

# **Environmental Assessment**

**Prepared in support of the City of Fort Lauderdale's  
ITP application for a  
Habitat Conservation Plan for Special Events**

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**List of Acronyms and Abbreviations**

ac	Acre
CCCL	Coastal Construction Control Line
City	The City of Fort Lauderdale
DPS	Distinct Population Segment
EA	Environmental Assessment
ESA	Endangered Species Act
FDEP	Florida Department of Environmental Protection
ft	Foot/Feet
ft <sup>2</sup>	Square feet
FWC	Florida Fish and Wildlife Conservation Commission
ha	Hectare
HCP	Habitat Conservation Plan
ITP	Incidental Take Permit
km	Kilometers
m	Meter
m <sup>2</sup>	Square meters
mi	Mile
NBMPH	Nesting Beach Marine Turtle Permit Holder
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
Plan Area	Habitat Conservation Plan Area
Service	U.S. Fish and Wildlife Service

## **I. Introduction**

### *Purpose and Need for Action*

The City of Fort Lauderdale (City) has made application to the U.S. Fish and Wildlife Service (Service) for a section 10(a)(1)(B) Incidental Take Permit (ITP). If issued, the ITP would authorize incidental take of federally listed sea turtle species related to special events permitted by the City on all ocean-facing beaches within City limits and at four beach-adjacent properties. As described below, special events currently permitted by the City are not intended to harm or harass sea turtles, but they have the potential to do so. Any such take is prohibited under Section 9 of the U.S. Endangered Species Act (ESA) of 1973, as amended. In the absence of an ITP, the City is vulnerable to Federal prosecution should take occur, as well as private, third-party lawsuits alleging violations of the ESA. An ITP would allow the City to continue its traditional special events program in conformance with ESA regulations by minimizing impacts to sea turtles to the maximum extent practicable and mitigating any unavoidable take.

### *Proposed Action*

The City has submitted a Habitat Conservation Plan (HCP) in support of its ITP application. The HCP describes in detail the following:

- Scope, location, and timing of special events,
- The City's current special event permitting process,
- The potential for special events to impact nesting sea turtles, their nests, hatchlings, and habitat,
- Measures the City proposes to avoid and minimize take to the maximum extent practicable,
- Actions the City will take to mitigate unavoidable take, and
- Measures, staffing, and funding necessary to implement the HCP.

The City intends to implement its HCP contingent upon issuance of an ITP by the Service.

### *Service Response to ITP Application*

The Service's decision to issue or deny the ITP is predicated on a determination of whether the City's proposed action and implementation of its HCP, meets the requirements of sections 10(a)(1)(B) and 10(a)(2)(B) of the ESA and related implementing regulations specified in 50 CFR 17. All applicable criteria must be satisfied before a permit can be issued. The first step in making this determination is preparation of an Environmental Assessment (EA) to assess the extent to which the City's proposed action will affect/impact the environment.

This EA has been prepared, as required by the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C.4321 – 4347). Evidence and analysis of impacts to the environment will allow the Service to determine whether it needs to prepare an Environmental Impact Statement or can instead issue a Finding of No Significant Impact (40 CFR 1508.9). These subsequent documents along



with the issuance criteria mentioned above will form the basis of the Service's ultimate decision to issue or deny the ITP. For brevity, the Service has referenced the City's HCP for more detailed information pertaining to the various activities, measures, affected natural resources, and data used in preparation of the EA.

This EA complies with the following Federal regulations and policies:

- NEPA of 1969, as amended,
- Council on Environmental Quality Implementing Regulations (40 CFR 1500–1508),
- Department of the Interior NEPA Regulations (43 CFR 46.10-46.450), and
- Revised Service draft NEPA Reference Handbook (2018).

## **II. Nature and Potential Impact of Special Events**

### *Nature of Special Events*

As described in the HCP, the City hosts a variety of events on or adjacent to the beach each year. These include, but are not limited to concerts, festivals, volleyball tournaments, athletic events, and fireworks displays, and range in size from tens of thousands of spectators to only a small group of people. Many last only a day or two, while others may exceed two weeks in duration; some are one-time events while others may recur throughout the year. In a typical year, approximately 47 events were held during the sea turtle nesting season, which in Florida is officially designated as March 1 through October 31 (Florida Administrative Rule 62B-33.002). Larger events may involve the placement or overnight storage of equipment on the beach, the use of vehicles for setup and breakdown, loud music, and temporary nighttime lighting.

Under the City's current special events permitting system, event organizers are required to submit an application and accompanying site plan and narrative to the Parks and Recreation Department, pay an application fee, and attend a meeting with City staff to discuss the event. The City advises applicants planning beach events during the sea turtle nesting season to contact the Florida Department of Environmental Protection (FDEP) to determine if a State permit is also required. The FDEP issues Coastal Construction Control Line (CCCL) permits for special events involving activities that could impact the beach or coastal system, such as the placement and overnight storage of structures or recreational equipment, excavation or deposition of sand, the use of vehicles and/or heavy equipment, and temporary nighttime lighting. The FDEP, in turn, consults with the Florida Fish and Wildlife Conservation Commission (FWC) for those activities likely to impact sea turtles. The FWC provides recommendations to FDEP for take avoidance, which are then incorporated into the CCCL permits as Special Conditions. Additionally, the FWC must review and approve lighting plans, submitted by the event applicant, for any temporary lighting proposed for special events. Special event organizers are required to adhere to all General and Special Conditions of their CCCL permit and their FWC-approved lighting plan, as applicable.

### *Potential Impacts of Special Events*

Impacts to sea turtles can be direct, indirect, or cumulative. Direct impacts are those which occur at the same time and place as the proposed action, while indirect impacts, although resulting from the proposed action, occur later in time or at a location distant from the action. Cumulative impacts result from the incrementally combined effects of all past, present, and reasonably foreseeable future actions like those of the proposed action, regardless of the entity undertaking such actions (40 CFR 1508.8). As described in detail in the City's HCP, activities associated with special events may have the following direct and indirect impacts and may contribute to the cumulative impact of similar human activities on the beach:

- The placement of equipment and structures on the beach, the nighttime movement of vehicles, noise, human activity, fireworks, and temporary nighttime lighting may deter turtles from emerging from the ocean to nest and frighten turtles already on the beach back into the water before they have nested.
- The movement of heavy equipment may damage nests and compact sediments within nesting habitat.
- Event participants may knowingly or unknowingly disturb nesting or hatchling turtles or eggs by handling or trampling them.
- Temporary structures and equipment stored on the beach overnight may trap nesting turtles or prevent them from reaching otherwise suitable nesting habitat.
- Objects placed over nests nearing hatching may prevent hatchlings from escaping the nest or if placed directly on the sand above the nest, may cause damage to the eggs.
- Temporary structures and equipment stored on the beach overnight as well as deep vehicle ruts may prevent or interfere with hatchlings' transit from the nest to the sea, thereby increasing their exposure to predation and causing them to expend valuable energy reserves needed to swim offshore to developmental habitats.
- Lighting may disorient both adult and hatchling sea turtles. Disoriented adults and hatchlings may wander into roads and parking lots where they are at risk of vehicular impacts. Hatchlings attracted away from the ocean or unable to properly orient to the ocean may ultimately succumb to predation, heat exhaustion, and desiccation.

Additional impacts to sea turtles potentially resulting from special event activities permitted by the City not explicitly identified in the HCP, but implicit in the requested take authorization include:

- Tent posts, stakes, and other items driven into the sand may damage eggs in incubating nests.
- Improperly disposed litter generated by an event may trap or entangle adult nesting and hatchling sea turtles.

The City is the only entity managing or regulating special events within the HCP area (Plan Area). Anyone holding a special event must receive a permit from the City which, under the HCP, will require adherence to measures developed to avoid or minimize impacts to sea turtles. Other than normal recreational activity such as fishing and sunbathing which might dictate the use and placement of recreational equipment (coolers, blankets, beach umbrellas, etc.), and general walks

along the beach, no other activities contribute to cumulative impacts to sea turtles within the HCP area.

### **III. HCP Area (Affected Environment)**

The City is located in Broward County on the southeast coast of Florida (Figure 1). The Plan Area, the area within which the City is requesting incidental take coverage, consists of a beach area and a beach-adjacent area. The beach area extends 10 km (6.2 mi) from Flamingo Avenue on the north to the Port Everglades Inlet on the south (Appendix A, Figures A-1 – A-6). The eastern and western limits of the beach portion of the Plan Area are the mean high-water line of the Atlantic Ocean and the dune, line of permanent vegetation, armoring structure, or other development feature effectively marking the landward extent of sandy beach, respectively. The beach portion of the Plan Area encompasses approximately 48 ha (119 ac) of sea turtle nesting habitat. The beach-adjacent portion of the Plan Area covers approximately 10.1 ha (25 ac) (Figure 2) and encompasses the following four properties:

- Las Olas Oceanside Park, 300 S Fort Lauderdale Beach Boulevard
- Fort Lauderdale Aquatic Complex, 501 Seabreeze Boulevard
- Bahia Mar Yachting Center, 801 Seabreeze Boulevard
- DC Alexander Park, SE 5<sup>th</sup> and A1A

As described in the HCP, the City's coastline can be characterized as highly urbanized and is almost completely built out. The northern and southern sections of the Plan Area are bounded on the west by of a mixture of high-, medium-, and low-density residential development, while the central business district is occupied by a variety of shops, restaurants, sidewalk cafes, hotels, and entertainment venues. Throughout the commercial area, SR A1A runs very close to the beach, with no occupied structures east of the road.

