Appendix C
Biological Resources

C-1 Section 7 Consultation

C-1.1 Biological Resources Technical Memorandum

C-1.2 USFWS Coordination

C-1.3 NOAA Fisheries Coordination

C-2 NOAA Fisheries Essential Fish Habitat (EFH) Consultation

Appendix C-1
Section 7 Consultation

Appendix C-1.1
Biological Resources Technical Memorandum

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Memorandum

date	March 15, 2024
to	Will Castillo, Broward County Aviation Department (BCAD)
cc	Peter M. Green, Federal Aviation Administration (FAA)
from	Julie Sullivan
subject	Ft Lauderdale Hollywood International Airport (FLL) Landside Projects Section 7 Consultation – Biological Resources Technical Memorandum

Description of the Proposed Project

Broward County Aviation Department (BCAD), in coordination with the Federal Aviation Administration (FAA), is preparing an Environmental Assessment (EA) for proposed parking and intermodal access improvements at the Fort Lauderdale-Hollywood International Airport (FLL or the Airport). The EA is being prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), Council of Environmental Quality regulations, and FAA policy and procedures. It is anticipated the Draft EA will be available in June 2024 for agency and public review and comment. After consideration of comments received, the FAA will decide whether to prepare an Environmental Impact Statement or issue a Finding of No Significant Impact.

The Proposed Project is needed to improve Airport access and reduce congestion on terminal area roadways. The Proposed Project includes constructing an Intermodal Center (IMC) within the U.S. Highway 1 right-of-way, constructing an Automated People Mover (APM), redeveloping the Airport's Palm parking garage, expanding the Airport's Cypress parking garage, reconfiguring the Airport's terminal access roadways, and other associated landside improvements at the Airport. Construction for the Proposed Project is anticipated to start in 2026. The location of the Airport is shown in **Enclosure 1**. The Proposed Project and its individual elements are described in **Enclosure 2** and depicted in **Enclosure 3**.

Project Site Information

Since 2008, there have been a number of field reviews conducted and biological surveys completed within the study area. Recent site reviews (January 31, 2024) updated and confirmed the findings of the prior studies and reviews. In addition to the field reviews and studies, a thorough review of publicly available resources[1], prior studies, and known site conditions was completed to characterize biological resources within the study area

[1] Database searches included:

- USFWS Information for Planning and Consultation (IPaC) database
- USFWS Environmental Conservation Online System
- USFWS Critical Habitat Mapper
- Florida Fish and Wildlife Conservation Commission (FFWCC) List of Florida's Endangered Wildlife Species (68A-27.003 FAC) and Species of Special Concern (68A-27.005 FAC)
- NOAA Fisheries Southeast Region (v2a), Endangered Species Act Section 7 Mapper
- Various USFWS, FFWCC, & Florida Natural Areas Inventory (FNAI) listed species occurrence data

(Action Area (AA), **Exhibit 1**) and to provide a comprehensive listing of the potential for species occurrence, specifically special status species.

Land Use

The AA is in a highly urbanized and industrial area of Broward County with very little open space and habitat (**Exhibit 2**). Most of the AA includes land that has been altered for transportation infrastructure, including US-1, arterial roadways (e.g., Perimeter Road, NE 7th Ave, etc.) and the Airport. Open areas in the AA consist primarily of grassy swales and stormwater features along roadways and in between Airport infrastructure that support the drainage from US-1 and other impervious areas associated with FLL. No pristine upland habitat is present within the AA. There is no coastal or barrier island habitat present within the AA.

Habitat within the AA is limited to the Dania Cut-off Canal and a strip of undeveloped land that lies between commercial property along NE 7th Avenue and Fort Lauderdale Rail Yard. A large portion of this area is disturbed habitat used for electrical power transmission lines. The remaining area is composed of mangrove swamp that consists primarily of red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), and some buttonwood (*Conocarpus erectus*). Exotic wetland hardwoods such as Brazilian pepper (*S. terebinthifolius*) and Australian pine (*C. equisetifolia*) are interspersed due to previous ditch construction, farming disturbances, and reduced tidal flushing with concentrations of these nuisance / exotics along the eastern and southern portions of the area. This area is the receiving body for the drainage from the entire US-1 drainage basin which includes the direct AA (**Exhibit 3**). **Table 1** details the land cover within the AA.

TABLE 1
LAND COVER WITHIN THE DIRECT AND INDIRECT ACTION AREA (ACRES)

FLUCCS NAME	FLUCCS CODE	DIRECT ACTION AREA	INDIRECT ACTION AREA	IMPACT AREA
Channelized Waterways, Canals	5120	-	20.8	-
Commercial and Services	1400	0.6	55.3	-
Electrical Power Transmission Lines	8320	25.4	42.3	<1
Mangrove Swamp	6120	33.6	95.6	<1
Marinas and Fish Camps	1840	-	38.6	-
Mixed Shrubs	6172	0.4	9.2	0.4
Open Land	1900	-	14.9	-
Other Light Industry	1550	-	2.6	-
Port Facilities	8150	-	75.2	-
Reservoirs	5300	-	16.4	-
Transportation	8100	110.3	560.1	110.3
Total		**170.3**	**931.0**	**112.7**

SOURCE: Environmental Science Associates, 2024. SWFWMD FLUCCS, 2024.

Approximately 33 acres of mangrove swamp land use immediately east of the NE 7th Ave is within the direct AA. The remaining mangrove swamp is within the indirect AA and consists of conservation lands and undeveloped vacant property. The conservation lands are associated with West Lake Park located south of the Dania Cut-Off Canal outside of the indirect AA. The areas south of the Dania Cut-Off Canal would not be directly or indirectly impacted by the Proposed Project. Representative photographs of the land uses within the AA are included in **Appendix A**.

Habitat and Wildlife

As previously described, habitat available to support common wildlife species is limited to undeveloped open space near transportation infrastructure and the mangrove swamp wetlands to the east of NE 7th Ave. The IMC is proposed to be developed inside the US-1 interchange loop which is characterized as a stormwater drainage basin. This area is maintained (mowed grass) and sloped to allow drainage. There is seasonal wetland vegetation in the lowest areas of the pond consisting of water hyssops (*Bacopa* spp.), cordgrasses (*Spartina* spp.), pennywort (*Hydrocotyle* spp.) and primrose (*Ludwigia* spp.). Birds, mammals, reptiles, amphibians, fish, and invertebrates considered relatively common within the vicinity of the Airport include those generally associated with and tolerant of highly developed, urban area, and natural areas throughout south Florida. Characteristic wildlife includes small to medium-sized mammals, such as rabbits (*Sylvilagus* spp.), raccoons (*Procyon lotor*), opossums (*Didelphis marsupialis*), white-tailed deer (*Odocoileus virginianus*), and various rodents. Common amphibians and reptiles include various frogs (*Hyla* spp. and *Rana* spp.), green anole (*Anolis carolinesis*), swamp snake species, water snakes, and cottonmouths (*Agkistrodon piscivorus*). Common species of birds include anhinga (*Anhinga anhinga*), boat-tailed grackles (*Quiscalus major*), common starling (*Sturnus vulgaris*), various heron species (*Ardea* spp.), American crows (*Corvus brachyrhynchos*), sparrows, swallows, and pigeons. Fish species common in mangrove swamps include jacks (*Caranx* spp.), sheepshead (*Archosargus probatocephalus*), grunts (*Haemulon* spp.), gobies (*Gobiosoma* spp.), schoolmasters (*Lutjanus apodus*), gray snappers (*Lutjanus griseus*), and small goliath grouper (*Epinephelus itajara*) as well as many other species.

Potential impacts to biological resources, including terrestrial and aquatic plant and animal species, game and non-game species, special status species, and environmentally-sensitive or critical habitats, were evaluated based on the assumption that the entire AA would be directly or indirectly affected by the Proposed Project. Potential impacts were assessed against the existing conditions and the potential use of various habitats within the AA by special status species was evaluated and compared to any loss of habitat within the area of disturbance.

Migratory Birds

The IPaC also lists migratory birds of concern that have been documented in the vicinity of the AA. The list of species protected by the MBTA was updated in February 2024 by incorporating the most current scientific information on taxonomy and natural distribution. Other species with the potential to occur within the AA are protected under other regulations include the bald eagle, which is protected under the *Bald and Golden Eagle Protection Act* (16 U.S.C. 668-668d).

Wildlife

The Proposed Project will permanently impact previously-disturbed and developed areas within the AA. It is anticipated that resident wildlife would be displaced, likely concentrating in remaining onsite natural areas and stormwater management features, as well as utilizing adjacent natural areas as available in the fragmented urban landscape.

Federally Listed Species with Potential for Occurrence in the Action Area

Based on the existing site conditions, species-specific habitat requirements, desktop review, and multiple field surveys, the AA has a potential to support 22 federally listed species and 2 federal candidate species. Table 1 in **Appendix B** provides a summary of special status species with the potential for occurrence within the study area and a discussion of the preferred habitat(s) and likelihood of occurrence for each. Species listed as having no potential for occurrence are not discussed in this memo in more detail. **Appendix C** includes the IPaC and FNAI list of species with potential to occur in the AA. **Table 2** provides a summary of protected species with some potential to occur in the AA.

TABLE 2
PROTECTED SPECIES WITH POTENTIAL FOR OCCURRENCE IN THE ASSESSMENT AREA

Common Name	Scientific Name	Protected Status	Potential Occurrence	Effect Summary
Florida Bonneted Bat	*Eumops floridanus**	Endangered USFWS	Moderate - Low	**To be determined** AA includes potential foraging and roosting opportunities (man-made structures) and is in the USFWS South Florida Urban Bat Area
West Indian Manatee	*Trichechus manatus*	Threatened USFWS	Low	**No Effect** Minimal in-water work limited to culvert replacement
Wood Stork	*Mycteria americana*	Threatened USFWS	Low	**No Effect** Existing habitat does not have sufficient hydroperiod to support Suitable Foraging Habitat (SFH)
American Alligator	*Alligator mississipiensis*	Similar Appearance Threatened USFWS	Low	**No Effect** Minimal in-water work limited to culvert replacement
American Crocodile	*Crocodylus acutus*	Threatened USFWS	Low	**No Effect** Minimal in-water work limited to culvert replacement
Smalltooth sawfish	*Pristis pectinata*	Endangered NOAA Fisheries	Low	**No Effect** Minimal in-water work limited to culvert replacement
Loggerhead Sea Turtle*	*Caretta caretta*	Threatened USFWS / NOAA Fisheries	Low	**No Effect** Minimal in-water work limited to culvert replacement
Green Sea Turtle*	*Chelonia mydas*	Threatened USFWS / NOAA Fisheries	Low	**No Effect** Minimal in-water work limited to culvert replacement
Hawksbill Sea Turtle*	*Eretmochelys imbricata*	Endangered USFWS / NOAA Fisheries	Low	**No Effect** Minimal in-water work limited to culvert replacement
Leatherback Sea Turtle*	*Dermochelys coriacea*	Endangered USFWS / NOAA Fisheries	Low	**No Effect** Minimal in-water work limited to culvert replacement

SOURCE: Environmental Science Associates, 2024.

NOTES: *Shared jurisdiction between USFWS and NOAA.

Florida Bonneted Bat

The Florida Bonneted Bat (FBB) (*Eumops floridanus*) was listed endangered by the USFWS in 2008. The 2013 listing rule identified threats for the species, which includes habitat loss and degradation, as well as habitat modification. FBBs are thought to have a low reproduction capacity, one birth per breeding season; however, FBBs are reproductively active through most of the year.[2] FBBs have been detected foraging in a variety of habitats including semitropical forests with tropical hardwood, pineland, and mangrove habitats, as well as man-made areas such as golf courses and neighborhoods.[3] Since FBBs can use a variety of roosting areas, including man-made structures such as highway bridges and ramps, the USFWS *Florida Bonneted Bat Consultation Guidelines* were reviewed. The AA falls within the USFWS FBB Consultation Area and the South Florida Urban

[2] Florida Fish and Wildlife Conservation Commission, Florida Bonneted Bat, Available at: https://myfwc.com/wildlifehabitats/profiles/mammals/land/florida-bonneted-bat/, Accessed: February 2024.

[3] Robson, M. 1989. Status survey of the Florida mastiff bat. Final Performance Report, Florida Game and Fresh Water Fish Commission, Tallahassee.

Bat Area.[4] Coordination with USFWS will identify whether an Acoustic Survey or Limited Roost Survey within the AA is warranted for the Proposed Project.

West Indian Manatee

The West Indian Manatee (*Trichechus manatus*) has been listed as a protected mammal in Florida since 1967. Both federal and state laws protect the manatee in Florida. Federal law includes the *Marine Mammal Protection Act of 1972* and the *Endangered Species Act* as amended in 1973. Manatees occur in both freshwater and saltwater habitats in Florida. The distribution of manatees is related to the proximity to warm water during cold weather, the availability of aquatic vegetation, and the location of freshwater sources. The aquatic mammal is strictly herbivorous, feeding on both freshwater and marine vegetation. Although critical habitat has been designated for the manatee; none exists in Broward County.[5] Both permanent and transient populations of manatees occur in Broward County. There have been no manatees spotted within the AA. Manatees have been spotted swimming and feeding in the Dania Cut-Off Canal to the south of the Airport.[6] The Dania Cut-Off Canal is located outside of the direct AA and will not be impacted by the Proposed Project. The only surface water feature within the AA that connects to the Dania Cut-Off Canal is a FDOT drainage ditch that drains the proposed IMC site (currently retention pond) east and then south along the FPL easement (east of the AA). This ditch contains a series of culverts that prevent manatees from accessing the direct AA. This was previously reviewed in the South Runway EIS[7] which identified both manatees and smalltooth sawfish are restricted to the open water portions of the Dania Cut-Off Canal. No construction activities will occur in the Dania Cut-Off Canal and existing manatee grates we be replaced with the replacement of the existing stormwater outfall pipes. The Proposed Project is expected to have "No Effect" on this species.

Wood Stork

The Wood Stork (*Mycteria americana*) is listed as both endangered by the USFWS and FFWCC. Wood storks nest primarily in cypress or mangrove swamps and feed in shallow freshwater marshes, narrow tidal creeks, or flooded tidal pools. The wood stork uses freshwater and estuarine habitats for nesting, roosting, and foraging. Wood storks forage most effectively in shallow-water areas with highly concentrated prey. Typical foraging sites consist of freshwater marshes and ponds; shallow, seasonally flooded roadside or agricultural ditches; narrow tidal creeks or shallow tidal pools; managed impoundments and depressions in cypress heads and swamp sloughs. Wood storks construct their nests in medium to tall trees in stands located in swamps or on islands surrounded by relatively broad expanses of open water. The AA is located within the USFWS Core Foraging Area (CFA) for wood storks.[8] While individuals were not observed during field surveys, wood storks have been noted within the area. The AA includes existing stormwater management features that are seasonally inundated and could provide limited seasonal Suitable Foraging Habitat (SFH) for wading birds, including wood stork, although the hydroperiod is not sufficient to sustain suitable habitat in most of these features.[9] Impacts to these features include modifications to increase storage as well as construction of the IMC and associated roadway improvements. The area within the IMC footprint that is seasonally inundated is limited to the area surrounding

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[4] U.S. Fish and Wildlife Service South Florida Ecological Services Office, Florida Bonneted Bat Consultation Guidelines, October 2019.

[5] USFWS, 2024. *ECOS, West Indian Manatee (Trichechus manatus)*. https://ecos.fws.gov/ecp/species/4469 (Accessed February 2024)

[6] Broward County, 2024. *Broward County GeoHub, Manatee Sightings*. https://geohub-bcgis.opendata.arcgis.com/maps/1db5e7bb4abd42289b7d592c1f75fc87/explore?location=26.064749%2C-80.128135%2C13.83 (Accessed February 2024)

[7] *Final Environmental Impact Statement (EIS) for the Development and Expansion of Runway 9R-27L and Other Associated Airport Projects for Fort Lauderdale-Hollywood International Airport (FLL)*. December 2008

[8] FDEP, 2024. *Florida Wood Stork Foraging Areas*. https://geodata.dep.state.fl.us/datasets/c3428d8d914c448ca27921388d443c5b (Accessed February 2024).

[9] As SFH within active CFAs may be impacted by the Proposed Project, the *Programmatic Wood Stork Effect Determination Key* was consulted to arrive at an appropriate effect determination for this species.

the drainage structures. Per the *South Florida Programmatic Effect Determination Key for Wood Stork*, a determination of "No Effect" is appropriate.

American Crocodile

The American Crocodile (*Crocodylus acutus*) inhabits brackish or saltwater areas and can be found in ponds, coves, and creeks in mangrove swamps. American crocodiles occur in South Florida and also can be found in Hispaniola, Cuba, Jamaica, along the Caribbean coast from southern Mexico to Venezuela, and along the Pacific coast from Mexico to Peru. The northern end of the crocodile's range is in South Florida. Occasionally, crocodiles are encountered inland in freshwater areas along the southern Florida coast.[10] The majority of impacts will occur within existing retention areas and developed land with only temporary impacts during construction for culvert replacement. The impact areas do not support suitable habitat therefore the Proposed Project is anticipated to have "No Effect" on this species.

American Alligator

The American Alligator (*Alligator mississippiensis*) is a large semi-aquatic reptile that is considered an opportunistic feeder. Alligators occur throughout the southeast, ranging from southeast Oklahoma and east Texas to North Carolina and Florida in the east. While alligators prefer freshwater lakes and rivers, they can also inhibit brackish waters. In Florida, the American alligator is federally protected by the Endangered Species Act as a threatened species, due to their similarity of appearance to the American crocodile. As mentioned above, it is anticipated that a majority of impacts will occur within the existing retention areas and developed land with only temporary impacts during construction for culvert replacement. Therefore, impacts to American crocodiles and their habitat is not anticipated. Since impacts to American crocodiles and their habitats are not anticipated, impacts to American alligators are also not anticipated. As a result, it is anticipated that the Proposed Project will have "No Effect" on this species.

Smalltooth sawfish

Smalltooth sawfish (*Pristis pectinate*) live in tropical seas and estuaries of the Atlantic Ocean. They are mostly at home in shallow, coastal waters, and sometimes enter the lower reaches of freshwater river systems. In the United States, they can be found in Florida's coastal waters. In the United States, smalltooth sawfish are most often found off the southwest coast of Florida, from about Charlotte Harbor through the Everglades and Florida Keys region at the southern tip of the state. Smalltooth sawfish are restricted to the open water portions of the Dania Cut-Off Canal. There are no construction activities proposed in the Dania Cut-Off Canal. Grates on the existing stormwater outfall pipes will be replaced when the culverts are upgraded for this project. The Proposed Project is expected to have "No Effect" on this species.

Sea Turtles

Loggerhead Sea Turtle

Named for its large head, Loggerhead sea turtles (*Caretta caretta*) have heart-shaped top shells that are generally reddish-brown in color, with a pale-yellow bottom. Loggerheads feed on hard-shelled prey, such as conchs, and are the most abundant nesting sea turtle species found within the United States, where both juveniles and adults live in U.S. Coastal waters. Through their life stages, hatchlings and

[10] Florida Fish and Wildlife Conservation Commission, 2024. *American Crocodile*. https://myfwc.com/wildlifehabitats/profiles/reptiles/american-crocodile/ (Accessed February 2024)

juveniles spend the first 7 to 15 years of their lives in the open ocean, then migrate to nearshore coastal areas where they will forage and continue to grow for several more years.[11]

Green Sea Turtle

Green Sea Turtles (*Chelonia mydas*) are strictly herbivores that forage on vegetation such as sea grass and algae, which will typically give their fat a greenish appearance. Green sea turtles are known to be the largest hard-shelled of the sea turtles; and like the loggerhead sea turtles, hatchlings typically swim to offshore areas, where they live for several years in pelagic habitat. Juveniles will eventually leave the open ocean habitat and travel to nearshore foraging grounds in shallow coastal habitats, where they mature to adulthood and spend the remainder of their lives.[12]

Hawksbill Sea Turtle

Known for their unique "tortoise shell" and beak-like mouth, the Hawksbill Sea Turtle (*Eretmochelys imbricate*) diet consists primarily of sponges, but will also forage on algae, corals, mollusks, sea urchins, and small fish. The hawksbill "largely inhabits nearshore foraging grounds, especially healthy coral reef habitats. Most hatchlings enter pelagic (open sea) habitat, where they take shelter in floating algal mats and drift lines of flotsam and jetsam for approximately 1 to 5 years. Eventually, juveniles migrate to shallower coastal feeding grounds, including their preferred coral reef habitats, where they mature to adulthood and spend the remainder of their lives.[13]

Leatherback Turtle

Known for their rubbery looking skin, the Leatherback Sea Turtles (*Dermochelys coriacea*) are the largest sea turtles in the world and spend most of their lives in the ocean. The majority of nesting occurs in Florida, Puerto Rico, and the U.S. Virgin Islands; however, leatherbacks have been satellite tagged at sea on foraging grounds off Nova Scotia, Canada and tracked to nesting beaches in the Caribbean.[14]

While there have been no marine turtles spotted within the AA, juvenile and adult sea turtles could utilize the Dania Cut-Off Canal to the south of the Airport. The Dania Cut-Off Canal is located outside of the direct AA and will not be impacted by the Proposed Project. As previously stated, the only surface water feature within the AA that connects to the Dania Cut-Off Canal is a FDOT drainage ditch that drains the proposed IMC site (current retention pond) east and then south along the FPL easement (east of the AA). This ditch contains a series of culverts that contain exclusionary grates that prevent species such as manatees and smalltooth sawfish from accessing the AA. This connection was previously reviewed in the South Runway EIS which identified both manatees and smalltooth sawfish are restricted to the open water portions of the Dania Cut-Off Canal. Since both manatees and smallthooth sawfish are precluded from the FDOT drainage ditch via existing exclusionary grates, it is expected that these grates would also restrict juvenile and adult sea turtles from the same area. Additionally, no construction activities will occur in the Dania Cut-Off Canal and existing grates will be reinstalled with the replacement of the existing stormwater outfall pipes. Therefore, the Proposed Project is expected to have "No Effect" on these species.

