APPENDICES FROM:

FINAL ENVIRONMENTAL ASSESSMENT FOR THE DEVELOPMENT OF LANDSIDE PROJECTS

FORT LAUDERDALE–HOLLYWOOD INTERNATIONAL AIRPORT (FLL)

November 2024



Visualization for illustrative purposes only

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Appendices

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Appendix A

A-1 Public Parking Requirements Analysis

Technical Memorandum # 2

Intermodal Center Advanced Planning – Parking Requirements Analysis

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Broward County Aviation Department

PREPARED BY:

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February 2022
DRAFT

Ricondo & Associates, Inc. (Ricondo) prepared this document for the stated purposes as expressly set forth herein and for the sole use of Broward County Aviation Department and its intended recipients. The techniques and methodologies used in preparing this document are consistent with industry practices at the time of preparation.

Technical Memorandum #2

Date: February 8, 2022

To: Michael P. Pacitto, PG, Director of Planning and Environmental

Broward County Aviation Department

From: Jason Garman

Subject: Intermodal Center Advanced Planning – Parking Requirements Analysis

This Technical Memorandum documents the parking demand analysis methodology and relocation of parking to help inform decision-making for the Intermodal Center (IMC) at Fort Lauderdale–Hollywood International Airport. It is intended that the work performed (and documented) through this advanced planning phase will provide a roadmap and blueprint to inform decisions necessary for any parking demand and capacity issues.

This memorandum is one in a series of several documents that will be developed as part of this advanced planning study to summarize planning and demand analyses, an updated concept of operations, implementation strategies, and stakeholder engagement efforts related to the IMC. This memorandum summarizes the following three key components of the advanced planning process to date relative to parking demand:

- Assumptions and Methodology
- Baseline Growth Scenario
- Future Scenarios with Changes in Mode Share

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1. Background

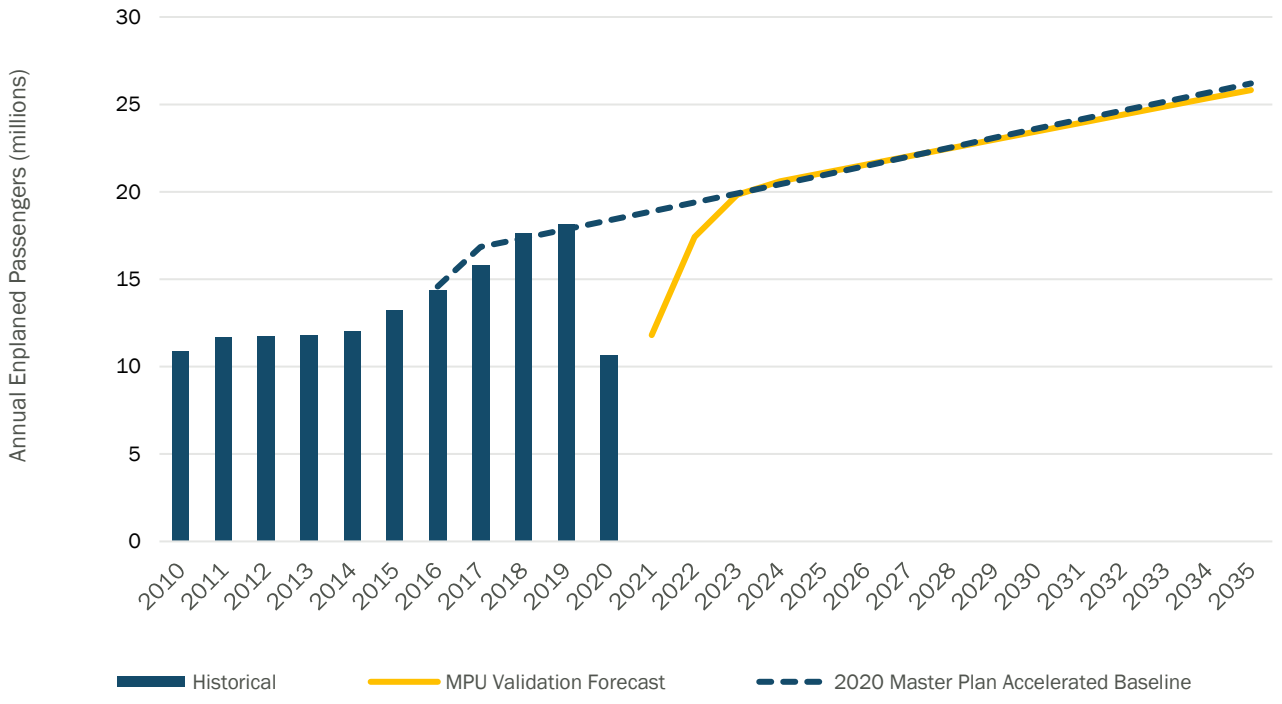
As landside facilities that were analyzed and recommended in the 2020 Master Plan Update (MPU) for Fort Lauderdale–Hollywood International Airport (FLL or the Airport) reach advanced planning, design, and implementation, it is important to understand how the parking demand for both the traveling public and employees of the Airport may have changed with the closure of economy parking, the relocation of employee parking, the effects of increased transportation network company (TNC) use, and the effects of the COVID-19 pandemic.

2. Historical Data Analysis

2.1 Passenger Forecast Comparison

The MPU Accelerated Baseline Forecast was used to determine the parking requirements for the Airport based on 2015/2016 parking data. In 2020, the COVID-19 pandemic significantly impacted aviation and transportation activity across the globe. In recognition of the potential impact the pandemic could have had on the master plan's recommended implementation plan, BCAD conducted a revalidation of the aviation activity forecast elements of the master plan in early 2021. The resulting MPU Validation Forecast was developed from March through May 2021. Beyond 2025, both forecasts track similarly. Both forecasts assume approximately 81 percent origin and destination (O&D) passengers beyond 2025. Thus, in the long term, the MPU Validation Forecast is similar to the MPU Accelerated Baseline Forecast. **Exhibit 1** depicts these forecasts.

Exhibit 1 Comparison of the Master Plan Update Accelerated Baseline Forecast to the Master Plan Update Validation Forecast



NOTES:

MPU – Master Plan Update

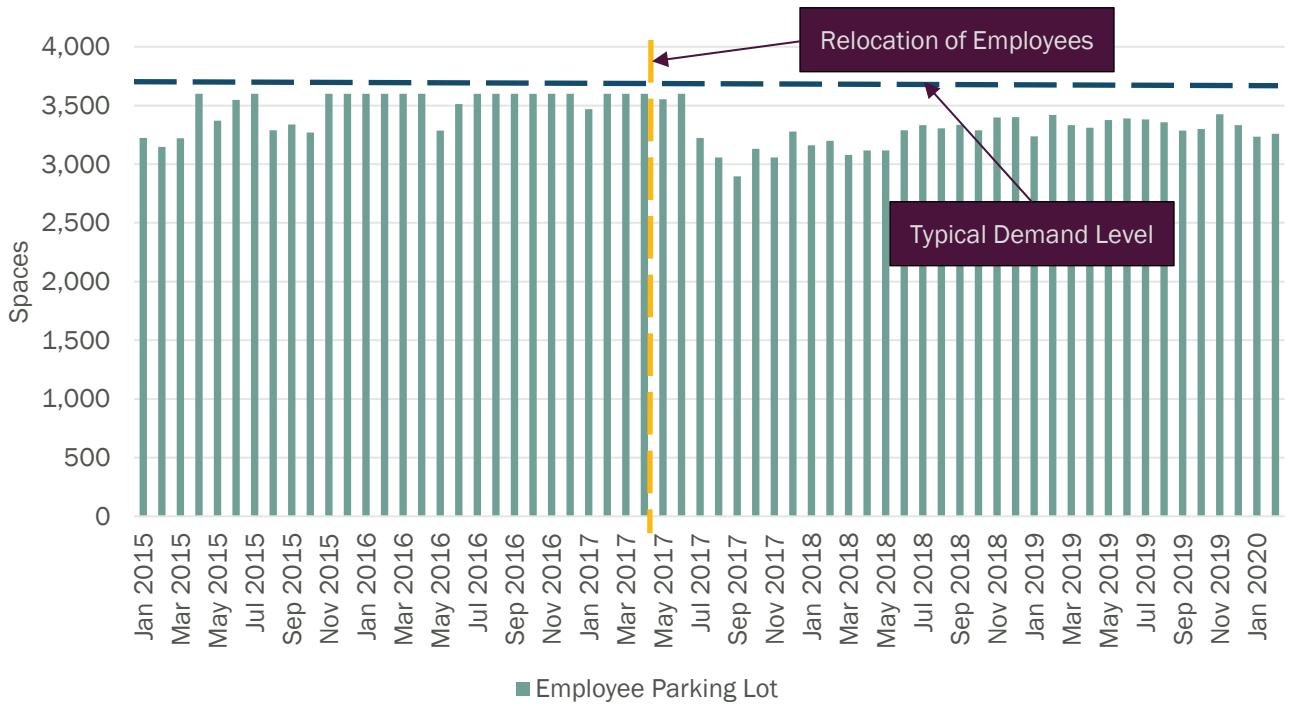
TAF – Terminal Area Forecast

SOURCES: Broward County Aviation Department, May 2021 (data); US Department of Transportation, Federal Aviation Administration, *2020 Terminal Area Forecast*; Ricondo & Associates, Inc., May 2021 (analysis).

2.2 Employee Monthly Overnight Occupancy

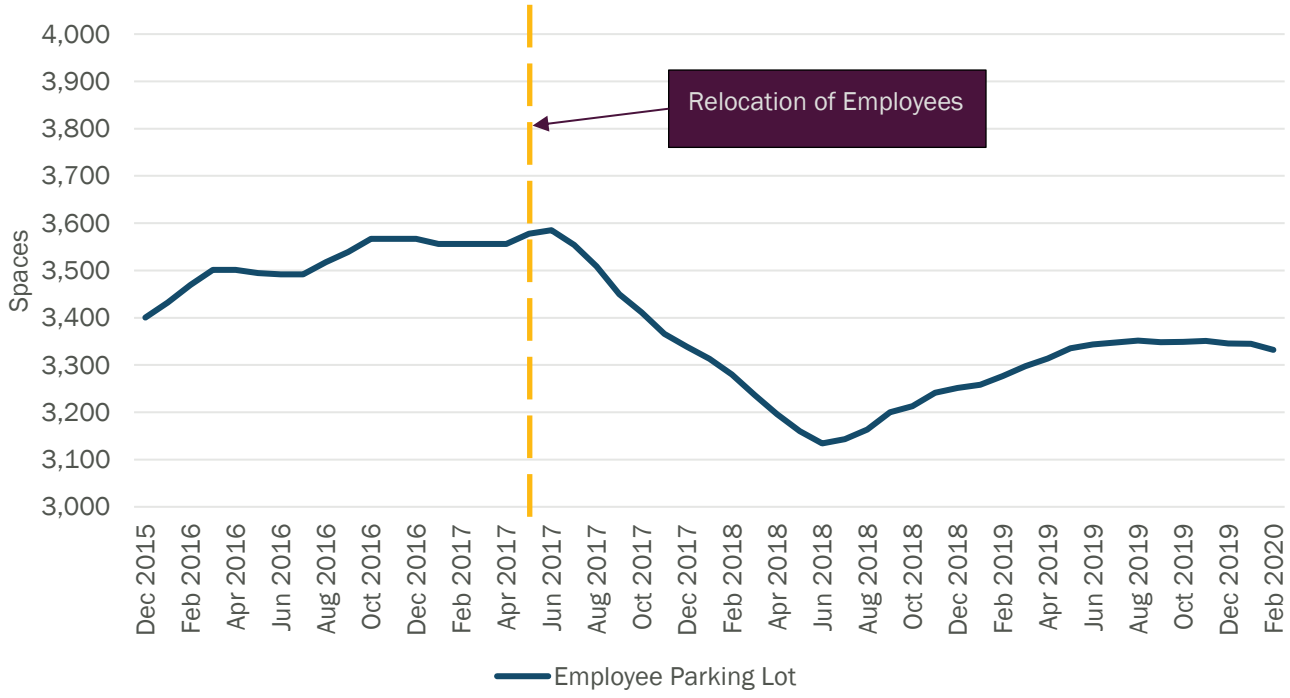
To supplement the historical peak parking data, overnight occupancy data were obtained and examined to identify the employee parking trends and how they were affected by the relocation of employee parking from the top three levels of the Cypress Garage to the location of the former Economy Lot. This change occurred in Spring 2017 to open more public parking capacity in the Cypress Garage. The Economy Lot was closed to the public as a result of this change. After the relocation, employee demand levels decreased at the Employee Lot, as shown on **Exhibit 2**. **Exhibit 3** presents this trend as a rolling 12-month period, which removes any impacts of seasonal variation.

Exhibit 2 2015 to 2020 Employee Parking Trends – Monthly Overnight Occupancy



SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

Exhibit 3 2015 to 2020 Employee Parking Trends – Rolling 12-Month Overnight Occupancy

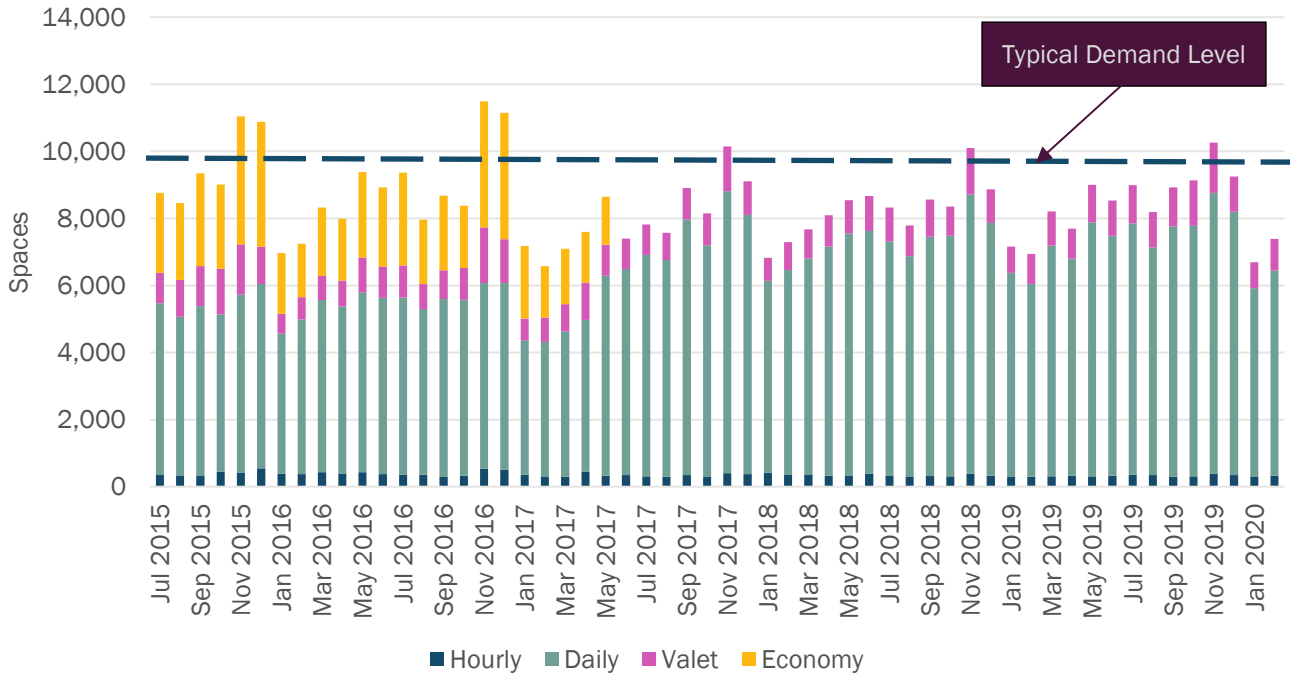


SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

2.3 Public Parking Monthly Overnight Occupancy

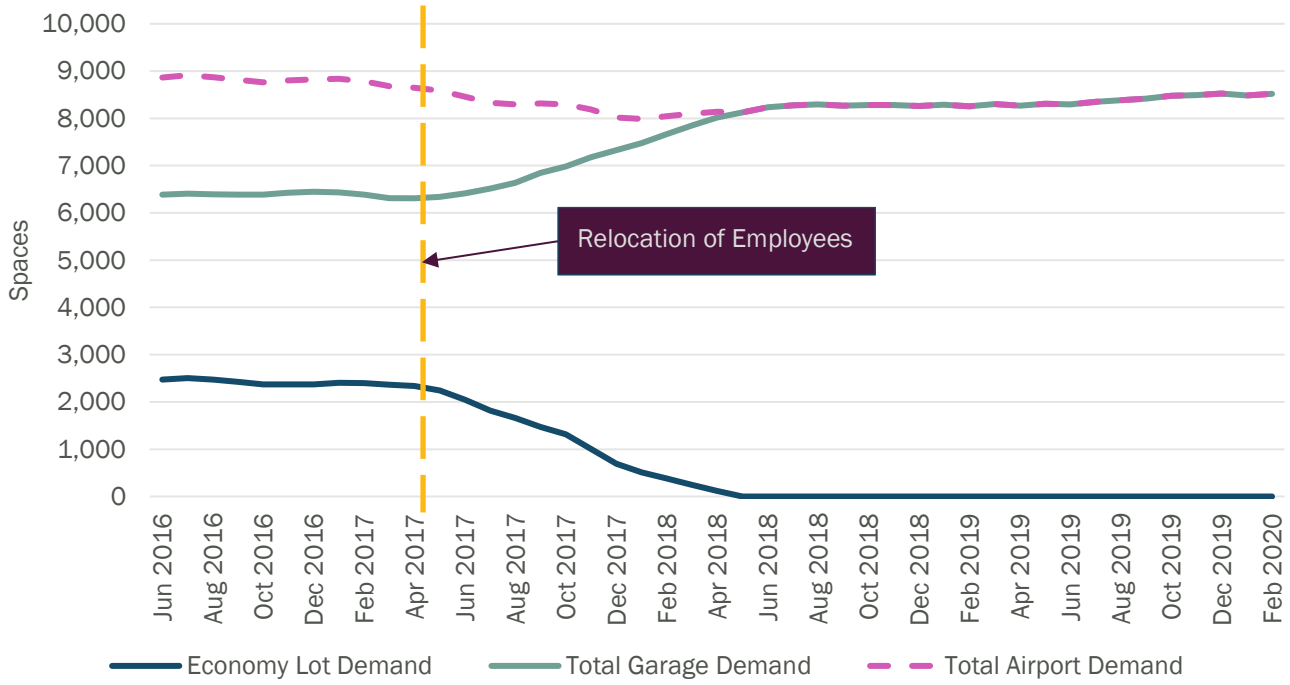
To supplement the historical peak parking data, overnight occupancy data were obtained and examined to identify the public parking trends and how they were affected by the relocation of the employee parking spaces from the Cypress Garage to the location of the former Economy Lot, as well as the subsequent closure of the Economy Lot spaces to public parkers. After the relocation, total public parking demand levels decreased, although garage occupancy increased, as shown on **Exhibit 4**. **Exhibit 5** presents this trend as a rolling 12-month period, which reflects seasonal changes. Since the closure of the Economy Lot, garage public parking demand has increased, but initially not by enough to offset the loss of the Economy Lot, leading to an initial decline in overall parking demand. That decline stabilized in 2018 and reversed in 2019 with slight overall parking demand growth.

Exhibit 4 2015 to 2020 Public Parking Trends – Monthly Overnight Occupancy



SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

Exhibit 5 2015 to 2020 Public Parking Trends – Rolling 12-Month Overnight Occupancy



SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

3. Effects of the COVID-19 Pandemic

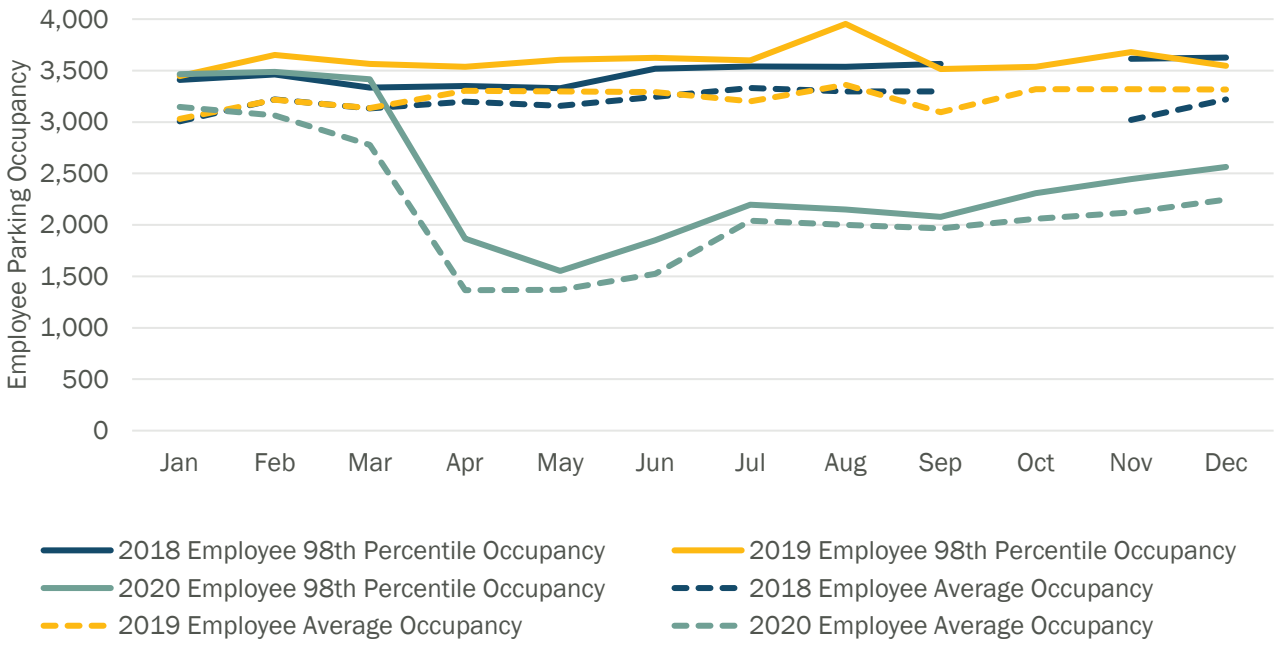
The COVID-19 pandemic greatly reduced air travel demand, and thus parking demand. At FLL, employee parking was affected; however, it was not affected as significantly as public parking, because a minimum number of employees must be present to maintain the critical operations at the Airport. Gradually, both employee and public parkers are returning to pre-pandemic values, although public parkers are returning at a quicker rate. To better understand the effects of the COVID-19 pandemic, Airport data from 2018 through 2020 were examined to observe the impacts and trends.

3.1 Effects on Employee Parking

Exhibit 6 illustrates the impact the pandemic has had on the employee parking demand (monthly average and 98th percentile) at the Airport. The 98th percentile day is used as the planning standard to represent a typical busy day of the year for employee parking, which does not vary as much as public parking throughout the year. Typical employee parkers are also more familiar with the facility and require less of a level of service buffer than public parker. As shown on **Exhibit 7**, employee parking demand was reduced to almost 40 percent of its pre-pandemic level in May 2020. However, in December 2020, employee parking demand was 70 percent of the pre-pandemic level. **Exhibit 8** shows the ratio of employee parkers to aircraft operations is returning to pre-pandemic levels after lagging the change in enplaned passengers at the start of the pandemic in Spring 2020. This indicates that staffing changes to adjust

to the pandemic lagged the decline in passenger activity and operations. There are also certain employee functions that are not dependent on passenger activity and operations that keep a higher minimum number of employees at the Airport than would be explained just by passenger aircraft operations.

Exhibit 6 Monthly Employee Parking Occupancy



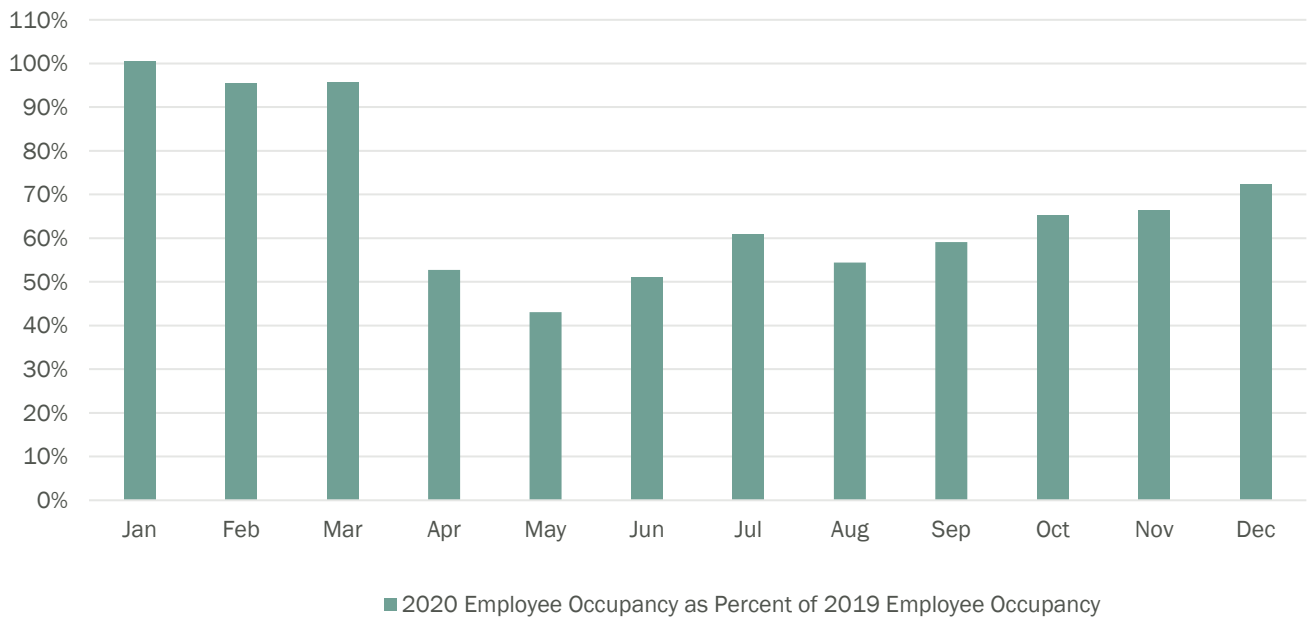
NOTES:

1/ The 98th percentile occupancy used for employees is higher than the 95th percentile occupancy used for public parking due to employees' familiarity and comfort with the facility and lesser need to provide a level of service buffer.

2/ October 2018 data were not available.

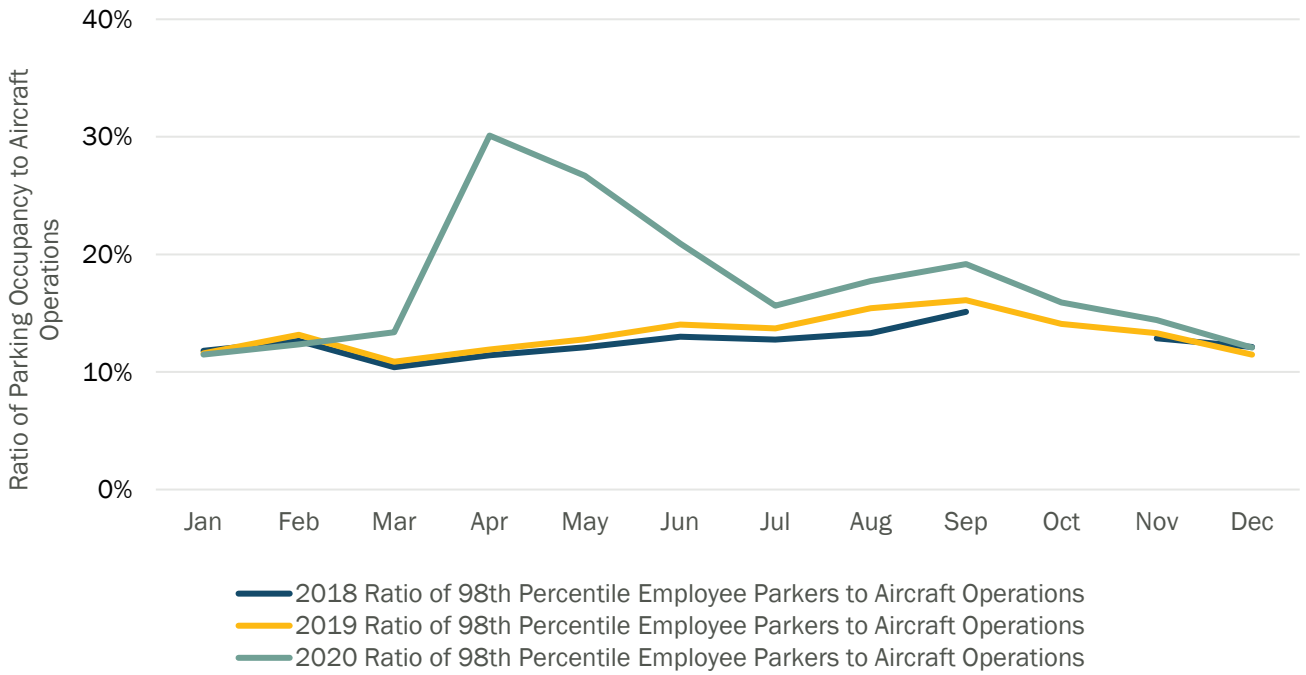
SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

Exhibit 7 2020 Employee Parking Occupancy as a Percentage of 2019 Occupancy



SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

Exhibit 8 Ratio of 98th Percentile Employee Parking Demand to Aircraft Operations



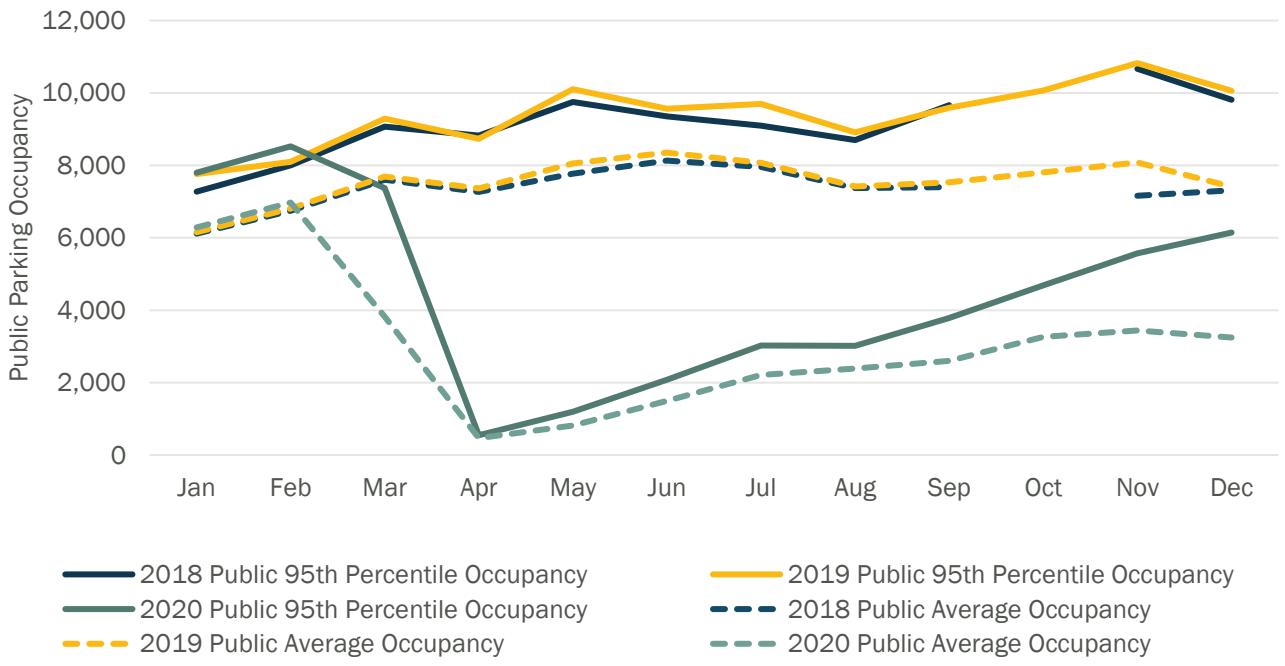
NOTE: 1/ October 2018 data were not available.

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

3.2 Effects on Public Parking

The COVID-19 pandemic has affected public parkers at the Airport. **Exhibit 9** illustrates the effect on public parking demand (monthly average and 95th percentile). The use of the 95th percentile day demand as the planning standard generally excludes the extreme peaks on major holidays and other isolated peak parking events. As shown on **Exhibit 10**, public parking demand was reduced to almost 5 percent of the pre-pandemic level in April 2020. However, in December 2020, public parking demand was back to 60 percent of the pre-pandemic level. **Exhibit 11** shows the ratio of public parkers to O&D passengers is returning to pre-pandemic levels after an initial increase in parking demand per O&D passenger at the start of the pandemic. This indicates that of the few passengers who were still traveling at that time, they were more likely to park than use another mode of transportation. Given the social distancing directives, passengers preferred their own vehicles over sharing a vehicle with someone else. The ratio began to approach the pre-pandemic level in Summer 2020 after some pandemic restrictions began to be lifted and the public started to become more comfortable with traveling again.

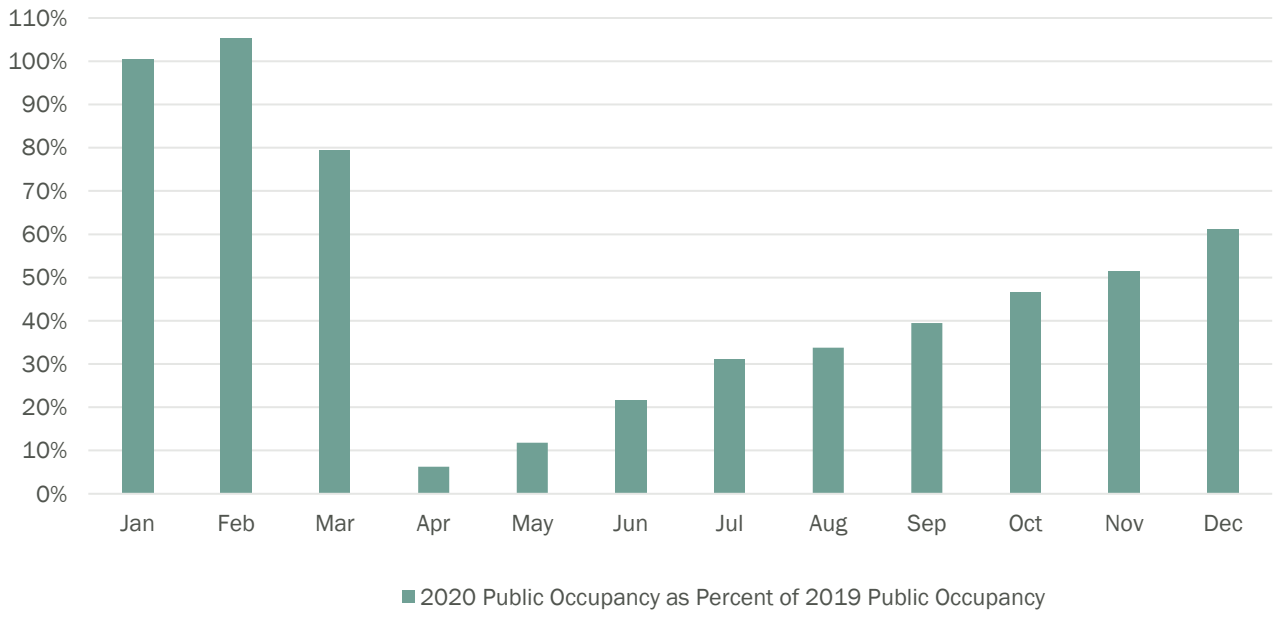
Exhibit 9 **Monthly Public Parking Occupancy**



NOTE: October 2018 data were not available.

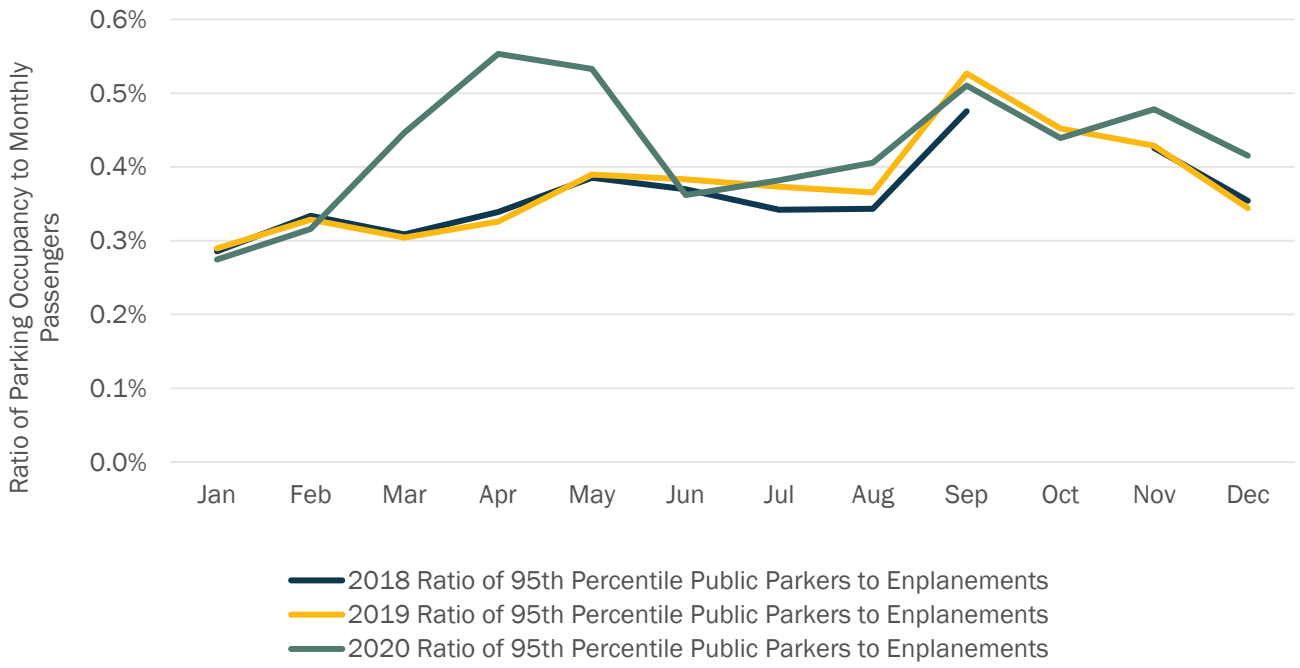
SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

Exhibit 10 2020 Public Parking Occupancy as a Percentage of 2019 Occupancy



SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

Exhibit 11 Ratio of 95th Percentile Public Parking Demand to Origin and Destination Passengers



NOTE: October 2018 data were not available.

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

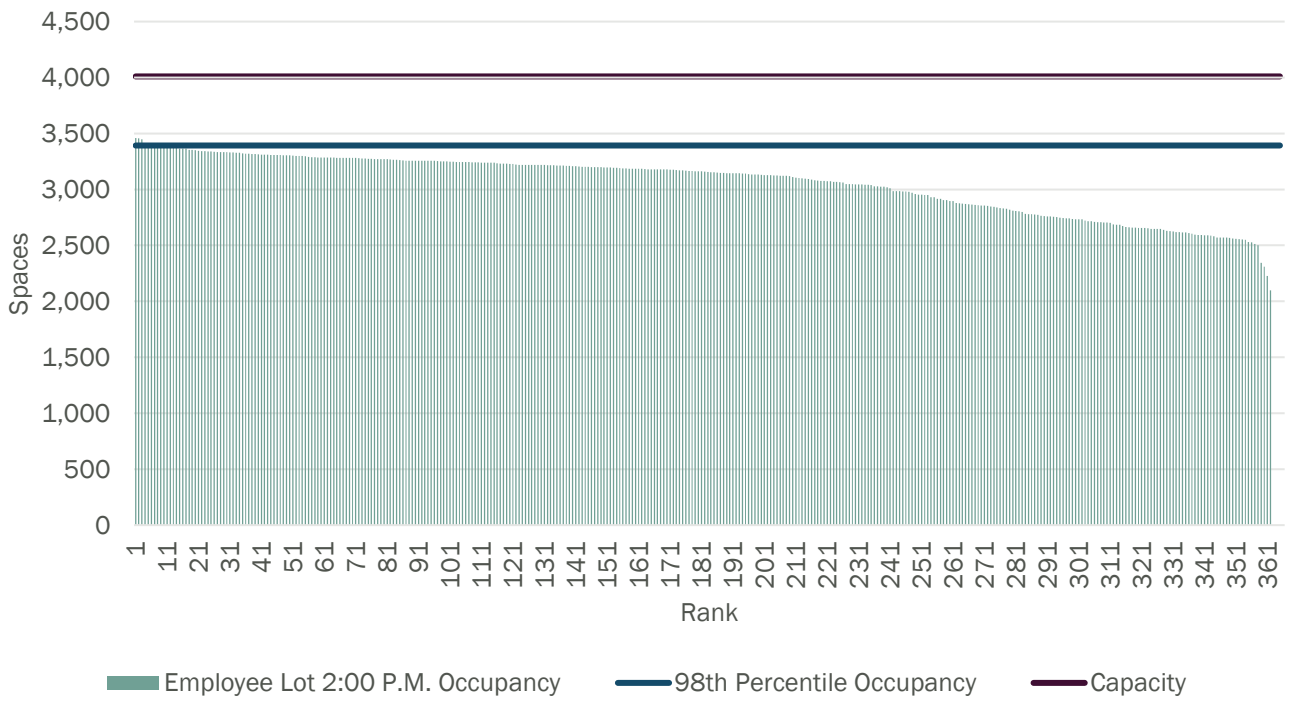
4. Parking Demand

4.1 Employee Parking Demand

Employee parking demand was examined to determine future requirements. Existing employee parking demand was determined using daily occupancy data from the Airport's parking access and revenue control system (PARCS) for 12 consecutive months (calendar year [CY] 2019). The daily peak occupancy counts were then ranked from highest to lowest daily occupancies to provide an annual descending order profile for each parking facility. The "design day" represents the level of demand for which parking facilities should be designed to accommodate anticipated demand on a busy day. The design day is based on the goal of accommodating the 98th percentile day demand, which represents a typical busy day of the year for employee parking. As employee demand does not vary much throughout the year, the 98th percentile day is not substantially different from most other busy days.

The base year (2019) employee parking demand was estimated by identifying the peak hour daily parking occupancy on the design day, or 98th percentile day of parking activity, as depicted on **Exhibit 12** for the Employee Parking Lot.

Exhibit 12 Employee Parking Lot – Descending Order Chart



SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

4.1.1 METHODOLOGY

Future employee parking requirements were determined using a spreadsheet-based parking demand model prepared to project demand for each on-Airport parking facility for future year conditions. As employment may vary based on changes in passenger enplanements or aircraft operations, future employee parking demand estimates assume demand will increase in proportion with the average of the airline passenger enplanement growth rate and the aircraft operations growth rate from the MPU Validation Forecast. Employee parking demand was determined using the blended growth rate of aircraft operations and enplaned passengers described above. Employee parkers would experience a deficit of parking spaces by 2027. By 2035 (51.6 MAP), a 520-space deficit is anticipated for employee parkers. **Table 1** lists the requirements that resulted from the employee parking demand analysis.

4.1.2 COMPARISON OF REQUIREMENTS

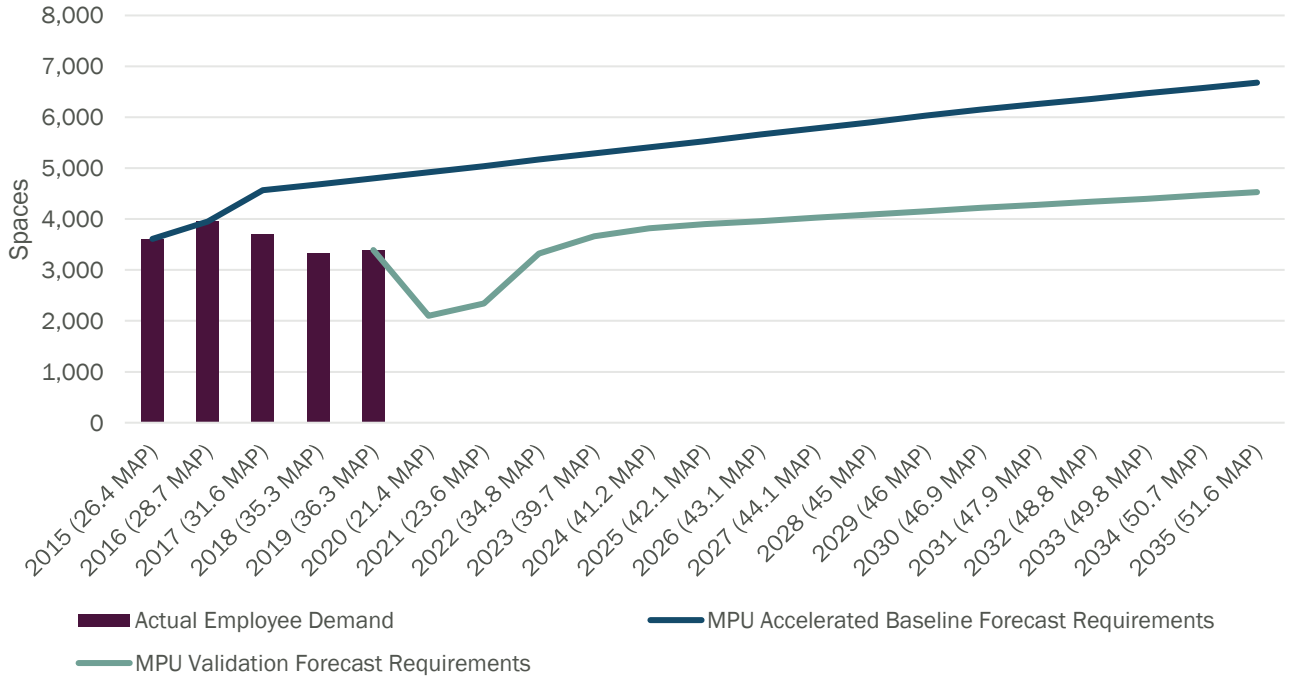
Exhibit 13 compares the MPU employee parking requirements (2015 base year) to the actual 2019 values, which the 2021 MPU Validation Forecast requirements were based on. As shown, there was a decrease from 2015 to 2019 in actual demand. The updated employee parking requirements based on the 2021 MPU Validation Forecast show a decrease in anticipated required parking. The actual employee parking demand not keeping pace with the MPU requirements beginning in 2017 is likely due to a shift in how employees accessed the Airport when employee parking was relocated from the Cypress Garage to the former Economy Lot. The increased travel time to get from the parking location to an employee's job location may have caused some to take a different mode of transportation to the Airport, such as a TNC or public transit. Some employees may also carpool to split the cost of continuing to park in the public garages at the public rates.

Table 1 Employee Parking Requirements (Spaces)

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	MAP	**36.3**	**21.4**	**23.6**	**34.8**	**39.7**	**41.2**	**42.1**	**43.1**	**44.1**	**45.0**	**46.0**	**46.9**	**47.9**	**48.8**	**49.8**	**50.7**	**51.6**
	Aircraft Operations (thousands)	**279**	**181**	**203**	**278**	**298**	**312**	**317**	**321**	**324**	**327**	**330**	**334**	**337**	**339**	**342**	**345**	**348**
Employee Lot	**Requirements**	3,390	2,100	2,340	3,320	3,670	3,830	3,900	3,970	4,040	4,100	4,160	4,230	4,290	4,350	4,410	4,470	4,530
	Capacity	4,010	4,010	4,010	4,010	4,010	4,010	4,010	4,010	4,010	4,010	4,010	4,010	4,010	4,010	4,010	4,010	4,010
	Surplus/(Deficit)	620	1,910	1,670	690	340	180	110	40	(30)	(90)	(150)	(220)	(280)	(340)	(400)	(460)	(520)

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis).

Exhibit 13 Comparison of Master Plan Update Employee Parking Requirements (2015 Base Year) to 2021 Master Plan Update Validation Forecast Requirements (2019 Base Year)



NOTES:

MAP – Million Annual Passengers

MPU – Master Plan Update

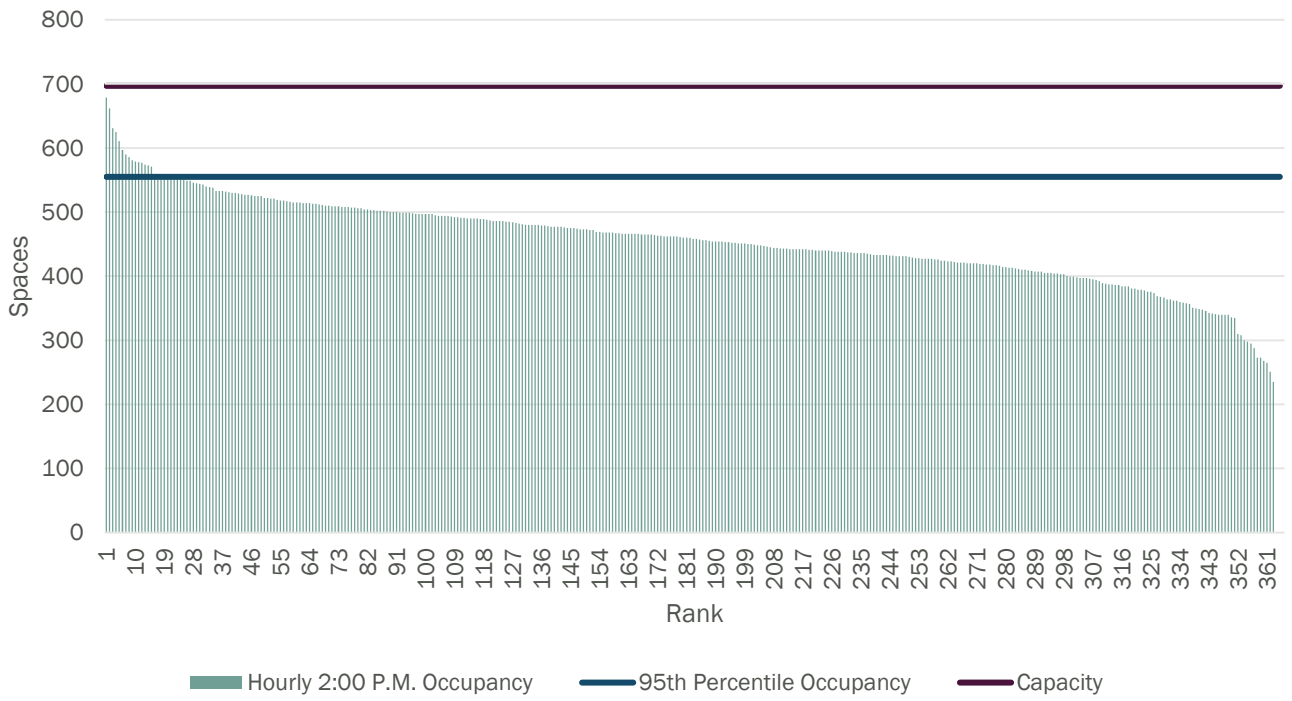
SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis).

4.2 Public Parking Demand

Existing public parking demand was determined using daily occupancy data from the Airport's PARCS for 12 consecutive months (CY 2019). The daily peak occupancy counts were then ranked from highest to lowest daily occupancies to provide an annual descending order profile for each parking facility. The design day represents the level of demand for which parking facilities should be designed to accommodate anticipated demand on a busy day. The design day is based on the goal of accommodating the 95th percentile day demand, which is represented by the 18th-busiest day of the year. The use of the 95th percentile day demand as the design day generally excludes the extreme peaks on major holidays and other isolated peak parking events. These isolated demand surges are typically accommodated by peak-day management and/or the use of additional surface and overflow parking areas. Adequate overflow facilities should be provided to accommodate the absolute peak-day demand occurring during major holidays, as needed.

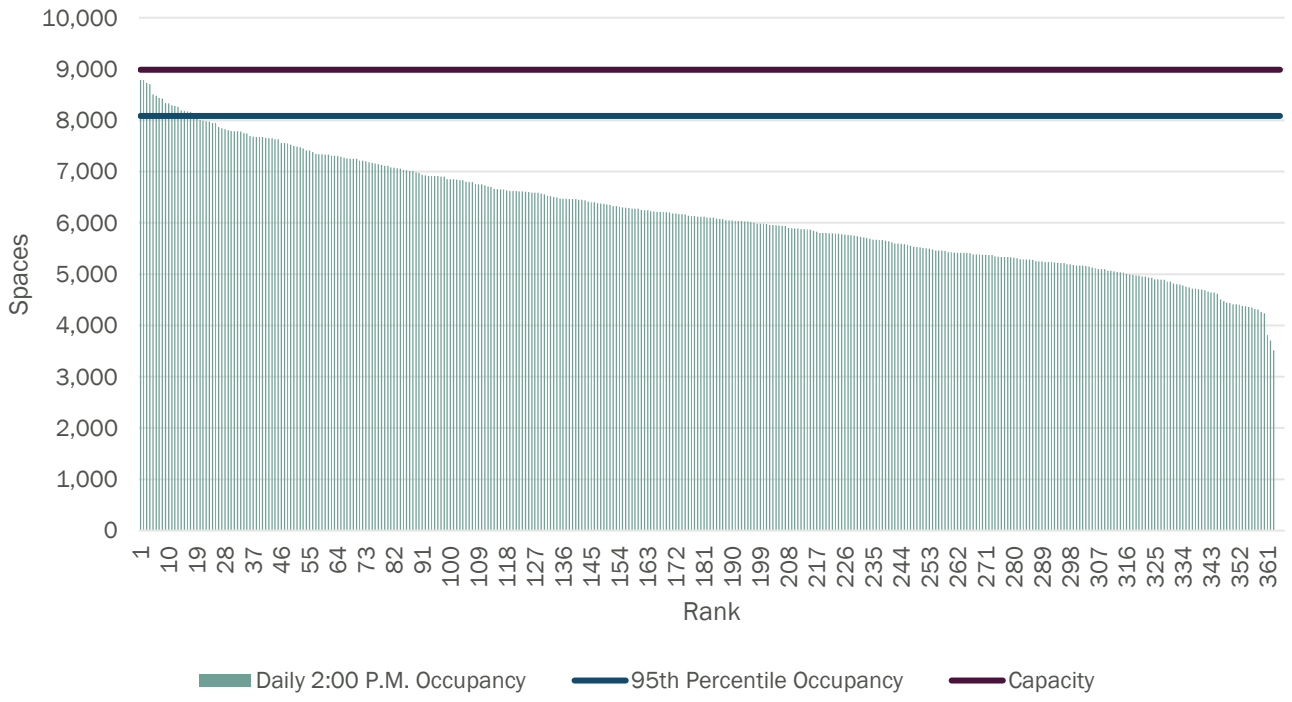
The base year (2019) public parking demand was estimated by identifying the peak hour daily parking occupancy on the parking design day, or 95th percentile day of parking activity, as depicted on **Exhibit 14** for Hourly Parking, **Exhibit 15** for Daily Parking, **Exhibit 16** for Valet Parking, and **Exhibit 17** for total public parking.

Exhibit 14 Hourly Parking – Descending Order Chart



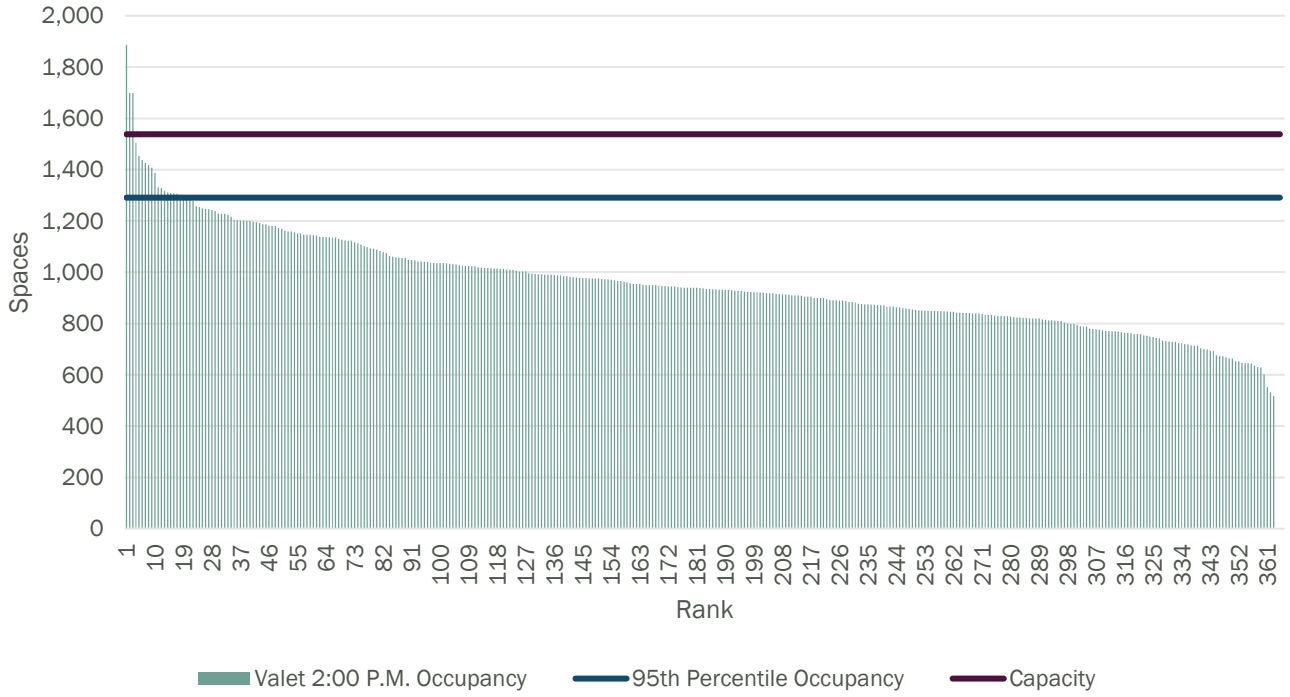
SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

Exhibit 15 Daily Parking – Descending Order Chart



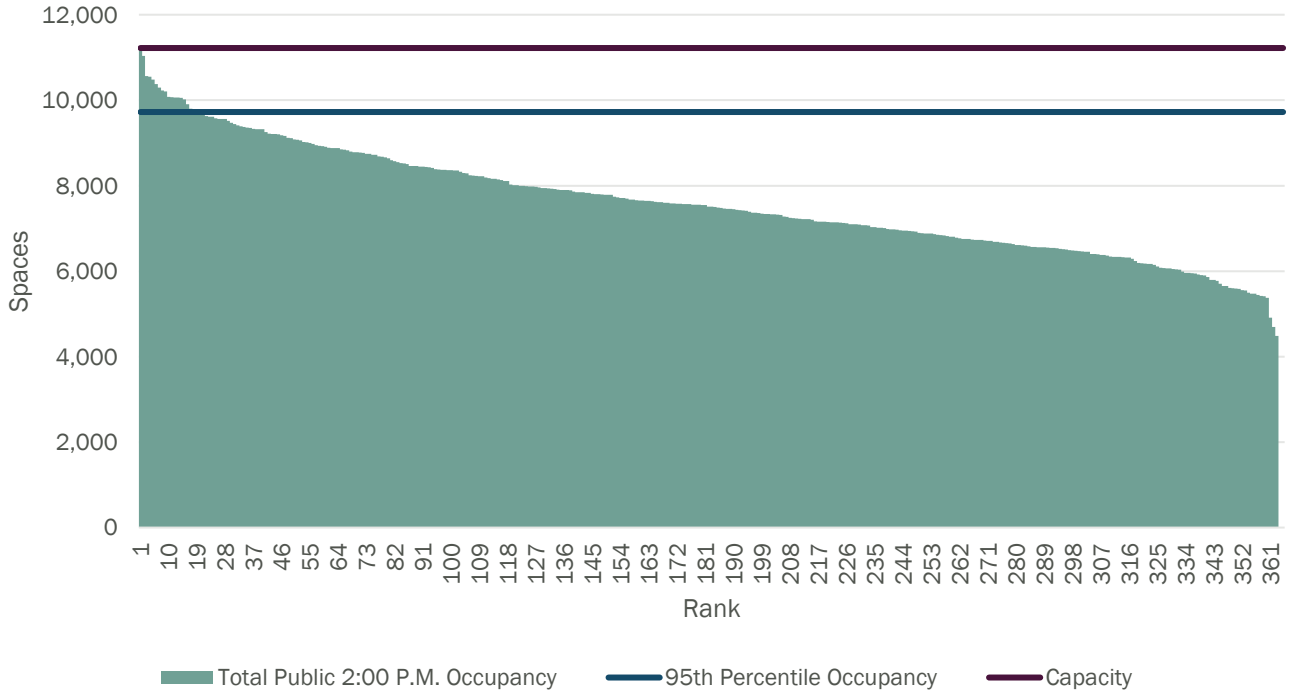
SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

Exhibit 16 Valet Parking – Descending Order Chart



SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

Exhibit 17 Total Public Parking – Descending Order Chart



SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., October 2021 (analysis).

4.2.1 METHODOLOGY

Future public parking requirements were determined using a spreadsheet-based parking demand model prepared to predict demand for each on-Airport parking facility for future year conditions. Future parking demand estimates assume that parking demand will increase in proportion to the growth in O&D passenger demand from the MPU Validation Forecast. The public parking requirements as shown in **Table 2** are called the Baseline Scenario, which assumes no change in the parking mode share relative to 2019. The public parking requirements include a 10% service factor to account for the difficulty of finding a space when parking facilities approach full utilization. All public parking products would have a deficit in both 2025 (17.1 million O&D passengers) and 2035 (20.9 million O&D passengers) with the exception of Hourly, which has a slight surplus in 2025 (17.1 million O&D passengers). In 2035 (20.9 million O&D passengers), Hourly parking would have a 140-space deficit, Daily parking would have a 3,320-space deficit, and Valet parking would have a 430-space deficit. The Airport would have an overall 3,570-space deficit.

4.2.2 COMPARISON OF REQUIREMENTS

Exhibit 18 compares the MPU public parking requirements (2015/16 base year) to the actual 2019 values, which the 2021 MPU Validation Forecast requirements were based on. As shown, there was a decrease from 2016 to 2019 in actual demand. The updated public parking requirements based on the 2021 MPU Validation Forecast show a decrease in anticipated required parking. The actual public parking demand not keeping pace with the MPU requirements beginning in 2017 is likely due to the closure of the low-price Economy Lot from the public parking supply. While some parkers who would have parked in the Economy Lot may have moved to Daily Parking in the Garages, some may have also shifted to another mode to access the Airport, such as family/friend drop-off, TNCs or public transit. Off-airport parking competitors that competed most closely with the Economy Lot may have also attracted some parkers. With the parking product offerings assumed to remain constant from 2019, the parking demand is assumed to resume growth in proportion to O&D passenger growth.

These results were also compared to the MPU Scenarios 1 and 2 and the Palm Garage Advanced Planning currently being conducted by Kimley-Horn and Associates, Inc. The future parking demand requirements of the Palm Garage Advanced Planning and 2021 updated requirements with the MPU Validation forecast resulted in parking space requirements for 2035 (20.9 million O&D passengers) that were within 380 spaces of each other (a difference of approximately 2.6 percent). Both the Palm Garage Advanced Planning and the 2021 MPU Validation Requirements track between MPU Scenarios 1 and 2. **Table 3** compares the public parking requirements.

Table 2 Public Parking Requirements (Spaces), Baseline Scenario

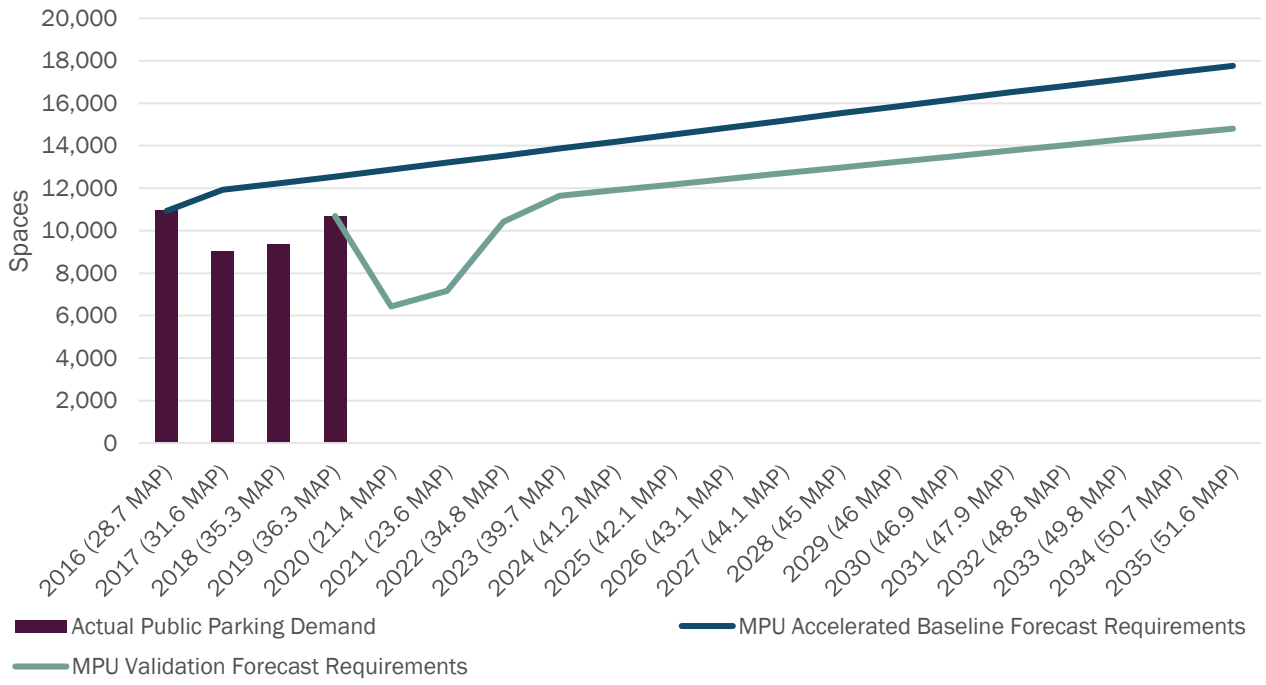
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	O&D Passengers (millions)	**15.1**	**9.1**	**10.1**	**14.7**	**16.4**	**16.8**	**17.1**	**17.5**	**17.9**	**18.3**	**18.6**	**19.0**	**19.4**	**19.8**	**20.1**	**20.5**	**20.9**
Hourly Parking	**Requirements**	610	370	410	590	660	680	690	710	730	740	760	770	790	800	820	830	840
	Capacity	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
	Surplus/(Deficit)	90	330	290	110	40	20	10	(10)	(30)	(40)	(60)	(70)	(90)	(100)	(120)	(130)	(140)
Daily Parking	**Requirements**	8,890	5,350	5,960	8,660	9,670	9,900	10,120	10,340	10,560	10,780	11,000	11,220	11,440	11,660	11,880	12,100	12,310
	Capacity	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990
	Surplus/(Deficit)	100	3,640	3,030	330	(680)	(910)	(1,130)	(1,350)	(1,570)	(1,790)	(2,010)	(2,230)	(2,450)	(2,670)	(2,890)	(3,110)	(3,320)
Valet Parking	**Requirements**	1,420	850	950	1,380	1,540	1,580	1,620	1,650	1,690	1,720	1,760	1,790	1,830	1,860	1,900	1,930	1,970
	Capacity	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540
	Surplus/(Deficit)	120	690	590	160	0	(40)	(80)	(110)	(150)	(180)	(220)	(250)	(290)	(320)	(360)	(390)	(430)
Total Parking	**Requirements**	10,700	6,430	7,170	10,410	11,630	11,900	12,170	12,440	12,700	12,970	13,230	13,500	13,760	14,020	14,290	14,550	14,800
	Capacity	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230
	Surplus/(Deficit)	530	4,800	4,060	820	(400)	(670)	(940)	(1,210)	(1,470)	(1,740)	(2,000)	(2,270)	(2,530)	(2,790)	(3,060)	(3,320)	(3,570)

NOTE:

Total parking may not equal the sums of the products as the 95th percentile day for each product occurs on different days. All values are rounded to the nearest ten.

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis).

Exhibit 18 Comparison of Master Plan Update Public Parking Requirements (2015/16 Base Year) to 2021 Master Plan Update Validation Forecast Requirements (2019 Base Year)



NOTES:

MAP – Million Annual Passengers

MPU – Master Plan Update

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis).

Table 3 Comparison of Public Parking Requirements (Spaces)

	BASE YEAR	FORECAST	2025	2035
MPU Baseline Requirement[1]	2015/16	MPU Accel. Baseline	14,510	17,760
MPU Scenario 1 Requirement[1]	2015/16	MPU Accel. Baseline	13,250	16,230
MPU Scenario 2 Requirement[1]	2015/16	MPU Accel. Baseline	11,890	12,800
Palm Garage Advanced Planning Requirement[2]	2019	MPU Accel. Baseline	11,790	14,420
2021 MPU Validation Requirement[3]	2019	MPU Validation	12,170	14,800

NOTES:

MPU – Master Plan Update

1 Data were obtained from the 2020 Master Plan Update for Fort Lauderdale–Hollywood International Airport (Table 4.7-1 through Table 4.7-3).

2 The public parking requirements forecast was developed by Kimley-Horn and Associates, Inc., for the Palm Garage Advanced Planning.

3 This represents the baseline public parking demand forecast of the 2021 updated requirements.

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Kimley-Horn & Associates, Inc., July 2021 (Palm Garage Advanced Planning) Ricondo & Associates, Inc., October 2021 (analysis).

5. Alternative Demand Scenarios and Future Parking Facility Development

5.1 Alternative Parking Demand Scenarios

Two alternative parking demand scenarios, Scenario 1, and Scenario 2 were developed as sensitivity analyses to reflect variations in demand from the Baseline Scenario requirements resulting from the impacts of COVID-19, parking mode share changes in the overall airport ground transportation (GT) access market, and other macroeconomic trends. The public parking share of GT transactions at the Airport declined slightly from 30.3 percent in CY 2016 to 29.6 percent in CY 2019.[1]

Scenario 1 assumes that after the GT market stabilizes and reaches equilibrium through the pandemic recovery, the public parking share of GT transactions continues the pre-pandemic slight decline on an annual basis, reaching 26.5 percent in 2035 (20.9 million O&D passengers). Other modes, such as TNCs, gain market share as the parking share declines. **Table 4** shows the Scenario 1 public parking requirements. All public parking products would have a deficit in both 2025 (17.1 million O&D passengers) and 2035 (20.9 million O&D passengers), albeit lower than the Baseline Scenario, with the exception of Hourly, which has a slight surplus in 2025 (17.1 million O&D passengers). In 2035 (20.9 million O&D passengers), Hourly parking would have a 70-space deficit, Daily parking would have a 2,170-space deficit, and Valet parking would have a 240-space deficit. The Airport would have an overall 2,190-space deficit.

Scenario 2 assumes that the public parking share of the GT market declines slightly faster than Scenario 1 due to continued pressure from other modes as well as the introduction of rail transit to the Airport. In addition, trends towards a "sharing economy" by younger generations of travelers and lower propensity to own a personal vehicle are also assumed, leading to a public parking GT transaction share of 23.3 percent in 2035 (20.9 million O&D passengers). **Table 5** shows the Scenario 2 public parking requirements. All public parking products except for Daily would be below capacity in 2025 (17.1 million O&D passengers). In 2035 (20.9 million O&D passengers), all except Hourly have a deficit, albeit lower than Scenario 1. In 2035 (20.9 million O&D passengers), Hourly parking would have a 30-space surplus, Daily parking would have an 840-space deficit, and Valet parking would have a 30-space deficit. The Airport would have an overall 590-space deficit.

[1] Palm Garage Advanced Planning, Kimley-Horn & Associates, Inc., June 2021.

Table 4 Public Parking Requirements (Spaces), Scenario 1

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	O&D Passengers (millions)	**15.1**	**9.1**	**10.1**	**14.7**	**16.4**	**16.8**	**17.1**	**17.5**	**17.9**	**18.3**	**18.6**	**19.0**	**19.4**	**19.8**	**20.1**	**20.5**	**20.9**
Hourly Parking	**Requirements**	610	370	410	590	650	660	670	680	690	700	710	720	730	740	750	760	770
	Capacity	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
	Surplus/(Deficit)	90	330	290	110	50	40	30	20	10	0	(10)	(20)	(30)	(40)	(50)	(60)	(70)
Daily Parking	**Requirements**	8,890	5,370	5,930	8,530	9,450	9,590	9,730	9,870	10,010	10,160	10,310	10,450	10,590	10,740	10,880	11,020	11,160
	Capacity	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990
	Surplus/(Deficit)	100	3,620	3,060	460	(460)	(600)	(740)	(880)	(1,020)	(1,170)	(1,320)	(1,460)	(1,600)	(1,750)	(1,890)	(2,030)	(2,170)
Valet Parking	**Requirements**	1,420	860	950	1,360	1,510	1,530	1,550	1,580	1,600	1,620	1,650	1,670	1,690	1,710	1,740	1,760	1,780
	Capacity	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540
	Surplus/(Deficit)	120	680	590	180	30	10	(10)	(40)	(60)	(80)	(110)	(130)	(150)	(170)	(200)	(220)	(240)
Total Parking	**Requirements**	10,700	6,450	7,130	10,260	11,370	11,530	11,700	11,870	12,040	12,220	12,400	12,560	12,740	12,910	13,080	13,260	13,420
	Capacity	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230
	Surplus/(Deficit)	530	4,780	4,100	970	(140)	(300)	(470)	(640)	(810)	(990)	(1,170)	(1,330)	(1,510)	(1,680)	(1,850)	(2,030)	(2,190)

NOTE:

Total parking may not equal the sums of the products as the 95th percentile day for each product occurs on different days. All values are rounded to the nearest ten

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis).

Table 5 Public Parking Requirements (Spaces), Scenario 2

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	O&D Passengers (millions)	**15.1**	**9.1**	**10.1**	**14.7**	**16.4**	**16.8**	**17.1**	**17.5**	**17.9**	**18.3**	**18.6**	**19.0**	**19.4**	**19.8**	**20.1**	**20.5**	**20.9**
Hourly Parking	**Requirements**	610	360	400	570	620	630	630	630	640	640	650	650	660	660	670	670	670
	Capacity	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
	Surplus/(Deficit)	90	340	300	130	80	70	70	70	60	60	50	50	40	40	30	30	30
Daily Parking	**Requirements**	8,890	5,310	5,800	8,270	9,080	9,130	9,180	9,240	9,310	9,370	9,440	9,500	9,570	9,630	9,700	9,760	9,830
	Capacity	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990	8,990
	Surplus/(Deficit)	100	3,680	3,190	720	(90)	(140)	(190)	(250)	(320)	(380)	(450)	(510)	(580)	(640)	(710)	(770)	(840)
Valet Parking	**Requirements**	1,420	850	930	1,320	1,450	1,460	1,470	1,480	1,490	1,500	1,510	1,520	1,530	1,540	1,550	1,560	1,570
	Capacity	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540
	Surplus/(Deficit)	120	690	610	220	90	80	70	60	50	40	30	20	10	0	(10)	(20)	(30)
Total Parking	**Requirements**	10,700	6,380	6,980	9,950	10,920	10,980	11,040	11,110	11,190	11,270	11,350	11,430	11,500	11,580	11,660	11,740	11,820
	Capacity	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230
	Surplus/(Deficit)	530	4,850	4,250	1,280	310	250	190	120	40	(40)	(120)	(200)	(270)	(350)	(430)	(510)	(590)

NOTE:

Total parking may not equal the sums of the products as the 95th percentile day for each product occurs on different days. All values are rounded to the nearest ten.

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis)

5.2 Future Parking Facility Development Sequencing

The parking facility development sequencing applies the Baseline Scenario, Scenario 1, and Scenario 2 parking demand to the facility implementation schedule to identify parking surpluses and deficits throughout the implementation period to 2035. Public parking demand and employee parking demand were combined to holistically view total parking demand against total developed parking capacity. Which type of parking is accommodated in each parking facility in each year is not decided by this analysis.

At this time, it is assumed that the IMC could be constructed in one phase (full build) or two phases, which would affect the timing of available parking capacity and, therefore, when employees are able relocate from their existing location back to being closer to the terminals. In addition to the construction of the IMC, the Palm Garage Redevelopment Project may also affect parking capacity during this period.

The Employee Parking Lot demand is added to the public parking demand in each scenario chart in 2029, which is assumed to be the first full year of operation of the automated people mover (APM). This assumption is made as a reasonable estimate of when employees could be relocated into a facility on the APM loop to eliminate the need for employee busing. However, depending on the public parking demand in each scenario and the timing of new parking development, there may not be enough capacity for all employee parking in 2029. That is discussed with each Scenario as needed.

5.2.1 INTERMODAL CENTER (FULL-BUILD)

In the full-build option, the IMC is expected to open in 2027 after one construction phase and provide between 6,700 and 6.900 parking spaces.

5.2.2 INTERMODAL CENTER (TWO-PHASE)

In the two-phase option, the IMC is expected to open after two construction phases. The first phase is anticipated to open in 2027 with 4,500 spaces and the second phase completed in 2035 to bring the total to 6,700 to 6,900 spaces.

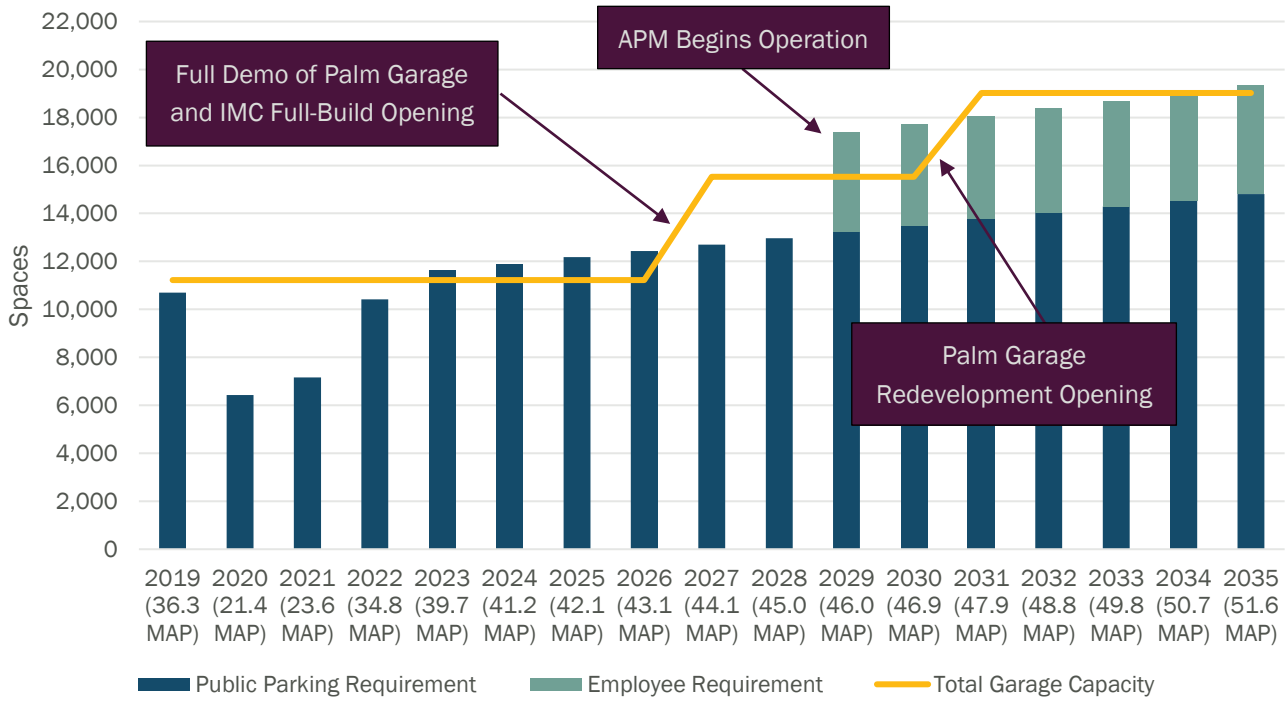
5.2.3 PALM GARAGE DEMOLITION AND REDEVELOPMENT

BCAD is currently proceeding with advanced planning for the demolition of the existing Palm Garage and a reconstruction of new 3,500-space garage to replace it, which would also accommodate the space needed for an APM station and guideway alignment. The existing Palm Garage is anticipated to be demolished in 2027 and the new garage is anticipated to open in 2031.

5.3 Baseline Scenario

Exhibit 19 shows the Baseline Scenario parking demand with the full-build IMC construction schedule, and **Exhibit 20** shows the two-phase-build IMC construction schedule. **Table 6** lists the requirements for the Baseline Scenario forecast. The employee parking demand is not able to be fully accommodated until both the full-build IMC and the Palm Garage Redevelopment are completed. In 2035, the anticipated parking deficit is 310 spaces.

Exhibit 19 Baseline Scenario Full-Build Intermodal Center Construction Schedule

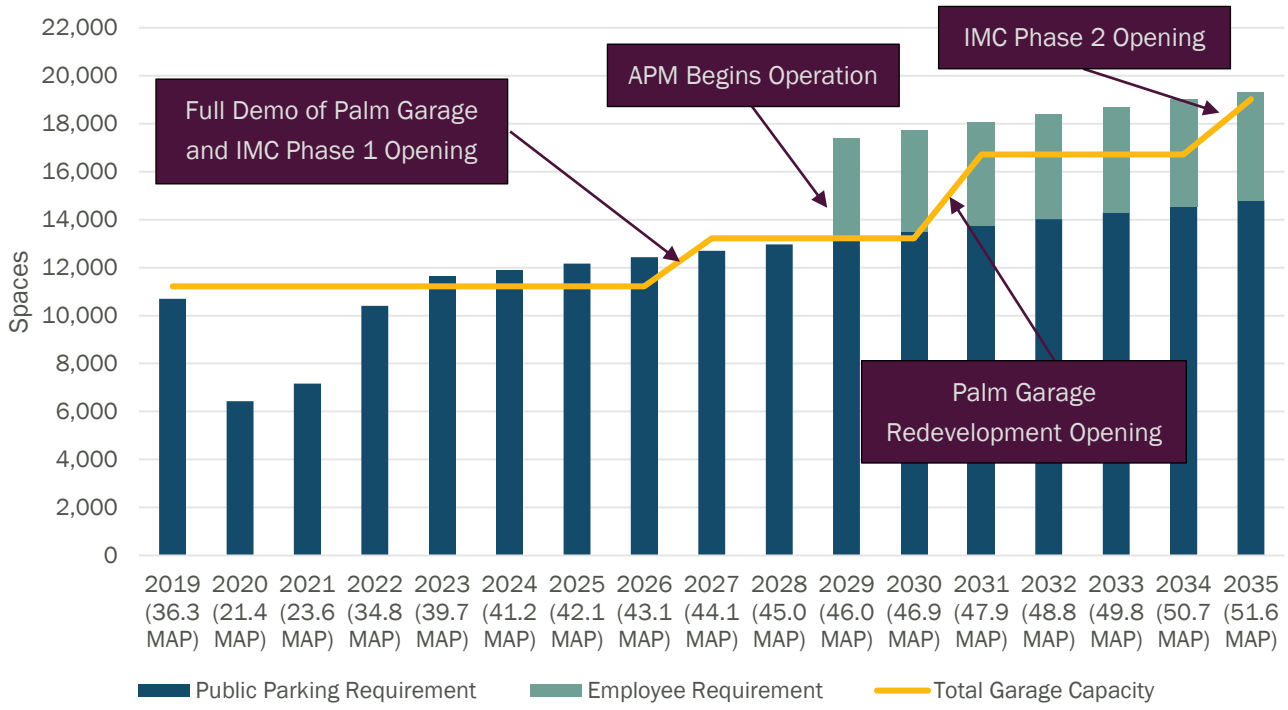


NOTE: MAP levels reflect total passengers, inclusive of origin/destination (O&D)

MAP – Million Annual Passengers

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis).

Exhibit 20 Baseline Scenario Two-Phase-Build Intermodal Center Construction Schedule



NOTE: MAP levels reflect total passengers, inclusive of origin/destination (O&D)

MAP – Million Annual Passengers

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis).

Table 6 Baseline Scenario Forecast

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	MAP	**36.3**	**21.4**	**23.6**	**34.8**	**39.7**	**41.2**	**42.1**	**43.1**	**44.1**	**45.0**	**46.0**	**46.9**	**47.9**	**48.8**	**49.8**	**50.7**	**51.6**
Full-Build Schedule	**Requirements**	10,700	6,430	7,170	10,410	11,630	11,900	12,170	12,440	12,700	12,970	13,230	13,500	13,760	14,020	14,290	14,550	14,800
	Capacity	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	15,520	15,520	15,520	15,520	19,020	19,020	19,020	19,020	19,020
	Surplus/(Deficit)	520	4,790	4,050	810	(410)	(680)	(950)	(1,220)	2,820	2,550	2,290	2,020	5,260	5,000	4,730	4,470	4,220
	Employee	-	-	-	-	-	-	-	-	-	-	4,160	4,230	4,290	4,350	4,410	4,470	4,530
	Surplus/(Deficit)	520	4,790	4,050	810	(410)	(680)	(950)	(1,220)	2,820	2,550	(1,870)	(2,210)	970	650	320	0	(310)
Two-Phase-Build Schedule	**Requirements**	10,700	6,430	7,170	10,410	11,630	11,900	12,170	12,440	12,700	12,970	13,230	13,500	13,760	14,020	14,290	14,550	14,800
	Capacity	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	13,220	13,220	13,220	13,220	16,720	16,720	16,720	16,720	19,020
	Surplus/(Deficit)	520	4,790	4,050	810	(410)	(680)	(950)	(1,220)	520	250	(10)	(280)	2,960	2,700	2,430	2,170	4,220
	Employee	-	-	-	-	-	-	-	-	-	-	4,160	4,230	4,290	4,350	4,410	4,470	4,530
	Surplus/(Deficit)	520	4,790	4,050	810	(410)	(680)	(950)	(1,220)	520	250	(4,170)	(4,510)	(1,330)	(1,650)	(1,980)	(2,300)	(310)

NOTE:

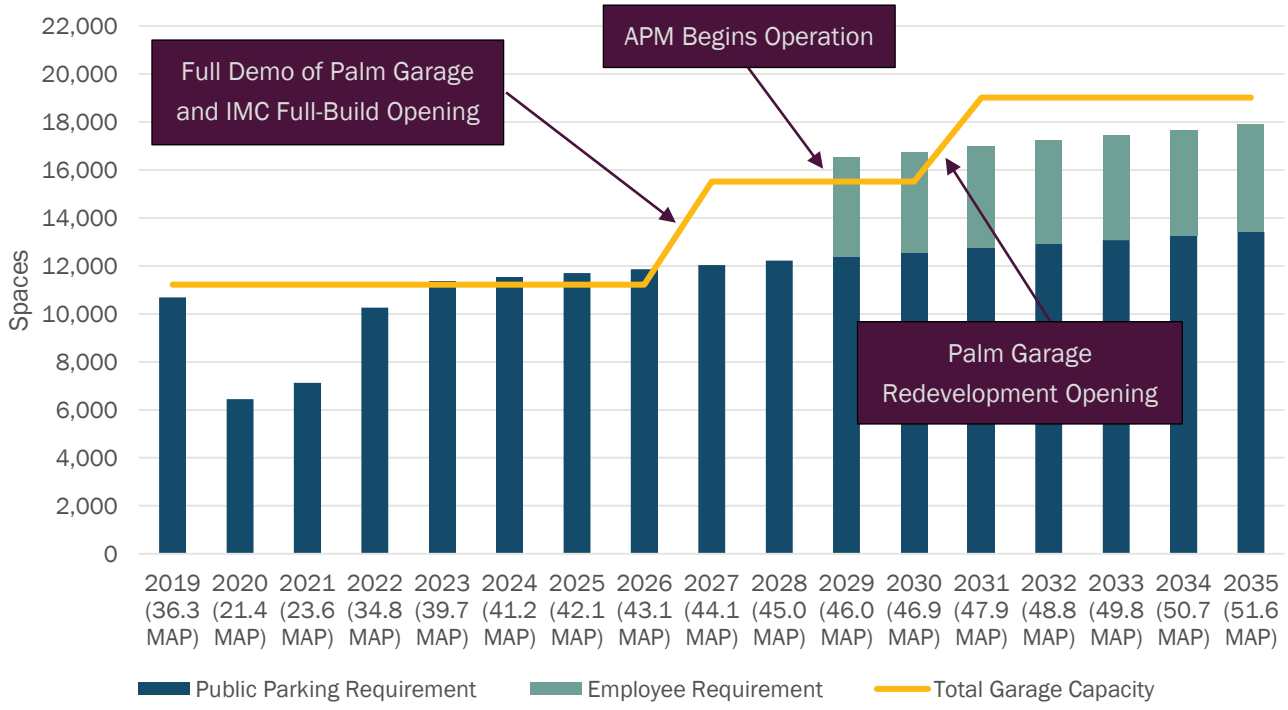
Total parking may not equal the sums of the products as the 95th percentile day for each product occurs on different days. All values are rounded to the nearest ten.

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis).

5.4 Scenario 1

Exhibit 21 shows the Scenario 1 parking demand with the full-build IMC construction schedule, and **Exhibit 22** shows the two-phase-build IMC construction schedule. **Table 7** lists the requirements for the Scenario 1 forecast. The employee parking demand is able to be partially but not fully accommodated until both the full-build IMC and the Palm Garage Redevelopment are completed. In the two-phase IMC option, public parking may continue to be fully accommodated with only the first IMC phase completed. Most, but not all employees may then be accommodated when the Palm Garage Redevelopment is completed. In 2035, the anticipated parking surplus is estimated at approximately 1,130 spaces.

Exhibit 21 Scenario 1 Full-Build Intermodal Center Construction Schedule

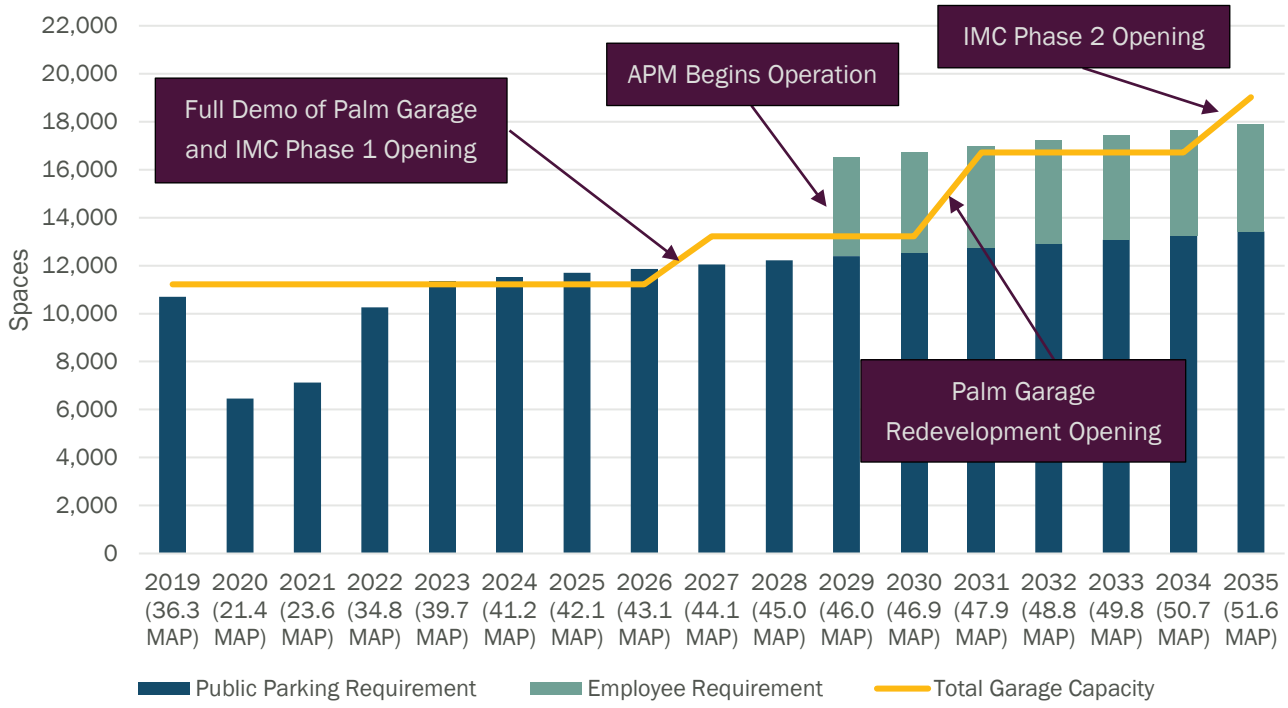


NOTE: MAP levels reflect total passengers, inclusive of origin/destination (O&D)

MAP – Million Annual Passengers

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis).

Exhibit 22 Scenario 1 Two-Phase-Build Intermodal Center Construction Schedule



NOTE: MAP levels reflect total passengers, inclusive of origin/destination (O&D)

MAP – Million Annual Passengers

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis).

Table 7 Scenario 1 Forecast

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	MAP	**36.3**	**21.4**	**23.6**	**34.8**	**39.7**	**41.2**	**42.1**	**43.1**	**44.1**	**45.0**	**46.0**	**46.9**	**47.9**	**48.8**	**49.8**	**50.7**	**51.6**
Full-Build Schedule	**Requirements**	10,700	6,450	7,130	10,260	11,370	11,530	11,700	11,870	12,040	12,220	12,400	12,560	12,740	12,910	13,080	13,260	13,420
	Capacity	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	15,520	15,520	15,520	15,520	19,020	19,020	19,020	19,020	19,020
	Surplus/(Deficit)	520	4,770	4,090	960	(150)	(310)	(480)	(650)	3,480	3,300	3,120	2,960	6,280	6,110	5,940	5,760	5,600
	Employee	-	-	-	-	-	-	-	-	-	-	4,130	4,190	4,250	4,300	4,360	4,410	4,470
	Surplus/(Deficit)	520	4,770	4,090	960	(150)	(310)	(480)	(650)	3,480	3,300	(1,010)	(1,230)	2,030	1,810	1,580	1,350	1,130
Two-Phase-Build Schedule	**Requirements**	10,700	6,450	7,130	10,260	11,370	11,530	11,700	11,870	12,040	12,220	12,400	12,560	12,740	12,910	13,080	13,260	13,420
	Capacity	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	13,220	13,220	13,220	13,220	16,720	16,720	16,720	16,720	19,020
	Surplus/(Deficit)	520	4,770	4,090	960	(150)	(310)	(480)	(650)	1,180	1,000	820	660	3,980	3,810	3,640	3,460	5,600
	Employee	-	-	-	-	-	-	-	-	-	-	4,130	4,190	4,250	4,300	4,360	4,410	4,470
	Surplus/(Deficit)	520	4,770	4,090	960	(150)	(310)	(480)	(650)	1,180	1,000	(3,310)	(3,530)	(270)	(490)	(720)	(950)	1,130

NOTE:

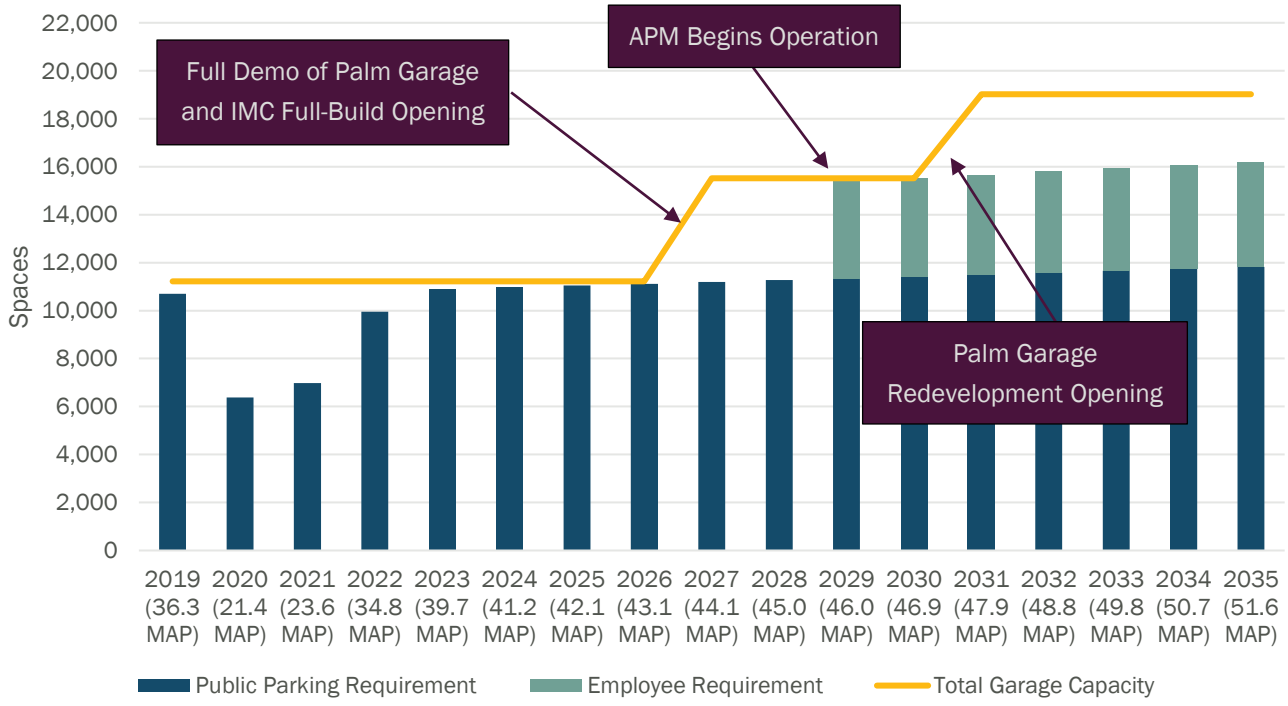
Total parking may not equal the sums of the products as the 95th percentile day for each product occurs on different days. All values are rounded to the nearest ten.

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis).

5.5 Scenario 2

Exhibit 23 shows the Scenario 2 parking demand with the full-build IMC construction schedule, and **Exhibit 24** shows the two-phase-build IMC construction schedule. **Table 8** lists the requirements for the Scenario 2 forecast. The employee parking demand is able to be accommodated when the full-build IMC is completed. The opening of the Palm Garage Redevelopment then creates a surplus. In the two-phase IMC option, public parking may continue to be fully accommodated with only the first IMC phase completed. Only approximately half of all employees may be accommodated until the Palm Garage Redevelopment is completed. IMC Phase 2 is not anticipated to be required until beyond 2035 but is still shown in 2035 for comparative purposes. In 2035, the anticipated parking surplus is estimated at approximately 2,850 spaces.

Exhibit 23 Scenario 2 Full-Build Intermodal Center Construction Schedule

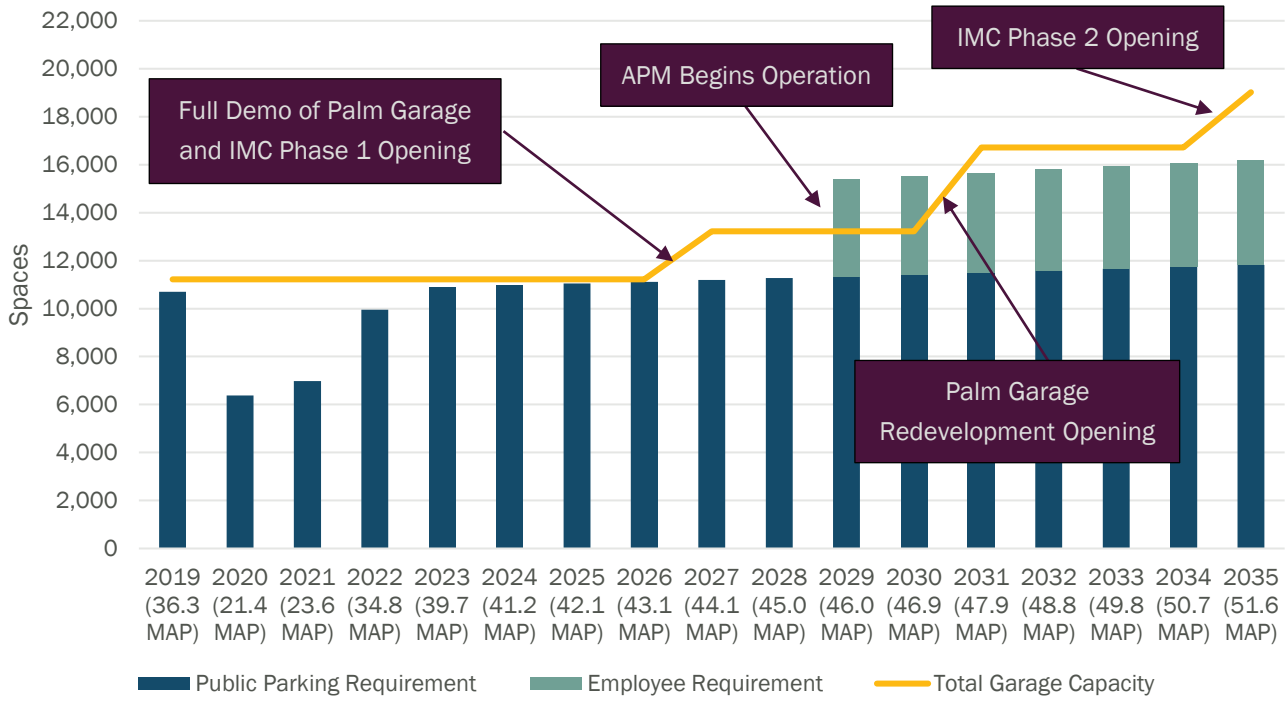


NOTE: MAP levels reflect total passengers, inclusive of origin/destination (O&D)

MAP – Million Annual Passengers

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis).

Exhibit 24 Scenario 2 Two-Phase-Build Intermodal Center Construction Schedule



NOTE: MAP levels reflect total passengers, inclusive of origin/destination (O&D)

MAP – Million Annual Passengers

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis).