Only approximately 15% of the upland area adjacent to the beach is designated as parks and open space. The largest, intact natural vegetative communities are found in Hugh Taylor Birch State Park in the north central portion of the Plan Area; the Park has approximately 0.8 km (0.5 mi) of beach frontage consisting of maritime hammock vegetation. Although there are several public parks adjacent to the Plan Area, they are mostly landscaped with ornamental vegetation. Nevertheless, low scattered dunes with native vegetation are present along the entire coastline, and some isolated areas may provide as much as 6-10 m (20-33 ft) of vegetative buffer between the beach and adjacent upland development.

Within the Plan Area, special events on the beach are currently only permitted at two locations (Fort Lauderdale Beach Park and adjacent to Hugh Taylor Birch State Park), and not throughout the entire City coastline.

### **IV. Listed Species Affected by the Proposed Action**

Five species of sea turtles occur in Atlantic coastal waters in the vicinity of the Plan Area and three of those species regularly nest on the City's sandy beaches. The nesting behavior for all species is stereotypical with turtles emerging from the ocean, ascending the beach, selecting a nest site,

digging a nest, depositing eggs, covering the nest, and returning to the ocean. All but one species, the Kemp's ridley, nests at night. The eggs incubate in a chamber beneath the dry, warm sand and hatch in approximately 50-60 days, depending on species and sand temperature. Hatchlings within the nest cue on declining sand temperatures to emerge as a group at night. Upon emergence, lighting cues orient them to the ocean, and after crawling to the water, they swim offshore in a "frenzied" state for many hours to reach pelagic developmental habitat.

Physical descriptions, biology, geographic ranges, population sizes, threats, and recovery efforts for each species are presented and thoroughly discussed in the Federal Recovery Plans and related 5-Year Reviews for each species. This section provides references to these documents and presents nesting data specific to the Plan Area.

### *Loggerhead Sea Turtle*

In 1978, the loggerhead sea turtle (*Caretta caretta*) was listed as threatened throughout its range under the ESA (43 FR 32800). Genetic studies have identified five distinct recovery units within the North Atlantic Distinct Population Segment (DPS). The Plan Area lies within the Peninsular Florida Recovery Unit where most loggerhead nesting in the United States takes place. The nearest designated critical nesting habitat for the loggerhead sea turtle (LOGG-T-FL14) extends south from the Boca Raton Inlet in Palm Beach County to the Hillsboro Inlet in northern Broward County, approximately 8.9 km (5.5 mi) north of the Plan Area. Relevant resource documents for the loggerhead sea turtle include Service (1978) and NMFS and Service (2007a and 2008), and NMFS (2014).

The loggerhead sea turtle is the most abundant of the five species of sea turtles nesting in Florida. The HCP presents loggerhead nesting data for the Plan Area from 2015 through 2020. Over that period, nesting ranged from 889 to 1,180 nests per year, with a 6-year mean of 994 nests per year. That represented approximately 34 % of all loggerhead nesting within Broward County and approximately 1 % of loggerhead nesting Statewide.

### *Green Sea Turtle*

The breeding population of the green sea turtle (*Chelonia mydas*) in Florida was federally listed as endangered in 1978 (43 FR 32800). Based on recent genetic testing, the Florida nesting population falls within the North Atlantic DPS, one of 11 distinct nesting populations of green turtles. Concurrent with its placement in the North Atlantic DPS, the Florida green turtle nesting population was down listed from endangered to threatened. Relevant resource documents for this species include NMFS and Service (1991, 2007b, and 2016).

The green sea turtle is the second most abundant nester within both Broward County and Florida. Nesting data presented in the HCP for the period of 2015 through 2020 shows between 46 and 128 nests annually, with a 6-year mean of 90 nests per year. That represented approximately 22% of all green turtle nesting in the County and less than 1 % of green turtle nesting Statewide.

### *Leatherback Sea Turtle*

In 1970, the leatherback sea turtle (*Dermochelys coriacea*) was listed as endangered throughout its range (Service 1970). This status was ratified in 1973 with the passage of the ESA. Relevant resource documents for the leatherback include NMFS and Service (1992 and 2013).

Leatherback nesting within the Plan Area is much lower than the two previous species, with only 1 to 11 nests documented each year between 2015 and 2020. The mean for that period was 5 nests per year, representing approximately 16 % of all leatherback nesting in Broward County and less than 1 % of leatherback nesting Statewide.

#### *Hawksbill Sea Turtle*

The hawksbill sea turtle (*Eretmochelys imbricata*) was listed as endangered throughout its range in 1970 (Service 1970), and this status was ratified in 1973 with the passage of the ESA. Although no hawksbill nests were documented in the Plan Area between 2015 and 2020, they have been recorded in the past: 1 in 1994, 2 in 1997, and 1 in 2005. Nesting by hawksbills outside of south Florida is extremely rare. Relevant resource documents for the hawksbill include NMFS and Service (1993 and 2007c).

#### *Kemp's Ridley Sea Turtle*

The Kemp's ridley sea turtle (*Lepidochelys kempii*) is the smallest and most endangered species of sea turtle in the world. It was listed as endangered throughout its range by the United States in 1970 (Service, 1970) and its status was ratified in 1973 with the passage of the ESA. Relevant resource documents for the Kemp's ridley include Service and NMFS (1992), NMFS and Service (2007d), and NMFS, Service, and SEMARNAT (2010).

Kemp's ridley sea turtles nest primarily on beaches in the Gulf of Mexico and are unique among Florida's sea turtles in that they nest during daylight hours. As discussed in the HCP, between 10 and 17 nests were recorded annually throughout Florida between 2015 and 2020, most occurring on the Gulf coast in the panhandle region. Although Kemp's ridley nests have been documented on Florida's east coast, no known nests have occurred within the Plan Area or elsewhere within Broward County.

An analysis of reproductive success data collected by the Broward County Sea Turtle Conservation Program for the Plan Area between 2015 and 2020 was performed for each species to estimate, on average, how many nests, eggs, and hatchlings could be impacted annually by special events (Table 1).

## **V. Documented Impacts to Affected Species and Requested Take**

### *Documented Impacts to Listed Species Within the Plan Area*

Although the potential for take associated with special event activities held during the sea turtle nesting season, particularly those occurring at night, appears relatively high, a few incidents have been documented. As described in the HCP, since 2016, only 2 reports of impacts to sea turtles attributable to special events have occurred, both involving nesting turtles in 2019. In one case, a

loggerhead encountered fencing associated with a special event; the turtle was able to successfully nest before returning to the ocean. Another loggerhead encountered a tent pole and returned to the ocean without nesting.

As discussed in the HCP, the major impact to sea turtles on Broward County beaches is caused by artificial lighting. Both adult nesting turtles and hatchlings have been disoriented within the Plan Area. Between 2015 and 2020, an average of 14 adult nesting turtle disorientation events and 484 hatchling disorientation events were documented annually. However, based on evaluation of standardized FWC disorientation reports, none of these incidents were directly attributable to special events. That may be due to the inability of turtle monitors to distinguish disorientations caused by the presence of permanent, proximate, light sources from those caused by temporary nighttime lighting associated with special events. If all beachfront lighting was compliant with applicable lighting regulations, disorientations associated with special events might be more apparent.

### *Requested Take*

The City has requested an individual ITP associated with Special Events which would authorize incidental take of sea turtles within the Plan Area over a 25-year period. This includes incidental take of turtles outside the official nesting season (March 1 – October 31), when some early nesting and late hatching may occur in the absence of the avoidance and minimization measures described below.

It is not anticipated that special events permitted by the City under the proposed HCP will have population level impacts to any sea turtle species. The three main species that nest within the Plan Area (loggerhead, green, and leatherback) represent only a small percentage of total Statewide nesting ( $\leq 1\%$ ) and impacts to nests that are present will be avoided and minimized to the maximum extent practicable.

## **VI. Avoidance and Minimization Measures**

Take authorization, if provided to the City through issuance of an ITP, will be contingent upon adherence to all avoidance and minimization measures described in detail in the HCP. These measures will be in effect from February 15 through November 15, a date range which encompasses the entire nesting season as well as any early nesting or late nesting/hatching that may occur. Key elements are summarized below.

- The FWC issues Nesting Beach Marine Turtle Permits to qualified individuals to perform specified activities for sea turtle protection, including nesting surveys, nest marking, and determination of nest fate and reproductive success. A Nesting Beach Marine Turtle Permit Holder (NBMTPH), contracted by the special event organizer (if the work falls outside the normal responsibilities of the NBMTPH), must monitor the site daily during any portion of the event that occurs during the official sea turtle nesting season (or any time before or after when marked nests are present on the beach), including setup and breakdown.
- The NBMTPH will conduct daily nesting surveys of the event site each day, and no special event activities can commence until the daily survey has been completed. The NBMTPH

will conspicuously mark all nests for avoidance and will inspect nest barriers daily to ensure their visibility.