Essential Fish Habitat

The Proposed Project is not in an area identified as Essential Fish Habitat (EFH). The AA includes mangrove habitat bounded by NE 7th Avenue on the west, development on the north, and a utility easement with a

[11] NOAA Fisheries, 2024. Loggerhead Turtles. Available at: https://www.fisheries.noaa.gov/species/loggerhead-turtle. Accessed: March 4, 2024.

[12] NOAA Fisheries, 2024. Green Turtle. Available at: https://www.fisheries.noaa.gov/species/green-turtle. Accessed: March 4, 2024.

[13] NOAA Fisheries, 2024. Available at: https://www.fisheries.noaa.gov/species/hawksbill-turtle. Accessed: March 4, 2024.

[14] NOAA Fisheries, 2024. Available at: https://www.fisheries.noaa.gov/species/leatherback-turtle. Accessed: March 4, 2024.

maintenance access road on the east and south. This access road is elevated and acts as barriers to any overland flow from this existing wetland area (see **Exhibit 3-3** in **Enclosure 3**). This elevated access road is adjacent to a Florida Department of Transportation (FDOT) drainage channel, which is similarly not designated as EFH, that discharges into the Dania Cut-Off Canal then to the Stranahan River to the east and ultimately into the Atlantic Ocean. Although outside the AA, Dania Cut-Off Canal is generally designated EFH for South Atlantic EFH species: shrimp, spiny lobster, snapper, and grouper. The Proposed Project does not directly impact any areas classified as EFH; however, the Proposed Project is ultimately hydrologically connected to EFH within the Indirect Study Area so potential for indirect impacts was evaluated.

The Proposed Project will result in additional stormwater which will be managed through modification of the existing FDOT US-1 stormwater system. The current FDOT US-1 Drainage System consists of a series of interconnected dry retention areas and wet ponds throughout the FDOT right-of-way for US-1, which provide storage volume for stormwater runoff, flood attenuation, and water quality treatment. The FDOT US-1 Drainage System discharges stormwater runoff via a single 48" outfall pipe from Basin US1-14 into the mangrove swamp east of NE 7th Avenue that acts as the receiving water body. There are also three 24"x32" oval outfall pipes that discharge stormwater runoff from the NE 7th Avenue right of way into this same mangrove area. Stormwater flows from this existing wetland area through seven (7) existing culverts under the FPL maintenance access road, which forms a barrier to overland flow, into the existing drainage ditch that flows south toward the Dania Cutoff Canal.[15]

The Proposed Project will increase the impervious area within the US-1 drainage basin and therefore would increase the volume of stormwater runoff. The stormwater will be managed through a series of modifications to the existing US-1 stormwater treatment system which include:

- maximizing the stormwater storage volume provided on-site within the footprint of the FLL IMC Facility and within the US-1 system prior to discharge
- upsizing various existing drainage connections throughout the US-1 system
- upsizing culverts under the existing transmission line haul road on the eastern boundary of the existing receiving wetland

The County-owned mangrove wetland area to east of NE 7th Avenue is entirely surrounded by existing uplands, which act as a perimeter berm blocking free overland flow of stormwater runoff. This existing perimeter berm would eliminate the need for constructing any additional berms in the mangrove wetlands and would avoid the need to clear and/or fill any mangrove wetland habitat. The only project-related construction impacts to the existing mangrove wetland area are limited to replacing the existing drainage culverts and discharge pipes routed under the existing utility access road located along the eastern and southern perimeter of the existing wetland site. The construction activities would not affect mangroves and the construction sites would employ measures to protect water quality and control siltation and sedimentation. Use of the existing mangrove wetland site for stormwater is expected to continue and preliminary modeling and analysis has identified that there would be only a minor increase in quantity within the area limited to periodic discharges and that there would be no significant impact to the mangrove habitat.

[15] FLL Intermodal Center PDD Stormwater Planning Technical Report (Preliminary DRAFT), Chen Moore and Associates, Inc. February 2024

Prior to stormwater entering the mangrove wetland it will be treated in accordance with state water quality criteria and the newly ratified Clean Waterways Act.[16] Retention of stormwater in the wetland will continue to ensure that water enters the canal system without adversely impacting water quality (temperature, salinity, and nutrient loads) of the receiving waterbody(s). Design of the stormwater management system will include the following measures:

- Minimizing periodic stormwater discharge volumes into the mangroves.
- Maximizing stormwater treatment within the interconnected drainage system prior to discharge into the mangroves.
- Retaining tidal connectivity between the mangrove wetlands and the Dania Cut-Off Canal.

Conclusion

Protected Species

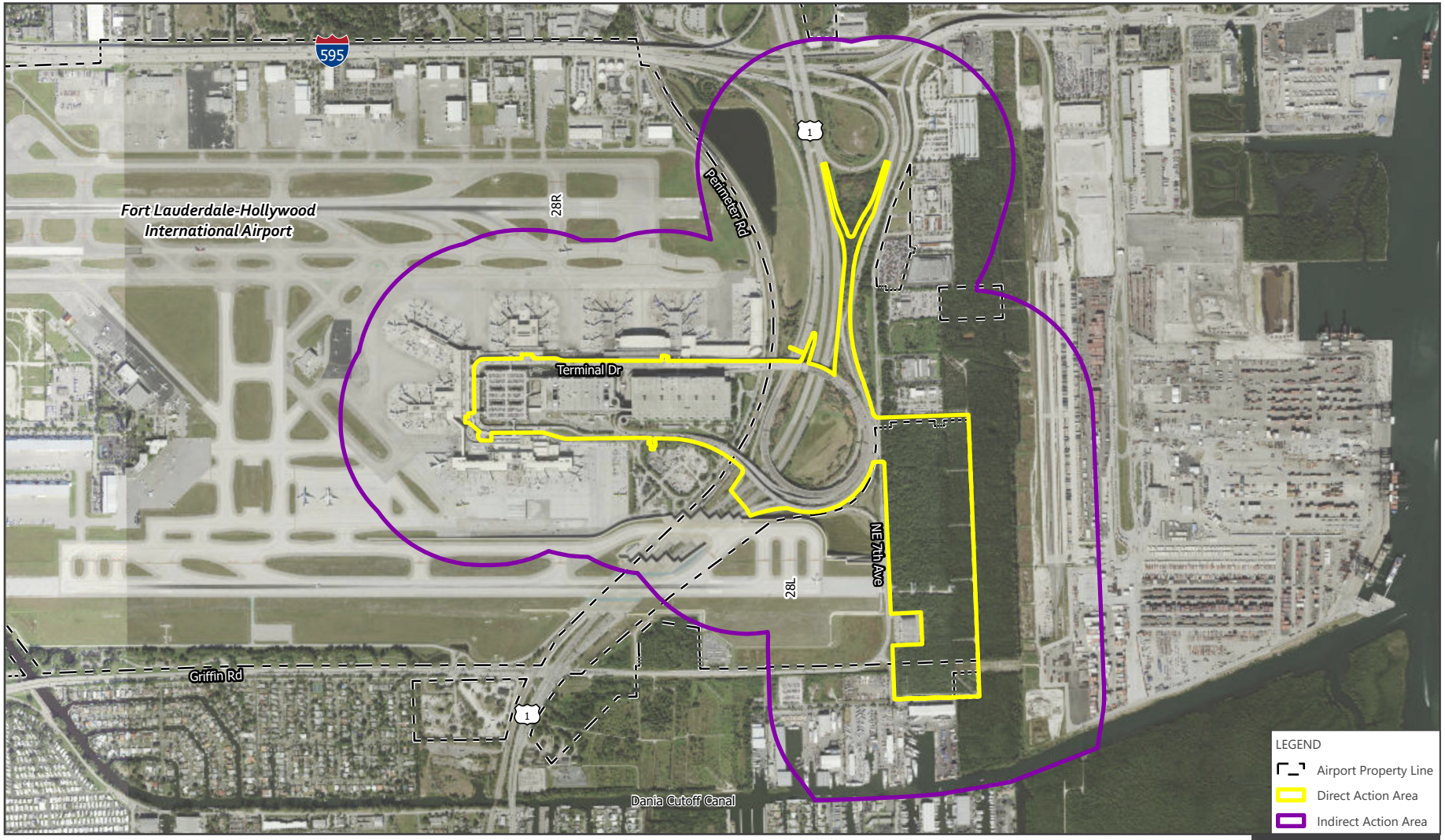
In accordance with Section 7 of *The Endangered Species Act of 1973* (16 U.S.C. §§ 1531-1544) and *Marine Mammal Protection Act (MMPA) of 1972* (16 U.S.C. §§1361 et seq.), Environmental Science Associates, Inc., (ESA) is recommending effect determinations for species with potential for occurrence in the AA under USFWS and/or NOAA Fisheries purview.

As detailed in this memo, the effects of the Proposed Project on endangered and threatened species, as well as critical habitat, were evaluated. Based on recent site visits and a review of previous studies performed in the area, it is ESA's opinion that the Proposed Project would not affect the federally-listed species in Table 2 or critical habitat. The Proposed Project would be constructed in previously developed areas and would have negligible impact to natural habitat and water quality within the stormwater attenuation mangrove swamp. Although conversion of the US-1 stormwater pond to develop the IMC will decrease open greenspace that supports various species common to urban and disturbed areas, there will be "No Effect" to special status species or their habitats or substantial loss or fragmentation of native species' habitats or their populations is anticipated.

EFH

The project is not located in an area identified as EFH. Although the Proposed Project will generate additional stormwater within the US-1 drainage basin, there will be no physical impact to habitat within the mangrove swamp or receiving waterbodies. The mangrove area will continue to receive treated stormwater from the US-1 basin through the existing drainage system with upgrades to individual culverts. The system will be designed to assure there are no adverse water quality impacts in receiving waterbodies and the salinity, temperature and water chemistry will not be affected in the receiving waters. In-water activities associated with the Proposed Project are limited to replacement of existing culverts during construction, with existing culvert grates to be re-installed. After a review and analysis, it is ESA's opinion that the Proposed Project will not affect EFH.

[16] CS/HB 7053 Ratification of the Department of Environmental Protection's Rules Relating to Stormwater. March 5, 2024.



SOURCES: ESA, 2024.

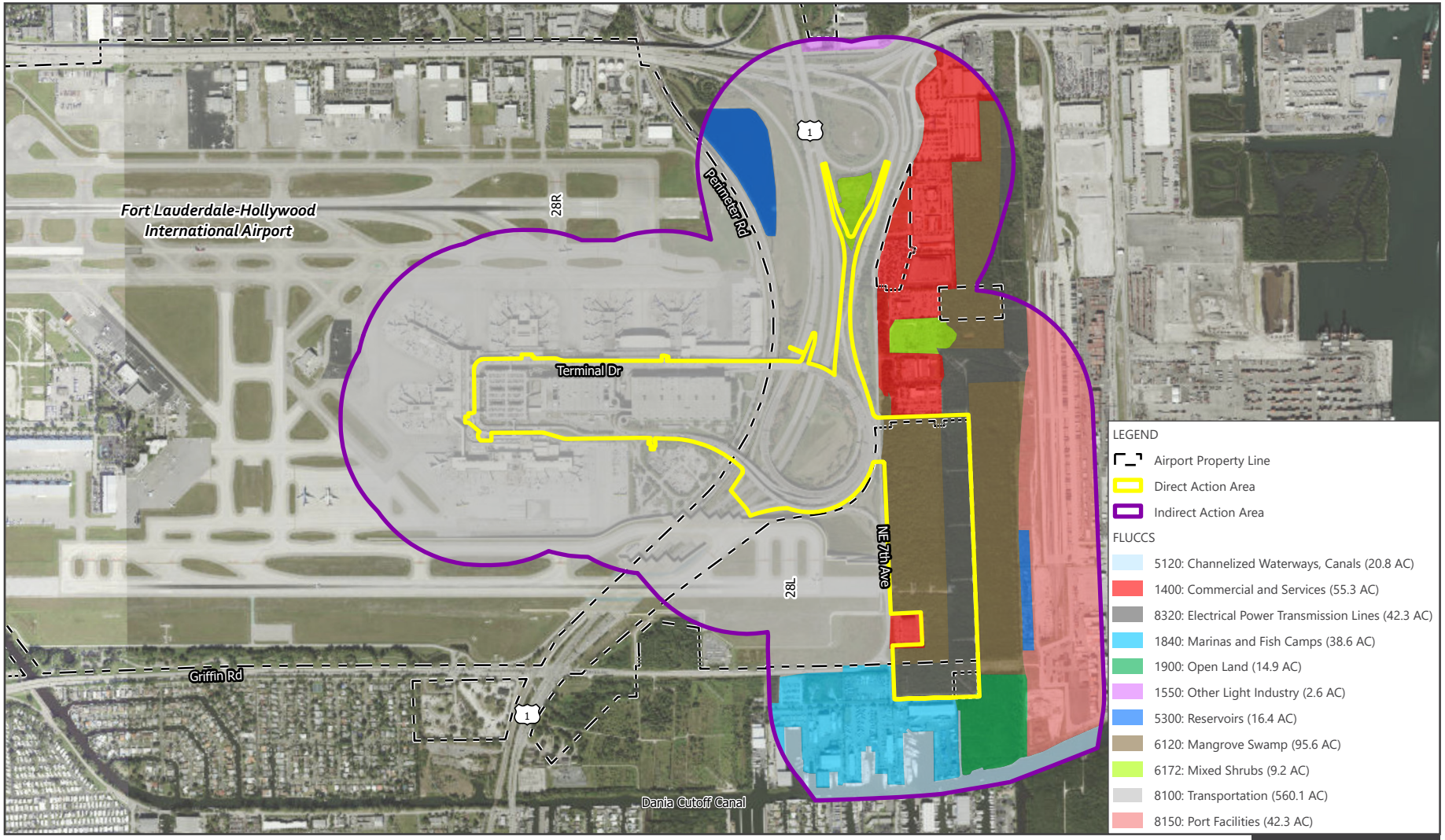
EXHIBIT 1

NORTH

0 1,600 ft.

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Action Area
Fort Lauderdale-Hollywood International Airport



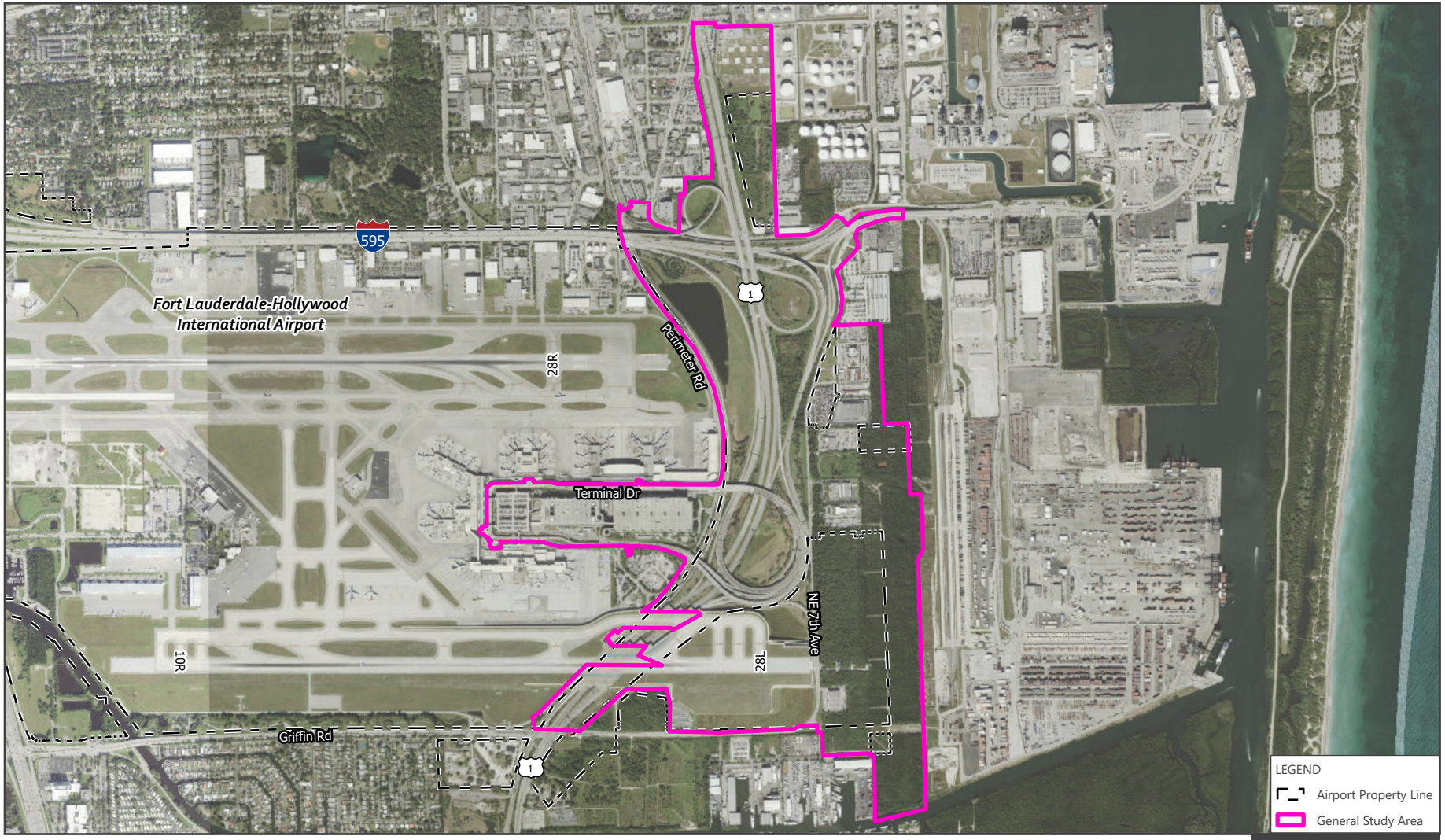
SOURCES: FDEP Statewide Landuse/Landcover; ESA, 2024.

EXHIBIT 2

NORTH 0 1,600 ft.

U:\GIS\GIS\Projects\2021xxx\D202100449_BCAD_Env_Planning_Acoustical_Consulting\03_Project\Ex_3.4_Land Cover.aprx

Land Cover
Fort Lauderdale-Hollywood International Airport



SOURCES: ESA, 2024.

EXHIBIT 3

NORTH

0 2,000 ft.

U:\GIS\GIS\Projects\2021xxx\D202100449_BCAD_Env_Planning_Acoustical_Consulting\03_Project\Ex_3.2_General Study Area.aprx

US-1 Drainage Basin
Fort Lauderdale-Hollywood International Airport

Appendix A

Representative Photographs





Habitat within proposed IMC location (source Chen Moore & Associates (CMA) 2024)



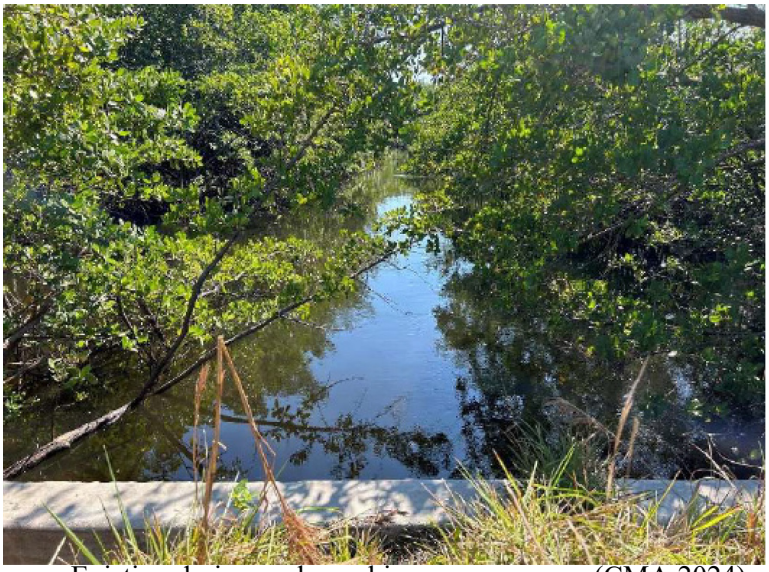
Habitat within proposed IMC location (source FDOT)



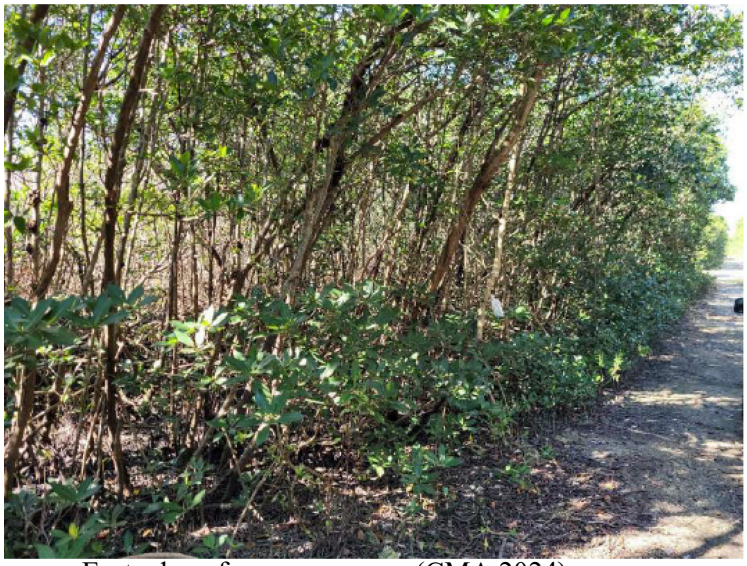
West edge of mangrove area (CMA 2024)



Interior of mangrove area (CMA 2024)



Existing drainage channel in mangrove area (CMA 2024)



East edge of mangrove area (CMA 2024)



Existing culvert in mangrove area (CMA 2024)



Example garage redevelopment area (FDOT)

Appendix B

Listed Species Table 1

TABLE 1
FEDERALLY LISTED SPECIES POTENTIALLY OCCURRING IN THE ACTION AREA

Common Name	Scientific Name	Federal Listing	Agency	Likelihood of Occurrence within the Action Area	Species Eliminated from Further Evaluation (Yes/No)	Habitat Preference
Mammals						
Florida Bonneted Bat	*Eumops floridanus**	E	USFWS	Moderate - Low	No	Florida bonneted bat (FBB) habitat includes tropical hardwoods, pinelands, and mangrove habitats, as well as man-made areas such as golf courses, bridges, buildings, and neighborhoods. **The AA includes potential foraging and roosting opportunities (man-made structures) and is in the USFWS South Florida Urban Bat Area**.
Florida Panther	*Puma concolor coryi*	E	USFWS	None	Yes	Suitable habitat includes large contiguous areas of forested habitat with dense understory vegetation, marsh shrub swamps, and prairie grasslands. Sometimes found near agricultural lands. **Suitable habitat is not identified within the AA.**
West Indian Manatee	*Trichechus manatus*	T	USFWS	High	No	Manatees can be found in shallow, slow-moving waters of rivers, estuaries, saltwater bays, canals, and coastal areas throughout Florida. **Suitable habitat includes the Dania Cut-off Canal to the south of the AA and a small, cleared area to the south and east of the AA.**
Birds						
Crested Caracara	*Caracara plancus audubonii*	T	USFWS	None	Yes	Caracara habitat includes open and low-lying fields, including dry prairies and pasture lands with cabbage palm, cabbage palm/live oak hammocks, and shallow ponds and sloughs. **Suitable habitat is not identified within the AA.**
Piping Plover	*Charadrius melodus*	T	USFWS	None	Yes	The piping plover prefers open sandy beaches, sand flats, mudflats, and coastal areas. **Suitable habitat is not identified within the AA**.
Eastern Black Rail	*Laterallus jamaicensis ssp. jamaicensis*	T	USFWS	None	Yes	Suitable habitat for this species includes salt, brackish, and freshwater herbaceous marshes that can be tidally or non-tidally influenced. **Suitable habitat is not identified within the AA**.
Everglade Snail Kite	*Rostrhamus sociabilis plumbeus**	E	USFWS	None	Yes	Everglades snail kite habitat includes large open freshwater marshes and lakes with shallow water, < 4 ft. (1.2 m) deep, and a low density of emergent vegetation are preferred foraging habitat. Forages on freshwater snails, such as the apple snail (*Pomacea paludosa*). **Suitable habitat is not identified within the AA.**
Wood Stork	*Mycteria americana*	T	USFWS	Low	No	Wood storks habitat includes forested wetland systems for nesting and open, shallow freshwater and brackish wetlands and roadside ditches/ponds. **A minimal amount of habitat may be found within the AA for foraging activities that includes areas within the dry ponds when water has been retained and along the shallow edges of the mangrove wetland systems within the AA.**
Fishes						
Smalltooth Sawfish	*Pristis pectinata*	E	NOAA Fisheries	Low	No	Smalltooth sawfish live in tropical seas and estuaries of the Atlantic Ocean, in shallow, coastal waters, and sometimes the lower reaches of freshwater river systems. **A Minimal amount of suitable habitat exists within the AA, including the Dania Cut-off Canal located south of the AA.**
Reptiles						
American Alligator	*Alligator mississipiensis*	SAT	USFWS	Low	No	Alligators can be found in river swamps, lakes, marshes, bayous, and other open wetland habitats. The American alligator is federally listed as threatened due to similarity of appearance to the American crocodile (*Crocodylus acutus*), but only where their ranges overlap. The Airport is located in the habitat range of this species.