Table 8 Scenario 2 Forecast

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	MAP	**36.3**	**21.4**	**23.6**	**34.8**	**39.7**	**41.2**	**42.1**	**43.1**	**44.1**	**45.0**	**46.0**	**46.9**	**47.9**	**48.8**	**49.8**	**50.7**	**51.6**
Full-Build Schedule	**Requirements**	10,700	6,380	6,980	9,950	10,920	10,980	11,040	11,110	11,190	11,270	11,350	11,430	11,500	11,580	11,660	11,740	11,820
	Capacity	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	15,520	15,520	15,520	15,520	19,020	19,020	19,020	19,020	19,020
	Surplus/(Deficit)	520	4,840	4,240	1,270	300	240	180	110	4,330	4,250	4,170	4,090	7,520	7,440	7,360	7,280	7,200
	Employee	-	-	-	-	-	-	-	-	-	-	4,060	4,110	4,160	4,210	4,260	4,300	4,350
	Surplus/(Deficit)	520	4,840	4,240	1,270	300	240	180	110	4,330	4,250	110	(20)	3,360	3,230	3,100	2,980	2,850
Two-Phase-Build Schedule	**Requirements**	10,700	6,380	6,980	9,950	10,920	10,980	11,040	11,110	11,190	11,270	11,350	11,430	11,500	11,580	11,660	11,740	11,820
	Capacity	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	13,220	13,220	13,220	13,220	16,720	16,720	16,720	16,720	19,020
	Surplus/(Deficit)	520	4,840	4,240	1,270	300	240	180	110	2,030	1,950	1,870	1,790	5,220	5,140	5,060	4,980	7,200
	Employee	-	-	-	-	-	-	-	-	-	-	4,060	4,110	4,160	4,210	4,260	4,300	4,350
	Surplus/(Deficit)	520	4,840	4,240	1,270	300	240	180	110	2,030	1,950	(2,190)	(2,320)	1,060	930	800	680	2,850

NOTE:

Total parking may not equal the sums of the products as the 95th percentile day for each product occurs on different days. All values are rounded to the nearest ten.

SOURCES: Broward County Aviation Department, May 2021 (data); Ricondo & Associates, Inc., May 2021 (Master Plan Update Validation Forecast); Ricondo & Associates, Inc., October 2021 (analysis).

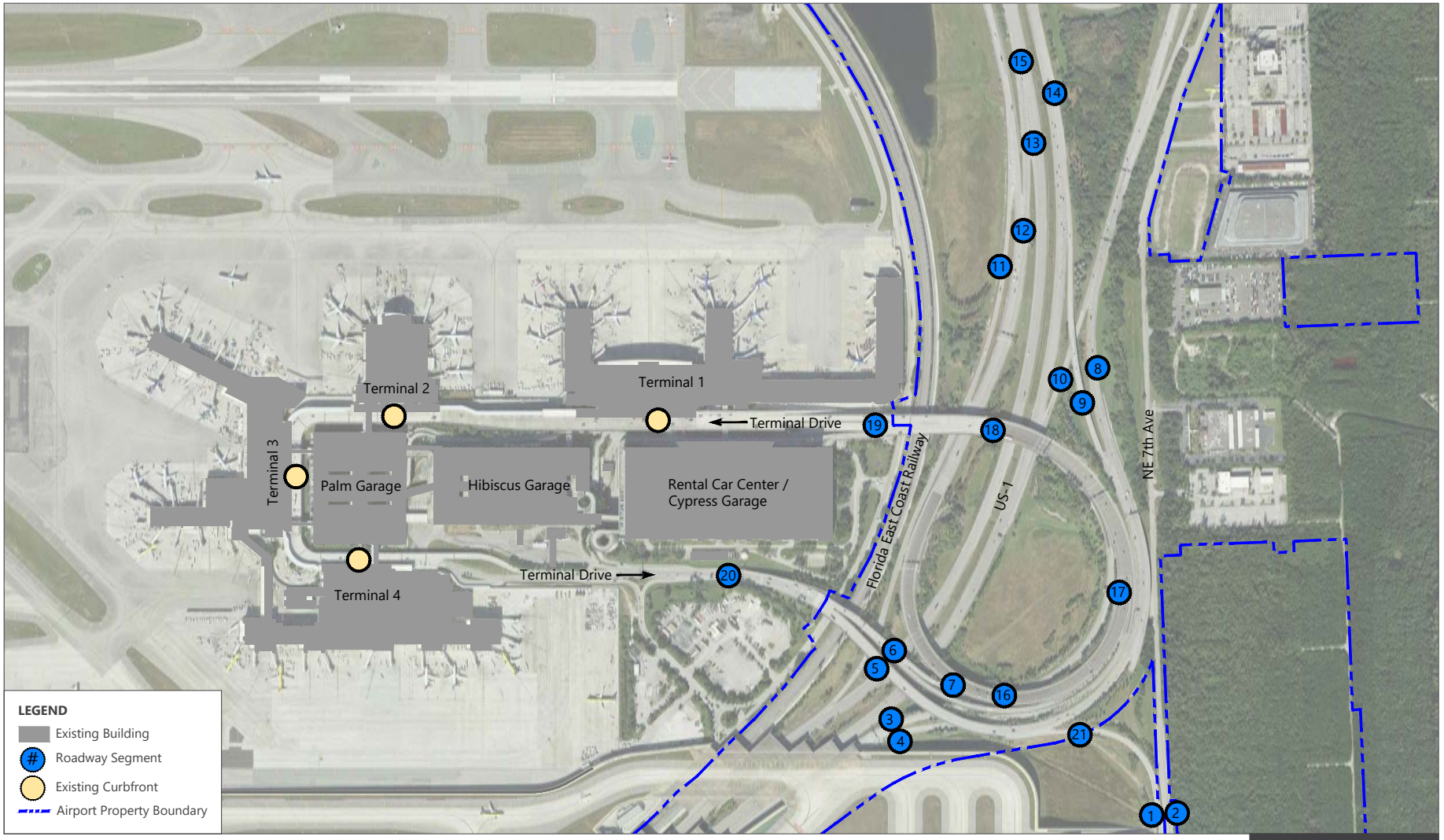
6. Summary

The alternative parking demand scenarios are intended to encompass a range of possible outcomes based on:

- historical parking demand since the MPU analysis was conducted
- facility changes and other factors that have influenced parking behavior since then (such as the closure of the public Economy Lot and the relocation of Employee Parking to that location)
- potential future impacts to parking demand driven by factors such as the increase in share of other travel modes or a change in vehicle ownership rates, among others

Overlaying these alternatives onto the facility implementation schedule helps to identify when throughout the implementation process there may be parking surpluses or deficits. Given the potential range of outcomes for future parking demand, continual tracking of public and employee parking demand can assist in decision-making for operational actions, such as the timing of relocating some or all employee parkers into the garages and/or IMC.

Appendix A
A-2 Surface Transportation



SOURCES: Nearmap, November 2023 (aerial photography - for visual reference only. may not be to scale); Broward County Aviation Department, Fort Lauderdale-Hollywood International, *2020 Master Plan Update*, November 2020 (existing facilities, Airport property boundary); Ricondo and Associates, Inc, November 2024 (Roadway Segments).

Exhibit A-2.1

NORTH 0 750'

Roadway Level of Service Analysis

Drawing: P:_PROJECTS\BCAD\23011349-On-Call Environmental Planning\Task 01 - Landside Environmental Assessment\03 - Purpose and Need\CAD\Surface Roadway_v2.dwgLayout: 1-3 Plotted: Nov 11, 2024, 01:36PM

Table A-2.1 Non-Terminal Roadway Existing and Future Level-of-Service

ID	ROADWAY SEGMENT	LEVEL-OF-SERVICE (LOS)		
		FY 2023 (EXISTING)	FY 2035 (NO BUILD)	FY 2035 (FULL BUILD)1/
1	NE 7th Avenue north of NE 10th St (NB)	C	D	D
2	NE 7th Avenue north of NE 10th St (SB)	C	C	C
3	SR-5/US-1 NB Off-ramp to Loop Ramp	A	B	B
4	SR-5/US-1 NB Off-ramp to Loop Ramp (Dep)	A	B	B
5	Terminal Drive to SR-5/US-1, I-595 West, Florida's Turnpike	D	F	D
6	Terminal Drive to Loop Ramp (Segment 1)	A	B	B
7	Terminal Drive to Loop Ramp (Segment 2)	A	B	B
8	Loop Ramp to I-595 West, Florida's Turnpike	D	F	C
9	Loop Ramp to SR-5/US-1 North ramp	C	D	C
10	NB ramp from SR-5/US-1 NB to I-595 West, Florida's Turnpike	B	D	D
11	SB ramp from I-595 to SR-5/US-1 SB	B	B	B
12	SB ramp from I-595 to Loop Ramp	C	E	E
13	SB ramp from US-1 SB to Loop Ramp	A	B	B
14	US-1 NB, south of I-595	C	C	C
15	US-1 SB, south of I-595	D	D	D
16	Entrance to Recirculation Ramp	B	C2/	C
17	Entry Loop Ramp to FLL (Segment 1)	B	C2/	C
18	Entry Loop Ramp to FLL (Segment 2)	C	C2/	C
19	Entrance to Lower-Level roadway	C	D2/	C
20	Terminal Drive Exit Roadway	C	E2/	C
21	Off-ramp from Loop Ramp to SR-5/US-1 via NE 7th Avenue	B	F	C

NOTES:

I-595: Interstate 595; NB: Northbound; NE: Northeast; SB: Southbound; SR-5: State Road 5; US-1; US Route 1;

1/ FY 2035 full build includes the development of the Automated People Mover, Intermodal Center, Palm Garage Redevelopment, Supplemental Roadway and Curbsides, Cypress Garage Expansion, Terminal 5, and Short-Term Roadway Improvements.

2/ Data derived from 2020 Master Plan Update, Section 4.5 *Nonterminal Roadways*, November 2020.

3/ FY 2035 represents 52.4 million annual passenger demand levels.

SOURCES: Transportation Research Board, *Airport Cooperative Research Report Program, Report 40, 2010;* Florida Department of Transportation, *2023 Multimodal Quality/Level-of-Service Handbook*, January 2023.; Broward County Aviation Department, *Draft Landside Modeling and Traffic Study*, May 2024; Broward County Aviation Department, *Draft Interchange Modification Report*, July 2024; Broward County Aviation Department, *2020 Master Plan Update*, November 2020; Kimley-Horn & Associates, Inc., 2024; Ricondo & Associates, Inc., November 2024.

Appendix B

Air Quality and Climate Technical Report

Final

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

Air Quality and Climate Technical Report

Prepared for
Broward County Aviation Department

May 2024

ESA

Final

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

Air Quality and Climate Technical Report

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Broward County Aviation Department

May 2024

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INTRODUCTION

Project Description

The Broward County Aviation Department (BCAD) is planning construction of an Intermodal Center (IMC) and Airport People Mover (APM), redevelopment of an airport parking garage and expansion of a second parking garage, reconfiguration of the Airport arrivals circulation roadways, and other associated landside improvements (the Proposed Project) at Fort Lauderdale-Hollywood International Airport (FLL or Airport). The Proposed Project is shown on **Figure 1** and includes the elements described in **Table 1**.

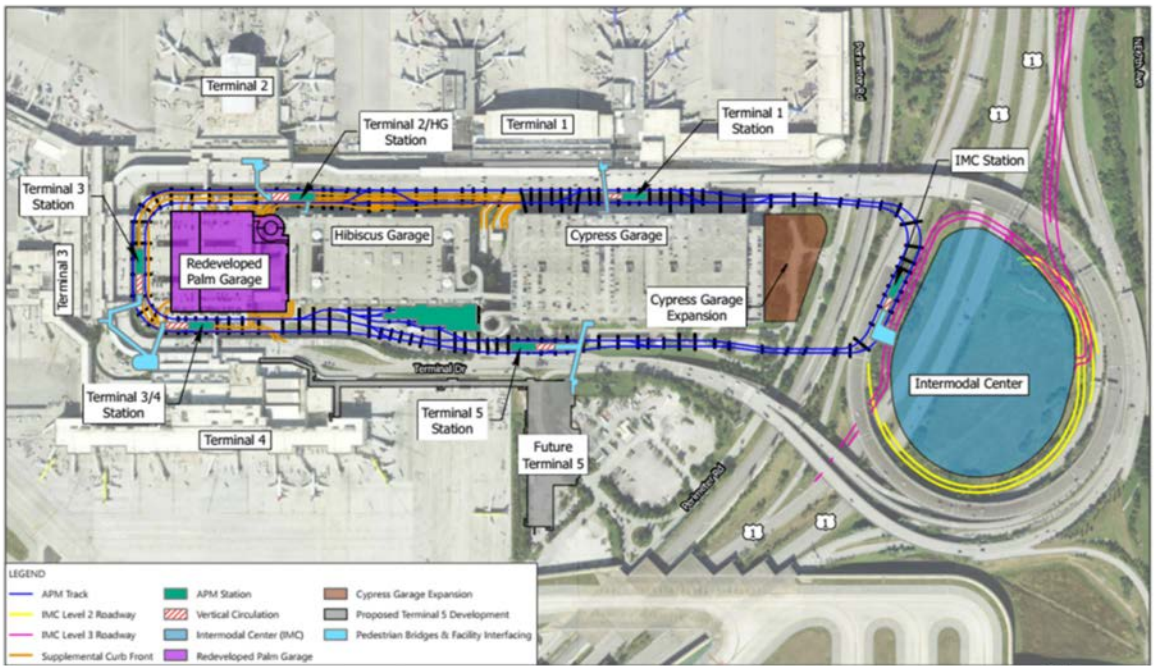


Figure 1
Proposed Project

TABLE 1
PROJECT COMPONENTS AND COMPONENT DESCRIPTIONS

Component	Elements
Intermodal Center (IMC)	• An 8-level, 4.6 million-square-foot facility • Approximately 6,700 parking spaces (Levels 2 – 8) • Ground transportation center (Level 1) • Revenue-generating spaces, such as concessions areas and leasable office space • Multi-modal space to support the FLL APM • Roadway and access improvements • Supporting utility infrastructure improvements • Stormwater improvements
Airport People Mover (APM)	• ~16,000 feet of elevated dual-track guideway • Five elevated on-airport station platforms and a sixth station platform constructed adjacent to the IMC • Pedestrian bridge connectors • Vertical circulation systems • A 52,000 square foot maintenance and storage facility • Supporting utility infrastructure improvements. • Two (2) power distribution substations
Palm Garage Redevelopment with Airport Hotel and Commercial Center	• Development of a seven- to nine-level parking facility providing approximately 3,400 - 3,700 parking stalls in a ~135,000 square foot area. • A large pedestrian circulation area on Level 3 provides users with terminal and transportation connectivity from a central location and eliminates at-grade pedestrian crossings on the terminal roadway system. • ~90,000 square-foot commercial center that may include an airport hotel and other commercial space. • On the eastern side, the public parking garage continues upwards with each floor plate matching the existing Hibiscus Garage to the east. • Supporting infrastructure improvements.
Supplemental Roadways and Curbsides	• Two at-grade supplemental curb areas are proposed to address terminal curbfront capacity deficiencies and/or serve as a bypass roadway to circumvent the traffic congestion at the terminals and improve roadway level of service.
Cypress Garage Expansion	• An approximately 90,000 square foot, nine-level expansion facility is proposed to the east of Cypress Garage. • Facility provides approximately 2,150 parking spaces. • Each level planned at same elevation as the corresponding level in the existing Cypress Garage. • Supporting utility infrastructure and drainage improvements

This report provides an analysis of the annual construction-related air quality and greenhouse gas (GHG) emissions associated with the proposed project, beginning in 2026 and ending in 2032. The Motor Vehicle Emission Simulator (MOVES) model developed by the Environmental Protection Agency (EPA) was used to develop air quality and GHG emissions both on- and off-

road emission factors specific to Broward County, Florida.[1] The project-specific emissions were prepared by Environmental Science Associates (ESA) using construction fleet activity data for the on-road and non-road equipment developed by Ricondo & Associates (Ricondo) and verified by BCAD. A detailed discussion of the model inputs used to develop air quality and GHG emissions calculations is included in the following sections.

The Proposed Project does not include development actions that would result in a change in aircraft operations at the Airport. The Proposed Project would also not induce passenger levels or vehicular travel. Background growth trends in traffic volumes and passenger levels at FLL would continue to increase as forecasted in the most recent Airport Master Plan Update. As such, aircraft operational emissions are not analyzed as part of this air quality technical analysis.

[1] Motor Vehicle Emission Simulator (MOVES) Version 4, Office of Transportation and Air Quality. US Environmental Protection Agency. August 2023. https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves

REGULATORY OVERVIEW

Criteria Air Pollutants

Air quality regulations in the United States are based on concerns that high concentrations of air pollutants can harm human health, especially for children, the elderly, and people with compromised health conditions; as well as adversely affect public welfare by damage to crops, vegetation, buildings, and other property. Information on applicable air quality standards and current attainment/nonattainment designations are detailed throughout this section. For the Proposed Project, located in Broward County, Florida, this includes information on attainment/nonattainment designations, and applicable regulatory criteria and/or thresholds that will be applied to the results of the air quality assessment.

The EPA has established National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3) and its precursors such as oxides of nitrogen (NO_x) and volatile organic compounds (VOCs), particulate matter (PM_{10} and $PM_{2.5}$), and sulfur dioxide (SO2). In complying with the National Environmental Policy Act (NEPA), the FAA must determine if "the action would cause pollutant concentrations to exceed one or more of the NAAQS, as established by the EPA under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations."[2] FAA will evaluate if the emissions caused by the Proposed Action Alternative would result in a significant impact under the FAA's NEPA threshold.

The current attainment status for Broward County is presented in **Table 2**.

The FAA Air Quality Handbook provides guidance on the level of assessment necessary for various airport projects.[3] Given that the Proposed Project would not induce or change passenger levels and associated aircraft operations at FLL, any emissions increase is anticipated to be driven by construction. Therefore, a detailed construction-based emission inventory was performed.

2 FAA, July 2015. *1050.1 Desk Reference, Chapter 1, Air Quality.*

3 Aviation Emissions and Air Quality Handbook Version 3. Federal Aviation Administration. January 2015. https://www.faa.gov/sites/faa.gov/files/regulations_policies/policy_guidance/envir_policy/airquality_handbook/Air_Quality_Handbook_Appendices.pdf

TABLE 2
BROWARD COUNTY NAAQS ATTAINMENT STATUS

Criteria Air Pollutant	NAAQS Attainment Status
Ozone (1-Hour)	Attainment*
Ozone (8-Hour)	Unclassified/Attainment
CO (1-Hour and 8-Hour)	Unclassified/Attainment
NO_2 (1-Hour)	Unclassified/Attainment
NO_2 (Annual)	Unclassified/Attainment
SO_2 (1-Hour and 3-Hour)	Unclassified/Attainment
PM10 (24-Hour)	Unclassified/Attainment
PM2.5 (24-Hour and Annual)	Unclassified/Attainment
Lead	Unclassified/Attainment

SOURCE: EPA, 2024.

NOTE:

* The EPA Green Book identifies the county with a status of maintenance for the revoked 1979 1-hour ozone standard. The county is considered maintenance because a maintenance plan was in-place when the standard was revoked. The two 10-year maintenance cycles are now complete, and the region is attaining the standards.

Thresholds of Significance

Exhibit 4-1 of FAA Order 1050.1F provides the FAA's significance threshold for air quality, which states,[4] "The action would cause pollutant concentrations to exceed one or more of the NAAQS, as established by the EPA under the CAA, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations."

While it is noted that the Proposed Project is not currently located within an EPA-designated nonattainment or maintenance area for any of the NAAQS, and thus General Conformity Rule (Section 176(c)(1) of the CAA) de minimis thresholds are not applicable. However, there have been concerns raised regarding the potential for Broward County to enter a non-compliance with that NAAQS in the future. Although specifics on this timeframe are not available, there is an interest in providing assurance regarding the potential air quality impacts of the Proposed Project.

De minimis thresholds, as outlined in the General Conformity Rule (Section 176(c)(1) of the Clean Air Act), serve as thresholds below which emissions from a particular project are not expected to cause concentrations to exceed a NAAQS standard or the frequency of such violations. The least restrictive de minimis thresholds are for regions that have previously exceeded a NAAQS standard, but have entered back into compliance, so called "maintenance areas." With the Proposed Project not in a nonattainment or maintenance area, the maintenance de minimis thresholds can serve as an emissions-based level of significance. The de minimis thresholds for most general conformity pollutants (NOx, SO2, CO, PM10, and PM2.5) is 100 tons per year, with two exceptions for lead (Pb) the threshold is 25 tons per year and the VOC de

4 Order 1050.1F – Environmental Impacts: Policies and Procedures. Federal Aviation Administration. July 2015. https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1050_1F.pdf

minimis threshold for maintenance areas in an ozone transport region (only in the northeast United States at the moment) is 50 tons per year.

Greenhouse Gases

FAA Order 1050.1F determines the need for and establishes the extent of the GHG assessment required for airport-related actions and projects. The GHG assessment includes emissions inventories for on-road and non-road construction, prepared for the 2026 through 2032 construction years. The analysis of GHG emissions generally follows the same methodology and modeling tools as the air quality criteria air pollutant emissions analysis as discussed in the *Air Quality Analysis* section of this report.

GHGs include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Increasing concentrations of GHGs in the atmosphere affect global climate. For the Proposed Project, anthropogenic (i.e., human-made) sources of GHG emissions are primarily associated with the combustion of fossil fuels (e.g., diesel and natural gas) for non-road construction equipment, on-road employee and truck trips, and material delivery.

Emissions of GHGs are accounted for by converting emissions of specific pollutants to CO_2 equivalent (CO_2) emissions by applying the proper global warming potential (GWP) value for each specific pollutant. GWP represents the amount of heat captured by a mass of a specific GHG compared to a similar mass of CO_2. These GWP ratios are provided by the Intergovernmental Panel on Climate Change (IPCC) in its Fifth Assessment Report (AR5).[5] By applying the GWP ratios, project related CO_2e emissions can be tabulated in metric tons per year. Typically, the GWP ratio corresponding to the warming potential of CO_2 over a 100-year period is used as a baseline.

Thresholds of Significance

The FAA has not established a threshold of significance for climate and GHG emissions, nor has the FAA identified specific factors to consider in making a significance determination for GHG emissions. The CEQ has noted that "it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions, as such direct linkage is difficult to isolate and to understand." However, in January of 2023, the CEQ published guidance to provide context to the GHG emissions through the use of social cost of carbon (SCC) calculations.[6] The GHG emissions detailed in this technical appendix are utilized to calculate the SCC, which are presented in Section 3.4, *Climate*, of the EA.

5 IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, p.87.

6 National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, Council on Environmental Quality. January 9, 2023. https://www.govinfo.gov/content/pkg/FR-2023-01-09/pdf/2023-00158.pdf

AIR QUALITY ANALYSIS

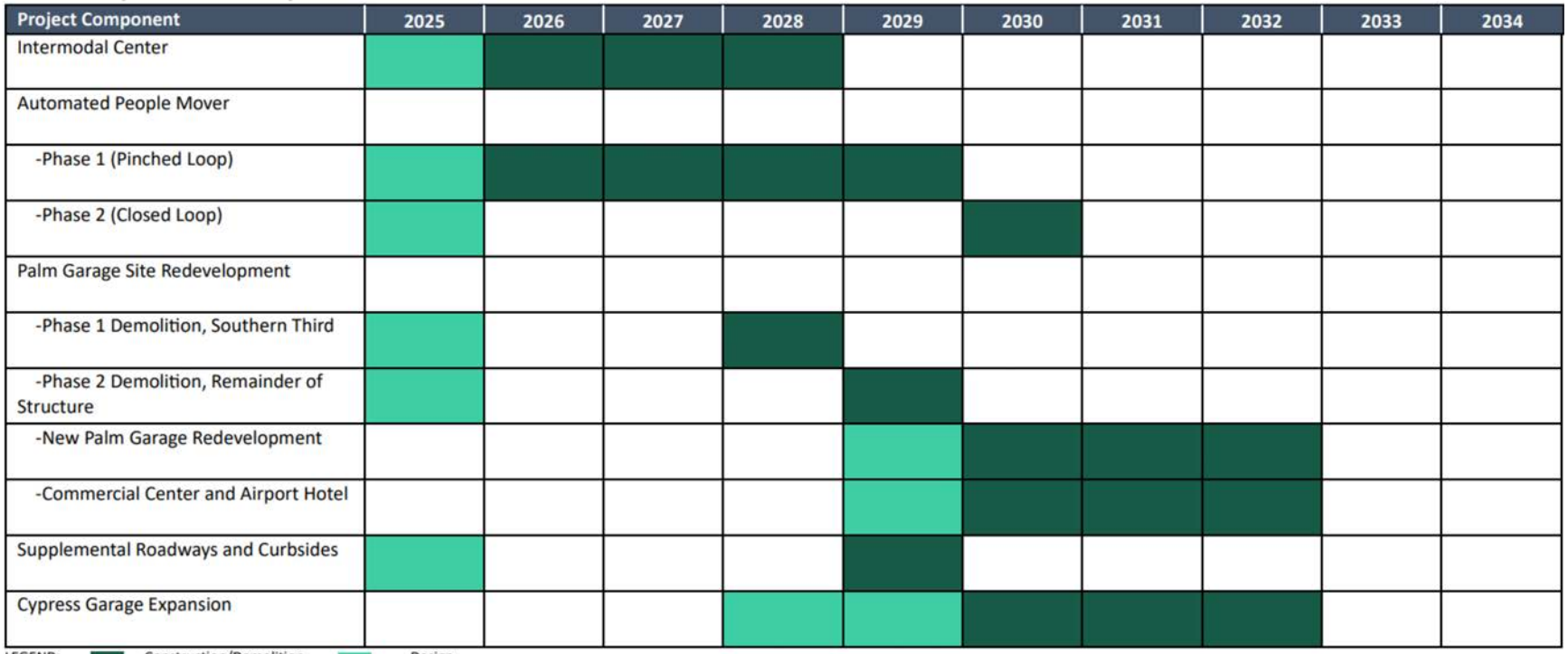
Air quality emissions for the Proposed Project were calculated using construction equipment activity data provided to ESA by Ricondo, and verified by BCAD, along with emission factors that were modeled using the EPA MOVES model. These combined data resulted in by-year air quality emissions for the Proposed Project that could be contrasted against an appropriate significance threshold.

After construction, the Proposed Project would rely on electricity to power future parking garages, the IMC, and APM. The Proposed Project would not induce passenger levels or result in a change in aircraft activity or operations at FLL. Further, surface traffic levels would not increase as a result of the Proposed Project, but may result in reduced idling due less congestion. Therefore, emissions associated with the operation of the Proposed Project were not performed.

Methodology

The activity levels were produced using the Airport Cooperative Research Program's (ACRP) Airport Construction Emissions Inventory Tool and scaled appropriately to the size of the Proposed Project components. This ACRP tool was originally designed to provide emission estimates for common airport projects, without the need to run a highly detailed and costly analysis. However, since its original publication, the tool's emission factors have become outdated and are no longer recommended for use by the FAA. As such, the tool's sole purpose for this project was to serve as an aid in developing equipment activity levels, with modern EPA MOVES being used to establish the appropriate emission factors.

The MOVES model was run for the years 2026 to 2032 to encompass all phases of the Proposed Project. This ensures that the emissions calculations reflect the full scope of the project activities over time. **Figure B-2** shows Proposed Project implementation schedule for the project activities.



NOTE:

1/ It is anticipated that the following design components of the proposed action will be procured and awarded together based on project dependencies and overlap: Automated People Mover (Phase 1 and 2), Palm Garage Demolition (Phase 1 and 2), and Supplemental Roadways and Curbsides.

SOURCE: Broward County Aviation Department, 2021 Master Plan Update Validation, 2022.

Figure 2
Proposed Project Implementation Schedule

Emission Factors

Emission factors for the modeling of criteria air pollutants used the EPA's MOVES model. This model is widely recognized for its ability to estimate emissions for mobile sources at the national, county, and project level for criteria air pollutants, GHGs, and air toxics. The MOVES 4.0 model allows us to input specific parameters related to a project including geolocation (state, county), project years, fleet and equipment profile, vehicle miles traveled (VMT), speed range, temperature, and fuel type, among others. By doing so, detailed emission factors can be generated that reflect the unique characteristics of a project.

In the MOVES model, emissions from non-road and on-road sources are computed independently. Non-road emissions come from equipment and vehicles that do not operate on highways. This primarily includes various forms of construction equipment (e.g., excavators, compactors, forklifts). The MOVES model estimates non-road emission factors based on the specific county, equipment population, scrappage, usage, and activity data, as well as local meteorological conditions.

On-road emissions are produced by vehicles that operate on various types of roadways. The MOVES model is capable of estimating emissions from a wide range of on-road vehicles, including passenger cars, trucks, dump trucks, concrete trucks, and motorcycles. Calculation of emission factors for on-road equipment requires that, at a minimum, the user provide information on the years of interest, location, types of equipment, and roadway types. In default scale mode, the model uses these inputs to estimate emissions of criteria air pollutants, GHGs, and any selected air toxics.

In both cases, the MOVES model provides a robust tool for estimating emission factors, but the results are dependent on the accuracy and completeness of the input data including the anticipated activity profile. Therefore, it's crucial to ensure that the inputs reflect the most accurate and current data available.

Post-processing the MOVES outputs provides emission factors in units of grams per hour for all non-road equipment and on-road idling and in units of grams per mile for all on-road activity. Activity data by equipment types associated with each project component are then applied to these emission factors to estimate project emissions.

Activity Data

Activity data that were used with the modeled EPA MOVES outputs were provided by Ricondo. Construction activity emissions are calculated based on the MOVES run output and the project specific anticipated activity profile assumptions that are provided for both on-road and non-road equipment. Non-road activity data includes details such as the year of construction, type of construction activity, equipment used, activity size in square feet (SF), activity rate, and hours of activity. Equipment type provided in the activity assumption were matched with the closest equipment list from the MOVES model. Exhibit 1 shows the total anticipated activity hours associated with each equipment type. The activity, in hours, for each equipment type and phase of

work is calculated as the product of the project-specific development area and the activity rate (hours per square foot) estimated by the ACRP tool.

Additionally, information on on-road equipment categorized by year, equipment type, on-road activity, fuel type, number of non-road equipment, round trip distance in miles, and a scale factor. The scale factor is simply the ratio between the project-specific development size and that estimated by the ACRP tool. For example, to estimate the miles of truck activity for a 210,000 square foot parking structure development, the ACRP tool can be used to establish how many miles are needed for a slightly different development size. The scale factor is then the ratio between the tools estimated area and the project-specific area, which is used to scale the estimated milage accordingly. If the tool's estimate is 80 miles of activity for a 240,000 square foot area and the project is proposing 210,000 square feet of development, then the scaled hours estimate is as follows.

$$\frac{210{,}000\ \text{sqft}}{240{,}000\ \text{sqft}} * 80\ \text{miles} = 70\ \text{miles}$$

Construction equipment was categorized into specific equipment types used in MOVES for construction related activities. The equipment types in the MOVES model that were assessed for this project are provided in Table A-5. Additionally, Table A-1 describes how the activity data provided by Ricondo were cross referenced to MOVES equipment types. For on-road equipment, all employee travel was assumed to be in passenger cars and all other on-road activity were classified as either single use short-haul trucks or combination short-haul trucks (cross reference information available in Table A-2). All on-road vehicle miles traveled were assumed to occur at 55 miles per hour.

Construction Emissions

The results of the emission tabulations, by calendar year and project element, are provided in **Table 3**. Additional details on the activity levels and emission factors for both on-road and nonroad equipment are available in **Attachment A**. Of note, even if general conformity were applicable, the annual emissions across all pollutants do not approach the de minimis levels used for areas operating in maintenance. As such, the air quality impacts from the Proposed Project do not result in a significant impact.

TABLE 3
ANNUAL CONSTRUCTION EMISSIONS INVENTORY (TONS)

Element	Year	CO	VOC	NOx	SO2	PM10	PM2.5
APM	2026	1.10	0.18	3.92	0.006	0.16	0.15
	2027	0.35	0.05	1.30	0.002	0.05	0.05
	2028	0.59	0.10	2.41	0.004	0.09	0.08
	2029	0.61	0.10	2.56	0.004	0.09	0.08
	2030	0.94	0.17	4.89	0.008	0.15	0.14
Cypress Garage	2030	0.39	0.07	2.04	0.003	0.06	0.05
	2031	0.23	0.04	1.26	0.002	0.03	0.03
	2032	0.22	0.04	1.23	0.002	0.03	0.02

Element	Year	CO	VOC	NOx	SO2	PM10	PM2.5
IMC	2026	5.34	1.00	24.56	0.033	0.82	0.79
	2027	2.02	0.39	11.84	0.016	0.29	0.28
	2028	1.52	0.30	9.67	0.013	0.22	0.21
Palm Garage	2028	0.20	0.05	1.23	0.002	0.03	0.03
	2029	0.31	0.08	2.13	0.003	0.06	0.05
	2030	1.73	0.38	13.53	0.019	0.30	0.29
	2031	1.59	0.36	13.25	0.019	0.28	0.27
	2032	1.48	0.34	13.03	0.019	0.26	0.26
Supplemental Roadways and Curbsides	2029	0.31	0.07	3.06	0.004	0.05	0.05
APM Total	**All**	**3.59**	**0.60**	**15.08**	**0.02**	**0.53**	**0.51**
Cypress Garage Total	**All**	**0.84**	**0.15**	**4.54**	**0.01**	**0.11**	**0.10**
IMC Total	**All**	**8.88**	**1.68**	**46.07**	**0.06**	**1.33**	**1.29**
Palm Garage Total	**All**	**5.30**	**1.20**	**43.16**	**0.06**	**0.93**	**0.90**
Supplemental Roadways and Curbsides Total	**All**	**0.31**	**0.07**	**3.06**	**0.004**	**0.05**	**0.05**

SOURCE: Environmental Science Associates, 2024.

NOTES: CO = carbon monoxide; NOx = oxides of nitrogen; PM10 = particulate matter less than or equal to 10 microns in diameter; PM2.5 = particulate matter less than or equal to 2.5 microns in diameter; SOX = oxides of sulfur; VOC = volatile organic compound.

In addition to assessing the emissions on an element basis, it is also helpful to produce calendar year emission totals to allow for comparison to metrics such as General Conformity de minimis thresholds, even if they don't apply in for this project. **Table 4** provides the construction emissions summed on a calendar year basis. No single year exceeds 30 tons per year, which is well below the maintenance area de minimis threshold of 100 tons per year.

TABLE 4
ANNUAL CONSTRUCTION EMISSIONS INVENTORY (TONS)

Year	CO	VOC	NOx	SO_X	PM10	PM2.5	Above any de minimis?
2026	6.43	1.17	28.48	0.04	0.98	0.95	No
2027	2.37	0.44	13.14	0.02	0.34	0.33	No
2028	2.31	0.45	13.31	0.02	0.34	0.33	No
2029	1.23	0.25	7.75	0.01	0.19	0.19	No
2030	3.06	0.62	20.46	0.03	0.50	0.48	No
2031	1.82	0.40	14.51	0.02	0.31	0.30	No
2032	1.70	0.38	14.26	0.02	0.29	0.28	No

SOURCE: Environmental Science Associates, 2024.

NOTES: CO = carbon monoxide; NOX = oxides of nitrogen; PM10 = particulate matter less than or equal to 10 microns in diameter; PM2.5 = particulate matter less than or equal to 2.5 microns in diameter; SO_X = oxides of sulfur; VOC = volatile organic compound.

Our analysis confirms that the annual emissions from construction activities associated with the Proposed Project remain below the General Conformity Rule de minimis thresholds for each criteria pollutant (refer to Appendix B).

Furthermore, it is essential to emphasize that even if Broward County were to enter a maintenance phase for air quality within a certain timeframe, the Proposed Project's emissions would still fall below the de minimis thresholds. This underscores the project's minimal contribution to air quality impacts, even under potentially changing regulatory conditions.

Mitigation, Avoidance, or Minimization Measures

Project-related emissions for the Proposed Project do not exceed the General Conformity Rule (Section 176(c)(1) of the CAA) de minimis thresholds for any pollutants. Therefore, no mitigation measures are required.

GREENHOUSE GAS ANALYSIS

GHG emissions were calculated using the same methodology described in the Air Quality Analysis methodology section of this report. As with the criteria air pollutants, MOVES was used to determine the emission factors of CO_2, CH_4, and N_2O. One notable exception is N_2O for nonroad equipment. The EPA MOVES model does not estimate emission factors for N_2O when analyzing nonroad equipment. Instead, these emissions were estimated by following guidance described for nonroad equipment in the EPA's port emission inventory guidance.[7] Additionally, CO_2 equivalents (CO_2e; an industry standard) were calculated using the IPCC AR5 GWP values. As with the criteria pollutants, GHG emissions associated with the operation of the Proposed Project were not performed. The detailed equipment activity and emission factors are provided in Attachment A.

Construction Emissions

The MOVES model was run for the years 2026 to 2032 to encompass all construction phases of the Proposed Project. This ensures that the emissions calculations reflect the full scope of the project activities over time. **Table 5** presents estimated levels of GHG emissions inventory at FLL for the 2026 through 2032 calendar years for each project element.

TABLE 5
2026–2032 GHG EMISSIONS INVENTORY (METRIC TONS)

Element	Year	CO2	CH4	N2O	Total CO2e
APM	2026	1,843	0.01	0.09	1,867
	2027	658	0.003	0.03	667
	2028	1,261	0.01	0.06	1,278
	2029	1,426	0.006	0.070	1,444
	2030	2,778	0.01	0.13	2,813
Cypress Garage	2030	1,075	0.005	0.06	1,090
	2031	653	0.003	0.04	663
	2032	652	0.003	0.04	662
IMC	2026	10,816	0.06	0.56	10,966
	2027	5,223	0.03	0.28	5,299
	2028	4,348	0.02	0.23	4,411
Palm Garage	2028	516	0.003	0.02	522
	2029	917	0.004	0.04	928
	2030	6,284	0.03	0.31	6,366

[7] Ports Emissions Inventory Guidance: Methodologies for Estimating Port-Related and Goods Movement Mobile Source Emissions, U.S. Environmental Protection Agency, April 2022. https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1014J1S.pdf

Element	Year	CO2	CH4	N2O	Total CO2e
	2031	6,281	0.02	0.31	6,363
	2032	6,279	0.024	0.307	6,361
Supplemental Roadways and Curbsides	2029	1,241	0.01	0.06	1,257
APM Total		7,965	0.04	0.39	8,068
Cypress Garage Total		2,380	0.01	0.13	2,415
IMC Total		20,388	0.11	1.08	20,676
Palm Garage Total		20,277	0.08	0.99	20,541
Supplemental Roadways and Curbsides Total		1,241	0.01	0.06	1,257
Overall Total					**52,958**

SOURCE: Environmental Science Associates, 2024.
NOTES: CO2e = carbon dioxide equivalent. The IPCC Forth Assessment AR5 Global Warming Potential Values (28 for CH4 and 265 for N2O) are applied to determine CO2e. Some rounding may have occurred that leads to slightly different totals if summed from the table directly.

Mitigation, Avoidance, or Minimization Measures

As the FAA has not established a threshold of significance for climate and GHG emissions, the Proposed Action does not exceed a significance threshold for GHG emissions. Therefore, no mitigation measures are required.

Attachment A

Emissions Calculation Tables

TABLE A-1
PROJECT NONROAD EQUIPMENT ACTIVITY (HRS)

Project Component	Ricondo Equipment	MOVES Equipment	2026	2027	2028	2029	2030	2031	2032
Construct APM Bridges & V Circ.	90 Ton Crane	Cranes	169.7	99.2	53.4	192.1	58.7		
Construct APM Bridges & V Circ.	Backhoe	Tractors/Loaders/Backhoes	169.7	99.2	53.4	192.1	58.7		
Construct APM Bridges & V Circ.	Concrete Pump	Cement & Mortar Mixers	6.4	3.7	2.0	7.2	2.2		
Construct APM Bridges & V Circ.	Concrete Ready Mix Trucks	Off-highway Trucks	31.8	18.6	10.0	36.0	11.0		
Construct APM Bridges & V Circ.	Concrete Truck	Off-highway Trucks	12.7	7.4	4.0	14.4	4.4		
Construct APM Bridges & V Circ.	Fork Truck	Rough Terrain Forklifts	1802.1	1054.1	566.7	2040.1	623.4		
Construct APM Bridges & V Circ.	Generator	Other Construction Equipment	159.0	93.0	50.0	180.0	55.0		
Construct APM Bridges & V Circ.	High Lift	Other Construction Equipment	487.7	285.2	153.4	552.1	168.7		
Construct APM Bridges & V Circ.	Man Lift	Other Construction Equipment	1590.0	930.0	500.0	1800.0	550.0		
Construct APM Bridges & V Circ.	Man Lift (Fascia Construction)	Other Construction Equipment	12.7	7.4	4.0	14.4	4.4		
Construct APM Bridges & V Circ.	Material Deliveries	Off-highway Trucks	31.8	18.6	10.0	36.0	11.0		
Construct APM Bridges & V Circ.	Survey Crew Trucks	Off-highway Trucks	5.2	3.1	1.7	5.9	1.8		
Construct APM Bridges & V Circ.	Tool Truck	Off-highway Trucks	393.4	230.1	123.7	445.3	136.1		
Construct APM Bridges & V Circ.	Tractor Trailer- Material Delivery	Tractors/Loaders/Backhoes	437.7	256.0	137.7	495.5	151.4		
Construct APM Bridges & V Circ.	Tractor Trailer- Steel Deliveries	Tractors/Loaders/Backhoes	21.1	12.4	6.7	23.9	7.3		
Construct APM Bridges & V Circ.	Tractor Trailers Temp Fac.	Tractors/Loaders/Backhoes	2.1	1.2	0.6	2.3	0.7		

Project Component	Ricondo Equipment	MOVES Equipment	2026	2027	2028	2029	2030	2031	2032
Construct APM Bridges & V Circ.	Trowel Machine	Other Construction Equipment	6.4	3.7	2.0	7.2	2.2		
Construct APM Maint. Facility	40 Ton Crane	Cranes					1248.0		
Construct APM Maint. Facility	Backhoe	Tractors/Loaders/Backhoes					1664.0		
Construct APM Maint. Facility	Concrete Ready Mix Trucks	Off-highway Trucks					312.0		
Construct APM Maint. Facility	Fork Truck	Rough Terrain Forklifts					8528.0		
Construct APM Maint. Facility	High Lift	Other Construction Equipment					2288.0		
Construct APM Maint. Facility	Man Lift	Other Construction Equipment					6240.0		
Construct APM Maint. Facility	Man Lift (Fascia Construction)	Other Construction Equipment					624.0		
Construct APM Maint. Facility	Material Deliveries	Off-highway Trucks					41.6		
Construct APM Maint. Facility	Survey Crew Trucks	Off-highway Trucks					52.0		
Construct APM Maint. Facility	Tool Truck	Off-highway Trucks					2080.0		
Construct APM Maint. Facility	Tractor Trailer- Material Delivery	Tractors/Loaders/Backhoes					894.4		
Construct APM Maint. Facility	Tractor Trailer- Steel Deliveries	Tractors/Loaders/Backhoes					83.2		
Construct APM Maint. Facility	Tractor Trailers Temp Fac.	Tractors/Loaders/Backhoes					20.8		
Construct APM Stations	40 Ton Crane	Cranes	117.6	117.6	117.6	117.6	117.6		
Construct APM Stations	Fork Truck	Rough Terrain Forklifts	646.8	646.8	646.8	646.8	646.8		
Construct APM Stations	High Lift	Other Construction Equipment	215.6	215.6	215.6	215.6	215.6		
Construct APM Stations	Man Lift	Other Construction Equipment	588.0	588.0	588.0	588.0	588.0		
Construct APM Stations	Man Lift (Fascia Construction)	Other Construction Equipment	58.8	58.8	58.8	58.8	58.8		
Construct APM Stations	Material Deliveries	Off-highway Trucks	3.9	3.9	3.9	3.9	3.9		
Construct APM Stations	Survey Crew Trucks	Off-highway Trucks	4.9	4.9	4.9	4.9	4.9		
Construct APM Stations	Tool Truck	Off-highway Trucks	156.8	156.8	156.8	156.8	156.8		
Construct APM Stations	Tractor Trailer- Material Delivery	Tractors/Loaders/Backhoes	76.4	76.4	76.4	76.4	76.4		

Project Component	Ricondo Equipment	MOVES Equipment	2026	2027	2028	2029	2030	2031	2032
Construct APM Stations	Tractor Trailer- Steel Deliveries	Tractors/Loaders/Backhoes	7.8	7.8	7.8	7.8	7.8		
Construct APM Stations	Tractor Trailers Temp Fac.	Tractors/Loaders/Backhoes	2.0	2.0	2.0	2.0	2.0		
Construct APM Substations	40 Ton Crane	Cranes			72.0		72.0		
Construct APM Substations	Backhoe	Tractors/Loaders/Backhoes			96.0		96.0		
Construct APM Substations	Concrete Ready Mix Trucks	Off-highway Trucks			18.0		18.0		
Construct APM Substations	Fork Truck	Rough Terrain Forklifts			492.0		492.0		
Construct APM Substations	High Lift	Other Construction Equipment			132.0		132.0		
Construct APM Substations	Man Lift	Other Construction Equipment			360.0		360.0		
Construct APM Substations	Man Lift (Fascia Construction)	Other Construction Equipment			36.0		36.0		
Construct APM Substations	Material Deliveries	Off-highway Trucks			2.4		2.4		
Construct APM Substations	Survey Crew Trucks	Off-highway Trucks			3.0		3.0		
Construct APM Substations	Tool Truck	Off-highway Trucks			120.0		120.0		
Construct APM Substations	Tractor Trailer- Material Delivery	Tractors/Loaders/Backhoes			51.6		51.6		
Construct APM Substations	Tractor Trailer- Steel Deliveries	Tractors/Loaders/Backhoes			4.8		4.8		
Construct APM Substations	Tractor Trailers Temp Fac.	Tractors/Loaders/Backhoes			1.2		1.2		
Construct APM Track	90 Ton Crane	Cranes	864.3	400.1	656.2	650.9	240.1		
Construct APM Track	Concrete Pump	Cement & Mortar Mixers	32.4	15.0	24.6	24.4	9.0		
Construct APM Track	Concrete Truck	Off-highway Trucks	64.8	30.0	49.2	48.8	18.0		
Construct APM Track	Fork Truck	Rough Terrain Forklifts	216.3	100.1	164.2	162.9	60.1		
Construct APM Track	Tool Truck	Off-highway Trucks	32.4	15.0	24.6	24.4	9.0		
Construct APM Track	Tractor Trailer- Steel Deliveries	Tractors/Loaders/Backhoes	107.7	49.9	81.8	81.1	29.9		
Construct APM Track	Trowel Machine	Other Construction Equipment	32.4	15.0	24.6	24.4	9.0		
Construct Hotel & Com. Center	90 Ton Crane	Cranes					648.0	648.0	648.0
Construct Hotel & Com. Center	Backhoe	Tractors/Loaders/Backhoes					1296.0	1296.0	1296.0
Construct Hotel & Com. Center	Concrete Pump	Cement & Mortar Mixers					648.0	648.0	648.0

Project Component	Ricondo Equipment	MOVES Equipment	2026	2027	2028	2029	2030	2031	2032
Construct Hotel & Com. Center	Concrete Ready Mix Trucks	Off-highway Trucks					972.0	972.0	972.0
Construct Hotel & Com. Center	Concrete Truck	Off-highway Trucks					162.0	162.0	162.0
Construct Hotel & Com. Center	Excavator	Excavators					432.0	432.0	432.0
Construct Hotel & Com. Center	Fork Truck	Rough Terrain Forklifts					9612.0	9612.0	9612.0
Construct Hotel & Com. Center	Generator	Other Construction Equipment					216.0	216.0	216.0
Construct Hotel & Com. Center	Grout Mixer	Cement & Mortar Mixers					1134.0	1134.0	1134.0
Construct Hotel & Com. Center	Grout Wheel Truck	Off-highway Trucks					432.0	432.0	432.0
Construct Hotel & Com. Center	High Lift	Other Construction Equipment					2592.0	2592.0	2592.0
Construct Hotel & Com. Center	Man Lift	Other Construction Equipment					13284.0	13284.0	13284.0
Construct Hotel & Com. Center	Material Deliveries	Off-highway Trucks					162.0	162.0	162.0
Construct Hotel & Com. Center	Survey Crew Trucks	Off-highway Trucks					27.0	27.0	27.0
Construct Hotel & Com. Center	Tool Truck	Off-highway Trucks					8370.0	8370.0	8370.0
Construct Hotel & Com. Center	Tractor Trailer- Material Delivery	Tractors/Loaders/Backhoes					7344.0	7344.0	7344.0
Construct Hotel & Com. Center	Tractor Trailer- Steel Deliveries	Tractors/Loaders/Backhoes					972.0	972.0	972.0
Construct Hotel & Com. Center	Tractor Trailers Temp Fac.	Tractors/Loaders/Backhoes					10.8	10.8	10.8
Construct Hotel & Com. Center	Trowel Machine	Other Construction Equipment					108.0	108.0	108.0
Construct Hotel & Com. Center	Truck Tower (Mantiwoc type)	Off-highway Trucks					2484.0	2484.0	2484.0
Construct IMC	40 Ton Rough Terrain	Crawler Tractor/Dozers	1206.0	1072.0	804.0				
Construct IMC	40 Ton Rough Terrain Crane	Cranes	900.0	800.0	600.0				
Construct IMC	90 Ton Crane	Cranes	3600.0	3200.0	2400.0				
Construct IMC	Asphalt Paver	Pavers	594.0	528.0	396.0				
Construct IMC	Backhoe	Tractors/Loaders/Backhoes	3006.0	2672.0	2004.0				
Construct IMC	Caisson Drilling Rig	Bore/Drill Rigs	900.0	800.0	600.0				
Construct IMC	Concrete Boom Pump	Cement & Mortar Mixers	2700.0	2400.0	1800.0				
Construct IMC	Concrete Pump	Cement & Mortar Mixers	675.0	600.0	450.0				

Project Component	Ricondo Equipment	MOVES Equipment	2026	2027	2028	2029	2030	2031	2032
Construct IMC	Concrete Ready Mix Trucks	Off-highway Trucks	4950.0	4400.0	3300.0				
Construct IMC	Excavator	Excavators	1206.0	1072.0	804.0				
Construct IMC	Fork Truck	Rough Terrain Forklifts	4212.0	3744.0	2808.0				
Construct IMC	Forklift	Rough Terrain Forklifts	1800.0	1600.0	1200.0				
Construct IMC	Front Loader	Rubber Tire Loaders	2088.0	1856.0	1392.0				
Construct IMC	Front Loader for Subgrade Materials	Rubber Tire Loaders	594.0	528.0	396.0				
Construct IMC	High Lift	Other Construction Equipment	3006.0	2672.0	2004.0				
Construct IMC	Survey Crew Trucks	Off-highway Trucks	72.0	64.0	48.0				
Construct IMC	Ten Wheelers- Material Delivery	Off-highway Trucks	450.0	400.0	300.0				
Construct IMC	Tool Truck	Off-highway Trucks	1962.0	1744.0	1308.0				
Construct IMC	Tractor Trailer with Boom Hoist- Curbs Del & Place	Tractors/Loaders/Backhoes	306.0	272.0	204.0				
Construct IMC	Tractor Trailer- Material Delivery	Tractors/Loaders/Backhoes	3294.0	2928.0	2196.0				
Construct IMC	Tractor Trailer- Steel Deliveries	Tractors/Loaders/Backhoes	1800.0	1600.0	1200.0				
Construct IMC	Tractor Trailer- Stone Delivery	Tractors/Loaders/Backhoes	1494.0	1328.0	996.0				
Construct IMC	Tractor Trailers Temp Fac.	Tractors/Loaders/Backhoes	36.0	32.0	24.0				
Construct IMC	Trencher	Trenchers	900.0	800.0	600.0				
Construct IMC	Trencher for U/G Piping	Trenchers	1494.0	1328.0	996.0				
Construct IMC	Trowel Machines (4) machines	Other Construction Equipment	1800.0	1600.0	1200.0				
Construct IMC	Truck for Topsoil & Seed Del&Spread	Cranes	306.0	272.0	204.0				
Construct IMC Roadways	Air Compressor	Other Construction Equipment	53.3	53.3	53.3				
Construct IMC Roadways	Concrete Saws	Concrete/Industrial Saws	53.3	53.3	53.3				
Construct IMC Roadways	Concrete Truck	Off-highway Trucks	516.4	516.4	516.4				
Construct IMC Roadways	Curb/Gutter Paver	Pavers	230.4	230.4	230.4				
Construct IMC Roadways	Dozer	Crawler Tractor/Dozers	471.0	471.0	471.0				
Construct IMC Roadways	Dump Truck	Dumpers/Tenders	746.6	746.6	746.6				

Project Component	Ricondo Equipment	MOVES Equipment	2026	2027	2028	2029	2030	2031	2032
Construct IMC Roadways	Dump Truck (12 cy)	Dumpers/Tenders	503.2	503.2	503.2				
Construct IMC Roadways	Excavator	Excavators	237.9	237.9	237.9				
Construct IMC Roadways	Flatbed Truck	Dumpers/Tenders	329.1	329.1	329.1				
Construct IMC Roadways	Grader	Graders	22.4	22.4	22.4				
Construct IMC Roadways	Hydroseeder	Other Construction Equipment	20.2	20.2	20.2				
Construct IMC Roadways	Loader	Rubber Tire Loaders	440.8	440.8	440.8				
Construct IMC Roadways	Off-Road Truck	Off-highway Trucks	20.2	20.2	20.2				
Construct IMC Roadways	Other General Equipment	Other Construction Equipment	1381.3	1381.3	1381.3				
Construct IMC Roadways	Pickup Truck	Off-highway Trucks	1678.5	1678.5	1678.5				
Construct IMC Roadways	Pumps	Other Construction Equipment	18.4	18.4	18.4				
Construct IMC Roadways	Roller	Rollers	334.1	334.1	334.1				
Construct IMC Roadways	Rubber Tired Loader	Rubber Tire Loaders	53.3	53.3	53.3				
Construct IMC Roadways	Scraper	Scrapers	66.6	66.6	66.6				
Construct IMC Roadways	Skid Steer Loader	Skid Steer Loaders	409.6	409.6	409.6				
Construct IMC Roadways	Slip Form Paver	Pavers	53.3	53.3	53.3				
Construct IMC Roadways	Surfacing Equipment (Grooving)	Surfacing Equipment	53.3	53.3	53.3				
Construct IMC Roadways	Tractors/Loader/Backhoe	Tractors/Loaders/Backhoes	530.6	530.6	530.6				
Construct IMC Roadways	Water Truck	Off-highway Trucks	2400.0	2400.0	2400.0				
Construct Supp. Curb Areas	Air Compressor	Other Construction Equipment				4.4			
Construct Supp. Curb Areas	Concrete Saws	Concrete/Industrial Saws				4.4			
Construct Supp. Curb Areas	Concrete Truck	Off-highway Trucks				61.2			
Construct Supp. Curb Areas	Curb/Gutter Paver	Pavers				12.0			
Construct Supp. Curb Areas	Dozer	Crawler Tractor/Dozers				43.9			
Construct Supp. Curb Areas	Dump Truck	Dumpers/Tenders				108.0			
Construct Supp. Curb Areas	Dump Truck (12 cy)	Dumpers/Tenders				41.9			

Project Component	Ricondo Equipment	MOVES Equipment	2026	2027	2028	2029	2030	2031	2032
Construct Supp. Curb Areas	Excavator	Excavators				24.0			
Construct Supp. Curb Areas	Flatbed Truck	Dumpers/Tenders				2.8			
Construct Supp. Curb Areas	Grader	Graders				2.0			
Construct Supp. Curb Areas	Hydroseeder	Other Construction Equipment				1.8			
Construct Supp. Curb Areas	Loader	Rubber Tire Loaders				52.9			
Construct Supp. Curb Areas	Off-Road Truck	Off-highway Trucks				1.8			
Construct Supp. Curb Areas	Other General Equipment	Other Construction Equipment				104.8			
Construct Supp. Curb Areas	Pickup Truck	Off-highway Trucks				154.0			
Construct Supp. Curb Areas	Pumps	Other Construction Equipment				1.6			
Construct Supp. Curb Areas	Roller	Rollers				32.1			
Construct Supp. Curb Areas	Rubber Tired Loader	Rubber Tire Loaders				4.4			
Construct Supp. Curb Areas	Scraper	Scrapers				5.6			
Construct Supp. Curb Areas	Skid Steer Loader	Skid Steer Loaders				27.5			
Construct Supp. Curb Areas	Slip Form Paver	Pavers				4.4			
Construct Supp. Curb Areas	Surfacing Equipment (Grooving)	Surfacing Equipment				4.4			
Construct Supp. Curb Areas	Tractors/Loader/Backhoe	Tractors/Loaders/Backhoes				85.6			
Construct Supp. Curb Areas	Vibratory Compactor	Plate Compactors				24.0			
Construct Supp. Roadway	Air Compressor	Other Construction Equipment				38.9			
Construct Supp. Roadway	Concrete Saws	Concrete/Industrial Saws				38.9			
Construct Supp. Roadway	Concrete Truck	Off-highway Trucks				376.5			
Construct Supp. Roadway	Curb/Gutter Paver	Pavers				168.0			
Construct Supp. Roadway	Dozer	Crawler Tractor/Dozers				343.6			
Construct Supp. Roadway	Dump Truck	Dumpers/Tenders				544.6			
Construct Supp. Roadway	Dump Truck (12 cy)	Dumpers/Tenders				366.9			
Construct Supp. Roadway	Excavator	Excavators				173.6			

Project Component	Ricondo Equipment	MOVES Equipment	2026	2027	2028	2029	2030	2031	2032
Construct Supp. Roadway	Flatbed Truck	Dumpers/Tenders				240.0			
Construct Supp. Roadway	Grader	Graders				16.4			
Construct Supp. Roadway	Hydroseeder	Other Construction Equipment				14.7			
Construct Supp. Roadway	Loader	Rubber Tire Loaders				321.6			
Construct Supp. Roadway	Off-Road Truck	Off-highway Trucks				14.7			
Construct Supp. Roadway	Other General Equipment	Other Construction Equipment				1007.5			
Construct Supp. Roadway	Pickup Truck	Off-highway Trucks				1224.5			
Construct Supp. Roadway	Pumps	Other Construction Equipment				13.6			
Construct Supp. Roadway	Roller	Rollers				243.7			
Construct Supp. Roadway	Rubber Tired Loader	Rubber Tire Loaders				38.9			
Construct Supp. Roadway	Scraper	Scrapers				48.6			
Construct Supp. Roadway	Skid Steer Loader	Skid Steer Loaders				298.7			
Construct Supp. Roadway	Slip Form Paver	Pavers				38.9			
Construct Supp. Roadway	Surfacing Equipment (Grooving)	Surfacing Equipment				38.9			
Construct Supp. Roadway	Tractors/Loader/Backhoe	Tractors/Loaders/Backhoes				387.1			
Construct Supp. Roadway	Water Truck	Off-highway Trucks				1920.0			
Demo Palm Garage	Bob Cat	Skid Steer Loaders			2160.0	3840.0			
Demo Palm Garage	Dump Truck	Dumpers/Tenders			2160.0	3840.0			
Demo Palm Garage	Excavator with Bucket	Excavators			1080.0	1920.0			
Demo Palm Garage	Generator Sets	Other Construction Equipment			1080.0	1920.0			
Demo Palm Garage	Pickup Truck	Off-highway Trucks			1260.0	2240.0			
Demo Roadways for Curbside Exp.	Excavator with Bucket	Excavators				53.3			
Demo Roadways for Curbside Exp.	Excavator with Hoe Ram	Excavators				53.3			

Project Component	Ricondo Equipment	MOVES Equipment	2026	2027	2028	2029	2030	2031	2032
Demo Roadways for Curbside Exp.	Pickup Truck	Off-highway Trucks				106.7			
Demo Roadways for Cyp G. Exp.	Excavator with Bucket	Excavators					50.0		
Demo Roadways for Cyp G. Exp.	Excavator with Hoe Ram	Excavators					50.0		
Demo Roadways for Cyp G. Exp.	Pickup Truck	Off-highway Trucks					100.0		
Expand Cypress Garage	40 Ton Rough Terrain	Crawler Tractor/Dozers					140.7	201.0	201.0
Expand Cypress Garage	40 Ton Rough Terrain Crane	Cranes					105.0	150.0	150.0
Expand Cypress Garage	90 Ton Crane	Cranes					420.0	600.0	600.0
Expand Cypress Garage	Asphalt Paver	Pavers					69.3	99.0	99.0
Expand Cypress Garage	Backhoe	Tractors/Loaders/Backhoes					350.7	501.0	501.0
Expand Cypress Garage	Caisson Drilling Rig	Bore/Drill Rigs					105.0	150.0	150.0
Expand Cypress Garage	Concrete Boom Pump	Cement & Mortar Mixers					315.0	450.0	450.0
Expand Cypress Garage	Concrete Pump	Cement & Mortar Mixers					78.8	112.5	112.5
Expand Cypress Garage	Concrete Ready Mix Trucks	Off-highway Trucks					577.5	825.0	825.0
Expand Cypress Garage	Excavator	Excavators					140.7	201.0	201.0
Expand Cypress Garage	Fork Truck	Rough Terrain Forklifts					491.4	702.0	702.0
Expand Cypress Garage	Forklift	Rough Terrain Forklifts					210.0	300.0	300.0
Expand Cypress Garage	Front Loader	Rubber Tire Loaders					243.6	348.0	348.0
Expand Cypress Garage	Front Loader for Subgrade Materials	Rubber Tire Loaders					69.3	99.0	99.0
Expand Cypress Garage	High Lift	Other Construction Equipment					350.7	501.0	501.0
Expand Cypress Garage	Survey Crew Trucks	Off-highway Trucks					8.4	12.0	12.0
Expand Cypress Garage	Ten Wheelers- Material Delivery	Off-highway Trucks					52.5	75.0	75.0
Expand Cypress Garage	Tool Truck	Off-highway Trucks					228.9	327.0	327.0
Expand Cypress Garage	Tractor Trailer with Boom Hoist- Curbs Del & Place	Tractors/Loaders/Backhoes					35.7	51.0	51.0
Expand Cypress Garage	Tractor Trailer- Material Delivery	Tractors/Loaders/Backhoes					384.3	549.0	549.0

Project Component	Ricondo Equipment	MOVES Equipment	2026	2027	2028	2029	2030	2031	2032
Expand Cypress Garage	Tractor Trailer- Steel Deliveries	Tractors/Loaders/Backhoes					210.0	300.0	300.0
Expand Cypress Garage	Tractor Trailer- Stone Delivery	Tractors/Loaders/Backhoes					174.3	249.0	249.0
Expand Cypress Garage	Tractor Trailers Temp Fac.	Tractors/Loaders/Backhoes					4.2	6.0	6.0
Expand Cypress Garage	Trencher	Trenchers					105.0	150.0	150.0
Expand Cypress Garage	Trencher for U/G Piping	Trenchers					174.3	249.0	249.0
Expand Cypress Garage	Trowel Machines (4) machines	Other Construction Equipment					210.0	300.0	300.0
Expand Cypress Garage	Truck for Topsoil & Seed Del&Spread	Cranes					35.7	51.0	51.0
Interior Ren. for APM Stations	Fork Truck	Rough Terrain Forklifts	777.6			576.0			
Interior Ren. for APM Stations	Man Lift	Other Construction Equipment	777.6			576.0			
Interior Ren. for APM Stations	Tool Truck	Off-highway Trucks	97.2			72.0			
Interior Ren. for APM Stations	Tractor Trailer- Material Delivery	Tractors/Loaders/Backhoes	97.2			72.0			
Pile Driving for APM	Dozer	Crawler Tractor/Dozers	15.2	15.2	15.2	15.2	15.2		
Pile Driving for APM	Dump Truck (12 cy)	Dumpers/Tenders	22.4	22.4	22.4	22.4	22.4		
Pile Driving for APM	Excavator	Excavators	4.5	4.5	4.5	4.5	4.5		
Pile Driving for APM	Pickup Truck	Off-highway Trucks	11.9	11.9	11.9	11.9	11.9		
Pile Driving for APM	Roller	Rollers	7.9	7.9	7.9	7.9	7.9		
Pile Driving for APM	Scraper	Scrapers	5.6	5.6	5.6	5.6	5.6		
Reconstruct Palm Garage	40 Ton Rough Terrain	Crawler Tractor/Dozers					271.4	271.4	271.4
Reconstruct Palm Garage	40 Ton Rough Terrain Crane	Cranes					202.5	202.5	202.5
Reconstruct Palm Garage	90 Ton Crane	Cranes					810.0	810.0	810.0
Reconstruct Palm Garage	Asphalt Paver	Pavers					133.7	133.7	133.7
Reconstruct Palm Garage	Backhoe	Tractors/Loaders/Backhoes					676.4	676.4	676.4
Reconstruct Palm Garage	Caisson Drilling Rig	Bore/Drill Rigs					202.5	202.5	202.5
Reconstruct Palm Garage	Concrete Boom Pump	Cement & Mortar Mixers					607.5	607.5	607.5
Reconstruct Palm Garage	Concrete Pump	Cement & Mortar Mixers					151.9	151.9	151.9
Reconstruct Palm Garage	Concrete Ready Mix Trucks	Off-highway Trucks					1113.8	1113.8	1113.8

Project Component	Ricondo Equipment	MOVES Equipment	2026	2027	2028	2029	2030	2031	2032
Reconstruct Palm Garage	Excavator	Excavators					271.4	271.4	271.4
Reconstruct Palm Garage	Fork Truck	Rough Terrain Forklifts					947.7	947.7	947.7
Reconstruct Palm Garage	Forklift	Rough Terrain Forklifts					405.0	405.0	405.0
Reconstruct Palm Garage	Front Loader	Rubber Tire Loaders					469.8	469.8	469.8
Reconstruct Palm Garage	Front Loader for Subgrade Materials	Rubber Tire Loaders					133.7	133.7	133.7
Reconstruct Palm Garage	High Lift	Other Construction Equipment					676.4	676.4	676.4
Reconstruct Palm Garage	Survey Crew Trucks	Off-highway Trucks					16.2	16.2	16.2
Reconstruct Palm Garage	Ten Wheelers- Material Delivery	Off-highway Trucks					101.3	101.3	101.3
Reconstruct Palm Garage	Tool Truck	Off-highway Trucks					441.5	441.5	441.5
Reconstruct Palm Garage	Tractor Trailer with Boom Hoist- Curbs Del & Place	Tractors/Loaders/Backhoes					68.9	68.9	68.9
Reconstruct Palm Garage	Tractor Trailer- Material Delivery	Tractors/Loaders/Backhoes					741.2	741.2	741.2
Reconstruct Palm Garage	Tractor Trailer- Steel Deliveries	Tractors/Loaders/Backhoes					405.0	405.0	405.0
Reconstruct Palm Garage	Tractor Trailer- Stone Delivery	Tractors/Loaders/Backhoes					336.2	336.2	336.2
Reconstruct Palm Garage	Tractor Trailers Temp Fac.	Tractors/Loaders/Backhoes					8.1	8.1	8.1
Reconstruct Palm Garage	Trencher	Trenchers					202.5	202.5	202.5
Reconstruct Palm Garage	Trencher for U/G Piping	Trenchers					336.2	336.2	336.2
Reconstruct Palm Garage	Trowel Machines (4) machines	Other Construction Equipment					405.0	405.0	405.0
Reconstruct Palm Garage	Truck for Topsoil & Seed Del&Spread	Cranes					68.9	68.9	68.9
Site Prep for APM	Backhoe	Tractors/Loaders/Backhoes	2040.0	384.0	1560.0	1200.0	720.0		
Site Prep for APM	Bob Cat	Skid Steer Loaders	408.0	76.8	312.0	240.0	144.0		
Site Prep for APM	Bulldozer	Crawler Tractor/Dozers	680.0	128.0	520.0	400.0	240.0		
Site Prep for APM	Chain Saws	Other Construction Equipment	680.0	128.0	520.0	400.0	240.0		
Site Prep for APM	Compacting Equipment	Rollers	408.0	76.8	312.0	240.0	144.0		
Site Prep for APM	Concrete Ready Mix Trucks	Off-highway Trucks	408.0	76.8	312.0	240.0	144.0		
Site Prep for APM	Flat Bed or Dump Trucks	Dumpers/Tenders	1360.0	256.0	1040.0	800.0	480.0		

Project Component	Ricondo Equipment	MOVES Equipment	2026	2027	2028	2029	2030	2031	2032
Site Prep for APM	Fork Truck	Rough Terrain Forklifts	1020.0	192.0	780.0	600.0	360.0		
Site Prep for APM	Forktruck (Hoist)	Rough Terrain Forklifts	1360.0	256.0	1040.0	800.0	480.0		
Site Prep for APM	Front Loader	Rubber Tire Loaders	680.0	128.0	520.0	400.0	240.0		
Site Prep for APM	Grub the site down 2'-0	Other Construction Equipment	680.0	128.0	520.0	400.0	240.0		
Site Prep for APM	Log Chipper	Other Construction Equipment	680.0	128.0	520.0	400.0	240.0		
Site Prep for APM	Mulcher	Other Construction Equipment	680.0	128.0	520.0	400.0	240.0		
Site Prep for APM	Roller	Rollers	680.0	128.0	520.0	400.0	240.0		
Site Prep for APM	Seed Truck Spreader	Other Construction Equipment	272.0	51.2	208.0	160.0	96.0		
Site Prep for APM	Small Dozer	Crawler Tractor/Dozers	408.0	76.8	312.0	240.0	144.0		
Site Prep for APM	Survey Crew Trucks	Off-highway Trucks	170.0	32.0	130.0	100.0	60.0		
Site Prep for APM	Ten Wheelers	Off-highway Trucks	680.0	128.0	520.0	400.0	240.0		
Site Prep for APM	Tractor	Tractors/Loaders/Backhoes	1360.0	256.0	1040.0	800.0	480.0		
Site Prep for APM	Tractor Trailer with Boom Hoist-Delivery	Tractors/Loaders/Backhoes	408.0	76.8	312.0	240.0	144.0		
Site Prep for APM	Tractor Trailer- Material Delivery	Tractors/Loaders/Backhoes	1870.0	352.0	1430.0	1100.0	660.0		
Site Prep for APM	Tractor Trailers Temp Fac.	Tractors/Loaders/Backhoes	68.0	12.8	52.0	40.0	24.0		
Site Prep for Cyp. Garage Exp.	Backhoe	Tractors/Loaders/Backhoes					1200.0		
Site Prep for Cyp. Garage Exp.	Bob Cat	Skid Steer Loaders					240.0		
Site Prep for Cyp. Garage Exp.	Bulldozer	Crawler Tractor/Dozers					400.0		
Site Prep for Cyp. Garage Exp.	Chain Saws	Other Construction Equipment					400.0		
Site Prep for Cyp. Garage Exp.	Compacting Equipment	Rollers					240.0		
Site Prep for Cyp. Garage Exp.	Concrete Ready Mix Trucks	Off-highway Trucks					240.0		
Site Prep for Cyp. Garage Exp.	Flat Bed or Dump Trucks	Dumpers/Tenders					800.0		
Site Prep for Cyp. Garage Exp.	Fork Truck	Rough Terrain Forklifts					600.0		
Site Prep for Cyp. Garage Exp.	Forktruck (Hoist)	Rough Terrain Forklifts					800.0		

Project Component	Ricondo Equipment	MOVES Equipment	2026	2027	2028	2029	2030	2031	2032
Site Prep for Cyp. Garage Exp.	Front Loader	Rubber Tire Loaders					400.0		
Site Prep for Cyp. Garage Exp.	Grub the site down 2'-0	Other Construction Equipment					400.0		
Site Prep for Cyp. Garage Exp.	Log Chipper	Other Construction Equipment					400.0		
Site Prep for Cyp. Garage Exp.	Mulcher	Other Construction Equipment					400.0		
Site Prep for Cyp. Garage Exp.	Roller	Rollers					400.0		
Site Prep for Cyp. Garage Exp.	Seed Truck Spreader	Other Construction Equipment					160.0		
Site Prep for Cyp. Garage Exp.	Small Dozer	Crawler Tractor/Dozers					240.0		
Site Prep for Cyp. Garage Exp.	Survey Crew Trucks	Off-highway Trucks					100.0		
Site Prep for Cyp. Garage Exp.	Ten Wheelers	Off-highway Trucks					400.0		
Site Prep for Cyp. Garage Exp.	Tractor	Tractors/Loaders/Backhoes					800.0		
Site Prep for Cyp. Garage Exp.	Tractor Trailer with Boom Hoist-Delivery	Tractors/Loaders/Backhoes					240.0		
Site Prep for Cyp. Garage Exp.	Tractor Trailer- Material Delivery	Tractors/Loaders/Backhoes					1100.0		
Site Prep for Cyp. Garage Exp.	Tractor Trailers Temp Fac.	Tractors/Loaders/Backhoes					40.0		
Site Prep for IMC	Backhoe	Tractors/Loaders/Backhoes	11040.0	516.0	516.0				
Site Prep for IMC	Bob Cat	Skid Steer Loaders	2208.0	103.2	103.2				
Site Prep for IMC	Bulldozer	Crawler Tractor/Dozers	3680.0	172.0	172.0				
Site Prep for IMC	Chain Saws	Other Construction Equipment	3680.0	172.0	172.0				
Site Prep for IMC	Compacting Equipment	Rollers	2208.0	103.2	103.2				
Site Prep for IMC	Concrete Ready Mix Trucks	Off-highway Trucks	2208.0	103.2	103.2				
Site Prep for IMC	Flat Bed or Dump Trucks	Dumpers/Tenders	7360.0	344.0	344.0				
Site Prep for IMC	Fork Truck	Rough Terrain Forklifts	5520.0	258.0	258.0				
Site Prep for IMC	Forktruck (Hoist)	Rough Terrain Forklifts	7360.0	344.0	344.0				
Site Prep for IMC	Front Loader	Rubber Tire Loaders	3680.0	172.0	172.0				

Project Component	Ricondo Equipment	MOVES Equipment	2026	2027	2028	2029	2030	2031	2032
Site Prep for IMC	Grub the site down 2'-0	Other Construction Equipment	3680.0	172.0	172.0				
Site Prep for IMC	Log Chipper	Other Construction Equipment	3680.0	172.0	172.0				
Site Prep for IMC	Mulcher	Other Construction Equipment	3680.0	172.0	172.0				
Site Prep for IMC	Roller	Rollers	3680.0	172.0	172.0				
Site Prep for IMC	Seed Truck Spreader	Other Construction Equipment	1472.0	68.8	68.8				
Site Prep for IMC	Small Dozer	Crawler Tractor/Dozers	2208.0	103.2	103.2				
Site Prep for IMC	Survey Crew Trucks	Off-highway Trucks	920.0	43.0	43.0				
Site Prep for IMC	Ten Wheelers	Off-highway Trucks	3680.0	172.0	172.0				
Site Prep for IMC	Tractor	Tractors/Loaders/Backhoes	7360.0	344.0	344.0				
Site Prep for IMC	Tractor Trailer with Boom Hoist-Delivery	Tractors/Loaders/Backhoes	2208.0	103.2	103.2				
Site Prep for IMC	Tractor Trailer- Material Delivery	Tractors/Loaders/Backhoes	10120.0	473.0	473.0				
Site Prep for IMC	Tractor Trailers Temp Fac.	Tractors/Loaders/Backhoes	368.0	17.2	17.2				

TABLE A-2
PROJECT ONROAD EQUIPMENT ACTIVITY (MI)

Project Component	Ricondo Equipment	MOVES Equipment	Fuel Type	2026	2027	2028	2029	2030	2031	2032
Construct APM Bridges & V Circ.	Cement Mixer	Single Unit Short-Haul Truck	Diesel	3,677	2,151	1,179	4,163	1,249		
Construct APM Bridges & V Circ.	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel	1,961	1,147	629	2,220	666		
Construct APM Bridges & V Circ.	Passenger Car	Passenger Car	Gasoline	9,353	5,612	2,828	11,223	3,741		
Construct APM Bridges & V Circ.	Tractor Trailer	Combination Short-Haul Truck	Diesel	84	49	27	95	29		
Construct APM Maint. Facility	Cement Mixer	Single Unit Short-Haul Truck	Diesel					12,028		
Construct APM Maint. Facility	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel					6,412		
Construct APM Maint. Facility	Passenger Car	Passenger Car	Gasoline					9,675		
Construct APM Maint. Facility	Tractor Trailer	Combination Short-Haul Truck	Diesel					832		
Construct APM Stations	Cement Mixer	Single Unit Short-Haul Truck	Diesel	1,133	1,133	1,133	1,133	1,133		
Construct APM Stations	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel	604	604	604	604	604		
Construct APM Stations	Passenger Car	Passenger Car	Gasoline	3,870	3,870	3,870	3,870	3,870		
Construct APM Stations	Tractor Trailer	Combination Short-Haul Truck	Diesel	118	118	118	118	118		
Construct APM Substations	Cement Mixer	Single Unit Short-Haul Truck	Diesel			694		694		
Construct APM Substations	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel			370		370		
Construct APM Substations	Passenger Car	Passenger Car	Gasoline			3,225		3,225		
Construct APM Substations	Tractor Trailer	Combination Short-Haul Truck	Diesel			48		48		
Construct APM Track	Cement Mixer	Single Unit Short-Haul Truck	Diesel	18,733	8,673	14,223	14,223	5,203		
Construct APM Track	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel	9,990	4,625	7,585	7,585	2,775		
Construct APM Track	Passenger Car	Passenger Car	Gasoline	2,709	1,134	2,258	2,258	683		
Construct Hotel & Com. Center	Cement Mixer	Single Unit Short-Haul Truck	Diesel					62,438	62,438	62,438
Construct Hotel & Com. Center	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel					33,299	33,299	33,299
Construct Hotel & Com. Center	Passenger Car	Passenger Car	Gasoline					13,932	13,932	13,932
Construct Hotel & Com. Center	Tractor Trailer	Combination Short-Haul Truck	Diesel					6,480	6,480	6,480
Construct IMC	Cement Mixer	Single Unit Short-Haul Truck	Diesel	416,250	371,850	277,500				
Construct IMC	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel	222,000	198,320	148,000				
Construct IMC	Passenger Car	Passenger Car	Gasoline	1,316	12,036	10,965				

Project Component	Ricondo Equipment	MOVES Equipment	Fuel Type	2026	2027	2028	2029	2030	2031	2032
Construct IMC	Tractor Trailer	Combination Short-Haul Truck	Diesel	14,940	13,346	9,960				
Construct IMC Roadways	Cement Mixer	Single Unit Short-Haul Truck	Diesel	39,313	28,444	33,300				
Construct IMC Roadways	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel	20,967	15,170	17,760				
Construct IMC Roadways	Passenger Car	Passenger Car	Gasoline	27,477	20,555	22,898				
Construct Supp. Curb Areas	Cement Mixer	Single Unit Short-Haul Truck	Diesel				2,775			
Construct Supp. Curb Areas	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel				1,480			
Construct Supp. Curb Areas	Passenger Car	Passenger Car	Gasoline				4,580			
Construct Supp. Roadway	Cement Mixer	Single Unit Short-Haul Truck	Diesel				24,281			
Construct Supp. Roadway	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel				12,950			
Construct Supp. Roadway	Passenger Car	Passenger Car	Gasoline				17,286			
Demo Palm Garage	Dump Truck	Single Unit Short-Haul Truck	Diesel			5,556	9,877			
Demo Palm Garage	Passenger Car	Passenger Car	Gasoline			1,125	1,935			
Demo Roadways for Curbside Exp.	Dump Truck	Single Unit Short-Haul Truck	Diesel				2,469			
Demo Roadways for Curbside Exp.	Passenger Car	Passenger Car	Gasoline				293			
Demo Roadways for Cyp G. Exp.	Dump Truck	Single Unit Short-Haul Truck	Diesel					2,315		
Demo Roadways for Cyp G. Exp.	Passenger Car	Passenger Car	Gasoline					194		
Expand Cypress Garage	Cement Mixer	Single Unit Short-Haul Truck	Diesel					48,563	69,375	69,375
Expand Cypress Garage	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel					25,900	37,000	37,000
Expand Cypress Garage	Passenger Car	Passenger Car	Gasoline					9,843	13,158	13,158
Expand Cypress Garage	Tractor Trailer	Combination Short-Haul Truck	Diesel					1,743	2,490	2,490
Interior Ren. for APM Stations	Cement Mixer	Single Unit Short-Haul Truck	Diesel	1,874			1,388			
Interior Ren. for APM Stations	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel	999			740			
Interior Ren. for APM Stations	Passenger Car	Passenger Car	Gasoline	1,032			774			
Interior Ren. for APM Stations	Tractor Trailer	Combination Short-Haul Truck	Diesel	972			720			
Pile Driving for APM	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel	4,176	789	3,197	2,452	1,492		
Pile Driving for APM	Passenger Car	Passenger Car	Gasoline	710	363	710	710	363		
Reconstruct Palm Garage	Cement Mixer	Single Unit Short-Haul Truck	Diesel					93,656	93,656	93,656

Project Component	Ricondo Equipment	MOVES Equipment	Fuel Type	2026	2027	2028	2029	2030	2031	2032
Reconstruct Palm Garage	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel					49,950	49,950	49,950
Reconstruct Palm Garage	Passenger Car	Passenger Car	Gasoline					13,158	13,158	13,158
Reconstruct Palm Garage	Tractor Trailer	Combination Short-Haul Truck	Diesel					3,362	3,362	3,362
Site Prep for APM	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel	20,961	3,946	16,029	12,330	7,398		
Site Prep for APM	Passenger Car	Passenger Car	Gasoline	8,901	1,484	6,659	5,175	3,726		
Site Prep for APM	Tractor Trailer	Combination Short-Haul Truck	Diesel	13,600	2,560	10,400	8,000	4,800		
Site Prep for Cyp. Garage Exp.	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel					12,330		
Site Prep for Cyp. Garage Exp.	Passenger Car	Passenger Car	Gasoline					2,967		
Site Prep for Cyp. Garage Exp.	Tractor Trailer	Combination Short-Haul Truck	Diesel					8,000		
Site Prep for IMC	Dump Truck Subbase Material	Single Unit Short-Haul Truck	Diesel	113,436	5,302	5,302				
Site Prep for IMC	Passenger Car	Passenger Car	Gasoline	4,451	759	759				
Site Prep for IMC	Tractor Trailer	Combination Short-Haul Truck	Diesel	73,600	3,440	3,440				

TABLE A-3
EPA MOVES NONROAD EMISSION FACTORS FOR BROWARD COUNTY (G/HR)

Equipment	Year	CO	VOC	NOx	SO2	PM10	PM25	CO_2	CH_4	N_2O
Bore/Drill Rigs	2026	42.38	10.95	169.76	0.12	7.78	7.55	40761.05	0.48	1.88
Bore/Drill Rigs	2027	36.49	9.35	149.72	0.12	6.64	6.44	40765.66	0.41	1.88
Bore/Drill Rigs	2028	31.32	8.04	131.87	0.12	5.73	5.56	40769.30	0.35	1.88
Bore/Drill Rigs	2029	27.14	7.02	117.50	0.12	5.01	4.86	40772.25	0.31	1.88
Bore/Drill Rigs	2030	23.91	6.24	106.84	0.11	4.43	4.30	40774.54	0.28	1.88
Bore/Drill Rigs	2031	21.53	5.65	99.25	0.11	3.99	3.87	40776.22	0.27	1.88
Bore/Drill Rigs	2032	19.75	5.21	93.70	0.11	3.67	3.56	40777.55	0.26	1.88
Cement & Mortar Mixers	2026	15.64	4.21	40.17	0.02	2.42	2.35	7509.13	0.22	0.35
Cement & Mortar Mixers	2027	14.54	3.95	37.53	0.02	2.21	2.14	7509.89	0.22	0.35
Cement & Mortar Mixers	2028	13.30	3.65	34.42	0.02	1.97	1.91	7510.77	0.21	0.35
Cement & Mortar Mixers	2029	12.17	3.38	31.68	0.02	1.77	1.71	7511.55	0.21	0.35
Cement & Mortar Mixers	2030	11.32	3.18	29.69	0.02	1.62	1.57	7512.10	0.20	0.35
Cement & Mortar Mixers	2031	10.76	3.04	28.39	0.02	1.51	1.47	7512.49	0.20	0.35
Cement & Mortar Mixers	2032	10.37	2.94	27.48	0.02	1.44	1.39	7512.78	0.20	0.35
Concrete/Industrial Saws	2026	13.19	2.48	57.95	0.05	1.73	1.68	16589.57	0.27	0.76
Concrete/Industrial Saws	2027	11.63	2.30	56.24	0.05	1.49	1.44	16590.09	0.26	0.76
Concrete/Industrial Saws	2028	10.44	2.17	54.78	0.05	1.30	1.26	16590.49	0.25	0.76
Concrete/Industrial Saws	2029	9.35	2.06	53.77	0.04	1.12	1.09	16590.78	0.24	0.76
Concrete/Industrial Saws	2030	8.30	1.96	52.77	0.04	0.96	0.93	16591.04	0.23	0.76
Concrete/Industrial Saws	2031	7.80	1.92	52.27	0.04	0.88	0.85	16591.13	0.23	0.76
Concrete/Industrial Saws	2032	7.51	1.89	51.99	0.04	0.84	0.81	16591.24	0.23	0.76
Cranes	2026	12.00	2.66	53.14	0.14	2.24	2.18	52949.48	0.21	2.44
Cranes	2027	10.37	2.34	47.25	0.14	1.96	1.90	52950.41	0.18	2.44
Cranes	2028	9.14	2.11	42.61	0.14	1.75	1.70	52951.05	0.16	2.44
Cranes	2029	8.03	1.91	38.13	0.14	1.58	1.53	52951.61	0.15	2.44
Cranes	2030	6.90	1.72	33.53	0.14	1.41	1.37	52952.15	0.12	2.44

Equipment	Year	CO	VOC	NOx	SO2	PM10	PM25	CO_2	CH_4	N_2O
Cranes	2031	5.87	1.53	29.85	0.14	1.24	1.21	52952.67	0.11	2.44
Cranes	2032	5.20	1.41	27.20	0.14	1.14	1.10	52953.03	0.09	2.44
Crawler Tractor/Dozers	2026	20.08	3.68	93.92	0.22	3.62	3.52	82752.24	0.29	3.81
Crawler Tractor/Dozers	2027	16.06	3.20	85.76	0.22	3.04	2.95	82753.56	0.24	3.81
Crawler Tractor/Dozers	2028	13.26	2.86	79.92	0.22	2.64	2.56	82754.34	0.21	3.81
Crawler Tractor/Dozers	2029	10.79	2.57	75.21	0.22	2.27	2.20	82755.39	0.18	3.81
Crawler Tractor/Dozers	2030	9.01	2.36	71.98	0.22	2.00	1.94	82755.95	0.16	3.81
Crawler Tractor/Dozers	2031	8.11	2.26	70.37	0.22	1.86	1.81	82756.25	0.15	3.81
Crawler Tractor/Dozers	2032	7.49	2.19	69.35	0.22	1.77	1.72	82756.29	0.15	3.81
Crushing/Proc. Equipment	2026	12.48	2.63	68.58	0.10	1.92	1.86	35796.86	0.26	1.65
Crushing/Proc. Equipment	2027	10.95	2.36	64.44	0.10	1.67	1.62	35797.66	0.24	1.65
Crushing/Proc. Equipment	2028	9.75	2.16	61.03	0.10	1.49	1.44	35798.25	0.23	1.65
Crushing/Proc. Equipment	2029	8.86	2.00	58.12	0.10	1.35	1.31	35798.68	0.22	1.65
Crushing/Proc. Equipment	2030	7.97	1.86	55.06	0.10	1.23	1.19	35799.11	0.20	1.65
Crushing/Proc. Equipment	2031	7.12	1.72	52.08	0.10	1.11	1.07	35799.53	0.19	1.65
Crushing/Proc. Equipment	2032	6.38	1.60	49.76	0.10	0.99	0.96	35799.84	0.18	1.65
Dumpers/Tenders	2026	16.82	4.05	23.75	0.02	2.57	2.49	4744.63	0.15	0.22
Dumpers/Tenders	2027	15.23	3.68	22.53	0.01	2.30	2.23	4745.72	0.15	0.22
Dumpers/Tenders	2028	13.61	3.29	21.18	0.01	2.02	1.96	4746.85	0.14	0.22
Dumpers/Tenders	2029	12.14	2.94	20.00	0.01	1.79	1.73	4747.85	0.13	0.22
Dumpers/Tenders	2030	10.97	2.67	19.12	0.01	1.60	1.55	4748.66	0.13	0.22
Dumpers/Tenders	2031	10.12	2.46	18.51	0.01	1.46	1.42	4749.24	0.13	0.22
Dumpers/Tenders	2032	9.52	2.31	18.08	0.01	1.36	1.32	4749.68	0.12	0.22
Excavators	2026	7.21	1.65	36.80	0.15	1.45	1.41	54730.32	0.13	2.52
Excavators	2027	6.32	1.54	34.74	0.15	1.29	1.25	54730.62	0.12	2.52
Excavators	2028	5.72	1.47	33.40	0.14	1.18	1.14	54730.89	0.11	2.52
Excavators	2029	5.32	1.42	32.59	0.14	1.10	1.07	54731.05	0.11	2.52

Equipment	Year	CO	VOC	NOx	SO2	PM10	PM25	CO_2	CH_4	N_2O
Excavators	2030	5.03	1.38	32.05	0.14	1.05	1.02	54731.20	0.10	2.52
Excavators	2031	4.84	1.36	31.67	0.14	1.02	0.99	54731.17	0.10	2.52
Excavators	2032	4.72	1.34	31.43	0.14	1.00	0.97	54731.23	0.10	2.52
Graders	2026	7.43	1.65	27.38	0.17	1.66	1.61	64847.55	0.11	2.99
Graders	2027	6.06	1.47	23.76	0.17	1.41	1.37	64848.08	0.09	2.99
Graders	2028	5.15	1.36	21.20	0.17	1.25	1.21	64848.36	0.08	2.99
Graders	2029	4.45	1.27	19.35	0.17	1.12	1.09	64848.59	0.07	2.99
Graders	2030	4.00	1.21	18.23	0.17	1.03	1.00	64848.76	0.06	2.99
Graders	2031	3.74	1.18	17.70	0.17	0.98	0.95	64848.97	0.06	2.99
Graders	2032	3.58	1.15	17.39	0.17	0.95	0.92	64848.92	0.06	2.99
Off-Highway Tractors	2026	105.06	19.71	598.47	0.63	16.52	16.02	229328.09	1.55	10.57
Off-Highway Tractors	2027	89.63	17.72	566.57	0.63	14.73	14.28	229334.30	1.39	10.57
Off-Highway Tractors	2028	74.87	15.84	539.57	0.62	12.94	12.55	229339.64	1.25	10.57
Off-Highway Tractors	2029	62.81	14.29	517.09	0.62	11.46	11.12	229343.59	1.14	10.57
Off-Highway Tractors	2030	50.44	12.76	495.89	0.61	9.89	9.59	229348.49	1.02	10.57
Off-Highway Tractors	2031	40.11	11.48	478.90	0.61	8.53	8.27	229351.67	0.92	10.57
Off-Highway Tractors	2032	35.17	10.87	470.74	0.61	7.87	7.64	229353.47	0.87	10.57
Off-highway Trucks	2026	32.15	12.58	643.54	0.66	8.75	8.48	247933.77	1.03	11.43
Off-highway Trucks	2027	28.98	12.16	638.78	0.65	8.32	8.07	247935.49	0.99	11.43
Off-highway Trucks	2028	26.73	11.87	635.54	0.65	8.01	7.77	247936.31	0.96	11.43
Off-highway Trucks	2029	25.33	11.68	633.63	0.65	7.83	7.60	247936.68	0.95	11.43
Off-highway Trucks	2030	24.47	11.58	632.45	0.65	7.73	7.49	247936.41	0.94	11.43
Off-highway Trucks	2031	23.90	11.50	631.68	0.65	7.67	7.44	247937.12	0.93	11.43
Off-highway Trucks	2032	23.70	11.48	631.40	0.65	7.66	7.43	247937.58	0.93	11.43
Other Construction Equipment	2026	65.33	9.79	175.40	0.29	9.39	9.11	104211.91	0.58	4.80
Other Construction Equipment	2027	57.78	8.72	157.33	0.29	8.39	8.13	104214.75	0.52	4.80
Other Construction Equipment	2028	51.11	7.77	141.64	0.29	7.50	7.27	104217.65	0.48	4.80

Equipment	Year	CO	VOC	NOx	SO2	PM10	PM25	CO_2	CH_4	N_2O
Other Construction Equipment	2029	45.19	6.94	128.27	0.29	6.70	6.50	104220.23	0.44	4.80
Other Construction Equipment	2030	39.55	6.18	115.59	0.28	5.95	5.77	104222.11	0.40	4.80
Other Construction Equipment	2031	35.01	5.59	105.19	0.28	5.37	5.21	104223.77	0.37	4.80
Other Construction Equipment	2032	31.33	5.12	96.59	0.28	4.92	4.77	104225.67	0.35	4.80
Pavers	2026	9.48	1.81	51.23	0.11	1.65	1.60	40390.80	0.19	1.86
Pavers	2027	8.21	1.65	48.55	0.11	1.41	1.37	40391.32	0.18	1.86
Pavers	2028	7.21	1.54	46.38	0.11	1.23	1.20	40391.57	0.17	1.86
Pavers	2029	6.40	1.44	44.61	0.11	1.09	1.06	40391.92	0.16	1.86
Pavers	2030	5.78	1.37	43.18	0.11	0.98	0.95	40392.05	0.15	1.86
Pavers	2031	5.26	1.31	42.03	0.11	0.89	0.86	40392.24	0.14	1.86
Pavers	2032	4.89	1.26	41.18	0.11	0.83	0.80	40392.29	0.14	1.86
Paving Equipment	2026	13.76	2.80	45.95	0.06	2.20	2.13	22837.42	0.26	1.05
Paving Equipment	2027	12.20	2.57	42.04	0.06	1.91	1.86	22838.03	0.24	1.05
Paving Equipment	2028	10.73	2.37	39.42	0.06	1.63	1.58	22838.68	0.23	1.05
Paving Equipment	2029	9.43	2.20	37.26	0.06	1.38	1.33	22839.07	0.21	1.05
Paving Equipment	2030	8.76	2.12	36.05	0.06	1.25	1.21	22839.27	0.21	1.05
Paving Equipment	2031	8.33	2.07	35.26	0.06	1.16	1.13	22839.38	0.20	1.05
Paving Equipment	2032	8.04	2.03	34.68	0.06	1.11	1.07	22839.51	0.20	1.05
Plate Compactors	2026	7.03	2.19	13.15	0.01	0.72	0.70	1905.98	0.19	0.09
Plate Compactors	2027	6.98	2.19	13.12	0.01	0.71	0.69	1905.98	0.19	0.09
Plate Compactors	2028	6.95	2.19	13.11	0.01	0.71	0.69	1905.98	0.19	0.09
Plate Compactors	2029	6.91	2.19	13.10	0.01	0.70	0.68	1905.99	0.19	0.09
Plate Compactors	2030	6.88	2.18	13.09	0.01	0.69	0.67	1905.99	0.19	0.09
Plate Compactors	2031	6.87	2.18	13.09	0.01	0.69	0.67	1906.00	0.19	0.09
Plate Compactors	2032	6.88	2.19	13.09	0.01	0.69	0.67	1905.99	0.19	0.09
Rollers	2026	11.69	2.11	50.33	0.08	1.89	1.83	30461.44	0.21	1.40
Rollers	2027	10.03	1.94	47.65	0.08	1.59	1.54	30461.95	0.20	1.40

Equipment	Year	CO	VOC	NOx	SO2	PM10	PM25	CO_2	CH_4	N_2O
Rollers	2028	9.07	1.84	45.81	0.08	1.41	1.37	30462.23	0.19	1.40
Rollers	2029	8.28	1.76	44.24	0.08	1.27	1.23	30462.41	0.18	1.40
Rollers	2030	7.54	1.69	42.87	0.08	1.14	1.10	30462.65	0.17	1.40
Rollers	2031	7.04	1.64	41.85	0.08	1.05	1.02	30462.73	0.17	1.40
Rollers	2032	6.66	1.60	41.00	0.08	0.98	0.95	30462.86	0.16	1.40
Rough Terrain Forklifts	2026	17.12	1.99	59.18	0.09	3.00	2.91	32533.98	0.19	1.50
Rough Terrain Forklifts	2027	13.51	1.63	54.24	0.09	2.38	2.31	32534.96	0.16	1.50
Rough Terrain Forklifts	2028	10.56	1.38	50.59	0.09	1.88	1.82	32535.75	0.14	1.50
Rough Terrain Forklifts	2029	8.93	1.23	48.39	0.09	1.59	1.55	32536.16	0.13	1.50
Rough Terrain Forklifts	2030	7.87	1.14	46.83	0.09	1.40	1.36	32536.46	0.12	1.50
Rough Terrain Forklifts	2031	7.02	1.07	45.50	0.09	1.26	1.22	32536.61	0.11	1.50
Rough Terrain Forklifts	2032	6.30	1.01	44.41	0.09	1.13	1.10	32536.73	0.11	1.50
Rubber Tire Loaders	2026	25.59	4.52	107.45	0.21	4.50	4.36	77267.37	0.36	3.56
Rubber Tire Loaders	2027	22.03	4.05	99.29	0.21	3.93	3.81	77268.72	0.32	3.56
Rubber Tire Loaders	2028	19.04	3.66	91.87	0.21	3.48	3.38	77269.98	0.29	3.56
Rubber Tire Loaders	2029	16.18	3.30	84.60	0.21	3.06	2.97	77270.92	0.25	3.56
Rubber Tire Loaders	2030	13.27	2.92	78.12	0.21	2.61	2.53	77272.06	0.22	3.56
Rubber Tire Loaders	2031	11.37	2.67	73.60	0.21	2.32	2.25	77272.89	0.20	3.56
Rubber Tire Loaders	2032	9.70	2.45	69.67	0.21	2.06	2.00	77273.29	0.18	3.56
Scrapers	2026	37.84	5.65	91.37	0.35	5.87	5.69	129642.72	0.45	5.97
Scrapers	2027	29.61	4.81	74.10	0.35	4.83	4.69	129645.23	0.36	5.97
Scrapers	2028	23.04	4.13	61.08	0.35	4.00	3.88	129647.20	0.29	5.97
Scrapers	2029	17.73	3.58	50.93	0.35	3.30	3.20	129648.69	0.23	5.97
Scrapers	2030	13.88	3.19	43.94	0.34	2.77	2.68	129649.89	0.19	5.97
Scrapers	2031	11.73	2.97	40.02	0.34	2.46	2.39	129650.30	0.17	5.97
Scrapers	2032	10.49	2.85	37.76	0.34	2.29	2.22	129650.81	0.16	5.97
Signal Boards/Light Plants	2026	11.64	2.91	33.91	0.02	1.36	1.32	6058.88	0.26	0.28

Equipment	Year	CO	VOC	NOx	SO2	PM10	PM25	CO_2	CH_4	N_2O
Signal Boards/Light Plants	2027	11.51	2.88	33.71	0.02	1.33	1.29	6058.97	0.26	0.28
Signal Boards/Light Plants	2028	11.40	2.85	33.56	0.02	1.31	1.27	6059.03	0.26	0.28
Signal Boards/Light Plants	2029	11.32	2.83	33.42	0.02	1.29	1.25	6059.09	0.26	0.28
Signal Boards/Light Plants	2030	11.23	2.81	33.29	0.02	1.27	1.24	6059.15	0.26	0.28
Signal Boards/Light Plants	2031	11.17	2.80	33.18	0.02	1.26	1.22	6059.20	0.26	0.28
Signal Boards/Light Plants	2032	11.13	2.78	33.10	0.02	1.25	1.22	6059.23	0.25	0.28
Skid Steer Loaders	2026	29.20	6.18	39.83	0.02	4.84	4.70	7983.66	0.20	0.37
Skid Steer Loaders	2027	25.98	5.47	37.60	0.02	4.28	4.15	7985.69	0.19	0.37
Skid Steer Loaders	2028	21.96	4.62	34.84	0.02	3.57	3.46	7988.16	0.17	0.37
Skid Steer Loaders	2029	18.35	3.89	32.44	0.02	2.96	2.87	7990.28	0.16	0.37
Skid Steer Loaders	2030	15.76	3.37	30.80	0.02	2.55	2.48	7991.78	0.14	0.37
Skid Steer Loaders	2031	14.08	3.02	29.73	0.02	2.27	2.21	7992.77	0.13	0.37
Skid Steer Loaders	2032	12.95	2.78	29.00	0.02	2.08	2.01	7993.51	0.13	0.37
Surfacing Equipment	2026	33.90	5.73	108.06	0.10	4.72	4.58	36158.16	0.38	1.67
Surfacing Equipment	2027	30.20	5.24	101.07	0.10	4.19	4.07	36159.61	0.36	1.67
Surfacing Equipment	2028	27.40	4.87	95.68	0.10	3.78	3.66	36160.66	0.35	1.67
Surfacing Equipment	2029	24.91	4.54	90.83	0.10	3.42	3.32	36161.64	0.33	1.67
Surfacing Equipment	2030	22.55	4.24	86.65	0.10	3.09	2.99	36162.50	0.32	1.67
Surfacing Equipment	2031	20.59	3.99	83.18	0.10	2.81	2.73	36163.22	0.31	1.67
Surfacing Equipment	2032	19.26	3.81	80.66	0.10	2.64	2.56	36163.62	0.31	1.67
Tampers/Rammers	2026	4.54	1.51	7.60	0.00	0.45	0.44	1061.88	0.13	0.05
Tampers/Rammers	2027	4.50	1.51	7.58	0.00	0.44	0.43	1061.88	0.13	0.05
Tampers/Rammers	2028	4.48	1.51	7.57	0.00	0.44	0.43	1061.88	0.13	0.05
Tampers/Rammers	2029	4.45	1.51	7.56	0.00	0.43	0.42	1061.88	0.13	0.05
Tampers/Rammers	2030	4.42	1.51	7.55	0.00	0.43	0.41	1061.88	0.13	0.05
Tampers/Rammers	2031	4.41	1.51	7.55	0.00	0.42	0.41	1061.88	0.13	0.05
Tampers/Rammers	2032	4.41	1.51	7.55	0.00	0.42	0.41	1061.88	0.13	0.05

Equipment	Year	CO	VOC	NOx	SO2	PM10	PM25	CO_2	CH_4	N_2O
Tractors/Loaders/Backhoes	2026	19.89	4.16	34.08	0.04	3.50	3.39	13059.66	0.17	0.60
Tractors/Loaders/Backhoes	2027	17.87	3.69	32.06	0.04	3.15	3.05	13061.09	0.15	0.60
Tractors/Loaders/Backhoes	2028	16.10	3.28	30.29	0.04	2.84	2.76	13062.26	0.14	0.60
Tractors/Loaders/Backhoes	2029	14.47	2.91	28.65	0.04	2.56	2.49	13063.35	0.13	0.60
Tractors/Loaders/Backhoes	2030	12.86	2.54	27.00	0.04	2.28	2.21	13064.34	0.12	0.60
Tractors/Loaders/Backhoes	2031	11.49	2.23	25.57	0.04	2.04	1.98	13065.24	0.12	0.60
Tractors/Loaders/Backhoes	2032	10.32	1.97	24.34	0.04	1.84	1.79	13066.04	0.11	0.60
Trenchers	2026	17.68	3.05	81.43	0.07	2.35	2.28	25853.70	0.33	1.19
Trenchers	2027	14.89	2.72	78.23	0.07	1.95	1.90	25854.65	0.31	1.19
Trenchers	2028	12.81	2.46	75.60	0.07	1.64	1.59	25855.39	0.30	1.19
Trenchers	2029	11.08	2.26	73.70	0.07	1.38	1.34	25855.95	0.29	1.19
Trenchers	2030	9.61	2.10	72.04	0.07	1.16	1.12	25856.43	0.27	1.19
Trenchers	2031	8.84	2.01	71.08	0.07	1.05	1.01	25856.64	0.27	1.19
Trenchers	2032	8.36	1.96	70.45	0.07	0.98	0.95	25856.77	0.26	1.19

TABLE A-4
EPA MOVES ONROAD EMISSION FACTORS FOR BROWARD COUNTY (G/MI)

Equipment	Year	Fuel Type	Road Type	Speed Bin	CO	VOC	NOx	SO2	PM10	PM25	CO_2	CH_4	N_2O
Combination Short-Haul Truck	2026	Diesel	Urban Unrestricted	52.5-57.4	1.216	0.094	1.710	0.005	0.033	0.030	1371.120	0.008	0.188
Combination Short-Haul Truck	2027	Diesel	Urban Unrestricted	52.5-57.4	1.166	0.086	1.527	0.005	0.028	0.026	1345.050	0.008	0.188
Combination Short-Haul Truck	2028	Diesel	Urban Unrestricted	52.5-57.4	1.122	0.079	1.359	0.004	0.023	0.021	1321.310	0.008	0.189
Combination Short-Haul Truck	2029	Diesel	Urban Unrestricted	52.5-57.4	1.086	0.073	1.191	0.004	0.019	0.018	1300.400	0.008	0.189
Combination Short-Haul Truck	2030	Diesel	Urban Unrestricted	52.5-57.4	1.058	0.068	1.064	0.004	0.016	0.015	1282.150	0.007	0.189
Combination Short-Haul Truck	2031	Diesel	Urban Unrestricted	52.5-57.4	1.028	0.064	0.944	0.004	0.014	0.013	1266.230	0.007	0.190
Combination Short-Haul Truck	2032	Diesel	Urban Unrestricted	52.5-57.4	1.003	0.061	0.844	0.004	0.012	0.011	1252.460	0.007	0.190
Passenger Car	2026	Gas	Urban Unrestricted	52.5-57.4	2.939	0.063	0.076	0.001	0.002	0.002	259.930	0.006	0.001
Passenger Car	2027	Gas	Urban Unrestricted	52.5-57.4	2.849	0.061	0.070	0.001	0.002	0.002	255.690	0.006	0.001
Passenger Car	2028	Gas	Urban Unrestricted	52.5-57.4	2.746	0.057	0.058	0.001	0.002	0.002	252.136	0.006	0.001
Passenger Car	2029	Gas	Urban Unrestricted	52.5-57.4	2.604	0.053	0.050	0.001	0.002	0.001	249.597	0.005	0.001
Passenger Car	2030	Gas	Urban Unrestricted	52.5-57.4	2.475	0.050	0.040	0.001	0.002	0.001	247.593	0.005	0.001
Passenger Car	2031	Gas	Urban Unrestricted	52.5-57.4	2.321	0.048	0.024	0.001	0.002	0.001	246.050	0.005	0.001
Passenger Car	2032	Gas	Urban Unrestricted	52.5-57.4	2.196	0.047	0.022	0.001	0.002	0.001	244.422	0.005	0.001
Single Unit Short-Haul Truck	2026	Diesel	Urban Unrestricted	52.5-57.4	0.701	0.063	0.722	0.002	0.024	0.022	735.737	0.005	0.097

Equipment	Year	Fuel Type	Road Type	Speed Bin	CO	VOC	NOx	SO2	PM10	PM25	CO_2	CH_4	N_2O
Single Unit Short-Haul Truck	2027	Diesel	Urban Unrestricted	52.5-57.4	0.679	0.055	0.638	0.002	0.020	0.019	721.764	0.005	0.097
Single Unit Short-Haul Truck	2028	Diesel	Urban Unrestricted	52.5-57.4	0.661	0.049	0.571	0.002	0.016	0.015	709.612	0.005	0.098
Single Unit Short-Haul Truck	2029	Diesel	Urban Unrestricted	52.5-57.4	0.644	0.043	0.494	0.002	0.014	0.012	698.305	0.005	0.098
Single Unit Short-Haul Truck	2030	Diesel	Urban Unrestricted	52.5-57.4	0.634	0.040	0.449	0.002	0.012	0.011	688.688	0.004	0.099
Single Unit Short-Haul Truck	2031	Diesel	Urban Unrestricted	52.5-57.4	0.619	0.036	0.397	0.002	0.010	0.009	680.073	0.004	0.099
Single Unit Short-Haul Truck	2032	Diesel	Urban Unrestricted	52.5-57.4	0.607	0.032	0.354	0.002	0.008	0.008	672.062	0.004	0.099

TABLE A-5
EPA MOVES NONROAD CONSTRUCTION EQUIPMENT TYPES MODELED

Construction Equipment
Bore/Drill Rigs
Cement & Mortar Mixers
Concrete/Industrial Saws
Cranes
Crawler Tractor/Dozers
Dumpers/Tenders
Excavators
Graders
Off-highway Trucks
Other Construction Equipment
Pavers
Plate Compactors
Rollers
Rough Terrain Forklifts
Rubber Tire Loaders
Scrapers
Skid Steer Loaders
Surfacing Equipment
Tractors/Loaders/Backhoes
Trenchers

Appendix C
Biological Resources

C-1 Protected Species Consultation

C-1.1 Biological Resources Technical Memorandum

C-1.2 USFWS Consultation

C-1.3 NOAA Fisheries Consultation

C-2 National Marine Fisheries Service (NMFS) Essential Fish Habitat (EFH) Consultation

Appendix C-1
Protected Species Consultation

Appendix C-1.1
Biological Resources Technical Memorandum

ESA

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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

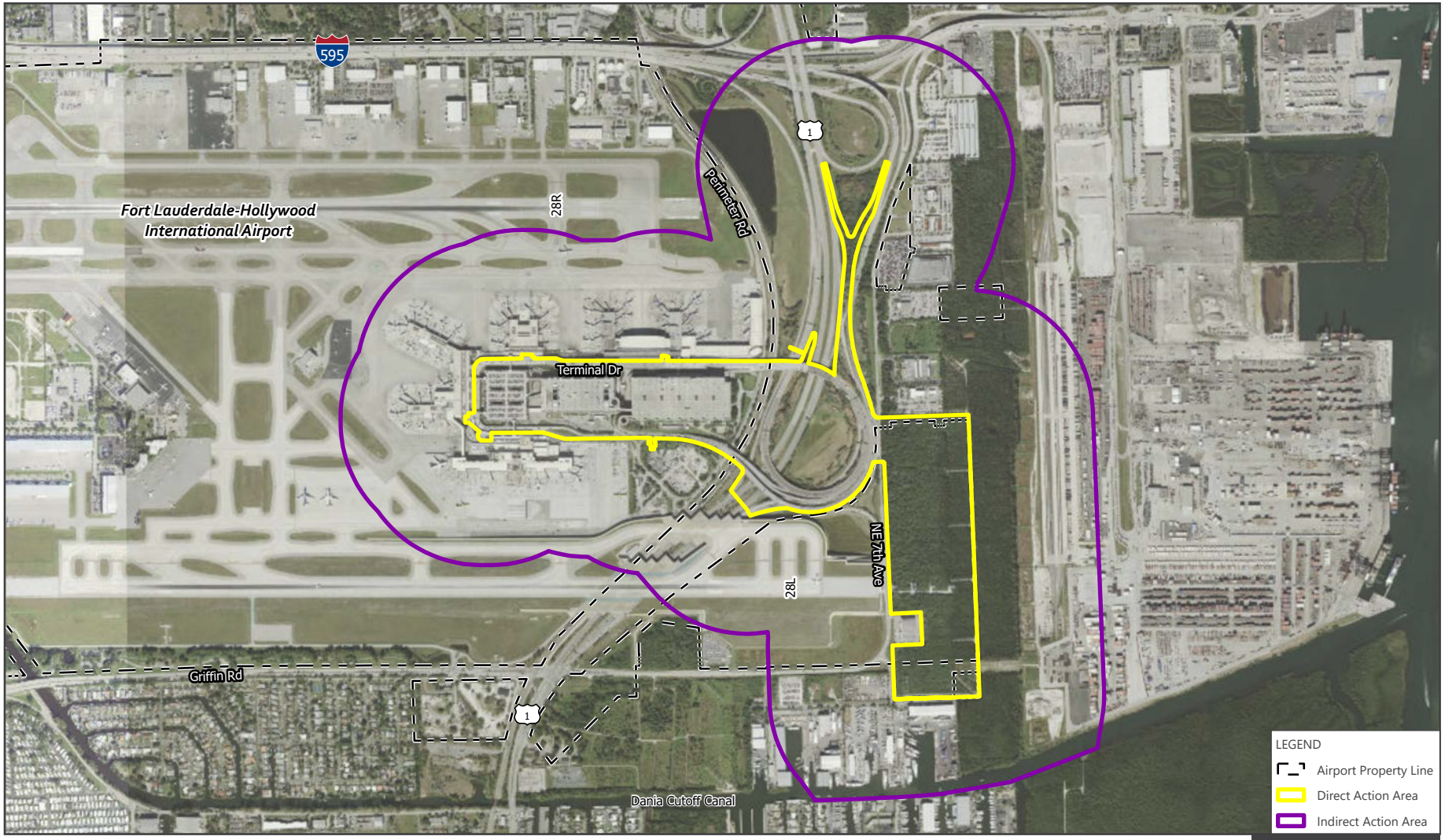
In accordance with Section 7 of *The Endangered Species Act of 1973* (16 U.S.C. §§ 1531-1544) and *Marine Mammal Protection Act (MMPA) of 1972* (16 U.S.C. §§1361 et seq.), Environmental Science Associates, Inc., (ESA) is recommending effect determinations for species with potential for occurrence in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

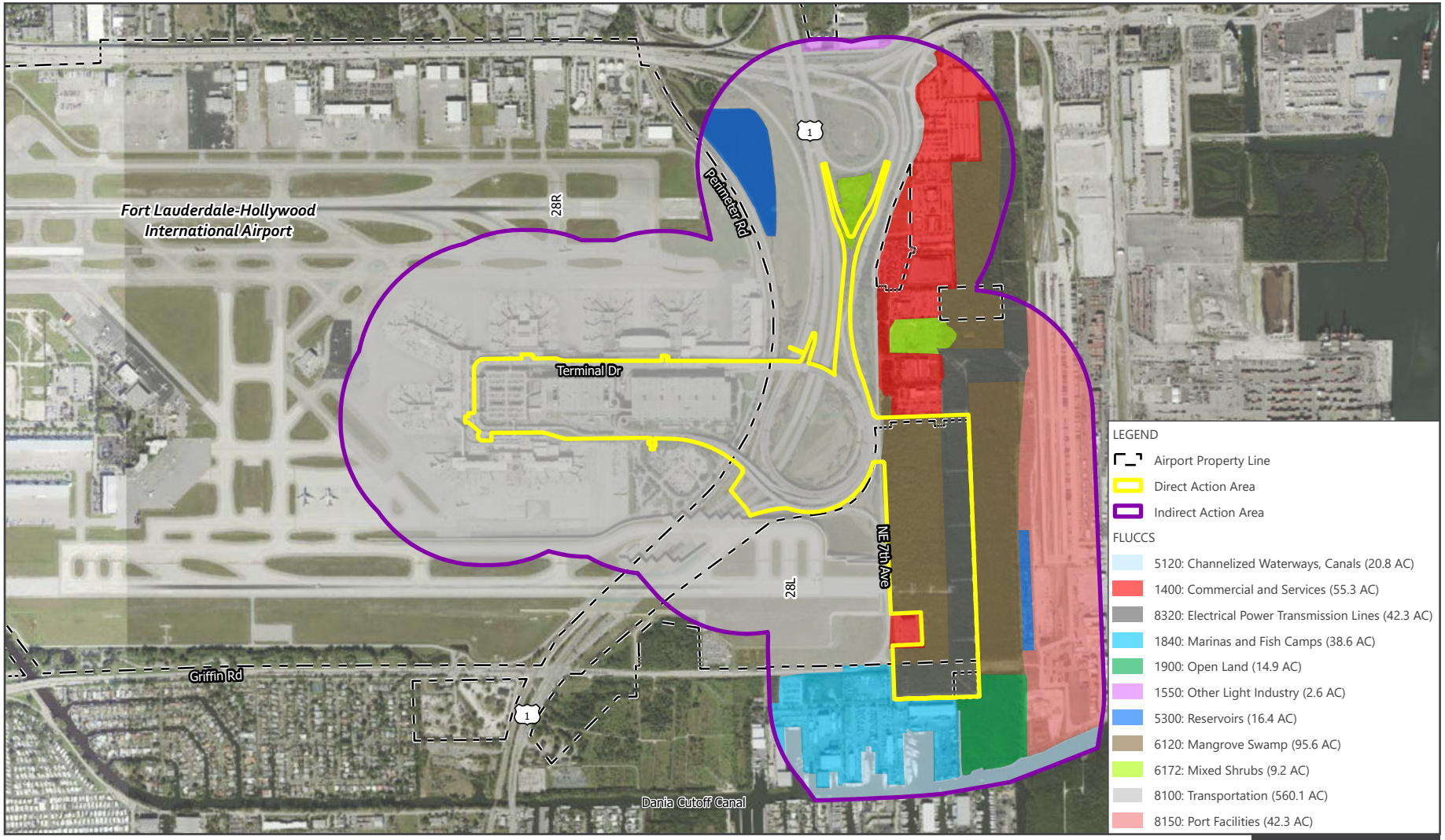
EXHIBIT 1

NORTH

0 1,600 ft.