- If a marked nest is present within the specified boundaries of an event with anticipated attendance in excess of 500 individuals, the event organizer must assign event security personnel to monitor crowds around the nest(s) throughout the period when event activities are taking place. This is to ensure that structures, equipment, vehicles, and event participants do not encroach on nest barriers. The NBMTPH is also required to be on site during the event.
- Only light-weight vehicles are allowed on the beach in support of special event activities, although heavy equipment can be used for event setup and breakdown. Heavy equipment can only be used during daylight hours and must be confined to pre-approved access corridors and operated on beach mats. Light-weight vehicles may operate after sunset only if a NBMTPH is present to watch for nesting turtles and hatchlings in the path of the light-weight vehicle. Any ruts posing obstacles to hatchling sea turtles must be removed and the beach restored to its natural grade prior to sunset, or immediately upon event conclusion, each day vehicle operations take place.
- No excavation of sand is permitted.
- Pedestrian traffic corridors must be clearly delineated, and the seaward edge of natural dunes, if present, conspicuously posted to prevent attendees from disturbing the dune and/or trampling dune vegetation.
- Temporary structures and/or equipment shall not be placed within 7.6 m (25.0 ft) of an existing marked sea turtle nest and either stored off-beach or near the dune such that they do not interfere with nesting turtles or pose obstacles to hatchlings transiting from the nest to the ocean. Special nest marking procedures are in place for any new nests deposited near temporary structures that are already in place.
- Large temporary structures remaining in place overnight must have a minimum clearance of 1 meter (3.3 ft) between the sand surface and lowest element of the structure and between structure supports so they do not trap nesting turtles or prevent them from reaching suitable nesting habitat farther landward.
- Outside of a specific fencing allowance in the minimization measures, fencing used to restrict access to large special events must be placed in a manner that does not pose a barrier or entrapment risk to nesting sea turtles or hatchlings, as determined by the NBMTPH.
- Event personnel must use red LED or red filtered flashlights at night.
- All temporary lighting must be extinguished by 10:00 PM during event setup and breakdown and by 12:00 AM during the event.
- Lights used for temporary parking areas immediately adjacent to the beach must be directed downward and shielded from beach view.
- Fireworks are prohibited after 10:00 PM (11:00 PM on national holidays)
- Movie screens for nighttime special events must be opaque with the viewing screen facing landward and showings concluded by 10:00 PM. Projected lighting should not spill over the edges of the viewing screen.
- No balloons (sold, provided, or released), illuminated paper lanterns, or other irretrievable floating or air-borne items may be released during an event, and all debris and litter generated during the event must be collected and removed from the beach prior to sunset each day the event takes place.

- If an event is authorized to take place past sunset, trash collection must occur at the conclusion of the event and a NBMTPH must be present during debris and litter removal if a marked nest is present and/or if the event area is not fenced.

## **VII. Mitigation Measures**

Take authorization, if provided to the City through issuance of an ITP, will be contingent upon adherence to all mitigation measures described in detail in the HCP. The mitigation plan proposed by the City was developed through discussions with the Service. These discussions addressed feasibility, relevancy, effectiveness, and adequacy of a variety of measures to offset unavoidable impacts anticipated under the City's proposed action. Mitigation will be funded through fees paid by special event applicants. Those fees will be proportioned based on the nature, timing, relative size, shoreline frontage, structural footprint, number of attendees, and hours of temporary nighttime lighting associated with each event. The three proposed mitigation initiatives are summarized below.

### *Lighting Ordinance Compliance Assistance*

As noted earlier, the primary impact to sea turtles on Broward County beaches results from light pollution. The County's efforts to address this problem have included relocating nests from problem areas and caging nests, where hatchlings are collected and transported to dark sections of beach for release. Both manipulative strategies have been discouraged by the FWC. Effective light management is the preferred alternative, but Broward County does not have a unified County-wide beachfront lighting program. Instead, individual municipalities must pass and enforce their own lighting regulations. Although the City has a beachfront lighting ordinance, inadequate staffing has resulted in a high percentage of non-compliant lights. Consequently, approximately 78% of the funds generated by mitigation fees will be directed toward assisting the City in its beachfront light management efforts. This includes hiring an additional ½ full-time equivalent lighting compliance officer to perform targeted lighting outreach to coastal residents and businesses and assist these properties with coming into compliance with the local ordinance. The goal of this mitigation element is to increase the proportion of compliant properties by three percentage points per year for the first five years of HCP implementation. A secondary goal is to decrease the percentage of lights categorized as Bright/Brighter/Brightest in HCP Appendix I (Lighting Per Property Hot Spots 2019\_2020) Comparison by one percentage point per year for the first five years of implementation. That higher level of compliance must be maintained or further increased over the term of the ITP.

### *Dune Enhancement*

The City proposes to create, restore, or enhance approximately 627 m<sup>2</sup> (6,750 ft<sup>2</sup>) of dunes annually over the term of the ITP with the goal of establishing a healthy, functional dune system throughout the Plan Area. Approximately 13% of mitigation funds will be directed to this initiative. The City will prioritize improving the health and protection of existing dune areas (including areas damaged by storms or other events) and then will work to expand existing dune areas and plant and protect larger, barren areas in need of dune vegetation. Restoration efforts will focus on areas of highest



nest densities and areas where disorientation events have been repeatedly documented, whenever possible.

#### *Coastal Lighting Retrofit Grant Program*

The City will dedicate approximately 9% of collected mitigation funds to a grants program, to be administered by a suitable City department. Small businesses, condominium associations, or single-family homeowners will be able to apply for grants to retrofit light fixtures and lamps. The goal of the program will be to expend all funds available. If funded at the expected maximum (\$6,800.00), the goal will be to retrofit at least 20 light fixtures and lamps annually (or approximately three properties based on an average of 6.87 lights per property in 2020).

### **VIII. HCP Implementation Plan**

Take authorization, if provided to the City through issuance of an ITP, will be contingent upon the timely and effective implementation of the HCP, including staffing, funding, compliance monitoring, adaptive management, reporting, and other measures described in detail in the HCP. Key elements include:

#### *Staffing*

The City will augment roles of existing staff and processes within the Parks and Recreation Department and add additional staff as necessary to fully and effectively implement the HCP. The role of HCP Coordinator will be nominally assigned to an existing or new staff person or subcontracted entity whose responsibility it will be to oversee HCP implementation and ensure compliance with the ITP. This individual must be familiar with the City's special event permitting process and sea turtle conservation issues within the Plan Area. They will serve as liaison between the various City entities having HCP implementation responsibilities, State agencies involved in permitting special events, the Service, and special event applicants.

#### *Amendments to Special Events Program*

The City will augment its special events permitting process to obtain sufficient detail to assess potential impacts to sea turtles, assign appropriate avoidance and minimization measures to permits issued for events during the sea turtle nesting season, meet with event applicants to review proposed activities and related permit conditions, and ensure compliance with permit conditions. Receipt of a special event permit will be contingent upon an applicant's agreement to comply with all applicable HCP avoidance and minimization measures. The City will verify compliance both during event setup and while the event is taking place, and event organizers will be notified of any non-compliance issues.

#### *Funding*

The City has broken down costs for its HCP into implementation and mitigation components. The City commits to funding existing full and part-time positions that will support HCP implementation such as the special events coordinator position, administrative staff to support the

lighting retrofit grant program, and facilities workers who may assist in dune restoration efforts. Novel implementation costs, such as the hiring of an HCP Coordinator, estimated to be funded initially at approximately \$50,000-\$60,000 annually, will be allocated from the City's general fund and/or special event permit processing fees. Funds needed to execute the HCP mitigation plan, estimated at \$76,700 annually, will be generated exclusively by fees paid by special event applicants based on the level of anticipated impacts associated with their proposed activities. In years when insufficient mitigation fees are collected, the City will fund the HCP Coordinator and lighting code enforcement support (1/2 full-time equivalent) positions to ensure that the HCP is fully implemented. The City anticipates reviewing the workload of the HCP Coordinator after the first year of HCP implementation to determine if the position should be classified as part-time or full-time.

### *Assessing HCP Performance*

The City will monitor its progress in implementing the HCP and will provide the Service with periodic updates on the overall performance of the HCP in meeting its biological goals and objectives. This includes semi-annual communications, at minimum, with the Service during the first year of HCP implementation, annual reporting, a formal meeting following submittal of the first annual report, and formal 5-year reviews thereafter.

### *Adaptive Management*

The City has established processes for addressing changed and unforeseen circumstances affecting listed species within the Plan Area or the City's ability to implement the HCP in conformance with ITP requirements over the term of the Permit.

## **IX. Effects of Alternative Actions**

The purpose of an EA is to assess the effects of a proposed action on the environment and compare those effects with the effects resulting from a reasonable suite of alternative actions. In the case of the City's ITP application, the proposed action is implementation of the HCP, and the only decision to be made by the Service is whether to issue or deny the ITP. Thus, issuance of an ITP becomes the Preferred Alternative in the alternative actions assessment below, and denial of the ITP becomes the No Action Alternative. The No Action Alternative assumes current conditions and trends continue unabated into the future (i.e., *status quo*). The City's special events program is causing take of sea turtles, which in the absence of an ITP, is prohibited under Section 9 of the ESA.

Although the City considered alternatives to its special events program during development of the HCP, including disallowing any special events on the beach or only permitting events on the beach outside the sea turtle nesting season, both were rejected. Ultimately, the City chose to implement the programs, policies, and measures described in its HCP, and that is the sole action alternative to be considered by the Service.

For this EA, the following elements of the environment were assessed:

- Air quality,
- Soils,
- Water quality and quantity,
- Wetlands and floodplains,
- Vegetation, fish, and wildlife resources,
- Threatened and endangered species,
- Social and economic interests, and
- Cultural resources.

### *Air Quality*

Increased traffic drawn to beachfront areas during large-scale special events may temporarily increase CO<sub>2</sub> emissions. However, given their general nature, and limited temporal and geographic scale, special events permitted by the City have little effect on air quality. The type, number, location, and duration of special events would not change under the proposed action, and therefore, there would be no difference in effects on air quality between the Preferred and No Action Alternatives.

### *Soils*

As described in the HCP, beaches within the Plan Area are comprised of unconsolidated silicate and carbonate sediments with little to no organic or silt content. Any activity, including special events, affecting the integrity of the beach and coastal system in Florida is highly regulated under FDEP's CCCL program. No excavation of dry, sandy sediments is allowed during special events and any material used for sand sculpting must be transported into the Plan Area from offsite. Although large numbers of event participants and the use of heavy equipment during setup and breakdown of large-scale events may compact sediments, impacts would be limited both temporally and spatially. Furthermore, the type, number, location, and duration of special events would not change under the proposed action, and therefore, there would be no difference in effects between the Preferred and No Action Alternatives.