TABLE 1
FEDERALLY LISTED SPECIES POTENTIALLY OCCURRING IN THE ACTION AREA

Common Name	Scientific Name	Federal Listing	Agency	Likelihood of Occurrence within the Action Area	Species Eliminated from Further Evaluation (Yes/No)	Habitat Preference
						A Minimal amount of suitable habitat exists within the AA, including the Dania Cut-off Canal located south of the AA.
American Crocodile	*Crocodylus acutus*	T	USFWS	Low	No	This species prefers coastal estuarine marshes, tidal swamps, and creeks along edges of mainland and islands. Usually associated with mangroves. Nests on beaches, stream banks, and levees. **No suitable habitat exists within the impact area of the AA,**
Eastern Indigo Snake	*Drymarchon couperi*	T	USFWS	None	Yes	The Eastern indigo snake utilizes a variety of habitats including wet flatwoods, mesic hammocks, tidal swamps, sandhills, scrub & upland forests. **No suitable habitat exists within the AA.**
Gopher Tortoise	*Gopherus polyphemus*	C	USFWS	None	Yes	Gopher tortoises prefer xeric, flatwoods, disturbed/spoil areas and coastal habitats with loose, well-drained, sandy soil with herbaceous vegetation. A portion of the AA includes upland areas around two retention ponds. This area has been previously cleared and impacted due to the construction of roads, stormwater retention, and landscape plantings. This portion of the AA is completely enclosed by heavily traveled roadway features that would exclude the potential for tortoises to relocate to this area. Although it is unlikely tortoise burrows will be present within the AA, a 100 percent gopher tortoise burrow survey will still be required, at least 90 days from construction. **Tortoise burrows are not likely due to previous construction activities within the AA and there is no potential for adjacent populations to relocate to this area.**
Loggerhead Sea Turtle	*Caretta caretta*	T	USFWS/ NOAA Fisheries	Low	No	The loggerhead sea turtle occurs in subtropical and temperate oceans and along coastal beaches. May be found hundreds of miles out to sea, as well as in inshore areas such as bays, lagoons, salt marshes, creeks, ship channels, and the mouths of large rivers. **A minimal amount of suitable habitat exists within the AA, including the Dania Cut-off Canal located to the south of the AA.**
Green Sea Turtle	*Chelonia mydas*	T	USFWS/ NOAA Fisheries	Low	No	The green sea turtle is also found in subtropical and temperate oceans, and nests along coastal beaches. Green turtles are found in inshore and nearshore waters. Important feeding areas in Florida include the Indian River Lagoon, the Florida Keys, Florida Bay, the Dry Tortugas, Homosassa, Crystal River, Cedar Key, and St. Joseph Bay. **A minimal amount of suitable habitat exists within the AA, including the Dania Cut-off Canal located to the south of the AA.**
Hawksbill Sea Turtle	*Eretmochelys imbricata*	E	USFWS/ NOAA Fisheries	Low - None	No	This species prefers marine coastal and oceanic waters, commonly associated with coral reefs, keys, and mangroves. The greatest number of hawksbill nests are laid in Mexico, Cuba, and Barbados, but nesting occurs throughout the Insular Caribbean. Nesting in the US is rare and is restricted primarily to the southeast coast of Florida and the Florida Keys. **A minimal amount of suitable habitat exists within the AA, including the Dania Cut-off Canal located to the south of the AA.**
Leatherback Sea Turtle	*Dermochelys coriacea*	E	USFWS/ NOAA Fisheries	Low - None	No	Leatherback sea turtles are found in marine waters and nest on sandy beaches throughout Florida. Leatherbacks juveniles will travel to nearshore foraging grounds in shallow coastal habitats, where they mature to adulthood. **A minimal amount of suitable habitat exists within the AA, including the Dania Cut-off Canal located to the south of the AA.**
Insects						
Bartram's Hairstreak Butterfly	*Strymon acis bartrami*	E	USFWS	None	Yes	The Bartram's hairstreak butterfly prefers pine rocklands and associated habitat (i.e., hydric pine flatwoods), specifically those containing its larval host plant, pineland croton. **Suitable habitat does not exist within the AA**.

TABLE 1
FEDERALLY LISTED SPECIES POTENTIALLY OCCURRING IN THE ACTION AREA

Common Name	Scientific Name	Federal Listing	Agency	Likelihood of Occurrence within the Action Area	Species Eliminated from Further Evaluation (Yes/No)	Habitat Preference
Florida Leafwing Butterfly	*Anaea troglodyta floridalis*	E	USFWS	None	Yes	This species is restricted to pine rocklands and associated habitat (i.e., hydric pine flatwoods), specifically those containing its larval host plant, pineland croton. **Suitable habitat does not exist within the AA.**
Miami Blue Butterfly	*Cyclargus (=Hemiargus) thomasi bethunebakeri*	E	USFWS	None	Yes	The Miami blue butterfly prefers topical hardwood hammocks, tropical pine rocklands, and beachside scrub. **Suitable habitat does not exist within the AA.**
Monarch Butterfly	*Danaus plexippus*	C	USFWS	None	Yes	Monarchs lay eggs on their obligate milkweed host plants (primarily Asclepias spp.) during the breeding season, which could be all year in some geographic areas. The portion of the AA that could support monarch butterflies is the upland strip of land that supports the two dry retention areas. This area has previously been excavated and resodded for past construction activities and is heavily manicured and maintained. **Suitable habitat does not exist within the AA.**
Plants						
Beach Jacquemontia	*Jacquemontia reclinata*	E	USFWS	None	Yes	Habitat includes dunes; disturbed openings in maritime hammock, coastal strand, and coastal scrub, often with sea grape, sand spurs, poisonwood, and prickly pear cactus. **Suitable habitat does not exist within the AA.**
Tiny Polygala	*Polygala smallii*	E	USFWS	None	Yes	Open grassy pineland; sandy pine rockland, scrubby flatwoods, and sandhill. Often in disturbed areas. **Suitable habitat does not exist within the AA.**
Florida Filmy Fern	*Trichomanes punctatum ssp. floridanum*	E	USFWS	None	Yes	Tree trunks in hammocks, edges of limesinks, and limestone boulders, often with mosses and liverworts. **Suitable habitat does not exist within the AA.**

NOTES:

Status Codes:

E = Listed as Endangered

T = Listed as Threatened

SAT = Protected due to Similarity of Appearance to other protected species

* = Candidate species for listing under the Endangered Species Act

SOURCES: FNAI, 2024. *Biodiversity Matrix*; USFWS, 2024. *IPaC*.

Appendix C

IPaC and FNAI Reports

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
850-681-9364 fax
www.fnai.org

Florida Natural Areas Inventory

Biodiversity Matrix Query Results

UNOFFICIAL REPORT

Created 2/9/2024

(Contact the FNAI Data Services Coordinator at 850.224.8207 or kbrinegar@fnai.fsu.edu for information on an official Standard Data Report)

NOTE: The Biodiversity Matrix includes only rare species and natural communities tracked by FNAI.

Report for 4 Matrix Units: 68775 , 68776 , 68911 , 68912



Descriptions

DOCUMENTED - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.

DOCUMENTED-HISTORIC - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit; however the occurrence has not been observed/reported within the last twenty years.

LIKELY - The species or community is *known* to occur in this vicinity, and is considered likely within this Matrix Unit because:

1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; *or*
2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.

POTENTIAL - This Matrix Unit lies within the known or predicted range of the species or community based on expert knowledge and environmental variables such as climate, soils, topography, and landcover.

Matrix Unit ID: 68775

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

2 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT

Matrix Unit ID: 68776

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

2 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	T	FT

Matrix Unit ID: 68911

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Lantana depressa var. floridana Atlantic Coast Florida lantana	G2T1	S1	N	E
Mycteria americana Wood Stork	G4	S2	T	FT
Scrub	G2	S2	N	N

Matrix Unit ID: 68912

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Maritime hammock	G3	S2	N	N

Mycteria americana Wood Stork	G4	S2	T	FT
Vireo altiloquus Black-whiskered Vireo	G5	S3	N	N

Matrix Unit IDs: 68775 , 68776 , 68911 , 68912

25 **Potential** Elements Common to Any of the 4 Matrix Units

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Aphrissa statira Statira	G5	S2S3	N	N
Athene cunicularia floridana Florida Burrowing Owl	G4T3	S3	N	ST
Conradina grandiflora large-flowered rosemary	G3	S3	N	T
Crocodylus acutus American Crocodile	G2	S2	T	FT
Ctenogobius stigmaturus Spottail Goby	G2	S2	N	N
Elytraria caroliniensis var. angustifolia narrow-leaved Carolina scalystem	G4T2	S2	N	N
Eretmochelys imbricata Hawksbill Sea Turtle	G3	S1	E	FE
Eumops floridanus Florida bonneted bat	G1	S1	E	FE
Gambusia rhizophorae Mangrove Gambusia	G3	S3	N	N
Glandularia maritima coastal vervain	G3	S3	N	E
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Halophila johnsonii Johnson's seagrass	G2Q	S2	T	E
Jacquemontia curtissii pineland jacquemontia	G2	S2	N	T
Kricogonia lyside Lyside Sulphur	G5	S1	N	N
Lechea cernua nodding pinweed	G3	S3	N	T
Okenia hypogaea burrowing four-o'clock	G3?	S2	N	E
Phyllophaga elongata Elongate June Beetle	G3	S3	N	N
Rallus longirostris scottii Florida Clapper Rail	G5T3?	S3?	N	N
Rivulus marmoratus Mangrove Rivulus	G4G5	S3	SC	N
Roystonea regia Florida royal palm	G2G3	S2	N	E
Setophaga discolor paludicola Florida Prairie Warbler	G5T3	S3	N	N
Swietenia mahagoni West Indies mahogany	G3G4	S3	N	T
Trichechus manatus latirostris Florida Manatee	G2G3T2	S2S3	T	N
Trichomanes punctatum ssp. floridanum Florida filmy fern	G4G5T1	S1	E	E
Zephyranthes simpsonii redmargin zephyrlily	G2G3	S2S3	N	T

Disclaimer

The data maintained by the Florida Natural Areas Inventory represent the single most comprehensive source of information available on the locations of rare species and other significant ecological resources statewide. However, the data are not always based on comprehensive or site-specific field surveys. Therefore, this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. FNAI shall not be held liable for the accuracy and completeness of these data, or opinions or conclusions drawn from these data. FNAI is not inviting reliance on these data. Inventory data are designed for the purposes of conservation planning and scientific research and are not intended for use as the primary criteria for regulatory decisions.

Unofficial Report

These results are considered unofficial. FNAI offers a Standard Data Request option for those needing certifiable data.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Florida Ecological Services Field Office
777 37th St
Suite D-101
Vero Beach, FL 32960-3559
Phone: (352) 448-9151 Fax: (772) 562-4288
Email Address: fw4flesregs@fws.gov
https://www.fws.gov/office/florida-ecological-services

In Reply Refer To: March 04, 2024
Project Code: 2024-0057576
Project Name: FLL Landside Projects

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, 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 IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through IPaC 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: https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service (fws.gov).

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

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 Code in the header of

this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- Marine Mammals

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Florida Ecological Services Field Office
777 37th St
Suite D-101
Vero Beach, FL 32960-3559
(352) 448-9151

PROJECT SUMMARY

Project Code: 2024-0057576
Project Name: FLL Landside Projects
Project Type: Airport - New Construction
Project Description: The Proposed Project is needed to improve Airport access and reduce congestion on terminal area roadways. The Proposed Project includes constructing an Intermodal Center (IMC) within the U.S. Highway 1 right-of-way, constructing an Automated People Mover (APM), redeveloping the Airport's Palm parking garage, expanding the Airport's Cypress parking garage, reconfiguring the Airport's terminal access roadways, and other associated landside improvements at the Airport.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@26.0706385,-80.13718565177855,14z



Counties: Broward County, Florida

ENDANGERED SPECIES ACT SPECIES

There is a total of 23 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Florida Bonneted Bat *Eumops floridanus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8630	Endangered
Florida Panther *Puma (=Felis) concolor coryi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1763 General project design guidelines: https://ipac.ecosphere.fws.gov/project/2VOIW74KA5A4LJLBHTCQSJRHSY/documents/generated/7123.pdf	Endangered
Puma (=mountain Lion) *Puma (=Felis) concolor (all subsp. except coryi)* Population: FL No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6049	Similarity of Appearance (Threatened)
Southeastern Beach Mouse *Peromyscus polionotus niveiventris* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3951	Threatened
West Indian Manatee *Trichechus manatus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. ***This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.*** Species profile: https://ecos.fws.gov/ecp/species/4469	Threatened

BIRDS

NAME	STATUS
Crested Caracara (audubon""s) [fl Dps] *Caracara plancus audubonii* Population: FL DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8250	Threatened
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Everglade Snail Kite *Rostrhamus sociabilis plumbeus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7713	Endangered
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Wood Stork *Mycteria americana* Population: AL, FL, GA, MS, NC, SC No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8477 General project design guidelines: https://ipac.ecosphere.fws.gov/project/2VOIW74KA5A4LJLBHTCQSJRHSY/documents/generated/6954.pdf	Threatened

REPTILES

NAME	STATUS
American Alligator *Alligator mississippiensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/776	Similarity of Appearance (Threatened)
American Crocodile *Crocodylus acutus* Population: U.S.A. (FL) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6604	Threatened
Eastern Indigo Snake *Drymarchon couperi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/646	Threatened
Green Sea Turtle *Chelonia mydas* Population: North Atlantic DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Hawksbill Sea Turtle *Eretmochelys imbricata* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3656	Endangered
Leatherback Sea Turtle *Dermochelys coriacea* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered
Loggerhead Sea Turtle *Caretta caretta* Population: Northwest Atlantic Ocean DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1110	Threatened

INSECTS

NAME	STATUS
Bartram's Hairstreak Butterfly *Strymon acis bartrami* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4837	Endangered
Florida Leafwing Butterfly *Anaea troglodyta floridalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6652	Endangered
Miami Blue Butterfly *Cyclargus (=Hemiargus) thomasi bethunebakeri* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3797	Endangered
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

FLOWERING PLANTS

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

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

MARINE MAMMALS

Marine mammals are protected under the Marine Mammal Protection Act. Some are also protected under the Endangered Species Act[1] and the Convention on International Trade in Endangered Species of Wild Fauna and Flora[2].

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries[3] [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the Marine Mammals page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

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1. The Endangered Species Act (ESA) of 1973.
2. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

NAME

West Indian Manatee *Trichechus manatus*

Species profile: https://ecos.fws.gov/ecp/species/4469

IPAC USER CONTACT INFORMATION

Agency: County of Broward
Name: Jeffrey Covert
Address: 5404 Cypress Center Drive, Suite 125
City: Tampa
State: FL
Zip: 33609
Email jcovert@esassoc.com
Phone: 8132077200

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Aviation Administration

Appendix C-1.2
USFWS
Coordination

Re: [EXTERNAL] FLL Landside Projects Supplemental Information for Species Coordination

Wrublik, John <john_wrublik@fws.gov>

Wed 5/22/2024 6:51 AM

To:Green, Peter M (FAA) <peter.m.green@faa.gov>
Cc:Jeffrey Covert <JCovert@esassoc.com>;Julie Sullivan <JSullivan@esassoc.com>

1 attachments (620 KB)

20240521_signed concurrence stamp_2024-0065497 Ft Lauderdale Hollywood Airport Landslide Projects.pdf;

Peter,

Attached is the U.S. Fish and Wildlife Service's signed concurrence stamp for the Fort Lauderdale Airport Landslide Projects. If you have any questions, please let me know.

Sincerely

John M. Wrublik
U.S. Fish and Wildlife Service
777 37th Street, Suite D-101
Vero Beach, Florida 32960
Office: (772) 226-8130
email: John_Wrublik@fws.gov

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Green, Peter M (FAA) <peter.m.green@faa.gov>
Sent: Tuesday, May 21, 2024 9:07 AM
To: Wrublik, John <john_wrublik@fws.gov>
Cc: Jeffrey Covert <JCovert@esassoc.com>; 'Julie Sullivan' <JSullivan@esassoc.com>
Subject: RE: [EXTERNAL] FLL Landside Projects Supplemental Information for Species Coordination

John,

Based on the supplemental studies and consultation undertaken for the threatened wood stork and the endangered Florida bonneted bat, the Federal Aviation Administration has determined the proposed terminal access and parking improvements at Fort Lauderdale-Hollywood International Airport "may affect, but not likely to adversely affect" these species.

Best regards,

Peter

From: Wrublik, John <john_wrublik@fws.gov>
Sent: Friday, May 17, 2024 8:47 AM
To: Green, Peter M (FAA) <peter.m.green@faa.gov>
Cc: Jeffrey Covert <JCovert@esassoc.com>; 'Julie Sullivan' <JSullivan@esassoc.com>
Subject: Re: [EXTERNAL] FLL Landside Projects Supplemental Information for Species Coordination

CAUTION: This email originated from outside of the Federal Aviation Administration (FAA). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Peter,

I have reviewed the additional information provided for the Fort Lauderdale International Airport Landslide Projects and it appears to be complete. Based on the information, I find it unlikely that the project will adversely affect the endangered Florida bonneted bat and the threatened wood stork. I recommend that you make a determination of "may affect, not likely to adversely affect" for these species. If this is acceptable to you, you can let me know by return email, and I will complete the consultation for the project, If you have any questions or concerns, please let me know

Sincerely,

John M. Wrublik
U.S. Fish and Wildlife Service
777 37th Street, Suite D-101
Vero Beach, Florida 32960
Office: (772) 226-8130
email: John_Wrublik@fws.gov

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Julie Sullivan <JSullivan@esassoc.com>
Sent: Thursday, May 16, 2024 5:03 PM
To: Wrublik, John <john_wrublik@fws.gov>; peter.m.green@faa.gov <peter.m.green@faa.gov>
Cc: Jeffrey Covert <JCovert@esassoc.com>
Subject: [EXTERNAL] FLL Landside Projects Supplemental Information for Species Coordination

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Mr. Wrublik-
In the link below please find supplemental information which is being provided in response to your March 20th and March 28th emails to the FAA in support of the section 7 coordination for the Landside Projects at Ft Lauderdale International Airport. Mr. Peter Green has asked me to submit this on his behalf. If you have any questions, or require any additional information, please let Mr. Green know. Thank you,
Julie Sullivan
https://oneesa.egnyte.com/dl/4fGgKoSjjB

Julie Sullivan
Southeast Regional Director / Senior Vice President

ESA | Environmental Science Associates
Orlando, FL

407-748-2729 **cell**
JSullivan@esassoc.com | **esassoc.com**

ESA partners with clients and communities to drive sustainable, resilient, and equitable solutions that shape a

From: Julie Sullivan

Subject: [EXTERNAL] Fort Lauderdale International Airport landside Project - Section 7 Consultation
Date: Thursday, March 28, 2024 3:04:47 PM
Attachments: 20240222_draft_FBB Consultation.docx

Julie Sullivan
Southeast Regional Director / Senior Vice President

ESA | Environmental Science Associates
407-748-2729 **cell**

From: Wrublik, John <john_wrublik@fws.gov>
Sent: Thursday, March 28, 2024 7:17 AM
To: Green, Peter M (FAA) <peter.m.green@faa.gov>
Cc: Castillo, William <wcastillo@broward.org>; Cannicle, Winston <WCANNICLE@broward.org>; Julie Sullivan <JSullivan@esassoc.com>; Jeffrey Covert <JCovert@esassoc.com>
Subject: Re: [EXTERNAL] Fort Lauderdale International Airport landside Project - Section 7 Consultation

Peter,

This email serves as a follow up to my last email on the Florida Lauderdale International Airport Landslide Project (Project). I have met with our office's lead for the endangered Florida bonneted bat (FBB) and based on that meeting I request that a roosting survey of suitable FBB roosting habitat be conducted to determine the status of the roosting bats at the Project site. Specifically, the survey would include inspection of suitable trees within the footprint of the proposed Intermodal Center and any existing roadway bridges that would be affected by the proposed works that could provide roosts for FBBs. It will not be necessary to inspect any of the existing parking garages that would be affected by the Project for the presence of roosting bats, as the Service finds that it unlikely that they would roost in these structures. In addition, it will not be necessary to conduct an FBB acoustic survey in association with the project. I have attached the Service's "Draft 2024 Florida Bonneted Bat Consultation Guidelines" to provide you with guidance on making a determination for the FBB with respect to the project, and to provide further information to the applicant's consultant on how to conduct a FBB roosting survey. Once the FBB survey at the project site is completed, please send the results of the survey in the form of a report and your determination for the project effects to the FBB. I will not be able to complete the consultation on this project until I receive this information. If you have any questions, please let me know.