U:\GIS\GIS\Projects\2021xxx\D202100449_BCAD_Env_Planning_Acoustical_Consulting\03_Project\Ex_3.3_Action Area.aprx

Action Area
Fort Lauderdale-Hollywood International Airport



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

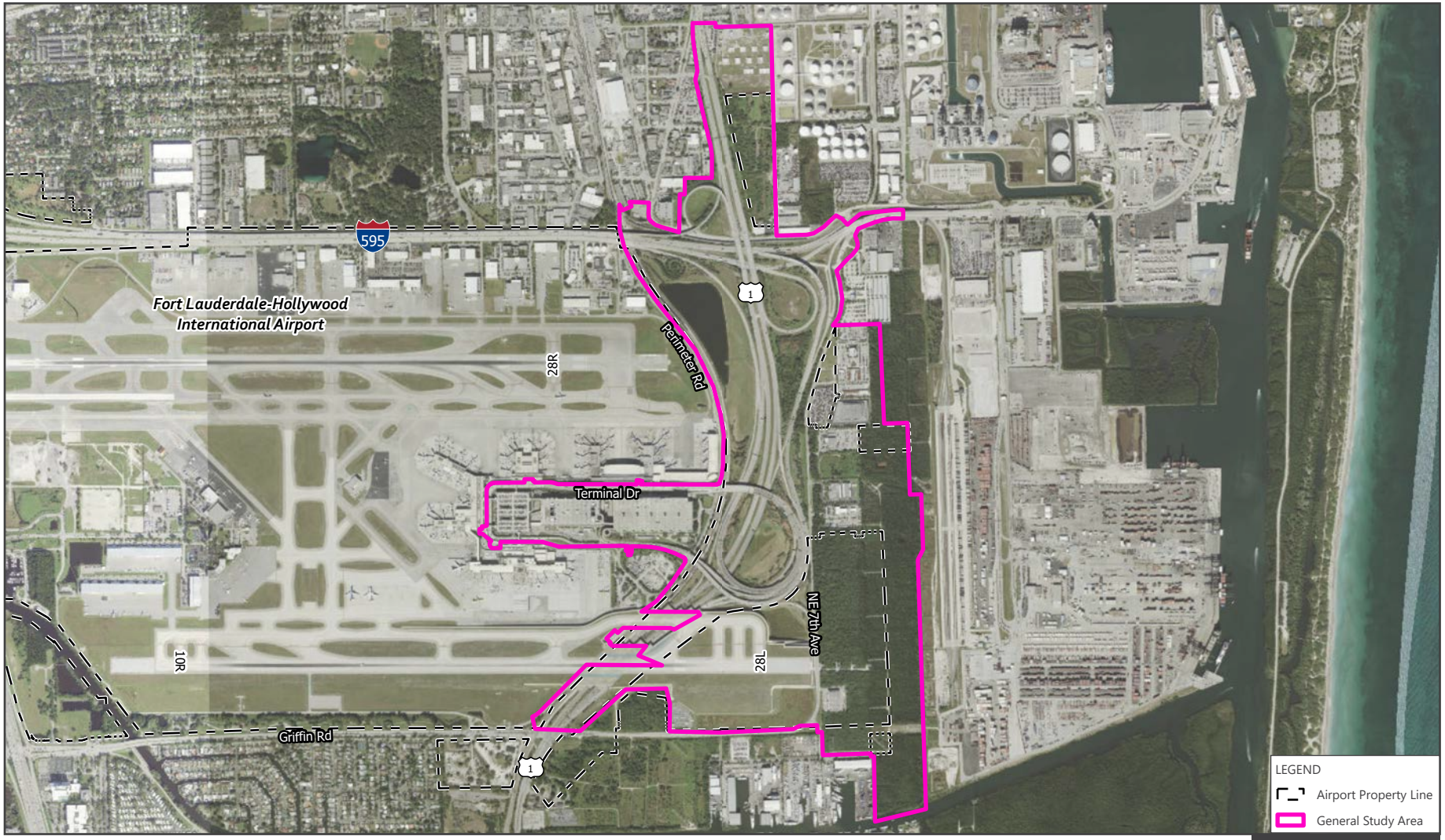
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Land Cover
Fort Lauderdale-Hollywood International Airport



SOURCES: ESA, 2024.

EXHIBIT 3

NORTH

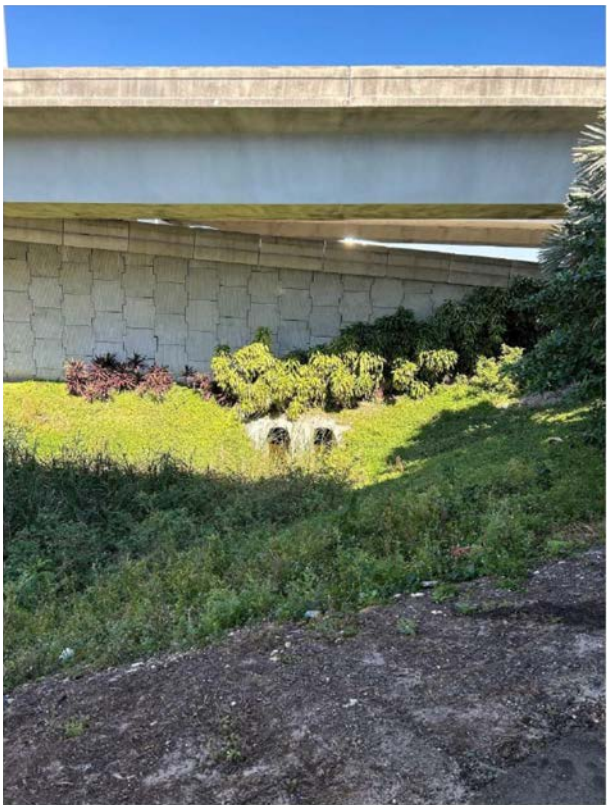
0 2,000 ft.

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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

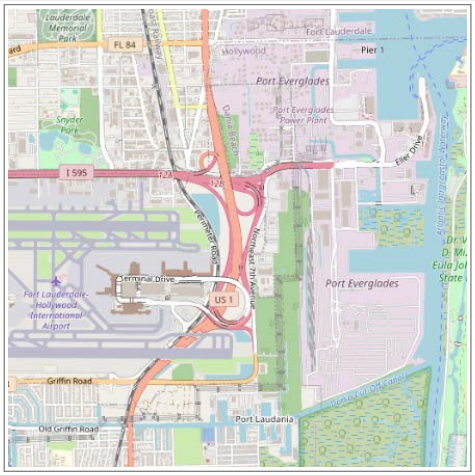
UNOFFICIAL REPORT

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

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.

---

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
Consultation

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

ESA

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 Matthias Green

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

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

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.

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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)

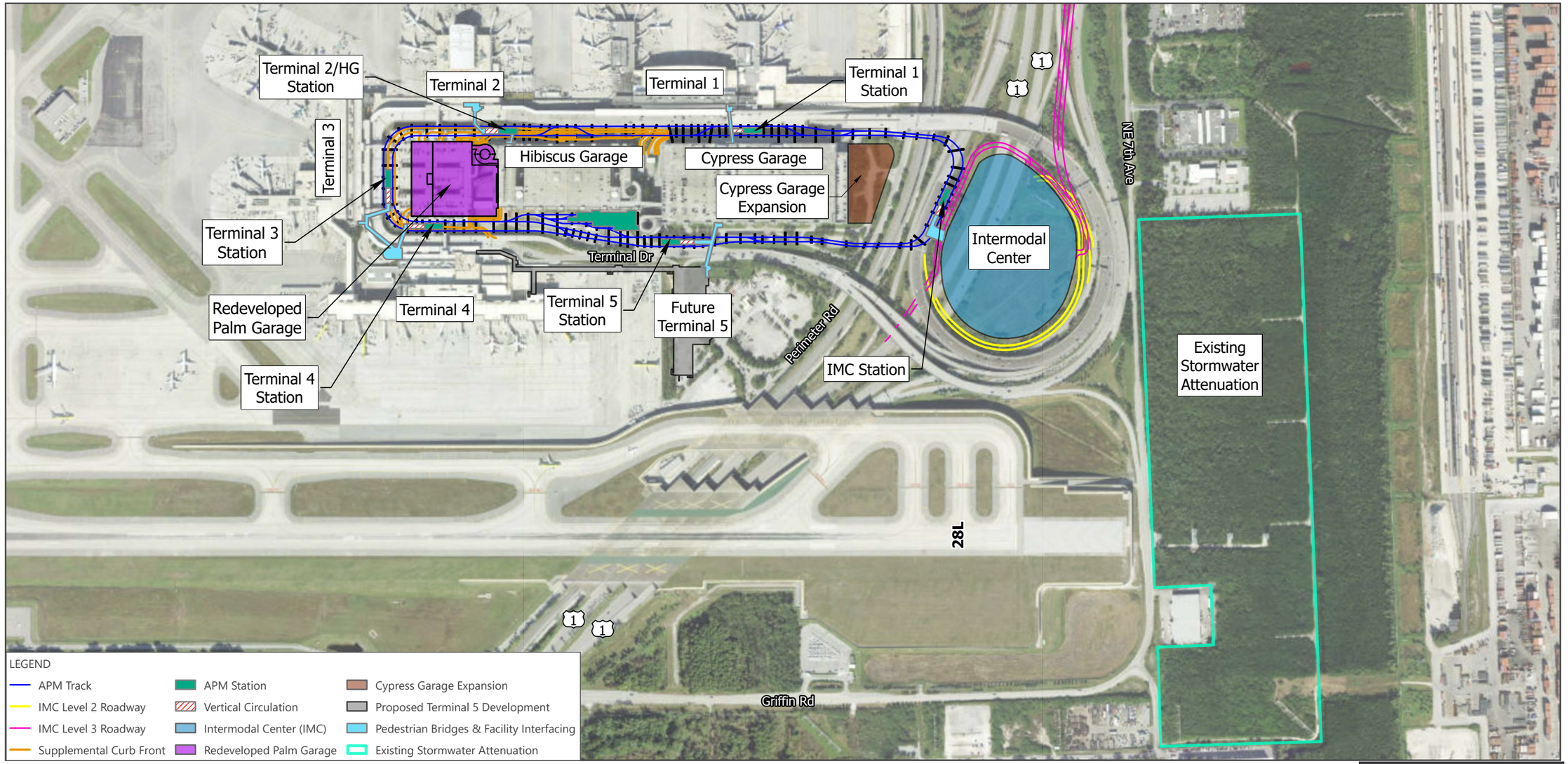
access. Those areas with potential access were inspected for evidence of bat roosting. All areas were found to be clear with no evidence of staining or guano on the ground below.

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.

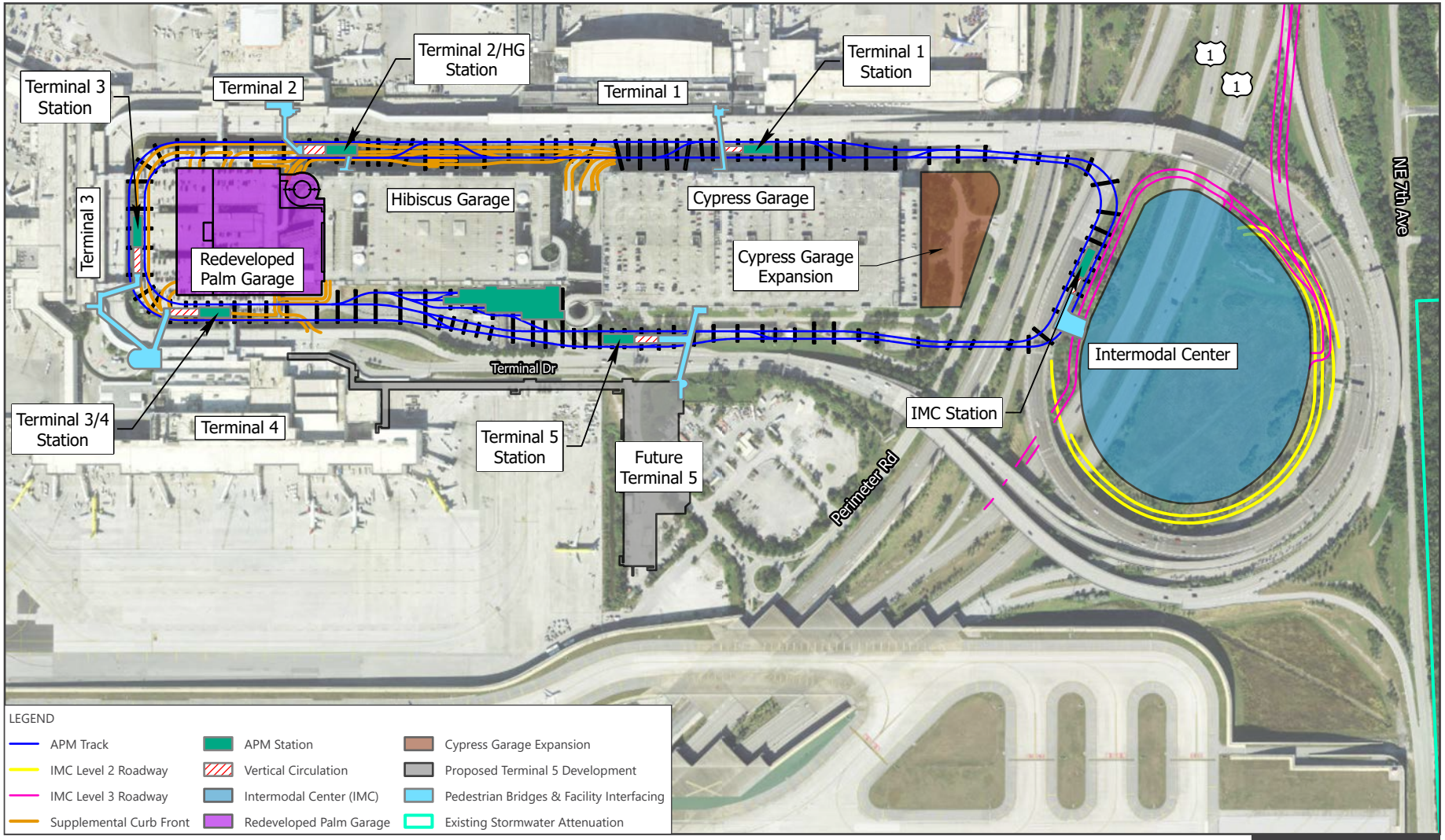
EXHIBIT 3-1

NORTH

0 600 ft.

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Project Elements
Fort Lauderdale-Hollywood International Airport



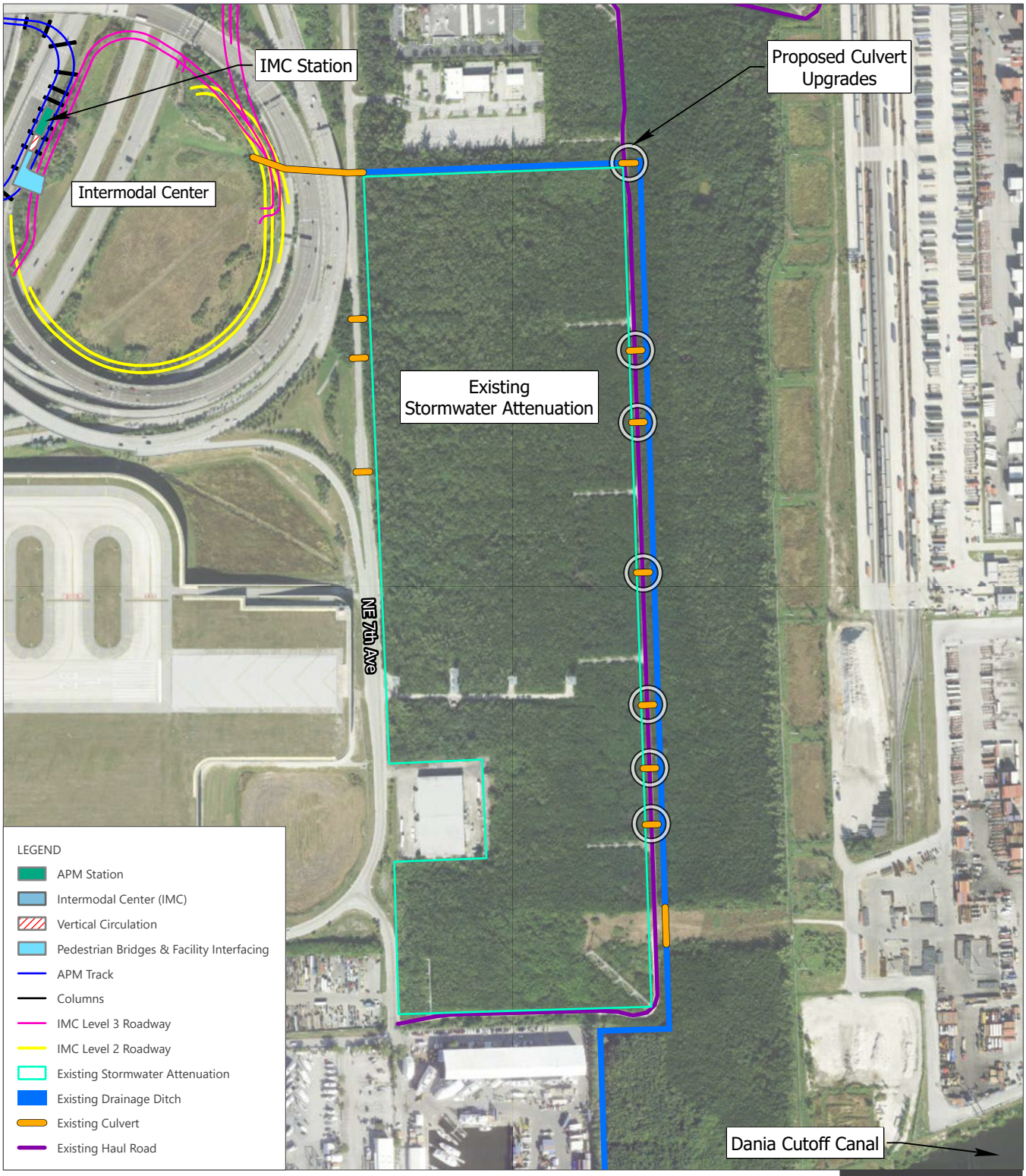
SOURCES: Ricondo & Associates, 2023; Adapted by ESA, 2024.

EXHIBIT 3-2

NORTH 0 500 ft.

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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

ESA

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
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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

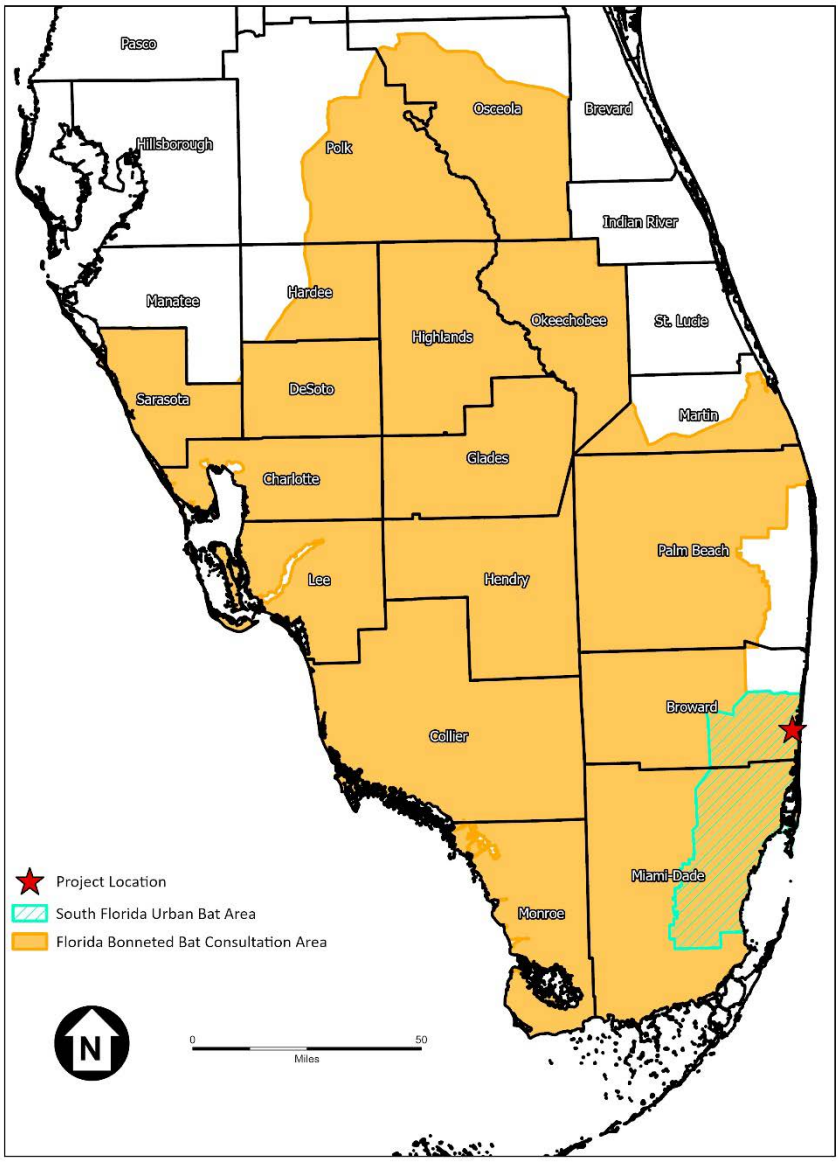


Figure 1. Map showing the USFWS's designated Consultation Area for the Florida Bonneted Bat**.**

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.

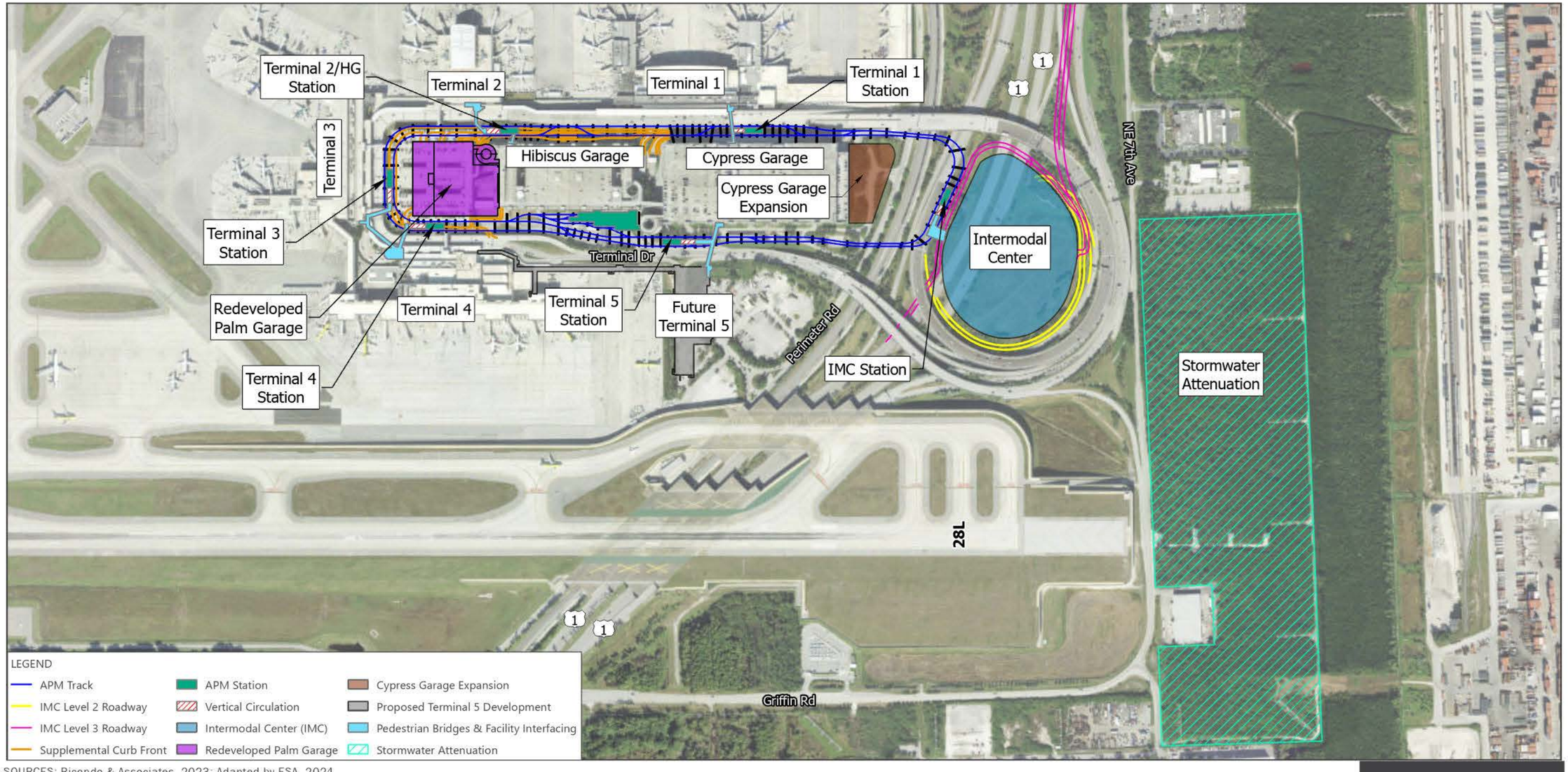
U.S. Fish and Wildlife Service. 2019. Consultation Key for the Florida bonneted bat; 04EF2000-2014-I-0320-R001. South Florida Ecological Services Office; Vero Beach, Florida.

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

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

Florida Ecological Services Field Office

Service Project Code No. 2024-0065497

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'

Environmental Review Supervisor

March 15, 2024

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

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

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

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 Consultation

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

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.

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)

NOAA FISHERIES

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

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Orlando, Florida 32819

407-487-7296

peter.m.green@faa.gov

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

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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 Matthias Green

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

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

Appendix C-2

National Marine Fisheries Service (NMFS) Essential Fish Habitat (EFH) Consultation

ESA

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407-748-2729 phone

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memorandum

date September 30, 2024

to Peter Green, FAA Southern Region Environmental Protection Specialist
William Castillo, Capital Program Management Administrator, Broward County Aviation Department (BCAD)

from Julie Sullivan, ESA

subject Essential Fish Habitat (EFH) Consultation Summary and Mitigation Agreement for Landside Projects at Ft Lauderdale-Hollywood International Airport (FLL)

The Landside Projects (Proposed Project) are needed to improve airport access and reduce congestion on terminal area roadways at FLL. The Proposed Project includes the development of an Intermodal Center (IMC) within the U.S. Highway 1 (US-1) right-of-way, construction of an Automated People Mover (APM), redevelopment of the existing Palm Parking Garage, expansion of the existing Cypress Parking Garage, reconfiguration of the terminal access roadways, and other associated landside improvements at the Airport (including utility and stormwater improvements).

Currently, stormwater from the US-1 stormwater basin that encompasses FLL and a section of US-1 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. The Proposed Project would require upgrading the seven existing drainage culverts that allow the stormwater from the system to discharge under the FPL maintenance access road. Replacing the culverts 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 at each culvert location. A total of 9,800 sf (up to 0.22 acres) of minor, temporary impacts could occur during installation of the replacement culverts. As detailed in Section 3.3 of the Final Environmental Assessment (EA) and the EFH Technical Report in Appendix C-2, there are areas within the Proposed Project footprint, specifically the mangrove wetlands, that are designated as EFH and Habitat Area of Particular Concern (HAPC).

On July 31, 2024, the FAA submitted a EFH consultation letter and EFH Technical Report to National Marine Fisheries Service (NOAA Fisheries or NMFS) to initiate consultation under the EFH protective provisions of the Magnuson Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). On September 18, 2024, FAA and NMFS discussed the Proposed Project, effects on EFH, and potential mitigation measures. During the call, NMFS stated concerns related to the time-lag associated with the proposed plan to allow mangrove plants to naturally revegetate and recommended the mitigation plan must consider this issue. Several mitigation options were discussed, including purchasing credits in mitigation banks or planting mangroves in the affected areas. FAA concurred that mitigation should

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address the time-lag issue and the initial plan for mitigation would include planting mangroves in the impacted areas. FAA agreed that mitigation plan, based on more detailed project design, will be coordinated with FAA and NFMS during the project's permitting phase. In a letter dated September 20, 2024, NOAA's National Marine Fisheries Service (NOAA Fisheries or NMFS) responded to the FAA's consultation request and provided a summary of their review and determination. The NMFS letter noted the affected mangrove and buttonwood wetlands is EFH for several species and is also HAPC for several species within the snapper/grouper complex. The letter also acknowledged that the mangrove area east of NE 7th Avenue is part of an approved stormwater management system, and the mangrove and buttonwood wetlands attenuate stormwater runoff. After considering the potential EFH impacts associated with the Proposed Project, commitments to use industry standard best management practices to avoid and minimize impacts to adjacent mangroves during construction, and to develop detailed minimization and mitigation plans during the project's design and permitting phase, and discussions with the FAA that included a commitment to supplement natural recruitment and revegetation with mangrove planting after work is completed, NMFS concurred that the impacts were minor and temporary and would not be adverse and had no EFH conservation recommendations for the proposed culvert replacements.

The affected EFH areas would revegetate naturally after the work is completed and pre-construction elevations are restored. As noted above, the NMFS expressed concern over potential time-lag for revegetation of the temporarily impacted mangroves. In order to hasten recovery and minimize the temporal loss of ecosystem function, BCAD and the FAA commit to addressing this concern in the Proposed Project's mitigation plan. There are several options to mitigate for time lag. At this early stage in the project development process, it is proposed that planting mangroves at appropriate elevations after construction would address the need to alleviate temporal loss of EFH habitat and mangrove wetland function. BCAD will coordinate with the FAA and NMFS when detailed and mitigation plans are developed during the design and permitting phase of the project. A summary of the proposed avoidance, minimization, and potential mitigation measures is described below.

Avoidance and Minimization

Section 404 of the Clean Water Act requires applicants avoid impacts to wetland and other surface waters to the greatest extent practicable. If avoidance is not possible, the applicant must demonstrate that minimization measures are being implemented to reduce the impact on wetland areas. For the Proposed Project, impacts to mangrove habitat (EFH) will be minimized by limiting construction storage, equipment, and activities to uplands and areas outside of mangrove habitat (primarily the FPL haul road) to the greatest extent possible. Key strategies to be utilized include:

1. **Site Access**: A key strategy for avoiding impacts during construction is choosing locations for access and staging that are outside of mangrove areas or that minimize encroachment. This is specific to construction vehicles, materials staging and storage, and other associated activities. This also includes confining any fuel, oils, greases or contaminants to upland areas outside of the immediate construction area. For this project, all access shall be via the existing FPL haul road. Any temporary staging would be confined to uplands, including the haul road, and would not be

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located within wetlands. Additionally, mats may be used to prevent rutting or erosion of the haul road. Mats would not be placed in wetlands.

2. **Design Considerations**: During design of the culvert replacements, efforts will be made to reduce the footprint of construction to the extent possible to avoid mangrove impacts where possible. Recommendations will be made to employ construction methods that minimize impacts.

3. **Construction Best Management Practices**: The Proposed Project will require permits for the discharge of stormwater from construction sites. Temporary water quality impacts will be minimized through the implementation of proper turbidity and perimeter controls, including silt fencing and floating barriers, throughout construction operations to ensure that State water quality standards are met. Silt fences are installed around construction areas and are the preferred method to prevent erosion and sedimentation from impacting wetlands or surface waters. Additionally, in-water turbidity barriers will be installed in a manner that protects mangroves outside the immediate construction area.

Mitigation

In addition to the implementing measures for avoidance and minimization of impacts, restoration activities will assure that there is no net loss of EFH habitat or habitat function associated with the Proposed Project. While plans will be coordinated with FAA and NMFS during the design and permitting phase(s), suggested mitigation includes the following potential measures:

- Immediately following construction, the mangrove area(s) would be maintained free of exotic pest plants and nuisance species until mangroves reestablish. This is accomplished by conducting frequent surveys to identify and assess the presence of invasive species in mangrove areas, and promptly removing exotic plants before they can establish a stronghold through manual removal, cutting, or chemical treatments, depending on the species and extent of infestation.
- In addition to the maintenance activities, to foster re-establishment of EFH habitat and offset any potential for time-lag associated with regrowth, BCAD will coordinate proposed the proposed mitigation, including planting plans, with NMFS and the FAA during the permitting process to identify areas to replant with native mangrove species.
- Consistent with anticipated permit requirements, the proposed mitigation will include development of a post-construction monitoring plan, inclusive of adaptive management, to assure that the <0.22 acres of temporary mangrove impacts are offset.
- Although it is not anticipated, if mitigation cannot be fully accomplished onsite, appropriate credits at a permitted mitigation bank could be utilized.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
https://www.fisheries.noaa.gov/region/southeast

September 20, 2024 F/SER47:KG/pw

(Sent via Electronic Mail)

Mr. Peter M. Green
Federal Aviation Administration, Airports Division
1701 Columbia, Avenue
College Park, Georgia 30337

Dear Mr. Green:

NOAA's National Marine Fisheries Service (NMFS) reviewed your letter dated July 31, 2024, requesting consultation under the essential fish habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson- Stevens Act) for replacing culverts at Fort Lauderdale-Hollywood International Airport (FLL), Broward County. The letter included an EFH Technical Report prepared for the Federal Aviation Administration (FAA) by the Broward County Aviation Department (BCAD). The FAA and BCAD propose impacts to 0.22 acres of mangrove and buttonwood wetlands adjacent to the Dania Cutoff Canal in order to replace seven culverts that convey stormwater from upland roadways and airport property to adjacent wetlands. The FAA has initially determined the proposed work would not have a substantial adverse impact on EFH or federally managed fishery species. As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the NMFS provides the following comments and recommendations pursuant to authorities of the Magnuson- Stevens Act and the Fish and Wildlife Coordination Act.

The mangrove and buttonwood wetlands are adjacent to the existing US-1 roadway and power line right-of-way and have a dense canopy of red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemose*), and buttonwood (*Conocarpus erectus*). Brazilian pepper (*Schinus terebinthifolius*) occurs at higher elevations along the perimeter berm. The South Atlantic Fishery Management Council (SAFMC) identifies mangrove and buttonwood wetlands as EFH for several species, including adult white grunt (*Haemulon plumieri*); juvenile and adult gray snapper (*Lutjanus griseus*); juvenile mutton snapper (*Lutjanus analis*); juvenile goliath grouper (*Epinephilus itijara*); and larval and juvenile pink shrimp (*Farfantepenaeus duorarum*). SAFMC also identifies these wetlands as a Habitat Area of Particular Concern (HAPC) for several species within the snapper/grouper complex. HAPCs are subsets of EFH that are rare, particularly susceptible to human-induced degradation, especially important ecologically, or located in an environmentally stressed area. Mangroves directly benefit fishery resources by providing foraging opportunities and nursery habitat. Further, mangroves help maintain water quality by filtering pollutants, stabilizing shorelines, attenuating wave action, and producing and exporting detritus (decaying organic material), which is an important component of marine and estuarine food chains. SAFMC provides additional information on EFH and HAPCs and their support of federally managed fishery species in *Fishery Ecosystem Plan of the South Atlantic Region*, which is available at *www.safmc.net*.

The project area is part of an approved stormwater management system, and the mangrove and buttonwood wetlands attenuate stormwater runoff. The FAA and BCAD estimate replacing each culvert will affect 1,400 square feet of mangroves. The FAA and BCAD would use industry standard best management practices to minimize impacts to adjacent mangroves during construction. These practices would include floating/staked turbidity barriers and silt fences. Detailed minimization and mitigation plans will be developed during the project's design and permitting process. While the affected areas will likely revegetate naturally after the work is completed and pre-construction elevations are restored, the FAA has agreed to hasten recovery and minimize the temporal loss of ecosystem services by planting mangroves at appropriate elevations after construction. Accordingly, the NMFS has no EFH conservation recommendations for the proposed culvert replacements and we will be happy to work with the FAA and BCAD on the more detailed pans need for permitting.

Thank you for the opportunity to provide these comments. Please direct related correspondence to the attention of Mr. Kurtis Gregg at 2198 Edison Avenue MS2814, Jacksonville, Florida 32204. He also may be reached by e-mail at Kurtis.Gregg@noaa.gov.

Sincerely,

WILBER.THOMAS.PAYSON.1365820186 Digitally signed by WILBER.THOMAS.PAYSON.1365820186 Date: 2024.09.20 11:31:10 -04'00'

/ for

Virginia M. Croom
Assistant Regional Administrator
Habitat Conservation Division

cc: FAA, Peter.M.Green@faa.gov
FWS, John_Wrublik@fws.gov
FWC, Lisa.Gregg@myfwc.com
F/SER47, Kurtis.Gregg@noaa.gov

Fort Lauderdale International Airport landside Project - Section 7 Consultation

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

Fri 3/15/2024 5:53 PM

To:nmfs.ser.esa.consultations@noaa.gov <nmfs.ser.esa.consultations@noaa.gov>
Cc:Castillo, William <wcastillo@broward.org>;Cannicle, Winston <WCANNICLE@broward.org>;Julie Sullivan <JSullivan@esassoc.com>;Jeffrey Covert <JCovert@esassoc.com>

2 attachments (17 MB)

Services Enclosure Package.pdf; FLL Landside Projects - FAA Sec 7 Consult Letter to NOAA NMFS.pdf;

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

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Final

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

Essential Fish Habitat Technical Report

Prepared for
Broward County Aviation Department

July 2024

ESA

Final

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

Essential Fish Habitat Technical Report

Prepared for
Broward County Aviation Department

July 2024

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Atlanta	Palm Beach County	San Diego
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Exhibit 1 Proposed Project Elements
Exhibit 2 IMC and Stormwater Improvements
Exhibit 3 Detail of Construction Limits for Proposed Culvert Upgrades
Exhibit 4 Land Cover

Appendices

A. Representative Photographs of Project Site
B. Section 7 Consultation

FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

Essential Fish Habitat Supplemental Information

1.0 Introduction

Environmental Science Associates, Inc., has prepared this report to perform the required consultation with National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) during preparation 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 the Proposed Project and its effects to support Federal Aviation Administration's consultation with 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 completing other 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. The Proposed Project elements are depicted in **Exhibit 1** at the end of this report.

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. The locations of the proposed culvert upgrades are depicted in **Exhibit 2**. An example of the construction limits for the culvert upgrades is depicted in **Exhibit 3**.

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. The land area within the Proposed Project area is depicted in **Exhibit 4**. Representative photographs of the Proposed Project site are provided in **Appendix A**.

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 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.

[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)

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. Documentation of section 7 consultation with USFWS and NOAA Fisheries is provided in **Appendix B**.

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

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

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.

3.2.1.4 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. Documentation of section 7 consultation with USFWS and NOAA Fisheries is provided in **Appendix B**.

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

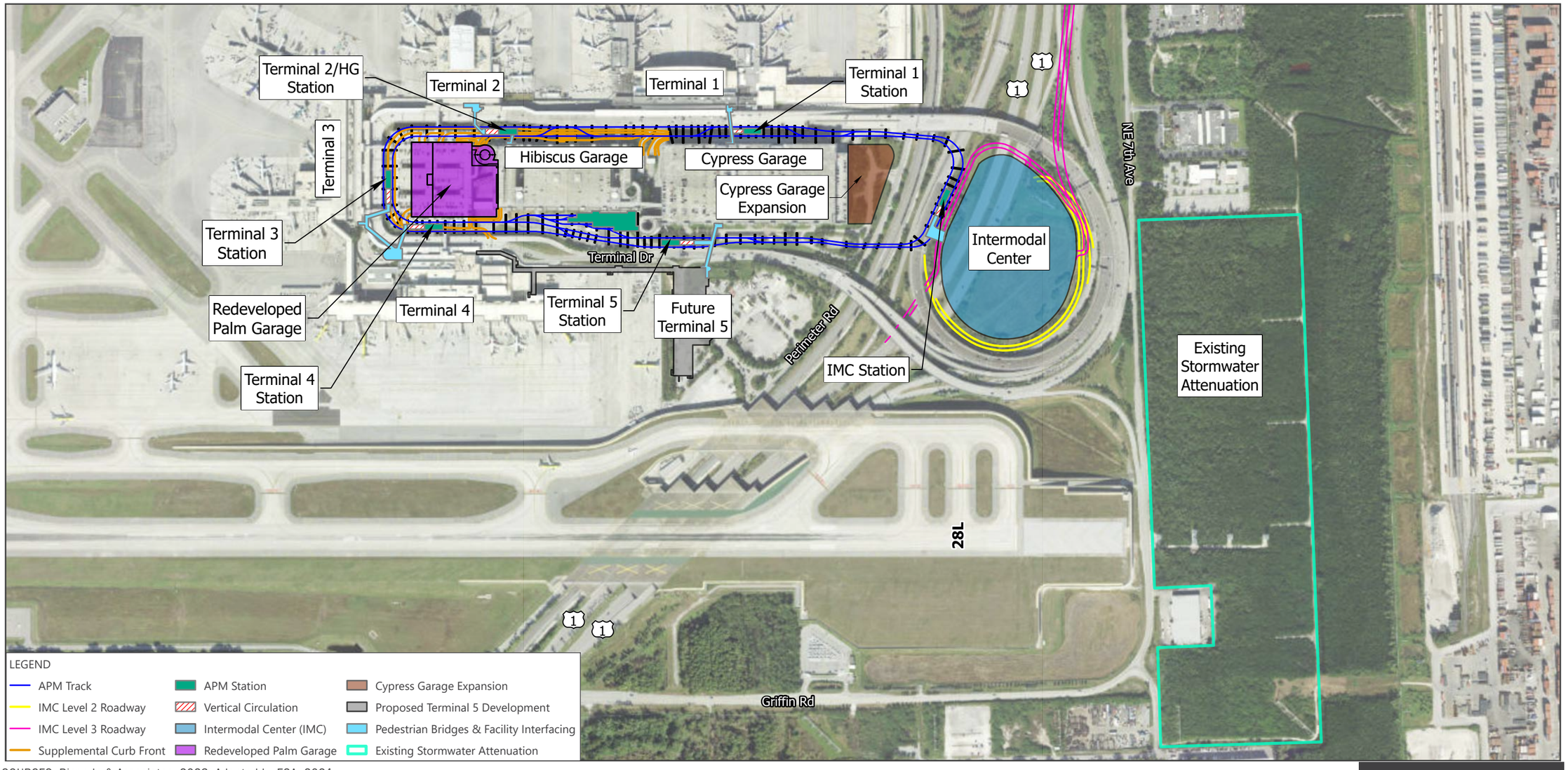
There would be no changes to EFH once the Proposed Project is operational. The Proposed Project's operation does not include any quantitative or qualitative changes to areas designated as EFH. There are no physical alterations proposed for EFH. While the wetland area would receive periodic increases 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.



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

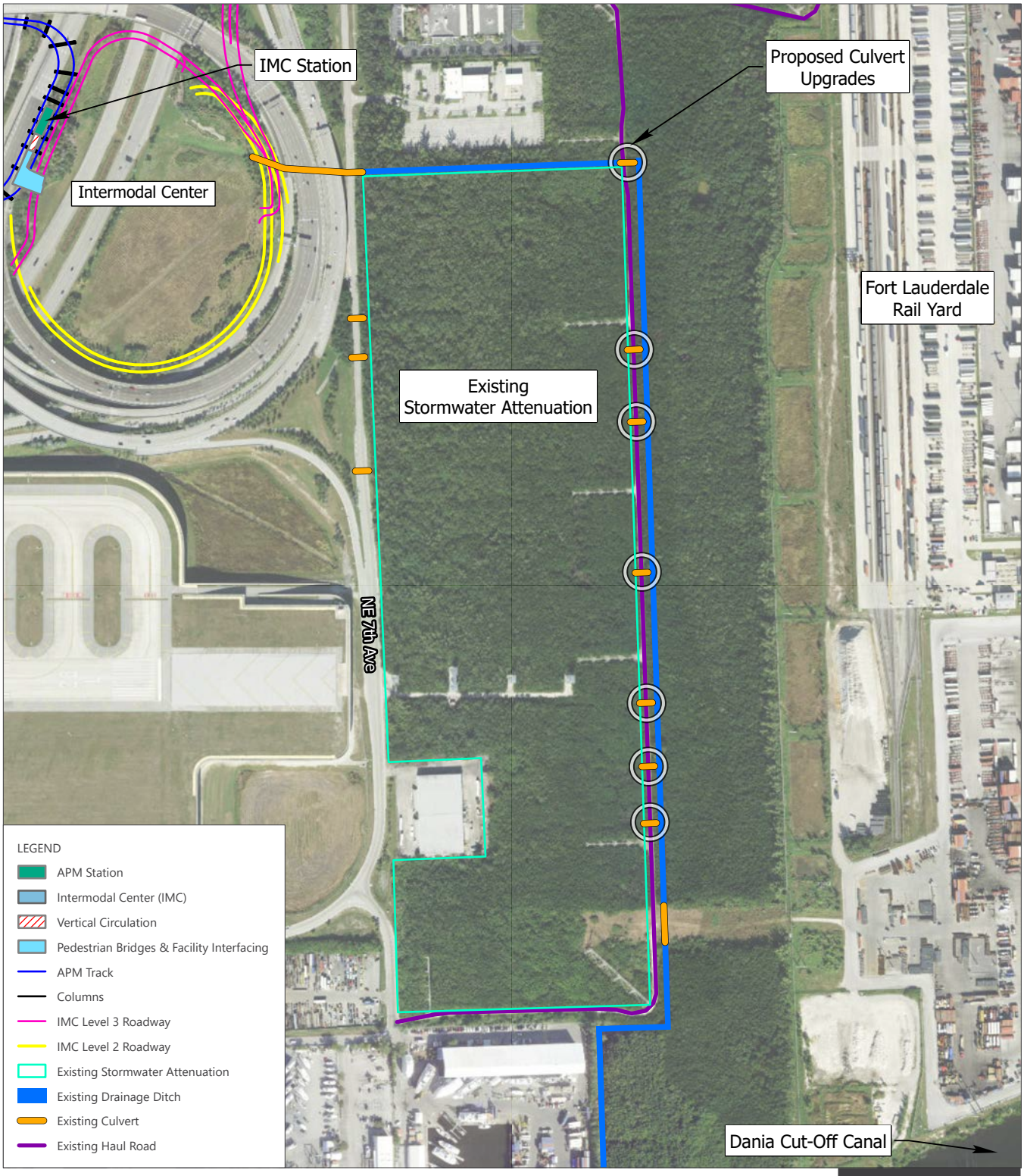
EXHIBIT 1

NORTH

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Proposed Project Elements
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 2

NORTH

0 500 ft.

IMC and Stormwater Improvements
Fort Lauderdale-Hollywood International Airport

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SOURCES: ESA, 2024..

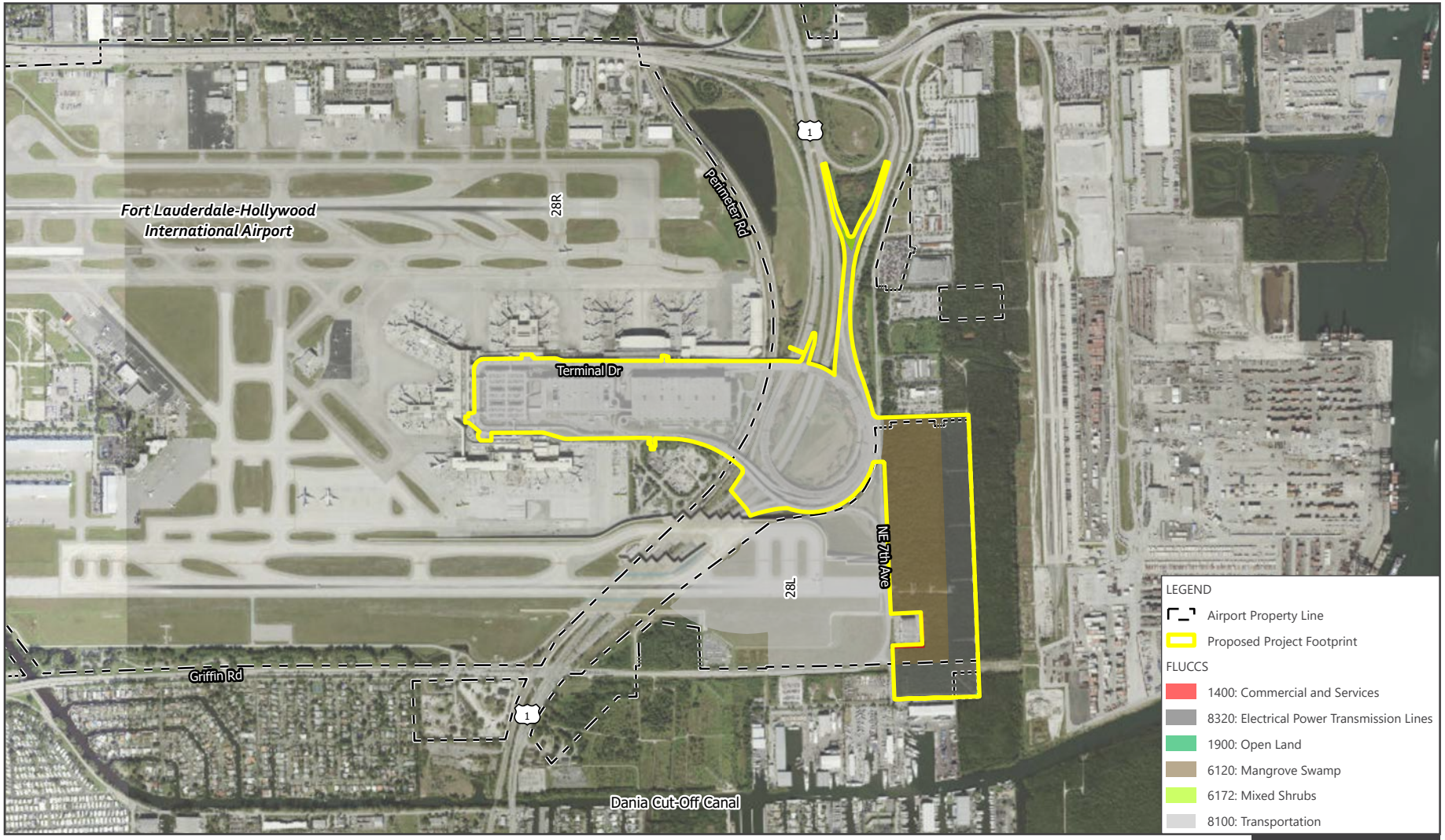
EXHIBIT 3

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



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

EXHIBIT 4

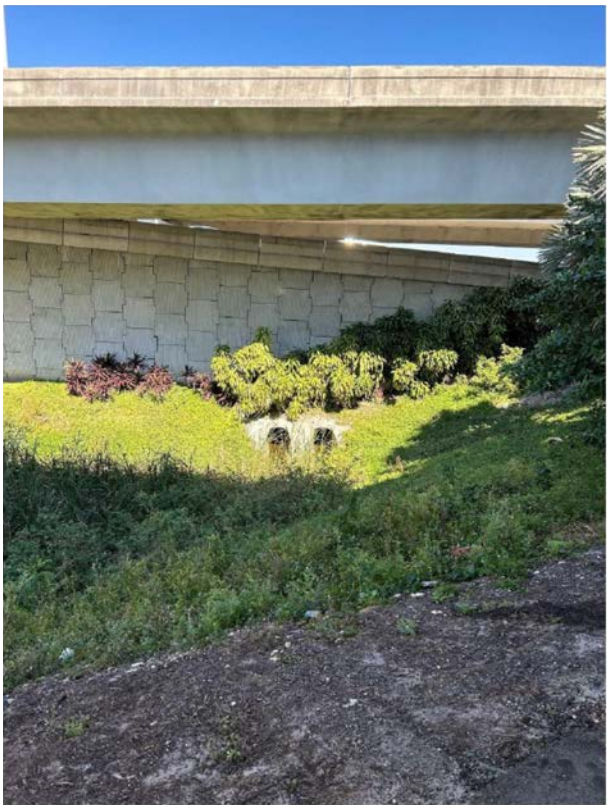
NORTH 0 1,600 ft.

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Land Cover
Fort Lauderdale-Hollywood International Airport

Appendix A

Representative Photographs
of Project Site

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

Section 7 Consultation

U.S. Department
of Transportation
Federal Aviation Administration

Florida Ecological Services Field Office

Service Project Code No. 2024-0065497

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'

Environmental Review Supervisor

March 15, 2024

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

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

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**

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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

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.

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.

><((((º>˜"·.¸¸.> <((((º>¸.·˜"·.¸> <((((º>˜"·.¸¸..> <((((º>

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

Appendix D
Climate

APPENDIX D
Climate

The Council on Environmental Quality (CEQ) provided guidance that "when addressing climate change agencies should consider: (1) The potential effects of a proposed action on climate change as indicated by assessing GHG emissions and, (2) The effects of climate change on a proposed action and its environmental impacts." [1] The assessment of GHG emissions from the Proposed Project and its effects on climate change is included in **Appendix B** and Section 3.4, *Climate*, of the environmental assessment. This appendix has been prepared by BCAD to assess the effects of climate change on the Proposed Project by detailing the implications of climate change at the Airport. Specifically, **Table D-1** provides an overview of the extent to which the Airport could be affected by future climate conditions, based on published sources applicable to the study area. For example, this appendix assesses the Airport's ability to sustain impacts to climate change and potential remedies. This appendix also discusses the current level of preparedness in the study area with respect to the impacts of climate change. This involves describing potential effects of climate change and remedies in place to adapt to the impacts of climate change (e.g., sea level rise, stronger or more frequent storms, etc.).

[1] CEQ (2014). Revised Draft Guidance, Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews, 79 Federal Register 77801 (December 24, 2014)

TABLE D-1
POTENTIAL EFFECTS OF CLIMATE CHANGE AND THREATS TO THE AIRPORT

Effect of Climate Change / Threat to Airports	Potential Effect	Potential Remedies
Sea Level Rise: The International Panel on Climate Change (IPCC) and National Oceanic and Atmospheric Administration (NOAA) provide local, predictive models to describe a spectrum of SLR scenarios between intermediate low, which relates to slow, incremental SLR, and extreme, which is a more rapid and aggressive potential outcome*		
• Ocean inundation, including increased incidence of tidal flooding	Restricted runway use, damage to runway and other electrical circuits	Shoreline management, extensive dewatering systems, extend runways or limit aircraft operations due to chronic or persistent wet pavements, which require additional length for safe aircraft operations; relocation
• Saltwater intrusion	Increased corrosion and weathering	Constant repair of subsurface or surface infrastructure
• Increased water table	Problematic stormwater collection/movement restricts storm water drainage potential (disruption/stagnation of hydraulic gradient)	Modification to storm water system
Increased Frequency of Extreme Temperatures: defined as days over 95ºF that may be experienced more frequently and for longer consecutive durations in comparison to known historic patterns. Over the past 30 years, Fort Lauderdale has recorded an average of 54 days each year of temperatures over 90 degrees Fahrenheit (ºF), the hottest months being between July and August**		
• Increased Frequency of Extreme Temperatures	Pavement weathering, warping, cracking, or softening, (especially areas of heavy use and/or high wheel pressure, such as turn areas)	Immediate intervention and renovation required due to safety concerns; otherwise, may require accelerated pavement maintenance schedule (currently 20-30 years)
	Increased energy demand	Higher cost for indoor cooling; HVAC system failure; retrofit increased efficiency measures in existing structures; installation of industrial fans or other air circulation methods in areas not currently climate-controlled; cumulative strain on regional utility provider
	Facility weathering	Increased maintenance requirements; reconstruct with more durable materials
Climate shift: may increase the length of rainy seasons and the duration/intensity of precipitation events in some areas, while causing extended precipitation deficits and protracted droughts in other locations. This change may be experienced in southern Florida with altered seasonality, producing drier springs and summers and profoundly wetter falls and winters. ***		
• Altered rainfall patterns/increased volume and frequency of precipitation events	Decreased visibility, navigation limitations, and flooding of active airfield movement areas	Mitigate user frustration from frequent storm-related weather delays
	Flooding; decreased capacity of stormwater collection design; establishment of standing water habitat	Modification to storm water system

TABLE D-1
POTENTIAL EFFECTS OF CLIMATE CHANGE AND THREATS TO THE AIRPORT

Effect of Climate Change / Threat to Airports	Potential Effect	Potential Remedies
	Facility weathering	Increased maintenance requirements; reconstruct with more durable materials
	Increased contact between water and hazardous materials (water quality impacts)	Redesign or reconstruct hazardous material handling areas, including maintenance, fueling, de-icing, or sanitary areas; increased citations and fines for water quality infractions
	Increased scouring / erosion	Increase landscape maintenance and water quality reporting burden, including control sediment deposition in adjacent waterways per NPDES permit
Increased Incidence of Extreme Storm Events: refers to episodic storm events that can produce flash flooding, gusty winds, hail, or tornados. An increasing trend towards extreme storm events has been identified globally and correlated to an existing 0.5ºC increase in average global temperature. In Florida, hurricane and other extreme storm events may increase in intensity in susceptible locations following similar overall climate change trends.		
• High wind	Structural damage or blockage from winds or from foreign objects and debris projectiles, especially airport lighting and signage which are on frangible mounts and designed to break away in aircraft impact.	Airport closes for storm / resumes within minimal timeframe.
• Intense rain, storm surge, and flooding	Storm surge and flooding of paved surfaces restrict use until receded. Temporary, but high-volume water inundation may cause water intrusion to short or destroy sensitive electrical system, disrupt communications, or cause sewer overflow. Increased vulnerability for hazardous material migration (fuel). Extreme volume of standing water likely to temporarily overwhelm stormwater management system.	Airport focuses planning efforts on adaptive capacity and resilience of existing infrastructure and addresses deficiencies in advance of future storm event.
• Widespread regional damage in adjacent communities.	Airport is needed as essential regional facility for evacuation and for import and staging of supplies after storm passes and damages are assessed	Airport repurposes available area for staging and operations; increases staffing and operational flexibility.

REFERENCES:

* International Panel on Climate Change (IPCC), 2018. *Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, Maycock, M. Tignor, and T. Waterfield (eds.)]. World Meteorological Organization, Geneva, Switzerland, 32 pp. Accessed in November 2020 at: https://www.ipcc.ch/sr15/chapter/spm/

* National Oceanic and Atmospheric Administration (NOAA), 2019. Sea Level Rise Viewer. Accessed in March 2024 at: https://coast.noaa.gov/slr

** FLL ASOS historical data January 1993- December 2023. from Iowa Environmental Mesonet, ASOS-AWOS-METAR Database, Iowa State University, 2024. Accessed March 2024 at: https://mesonet.agron.iastate.edu/request/download.phtml?network=FL_ASOS

*** National Aeronautics and Space Administration (NASA), 2019. *Precipitation Measurement Missions: Climate Change, Trends and Patterns* accessed in March 2024 at: https://pmm.nasa.gov/science/climate-change and NASA 2013, *National Climate Assessment: 21st Century Precipitation Scenarios* accessed in March 2024 at: https://svs.gsfc.nasa.gov/4028

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Appendix E
Coastal Resources

APPENDIX E
Coastal Resources

The Coastal Zone Management Act (CZMA) requires federal agency activities to be fully consistent with a state's approved coastal management program unless full consistency is prohibited by federal law. Federal permit and funding decisions must also be fully consistent with the state's approved coastal management program. Therefore, the FAA must ensure that all activities initiated or undertaken by the FAA meet the consistency requirements of Florida's coastal management program to the extent practicable. The FAA initiated a consistency review with the State Clearinghouse on March 4, 2024, in accordance with Section 403.061(43), Florida Statutes and Executive Order 12372. The State Clearinghouse responded on May 2, 2024, detailing the results of their consistency review and stating that the Proposed Project "is consistent with the Florida Coastal Management Program [FCMP]." BCAD prepared **Table E-1** to summarize the Proposed Project's consistency with the 24 Florida statutes of FCMP.

TABLE E-1
FLORIDA COASTAL MANAGEMENT PROGRAM STATE STATUTE CONSISTENCY

Statute	Consistency Review
Chapter 161 *Beach and Shore Preservation* acknowledges that coastal areas are among the state's most valuable natural, aesthetic, and economic resources and authorizes FDEP to regulate certain activities on or seaward of the States' beaches.	**Not Applicable** Construction of the Proposed Project would not occur on or seaward of any state beach. The Proposed Project would not adversely affect coastal areas that could jeopardize the stability of the beach-dune system, accelerate erosion, provide inadequate protection to upland structures, endanger adjacent properties, or interfere with public beach access.
Chapter 163, Part II *Intergovernmental Programs: Growth Policy; County and Municipal Planning; Land Development Regulation* requires the local governments to prepare, adopt, and implement comprehensive plans that guide and control future development toward the most appropriate use of land and natural resources in a manner consistent with the public interest.	**Consistent** The Proposed Project would be implemented in accordance with local government comprehensive plans that encourage the most appropriate use of land and natural resources in a manner consistent with the public interest.
Chapter 186 *State and Regional Planning* details state-level planning requirements; requires the development of special statewide plans governing the orderly social, economic, and physical growth of the state.	**Consistent** The Proposed Project would be developed in accordance with any special statewide plans governing water use, land development, and transportation.
Chapter 252 *Emergency Management* provides for planning that would reduce the State's vulnerability to or impacts from natural or manmade disasters and would enhance recovery efforts in the event of such emergencies.	**Consistent** The Proposed Project does not increase the vulnerability of people or property to natural disasters. Emergency response and evacuation procedures would not be adversely impacted; although, the provision of additional efficient airport infrastructure may assist in staging or responding to emergencies.

TABLE E-1
FLORIDA COASTAL MANAGEMENT PROGRAM STATE STATUTE CONSISTENCY

Statute	Consistency Review
Chapter 253 *State Lands* addresses the state's administration of public lands and property and provides direction regarding the acquisition, disposal, and management of all state lands.	**Not Applicable** Implementation of the Proposed Project does not require acquisition of or result in any impacts to state lands that would prevent the conservation, protection, enhancement, or preservation of State-owned natural areas, ecosystems, or archaeological and historical resources. While the proposed site for the IMC at the US-1 ROW is owned by the Florida Department of Transportation, this area is used for stormwater and is not intended for conservation purposes.
Chapter 258 *State Parks and Preserves* addresses administration and management of state parks, aquatic preserves, and recreation areas.	**Consistent** The Proposed Project is wholly outside of the nearest State Park, *Dr. Von D. Mizell-Eula Johnson State Park.* Therefore, the Proposed project would have no effect on Chapter 258 resources.
Chapter 259 *Land Acquisition for Conservation or Recreation* authorizes acquisition to protect air, land, and water quality and abundance, and natural resource-based recreation opportunities.	The Proposed Project does not affect any planned land acquisition for conservation or recreation purposes under Chapter 259.[1]
Chapter 260 *Florida Greenways and Trails Act* authorizes acquisition of land to create a recreational trails system and to facilitate management of the system.	The Proposed Project does not affect Florida greenways and trails.
Chapter 375 *Outdoor Recreation and Conservation Lands* develops a comprehensive outdoor recreation plan to document recreational supply and demand, describe current recreational opportunities, estimate need for additional recreational opportunities, and propose means to meet the identified needs.	State tourism and outdoor recreation areas owned and operated by the State would not be affected. The nearest state-owned recreation area, *Dr. Von D. Mizell-Eula Johnson State Park, w*hile included in the most recent 2023-2027 Statewide Comprehensive Outdoor Recreation Plan published in 2024 under Section 375[2] , is outside the boundaries of the Proposed Project, direct and indirect study areas.
Chapter 267 *Historical Resources* addresses management and preservation of the State's archaeological and historical resources.	**Consistent** The Proposed Project will not affect any historic properties that are eligible or potentially eligible for listing on the NRHP as historic districts or individual structures. The Proposed Project will not adversely affect any archaeological resources that are eligible or potentially eligible for listing on the NRHP.
Chapter 288 *Commercial Development and Capital Improvements* provides the framework for promoting and developing the general business, trade, and tourism components of the State's economy.	**Consistent** The Proposed Project would not impact the promotion of natural, coastal, historical, or cultural tourism assets of the state. The Proposed Project is anticipated to have positive impacts on local growth and economic development.

[1] Florida Department of Environmental Protection, Office of Environmental Services. *2023 Florida Forever Priority List*. https://floridadep.gov/lands/environmental-services/content/florida-forever-priority-list-annual-work-plan. Accessed on March 2024.

[2] Florida Department of Environmental Protection, Division of Recreation and Parks. *2023-2027 Statewide Comprehensive Outdoor Recreation Plan.* March 2024. https://floridadep.gov/parks/florida-scorp-outdoor-recreation-florida

TABLE E-1
FLORIDA COASTAL MANAGEMENT PROGRAM STATE STATUTE CONSISTENCY

Statute	Consistency Review
Chapter 334 *Transportation Administration* addresses the state's policy concerning transportation administration and establishes the responsibilities of the state, counties, and municipalities to assure the development of an integrated, balanced statewide transportation system.	**Consistent** The Proposed Project would not have an effect on the state's policy concerning transportation administration. In addition, the Proposed Project will be developed in accordance with and incorporated into existing transportation infrastructure and transportation projects planned for the area.
Chapter 339 *Transportation Finance and Planning* addresses the finance and planning needs of the state's transportation system.	The Proposed Project would not affect the finance and planning needs of the state's transportation system.
Chapter 373 *Water Resources* addresses sustainable water management; conservation of surface and ground waters; preservation of natural resources, fish, and wildlife; protection of public land; and promotion of health and welfare of Floridians.	**Consistent** The Proposed Project is anticipated to result temporary impacts to a mangrove wetland area directly east of NE 7th Avenue. Construction impacts to the existing mangrove wetland area are limited to replacing seven (7) existing drainage culverts under the existing utility access road located along the eastern perimeter of the existing wetland site. The construction activities to replace the seven culverts would temporarily impact approximately 0.22 acres of mangroves. Mangroves would be able to reestablish post construction and the construction sites would employ measures to protect water quality and control siltation and sedimentation. The mangrove wetland would remain post project and the mangrove area would continue to receive treated stormwater from the US-1 drainage system. There would be no significant impact to the mangrove habitat.
Chapter 376 *Pollution Discharge Prevention and Removal* regulates transfer, storage, and transportation of pollutants, and cleanup of pollutant discharges.	All construction activities, whether identified as part of this Proposed Project or associated with future development actions, would employ spill prevention plans and Stormwater Pollution Prevention Plans. Best management practices would be employed to prevent contamination to surface and groundwater, as detailed in Chapter 3, Section 3.7, *Hazardous Materials, Solid Waste, and Pollution Prevention*.
Chapter 377 *Energy Resources* addresses the regulation, planning, and development of energy resources of the state.	**Not Applicable** The Proposed Project does not involve the exploration, drilling, or production of gas, oil, or petroleum products.
Chapter 379 *Fish and Wildlife Conservation* provides the framework for the management and protection of the state of Florida's wide diversity of fish and wildlife resources.	**Consistent** The Proposed Project would not impact the conservation, preservation, or management of the state's fish and wildlife resources. Consultation with USFWS concluded that the Proposed Project "May Affect, Not Likely to Adversely Affect" the Florida Bonneted Bat and the Wood Stork. Further, the Proposed Project would not impact designated critical habitat for any species protected by the Endangered Species Act of 1973.
Chapter 380 *Land and Water Management* establishes land and water management policies to guide and coordinate local decisions relating to growth and development, including the establishment of the Areas of Critical State Concern, Florida Communities Trust, and the Florida Coastal Management Program.	**Consistent** The Proposed Project would be developed consistent with local land and water management plans. The Proposed Project is subject to local permit, stormwater, and environmental requirements and review.

TABLE E-1
FLORIDA COASTAL MANAGEMENT PROGRAM STATE STATUTE CONSISTENCY

Statute	Consistency Review
Chapter 381 *Public Health: General Provisions* establishes public policy concerning the state's public health system.	**Not Applicable** The Proposed Project would not impact the state's public health system.
Chapter 388 *Mosquito Control* addresses mosquito control efforts in the state.	**Not Applicable** The Proposed Project would not affect mosquito control efforts.
Chapter 403 *Environmental Control* provides wide-ranging authority to address various environmental control concerns including air and water pollution, electrical power plant and transmission line siting, the Interstate Environmental Control Compact, resource recovery and management, solid and hazardous waste management, drinking water protection, pollution prevention, ecosystem management, and natural gas transmission pipeline siting.	**Consistent** The Proposed Project would comply with all state regulations regarding air quality, water quality, solid and hazardous waste management, pollution prevention, and ecosystem management. Best management practices would be employed to prevent contamination to surface and groundwaters. No adverse impacts are expected as a result of the Proposed Project.
Chapter 553 *Building and Construction Standards* addresses building construction standards and provides for a unified Florida Building Code.	**Consistent** All buildings associated with the Proposed Project will be designed and constructed in accordance with relevant FAA and Florida Building Codes.
Chapter 582 *Soil and Water Conservation* provides for the control and prevention of soil erosion, prevention of floodwater and sediment damages, and further conservation, development, and use of soil and water resources.	**Consistent** All development as part of this Proposed Project would require the incorporation of best management practices that mitigate the loss or transport of soil or other floodwater damages. Best management practices to prevent contamination to surface and groundwater are provided in Chapter 3, Section 3.7, *Hazardous Materials, Solid Waste, and Pollution Prevention*.
Chapter 597 *Aquaculture* establishes public policy concerning the cultivation of aquatic organisms in the state.	**Not Applicable** The Proposed Project would not impact the cultivation of aquatic organisms.

SOURCES: FDEP Florida Coastal Management Program Guide: A Guide to the Federally Approved Florida Coastal Management Program, Updated February 5th, 2024.; FDEP 24 Florida Statutes of the Florida Coastal Management Program, <https://floridadep.gov/fco/fcmp/content/24-florida-statutes-florida-coastal-management-program>, Accessed March 2024.

Appendix F

Stormwater Technical Report

FLL Intermodal Center

PDD Stormwater Planning
Technical Report (DRAFT)

PREPARED FOR:

Broward County Aviation Department

PREPARED BY:

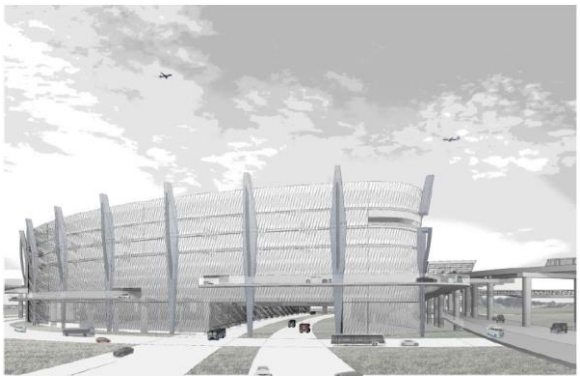
CHEN MOORE AND ASSOCIATES, INC.

February 2024
DRAFT

Introduction

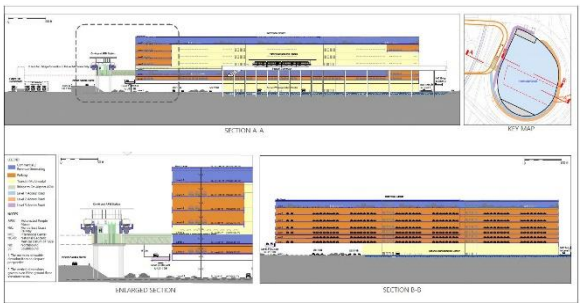
The planned future development activities at FLL have been defined within the FLL Master Plan along with the associated FLL Future Airport Layout Plan (ALP), which established the location and extent of future development projects throughout FLL. The planned future development activities at FLL will increase the impervious surfaces throughout FLL and eliminate existing stormwater management areas throughout FLL, which will further increase the need for additional stormwater management areas throughout FLL. Based on the analysis completed for the 2021 FLL Stormwater Master Plan Update, the proposed stormwater management system at FLL will not provide sufficient storage capacity for stormwater runoff within existing and proposed stormwater management areas throughout FLL to enable the future "build out" conditions at FLL. To ensure the stormwater management system at FLL meets various level of service criteria related to flood control and meets various regulatory requirements related to water quality treatment, BCAD needs to identify, reserve, and potentially acquire additional land area at FLL for the implementation of additional stormwater retention areas throughout FLL.

A key planned future development project defined within the FLL Master Plan is the proposed FLL Intermodal Center (IMC), which will be located immediately east of the Terminal Area within the FDOT right of way for US Highway 1. The proposed FLL IMC Facility will be a transportation hub that integrates the current and planned regional countywide transportation network, including the planned first/last mile transmit connectivity between the Fort Lauderdale-Hollywood International Airport and Port Everglades. The location of the proposed FLL IMC Facility is shown in **Exhibit 1** at the end of this report.



BCAD has retained a consultant team to prepare the Project Definition Document (PDD) for the FLL Intermodal Center, which is currently underway. According to the FLL IMC Advanced Planning Technical Report, the planning consultant team is investigating both on-site and off-site strategies to mitigate the impact of the proposed FLL IMC development on the existing stormwater management areas within the FDOT right of way that serves the FLL Terminal Area. The planning consultant team has identified various constructability concerns about the on-site mitigation options related to preserving the stormwater storage capacity within the footprint of the proposed FLL IMC Facility, which could potentially increase the estimated construction costs. The planning consultant team is investigating the feasibility of various off-site mitigation options for stormwater management related to the proposed FLL IMC Facility.

The planning consultant team has identified various vacant parcels owned by Broward County that could potentially be modified into new stormwater management areas immediately east of the proposed FLL IMC Facility on the east side of NE 7th Avenue. These vacant parcels are currently wetland areas that act as the receiving water body for the existing stormwater management system within FDOT right of way, which discharges stormwater runoff via one 48" outfall pipe and three 24"x32" elliptical outfall pipes into this existing wetland area. A potential off-site mitigation option for the impacts of the proposed FLL IMC Facility would be to stage stormwater runoff within this existing wetland area, which would retain stormwater runoff from the FLL Terminal Area and from the FDOT right of way. This off-site mitigation option could potentially cause adverse impacts to the hydraulic capacity within upstream portions of the existing stormwater management system, which may exacerbate any existing flooding issues within the FLL Terminal Area along with the FDOT right of way areas. Additional modeling analysis should be completed to assess the hydraulic feasibility of this off-site mitigation option to ensure there are not any adverse impacts within upstream portions of the existing stormwater management system serving the FLL Terminal Area.



The FLL IMC Facility is located within the FDOT US1 Drainage System, which is interconnected to Drainage System 2 serving the eastern portion of the FLL Terminal Area. The limits of the primary stormwater basins within the FLL boundaries are shown in **Exhibit 2** at the end of this memorandum. The primary stormwater basins are further subdivided into sub-basins, which are shown within **Exhibit 3** at the end of this memorandum. Under the existing conditions, all stormwater runoff generated within the System 2 and within the FDOT US1 System eventually flows into the existing dry retention area located within the footprint of the proposed FLL IMC Facility before discharge off-site to the east. Due to various site limitations, the 2021 FLL Stormwater Master Plan Update recommended that the proposed FLL IMC Facility maximize the on-site storage capacity for stormwater runoff.

Broward County Aviation Department (BCAD) has retained Chen Moore and Associates (CMA) to complete a stormwater study on the proposed FLL IMC. The conceptual design of the FLL IMC Facility was presented in the FLL IMC Advanced Planning Technical Report, which was prepared by Ricondo and Kimley Horn. This stormwater study is intended to support and supplement the ongoing Project Definition Document (PDD) effort for the FLL IMC Facility, which will also be completed by Ricondo and Kimley Horn. The purpose of the stormwater study is to evaluate the impact of the proposed footprint of the FLL IMC Facility on the existing stormwater management system serving FLL and the FDOT US-1 System along with additional stormwater needs created by this new development. The implementation of stormwater improvements will be required to provide sufficient stormwater capacity to offset the loss of existing stormwater retention volume within the footprint of the proposed FLL IMC Facility along with handling additional stormwater runoff generated from new impervious surfaces created by the proposed FLL IMC Facility. These stormwater improvements will need to prevent any adverse upstream impacts on the performance of the existing stormwater management system serving the FDOT right of way for US1 and the eastern portions of the FLL Terminal Area along with providing sufficient flood control and water quality treatment for the proposed FLL IMC site.

The various stormwater improvement alternatives for the FLL IMC Facility were evaluated from a flood control, a flood attenuation, and a water quality treatment perspective along with any potential impacts of the existing wetland areas east of the FLL IMC. The permitting requirements for these various stormwater improvement alternatives were also evaluated with the relevant regulatory agencies, which include the South Florida Water Management District (SFWMD) and Broward County Environmental Permitting Division (BCEPD). CMA also evaluated several stormwater alternatives that could potentially be implemented within the proposed stormwater management system for the FLL IMC Facility. The hydraulic performance of the various stormwater improvement alternatives was analyzed with an ICPR4 stormwater model to develop the recommendation to avoid any adverse upstream impacts within the FLL Terminal Area and within FDOT US-1 System.

Project Documentation

CMA reviewed various documentation provided by BCAD with relevant information on the future planned projects at FLL. CMA used this documentation to confirm the existing conditions and the planned future conditions within Drainage System 2 and FDOT US1 Drainage System, which was used to analyze the stormwater impacts and stormwater needs related to the FLL IMC Facility along with any other associated projects. CMA used the following documentation as the basis for this stormwater analysis for the proposed FLL IMC Facility:

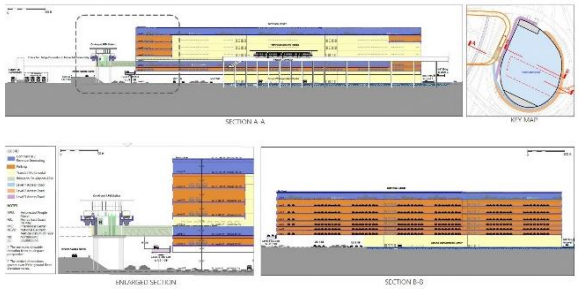
- FLL Master Plan Update (2020)
- FLL Stormwater Master Plan Update (2021)
- FLL Terminal 5 PDD Report (2021)

- FLL IMC Advanced Planning Technical Report (2022)
- FLL APM PDD Report (2022)

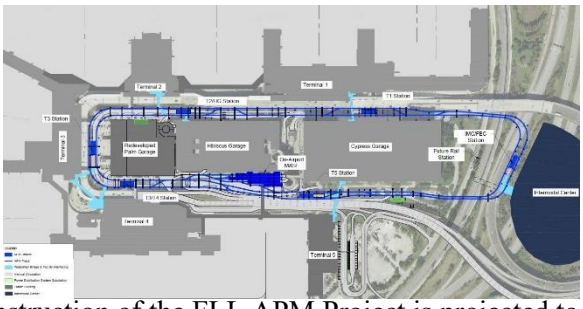
Relevant Planned Projects

BCAD completed the FLL Master Plan in 2020, which identified all planned future development at FLL in phases over a 30-year planning timeframe. Since all stormwater runoff generated within the System 2 and within the FDOT US1 System currently flows into the existing dry retention area located within the footprint of the proposed FLL IMC Facility, it is important to consider the stormwater needs for all future planned development within System 2 and FDOT US1 System when evaluating the stormwater needs of the FLL IMC Facility. Based on the FLL Master Plan, the planned development projects within the limits of the System 2 and FDOT US-1 System stormwater basins are shown within Exhibit 4 at the end of this memorandum, which are also summarized below.

- FLL IMC Facility – This project will be a transportation hub that will integrate the current and planned regional and countywide transportation network, including the planned first/last mile transit connectivity between the airport and seaport. The purpose of the FLL IMC Facility is to provide a hub for Broward County Transit at FLL, to provide additional vehicular parking capacity at FLL, to capture a share of vehicular demand prior to entering the Terminal Area, to alleviate vehicular congestion along Terminal Drive, to provide connectivity with alternate transportation modes, and to provide for passenger rail connectivity at FLL. According to the FLL Master Plan, this project is planned to be implemented during Phase 1 Sequence 1 of the program implementation phasing plan. At this time, the construction of the FLL IMC Facility is projected to start in Fiscal Year 2026 and to be completed in Fiscal Year 2028. Since the FLL IMC Facility will eliminate a large existing dry retention area serving all of System 2 and the FDOT US1 System, this stormwater evaluation will need to identify options for compensating for the loss of the existing stormwater storage volume along with any additional stormwater needs related to the new development.



- FLL Automated People Mover (APM) – This project is intended to facilitate landside and terminal development by enhancing connectivity between the terminals, the parking garages, and the proposed FLL Intermodal Center while alleviating landside congestion along Terminal Drive. The FLL APM Project will consist of 16,000 linear feet of dual guideway routed along Terminal Drive that will be connected to six stations at Terminal 1, Terminal 2, Terminal 3, Terminal 4, Terminal 5, and the Intermodal Center. At this time, the construction of the FLL APM Project is projected to start in Fiscal Year 2026 and completed in Fiscal Year 2030. The FLL APM Project is not expected to create significant amounts of new impervious surfaces and is not expected to eliminate any existing stormwater storage within the existing stormwater retention. Due to the elevated conceptual design of the FLL APM, the project is not expected to have significant impacts on the existing stormwater system (beyond the relocation of existing stormwater infrastructure that may conflict with structural elements of the project).

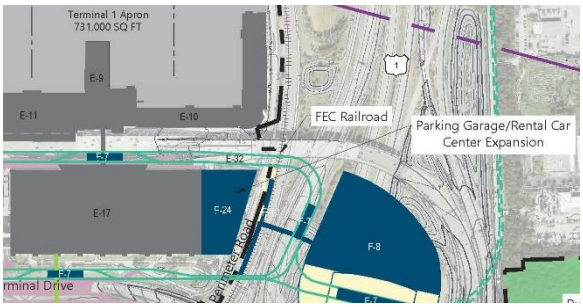


- FLL Terminal 5 – This project is a new terminal serving domestic flights that will be located east of Terminal 4 Concourse G. The proposed footprint of Terminal 5 is located on a portion of existing airside apron area that currently provides overnight aircraft parking and storage for ground service equipment. The



project will also include a new elevated multi-level pedestrian connector between Terminal 5 and Terminal 4 Concourse G. The area immediately west of Terminal 5 will include a new landside roadway system for passenger pick-up, drop-off, and commercial vehicles. Terminal 5 will be located within existing Drainage Basin 2.7, which is part of Drainage System 2 that discharges into the FDOT US1 Drainage System. According to the stormwater management concept within the Terminal 5 PDD Report, stormwater runoff from the Terminal 5 roof along with associated airside areas will no longer discharge into the FDOT US1 Drainage System and will now flow via a new 42-inch RCP routed south into Drainage System 1 (Basin B). The Terminal 5 landside areas will continue to discharge into Basin US1-16 with the FDOT US-1 Drainage System. According to the stormwater management concept within the Terminal 5 PDD Report, the Terminal 5 landside areas will have on-site stormwater management facilities, which will minimize the need for additional stormwater storage capacity within the FDOT US1 Drainage System.

- RCC Cypress Garage Expansion – This project includes the expansion of the existing parking garage structure to the east toward Perimeter Road. The Rental Car Center (RCC) Cypress Garage originally opened in 2005 and includes 5 levels with a quick turn-around at the ground level. The RCC Cypress Garage Expansion Project is located within Basin 2.4, which currently discharges into the FDOT US1 Drainage System. The project is expected to eliminate three existing stormwater retention areas located within the expansion footprint and to create new impervious ground surface, which will generate additional stormwater runoff. Due to these impacts, the RCC Cypress Garage Expansion Project will need to create on-site stormwater storage volume to compensate for the loss of the existing stormwater retention areas and to handle the additional stormwater runoff generated by the project. Based on a preliminary review, the project is expected to meet its stormwater needs on-site by the implementation of a stormwater storage chamber system below the ground floor.

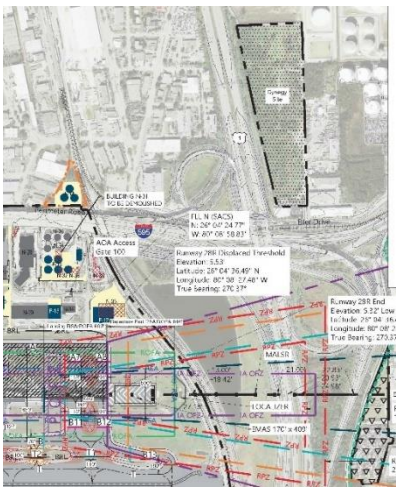


- Broward Commuter Rail South – The plan is to construct a new FLL Airport Commuter Rail Station between Perimeter Road and the FEC Railway immediately east of the RCC Cypress Garage, which will have commuter connectivity to the proposed FLL IMC Facility and the proposed FLL APM. The footprint of the FLL Airport Commuter Rail Station is not expected to significantly impact any existing stormwater storage and will have limited stormwater needs. Based on conceptual map from the FDOT PD&E Study for this project, the proposed improvements are expected to include a realignment of the existing railways to the north and south of the proposed FLL Airport Commuter Rail Station. The realignment of the existing railway will encroach into the FDOT US1 Drainage System and will require the relocation and reconfiguration of the existing wet pond in Basin US1-6, which will likely eliminate the possibility of expanding this existing wet pond to support the impacts of the FLL IMC Facility.



- Dynegy Site – According to the FLL Future ALP, the parcel located on northeast corner of US1 and Eller Drive is identified for future joint use development, which will likely be demand driven. Since this parcel is hydraulically isolated from the FDOT US1 Drainage System, any stormwater needs related to future development at this parcel will likely need to be implemented on-site and are not expected to have any impact on the stormwater needs for the proposed FLL IMC Facility.

- Non-Aeronautical Development Parcel – According to the FLL Future ALP, the parcel along east side of NE 7th Avenue is identified as non-aeronautical development, which will likely be demand driven. Since this parcel is hydraulically isolated from the FDOT US1 Drainage System, any stormwater needs related to future development at this parcel will likely need to be implemented on-site and are not expected to have any impact on the stormwater needs for the proposed FLL IMC Facility.
- Fuel Farm Expansion – The existing fuel farm is located within Drainage Basin A3.2 in northeast corner of FLL, which is part of Drainage System 1 (Basin A), which is not interconnected to the FDOT US1 Drainage System. The short-term expansion plan is to construct additional fuel tanks at the existing farm location, which will not have an impact on the FLL IMC Facility. Under the long-term expansion plan, three additional 1.5 MG fuel tanks will be constructed within a parcel on northwest corner of US1 and I595.



Florida Department of Transportation (FDOT)

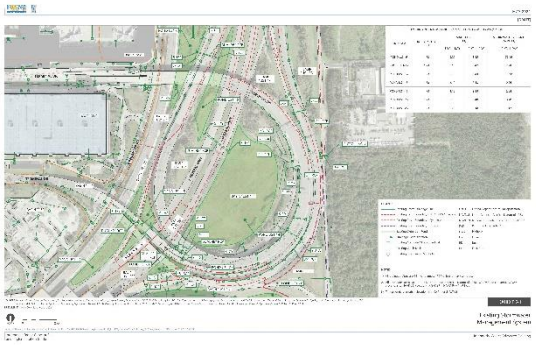
The Florida Department of Transportation (FDOT) owns all land areas throughout the FDOT US1 Drainage System where the proposed FLL IMC Facility will be located. Any proposed stormwater improvements required to enable the FLL IMC Facility will be located within FDOT jurisdiction and will require their approval for construction. A coordination meeting was held with FDOT Drainage representatives on January 30, 2024 and focused on the expected stormwater impacts from the proposed FLL IMC Facility. The meeting notes from this discussion are included within the Appendix of this memorandum. The key discussion topics specific to the stormwater impacts from the FLL IMC Facility are summarized below:

- The conceptual stormwater improvements to potentially be implemented on-site within the FLL IMC footprint will likely include the implementation of a stormwater storage chamber system under the ground level of the FLL IMC Facility, new dry retention areas around the building perimeter, and new stormwater infrastructure around the building perimeter.
- The conceptual stormwater improvements to potentially be implemented off-site will likely include upsizing existing drainage culverts that interconnect various retention areas throughout the FDOT US1 Drainage System and modification to the stormwater controls within the existing County owned wetland areas located to the east of NE 7th Avenue.
- FDOT noted that the FLL IMC Facility cannot create adverse flooding impacts within upstream portions of the FDOT US1 Drainage System.
- FDOT noted that the regrading of existing dry retention areas throughout the FDOT US1 Drainage System to provide additional stormwater storage capacity for the FLL IMC Facility would be considered as a potential option as long as it meets FDOT design criteria. FDOT noted that the additional storage capacity may be limited due to site constraints but would require further analysis.
- FDOT noted that any modifications to the existing stormwater infrastructure within the FDOT US1 Drainage System will have to follow the FDOT roadway drainage manual, which will have similar design criteria to the relevant stormwater regulatory agencies (SFWMD and BCEPD).