### *Water Quality and Quantity*

No water can be discharged onto the beach during special events, and all fueling and maintenance of vehicles used in support of these events must take place off site. Although some debris may enter the ocean during special events, impacts to water quality are anticipated to be minimal and limited both spatially and temporally; consequently, special events have no impact on water quantity. The type, number, location, and duration of special events would not change under the proposed action, and therefore, there would be no difference in effects on water quality between the Preferred and No Action Alternatives.

### *Wetlands and Floodplain*

The Plan Area does not include any wetlands or floodplains and thus, the City's special events program does not directly impact these resources. The nearest wetlands are found west of A1A adjacent to the Intracoastal Waterway in Hugh Taylor Birch State Park, and special events permitted by the City have no indirect impact on these systems. Thus, there is no difference in effects on wetlands and floodplains between the Preferred and No Action Alternatives.

### *Vegetation, Fish, and Wildlife*

As described in the HCP, the only native vegetation occurring within the Plan Area is found in the low, scattered dunes along the length of the City's beaches. However, some larger intact dune and coastal plant communities exist immediately adjacent to the Plan Area in a few locations; the largest of these is a maritime hammock in Hugh Taylor Birch State Park. Individuals attending events may directly impact areas of native vegetation if they trespass into the dunes. Minimization measures proposed in the Preferred Alternative include barriers and signage which provide better protection for dune and coastal vegetation than those currently in place under the No Action Alternative. Additionally, under the Preferred Alternative, the City proposes to create, restore, and enhance the dune system throughout the Plan Area through planting of native vegetation.

Vehicles used in support of special events may crush dune vegetation. However, under both the Preferred and No-Action Alternatives, vehicles must ingress and egress the beach through designated access corridors where dunes are not present.

There is a robust community of intertidal and surf zone invertebrates along the eastern edge of the Plan Area. However, special events have little impact on these assemblages.

The only permanent resident of the dry, sandy beach in the Plan Area is the Atlantic ghost crab (*Ocypode quadrata*) which lives in burrows on the beach. Small lizards and snakes may reside in the dunes, and urban wildlife, such as raccoons, foxes, and opossums may occasionally venture onto the beach, primarily at night.

As discussed in the HCP, a variety of resident and migratory shorebirds and seabirds rest and forage within the Plan Area. Some nesting by the least tern (*Sterna antillarum*) has been documented in the Plan Area in the past, but human disturbances unrelated to special events make City beaches unattractive for least tern nesting. Large crowds associated with special events may disturb roosting, resting, and foraging shorebirds and seabirds, but these disturbances are limited in temporal and spatial scale and are largely indistinguishable from disturbances caused by the large crowds typically attracted to the City's beaches independent of special events.

Collectively, the conditions described above suggest that special events have little impact on fish and wildlife on or adjacent to the Plan Area. Furthermore, there is essentially no difference in effects between the Preferred and No Action Alternatives.

### *Threatened and Endangered Species*

As described in detail in the HCP and summarized in Section II of this EA, special events have the potential to impact adult nesting sea turtles, their nests, hatchlings, and habitat. Under the No-

Action Alternative, certain larger events must obtain an FDEP CCCL permit in addition to their City permit to hold the event. FDEP refers permit applications for events held during the nesting season to the FWC to assess impacts to sea turtles. The FWC proposes measures intended to avoid take, which are then incorporated into the CCCL permit issued by FDEP. This current system has several flaws:

- Measures intended to avoid take, in effect, only minimize take, as they do not prevent harm to, and/or harassment of:
  - nests laid prior to the start of the official nesting season when no nesting surveys are taking place.
  - adult nesting turtles prior to the start of the official nesting season,
  - hatchlings emerging from nests after November 15, and
  - unmarked nests missed or misidentified as abandoned digs during morning nesting surveys conducted during the nesting season.
- Event organizers sometimes may not understand how to effectively implement, or simply fail to implement the Special Conditions for sea turtle protection in their FDEP permits.
- Any take occurring under the current program is not mitigated.

Under the Preferred Alternative:

- All events regardless of size are required to adhere to the avoidance and minimization measures contained in the HCP.
- The City will meet with event organizers to review event activities and related HCP requirements, and applicants will have to certify that they understand and agree to implement all applicable avoidance and minimization measures. Furthermore, the City will conduct compliance assessments to ensure event activities are conducted in conformance with HCP requirements.
- All take of sea turtles, regardless of time of year, will be covered under the ITP, including early nesting and late hatchling.
- Special event applicants will be required to pay a fee commensurate with the relative risk posed to sea turtles by their proposed activities. Those fees will be used by the City to mitigate unavoidable impacts, as summarized in Section VII of this EA.

In addition to sea turtles, several other federally listed species occasionally utilize the Plan Area. In particular, migratory birds such as the red knot (*Calidris canutus*) or piping plover (*Charadrius melodus*) may stop over to rest or forage during their annual migrations. However, as for other resident and migratory shorebirds and seabirds, the large human crowds using the beaches within the Plan Area tend to disturb birds and, thus, do not make these beaches attractive habitat. Furthermore, there would be no difference in effects to listed and other migratory bird species between the Preferred and No Action Alternatives.

As discussed in the HCP, the threatened southeastern beach mouse (*Peromyscus polionotis niveiventris*) historically ranged throughout south Florida, including the Plan Area. However, due to habitat loss, this species has been completely extirpated from south Florida (Service, 1999).

### *Social and Economic Interests*

Special events add to the diversity of life experiences available to residents and tourists alike in the City. The beach is already a main tourist attraction, and the large crowds drawn to some of the events held within the core business district further benefit the many bars and restaurants found there. Although noise emanating from some events could be problematic in residential areas, most events featuring music are held in the commercial district. Large crowds, increased traffic, and limited beachfront parking may all be exacerbated during special events. However, each event affects only a small portion of the entire Plan Area and each is limited in duration.

Under the Preferred Alternative, event applicants will have to pay fees to fund mitigation for unavoidable impacts to sea turtles, and the City will bear some financial burden to implement the HCP. No financial burden exists for the City or special event applicants under the No Action Alternative. Otherwise, there is no appreciable difference in effects on social and economic interests in the City between the Preferred and No Action Alternatives.

### *Cultural Resources*

There are no known cultural resources (historic buildings, sunken ships, artifacts, etc.) within or immediately adjacent to the Plan Area. No major excavation or construction activities are allowed on the beach during special events. Thus, even if cultural resources were present, impacts would be *de minimis*, with no difference between the Preferred and No-Action Alternatives.

## **X. Agencies and Persons Consulted**

The Service provided guidance to the City and its consultant throughout development of the HCP. This guidance addressed ESA regulations, ITP issuance criteria, effectiveness and adequacy of minimization and mitigation measures, and adaptive management. Additionally, the Service periodically consulted with the FWC and FDEP to ensure HCP minimization measures minimally met current State conservation requirements and that agency regulatory concerns were properly addressed.

This EA was developed by the Service's Florida Ecological Services Field Office in Vero Beach, Florida in consultation with the Service's Regional HCP Coordinator in Atlanta, Georgia.

## **XI. Literature Cited**

- NMFS (National Marine Fisheries Service). 2014. Endangered and Threatened Species: Critical Habitat for the Northwest Atlantic Ocean Loggerhead Sea Turtle Distinct Population Segment (DPS) and Determination Regarding Critical Habitat for the North Pacific Ocean Loggerhead DPS. Federal Register, 79(132): 39856-39912 (50 CFR Part 226).
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- Service. 1970. List of endangered foreign fish and wildlife. Federal Register 35(233):18319-18322, December 2, 1970.
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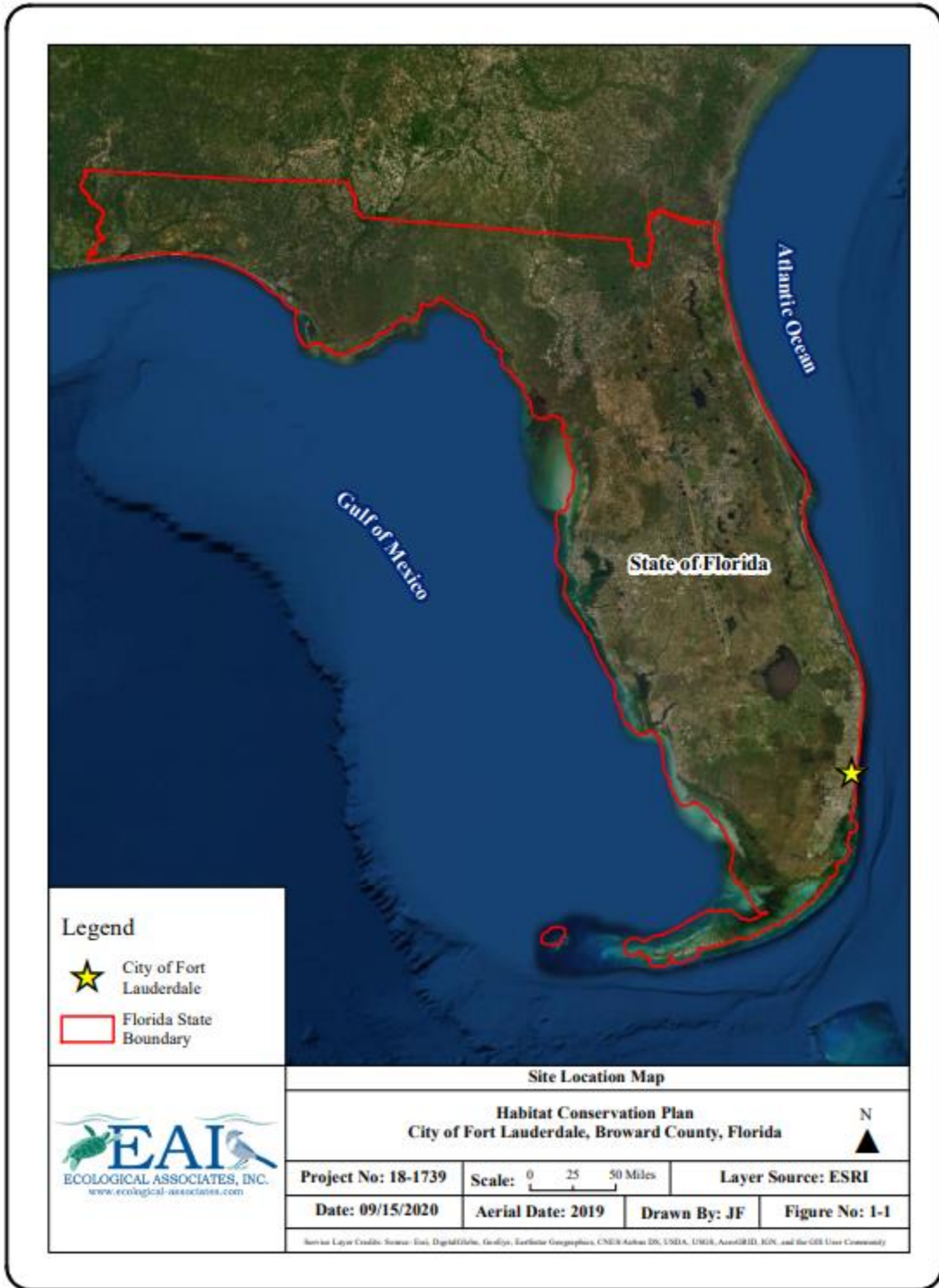
## **XII. Tables and Figures**