Sincerely,

John M. Wrublik
U.S. Fish and Wildlife Service
777 37th Street, Suite D-101

Vero Beach, Florida 32960
Office: (772) 226-8130
email: John_Wrublik@fws.gov

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Wrublik, John <john_wrublik@fws.gov>
Sent: Wednesday, March 20, 2024 10:12 AM
To: Green, Peter M (FAA) <peter.m.green@faa.gov>
Cc: Castillo, William <wcastillo@broward.org>; Winston Cannicle <WCANNICLE@broward.org>; Julie Sullivan (JSullivan@esassoc.com) <JSullivan@esassoc.com>; Jeffrey Covert <JCovert@esassoc.com>
Subject: Re: [EXTERNAL] Fort Lauderdale International Airport landside Project - Section 7 Consultation

Peter,

I have reviewed the documents for the Fort Lauderdale International Airport Landside Project and provide the following comments:

Wood Stork - The Federal Aviation Administration (FAA) has determined the project will have no effect on the wood stork. According to the information provided it appears that the project will impact a small amount of wetlands (< 1 acre of mangrove wetlands) that could provide potential foraging habitat for the wood stork (Please be aware that the Service considers forested wetlands like mangroves as providing suitable foraging habitat for the wood stork. The Service finds that the loss this small acreage of wetlands will affect the wood stork, but it is not likely to be an adverse effect. I recommend that the FAA change its determination for the wood stork from no effect to may affect, not likely to adversely affect, and request our concurrence for this finding. If this is acceptable to the FAA, you can let me know by return email. Could you also provide me with the acreage of mangrove wetlands and any other wetlands to be lost due to the project, and let me know if any mitigation will be required to offset this loss.

Florida bonneted bat (FBB) -You have not yet provided a determination of how the project will affect the FBB. As I understand it you are requesting guidance on the appropriate surveys to conduct to determine the status of the FBB on your project site. I plan to discuss your project with our office's species lead for the FBB early next week in order to determine this. I will get back to you on to provide further guidance on FBB surveys, once I have had this meeting.

Let me know if you have any questions.

Sincerely,

John M. Wrublik
U.S. Fish and Wildlife Service

777 37th Street, Suite D-101
Vero Beach, Florida 32960
Office: (772) 226-8130
email: John_Wrublik@fws.gov

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Green, Peter M (FAA) <peter.m.green@faa.gov>
Sent: Friday, March 15, 2024 4:46 PM
To: Vero Beach, FW4 <verobeach@fws.gov>; Wrublik, John <john_wrublik@fws.gov>
Cc: Castillo, William <wcastillo@broward.org>; Winston Cannicle <WCANNICLE@broward.org>; Julie Sullivan (JSullivan@esassoc.com) <JSullivan@esassoc.com>; Jeffrey Covert <JCovert@esassoc.com>
Subject: [EXTERNAL] Fort Lauderdale International Airport landside Project - Section 7 Consultation

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Attached is the Federal Aviation Administration's consultation letter and a file containing information for Section 7 consultation for the proposed Intermodal Center, Automated People Mover, and Parking garage improvements at the Fort Lauderdale-Hollywood International Airport. We would appreciate your review of the information and FAA's effect determination. Please let me know if you have any questions or need additional information.

Best regards,

Peter Green

Peter M. Green, AICP

Environmental Protection Specialist

Orlando Airports District Office

Federal Aviation Administration

U.S. Department
of Transportation
**Federal Aviation
Administration**

Orlando Airports District Office
8427 SouthPark Circle, Suite 524
Orlando, FL 32819
Phone: (407) 487-7720
Fax: (407) 487-7135

March 15, 2024

[via email: verobeach@fws.gov]

ATTN: Mr. John Wrublik
U.S. Fish and Wildlife Service
South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL, 32960

RE: Section 7 Consultation
Proposed Landside Projects (Intermodal Center and Related Projects)
Fort Lauderdale-Hollywood International Airport (FLL), Florida

Dear Mr. Wrublik:

The Broward County Department of Airports (BCAD) has requested approval and funding from the Federal Aviation Administration (FAA) to improve public access to the Fort Lauderdale-Hollywood International Airport (FLL). The proposed project includes developing an Intermodal Center (IMC) within the U.S. Highway 1 right-of-way; an elevated Automated People Mover (APM) connecting the IMC, airport garages, and terminal buildings; redeveloping the Airport's Palm parking garage; expanding the Airport's Cypress parking garage, reconfiguring the existing on-airport terminal access roadways; and other associated improvements. The proposed "landside" project is needed to improve multi-modal access to the airport, improve passenger movement to/from the terminal buildings; reduce congestion on on-airport roads serving the existing terminal buildings, and improve airport parking facilities. If approved, construction is anticipated to start in 2026. The location of the airport is shown in the attached Enclosure 1. The proposed project and its individual elements are described in Enclosure 2 and depicted in Enclosure 3.

These federal actions are subject to provisions found in the Endangered Species Act (ESA). The purpose of this letter is to initiate informal consultation with the U.S. Fish and Wildlife Service pursuant to Section 7 of the ESA and its implementing regulations at 50 CFR Part 402. The proposed project also requires the preparation of an Environmental Assessment (EA) in accordance with the National Environmental Policy Act. The EA is being prepared separately from, but concurrent with, this consultation process.

Background Research and Site Review

Since 2008, there have been a number of field reviews conducted and biological surveys completed within the proposed project's study area. Most notably, the projects listed below included field reviews and biological surveys:

- 2008 Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) for the Development and Expansion of Runway 9R-27L and Other Associated Airport Projects at FLL (FAA)
- 2009 Project Development & Environmental (PD&E) Study for the Broward County Intermodal Center and People Mover System (FDOT)

Recent site reviews (September 26, 2023, and January 31, 2024) were conducted for this project to verify the presence and type of habitat within the Action Area. The site reviews updated and confirmed information and findings in prior studies and reviews of the area. In addition to the field reviews, a thorough review of available information, including species listings, databases, and other resources[1] was completed to characterize biological resources within the Action Area depicted in Figure 1 of Enclosure 4. Based on the field reviews and research by conducted qualified Environmental Science Associates, Inc. biologists, a comprehensive listing of the potential for protected species in the area was developed. The enclosed Biological Resources Technical Memorandum (Enclosure 4) includes a detailed discussion of the land use, habitat, and listed species with a potential for occurrence within the Action Area. Information on the likelihood of occurrence and an assessment of the potential for effect for each species was also determined.

Effect Determination

As described in the Biological Resources Technical Memorandum, the direct Action Area (where land disturbance would occur) encompasses approximately 170 acres. A majority of the land is developed and used for transportation (US Highway 1 and FLL Airport) and power transmission lines. Natural habitats within the direct Action Area include approximately 33 acres of mangrove swamp and 0.4 acres of mixed shrub. The two natural habitat areas are associated with stormwater management and receive treated stormwater through the existing stormwater management system. The water flows through the 33-acre stormwater management mangrove site before it enters adjacent waters. Construction activities in the mangrove site would be limited to the replacement of existing culverts and pipes and affect less than one acre of a man-made drainage ditch. Vegetation clearing would be minimal and limited to the footprint of the existing culverts being upgraded. Avoidance, minimization, and best practices will be employed during construction in this area to minimize impacts. The new culverts will also have gates, similar to the existing culverts.

In accordance with Section 7 of the Endangered Species Act and based on site visits and research conducted for the proposed project, FAA is proposing effect determinations for species with potential for occurrence in the Action Area. The species include those under U.S. Fish & Wildlife Service (USFWS) and/or NOAA Marine Fisheries purview. Species with shared jurisdiction between USFWS and NOAA with potential to occur in the Action Area include sea turtles.

[1] Database searches included:

- USFWS Information for Planning and Consultation (IPaC) database
- USFWS Environmental Conservation Online System
- USFWS Critical Habitat Mapper
- Florida Fish and Wildlife Conservation Commission (FFWCC) List of Florida's Endangered Wildlife Species (68A-27.003 FAC) and Species of Special Concern (68A-27.005 FAC)
- NOAA Fisheries Southeast Region (v2a), ESA Section 7 Mapper
- Various USFWS, FFWCC, & Florida Natural Areas Inventory (FNAI) listed species occurrence data

Consultation between the FAA and NOAA is being initiated concurrently. Exhibit 4 provides amore information, analysis, and discussion regarding the listed species and the criteria used to make the effects determination. Specific to USFWS, the determinations are as follows:

Common Name	Scientific Name	Protected Status	Potential Occurrence	Effect Summary
Florida Bonneted Bat	*Eumops floridanus**	Endangered **USFWS**	Moderate - Low	**To be determined** AA includes potential foraging and roosting opportunities (man-made structures) and is in the USFWS South Florida Urban Bat Area
West Indian Manatee	*Trichechus manatus*	Threatened **USFWS**	Low	**No Effect** Minimal in-water work limited to culvert replacement
Wood Stork	*Mycteria americana*	Threatened **USFWS**	Low	**No Effect** Existing habitat does not have sufficient hydroperiod to support Suitable Foraging Habitat (SFH)
American Alligator	*Alligator mississipiensis*	Similar Appearance Threatened **USFWS**	Low	**No Effect** Minimal in-water work limited to culvert replacement
American Crocodile	*Crocodylus acutus*	Threatened **USFWS**	Low	**No Effect** Minimal in-water work limited to culvert replacement
Loggerhead Sea Turtle*	*Caretta caretta*	Threatened **USFWS / NOAA Fisheries**	Low	**No Effect** Minimal in-water work limited to culvert replacement
Green Sea Turtle*	*Chelonia mydas*	Threatened **USFWS / NOAA Fisheries**	Low	**No Effect** Minimal in-water work limited to culvert replacement
Hawksbill Sea Turtle*	*Eretmochelys imbricata*	Endangered **USFWS / NOAA Fisheries**	Low	**No Effect** Minimal in-water work limited to culvert replacement
Leatherback Sea Turtle*	*Dermochelys coriacea*	Endangered **USFWS / NOAA Fisheries**	Low	**No Effect** Minimal in-water work limited to culvert replacement

SOURCE: Environmental Science Associates, 2024.

NOTES: *Shared jurisdiction between USFWS and NOAA. Effect determinations are recommended by Environmental Science Associates.

USFWS Florida Bonneted Bat Consultation Guideline's provide direction on artificial structures, which states "If you are renovating an existing artificial structure (e.g., building) within the urban environment with or without additional ground disturbing activities, these Guidelines do not apply. The Service is developing separate guidelines for consultation in these situations. Until the urban guidelines are complete, please contact the Service for additional guidance." The FAA would like to discuss the proposed project with USFWS and determine the appropriate level of survey necessary for the Florida Bonneted Bat. For the remaining species, the FAA is seeking concurrence on the No Effect determinations.

We appreciate your review of this information, and we look forward to discussing the Bonneted Bat consultation with you. Should you have any questions, or require any additional information, please do not hesitate to contact me at (407) 487-7296 or via email at peter.m.green@faa.gov.

Sincerely,

Peter M Green, AICP
Environmental Protection Specialist

CC: William Castillo, Aviation Planning Manager, BCAD
Winston Cannicle, Environmental Manager, BCAD
Julie Sullivan, Environmental Science Associates

Enclosures:
1. Project Location
2. Description of Proposed Project
3. Proposed Project
4. Biological Resources Technical Memorandum

See Appendix C-1.1 for enclosures

Peter Matthias Green
Digitally signed by Peter Matthias Green
Date: 2024.03.15 16:36:49 -04'00'

ESA

5401 South Kirkman Road
Suite 475
Orlando, FL 32819
407.403.6300 phone
407.403.6301 fax

esassoc.com

Memorandum

date	March 29, 2024
to	Mr. Peter M. Green, Environmental Protection Specialist, Federal Aviation Administration
cc	Mr. Will Castillo, Director, Broward County Aviation Department
from	Julie Sullivan
subject	Supplemental Information for U.S. Fish and Wildlife Service Coordination

This memorandum is provided as a supplement to the Ft Lauderdale Hollywood International Airport (FLL) Landside Projects Section 7 Consultation – Biological Resources Technical Memorandum (March 15, 2024) to provide additional information in support of the coordination with the U.S. Fish and Wildlife Service (FWS or Service). Mr. John Wrublik with FWS provided initial comments on the Technical Memorandum on March 20, 2024. The comments were specific to two listed species, wood stork and Florida Bonneted Bat (FBB). Mr. Wrublik requested additional information on potential impacts to mangrove habitat and identified that as presented the project "may affect, not likely to adversely affect" Wood Storks through the impact of <1 ac of mangrove habitat. Related to FBB, Mr. Wrublik identified that he would coordinate with his office's species lead and provide guidance. In a follow-up email (March 28, 2024) Mr. Wrublik identified that based on his coordination with his office's lead for the endangered FBB, FWS is requesting that a *roosting survey of suitable FBB roosting habitat be conducted to determine the status of the roosting bats at the Project site. Specifically, the survey would include inspection of suitable trees within the footprint of the proposed Intermodal Center and any existing roadway bridges that would be affected by the proposed works that could provide roosts for FBBs. It will not be necessary to inspect any of the existing parking garages that would be affected by the Project for the presence of roosting bats, as the Service finds that it unlikely that they would roost in these structures. In addition, it will not be necessary to conduct an FBB acoustic survey in association with the project.*

In support of the FAA's determination, the following additional information is being provided to assist the FWS in their review and coordination under section 7.

Wood Stork

The Action Area (AA) includes an area of mangrove wetlands (~33 ac) which is immediately east of NE 7th Avenue (**Exhibit 3-1**). Further, that mangrove area is contiguous with a utility easement (~25 ac) which in addition to overhead powerline infrastructure and a perimeter unpaved, improved haul / access road, has areas of mangroves with mixed upland and nuisance / exotic vegetation. The mangrove habitat in both systems is medium to high quality with significant nuisance and exotic species (Brazilian pepper, Australian pine) around the perimeter and edges. It is acknowledged that mangrove habitat is considered suitable forage habitat for listed wood storks.

The Proposed Project (depicted in **Exhibits 3-1** and **3-2**) will not have permanent impacts to mangrove habitat. The mangrove area presently serves as the receiving waters for the US-1 drainage system. Improvements to the system to accommodate new impervious associated with the development of the Intermodal Center (IMC) will result in some additional periodic discharges through the existing system. This will require some upgrades to the existing drainage infrastructure, including the seven (7) existing culverts at the perimeter of the mangrove / easement system(s). The proposed improvements are identified in revised **Exhibit 3-3** of the Technical Memorandum (revised from coordination package dated March 15, 2024). As identified, the seven (7) culverts to be replaced are located on the eastern boundary of the parcel underneath the existing haul road. The haul road is currently subject to routine maintenance to allow access to the overhead utility corridor and infrastructure. The physical impacts during construction will be limited to seven culvert areas along that route. While these areas are primarily fill dirt and nuisance vegetation, it is acknowledged that due to the site conditions mangroves occur at the culvert locations. As such, a conservative estimate of potential impacts to areas that include uplands / haul road, open water and isolated mangroves is included in this addendum to clarify the potential for impact. It is estimated that replacement of each culvert could temporarily impact up to 700 square feet (sf) on either side of the center of the culvert / haul road for a total of up to ~1,400 sf per culvert. While this area is primarily fill, temporary impacts will occur in the open water and to vegetation within that area, including mangroves A depiction of what a potential temporary impact area at one of the culvert locations might look like is included as **Exhibit 3-4**. To assure no impacts occur outside of the construction area, best management practices, in accordance with permit criteria, will be employed during culvert replacement. These will include, at a minimum, floating / staked turbidity barriers to prevent sedimentation and turbidity outside of the limited construction areas. Once the culverts are replaced, the haul road will be re-stabilized and the vegetation, including mangroves, will be allowed to re-establish. For the replacement of all seven (7) culverts there would be a total potential temporary impact to uplands, wetlands and open water of up to 9,800 sf or 0.22 ac (0.09 hectare).

As detailed in the Technical Memorandum (March 15, 2024), prior to stormwater entering the mangrove wetland it will be treated in accordance with state water quality criteria and the newly ratified Clean Waterways Act.[1] Retention of stormwater in the wetland will continue to ensure that water enters the canal system without adversely impacting water quality (temperature, salinity, and nutrient loads) of the receiving waterbody(s). Preliminary modeling and analysis has identified that there would be only a minor increase in quantity within the area limited to periodic discharges and that there would be no significant impact to the mangrove habitat. Further, design of the stormwater management system will include the following measures to minimize impacts to the greatest extent practicable:

- Minimizing periodic stormwater discharge volumes into the mangroves.
- Maximizing stormwater treatment within the interconnected drainage system prior to discharge into the mangroves.
- Retaining tidal connectivity between the mangrove wetlands and the Dania Cut-Off Canal.

.

To determine the potential for effect for the listed wood stork, the South Florida Ecological Services Office and U.S. Army Corps of Engineers *Wood Stork Effect Determination Key* (Key) was applied to the proposed project. Following the Key for Step A:

- Project could impact Suitable Foraging Habitat (SFH) at a location greater than 0.76 km from a colony site

[1] CS/HB 7053 Ratification of the Department of Environmental Protection's Rules Relating to Stormwater. March 5, 2024.

Following to Step B:

- Project impacts to SFH are less than 0.20 hectare (one-half acre)

Therefore, based on the evaluation conducted using the Key (**Appendix A**), the proposed project will *Not Likely Adversely Affect* (NLAA) wood storks.

Florida Bonneted Bat (FBB)

The current consultation key specifies the following:

> *If you are within the urban environment and you are renovating an existing artificial structure (with or without additional ground disturbing activities), these Guidelines[2] do not apply. The Service is developing separate guidelines for consultation in these situations. Until the urban guidelines are complete, please contact the Service for additional guidance.*

FAA consultation with USFWS resulted in the direction to complete a roost survey of suitable FBB roosting habitat, specifically inspection of suitable trees in the IMC footprint and existing roadway bridges that would be affected (Mr. Wrublik email dated March 28, 2024). ESA completed the required roosting surveys (April 10-12, 2024) following the *Florida Bonneted Bat Consultation Guidelines* (2019 and Draft Revision – 2024). A memorandum detailing the FBB survey methodology and results is included as **Appendix B**.

Survey Methodology

ESA biologists inspected all elements of the proposed project identified as potentially suitable for FBB roosting including the IMC parcel, the stormwater attenuation area, the roadway bridges, the terminals and parking areas and other areas within the project footprint. Initially, biologists inspected the proposed stormwater attenuation area, although no clearing is proposed in that area. The only trees reaching above the dense vegetation included Australian pines which did not extend high enough above the understory to allow for emergence. Therefore, it was determined that this area did not provide roosting habitat given the substantial understory and lack of trees that provide roosting habitat.

Next biologists inspected the landscaped areas associated with the Intermodal Center, Cypress Garage Extension, and Future Terminal 5. Trees in these areas were limited to ornamental, maintained palm species. Most mature palms over 15 feet in height were identified as royal palms (*Roystonea regia*). These maintained species have limited potential for cavities and other deformities and are generally trimmed to prevent any overhanging branches that could create potential roost sites. ESA biologists did not observe cavities in the maintained royal palms. One palm snag was discovered with a cavity in the area of the Intermodal Center. However, this cavity was smaller than one inch in diameter and was not large enough to inspect with the tree top camera. During the inspection of the trees in these areas, biologists also inspected the joints and abutments of the roadway overpasses. These areas were visually inspected for evidence of bat roosting, including staining on concrete structures and evidence of guano on the structure or on the ground below. All inspected areas were free of evidence of roosting of any bat species.