Existing Stormwater System

The existing stormwater management system at FLL is divided into seven primary system basins, which are shown in **Exhibit 2** at the end of this memorandum. There are limited interconnections between these primary system basins at FLL. The existing stormwater infrastructure within each primary system basin is directly

connected to corresponding primary outfall(s) that discharge stormwater runoff off-site. The primary system basins are further divided into sub-basins within the FLL stormwater model, which are shown within **Exhibit 3** at the end of this memorandum. The FLL IMC Facility is located entirely within the FDOT US1 Drainage System. Under the existing conditions, all stormwater runoff generated within the System 2 serving the eastern portion of the FLL Terminal Area and within the entire FDOT US1 System eventually flows into the existing dry retention area located within the footprint of the proposed FLL IMC Facility before discharge off-site to the east. Since the FLL IMC Facility will eliminate a large existing dry retention area serving all of System 2 and FDOT US1 System, this stormwater evaluation will need to identify options for compensating for the loss of the existing stormwater storage volume along with any additional stormwater needs related to the new development.



The FDOT US1 Drainage System consists of a series of interconnected dry retention areas and wet ponds throughout the FDOT right of way for US1, which are displayed on **Exhibit 5** at the end of this memorandum. These stormwater management areas provide storage volume for stormwater runoff for flood attenuation and water quality purposes. The water quality storage is the available volume provided with these interconnected dry retention areas and wet ponds below the control elevation for the FDOT US1 Drainage System, which is +2.50 feet NAVD. The existing water quality storage volume provided within these interconnected dry retention areas and wet ponds throughout the FDOT US1 Drainage System was formally defined within the most recent surface water license approval from BCEPD and SFWMD, which was for the FLL Access Roads and Valet Ramps Improvements Project in 2019.

According to the water quality calculations provided for this surface water license for the FLL Exit Road and Valet Ramp Improvements Project, the FDOT US1 Drainage System and Drainage System 2 should provide at least 53.54 acre*feet of water quality storage based on the existing impervious ground coverage throughout these drainage systems. Based on these same water quality calculations provided for this surface water license, the existing interconnected dry retention areas and wet ponds within the FDOT US1 Drainage System provides a water quality volume of 28.99 acre*feet within existing dry retention areas and 35.08 acre*feet within existing wet retention areas. Based on this previous water quality analysis, dry retention areas and wet ponds throughout the FDOT US1 Drainage System provide surplus water quality treatment volume within the FDOT US1 Drainage System of 20.10 acre*feet under the existing conditions.

Based on a detailed review of the water quality calculations for the FLL Access Roads and Valet Ramps Improvements Project, it appears that some inappropriate design assumptions were used to estimate the water quality storage volume provided by the existing interconnected dry retention areas and wet ponds within the FDOT US1 Drainage System. Based on our review, the estimated water quality provided within existing dry retention areas in the FDOT US1 Drainage System included all available volume from +0.42 feet NAVD up to the system control elevation of +2.50 feet NAVD. The estimated water quality provided within existing dry retention areas should only the available from +1.42 feet NAVD, which corresponds to 12 inches above the seasonal high groundwater elevation, up to the system control elevation of +2.50 feet NAVD. It also appears the 0.75 factor was not consistently applied to the water quality storage volume provided within existing wet ponds versus existing dry retention areas. These design assumptions made under water quality calculations for the FLL Access Roads and Valet Ramps Improvements Project have overestimated the total water quality storage volume provided within the FDOT US1 Drainage System.

During the completion of the FLL Stormwater Master Plan, the storage volume provided by the existing interconnected dry retention areas and wet ponds within the FDOT US1 Drainage System was re-evaluated

using the appropriate design assumptions related to water quality storage. Based on these updated water quality calculations, the FDOT US1 Drainage System and Drainage System 2 should provide at least 53.63 acre*feet of water quality storage based on the existing impervious ground coverage throughout these drainage systems. These updated water quality calculations for FDOT US1 Drainage System and Drainage System 2 are included within the Appendix. Based on these updated water quality calculations, the existing interconnected dry retention areas and wet ponds within the FDOT US1 Drainage System provides a water quality volume of 31.61 acre*feet within existing dry retention areas and 22.40 acre*feet within existing wet retention areas. Based on this updated water quality analysis, dry retention areas and wet ponds throughout the FDOT US1 Drainage System provide surplus water quality treatment volume within the FDOT US1 Drainage System of only 0.38 acre*feet under the existing conditions. For comparison purposes, the estimated water quality storage volume provided within relevant drainage basins in the FDOT US1 Drainage System are summarized in the table below from both sources. Any water quality storage volume eliminated from these drainage basins due to the FLL IMC Facility will need to be compensated for to maintain the flood attenuation and water quality treatment provided throughout the FDOT US1 Drainage System. As noted, there is a significant discrepancy between the estimated storage volumes from both sources, which will need to be verified as more survey data becomes available for this project.

FDOT US1 Drainage System – Existing Water Quality Storage Volume		
Basin	**FLL Exit Road and Valet Ramps**	**FLL Stormwater Master Plan**
Basin US1-6	35.08 acre*feet	27.05 acre*feet
Basin US1-12	0.70 acre*feet	0.70 acre*feet
Basin US1-14	7.10 acre*feet	6.90 acre*feet

The existing dry retention areas and wet ponds throughout the FDOT US1 Drainage System are interconnected by existing drainage piping to allow for stormwater runoff to equalize and stage before discharging to the east via the existing outfalls, which is displayed in **Exhibit 5** at the end of this memorandum. CMA reviewed available documentation to confirm the existing drainage connections throughout the FDOT US1 Drainage System. The FLL IMC Advanced Planning Technical Report included Exhibit 5-1, which displayed the locations and sizes of the existing drainage pipe throughout the FDOT US1 Drainage System but had incomplete information on pipe inverts and any control structure information. BCAD maintains a GIS utility atlas of the existing stormwater system, which was missing significant information on the existing drainage piping within the FDOT US1 System. Although FDOT provided their available drainage as-built drawings for the FDOT US1 System, these record drawings did not include any relevant information since the FDOT US1 System was significantly reconfigured after these record drawings. The existing drainage pipe connections throughout the FDOT US1 System will need to be confirmed as more survey data becomes available for this project. Based on the available documentation, the existing drainage pipe interconnecting the drainage basins immediately upstream and downstream were assumed to be as follows:

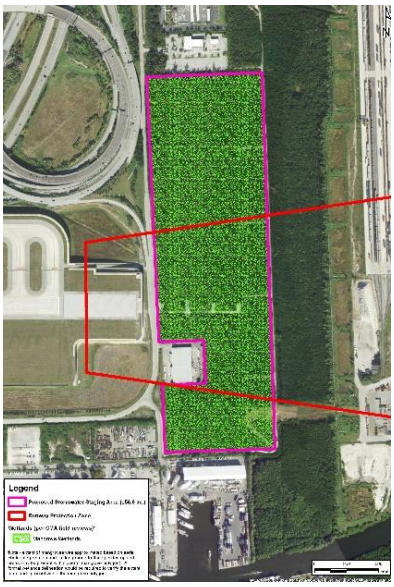
- Dual 36” RCP between Basin US1-6 and Basin US1-12
- Dual 42” RCP between Basin US-12 and Basin US1-14
- Single 48” RCP from Basin US1-14 to existing wetland areas east of NE 7th Avenue

Existing Wetland Areas

The FDOT US1 Drainage System discharges stormwater runoff via a single 48” RCP outfall from Basin US1-14 into an existing wetland area to 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 existing wetland area. This existing wetland area is located within County owned parcels that encompasses approximately 54.92 acres. This existing wetland area is bounded by NE 7th Avenue on the west, development on the north, and an FPL maintenance access road on the east and south, which act as barriers to any overland

flow from this existing wetland area. Any stormwater runoff flows from this existing wetland area via seven existing culverts under the FPL maintenance access road into the existing drainage ditch that flows south toward the Dania Cutoff Canal. The configuration of this existing wetland areas along with the drainage pipe connections is displayed on **Exhibit 6** at the end of this memorandum.

CMA performed a desktop review of existing GIS databases for the areas east of NE 7th Avenue along with subsequent field reviews on September 26, 2023 and January 31, 2024 to verify the presence and type of wetlands within these areas.



Based on aerial photo interpretation and limited ground truthing, these County owned wetland areas to the east of NE 7th Avenue consists of mangrove wetlands. The canopy stratum throughout these County owned wetland areas to the east of NE 7th Avenue was composed of red mangroves (*Rhizophora mangle*), black mangroves (*Avicennia germinans*), and white mangroves (*Laguncularia racemose*) with minor inclusion by green buttonwood (*Conocarpus erectus*). Plant cover in the groundcover stratum was limited due to dense canopy cover throughout these County owned wetland areas to the east of NE 7th Avenue. Species present in the groundcover stratum included leather fern (*Acrostichum danaeifolium*), coin vine (*Dalbergia ecastaphyllum*), and red, black, and white mangrove seedlings.

The west and southern perimeters of the mangrove areas displayed dense cover by invasive/exotic species, including Australian pine (*Casuarina equisetifolia*) and Brazilian pepper (*Schinus terebinthifolia*), which may be indicative of uplands. However, these minor areas were not deducted from overall estimated mangrove coverage for the purposes of this preliminary evaluation. In addition, several FPL access roads and FPL transmission structures were observed within the footprint of these County owned wetland areas to the east of NE 7th Avenue. The access roads were not deducted from the mangrove coverage estimate. A formal wetlands delineation would be required to verify the extent of uplands within the retention area footprint.

An existing system of open water ditches are routed throughout the mangrove wetlands within these County owned wetland areas to the east of NE 7th Avenue. Existing drainage culverts provide a hydrologic connection between the mangrove wetlands and an FDOT drainage ditch that runs south along the eastern boundary these County owned wetland areas to the east of NE 7th Avenue to the Dania Cutoff Canal. This existing drainage ditch system provides for both tidal flushing and detrital transport, which improve the health of the mangrove system.

<u>Site Visits</u>

BCAD has no available records on any existing drainage infrastructure within the existing wetland areas east of NE 7th Avenue. Since flow patterns of any stormwater runoff discharge from the FDOT US1 Drainage System needed to be confirmed, CMA staff conducted a site visit on January 31, 2024 of the existing wetland areas east of NE 7th Avenue from the FPL access road. The primary purpose of the site visit was to conduct a visual inspection of the wetland areas immediately adjacent to the FPL access road, which will help inform any preliminary wetland mitigation calculations and to confirm the number and sizes of any existing drainage culverts under the FPL access, which is necessary to develop an accurate stormwater model for the FLL IMC stormwater analysis. CMA travelled along the entire length of the FPL access road while stopping to visually inspect each drainage culvert crossing under the FPL access road along with the condition of the existing wetland areas to west of FPL access road. A photo inventory from this site inspection is enclosed within the Appendix at the end of this memorandum.

The site inspection confirmed the presence of seven drainage culverts that allow for stormwater flow from the wetland areas under the FPL access road into the FDOT drainage ditch/canal, which include 1-42" culvert, 4-36" culverts, 1 oval culvert (likely 24"x36"), and 1 small culvert (likely 12"). Based on site observations, it will be feasible to retrofit a control structure on the upstream end of each existing culvert with minimal wetland impacts, which will allow for the staging of limited additional stormwater runoff area within the wetland area to the west of the FPL access road. The site inspection confirmed that some isolated segments of the FPL access road have very low elevations, which allow stormwater runoff to sheet flow from the wetland areas over the FPL access road into the FDOT drainage ditch/canal. These segments of the FPL access road should be raised to allow for the staging of limited additional stormwater runoff area within the wetland area to the west of the FPL access road. The site inspection confirmed that the existing wetland areas to the west of the FPL access road within the County owned parcels are indeed mangrove wetlands. The FLUCCS and NWI GIS databases had Parcel 8 incorrectly labelled as "freshwater forested wetlands".

Stormwater Impacts

The entire footprint of the FLL IMC Facility is located within Drainage Basins US1-12, US1-14, and US1-18 within the FDOT US1 Drainage System, which impacts stormwater drainage infrastructure shown on **Exhibit 7** at the end of this memorandum. The development of the proposed FLL IMC Facility will impact existing drainage facilities within these drainage basins, which include existing dry retention and existing drainage pipe connections. Since these existing drainage facilities serve all stormwater runoff generated throughout the FDOT US1 Drainage System and from the Drainage System for the eastern FLL Terminal Area, new stormwater improvements will need to be implemented within on-site and off-site areas to compensate for the impacts on existing stormwater facilities and to handle additional stormwater runoff generated by the proposed FLL IMC Facility. The primary stormwater impacts of the proposed FLL IMC Facility will be the elimination of dry retention within the footprint along with the need to reconfigure and/or upsize the existing drainage pipe connection upstream and downstream of the footprint to maintain the flood control provided throughout the entire FDOT US1 Drainage System and Drainage System 2. The expected stormwater impacts from the FLL IMC Facility are summarized below.

The development of the proposed FLL IMC Facility will modify the ground surface coverage within the FDOT US1 Drainage System, which will eliminate existing dry retention and create new impervious ground surfaces. The footprint of the FLL IMC FLL is located within Drainage Basins US1-12, US1-14, and US1-18 which are primarily pervious surface with dry retention storage. The limits of existing impervious and pervious ground surface throughout the FDOT US1 Drainage System and Drainage System 2 are displayed on **Exhibit 8** at the end of this memorandum. The development of the FLL IMC Facility will increase impervious ground surface within the FDOT US1 Drainage System, which will increase stormwater runoff generated within the footprint and will eliminate existing pervious area that allows for the infiltration of stormwater runoff into the ground. The development of the FLL IMC Facility will also eliminate the storage volume provided for stormwater runoff within existing retention in the footprint. Due to the decreased storage volume provided within existing retention areas to be eliminated along with the increased stormwater runoff generated by the additional impervious areas, the proposed FLL IMC Facility would cause additional flooding throughout the FDOT US1 Drainage System and Drainage System 2 without sufficient on-site and off-site stormwater improvements.

The impacted dry retention within the FDOT US1 Drainage System provides storage volume for both flood attenuation purposes and water quality treatment purposes, which will need to be maintained under the proposed conditions. The existing ground surface elevations throughout the FDOT US1 Drainage System are displayed on **Exhibit 9** at the end of this memorandum. The existing retention areas within Basin US1-12 and Basin US1-14 conflict with the footprint of the FLL IMC Facility. Based on a preliminary evaluation, the water quality storage volume within the existing retention in Drainage Basins US1-12, US1-14, and US1-18 to be potentially eliminated by the FLL IMC Facility was estimated to be 7.60 acre*feet. The proposed FLL IMC Facility is

estimated to create approximately 11.29 acres of new impervious ground coverage, which will generate additional stormwater runoff into the FDOT US1 Drainage System. Based on this additional impervious ground surface, an additional stormwater storage volume of up to 2.35 acre*feet will need to be created within the FDOT US1 Drainage System to enable the proposed FLL IMC Facility to be built while meeting regulatory requirements for water quality treatment.

Based on the existing retention to be eliminated along with the additional stormwater needs related to the new development, the total stormwater impact from the FLL IMC Facility is estimated to be up to 9.95 acre*feet in the worst-case scenario. This stormwater storage volume will need to be created in new on-site and off-site stormwater facilities to support the proposed development. The goal will be to maximize the stormwater storage volume provided on-site within the footprint of the FLL IMC Facility. Any additional stormwater storage needs will need to be provided off-site elsewhere within the FDOT US1 Drainage System or within the existing County owned wetland areas to the east of the NE 7th Avenue.

Some existing drainage pipe connections within the FDOT US1 Drainage System will need to be relocated to avoid conflicting with the proposed FLL IMC Facility or will need be upsized to avoid upstream flooding impacts due to the proposed development. The existing drainage pipe connections throughout the FDOT US1 Drainage System are displayed on **Exhibit 5** at the end of this memorandum. Basin US1-12 and Basin US1-14 are connected by dual 42" RCP, which conflict with the footprint of the FLL IMC Facility and will need to be relocated. Based on a preliminary analysis, various existing drainage connections will need to be upsized to avoid upstream flooding impacts due to the proposed development, which include the existing dual 36" RCP between Basin US1-6 and Basin US1-12, the existing dual 42" RCP between Basin US1-12 and Basin US1-14, and the existing 48" RCP from Basin US1-14 into the existing wetland area east of NE 7th Avenue. All existing stormwater infrastructure impacted by the FLL IMC Facility are displayed on **Exhibit 7** at the end of this memorandum.

Avoidance and Minimization of Wetland Impacts

Under the existing conditions, the FDOT US1 Drainage System discharges all stormwater runoff via existing outfalls into the existing wetland areas to the east of NE 7th Avenue. In order to offset the loss of existing water quality storage within the FDOT US1 Drainage System due to the proposed FLL IMC Facility, the limited staging of stormwater runoff within these existing wetland areas will be required to meet regulatory requirements for water quality treatment. The incorporation of dry retention and wet retention alternatives within these County owned parcels were initially reviewed to meet these regulatory requirements for water quality treatment. The incorporation of dry retention within these County owned parcels would require clearing and grading of these existing high quality wetland areas, which is not desirable. The incorporation of wet retention would avoid these severe impacts to these existing high quality wetland areas. Based on this initial review, the incorporation of wet retention was identified as the preferred option to "avoid and minimize" wetland impacts under these proposed improvements.

The existing County owned wetland area to east of NE 7th Avenue is surrounded by existing uplands, which acts as a perimeter berm, which blocks free overland flow of stormwater runoff. This existing perimeter berm would eliminate the need for constructing a berm in wetlands and avoiding the need to clear and/or fill any existing wetland areas. The only construction activities would be limited to modifications to the existing drainage culverts routed under the existing FPL access road along the eastern and southern perimeter of the existing wetland area. In general, the use of the existing mangrove wetlands for stormwater retention is expected to incur minor alterations, which are anticipated to consist of the following:

- Additional periodic discharges of stormwater runoff from the FDOT US1 Drainage System into the existing wetland areas.

- Additional staging of stormwater runoff from the FDOT US1 Drainage System within the existing wetland areas, which is expected to be less than 2 inches..
- Alteration of tidal connectivity between the existing mangrove wetlands and existing FDOT drainage ditch leading to the Dania Cutoff Canal due to control weirs.

Stormwater Alternatives

CMA evaluated the feasibility of implementing various stormwater alternatives within the footprint of the FLL IMC Facility to maximize the on-site stormwater facilities and to minimize the off-site stormwater facilities. Each of these potential stormwater alternatives is summarized below.

Wet Retention/Detention



Wet retention or detention are permanent wet ponds, which is intended to provide storage capacity for stormwater runoff and water quality treatment when the stormwater runoff is retained or detained within the wet pond. The primary advantages are that wet retention or detention is the most efficient option for maximizing storage capacity for stormwater runoff. Under the pending Statewide Stormwater Rule, wet retention or detention is considered to be very effective for water quality treatment, particularly for nutrient removal efficiency. The primary disadvantages are that wet retention or detention requires a large continuous area for implementation and does not have flexibility to configure with small sites. Wet retention or detention should be avoided adjacent to active airfields since it is considered a bird attractant.

The proposed building structure for FLL IMC Facility encompasses the majority of the project footprint within the FDOT US1 Drainage System. There are also multiple access roadways that will enter and exit the proposed FLL IMC Facility. Due to these factors, there will be limited available and continuous space around the perimeter of the proposed building structure for the implementation of wet retention or detention. Based on these site limitations, the implementation of proposed wet retention or detention is not feasible option for an on-site stormwater solution at the FLL IMC Facility.

Dry Retention/Detention



Dry retention or detention is a graded depressional area with a pervious ground coverage that allows for infiltration of stormwater runoff into the ground surface. Dry retention or detention is intended to provide storage capacity for stormwater runoff and water quality treatment when the stormwater runoff is retained or detained within the wet pond. The primary advantages are that dry retention is an efficient option for maximizing storage capacity for stormwater runoff if the groundwater level is not close to the ground surface along with limited maintenance requirements and flexible configurations. The primary disadvantage is that dry retention or detention is not efficient for sites with low ground surface elevations and high groundwater elevation since the bottom of the dry retention needs to be set at least 12 inches above the seasonal high groundwater elevation. Dry retention and detention areas can also be prone to standing water during the wet season in areas with high groundwater elevations and/or poorly

draining soils, such as the FLL IMC Facility. Dry retention or detention is considered to have reduced efficiency for water quality treatment, particularly for nutrient removal efficiency, under the pending Statewide Stormwater Rules as opposed to the current Statewide Stormwater Rules.

The proposed building structure for FLL IMC Facility encompasses the majority of the project footprint within the FDOT US1 Drainage System. There are also multiple access roadways that will enter and exit the proposed FLL IMC Facility. Due to these factors, there will be limited available space around the perimeter of the proposed building structure for the implementation of dry retention. Based on these site limitations, the implementation of proposed dry retention or detention may be feasible as an on-site stormwater solution at the FLL IMC Facility on a limited basis.

Due to the proposed finish floor elevation of +8.5 feet NAVD for the FLL IMC Facility along with the limited space around the building perimeter and the elevation of existing roadway surrounding the site, it may not be feasible to regrade the perimeter to create stormwater storage volume below the control elevation for the FDOT US1 Drainage System of +2.5 feet NAVD. Once a topographic survey along with a more detailed site plan is available for the FLL IMC Facility, the implementation of dry retention around the perimeter of the proposed building structure could be evaluated further. Based on these site limitations, the implementation of proposed dry retention or detention may be a feasible option for on-site stormwater solution at the FLL IMC Facility on a limited basis.

Swales



Swales are shallow graded depressional areas with a pervious ground coverage that allows for infiltration of stormwater runoff into the ground surface. Swales are intended to provide limited storage capacity for stormwater runoff and water quality treatment when the stormwater runoff is retained or detained within the swale. The primary advantages are that swales are an efficient option for maximizing storage capacity for stormwater runoff on sites with limited available space along with limited maintenance requirements and flexible configurations. The primary disadvantage is that swales provide limited storage volume due to their shallow depth. Swales can also be prone to standing water during the wet season in areas with high groundwater elevations and/or poorly draining soils, such as the FLL IMC Facility. Swales are also considered to have a reduced efficiency for water quality treatment, particularly for nutrient removal efficiency, under the pending Statewide Stormwater Rules as opposed to the current Statewide Stormwater Rules.

Due to the limited space around the building perimeter, swales are the best option for implementing an on-site stormwater solution at the FLL IMC Facility. Once a topographic survey along with a more detailed site plan is available for the FLL IMC Facility, the stormwater storage volume provided by any proposed swales around the perimeter of the proposed building structure could be estimated accurately upon developing preliminary site grading. Based on these site limitations, the implementation of proposed swales will be the most feasible option for an on-site stormwater solution at the FLL IMC Facility on a limited basis.

Bioswales



Bioswales are similar to swales but include the installation of vegetated mediums along the bottom of the bioswales, which are efficient at providing water quality treatment of stormwater runoff. The primary advantage is that bioswales provide greater water quality benefits due to their higher

efficiency in removing pollutants from the stormwater runoff when compared to unvegetated grass swales. The vegetation planted within bioswales can also decrease erosion impacts from stormwater runoff, which maintains the efficiency of the bioswale in the long term. The primary disadvantages are that bioswales provide limited storage volume due to their shallow depth and the planted vegetation require significant routine maintenance effort.

Due to the limited space around the building perimeter, bioswales are an option for implementing an on-site stormwater solution at the FLL IMC Facility. Once a topographic survey along with a more detailed site plan is available for the FLL IMC Facility, the stormwater storage volume provided by any proposed bioswales around the perimeter of the proposed building structure could be estimated accurately upon developing preliminary site grading. Based on these site limitations, the implementation of bioswales will be a feasible option for an on-site stormwater solution at the FLL IMC Facility on a limited basis if BCAD concurs with the level of routine maintenance that will be required.

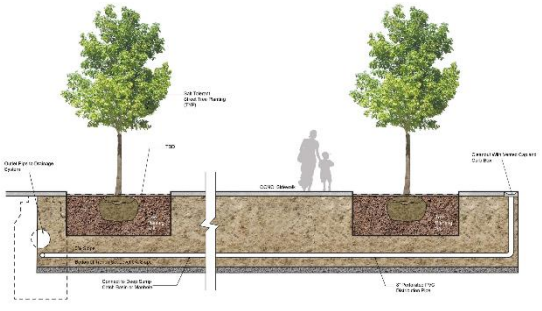
Vegetated Filter



Vegetated filters are open channels with vegetated side slopes, which are intended to provide water quality treatment of stormwater runoff flowing through the channel. The side slopes of these open channels are typically very shallow slopes to promote slow sheet flow of stormwater runoff through the vegetated medium to increase the pollutant removal efficiency. Some of the stormwater runoff may also infiltrate into the underlying soil before continuing to flow downstream within the open channel, which can decrease the total stormwater discharge off-site. The primary advantage of a vegetated filter is to incorporate water quality treatments within a linear open channel that is used to transport stormwater runoff. The primary disadvantage is that vegetated filters are not compatible with small sites. Vegetated filters should also be avoided adjacent to active airfields since it is considered a bird attractant.

The proposed building structure for FLL IMC Facility encompasses most of the project footprint within the FDOT US1 Drainage System. There are also multiple access roadways that will enter and exit the proposed FLL IMC Facility. Due to these factors, there will be limited available space around the perimeter of the proposed building structure for the implementation of a vegetated filter. Based on these site limitations, the implementation of proposed vegetated filters is not feasible as an on-site stormwater solution at the FLL IMC Facility.

Tree Wells



Tree wells are pervious openings where trees are planted between impervious surfaces, such as concrete sidewalks or paths. The tree wells can be used to collect stormwater runoff from these pedestrian sidewalks or pathways and to allow for infiltration into the ground surface. The growth of the tree roots below the tree well location will decrease the soil compaction in the long-term, which will allow stormwater runoff to infiltrate efficiently long after installation. Tree wells also encourage evapotranspiration, which decreases the stormwater discharge to an off-site location. The primary advantage of tree wells is the associated tree canopy provided on-site. The primary disadvantage is that tree wells provide a very small storage volume for stormwater runoff compared to other stormwater best

management practices (BMPs). The root system of any proposed trees could also conflict with any underground utilities.

The proposed building structure for FLL IMC Facility encompasses most of the project footprint within the FDOT US1 Drainage System so there is limited space around the building perimeter for mature tree canopies. The proposed underground infrastructure (particularly the proposed stormwater piping) will likely be routed around the building perimeter of the proposed FLL IMC Facility, which would conflict with any new trees. Considering the stormwater storage capacity provided by tree wells is negligible, the implementation of tree wells should not be considered a feasible option for as an on-site stormwater solution at the FLL IMC Facility. But tree wells should be considered as part of any planned landscaping improvements.

Green Roof



A green roof is a building structure roof that is either partially or fully covered by vegetation. Green roofs are configurable and provide pollutant filtering before stormwater enters a roof drain. The vegetation covering the green roof that would otherwise be covered by other materials encourages the reduction of the heat island effect present in urban areas. The primary advantage is that green roofs can repurpose a building roof area to provide ancillary benefits, which would otherwise not have any uses. The primary disadvantages are that green roofs will require enhanced structural support and building of the building roof and will have significant routine maintenance requirements.

The proposed building structure for FLL IMC Facility encompasses the majority of the project footprint within the FDOT US1 Drainage System so there would be a large area to potentially implement a green roof. That said, the top level of the proposed FLL IMC Facility currently has programmed use, which would preclude the implementation of a green roof. The implementation of green roofs should not be considered a feasible option for an on-site stormwater solution at the FLL IMC Facility but could be considered as part of any facility accreditation on a limited basis if space allows.

Stormwater Harvesting



Stormwater harvesting is a form of stormwater reuse where stormwater runoff is collected typically from building roofs, stored within tanks, and then reused on an as-needed basin, which is typically for irrigation purposes. In general, roof drains are typically routed into a storage tank, which can be installed at ground level or underground. The primary advantage is that stormwater harvesting can reduce the extent of stormwater infrastructure needed on-site due to the reduced amount of stormwater runoff. The primary disadvantage is that the irrigation demand during the dry season does not align with the stormwater supply during the wet season along with high routine maintenance requirements.

The proposed FLL IMC Facility is not expected to have a significant amount of landscaped areas, which would result in a limited water demand for irrigation via stormwater harvesting. The implementation of stormwater harvesting should not be considered a feasible option for an on-site stormwater solution at the FLL IMC Facility but could be considered as part of any facility accreditation on a limited basis should BCAD desire.

Permeable Pavement

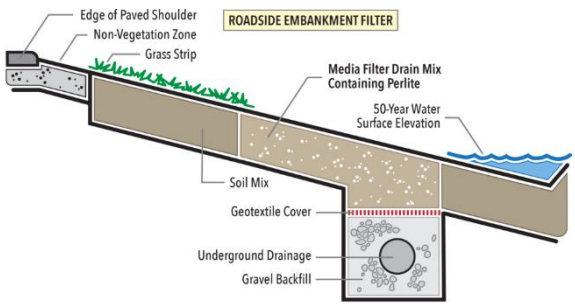


Permeable pavement is a porous surface that allows stormwater runoff to infiltrate into the underlying soil below. The types of permeable pavement can include porous asphalt, pervious concrete, and/or pervious interlocking concrete paver systems. In general, most permeable pavement systems are unable to meet the same vehicular loading as typical asphalt or concrete pavement. Permeable pavement systems are not typically used for travel lanes with significant vehicular traffic but are used for vehicular parking areas or for pedestrian areas. The primary advantage of permeable pavement is that it can reduce the extent of stormwater infrastructure needed on-site due to the reduced amount of stormwater runoff. The primary disadvantage is that permeable pavement is not granted a water quality credit by local regulatory agency, which limits any benefit during stormwater permitting.

The proposed building structure for FLL IMC Facility encompasses the majority of the project footprint within the FDOT US1 Drainage System so there will be limited available area around the building perimeter to implement permeable pavement. Most permeable pavement systems would be unsuitable for the access drives entering and exiting the FLL IMC Facility due to the expected heavy duty vehicular loading. The implementation of permeable pavement on the ground level of the FLL IMC Facility would not provide any tangible benefit. The implementation of any permeable pavement would likely need to be limited to the pedestrian pathway outside of the building footprint for the FLL IMC Facility. The implementation of permeable pavement should not be considered a feasible option for an on-site stormwater solution at the FLL IMC Facility but could be considered as part of any facility accreditation on a limited basis should BCAD desire.

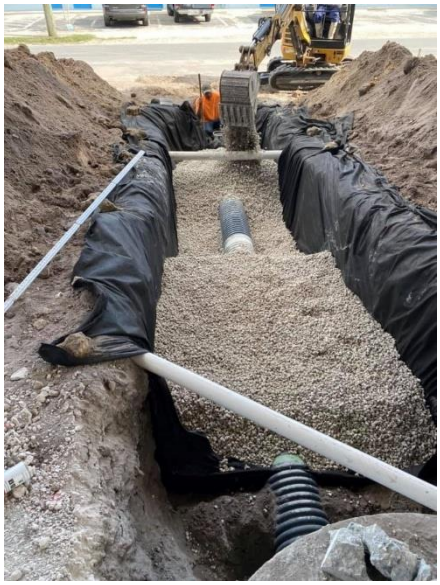
Surface Filter

A surface filter is a flexible BMP alternative that can be installed on flat ground or on a sloped embankment. A surface filter is used to intercept and divert any stormwater runoff through a filtered medium before being collected by an interconnected underground drainage system for storage and percolation into the surrounding soils, which is similar to an exfiltration trench. The primary advantage is that a surface filter can be installed within a sloped roadway embankment. The primary disadvantage is that a surface filter will accumulate sediments and debris over time and requires routine maintenance to extend the useful life.



Due to the limited space around the building perimeter along with the elevated roadways surrounding the project limits, surface filters should be considered a viable option for implementing an on-site stormwater solution within the existing embankment areas surrounding the FLL IMC Facility. Once a topographic survey along with a more detailed site plan is available for the FLL IMC Facility, the stormwater storage volume provided any proposed surface filters around the perimeter of the proposed building structure could be estimated accurately upon developing preliminary site grading. Based on these site limitations, the implementation of proposed surface filters may be a feasible option for an on-site stormwater solution at the FLL IMC Facility on a limited basis.

Exfiltration Trench



Exfiltration trench consists of perforated or slotted drainage pipes installed within a porous stone medium that allows for the storage of stormwater runoff and for the infiltration of stormwater runoff into surrounding soils. Exfiltration trench is typically interconnected with the stormwater management system to provide storage capacity for flood attenuation and to provide water quality treatment. The primary advantage is that exfiltration trench is the most common stormwater solution within South Florida due to various regional limitations. The primary disadvantage is that exfiltration trench is not effective in areas with low ground surface elevations and high groundwater elevations. Exfiltration trench can also accumulate sediments and debris over time, which requires on-going routine maintenance to extend the useful life.

The implementation of exfiltration trench within the proposed footprint of the FLL IMC Facility is a feasible option around the building perimeter and/or under the 5 drive aisles routed through the ground level of the building structure. Due to the proposed finish floor elevation of +8.5 feet NAVD for the FLL IMC Facility, it will be feasible to keep the exfiltration trench above the seasonal high groundwater elevation to maximize the storage capacity for stormwater runoff. The implementation of a proposed exfiltration trench will be a feasible option for an on-site stormwater solution at the FLL IMC Facility.

Storage Chamber Systems



Stormwater storage chamber systems typically consist of a manufactured modal chamber network installed above a porous stone base that allows for the storage of stormwater runoff and for the infiltration of stormwater runoff into subsurface soils. In addition to manufactured products, a custom stormwater storage chamber can be constructed to be integrated with the structural and foundation elements of an above ground building structure. Stormwater storage chamber systems are typically interconnected with the stormwater management system to provide storage capacity for flood attenuation and to provide water quality treatment. The primary advantage is that stormwater storage chamber systems are the most efficient option for maximizing storage capacity for stormwater runoff below the ground surface and maximizing the land area available for land development. The primary disadvantage is that stormwater storage chamber systems are not effective in areas with low ground surface elevations and high groundwater elevations. Stormwater storage chamber systems can also accumulate sediments and debris over time, which requires on-going routine maintenance to extend the useful life.

The implementation of stormwater storage chamber systems within the proposed footprint of the FLL IMC Facility is a feasible option under the 5 drive aisles routed through the ground level of the building structure. Due to the proposed finish floor elevation of +8.5 feet NAVD for the FLL IMC Facility, it will be feasible to keep the stormwater storage chamber systems above the seasonal high groundwater elevation to maximize the storage capacity for stormwater runoff. The implementation of a proposed stormwater storage chamber system will be a feasible option for an on-site stormwater solution at the FLL IMC Facility. Various stormwater storage chamber systems were evaluated further to identify the most appropriate option for the FLL IMC Facility, which are summarized below.

Contech ChamberMaxx



The Contech ChamberMaxx system is an underground open-bottom chamber system that provides storage capacity for stormwater runoff, allows for infiltration of stormwater runoff into subsurface soils, and reduces the off-site discharge of stormwater runoff. The Contech ChamberMaxx system consists of interconnected polypropylene corrugated wall stormwater collection chambers installed over a stone bedding. The Contech ChamberMaxx system is most effective on sites where the depth from finished grade to storm outfall is less than 54 inches. Relevant reference documentation on the Contech ChamberMaxx system is included within the Appendix of this memorandum.

CMA held a design coordination meeting with representatives for the Contech ChamberMaxx system on November 28, 2023 to discuss the feasibility of implementing it within the FLL IMC Facility. The meeting notes from this discussion are included within the Appendix of this memorandum. The discussion focused on the conceptual design of implementing the Contech ChamberMaxx system under the 5 drive aisles routed through the ground level of the FLL IMC building structure. The Contech representative provide the following preliminary design information on implementing the ChamberMaxx system within the FLL IMC Facility:

- Estimated Storage Capacity: The available vertical storage height below the FLL IMC Facility for the proposed ChamberMaxx system was assumed to be 54 inches based on an assumed ground floor elevation of +8.5 feet NAVD, an assumed top of storage elevation of +6.5 feet NAVD, and an assumed future groundwater elevation of +2.0 feet NAVD. Using these assumed vertical dimensions, the recommended sizing for the ChamberMaxx system would include integrating 54-inch diameter pipe design, which would be estimated to provide 3.2 cubic feet in storage volume for each square foot of system footprint area. If the bottom 12 inches of the assumed 24-inch thick road section consists of #57 stone as a subbase, the ChamberMaxx system is estimated to provide up to 3.7 cubic feet in storage volume for each square foot of system footprint area.
- Available Footprint: The ChamberMaxx system is appropriate for installation under roadway areas, parking areas, or pedestrian areas. The ChamberMaxx system could be installed under 5 drive aisles routed through the ground level of the FLL IMC building structure, which are assumed to be 24 feet wide with pedestrian areas on each side. The limiting factor for the ChamberMaxx width will be the proximity to any structural elements and foundations support the FLL IMC building structure. The proposed structural foundations for the FLL IMC building structure were assumed to be approximately 60 feet apart. The ChamberMaxx system should have a minimum horizontal separation of 10 feet separation from any structural elements and foundations. Based on these design assumptions, the assumed footprint of each ChamberMaxx segement below each drive aisle would be 50 feet wide.
- Estimated Storage Volume: Based on the design assumptions noted above, each segment of ChamberMaxx system would be 500 feet in length and 50 feet in width under each drive aisle and is estimated to provide approximately 80,000 cubic feet to 92,500 cubic feet per drive isle. Based on these estimates, the ChamberMaxx system is estimated to provide approximately between 9.2 acre*feet to 10.6 acre*feet within the footprint of the FLL IMC Facility.
- Storage System below Building Structures: Contech provided several design considerations to verify for implementing the ChamberMaxx system below the proposed building structure. There will need to be adequate vertical clearance between finished grade and any building structure components to allow for the installation of the underground storage system and to potentially repair any underground storage system if the need ever arises. Based on the conceptual section views for the FLL IMC Facility, there appears to be 23

feet in vertical clearance from the ground floor and the bottom of the first level, which should be adequate. While installation of the ChamberMaxx system below portions of a parking garage structures, Contech does not allow the installation of the ChamberMaxx system below any habitable or occupied portions of a building structure.

- Preliminary Costing: The estimated material costs for the ChamberMaxx system is expected to be in the range of $5.7 per cubic feet of provided storage volume. The estimated construction costs are difficult to predict for these underground storage systems but generally range from 50% to 100% of the total material costs. Based on these preliminary assumptions, the installation of the ChamberMaxx system at the FLL IMC Facility is estimated to range between approximately $680,000 and $1,050,000.
- Additional Considerations: In addition to the 5 drive isles below the ground floor of the FLL IMC Facility, it may be feasible to implement the ChamberMaxx system below additional access roadways entering and exiting the FLL IMC if additional storage volume is needed.

ADS StormTech



The ADS StormTech system is an underground open-bottom modular chamber system that provides storage capacity for stormwater runoff, allows for infiltration of stormwater runoff into subsurface soils, and reduces the off-site discharge of stormwater runoff. The ADS StormTech system consists of corrugated arch segments, which are interconnected to form the linear stormwater collection chambers with additional end cap components. The ADS StormTech segments are composed of molded impact modified resins. The ADS StormTech chambers are typically installed over geotextile fabric and stone bedding. The ADS StormTech system can also integrate their isolator row components, which is used to enhance the enhance the capture of any total suspended solids within stormwater runoff, to allow for ongoing maintenance to remove accumulated sediments, and to provide additional water quality benefits. Relevant reference documentation on the ADS StormTech system is included within the Appendix of this memorandum.

CMA held a design coordination meeting with representatives for the ADS StormTech system on December 5, 2023 to discuss the feasibility of implementing it within the FLL IMC Facility. The meeting notes from this discussion are included within the Appendix of this memorandum. The discussion focused on the conceptual design of implementing the ADS StormTech system under the 5 drive aisles routed through the ground level of the FLL IMC building structure. Based on the various design assumptions for the FLL IMC Facility, the ADS representative prepared preliminary storage calculations and developed a conceptual design layout to implement the StormTech system within the FLL IMC Facility, which is included within the Appendix of this memorandum. Based on this conceptual design, the StormTech system at the FLL IMC Facility would consist of the 230 MC-3500 chambers and 10 MC-3500, which would be installed above 9 inch thick stone bedding and would include stone backfill to 12 inches above the top of the chamber system. Based on this conceptual design, the StormTech system at the FLL IMC Facility is estimated to provide 49,482 cubic feet in storage volume for stormwater runoff, which would be equivalent to 1.14 acre*feet.

StormTrap

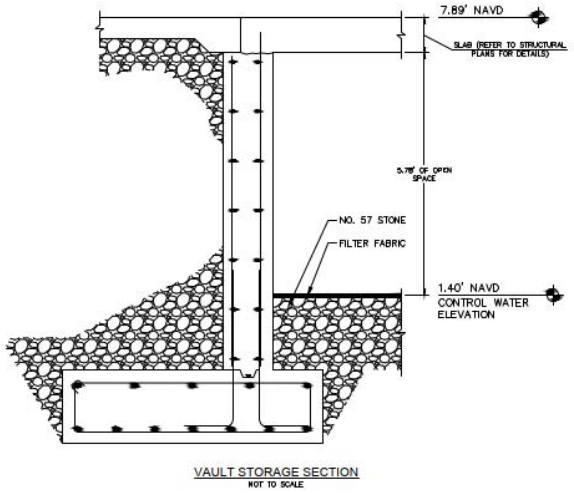


The StormTrap system is an underground modular chamber system that provides storage capacity for stormwater runoff, allows for infiltration of stormwater runoff into subsurface soils, and reduces the off-site discharge of stormwater runoff. The StormTrap system consists of precast concrete segments,

which are interconnected to form the stormwater collection chambers. The StormTrap chambers are typically installed over geotextile fabric and stone bedding. The StormTrap system can be used to enhance the capture of any total suspended solids within stormwater runoff, to allow for ongoing maintenance to remove accumulated sediments, and to provide additional water quality benefits. Relevant reference documentation on the StormTrap system is included within the Appendix of this memorandum.

CMA held a design coordination meeting with representatives for the StormTrap system on December 6, 2023 to discuss the feasibility of implementing it within the FLL IMC Facility. The meeting notes from this discussion are included within the Appendix of this memorandum. The discussion focused on the conceptual design of implementing the StormTrap system under the 5 drive aisles routed through the ground level of the FLL IMC building structure. Based on the various design assumptions for the FLL IMC Facility, the StormTrap representative prepared preliminary storage calculations and developed a conceptual design layout to implement the StormTrap system within the FLL IMC Facility, which is included within the Appendix of this memorandum. Based on this conceptual design, the StormTrap system at the FLL IMC Facility would consist of 809 Single Trap chambers with 5 feet height. Based on this conceptual design, the StormTrap system at the FLL IMC Facility is estimated to provide 427,695 cubic feet in storage volume for stormwater runoff, which would be equivalent to 9.82 acre*feet.

Custom



VAULT STORAGE SECTION
NOT TO SCALE

Another alternative would be to implement a custom designed stormwater vault below the FLL IMC Facility that is structurally integrated with the building foundation. The proposed stormwater vault would be an enclosed structure below the ground floor of the FLL IMC Facility. The stormwater vault will be constructed of cast in place concrete with associated reinforcement. The interior surfaces within the stormwater vault would need to be water-proofed with a concrete admixture to prevent spalling and corrosion of the rebar reinforcement. The ground floor of the FLL IMC Facility would need to be composed of a concrete structural slab that can bridge over the stormwater vault. The bottom of the stormwater vault would consist of stone bedding overlaid with geotextile to allow for infiltration of stormwater runoff into the subsurface soils. A custom stormwater vault below the FLL IMC Facility would maximize the storage capacity for stormwater runoff compared to the alternatives but would be more expensive to construct and have more extensive maintenance requirements compare to the manufactured alternatives.

The feasibility of implementing various stormwater alternatives within the footprint of the FLL IMC Facility along with the associated flood control, flood attenuation, and water quality treatment impacts is summarized within the table below.

Stormwater Alternative	Site Feasibility	Flood Control Benefit	Flood Attenuation Benefit	Water Quality Benefit
Wet Retention/Detention	No	Yes	Yes	Yes
Dry Retention/Detention	Yes	Yes	Yes	Yes
Swale	Yes	Limited	Limited	Yes
Bioswale	Yes	Limited	Limited	Yes
Vegetated Filter	No	No	No	Yes
Tree Wells	Limited	Limited	Limited	Limited

Stormwater Alternative	Site Feasibility	Flood Control Benefit	Flood Attenuation Benefit	Water Quality Benefit
Green Roof	Limited	Limited	Limited	No
Stormwater Harvesting	Limited	Limited	Limited	No
Permeable Pavement	Limited	Limited	Limited	No
Surface Filter	Yes	Limited	Limited	Yes
Exfiltration Trench	Yes	Limited	Limited	Yes
Storage Chambers	Yes	Yes	Yes	Yes

Based on this review of various stormwater alternatives, CMA would recommend further evaluation of implementing stormwater storage chambers below the FLL IMC Facility and a combination of dry retention, swales, surface filter, and/or exfiltration trench around the perimeter of the FLL IMC Facility.

Stormwater Concept

Based on the evaluation of the expected stormwater impacts of the proposed FLL IMC Facility, CMA has developed a preliminary concept of the on-site and off-site stormwater improvements, which will be needed to compensate for the loss of existing retention areas and to avoid negative upstream flooding impacts throughout the FDOT US1 Drainage System and Drainage System 2 for the eastern portion of the FLL Terminal Area. The preliminary stormwater concept is displayed on **Exhibit 10** at the end of this memorandum. The proposed stormwater concept for the FLL IMC Facility will include the following on-site stormwater improvements:

- Stormwater Storage Chambers – The implementation of stormwater storage chamber systems within the proposed footprint of the FLL IMC Facility is proposed under the 5 drive aisles routed through the ground level of the building structure. The purpose of the stormwater storage chamber system is to provide water quality storage to offset the loss of existing dry retention areas due to the proposed development and to provide flood attenuation throughout the FDOT US1 Drainage System. All stormwater collected from the roof of the building structure should be routed via roof drains directly into the stormwater storage chamber system, which would have a control weir to retain stormwater up to a defined control elevation. Once the levels within the stormwater storage chambers exceed the control elevation, the stormwater runoff would overflow the weir toward the stormwater outfall for off-site discharge.
- Dry Retention Areas – There is expected to be open green space around the perimeter of the FLL IMC Facility between the various access roadways and below elevated portions of the FLL IMC Facility. The stormwater concept includes implementing a series of dry retention areas within any open green space within the footprint of the FLL IMC Facility. The purpose of the dry retention areas is to provide water quality storage to offset the loss of existing dry retention areas due to the proposed development and to provide flood attenuation throughout the FDOT US1 Drainage System. At this time, the extent of any new dry retention areas is based on general assumptions since there is currently not sufficient site information to develop an accurate layout of new dry retention areas.
- Surface Filters – The footprint of the FLL IMC Facility is primarily surrounded by elevated roadways. Some of the stormwater runoff generated from these elevated roadways flows down the roadway embankments into the footprint of the FLL IMC Facility. The stormwater concept includes implementing surface filters within the appropriate embankment areas surrounding the FLL IMC Facility. The purpose of the surface filters is to intercept any stormwater runoff flowing down from the elevated roadways and minimize the stormwater needs for the FLL IMC Facility.
- Upsized Stormwater Piping Network – All stormwater runoff generated within the FDOT US1 Drainage System and Drainage System 2 currently flows into Drainage Basin US1-12 and Drainage Basin US1-14, which is within the footprint of the FLL IMC Facility. The new stormwater infrastructure will need to be routed around the perimeter of the building structure, which will allow the stormwater runoff from upstream portions of the FDOT US1 Drainage System to bypass the FLL IMC Facility and flow directly toward the

system outfall to the east. The purpose of these stormwater pipe upgrades is to prevent any negative impacts within upstream areas in the FDOT US1 Drainage System. Additional modeling analysis will be conducted to develop preliminary recommendation for the pipe sizing.

The proposed stormwater concept for the FLL IMC Facility will include the following off-site stormwater improvements:

- Basin US1-6 / Basin US1-12 Pipe Connections – All stormwater runoff generated within the FDOT US1 Drainage System and Drainage System 2 eventually flows into Drainage Basin US1-12 and Drainage Basin US1-14, which is within the footprint of the FLL IMC Facility. The existing drainage infrastructure connecting these drainage basins will need to be upsized to avoid adverse flooding impacts in upstream portions of the FDOT US1 Drainage System.
- Basin US1-12 and Basin US1-14 Pipe Connections – All stormwater runoff generated within the FDOT US1 Drainage System and Drainage System 2 eventually flows into Drainage Basin US1-12 and Drainage Basin US1-14, which is within the footprint of the FLL IMC Facility. The existing drainage infrastructure connecting these drainage basins will need to be relocated and upsized to avoid adverse flooding impacts in upstream portions of the FDOT US1 Drainage System.
- Basin US1-14 Outfall – All stormwater runoff generated within the FDOT US1 Drainage System and Drainage System 2 eventually flows into Drainage Basin US1-12 and Drainage Basin US1-14, which is within the footprint of the FLL IMC Facility. The existing drainage infrastructure connecting this drainage basin to the existing wetland area to the east of NE 7th Avenue will need to be upsized to avoid adverse flooding impacts in upstream portions of the FDOT US1 Drainage System.
- Basin US1-26 Outfall – All stormwater runoff generated within the FDOT US1 Drainage System flows into Drainage Basin US1-12 and Drainage Basin US1-14, which is within the footprint of the FLL IMC Facility. The proposed stormwater concept includes directly connecting this drainage basin to the existing wetland area to the east of NE 7th Avenue to avoid adverse flooding impacts in upstream portions of the FDOT US1 Drainage System.
- FPL Access Road Culvert Control Structures – All stormwater runoff generated within the FDOT US1 Drainage System discharges into the existing County owned wetland area to east of NE 7th Avenue, which is bounded by an FPL maintenance access road. Any stormwater runoff flows from this existing wetland area via 7 existing drainage culverts under the FPL maintenance access road into the existing drainage ditch that flows south toward the Dania Cutoff Canal. The stormwater concept includes retrofitting a control structure with an overflow weir at the upstream end of the 7 existing drainage culverts. The purpose of these control structures is to increase the staging of stormwater runoff throughout the existing drainage and to offset the loss of existing water quality storage lost due to the impacts of the FLL IMC Facility.
- FPL Access Road Modifications – All stormwater runoff generated within the FDOT US1 Drainage System discharges into the existing County owned wetland area to east of NE 7th Avenue, which is bounded by an FPL maintenance access road. Some segments of the FPL maintenance access road have very low elevations. The stormwater concept includes raising the FPL maintenance access road up to at least +3.0 feet NAVD. The purpose of raising any low access road segments is to prevent any stormwater runoff staging within the existing wetland areas from sheet flowing over the FPL maintenance access road.

Stormwater Modeling

CMA conducted a hydraulic modeling analysis of the proposed stormwater concept for the FLL IMC Facility on an iterative basis to evaluate the stormwater impacts due to the proposed development. The primary purpose of this hydraulic modeling analysis was to develop preliminary recommendations on the potential sizing and configuration of any stormwater improvements needed to ensure the proposed FLL IMC Facility does not cause adverse stormwater impacts within upstream areas of the FDOT US1 Drainage System and the Drainage System 2. CMA used the ICPR4 stormwater model developed during the 2021 FLL Stormwater Master Plan to conduct

the hydraulic modeling analysis of the proposed stormwater concept for the FLL IMC Facility. CMA only used a portion of the ICPR4 stormwater model related to the FDOT US1 Drainage System and Drainage System 2 for the FLL Terminal Area to conduct this analysis. CMA had to adjust the ICPR4 stormwater model setup for this analysis specific to the proposed FLL IMC Facility, which is summarized below.

Model Boundaries

The stormwater modeling analysis for the FLL IMC Facility was limited to the boundaries of the FDOT US1 Drainage System and the Drainage System 2, which serves the eastern portion of the FLL Terminal Area. Most sub-basin boundaries within these two primary systems were left unchanged within the ICPR4 stormwater model for the existing conditions and future conditions with a few exceptions, which are noted below.

- Basin US1-12 – Even though the proposed FLL IMC Facility will be primarily located within Basin US1-14, the facility is also partially located within Basin US1-12. The boundary for Basin US1-12 was adjusted to not include any of the area occupied by Basin IMC, which encompasses the proposed footprint of the FLL IMC building structure. This adjustment of this basin boundary will allow for a more precise routing analysis of stormwater runoff generated from the roof of the proposed FLL IMC Facility and generated from the open areas surrounding the perimeter of the FLL IMC Facility.
- Basin US1-14 – The proposed FLL IMC Facility will be primarily located within Basin US1-14, which was sub-divided to allow for an analysis of the future development conditions. Basin US1-14 was divided into two sub-basins. Basin IMC encompassed the proposed footprint of the FLL IMC building structure. The area around the perimeter of the FLL IMC building structure that includes the access roadways and remaining green space retained the name Basin US1-14 This adjustment of this basin boundary will allow for a more precise routing analysis of stormwater runoff generated from the roof of the proposed FLL IMC Facility and generated from the open areas surrounding the perimeter of the FLL IMC Facility.
- Basin US1-18 – Even though the proposed FLL IMC Facility will be primarily located within Basin US1-14, the facility is also partially located within Basin US1-18. The boundary for Basin US1-18 was adjusted to not include any of the area occupied by Basin IMC, which encompasses the proposed footprint of the FLL IMC building structure. This adjustment of this basin boundary will allow for a more precise routing analysis of stormwater runoff generated from the roof of the proposed FLL IMC Facility and generated from the open areas surrounding the perimeter of the FLL IMC Facility.
- Basin US1-28 – The area within this basin encompasses a portion of the existing wetland areas located east of NE 7th Avenue. The north boundary of this basin is now aligned with the high ridge on north side of the existing FDOT drainage ditch that flows from west to east. This adjustment of this basin boundary will allow for a routing analysis of stormwater runoff flowing through this existing wetland area.
- Basin US1-29 – The area within this basin encompasses a portion of the existing wetland areas located east of NE 7th Avenue. The south boundary of this basin is now aligned with the high ridge on north side of the existing FDOT drainage ditch that flows from west to east. This adjustment of this basin boundary will allow for a routing analysis of stormwater runoff flowing through this existing wetland area.

The relevant information on the updated model boundaries is defined within the Appendix at the end of this memorandum. Exhibits 11A and 11B at the end of this memorandum show the nodal diagram of the existing and future ICPR4 models.

Basin Parameters

Within the ICPR4 stormwater model, basins are used to represent areas that receive rainfall during a storm event, which include various hydrologic parameters related to the type of ground coverage. The basin parameters within FDOT US1 Drainage System and the Drainage System 2 were left unchanged for the existing condition scenario. The basin parameters for a few select drainage basins were updated for the future conditions

scenario. These basin parameter changes were necessary to reflect the assumed development conditions of the FLL IMC Facility. The future ground coverages within these select drainage basins were estimated based on the conceptual layouts within the FLL IMC Advanced Planning Technical Report. The assumed impervious, pervious, building, and surface water ground coverages under the future development conditions were used to tabulate a future curve number (CN) parameters for these select drainage basins. The composite CN method defined in the SFWMD SWERP Manual was used to calculate the updated CN parameter for these select drainage basins. The basin parameter updates are summarized below:

- Basin US1-12 – Even though the proposed FLL IMC Facility will be primarily located within Basin US1-14, the facility is also partially located within Basin US1-12. The boundary for Basin US1-12 was adjusted to not include any of the area occupied by Basin IMC, which encompasses the proposed footprint of the FLL IMC building structure. The remaining ground coverage within the adjusted Basin US1-12 was used to calculate the updated CN parameters for incorporation into the future condition model scenario.
- Basin US1-14 – The proposed FLL IMC Facility footprint will be primarily located within Basin US1-14, which was sub-divided to allow for an analysis of the future development conditions. Basin US1-14 was divided into two sub-basins. Basin IMC encompassed the proposed footprint of the FLL IMC building structure, which will be completely impervious due to the proposed building structure. Basin US1-14 encompassed the area around the perimeter of FLL IMC building structure that will include some new impervious surface due to new access roadway along remaining green space. The proposed ground coverage within the two new drainage basins was used to calculate updated CN parameters for incorporation into the future condition model scenario.
- Basin US1-18 – Even though the proposed FLL IMC Facility will be primarily located within Basin US1-14, the facility is also partially located within Basin US1-12. The boundary for Basin US1-18 was adjusted to not include any of the area occupied by Basin IMC, which encompasses the proposed footprint of the FLL IMC building structure. The remaining ground coverage within the adjusted Basin US1-18 was used to calculate the updated CN parameters for incorporation into the future condition model scenario.

The relevant information on the updated basin parameters is defined within the Appendix at the end of this memorandum. Exhibits 11A and 11B at the end of this memorandum show the nodal diagram of the existing and future ICPR4 models.

Node Parameters

Within the ICPR4 stormwater model, nodes are used to represent junction points within a drainage network, which can provide storage capacity for stormwater runoff during a flood routing analysis. The drainage node parameters within FDOT US1 Drainage System and the Drainage System 2 were left unchanged for the existing condition scenario. The drainage node parameters for a few select drainage notes were updated for the future condition scenario. These node parameter changes were necessary to reflect the assumed development conditions of the FLL IMC Facility, which include updated stage storage parameters to reflect the assumed grading under the future conditions. Stage storage parameters are used to define the available volume for stormwater storage at various elevation intervals. The updated stage storage parameters within these select drainage nodes were estimated based on the conceptual layouts within the FLL IMC Advanced Planning Technical Report. The node parameter updates are summarized below:

- Node US1-12 – Although the proposed FLL IMC Facility will be primarily located within Basin US1-14, the building footprint is also partially located within Basin US1-12. The stage storage volume within Basin US1-12 limits was adjusted for the proposed conditions within this node. The FLL IMC Facility is expected to have a finished floor elevation of +8.5 feet NAVD. So all storage volume below this elevation was eliminated from this node except for the additional storage volume created by the new regraded dry retention area around the building perimeter. The proposed stage storage within the adjusted node was

estimated based on preliminary design assumptions for incorporation into the future condition model scenario.

- Node US1-14 – The proposed FLL IMC Facility footprint will be primarily located within Node US1-14, which was sub-divided to allow for an analysis of the future development conditions. Node US1-14 was divided into three separate nodes. Node IMC_Roof encompassed the proposed building footprint of the FLL IMC building structure, which will have a finish floor elevation of +8.5 feet NAVD. This node was assumed to have negligible stage storage volume and was used to collect stormwater runoff from the roof area of the FLL IMC Facility. Node IMC_Storage also encompassed the proposed footprint of the FLL IMC building structure. This node represents the stage storage within the proposed stormwater chamber system to be installed under the FLL IMC Facility. All stormwater storage was assumed between +2.00 feet NAVD and the local control elevation of +7.00 feet NAVD. The area around the perimeter of the FLL IMC Facility was represented by the readjusted Node US1-14. The stage storage within this node was recalculated based on the existing conditions topography. The FLL IMC Facility footprint is expected to be regraded to an elevation of +8.5 feet NAVD so all storage below this elevation was eliminated except for the storage volume created by the new regraded dry retention area around the proposed building perimeter. So all storage volume below this elevation was eliminated from this node except for the additional storage volume created by the new regraded dry retention area around the building perimeter. The proposed stage storage within the adjusted node was estimated based on preliminary design assumptions for incorporation into the future condition model scenario.

The relevant information on the updated node parameters is defined within the Appendix at the end of this memorandum. Exhibits 11A and 11B at the end of this memorandum show the nodal diagram of the existing and future ICPR4 models.

Link Parameters

Within the ICPR4 stormwater model, links are used to represent flow connections between basins and nodes within a drainage network, which can be drainage pipe connections, weir connections, and overland flow connections. The drainage link parameters within the FDOT US1 Drainage System and the Drainage System 2 were left unchanged for the existing condition scenario. The drainage link parameters were updated for the future condition scenario. These drainage link parameter changes were necessary to reflect the assumed development conditions of the FLL IMC Facility along with any proposed stormwater infrastructure improvements throughout these drainage systems. The drainage link parameter updates are summarized below:

- Link US1-6_TO_US1-12 – The existing drainage infrastructure connecting Basin US1-6 and Basin US1-12 will need to be upsized to avoid adverse flooding impacts in upstream portions of the FDOT US1 Drainage System. The proposed sizing of these pipe connections was adjusted within the model on an iterative basis to identify the recommended sizing of the proposed drainage pipe connection between Basin US1-6 and Basin US1-12.
- Link US1-12_TO_US1-14 – The existing drainage infrastructure connecting Basin US1-12 and Basin US1-14 will need to be upsized and relocated to avoid adverse flooding impacts in upstream portions of the FDOT US1 Drainage System. The proposed sizing of these pipe connections was adjusted on an iterative basis to identify the recommended sizing of the proposed drainage pipe connection between Basin US1-12 and Basin US1-14. The link was switched from a pipe link to a drop structure link in the proposed conditions model to simulate a control elevation of +2.50 feet NAVD. The link was readjusted to discharge into Node US1-14A, which represents the junction structure downstream of Node US1-14.
- Link US1-14_TO_US1-14A – The perimeter area around the FLL IMC Facility footprint will collect stormwater through proposed dry retention, which will discharge into an upstream junction structure represented by Node US1-14A. The connection to this junction structure is represented by a drop structure link that represents a proposed pipe and a proposed control structure elevation.

- Link US1-14A_TO_US1-28 – The existing drainage infrastructure connecting Basin US1-14 to the existing wetland areas to east of NE 7th Avenue will need to be upsized to avoid adverse flooding impacts in upstream portions of the FDOT US1 Drainage System. The proposed sizing of these pipe connections was adjusted on an iterative basis to identify the recommended sizing of the proposed drainage pipe connection between Basin US1-14 and the existing wetland areas to east of NE 7th Avenue.
- Link US1-26_TO_US1-28 – New drainage infrastructure connecting Basin US1-26 directly to the existing wetland areas to east of NE 7th Avenue will need to be implemented to avoid adverse flooding impacts in upstream portions of the FDOT US1 Drainage System. The proposed sizing of these new pipe connections was adjusted on an iterative basis to identify the recommended sizing of the proposed drainage pipe connection between Basin US1-26 and the existing wetland areas to east of NE 7th Avenue.
- Links OF1, OF2, OF3, OF4, OF5, OF6, and OF7: – New control structures with overflow weirs and bleeders will need to be added to the 7 existing drainage culverts routed under the FPL maintenance access road. The proposed configuration of these new control structures was adjusted on an iterative basis to identify the recommended control elevations to provide sufficient water quality storage within the existing wetland areas while avoiding adverse flooding impacts in upstream portions of the FDOT US1 Drainage System. The culverts with diameters less than 36 inches were evaluated to potentially be upsized to alleviate upstream stormwater inundation.
- Links HR1, HR2, HR3, HR4, HR5, and HR6 – New overland flow weirs were created for the FPL access road along the boundaries of the existing County owned wetland area to east of NE 7th Avenue, which have very low ground surface elevations. The proposed configuration of these new overland flow weirs was adjusted on an iterative basis to identify the recommended road elevations to eliminate overland flow from the existing wetland areas into the FDOT drainage ditch.
- Links US1-20_TO_US1-14_1 US1-20_TO_US1-14_2 – The future condition ICPR4 model was updated to modify the existing links, which was used to define the proposed drainage infrastructure to be routed around the perimeter of the FLL IMC Facility. These links represent the existing culverts that connect Basin US1-20 and US1-14. Under proposed conditions, the connected stormwater infrastructure around the FLL IMC Facility perimeter bypasses Basin US1-14 and instead discharges into the upstream junction structure represented by Node US1-14A. The links were modified into drop structure links in the proposed conditions to assign a control elevation prior to discharge into the proposed junction structure.
- Link US1-26A_TO_US1-14 – The future condition ICPR4 model was updated to modify the existing link, which was used to define the proposed drainage infrastructure to be routed around the perimeter of the FLL IMC Facility. This link represents the existing culvert that connects Basin US1-26 and US1-14. Under proposed conditions, the connected stormwater infrastructure around the FLL IMC Facility perimeter bypasses Basin US1-14 and instead discharges into the upstream junction structure represented by Node US1-14A. The link was modified into a drop structure in the proposed conditions to assign a control elevation prior to discharge into the proposed junction structure.

The relevant information on the updated link parameters is defined within the Appendix at the end of this memorandum. Exhibits 11A and 11B at the end of this memorandum show the nodal diagram of the existing and future ICPR4 models.

Peak Discharge Comparison

The ICPR4 stormwater model was used to confirm the peak discharges from the FDOT US1 Drainage System into the FDOT drainage ditch do not increase from the existing conditions upon the implementation of the recommended stormwater improvements. As noted within the table below, the total peak discharge from the FDOT US1 Drainage System into the FDOT drainage ditch under the proposed conditions does not exceed the total peak discharge from the FDOT US1 Drainage System under the existing conditions.

ICPR4 Peak Discharge Results (CFS)		
Link Name	**Existing Peak Discharge**	**Proposed Peak Discharge**
W:HR1	29.52	0.00
W:HR2	0.13	0.00
W:HR3	0.00	0.00
W:HR4	2.04	0.00
W:HR5	5.13	0.00
W:HR6	197.44	0.00
P:OF1 / DS:OF1	44.05	54.21
P:OF2 / DS:OF2	31.03	44.81
P:OF3 / DS:OF3	31.03	44.81
P:OF4 / DS:OF4	31.03	44.81
P:OF5 / DS:OF5	1.93	44.81
P:OF6 / DS:OF6	31.03	44.81
P:OF7 / DS:OF7	18.81	44.81
Total	**423.17**	**323.07**

Peak Stage Comparison

The ICPR4 stormwater model was used to confirm the peak flood stages do not increase throughout the FDOT US1 Drainage System and Drainage System 2 under the proposed development conditions for the FLL IMC Facility. The estimated peak flood stages under the proposed development conditions do not increase throughout the FDOT US1 Drainage System and Drainage System 2. The only exception is where the FLL IMC Facility is located within Basin US1-14, which would be expected due to filling of this areas for the proposed building construction. The comparison of the estimated peak flood stages within basins throughout the FDOT US1 Drainage System and Drainage System 2 under both the existing conditions and the proposed development conditions is summarized within the Appendix at the end of this memorandum.

Recommended Conceptual Stormwater Improvements

CMA conducted a hydraulic modeling analysis of the proposed stormwater concept for the FLL IMC Facility on an iterative basis to evaluate the stormwater impacts due to the proposed development. This hydraulic modeling analysis was used to develop the preliminary recommendations on the potential sizing and configuration of any stormwater improvements needed to ensure the proposed FLL IMC Facility does not cause adverse stormwater impacts within upstream areas of the FDOT US1 Drainage System and the Drainage System 2. Based on this hydraulic modeling analysis, the preliminary recommendations on the potential sizing and configuration of any stormwater improvements needed to enable the FLL IMC Facility are displayed in **Exhibit 10** at the end of this memorandum. The recommended conceptual stormwater improvements needed to enable the FLL IMC Facility is summarized below:

- Stormwater Storage Chambers – The implementation of stormwater storage chamber systems within the proposed footprint of the FLL IMC Facility is recommended under the 5 drive aisles routed through the ground level of the building structure. The proposed stormwater storage chamber system will handle all stormwater runoff from the roof the FLL IMC Facility and will provide sufficient water quality storage for the new impervious area. All stormwater collected from the roof of the FLL IMC building structure should be routed via roof drains directly into the stormwater storage chamber system, which would have a control weir to retain stormwater up to weir control elevation of +7.0 feet NAVD. Once the levels within the stormwater storage chambers exceed the control elevation, the stormwater runoff would overflow the weir toward the stormwater outfall for off-site discharge. Based on a preliminary evaluation, the implementation of the StormTrap stormwater chamber is the most appropriate for the FLL IMC Facility since it will

maximize the storage volume for stormwater runoff. Based on the conceptual design, the StormTrap chamber system at the FLL IMC Facility is estimated to provide 427,695 cubic feet in storage volume for stormwater runoff, which would be equivalent to 9.82 acre*feet.

- Dry Retention Areas – There is expected to be open green space around the perimeter of the FLL IMC Facility between the various access roadways and below elevated portions of the FLL IMC Facility. The purpose of these proposed dry retention areas is to help compensate for the loss of existing storage volume due to the FLL IMC Facility. The stormwater concept includes implementing a series of dry retention areas with bottom elevations of +1.42 feet NAVD and maximum side slope of 4:1 within any open green space within the footprint of the FLL IMC Facility. At this time, these new dry retention areas around the perimeter of the FLL IMC Facility encompass approximately 3.70 acres and are estimated to provide approximately 1.07 acre*feet of storage capacity for stormwater runoff. The proposed grading of the roadway embankments surrounding the FLL IMC Facility will need to be developed to confirm the extent of these new dry retention areas.
- On-Site Stormwater Piping Network – The new stormwater infrastructure will need to be routed around the perimeter of the FLL IMC building structure, which will allow the stormwater runoff from upstream portions of the FDOT US1 Drainage System to bypass the FLL IMC Facility and flow directly toward the system outfall to the east. The proposed stormwater infrastructure handling stormwater runoff from Basin US1-20 and Basin 1-26 to the south is expected to include dual 48-inch drainage piping or the hydraulic equivalent, which will be routed around the south and east perimeter of the FLL IMC Facility. The proposed stormwater infrastructure handling stormwater runoff from Basin US1-12 to the west is expected to include dual 48-inch drainage piping or the hydraulic equivalent, which is routed around the north perimeter of the FLL IMC Facility. These proposed on-site improvements are expected to include approximately 3,530 linear feet of 48-inch drainage pipe, 8 drainage structures, and 2 control structures.
- Basin US1-6 / Basin US1-12 Pipe Connections – The existing drainage infrastructure connecting these drainage basins is expected to be upsized to dual 48-inch drainage piping or the hydraulic equivalent. The purpose of these drainage pipe upgrades is to increase the hydraulic transmission capacity to avoid any adverse flooding impacts within upstream areas of the FDOT US1 Drainage System. These proposed drainage pipe upgrades are expected to include approximately 320 linear feet of 48-inch drainage pipe and 4 headwall structures.
- Basin US1-12 and Basin US1-14 Pipe Connections – The existing drainage infrastructure connecting these drainage basins is expected to be relocated and upsized to dual 48-inch drainage piping or the hydraulic equivalent. The purpose of these drainage pipe upgrades is to increase the hydraulic transmission capacity to avoid any adverse flooding impacts within upstream areas of the FDOT US1 Drainage System. These proposed drainage pipe upgrades are expected to include approximately 510 linear feet of 48-inch drainage pipe and 2 headwall structures.
- Basin US1-14 Outfall – The existing drainage infrastructure discharging into the existing wetland area to east of NE 7th Avenue is expected to be upsized to triple 48-inch drainage piping or the hydraulic equivalent while maintaining a system control elevation of +2.5 feet NAVD. The purpose of these drainage pipe upgrades is to increase the hydraulic transmission capacity to avoid any adverse flooding impacts within upstream areas of the FDOT US1 Drainage System. These proposed drainage pipe upgrades are expected to include approximately 940 linear feet of 48-inch drainage pipe, 1 junction structure, and 3 headwall structures.
- Basin US1-26 Outfall – The proposed drainage infrastructure to allow stormwater runoff to discharge from this drainage basin into the existing wetland is expected to be a single 48-inch drainage pipe or the hydraulic equivalent with a control elevation of +2.5 feet NAVD. The purpose of these drainage pipe upgrades is to divert stormwater runoff from Basin US1-26 directly into the existing wetland areas to east of NE 7th Avenue instead of toward the FLL IMC Facility, which will avoid any adverse flooding impacts within upstream areas of the FDOT US1 Drainage System. These proposed drainage pipe upgrades are expected to include approximately 210 linear feet of 48-inch drainage pipe, 1 control structure, and 2 headwall structures.

- FPL Access Road Culvert Upsize – The proposed stormwater improvements along the FPL access road within the existing wetland area are expected to include upsizing two existing drainage culverts to 36-inch drainage pipe, which are expected to include 50 linear feet of 36-inch drainage pipe. The purpose of these drainage pipe improvements is to ensure a consistent flow rate from the existing wetland area into the existing FDOT drainage ditch.
- FPL Access Road Culvert Control Structures – The proposed stormwater improvements along the FPL access road within the existing wetland area is expected to include retrofitting a control structure with an at the upstream end of the 7 existing drainage culverts, which will include 10 feet wide sharp crested overflow weirs at +0.8 feet NAVD and 3-inch wide rectangular bleeder notches at +0.42 feet NAVD (or the hydraulic equivalent). The purpose of the proposed control structures is to stage stormwater runoff within the existing wetland area up to 0.8 feet NAVD, which is required to meet the water quality requirements for the proposed FLL IMC Facility.
- FPL Access Road Modifications – The proposed stormwater improvements are expected to include raising the low lying segments of the FPL maintenance access road up to at least +3.0 feet NAVD. The purpose of these improvements are to prevent water levels within the existing wetland areas from overtopping and sheet flow across the FPL access road directly into the FDOT drainage ditch. The existing FPL access road is approximately 7,800 feet in length. Based on available LIDAR elevation data, it is estimated that approximately 3,200 linear feet of the existing FPL access road will need to be raised up to +3.0 feet NAVD.

Based on the preliminary design assumptions defined within the FLL IMC Advanced Planning Technical Report (2022), CMA developed these preliminary recommendations on the potential sizing and configuration of the proposed stormwater improvements needed to enable the FLL IMC Facility. As more specific information on the proposed FLL IMC Facility is developed throughout the project planning process, these preliminary recommendations for the proposed stormwater improvement will need to be re-evaluated and adjusted as needed moving forward.

Surface Water Permitting

The proposed stormwater improvements related to the FLL IMC Facility will require obtaining a surface water license. South Florida Water Management District (SFWMD) and Broward County Environmental Protection Division (BCEPD) are the primary regulatory agencies with jurisdiction over stormwater issues at FLL. Chapter 40E-4 of the Florida Administrative Code (FAC) empowers the SFWMD to regulate all matters related to stormwater management. Chapter 27, Article V of the Broward County Code of Ordinances similarly empowers the BCEPD with similar regulatory duties.

At this time, each of these regulatory agencies use a single surface water license, which acts as the "master" surface water license for the entire stormwater management system at FLL. All new development projects at FLL are typically required modify these master surface water licenses with SFWMD and BCEPGM. The "master" surface water license for FLL was initially established during the permitting of the FLL South Runway Expansion Project under SFWMD Permit #06-00339-S / Application #101203-7 and under BCEPD Permit #SWM2011-028-0. The most recent modifications of this "master" surface water licenses for FLL appear to be for the FLL North Airfield Pavement Rehabilitation Project (BCEPD License #SWM2011-028-18 and SFWMD License #06-00339-S) and for the Airport Exit Routes and Valet Ramps Project (BCEPD License #SWM2011-028-21 and SFWMD License #06-102518-P).

These regulatory agencies enforce the following requirements related to peak discharge, water quality treatment, and floodplain compensation under current regulations:

- Peak discharge from stormwater outfalls during a 25-year/72-hour storm event shall not exceed the previously permitted peak discharge for FLL according to previous permits issued by SFWMD and BCEPD.

Based on the most recent modification to the "master" surface water license for FLL, the maximum allowable discharge from the FDOT US1/System 2 primary stormwater systems under the most recent permit modification is currently defined at 195.07 CFS during a 25-year/72-hour storm event.

- The retention and detention of stormwater runoff shall be provided for water quality treatment purposes using the following criteria:

  1) The total wet detention volume provided within the master stormwater management system at FLL shall equal or exceed one inch of stormwater runoff from the entire FLL area or 2.5 inches of stormwater runoff from the total impervious ground surface within FLL, whichever is greater.
  2) The total dry detention volume provided within the master stormwater management system at FLL shall equal or exceed 75% of one inch of stormwater runoff from the entire FLL area or 75% of 2.5 inches of stormwater runoff from the total impervious ground surface within FLL, whichever is greater.
  3) The pretreatment retention volume provided within each site prior to discharging into the master stormwater management system at FLL shall equal or exceed 50% of one inch of stormwater runoff from each site or 50% of 2.5 inches of stormwater runoff from the total impervious ground surface within each site, whichever is greater.

  Based on the most recent modification to the "master" surface water license for FLL, the FDOT US1 Drainage System and Drainage System 2 was required to provide 53.54 acre*feet of water quality storage based on the existing impervious ground coverage throughout these drainage systems and does provide a water quality volume of 28.99 acre*feet within existing dry retention areas and 35.08 acre*feet within existing wet retention areas. Based on these permit conditions, the existing dry retention areas and wet ponds throughout the FDOT US1 Drainage System provide surplus water quality treatment volume of 20.10 acre*feet under the existing conditions.

- All surface water license applications for future development and redevelopment activities within Broward County fall under County Ordinance 2016-17, which established the Future Conditions Groundwater Map throughout Broward County. According to this County Ordinance, the Future Conditions Groundwater Map shall be used for determining the average wet season groundwater levels for use in calculating a design event for new applications for a surface water management license, applications for major redevelopment of existing sites, and applications for major modifications to existing surface water management licenses submitted after June 30, 2017. Major redevelopment is defined as construction activities which involve the demolition or removal of the principal structure on a site or of more than fifty percent (50%) of the impervious surface of a developed area on a site. Major redevelopment is also defined as multiple minor redevelopments with the cumulative expansion of developed area greater than or equal to twenty-five percent (25%) of the existing developed area of a site or greater than or equal to two (2) acres over a period of ten (10) years. Any minor development at FLL less than the 25% threshold can continue to use the existing seasonal high groundwater map for Broward County within the corresponding drainage calculations. Any major redevelopment at FLL beyond the 25% threshold will be required to use groundwater elevations defined by Future Conditions Groundwater Map within the corresponding drainage calculations. Based on the evaluation completed by FLL Master Plan Update, it was estimated that the development of the FLL IMC Facility should not cause the amount of developed land to exceed the 25% threshold noted above with the currently outlined development limits. The FLL IMC Facility should be able to use the previous seasonal high groundwater elevation of +0.42 feet NAVD.
- Any proposed development should result in no net encroachment into an existing floodplain between the average wet season water table elevation and the 100-year flood elevation to ensure the proposed development will not adversely affect the existing rights of others. It must be confirmed that any existing storage volume eliminated by a proposed development is compensated for creating an equivalent storage volume elsewhere within the same floodplain. Based on the current FEMA flood maps, the 100-year flood elevation for the FLL IMC Facility is at 7.5 feet NAVD. Based on a preliminary evaluation, the proposed

FLL IMC Facility is expected to eliminate approximate 40.32 acre*feet of existing floodplain storage between 0.42 feet NAVD and 7.5 feet NAVD. In order to compensate for this loss of floodplain storage volume, additional floodplain storage volume will need to be created within the vicinity of FLL. According to the FLL Stormwater Master Plan, there are recommended stormwater CIP that will create additional floodplain storage volume within expanded dry retention areas that could used to help meet this floodplain compensation requirement.

Once more detailed site information on the FLL IMC Facility along with the associated stormwater impacts is clarified as the planning and design process proceeds, pre-application meetings should be held with each of the environmental regulatory agencies (SFWMD and BCRED) to verify the permitting requirements for the proposed stormwater improvements.

Pending Statewide Stormwater Rules

The State of Florida is in the process of enacting pending updates to the Statewide Stormwater Rules, which are expected to become effective sometime in 2024. In general, the new Statewide Stormwater Rules will establish more performance-based criteria for water quality treatment of stormwater runoff from new development or redevelopment sites that is more site specific or location specific. The new Statewide Stormwater Rules will supplement and in certain cases replace the current quantitative criteria for water quality treatment, which currently requires providing prescribed water storage volume based on the total site area and/or the total on-site impervious area. These performance-based criteria are expected to focus on the nutrient removal efficiency of various stormwater alternatives for removing total nitrogen and total phosphorous from stormwater runoff, which is summarized below.

Pending Statewide Stormwater Rule – Pollutant Removal Efficiency Requirements			
Project Scenario	**TP Removal**	**TN Removal**	**Additional Requirements**
All Sites	80%	55%	Post Conditions = Pre Conditions
Outstanding Florida Water	90%	80%	Post Conditions = Pre Conditions
Impaired Water	80%	80%	Net Improvement
Impaired Outstanding Florida Water	95%	95%	Net Improvement
Redevelopment Project	80%	45%	N/A
Redevelopment Project + Outstanding Florida Water	95%	60%	N/A

In regards to the FLL IMC Facility, there will be an impact on the designers who have to prepare more detailed / comprehensive water quality calculations during the permitting stage. The designers will need to prepare a "treatment train" drainage analysis that quantifies the total nutrient removal due to all stormwater alternatives proposed under the FLL IMC Facility. At this time, the new Statewide Stormwater Rules are expected to be adopted sometime before July 1st, 2024. It is expected that any conceptual surface permit applications under current criteria will need to be approved before this adoption date. Otherwise, any conceptual surface permit applications will need to be approved under the new criteria. It is expected that any individual surface permit applications under the current criteria will have a grace period of up to 12 months from the adoption date, which would likely be no later than July 1st, 2025. Based on this preliminary information along with the expected project schedule, it is expected that the FLL IMC Facility will need to be permitted under the new Statewide Stormwater Rule.

At this time, it is not clear on how SFWMD and BCEPD will enforce these new Statewide Stormwater Rules during permit approvals, particularly for a project like the FLL IMC Facility which will be a modification to an existing "master" surface water license. At this preliminary stage, the minimum water quality requirements for the proposed FLL IMC Facility under the new Statewide Stormwater Rules is not clear at this time. Based on

our preliminary review of the draft criteria under the new Statewide Stormwater Rules, the implementation of dry retention is no longer considered an effective method for meeting the new water quality criteria but the implementation of wet retention is now considered a more effective method u for meeting the new water quality criteria. It is our understanding that there has been some discussion of potential exemptions for airports since the implementation of wet retention and other similar alternatives is not compatible with aviation uses. But the status of these potential exemption is not known at this time.

Environmental Permitting

The proposed stormwater retention areas east of NW 7th Avenue would require permitting through the following agencies:

- U.S. Army Corps of Engineers (USACE) - Federal 404 Permit.
- South Florida Water Management District (SFWMD) - Environmental Resource Permit (ERP).
- Broward County Resilient Environment Department (BCRED) – Environmental Resource License (ERL).

The existing mangrove wetlands appear to be designated as *Environmentally Sensitive Lands* (ESL) by Broward County. So the regulatory agencies, particularly BCRED, will require that all practicable measures are explored to avoid and minimize impacts to the existing mangrove wetlands, which may include the following efforts:

- Minimize stormwater discharge volumes into the existing mangrove wetlands.
- Maximize stormwater treatment within the FDOT US1 Drainage System prior to discharge into the existing mangrove wetlands.
- Retain tidal connectivity between the existing mangrove wetlands and Dania Cutoff Canal.

The project will be designed to avoid and minimize mangrove impacts. However, if it is determined that unavoidable impacts will occur, then each of the agencies will require mitigation for those impacts. Mitigation may be provided though on-site wetlands enhancement (i.e. invasive/exotic species removal), mitigation bank credits, or a combination of both.

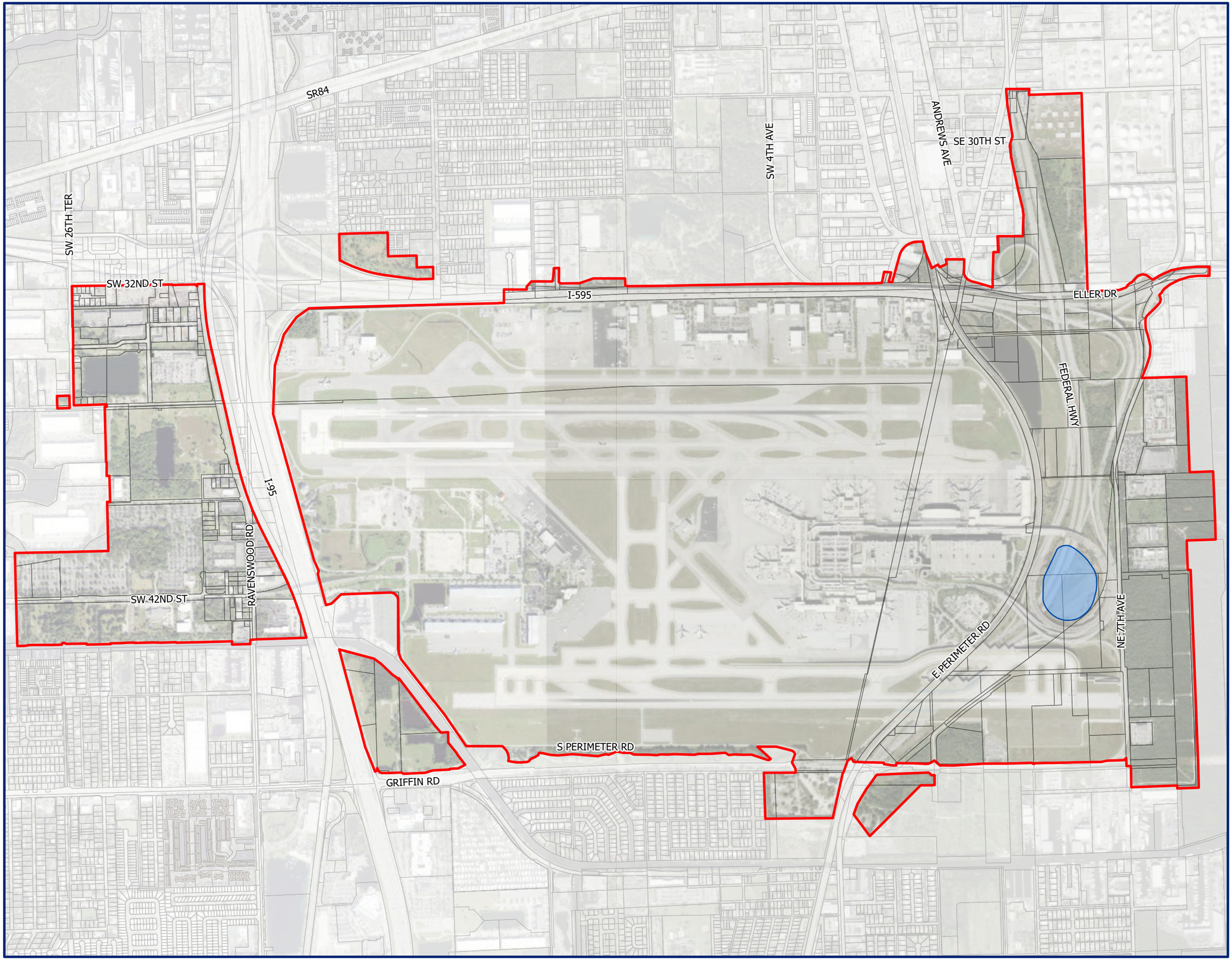
Conclusion

Based on the preliminary design assumptions defined within the FLL IMC Advanced Planning Technical Report (2022), CMA developed the preliminary recommendations on the potential sizing and configuration of the proposed stormwater improvements needed to enable the FLL IMC Facility, which are summarized within this draft technical memorandum and displayed on **Exhibit 10** at the end of this memorandum. As more specific information on the proposed FLL IMC Facility is developed throughout the project planning process, these preliminary recommendations for the proposed stormwater improvement will need to be re-evaluated and adjusted as needed moving forward. At this time, it is our understanding that a topographic survey of the existing conditions within the FLL IMC Facility footprint is currently underway. The additional information within this topographic survey will be useful to refine our recommendations for the proposed stormwater improvements related to the FLL IMC Facility. Prior to finalizing this draft technical memorandum, the next action items are outlined below:

- Evaluate the existing elevations throughout the footprint of the FLL IMC Facility based on the upcoming topographic survey
- Verify the location and configuration of any existing stormwater infrastructure throughout the footprint of the FLL IMC Facility based on the upcoming topographic survey
- Adjust the preliminary configuration of any proposed retention areas around the perimeter of the FLL IMC Facility based on the upcoming topographic survey

- Tabulate the preliminary storage capacity of these proposed retention areas around the perimeter of the FLL IMC Facility
- Evaluate constructability of the proposed stormwater infrastructure around the perimeter of the FLL IMC Facility based on the upcoming topographic survey
- Adjust the preliminary configuration of the proposed stormwater infrastructure around the perimeter of the FLL IMC Facility based on the upcoming topographic survey
- Evaluate the impact of the pending Statewide Stormwater Rules update as more specific information becomes available
- Conduct coordination meetings with surface water regulatory agencies (BCEPD/SFWMD)
- Conduct coordination meetings with environmental regulatory agencies (BCEPD/SFWMD)
- Continue design coordination meetings with FDOT
- Finalize this technical memorandum based on this additional site information

APPENDIX A
MAP EXHIBITS



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Broward County Aviation Department

FLL IMC PDD Stormwater Planning
Exhibit 1 - Project Location Map

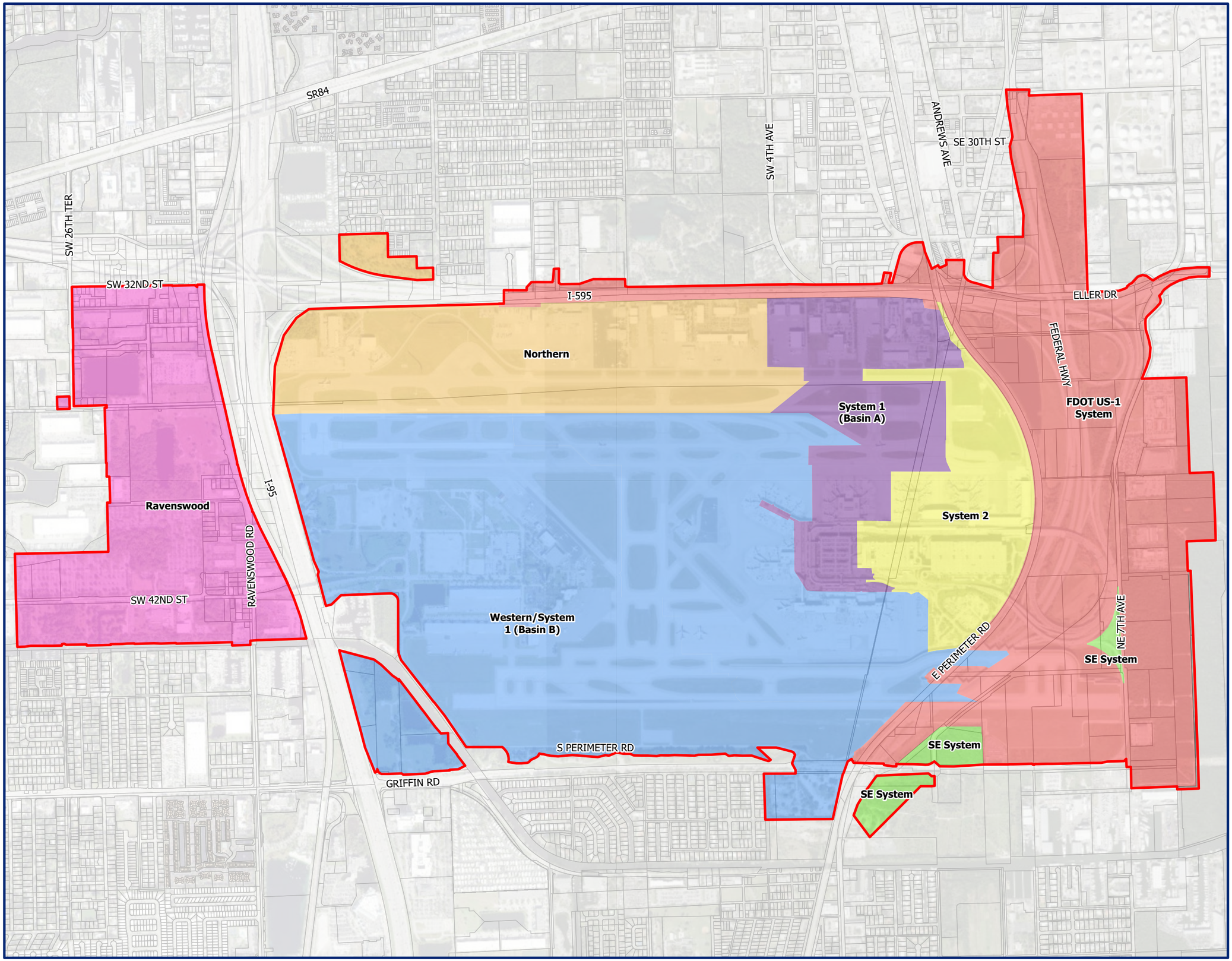
LEGEND

- FLL Limits
- Parcels
- FLL Intermodal Center Limits

SCALE & ORIENTATION

0 625 1,250 1,875

1" = 1,250'



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FLL IMC PDD Stormwater Planning
Exhibit 2 - Primary Drainage Basin Map

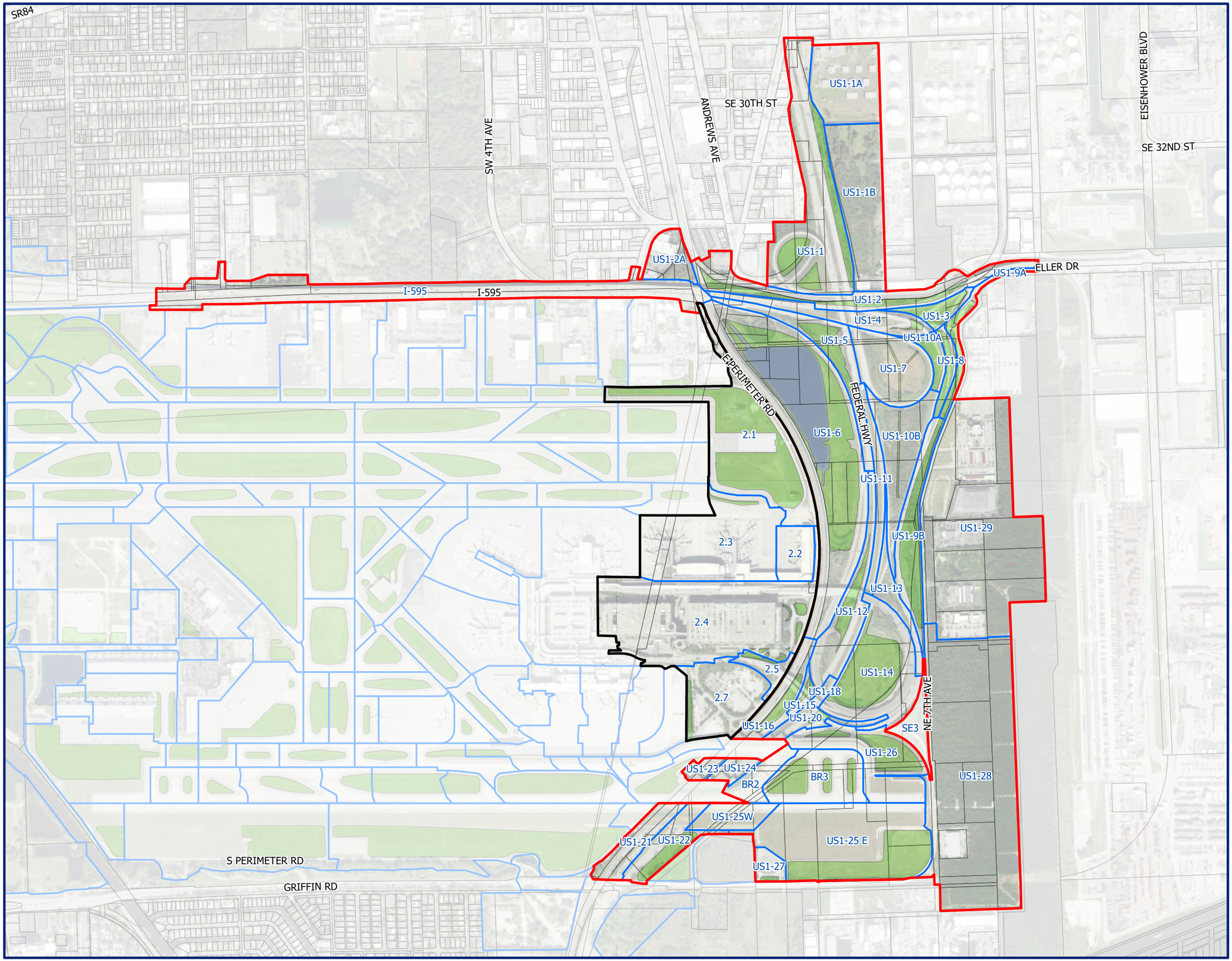
LEGEND

- Stormwater Master Plan Limits
- Parcels
- Primary Drainage Basin

SCALE & ORIENTATION

0 625 1,250 1,875

1" = 1,250'



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FLL IMC PDD Stormwater Planning
Exhibit 3 - Drainage Basin Map

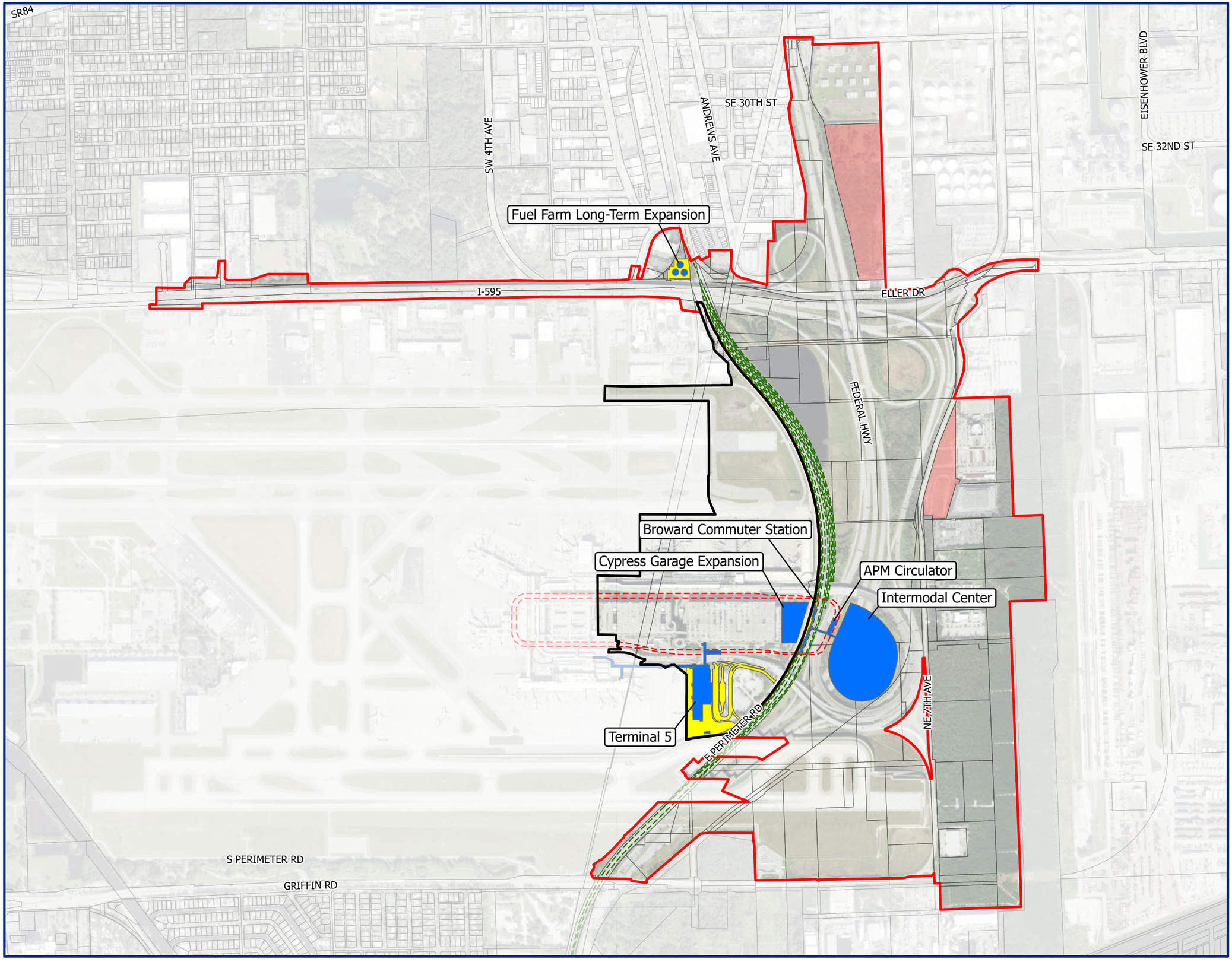
LEGEND

- FDOT US-1 System Limits
- System 2 Limits
- Parcels
- Drainage Sub-basin
- Wet Retention Area
- Dry Retention Area

SCALE & ORIENTATION

0 500 1,000 1,500

1" = 1,000'



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FLL IMC PDD Stormwater Planning
Exhibit 4 - Planned Developments Map