Table 1. Reproductive success analysis of sea turtle nests, eggs, and hatchlings potentially impacted within the Plan Area (10 km [6.2 mi]) from 2015 – 2020. Source: Broward County Sea Turtle Conservation Program.

<b>Average</b>	<b>Loggerhead</b>	<b>Green Turtle</b>	<b>Leatherback</b>
<b>Number of Nests</b>	994.0	89.7	4.5
<b>Clutch Size</b>	104.6	118.9	88.0
<b>Number of Eggs</b>	103,972	10,665	396
<b>Hatching Success (%)</b>	79.29	87.77	71.45
<b>Emerging Success (%)</b>	71.88	82.62	61.72
<b>Number of Hatchlings</b>	74,735	8,812	244

\*Note: this represents a maximum number of nests, eggs, and hatchlings that could be potentially impacted, but since the City does not permit events across the entire City coastline, this is unlikely to occur.





**Figure 1. Site Location Map.**



**Figure 2. Locations of the four beach-adjacent parcels included in the Plan Area.**

### **XIII. Appendix**





**Legend**

- Plan Area
- Coastal Range Monument
- Beach Edge West/Seawall
- Average High Tide Line 2017
- City of Fort Lauderdale Boundary

**Site Location Map**

**Habitat Conservation Plan**  
**City of Fort Lauderdale, Broward County, Florida**



**Project No: 18-1739**

**Scale:** 0 200 400 800 Feet

**Layer Source: ESRI**

**Date: 09/15/2020**

**Aerial Date: 2019**

**Drawn By: JF**

**Figure No: A-1**

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**Appendix A**





**Legend**

- Plan Area
- Coastal Range Monument
- Beach Edge West/Seawall
- Average High Tide Line 2017
- City of Fort Lauderdale Boundary

**Site Location Map**

**Habitat Conservation Plan**  
**City of Fort Lauderdale, Broward County, Florida**



**Project No: 18-1739**

**Scale:** 0 200 400 800 Feet

**Layer Source: ESRI**

**Date: 09/15/2020**

**Aerial Date: 2019**

**Drawn By: JF**

**Figure No: A-2**

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**Legend**

- Plan Area
- Coastal Range Monument
- Beach Edge West/Seawall
- Average High Tide Line 2017
- City of Fort Lauderdale Boundary

**Site Location Map**

**Habitat Conservation Plan  
City of Fort Lauderdale, Broward County, Florida**



**Project No: 18-1739**

**Scale:** 0 200 400 800 Feet

**Layer Source: ESRI**

**Date: 09/15/2020**

**Aerial Date: 2019**

**Drawn By: JF**

**Figure No: A-3**

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





**Legend**

- Plan Area
- Coastal Range Monument
- Beach Edge West/Seawall
- Average High Tide Line 2017
- City of Fort Lauderdale Boundary

**Site Location Map**

**Habitat Conservation Plan**  
**City of Fort Lauderdale, Broward County, Florida**



**Project No: 18-1739**

**Scale:** 0 220 440 880 Feet

**Layer Source: ESRI**

**Date: 09/15/2020**

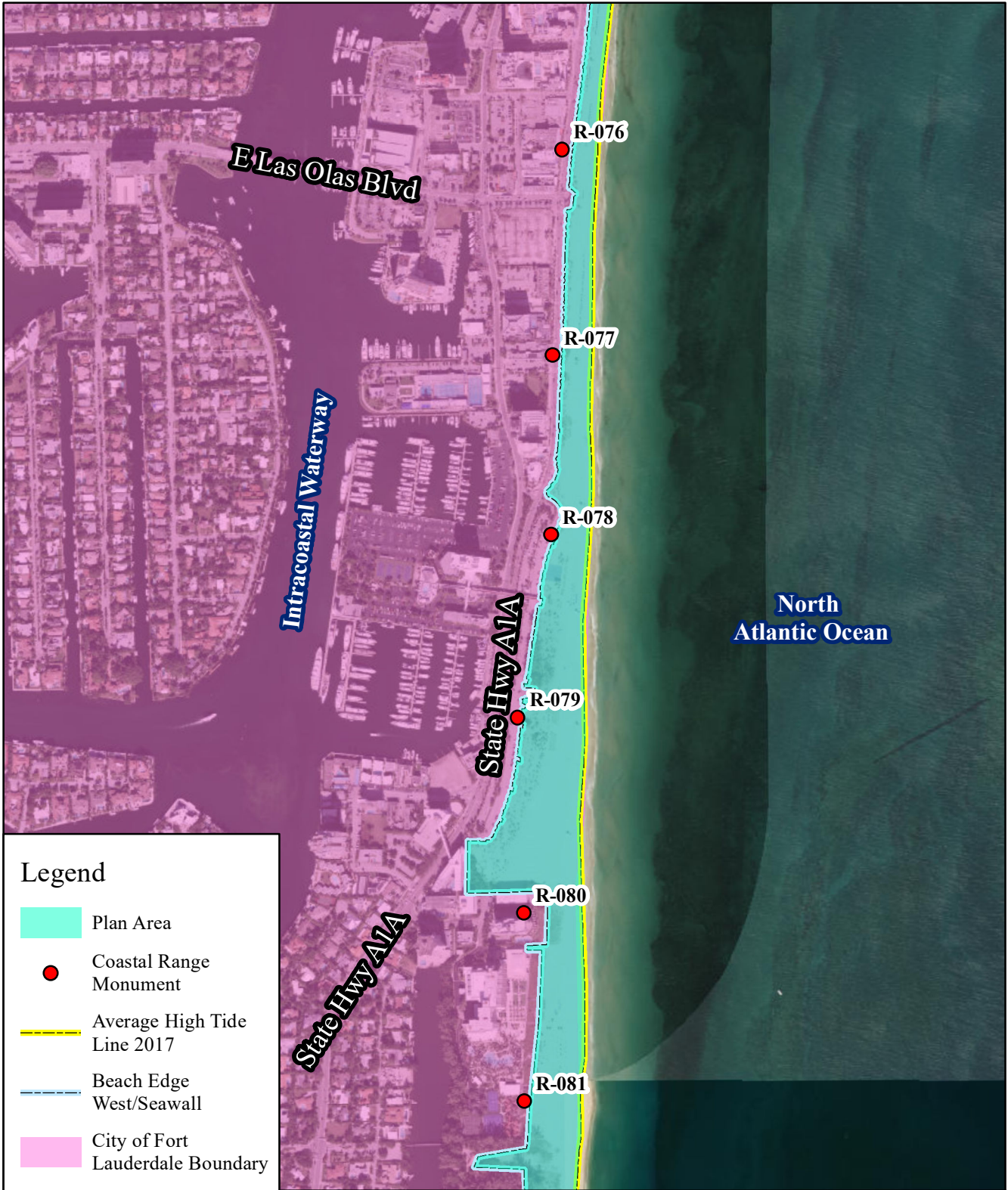
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**Drawn By: JF**

**Figure No: A-4**

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





**Legend**

- Plan Area
- Coastal Range Monument
- Average High Tide Line 2017
- Beach Edge West/Seawall
- City of Fort Lauderdale Boundary

**Site Location Map**

**Habitat Conservation Plan  
City of Fort Lauderdale, Broward County, Florida**



**Project No: 18-1739**

**Scale:** 0 200 400 800 Feet

**Layer Source: ESRI**

**Date: 09/15/2020**

**Aerial Date: 2019**

**Drawn By: JF**

**Figure No: A-5**

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**Legend**

- Plan Area
- Coastal Range Monument
- Average High Tide Line 2017
- Beach Edge West/Seawall
- City of Fort Lauderdale Boundary