Finally, biologists inspected the areas associated with the terminals. All areas were inspected for potential roosting spaces. Most spaces found around these buildings were too small (less than one inch) to allow for potential bat

[2] Florida Bonneted Bat Consultation Guidelines (October 2019)

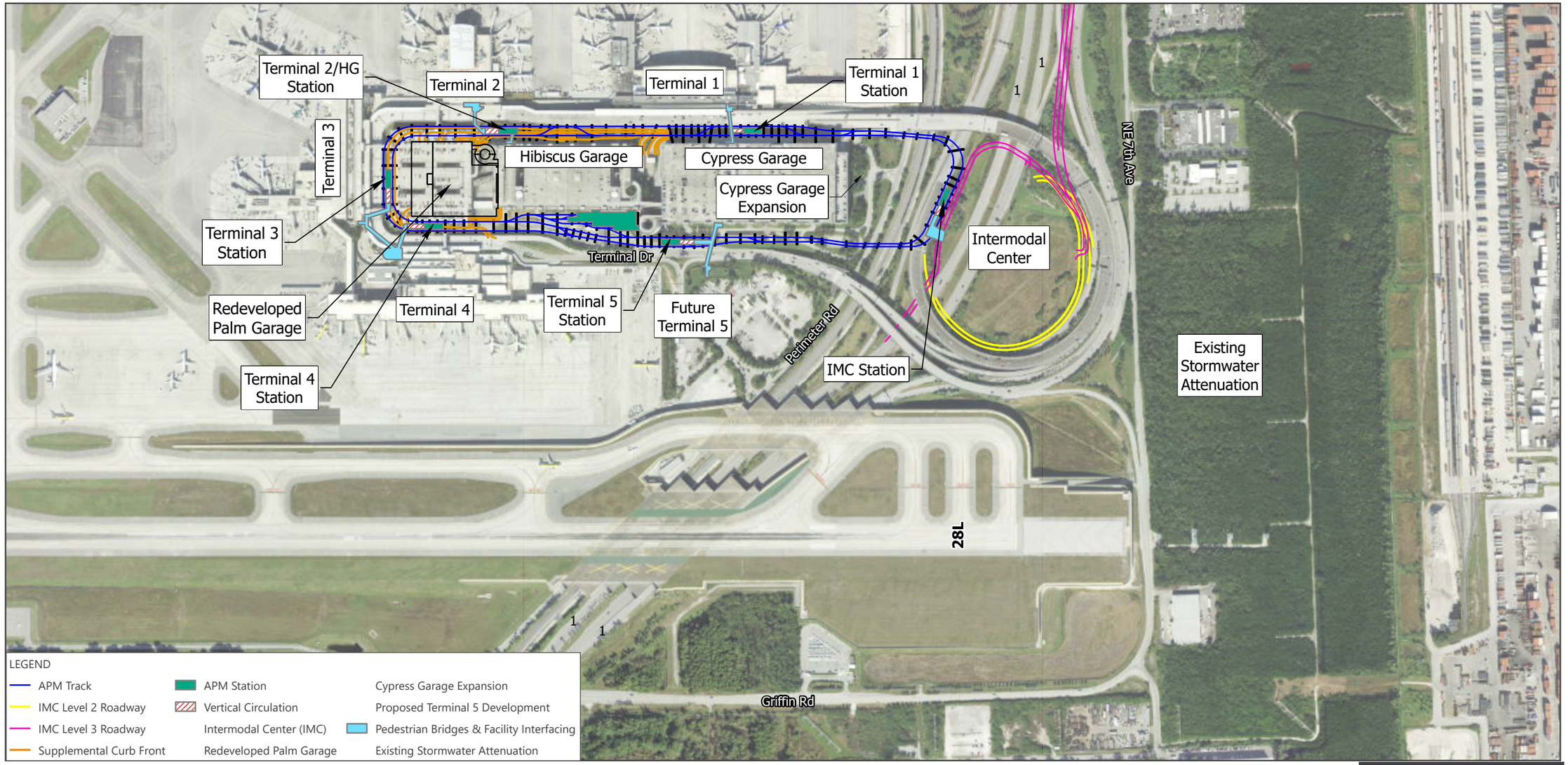
access. Those areas with potential access were inspected for evidence of bat roosting. All areas were found to be clear with no evidence of staining or guano on the ground below.

Results

As no evidence of bat utilization in the areas of the proposed improvements or nearby features was documented, the project is not anticipated to impact the Florida bonneted bat. Based on the lack of evidence of roosting within the project area, an effect determination of May Affect, Not Likely to Adversely Affect (MANLAA) has been made for this project. In support of this, the following Best Management Practices (BMPs) will be implemented:

- D6. Avoid widespread use/application of pesticides and insecticides (e.g., mosquito control, agricultural pest control). Chemicals should not be used or applied within and adjacent to areas where Florida bonneted bats are known or expected to forage or roost.

- D7. Conduct roost surveys of potential roost trees prior to removal. If potential roost trees or structures need to be removed, trees, snags, and structures need to be visually surveyed within 30 days prior to removal. Any cavities must be peeped with a “treetop” camera, and any cavities that cannot be reached or fully viewed by camera should be surveyed at emergence. Tree, snag, or structure should not be removed from April 15 to August 15, ideally removal should occur January 1 through April 15). If evidence of use by any bat species is observed, discontinue tree removal efforts in that area and coordinate with the Service on how to proceed.



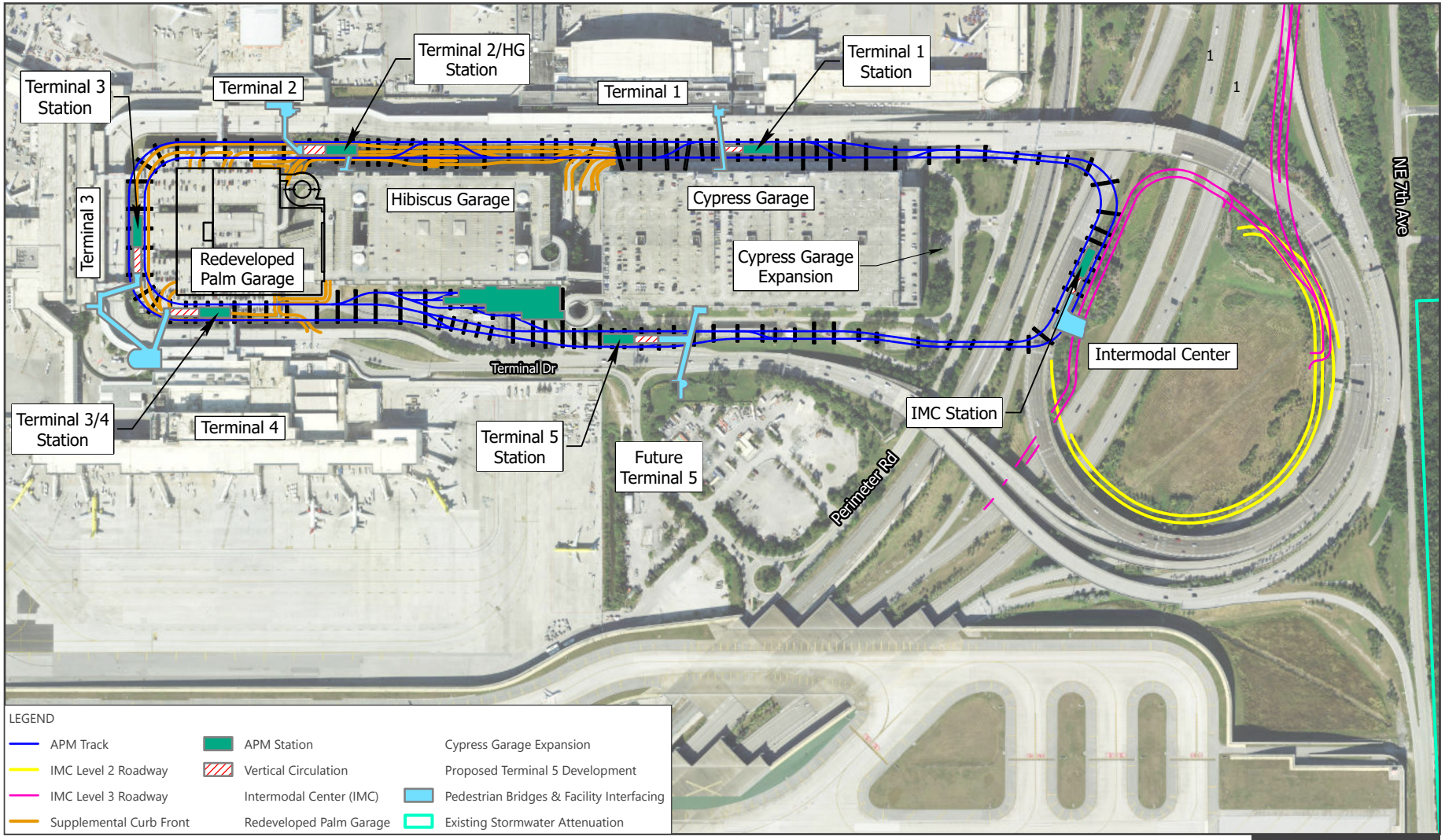
SOURCES: Ricondo & Associates, 2023; Adapted by ESA, 2024.

EXHIBIT 3-1

NORTH 0 600 ft.

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Project Elements
Fort Lauderdale-Hollywood International Airport



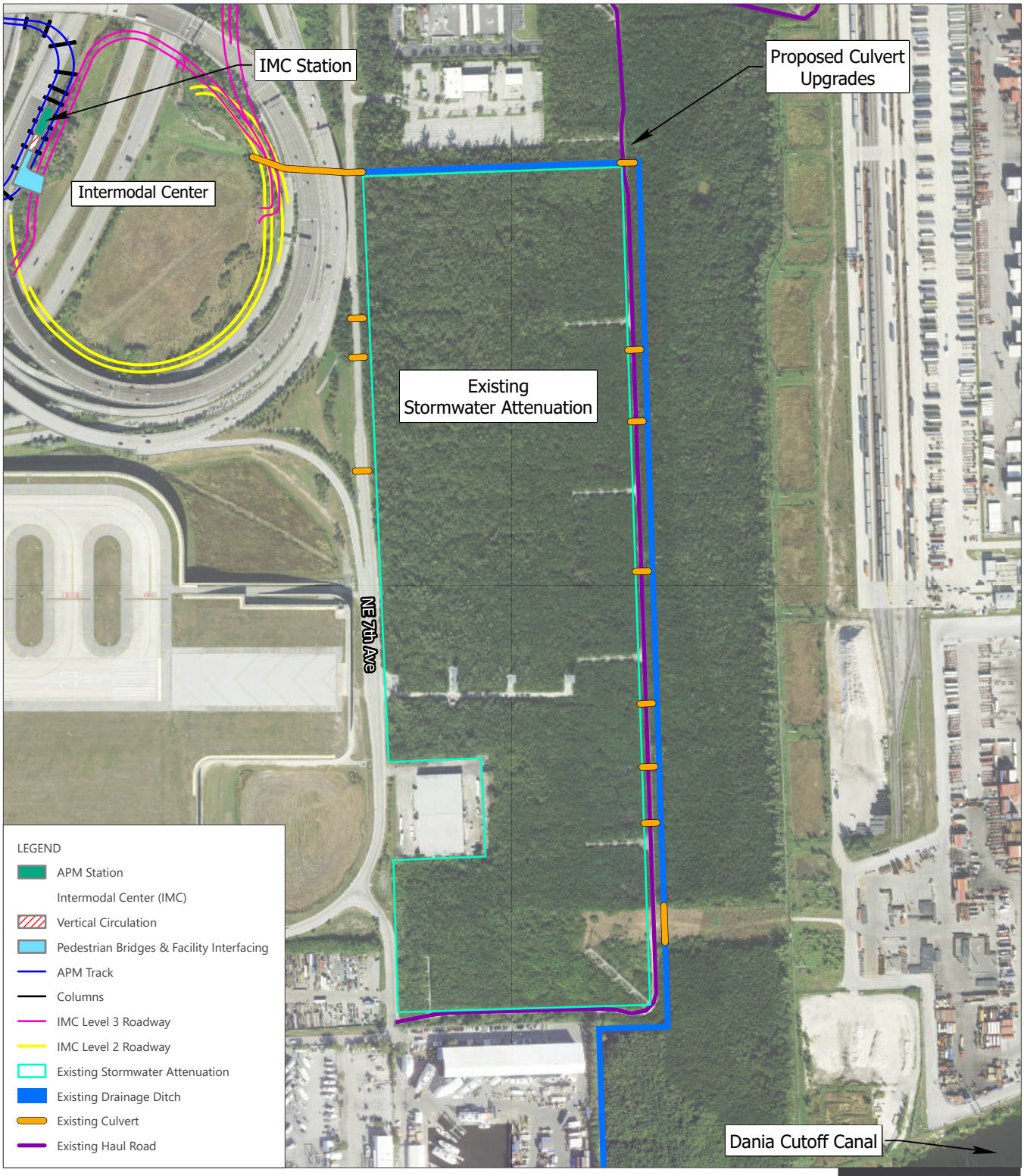
SOURCES: Ricondo & Associates, 2023; Adapted by ESA, 2024.

EXHIBIT 3-2

NORTH 0 500 ft.

U:\GIS\GIS\Projects\2021xxx\D202100449_BCAD_Env_Planning_Acoustical_Consulting\03_Project\FWS_Ex_3.2_Landside EA Project Elements.aprx

Landside Elements and IMC
Fort Lauderdale-Hollywood International Airport



SOURCES: Ricondo & Associates, 2023; Adapted by ESA, 2024; State of Florida, 2020.
NOTES: Natural habitat within the Stormwater Attenuation area would remain. This area would act as a wet retention system for treated stormwater.

EXHIBIT 3-3

NORTH

0 500 ft.

IMC and Stormwater Improvements
Fort Lauderdale-Hollywood International Airport

U:\GIS\GIS\Projects\2021xxx\D202100449_BCAD_Env_Planning_Acoustical_Consulting\03_Project\FWS_Ex_3.3_IMC and Stormwater Improvements_v2.aprx



SOURCES: ESA, 2024..

EXHIBIT 3-4

NORTH

NTS.

Detail of Construction Limits for Proposed Culvert Upgrades
Fort Lauderdale-Hollywood International Airport

U:\GIS\GIS\Projects\2021xxx\D202100449_BCAD_Env_Planning_Acoustical_Consulting\03_Project\FWS_Ex_3.4_Detail of Construction Limits for Proposed Culvert Upgrades.aprx

Appendix A

Wood Stork Effect Determination Key

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

May 18, 2010

Donnie Kinard
Chief, Regulatory Division
Jacksonville District Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Service Federal Activity Code: 41420-2007-FA-1494
Service Consultation Code: 41420-2007-I-0964
Subject: South Florida Programmatic Concurrence
Species: Wood Stork

Dear Mr. Kinard:

This letter addresses minor errors identified in our January 25, 2010, wood stork key and as such, supplants the previous key. The key criteria and wood stork biomass foraging assessment methodology have not been affected by these minor revisions.

The Fish and Wildlife Service's (Service) South Florida Ecological Services Office (SFESO) and the U.S. Army Corps of Engineers Jacksonville District (Corps) have been working together to streamline the consultation process for federally listed species associated with the Corps' wetland permitting program. The Service provided letters to the Corps dated March 23, 2007, and October 18, 2007, in response to a request for a multi-county programmatic concurrence with a criteria-based determination of "may affect, not likely to adversely affect" (NLAA) for the threatened eastern indigo snake (*Drymarchon corais couperi*) and the endangered wood stork (*Mycteria americana*) for projects involving freshwater wetland impacts within specified Florida counties. In our letters, we provided effect determination keys for these two federally listed species, with specific criteria for the Service to concur with a determination of NLAA.

The Service has revisited these keys recently and believes new information provides cause to revise these keys. Specifically, the new information relates to foraging efficiencies and prey base assessments for the wood stork and permitting requirements for the eastern indigo snake. This letter addresses the wood stork key and is submitted in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). The eastern indigo snake key will be provided in a separate letter.

Wood stork

Habitat

The wood stork is primarily associated with freshwater and estuarine habitats that are used for nesting, roosting, and foraging. Wood storks typically construct their nests in medium to tall

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trees that occur in stands located either in swamps or on islands surrounded by relatively broad expanses of open water (Ogden 1991, 1996; Rodgers et al. 1996). Successful colonies are those that have limited human disturbance and low exposure to land-based predators. Nesting colonies protected from land-based predators are characterized as those surrounded by large expanses of open water or where the nest trees are inundated at the onset of nesting and remain inundated throughout most of the breeding cycle. These colonies have water depths between 0.9 and 1.5 meters (3 and 5 feet) during the breeding season.

Successful nesting generally involves combinations of average or above-average rainfall during the summer rainy season and an absence of unusually rainy or cold weather during the winter-spring breeding season (Kahl 1964; Rodgers et al. 1987). This pattern produces widespread and prolonged flooding of summer marshes, which maximize production of freshwater fishes, followed by steady drying that concentrate fish during the season when storks nest (Kahl 1964). Successful nesting colonies are those that have a large number of foraging sites. To maintain a wide range of foraging sites, a variety of wetland types should be present, with both short and long hydroperiods. The Service (1999) describes a short hydroperiod as a 1 to 5-month wet/dry cycle, and a long hydroperiod as greater than 5 months. During the wet season, wood storks generally feed in the shallow water of the short-hydroperiod wetlands and in coastal habitats during low tide. During the dry season, foraging shifts to longer hydroperiod interior wetlands as they progressively dry-down (though usually retaining some surface water throughout the dry season).

Wood storks occur in a wide variety of wetland habitats. Typical foraging sites for the wood stork include freshwater marshes and stock ponds, shallow, seasonally flooded roadside and agricultural ditches, narrow tidal creeks and shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs. Because of their specialized feeding behavior, wood storks forage most effectively in shallow-water areas with highly concentrated prey. Through tactolocation, or grope feeding, wood storks in south Florida feed almost exclusively on fish between 2 and 25 centimeters [cm] (1 and 10 inches) in length (Ogden et al. 1976). Good foraging conditions are characterized by water that is relatively calm, uncluttered by dense thickets of aquatic vegetation, and having a water depth between 5 and 38 cm (5 and 15 inches) deep, although wood storks may forage in other wetlands. Ideally, preferred foraging wetlands would include a mosaic of emergent and shallow open-water areas. The emergent component provides nursery habitat for small fish, frogs, and other aquatic prey and the shallow, open-water areas provide sites for concentration of the prey during seasonal dry-down of the wetland.

Conservation Measures

The Service routinely concurs with the Corps' "may affect, not likely to adversely affect" determination for individual project effects to the wood stork when project effects are insignificant due to scope or location, or if assurances are given that wetland impacts have been avoided, minimized, and adequately compensated such that there is no net loss in foraging potential. We utilize our *Habitat Management Guidelines for the Wood Stork in the Southeast Region* (Service 1990) (Enclosure 1) (HMG) in project evaluation. The HMG is currently under review and once final will replace the enclosed HMG. There is no designated critical habitat for the wood stork.

The SFESO recognizes a 29.9 kilometer [km] (18.6-mile) core foraging area (CFA) around all known wood stork colonies in south Florida. Enclosure 2 (to be updated as necessary) provides locations of colonies and their CFAs in south Florida that have been documented as active within the last 10 years. The Service believes loss of suitable wetlands within these CFAs may reduce foraging opportunities for the wood stork. To minimize adverse effects to the wood stork, we recommend compensation be provided for impacts to foraging habitat. The compensation should consider wetland type, location, function, and value (hydrology, vegetation, prey utilization) to ensure that wetland functions lost due to the project are adequately offset. Wetlands offered as compensation should be of the same hydroperiod and located within the CFAs of the affected wood stork colonies. The Service may accept, under special circumstances, wetland compensation located outside the CFAs of the affected wood stork nesting colonies. On occasion, wetland credits purchased from a "Service Approved" mitigation bank located outside the CFAs could be acceptable to the Service, depending on location of impacted wetlands relative to the permitted service area of the bank, and whether or not the bank has wetlands having the same hydroperiod as the impacted wetland.

In an effort to reduce correspondence in effect determinations and responses, the Service is providing the Wood Stork Effect Determination Key below. If the use of this key results in a Corps determination of "no effect" for a particular project, the Service supports this determination. If the use of this Key results in a determination of NLAA, the Service concurs with this determination[1]. This Key is subject to revisitation as the Corps and Service deem necessary.

The Key is as follows:

A. Project within 0.76 km (0.47 mile)[2] of an active colony site[3] ..... "*may affect*[4]"

Project impacts Suitable Foraging Habitat (SFH)[5] at a location greater than 0.76 km (0.47 mile) from a colony site..... ....."*go to* B"

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[1] With an outcome of "no effect" or "NLAA" as outlined in this key, and the project has less than 20.2 hectares (50 acres) of wetland impacts, the requirements of section 7 of the Act are fulfilled for the wood stork and no further action is required. For projects with greater than 20.2 hectares (50 acres) of wetland impacts, written concurrence of NLAA from the Service is necessary.

[2] Within the secondary zone (the average distance from the border of a colony to the limits of the secondary zone is 0.76 km (2,500 feet, or 0.47 mi).

[3] An active colony is defined as a colony that is currently being used for nesting by wood storks or has historically over the last 10 years been used for nesting by wood storks.

[4] Consultation may be concluded informally or formally depending on project impacts.

[5] Suitable foraging habitat (SFH) includes wetlands that typically have shallow-open water areas that are relatively calm and have a permanent or seasonal water depth between 5 to 38 cm (2 to 15 inches) deep. Other shallow non-wetland water bodies are also SFH. SFH supports and concentrates, or is capable of supporting and concentrating small fish, frogs, and other aquatic prey. Examples of SFH include, but are not limited to freshwater marshes, small ponds, shallow, seasonally flooded roadside or agricultural ditches, seasonally flooded pastures, narrow tidal creeks or shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs.

Project does not affect SFH……..…..*"no effect[1]".*

B. Project impact to SFH is less than 0.20 hectare (one-half acre)[6]……..……*NLAA[1]"*

Project impact to SFH is greater in scope than 0.20 hectare (one-half acre)....……*go to* C

C. Project impacts to SFH not within the CFA (29.9 km, 18.6 miles) of a colony site ……..…….…….…..……*go to* D

Project impacts to SFH within the CFA of a colony site …….…..…...…….*go to* E

D. Project impacts to SFH have been avoided and minimized to the extent practicable; compensation (Service approved mitigation bank or as provided in accordance with Mitigation Rule 33 CFR Part 332) for unavoidable impacts is proposed in accordance with the CWA section 404(b)(1) guidelines; and habitat compensation replaces the foraging value matching the hydroperiod[7] of the wetlands affected and provides foraging value similar to, or higher than, that of impacted wetlands. See Enclosure 3 for a detailed discussion of the hydroperiod foraging values, an example, and further guidance[8]…….. *NLAA[1]"*

Project not as above.……... *"may affect[4]"*

E. Project provides SFH compensation in accordance with the CWA section 404(b)(1) guidelines and is not contrary to the HMG; habitat compensation is within the appropriate CFA or within the service area of a Service-approved mitigation bank; and habitat compensation replaces foraging value, consisting of wetland enhancement or restoration matching the hydroperiod[7] of the wetlands affected, and provides foraging value similar

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[6] On an individual basis, SFH impacts to wetlands less than 0.20 hectare (one-half acre) generally will not have a measurable effect on wood storks, although we request that the Corps require mitigation for these losses when appropriate. Wood storks are a wide ranging species, and individually, habitat change from impacts to SFH less than one-half acre are not likely to adversely affect wood storks. However, collectively they may have an effect and therefore regular monitoring and reporting of these effects are important.