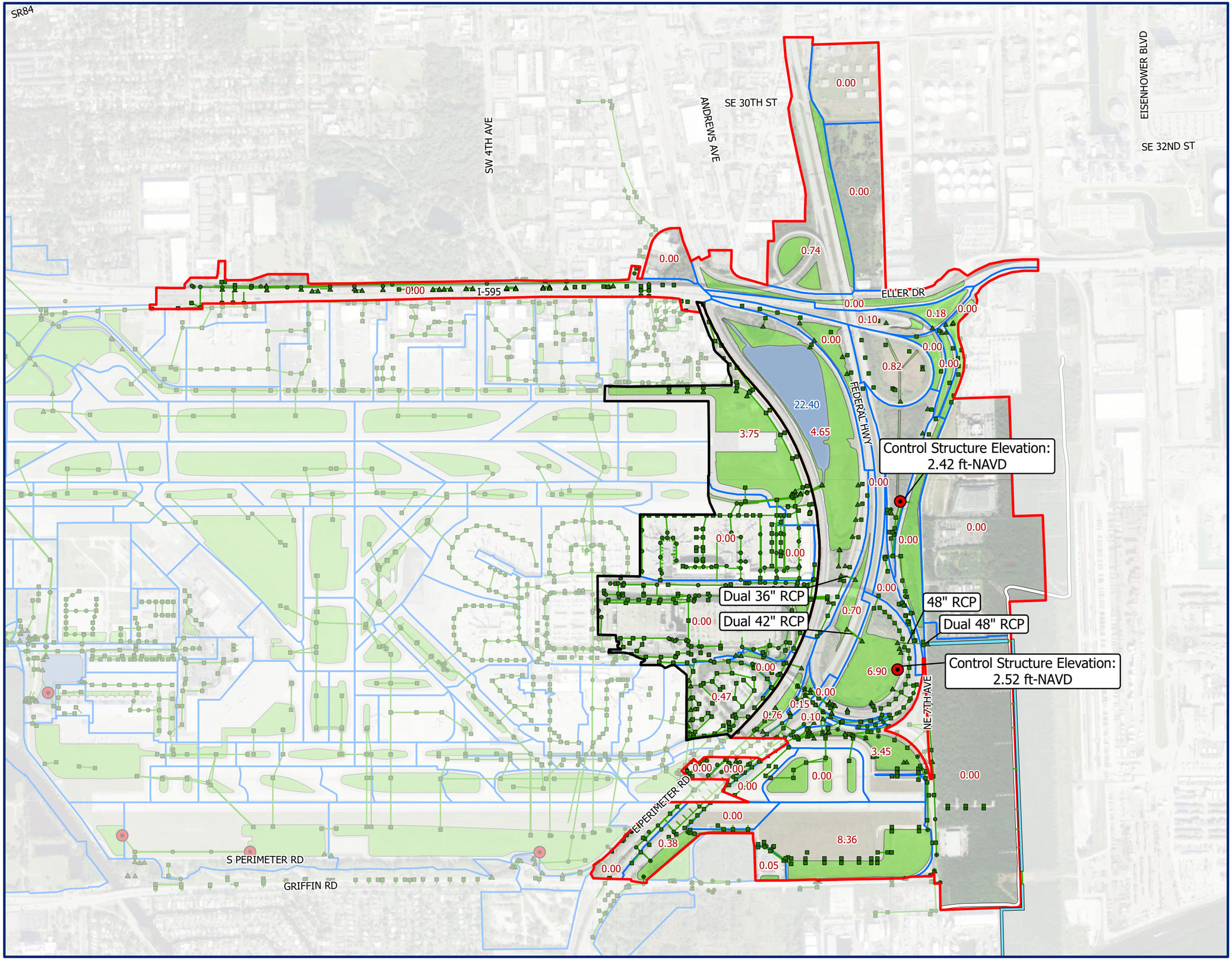
LEGEND

- FDOT US-1 System Limits
- System 2 Limits
- Parcels
- Future Development Parcel
- Future Development - Building
- Future Development - Pavement
- Future Railway Expansion
- Future FLL APM

SCALE & ORIENTATION

0 500 1,000 1,500

1" = 1,000'



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BROWARD COUNTY FLORIDA

Broward County Aviation Department

FLL IMC PDD Stormwater Planning
Exhibit 5 - Drainage Infrastructure Map

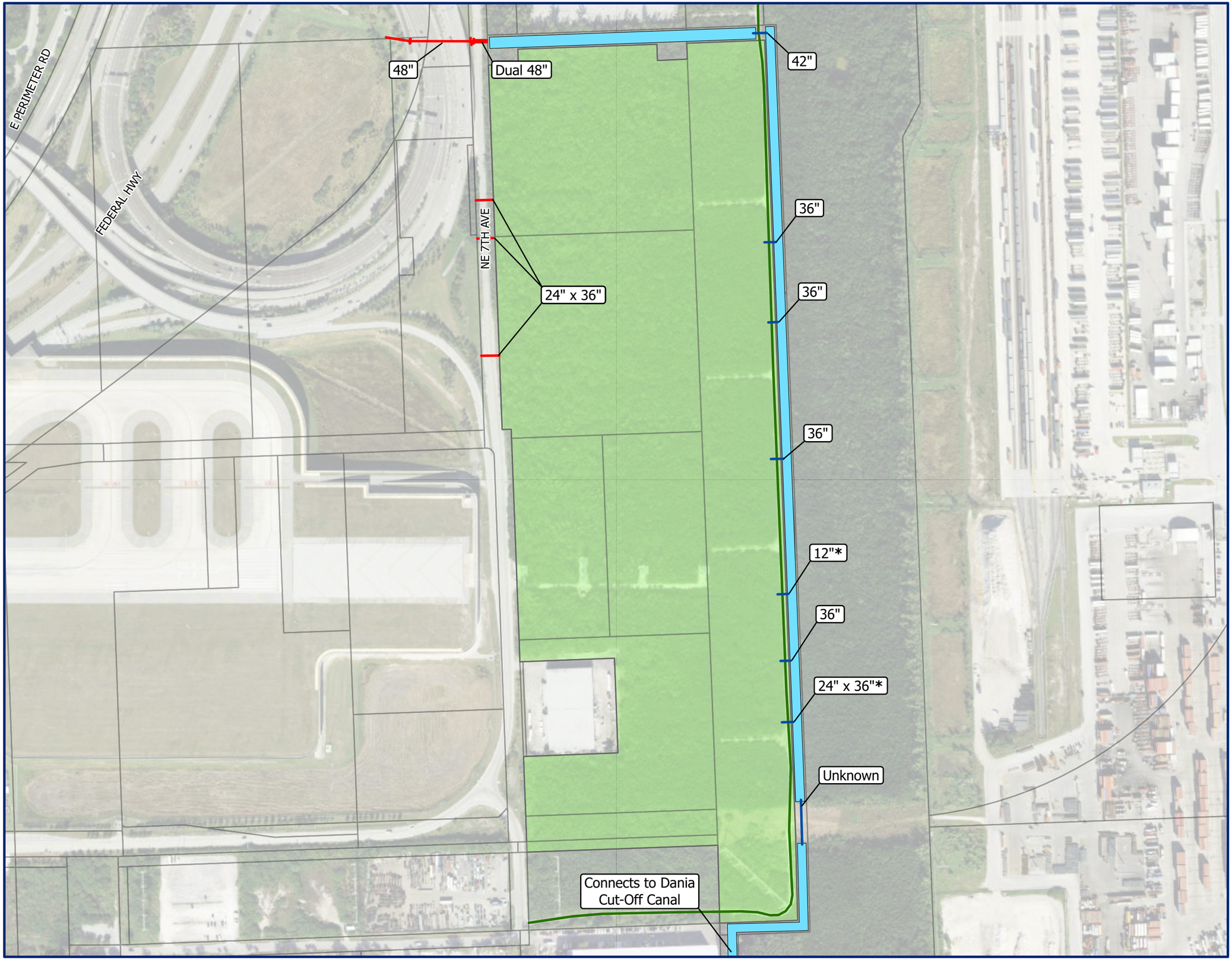
LEGEND

- FDOT US-1 System Limits
- System 2 Limits
- Drainage Sub-basin
- Major Control Structure
- Stormwater Control Structure
- Stormwater Manhole
- Stormwater Inlet
- Stormwater Outfall
- Stormwater Pipe
- FPL Haul Road
- FDOT Drainage Ditch
- Wet Retention Area
- Dry Retention Area
- Basin Wet Water Quality (ac-ft)
- Basin Dry Water Quality (ac-ft)

SCALE & ORIENTATION

0 500 1,000 1,500

1" = 1,000'



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BROWARD COUNTY FLORIDA

Broward County Aviation Department

FLL IMC PDD Stormwater Planning
Exhibit 6 - Existing Wetland Drainage

LEGEND

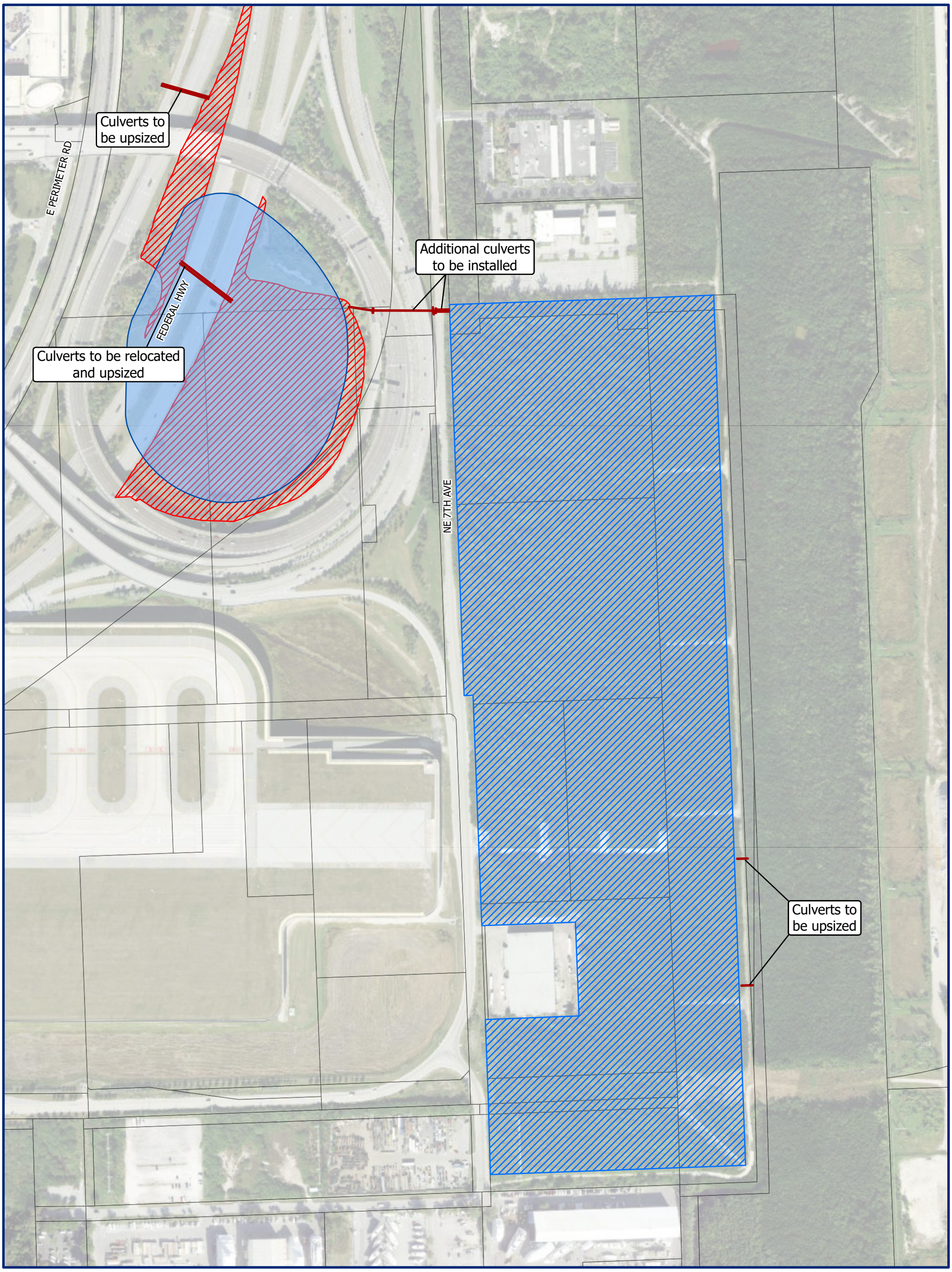
- Parcel Boundaries
- FDOT Drainage Ditch
- Existing County-Owned Mangrove/Wetland (54.92 acres)
- FPL Haul Road
- Existing Haul Road Culvert
- Existing Wetland Outfall

*Assumed Culvert Size

SCALE & ORIENTATION

0 150 300 450

1" = 300



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BROWARD COUNTY FLORIDA

SCALE & ORIENTATION

0 150 300 450

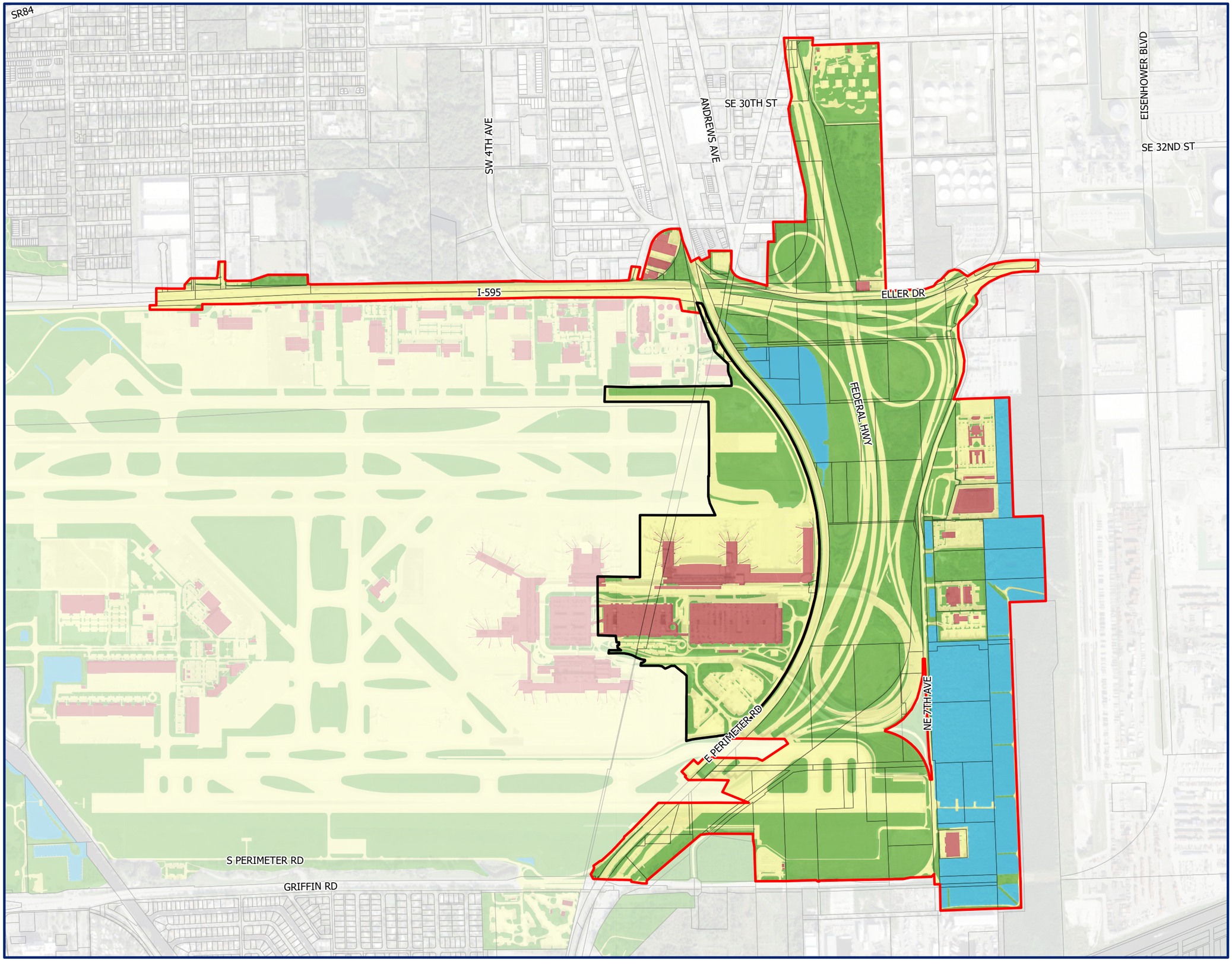
1" = 300

Broward County
Aviation Department

FLL IMC PDD Stormwater Planning
Exhibit 7 - Stormwater Impacts Map

LEGEND

- Parcels
- FLL Intermodal Center Limits
- Impacted Wetland Area
- Impacted Dry Retention
- Impacted Stormwater Pipe



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BROWARD COUNTY FLORIDA

Broward County Aviation Department

FLL IMC PDD Stormwater Planning
Exhibit 8 - Existing Ground Coverage

LEGEND

- FDOT US-1 System Limits
- System 2 Limits
- Parcels

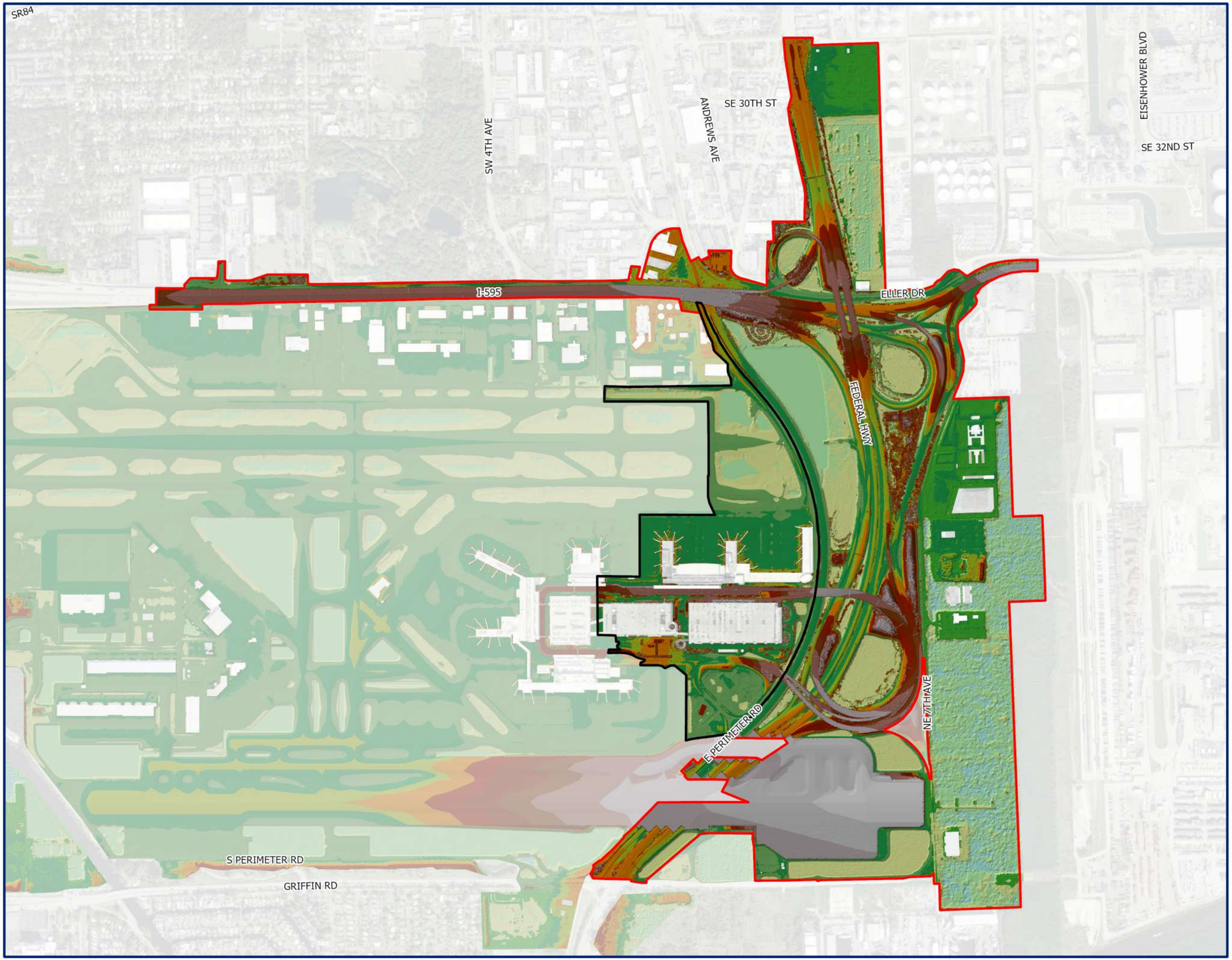
Existing Surface Coverage Type

- Building
- Impervious Area
- Pervious Area
- Waterway

SCALE & ORIENTATION

0 500 1,000 1,500

1" = 1,000'



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BROWARD COUNTY FLORIDA

Broward County Aviation Department

FLL IMC PDD Stormwater Planning
Exhibit 9 - Existing Topographic Map

LEGEND

- FDOT US-1 System Limits
- System 2 Limits

Elevation (feet-NAVD)

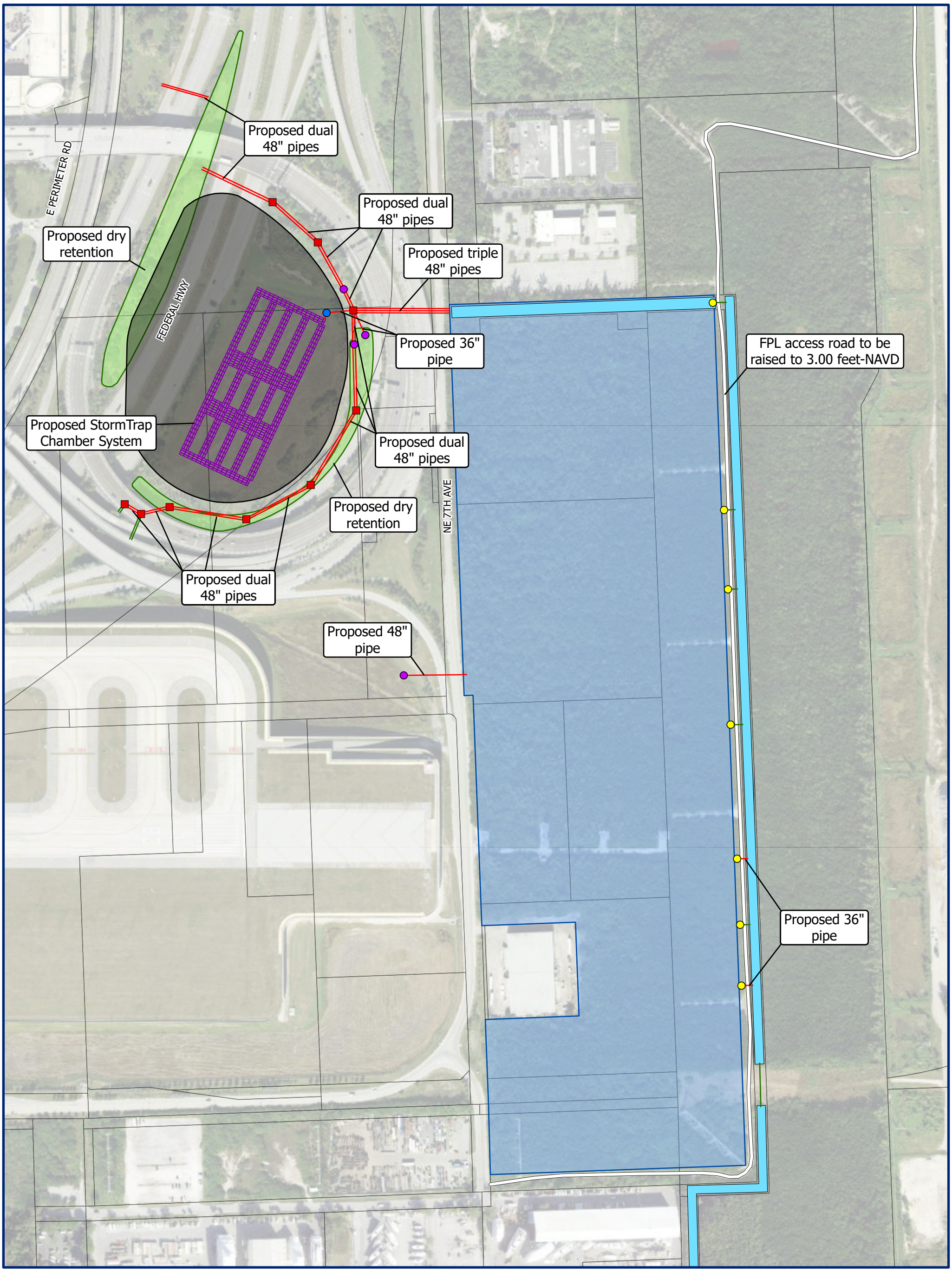
- > 60
- 50 - 60
- 40 - 50
- 30 - 40
- 25 - 30
- 20 - 25
- 15 - 20
- 10 - 15
- 8 - 10
- 6 - 8
- 4 - 6
- 2 - 4
- 0 - 2
- < 0

SCALE & ORIENTATION

0 500 1,000 1,500

1" = 1,000'

N



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BROWARD COUNTY FLORIDA

SCALE & ORIENTATION

0 150 300 450

1" = 300

Broward County Aviation Department

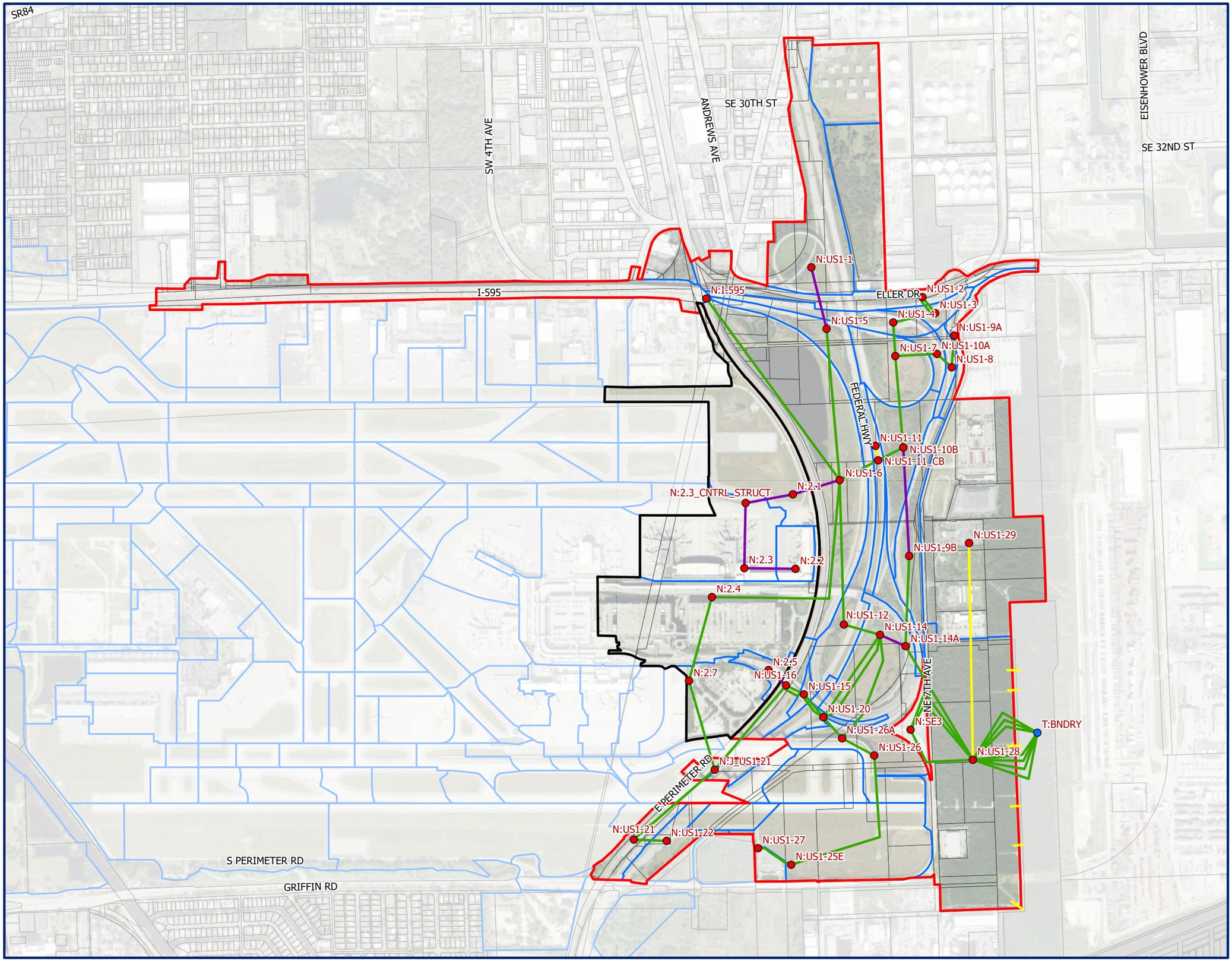
FLL IMC PDD Stormwater Planning
Exhibit 10 - Proposed Improvements

LEGEND

- Parcels
- Intermodal Center Limits
- Proposed Dry Retenion
- Wetland Staging Limits
- FDOT Drainage Ditch
- FPL Haul Road
- Existing Pipe to Remain
- Proposed Stormwater Pipe
- Proposed StormTrap System
- Proposed Junction Structure

Proposed Control Structure

- 7.00 feet-NAVD
- 2.50 feet-NAVD
- 0.80 feet-NAVD



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BROWARD COUNTY FLORIDA

Broward County Aviation Department

FLL IMC PDD Stormwater Planning
Exhibit 11A - Existing ICPR4 Nodal Map

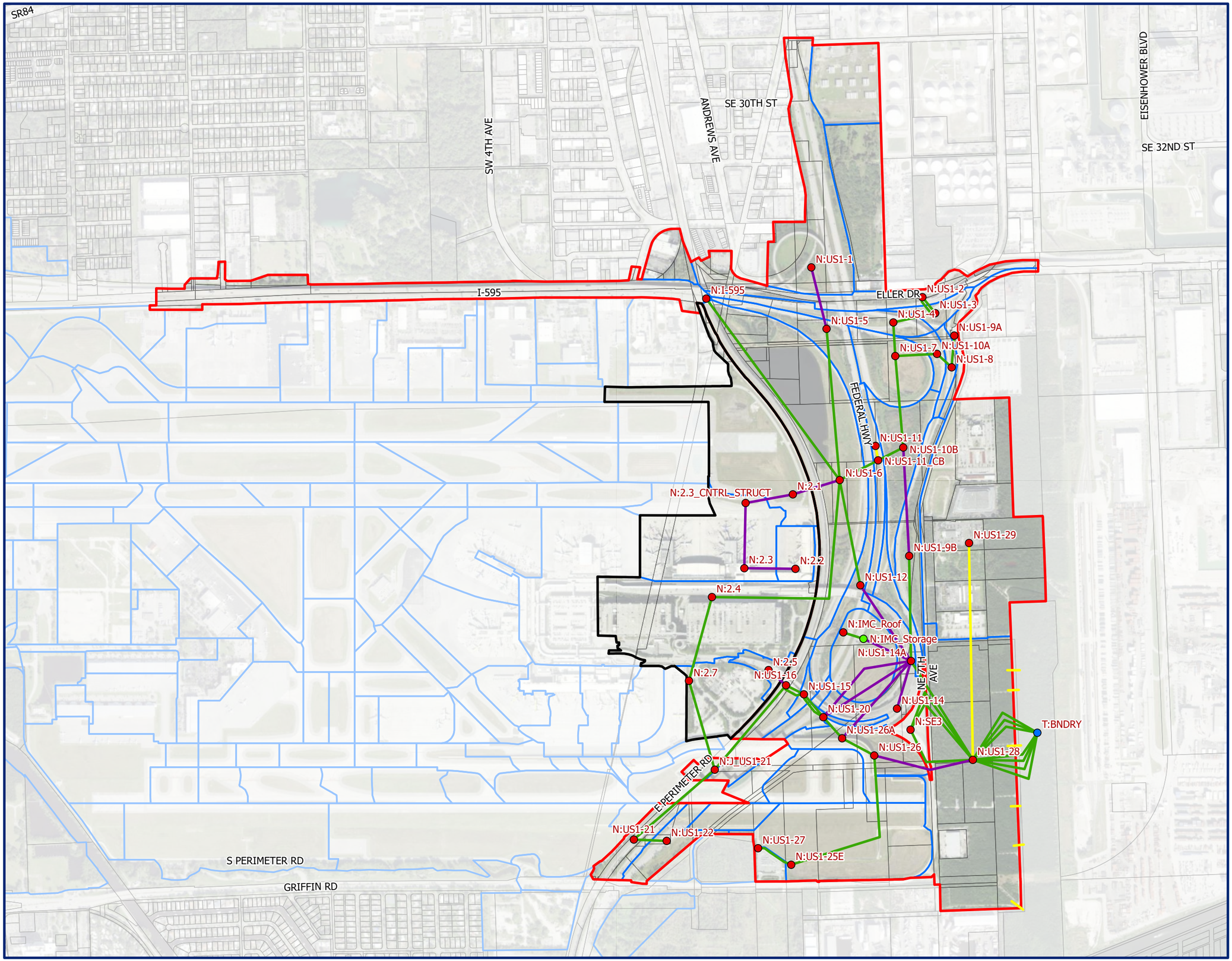
LEGEND

- FDOT US-1 System Limits
- System 2 Limits
- Parcels
- Drainage Sub-basin
- Stage Area Node
- Time Stage Node
- Pipe Link
- Drop Structure Link
- Weir Link

SCALE & ORIENTATION

0 500 1,000 1,500

1" = 1,000'



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BROWARD COUNTY FLORIDA

Broward County Aviation Department

FLL IMC PDD Stormwater Planning
Exhibit 11B - Proposed ICPR4 Nodal Map

LEGEND

- FDOT US-1 System Limits
- System 2 Limits
- Parcels
- Drainage Sub-basin
- Stage Area node
- Stage Volume Node
- Time Stage Node
- Pipe Link
- Drop Structure Link
- Weir Link

SCALE & ORIENTATION

0 500 1,000 1,500

1" = 1,000'

Appendix G
Agency Coordination

G-1 Summary of Agency Coordination

G-2 Notice of Preparation and Availability

G-2.1 Notice of Preparation

G-2.2 Notices of Availability Sent to Agencies

G-3 FDOT Coordination

G-4 Florida State Clearinghouse Coordination

G-5 Section 106 Consultation

G-5.1 SHPO Consultation

G-5.2 Tribal Consultation

Appendix G-1
Summary of Agency Coordination

APPENDIX G
Agency Coordination

Under 40 CFR § 1501.4, federal agencies are required to involve environmental agencies, applicants, and the public, to the extent practicable, in the preparation of environmental assessments (EAs). The primary components of the agency coordination and consultation and public involvement program for this EA include:

- Notice of Preparation of an EA
- Publication of the Draft EA Notice of Availability
- Circulation of the Draft EA and for agency and public review
- Preparation of a Final EA that will include responses to comments received on the Draft EA

Keeping agencies and the public informed and gathering their input is an essential component of any environmental study. The following sections summarize the agency coordination and public involvement program for this EA.

G.1 Agency and Tribal Consultation

G.1.1 Early Agency Coordination and Consultation

Early agency coordination was performed by engaging with federal, state, and local agencies that have an interest in the Proposed Project. In coordination with the Federal Aviation Administration (FAA), Broward County Aviation Department (BCAD) notified several agencies of the intent to prepare an EA for the landside improvements at Fort Lauderdale-Hollywood International Airport (FLL). BCAD sent a notice of preparation to 1) inform agencies of the preparation of the EA, 2) request any information relevant to the project's environmental setting to be considered in the EA, and 3) to obtain an understanding of any interest, issues, concerns an agency may have regarding the proposed runway extension. The State Historic Preservation Office (SHPO), Tribes, National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries), U.S. Fish and Wildlife Service (USFWS), and Florida State Clearinghouse received consultation letters specific to the resources under their purview.

Coordination was conducted with five federal, four state, twelve local agencies with two recognized Native American tribes. A letter providing notice of preparation of the Draft EA was distributed by e-mail to all agencies by April 2024. BCAD received responses from nine different agencies, which included the USFWS, NOAA Fisheries, Florida Department of Environmental Protection (FDEP) / Florida State Clearinghouse, Florida Department of Transportation (FDOT) District 4, City of Hollywood Department

of Development Services, Broward County Resilient Environment Department (RED), Broward County Public Works, and Broward County Transit (BCT). **Table G-1** provides a list of the agencies notified of the Proposed Project, the date notices were distributed, dates of consultation, and the date(s) of a response, if any. A summary of coordination performed as a part of this EA is discussed in the sections below. An example notice of preparation letter sent to agencies is provided in this appendix.

Responses that did not provide substantive issues, recommendations, or additional information for the evaluation of the Proposed Project are not described in detail nor are these responses attached to this appendix. These include responses from local agencies that informed BCAD of the agency point of contact and personnel for distribution of the Draft EA. Given that these responses from early coordination did not highlight issues or information to consider in the evaluation of the Proposed Project, these responses are not included in this appendix, but the dates of response have been incorporated in Table G-1.

As a follow-up to the early coordination letters, notification of the availability of the Draft EA for public comment was distributed to the federal, state, and local agencies. Notification included details on where to access the Draft EA and how to submit comments. A copy of the notification of availability of the Draft EA is provided in this appendix. Florida Department of Transportation was the only agency to respond to the notification of availability of the Draft EA. Coordination with FDOT is detailed in Section G.2.4.2, *Florida Department of Transportation,* of this appendix. Table G-1 summarizes the notices of availability of the EA for public comment that was sent to agencies.

TABLE G-1
NOTICE OF PREPARATION AND AVAILABILITY RECIPIENTS

Agency	Point of Contact	Address	Date	Comments Received
Federal				
US Environmental Protection Agency (USEPA)	Susan Park, Region 4 Strategic Programs Office, NEPA Section	Atlanta Federal Center 61 Forsyth Street, SW Atlanta, GA 30303-8960	3/11/2024	
Federal Transit Administration (FTA)	Robert Sachnin	Federal Transit Administration Region 4 Office 230 Peachtree Street, NW, Suite 1400 Atlanta, GA 30303	8/5/2024	
Federal Highway Administration (FHWA)	Luis Lopez	Luis.d.lopez@dot.gov	6/13/2024	
U.S. Army Corps of Engineers (USACE) - Jacksonville District Office		P.O. Box 4970 Jacksonville, Florida 32232-0019	3/11/2024	
U.S. Army Corps of Engineers (USACE) - Palm Beach Gardens Permit Section		Palm Beach Gardens Permits Section 4400 PGA Blvd, Ste 500 Palm Beach Gardens, FL 33410-6557	3/11/2024	
State				
Florida State Clearinghouse	Chris Stahl, Clearinghouse Coordinator	Florida Department of Environmental Protection Office of Intergovernmental Programs 2600 Blair Stone Road, MS 47 Tallahassee, FL 32399-2400	3/11/2024 7/26/2024	5/2/2024
Florida Department of Environmental Protection	Sirena Davila, Interim Director	Southeast District (WPB) 3301 Gun Club Road, MSC7210-1 West Palm Beach, FL 33406	3/11/2024 7/26/2024	
Florida Department of Transportation (FDOT) – District 4	Mike Melendez, Project Manager	3400 West Commercial Blvd. Fort Lauderdale, 33309	4/9/2024 7/26/2024	4/9/2024 5/9/2024 9/5/2024

TABLE G-1
NOTICE OF PREPARATION AND AVAILABILITY RECIPIENTS

Agency	Point of Contact	Address	Date	Comments Received
Local				
City of Fort Lauderdale Development Services Department	Christopher Cooper, Development Services Department Director CC: Greg Chavarria, City Manager	700 NW 19th Ave Fort Lauderdale, FL 33311	3/11/2024 7/26/2024	
City of Fort Lauderdale Public Works	Alan Dodd, Director of Public Works CC: Greg Chavarria, City Manager	700 NW 19th Ave Fort Lauderdale, FL 33311	3/11/2024 7/26/2024	
City of Dania Beach Community Development	Eleanor Norena, CFM, Director, Community Development CC: Ana M. Garcia, City Manager	100 W Dania Beach Boulevard Dania Beach, FL 33004	3/11/2024 7/26/2024	
City of Dania Beach Public Services	Fernando Rodriguez, Director of Public Services CC: Ana M. Garcia, City Manager	1201 Stirling Road Dania Beach, FL 33004	3/11/2024 7/26/2024	
City of Hollywood Department of Development Services	Andria Wingett, Director of Development Services, Division of Planning and Urban Design, Department of Development Services CC: George R. Keller, City Manager	2600 Hollywood Blvd, Room 315, Hollywood, FL 33020	3/11/2024 7/26/2024	3/12/2024
City of Hollywood Public Works	Joseph Kroll, Director of Public Works CC: George R. Keller, City Manager	1600 South Park Rd. Hollywood, FL 33021	3/11/2024 7/26/2024	
City of Hollywood	Azita Behmardi, Deputy Director	1600 South Park Rd. Hollywood, FL 33021	3/11/2024 7/26/2024	
Broward County MPO	Peter Giles, Transportation Planner	Broward MPO Trade Centre South 100 West Cypress Creek Road 6th Floor, Suite 650 Fort Lauderdale, Florida 33309-2181	4/9/2024 7/26/2024	4/10//2024 8/27/2024
Broward County Planning Council	Dawn Teetsel, Director of Planning CC: Kim Rudominer, Senior Program Coordinator	Broward County Governmental Center 115 S Andrews Ave # 307 Fort Lauderdale, FL 33301	4/9/2024 7/26/2024	
Broward County Resilient Environment Department (RED)	Linda Sunderland, Environmental Program Supervisor	1 N. University Drive Plantation, FL 33324	4/9/204 7/26/2024	4/9/2024

TABLE G-1
NOTICE OF PREPARATION AND AVAILABILITY RECIPIENTS

Agency	Point of Contact	Address	Date	Comments Received
Broward County Public Works	Trevor Fisher, Director of Public Works	1 N. University Drive Plantation FL 33324	3/11/2024 7/26/2024	4/10/2024
Broward County Public Works Water and Wastewater Division	Mark Darmanin, Water and Wastewater Operations Division Director Rolando Nigaglioni, Engineering Division Director	1 N. University Drive Plantation FL 33324	7/26/2024	
Broward County Public Works Traffic Engineering Division	Rasem Awwad, Acting Director	1 N. University Drive Plantation FL 33324	7/26/2024	
Broward County Public Works Solid Waste and Recycling Services	Notosha Austin, Acting Director	1 N. University Drive Plantation FL 33324	7/26/2024	
Broward County Parks & Recreation	Dan West, Director	Broward County Parks and Recreation Division 950 N.W. 38th St. Oakland Park, Florida 33309	3/11/2024 7/26/2024	
Broward County Transit	Jie Bian, Director of Transit	1 N. University Drive Plantation FL 33324	3/11/2024 7/26/024	3/11/2024

NOTES: Table represents notices of preparation of an EA and notification of availability of the EA. A summary of agency coordination and consultation can be found in Table G-2.

G.2.2 Federal Agency Coordination and Consultation

G.2.2.1 U.S. Fish and Wildlife Service

The FAA initiated consultation with the Department of the Interior, USFWS through email transmittal of a coordination letter on March 15, 2024. USFWS responded on March 20 and March 28 with requests for additional guidance on the wood stork (*Mycteria americana*) and Florida Bonneted Bat (FBB).

In response to USFWS correspondence, a roosting survey of suitable FBB roosting habitat was conducted to determine the status of the roosting bats at the site of the Proposed Project. 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 FBB. The survey did not identify any evidence of roosting bats. The study was completed on April 16, 2024, and provided to USFWS on March 16, 2024.

On May 16, 2024, the FAA also provided USFWS with additional guidance on the wood stork. Along with the FBB survey results, FAA detailing that wetland impacts are limited to the replacement of seven (7) culverts underneath a Florida Power & Light (FPL) maintenance access road. As a result, construction of the Proposed Project would temporarily impact approximately 9,800 square feet or 0.22 acres (0.09 hectare) of uplands, wetlands, and open water. After replacement of the culverts, any mangroves within the temporary construction limits for the culverts would be allowed to reestablish.

USFWS reviewed the information provided for the FBB and wood stork. On May 17, 2024, the USFWS responded with the finding that it is unlikely that the Proposed Project would adversely affect the endangered FBB and threatened wood stork. The USFWS suggested a "May Affect, Not Likely to Adversely Affect" determination for both the wood stork (*Mycteria americana*) and FBB. For more information on section 7 coordination / consultation, please see Appendix C-1.2 and C-1.3.

G.2.2.2 NOAA Fisheries

The FAA initiated consultation with NOAA Fisheries through email transmittal on March 15, 2024. NOAA Fisheries responded on May 29, 2024, stating that Section 7 consultation for protected species is not necessary since a "No Effect" determination was made for species under their purview and coordination concluded. FAA coordinated with NOAA Fisheries on EFH on July 31, 2024, by providing a technical report in conjunction with the Draft EA review process. Based on the research and analyses documented in this Draft EA, no adverse effects to EFH are anticipated. On September 20, 2024, NOAA Fisheries provided comments on the evaluation of effects to EFH. Their comments have been incorporated within this EA. NOAA Fisheries had no EFH conservation recommendations. An evaluation of the effects of the Proposed Project on EFH habitat is provided in Appendix C-2. The proposed mitigation agreement to reduce or eliminate the potential for effects to EFH is included in Appendix C-2. Further, more information on USFWS and NOAA Fisheries consultation is provided in Section 3.3.4, *Protected Species and Section 7 Consultation* and in Appendix C-2.

G.2.2.3 Federal Highway Administration

Since 2016, FDOT has assumed FHWA's responsibilities under NEPA for all highway projects in the State of Florida where either federal funding comes from FHWA, or which constitutes a federal action through

FHWA. This includes responsibilities for environmental review, interagency consultation and other regulatory compliance-related actions pertaining to the review or approval of NEPA projects. Therefore, whereas FHWA was previously identified as the Lead Federal Agency, this function is now served by FDOT. For this project, although FDOT is the lead agency, on May 16, 2024, the FDOT recommended BCAD also coordinate with FHWA directly to discuss the EA. BCAD met with FHWA on June 13, 2024, to discuss the EA and solicit input. FHWA identified they will review the Draft EA and provide comments if warranted.

G-2.3 Native American Tribe Consultation

Consultation with the Seminole Tribe of Florida (STOF) and Seminole Nation of Oklahoma (SNO) was initiated on April 22, 2024. The STOF confirmed that the Proposed Project is within the STOF Area of Interest. The STOF responded, asking for copies of the maps referenced in the consultation letter for documentation and noted they had no objections or comments on the Proposed Project. FAA provided STOF with the requested maps. The FAA has not received a response from the SNO. More information on consultation is provided in Section 3.8.4.3, *Section 106 Consultation*, of the EA and at the end of this appendix.

G-2.4 State Agency Coordination and Consultation

G.2.4.1 Florida Division of Historic Resources – State Historic Preservation Office

Consultation with the Florida State Historic Preservation Officer (SHPO) was initiated on March 15, 2024. Notification of the availability of the Draft EA was provided to the SHPO on August 5, 2024. A response from the SHPO was received on October 9, 2024, stating that the office concurs with the finding of no historic properties affected. The SHPO also commented through the Florida Clearinghouse response on May 2, 2024, with a standard response addressing incidental discovery of buried artifacts during construction. For more information, please see Section 3.8.4.3, *Section 106 Consultation*. More information on consultation with the SHPO is provided at the end of this appendix.

G.2.4.2 Florida Department of Transportation

Coordination with the FDOT has taken place throughout the development of the EA. Notice of preparation was sent to FDOT District 4 representative Michael Melendez on April 9, 2024. The notice requested any new information relevant to the environmental setting to be considered in the EA; interests, issues, or concerns regarding the Proposed Project; and, as updates related to the progress of the Project Development and Environment Study (PD&E – FDOT NEPA process) for the commuter rail project, including project schedule or modifications. On May 9, 2024, the FDOT responded that the Department did not have an opinion on any substantial impact on interstate ramps due to IMC development. FDOT also provided an update on the Broward County Commuter Rail (BCR) project and its timeline for completion. An additional coordination meeting with Broward County Transit and FDOT was held on June 10, 2024. Both parties provided an update on the ongoing PD&E study for the BCR project. It was identified that the study has determined there are no significant impacts on any of the resources categories evaluated. A copy of this response is provided at the end of this appendix. Notification of the availability of the Draft EA was also provided to FDOT on July 26, 2024. FDOT provided comments on the Draft EA on September 5, 2024.

FDOT's comments were for information only and stated that a "written response is NOT required." FDOT coordination and correspondence is provided at the end of this appendix.

G.2.4.3 Florida State Clearinghouse

Consultation with the FDEP, representative Chris Stahl, was initiated on April 9, 2024. The FDEP responded on May 2, 2024, stating that based on the information submitted and minimal project impacts, the state has no objections to the subject project and, therefore, it is consistent with the Florida Coastal Management Program (FGMP). The state's final concurrence of the project's consistency with the FCMP will be determined during any environmental permitting processes, in accordance with Section 373.428, Florida Statutes. More information on coordination with FDEP can be found in Section 3.5, *Coastal Resources*.

G.2.5 Agency Coordination and Consultation Summary

Agency coordination and consultation began early in the preparation of the EA. Federal agency consultation started in March and April of 2024, which was approximately three months before the Draft EA was made available for public review. Consultation letters specific to the resources under an agency's purview were sent to the SHPO, Tribes, NOAA Fisheries, USFWS, Clearinghouse, and FDOT. All agencies consulted responded except for the SHPO and STO. **Table G-2** summarizes the agency coordination and consultation efforts as a part of the EA.

TABLE G-2
AGENCY COORDINATION AND CONSULTATION SUMMARY

Agency	Point of Contact	Address	Consultation/ Coordination	
			Submitted	Comments Received
Federal				
U.S. Fish and Wildlife Service (FWS)	John Wrublik	South Florida Ecological Services Field Office 1339 20th St Vero Beach, FL	3/15/2024	3/20/2024 3/28/2024 5/17/2024
National Oceanic and Atmospheric Administration (NOAA) Fisheries *Section 7*		Electronic submittal via portal	3/15/2024	3/19/2024
National Oceanic and Atmospheric Administration (NOAA) Fisheries *Essential Fish Habitat (EFH)*	David Dale, Regional Essential Fish Habitat Coordinator	263 13th Avenue South St. Petersburg, Florida 33701	7/31/2024	9/20/2024
State				
Florida State Historic Preservation Officer (SHPO)	State Historic Preservation Officer	Division of Historical Resources R.A. Gray Building 500 S. Bronough Street Tallahassee, FL 32399-0250	3/15/2024 8/5/2024*	10/9/2024
Florida State Clearinghouse	Chris Stahl, Clearinghouse Coordinator	Florida Department of Environmental Protection Office of Intergovernmental Programs 2600 Blair Stone Road, MS 47 Tallahassee, FL 32399-2400	3/11/2024 7/26/2024*	5/2/2024
Florida Department of Transportation (FDOT) – District 4	Mike Melendez, Project Manager	3400 West Commercial Blvd. Fort Lauderdale, 33309	4/9/2024 7/26/2024*	4/9/2024 5/9/2024 9/5/2024

TABLE G-2
AGENCY COORDINATION AND CONSULTATION SUMMARY

Agency	Point of Contact	Address	Consultation/ Coordination	
			Submitted	Comments Received
Tribal				
Seminole Tribe of Florida Mr. Marcellus W. Osceola, Chairman	Heritage and Environmental Office Dr. Paul N. Backhouse, Sr. Director Anne Mullins, Director Tribal Historic Preservation Office, Compliance Review Section Mr. Bradley Mueller, Compliance Review Supervisor Victoria Menchaca, MA, Compliance Review Specialist	Tribal Historic Preservation Office, Compliance Review Section 30290 Josie Billie Highway, PMB 1004 Clewiston, FL 33440	4/22/2024	5/2/2024
Seminole Tribe of Oklahoma Mr. Gregory Chilcoat, Principal Chief	Historic Preservation Office Brigita Leader, MS, Interim Director/TCNS Coordinator	Historic Preservation Office Seminole Nation of Oklahoma PO Box 1498 Wewoka, OK 74884	4/22/2024	

NOTES: Table represents agency consultation and coordination letters. Comments received as of October 2024.

* Notices of availability were sent to agencies.

Appendix G-2
Notice of Preparation and Availability

Appendix G-2.1
Notice of Preparation

EXAMPLE

AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
320 Terminal Drive, Suite 200 • Fort Lauderdale, Florida 33315 • 954-359-6100

March 11, 2024

Broward County Metropolitan Planning Organization
William "Bill" Cross, P.E., Deputy Executive Director, Planning & Programming
Trade Centre South
100 West Cypress Creek Road
6th Floor, Suite 650
Fort Lauderdale, Florida 33309-2181

RE: Notice of Preparation of an Environmental Assessment for Landside Projects at Fort Lauderdale-Hollywood International Airport (FLL), Florida

Dear William "Bill" Cross:

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.

On behalf of BCAD and FAA, we are notifying you of the proposed airport parking and intermodal access improvements to: 1) inform you of the preparation of the EA, 2) request any information relevant to the environmental setting to be considered in the EA, and 3) to obtain an understanding of any interest, issues, or concerns you may have regarding the Proposed Project.

Description of the Proposed Project

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 the attached **Enclosure 1**. The Proposed Project and its individual elements are depicted in **Enclosure 2** and described in **Enclosure 3**.

We appreciate your input on the Proposed Project. If you would like additional information or want to discuss the project further, you can contact me at 954-359-2291 or wcastillo@broward.org. You may submit your comments via email or regular mail to my attention at 320 Terminal Drive, Suite 200, Fort Lauderdale, FL, 33315. If possible, please provide your input within 30 days of receipt of this letter.

Sincerely,

William Castillo
Aviation Planning Manager

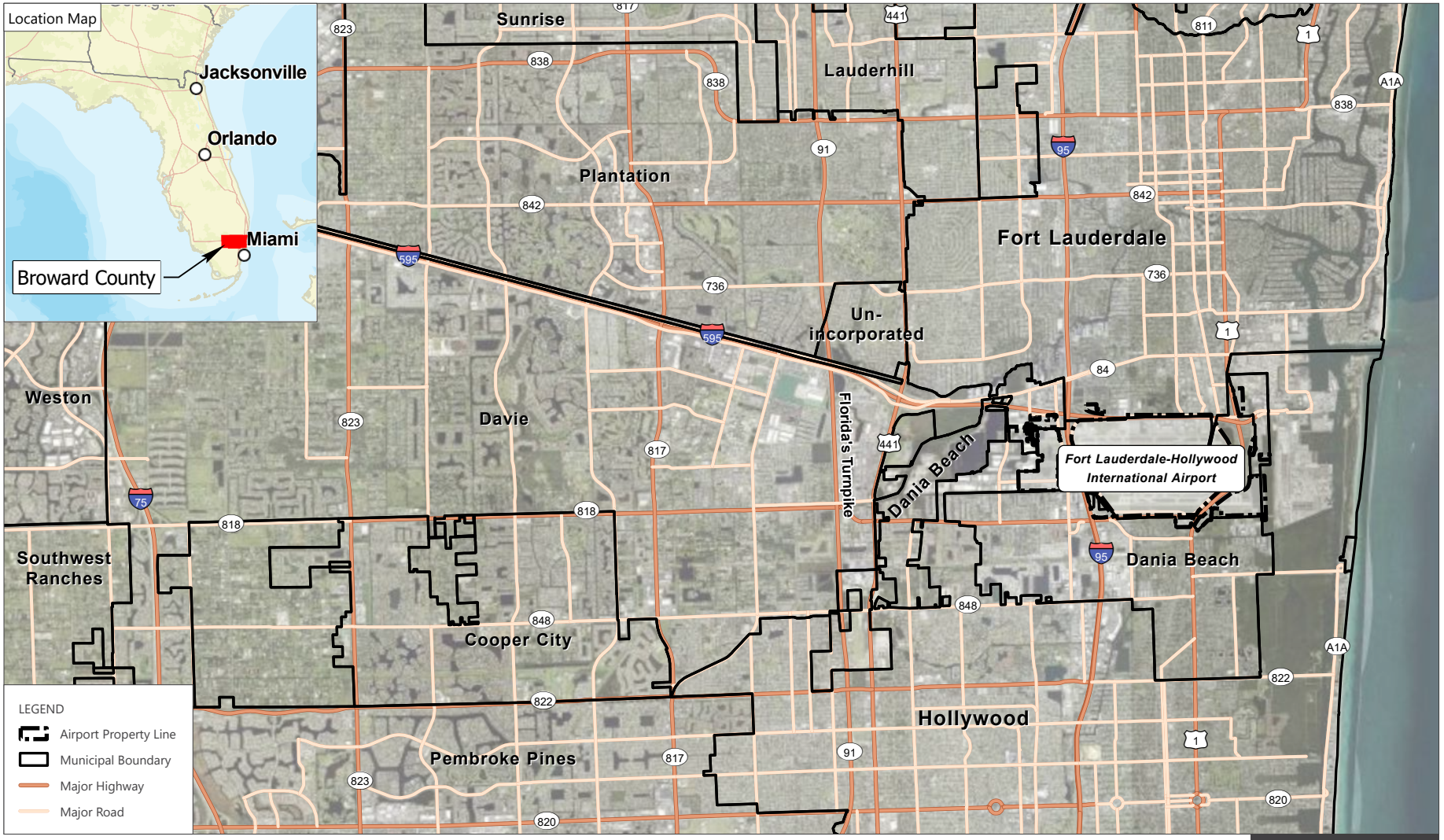
CC: Federal Aviation Administration, Orlando Airports District Office

Michael Pacitto, Chief Development Officer, BCAD
Winston Cannicle, Environmental Manager, BCAD
Peter Gies, Broward County Metropolitan Planning Organization, Transportation Planner

Enclosures: 1. Project Location
2. Description of Proposed Project
3. Proposed Project

Enclosure 1

Project Location



SOURCES: State of Florida, 2020; County of Broward, 2015.

EXHIBIT 1-1

NORTH 0 10,000 ft.

U:\GIS\GIS\Projects\2021xxx\D202100449_BCAD_Env_Planning_Acoustical_Consulting\03_Project\Ex_##_Landside EA Project Elements_v2.aprx

Location Map
Fort Lauderdale-Hollywood International Airport

Enclosure 2

Description of Proposed Project

1.1 Description of the Proposed Project

The Broward County Aviation Department (BCAD) proposes to construct an Intermodal Center (IMC), an Automated People Mover (APM) Circulator, redevelop an Airport parking garage and expand a second parking garage that accommodates public parking and the Rental Car Center, reconfigure the passenger terminal complex roadways and curbside, and implement other associated landside improvements at Fort Lauderdale-Hollywood International Airport (FLL or the Airport). The proposed project is shown on **Enclosure 3**, and the main project components are discussed below.

1.1.1 INTERMODAL CENTER

The IMC would be a transportation hub that improves integration between the regional transportation network and FLL. The IMC would be located within the US Highway 1 (US-1) right-of-way (ROW). The US-1 ROW is located outside FLL property at the east end of the FLL terminal complex on a 22-acre parcel within the greenspace bounded by the interchange between US-1 and the terminal entrance/exit roadways. The eight-level, 4.6-million-square-foot facility would accommodate airport parking, a Ground Transportation Center (GTC) for commercial vehicle pickups and drop-offs (drop-and-ride passengers), a multimodal transfer lobby with concessions and seating that connects to the proposed APM, and leasable office space.

The first level of the IMC would be constructed within the interchange footprint, on land leased from the Florida Department of Transportation (FDOT).[1] Levels 2 through 8 would extend over US-1, supported by columns and footings on the west side of the highway, to achieve the desired structural square footage while remaining under airspace protected for aircraft using FLL's runways. In addition to the proposed APM connection between the IMC and the FLL terminals, the IMC would connect to the regional roadway network at several access points and would provide the ability to connect to other regional transportation modes developed by other entities.

The IMC parking spaces would initially accommodate public parkers displaced during the Palm Garage Redevelopment project (a component of the proposed project), resulting in a temporary mid-project-implementation peak in parking supply. Following the reopening of the Palm Garage, BCAD intends to accommodate employee parking at the IMC. Employee parking is currently provided in a remote lot west of Airport property. **Table 1** demonstrates the transition of parking spaces before, during, and after construction of the proposed project, as project components come online.

[1] BCAD is pursuing a 99-year land lease from FDOT.

Table 1 Public and Employee Parking Capacity

FACILITY	NUMBER OF VEHICLE PARKING SPACES, BY YEAR		
	2022	2029[1]	2033[2]
Public Parking	**11,221**	**17,011**	**12,231**
Palm Garage	2,490	1,490	3,500
Hibiscus Garage	4,534	4,534	4,534
Cypress Garage	4,197	4,197	4,197
IMC[3]	0	6,790	0
Employee Parking	**4,010**	**4,010**	**6,790**
West Employee Lot	4,010	4,010	0
IMC[3]	0	0	6,790
Total Parking	**15,231**	**21,021**	**19,021**

NOTES:

IMC – Intermodal Center

1 As shown in Table 1-5, construction of the IMC is planned to be completed in 2028. The year 2029 represents the first full year of operation with reduced capacity in the Palm Garage and temporary accommodation of displaced public parking at the IMC.

2 As shown in Table 1-5, reconstruction of the Palm Garage is planned to be completed in 2032. The year 2033 represents the first full year of operation of the fully reconstructed Palm Garage (spaces temporarily displaced to the IMC return to the Palm Garage). Employee parking then shifts to the IMC.

3 Also includes parking for other IMC users in addition to public parking (2029) and employee parking (2033).

SOURCE: Broward County Aviation Department, *Advanced Planning for Palm Garage Demolition and Replacement, and Supplemental Curb Technical Report, Fort Lauderdale-Hollywood International Airport*, April 2023; Broward County Aviation Department, *Intermodal Center Advanced Planning Technical Report*, November 2022.

Connectivity between the regional roadway network and level 1 of the IMC would be provided for commercial vehicles from northbound and southbound US-1 via a T-intersection and ramp, respectively, and a tunnel providing access to/from Northeast 7th Avenue. Public and employee private vehicles parking at the IMC, as well as drop-and-ride passengers[2] and Transportation Network Company (TNC) pickups[3] would access the IMC at level 2 via new ramps from existing Airport roadways providing connections from northbound and southbound US-1. These vehicles would exit the IMC at level 3 via new ramps to northbound and southbound US-1 and a new ramp to I-595. The new ramps to northbound US-1 and I-595 would include an approximately 1,800-linear-foot overpass to clear the existing Airport roadway network.

Construction of the IMC would also include utility and stormwater improvements to serve development at the site. All stormwater runoff from the new IMC facility would be collected and treated on site prior to discharge. The US-1 ROW currently accommodates an existing dry detention basin that would be displaced with IMC development. The basin is part of an interconnected system of basins along US-1 that drain to the undeveloped land east of Northeast 7th Avenue. The displaced stormwater detention volume at the US-1 ROW would be accommodated through a combination of increases

2 Drop-and-ride passengers are those that are dropped of at or picked up from the IMC by a private vehicle.

3 TNC operators would pickup passengers arriving at FLL at the IMC; passengers would transfer from the terminals to the IMC via the APM. TNC drop-offs would occur at the terminal curbs.

to volumes of other detention basins, as feasible, within this interconnected drainage system; upsizing existing culverts that drain to the land west of Northeast 7th Avenue, and implementing avoidance and minimization measures to improve treatment of water discharged to the land west of Northeast 7th Avenue given the reduced detention capacity.

1.1.2 AUTOMATED PEOPLE MOVER

The APM would be a landside airport circulator comprising an elevated dual-track guideway and train system connecting the FLL terminals, Airport parking garages, Rental Car Center, and the proposed IMC. The APM project would include the following elements:

- 16,000 feet of elevated dual-track guideway;
- five elevated on-Airport stations and a sixth station constructed adjacent to the IMC;
- pedestrian bridges and vertical circulation systems to connect the stations to terminal and parking facilities;
- a 52,000-square-foot Maintenance and Storage Facility (M&SF); and
- supporting utility infrastructure improvements, including two power distribution substations.

The 16,000-foot dual-track guideway would be elevated above the upper level of Terminal Drive, running between the terminals and the parking garages, on Airport property. It would cross over the Florida East Coast (FEC) Railway tracks, but no support columns would be placed in FEC right-of-way; BCAD would obtain an aerial rights agreement with FEC for the guideway overpass. The portion of the guideway connecting to the IMC would extend into land BCAD plans to lease from FDOT for the IMC.

The APM would be constructed in two phases. The first phase would include a guideway operating in a pinched loop configuration[4] serving stations between Terminal 2 and Terminal 4, via Terminal 1, the IMC, and future Terminal. A sixth station at Terminal 3 and full guideway loop at the west end would be constructed in the second phase with redevelopment of Palm Garage. By the second phase, the APM would operate as a bi-directional closed loop,[5] with the guideway crossovers providing operational redundancy.

The elevated dual-track guideway separation would range from 16 feet wide between stations to 52 feet wide at stations where the guideways are separated by the station platform and would be supported by columns along the guideway's entire length. Program definition (to be verified in design) included a column plan defined to meet structural design requirements of Florida Building Code (2020 Edition), wind and gravity load requirements defined by the American Society of Civil Engineers (ASCE/SEI 7-16), and the BCAD Airport Design Guidelines Manual. An initial column layout was adjusted to avoid conflicts with existing structures, pressurized fuel pipelines, utilities, existing roadways, and planned future roadways. Based on program definition and preliminary structural engineering, APM foundations are planned to be standard driven piles below each pier column 12 inches wider than the column for reinforcement clearance and

[4] A pinched loop APM system operates back and forth between two distinct end points, requiring crossovers between the parallel guideways for train repositioning based on operating direction of each guideway.

[5] A closed loop APM operates as a continuous circuit in one direction. The proposed project would include two parallel guideways, allowing each guideway to operate independently as a closed loop in opposite directions. Bi-directional closed loop refers to the set of closed loop guideways.

tolerance. Columns would be between 5 and 8 feet wide. A geotechnical evaluation of the soil condition is required through the APM complete loop for final foundation design.

The six APM stations would each include an elevated platform (at the guideway level) sized to accommodate the boarding and deboarding of passengers to and from a two-car train as well as vertical circulation between the platform and a mezzanine level directly below the platform level. At the mezzanine level, elevated pedestrian bridges would link the stations with adjacent terminals and parking garages. A station equipment room would also be accommodated at the mezzanine level. At the terminal and parking garage ends of the elevated pedestrian bridges, vertical circulation cores would be added to connect the bridges with the various levels of the terminal and parking garage facilities.

The APM project also includes construction of a two-level M&SF of approximately 52,000 square feet, to be constructed south of the Hibiscus Garage. The lower level of M&SF would accommodate APM vehicle storage and maintenance space, and the second level would accommodate APM operational control space, including administrative offices, locker rooms, and restrooms. M&SF staff would park at the IMC or the Hibiscus Garage.

The first phase of the APM would require one Traction Power Substation (TPSS) of approximately 3,000 square feet, and a second TPSS would be required to support the extended guideway length in Phase 2. The TPSS buildings would be standalone facilities generally located within the northwest and southeast corners of the APM guideway loop. In addition to the TPSS stations, additional utility improvements would be implemented to support the APM.

1.1.3 PALM GARAGE REDEVELOPMENT WITH AIRPORT HOTEL AND COMMERCIAL CENTER

The existing four-level Palm Garage accommodates 2,490 public parking spaces and has a footprint of approximately 250,000 square feet. The proposed project includes demolition of the existing, aging parking structure in phases and redevelopment of the garage on a smaller footprint at the same site with seven to nine levels that include additional parking and areas for commercial development. The proposed project also includes utility improvements to support redevelopment and commercials areas.

In the first phase of construction, BCAD plans to demolish the southern one-third of the Palm Garage to enable construction of the first phase of the APM. The extent of building demolition in the first phase was defined to match an original expansion joint to minimize the structural effects of demolition.

The second phase of Palm Garage redevelopment includes demolition of the remaining two-thirds of the structure and site redevelopment. Palm Garage would be redeveloped on its existing site, within a smaller building footprint of approximately 135,000 square feet. The seven- to nine-level structure would be a multimodal facility that includes public parking and a commercial GTC. The garage would provide approximately 3,400 to 3,700 parking spaces on level 2 and above. Level 1 would accommodate a GTC for commercial vehicle pickup and drop-off operations. The GTC would provide approximately 1,700 linear feet of curbfront and 110 vehicle staging positions for commercial ground transportation operations. Pedestrian connectivity to the terminals would be provided at Level 3, which would include a large pedestrian circulation area. The intent for the dedicated third-level connection with terminals would be to eliminate/reduce at-grade pedestrian crossings between the Palm Garage and terminals. The east side of each level of Palm Garage would be integrated with the adjacent levels of the Hibiscus Garage.

The reduced Palm Garage footprint allows for the construction of a 90,000-square-foot commercial center that could include an Airport hotel and other commercial space along the west side of the redeveloped Palm Garage.

1.1.4 SUPPLEMENTAL ROADWAYS AND CURBSIDES

Two at-grade supplemental curb areas would be provided at the lower levels of Terminals 1 and 2; they are proposed to address terminal curbfront capacity deficiencies. A new bypass roadway, splitting from the lower-level terminal roadway before Terminal 1 and merging back after Terminal 4, would provide the ability to avoid traffic congestion in front of the terminals and improve roadway level of service. The parking garages would be accessed from the bypass roadway.

1.1.5 CYPRESS GARAGE EXPANSION

The existing Cypress Garage is a nine-level facility that includes FLL's Rental Car Center on levels 1 through 5 and provides public parking spaces on levels 6 through 9. The proposed project includes the construction of a Cypress Garage Expansion along the structure's east face. The nine-level expansion to the garage would increase the garage footprint by approximately 90,000 square feet and supply approximately 2,150 additional parking spaces to accommodate rental car ready/return staging[6] operations at the Rental Car Center and public parking. Each level of the expansion would be built to the same elevation as the corresponding level in the existing Cypress Garage to maintain internal vehicle circulation connectivity.

1.2 Timeframe of the Proposed Project

As shown in **Table 2**, construction of the Proposed Project is planned to begin in 2026, and all project components would be operational by 2033.

[6] Rental car ready/return areas provide staging for rental cars ready for rental from, or recently returned to, a rental car company.

Table 2 Proposed Project Implementation Schedule

Project Component	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Intermodal Center (IMC)	Design	Demolition/Construction	Demolition/Construction	Demolition/Construction						
Automated People Mover (APM)										
Phase 1 (Pinched Loop)	Design	Demolition/Construction	Demolition/Construction	Demolition/Construction	Demolition/Construction					
Phase 2 (Closed Loop)	Design					Demolition/Construction				
Palm Garage Site Redevelopment										
Phase 1 Demolition, Southern Third	Design			Demolition/Construction						
Phase 2 Demolition, Remainder of Structure	Design				Demolition/Construction					
New Palm Garage Redevelopment					Design	Demolition/Construction	Demolition/Construction	Demolition/Construction		
Commercial Center and Airport Hotel					Design	Demolition/Construction	Demolition/Construction	Demolition/Construction		
Supplemental Roadways and Curbsides	Design				Demolition/Construction					
Cypress Garage Expansion				Design	Design	Demolition/Construction	Demolition/Construction	Demolition/Construction		

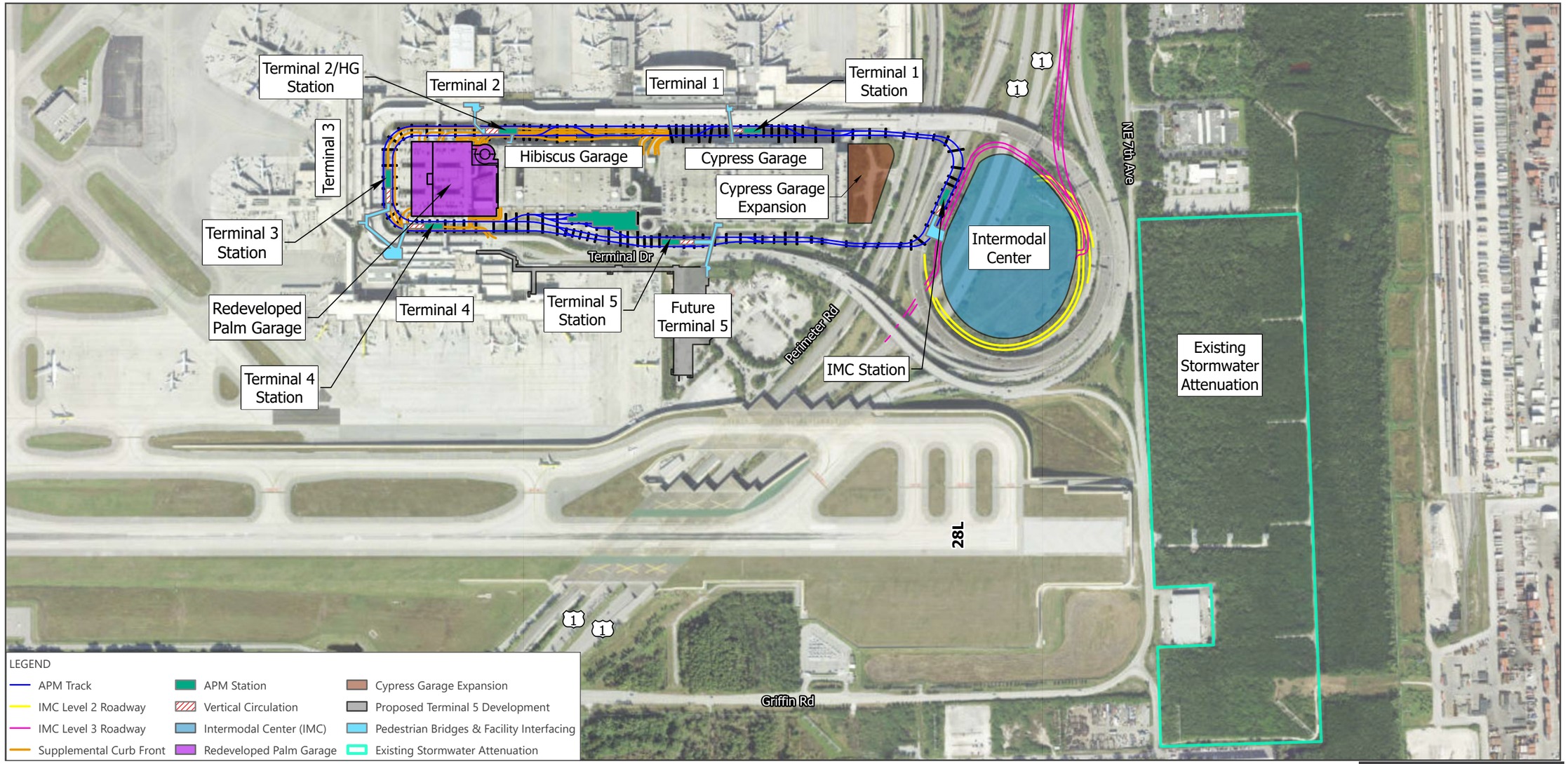
NOTES: Design Demolition/Construction

1 It is anticipated that the following design components of the Proposed Project would be procured and awarded together based on project dependencies and overlap: Automated People Mover (Phase 1 and 2), Palm Garage Demolition (Phase 1 and 2), and Supplemental Roadways and Curbsides.

SOURCE: Broward County Aviation Department, 2022.

Enclosure 3

Proposed Project



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

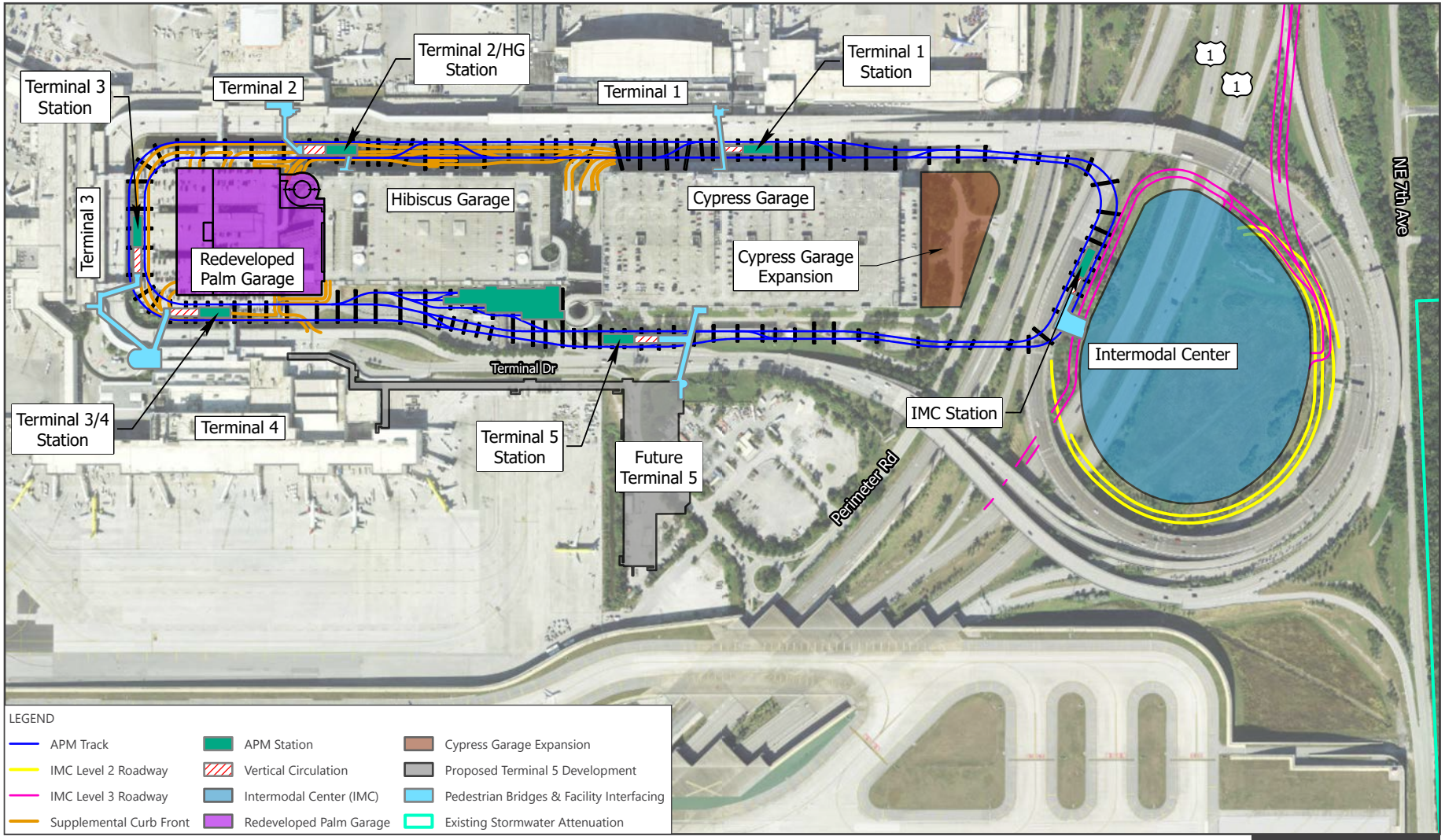
EXHIBIT 3-1

NORTH

0 600 ft.

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Project Elements
Fort Lauderdale-Hollywood International Airport



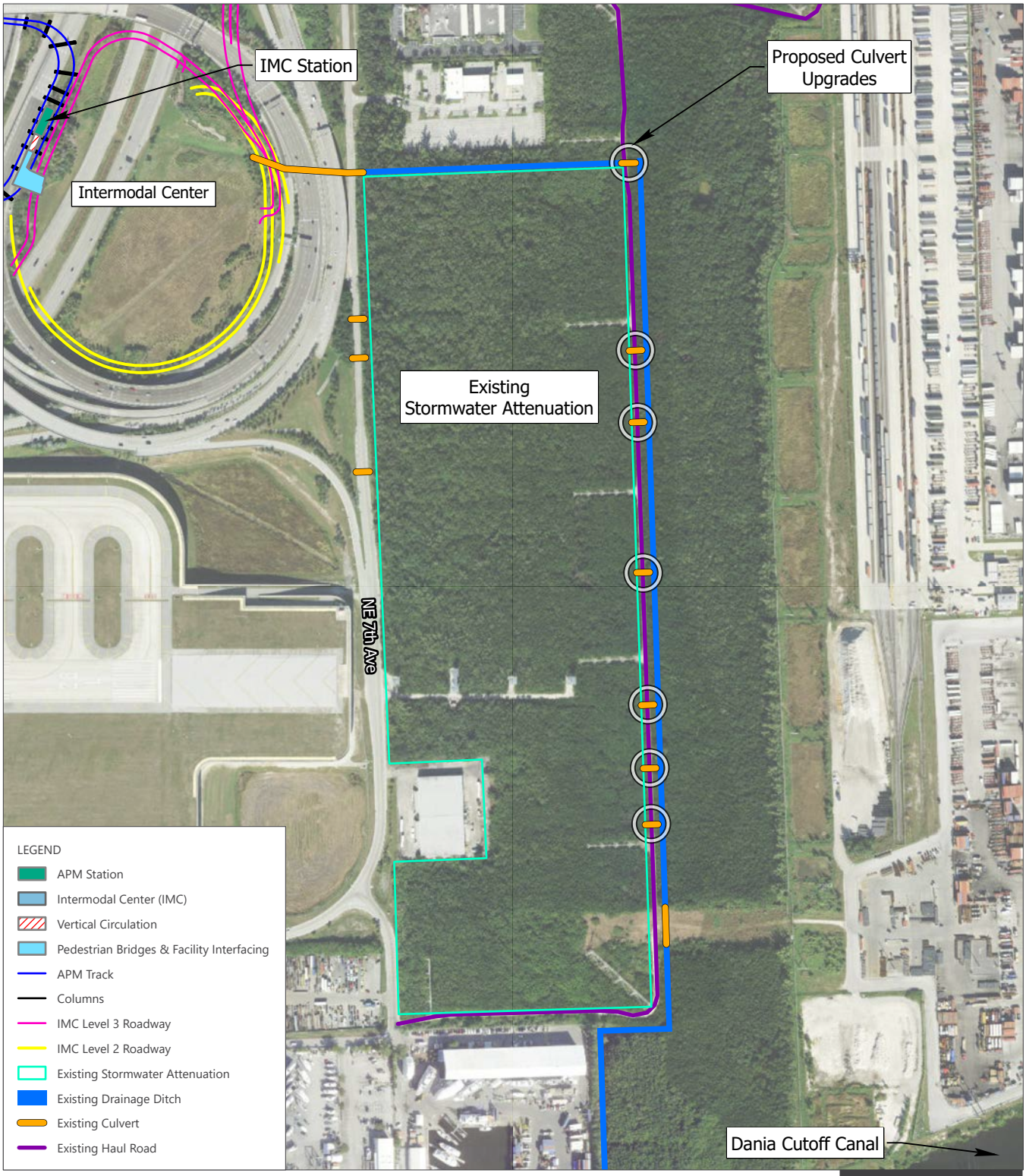
SOURCES: Ricondo & Associates, 2023; Adapted by ESA, 2024.

EXHIBIT 3-2

NORTH 0 500 ft.

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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

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Appendix G-2.2
Notices of Availability Sent to Agencies

Broward County MPO

Notice of Draft Environmental Assessment for Landside Projects at Fort Lauderdale-Hollywood International Airport (FLL), Florida

EXAMPLE

Jeffrey Covert <JCovert@esassoc.com>

Fri 7/26/2024 1:19 PM

To:GIESP@BROWARDMPO.ORG <GIESP@BROWARDMPO.ORG>
Cc:Castillo, William <wcastillo@broward.org>;Lopez Velez, Alejandro <ALLOPEZVELEZ@broward.org>;Julie Sullivan <JSullivan@esassoc.com>;Peter Green (peter.m.green@faa.gov) <peter.m.green@faa.gov>;Karen Moran <KMoran@esassoc.com>

Dear Peter Gies:

On behalf of the Broward County Aviation Department (BCAD) and Federal Aviation Administration (FAA), we are providing notification that the Draft Environmental Assessment (EA) for proposed parking and intermodal access improvements at the Fort Lauderdale-Hollywood International Airport (FLL or the Airport) is being made available for public and agency review and comment pursuant to the requirements of the National Environmental Policy Act of 1969 (NEPA). 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 Draft EA and its appendices can be accessed at https://www.broward.org/Airport/Business/Community/MasterPlan/Pages/default.aspx. The public comment period started on July 22, 2024, and will close on September 4, 2024. After review of the Draft EA and consideration of comments from the public and federal, state, and local agencies, the FAA will make an environmental determination on the Proposed Project.

A Public Information Workshop for the Draft EA will be held on August 27, 2024, from 5:30 pm to 8:30 pm at the Anne Kolb Nature Center located at 751 Sheridan Street, Hollywood, Florida, 33019. The Public Information Workshop will consist of a series of informational display boards that provide an overview of the Proposed Project, alternatives evaluated, impact analyses, and proposed mitigation. BCAD and their consultants will be available during the Workshop to answer any questions.

The FAA appreciates any comments you may have regarding the Proposed Project and its potential environmental, social, and economic impacts. Please mail your written comments to the following address: William Castillo, Capital Program Management Administrator, Broward County Aviation Department, 320 Terminal Drive, Suite 200, Fort Lauderdale, FL 33315. If you wish to submit comments electronically, please send comments to FLLLandsideEAComments@esassoc.com. All comments must be received by 5:00 p.m. Eastern on September 4, 2024. All comments received will be responded to in the Final EA document.

Sincerely,

ESA

Jeffrey Covert *he/him*
Aviation Specialist III

ESA | Environmental Science Associates

Appendix G-3
FDOT Coordination

RE: Notice on EA for Landside Projects at FLL

Melendez, Michael <Michael.Melendez@dot.state.fl.us>

Thu 5/9/2024 12:30 PM

To:Jeffrey Covert <JCovert@esassoc.com>
Cc:Julie Sullivan <JSullivan@esassoc.com>;mppacitto <mppacitto@broward.org>;Castillo, William <wcastillo@broward.org>; Cannicle, Winston <WCANNICLE@broward.org>;Peter Green (peter.m.green@faa.gov) <peter.m.green@faa.gov>

Hello Jeffrey,

Please find responses to the three items.

1) any new information relevant to the environmental setting to be considered in the EA;

No new information to report at this time.

2) any interests, issues, or concerns you may have regarding the Proposed Project, including FDOT's opinion as to whether or not any of the proposed ramp improvements on U.S. Hwy 1 would have any substantial impact on Interstate 595 ramps; and

At this time, FDOT does not have an opinion on any substantial impact on interstate ramps. As part of the Interchange Access Request process, a methodology was submitted by Broward County and approved by FDOT in coordination with FHWA. The results of the analysis associated with the methodology are expected to be presented to FDOT and FHWA.

FDOT District 4 requests additional time to coordinate with FDOT's Office of Environmental Management to identify any additional coordination that should involve FHWA, directly or in-directly.

3) as the proposed commuter rail project will be considered in this EA in the EA's cumulative impact analysis, any updates related to the progress of the Project Development and Environment (PD&E) study for the rail project, including project schedule or modifications would be appreciated.

Broward Commuter Rail (BCR) South project is expected to complete its NEPA study this summer and work through the risk analysis with FTA in the fall, with the goal of negotiating a grant agreement in 2025.

There are several agreements that Broward County will be required to obtain including an agreement for shared operations with Miami-Dade County, an access agreement with Brightline and another agreement with FECR. Broward County is also evaluating how proposed schedule changes on Miami-Dade County's commuter rail project may affect the BCR South's start of operations. The current concept for a BCR South station at the Fort-Lauderdale/Hollywood International Airport includes a pedestrian bridge providing connectivity between the FEC right-of-way and the airport's perimeter road where shuttles can pick up and drop off passengers to and from the airport. A car drop-off area is also planned. The BCR South project does not provide for any connections between the County's planned Automated People Mover (APM) and the commuter rail station.

Additional comment regarding the 'Proposed Project Implementation Schedule' (page 11 of 16): Suggest adding dates for any vehicle procurement and start of operations.

Regards,
Mike

Michael Melendez, P.E.
In-House Consultant – CTS Engineering, Inc.

Florida Department of Transportation – District 4
Office of Modal Development
3400 West Commercial Blvd., Fort Lauderdale, FL 33309
Direct: (954) 777-7898
Mobile: (954) 895-6894

From: Jeffrey Covert <JCovert@esassoc.com>
Sent: Tuesday, April 9, 2024 3:54 PM
To: Melendez, Michael <Michael.Melendez@dot.state.fl.us>
Cc: Julie Sullivan <JSullivan@esassoc.com>; mppacitto <mppacitto@broward.org>; Castillo, William <wcastillo@broward.org>; Cannicle, Winston <WCANNICLE@broward.org>; Peter Green (peter.m.green@faa.gov) <peter.m.green@faa.gov>
Subject: Notice on EA for Landside Projects at FLL

EXTERNAL SENDER: Use caution with links and attachments.

Dear Mike Melendez,

On behalf of BCAD and FAA, we are sending you this letter as a part of continued coordination and exchange of information related to the EA for proposed airport parking and intermodal access improvements at FLL. Specifically, BCAD and the FAA respectfully requests the following: 1) any new information relevant to the environmental setting to be considered in the EA; 2) any interests, issues, or concerns you may have regarding the Proposed Project, including FDOT's opinion as to whether or not any of the proposed ramp improvements on U.S. Hwy 1 would have any substantial impact on Interstate 595 ramps; and 3) as the proposed commuter rail project will be considered in this EA in the EA's cumulative impact analysis, any updates related to the progress of the Project Development and Environment (PD&E) study for the rail project, including project schedule or modifications would be appreciated.

We appreciate your continued input on the Proposed Project. If you would like additional information or want to discuss the project further, please contact Will Castillo at 954-359-2291

or wcastillo@broward.org. You may submit your comments via email or regular mail to Will's attention at 320 Terminal Drive, Suite 200, Fort Lauderdale, FL, 33315. If possible, please provide your input within 30 days of receipt of this letter.

Best,

Jeffrey Covert *he/him*
Aviation Specialist III

ESA | Environmental Science Associates

404-353-8408 **cell**
JCovert@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.**

Re: Notice of Draft Environmental Assessment for Landside Projects at Fort Lauderdale-Hollywood International Airport (FLL), Florida

Jeffrey Covert <JCovert@esassoc.com>

Thu 9/5/2024 11:10 AM

To:Melendez, Michael <Michael.Melendez@dot.state.fl.us>
Cc:Castillo, William <wcastillo@broward.org>;Lopez Velez, Alejandro <ALLOPEZVELEZ@broward.org>;Julie Sullivan <JSullivan@esassoc.com>;Peter Green (peter.m.green@faa.gov) <peter.m.green@faa.gov>;Castro, Carlos <Carlos.Castro@dot.state.fl.us>

Hey Mike,

Thanks for clarifying and confirming that the Draft EA and its appendices (including Appendix F, *Stormwater Technical Report*) were made available for review in the ERC system.

We appreciate FDOT's response and your follow-up e-mail.

Best,

Jeffrey Covert *he/him*
Aviation Specialist III

ESA | Environmental Science Associates
404-353-8408 cell

From: Melendez, Michael <Michael.Melendez@dot.state.fl.us>
Sent: Thursday, September 5, 2024 11:06 AM
To: Jeffrey Covert <JCovert@esassoc.com>
Cc: Castillo, William <wcastillo@broward.org>; Lopez Velez, Alejandro <ALLOPEZVELEZ@broward.org>; Julie Sullivan <JSullivan@esassoc.com>; Peter Green (peter.m.green@faa.gov) <peter.m.green@faa.gov>; Castro, Carlos <Carlos.Castro@dot.state.fl.us>
Subject: RE: Notice of Draft Environmental Assessment for Landside Projects at Fort Lauderdale-Hollywood International Airport (FLL), Florida

Hi Jeff,

I did want to circle back to confirm that the appendices were made available in the ERC system as separate documents.

Name
1_FLL_draft_environmentalassessment_07182024_ada.pdf
2_Appendixa_ada.pdf
3_Appendixb_ada.pdf
4_Appendixc_ada.pdf
5_Appendixd_ada.pdf
6_Appendixe_ada.pdf
7_Appendixf_ada.pdf
8_Appendixg_ada.pdf

Regards,
Mike

Michael Melendez, P.E.
In-House Consultant – CTS Engineering, Inc.

Florida Department of Transportation – District 4
Office of Modal Development
3400 West Commercial Blvd., Fort Lauderdale, FL 33309
Direct: (954) 777-7898
Mobile: (954) 895-6894

From: Melendez, Michael
Sent: Thursday, September 5, 2024 10:43 AM
To: FLLLandsideEAComments@esassoc.com
Cc: Castillo, William <wcastillo@broward.org>; Jeffrey Covert <JCovert@esassoc.com>; Lopez Velez, Alejandro <ALLOPEZVELEZ@broward.org>; Julie Sullivan <JSullivan@esassoc.com>; Peter Green (peter.m.green@faa.gov) <peter.m.green@faa.gov>; Castro, Carlos <Carlos.Castro@dot.state.fl.us>
Subject: RE: Notice of Draft Environmental Assessment for Landside Projects at Fort Lauderdale-Hollywood International Airport (FLL), Florida

For your consideration, please find attached comments from FDOT District Four regarding the Draft EA for Landside Projects at FLL.

Regards,
Mike

Michael Melendez, P.E.
In-House Consultant – CTS Engineering, Inc.

Florida Department of Transportation – District 4
Office of Modal Development
3400 West Commercial Blvd., Fort Lauderdale, FL 33309
Direct: (954) 777-7898
Mobile: (954) 895-6894

From: Jeffrey Covert <JCovert@esassoc.com>
Sent: Friday, July 26, 2024 1:18 PM
To: Melendez, Michael <Michael.Melendez@dot.state.fl.us>
Cc: Castillo, William <wcastillo@broward.org>; Lopez Velez, Alejandro <ALLOPEZVELEZ@broward.org>; Julie Sullivan <JSullivan@esassoc.com>; Peter Green (peter.m.green@faa.gov) <peter.m.green@faa.gov>
Subject: Notice of Draft Environmental Assessment for Landside Projects at Fort Lauderdale-Hollywood International Airport (FLL), Florida

EXTERNAL SENDER: Use caution with links and attachments.

Dear Mike Melendez:

On behalf of the Broward County Aviation Department (BCAD) and Federal Aviation Administration (FAA), we are providing notification that the Draft Environmental Assessment (EA) for proposed parking and intermodal access improvements at the Fort Lauderdale-Hollywood International Airport (FLL or the Airport) is being made available for public and agency review and comment pursuant to the requirements of the National Environmental Policy Act of 1969 (NEPA). 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 Draft EA and its appendices can be accessed at https://www.broward.org/Airport/Business/Community/MasterPlan/Pages/default.aspx. The public comment period started on July 22, 2024, and will close on September 4, 2024. After review of the Draft EA and consideration of comments from the public and federal, state, and local agencies, the FAA will make an environmental determination on the Proposed Project.

A Public Information Workshop for the Draft EA will be held on August 27, 2024, from 5:30 pm to 8:30 pm at the Anne Kolb Nature Center located at 751 Sheridan Street, Hollywood, Florida, 33019. The Public Information Workshop will consist of a series of informational display boards that provide an overview of the Proposed Project, alternatives evaluated, impact analyses, and proposed mitigation. BCAD and their consultants will be available during the Workshop to answer any questions.

The FAA appreciates any comments you may have regarding the Proposed Project and its potential environmental, social, and economic impacts. Please mail your written comments to the following address: William Castillo, Capital Program Management Administrator, Broward County Aviation Department, 320 Terminal Drive, Suite 200, Fort Lauderdale, FL 33315. If you wish to submit comments electronically, please send comments to FLLLandsideEAComments@esassoc.com. All comments must be received by 5:00 p.m. Eastern on September 4, 2024. All comments received will be responded to in the Final EA document.

Sincerely,

Jeffrey Covert *he/him*
Aviation Specialist III

ESA | Environmental Science Associates

404-353-8408 **cell**
JCovert@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.**

FDOT District Four Comment Report

The following documents were made available for review by FDOT District Four through the Electronic Review Comments (ERC) system. Resulting comments are provided below.

Name
1_FLL_draft_environmentalassessment_07182024_ada.pdf
2_Appendixa_ada.pdf
3_Appendixb_ada.pdf
4_Appendixc_ada.pdf
5_Appendixd_ada.pdf
6_Appendixe_ada.pdf
7_Appendixf_ada.pdf
8_Appendixg_ada.pdf

********** Broward Count Aviation Division (BCAD) Project **********
**********Draft Environmental Assessment for the Development **********
**********of Landside Projects **********

The Broward County Aviation Department (BCAD) proposes the development of passenger terminal access and parking Improvements at, and adjacent to, Fort Lauderdale-Hollywood International Airport (FLL or the Airport). The proposed projects, referred to as "Landside" Improvements, include several 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 (the Proposed Project).

Threads:

No	Status	Current Holder	Reference	Categories
1				ENVIRONMENTAL PERMITS

Created By	Created On	Version	Delegate For
James Poole	8/23/2024	1	

Existing environmental permits major modifications are not discussed in this report.

This comment is for information only. A written response is NOT required.

No	Status	Current Holder	Reference	Categories
2				DRAINAGE

Created By	Created On	Version	Delegate For
James Poole	8/23/2024	1	

Report should include the airport's entire Drainage Stormwater Basins (specifically in Section 3.14), to be able to tie-in the affected/impacted drainage basin and sub-basins and outfalls as part of the proposed improvements (from the Detailed and General Study Areas) to the overall system and FDOT's drainage system as identified in Section 3, Section 3.3, Section 3.14, and as part of Appendix F (not provided)., and as part of the Stormwater Master Plan for FLL (by Chen Moore). Including SLR and future groundwater projections.

This comment is for information only. A written response is NOT required.

No	Status	Current Holder	Reference	Categories
3				DRAINAGE

Created By	Created On	Version	Delegate For
James Poole	8/23/2024	1	

Appendices not provided with this submittal, as such these could not be reviewed. (Specifically, Appendix F (Stormwater Technical Report))

This comment is for information only. A written response is NOT required.

Appendix G-4

Florida State Clearinghouse Coordination

FW: State Clearance Letter for FL202403140044C- Environmental Assessment For Parking And Intermodal Access Improvements At The Fort Lauderdale-Hollywood International Airport (Fll), Broward County, Florida

Castillo, William <wcastillo@broward.org>

Thu 5/2/2024 1:40 PM

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

FYI

From: Stahl, Chris <Chris.Stahl@FloridaDEP.gov>
Sent: Thursday, May 2, 2024 1:24 PM
To: Castillo, William <wcastillo@broward.org>
Cc: State_Clearinghouse <State.Clearinghouse@dep.state.fl.us>
Subject: State Clearance Letter for FL202403140044C- Environmental Assessment For Parking And Intermodal Access Improvements At The Fort Lauderdale-Hollywood International Airport (Fll), Broward County, Florida

---

May 2, 2024

William Castillo

Fort Lauderdale-Hollywood International Airport

320 Terminal Drive

Fort Lauderdale, Florida 33315

RE: Department of Transportation, Federal Aviation Administration, Airport Improvement Program, Environmental Assessment for Parking And Intermodal Access Improvements at the Fort Lauderdale-Hollywood International Airport (Fll), Broward County, Florida

SAI # FL202403140044C

Dear William:

Florida State Clearinghouse staff has reviewed the proposal under the following authorities: Presidential Executive Order 12372; § 403.061(42), Florida Statutes; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

The DEP Southeast District staff has made the following notations:

1. The proposed project will require an Environmental Resource Permit (ERP) from the SFWMD and as part of the ERP application, must demonstrate that the project meets the ERP Conditions for Issuance in Rule 62-330.301, F.A.C., the Additional Conditions for Issuance in Rule 62-330.302, F.A.C. and the applicable criteria in the ERP Applicant's Handbook Vol. I and II.

2. The proposed activities may require an Environmental Resource Permit (ERP) pursuant to Chapter 373, Florida Statutes and Chapter 62-330, F.A.C. ERP jurisdiction falls to the SFWMD.

3. The disturbed land area will exceed 1-acre, therefore a NPDES Stormwater Construction General Permit will be required.

4. A general permit for water main extension may be required for any needed potable water supply lines which extend the existing utility's water distribution mains.

5. Addition of Underground Storage Tank(s) (UST) regardless of capacity must comply with Rules 62-671 Florida Administrative Code (F.A.C.). Addition of Aboveground Storage Tank(s) (AST) with a capacity exceeding 550-gallons must comply with Rule 62-762 F.A.C. Should the project conflict with any existing UST, AST, regulated substance piping, sumps, pumps, dispensers, or other storage tank components must comply with the afore mentioned regulated storage tank rules.

6. There is a mention of the APM project including administrative offices, locker rooms and restrooms, so a PW permit would need to be obtained.

7. This site is not currently located in a designated Brownfield area. There are no restrictions in place on the property.

If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The applicant shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section at (850)-245-6333. Project activities shall not resume without verbal and/or written authorization. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statutes.

Based on the information submitted and minimal project impacts, the state has no objections to the subject project and, therefore, it is consistent with the Florida Coastal Management Program (FCMP). The state's final concurrence of the project's consistency with the FCMP will be determined during any environmental permitting processes, in accordance with Section 373.428, Florida Statutes.

Thank you for the opportunity to review the proposed plan. If you have any questions or need further assistance, please don't hesitate to contact me at (850) 717-9076.

Sincerely,

Chris Stahl

Chris Stahl, Coordinator

Florida State Clearinghouse

Florida Department of Environmental Protection

3900 Commonwealth Blvd., M.S. 47

Tallahassee, FL 32399-2400

ph. (850) 717-9076

Chris.Stahl@floridadep.gov



Under Florida law, most e-mail messages to or from Broward County employees or officials are public records, available to any person upon request, absent an exemption. Therefore, any e-mail message to or from the County, inclusive of e-mail addresses contained therein, may be subject to public disclosure.

Appendix G-5
Section 106
Consultation

Appendix G-5.1
SHPO Consultation

Outlook

RE: Fort Lauderdale International Airport landside Project - Section 106 Consultation

From Edwards, Scott <Scott.Edwards@dos.fl.gov>
Date Wed 10/9/2024 11:08 AM
To Jeffrey Covert <JCovert@esassoc.com>
Cc Peter Green (peter.m.green@faa.gov) <peter.m.green@faa.gov>

DHR No: 2024-4442

The Florida State Historic Preservation Officer reviewed the referenced project for possible effects on historic properties listed, or eligible for listing, on the *National Register of Historic Places*. The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, and its implementing regulations in *36 CFR Part 800: Protection of Historic Properties*.

Based on the information provided and a review of our records, this office concurs with your finding of *No Historic Properties Affected*.

Please accept this email as our official correspondence.

If you have any questions, please contact Scott Edwards, Historic Preservationist, by electronic mail *scott.edwards@dos.fl.gov*, or at 850.245.6333 or 800.847.7278.

Scott Edwards

Historic Preservationist and Florida Historic Golf Trail Coordinator | Bureau of Historic Preservation | Division of Historical Resources | Florida Department of State | 500 South Bronough Street | Tallahassee, Florida 32399 | 850.245.6369 | 1.800.847.7278 | www.flheritage.com and www.floridahistoricgolftrail.com

FLORIDA HISTORIC GOLF TRAIL

FLORIDA DEPARTMENT OF STATE DIVISION OF Historical Resources

From: Jeffrey Covert <JCovert@esassoc.com>
Sent: Monday, August 5, 2024 2:55 PM

To: CompliancePermits <CompliancePermits@DOS.MyFlorida.com>
Cc: Castillo, William <wcastillo@broward.org>; Julie Sullivan <JSullivan@esassoc.com>; Karen Moran <KMoran@esassoc.com>; Peter Green (peter.m.green@faa.gov) <peter.m.green@faa.gov>
Subject: Fw: Fort Lauderdale International Airport landside Project - Section 106 Consultation

EMAIL RECEIVED FROM EXTERNAL SOURCE

The attachments/links in this message have been scanned by Proofpoint.