**Site Location Map**

**Habitat Conservation Plan  
City of Fort Lauderdale, Broward County, Florida**



**Project No: 18-1739**

**Scale:** 0 200 400 800 Feet

**Layer Source: ESRI**

**Date: 09/15/2020**

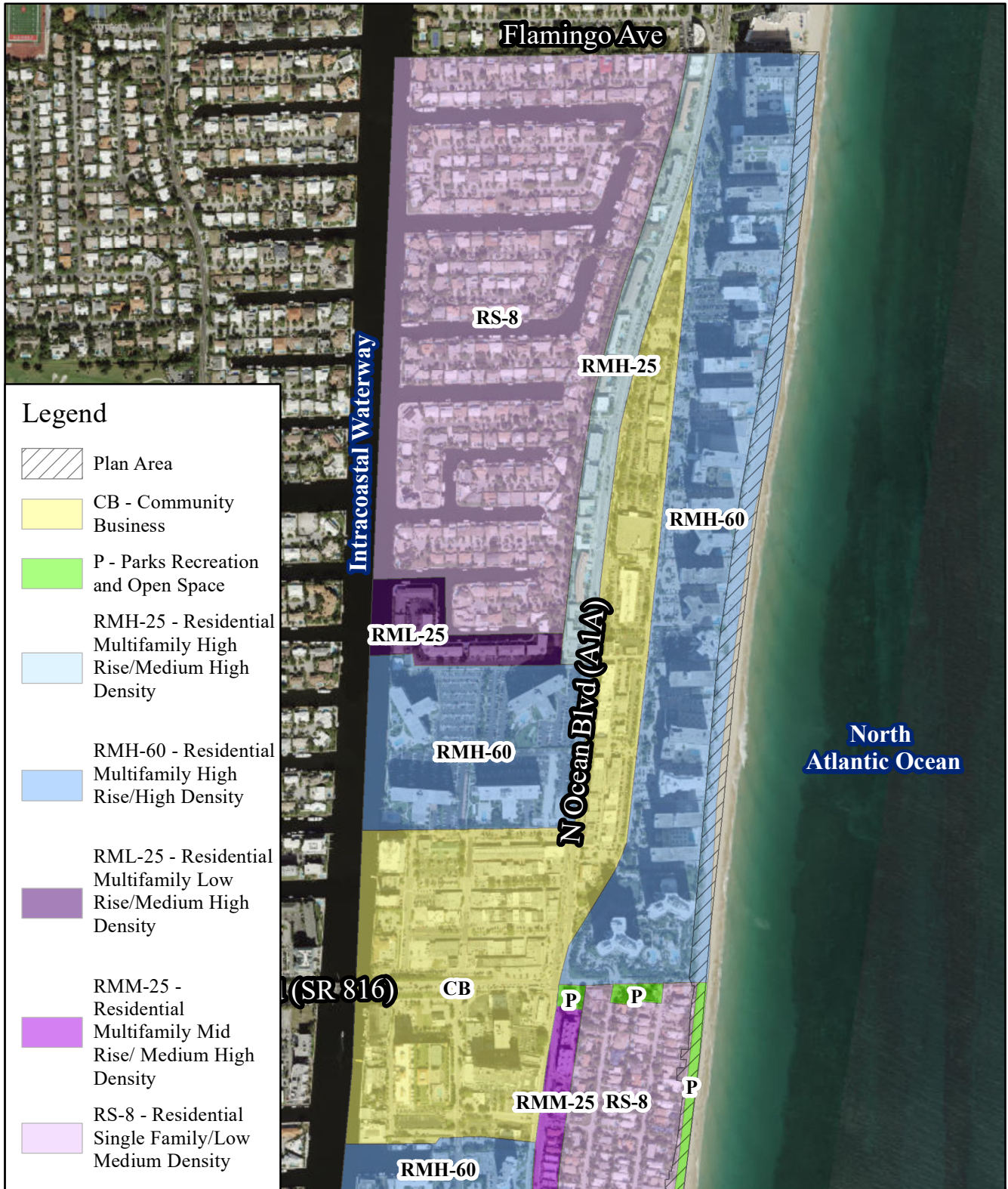
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






**Figure No: A-6**

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**Legend**

-  Plan Area
-  CB - Community Business
-  P - Parks Recreation and Open Space
-  RMH-25 - Residential Multifamily High Rise/Medium High Density
-  RMH-60 - Residential Multifamily High Rise/High Density
-  RML-25 - Residential Multifamily Low Rise/Medium High Density
-  RMM-25 - Residential Multifamily Mid Rise/ Medium High Density
-  RS-8 - Residential Single Family/Low Medium Density

**Existing Land Use Map**

**Habitat Conservation Plan  
City of Fort Lauderdale, Broward County, Florida**



**Project No: 18-1739**

**Scale:** 0 200 400 800 Feet

**Layer Source: CoFL**

**Date: 08/24/2020**

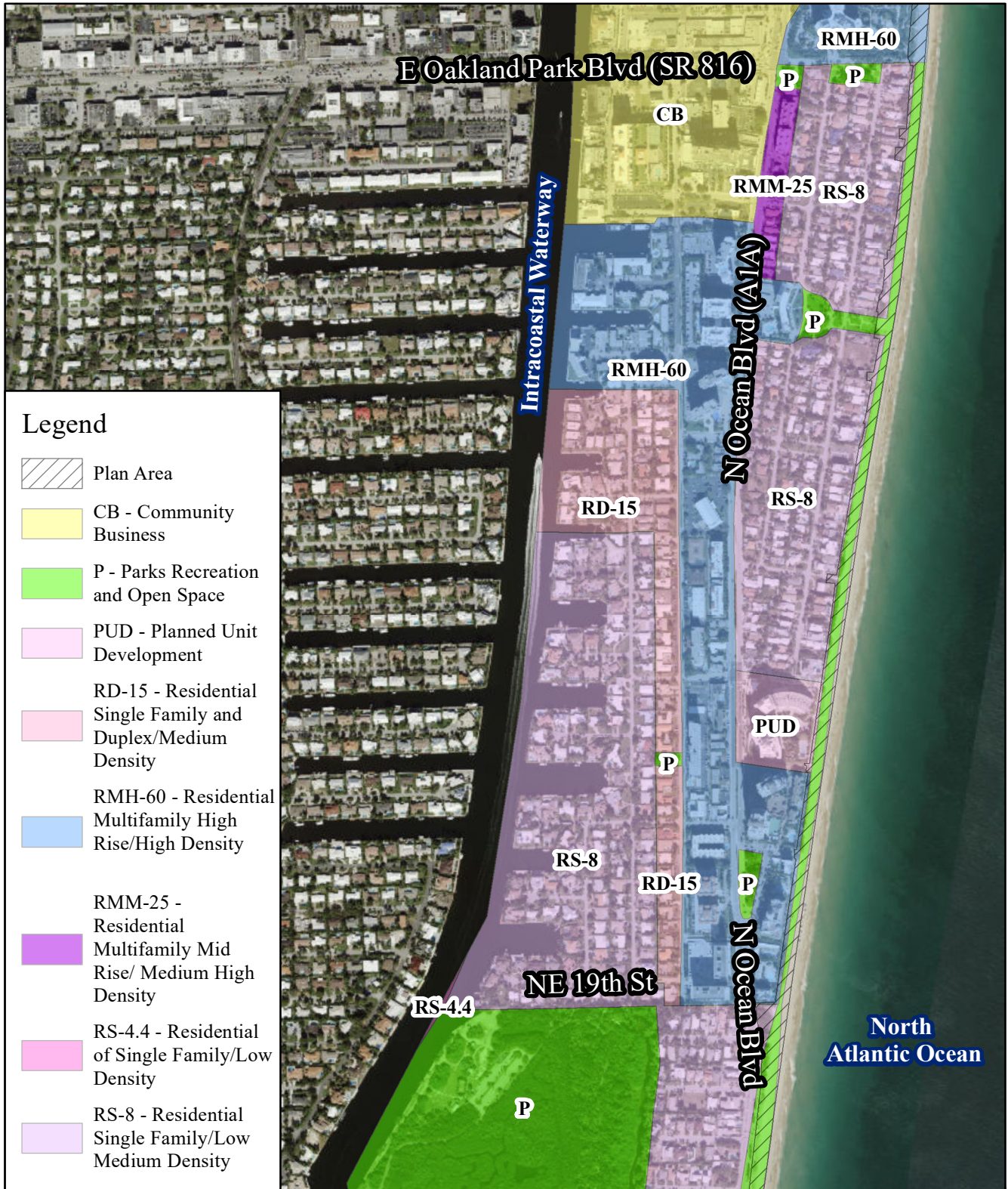
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







**Figure No: A-7**

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**Legend**

-  Plan Area
-  CB - Community Business
-  P - Parks Recreation and Open Space
-  PUD - Planned Unit Development
-  RD-15 - Residential Single Family and Duplex/Medium Density
-  RMH-60 - Residential Multifamily High Rise/High Density
-  RMM-25 - Residential Multifamily Mid Rise/ Medium High Density
-  RS-4.4 - Residential of Single Family/Low Density
-  RS-8 - Residential Single Family/Low Medium Density

**Existing Land Use Map**

**Habitat Conservation Plan  
City of Fort Lauderdale, Broward County, Florida**



**Project No: 18-1739**

**Scale:** 0 200 400 800 Feet

**Layer Source: CoFL**

**Date: 08/24/2020**

**Aerial Date: 2019**

**Drawn By: JF**









**Figure No: A-8**

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**Legend**

-  Plan Area
-  B-1 - Boulevard Business
-  P - Parks Recreation and Open Space
-  RD-15 - Residential Single Family and Duplex/Medium Density
-  RMH-60 - Residential Multifamily High Rise/High Density
-  RS-4.4 - Residential of Single Family/Low Density
-  RS-8 - Residential Single Family/Low Medium Density
-  SLA - Sunrise Lane Area District