[7] Several researchers (Flemming et al. 1994; Ceilley and Bortone 2000) believe that the short hydroperiod wetlands provide a more important pre-nesting foraging food source and a greater early nestling survivor value for wood storks than the foraging base (grams of fish per square meter) than long hydroperiod wetlands provide. Although the short hydroperiod wetlands may provide less fish, these prey bases historically were more extensive and met the foraging needs of the pre-nesting storks and the early-age nestlings. Nest productivity may suffer as a result of the loss of short hydroperiod wetlands. We believe that most wetland fill and excavation impacts permitted in south Florida are in short hydroperiod wetlands. Therefore, we believe that it is especially important that impacts to these short hydroperiod wetlands within CFAs are avoided, minimized, and compensated for by enhancement/restoration of short hydroperiod wetlands.

[8] For this Key, the Service requires an analysis of foraging prey base losses and enhancements from the proposed action as shown in the examples in Enclosure 3 for projects with greater than 2.02 hectares (5 acres) of wetland impacts. For projects with less than 2.02 hectares (5 acres) of wetland impacts, an individual foraging prey base analysis is not necessary although type for type wetland compensation is still a requirement of the Key.

to, or higher than, that of impacted wetlands. See Enclosure 3 for a detailed discussion of the hydroperiod foraging values, an example, and further guidance[8]..... *"NLAA[1]"*

Project does not satisfy these elements ..... *"may affect[4]"*

This Key does not apply to Comprehensive Everglades Restoration Plan projects, as they will require project-specific consultations with the Service.

Monitoring and Reporting Effects

For the Service to monitor cumulative effects, it is important for the Corps to monitor the number of permits and provide information to the Service regarding the number of permits issued where the effect determination was: "may affect, not likely to adversely affect." We request that the Corps send us an annual summary consisting of: project dates, Corps identification numbers, project acreages, project wetland acreages, and project locations in latitude and longitude in decimal degrees.

Thank you for your cooperation and effort in protecting federally listed species. If you have any questions, please contact Allen Webb at extension 246.

Sincerely yours,

Paul Souza
Field Supervisor
South Florida Ecological Services Office

Enclosures

cc: w/enclosures (electronic only)
Corps, Jacksonville, Florida (Stu Santos)
EPA, West Palm Beach, Florida (Richard Harvey)
FWC, Vero Beach, Florida (Joe Walsh)
Service, Jacksonville, Florida (Billy Brooks)

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Appendix B

Florida Bonneted Bat Survey Memorandum

ESA

ESA

5404 Cypress Center Drive
Suite 125
Tampa, FL 33609
813.207.7200 phone
813.207.7201 fax

esassoc.com

memorandum

date	April 19, 2024
to	Will Castillo – Director of Airport Expansion Programs
cc	Julie Sullivan – Senior Vice President Tori Kuba – Senior Biologist
from	BJ Quinton, MS, GISP – Senior Biologist
subject	Florida Bonneted Bat Limited Roost Survey Fort Lauderdale-Hollywood International Airport Landside Project

Introduction

The Florida bonneted bat (*Eumops floridanus*) is the largest bat species in Florida (Belwood 1992) and is listed as federally endangered by the United States Fish and Wildlife Service (USFWS) and the Florida Fish and Wildlife Conservation Commission (FWC). Little is known about this species' life history and behavior characteristics as it is rarely observed, has a limited range, and a low abundance within its range. In general, bats tend to forage near wetlands and/or waterbodies where their prey (insects and other small invertebrates) are prevalent and will also drink when flying over open water. During dry seasons, bats become more dependent on remaining ponds, streams, and wetland areas for foraging purposes. The presence of roosting habitat is critical for day roosts, protection from predators, and the rearing of young. For most bats, the availability of suitable roosts is an important limiting factor. The Florida bonneted bat has been known to roost in man-made structures and natural crevices as well as tree cavities higher than 16 feet above ground level.

The Broward County Aviation Department (BCAD) proposes the development of landside improvements at, and adjacent to, Fort Lauderdale-Hollywood International Airport (FLL or the Airport). The proposed landside improvements comprise several connected landside projects to enhance Airport access and reduce congestion on terminal area roadways. The Landside Improvements include an Intermodal Center (IMC), Automated People Mover (APM) Circulator, Palm Garage Redevelopment with Airport Hotel and Commercial Center, Supplemental Roadways and Curbsides, Cypress Garage Expansion, and other minor connected projects (See **Attachment 1 - Project Elements**). The proposed work occurs within the USFWS designated Consultation Area for the Florida bonneted bat and is within the South Florida Urban Bat Area within Miami-Dade County (see **Figure 1** below).

Correspondence from USFWS on March 28, 2024, requested that a roosting survey of suitable Florida bonneted bat roosting habitat be conducted to determine the status of the roosting bats at the project site (See **Attachment 2 – USFWS Coordination**). USFWS specified that the survey include inspection of suitable trees within the footprint of the proposed Intermodal Center, any existing roadway bridges, and any other structures that would be affected by the proposed works that could provide roosts for Florida bonneted bats. Furthermore, USFWS indicated

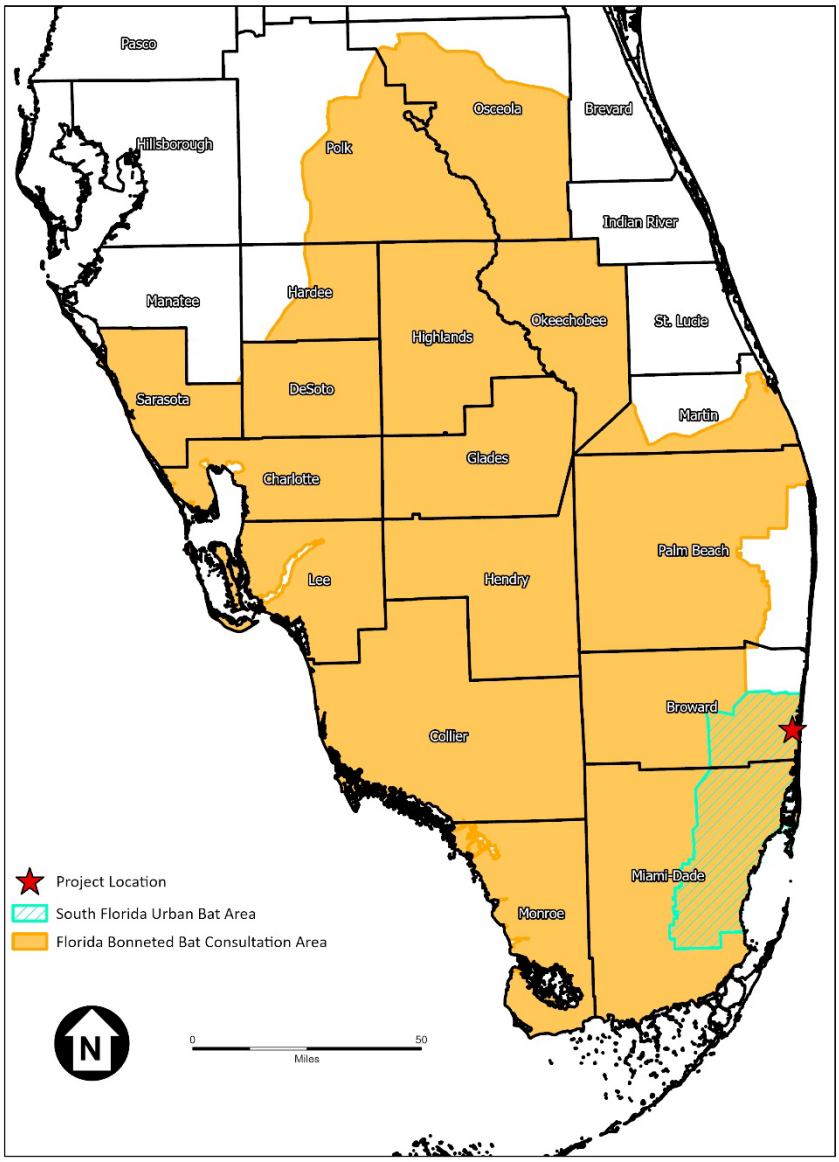


Figure 1. Map showing the USFWS's designated Consultation Area for the Florida Bonneted Bat**.**

that it is not necessary to inspect any of the existing parking garages that would be affected by the project for the presence of roosting bats and that it is not necessary to conduct a Florida bonneted bat acoustic survey in association with the project.

As requested by the USFWS, a roosting habitat survey was conducted to determine the presence or absence of roosting Florida bonneted bats on and near the site, in lieu of an acoustic survey. Potential roosting areas associated with the site include trees within the landscaped areas near the Cypress Parking Garage and nearby roadway medians, joints in the bridges associated with the terminal ramps, and various spaces and overhangs associated with

the terminal buildings. Per USWFS's *Consultation Key for the Florida bonneted bat*[1], the survey included trees and artificial structures 15 feet in height or greater within the project area, as well as 250 feet from any areas that will not be conserved. The nearest freshwater source is a large open water pond, approximately 1,300 feet north of the project area, which is not expected to be impacted.

Environmental Science Associates (ESA) biologists familiar with this species in South Florida conducted the potential roost structure survey of the project area around and within the project area for potential roost trees (e.g., trees with cavities) and other potential roosts within the abandoned structures, utilizing the Potential Roost Structure Inventory/Survey Methods described in the USFWS *Consultation Key for the Florida bonneted bat*. The purpose of this memorandum is to provide the results of this survey performed by ESA April 10 – 12, 2024.

Methodology

The *Florida Bonneted Bat Consultation Guidelines* were utilized to determine which structures could be identified as potential roost structures. The guidelines define potential roosting habitat as live or dead trees and tree snags. Trees of any species 34 feet (10.4 meters) or taller, snags 28 feet (8.5 meters) or taller, with a diameter at breast height (DBH) of 7.4 inches (19 centimeters) or greater are potential roosting habitat. Artificial structures over 15 feet (4.5 meter) in height that may mimic natural roosting conditions (e.g., bat houses, utility poles, buildings over one story high), situated in natural or semi-natural habitats should also be considered potential Florida bonneted bat roosting habitat. Such buildings with chimneys, gaps in soffits, gaps along gutters, or other structural gaps or crevices (outward entrance approximately 1 inch (2.5 centimeters) in size or greater can be potential roosting habitat. Bridges and culverts are also expected to provide roosting habitat, based upon the species' morphology and behavior.

From April 10 to April 12, 2024, the project area was surveyed for potential roost trees and artificial structures using the USFWS survey protocol outlined in the *Florida Bonneted Bat Consultation Guidelines*. Per the guidelines, ESA biologists inventoried trees and structures that met the following criteria:

- All trees over 20 feet (6 meters) tall.
- Artificial structures over 15 feet (4.5 meters) in height that may mimic natural roosting conditions (e.g., bat houses, utility poles, buildings over one story high with chimneys, gaps in soffits, gaps along gutters, or other structural gaps or crevices), situated in natural or semi-natural habitats.

Using binoculars, trees and snags (and artificial structures) were visually inspected for evidence that it could be used as a shelter, including, but not limited to openings one inch (2.5 centimeters) in diameter or greater. The presence of any cavities, hollows, decay, or loose bark were noted and representative photographs were taken of any trees, snags, or artificial structures with cavities or other deformities where bats may emerge or find shelter.

The outer edges of the terminal buildings included several overhangs with the potential to contain spaces that would allow for bat roosting. The joints for the overpasses in the terminal areas were generally filled with backer rods; however, some open areas existed where the backer rod had begun to deteriorate. All potential roosting spaces at each level of the terminal areas were inspected for any sign of presence and/or utilization by the Florida bonneted bat, as well as any other bat species. In addition, all trees associated with the landscape areas outside of the terminal

[1] 2019 U.S. Fish and Wildlife Service Florida Bonneted Bat Consultation Guidelines;
2024 Draft U.S. Fish and Wildlife Service Florida Bonneted Bat Consultation Guidelines

area, but within or adjacent to areas of impact were inspected for tree cavities or other evidence of bat utilization. Finally, all bridge abutments adjacent to potential impact areas were inspected for evidence of bat activity. Representative photographs of the buildings, trees and other structures were taken during the survey and have been included in **Attachment 3 - Representative Photographs**.

Identification of Potential Roost Structures

Results

The project is located in a highly urbanized and industrial area of Broward County with very little open space and habitat. Most of the Action Area includes land that has been altered for transportation infrastructure, including US-1, arterial roadways (e.g., Perimeter Road, NE 7th Ave, etc.), and the Airport. Open areas consist primarily of grassy swales and stormwater features along roadways and in between Airport infrastructure. No pristine upland habitat is present.

Habitat is limited to the Dania Cut-off Canal and a strip of undeveloped land that lies between commercial property along NE 7th Avenue and Fort Lauderdale Rail Yard. A large portion of this area is disturbed habitat used for electrical power transmission lines. The remaining area is composed of mangrove swamp that consists primarily of red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), and some buttonwood (*Conocarpus erectus*). Exotic wetland hardwoods such as Brazilian pepper (*Schinus terebinthifolia*) and Australian pine (*Casuarina equisetifolia*) are interspersed due to ditch construction and reduced tidal flushing with concentrations of these nuisance / exotics along the eastern and southern portions of the area.

ESA biologists first inspected the proposed stormwater attenuation area on the southeast end of the project. The area contains a dense understory of shrubs and small trees predominantly Brazilian pepper with an occasional Australian pine. A general survey of vegetative types was taken from areas with access. This was followed by an overview of the area taken from nearby elevated areas to detect the presence of any potential roost trees reaching heights above the dense shrub understory that would allow for potential roosting. The only trees reaching above the dense vegetation included Australian pines which did not extend high enough above the understory to allow for emergence. Therefore, it was determined that this area did not provide roosting habitat given the substantial understory and lack of trees that provide roosting habitat. Additionally, clearing is not proposed in this area.

Next, biologists inspected the landscaped areas associated with the Intermodal Center, Cypress Garage Extension, and Future Terminal 5. Trees in these areas were limited to ornamental, maintained palm species. Most mature palms over 15 feet in height were identified as royal palms (*Roystonea regia*). These maintained species have limited potential for cavities and other deformities and are generally trimmed to prevent any overhanging branches that could create potential roost sites. ESA biologists did not observe cavities in the maintained royal palms. One palm snag was discovered with a cavity in the area of the Intermodal Center. However, this cavity was smaller than one inch in diameter and was not large enough to inspect with the tree top camera. During the inspection of the trees in these areas, biologists also inspected the joints and abutments of the nearby overpasses. These areas were visually inspected for evidence of bat roosting, including staining on concrete structures and evidence of guano on the structure or on the ground below. All inspected areas were free of evidence of roosting of any bat species.

Lastly, biologists inspected the areas associated with the terminals. All areas were inspected for potential roosting spaces. Most spaces found around these buildings were too small (less than one inch) to allow for potential bat access. Those areas with potential access were inspected for evidence of bat roosting. All areas were found to be clear with no evidence of staining or guano on the ground below.

As no evidence of bat utilization in the areas of the proposed improvements or nearby features was documented, the project is not anticipated to impact the Florida bonneted bat. Notably, the current consultation key specifies that it does not apply to projects in the South Florida Urban Bat Area and that each project in this area requires individual consultation. This survey was conducted based on previous coordination with the USFWS. Based on the lack of evidence of roosting within the project area, an effect determination of May Affect, Not Likely to Adversely Affect (MANLAA) has been made for this project.

The following BMPs are proposed to be implemented:

- D6. Avoid widespread use/application of pesticides and insecticides (e.g., mosquito control, agricultural pest control). Chemicals should not be used or applied within and adjacent to areas where Florida bonneted bats are known or expected to forage or roost.
- D7. Conduct roost surveys of potential roost trees prior to removal. If potential roost trees or structures need to be removed, trees, snags, and structures need to be visually surveyed within 30 days prior to removal. Any cavities must be peeped with a "treetop" camera, and any cavities that cannot be reached or fully viewed by camera should be surveyed at emergence. Tree, snag, or structure should not be removed from April 15 to August 15, ideally removal should occur January 1 through April 15). If evidence of use by any bat species is observed, discontinue tree removal efforts in that area and coordinate with the Service on how to proceed.

Summary

The Florida bonneted bat is the largest species of bat inhabiting the state of Florida yet is only found in a handful of counties throughout the state and was even thought to have gone extinct in the late 1980's (Belwood 1992). Due to its nocturnal nature and low abundance, very little is known about the Florida bonneted bat.

The survey of the areas associated with the landside improvements at FLL did not identify any evidence of roosting bats, although there is potential roosting opportunity. No tree cavities of appropriate size were documented in the surrounding areas and no visual evidence (staining, guano, fur, etc.) was observed in the survey area. Due to the project area being located within a highly trafficked, developed major airport, coupled with the lack of evidence of species utilization, an effect determination of May Affect, Not Likely to Adversely Affect is anticipated for the project. Therefore, the landside improvements at FLL are not anticipated to result in impacts to the Florida bonneted bat based on this roost survey.

References

Belwood, J.J. 1992. Florida mastiff bat *Eumops glaucinus floridanus*. Pages 216-223 in S.R. Humphrey (ed.), Rare and endangered biota of Florida. Vol. I. Mammals. University Press of Florida. Gainesville, Florida.

Braun de Torrez, E. 2019. Email from biologist E. Braun de Torrez, Florida Fish and Wildlife

Conservation Commission to biologist, S. Sneckenberger, U.S. Fish and Wildlife Service. July 24, 2019. Gainesville, Florida.

U.S. Fish and Wildlife Service. 2008. U.S. Fish and Wildlife Service Species Assessment and Listing Priority Assignment.

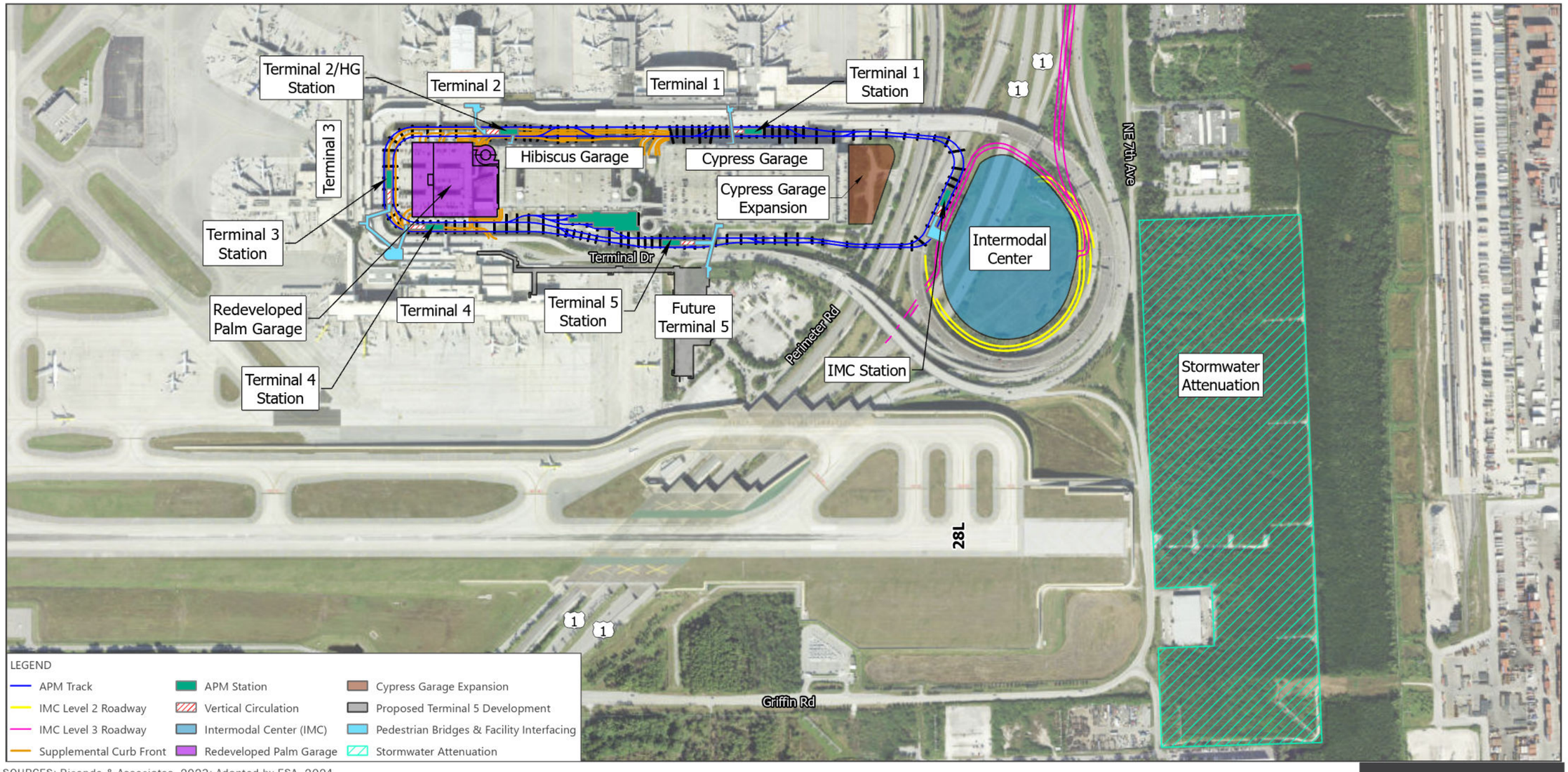
U.S. Fish and Wildlife Service. 2019. Consultation Key for the Florida bonneted bat; 04EF2000-2014-I-0320-R001. South Florida Ecological Services Office; Vero Beach, Florida.

U.S. Fish and Wildlife Service. 2024. Florida Bonneted Bat Consultation Guidelines, Draft 2024 Revision; South Florida Ecological Services Office; Vero Beach, Florida.

Attachment 1

Project Elements

ESA



SOURCES: Ricondo & Associates, 2023; Adapted by ESA, 2024.