To whom it may concern:

On behalf of the Broward County Aviation Department (BCAD) and Federal Aviation Administration (FAA), we are providing notification that the Draft Environmental Assessment (EA) for proposed parking and intermodal access improvements at the Fort Lauderdale-Hollywood International Airport (FLL or the Airport) is being made available for public and agency review and comment pursuant to the requirements of the National Environmental Policy Act of 1969 (NEPA). On March 15, 2024, the FAA sent the attached consultation letter and information on the Proposed Project to the SHPO for review. To date, the FAA has not received a response from the SHPO. Accordingly, BCAD and the FAA are providing this notice to the SHPO that the Draft EA is available for review and comment.

The Draft EA and its appendices can be accessed at https://www.broward.org/Airport/Business/Community/MasterPlan/Pages/default.aspx. The public comment period started on July 22, 2024, and will close on September 4, 2024. After review of the Draft EA and consideration of comments from the public and federal, state, and local agencies, the FAA will make an environmental determination on the Proposed Project.

A Public Information Workshop for the Draft EA will be held on August 27, 2024, from 5:30 pm to 8:30 pm at the Anne Kolb Nature Center located at 751 Sheridan Street, Hollywood, Florida, 33019. The Public Information Workshop will consist of a series of informational display boards that provide an overview of the Proposed Project, alternatives evaluated, impact analyses, and proposed mitigation. BCAD and their consultants will be available during the Workshop to answer any questions.

BCAD and the FAA welcome any comments you may have regarding the Proposed Project. If there are any questions or comments, please contact the FAA at peter.m.green@faa.gov. All comments must be received by 5:00 p.m. Eastern on September 4, 2024.

Sincerely,

Jeffrey Covert *he/him*
Aviation Specialist III

ESA | Environmental Science Associates
404-353-8408 **cell**

From: Green, Peter M (FAA) <peter.m.green@faa.gov>
Sent: Monday, March 18, 2024 4:19 PM
To: Jeffrey Covert <JCovert@esassoc.com>
Subject: FW: Fort Lauderdale International Airport landside Project - Section 106 Consultation

Forwarding copy of email

From: Green, Peter M (FAA)
Sent: Friday, March 15, 2024 2:49 PM
To: CompliancePermits@DOS.MyFlorida.com
Cc: Castillo, William <wcastillo@broward.org>; Julie Sullivan (JSullivan@esassoc.com) <JSullivan@esassoc.com>; Winston Cannicle <WCANNICLE@broward.org>
Subject: Fort Lauderdale International Airport landside Project - Section 106 Consultation

Attached is the Federal Aviation Administration's consultation letter and a file containing information for a 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

FW: Fort Lauderdale International Airport landside Project - Section 106 Consultation

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

Mon 3/18/2024 4:20 PM

To:Jeffrey Covert <JCovert@esassoc.com>

2 attachments (7 MB)

FLL Landside Projects - FAA Letter to SHPO 240315docx.pdf; SHPO Enclosure Package.pdf;

Forwarding copy of email

From: Green, Peter M (FAA)
Sent: Friday, March 15, 2024 2:49 PM
To: CompliancePermits@DOS.MyFlorida.com
Cc: Castillo, William <wcastillo@broward.org>; Julie Sullivan (JSullivan@esassoc.com) <JSullivan@esassoc.com>; Winston Cannicle <WCANNICLE@broward.org>
Subject: Fort Lauderdale International Airport landside Project - Section 106 Consultation

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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

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 - CompliancePermits@DOS.MyFlorida.com]

Alissa S. Lotane
Director, Division of Historical Resources
and State Historic Preservation Officer (SHPO)
R.A. Gray Building
500 South Bronough Street, Room 423
Tallahassee, Florida 32399

RE: Section 106 Consultation
Proposed Landside Projects (Intermodal Center and Related Projects)
Fort Lauderdale-Hollywood International Airport (FLL), Florida

Dear Ms. Lotane:

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 undertaking 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 will 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.

The proposed project constitutes an undertaking subject to the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800. This letter is intended to initiate consultation with your office. 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.

Area of Potential Effect

The construction and operation of the proposed facilities was reviewed to identify an appropriate APE for the evaluation of potential impacts on historic, archaeological, and cultural resources. Based on the review, the Direct Effects portion of the APE includes the areas where construction and related ground disturbance would occur and where additional stormwater runoff would be directed within an existing stormwater management treatment area. The proposed construction areas within the Direct Effects APE have been previously disturbed by the development of the

airport and U.S. Highway 1. Some stormwater management culverts and drainage pipes would be replaced within an existing stormwater treatment area (mangrove swamp) located adjacent to U.S. Highway 1 (between Northeast 7th Avenue and the Fort Lauderdale Rail Yard). None of the natural land and habitat would be disturbed. The Indirect Effects APE encompasses an area where effects such as light emissions, noise, and air emissions may occur.

The overall APE is approximately 603 acres in size and includes the proposed terminal and access facilities at FLL; portions of U.S. Highway 1 between Interstate 595 and Griffin Road, portions of connecting arterial roadways, and the aforementioned stormwater treatment area. The APEs are depicted on Enclosure 4.

Potential for Historic and Cultural Resources in the APE

The portion of the APE where construction would occur consists of extensively disturbed and modified land that supports automobile, bus, and commercial rail transportation infrastructure. Past development and construction in the Direct Effects APE during the last century have been intensive and almost all current soils have been re-deposited over native soils and include large amounts of fill material from off-site sources. The only area with mostly intact soils is the existing stormwater management area, where there is no planned ground disturbance.

In response to an inquiry made by Environmental Science Associates in February 2023, the results of a Florida Master Site File (FMSF) search listed no recorded archaeological sites or historic resources within the direct or indirect APE. The direct APEs do not contain any buildings or structures over 50 years old. A comparison of historical US Coast and Geodetic Survey (USCGS) and US Geological Survey (USGS) topographic maps (1883, 1884, 1935, 1949, 1962, 1973) and current aerial photographs of the area indicates that the only extant historic structure is the railroad spur from the Florida East Coast Railway mainline to Port Everglades. That railroad spur passes through the northern edge of the Indirect Effects APE and would not be adversely affected by the project. The nearest National Register-eligible resources are the Customs House (8BD210) and the Link Trainer Naval Air Station Ft. Lauderdale (BD02562), located more than a mile from the direct and indirect APE. The 1883 and 1884 USCGS maps depict almost the entirety of the APE in coastal swamps, with two Seminole camps depicted in the wooded strip outside the APE to the west. Based on a review of the FMSF information, historical maps, and the activities on the site, it appears that the likelihood of encountering historic, archaeological, and cultural resources within the project site would be low. A copy of the FMSF search report is provided in Enclosure 5.

The location of the proposed undertaking has a history of consultation with the Florida SHPO. For the Final Environmental Impact Statement (EIS) and Record of Decision (ROD) for the Development and Expansion of Runway 9R-27L and Other Associated Airport Projects[1] the studies and Section 106 consultation concluded that the Preferred Alternative would have no effect on any properties either listed, or eligible to be listed, on the National Register of Historic Places. The Florida Historic Preservation Officer concurred with that determination. In 2019 resources were evaluated as part of the EA for the Jetscape Westside Development project.[2] That project identified that there were formerly historic structures within 0.25 miles of that study's APE

[1] *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)*. Federal Aviation Administration. December 2008

[2] *Environmental Assessment for the Relocation, construction and operation of the Jetscape Fixed Base Operator (FBO)*. Federal Aviation Administration. April 2019

(located on the west side of the airfield), but most of those structures had been previously removed or relocated and that there were no structures or resources within the that project's APE.

In support of a 2009 Project Development & Environmental (PD&E) Study conducted for an Intermodal Center and People Mover System at FLL, a Cultural Resource Assessment Survey (CRAS) was conducted by the Archaeological and Historical Conservancy, Inc. and coordinated with the SHPO. In July 2007 a draft State Historic Preservation Office Minimum Review Document was submitted to the SHPO for the proposed project. That assessment evaluated previously recorded cultural resources within two miles of the project for direct and indirect (65 DNL contour) effects. This evaluation concluded that identified sites would not be impacted by the proposed project, however, because of proximity of site BD210 (U.S. Customs House) to the Sunport corridor, an additional assessment of that structure was undertaken (2007 CRAS3). Although site BD210 is not located within the direct or indirect study area of the current proposed undertaking, the study area for that project did encompass the study areas for the current proposed undertaking (Enclosure 6). Per the Results and Conclusions of the CRAS, the recommended project alternative (Alignment 6 and IMC location 14) would have no impact on National Registered Properties. Further, the study concluded that:

> "In accordance with the procedures contained in 36 CFR, Part 800, a Cultural Resource Assessment, including background research and a field survey coordinated with the State Historic Preservation Officer (SHPO), was performed for the project. As a result of the assessment, one site listed with the Florida Master File Sites number BD210, was identified, which has been determined eligible for listing on the National Register of Historic Places. Through the application of Criteria of Adverse Effect, The Federal Highway Administration in consultation with the SHPO determined that the recommended project alternative 6 and IMC location 1, did not constitute an adverse effect on the BD210, U.S. Customs House. Based on the fact that no additional archaeological or historical sites or properties are expected to be encountered during subsequent project development, the Federal Highway Administration has determined that no other National Register properties would be impacted."

The study area for the 2009 PD&E encompassed almost the entirety of the APE defined for the current Proposed Project. Portions of the existing stormwater attenuation area are outside 2009 study area, but there are no historic structures in that area and the additional runoff would not affect any unknown archaeological sites that could be present. Considering that there is no potential for the runoff to impact archaeological sites and that the location of the proposed Intermodal Center has not changed since the publication of that study, there is a low probability of cultural resource impacts at the location of the proposed undertaking.

Secretary of the Interior Qualified archaeologists Evan Tudor Elliott, MA, RPA, and James J. Clark, MA, RPA, reviewed the cultural resources data and the project activities and recommended that the project would not likely encounter or adversely affect any historic properties. Due to the low probability of encountering Cultural Resources at FLL based on a current FMSF Review, a historical map review, results of past CRAS, previous determinations from and coordination with the SHPO, and because the majority of the APE is located on built-up fill dirt, it is FAA's determination that the proposed undertaking is unlikely to affect historic properties or resources.

---

[3] *A Phase I Cultural Resource Survey of the Sunport Parcel, Broward County*, *Florida.* November 2007

[4] Note: IMC location 1 (preferred alternative in the 2009 PD&E) is the same as the current proposed IMC location

If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials; or any other physical remains that could be associated with Native American, early European, or early American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The applicant shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section and Native American Indian tribes. Project activities shall not resume without verbal and/or written authorization from all parties. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately, and the proper authorities notified in accordance with Section 872.05, Florida Statutes.

FAA Determination of Effect

Taking into account project site conditions and the professional opinions based on a review of the Proposed Project, APE, and available information, the FAA has determined there are no historic properties listed in, or eligible for listing in, the National Register of Historic Places within the APE and that the project is unlikely to encounter post review discoveries or to have an effect on unknown resources. Therefore, the FAA finds "no historic properties affected" for the Proposed Undertaking under 36 CFR Part 800.4(d)(1).

FAA requests that your agency consider the enclosed project information and please respond within 30 days of receipt of this letter indicating whether or not you agree with the determination. Please direct comments and information to me at (407) 487-7296 or via email at peter.m.green@faa.gov.

Sincerely,

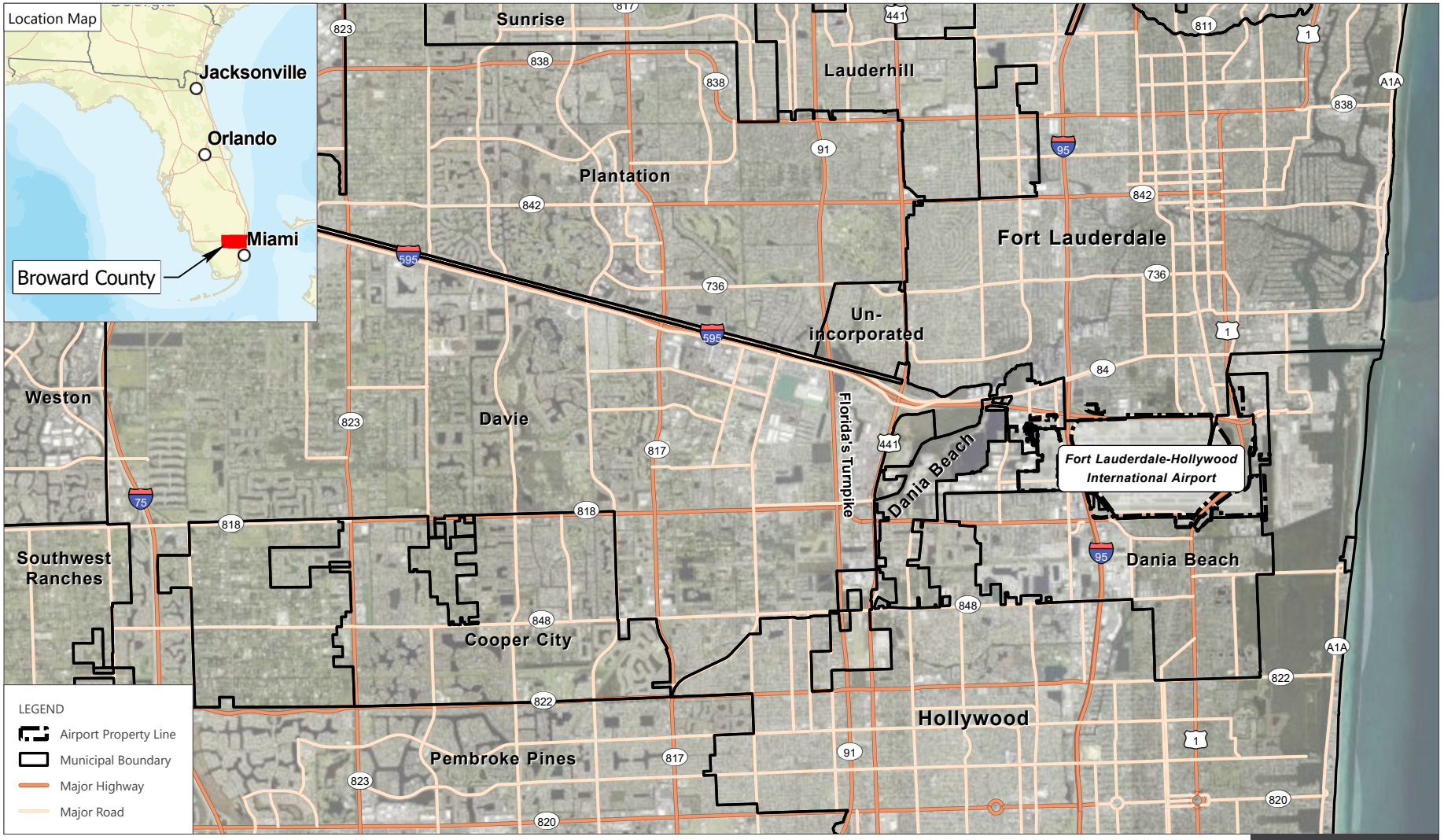
Peter M Green, AICP
Environmental Protection Specialist

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. APE
5. FMSF Records
6 2007 CRAS from 2009 PD&E

Enclosure 1

Project Location



SOURCES: State of Florida, 2020; County of Broward, 2015.

EXHIBIT 1-1

NORTH 0 10,000 ft.

U:\GIS\GIS\Projects\2021xxx\D202100449_BCAD_Env_Planning_Acoustical_Consulting\03_Project\Ex_##_Landside EA Project Elements_v2.aprx

Location Map
Fort Lauderdale-Hollywood International Airport

Enclosure 2

Description of Proposed Project

1.1 Description of the Proposed Project

The Broward County Aviation Department (BCAD) proposes to construct an Intermodal Center (IMC), an Automated People Mover (APM) Circulator, redevelop an Airport parking garage and expand a second parking garage that accommodates public parking and the Rental Car Center, reconfigure the passenger terminal complex roadways and curbside, and implement other associated landside improvements at Fort Lauderdale-Hollywood International Airport (FLL or the Airport). The proposed project is shown on **Enclosure 3**, and the main project components are discussed below.

1.1.1 INTERMODAL CENTER

The IMC would be a transportation hub that improves integration between the regional transportation network and FLL. The IMC would be located within the US Highway 1 (US-1) right-of-way (ROW). The US-1 ROW is located outside FLL property at the east end of the FLL terminal complex on a 22-acre parcel within the greenspace bounded by the interchange between US-1 and the terminal entrance/exit roadways. The eight-level, 4.6-million-square-foot facility would accommodate airport parking, a Ground Transportation Center (GTC) for commercial vehicle pickups and drop-offs (drop-and-ride passengers), a multimodal transfer lobby with concessions and seating that connects to the proposed APM, and leasable office space.

The first level of the IMC would be constructed within the interchange footprint, on land leased from the Florida Department of Transportation (FDOT).[1] Levels 2 through 8 would extend over US-1, supported by columns and footings on the west side of the highway, to achieve the desired structural square footage while remaining under airspace protected for aircraft using FLL's runways. In addition to the proposed APM connection between the IMC and the FLL terminals, the IMC would connect to the regional roadway network at several access points and would provide the ability to connect to other regional transportation modes developed by other entities.

The IMC parking spaces would initially accommodate public parkers displaced during the Palm Garage Redevelopment project (a component of the proposed project), resulting in a temporary mid-project-implementation peak in parking supply. Following the reopening of the Palm Garage, BCAD intends to accommodate employee parking at the IMC. Employee parking is currently provided in a remote lot west of Airport property. **Table 1** demonstrates the transition of parking spaces before, during, and after construction of the proposed project, as project components come online.

[1] BCAD is pursuing a 99-year land lease from FDOT.

Table 1 Public and Employee Parking Capacity

FACILITY	NUMBER OF VEHICLE PARKING SPACES, BY YEAR 2022	2029[1]	2033[2]
Public Parking	**11,221**	**17,011**	**12,231**
Palm Garage	2,490	1,490	3,500
Hibiscus Garage	4,534	4,534	4,534
Cypress Garage	4,197	4,197	4,197
IMC[3]	0	6,790	0
Employee Parking	**4,010**	**4,010**	**6,790**
West Employee Lot	4,010	4,010	0
IMC[3]	0	0	6,790
Total Parking	**15,231**	**21,021**	**19,021**

NOTES:

IMC – Intermodal Center

1 As shown in Table 1-5, construction of the IMC is planned to be completed in 2028. The year 2029 represents the first full year of operation with reduced capacity in the Palm Garage and temporary accommodation of displaced public parking at the IMC.

2 As shown in Table 1-5, reconstruction of the Palm Garage is planned to be completed in 2032. The year 2033 represents the first full year of operation of the fully reconstructed Palm Garage (spaces temporarily displaced to the IMC return to the Palm Garage). Employee parking then shifts to the IMC.

3 Also includes parking for other IMC users in addition to public parking (2029) and employee parking (2033).

SOURCE: Broward County Aviation Department, *Advanced Planning for Palm Garage Demolition and Replacement, and Supplemental Curb Technical Report, Fort Lauderdale-Hollywood International Airport*, April 2023; Broward County Aviation Department, *Intermodal Center Advanced Planning Technical Report*, November 2022.

Connectivity between the regional roadway network and level 1 of the IMC would be provided for commercial vehicles from northbound and southbound US-1 via a T-intersection and ramp, respectively, and a tunnel providing access to/from Northeast 7th Avenue. Public and employee private vehicles parking at the IMC, as well as drop-and-ride passengers[2] and Transportation Network Company (TNC) pickups[3] would access the IMC at level 2 via new ramps from existing Airport roadways providing connections from northbound and southbound US-1. These vehicles would exit the IMC at level 3 via new ramps to northbound and southbound US-1 and a new ramp to I-595. The new ramps to northbound US-1 and I-595 would include an approximately 1,800-linear-foot overpass to clear the existing Airport roadway network.

Construction of the IMC would also include utility and stormwater improvements to serve development at the site. All stormwater runoff from the new IMC facility would be collected and treated on site prior to discharge. The US-1 ROW currently accommodates an existing dry detention basin that would be displaced with IMC development. The basin is part of an interconnected system of basins along US-1 that drain to the undeveloped land east of Northeast 7th Avenue. The displaced stormwater detention volume at the US-1 ROW would be accommodated through a combination of increases

2 Drop-and-ride passengers are those that are dropped of at or picked up from the IMC by a private vehicle.

3 TNC operators would pickup passengers arriving at FLL at the IMC; passengers would transfer from the terminals to the IMC via the APM. TNC drop-offs would occur at the terminal curbs.

to volumes of other detention basins, as feasible, within this interconnected drainage system; upsizing existing culverts that drain to the land west of Northeast 7th Avenue, and implementing avoidance and minimization measures to improve treatment of water discharged to the land west of Northeast 7th Avenue given the reduced detention capacity.

1.1.2 AUTOMATED PEOPLE MOVER

The APM would be a landside airport circulator comprising an elevated dual-track guideway and train system connecting the FLL terminals, Airport parking garages, Rental Car Center, and the proposed IMC. The APM project would include the following elements:

- 16,000 feet of elevated dual-track guideway;
- five elevated on-Airport stations and a sixth station constructed adjacent to the IMC;
- pedestrian bridges and vertical circulation systems to connect the stations to terminal and parking facilities;
- a 52,000-square-foot Maintenance and Storage Facility (M&SF); and
- supporting utility infrastructure improvements, including two power distribution substations.

The 16,000-foot dual-track guideway would be elevated above the upper level of Terminal Drive, running between the terminals and the parking garages, on Airport property. It would cross over the Florida East Coast (FEC) Railway tracks, but no support columns would be placed in FEC right-of-way; BCAD would obtain an aerial rights agreement with FEC for the guideway overpass. The portion of the guideway connecting to the IMC would extend into land BCAD plans to lease from FDOT for the IMC.

The APM would be constructed in two phases. The first phase would include a guideway operating in a pinched loop configuration[4] serving stations between Terminal 2 and Terminal 4, via Terminal 1, the IMC, and future Terminal. A sixth station at Terminal 3 and full guideway loop at the west end would be constructed in the second phase with redevelopment of Palm Garage. By the second phase, the APM would operate as a bi-directional closed loop,[5] with the guideway crossovers providing operational redundancy.

The elevated dual-track guideway separation would range from 16 feet wide between stations to 52 feet wide at stations where the guideways are separated by the station platform and would be supported by columns along the guideway's entire length. Program definition (to be verified in design) included a column plan defined to meet structural design requirements of Florida Building Code (2020 Edition), wind and gravity load requirements defined by the American Society of Civil Engineers (ASCE/SEI 7-16), and the BCAD Airport Design Guidelines Manual. An initial column layout was adjusted to avoid conflicts with existing structures, pressurized fuel pipelines, utilities, existing roadways, and planned future roadways. Based on program definition and preliminary structural engineering, APM foundations are planned to be standard driven piles below each pier column 12 inches wider than the column for reinforcement clearance and

[4] A pinched loop APM system operates back and forth between two distinct end points, requiring crossovers between the parallel guideways for train repositioning based on operating direction of each guideway.

[5] A closed loop APM operates as a continuous circuit in one direction. The proposed project would include two parallel guideways, allowing each guideway to operate independently as a closed loop in opposite directions. Bi-directional closed loop refers to the set of closed loop guideways.

tolerance. Columns would be between 5 and 8 feet wide. A geotechnical evaluation of the soil condition is required through the APM complete loop for final foundation design.

The six APM stations would each include an elevated platform (at the guideway level) sized to accommodate the boarding and deboarding of passengers to and from a two-car train as well as vertical circulation between the platform and a mezzanine level directly below the platform level. At the mezzanine level, elevated pedestrian bridges would link the stations with adjacent terminals and parking garages. A station equipment room would also be accommodated at the mezzanine level. At the terminal and parking garage ends of the elevated pedestrian bridges, vertical circulation cores would be added to connect the bridges with the various levels of the terminal and parking garage facilities.

The APM project also includes construction of a two-level M&SF of approximately 52,000 square feet, to be constructed south of the Hibiscus Garage. The lower level of M&SF would accommodate APM vehicle storage and maintenance space, and the second level would accommodate APM operational control space, including administrative offices, locker rooms, and restrooms. M&SF staff would park at the IMC or the Hibiscus Garage.

The first phase of the APM would require one Traction Power Substation (TPSS) of approximately 3,000 square feet, and a second TPSS would be required to support the extended guideway length in Phase 2. The TPSS buildings would be standalone facilities generally located within the northwest and southeast corners of the APM guideway loop. In addition to the TPSS stations, additional utility improvements would be implemented to support the APM.

1.1.3 PALM GARAGE REDEVELOPMENT WITH AIRPORT HOTEL AND COMMERCIAL CENTER

The existing four-level Palm Garage accommodates 2,490 public parking spaces and has a footprint of approximately 250,000 square feet. The proposed project includes demolition of the existing, aging parking structure in phases and redevelopment of the garage on a smaller footprint at the same site with seven to nine levels that include additional parking and areas for commercial development. The proposed project also includes utility improvements to support redevelopment and commercials areas.

In the first phase of construction, BCAD plans to demolish the southern one-third of the Palm Garage to enable construction of the first phase of the APM. The extent of building demolition in the first phase was defined to match an original expansion joint to minimize the structural effects of demolition.

The second phase of Palm Garage redevelopment includes demolition of the remaining two-thirds of the structure and site redevelopment. Palm Garage would be redeveloped on its existing site, within a smaller building footprint of approximately 135,000 square feet. The seven- to nine-level structure would be a multimodal facility that includes public parking and a commercial GTC. The garage would provide approximately 3,400 to 3,700 parking spaces on level 2 and above. Level 1 would accommodate a GTC for commercial vehicle pickup and drop-off operations. The GTC would provide approximately 1,700 linear feet of curbfront and 110 vehicle staging positions for commercial ground transportation operations. Pedestrian connectivity to the terminals would be provided at Level 3, which would include a large pedestrian circulation area. The intent for the dedicated third-level connection with terminals would be to eliminate/reduce at-grade pedestrian crossings between the Palm Garage and terminals. The east side of each level of Palm Garage would be integrated with the adjacent levels of the Hibiscus Garage.

The reduced Palm Garage footprint allows for the construction of a 90,000-square-foot commercial center that could include an Airport hotel and other commercial space along the west side of the redeveloped Palm Garage.

1.1.4 SUPPLEMENTAL ROADWAYS AND CURBSIDES

Two at-grade supplemental curb areas would be provided at the lower levels of Terminals 1 and 2; they are proposed to address terminal curbfront capacity deficiencies. A new bypass roadway, splitting from the lower-level terminal roadway before Terminal 1 and merging back after Terminal 4, would provide the ability to avoid traffic congestion in front of the terminals and improve roadway level of service. The parking garages would be accessed from the bypass roadway.

1.1.5 CYPRESS GARAGE EXPANSION

The existing Cypress Garage is a nine-level facility that includes FLL's Rental Car Center on levels 1 through 5 and provides public parking spaces on levels 6 through 9. The proposed project includes the construction of a Cypress Garage Expansion along the structure's east face. The nine-level expansion to the garage would increase the garage footprint by approximately 90,000 square feet and supply approximately 2,150 additional parking spaces to accommodate rental car ready/return staging[6] operations at the Rental Car Center and public parking. Each level of the expansion would be built to the same elevation as the corresponding level in the existing Cypress Garage to maintain internal vehicle circulation connectivity.

1.2 Timeframe of the Proposed Project

As shown in **Table 2**, construction of the Proposed Project is planned to begin in 2026, and all project components would be operational by 2033.

[6] Rental car ready/return areas provide staging for rental cars ready for rental from, or recently returned to, a rental car company.

Table 2 Proposed Project Implementation Schedule

Project Component	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Intermodal Center (IMC)	Design	Demolition/Construction	Demolition/Construction	Demolition/Construction						
Automated People Mover (APM)										
Phase 1 (Pinched Loop)	Design	Demolition/Construction	Demolition/Construction	Demolition/Construction	Demolition/Construction					
Phase 2 (Closed Loop)	Design					Demolition/Construction				
Palm Garage Site Redevelopment										
Phase 1 Demolition, Southern Third	Design			Demolition/Construction						
Phase 2 Demolition, Remainder of Structure	Design				Demolition/Construction					
New Palm Garage Redevelopment					Design	Demolition/Construction	Demolition/Construction	Demolition/Construction		
Commercial Center and Airport Hotel					Design	Demolition/Construction	Demolition/Construction	Demolition/Construction		
Supplemental Roadways and Curbsides	Design				Demolition/Construction					
Cypress Garage Expansion				Design	Design	Demolition/Construction	Demolition/Construction	Demolition/Construction		

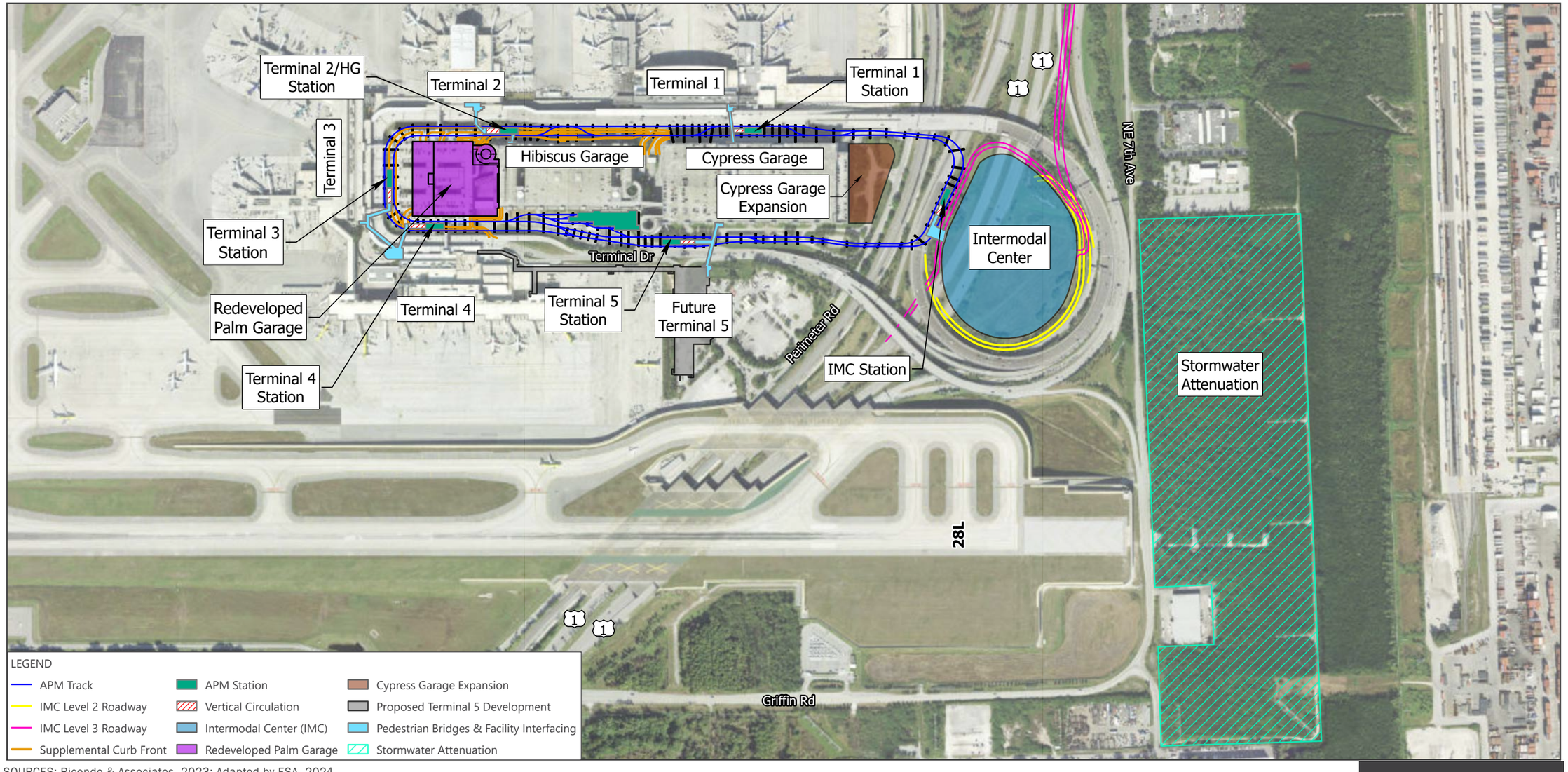
NOTES: Design Demolition/Construction

1 It is anticipated that the following design components of the Proposed Project would be procured and awarded together based on project dependencies and overlap: Automated People Mover (Phase 1 and 2), Palm Garage Demolition (Phase 1 and 2), and Supplemental Roadways and Curbsides.

SOURCE: Broward County Aviation Department, 2022.

Enclosure 3

Proposed Project



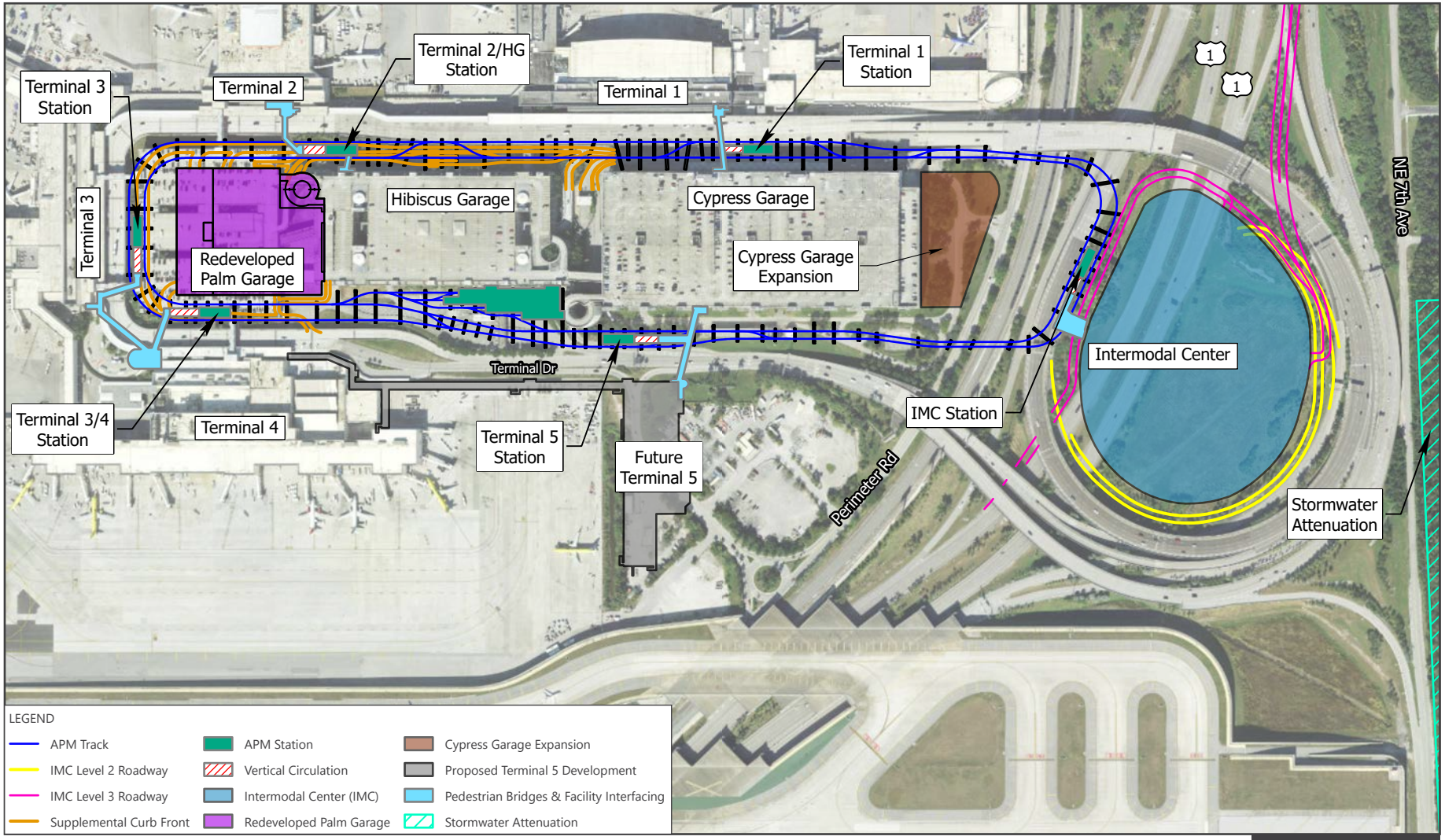
SOURCES: Ricondo & Associates, 2023; Adapted by ESA, 2024.

EXHIBIT 3-1

NORTH 0 600 ft.

U:\GIS\GIS\Projects\2021xxx\D202100449_BCAD_Env_Planning_Acoustical_Consulting\03_Project\Ex_##_Landside EA Project Elements_11x17.aprx

Project Elements
Fort Lauderdale-Hollywood International Airport



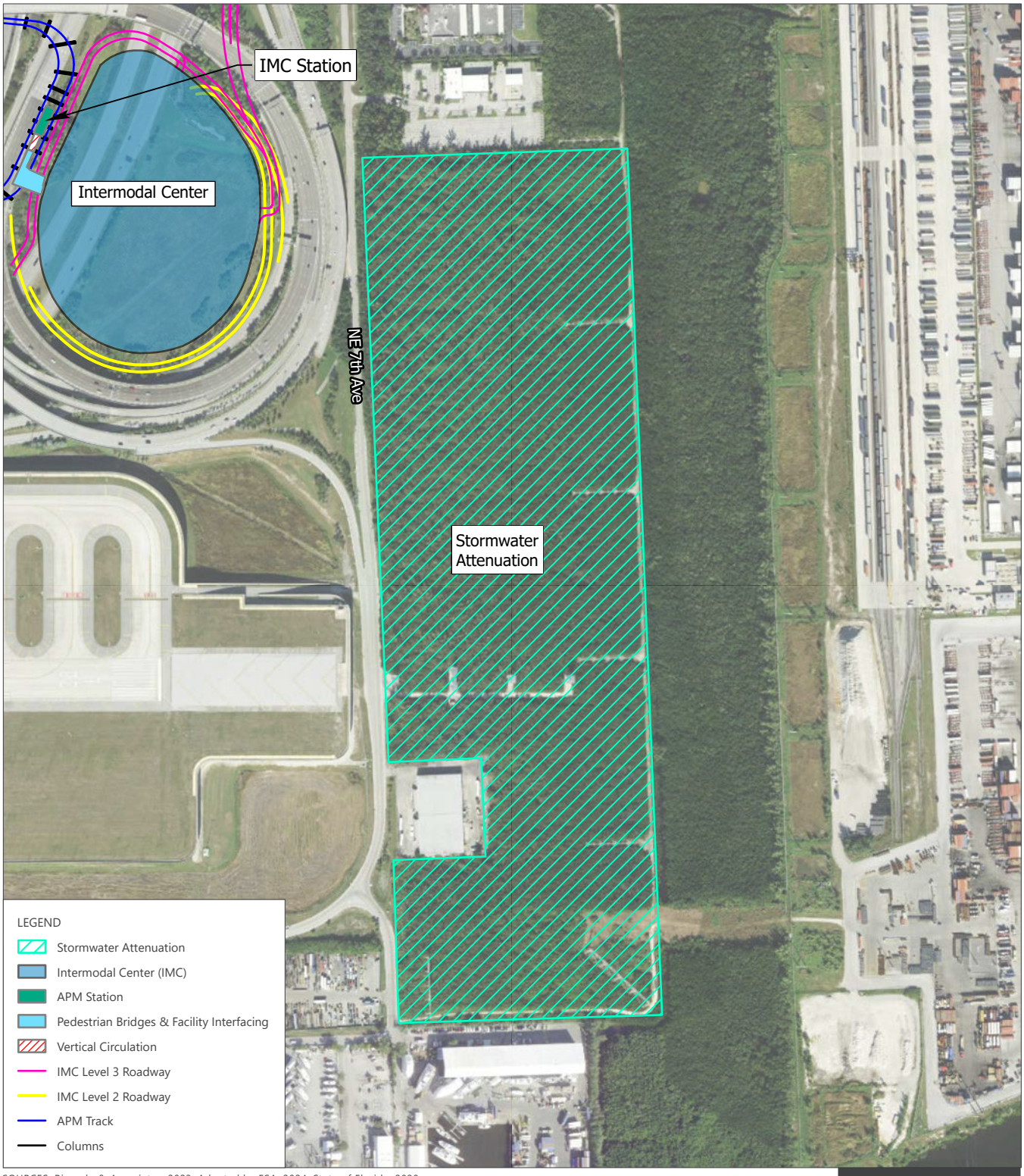
SOURCES: Ricondo & Associates, 2023; Adapted by ESA, 2024; State of Florida, 2020.

EXHIBIT 3-2

NORTH 0 500 ft.

U:\GIS\GIS\Projects\2021xxx\D202100449_BCAD_Env_Planning_Acoustical_Consulting\03_Project\Ex_##_Landside EA Project Elements_v2.aprx

Landside Elements and IMC
Fort Lauderdale-Hollywood International Airport



SOURCES: Ricondo & Associates, 2023; Adapted by ESA, 2024; State of Florida, 2020.

EXHIBIT 3-3

NORTH

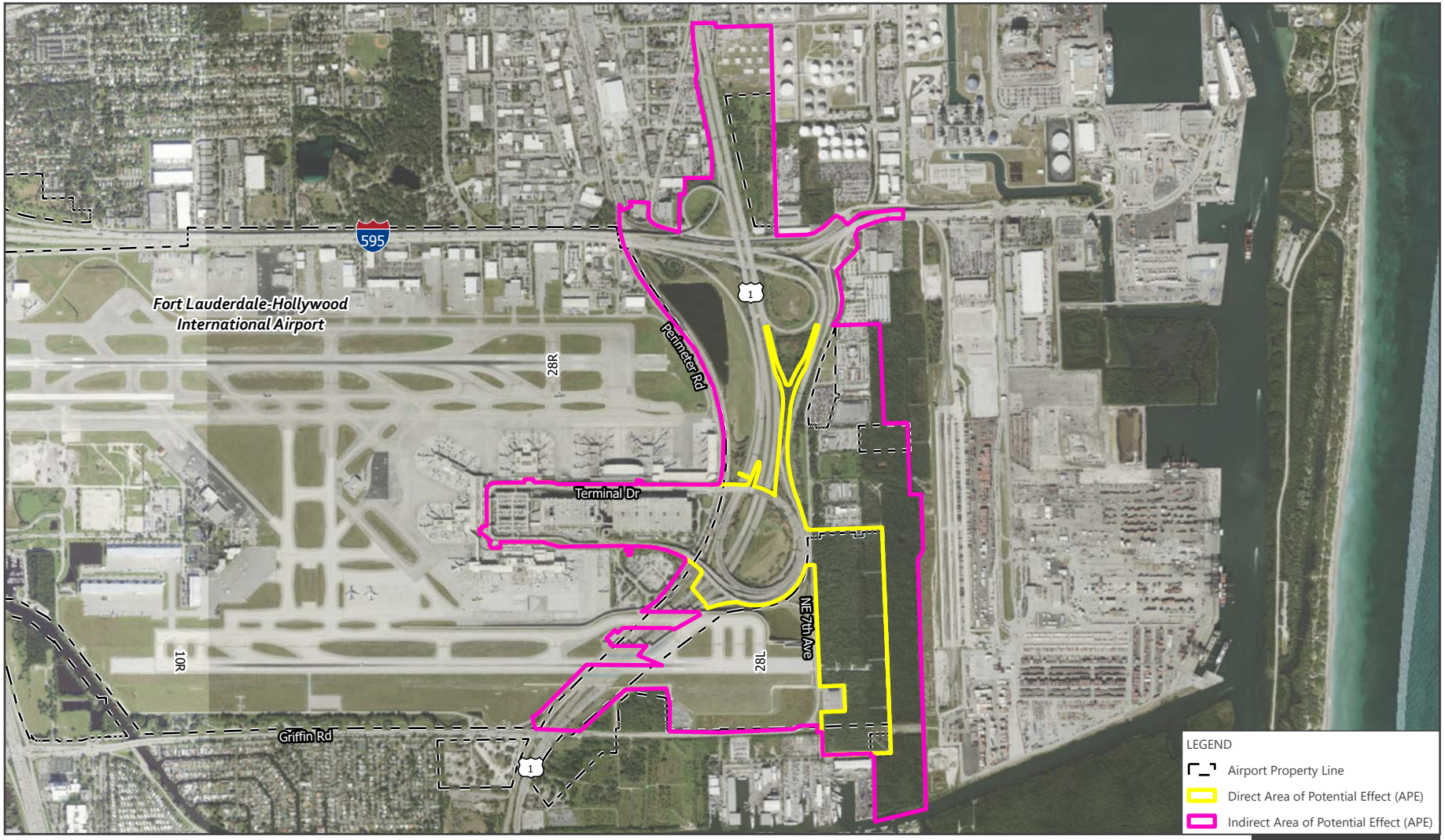
0 500 ft.

IMC and Stormwater Attenuation
Fort Lauderdale-Hollywood International Airport

U:\GIS\GIS\Projects\2021xxx\D202100449_BCAD_Env_Planning_Acoustical_Consulting\03_Project\Ex_##_Landside EA Project Elements_v2.aprx

Enclosure 4

Area of Potential Effect



SOURCES: ESA, 2024.

EXHIBIT 4-1

NORTH 0 2,000 ft.

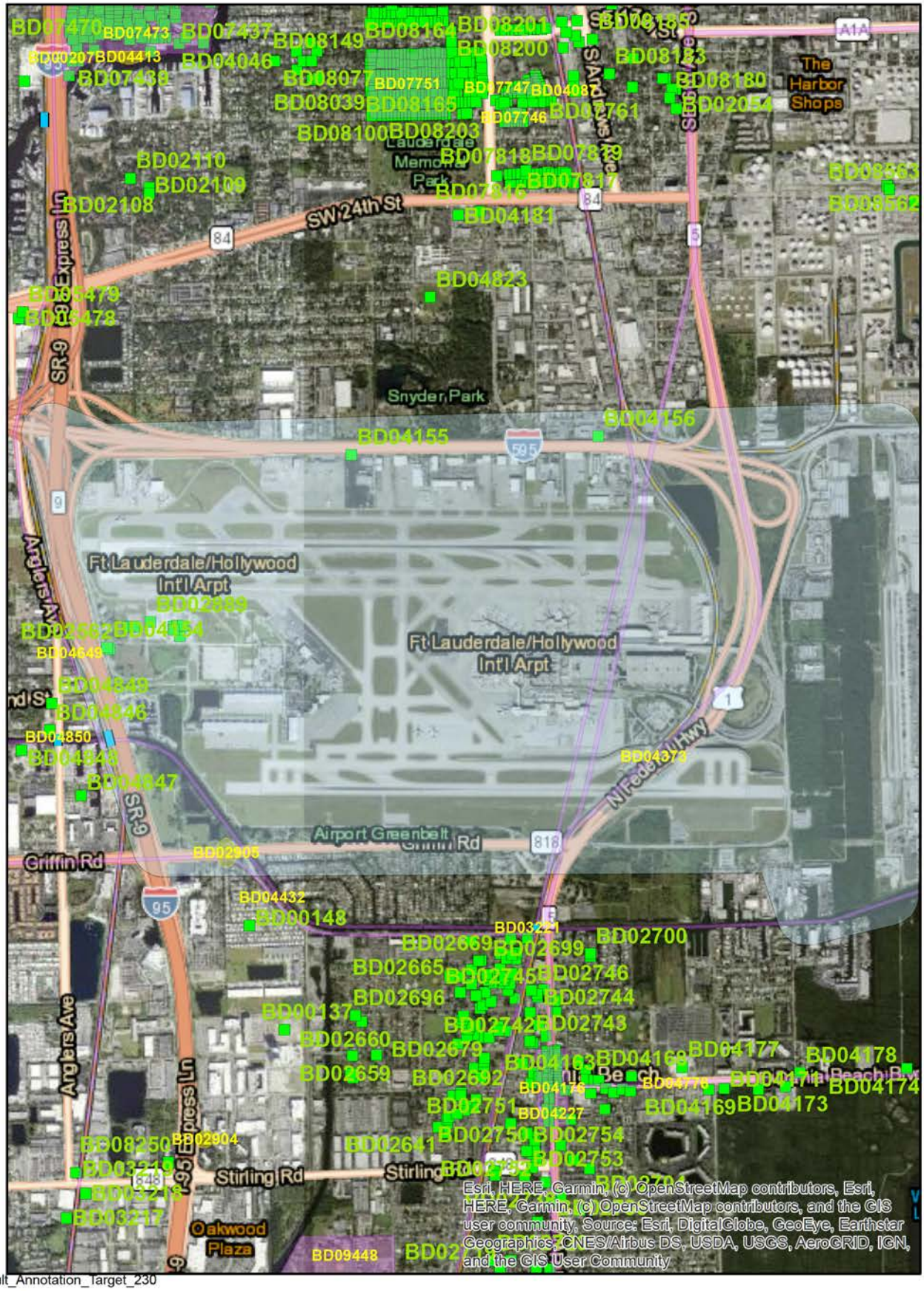
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Areas of Potential Effect
Fort Lauderdale-Hollywood International Airport

Enclosure 5

Florida Master Site File Records

Date: 2/19/2024



Legend

- Buffer_of_Default_Annotation_Target_230
- FloridaSites
- HistoricalBridges
- HistoricalCemeteries
- ResourceGroups
- FloridaStructures

870 435 0 870 Meters

N

AR=1
SS=14
CM=0
RG=5
BR=0
Total=20

Cultural Resource Roster

SiteID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
BD02561	SS	JUNIOR BACHELOR OFFICERS QUARTERS NAS	1615 S W 39TH ST, FT LAUDERDALE	-RESOURCE DESTROYED- 1942 Other		
BD02562	SS	LINK TRAINER NAS FT LAUDERDALE	4000 W perimeter RD, Ft. Lauderdale	1942 Frame Vernacular	Eligible	NR Listed - May 20, 1998
BD02889	SS	PAINT BUILDING NAS BUILDING 1	NAVAL AIR STATION, FT. LAUDERDALE	-RESOURCE DESTROYED- 1942 No style	Not Eligible	
BD02890	SS	ANTENNA COMMUNICATIONS NAS BUILDING 4	1650 SW 39TH ST,NAVAL AIR STATION, FT. LAUDERDALE	-RESOURCE DESTROYED- 1953 No style	Not Eligible	
BD02891	SS	HOISTING TOWER NAS BUILDING 4	1650 SW 39TH ST, FT. LAUDERDALE	-RESOURCE DESTROYED- 1953 No style	Not Eligible	
BD02892	SS	MINE TEST TANK NAS BUILDING 7	1650 SW 39TH ST, FT. LAUDERDALE	-RESOURCE DESTROYED- 1942 No style	Not Eligible	
BD02893	SS	UNDERWATER WEAPONS SYSTEMS LAB NAS BLD14	1650 SW 39TH ST, FT. LAUDERDALE	-RESOURCE DESTROYED- 1942 No style	Not Eligible	
BD02894	SS	ADMINISTRATION BUILDING NAS BUILDING 15	NAVAL AIR STATION, FT. LAUDERDALE	-RESOURCE DESTROYED- 1942 Other	Not Eligible	
BD02895	SS	MAGAZINES/SMALL ARMS NAS BUILDING 20	1650 SW 39TH STREET, FT. LAUDERDALE	-RESOURCE DESTROYED- 1943 Other	Not Eligible	
BD02896	SS	MAGAZINES/HIGH EXPLOSIVE NAS BUILDING 21	1650 SW 39TH STREET, FT. LAUDERDALE	-RESOURCE DESTROYED- 1943 Other	Not Eligible	
BD02897	SS	MAGAZINES/SMALL ARMS NAS BUILDING 22	1650 SW 39TH STREET, FT. LAUDERDALE	-RESOURCE DESTROYED- 1943 Other	Not Eligible	
BD02905	AR	OLD GRIFFIN			Insufficient Info	
BD03221	RG	DANIA CANAL	Dania Beach	Linear Resource	Not Eligible	
BD04087	RG	Railroad Tracks	Pompano Beach	Linear Resource - 1 Contrib Resources	Eligible	
BD04154	SS	Sentry Gate	4000 W perimeter RD, Ft. Lauderdale	-RESOURCE DESTROYED- 1942 Frame Vernacular	Not Eligible	
BD04155	SS	GB Airlink	850 SW 34th ST, Ft. Lauderdale	1956 Masonry Vernacular	Not Eligible	
BD04156	SS	3340 SW 2nd Avenue	3340 SW 2nd AVE, Ft. Lauderdale	-RESOURCE DESTROYED- 1948 Masonry Vernacular	Not Eligible	
BD04373	RG	Federal Highway	Hollywood	Linear Resource - 1 Contrib Resources	Not Eligible	
BD04432	RG	Griffin Road	Dania Beach	Linear Resource - 1 Contrib Resources	Not Eligible	
BD04776	RG	SR-A1A	Lauerdale-by-the-Sea	Linear Resource - 1 Contrib Resources	Not Eligible	

Florida Master Site File

Manuscript Roster

Total=28

MS#	Title	Publication Information	Year
23551	Cultural Resource Assessment Survey of the Design Build Broward Mobility Project, Group 5A (Sequences 30, 150-1, 150-2, 280, and 290), Broward County, Florida (Financial Project ID: 433165-1-52-01)	Janus Research, 1107 N. Ward Street, Tampa FL 33607	2016
22382	Cultural Resource Assessment Survey Reevaluation of I-595/I-95 Express Lanes Direct Connect, I-95 from Stirling Road to Broward Boulevard and I-595 from SR-7 to I-95, Broward County, Florida	Janus Research, 1107 N. Ward Street, Tampa FL 33607	2015
19480	Cultural Resource Assessment Report for the All Aboard Florida Passenger Rail Project from West Palm Beach to Miami, West Palm Beach, Broward, and Miami-Dade Counties	Janus Research, 1107 N. Ward Street, Tampa FL 33607	2012
19752	Cultural Resource Assessment Survey SR 9 / I-95 PD&E Study from Stirling Road to North of Oakland Park Boulevard FM 42980412201 / ETDM 13168, Broward County, Florida	Janus Research, 1107 N. Ward Street, Tampa, FL 33607	2012
14376	Historic Resources Reconnaissance Survey and Archaeological Desktop Analysis I-95 Managed Lanes Piolt Project: 95 Express from: I-395 (Miami-Dade County) To: I-595 (Broward County)	Janus Research, Tampa. Prepared for Florida Department of Transportation, District Six, Miami	2007
14000	Cultural Resources Reconnaissance Study South Florida East Coast Corridor Transit Analysis Miami-Dade, Broward and Palm Beach Counties	Janus Research, Inc., Tampa, in Conjunction with Gannett Fleming, Inc., Miami. Prepared for Florida Department of Transportation, District 4, Fort Lauderdale	2006
12275	Cultural Resource Assessment Survey and Destop Analysis for the Fort Lauderdale-Hollywood International Airport, Broward County	Janus Research, Tampa. Submitted to Landrum & Brown, Cincinnati, OH	2005
12945	Cultural Resource Assessment Survey I-595 (SR-862) Project Development & Environment Study FM No. 409354-1-22-01 FAP No. 5951 539 I From the I-75 Interchange West of 136 Avenue to the I-95 Interchange Broward County, Florida	Janus Research, Tampa. Submitted to Florida Department of Transportion District Four, Fort Lauderdale	2005
10432	An Archaeological and Historical Assessment for the Existing SE 14th Avenue Cellular Tower, Broward County, Florida	Environmental Services, Inc., Jacksonville. Submitted to Vertex Engineering Services, Inc.	2004
10433	An Archaeological and Historical Assessment for the Existing SW 23rd Terrace Cellular Tower, Broward County, Florida	Environmental Services, Inc., Jacksonville. Submitted to Vertex Engineering Services, Inc.	2004
14102	Onshore Archaeological Assessment Report: Archaeological Monitoring of Geotechnical Test Bore Program and Subsurface Archaeological Testing of Taylor Road Area, for Onshore Portion of Proposed AES Ocean Express Pipeline, Southern Broward County, Florida		2004
7612	An Archaeological and Historical Survey of the Proposed Snyder Park Tower Location in Broward County, Florida	Panamerican Consultants, Inc., Tampa. Submitted to EPAC Environmental Services, Inc., Pompano Beach	2003
8906	The Tractebel Calypso Natural Gas Pipeline, Supplemental Report # 1	Janus Reseach. Submitted to: URS Corporation.	2003
8953	An Archaeological and Historical Survey of the Proposed MNTA Tower Location in Broward County, Florida	Panamerican Consultants, Inc., Tampa. Submitted to EnviroDesign Associates, Inc.	2003
12075	Archaeological Monitoring of Geotechnical Test Bore Program and Subsurface Archaeological Testing of Taylor Road Area for Onshore Segment of Proposed AES Ocean Express Pipeline, Southern Broward County, Florida	Gifford, John A. Submitted to Haley & Aldrich, Inc, East Hartford, Connecticut.	2003
7926	An Archaeological and Historical Survey of the Proposed Metro PCS Tower Location in Broward County, Florida	PANAMERICAN CONSULTANTS, INC., TAMPA. Submitted TO EPAC ENVIRONMENTAL SERVICES, INC., POMPANO BEACH, FLORIDA	2002

MS#	Title	Publication Information	Year
19293	Cultural Resource Overview of Onshore Segment of Propsed AES Ocean Express Pipeline, Southern Broward County, Florida & Archaeological Evaluation of Magnetometer & Side-Scan Sonar Targets in Florida State Territorial Waters Along the Offshore Navy Restri	AES Ocean Express LLC, Resource Report 4, Exhibit F-1, application to Federal Energy Regulatory Commission	2002
19302	Underwater Archaeological Background Study and Remote Sensing Investigation and Associated Upland Route Corridor Survey Pursuant to the AES Ocean Express LLC Pipeline Project from Exclusive Economic Zone (EEZ) to Broward County, Florida	Dr. Robert H. Baer, prepared for Haley Aldrich, Inc.	2002
6253	A Cultural Resource Assessment of the Proposed Grade Separation Along Eller Drive Over the Florida East Coast Railroad Tracks from US 1 to McIntosh Road, Broward County, Florida	PANAMERICAN CONSULTANTS, INC. SUBMITTED TO FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT FOUR	2001
6679	Resource Report 4, Cultural Resources for Calypso Pipeline, LLC, Calypso Natural Gas Pipeline Project	JANUS RESEARCH, ST. PETERSBURG. Submitted TO URS CORPORATION, ST. PETERSBURG	2001
7477	An Archaeological and Historical Survey of the Proposed Snyder Park Tower Location in Broward County, Florida	PANAMERICAN CONSULTANTS, INC., TAMPA. Submitted TO EPAC ENVIRONMENTAL SERVICES, INC., POMPANO BEACH	2001
5844	Tri-County Commuter Rail Authority Double Track Corridor Improvement Program for Segment 5	JANUS RESEARCH, INC., ST PETERSBURG, FORIDA. SUBMITTED TO PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC., MIAMI	1999
5872	An Archaeological and Historic Assessment of the Ft Lauderdale Airport SEIR Roadway Expansion, Broward County Florida	ARCHAEOLOGICAL AND HISTORICAL CONSERVANCY, INC., MIAMI. Submitted TO KEITH AND SCHNARS, P.A.	1999
4075	An Archaeological Survey of Southeast Broward County, Florida: Phase 3	Archaeological and Historical Conservancy, Inc., Miami. Submitted to Broward County Office of Planning	1995
5546	Archaeological and Architectural Survey, South Florida Testing Facility, U.S. Navy Surface Warfare Center, Fort Lauderdale, Florida	NEW SOUTH ASSOCIATES, INC., STONE MOUNTAIN, GA. SUBMITTED TO US ARMY CORPS OF ENGINEERS, MOBILE DISTRICT, MOBILE, AL	1995
3476	Archeological Survey of the Planned 20 in O.D. Port Everglades Loop and Meter Station	Letter Report from R. Christopher Goodwin & Associates, Inc., New Orleans, LA. Submitted to Enron Gas Pipeline Operating Company/Florida Gas Transmission Company, Houston, TX.	1992
2125	Historic properties survey of Fort Lauderdale, Florida	Historic Property Associates, Inc., St. Augustine.	1989
1440	Proposed re-alignment of SR A-1-A, from SR 5/US 1 to SE 17th St., in Broward County, Florida	Florida Department of Transportation, Tallahassee.	1987

Enclosure 6

2007 CRAS

A PHASE I CULTURAL RESOURCE SURVEY OF THE SUNPORT PARCEL, BROWARD COUNTY, FLORIDA

By:
Robert S. Carr, M.S.
Ivan Rodriguez, M.A.

ARCHAEOLOGICAL AND HISTORICAL CONSERVANCY, INC.
Davie, Florida 33314

For:
Lea + Elliot, Inc.

November 2007
AHC Project No. 2007.91
AHC Technical Report No. 825

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A Phase I Cultural Resource Survey of the Sunport Parcel, Broward County, Florida

By:
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Ivan Rodriguez, M.A.

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November 2007
AHC Project No. 2007.91
AHC Technical Report No. 825

CONSULTANT SUMMARY

In July, 2007 a draft State Historic Preservation Office Minimum Review Document was submitted to the SHPO. That assessment evaluated previously recorded cultural resources within two miles of the project parcel. A preliminary evaluation of those sites concluded that those sites would not be impacted by the Sunport Intermodal Centers and People Mover project, however, because of the proximity of BD210, the U.S. Customs House, to the People Mover Corridor an additional assessment of that structure should be conducted. This survey provides an assessment of BD210.

In September – November of 2007, the Archaeological & Historical Conservancy, Inc. (AHC) conducted a cultural resource survey for Lea + Elliot, Inc. of the Broward County Intermodal Center and People Mover Study also known as the Sunport PD&E Study. The subject encompasses parts of Sections 5, 13, 14, 15, and 21-28 in Township 50 Range 42E (Figure 1). The study area is characterized by urban development and the Port Everglades facility. The project area was surveyed to identify sites of archaeological and/or historical significance and to determine the potential impact to cultural resources from the project alternatives.

This assessment was conducted to fulfill historic and cultural resource requirements for Florida's Chapters 267 and 373 and cultural resource requirements of the Broward County Historic Commission. This assessment was conducted in accordance with Section 106 of the National Historic Preservation Act of 1966 (Public Law 89-665), as amended in 1992, and 36 C.F.R., Part 800: Protection of Historic Properties. The work and the report conform to the specifications set forth in Chapter IA-46, Florida Administrative Code.

The project parcel was assessed with an archival review and a windshield and pedestrian survey by an architectural historian and an archaeologist. A 2007 search with the Florida Division of Historic Resources (FDHR) indicates that there are 13 recorded sites within one mile of the study area of which two are within the study parcel. In addition, this assessment indicates that an area of moderate to high probability for archaeological sites occurs in the study area in proximity to the project alignment Alternative 5A and C along the Miami Road segment. This moderate to high probability area will also be affected by the proposed Intermodal Center (IMC) at Potential Location 2 (although that location is no longer considered as viable), and People Mover Corridor 4. Any consideration of the above alternatives will require a phase I cultural resource assessment to determine whether any significant archaeological and/or historic resources occur and whether they will be impacted.

Two National Register eligible sites, The Customs House (8BD210), and the Port Everglades Facility, 8BD180 were assessed in this study. The Customs House was designated as a historic site by the City of Hollywood in March 2000. Although People Mover Corridors 2, 3, and 5 come within 300 feet of this structure, there is no perceived adverse impact to the site as a result of the proposed People Mover alignments. A

detailed assessment of the site and recommendations are provided by architectural historian Ivan Rodriguez is provided in the Appendix of this report. The Port Everglades site, 8BD180, is adjacent to some People Mover alignments, however, the site is largely characterized as shipping basins and will not be affected by this project.

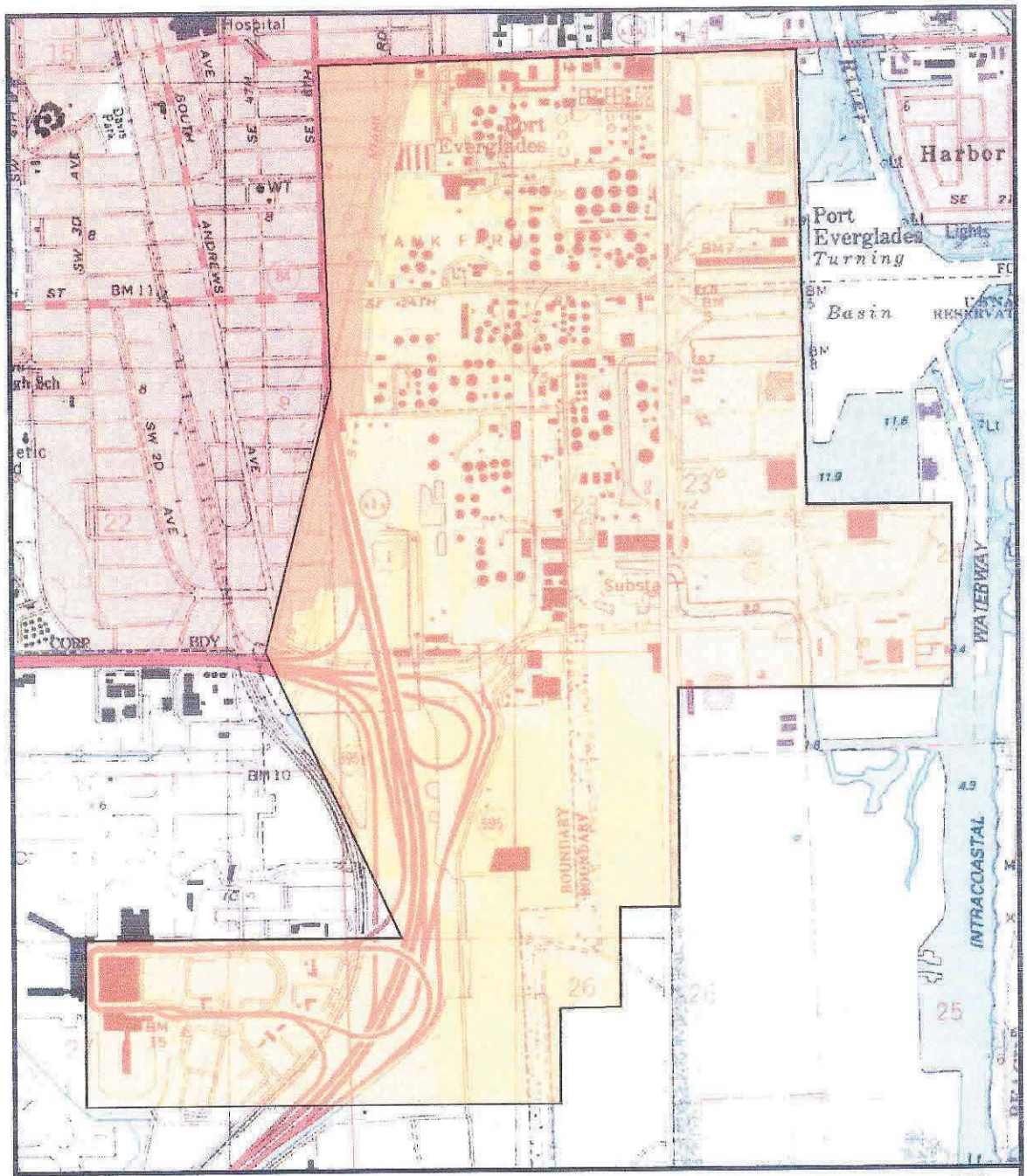


Figure 1. Map of the SunPort project area

= Project area

Township 50S, Range 42E, Sections 14, 15, 22, 23, 24, 26, 27

USGS Map: Fort Lauderdale South 1994 and Port Everglades 1986

0 1/8 1/4 1/2 Mile

PROJECT SETTING

The Sunport study area is located in eastern Broward County, Florida, within Sections 5, 13, 14, 15, and 21-28 in Township 50S, Range 42E. The study area is located within the municipalities of Fort Lauderdale, Hollywood, and Dania Beach. The project encompasses about 4.5 square miles.

The study area is bounded on the north by SE 17th Street, on the east by the Port Everglades turning basin, on the south by largely remnant wetlands and part of US 1. The western boundary roughly follows US 1 and a portion of the Fort Lauderdale Airport. Numerous structures occur within the project parcel including Port Everglades, the principal Port of Broward County. A review of a 1944 aerial photograph clearly indicates the relationship of the wetlands to the Atlantic Coastal Ridge (Figure 2). At that time the wetlands were being extensively farmed.

Disturbances to the project parcel have been intensive during this last century. Few intact soils occur on the parcel. Almost all soils are re-deposited and large quantities of fill occur particularly within Port Everglades.

Two physiographic regions characterize the study area. Approximately 90% of the parcel is highly disturbed fill placed ontop of what was historic fresh water marsh. All of Port Everglades was constructed upon filled-in wetlands. Mangrove forest now fringes the east edge of a portion of the parcel where it abuts the Intercostal Waterway. The Atlantic Coastal Ridge skirts the external western edge of the Sunport area. The ridge interface with the historic wetlands represent a moderate probability area for archaeological sites.

Elevations across the study area average 5 to 10 feet above sea level. A ridge approximately 10 feet above sea level and 5 feet above the historic wetlands occurs on the parcel's western boundary. The ridge geologically represents a portion of the Atlantic Coastal Ridge and is characterized by limestone, a porous marine fossil sedimentary rock overlaid by a relatively thin mantle of sands and organic soils. Soil on top of the ridge rarely exceeds 60 centimeters in depth (except in solution holes); while in contrast, soils on the adjacent lowlands are considerably deeper. Soil types are depicted as Arent organic substratum according to the Broward County soil map (Pendleton et al. 1994).



Figure 2. Aerial photograph (1947) of a portion of the SunPort project area

N

= Project boundaries

Source: http://palmm.fcla.edu

0 1/16 1/8 1/4 Mile

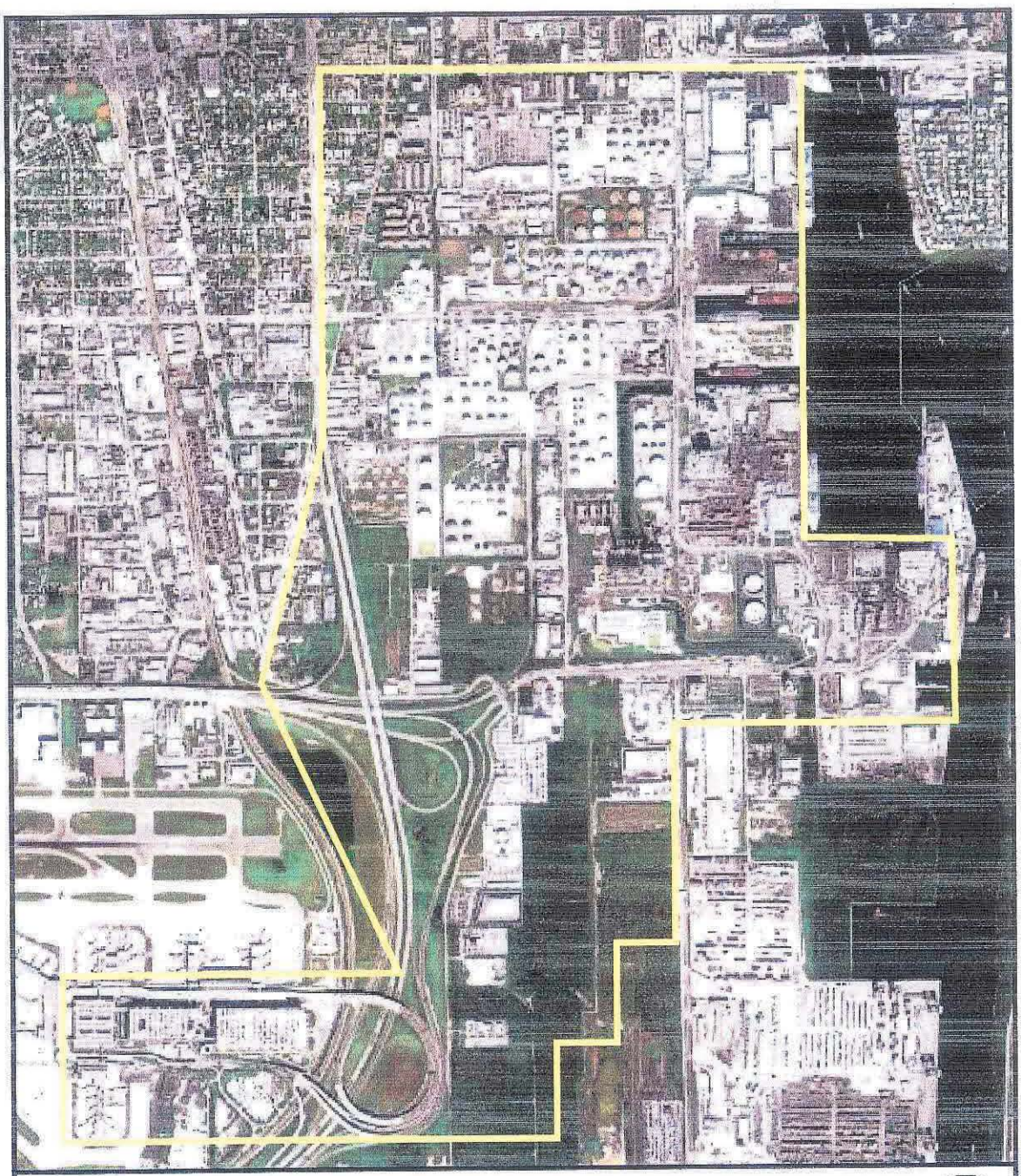


Figure 3. Aerial photograph (2006) of the SunPort project area

N

= Project area

Source: www.earth.google.com

0 1/8 1/4 1/2 Mile

PREVIOUS RESEARCH

The earliest recorded archaeological investigations in eastern Broward County were conducted by M.H. Harrington at a prehistoric mound complex (8BD3) located on the north bank of the New River. These mounds ranged in size from 8 to 50 feet in diameter and were from 2 to 8 feet high. The larger mounds had low sand embankments extending southward to the river. Smaller mounds were scattered throughout the palmettos. Harrington noted that a previous explorer had dug a trench across one of the larger mounds and that fragments of human bone were recovered in the excavation spoil. Harrington trenched another of the larger mounds without finding anything.

In the 1940s John Goggin reviewed specimens of pottery sherds and shell tools collected by Harrington from refuse deposits at the forks, now reposing at the Smithsonian Institution. However, these samples were mixed with other collections and could not be distinguished with certainty from other samples. John Goggin states on the 8BD3 site form that the mounds and refuse deposits were totally destroyed, believing that dredging operations on the river destroyed the refuse deposits. However, this is not the case. In all probability, the refuse deposits that were collected by Harrington were sites 8BD87 (the Rivermont site) and 8BD201. Goggin also reports a site on the Loesch property, 8BD39, where Mr. W.C. Orchard recovered a flint projectile point in 1939. Goggin did not visit the site but gives the address as being 4th Street and 11th Avenue (Goggin ND), which would place it within the boundaries of 8BD87.

Many early settlers observed the imposing mound complex of 8BD3. The surveyor, A.L. Knowlton, depicted it on his 1895 plat map of Fort Lauderdale by showing two mounds and earthwork ridges that extended towards the river. A Dade County guidebook for the years 1896-1897 describes human skeletons found at a depth of four feet that were "buried in a circle after the manner of spokes in a wheel, one tier the feet to the center and the next the heads (Anonymous n.d.:76). Although the exact location of these burials is not indicated, it is likely that it was at or in the vicinity of 8BD3.

A partial survey of Broward County was conducted by the Florida Division of Archives, History, Records Management between June and September 1974 by this author, and a "windshield" survey of the county was conducted in 1979 by the Broward County Archaeological Society. In January 1980, a survey of the "Near Northwest" Redevelopment Area was conducted within a small tract along the north bank of the river. Disturbed components of a single prehistoric midden, 8DA196, were discovered there (Carr 1980). In the same year, a survey was also conducted of the South Fork of the New River, as well as an archaeological investigation of the Stranahan House (Carr 1989). The South Fork survey included the excavation of a 50 cm test hole at the Rivermont site, 8BD87, next to a house at 922 SW 4th street. The midden depth was determined to be 110 cm. A survey of Broward County archaeological sites, which included the New River and the barrier island, was conducted in 1991 (Carr 1991). In 2000, an archaeological assessment was conducted at 1016 Waverly Place, which resulted in locating at least one prehistoric grave (Carr and Beriault 2000). Another assessment near that one, at SW 2nd Court, north of the North Fork of the New

River was conducted by AHC in 2001 (Carr *et al.* 2001). An archaeological assessment of the Ft. Lauderdale Hotel parcel revealed a scattering of oyster shells that may have been prehistoric (Carr and Elgart-Berry 2001).

Site 8BD99 is located three miles northwest of the subject parcel and occurs on an oak island. That site yielded both prehistoric and Seminole artifacts.

PROJECT METHODOLOGY

In July, 2007 a draft State Historic Preservation Office Minimum Review Document was submitted to the SHPO. That assessment evaluated previously recorded cultural resources within two miles of the project parcel. A preliminary evaluation of those sites concluded that there sites would not be impacted by the Sunport Intermodal Centers and People Mover project, however, because of the proximity of BD210, the U.S. Customs House, to the People Mover Corridor an additional assessment of that structure should be conducted. This survey provides an assessment of BD210.

Prior to conducting the Customs House assessment and additional fieldwork relevant archives and literature were reviewed. This included, but was not limited to, studying the previous archaeological reports for sites in Broward County and the project parcel, reviewing information from the Master Site File in Tallahassee and the Broward County Historic Commission concerning nearby sites, and examining USGS maps of the project area. A review of the Labins database of land surveys also was conducted. In addition, color and black and white aerial photographs from the project area, which could aid in revealing anthropogenic changes to the topography and floral communities were interpreted.

The archaeological component of this survey incorporated the use of area predictive archaeological site models. These models postulate that oak hammocks adjacent to wetlands (i.e. rivers, creeks, transverse glades and marshes) are high probability areas for being associated with archaeological sites. The elevational information on the USGS Fort Lauderdale South Quadrangle map for the area and vintage aerial photographs were used to identify any higher probability areas within the project area.

The subject parcel was assessed by pedestrian and windshield survey. A field assessment of existing structures and higher probability archaeological areas was conducted within the project parcel by windshield survey.

Site 8BD210, is located adjacent to various People Mover alternatives and was assessed by an architectural historian and an updated Florida Mater Site File for 8BD210 completed (see Appendix 1). Site 8BD180 also was assessed and documentation on the site is presented in Appendix 2.

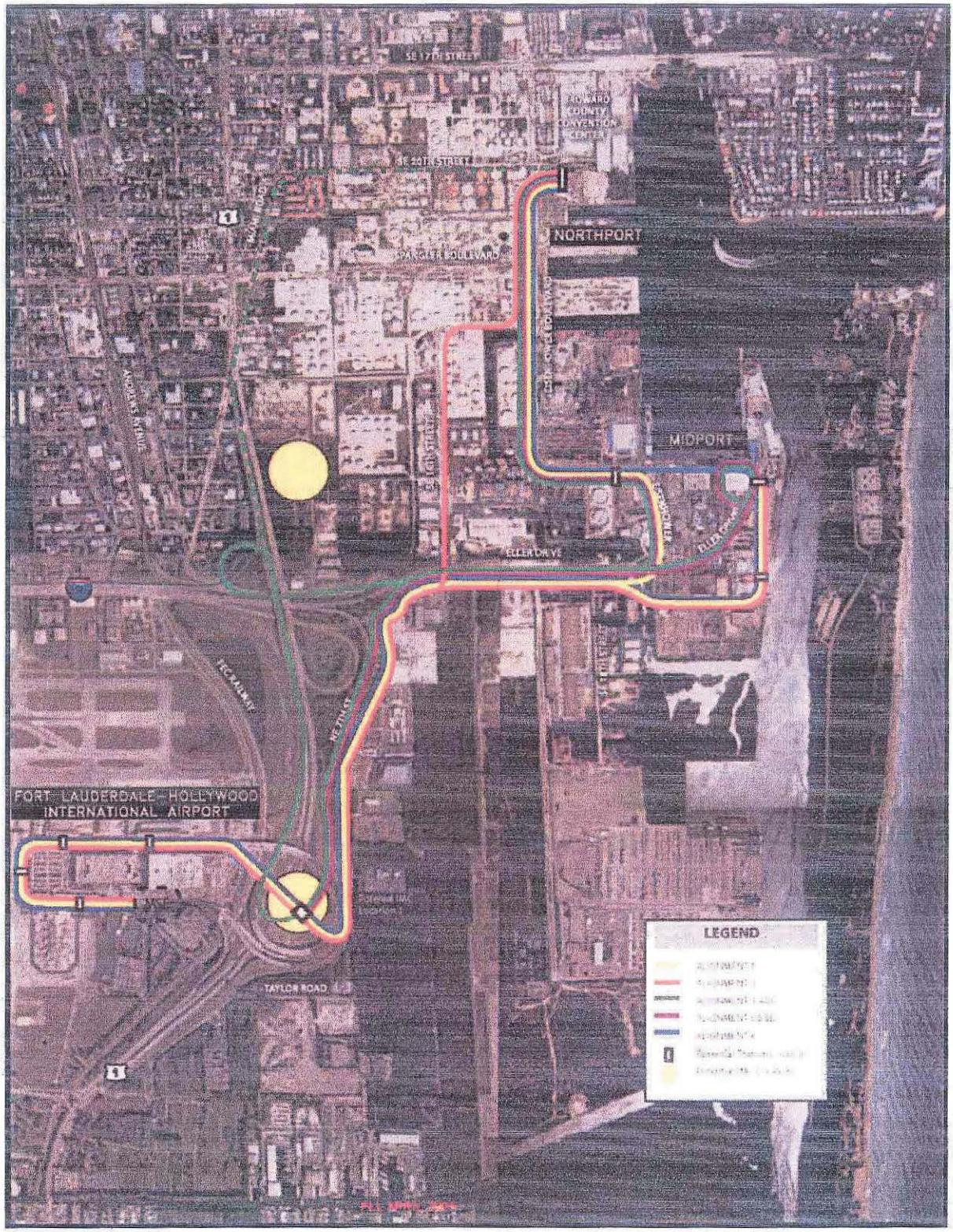


Figure 4. Aerial photograph with SunPort project alignment alternatives overlaid.

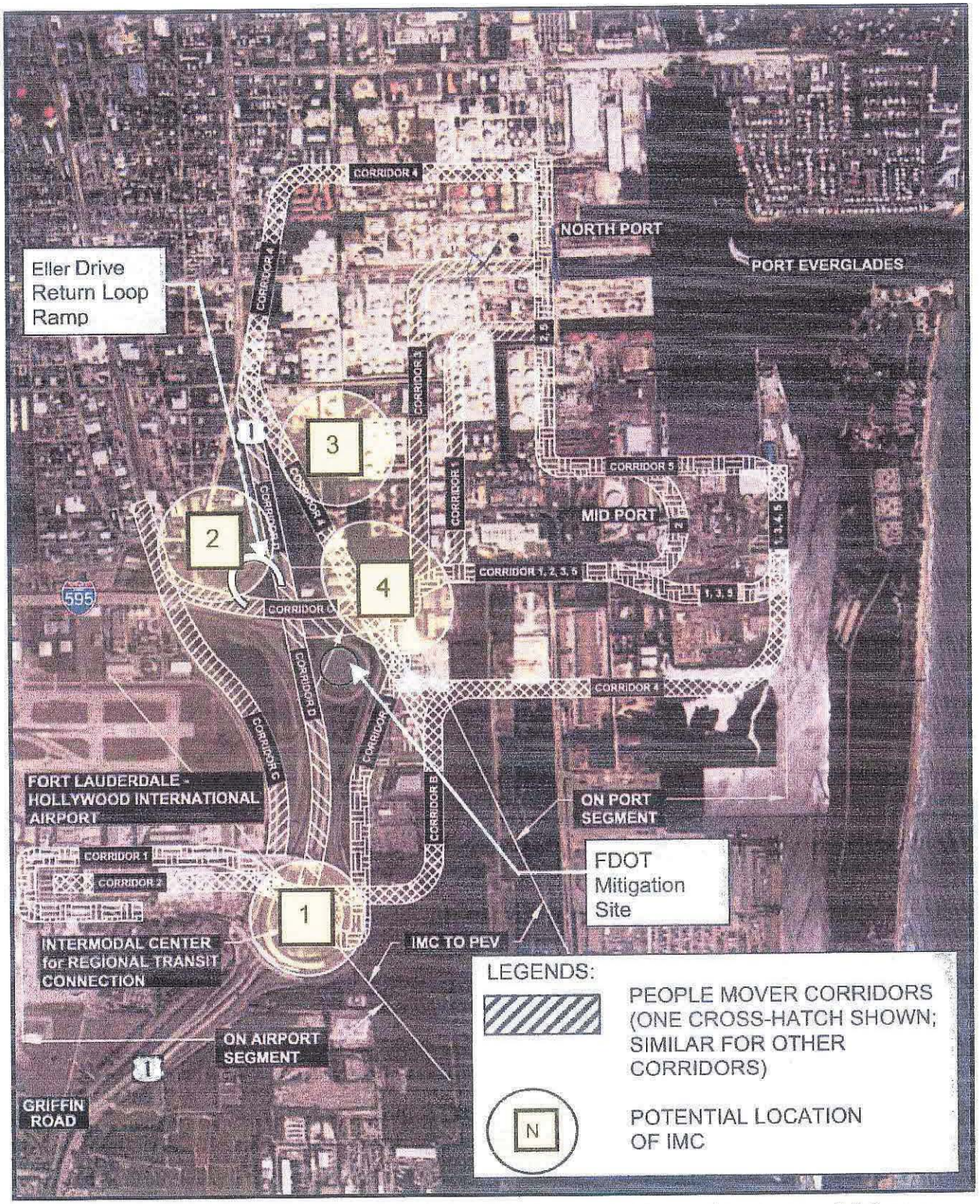


Figure 5. Aerial photograph with potential locations for the SunPort project Intermodal Center and People Mover corridors overlaid.

RESULTS AND CONCLUSIONS

This cultural resource assessment included a review of archival documents, maps, aerial photographs, and a field assessment by an archaeologist and an architectural historian. One structure, The Customs House, 8BD210, was assessed relative to it's significance and potential impacts from alternative alignments from several project people mover alignment alternatives. All proposed alignment share a similar route adjacent to this historic site. A detailed assessment of the structure is provided in the Appendix of this report.

Alternative transportation alignments and Intermodal Center locations are evaluated in the Tables below:

Table 1. Intermodal Center Location Alternatives Evaluation

Alternative II	Potential Cultural Resource (CE) Impacts	Known Sites	Probability
1	Low	None	LPZ
2**	High	None	MPZ
3	Low	None	LPZ
4**	Low	None	LPZ

LPZ= Low Probability Zone for archaeological sites
MPZ=Moderate Probability Zone for archaeological sites
**IMC=Location determined to be non-viable and dropped from consideration

Table 2. People Mover / Alignment Alternatives Evaluation

Alignment	Potential CR Impacts	Known Sites	Comments
1	Low	8BD210	No impact
2	Low	8BD210	No impact
4	Moderate	None	Historic structure, possible archaeological site
5 A, C	Low, Moderate, and High	8BD210	Moderate to High Probability on Miami Road
5 B, D	Low	8BD210	No impact
6	Low	8BD210	No impact

This assessment determined that two previously recorded historic sites occur within close proximity to the people mover alignments. The U.S. Customs House, BD210, is of National Register significance and designated as a historic site by the City of Hollywood. No adverse impacts to the building is anticipated by any of the People Mover alignments (see Appendix 1). Site BD180 is the Port Everglades fuel farm and shipping basin. This site encompasses part of the original footprint of the port facility built in 1927. This site is adjacent to several proposed People Mover alignments but will not be affected by this project.

identified along Miami Road and SE 6th Avenue (Figure 6). This zone is characterized as a high elevated ridge adjacent to historic wetlands. The zone has a moderate probability of encompassing prehistoric and historic archaeological sites, including a segment of the 19th century military road connecting Fort Lauderdale and Fort Dallas in Miami. Also, there is one unrecorded historic structure with a concrete and shell wall located at 2200 SE Miami Road. This zone would only be affected by Corridor 4, and if only a bus system is used, than no potential adverse impact would occur unless the road was improved and widened. If an alternative is selected where the road is improved, then a phase I cultural resource assessment will need to be conducted.

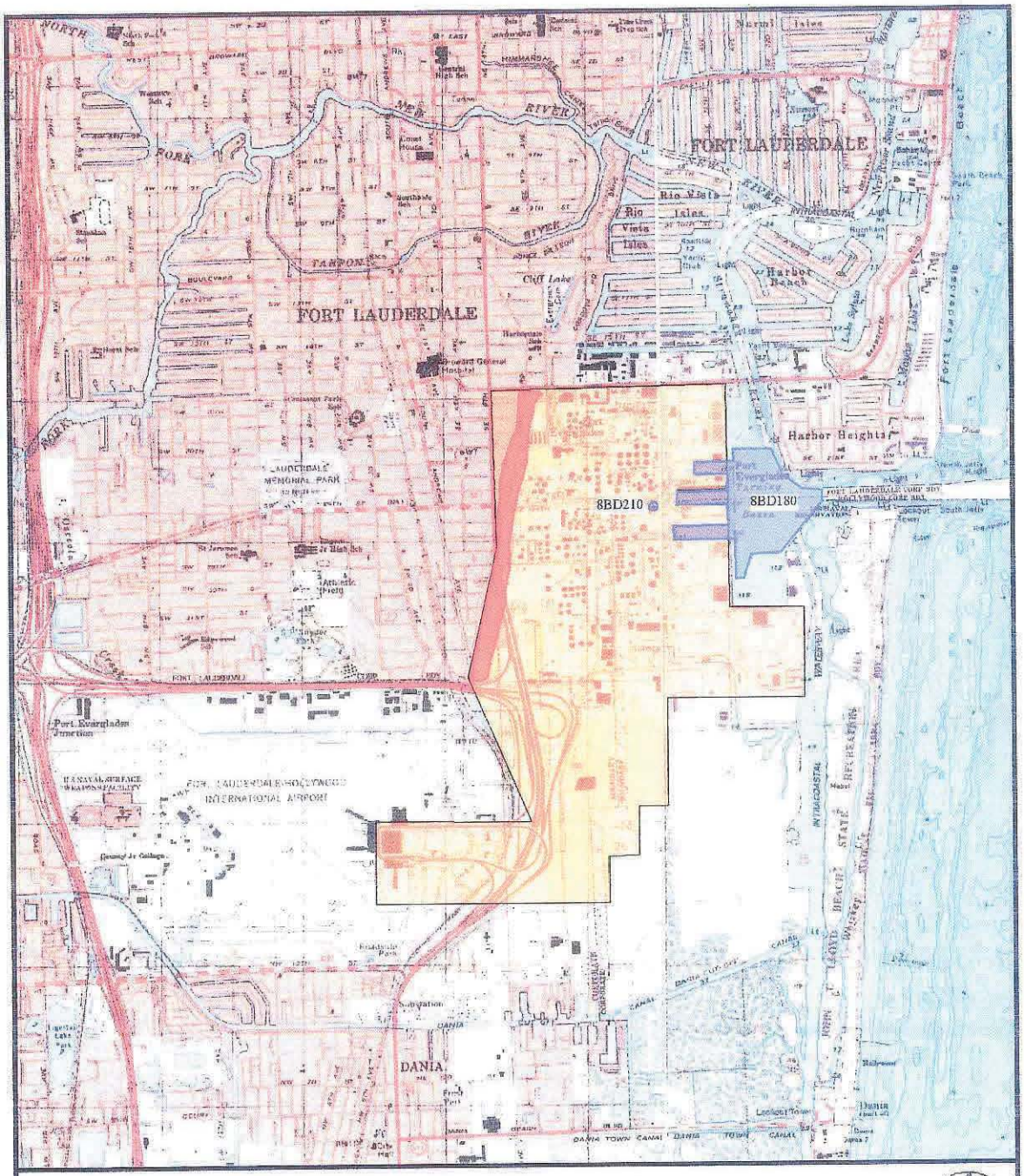


Figure 6. Map of the SunPort project and project parcel cultural resources

USGS Map: Fort Lauderdale South 1994 and Port Everglades 1986

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Notice of Availability sent to Florida State Historic Preservation Office

Fw: Fort Lauderdale International Airport landside Project - Section 106 Consultation

Jeffrey Covert <JCovert@esassoc.com>

Mon 8/5/2024 2:55 PM

To:CompliancePermits@DOS.MyFlorida.com <CompliancePermits@DOS.MyFlorida.com>
Cc:Castillo, William <wcastillo@broward.org>;Julie Sullivan <JSullivan@esassoc.com>;Karen Moran <KMoran@esassoc.com>;Peter Green (peter.m.green@faa.gov) <peter.m.green@faa.gov>

2 attachments (7 MB)

FLL Landside Projects - FAA Letter to SHPO 240315docx.pdf; SHPO Enclosure Package.pdf;

To whom it may concern:

On behalf of the Broward County Aviation Department (BCAD) and Federal Aviation Administration (FAA), we are providing notification that the Draft Environmental Assessment (EA) for proposed parking and intermodal access improvements at the Fort Lauderdale-Hollywood International Airport (FLL or the Airport) is being made available for public and agency review and comment pursuant to the requirements of the National Environmental Policy Act of 1969 (NEPA). On March 15, 2024, the FAA sent the attached consultation letter and information on the Proposed Project to the SHPO for review. To date, the FAA has not received a response from the SHPO. Accordingly, BCAD and the FAA are providing this notice to the SHPO that the Draft EA is available for review and comment.

The Draft EA and its appendices can be accessed at https://www.broward.org/Airport/Business/Community/MasterPlan/Pages/default.aspx. The public comment period started on July 22, 2024, and will close on September 4, 2024. After review of the Draft EA and consideration of comments from the public and federal, state, and local agencies, the FAA will make an environmental determination on the Proposed Project.

A Public Information Workshop for the Draft EA will be held on August 27, 2024, from 5:30 pm to 8:30 pm at the Anne Kolb Nature Center located at 751 Sheridan Street, Hollywood, Florida, 33019. The Public Information Workshop will consist of a series of informational display boards that provide an overview of the Proposed Project, alternatives evaluated, impact analyses, and proposed mitigation. BCAD and their consultants will be available during the Workshop to answer any questions.

BCAD and the FAA welcome any comments you may have regarding the Proposed Project. If there are any questions or comments, please contact the FAA at peter.m.green@faa.gov. All comments must be received by 5:00 p.m. Eastern on September 4, 2024.

Sincerely,

Jeffrey Covert *he/him*
Aviation Specialist III

ESA | Environmental Science Associates
404-353-8408 **cell**

From: Green, Peter M (FAA) <peter.m.green@faa.gov>
Sent: Monday, March 18, 2024 4:19 PM

To: Jeffrey Covert <JCovert@esassoc.com>
Subject: FW: Fort Lauderdale International Airport landside Project - Section 106 Consultation

Forwarding copy of email

From: Green, Peter M (FAA)
Sent: Friday, March 15, 2024 2:49 PM
To: CompliancePermits@DOS.MyFlorida.com
Cc: Castillo, William <wcastillo@broward.org>; Julie Sullivan (JSullivan@esassoc.com) <JSullivan@esassoc.com>; Winston Cannicle <WCANNICLE@broward.org>
Subject: Fort Lauderdale International Airport landside Project - Section 106 Consultation

Attached is the Federal Aviation Administration's consultation letter and a file containing information for a 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

Appendix G-5.2
Tribal Consultation

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

Orlando Airports District Office
8427 South Park Circle, Suite 524
Orlando, FL 32819
Phone: (407) 487-7220
Fax: (407) 487-7135

April 22, 2024

[Via email - Yahola.b@sno-nsn.gov]

Mr. Ben Yahola
Tribal Historic Preservation Officer
Historic Preservation Office
Seminole Nation of Oklahoma PO Box 1498
Wewoka, OK 74884

RE: Section 106 Consultation
Landside (Intermodal) Improvement Project
Fort Lauderdale-Hollywood International Airport (FLL)
Broward County, Florida
Proposed Effects Determination: No Historic Properties Affected

Dear Mr. Yahola,

The Broward County Department of Airports (BCAD) has proposed several projects to improve public access to the Fort Lauderdale-Hollywood International Airport (FLL). The proposed undertaking 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. BCAD plans to request federal funding from the Federal Aviation Administration (FAA) for the proposed projects. If approved, construction of the multi-year program 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 depicted in **Enclosure 2** and described in **Enclosure 3**.

The proposed project constitutes an undertaking subject to the *National Historic Preservation Act* (Section 106) and its implementing regulations at 36 CFR Part 800. This letter is intended to initiate consultation with your office. 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.

Area of Potential Effect

The construction and operation of the proposed facilities was reviewed to identify an appropriate APE for the evaluation of potential impacts on historic, archaeological, and cultural resources. Based on the review, the Direct Effects portion of the APE includes the areas where construction-related ground disturbance would occur and where additional stormwater runoff would be directed within an existing stormwater management treatment area. The Indirect Effects APE encompasses an area where effects such as light emissions, noise, and air emissions may occur. The direct and indirect APE is depicted on **Enclosure 4**.

The proposed construction areas within the Direct Effects APE have been previously disturbed during the development of the airport and U.S. Highway 1. The Direct Effects APE also includes an existing mangrove swamp area where treated stormwater runoff from the U.S. Highway 1 stormwater management system is released for attenuation (see Enclosure 3, Figure 3-3). The treated stormwater enters the mangrove swamp through several drainage culvert pipes located adjacent to U.S. Hwy 1. The water in the mangrove swamp connects to adjacent mangroves via seven culvert pipes located under an existing electric power distribution line maintenance road. The proposed project would upgrade eight existing culvert pipes in-place. This would involve minor and temporary effects on mangrove habitat during construction at each culvert location. The total area of mangrove swamp affected for the overall project would be approximately 9,800 square feet (0.22 acre).

The overall APE is approximately 603 acres in size and includes the proposed terminal access facilities at FLL; portions of U.S. Highway 1 between Interstate 595 and Griffin Road, arterial roadways, and mangrove swamp between Northeast 7th Avenue and the Fort Lauderdale Rail Yard.

Potential for Historic and Cultural Resources in the APE

The portion of the APE where construction would occur consists of extensively disturbed and modified land that presently supports automobile, bus, and commercial rail transportation infrastructure. Past development and construction in the Direct Effects APE during the last century have been intensive and almost all current soils have been re-deposited over native soils and include large amounts of fill material from off-site sources. The only area with mostly intact soils is the existing stormwater management area, where there is no planned ground disturbance, other than replacing several existing drainage culverts. This area is located in a dense mangrove swamp habitat with standing water that subject to tidal flow.

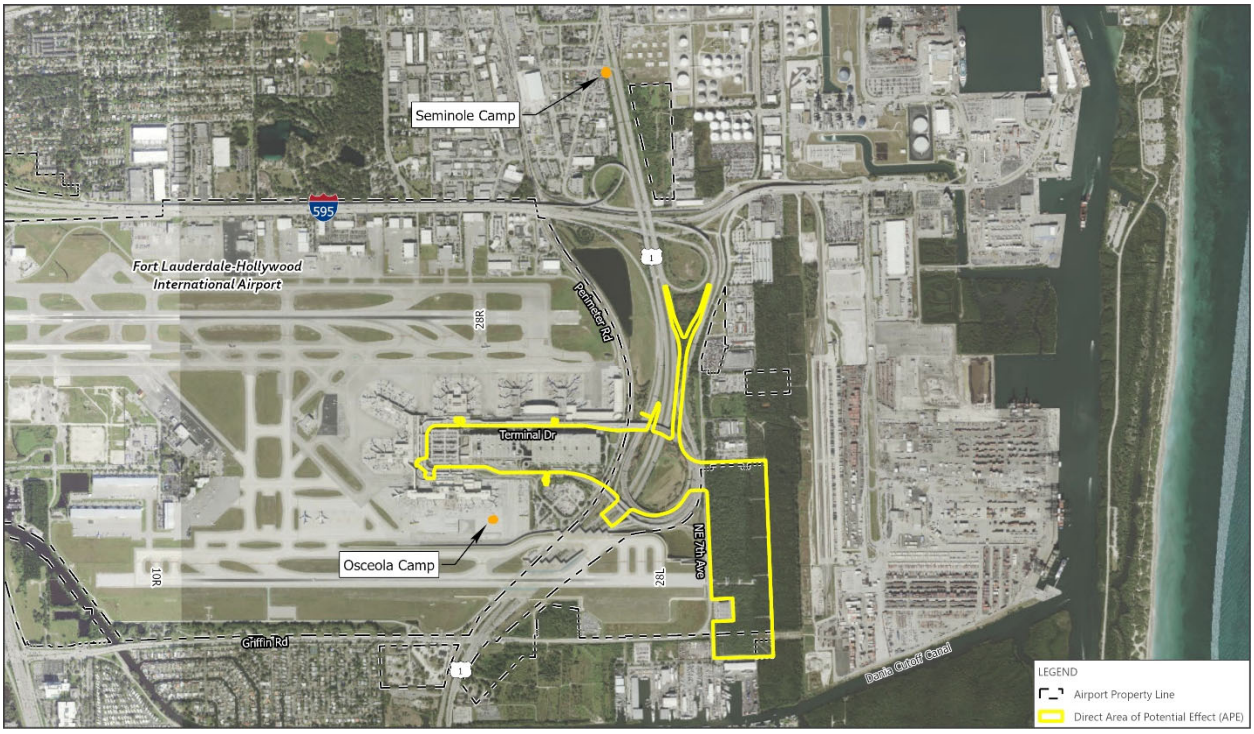
A search of the Florida Master Site File (FMSF) in February 2023 did not identify any recorded archaeological sites, historic resources, or cultural resources within the APE. The Direct APE does not contain any buildings or structures over 50 years old. A comparison of historical US Coast and Geodetic Survey (USCGS) and US Geological Survey (USGS) topographic maps (1883, 1884, 1935, 1949, 1962, 1973) and current aerial photographs of the area indicates that the only extant historic structure is the railroad spur from the Florida East Coast Railway mainline to Port Everglades. That railroad spur passes through the northern edge of the Indirect Effects APE and would not be adversely affected by the project. The nearest National Register-eligible resources are the Customs House (8BD210) and the Link Trainer Naval Air Station Ft. Lauderdale (BD02562), located more than a mile from the direct and indirect APE.