**Existing Land Use Map**

**Habitat Conservation Plan  
City of Fort Lauderdale, Broward County, Florida**



**Project No: 18-1739**

**Scale:** 0 200 400 800 Feet

**Layer Source: CoFL**

**Date: 08/24/2020**

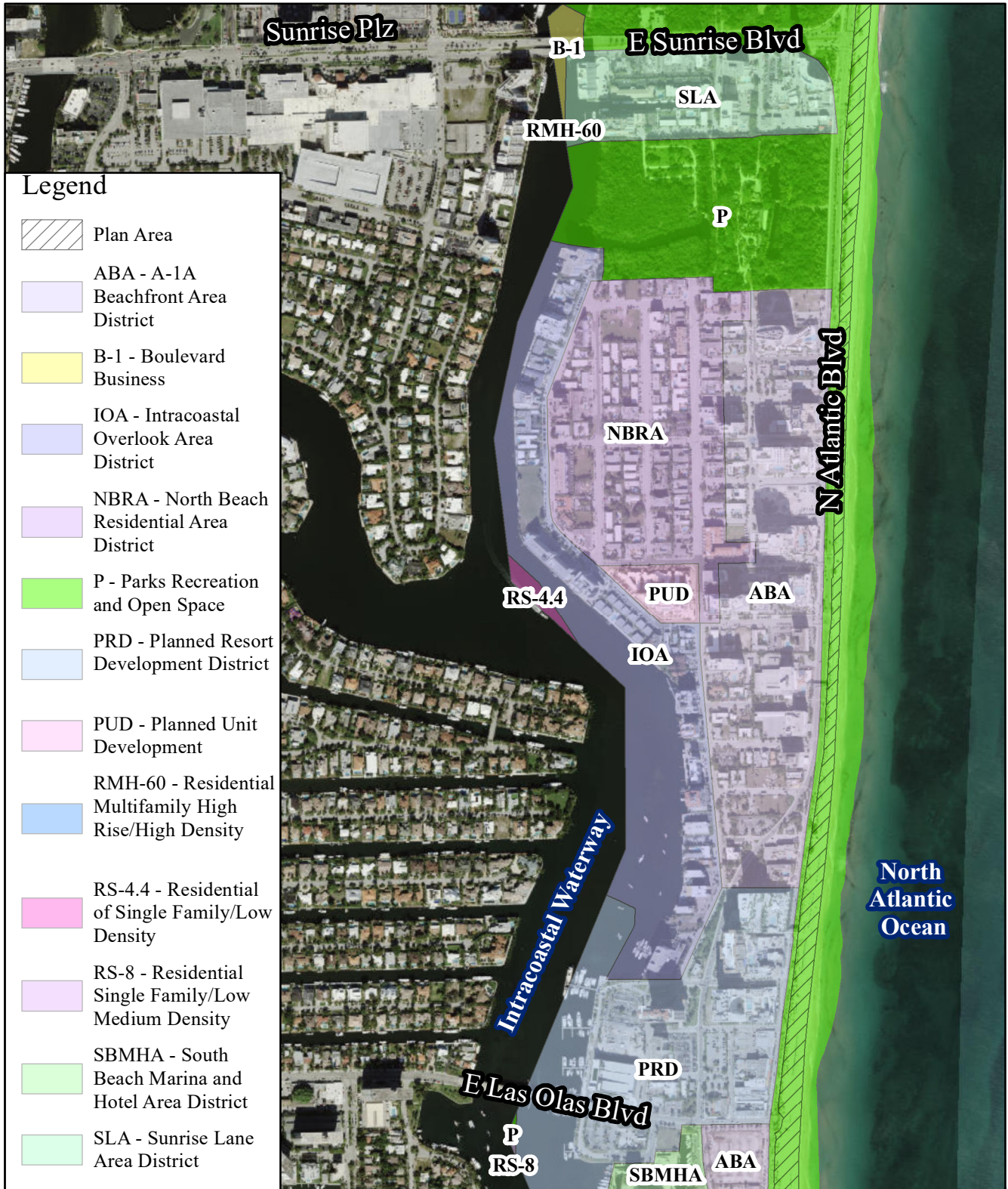
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








**Figure No: A-9**

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**Legend**

-  Plan Area
-  ABA - A-1A Beachfront Area District
-  B-1 - Boulevard Business
-  IOA - Intracoastal Overlook Area District
-  NBRA - North Beach Residential Area District
-  P - Parks Recreation and Open Space
-  PRD - Planned Resort Development District
-  PUD - Planned Unit Development
-  RMH-60 - Residential Multifamily High Rise/High Density
-  RS-4.4 - Residential of Single Family/Low Density
-  RS-8 - Residential Single Family/Low Medium Density
-  SBMHA - South Beach Marina and Hotel Area District
-  SLA - Sunrise Lane Area District



**Existing Land Use Map**

**Habitat Conservation Plan**  
 City of Fort Lauderdale, Broward County, Florida



**Project No: 18-1739**

**Scale:** 0 220 440 880 Feet

**Layer Source: CoFL**

**Date: 08/24/2020**

**Aerial Date: 2019**

**Drawn By: JF**













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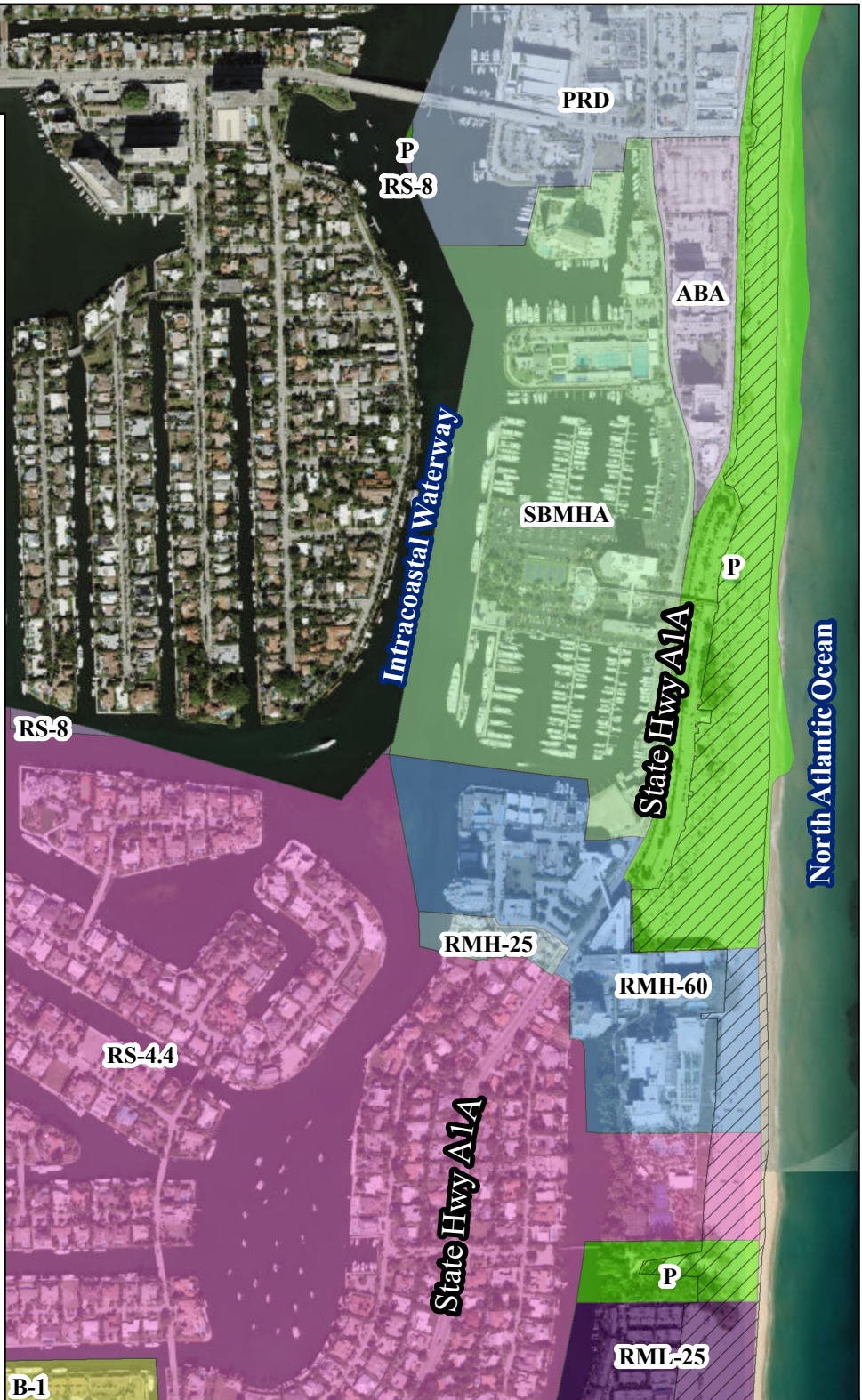
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E Las Olas Blvd

**Legend**

-  Plan Area
-  ABA - A-1A Beachfront Area District
-  B-1 - Boulevard Business
-  B-2 - General Business
-  P - Parks Recreation and Open Space
-  PRD - Planned Resort Development District
-  RMH-25 - Residential Multifamily High Rise/Medium High Density
-  RMH-60 - Residential Multifamily High Rise/High Density
-  RML-25 - Residential Multifamily Low Rise/Medium High Density
-  RS-4.4 - Residential of Single Family/Low Density
-  RS-8 - Residential Single Family/Low Medium Density
-  SBMHA - South Beach Marina and Hotel Area District