ATTACHMENT 1

NORTH

0 600 ft.

U:\GIS\GIS\Projects\2021xxx\D202100449_BCAD_Env_Planning_Acoustical_Consulting\03_Project\Landside EA FBB Attachment 1.aprx

Project Elements
Fort Lauderdale-Hollywood International Airport

Attachment 2

USFWS Coordination

ESA

From: Julie Sullivan
To: Tori Kuba
Subject: FW: [EXTERNAL] Fort Lauderdale International Airport landside Project - Section 7 Consultation
Date: Thursday, March 28, 2024 3:04:47 PM
Attachments: 20240222_draft_FBB Consultation.docx

Julie Sullivan
Southeast Regional Director / Senior Vice President

ESA | Environmental Science Associates
407-748-2729 **cell**

From: Wrublik, John <john_wrublik@fws.gov>
Sent: Thursday, March 28, 2024 7:17 AM
To: Green, Peter M (FAA) <peter.m.green@faa.gov>
Cc: Castillo, William <wcastillo@broward.org>; Cannicle, Winston <WCANNICLE@broward.org>; Julie Sullivan <JSullivan@esassoc.com>; Jeffrey Covert <JCovert@esassoc.com>
Subject: Re: [EXTERNAL] Fort Lauderdale International Airport landside Project - Section 7 Consultation

Peter,

This email serves as a follow up to my last email on the Florida Lauderdale International Airport Landslide Project (Project). I have met with our office's lead for the endangered Florida bonneted bat (FBB) and based on that meeting I request that a roosting survey of suitable FBB roosting habitat be conducted to determine the status of the roosting bats at the Project site. Specifically, the survey would include inspection of suitable trees within the footprint of the proposed Intermodal Center and any existing roadway bridges that would be affected by the proposed works that could provide roosts for FBBs. It will not be necessary to inspect any of the existing parking garages that would be affected by the Project for the presence of roosting bats, as the Service finds that it unlikely that they would roost in these structures. In addition, it will not be necessary to conduct an FBB acoustic survey in association with the project. I have attached the Service's "Draft 2024 Florida Bonneted Bat Consultation Guidelines" to provide you with guidance on making a determination for the FBB with respect to the project, and to provide further information to the applicant's consultant on how to conduct a FBB roosting survey. Once the FBB survey at the project site is completed, please send the results of the survey in the form of a report and your determination for the project effects to the FBB. I will not be able to complete the consultation on this project until I receive this information. If you have any questions, please let me know.

Sincerely,

John M. Wrublik
U.S. Fish and Wildlife Service
777 37th Street, Suite D-101

Vero Beach, Florida 32960
Office: (772) 226-8130
email: John_Wrublik@fws.gov

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Wrublik, John <john_wrublik@fws.gov>
Sent: Wednesday, March 20, 2024 10:12 AM
To: Green, Peter M (FAA) <peter.m.green@faa.gov>
Cc: Castillo, William <wcastillo@broward.org>; Winston Cannicle <WCANNICLE@broward.org>; Julie Sullivan (JSullivan@esassoc.com) <JSullivan@esassoc.com>; Jeffrey Covert <JCovert@esassoc.com>
Subject: Re: [EXTERNAL] Fort Lauderdale International Airport landside Project - Section 7 Consultation

Peter,

I have reviewed the documents for the Fort Lauderdale International Airport Landside Project and provide the following comments:

Wood Stork - The Federal Aviation Administration (FAA) has determined the project will have no effect on the wood stork. According to the information provided it appears that the project will impact a small amount of wetlands (< 1 acre of mangrove wetlands) that could provide potential foraging habitat for the wood stork (Please be aware that the Service considers forested wetlands like mangroves as providing suitable foraging habitat for the wood stork. The Service finds that the loss this small acreage of wetlands will affect the wood stork, but it is not likely to be an adverse effect. I recommend that the FAA change its determination for the wood stork from no effect to may affect, not likely to adversely affect, and request our concurrence for this finding. If this is acceptable to the FAA, you can let me know by return email. Could you also provide me with the acreage of mangrove wetlands and any other wetlands to be lost due to the project, and let me know if any mitigation will be required to offset this loss.

Florida bonneted bat (FBB) -You have not yet provided a determination of how the project will affect the FBB. As I understand it you are requesting guidance on the appropriate surveys to conduct to determine the status of the FBB on your project site. I plan to discuss your project with our office's species lead for the FBB early next week in order to determine this. I will get back to you on to provide further guidance on FBB surveys, once I have had this meeting.

Let me know if you have any questions.

Sincerely,

John M. Wrublik
U.S. Fish and Wildlife Service

777 37th Street, Suite D-101
Vero Beach, Florida 32960
Office: (772) 226-8130
email: John_Wrublik@fws.gov

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Green, Peter M (FAA) <peter.m.green@faa.gov>
Sent: Friday, March 15, 2024 4:46 PM
To: Vero Beach, FW4 <verobeach@fws.gov>; Wrublik, John <john_wrublik@fws.gov>
Cc: Castillo, William <wcastillo@broward.org>; Winston Cannicle <WCANNICLE@broward.org>; Julie Sullivan (JSullivan@esassoc.com) <JSullivan@esassoc.com>; Jeffrey Covert <JCovert@esassoc.com>
Subject: [EXTERNAL] Fort Lauderdale International Airport landside Project - Section 7 Consultation

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Attached is the Federal Aviation Administration's consultation letter and a file containing information for Section 7 consultation for the proposed Intermodal Center, Automated People Mover, and Parking garage improvements at the Fort Lauderdale-Hollywood International Airport. We would appreciate your review of the information and FAA's effect determination. Please let me know if you have any questions or need additional information.

Best regards,

Peter Green

Peter M. Green, AICP

Environmental Protection Specialist

Orlando Airports District Office

Federal Aviation Administration

8427 SouthPark Circle, Suite 524

Orlando, Florida 32819

407-487-7296

peter.m.green@faa.gov

Attachment 3

Representative Photographs

ESA

Representative Photographs

Photograph No.: 1

Date: April 10, 2024

Location: Proposed Stormwater Attenuation Area Fort Lauderdale-Hollywood International Airport

Notes: The photo shows a typical elevated view of the stormwater attenuation area. The majority of vegetation is thick and free of any potential roosting sites. The few trees that extend over the understory are thin Australian pines.



Representative Photographs

Photograph No.: 2

Date: April 10, 2024

Location: Proposed Intermodal Center
Fort Lauderdale-Hollywood International Airport

Notes: The photo shows the typical manicured landscaping associated with right-of-way areas within the proposed intermodal center. Very few hanging fronds were available and no cavities were observed.



Representative Photographs

Photograph No.: 3

Date: April 10, 2024

Location: Proposed Intermodal Center
Fort Lauderdale-Hollywood International Airport

Notes: The photo shows the one royal palm snag identified within the project area. The arrow indicates the cavity (less than 1 inch).



Representative Photographs

Photograph No.: 4

Date: April 11, 2024

Location: Proposed Intermodal Center
Fort Lauderdale-Hollywood International Airport

Notes: The photo shows typical bridge features, including longitudinal joints and abutments. These areas were free of staining and no evidence of guano was observed.



Representative Photographs

Photograph No.: 5

Date: April 11, 2024

Location: : Terminal Overpass
Fort Lauderdale-Hollywood International Airport

Notes: The photo shows a typical overpass joint with displaced backer rod. Each joint was inspected for evidence of potential bat roosting. No staining or guano was observed.



Representative Photographs

Photograph No.: 6

Date: April 11, 2024

Location: Terminal Overpass Fort Lauderdale-Hollywood International Airport

Notes: The photo shows the typical space available in overpass joints with displaced back rods. Flashlights were used to inspect the space for potential bats activity. No evidence of bat activity was observed.



Representative Photographs

Photograph No.: 7

Date: April 11, 2024

Location: Outside
Terminal Covering
Fort Lauderdale-Hollywood International Airport

Notes: The photo shows the typical spacing available at the columns that support the covering for the walkways outside of the terminals. Generally, these spaces were too small to provide the refuge necessary for roosting. Furthermore, no evidence of bat use was detected in these areas.



Representative Photographs

Photograph No.: 8

Date: April 11, 2024

Location: Terminal Covering Fort Lauderdale-Hollywood International Airport

Notes: The photo shows the roof edge typical of both the outside terminal walkway coverings and the terminal buildings themselves. These spaces (estimated at ¼ inch) were not wide enough to provide access for bat roosting.



U.S. Department of Transportation
Federal Aviation Administration

March 15, 2024

Florida Ecological Services Field Office

Service Project Code No. 2024-0065497

Orlando Airports District Office
8427 SouthPark Circle, Suite 524
Orlando, FL 32819
Phone: (407) 487-7720
Fax: (407) 487-7435

The U.S. Fish and Wildlife Service has reviewed the information provided and finds that the proposed action is not likely to adversely affect any federally listed species or designated critical habitat protected by the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 et. seq.). A record of this consultation is on file at the Florida Ecological Services Field Office.

This fulfills the requirements of section 7 of the Act and further action is not required. If modifications are made to the project, if additional information involving potential effects to listed species becomes available, or if a new species is listed, reinitiation of consultation may be necessary.

ROBERT CAREY Digitally signed by ROBERT CAREY Date: 2024.05.21 15:49:32 -04'00'

[via email: verobeach@fws.gov]

Environmental Review Supervisor

ATTN: Mr. John Wrublik
U.S. Fish and Wildlife Service
South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL, 32960

RE: Section 7 Consultation
Proposed Landside Projects (Intermodal Center and Related Projects)
Fort Lauderdale-Hollywood International Airport (FLL), Florida

Dear Mr. Wrublik:

The Broward County Department of Airports (BCAD) has requested approval and funding from the Federal Aviation Administration (FAA) to improve public access to the Fort Lauderdale-Hollywood International Airport (FLL). The proposed project includes developing an Intermodal Center (IMC) within the U.S. Highway 1 right-of-way; an elevated Automated People Mover (APM) connecting the IMC, airport garages, and terminal buildings; redeveloping the Airport's Palm parking garage; expanding the Airport's Cypress parking garage, reconfiguring the existing on-airport terminal access roadways; and other associated improvements. The proposed "landside" project is needed to improve multi-modal access to the airport, improve passenger movement to/from the terminal buildings; reduce congestion on on-airport roads serving the existing terminal buildings, and improve airport parking facilities. If approved, construction is anticipated to start in 2026. The location of the airport is shown in the attached Enclosure 1. The proposed project and its individual elements are described in Enclosure 2 and depicted in Enclosure 3.

These federal actions are subject to provisions found in the Endangered Species Act (ESA). The purpose of this letter is to initiate informal consultation with the U.S. Fish and Wildlife Service pursuant to Section 7 of the ESA and its implementing regulations at 50 CFR Part 402. The proposed project also requires the preparation of an Environmental Assessment (EA) in accordance with the National Environmental Policy Act. The EA is being prepared separately from, but concurrent with, this consultation process.

Background Research and Site Review

Since 2008, there have been a number of field reviews conducted and biological surveys completed within the proposed project's study area. Most notably, the projects listed below included field reviews and biological surveys:

- 2008 Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) for the Development and Expansion of Runway 9R-27L and Other Associated Airport Projects at FLL (FAA)
- 2009 Project Development & Environmental (PD&E) Study for the Broward County Intermodal Center and People Mover System (FDOT)

Recent site reviews (September 26, 2023, and January 31, 2024) were conducted for this project to verify the presence and type of habitat within the Action Area. The site reviews updated and confirmed information and findings in prior studies and reviews of the area. In addition to the field reviews, a thorough review of available information, including species listings, databases, and other resources[1] was completed to characterize biological resources within the Action Area depicted in Figure 1 of Enclosure 4. Based on the field reviews and research by conducted qualified Environmental Science Associates, Inc. biologists, a comprehensive listing of the potential for protected species in the area was developed. The enclosed Biological Resources Technical Memorandum (Enclosure 4) includes a detailed discussion of the land use, habitat, and listed species with a potential for occurrence within the Action Area. Information on the likelihood of occurrence and an assessment of the potential for effect for each species was also determined.

Effect Determination

As described in the Biological Resources Technical Memorandum, the direct Action Area (where land disturbance would occur) encompasses approximately 170 acres. A majority of the land is developed and used for transportation (US Highway 1 and FLL Airport) and power transmission lines. Natural habitats within the direct Action Area include approximately 33 acres of mangrove swamp and 0.4 acres of mixed shrub. The two natural habitat areas are associated with stormwater management and receive treated stormwater through the existing stormwater management system. The water flows through the 33-acre stormwater management mangrove site before it enters adjacent waters. Construction activities in the mangrove site would be limited to the replacement of existing culverts and pipes and affect less than one acre of a man-made drainage ditch. Vegetation clearing would be minimal and limited to the footprint of the existing culverts being upgraded. Avoidance, minimization, and best practices will be employed during construction in this area to minimize impacts. The new culverts will also have gates, similar to the existing culverts.

In accordance with Section 7 of the Endangered Species Act and based on site visits and research conducted for the proposed project, FAA is proposing effect determinations for species with potential for occurrence in the Action Area. The species include those under U.S. Fish & Wildlife Service (USFWS) and/or NOAA Marine Fisheries purview. Species with shared jurisdiction between USFWS and NOAA with potential to occur in the Action Area include sea turtles.

[1] Database searches included:

- USFWS Information for Planning and Consultation (IPaC) database
- USFWS Environmental Conservation Online System
- USFWS Critical Habitat Mapper
- Florida Fish and Wildlife Conservation Commission (FFWCC) List of Florida's Endangered Wildlife Species (68A-27.003 FAC) and Species of Special Concern (68A-27.005 FAC)
- NOAA Fisheries Southeast Region (v2a), ESA Section 7 Mapper
- Various USFWS, FFWCC, & Florida Natural Areas Inventory (FNAI) listed species occurrence data

Consultation between the FAA and NOAA is being initiated concurrently. Exhibit 4 provides amore information, analysis, and discussion regarding the listed species and the criteria used to make the effects determination. Specific to USFWS, the determinations are as follows:

Common Name	Scientific Name	Protected Status	Potential Occurrence	Effect Summary
Florida Bonneted Bat	*Eumops floridanus**	Endangered **USFWS**	Moderate - Low	**To be determined** AA includes potential foraging and roosting opportunities (man-made structures) and is in the USFWS South Florida Urban Bat Area
West Indian Manatee	*Trichechus manatus*	Threatened **USFWS**	Low	**No Effect** Minimal in-water work limited to culvert replacement
Wood Stork	*Mycteria americana*	Threatened **USFWS**	Low	**No Effect** Existing habitat does not have sufficient hydroperiod to support Suitable Foraging Habitat (SFH)
American Alligator	*Alligator mississipiensis*	Similar Appearance Threatened **USFWS**	Low	**No Effect** Minimal in-water work limited to culvert replacement
American Crocodile	*Crocodylus acutus*	Threatened **USFWS**	Low	**No Effect** Minimal in-water work limited to culvert replacement
Loggerhead Sea Turtle*	*Caretta caretta*	Threatened **USFWS / NOAA Fisheries**	Low	**No Effect** Minimal in-water work limited to culvert replacement
Green Sea Turtle*	*Chelonia mydas*	Threatened **USFWS / NOAA Fisheries**	Low	**No Effect** Minimal in-water work limited to culvert replacement
Hawksbill Sea Turtle*	*Eretmochelys imbricata*	Endangered **USFWS / NOAA Fisheries**	Low	**No Effect** Minimal in-water work limited to culvert replacement
Leatherback Sea Turtle*	*Dermochelys coriacea*	Endangered **USFWS / NOAA Fisheries**	Low	**No Effect** Minimal in-water work limited to culvert replacement

SOURCE: Environmental Science Associates, 2024.

NOTES: *Shared jurisdiction between USFWS and NOAA. Effect determinations are recommended by Environmental Science Associates.

USFWS Florida Bonneted Bat Consultation Guideline's provide direction on artificial structures, which states "If you are renovating an existing artificial structure (e.g., building) within the urban environment with or without additional ground disturbing activities, these Guidelines do not apply. The Service is developing separate guidelines for consultation in these situations. Until the urban guidelines are complete, please contact the Service for additional guidance." The FAA would like to discuss the proposed project with USFWS and determine the appropriate level of survey necessary for the Florida Bonneted Bat. For the remaining species, the FAA is seeking concurrence on the No Effect determinations.

We appreciate your review of this information, and we look forward to discussing the Bonneted Bat consultation with you. Should you have any questions, or require any additional information, please do not hesitate to contact me at (407) 487-7296 or via email at peter.m.green@faa.gov.

Sincerely,

Peter M Green, AICP
Environmental Protection Specialist

CC: William Castillo, Aviation Planning Manager, BCAD
Winston Cannicle, Environmental Manager, BCAD
Julie Sullivan, Environmental Science Associates

Enclosures:
1. Project Location
2. Description of Proposed Project
3. Proposed Project
4. Biological Resources Technical Memorandum

RE: [EXTERNAL] FLL Landside Projects Supplemental Information for Species Coordination

Green, Peter M (FAA) <peter.m.green@faa.gov>

Tue 5/21/2024 9:07 AM

To:Wrublik, John <john_wrublik@fws.gov>
Cc:Jeffrey Covert <JCovert@esassoc.com>;'Julie Sullivan' <JSullivan@esassoc.com>

John,

Based on the supplemental studies and consultation undertaken for the threatened wood stork and the endangered Florida bonneted bat, the Federal Aviation Administration has determined the proposed terminal access and parking improvements at Fort Lauderdale-Hollywood International Airport "may affect, but not likely to adversely affect" these species.

Best regards,

Peter

From: Wrublik, John <john_wrublik@fws.gov>
Sent: Friday, May 17, 2024 8:47 AM
To: Green, Peter M (FAA) <peter.m.green@faa.gov>
Cc: Jeffrey Covert <JCovert@esassoc.com>; 'Julie Sullivan' <JSullivan@esassoc.com>
Subject: Re: [EXTERNAL] FLL Landside Projects Supplemental Information for Species Coordination

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Peter,

I have reviewed the additional information provided for the Fort Lauderdale International Airport Landslide Projects and it appears to be complete. Based on the information, I find it unlikely that the project will adversely affect the endangered Florida bonneted bat and the threatened wood stork. I recommend that you make a determination of "may affect, not likely to adversely affect" for these species. If this is acceptable to you, you can let me know by return email, and I will complete the consultation for the project, If you have any questions or concerns, please let me know

Sincerely,

John M. Wrublik
U.S. Fish and Wildlife Service
777 37th Street, Suite D-101
Vero Beach, Florida 32960
Office: (772) 226-8130
email: John_Wrublik@fws.gov

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Julie Sullivan <JSullivan@esassoc.com>
Sent: Thursday, May 16, 2024 5:03 PM

To: Wrublik, John <john_wrublik@fws.gov>; peter.m.green@faa.gov <peter.m.green@faa.gov>
Cc: Jeffrey Covert <JCovert@esassoc.com>
Subject: [EXTERNAL] FLL Landside Projects Supplemental Information for Species Coordination

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Mr. Wrublik-
In the link below please find supplemental information which is being provided in response to your March 20th and March 28th emails to the FAA in support of the section 7 coordination for the Landside Projects at Ft Lauderdale International Airport. Mr. Peter Green has asked me to submit this on his behalf. If you have any questions, or require any additional information, please let Mr. Green know. Thank you,
Julie Sullivan
https://oneesa.egnyte.com/dl/4fGgKoSjjB

Julie Sullivan
Southeast Regional Director / Senior Vice President

ESA | Environmental Science Associates
Orlando, FL

407-748-2729 **cell**
JSullivan@esassoc.com | **esassoc.com**

ESA partners with clients and communities to drive sustainable, resilient, and equitable solutions that shape a better world. Let's stay in touch: **Sign up for our newsletter.**

Appendix C-1.3
NOAA Fisheries Coordination

FW: Fort Lauderdale International Airport landside Project - Section 7 Consultation

Green, Peter M (FAA) <peter.m.green@faa.gov>

Tue 4/2/2024 2:06 PM

To:Castillo, William <wcastillo@broward.org>;Cannicle, Winston <WCANNICLE@broward.org>;Julie Sullivan <JSullivan@esassoc.com>;Jeffrey Covert <JCovert@esassoc.com>

From: nmfs ser esa consultations - NOAA Service Account <nmfs.ser.esa.consultations@noaa.gov>
Sent: Tuesday, March 19, 2024 12:50 PM
To: Green, Peter M (FAA) <peter.m.green@faa.gov>
Cc: Karla Reece - NOAA Federal <karla.reece@noaa.gov>
Subject: Re: Fort Lauderdale International Airport landside Project - Section 7 Consultation

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Hello,

Because you determined No Effect, Section 7 consultation is not necessary. NMFS does not concur with nor review "No Effect" determinations under Section 7 of the Endangered Species Act. You can find effect determination guidance for Section 7 of the ESA on our website here: Making a "No Effect" Determination. Also, you may find a host of information about the ESA Section 7 Process on our Section 7 Guidance webpage. It would be prudent for you to document to your project files your rationale behind your No Effect determination. That way should you ever be questioned about your ESA responsibilities you will be able to share the rationale behind your determinations.

v/r

Karla

Please email any questions or concerns for the most efficient response.

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Karla Reece- *(she/her)*

Section 7 Team Lead

Interagency Cooperation Branch

Protected Resources

NOAA Fisheries | U.S. Department of Commerce

Southeast Regional Office

National Marine Fisheries Service

email: karla.reece@noaa.gov

Section 7 Guidance Webpage - UPDATED URL

Updated Construction Conditions, (May 2021)





This is a U.S. government email account. Your emails to this address may be reviewed or archived. Please do not send inappropriate material. Thank you.