The USCGS Sheet T-01510 “East coast of Florida from Biscayne Bay northward, Broward and Dade Counties, FL” (1883) and Sheet T-01605b “Southern Part of New River and Head

of Key Biscayne Bay" (1884) maps depict almost the entirety of the Direct Effects APE located in coastal swamps. Two Seminole camps are shown in wooded area located outside of the swamp areas (and current Direct Effects APE). The approximate locations of the camps are shown on a current aerial image of the APE and surrounding project area (see **Figure 1** below). The depicted location of the "Osceola Camp" is on airport property, outside of the Direct Effects APE, in an area presently developed as a concrete aircraft circulation and parking apron. The depicted location of the "Seminole Camp" is approximately 0.62 mile north-northwest of the Direct Effects APE. The area is adjacent to US Highway A1A and is presently developed for roadways and commercial use.

Based on a review of the FMSF information, historical maps, and the activities on the site, the likelihood of encountering historic, archaeological, and cultural resources within the Direct Effects APE would be low. A copy of the FMSF search report is provided in **Enclosure 5**.

Figure 1
Seminole and Osceola Camps and Direct APE



Source: Environmental Science Associates, 2024.

The location of the proposed undertaking has a history of Section 106 consultation. In the Final Environmental Impact Statement (EIS) and Record of Decision (ROD) for the Development and Expansion of Runway 9R-27L and Other Associated Airport Projects[1] the FAA concluded that there would be no effect of the Preferred Alternative on any properties either listed, or eligible to be listed, on the National Register of Historic Places. The Florida Historic Preservation Officer concurred with that determination. In 2019, resources were evaluated for

[1] *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

the proposed Jetscape Westside Development project[2]. The Environmental Assessment (EA) identified existing and former historic structures on the far west side of airport and considered archaeological and cultural resources. FAA Section 106 consultation with the Seminole Nation of Oklahoma in 2019 cited the potential for buried cultural resources and the project's probability for affecting cultural resources. As requested, intensive research and review of Phase 1 survey reports and related information was conducted. The research did not indicate a high probability for that project; however, the potential for encountering unexpected discoveries was recognized. The EA was approved under the condition that construction activities would cease if historic, cultural, and/or archaeological artifacts were encountered.

In support of the 2009 Project Development & Environmental (PD&E) Study for the Broward County Intermodal Center and People Mover System, a Cultural Resource Assessment Survey (CRAS) was conducted by the Archaeological and Historical Conservancy, Inc. and coordinated with the SHPO. In July 2007, a draft State Historic Preservation Office Minimum Review Document was submitted to the SHPO for the proposed project. That assessment evaluated previously recorded cultural resources within two miles of the project for direct and indirect (65 DNL contour) effects. This evaluation concluded that identified sites would not be impacted by the proposed project; however, because of proximity of site BD210 (U.S. Customs House) to the Sunport corridor, an additional assessment of that structure was undertaken (2007 CRAS[3]). Although site BD210 is not located within the direct or indirect study area of the current proposed undertaking, the study area for that project did encompass the study areas for the current proposed undertaking (**Enclosure 6**). The 2007 CRAS recommended project alternative (Alignment 6 and IMC location 1[4]) would have no impact on National Registered Properties. Further, the study concluded that:

> "*In accordance with the procedures contained in 36 CFR, Part 800, A Cultural Resource Assessment, including background research and a field survey coordinated with the State Historic Preservation Officer (SHPO), was performed for the project. As a result of the assessment, one site listed with the Florida Master File Sites number BD210, was identified, which has been determined eligible for listing on the National Register of Historic Places. Through the application of Criteria of Adverse Effect, The Federal Highway Administration in consultation with the SHPO determined that the recommended project alternative 6 and IMC location 1, did not constitute an adverse effect on the BD210, U.S. Customs House. Based on the fact that no additional archaeological or historical sites or properties are expected to be encountered during subsequent project development, the Federal Highway Administration has determined that no other National Register properties would be impacted*."

The study area for the 2009 PD&E encompassed almost the entirety of the direct and indirect impact areas for the current FLL Landside Improvement Project. Portions of the stormwater attenuation area are outside that study's APE, but there are no structures in that area and the additional runoff culvert replacements would not affect any unknown archaeological sites that could be present. Considering that there is no potential for the runoff to impact archaeological

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[2] *Environmental Assessment for the Relocation, Construction and Operation of the Jetscape Fixed Base Operator (FBO)*. April 2019

[3] *A Phase I Cultural Resource Survey of the Sunport Parcel, Broward County*, *Florida*. November 2007

[4] Note: IMC location 1 (preferred alternative in the 2009 PD&E) is the same as the current proposed IMC location

sites and that the location of the IMC has not changed since the publication of that study, there is a low probability of cultural resource impacts at the location of the proposed undertaking.

Secretary of the Interior Qualified archaeologists Evan Tudor Elliott, MA, RPA, and James J. Clark, MA, RPA, reviewed the cultural resources data and the project activities and recommended that the project would not likely encounter or adversely affect any historic properties. Due to the low probability of encountering Cultural Resources at FLL based on a FMSF Review, historical map review, results of past CRAS, previous determination from and coordination with the SHPO, and because the majority of the APE is located on built-up fill dirt, it their determination that the proposed undertaking is unlikely to affect historic properties or resources.

FAA Determination of Effect

Taking into account past research conducted in the project area and a review of the proposed project described in this letter, it is the FAA's opinion there are no historic, architectural, or cultural resources or historic properties listed, or eligible for listing, on the National Register of Historic Places within the APE and the Proposed Undertaking is unlikely to encounter post review discoveries or to have an effect on unknown resources. Therefore, the FAA finds "no historic properties affected" for the Proposed Undertaking under 36 CFR Part 800.4(d)(1).

If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials; or any other physical remains that could be associated with Native American, early European, or early American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The Florida Department of State, Division of Historical Resources, Compliance Review Section, the Seminole Nation of Oklahoma, and other interested Native American Indian Tribes will be notified. Project activities shall not resume without verbal and/or written authorization from the interested parties. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately, and the proper authorities notified in accordance with Section 872.05, Florida Statutes.

FAA requests your consideration the enclosed project information and please respond within 30 days of receipt of this letter indicating whether or not you agree with FAA's determination. Please direct comments and information to me at (407) 487-7296 or via email at peter.m.green@faa.gov.

Sincerely,

Peter Matthias Green Digitally signed by Peter Matthias Green
Date: 2024.04.22 16:09:56 -04'00'

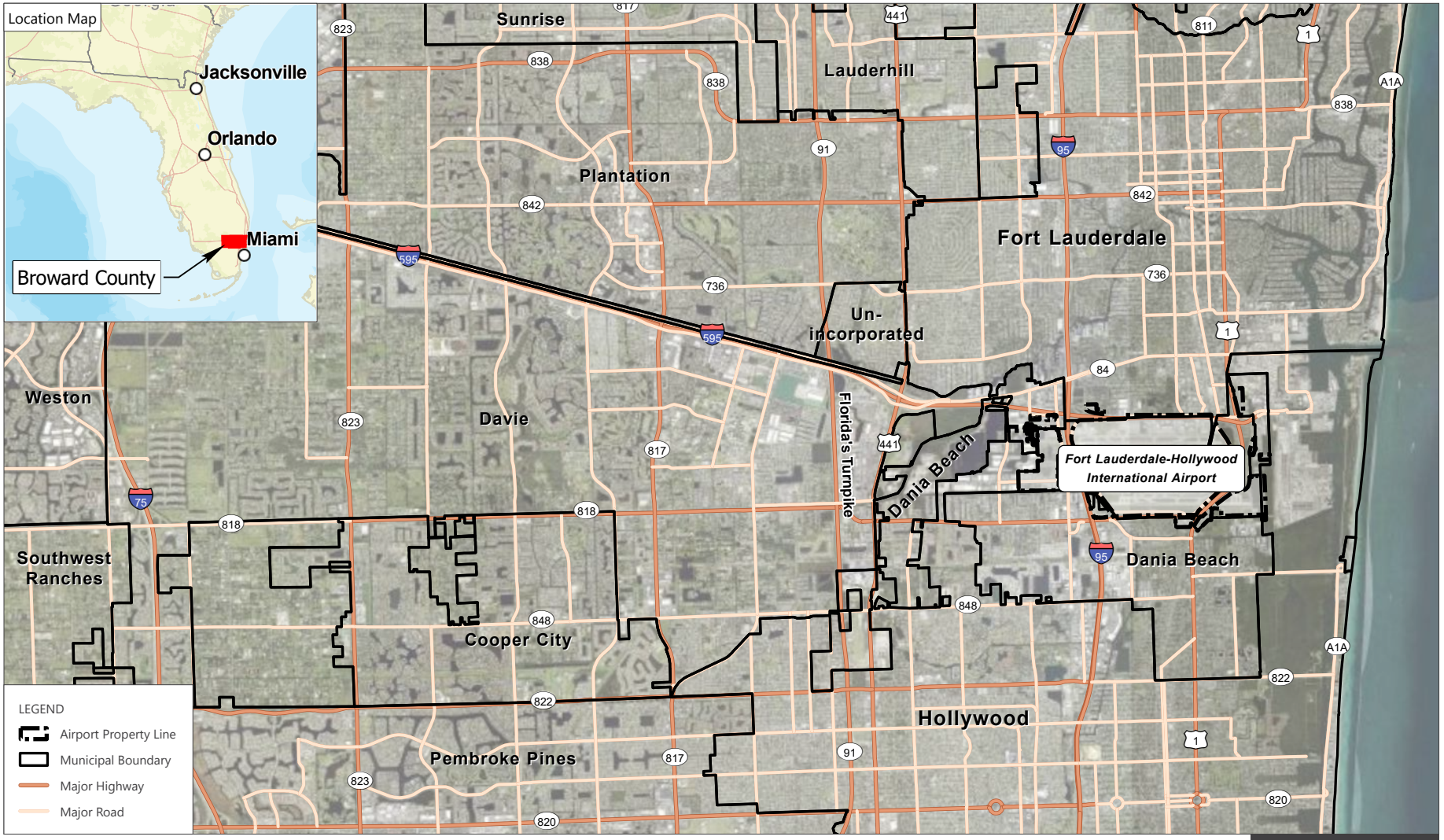
Peter M Green, AICP
Environmental Protection Specialist
Orlando Airport s District Office

Copy: William Castillo, Aviation Planning Manager, BCAD
Winston Cannicle, Environmental Manager, BCAD

Enclosures:
1. Project Location
2. Description of Proposed Project
3. Proposed Project
4. APE
5. FMSF Records
6 2007 CRAS from 2009 PD&E

Enclosure 1

Project Location



SOURCES: State of Florida, 2020; County of Broward, 2015.

EXHIBIT 1-1

NORTH 0 10,000 ft.

U:\GIS\GIS\Projects\2021xxx\D202100449_BCAD_Env_Planning_Acoustical_Consulting\03_Project\Ex_##_Landside EA Project Elements_v2.aprx

Location Map
Fort Lauderdale-Hollywood International Airport

Enclosure 2

Description of Proposed Project

1.1 Description of the Proposed Project

The Broward County Aviation Department (BCAD) proposes to construct an Intermodal Center (IMC), an Automated People Mover (APM) Circulator, redevelop an Airport parking garage and expand a second parking garage that accommodates public parking and the Rental Car Center, reconfigure the passenger terminal complex roadways and curbside, and implement other associated landside improvements at Fort Lauderdale-Hollywood International Airport (FLL or the Airport). The proposed project is shown on **Enclosure 3**, and the main project components are discussed below.

1.1.1 INTERMODAL CENTER

The IMC would be a transportation hub that improves integration between the regional transportation network and FLL. The IMC would be located within the US Highway 1 (US-1) right-of-way (ROW). The US-1 ROW is located outside FLL property at the east end of the FLL terminal complex on a 22-acre parcel within the greenspace bounded by the interchange between US-1 and the terminal entrance/exit roadways. The eight-level, 4.6-million-square-foot facility would accommodate airport parking, a Ground Transportation Center (GTC) for commercial vehicle pickups and drop-offs (drop-and-ride passengers), a multimodal transfer lobby with concessions and seating that connects to the proposed APM, and leasable office space.

The first level of the IMC would be constructed within the interchange footprint, on land leased from the Florida Department of Transportation (FDOT).[1] Levels 2 through 8 would extend over US-1, supported by columns and footings on the west side of the highway, to achieve the desired structural square footage while remaining under airspace protected for aircraft using FLL's runways. In addition to the proposed APM connection between the IMC and the FLL terminals, the IMC would connect to the regional roadway network at several access points and would provide the ability to connect to other regional transportation modes developed by other entities.

The IMC parking spaces would initially accommodate public parkers displaced during the Palm Garage Redevelopment project (a component of the proposed project), resulting in a temporary mid-project-implementation peak in parking supply. Following the reopening of the Palm Garage, BCAD intends to accommodate employee parking at the IMC. Employee parking is currently provided in a remote lot west of Airport property. **Table 1** demonstrates the transition of parking spaces before, during, and after construction of the proposed project, as project components come online.

[1] BCAD is pursuing a 99-year land lease from FDOT.

Table 1 Public and Employee Parking Capacity

FACILITY	NUMBER OF VEHICLE PARKING SPACES, BY YEAR 2022	2029[1]	2033[2]
Public Parking	**11,221**	**17,011**	**12,231**
Palm Garage	2,490	1,490	3,500
Hibiscus Garage	4,534	4,534	4,534
Cypress Garage	4,197	4,197	4,197
IMC[3]	0	6,790	0
Employee Parking	**4,010**	**4,010**	**6,790**
West Employee Lot	4,010	4,010	0
IMC[3]	0	0	6,790
Total Parking	**15,231**	**21,021**	**19,021**

NOTES:

IMC – Intermodal Center

1 As shown in Table 1-5, construction of the IMC is planned to be completed in 2028. The year 2029 represents the first full year of operation with reduced capacity in the Palm Garage and temporary accommodation of displaced public parking at the IMC.

2 As shown in Table 1-5, reconstruction of the Palm Garage is planned to be completed in 2032. The year 2033 represents the first full year of operation of the fully reconstructed Palm Garage (spaces temporarily displaced to the IMC return to the Palm Garage). Employee parking then shifts to the IMC.

3 Also includes parking for other IMC users in addition to public parking (2029) and employee parking (2033).

SOURCE: Broward County Aviation Department, *Advanced Planning for Palm Garage Demolition and Replacement, and Supplemental Curb Technical Report, Fort Lauderdale-Hollywood International Airport*, April 2023; Broward County Aviation Department, *Intermodal Center Advanced Planning Technical Report*, November 2022.

Connectivity between the regional roadway network and level 1 of the IMC would be provided for commercial vehicles from northbound and southbound US-1 via a T-intersection and ramp, respectively, and a tunnel providing access to/from Northeast 7th Avenue. Public and employee private vehicles parking at the IMC, as well as drop-and-ride passengers[2] and Transportation Network Company (TNC) pickups[3] would access the IMC at level 2 via new ramps from existing Airport roadways providing connections from northbound and southbound US-1. These vehicles would exit the IMC at level 3 via new ramps to northbound and southbound US-1 and a new ramp to I-595. The new ramps to northbound US-1 and I-595 would include an approximately 1,800-linear-foot overpass to clear the existing Airport roadway network.

Construction of the IMC would also include utility and stormwater improvements to serve development at the site. All stormwater runoff from the new IMC facility would be collected and treated on site prior to discharge. The US-1 ROW currently accommodates an existing dry detention basin that would be displaced with IMC development. The basin is part of an interconnected system of basins along US-1 that drain to the undeveloped land east of Northeast 7th Avenue. The displaced stormwater detention volume at the US-1 ROW would be accommodated through a combination of increases

2 Drop-and-ride passengers are those that are dropped of at or picked up from the IMC by a private vehicle.

3 TNC operators would pickup passengers arriving at FLL at the IMC; passengers would transfer from the terminals to the IMC via the APM. TNC drop-offs would occur at the terminal curbs.

to volumes of other detention basins, as feasible, within this interconnected drainage system; upsizing existing culverts that drain to the land west of Northeast 7th Avenue, and implementing avoidance and minimization measures to improve treatment of water discharged to the land west of Northeast 7th Avenue given the reduced detention capacity.

1.1.2 AUTOMATED PEOPLE MOVER

The APM would be a landside airport circulator comprising an elevated dual-track guideway and train system connecting the FLL terminals, Airport parking garages, Rental Car Center, and the proposed IMC. The APM project would include the following elements:

- 16,000 feet of elevated dual-track guideway;
- five elevated on-Airport stations and a sixth station constructed adjacent to the IMC;
- pedestrian bridges and vertical circulation systems to connect the stations to terminal and parking facilities;
- a 52,000-square-foot Maintenance and Storage Facility (M&SF); and
- supporting utility infrastructure improvements, including two power distribution substations.

The 16,000-foot dual-track guideway would be elevated above the upper level of Terminal Drive, running between the terminals and the parking garages, on Airport property. It would cross over the Florida East Coast (FEC) Railway tracks, but no support columns would be placed in FEC right-of-way; BCAD would obtain an aerial rights agreement with FEC for the guideway overpass. The portion of the guideway connecting to the IMC would extend into land BCAD plans to lease from FDOT for the IMC.

The APM would be constructed in two phases. The first phase would include a guideway operating in a pinched loop configuration[4] serving stations between Terminal 2 and Terminal 4, via Terminal 1, the IMC, and future Terminal. A sixth station at Terminal 3 and full guideway loop at the west end would be constructed in the second phase with redevelopment of Palm Garage. By the second phase, the APM would operate as a bi-directional closed loop,[5] with the guideway crossovers providing operational redundancy.

The elevated dual-track guideway separation would range from 16 feet wide between stations to 52 feet wide at stations where the guideways are separated by the station platform and would be supported by columns along the guideway's entire length. Program definition (to be verified in design) included a column plan defined to meet structural design requirements of Florida Building Code (2020 Edition), wind and gravity load requirements defined by the American Society of Civil Engineers (ASCE/SEI 7-16), and the BCAD Airport Design Guidelines Manual. An initial column layout was adjusted to avoid conflicts with existing structures, pressurized fuel pipelines, utilities, existing roadways, and planned future roadways. Based on program definition and preliminary structural engineering, APM foundations are planned to be standard driven piles below each pier column 12 inches wider than the column for reinforcement clearance and

[4] A pinched loop APM system operates back and forth between two distinct end points, requiring crossovers between the parallel guideways for train repositioning based on operating direction of each guideway.

[5] A closed loop APM operates as a continuous circuit in one direction. The proposed project would include two parallel guideways, allowing each guideway to operate independently as a closed loop in opposite directions. Bi-directional closed loop refers to the set of closed loop guideways.

tolerance. Columns would be between 5 and 8 feet wide. A geotechnical evaluation of the soil condition is required through the APM complete loop for final foundation design.

The six APM stations would each include an elevated platform (at the guideway level) sized to accommodate the boarding and deboarding of passengers to and from a two-car train as well as vertical circulation between the platform and a mezzanine level directly below the platform level. At the mezzanine level, elevated pedestrian bridges would link the stations with adjacent terminals and parking garages. A station equipment room would also be accommodated at the mezzanine level. At the terminal and parking garage ends of the elevated pedestrian bridges, vertical circulation cores would be added to connect the bridges with the various levels of the terminal and parking garage facilities.

The APM project also includes construction of a two-level M&SF of approximately 52,000 square feet, to be constructed south of the Hibiscus Garage. The lower level of M&SF would accommodate APM vehicle storage and maintenance space, and the second level would accommodate APM operational control space, including administrative offices, locker rooms, and restrooms. M&SF staff would park at the IMC or the Hibiscus Garage.

The first phase of the APM would require one Traction Power Substation (TPSS) of approximately 3,000 square feet, and a second TPSS would be required to support the extended guideway length in Phase 2. The TPSS buildings would be standalone facilities generally located within the northwest and southeast corners of the APM guideway loop. In addition to the TPSS stations, additional utility improvements would be implemented to support the APM.

1.1.3 PALM GARAGE REDEVELOPMENT WITH AIRPORT HOTEL AND COMMERCIAL CENTER

The existing four-level Palm Garage accommodates 2,490 public parking spaces and has a footprint of approximately 250,000 square feet. The proposed project includes demolition of the existing, aging parking structure in phases and redevelopment of the garage on a smaller footprint at the same site with seven to nine levels that include additional parking and areas for commercial development. The proposed project also includes utility improvements to support redevelopment and commercials areas.

In the first phase of construction, BCAD plans to demolish the southern one-third of the Palm Garage to enable construction of the first phase of the APM. The extent of building demolition in the first phase was defined to match an original expansion joint to minimize the structural effects of demolition.

The second phase of Palm Garage redevelopment includes demolition of the remaining two-thirds of the structure and site redevelopment. Palm Garage would be redeveloped on its existing site, within a smaller building footprint of approximately 135,000 square feet. The seven- to nine-level structure would be a multimodal facility that includes public parking and a commercial GTC. The garage would provide approximately 3,400 to 3,700 parking spaces on level 2 and above. Level 1 would accommodate a GTC for commercial vehicle pickup and drop-off operations. The GTC would provide approximately 1,700 linear feet of curbfront and 110 vehicle staging positions for commercial ground transportation operations. Pedestrian connectivity to the terminals would be provided at Level 3, which would include a large pedestrian circulation area. The intent for the dedicated third-level connection with terminals would be to eliminate/reduce at-grade pedestrian crossings between the Palm Garage and terminals. The east side of each level of Palm Garage would be integrated with the adjacent levels of the Hibiscus Garage.

The reduced Palm Garage footprint allows for the construction of a 90,000-square-foot commercial center that could include an Airport hotel and other commercial space along the west side of the redeveloped Palm Garage.

1.1.4 SUPPLEMENTAL ROADWAYS AND CURBSIDES

Two at-grade supplemental curb areas would be provided at the lower levels of Terminals 1 and 2; they are proposed to address terminal curbfront capacity deficiencies. A new bypass roadway, splitting from the lower-level terminal roadway before Terminal 1 and merging back after Terminal 4, would provide the ability to avoid traffic congestion in front of the terminals and improve roadway level of service. The parking garages would be accessed from the bypass roadway.

1.1.5 CYPRESS GARAGE EXPANSION

The existing Cypress Garage is a nine-level facility that includes FLL's Rental Car Center on levels 1 through 5 and provides public parking spaces on levels 6 through 9. The proposed project includes the construction of a Cypress Garage Expansion along the structure's east face. The nine-level expansion to the garage would increase the garage footprint by approximately 90,000 square feet and supply approximately 2,150 additional parking spaces to accommodate rental car ready/return staging[6] operations at the Rental Car Center and public parking. Each level of the expansion would be built to the same elevation as the corresponding level in the existing Cypress Garage to maintain internal vehicle circulation connectivity.

1.2 Timeframe of the Proposed Project

As shown in **Table 2**, construction of the Proposed Project is planned to begin in 2026, and all project components would be operational by 2033.

[6] Rental car ready/return areas provide staging for rental cars ready for rental from, or recently returned to, a rental car company.

Table 2 Proposed Project Implementation Schedule

Project Component	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Intermodal Center (IMC)	Design	Demolition/Construction	Demolition/Construction	Demolition/Construction						
Automated People Mover (APM)										
Phase 1 (Pinched Loop)	Design	Demolition/Construction	Demolition/Construction	Demolition/Construction	Demolition/Construction					
Phase 2 (Closed Loop)	Design					Demolition/Construction				
Palm Garage Site Redevelopment										
Phase 1 Demolition, Southern Third	Design			Demolition/Construction						
Phase 2 Demolition, Remainder of Structure	Design				Demolition/Construction					
New Palm Garage Redevelopment					Design	Demolition/Construction	Demolition/Construction	Demolition/Construction		
Commercial Center and Airport Hotel					Design	Demolition/Construction	Demolition/Construction	Demolition/Construction		
Supplemental Roadways and Curbsides	Design				Demolition/Construction					
Cypress Garage Expansion				Design	Design	Demolition/Construction	Demolition/Construction	Demolition/Construction		

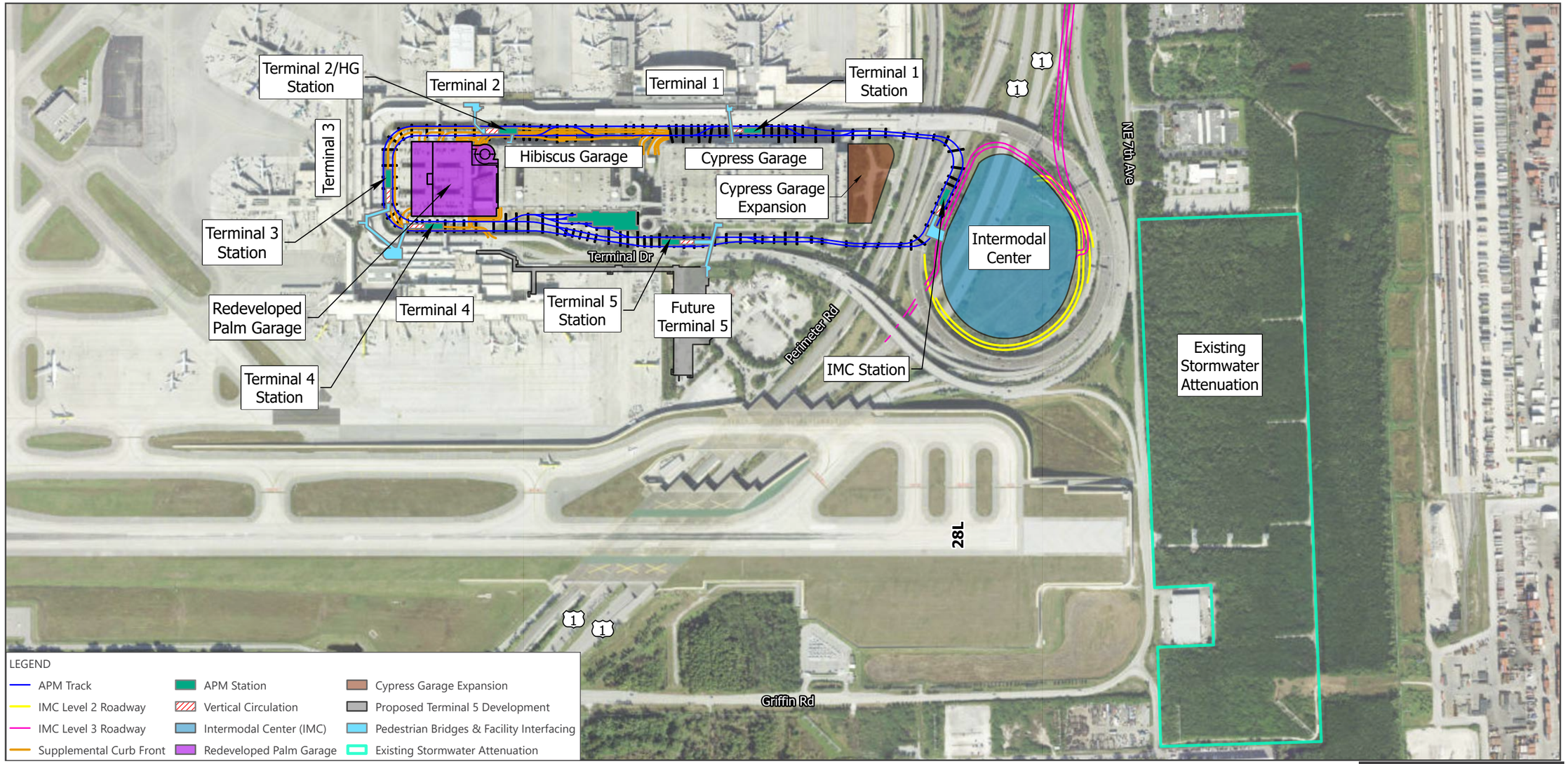
NOTES: Design Demolition/Construction

1 It is anticipated that the following design components of the Proposed Project would be procured and awarded together based on project dependencies and overlap: Automated People Mover (Phase 1 and 2), Palm Garage Demolition (Phase 1 and 2), and Supplemental Roadways and Curbsides.

SOURCE: Broward County Aviation Department, 2022.

Enclosure 3

Proposed Project



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

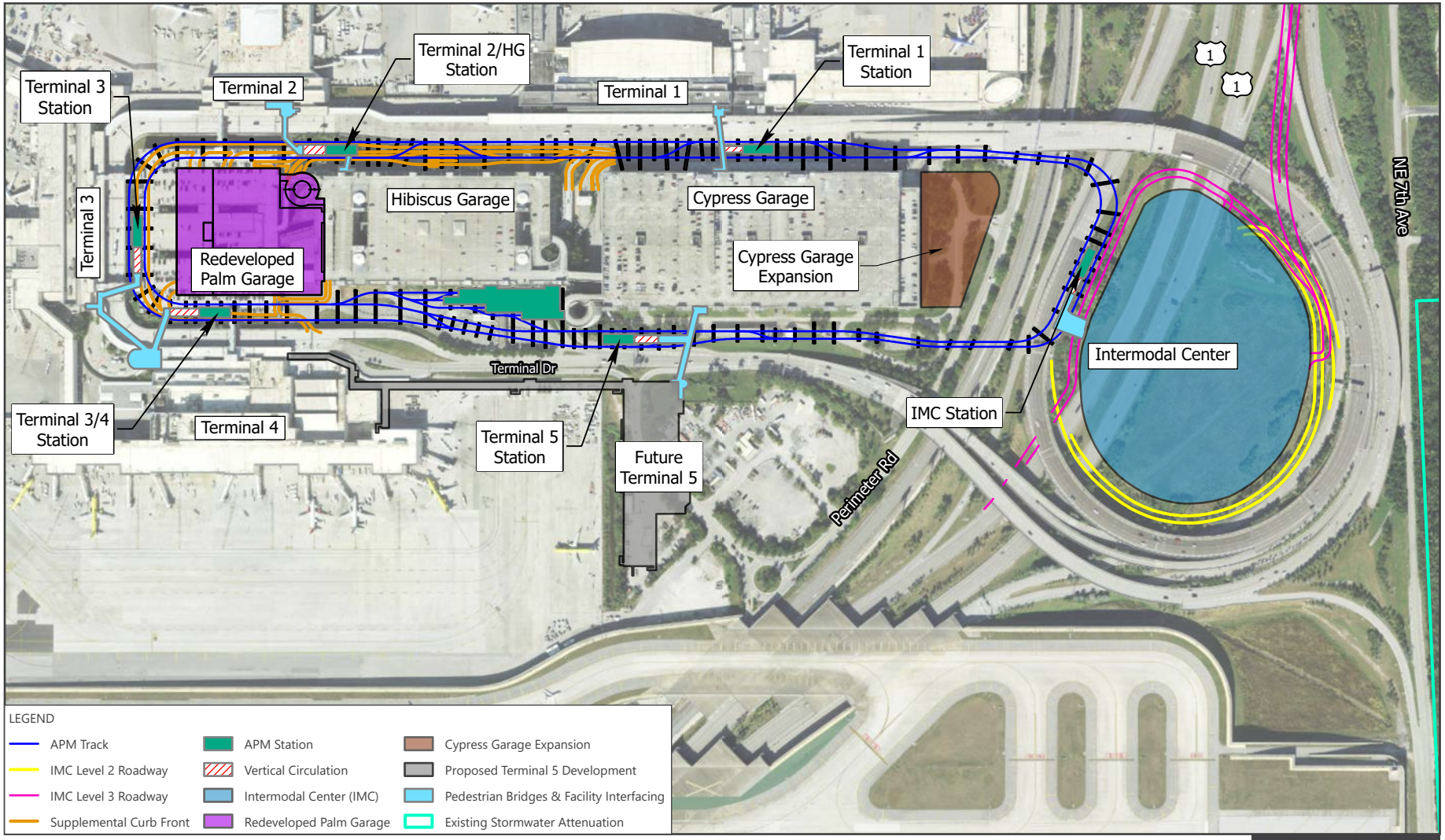
EXHIBIT 3-1

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Project Elements
Fort Lauderdale-Hollywood International Airport



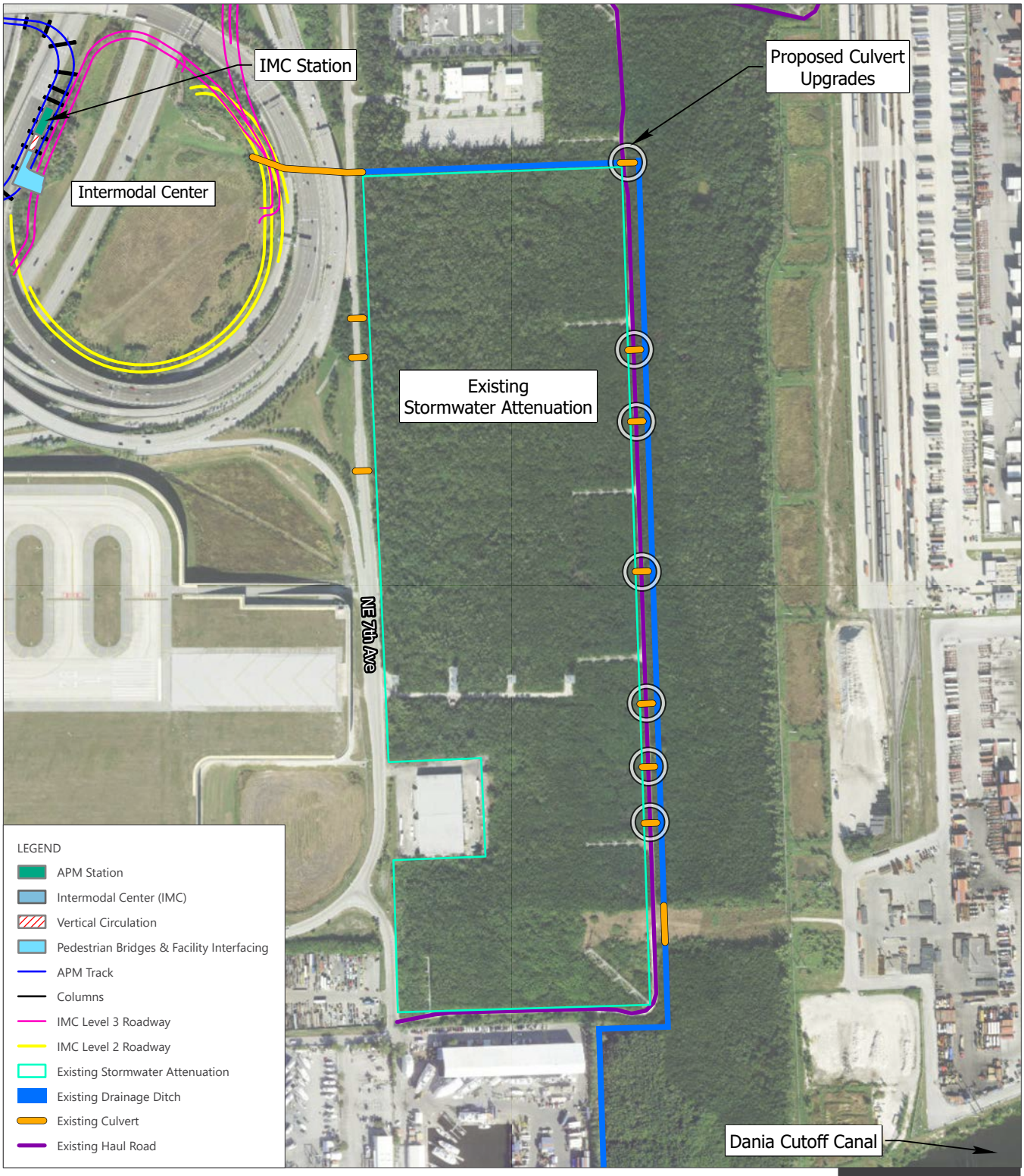
SOURCES: Ricondo & Associates, 2023; Adapted by ESA, 2024.

EXHIBIT 3-2

NORTH 0 500 ft.

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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

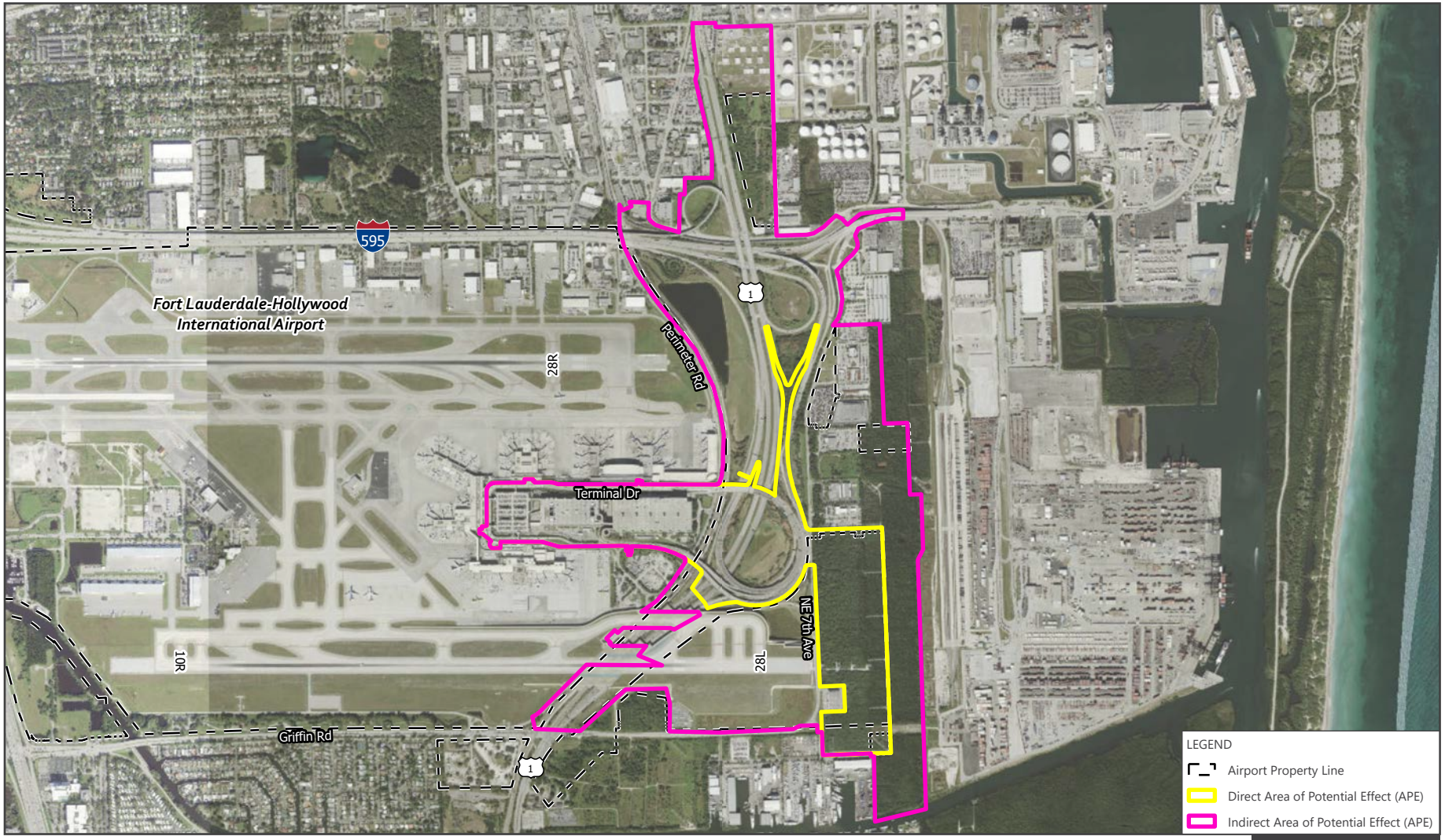
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IMC and Stormwater Improvements
Fort Lauderdale-Hollywood International Airport

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Enclosure 4

Area of Potential Effect



SOURCES: ESA, 2024.

EXHIBIT 4-1

NORTH 0 2,000 ft.

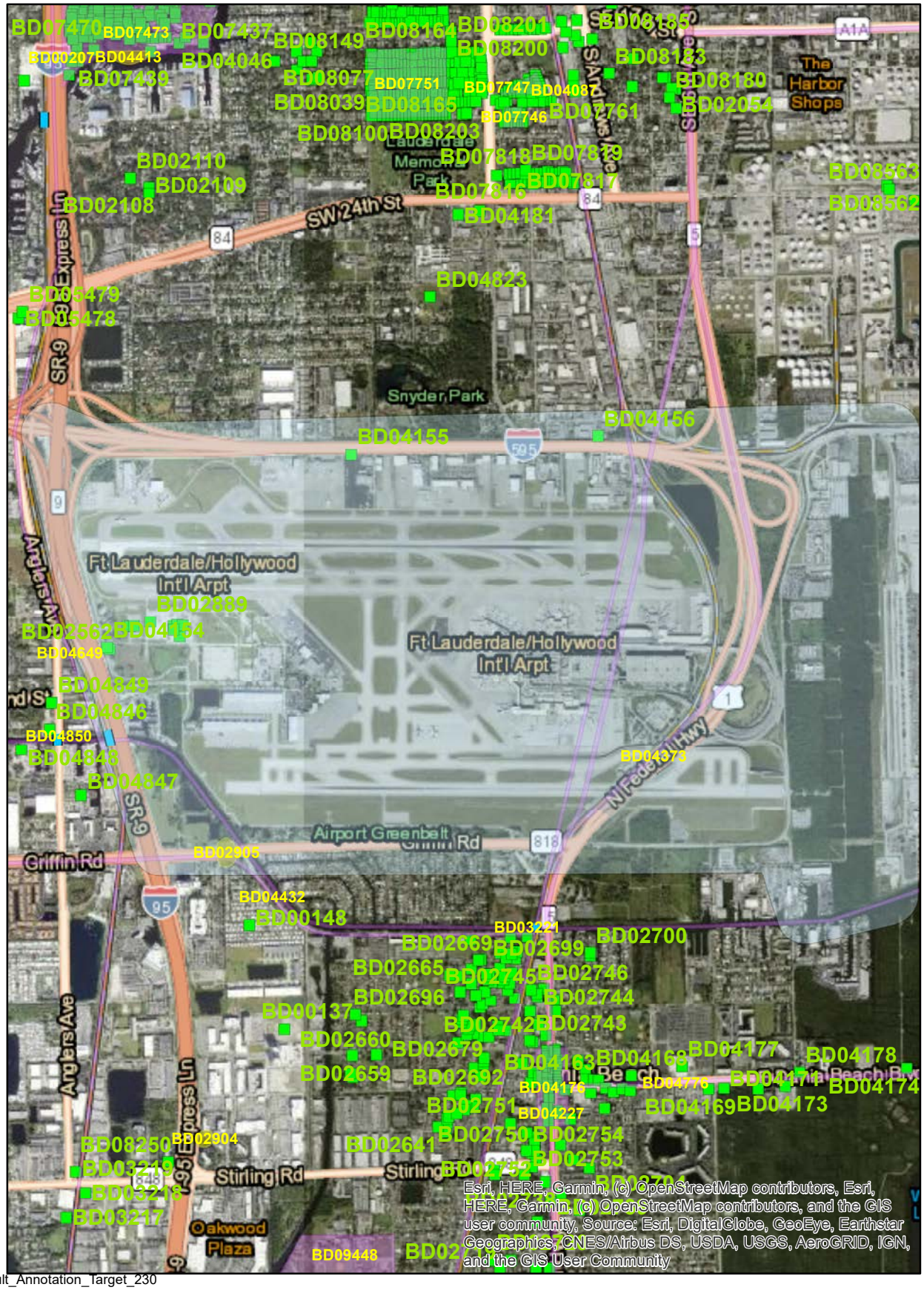
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Areas of Potential Effect
Fort Lauderdale-Hollywood International Airport

Enclosure 5

Florida Master Site File Records

Date: 2/19/2024



Legend

- Buffer_of_Default_Annotation_Target_230
- FloridaSites
- HistoricalBridges
- HistoricalCemeteries
- ResourceGroups
- FloridaStructures

870 435 0 870 Meters

N

AR=1
SS=14
CM=0
RG=5
BR=0
Total=20

Cultural Resource Roster

SiteID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
BD02561	SS	JUNIOR BACHELOR OFFICERS QUARTERS NAS	1615 S W 39TH ST, FT LAUDERDALE	-RESOURCE DESTROYED- 1942 Other		
BD02562	SS	LINK TRAINER NAS FT LAUDERDALE	4000 W perimeter RD, Ft. Lauderdale	1942 Frame Vernacular	Eligible	NR Listed - May 20, 1998
BD02889	SS	PAINT BUILDING NAS BUILDING 1	NAVAL AIR STATION, FT. LAUDERDALE	-RESOURCE DESTROYED- 1942 No style	Not Eligible	
BD02890	SS	ANTENNA COMMUNICATIONS NAS BUILDING 4	1650 SW 39TH ST,NAVAL AIR STATION, FT. LAUDERDALE	-RESOURCE DESTROYED- 1953 No style	Not Eligible	
BD02891	SS	HOISTING TOWER NAS BUILDING 4	1650 SW 39TH ST, FT. LAUDERDALE	-RESOURCE DESTROYED- 1953 No style	Not Eligible	
BD02892	SS	MINE TEST TANK NAS BUILDING 7	1650 SW 39TH ST, FT. LAUDERDALE	-RESOURCE DESTROYED- 1942 No style	Not Eligible	
BD02893	SS	UNDERWATER WEAPONS SYSTEMS LAB NAS BLD14	1650 SW 39TH ST, FT. LAUDERDALE	-RESOURCE DESTROYED- 1942 No style	Not Eligible	
BD02894	SS	ADMINISTRATION BUILDING NAS BUILDING 15	NAVAL AIR STATION, FT. LAUDERDALE	-RESOURCE DESTROYED- 1942 Other	Not Eligible	
BD02895	SS	MAGAZINES/SMALL ARMS NAS BUILDING 20	1650 SW 39TH STREET, FT. LAUDERDALE	-RESOURCE DESTROYED- 1943 Other	Not Eligible	
BD02896	SS	MAGAZINES/HIGH EXPLOSIVE NAS BUILDING 21	1650 SW 39TH STREET, FT. LAUDERDALE	-RESOURCE DESTROYED- 1943 Other	Not Eligible	
BD02897	SS	MAGAZINES/SMALL ARMS NAS BUILDING 22	1650 SW 39TH STREET, FT. LAUDERDALE	-RESOURCE DESTROYED- 1943 Other	Not Eligible	
BD02905	AR	OLD GRIFFIN			Insufficient Info	
BD03221	RG	DANIA CANAL	Dania Beach	Linear Resource	Not Eligible	
BD04087	RG	Railroad Tracks	Pompano Beach	Linear Resource - 1 Contrib Resources	Eligible	
BD04154	SS	Sentry Gate	4000 W perimeter RD, Ft. Lauderdale	-RESOURCE DESTROYED- 1942 Frame Vernacular	Not Eligible	
BD04155	SS	GB Airlink	850 SW 34th ST, Ft. Lauderdale	1956 Masonry Vernacular	Not Eligible	
BD04156	SS	3340 SW 2nd Avenue	3340 SW 2nd AVE, Ft. Lauderdale	-RESOURCE DESTROYED- 1948 Masonry Vernacular	Not Eligible	
BD04373	RG	Federal Highway	Hollywood	Linear Resource - 1 Contrib Resources	Not Eligible	
BD04432	RG	Griffin Road	Dania Beach	Linear Resource - 1 Contrib Resources	Not Eligible	
BD04776	RG	SR-A1A	Lauerdale-by-the-Sea	Linear Resource - 1 Contrib Resources	Not Eligible	

Florida Master Site File

Manuscript Roster

Total=28

MS#	Title	Publication Information	Year
23551	Cultural Resource Assessment Survey of the Design Build Broward Mobility Project, Group 5A (Sequences 30, 150-1, 150-2, 280, and 290), Broward County, Florida (Financial Project ID: 433165-1-52-01)	Janus Research, 1107 N. Ward Street, Tampa FL 33607	2016
22382	Cultural Resource Assessment Survey Reevaluation of I-595/I-95 Express Lanes Direct Connect, I-95 from Stirling Road to Broward Boulevard and I-595 from SR-7 to I-95, Broward County, Florida	Janus Research, 1107 N. Ward Street, Tampa FL 33607	2015
19480	Cultural Resource Assessment Report for the All Aboard Florida Passenger Rail Project from West Palm Beach to Miami, West Palm Beach, Broward, and Miami-Dade Counties	Janus Research, 1107 N. Ward Street, Tampa FL 33607	2012
19752	Cultural Resource Assessment Survey SR 9 / I-95 PD&E Study from Stirling Road to North of Oakland Park Boulevard FM 42980412201 / ETDM 13168, Broward County, Florida	Janus Research, 1107 N. Ward Street, Tampa, FL 33607	2012
14376	Historic Resources Reconnaissance Survey and Archaeological Desktop Analysis I-95 Managed Lanes Piolt Project: 95 Express from: I-395 (Miami-Dade County) To: I-595 (Broward County)	Janus Research, Tampa. Prepared for Florida Department of Transportation, District Six, Miami	2007
14000	Cultural Resources Reconnaissance Study South Florida East Coast Corridor Transit Analysis Miami-Dade, Broward and Palm Beach Counties	Janus Research, Inc., Tampa, in Conjunction with Gannett Fleming, Inc., Miami. Prepared for Florida Department of Transportation, District 4, Fort Lauderdale	2006
12275	Cultural Resource Assessment Survey and Destop Analysis for the Fort Lauderdale-Hollywood International Airport, Broward County	Janus Research, Tampa. Submitted to Landrum & Brown, Cincinnati, OH	2005
12945	Cultural Resource Assessment Survey I-595 (SR-862) Project Development & Environment Study FM No. 409354-1-22-01 FAP No. 5951 539 I From the I-75 Interchange West of 136 Avenue to the I-95 Interchange Broward County, Florida	Janus Research, Tampa. Submitted to Florida Department of Transportion District Four, Fort Lauderdale	2005
10432	An Archaeological and Historical Assessment for the Existing SE 14th Avenue Cellular Tower, Broward County, Florida	Environmental Services, Inc., Jacksonville. Submitted to Vertex Engineering Services, Inc.	2004
10433	An Archaeological and Historical Assessment for the Existing SW 23rd Terrace Cellular Tower, Broward County, Florida	Environmental Services, Inc., Jacksonville. Submitted to Vertex Engineering Services, Inc.	2004
14102	Onshore Archaeological Assessment Report: Archaeological Monitoring of Geotechnical Test Bore Program and Subsurface Archaeological Testing of Taylor Road Area, for Onshore Portion of Proposed AES Ocean Express Pipeline, Southern Broward County, Florida		2004
7612	An Archaeological and Historical Survey of the Proposed Snyder Park Tower Location in Broward County, Florida	Panamerican Consultants, Inc., Tampa. Submitted to EPAC Environmental Services, Inc., Pompano Beach	2003
8906	The Tractebel Calypso Natural Gas Pipeline, Supplemental Report # 1	Janus Reseach. Submitted to: URS Corporation.	2003
8953	An Archaeological and Historical Survey of the Proposed MNTA Tower Location in Broward County, Florida	Panamerican Consultants, Inc., Tampa. Submitted to EnviroDesign Associates, Inc.	2003
12075	Archaeological Monitoring of Geotechnical Test Bore Program and Subsurface Archaeological Testing of Taylor Road Area for Onshore Segment of Proposed AES Ocean Express Pipeline, Southern Broward County, Florida	Gifford, John A. Submitted to Haley & Aldrich, Inc, East Hartford, Connecticut.	2003
7926	An Archaeological and Historical Survey of the Proposed Metro PCS Tower Location in Broward County, Florida	PANAMERICAN CONSULTANTS, INC., TAMPA. Submitted TO EPAC ENVIRONMENTAL SERVICES, INC., POMPANO BEACH, FLORIDA	2002

MS#	Title	Publication Information	Year
19293	Cultural Resource Overview of Onshore Segment of Propsed AES Ocean Express Pipeline, Southern Broward County, Florida & Archaeological Evaluation of Magnetometer & Side-Scan Sonar Targets in Florida State Territorial Waters Along the Offshore Navy Restri	AES Ocean Express LLC, Resource Report 4, Exhibit F-1, application to Federal Energy Regulatory Commission	2002
19302	Underwater Archaeological Background Study and Remote Sensing Investigation and Associated Upland Route Corridor Survey Pursuant to the AES Ocean Express LLC Pipeline Project from Exclusive Economic Zone (EEZ) to Broward County, Florida	Dr. Robert H. Baer, prepared for Haley Aldrich, Inc.	2002
6253	A Cultural Resource Assessment of the Proposed Grade Separation Along Eller Drive Over the Florida East Coast Railroad Tracks from US 1 to McIntosh Road, Broward County, Florida	PANAMERICAN CONSULTANTS, INC. SUBMITTED TO FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT FOUR	2001
6679	Resource Report 4, Cultural Resources for Calypso Pipeline, LLC, Calypso Natural Gas Pipeline Project	JANUS RESEARCH, ST. PETERSBURG. Submitted TO URS CORPORATION, ST. PETERSBURG	2001
7477	An Archaeological and Historical Survey of the Proposed Snyder Park Tower Location in Broward County, Florida	PANAMERICAN CONSULTANTS, INC., TAMPA. Submitted TO EPAC ENVIRONMENTAL SERVICES, INC., POMPANO BEACH	2001
5844	Tri-County Commuter Rail Authority Double Track Corridor Improvement Program for Segment 5	JANUS RESEARCH, INC., ST PETERSBURG, FORIDA. SUBMITTED TO PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC., MIAMI	1999
5872	An Archaeological and Historic Assessment of the Ft Lauderdale Airport SEIR Roadway Expansion, Broward County Florida	ARCHAEOLOGICAL AND HISTORICAL CONSERVANCY, INC., MIAMI. Submitted TO KEITH AND SCHNARS, P.A.	1999
4075	An Archaeological Survey of Southeast Broward County, Florida: Phase 3	Archaeological and Historical Conservancy, Inc., Miami. Submitted to Broward County Office of Planning	1995
5546	Archaeological and Architectural Survey, South Florida Testing Facility, U.S. Navy Surface Warfare Center, Fort Lauderdale, Florida	NEW SOUTH ASSOCIATES, INC., STONE MOUNTAIN, GA. SUBMITTED TO US ARMY CORPS OF ENGINEERS, MOBILE DISTRICT, MOBILE, AL	1995
3476	Archeological Survey of the Planned 20 in O.D. Port Everglades Loop and Meter Station	Letter Report from R. Christopher Goodwin & Associates, Inc., New Orleans, LA. Submitted to Enron Gas Pipeline Operating Company/Florida Gas Transmission Company, Houston, TX.	1992
2125	Historic properties survey of Fort Lauderdale, Florida	Historic Property Associates, Inc., St. Augustine.	1989
1440	Proposed re-alignment of SR A-1-A, from SR 5/US 1 to SE 17th St., in Broward County, Florida	Florida Department of Transportation, Tallahassee.	1987

Enclosure 6

2007 CRAS

A PHASE I CULTURAL RESOURCE SURVEY OF THE SUNPORT PARCEL, BROWARD COUNTY, FLORIDA

By:
Robert S. Carr, M.S.
Ivan Rodriguez, M.A.

ARCHAEOLOGICAL AND HISTORICAL CONSERVANCY, INC.
Davie, Florida 33314

For:
Lea + Elliot, Inc.

November 2007
AHC Project No. 2007.91
AHC Technical Report No. 825

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A Phase I Cultural Resource Survey of the Sunport Parcel, Broward County, Florida

By:
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November 2007
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AHC Technical Report No. 825

CONSULTANT SUMMARY

In July, 2007 a draft State Historic Preservation Office Minimum Review Document was submitted to the SHPO. That assessment evaluated previously recorded cultural resources within two miles of the project parcel. A preliminary evaluation of those sites concluded that those sites would not be impacted by the Sunport Intermodal Centers and People Mover project, however, because of the proximity of BD210, the U.S. Customs House, to the People Mover Corridor an additional assessment of that structure should be conducted. This survey provides an assessment of BD210.

In September – November of 2007, the Archaeological & Historical Conservancy, Inc. (AHC) conducted a cultural resource survey for Lea + Elliot, Inc. of the Broward County Intermodal Center and People Mover Study also known as the Sunport PD&E Study. The subject encompasses parts of Sections 5, 13, 14, 15, and 21-28 in Township 50 Range 42E (Figure 1). The study area is characterized by urban development and the Port Everglades facility. The project area was surveyed to identify sites of archaeological and/or historical significance and to determine the potential impact to cultural resources from the project alternatives.

This assessment was conducted to fulfill historic and cultural resource requirements for Florida's Chapters 267 and 373 and cultural resource requirements of the Broward County Historic Commission. This assessment was conducted in accordance with Section 106 of the National Historic Preservation Act of 1966 (Public Law 89-665), as amended in 1992, and 36 C.F.R., Part 800: Protection of Historic Properties. The work and the report conform to the specifications set forth in Chapter IA-46, Florida Administrative Code.

The project parcel was assessed with an archival review and a windshield and pedestrian survey by an architectural historian and an archaeologist. A 2007 search with the Florida Division of Historic Resources (FDHR) indicates that there are 13 recorded sites within one mile of the study area of which two are within the study parcel. In addition, this assessment indicates that an area of moderate to high probability for archaeological sites occurs in the study area in proximity to the project alignment Alternative 5A and C along the Miami Road segment. This moderate to high probability area will also be affected by the proposed Intermodal Center (IMC) at Potential Location 2 (although that location is no longer considered as viable), and People Mover Corridor 4. Any consideration of the above alternatives will require a phase I cultural resource assessment to determine whether any significant archaeological and/or historic resources occur and whether they will be impacted.

Two National Register eligible sites, The Customs House (8BD210), and the Port Everglades Facility, 8BD180 were assessed in this study. The Customs House was designated as a historic site by the City of Hollywood in March 2000. Although People Mover Corridors 2, 3, and 5 come within 300 feet of this structure, there is no perceived adverse impact to the site as a result of the proposed People Mover alignments. A

detailed assessment of the site and recommendations are provided by architectural historian Ivan Rodriguez is provided in the Appendix of this report. The Port Everglades site, 8BD180, is adjacent to some People Mover alignments, however, the site is largely characterized as shipping basins and will not be affected by this project.

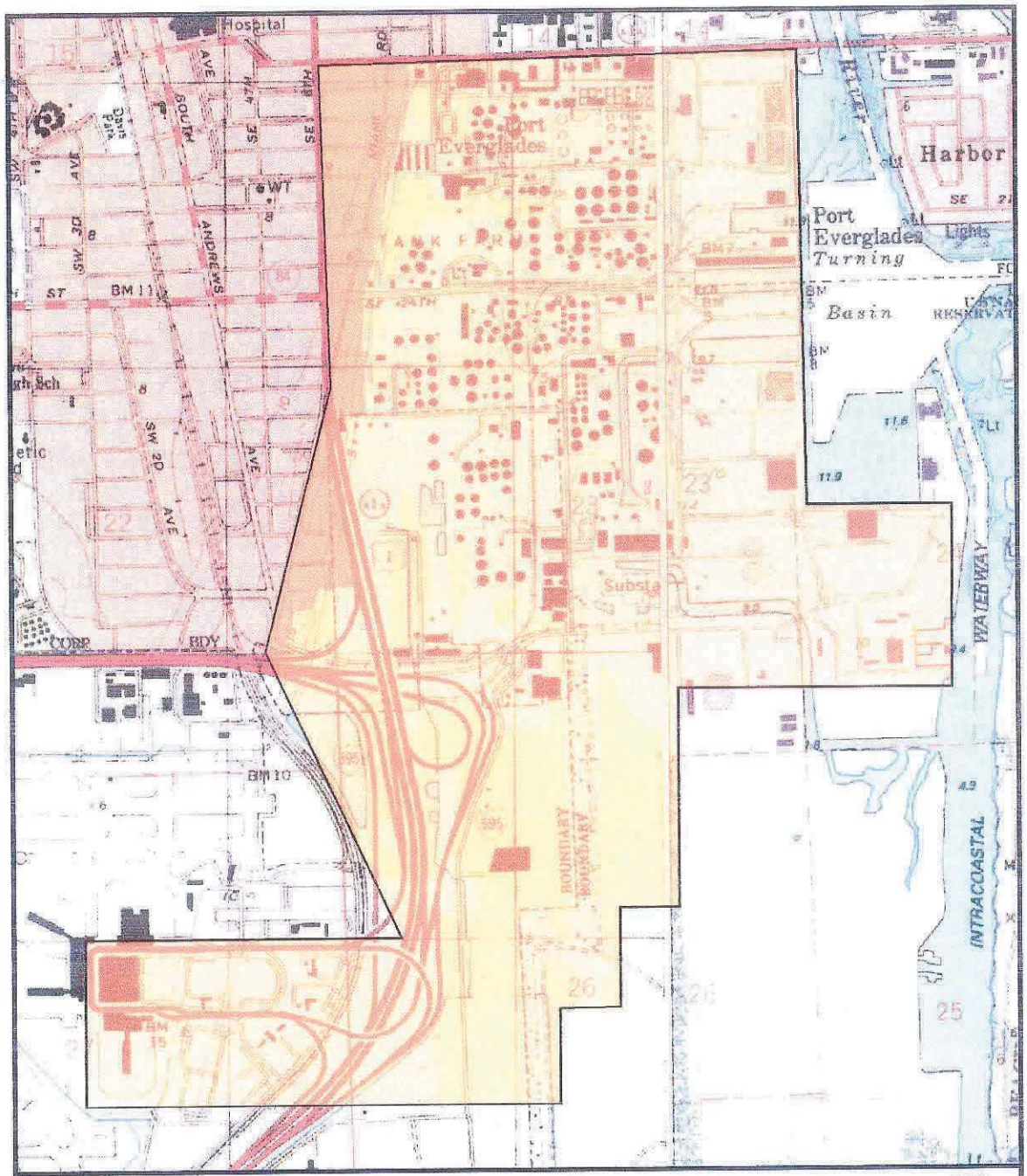


Figure 1. Map of the SunPort project area

= Project area

Township 50S, Range 42E, Sections 14, 15, 22, 23, 24, 26, 27

USGS Map: Fort Lauderdale South 1994 and Port Everglades 1986

0 1/8 1/4 1/2 Mile

PROJECT SETTING

The Sunport study area is located in eastern Broward County, Florida, within Sections 5, 13, 14, 15, and 21-28 in Township 50S, Range 42E. The study area is located within the municipalities of Fort Lauderdale, Hollywood, and Dania Beach. The project encompasses about 4.5 square miles.

The study area is bounded on the north by SE 17th Street, on the east by the Port Everglades turning basin, on the south by largely remnant wetlands and part of US 1. The western boundary roughly follows US 1 and a portion of the Fort Lauderdale Airport. Numerous structures occur within the project parcel including Port Everglades, the principal Port of Broward County. A review of a 1944 aerial photograph clearly indicates the relationship of the wetlands to the Atlantic Coastal Ridge (Figure 2). At that time the wetlands were being extensively farmed.

Disturbances to the project parcel have been intensive during this last century. Few intact soils occur on the parcel. Almost all soils are re-deposited and large quantities of fill occur particularly within Port Everglades.

Two physiographic regions characterize the study area. Approximately 90% of the parcel is highly disturbed fill placed ontop of what was historic fresh water marsh. All of Port Everglades was constructed upon filled-in wetlands. Mangrove forest now fringes the east edge of a portion of the parcel where it abuts the Intercostal Waterway. The Atlantic Coastal Ridge skirts the external western edge of the Sunport area. The ridge interface with the historic wetlands represent a moderate probability area for archaeological sites.

Elevations across the study area average 5 to 10 feet above sea level. A ridge approximately 10 feet above sea level and 5 feet above the historic wetlands occurs on the parcel's western boundary. The ridge geologically represents a portion of the Atlantic Coastal Ridge and is characterized by limestone, a porous marine fossil sedimentary rock overlaid by a relatively thin mantle of sands and organic soils. Soil on top of the ridge rarely exceeds 60 centimeters in depth (except in solution holes); while in contrast, soils on the adjacent lowlands are considerably deeper. Soil types are depicted as Arent organic substratum according to the Broward County soil map (Pendleton et al. 1994).



Figure 2. Aerial photograph (1947) of a portion of the SunPort project area

N

= Project boundaries

Source: http://palmm.fcla.edu

0 1/16 1/8 1/4 Mile

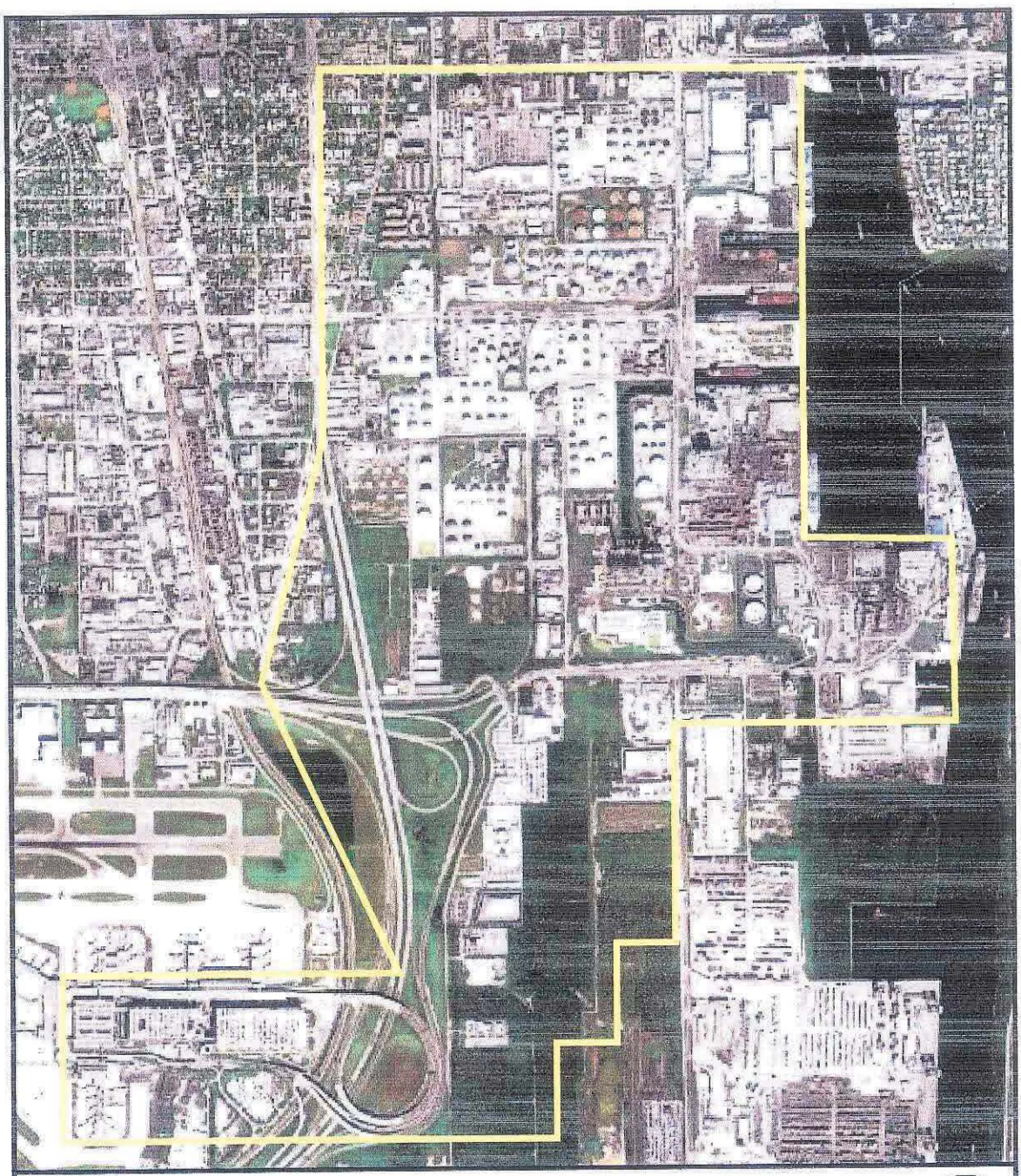


Figure 3. Aerial photograph (2006) of the SunPort project area

N

= Project area

Source: www.earth.google.com

0 1/8 1/4 1/2 Mile

PREVIOUS RESEARCH

The earliest recorded archaeological investigations in eastern Broward County were conducted by M.H. Harrington at a prehistoric mound complex (8BD3) located on the north bank of the New River. These mounds ranged in size from 8 to 50 feet in diameter and were from 2 to 8 feet high. The larger mounds had low sand embankments extending southward to the river. Smaller mounds were scattered throughout the palmettos. Harrington noted that a previous explorer had dug a trench across one of the larger mounds and that fragments of human bone were recovered in the excavation spoil. Harrington trenched another of the larger mounds without finding anything.

In the 1940s John Goggin reviewed specimens of pottery sherds and shell tools collected by Harrington from refuse deposits at the forks, now reposing at the Smithsonian Institution. However, these samples were mixed with other collections and could not be distinguished with certainty from other samples. John Goggin states on the 8BD3 site form that the mounds and refuse deposits were totally destroyed, believing that dredging operations on the river destroyed the refuse deposits. However, this is not the case. In all probability, the refuse deposits that were collected by Harrington were sites 8BD87 (the Rivermont site) and 8BD201. Goggin also reports a site on the Loesch property, 8BD39, where Mr. W.C. Orchard recovered a flint projectile point in 1939. Goggin did not visit the site but gives the address as being 4th Street and 11th Avenue (Goggin ND), which would place it within the boundaries of 8BD87.

Many early settlers observed the imposing mound complex of 8BD3. The surveyor, A.L. Knowlton, depicted it on his 1895 plat map of Fort Lauderdale by showing two mounds and earthwork ridges that extended towards the river. A Dade County guidebook for the years 1896-1897 describes human skeletons found at a depth of four feet that were "buried in a circle after the manner of spokes in a wheel, one tier the feet to the center and the next the heads (Anonymous n.d.:76). Although the exact location of these burials is not indicated, it is likely that it was at or in the vicinity of 8BD3.

A partial survey of Broward County was conducted by the Florida Division of Archives, History, Records Management between June and September 1974 by this author, and a "windshield" survey of the county was conducted in 1979 by the Broward County Archaeological Society. In January 1980, a survey of the "Near Northwest" Redevelopment Area was conducted within a small tract along the north bank of the river. Disturbed components of a single prehistoric midden, 8DA196, were discovered there (Carr 1980). In the same year, a survey was also conducted of the South Fork of the New River, as well as an archaeological investigation of the Stranahan House (Carr 1989). The South Fork survey included the excavation of a 50 cm test hole at the Rivermont site, 8BD87, next to a house at 922 SW 4th street. The midden depth was determined to be 110 cm. A survey of Broward County archaeological sites, which included the New River and the barrier island, was conducted in 1991 (Carr 1991). In 2000, an archaeological assessment was conducted at 1016 Waverly Place, which resulted in locating at least one prehistoric grave (Carr and Beriault 2000). Another assessment near that one, at SW 2nd Court, north of the North Fork of the New

River was conducted by AHC in 2001 (Carr *et al.* 2001). An archaeological assessment of the Ft. Lauderdale Hotel parcel revealed a scattering of oyster shells that may have been prehistoric (Carr and Elgart-Berry 2001).

Site 8BD99 is located three miles northwest of the subject parcel and occurs on an oak island. That site yielded both prehistoric and Seminole artifacts.

PROJECT METHODOLOGY

In July, 2007 a draft State Historic Preservation Office Minimum Review Document was submitted to the SHPO. That assessment evaluated previously recorded cultural resources within two miles of the project parcel. A preliminary evaluation of those sites concluded that there sites would not be impacted by the Sunport Intermodal Centers and People Mover project, however, because of the proximity of BD210, the U.S. Customs House, to the People Mover Corridor an additional assessment of that structure should be conducted. This survey provides an assessment of BD210.

Prior to conducting the Customs House assessment and additional fieldwork relevant archives and literature were reviewed. This included, but was not limited to, studying the previous archaeological reports for sites in Broward County and the project parcel, reviewing information from the Master Site File in Tallahassee and the Broward County Historic Commission concerning nearby sites, and examining USGS maps of the project area. A review of the Labins database of land surveys also was conducted. In addition, color and black and white aerial photographs from the project area, which could aid in revealing anthropogenic changes to the topography and floral communities were interpreted.

The archaeological component of this survey incorporated the use of area predictive archaeological site models. These models postulate that oak hammocks adjacent to wetlands (i.e. rivers, creeks, transverse glades and marshes) are high probability areas for being associated with archaeological sites. The elevational information on the USGS Fort Lauderdale South Quadrangle map for the area and vintage aerial photographs were used to identify any higher probability areas within the project area.

The subject parcel was assessed by pedestrian and windshield survey. A field assessment of existing structures and higher probability archaeological areas was conducted within the project parcel by windshield survey.

Site 8BD210, is located adjacent to various People Mover alternatives and was assessed by an architectural historian and an updated Florida Mater Site File for 8BD210 completed (see Appendix 1). Site 8BD180 also was assessed and documentation on the site is presented in Appendix 2.

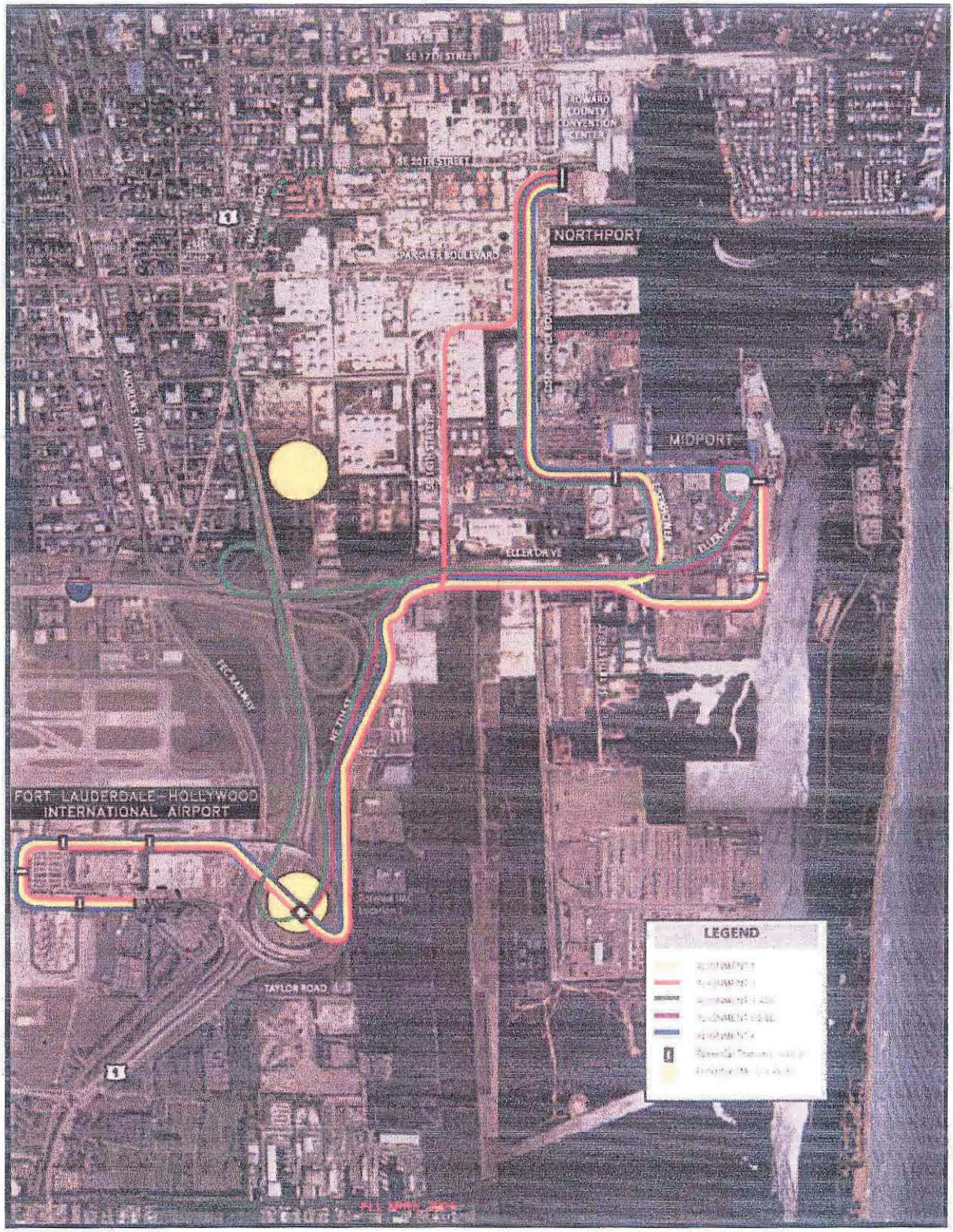


Figure 4. Aerial photograph with SunPort project alignment alternatives overlaid.

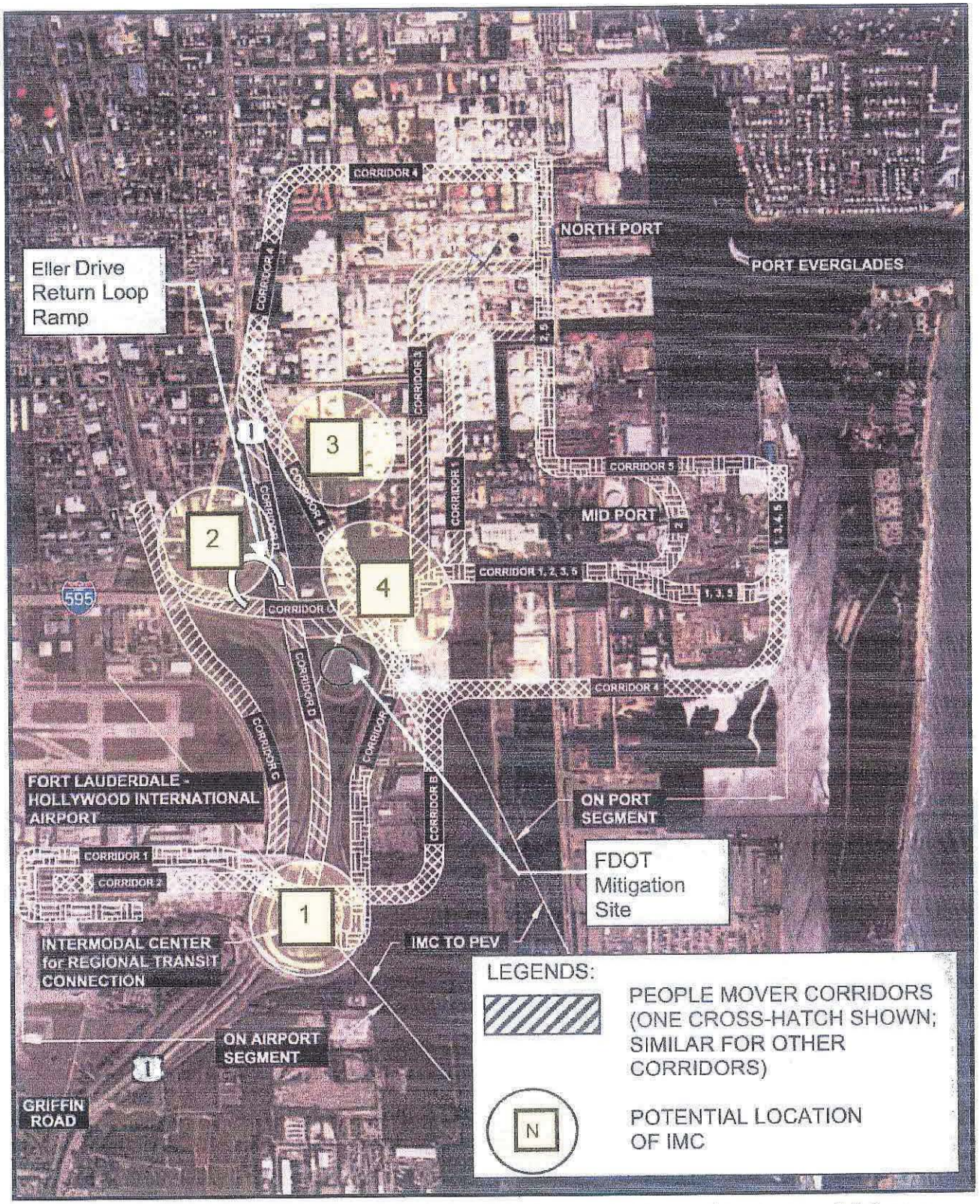


Figure 5. Aerial photograph with potential locations for the SunPort project Intermodal Center and People Mover corridors overlaid.

RESULTS AND CONCLUSIONS

This cultural resource assessment included a review of archival documents, maps, aerial photographs, and a field assessment by an archaeologist and an architectural historian. One structure, The Customs House, 8BD210, was assessed relative to it's significance and potential impacts from alternative alignments from several project people mover alignment alternatives. All proposed alignment share a similar route adjacent to this historic site. A detailed assessment of the structure is provided in the Appendix of this report.

Alternative transportation alignments and Intermodal Center locations are evaluated in the Tables below:

Table 1. Intermodal Center Location Alternatives Evaluation

Alternative II	Potential Cultural Resource (CE) Impacts	Known Sites	Probability
1	Low	None	LPZ
2**	High	None	MPZ
3	Low	None	LPZ
4**	Low	None	LPZ

LPZ= Low Probability Zone for archaeological sites
MPZ=Moderate Probability Zone for archaeological sites
**IMC=Location determined to be non-viable and dropped from consideration

Table 2. People Mover / Alignment Alternatives Evaluation

Alignment	Potential CR Impacts	Known Sites	Comments
1	Low	8BD210	No impact
2	Low	8BD210	No impact
4	Moderate	None	Historic structure, possible archaeological site
5 A, C	Low, Moderate, and High	8BD210	Moderate to High Probability on Miami Road
5 B, D	Low	8BD210	No impact
6	Low	8BD210	No impact

This assessment determined that two previously recorded historic sites occur within close proximity to the people mover alignments. The U.S. Customs House, BD210, is of National Register significance and designated as a historic site by the City of Hollywood. No adverse impacts to the building is anticipated by any of the People Mover alignments (see Appendix 1). Site BD180 is the Port Everglades fuel farm and shipping basin. This site encompasses part of the original footprint of the port facility built in 1927. This site is adjacent to several proposed People Mover alignments but will not be affected by this project.

identified along Miami Road and SE 6th Avenue (Figure 6). This zone is characterized as a high elevated ridge adjacent to historic wetlands. The zone has a moderate probability of encompassing prehistoric and historic archaeological sites, including a segment of the 19th century military road connecting Fort Lauderdale and Fort Dallas in Miami. Also, there is one unrecorded historic structure with a concrete and shell wall located at 2200 SE Miami Road. This zone would only be affected by Corridor 4, and if only a bus system is used, than no potential adverse impact would occur unless the road was improved and widened. If an alternative is selected where the road is improved, then a phase I cultural resource assessment will need to be conducted.

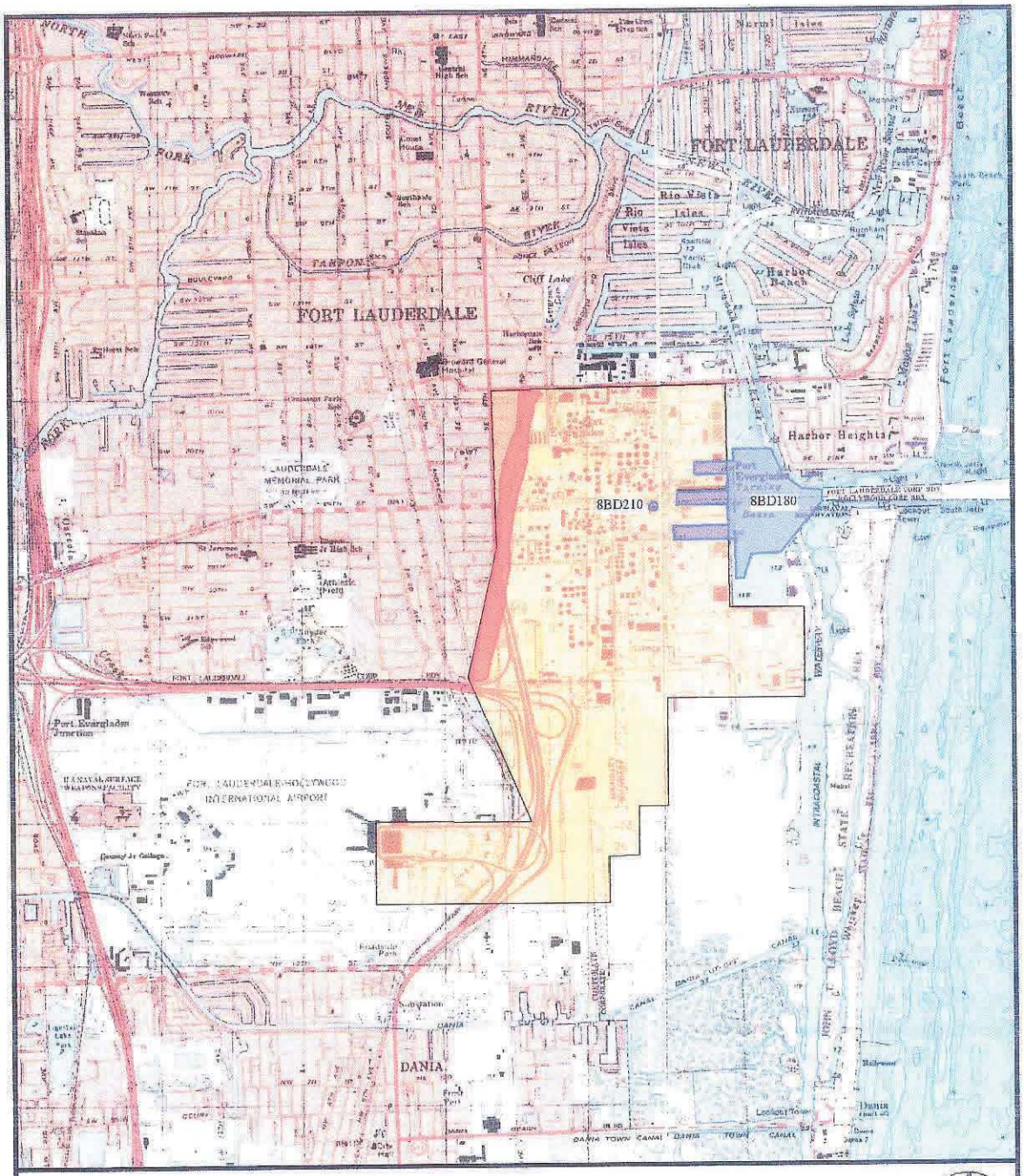


Figure 6. Map of the SunPort project and project parcel cultural resources

USGS Map: Fort Lauderdale South 1994 and Port Everglades 1986

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**Federal Aviation
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Orlando Airports District Office
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Orlando, FL 32819
Phone: (407) 487-7220
Fax: (407) 487-7135

April 22, 2024

[Via email - THPOCompliance@semtribe.com]

Ms. Tina Marie Osceola
Tribal Historic Preservation Officer and Director
Seminole Tribe of Florida
30290 Josie Billie Highway, PMB 1004
Clewiston, FL 33440

RE: Section 106 Consultation
Landside (Intermodal) Improvement Project
Fort Lauderdale-Hollywood International Airport (FLL)
Broward County, Florida

Dear Ms. Osceola,

The Broward County Department of Airports (BCAD) has proposed several projects to improve public access to the Fort Lauderdale-Hollywood International Airport (FLL). The proposed undertaking 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. BCAD plans to request federal funding from the Federal Aviation Administration (FAA) for the proposed projects. If approved, construction of the multi-year program 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 depicted in **Enclosure 2** and described in **Enclosure 3**.

The proposed project constitutes an undertaking subject to the *National Historic Preservation Act* (Section 106) and its implementing regulations at 36 CFR Part 800. This letter is intended to initiate consultation with your office. 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.

Area of Potential Effect

The construction and operation of the proposed facilities was reviewed to identify an appropriate APE for the evaluation of potential impacts on historic, archaeological, and cultural resources. Based on the review, the Direct Effects portion of the APE includes the areas where construction-related ground disturbance would occur and where additional stormwater runoff would be directed within an existing stormwater management treatment area. The Indirect Effects APE encompasses an area where effects such as light emissions, noise, and air emissions may occur. The direct and indirect APE is depicted on **Enclosure 4**.

The proposed construction areas within the Direct Effects APE have been previously disturbed during the development of the airport and U.S. Highway 1. The Direct Effects APE also includes an existing mangrove swamp area where treated stormwater runoff from the U.S. Highway 1 stormwater management system is released for attenuation (see Enclosure 3, Figure 3-3). The treated stormwater enters the mangrove swamp through several drainage culvert pipes located adjacent to U.S. Hwy 1. The water in the mangrove swamp connects to adjacent mangroves via seven culvert pipes located under an existing electric power distribution line maintenance road. The proposed project would upgrade eight existing culvert pipes in-place. This would involve minor and temporary effects on mangrove habitat during construction at each culvert location. The total area of mangrove swamp affected for the overall project would be approximately 9,800 square feet (0.22 acre).

The overall APE is approximately 603 acres in size and includes the proposed terminal access facilities at FLL; portions of U.S. Highway 1 between Interstate 595 and Griffin Road, arterial roadways, and mangrove swamp between Northeast 7th Avenue and the Fort Lauderdale Rail Yard.

Potential for Historic and Cultural Resources in the APE

The portion of the APE where construction would occur consists of extensively disturbed and modified land that presently supports automobile, bus, and commercial rail transportation infrastructure. Past development and construction in the Direct Effects APE during the last century have been intensive and almost all current soils have been re-deposited over native soils and include large amounts of fill material from off-site sources. The only area with mostly intact soils is the existing stormwater management area, where there is no planned ground disturbance, other than replacing several existing drainage culverts. This area is located in a dense mangrove swamp habitat with standing water that subject to tidal flow.

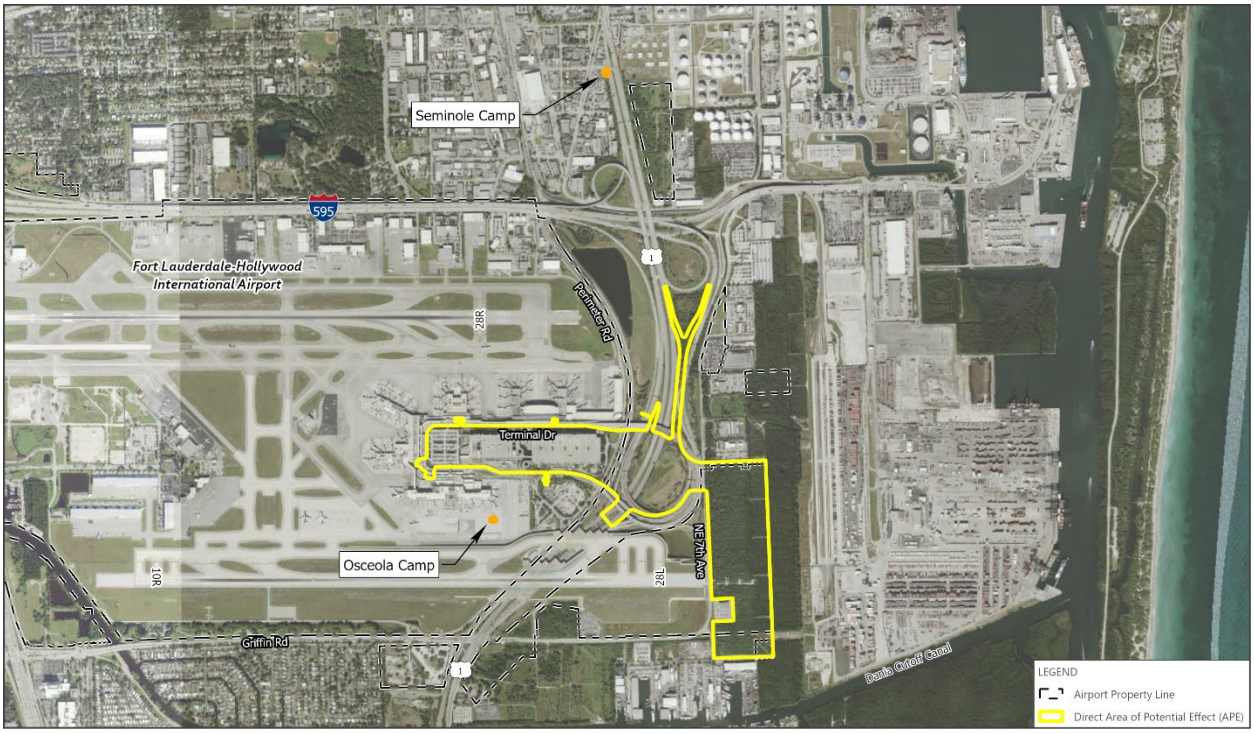
A search of the Florida Master Site File (FMSF) in February 2023 did not identify any recorded archaeological sites, historic resources, or cultural resources within the APE. The Direct APE does not contain any buildings or structures over 50 years old. A comparison of historical US Coast and Geodetic Survey (USCGS) and US Geological Survey (USGS) topographic maps (1883, 1884, 1935, 1949, 1962, 1973) and current aerial photographs of the area indicates that the only extant historic structure is the railroad spur from the Florida East Coast Railway mainline to Port Everglades. That railroad spur passes through the northern edge of the Indirect Effects APE and would not be adversely affected by the project. The nearest National Register-eligible resources are the Customs House (8BD210) and the Link Trainer Naval Air Station Ft. Lauderdale (BD02562), located more than a mile from the direct and indirect APE.

The USCGS Sheet T-01510 “East coast of Florida from Biscayne Bay northward, Broward and Dade Counties, FL” (1883) and Sheet T-01605b “Southern Part of New River and Head

of Key Biscayne Bay" (1884) maps depict almost the entirety of the Direct Effects APE located in coastal swamps. Two Seminole camps are shown in wooded area located outside of the swamp areas (and current Direct Effects APE). The approximate locations of the camps are shown on a current aerial image of the APE and surrounding project area (see **Figure 1** below). The depicted location of the "Osceola Camp" is on airport property, outside of the Direct Effects APE, in an area presently developed as a concrete aircraft circulation and parking apron. The depicted location of the "Seminole Camp" is approximately 0.62 mile north-northwest of the Direct Effects APE. The area is adjacent to US Highway A1A and is presently developed for roadways and commercial use.

Based on a review of the FMSF information, historical maps, and the activities on the site, the likelihood of encountering historic, archaeological, and cultural resources within the Direct Effects APE would be low. A copy of the FMSF search report is provided in **Enclosure 5**.

Figure 1
Seminole and Osceola Camps and Direct APE



Source: Environmental Science Associates, 2024.

The location of the proposed undertaking has a history of Section 106 consultation. In the Final Environmental Impact Statement (EIS) and Record of Decision (ROD) for the Development and Expansion of Runway 9R-27L and Other Associated Airport Projects[1] the FAA concluded that there would be no effect of the Preferred Alternative on any properties either listed, or eligible to be listed, on the National Register of Historic Places. The Florida Historic Preservation Officer concurred with that determination. In 2019, resources were evaluated for

[1] *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

the proposed Jetscape Westside Development project[2]. The Environmental Assessment (EA) identified existing and former historic structures on the far west side of airport and considered archaeological and cultural resources. Section 106 consultations cited the potential for buried cultural resources and the project's probability for affecting cultural resources. As requested, intensive research and review of Phase 1 survey reports and related information was conducted. The research did not indicate a high probability for that particular project; however, the potential for encountering unexpected discoveries was recognized. The EA was approved under the conditions that construction activities would cease if historic, cultural, and/or archaeological artifacts were encountered.

In support of the 2009 Project Development & Environmental (PD&E) Study for the Broward County Intermodal Center and People Mover System, a Cultural Resource Assessment Survey (CRAS) was conducted by the Archaeological and Historical Conservancy, Inc. and coordinated with the SHPO. In July 2007, a draft State Historic Preservation Office Minimum Review Document was submitted to the SHPO for the proposed project. That assessment evaluated previously recorded cultural resources within two miles of the project for direct and indirect (65 DNL contour) effects. This evaluation concluded that identified sites would not be impacted by the proposed project; however, because of proximity of site BD210 (U.S. Customs House) to the Sunport corridor, an additional assessment of that structure was undertaken (2007 CRAS[3]). Although site BD210 is not located within the direct or indirect study area of the current proposed undertaking, the study area for that project did encompass the study areas for the current proposed undertaking (**Enclosure 6**). The 2007 CRAS recommended project alternative (Alignment 6 and IMC location 1[4]) would have no impact on National Registered Properties. Further, the study concluded that:

> "*In accordance with the procedures contained in 36 CFR, Part 800, A Cultural Resource Assessment, including background research and a field survey coordinated with the State Historic Preservation Officer (SHPO), was performed for the project. As a result of the assessment, one site listed with the Florida Master File Sites number BD210, was identified, which has been determined eligible for listing on the National Register of Historic Places. Through the application of Criteria of Adverse Effect, The Federal Highway Administration in consultation with the SHPO determined that the recommended project alternative 6 and IMC location 1, did not constitute an adverse effect on the BD210, U.S. Customs House. Based on the fact that no additional archaeological or historical sites or properties are expected to be encountered during subsequent project development, the Federal Highway Administration has determined that no other National Register properties would be impacted*."

The study area for the 2009 PD&E encompassed almost the entirety of the direct and indirect impact areas for the current FLL Landside Improvement Project. Portions of the stormwater attenuation area are outside that study's APE, but there are no structures in that area and the additional runoff culvert replacements would not affect any unknown archaeological sites that could be present. Considering that there is no potential for the runoff to impact archaeological

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[2] *Environmental Assessment for the Relocation, Construction and Operation of the Jetscape Fixed Base Operator (FBO)*. April 2019

[3] *A Phase I Cultural Resource Survey of the Sunport Parcel, Broward County*, *Florida*. November 2007

[4] Note: IMC location 1 (preferred alternative in the 2009 PD&E) is the same as the current proposed IMC location

sites and that the location of the IMC has not changed since the publication of that study, there is a low probability of cultural resource impacts at the location of the proposed undertaking.

Secretary of the Interior Qualified archaeologists Evan Tudor Elliott, MA, RPA, and James J. Clark, MA, RPA, reviewed the cultural resources data and the project activities and recommended that the project would not likely encounter or adversely affect any historic properties. Due to the low probability of encountering Cultural Resources at FLL based on a FMSF Review, historical map review, results of past CRAS, previous determination from and coordination with the SHPO, and because the majority of the APE is located on built-up fill dirt, it their determination that the proposed undertaking is unlikely to affect historic properties or resources.

FAA Determination of Effect

Taking into account past research conducted in the project area and a review of the proposed project described in this letter, it is the FAA's opinion there are no historic, architectural, or cultural resources or historic properties listed, or eligible for listing, on the National Register of Historic Places within the APE and the Proposed Undertaking is unlikely to encounter post review discoveries or to have an effect on unknown resources. Therefore, the FAA finds "no historic properties affected" for the Proposed Undertaking under 36 CFR Part 800.4(d)(1).

If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials; or any other physical remains that could be associated with Native American, early European, or early American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The Florida Department of State, Division of Historical Resources, Compliance Review Section, the Seminole Tribe of Florida, and other interested Native American Indian Tribes will be notified. Project activities shall not resume without verbal and/or written authorization from the interested parties. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately, and the proper authorities notified in accordance with Section 872.05, Florida Statutes.

FAA requests your consideration the enclosed project information and please respond within 30 days of receipt of this letter indicating whether or not you agree with FAA's determination. Please direct comments and information to me at (407) 487-7296 or via email at peter.m.green@faa.gov.

Sincerely,

Peter Matthias Green Digitally signed by Peter Matthias Green
Date: 2024.04.22 15:37:23 -04'00'

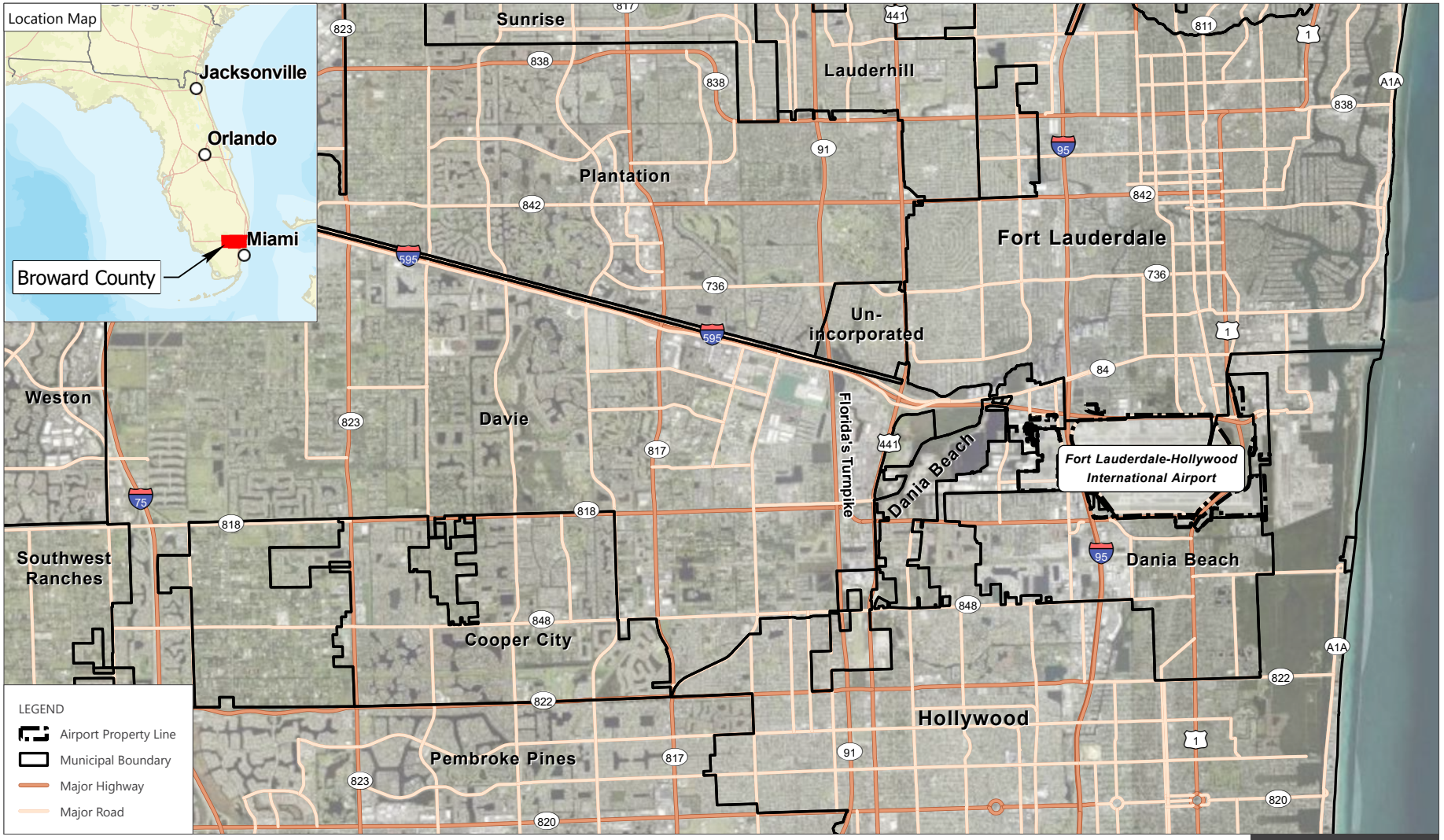
Peter M Green, AICP
Environmental Protection Specialist
Orlando Airport s District Office

Copy: William Castillo, Aviation Planning Manager, BCAD
Winston Cannicle, Environmental Manager, BCAD

Enclosures:
1. Project Location
2. Description of Proposed Project
3. Proposed Project
4. APE
5. FMSF Records
6 2007 CRAS from 2009 PD&E

Enclosure 1

Project Location



SOURCES: State of Florida, 2020; County of Broward, 2015.