**Existing Land Use Map**

**Habitat Conservation Plan  
City of Fort Lauderdale, Broward County, Florida**



**Project No: 18-1739**

**Scale:** 0 200 400 800 Feet

**Layer Source: CoFL**

**Date: 08/24/2020**

**Aerial Date: 2019**














**Drawn By: JF**

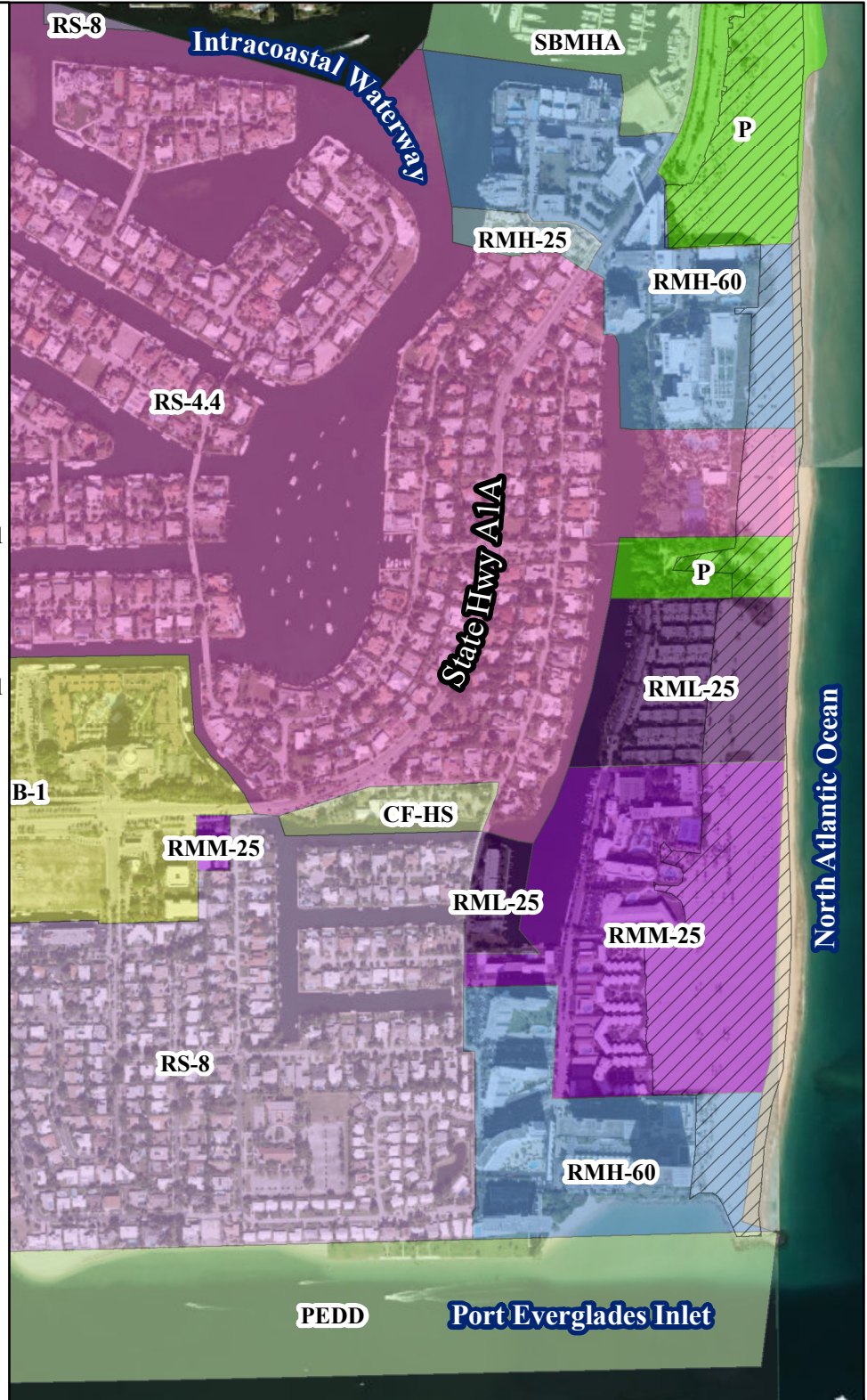
**Figure No: A-11**

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



**Legend**

-  Plan Area
-  B-1 - Boulevard Business
-  B-2 - General Business
-  CF-HS - Community Facility/House of Worship and School
-  P - Parks Recreation and Open Space
-  PEDD - Port Everglades Development District
-  RMH-25 - Residential Multifamily High Rise/Medium High Density
-  RMH-60 - Residential Multifamily High Rise/High Density
-  RML-25 - Residential Multifamily Low Rise/Medium High Density
-  RMM-25 - Residential Multifamily Mid Rise/ Medium High Density
-  RS-4.4 - Residential of Single Family/Low Density
-  RS-8 - Residential Single Family/Low Medium Density
-  SBMHA - South Beach Marina and Hotel Area District



**Existing Land Use Map**

**Habitat Conservation Plan  
City of Fort Lauderdale, Broward County, Florida**



**Project No: 18-1739**

**Scale:** 0 200 400 800 Feet

**Layer Source: CoFL**

**Date: 08/24/2020**

**Aerial Date: 2019**













**Drawn By: JF**

**Figure No: A-12**

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**Legend**

-  B-1 - Boulevard Business
-  B-2 - General Business
-  CF-HS - Community Facility/House of Worship and School
-  P - Parks Recreation and Open Space
-  PEDD - Port Everglades Development District
-  RMH-25 - Residential Multifamily High Rise/Medium High Density
-  RMH-60 - Residential Multifamily High Rise/High Density
-  RML-25 - Residential Multifamily Low Rise/Medium High Density
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-  RS-4.4 - Residential of Single Family/Low Density
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-  SBMHA - South Beach Marina and Hotel Area District



**Existing Land Use Map**

**Habitat Conservation Plan  
City of Fort Lauderdale, Broward County, Florida**



**Project No: 18-1739**

**Scale:** 0 210 420 840 Feet

**Layer Source: CoFL**

**Date: 08/24/2020**

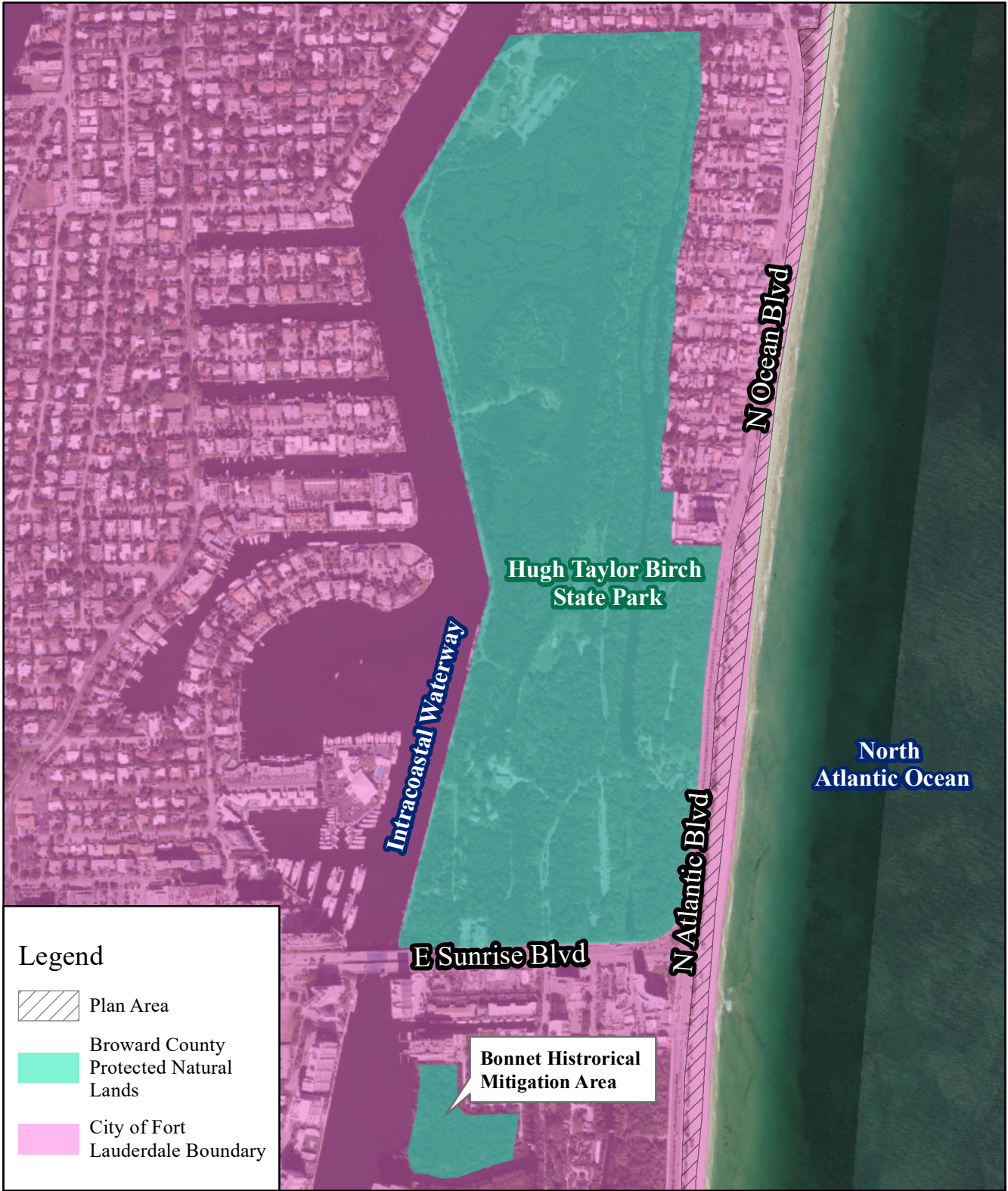
**Aerial Date: 2019**

**Drawn By: JF**




**Figure No: A-13**

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





**Legend**

-  Plan Area
-  Broward County Protected Natural Lands
-  City of Fort Lauderdale Boundary



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 www.ecological-associates.com

<b>Protected Lands Map</b>			
<b>Habitat Conservation Plan</b>			
<b>City of Fort Lauderdale, Broward County, Florida</b>			
		N ▲	
<b>Project No: 18-1739</b>	<b>Scale:</b> 0 200 400 800 Feet	<b>Layer Source: ESRI</b>	
<b>Date: 08/24/2020</b>	<b>Aerial Date: 2019</b>	<b>Drawn By: JF</b>	<b>Figure No: A-14</b>
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community			