On Fri, Mar 15, 2024 at 5:56 PM Green, Peter M (FAA) <peter.m.green@faa.gov> wrote:

> Attached is the Federal Aviation Administration's consultation letter and a file containing information for Section 7 consultation for the proposed Intermodal Center, Automated People Mover, and Parking garage improvements at the Fort Lauderdale-Hollywood International Airport. We would appreciate your review of the information and FAA's effect determination. Please let me know if you have any questions or need additional information.
>
> Best regards,
>
> Peter Green
>
> **Peter M. Green, AICP**

Environmental Protection Specialist

Orlando Airports District Office

Federal Aviation Administration

8427 SouthPark Circle, Suite 524

Orlando, Florida 32819

407-487-7296

peter.m.green@faa.gov

U.S. Department
of Transportation
**Federal Aviation
Administration**

Orlando Airports District Office
8427 SouthPark Circle, Suite 524
Orlando, FL 32819
Phone: (407) 487-7720
Fax: (407) 487-7135

March 15, 2024

[via email to: nmfs.ser.esa.consultations@noaa.gov]

Mr. David Bernhart
Assistant Regional Administrator for Protected Resources
National Marine Fisheries Service
Southeast Regional Office
St. Petersburg, Florida

**RE: Request to NOAA Fisheries Southeast Regional Office for
Initiation of Expedited Informal Consultation
Landside Projects at Fort Lauderdale-Hollywood International Airport (FLL)**

Dear Mr. Bernhart:

Broward County Aviation Department (BCAD), operator of the Fort Lauderdale-Hollywood International Airport, is requesting approvals and will seek funding from the Federal Aviation Administration to develop the proposed project as described below. We request initiation of informal consultation under section 7(a)(2) of the Endangered Species Act (ESA) for the proposed development of an intermodal facility, automated people mover, and parking garage improvements at FLL. We have determined that the proposed project would have "No Effect" to the ESA-listed species and critical habitat included in the table(s) below. Our supporting analysis is provided below. We request your written concurrence with our determinations.

Pursuant to our request for expedited informal consultation, we are providing, enclosing, or otherwise identifying the following information:

- A description of the action to be considered;
- A description of the action area;
- A description of any listed species or critical habitat that may be affected by the action; and
- An analysis of the potential routes of effect on any listed species or critical habitat.

Proposed Action

The proposed federal action includes FAA's approval of portions of the FLL Airport Layout Plan, processing grant requests for federal funding to construct the proposed airport landside improvements, and processing applications for BCAD to collect and use Passenger Facility Charge fees to construct the proposed the proposed project.

The proposed project includes developing an Intermodal Center (IMC) within the U.S. Highway 1 right-of-way; constructing an elevated Automated People Mover (APM) connecting the IMC, airport's parking garages and terminal buildings; redeveloping the Airport's Palm parking garage; expanding the Airport's Cypress parking garage, reconfiguring the existing on-airport terminal access roadways; and other associated improvements. The proposed "landside" project is needed to improve multi-modal access to the airport, improve passenger movement to/from the terminal buildings; reduce congestion on on-airport roads serving the existing terminal buildings, and improve airport parking facilities. If approved, construction is anticipated to start in 2026. The location of the airport is shown in the attached **Enclosure 1**. The proposed project and its individual elements are described in **Enclosure 2** and depicted in **Enclosure 3**.

Description of the Action Area

The *action area* is all areas to be affected by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). *Effects of the action* are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. The action area is distinct from and can be larger than the project footprint because some elements of the project may affect listed species or critical habitat some distance from the project footprint. The action area, therefore, extends out to a point where no effects from the project are expected to occur.

The action area, depicted on Exhibit 1 of **Enclosure 4**, is located within a highly urbanized area, and is comprised of transportation and industrial land uses, with very little open space and natural habitat (See Exhibit 2 of Enclosure 4). Most of the action area includes land that has been altered for transportation infrastructure, including US Highway 1, arterial roadways (e.g., Perimeter Road, NE 7th Ave, etc.), and a large-hub commercial service airport (FLL). Open areas in the action consist primarily of maintained grassy swales and stormwater features along roadways and in between airport infrastructure that support collection and treatment of stormwater run-off from US Highway 1 some impervious surfaces at the airport.

Two natural habitat areas associated with an existing stormwater management system receive treated stormwater from US Highway 1 through an existing stormwater management system. The water flows through the 33-acre stormwater management mangrove site before it enters adjacent waters. Construction activities in the mangrove site would be limited to the replacement of existing culverts and pipes and affect less than one acre of a man-made drainage ditch. Vegetation clearing would be minimal and limited to the footprint of the existing culverts being upgraded. Avoidance, minimization, and best practices will be employed during construction in this area to minimize impacts. The new culverts will also have gates, similar to the existing culverts.

The Biological Resources Technical Memorandum (**Enclosure 4**) includes a detailed discussion of the land use, habitat, and listed species with a potential for occurrence within the Action Area. Information on the likelihood of occurrence and an assessment of the potential for effect for each species was also determined.

Potentially Affected NMFS ESA-Listed Species and Critical Habitat

We have assessed the listed species that may be present in the action area and our determination of the project's potential effects to them as shown in the table below. In the table, abbreviations are: E = endangered; T = threatened; NLAA = may affect, not likely to adversely affect; NE = no effect; N/A = not applicable

Table 1. ESA-listed Species in the Action Area and Effect Determination(s)

Species	ESA Listing Status	Listing Rule/Date	Most Recent Recovery Plan/Outline Date	Effect Determination (Species)
Sea Turtles				
Green (South Atlantic [SA] DPS)	T	81 FR 20057/ April 6, 2016	October 1991	NE
Leatherback	E	35 FR 8491/ June 2, 1970	April 1992	NE
Loggerhead (Northwest Atlantic [NWA] DPS)	T	76 FR 58868/ September 22, 2011	December 2008	NE
Hawksbill	E	35 FR 8491/ June 2, 1970	December 1993	NE
Fish				
Smalltooth sawfish (U.S. DPS)	E	68 FR 15674/ April 1, 2003	January 2009	NE

The project is not located in critical habitat, and there are no potential routes of effect to any critical habitat.

Effects of the Action

A detailed discussion of the effects of the action can be found in **Enclosure 4**.

Conclusion

The FAA has reviewed the proposed project for its effects to ESA-listed species and their critical habitat. Based on the analysis above, we have determined that the proposed parking and intermodal access improvements at the FLL is not likely to adversely affect any listed species or critical habitat under NMFS's jurisdiction. We have used the best scientific and commercial data available to complete this analysis. We request your concurrence with this determination.

We appreciate your review of this information. Should you have any questions, or require any additional information, please do not hesitate to contact me at (407) 487-7296 or via email at peter.m.green@faa.gov.

Sincerely,

Peter M Green, AICP
Environmental Protection Specialist

cc: William Castillo, Aviation Planning Manager, BCAD
Winston Cannicle, Environmental Manager, BCAD
Julie Sullivan, Environmental Science Associates

Enclosures: 1. Project Location
2. Description of Proposed Project
3. Proposed Project
4. Biological Resources Technical Memorandum

See Appendix C-1.1 for enclosures

Peter Matthias Green
Digitally signed by Peter Matthias Green
Date: 2024.03.15 17:48:18 -04'00'

Appendix C-2

NOAA Fisheries Essential Fish Habitat (EFH) Consultation

Draft

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

Essential Fish Habitat Technical Report

Prepared for
Broward County Aviation Department

July 2024

ESA

Draft

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

Essential Fish Habitat Technical Report

Prepared for
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July 2024

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FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

Essential Fish Habitat Supplemental Information

1.0 Introduction

Environmental Science Associates, Inc., has prepared this report to provide supplemental information to the Essential Fish Habitat (EFH) evaluation performed in Section 3.3, *Biological Resources,* of the Draft Environmental Assessment (EA) for proposed parking and intermodal access improvements at the Fort Lauderdale-Hollywood International Airport (FLL or the Airport). The objectives of this EFH technical report are to describe how the Proposed Project would not adversely affect EFH designated by the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) and the South Atlantic Fisheries Management Council (SAFMC).

1.1 Project Description

The Proposed Project is needed to improve Airport access and reduce congestion on terminal area roadways at FLL. The Proposed Project includes constructing an Intermodal Center (IMC) within the U.S. Highway 1 (US-1) right-of-way, constructing an Automated People Mover (APM), redeveloping the existing Palm Parking Garage, expanding the existing Cypress Parking Garage, reconfiguring the terminal access roadways, and other completing associated landside improvements at the Airport including utility and stormwater improvements. The proposed stormwater improvements include developing onsite drainage infrastructure (including stormwater storage chambers and dry retention areas) to accommodate stormwater from the IMC, maximizing the storage and treatment capacity within the existing drainage system through upgrades and the addition of surface filters on existing elevated roadway embankments, and upsizing the stormwater piping network, including replacement of existing culvert pipes (culverts) throughout the system.

Currently stormwater from the entire US-1 stormwater basin discharges into a mangrove area immediately east of Northeast 7th Avenue. The stormwater flows through the system and is ultimately discharged into a Florida Department of Transportation (FDOT) drainage channel located along the east side of a Florida Power & Light (FPL) elevated maintenance access road. This road has seven existing culverts that allow the stormwater from the system to discharge under the road. The FDOT drainage channel flows south into the Dania Cut-Off Canal which discharges into the Stranahan River and ultimately into the Atlantic Ocean. The Proposed Project would require upgrading the seven existing drainage culverts under the FPL maintenance access road but would not alter the FDOT drainage channel or any adjacent mangrove habitat. It is estimated that replacement of each culvert could temporarily impact up to 700 square feet (sf) of mangrove habitat on each side of the centerline of the access road berm for a total of up to 1,400 sf of temporary impacts to uplands, wetlands, and surface waters at each culvert location. A total of 9,800 sf of temporary impacts could occur during installation of the

replacement culverts. After installation, the vegetation would be allowed to re-establish. To minimize the potential for adverse impacts outside of the culvert replacement construction areas, Best Management Practices (BMPs) and preventative measures, in accordance with permit criteria, will be implemented to minimize effects on natural habitat, prevent pollution, and maintain water quality. These would include, but may not be limited to, the use of floating/staked turbidity barriers and silt fences to prevent sedimentation and turbidity outside of each limited construction area. Once the culverts are replaced, the haul road would be re-stabilized and the vegetation, including mangroves, would be allowed to re-establish.

1.2 Project Site Information

The Proposed Project is in a highly urbanized and industrial area of Broward County with very little open space and habitat. Most of the area includes land that has been altered for transportation infrastructure, including US-1, arterial roadways (e.g., Perimeter Road, NE 7th Ave, etc.) and the Airport. Open areas consist primarily of grassy swales and stormwater features along roadways and in between Airport infrastructure that support the drainage from US-1 and other impervious areas associated with FLL.

Habitat within the Proposed Project area is limited to a strip of undeveloped land that lies between commercial property along Northeast 7th Avenue and Fort Lauderdale Rail Yard. This area consists of disturbed habitat used for electrical power transmission lines, the FPL maintenance access road, and mangrove swamp that currently serves as the receiving body for treated stormwater from the entire US-1 drainage system. The mangrove area consists primarily of red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), and some buttonwood (*Conocarpus erectus*). Exotic wetland hardwoods such as Brazilian pepper (*S. terebinthifolius*) and Australian pine (*C. equisetifolia*) are interspersed due to previous ditch construction and reduced tidal flushing with concentrations of these nuisance / exotics along the eastern and southern portions of the area.

The mangrove area is bounded by existing uplands and the FPL maintenance access road along the eastern and southern boundaries, Northeast 7th Avenue on the western boundary, and development to the north. The eastern portion of the mangrove area is a dedicated utility easement to accommodate electrical infrastructure and the FPL maintenance access road. This entire mangrove area serves as the receiving body for stormwater from the US-1 drainage system adjacent to the Airport. Presently, the US-1 drainage system discharges treated stormwater runoff via a single 48-inch outfall pipe into this mangrove area and three 24x32-inch oval outfall pipes also discharge treated stormwater runoff from Northeast 7th Avenue into this same mangrove area. Stormwater flows through this mangrove wetland into a FDOT drainage channel via seven existing culverts under the FPL maintenance access road. The drainage channel flows south ultimately discharging into the Dania Cut-Off Canal.

2.0 Essential Fish Habitat

The mangrove area and FDOT drainage channel within the Proposed Project area are designated as Essential Fish Habitat (EFH) for shrimp, drum, grouper, and snapper species.[1, 2] The mangrove area is

[1] NOAA Fisheries, 2024. *Inland EFH Mapper.* https://efhtools.github.io/InlandEFH/Mapper.html (accessed June 25, 2024)

[2] NOAA Fisheries, 2024. *Essential Fish Habitat.* https://www.habitat.noaa.gov/apps/efhmapper/?page=page_7 (accessed June 25, 2024)

also identified as a Habitat Area of Particular Concern. However, there is no designated EFH for migratory species within the Proposed Project footprint. The nearest EFH for Highly Migratory Species is located in the Stranahan River and Atlantic Ocean to the east. The Proposed Project footprint does not include EFH Areas Protected from Fishing. The Dania Cut-Off Canal is outside of the Proposed Project footprint but is considered EFH habitat that is hydrologically connected to the mangrove area through the FDOT drainage channel. The Dania Cut-Off Canal is generally designated EFH for South Atlantic EFH species: shrimp, spiny lobster, drum, and snapper / grouper.

3.0 Impact Assessment

3.1 Regulatory Context

Federal agencies that authorize, fund, or undertake activities that may adversely affect EFH must consult with NOAA Fisheries. An adverse effect includes direct or indirect physical, chemical, or biological alterations which includes adverse changes to:

1. Waters or substrate.
2. Species and their habitat.
3. Other ecosystem components.
4. Quality and/or quantity of EFH.

This technical report evaluates the Proposed Project according to the criteria above to describe how the Proposed Project would not adversely affect EFH.

3.2 Effects Analysis

3.2.1 Construction Activities

During the construction phase, temporary impacts to areas designated as EFH would result from the replacement of seven existing culverts under the FPL maintenance access road. The construction limits would be less than 1,400 square feet for each culvert replacement or less than 0.22 total acres. Construction staging would take place on the existing FPL maintenance access road. The construction footprint for each culvert is composed primarily of the gravel road and disturbed upland habitat along the road edges. Mangrove and open water habitat within the construction footprint is limited to the in-water portions of the existing culverts. The total potential impact to mangroves, upland, and open water is estimated to be less than 0.22 acres for all seven culvert replacements combined. Any impacts to mangrove or open water would be temporary and areas temporarily impacted for culvert replacement would be allowed to revegetate. Construction would, however, allow the removal of dense clusters of noxious vegetation such as Brazilian pepper that grows along the berm and around each culvert feature. There would be no construction activities along the FPL drainage channel. Further, there would be no impacts to the Dania Cut-Off canal as a result of construction.

It is anticipated that the replacement of the seven existing culverts as a part of the Proposed Project would be eligible for U.S. Army Corps of Engineers (USACE) Nationwide Permit #3 which allows for “the repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or

fill."[3] To ensure no impacts occur outside of the construction area, BMPs, in accordance with permit criteria, would be employed during culvert replacement. These would include, at a minimum, floating / staked turbidity barriers to prevent sedimentation and turbidity outside of the limited construction areas.

3.2.1.1 Waters or substrate

Construction for the replacement of seven culverts along the FPL maintenance access road would result in less than 0.22 total acres of temporary disturbance to upland areas, mangroves, waters and associated substrate. Any physical disturbance to waters and substrates would be limited to the construction footprint and would be temporary. The substratum would be allowed to reestablish to its existing condition once the culvert replacement is complete. BMPs and preventative measures, in accordance with permit criteria, will also be implemented to minimize effects to EFH beyond the construction footprint, such as water pollution and sedimentation. BMPs would include, but may not be limited to, the use of floating/staked turbidity barriers and silt fences to prevent sedimentation and turbidity outside of each limited construction area. Therefore, construction activities would result in no adverse effect to EFH waters or substrates.

3.2.1.2 Species and their habitat

In accordance with Section 7 of The Endangered Species Act of 1973 (16 U.S.C. §§ 1531-1544) and Marine Mammal Protection Act (MMPA) of 1972 (16 U.S.C. §§1361 et seq.), consultation with U.S. Fish and Wildlife Service and NOAA Fisheries was initiated on March 15, 2024. On March 19, 2024, NOAA Fisheries acknowledged FAA's No Effect determination for species under NOAA's purview and noted that further consultation is not required. The consultation package submitted to NOAA Fisheries also described that although the Proposed Project will have minor temporary impacts within mangrove habitat, EFH would not be impacted. The USFWS concurred with FAA's determination that the Proposed Project "May Affect, Not Likely Adversely Affect" the Wood Stork and Florida Bonneted Bat (FBB). Consultation with NOAA Fisheries and USFWS indicate that there would be no adverse effect to species and their habitat.

3.2.1.3 Other ecosystem components

The mangrove area consists primarily of various mangrove species and exotic wetland hardwoods interspersed within the construction footprint. This area currently receives treated stormwater from the entire US-1 drainage basin. Construction in areas designated as EFH would not result in a permanent physical alteration of the mangrove ecosystem. Construction for the replacement of seven culverts along the FPL maintenance access road would result in less than 0.22 total acres of temporary disturbance to mangroves, uplands, and open water. Impacts to these resources are considered temporary and would be allowed to reestablish once construction has been completed. Further, construction activities would assist in removing/reducing invasive/noxious plant species established along the maintenance road and around each of the seven culverts. Additionally, the mangrove wetland would continue to be hydrologically and tidally connected to other EFH habitat at the Dania Cut-Off canal. Given the small footprint of temporary impacts to mangrove areas, it is anticipated that construction of the Proposed Project would not adversely effect EFH.

[3] U.S. Army Corps of Engineers, 2022. *Nationwide Permit 3 – Maintenance. NWP Final Notice, 86 FR 73522..* Effective Date: February 25, 2022.

3.2.1.4 Quality and/or quantity of EFH

Construction within EFH for the Proposed Project would be limited to the mangrove wetlands and open water within the construction footprint used to replace seven existing culverts along the FPL maintenance access road. Impacts within EFH due to construction would be temporary and there would be no permanent reduction in the quantity of EFH. Any mangroves affected by the culvert replacement would be allowed to reestablish. Areas would also be revegetated with appropriate plant species, as needed, after construction is completed.

3.2.2 Operational Activities

Operational impacts to areas designated as EFH would result from additional stormwater generated within the US-1 drainage system. Additional stormwater would continue to be treated to state standards and then discharged into the mangrove area that is hydrologically connected to other EFH habitat at the Dania Cut-Off Canal. As such, the mangrove area would continue to receive treated stormwater from the US-1 drainage system once the Proposed Project is operational. Further, the mangrove area would not be physically impacted once the Proposed Project is operational.

3.2.2.1 Waters or substrate

There would be no physical, chemical or biological alterations to the waters or substrate within the mangrove areas once the Proposed Project is operational. There would be no changes in temperature, salinity, pollution, or nutrient loads. Although the wetland area would receive episodic increases in water quantity, the Proposed Project includes design measure to minimize periodic stormwater discharge volumes into the mangroves by maximizing stormwater retention and treatment within the interconnected drainage system prior to discharge. Any additional stormwater discharged would continue to be treated according to state water quality standards and the newly ratified Clean Waterways Act. Retention of stormwater in the mangrove area would also continue to ensure that water enters the Dania Cut-Off Canal system without adversely impacting water quality of the receiving waterbody(s). Therefore, the additional treated stormwater entering the wetland area would be similar to existing conditions once the Proposed Project is operational and would not adversely affect the waters or substrate of EFH.

3.2.2.2 Species and their habitat

The consultation package submitted to the USFWS and NOAA Fisheries described that the Proposed Project would have an increase in treated stormwater discharged to the mangrove area. The USFWS concurred with FAA's determination that the Proposed Project "May Affect, Not Likely Adversely Affect" the Wood Stork and FBB. Further, NOAA Fisheries acknowledged FAA's No Effect determination for species under NOAA's purview and noted that further consultation is not required. Consultation with NOAA Fisheries and USFWS indicate that there would be no adverse effect to species and their habitat once the Proposed Project is operational.

3.2.2.3 Other ecosystem components

There would be no changes to ecosystem components of EFH once the Proposed Project is operational. The additional treated stormwater discharged into EFH would not differ from existing conditions. Further, there are no physical alterations expected as result of the Proposed Project's operation. The wetland area, FDOT drainage channel, and Dania Cut-Off Canal would not be physically altered. The ecological conditions of EFH would remain once the Proposed Project is operational.

3.2.2.4 Quality and/or quantity of EFH

There would be no changes to EFH once the Proposed Project is operational. The Proposed Project's operation does not include any quantitative or qualitative changes to areas designated as EFH. There are no physical alterations proposed for EFH. While the wetland area would receive periodic increases in discharges of treated stormwater, the design will ensure that water that enters the receiving waterbody will continue to be treated according to state water quality criteria standards and the newly ratified state stormwater rules. Further, the system will be designed with the following measures to minimize impacts and assure there is no adverse affect on the receiving waterbody or on EFH:

- Periodic stormwater discharge volumes into the mangroves will be minimized through the design of the onsite (IMC) stormwater system.
- Stormwater treatment within the interconnected drainage system prior to discharge into the mangroves will be maximized.
- Tidal connectivity between the mangrove wetlands and the Dania Cut-Off Canal will be maintained.

Therefore, the additional treated stormwater entering the wetland area would be similar to existing conditions once the Proposed Project is operational and would not affect the quality of EFH. As such, the Proposed Project would not adversely affect the quality or quantity of EFH once operational.

4.0 Summary

The Proposed Project does not include any proposed actions that would result in the permanent loss or direct or indirect physical, chemical, or biological alteration to EFH. Construction impacts to EFH are limited to the replacement of seven culverts along an FPL maintenance access road and would not exceed 0.22 acres in temporary impacts to mangrove wetlands, uplands, and open water. Vegetation would be allowed to reestablish after the culverts are installed or new native plantings would be provided, if required. Once the Proposed Project is operational, additional treated stormwater would be discharged to the mangrove area which currently serves as the receiving water body for the entire US-1 drainage system. The mangrove system would remain hydrologically connected to other EFH habitat within the Dania Cut-Off Canal and any additional stormwater discharged would meet state water quality standards. Therefore, the resulting additional stormwater would be similar to existing conditions. Given the results from the evaluation provided in this technical report and section 7 consultation with NOAA Fisheries and USFWS, the proposed Project would not adversely affect EFH. Coordination with NOAA Fisheries on EFH will continue as part of the Draft EA review process. Any further coordination with NOAA Fisheries will be completed and documented in the Final EA.