EXHIBIT 1-1

NORTH 0 10,000 ft.

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Location Map
Fort Lauderdale-Hollywood International Airport

Enclosure 2

Description of Proposed Project

1.1 Description of the Proposed Project

The Broward County Aviation Department (BCAD) proposes to construct an Intermodal Center (IMC), an Automated People Mover (APM) Circulator, redevelop an Airport parking garage and expand a second parking garage that accommodates public parking and the Rental Car Center, reconfigure the passenger terminal complex roadways and curbside, and implement other associated landside improvements at Fort Lauderdale-Hollywood International Airport (FLL or the Airport). The proposed project is shown on **Enclosure 3**, and the main project components are discussed below.

1.1.1 INTERMODAL CENTER

The IMC would be a transportation hub that improves integration between the regional transportation network and FLL. The IMC would be located within the US Highway 1 (US-1) right-of-way (ROW). The US-1 ROW is located outside FLL property at the east end of the FLL terminal complex on a 22-acre parcel within the greenspace bounded by the interchange between US-1 and the terminal entrance/exit roadways. The eight-level, 4.6-million-square-foot facility would accommodate airport parking, a Ground Transportation Center (GTC) for commercial vehicle pickups and drop-offs (drop-and-ride passengers), a multimodal transfer lobby with concessions and seating that connects to the proposed APM, and leasable office space.

The first level of the IMC would be constructed within the interchange footprint, on land leased from the Florida Department of Transportation (FDOT).[1] Levels 2 through 8 would extend over US-1, supported by columns and footings on the west side of the highway, to achieve the desired structural square footage while remaining under airspace protected for aircraft using FLL's runways. In addition to the proposed APM connection between the IMC and the FLL terminals, the IMC would connect to the regional roadway network at several access points and would provide the ability to connect to other regional transportation modes developed by other entities.

The IMC parking spaces would initially accommodate public parkers displaced during the Palm Garage Redevelopment project (a component of the proposed project), resulting in a temporary mid-project-implementation peak in parking supply. Following the reopening of the Palm Garage, BCAD intends to accommodate employee parking at the IMC. Employee parking is currently provided in a remote lot west of Airport property. **Table 1** demonstrates the transition of parking spaces before, during, and after construction of the proposed project, as project components come online.

[1] BCAD is pursuing a 99-year land lease from FDOT.

Table 1 Public and Employee Parking Capacity

FACILITY	NUMBER OF VEHICLE PARKING SPACES, BY YEAR 2022	2029[1]	2033[2]
Public Parking	**11,221**	**17,011**	**12,231**
Palm Garage	2,490	1,490	3,500
Hibiscus Garage	4,534	4,534	4,534
Cypress Garage	4,197	4,197	4,197
IMC[3]	0	6,790	0
Employee Parking	**4,010**	**4,010**	**6,790**
West Employee Lot	4,010	4,010	0
IMC[3]	0	0	6,790
Total Parking	**15,231**	**21,021**	**19,021**

NOTES:

IMC – Intermodal Center

1 As shown in Table 1-5, construction of the IMC is planned to be completed in 2028. The year 2029 represents the first full year of operation with reduced capacity in the Palm Garage and temporary accommodation of displaced public parking at the IMC.

2 As shown in Table 1-5, reconstruction of the Palm Garage is planned to be completed in 2032. The year 2033 represents the first full year of operation of the fully reconstructed Palm Garage (spaces temporarily displaced to the IMC return to the Palm Garage). Employee parking then shifts to the IMC.

3 Also includes parking for other IMC users in addition to public parking (2029) and employee parking (2033).

SOURCE: Broward County Aviation Department, *Advanced Planning for Palm Garage Demolition and Replacement, and Supplemental Curb Technical Report, Fort Lauderdale-Hollywood International Airport*, April 2023; Broward County Aviation Department, *Intermodal Center Advanced Planning Technical Report*, November 2022.

Connectivity between the regional roadway network and level 1 of the IMC would be provided for commercial vehicles from northbound and southbound US-1 via a T-intersection and ramp, respectively, and a tunnel providing access to/from Northeast 7th Avenue. Public and employee private vehicles parking at the IMC, as well as drop-and-ride passengers[2] and Transportation Network Company (TNC) pickups[3] would access the IMC at level 2 via new ramps from existing Airport roadways providing connections from northbound and southbound US-1. These vehicles would exit the IMC at level 3 via new ramps to northbound and southbound US-1 and a new ramp to I-595. The new ramps to northbound US-1 and I-595 would include an approximately 1,800-linear-foot overpass to clear the existing Airport roadway network.

Construction of the IMC would also include utility and stormwater improvements to serve development at the site. All stormwater runoff from the new IMC facility would be collected and treated on site prior to discharge. The US-1 ROW currently accommodates an existing dry detention basin that would be displaced with IMC development. The basin is part of an interconnected system of basins along US-1 that drain to the undeveloped land east of Northeast 7th Avenue. The displaced stormwater detention volume at the US-1 ROW would be accommodated through a combination of increases

2 Drop-and-ride passengers are those that are dropped of at or picked up from the IMC by a private vehicle.

3 TNC operators would pickup passengers arriving at FLL at the IMC; passengers would transfer from the terminals to the IMC via the APM. TNC drop-offs would occur at the terminal curbs.

to volumes of other detention basins, as feasible, within this interconnected drainage system; upsizing existing culverts that drain to the land west of Northeast 7th Avenue, and implementing avoidance and minimization measures to improve treatment of water discharged to the land west of Northeast 7th Avenue given the reduced detention capacity.

1.1.2 AUTOMATED PEOPLE MOVER

The APM would be a landside airport circulator comprising an elevated dual-track guideway and train system connecting the FLL terminals, Airport parking garages, Rental Car Center, and the proposed IMC. The APM project would include the following elements:

- 16,000 feet of elevated dual-track guideway;
- five elevated on-Airport stations and a sixth station constructed adjacent to the IMC;
- pedestrian bridges and vertical circulation systems to connect the stations to terminal and parking facilities;
- a 52,000-square-foot Maintenance and Storage Facility (M&SF); and
- supporting utility infrastructure improvements, including two power distribution substations.

The 16,000-foot dual-track guideway would be elevated above the upper level of Terminal Drive, running between the terminals and the parking garages, on Airport property. It would cross over the Florida East Coast (FEC) Railway tracks, but no support columns would be placed in FEC right-of-way; BCAD would obtain an aerial rights agreement with FEC for the guideway overpass. The portion of the guideway connecting to the IMC would extend into land BCAD plans to lease from FDOT for the IMC.

The APM would be constructed in two phases. The first phase would include a guideway operating in a pinched loop configuration[4] serving stations between Terminal 2 and Terminal 4, via Terminal 1, the IMC, and future Terminal. A sixth station at Terminal 3 and full guideway loop at the west end would be constructed in the second phase with redevelopment of Palm Garage. By the second phase, the APM would operate as a bi-directional closed loop,[5] with the guideway crossovers providing operational redundancy.

The elevated dual-track guideway separation would range from 16 feet wide between stations to 52 feet wide at stations where the guideways are separated by the station platform and would be supported by columns along the guideway's entire length. Program definition (to be verified in design) included a column plan defined to meet structural design requirements of Florida Building Code (2020 Edition), wind and gravity load requirements defined by the American Society of Civil Engineers (ASCE/SEI 7-16), and the BCAD Airport Design Guidelines Manual. An initial column layout was adjusted to avoid conflicts with existing structures, pressurized fuel pipelines, utilities, existing roadways, and planned future roadways. Based on program definition and preliminary structural engineering, APM foundations are planned to be standard driven piles below each pier column 12 inches wider than the column for reinforcement clearance and

[4] A pinched loop APM system operates back and forth between two distinct end points, requiring crossovers between the parallel guideways for train repositioning based on operating direction of each guideway.

[5] A closed loop APM operates as a continuous circuit in one direction. The proposed project would include two parallel guideways, allowing each guideway to operate independently as a closed loop in opposite directions. Bi-directional closed loop refers to the set of closed loop guideways.

tolerance. Columns would be between 5 and 8 feet wide. A geotechnical evaluation of the soil condition is required through the APM complete loop for final foundation design.

The six APM stations would each include an elevated platform (at the guideway level) sized to accommodate the boarding and deboarding of passengers to and from a two-car train as well as vertical circulation between the platform and a mezzanine level directly below the platform level. At the mezzanine level, elevated pedestrian bridges would link the stations with adjacent terminals and parking garages. A station equipment room would also be accommodated at the mezzanine level. At the terminal and parking garage ends of the elevated pedestrian bridges, vertical circulation cores would be added to connect the bridges with the various levels of the terminal and parking garage facilities.

The APM project also includes construction of a two-level M&SF of approximately 52,000 square feet, to be constructed south of the Hibiscus Garage. The lower level of M&SF would accommodate APM vehicle storage and maintenance space, and the second level would accommodate APM operational control space, including administrative offices, locker rooms, and restrooms. M&SF staff would park at the IMC or the Hibiscus Garage.

The first phase of the APM would require one Traction Power Substation (TPSS) of approximately 3,000 square feet, and a second TPSS would be required to support the extended guideway length in Phase 2. The TPSS buildings would be standalone facilities generally located within the northwest and southeast corners of the APM guideway loop. In addition to the TPSS stations, additional utility improvements would be implemented to support the APM.

1.1.3 PALM GARAGE REDEVELOPMENT WITH AIRPORT HOTEL AND COMMERCIAL CENTER

The existing four-level Palm Garage accommodates 2,490 public parking spaces and has a footprint of approximately 250,000 square feet. The proposed project includes demolition of the existing, aging parking structure in phases and redevelopment of the garage on a smaller footprint at the same site with seven to nine levels that include additional parking and areas for commercial development. The proposed project also includes utility improvements to support redevelopment and commercials areas.

In the first phase of construction, BCAD plans to demolish the southern one-third of the Palm Garage to enable construction of the first phase of the APM. The extent of building demolition in the first phase was defined to match an original expansion joint to minimize the structural effects of demolition.

The second phase of Palm Garage redevelopment includes demolition of the remaining two-thirds of the structure and site redevelopment. Palm Garage would be redeveloped on its existing site, within a smaller building footprint of approximately 135,000 square feet. The seven- to nine-level structure would be a multimodal facility that includes public parking and a commercial GTC. The garage would provide approximately 3,400 to 3,700 parking spaces on level 2 and above. Level 1 would accommodate a GTC for commercial vehicle pickup and drop-off operations. The GTC would provide approximately 1,700 linear feet of curbfront and 110 vehicle staging positions for commercial ground transportation operations. Pedestrian connectivity to the terminals would be provided at Level 3, which would include a large pedestrian circulation area. The intent for the dedicated third-level connection with terminals would be to eliminate/reduce at-grade pedestrian crossings between the Palm Garage and terminals. The east side of each level of Palm Garage would be integrated with the adjacent levels of the Hibiscus Garage.

The reduced Palm Garage footprint allows for the construction of a 90,000-square-foot commercial center that could include an Airport hotel and other commercial space along the west side of the redeveloped Palm Garage.

1.1.4 SUPPLEMENTAL ROADWAYS AND CURBSIDES

Two at-grade supplemental curb areas would be provided at the lower levels of Terminals 1 and 2; they are proposed to address terminal curbfront capacity deficiencies. A new bypass roadway, splitting from the lower-level terminal roadway before Terminal 1 and merging back after Terminal 4, would provide the ability to avoid traffic congestion in front of the terminals and improve roadway level of service. The parking garages would be accessed from the bypass roadway.

1.1.5 CYPRESS GARAGE EXPANSION

The existing Cypress Garage is a nine-level facility that includes FLL's Rental Car Center on levels 1 through 5 and provides public parking spaces on levels 6 through 9. The proposed project includes the construction of a Cypress Garage Expansion along the structure's east face. The nine-level expansion to the garage would increase the garage footprint by approximately 90,000 square feet and supply approximately 2,150 additional parking spaces to accommodate rental car ready/return staging[6] operations at the Rental Car Center and public parking. Each level of the expansion would be built to the same elevation as the corresponding level in the existing Cypress Garage to maintain internal vehicle circulation connectivity.

1.2 Timeframe of the Proposed Project

As shown in **Table 2**, construction of the Proposed Project is planned to begin in 2026, and all project components would be operational by 2033.

[6] Rental car ready/return areas provide staging for rental cars ready for rental from, or recently returned to, a rental car company.

Table 2 Proposed Project Implementation Schedule

Project Component	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Intermodal Center (IMC)	Design	Demolition/Construction	Demolition/Construction	Demolition/Construction						
Automated People Mover (APM)										
Phase 1 (Pinched Loop)	Design	Demolition/Construction	Demolition/Construction	Demolition/Construction	Demolition/Construction					
Phase 2 (Closed Loop)	Design					Demolition/Construction				
Palm Garage Site Redevelopment										
Phase 1 Demolition, Southern Third	Design			Demolition/Construction						
Phase 2 Demolition, Remainder of Structure	Design				Demolition/Construction					
New Palm Garage Redevelopment					Design	Demolition/Construction	Demolition/Construction	Demolition/Construction		
Commercial Center and Airport Hotel					Design	Demolition/Construction	Demolition/Construction	Demolition/Construction		
Supplemental Roadways and Curbsides	Design				Demolition/Construction					
Cypress Garage Expansion				Design	Design	Demolition/Construction	Demolition/Construction	Demolition/Construction		

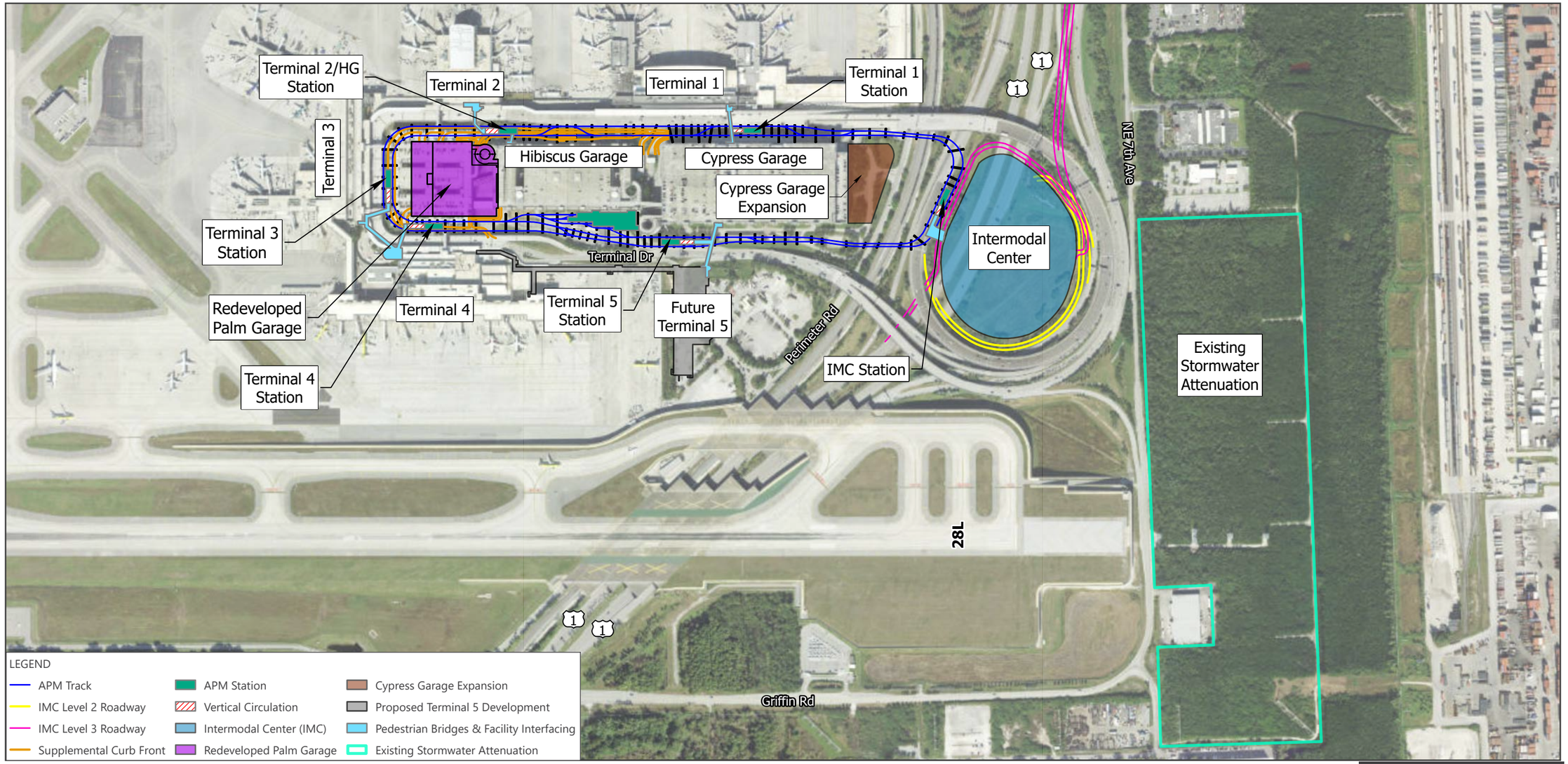
NOTES: Design Demolition/Construction

1 It is anticipated that the following design components of the Proposed Project would be procured and awarded together based on project dependencies and overlap: Automated People Mover (Phase 1 and 2), Palm Garage Demolition (Phase 1 and 2), and Supplemental Roadways and Curbsides.

SOURCE: Broward County Aviation Department, 2022.

Enclosure 3

Proposed Project



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

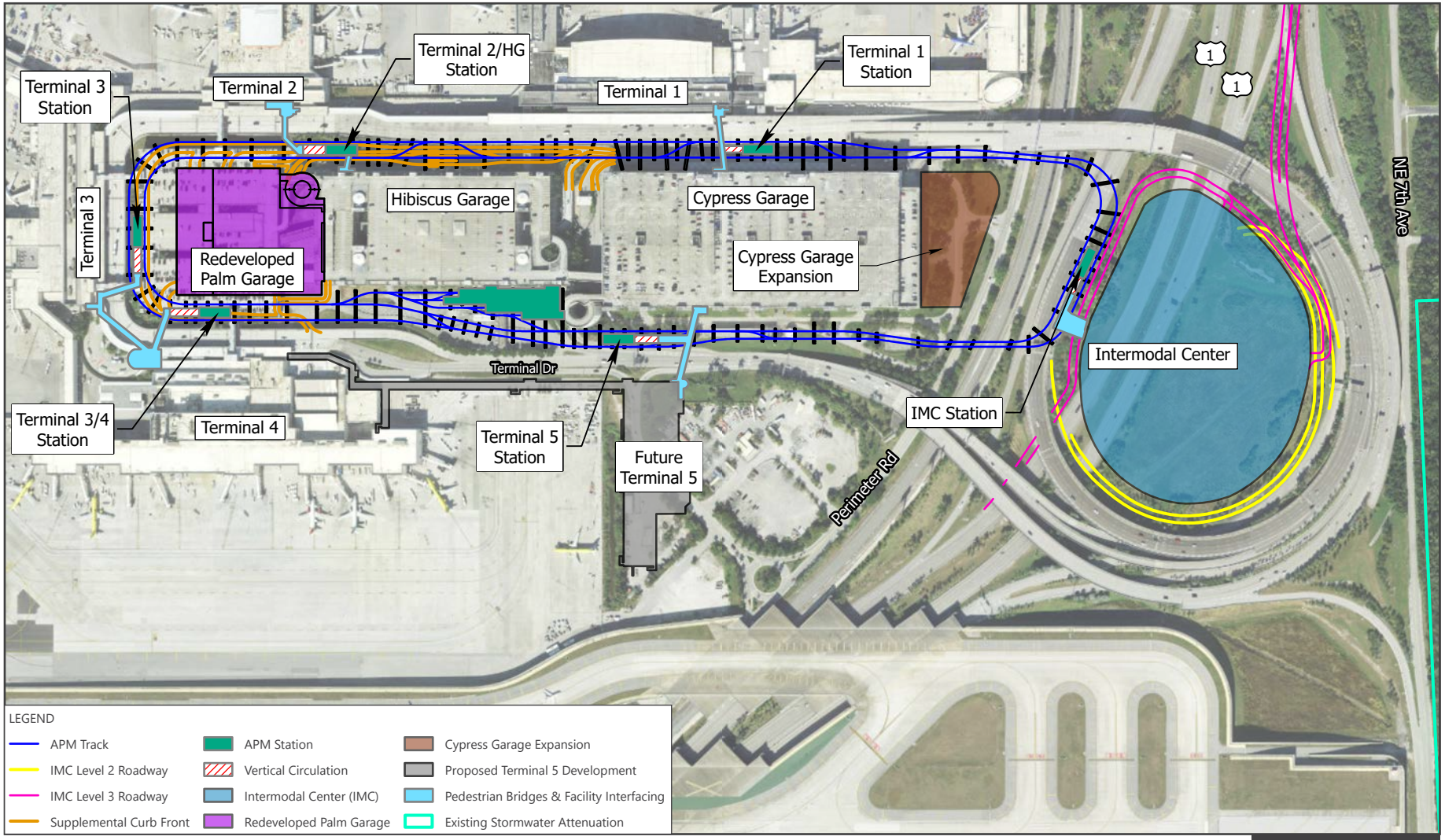
EXHIBIT 3-1

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Project Elements
Fort Lauderdale-Hollywood International Airport



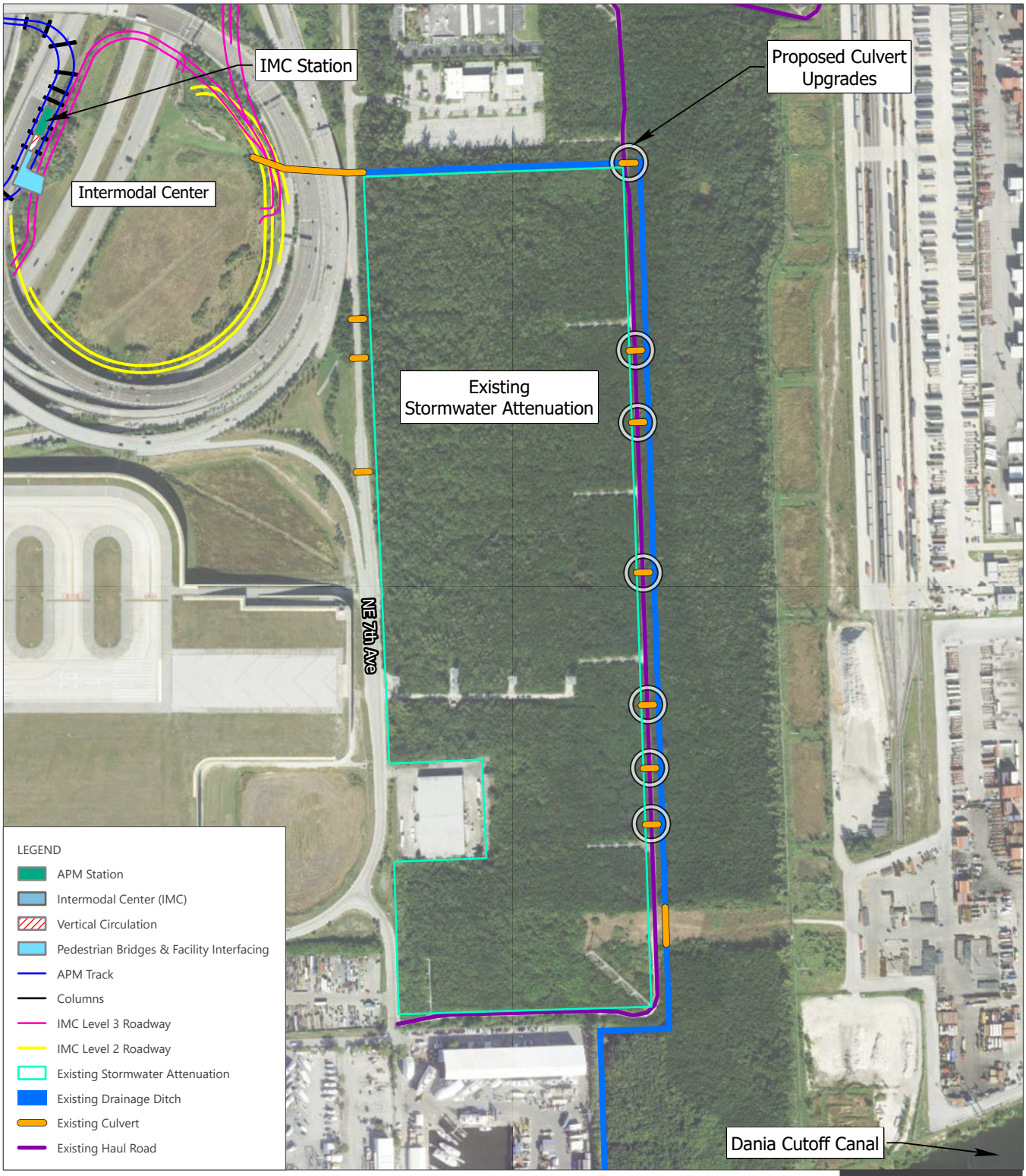
SOURCES: Ricondo & Associates, 2023; Adapted by ESA, 2024.

EXHIBIT 3-2

NORTH 0 500 ft.

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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

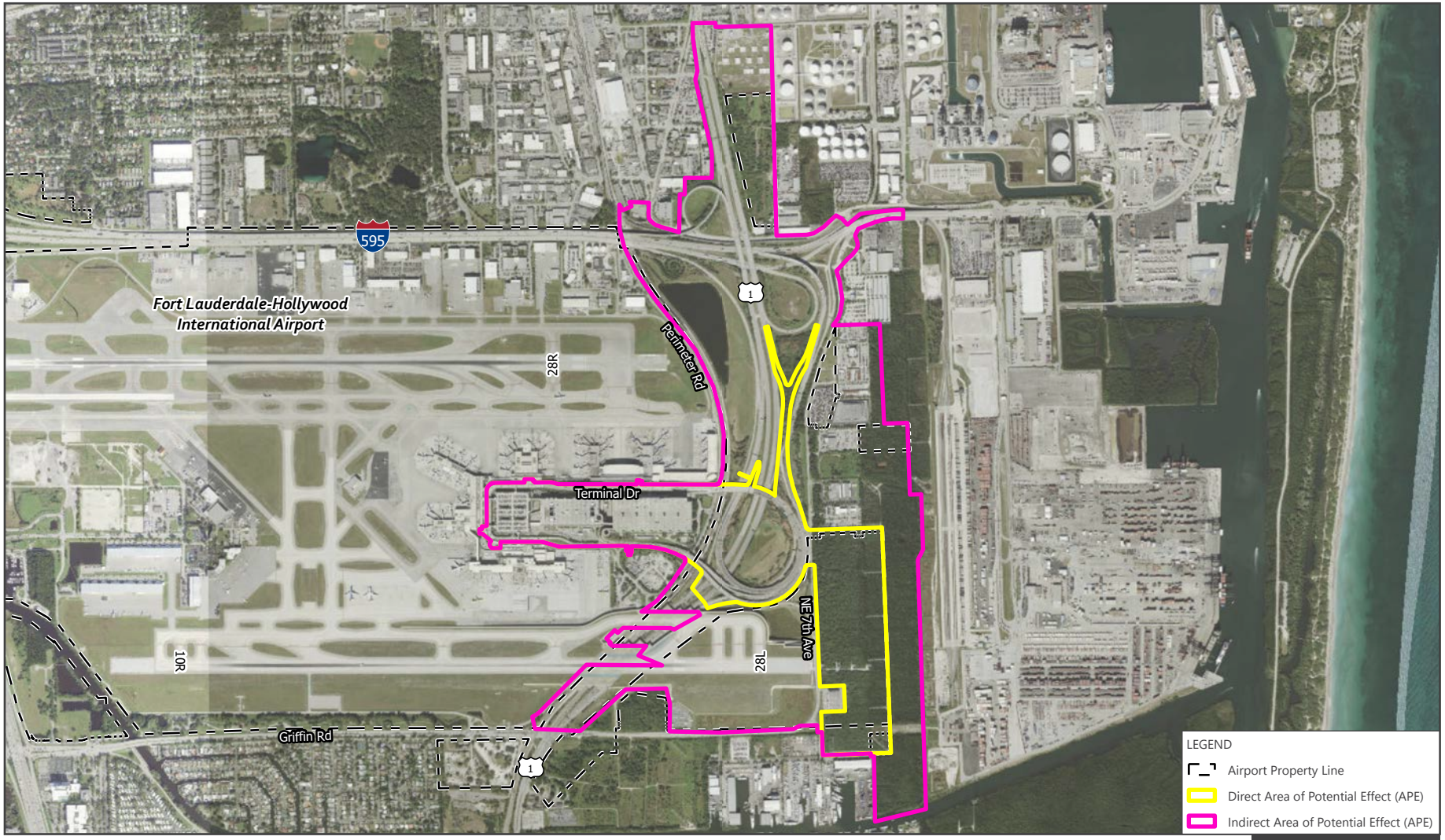
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IMC and Stormwater Improvements
Fort Lauderdale-Hollywood International Airport

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Enclosure 4

Area of Potential Effect



SOURCES: ESA, 2024.

EXHIBIT 4-1

NORTH 0 2,000 ft.

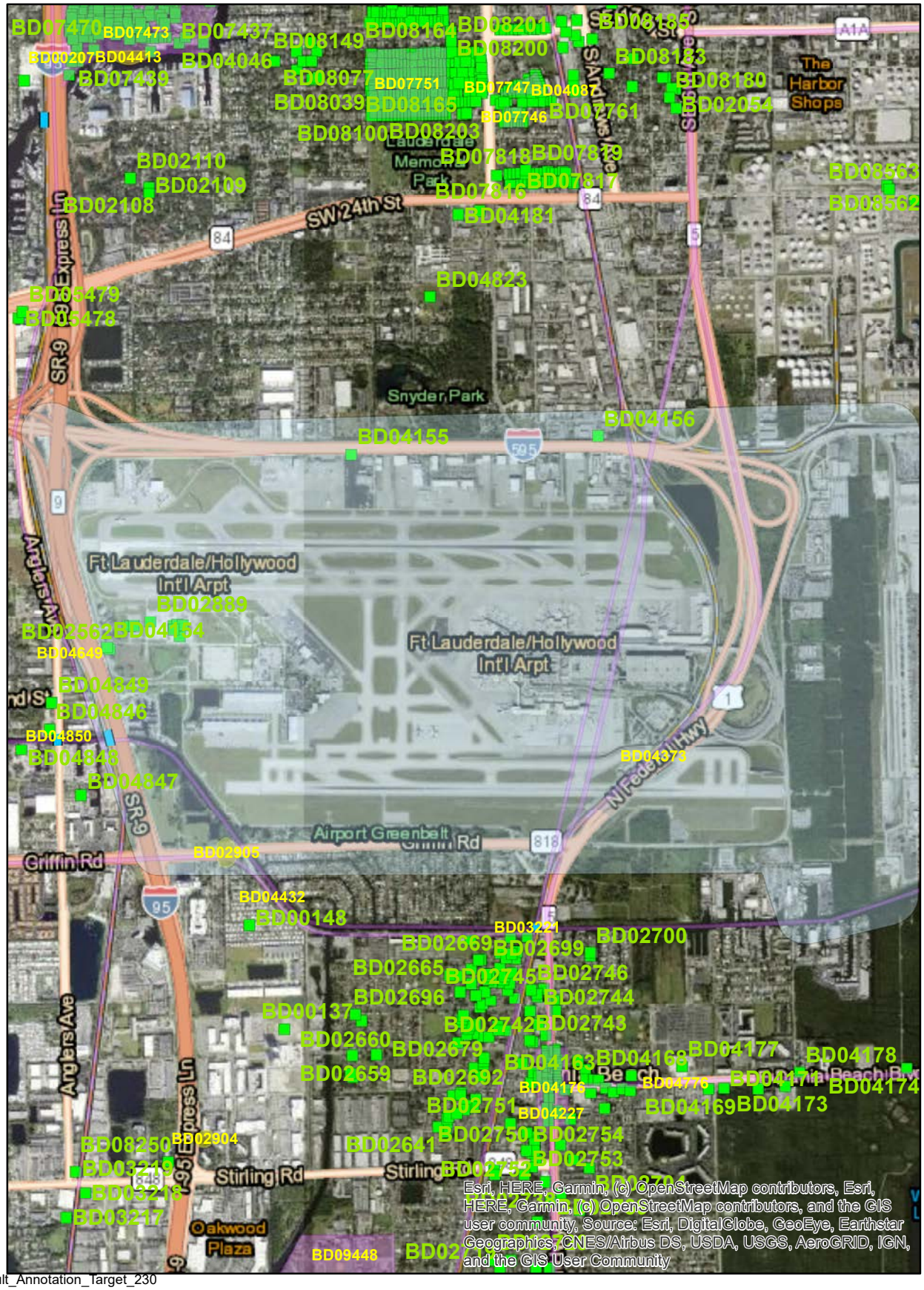
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Areas of Potential Effect
Fort Lauderdale-Hollywood International Airport

Enclosure 5

Florida Master Site File Records

Date: 2/19/2024



Legend

- Buffer_of_Default_Annotation_Target_230
- FloridaSites
- HistoricalBridges
- HistoricalCemeteries
- ResourceGroups
- FloridaStructures

870 435 0 870 Meters

N

AR=1
SS=14
CM=0
RG=5
BR=0
Total=20

Cultural Resource Roster

SiteID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
BD02561	SS	JUNIOR BACHELOR OFFICERS QUARTERS NAS	1615 S W 39TH ST, FT LAUDERDALE	-RESOURCE DESTROYED- 1942 Other		
BD02562	SS	LINK TRAINER NAS FT LAUDERDALE	4000 W perimeter RD, Ft. Lauderdale	1942 Frame Vernacular	Eligible	NR Listed - May 20, 1998
BD02889	SS	PAINT BUILDING NAS BUILDING 1	NAVAL AIR STATION, FT. LAUDERDALE	-RESOURCE DESTROYED- 1942 No style	Not Eligible	
BD02890	SS	ANTENNA COMMUNICATIONS NAS BUILDING 4	1650 SW 39TH ST,NAVAL AIR STATION, FT. LAUDERDALE	-RESOURCE DESTROYED- 1953 No style	Not Eligible	
BD02891	SS	HOISTING TOWER NAS BUILDING 4	1650 SW 39TH ST, FT. LAUDERDALE	-RESOURCE DESTROYED- 1953 No style	Not Eligible	
BD02892	SS	MINE TEST TANK NAS BUILDING 7	1650 SW 39TH ST, FT. LAUDERDALE	-RESOURCE DESTROYED- 1942 No style	Not Eligible	
BD02893	SS	UNDERWATER WEAPONS SYSTEMS LAB NAS BLD14	1650 SW 39TH ST, FT. LAUDERDALE	-RESOURCE DESTROYED- 1942 No style	Not Eligible	
BD02894	SS	ADMINISTRATION BUILDING NAS BUILDING 15	NAVAL AIR STATION, FT. LAUDERDALE	-RESOURCE DESTROYED- 1942 Other	Not Eligible	
BD02895	SS	MAGAZINES/SMALL ARMS NAS BUILDING 20	1650 SW 39TH STREET, FT. LAUDERDALE	-RESOURCE DESTROYED- 1943 Other	Not Eligible	
BD02896	SS	MAGAZINES/HIGH EXPLOSIVE NAS BUILDING 21	1650 SW 39TH STREET, FT. LAUDERDALE	-RESOURCE DESTROYED- 1943 Other	Not Eligible	
BD02897	SS	MAGAZINES/SMALL ARMS NAS BUILDING 22	1650 SW 39TH STREET, FT. LAUDERDALE	-RESOURCE DESTROYED- 1943 Other	Not Eligible	
BD02905	AR	OLD GRIFFIN			Insufficient Info	
BD03221	RG	DANIA CANAL	Dania Beach	Linear Resource	Not Eligible	
BD04087	RG	Railroad Tracks	Pompano Beach	Linear Resource - 1 Contrib Resources	Eligible	
BD04154	SS	Sentry Gate	4000 W perimeter RD, Ft. Lauderdale	-RESOURCE DESTROYED- 1942 Frame Vernacular	Not Eligible	
BD04155	SS	GB Airlink	850 SW 34th ST, Ft. Lauderdale	1956 Masonry Vernacular	Not Eligible	
BD04156	SS	3340 SW 2nd Avenue	3340 SW 2nd AVE, Ft. Lauderdale	-RESOURCE DESTROYED- 1948 Masonry Vernacular	Not Eligible	
BD04373	RG	Federal Highway	Hollywood	Linear Resource - 1 Contrib Resources	Not Eligible	
BD04432	RG	Griffin Road	Dania Beach	Linear Resource - 1 Contrib Resources	Not Eligible	
BD04776	RG	SR-A1A	Lauerdale-by-the-Sea	Linear Resource - 1 Contrib Resources	Not Eligible	

Florida Master Site File

Manuscript Roster

Total=28

MS#	Title	Publication Information	Year
23551	Cultural Resource Assessment Survey of the Design Build Broward Mobility Project, Group 5A (Sequences 30, 150-1, 150-2, 280, and 290), Broward County, Florida (Financial Project ID: 433165-1-52-01)	Janus Research, 1107 N. Ward Street, Tampa FL 33607	2016
22382	Cultural Resource Assessment Survey Reevaluation of I-595/I-95 Express Lanes Direct Connect, I-95 from Stirling Road to Broward Boulevard and I-595 from SR-7 to I-95, Broward County, Florida	Janus Research, 1107 N. Ward Street, Tampa FL 33607	2015
19480	Cultural Resource Assessment Report for the All Aboard Florida Passenger Rail Project from West Palm Beach to Miami, West Palm Beach, Broward, and Miami-Dade Counties	Janus Research, 1107 N. Ward Street, Tampa FL 33607	2012
19752	Cultural Resource Assessment Survey SR 9 / I-95 PD&E Study from Stirling Road to North of Oakland Park Boulevard FM 42980412201 / ETDM 13168, Broward County, Florida	Janus Research, 1107 N. Ward Street, Tampa, FL 33607	2012
14376	Historic Resources Reconnaissance Survey and Archaeological Desktop Analysis I-95 Managed Lanes Piolt Project: 95 Express from: I-395 (Miami-Dade County) To: I-595 (Broward County)	Janus Research, Tampa. Prepared for Florida Department of Transportation, District Six, Miami	2007
14000	Cultural Resources Reconnaissance Study South Florida East Coast Corridor Transit Analysis Miami-Dade, Broward and Palm Beach Counties	Janus Research, Inc., Tampa, in Conjunction with Gannett Fleming, Inc., Miami. Prepared for Florida Department of Transportation, District 4, Fort Lauderdale	2006
12275	Cultural Resource Assessment Survey and Destop Analysis for the Fort Lauderdale-Hollywood International Airport, Broward County	Janus Research, Tampa. Submitted to Landrum & Brown, Cincinnati, OH	2005
12945	Cultural Resource Assessment Survey I-595 (SR-862) Project Development & Environment Study FM No. 409354-1-22-01 FAP No. 5951 539 I From the I-75 Interchange West of 136 Avenue to the I-95 Interchange Broward County, Florida	Janus Research, Tampa. Submitted to Florida Department of Transportion District Four, Fort Lauderdale	2005
10432	An Archaeological and Historical Assessment for the Existing SE 14th Avenue Cellular Tower, Broward County, Florida	Environmental Services, Inc., Jacksonville. Submitted to Vertex Engineering Services, Inc.	2004
10433	An Archaeological and Historical Assessment for the Existing SW 23rd Terrace Cellular Tower, Broward County, Florida	Environmental Services, Inc., Jacksonville. Submitted to Vertex Engineering Services, Inc.	2004
14102	Onshore Archaeological Assessment Report: Archaeological Monitoring of Geotechnical Test Bore Program and Subsurface Archaeological Testing of Taylor Road Area, for Onshore Portion of Proposed AES Ocean Express Pipeline, Southern Broward County, Florida		2004
7612	An Archaeological and Historical Survey of the Proposed Snyder Park Tower Location in Broward County, Florida	Panamerican Consultants, Inc., Tampa. Submitted to EPAC Environmental Services, Inc., Pompano Beach	2003
8906	The Tractebel Calypso Natural Gas Pipeline, Supplemental Report # 1	Janus Reseach. Submitted to: URS Corporation.	2003
8953	An Archaeological and Historical Survey of the Proposed MNTA Tower Location in Broward County, Florida	Panamerican Consultants, Inc., Tampa. Submitted to EnviroDesign Associates, Inc.	2003
12075	Archaeological Monitoring of Geotechnical Test Bore Program and Subsurface Archaeological Testing of Taylor Road Area for Onshore Segment of Proposed AES Ocean Express Pipeline, Southern Broward County, Florida	Gifford, John A. Submitted to Haley & Aldrich, Inc, East Hartford, Connecticut.	2003
7926	An Archaeological and Historical Survey of the Proposed Metro PCS Tower Location in Broward County, Florida	PANAMERICAN CONSULTANTS, INC., TAMPA. Submitted TO EPAC ENVIRONMENTAL SERVICES, INC., POMPANO BEACH, FLORIDA	2002

MS#	Title	Publication Information	Year
19293	Cultural Resource Overview of Onshore Segment of Propsed AES Ocean Express Pipeline, Southern Broward County, Florida & Archaeological Evaluation of Magnetometer & Side-Scan Sonar Targets in Florida State Territorial Waters Along the Offshore Navy Restri	AES Ocean Express LLC, Resource Report 4, Exhibit F-1, application to Federal Energy Regulatory Commission	2002
19302	Underwater Archaeological Background Study and Remote Sensing Investigation and Associated Upland Route Corridor Survey Pursuant to the AES Ocean Express LLC Pipeline Project from Exclusive Economic Zone (EEZ) to Broward County, Florida	Dr. Robert H. Baer, prepared for Haley Aldrich, Inc.	2002
6253	A Cultural Resource Assessment of the Proposed Grade Separation Along Eller Drive Over the Florida East Coast Railroad Tracks from US 1 to McIntosh Road, Broward County, Florida	PANAMERICAN CONSULTANTS, INC. SUBMITTED TO FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT FOUR	2001
6679	Resource Report 4, Cultural Resources for Calypso Pipeline, LLC, Calypso Natural Gas Pipeline Project	JANUS RESEARCH, ST. PETERSBURG. Submitted TO URS CORPORATION, ST. PETERSBURG	2001
7477	An Archaeological and Historical Survey of the Proposed Snyder Park Tower Location in Broward County, Florida	PANAMERICAN CONSULTANTS, INC., TAMPA. Submitted TO EPAC ENVIRONMENTAL SERVICES, INC., POMPANO BEACH	2001
5844	Tri-County Commuter Rail Authority Double Track Corridor Improvement Program for Segment 5	JANUS RESEARCH, INC., ST PETERSBURG, FORIDA. SUBMITTED TO PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC., MIAMI	1999
5872	An Archaeological and Historic Assessment of the Ft Lauderdale Airport SEIR Roadway Expansion, Broward County Florida	ARCHAEOLOGICAL AND HISTORICAL CONSERVANCY, INC., MIAMI. Submitted TO KEITH AND SCHNARS, P.A.	1999
4075	An Archaeological Survey of Southeast Broward County, Florida: Phase 3	Archaeological and Historical Conservancy, Inc., Miami. Submitted to Broward County Office of Planning	1995
5546	Archaeological and Architectural Survey, South Florida Testing Facility, U.S. Navy Surface Warfare Center, Fort Lauderdale, Florida	NEW SOUTH ASSOCIATES, INC., STONE MOUNTAIN, GA. SUBMITTED TO US ARMY CORPS OF ENGINEERS, MOBILE DISTRICT, MOBILE, AL	1995
3476	Archeological Survey of the Planned 20 in O.D. Port Everglades Loop and Meter Station	Letter Report from R. Christopher Goodwin & Associates, Inc., New Orleans, LA. Submitted to Enron Gas Pipeline Operating Company/Florida Gas Transmission Company, Houston, TX.	1992
2125	Historic properties survey of Fort Lauderdale, Florida	Historic Property Associates, Inc., St. Augustine.	1989
1440	Proposed re-alignment of SR A-1-A, from SR 5/US 1 to SE 17th St., in Broward County, Florida	Florida Department of Transportation, Tallahassee.	1987

Enclosure 6

2007 CRAS

A PHASE I CULTURAL RESOURCE SURVEY OF THE SUNPORT PARCEL, BROWARD COUNTY, FLORIDA

By:
Robert S. Carr, M.S.
Ivan Rodriguez, M.A.

ARCHAEOLOGICAL AND HISTORICAL CONSERVANCY, INC.
Davie, Florida 33314

For:
Lea + Elliot, Inc.

November 2007
AHC Project No. 2007.91
AHC Technical Report No. 825

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A Phase I Cultural Resource Survey of the Sunport Parcel, Broward County, Florida

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November 2007
AHC Project No. 2007.91
AHC Technical Report No. 825

CONSULTANT SUMMARY

In July, 2007 a draft State Historic Preservation Office Minimum Review Document was submitted to the SHPO. That assessment evaluated previously recorded cultural resources within two miles of the project parcel. A preliminary evaluation of those sites concluded that those sites would not be impacted by the Sunport Intermodal Centers and People Mover project, however, because of the proximity of BD210, the U.S. Customs House, to the People Mover Corridor an additional assessment of that structure should be conducted. This survey provides an assessment of BD210.

In September – November of 2007, the Archaeological & Historical Conservancy, Inc. (AHC) conducted a cultural resource survey for Lea + Elliot, Inc. of the Broward County Intermodal Center and People Mover Study also known as the Sunport PD&E Study. The subject encompasses parts of Sections 5, 13, 14, 15, and 21-28 in Township 50 Range 42E (Figure 1). The study area is characterized by urban development and the Port Everglades facility. The project area was surveyed to identify sites of archaeological and/or historical significance and to determine the potential impact to cultural resources from the project alternatives.

This assessment was conducted to fulfill historic and cultural resource requirements for Florida's Chapters 267 and 373 and cultural resource requirements of the Broward County Historic Commission. This assessment was conducted in accordance with Section 106 of the National Historic Preservation Act of 1966 (Public Law 89-665), as amended in 1992, and 36 C.F.R., Part 800: Protection of Historic Properties. The work and the report conform to the specifications set forth in Chapter IA-46, Florida Administrative Code.

The project parcel was assessed with an archival review and a windshield and pedestrian survey by an architectural historian and an archaeologist. A 2007 search with the Florida Division of Historic Resources (FDHR) indicates that there are 13 recorded sites within one mile of the study area of which two are within the study parcel. In addition, this assessment indicates that an area of moderate to high probability for archaeological sites occurs in the study area in proximity to the project alignment Alternative 5A and C along the Miami Road segment. This moderate to high probability area will also be affected by the proposed Intermodal Center (IMC) at Potential Location 2 (although that location is no longer considered as viable), and People Mover Corridor 4. Any consideration of the above alternatives will require a phase I cultural resource assessment to determine whether any significant archaeological and/or historic resources occur and whether they will be impacted.

Two National Register eligible sites, The Customs House (8BD210), and the Port Everglades Facility, 8BD180 were assessed in this study. The Customs House was designated as a historic site by the City of Hollywood in March 2000. Although People Mover Corridors 2, 3, and 5 come within 300 feet of this structure, there is no perceived adverse impact to the site as a result of the proposed People Mover alignments. A

detailed assessment of the site and recommendations are provided by architectural historian Ivan Rodriguez is provided in the Appendix of this report. The Port Everglades site, 8BD180, is adjacent to some People Mover alignments, however, the site is largely characterized as shipping basins and will not be affected by this project.

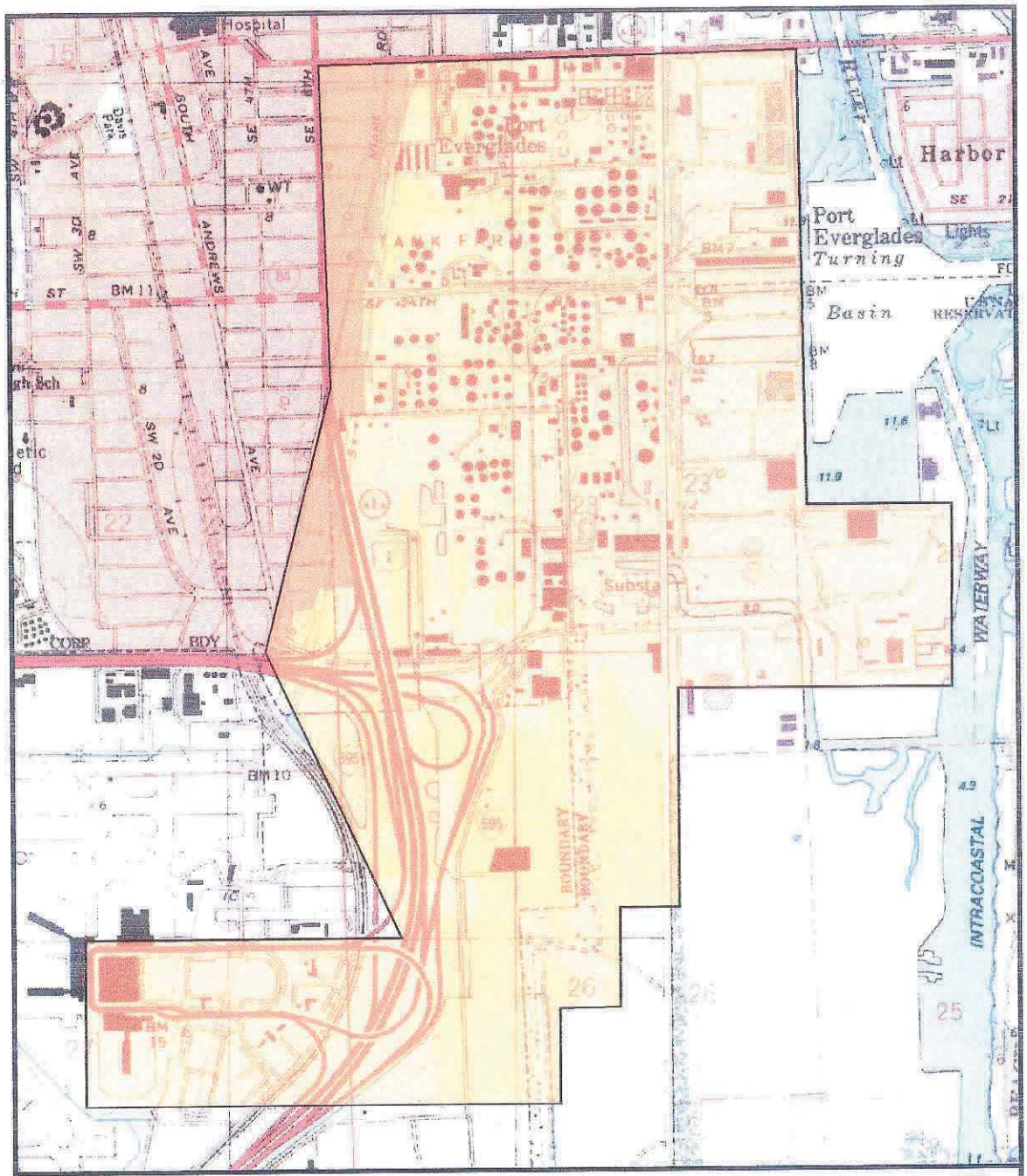


Figure 1. Map of the SunPort project area

= Project area

Township 50S, Range 42E, Sections 14, 15, 22, 23, 24, 26, 27

USGS Map: Fort Lauderdale South 1994 and Port Everglades 1986

0 1/8 1/4 1/2 Mile

PROJECT SETTING

The Sunport study area is located in eastern Broward County, Florida, within Sections 5, 13, 14, 15, and 21-28 in Township 50S, Range 42E. The study area is located within the municipalities of Fort Lauderdale, Hollywood, and Dania Beach. The project encompasses about 4.5 square miles.

The study area is bounded on the north by SE 17th Street, on the east by the Port Everglades turning basin, on the south by largely remnant wetlands and part of US 1. The western boundary roughly follows US 1 and a portion of the Fort Lauderdale Airport. Numerous structures occur within the project parcel including Port Everglades, the principal Port of Broward County. A review of a 1944 aerial photograph clearly indicates the relationship of the wetlands to the Atlantic Coastal Ridge (Figure 2). At that time the wetlands were being extensively farmed.

Disturbances to the project parcel have been intensive during this last century. Few intact soils occur on the parcel. Almost all soils are re-deposited and large quantities of fill occur particularly within Port Everglades.

Two physiographic regions characterize the study area. Approximately 90% of the parcel is highly disturbed fill placed ontop of what was historic fresh water marsh. All of Port Everglades was constructed upon filled-in wetlands. Mangrove forest now fringes the east edge of a portion of the parcel where it abuts the Intercostal Waterway. The Atlantic Coastal Ridge skirts the external western edge of the Sunport area. The ridge interface with the historic wetlands represent a moderate probability area for archaeological sites.

Elevations across the study area average 5 to 10 feet above sea level. A ridge approximately 10 feet above sea level and 5 feet above the historic wetlands occurs on the parcel's western boundary. The ridge geologically represents a portion of the Atlantic Coastal Ridge and is characterized by limestone, a porous marine fossil sedimentary rock overlaid by a relatively thin mantle of sands and organic soils. Soil on top of the ridge rarely exceeds 60 centimeters in depth (except in solution holes); while in contrast, soils on the adjacent lowlands are considerably deeper. Soil types are depicted as Arent organic substratum according to the Broward County soil map (Pendleton et al. 1994).



Figure 2. Aerial photograph (1947) of a portion of the SunPort project area

N

= Project boundaries

Source: http://palmm.fcla.edu

0 1/16 1/8 1/4 Mile

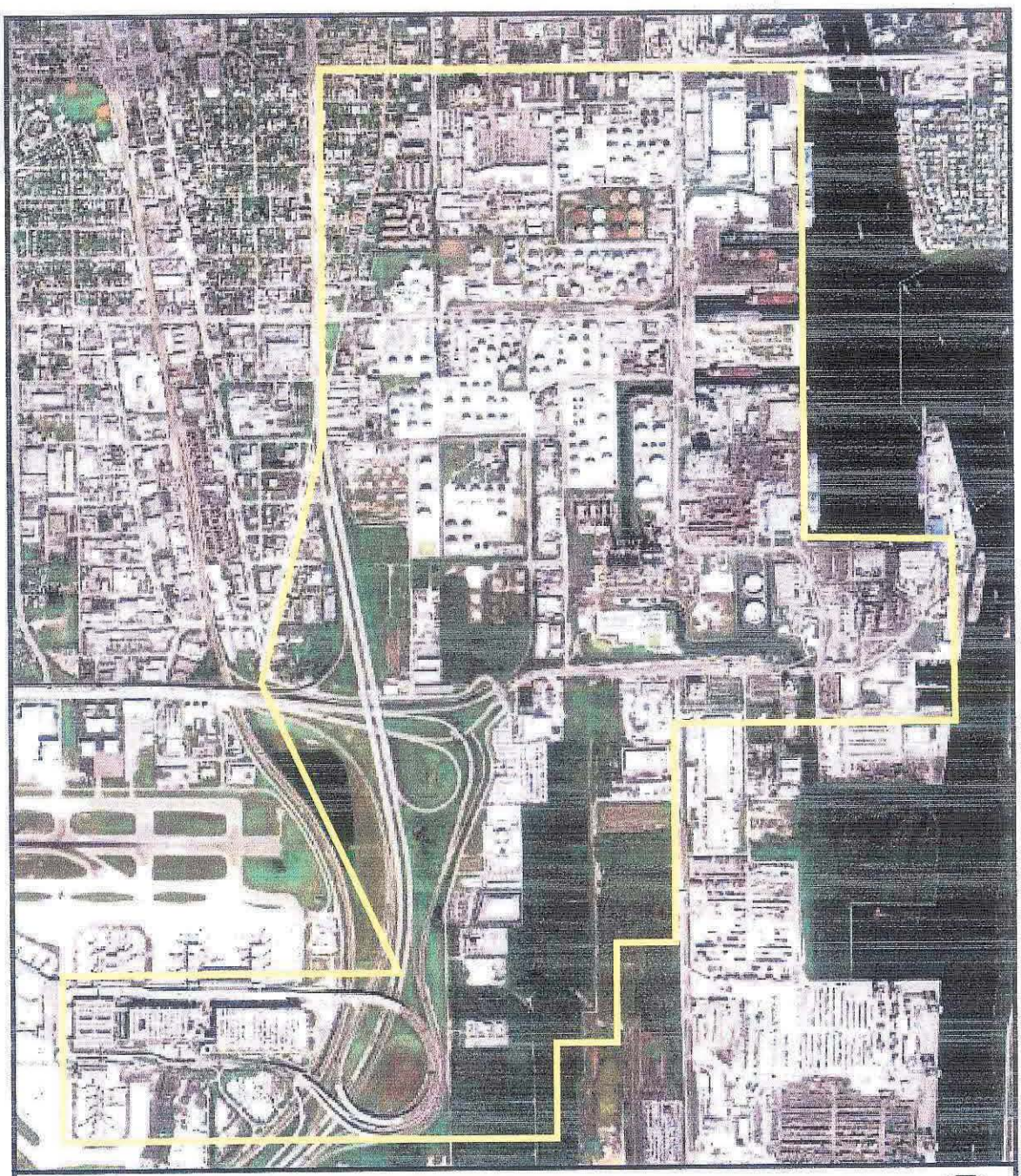


Figure 3. Aerial photograph (2006) of the SunPort project area

N

= Project area

Source: www.earth.google.com

0 1/8 1/4 1/2 Mile

PREVIOUS RESEARCH

The earliest recorded archaeological investigations in eastern Broward County were conducted by M.H. Harrington at a prehistoric mound complex (8BD3) located on the north bank of the New River. These mounds ranged in size from 8 to 50 feet in diameter and were from 2 to 8 feet high. The larger mounds had low sand embankments extending southward to the river. Smaller mounds were scattered throughout the palmettos. Harrington noted that a previous explorer had dug a trench across one of the larger mounds and that fragments of human bone were recovered in the excavation spoil. Harrington trenched another of the larger mounds without finding anything.

In the 1940s John Goggin reviewed specimens of pottery sherds and shell tools collected by Harrington from refuse deposits at the forks, now reposing at the Smithsonian Institution. However, these samples were mixed with other collections and could not be distinguished with certainty from other samples. John Goggin states on the 8BD3 site form that the mounds and refuse deposits were totally destroyed, believing that dredging operations on the river destroyed the refuse deposits. However, this is not the case. In all probability, the refuse deposits that were collected by Harrington were sites 8BD87 (the Rivermont site) and 8BD201. Goggin also reports a site on the Loesch property, 8BD39, where Mr. W.C. Orchard recovered a flint projectile point in 1939. Goggin did not visit the site but gives the address as being 4th Street and 11th Avenue (Goggin ND), which would place it within the boundaries of 8BD87.

Many early settlers observed the imposing mound complex of 8BD3. The surveyor, A.L. Knowlton, depicted it on his 1895 plat map of Fort Lauderdale by showing two mounds and earthwork ridges that extended towards the river. A Dade County guidebook for the years 1896-1897 describes human skeletons found at a depth of four feet that were "buried in a circle after the manner of spokes in a wheel, one tier the feet to the center and the next the heads (Anonymous n.d.:76). Although the exact location of these burials is not indicated, it is likely that it was at or in the vicinity of 8BD3.

A partial survey of Broward County was conducted by the Florida Division of Archives, History, Records Management between June and September 1974 by this author, and a "windshield" survey of the county was conducted in 1979 by the Broward County Archaeological Society. In January 1980, a survey of the "Near Northwest" Redevelopment Area was conducted within a small tract along the north bank of the river. Disturbed components of a single prehistoric midden, 8DA196, were discovered there (Carr 1980). In the same year, a survey was also conducted of the South Fork of the New River, as well as an archaeological investigation of the Stranahan House (Carr 1989). The South Fork survey included the excavation of a 50 cm test hole at the Rivermont site, 8BD87, next to a house at 922 SW 4th street. The midden depth was determined to be 110 cm. A survey of Broward County archaeological sites, which included the New River and the barrier island, was conducted in 1991 (Carr 1991). In 2000, an archaeological assessment was conducted at 1016 Waverly Place, which resulted in locating at least one prehistoric grave (Carr and Beriault 2000). Another assessment near that one, at SW 2nd Court, north of the North Fork of the New

River was conducted by AHC in 2001 (Carr *et al.* 2001). An archaeological assessment of the Ft. Lauderdale Hotel parcel revealed a scattering of oyster shells that may have been prehistoric (Carr and Elgart-Berry 2001).

Site 8BD99 is located three miles northwest of the subject parcel and occurs on an oak island. That site yielded both prehistoric and Seminole artifacts.

PROJECT METHODOLOGY

In July, 2007 a draft State Historic Preservation Office Minimum Review Document was submitted to the SHPO. That assessment evaluated previously recorded cultural resources within two miles of the project parcel. A preliminary evaluation of those sites concluded that there sites would not be impacted by the Sunport Intermodal Centers and People Mover project, however, because of the proximity of BD210, the U.S. Customs House, to the People Mover Corridor an additional assessment of that structure should be conducted. This survey provides an assessment of BD210.

Prior to conducting the Customs House assessment and additional fieldwork relevant archives and literature were reviewed. This included, but was not limited to, studying the previous archaeological reports for sites in Broward County and the project parcel, reviewing information from the Master Site File in Tallahassee and the Broward County Historic Commission concerning nearby sites, and examining USGS maps of the project area. A review of the Labins database of land surveys also was conducted. In addition, color and black and white aerial photographs from the project area, which could aid in revealing anthropogenic changes to the topography and floral communities were interpreted.

The archaeological component of this survey incorporated the use of area predictive archaeological site models. These models postulate that oak hammocks adjacent to wetlands (i.e. rivers, creeks, transverse glades and marshes) are high probability areas for being associated with archaeological sites. The elevational information on the USGS Fort Lauderdale South Quadrangle map for the area and vintage aerial photographs were used to identify any higher probability areas within the project area.

The subject parcel was assessed by pedestrian and windshield survey. A field assessment of existing structures and higher probability archaeological areas was conducted within the project parcel by windshield survey.

Site 8BD210, is located adjacent to various People Mover alternatives and was assessed by an architectural historian and an updated Florida Mater Site File for 8BD210 completed (see Appendix 1). Site 8BD180 also was assessed and documentation on the site is presented in Appendix 2.

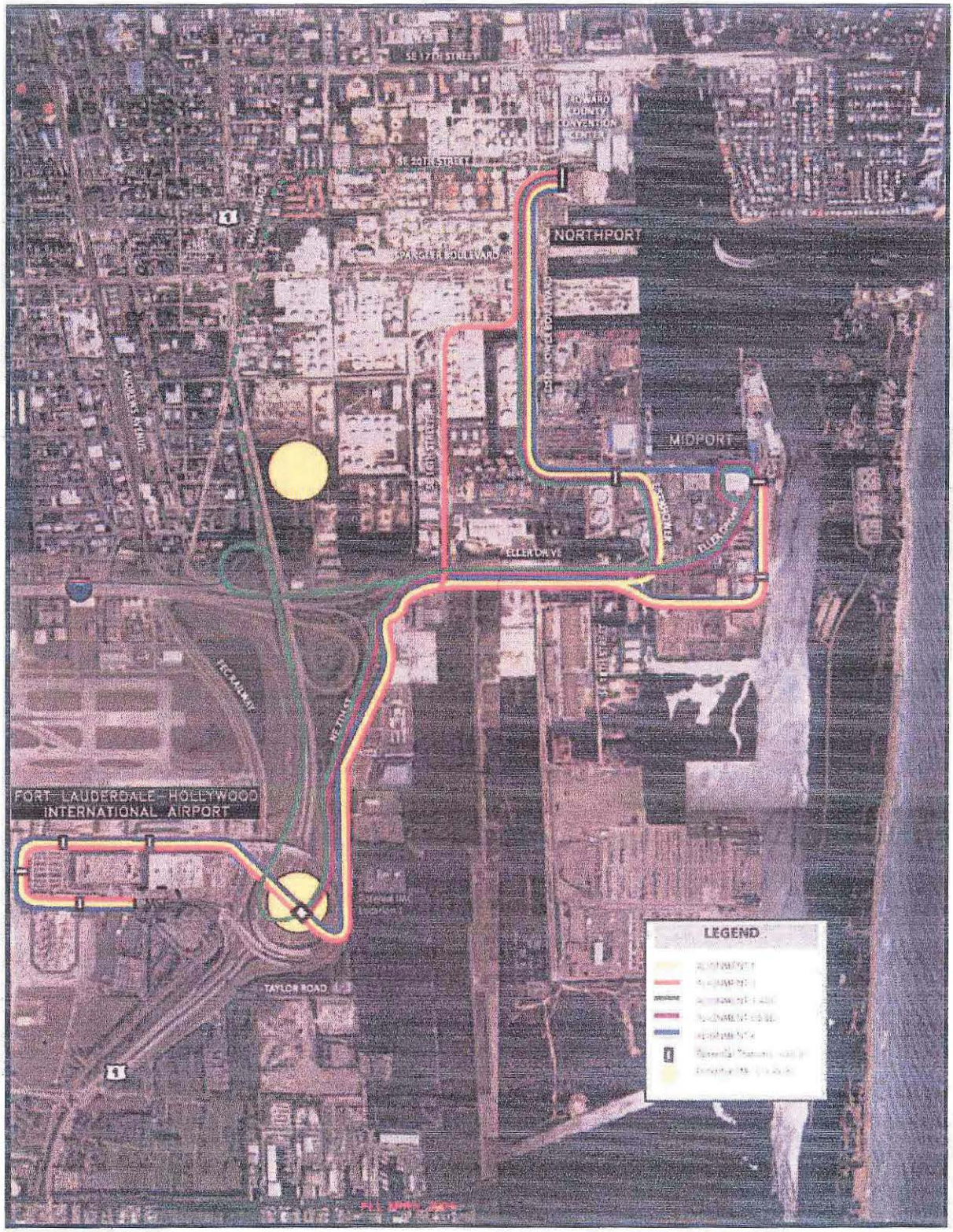


Figure 4. Aerial photograph with SunPort project alignment alternatives overlaid.

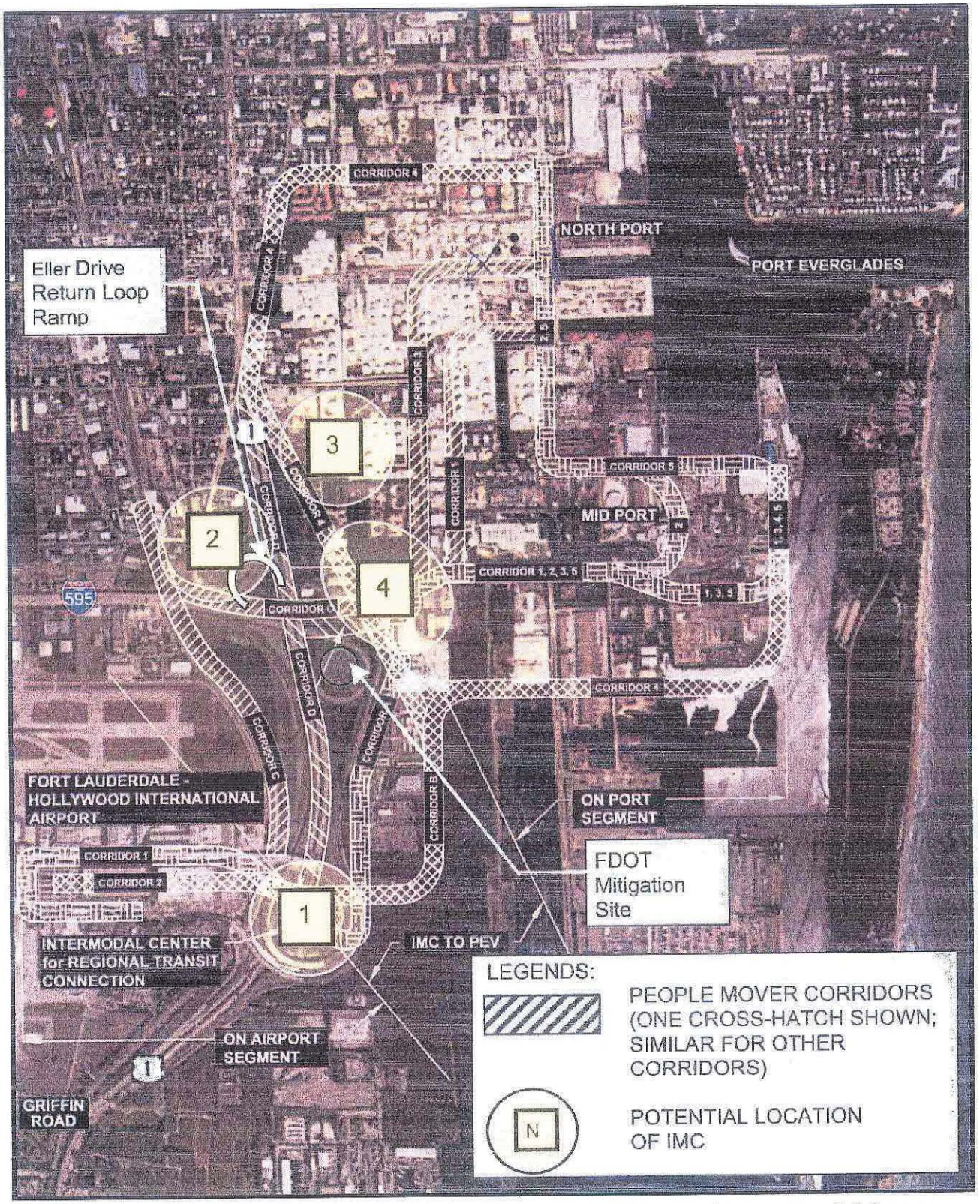


Figure 5. Aerial photograph with potential locations for the SunPort project Intermodal Center and People Mover corridors overlaid.

RESULTS AND CONCLUSIONS

This cultural resource assessment included a review of archival documents, maps, aerial photographs, and a field assessment by an archaeologist and an architectural historian. One structure, The Customs House, 8BD210, was assessed relative to it's significance and potential impacts from alternative alignments from several project people mover alignment alternatives. All proposed alignment share a similar route adjacent to this historic site. A detailed assessment of the structure is provided in the Appendix of this report.

Alternative transportation alignments and Intermodal Center locations are evaluated in the Tables below:

Table 1. Intermodal Center Location Alternatives Evaluation

Alternative II	Potential Cultural Resource (CE) Impacts	Known Sites	Probability
1	Low	None	LPZ
2**	High	None	MPZ
3	Low	None	LPZ
4**	Low	None	LPZ

LPZ= Low Probability Zone for archaeological sites
MPZ=Moderate Probability Zone for archaeological sites
**IMC=Location determined to be non-viable and dropped from consideration

Table 2. People Mover / Alignment Alternatives Evaluation

Alignment	Potential CR Impacts	Known Sites	Comments
1	Low	8BD210	No impact
2	Low	8BD210	No impact
4	Moderate	None	Historic structure, possible archaeological site
5 A, C	Low, Moderate, and High	8BD210	Moderate to High Probability on Miami Road
5 B, D	Low	8BD210	No impact
6	Low	8BD210	No impact

This assessment determined that two previously recorded historic sites occur within close proximity to the people mover alignments. The U.S. Customs House, BD210, is of National Register significance and designated as a historic site by the City of Hollywood. No adverse impacts to the building is anticipated by any of the People Mover alignments (see Appendix 1). Site BD180 is the Port Everglades fuel farm and shipping basin. This site encompasses part of the original footprint of the port facility built in 1927. This site is adjacent to several proposed People Mover alignments but will not be affected by this project.

identified along Miami Road and SE 6th Avenue (Figure 6). This zone is characterized as a high elevated ridge adjacent to historic wetlands. The zone has a moderate probability of encompassing prehistoric and historic archaeological sites, including a segment of the 19th century military road connecting Fort Lauderdale and Fort Dallas in Miami. Also, there is one unrecorded historic structure with a concrete and shell wall located at 2200 SE Miami Road. This zone would only be affected by Corridor 4, and if only a bus system is used, than no potential adverse impact would occur unless the road was improved and widened. If an alternative is selected where the road is improved, then a phase I cultural resource assessment will need to be conducted.

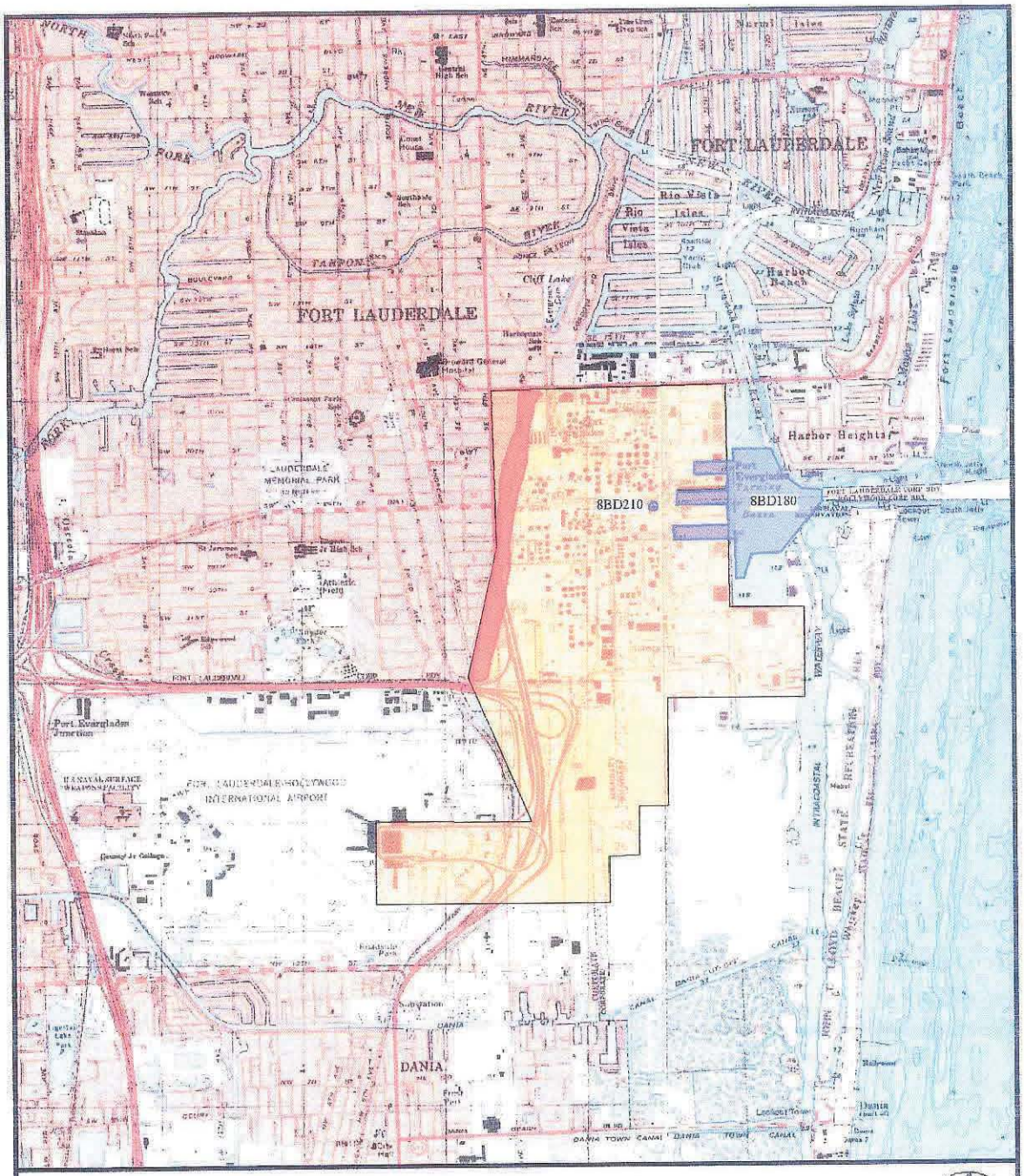


Figure 6. Map of the SunPort project and project parcel cultural resources

USGS Map: Fort Lauderdale South 1994 and Port Everglades 1986

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From: Micheline Hilpert
To: Green, Peter M (FAA); THPO Compliance
Subject: RE: Section 106 Consultation - Proposed Intermodal Center and Related Improvements at FLL Airport
Date: Thursday, May 2, 2024 4:21:50 PM

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PETER A. HAHN
TREASURER

May 2, 2024

Peter M. Green, AICP
Environmental Protection Specialist
Orlando Airports District Office
8427 South Park Circle, Suite 524
Orlando, FL 32819
Phone: (407) 487-7220
Fax: (407) 487-7135

Subject: Landside (Intermodal) Improvement Project, Fort Lauderdale-Hollywood International Airport (FLL), Broward County, Florida
THPO Compliance Tracking Number: 0034400

In order to expedite the THPO review process:

1. Please correspond via email and provide documents as attachments,
2. Please send all emails to THPOCompliance@semtribe.com,
3. Please reference the THPO Compliance Tracking Number if one has been assigned.

Dear Peter M. Green,

Thank you for contacting the Seminole Tribe of Florida Tribal Historic Preservation Office (STOF THPO) Compliance Section regarding the Landside (Intermodal) Improvement Project, Fort Lauderdale-Hollywood International Airport (FLL), Broward County, Florida.

The proposed undertaking does fall within the STOF Area of Interest. We have reviewed the documents that you provided and completed our assessment pursuant to Section 106 of the National Historic Preservation Act (16

USC 470) as amended and its implementing regulations (36 CFR 800). In response, our office would like to provide the following comments:

- We would like to request that you please provide us with the maps mentioned in your consultation request letter of April 22, 2024, for our records (i.e., USCGS Sheet T-01510 'East coast of Florida from Biscayne Bay northward, Broward and Dade Counties, FL' [1883] and Sheet T-01605b 'Southern Part of New River and Head of Key Biscayne Bay' [1884]).

Otherwise, we have no objections or other comments currently. Please notify our office if any archaeological, historical, and/or burial resources are inadvertently discovered during project implementation and feel free to contact us with any questions or concerns.

Respectfully,

Micheline Hilpert, MA
Compliance Analyst I
STOF THPO, Compliance Section
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440
Email: MichelineHilpert@semtribe.com

From: Green, Peter M (FAA) <peter.m.green@faa.gov>
Sent: Monday, April 22, 2024 5:25 PM
To: THPO Compliance <THPOCompliance@semtribe.com>
Subject: Section 106 Consultation - Proposed Intermodal Center and Related Improvements at FLL Airport

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Ms. Osceola,

Broward County Department of Aviation has requested approval from the Federal Aviation Administration for development of an Intermodal Center and an Automated People Mover, parking garage improvements, and terminal access road improvements at the Fort Lauderdale-Hollywood International Airport (FLL). The federal actions associated with the proposed project require consultation under Section 106 of the National Historic Preservation Act. FAA appreciates your review of the project and opinion on FAA's determination that the undertaking would not affect historic properties. Please let me know if you have any questions or need additional information.

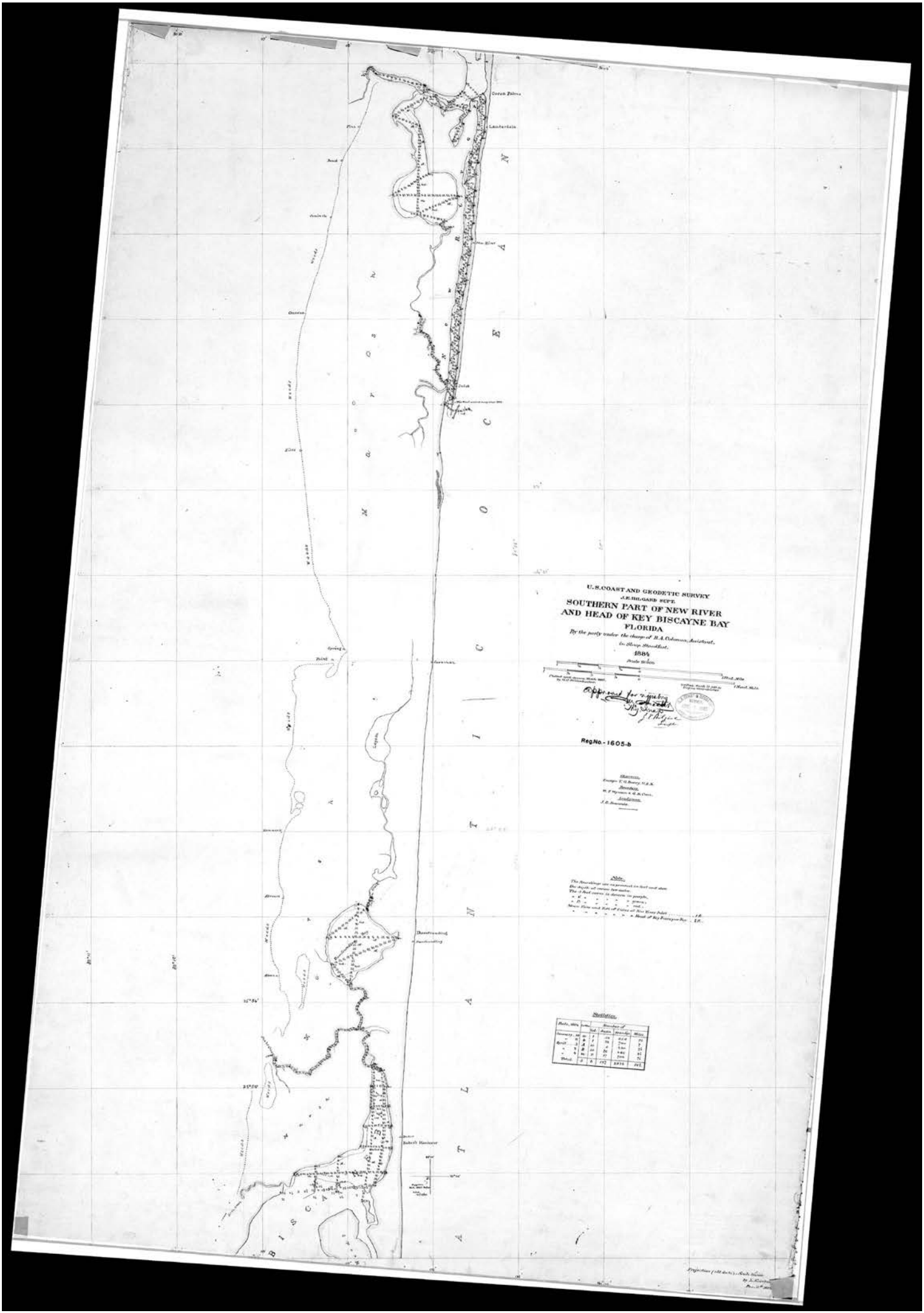
Attached is FAA's consultation letter and an enclosure providing information on the proposed project, the Area of Potential Effect, and research conducted for the study.

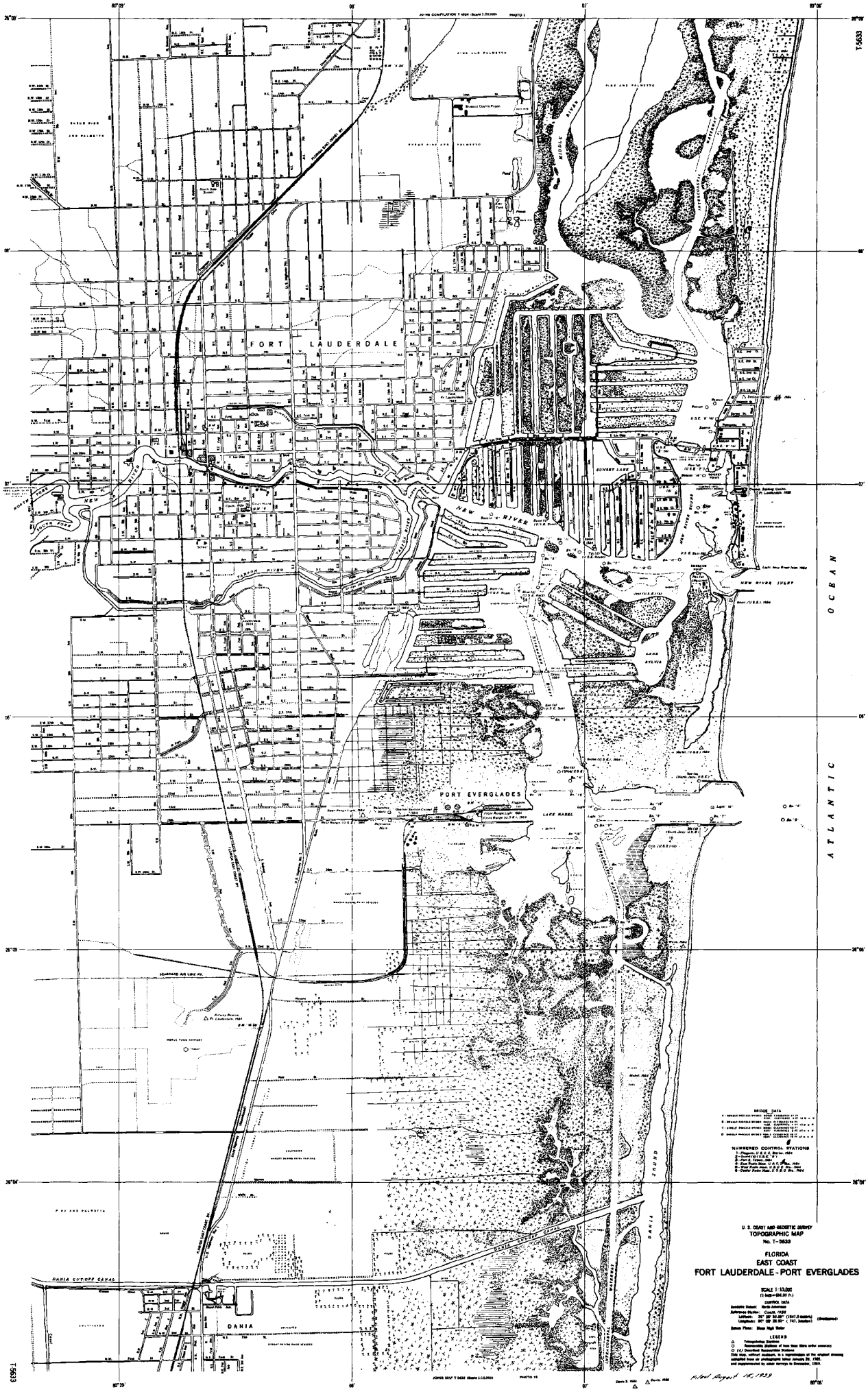
Best regards,

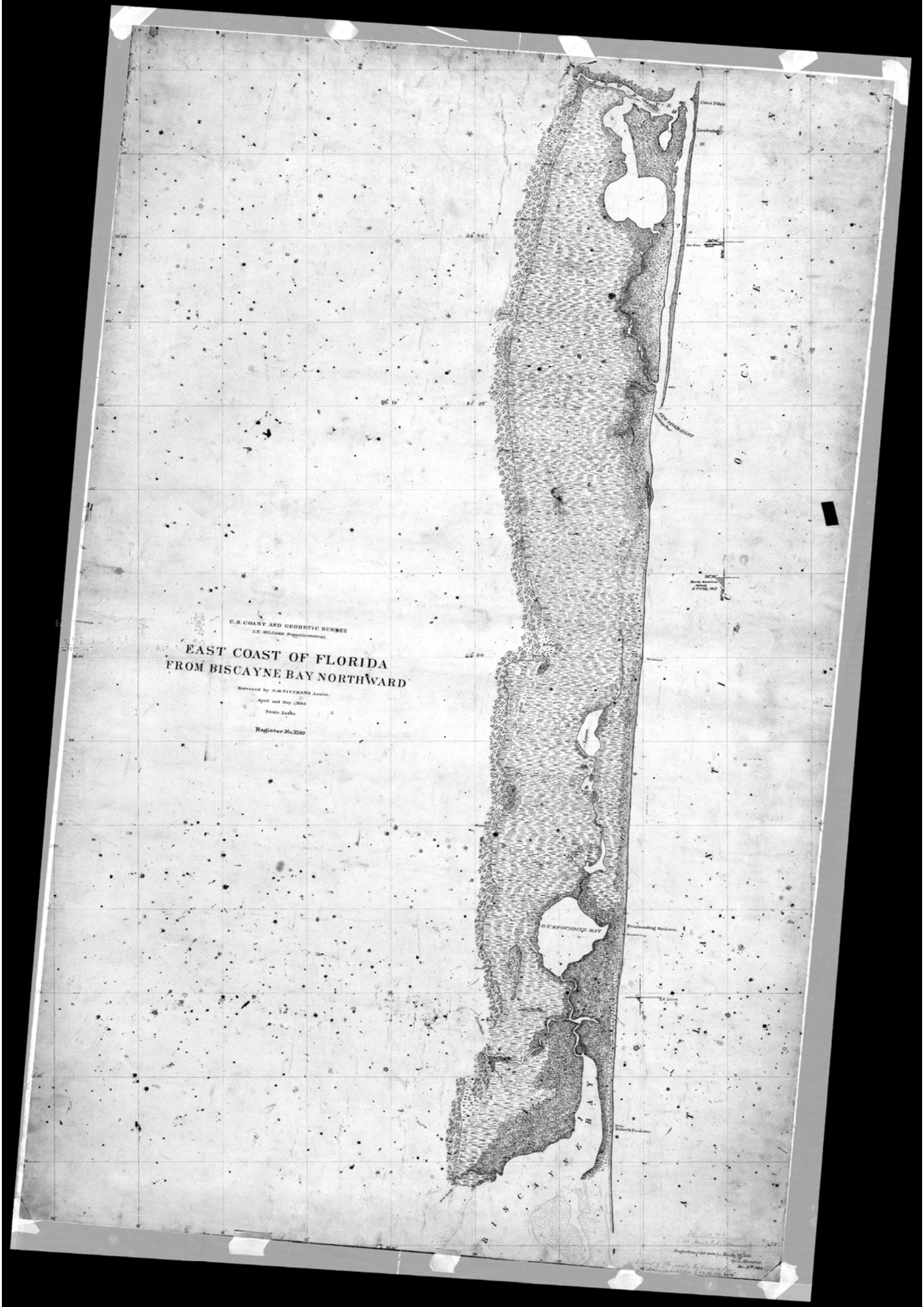
Peter Green

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

Maps Provided to STOF THPO


U.S. COAST AND GEODETIC SURVEY
J.E. HILGARD SUPT.
SOUTHERN PART OF NEW RIVER
AND HEAD OF KEY BISCAYNE BAY
FLORIDA
By the party under the charge of R.A. Colonna, Assistant,
In Sloop Hazel Kirk.
1884
Scale 1/80,000
Approved for publication
Reg No. - 1605-b
Hazel Kirk
Thunderbolt
Baker's Hammock
Coast Palms
Fort Lauderdale
New River
Dania
Miami
Key Biscayne
ATLANTIC OCEAN
BISCAYNE BAY


FORT LAUDERDALE
NEW RIVER
NEW RIVER INLET
SUNSET LAKE
LAKE SYLVIA
FORT EVERGLADES
LAKE MABEL
ATLANTIC OCEAN
DANIA CUTOFF CANAL
DANIA
HOLLYWOOD
BRIDGE DATA
NUMBERED CONTROL STATIONS
U. S. COAST AND GEODETIC SURVEY
TOPOGRAPHIC MAP
No. T-5633
FLORIDA
EAST COAST
FORT LAUDERDALE - PORT EVERGLADES
SCALE 1:10,000
(1 inch = 833.33 ft.)
CONTROL DATA
LEGEND
T-5633


U.S.COAST AND GEODETIC SURVEY
J.E. HILGARD Superintendent.
EAST COAST OF FLORIDA
FROM BISCAYNE BAY NORTHWARD
Surveyed by O.H.TITTMANN Assist.
April and May 1882
Scale 2miles
Register No.1580
Cocoa Point
Jupiter Inlet
Hillsboro River
Hillsboro Inlet
Lake Worth
Boynton
Boca Raton
Hillsboro
Deerfield
Pompano
Fort Lauderdale
Dumfoundling Bay
Broadmoor
Miami
Coconut Grove
Cocoanut Grove
Biscayne Bay
Baker's Haulover
Projection (not to scale) Scale by Lat.
by O. Tittmann
Dec. 27 1882.

Appendix H
Public Involvement

H-1 Summary of Public Involvement

H-2 Public Notices

H-3 Public Workshop Materials

H-4 Public Comments and Responses

Appendix H-1

Summary of Public Involvement

APPENDIX H-1
Summary of Public Involvement

Public involvement under the National Environmental Policy Act (NEPA) serves several critical purposes. It enhances the quality of decisions by incorporating diverse perspectives and information, leading to more informed and effective outcomes (42 USC § 4332). Additionally, public participation ensures transparency in the decision-making process, fostering trust between the public and government agencies (40 CFR § 1506.6). Engaging with stakeholders and the community improves relationships and promotes a sense of collaboration and partnership (40 CFR § 1501.7). Furthermore, public involvement holds agencies accountable, ensuring that environmental impacts are thoroughly considered and addressed (42 USC § 4332). NEPA mandates public involvement at various stages of the environmental review process, such as during the preparation of environmental assessments (EAs) (40 CFR § 1503.1). This legal framework underscores the importance of public participation in achieving NEPA's goals of keeping the public informed and gathering their input. This appendix summarizes the public involvement performed for the EA for landside projects at Fort Lauderdale-Hollywood International Airport.

H.1 Availability of the Draft EA

H.1.1 Notice of Availability of the Draft EA

A Notice of Availability for the Draft EA was printed in the Sun Sentinel and Gazetta newspapers on July 22, 2024. The Notice of Availability was also posted on the BCAD's website at https://www.broward.org/Airport/Business/Community/MasterPlan/Pages/default.aspx. Printed copies of the Draft EA were also made available for review during regular business hours at the following locations:

- Dania Beach-Paul DeMaio Library: 1 Park Avenue East, Dania Beach, Florida 33004
- Davie/Cooper City Branch Library: 4600 SW 82nd Avenue, Davie, Florida 33328
- Broward County Main Library: 100 S Andrews Ave, Fort Lauderdale, FL 33301

The Draft EA was made available for review by the public, government agencies, and interested parties for 44 days. Copies of the notices and proof of publication are provided in **Appendix H-2.**

H.1.2 Public Workshop

A Public Workshop was held between 5:30 P.M. and 8:30 P.M. on August 27, 2024, to discuss the analyses presented in the Draft EA and to answer questions from the public. The Public Workshop was held at Ann Kolb Nature Center. The Public Workshop was an Open House style workshop with boards describing the NEPA process, alternatives considered, the Proposed Action, and an overview of the analyses and results

of the Draft EA environmental analysis. The Study Team was available to answer questions. Comment cards were provided so that attendees could submit public comments. **Appendix H-3** includes public workshop materials, including the sign in sheets, comment forms, and workshop boards. Following the public workshop the presentation boards were remediated in accordance with Section 508 of the Rehabilitation Act of 1973 to make the materials accessible. The materials were made available on the project website at: https://www.broward.org/Airport/Business/Community/MasterPlan/Pages/default.aspx

There were approximately 35 attendees at the workshop. The workshop was attended primarily by contractors. There were very few members of the public and local agencies that attended the workshop. Those who attended the workshop were interested in finding out more information on the Proposed Project. There were no issues, major concerns, or objections raised by attendees on the environmental analysis of the Proposed Project. None of the attendees submitted a written comment at the workshop.

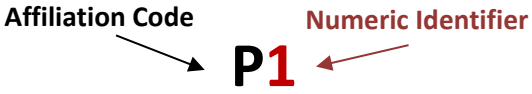
H.2 Public Comments and Responses

There were two comments submitted during the comment period for the Draft EA. Both comments were submitted via e-mail. One comment was submitted by a local agency and one comment was submitted by the public. The comment provided by the local agency was in overall support of the Proposed Project. The one comment from the public stated they could not make the public workshop and were requesting for the information used in the public workshop. There were no other public comments received during the comment period. There were also no comments submitted at the public workshop.

Letter codes were developed that consist of a character and a number to identify each comment letter to facilitate the cataloging of the comment letters. The first character identifies the type of commenter (affiliation code) as follows:

- A – Agency - Federal/State/Regional/Local
- P – Public

The number that follows the affiliation code identifies the specific comment letter, comment form, or verbal comment. For example, a Letter Code "P1" describes the comment as being the 25th comment submission received from the public.



The table below provides an indexed list of all comment letters received. The comment letters and responses can be viewed in **Appendix H-4**.

INDEX OF COMMENT LETTERS

Letter Code	Commenter	Agency / Affiliation	Date
A1	Gregory Stuart, AICP	Broward Metropolitan Planning Organization	August 27, 2024
P1	Michael Binne	Public Commenter	August 27, 2024

Appendix H-2
Public Notices

McClatchy

The Beaufort Gazette
The Belleville News-Democrat
Bellingham Herald
Centre Daily Times
Sun Herald
Idaho Statesman
Bradenton Herald
The Charlotte Observer
The State
Ledger-Enquirer

Durham | The Herald-Sun
Fort Worth Star-Telegram
The Fresno Bee
The Island Packet
The Kansas City Star
Lexington Herald-Leader
The Telegraph - Macon
Merced Sun-Star
Miami Herald
El Nuevo Herald

The Modesto Bee
The Sun News - Myrtle Beach
Raleigh News & Observer
Rock Hill | The Herald
The Sacramento Bee
San Luis Obispo Tribune
Tacoma | The News Tribune
Tri-City Herald
The Wichita Eagle
The Olympian

AFFIDAVIT OF PUBLICATION

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ryan.sherwin@garthsolutions.com

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Ante la autoridad que suscribe se presento en persona: Mary Castro, CUSTODIAN OF RECORDS Quien bajo juramento dice que El/ella es de El Nuevo Herald, un periodico en Miami, Condado de Miami Dade, Florida; que la copis adjunta de este anuncio fue publicado en dicho periodico, en las ediciones de:
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1 insertion(s) published on:
07/26/24

El declarante afirma ademas que El Nuevo Herald es un periodico que Se publica en el mencionado condado De Miami Dade, Florida y que ha sido Publicado diariamente en dicho condado De Miami Dade, Florida, habiendo sido clasificado por las Oficinas de Correos en Miami condado de Miami Dade, como material con franquicia de segunda clase desde El 29 de Marzo de 1976. El Declarante Asegura que no ha pagado ni prometido Pagar a personal alguna, firma o Corporacion ningun descuento reembolso Comision o devolucion de fondos con el Proposito de lograr la publicacion de este Anuncio en dicho periodico. The McClatchy Company cumple con todos los requisitos legales para publicación en el capítulo 50, Estatutos de Florida.

Stephanie Hatcher

Jurado y subscrito ante mi en Este Dia 15th day of August in the year of 2024

Stephanie Hatcher

Notary Public in and for the state of Texas, residing in Dallas County

STEPHANIE HATCHER
My Notary ID # 133534406
Expires January 14, 2026

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Departamento de Transporte de EE. UU.Administración Federal de AviaciónDepartamento de Aviación del Condado de Broward-
AVISO DE DISPONIBILIDAD DE PROYECTO DE EVALUACIÓN AMBIENTAL PARA TERRESTREPROYECTOS EN EL AEROPUERTO INTERNACIONAL DE FORT LAUDERDALE-HOLLYWOOD YTALLER PÚBLICO

Proyecto propuesto:Proyectos terrestres en el Aeropuerto Internacional de Fort Lauderdale-Hollywood (FLL), ubicado en 100 Terminal Dr, Fort Lauderdale, FL 33315.

Patrocinador:Departamento de Aviación del Condado de Broward (BCAD)
Descripción del Proyecto: El Departamento de Aviación del Condado de Broward (BCAD) propone ampliar y mejorar las instalaciones en FLL que brindan acceso público a los estacionamientos del aeropuerto y a los edificios de la terminal de pasajeros. BCAD también propone la construcción de una nueva instalación intermodal adyacente al área de la terminal del aeropuerto que proporcionará espacio adicional para estacionamiento de automóviles y conexiones a los sistemas de transporte público existentes y futuros, incluido el servicio ferroviario comercial de pasajeros. El Proyecto Propuesto, denominado colectivamente en el Borrador de Evaluación Ambiental como "proyectos terrestres", mejorará el acceso a las terminales de pasajeros, reducirá la congestión en las carreteras del área de la terminal y mejorará el estacionamiento en FLL. Los componentes
principales del Proyecto Propuesto incluyen: la construcción de un Centro Intermodal (IMC) dentro del derecho de vía de la Autopista 1 de EE. UU.; construcción de un Transporte Automatizado de Personas (APM) que conecte el IMC, los estacionamientos y los edificios terminales; remodelación del Palm Garage para incluir estacionamiento público, un hotel y un centro comercial; ampliación del Cypress Garage; reconfiguración de vías de acceso a las terminales; y otras mejoras asociadas. El proyecto también incluye un mejor acceso al aeropuerto y al IMC propuesto desde la autopista US 1. Estas mejoras en el acceso de vehículos se realizarán dentro del derecho de paso existente de la autopista.
Resumen de impactos:
El Borrador de Evaluación Ambiental (EA) evaluó los impactos ambientales para 14 categorías de recursos que incluyen, entre otros, calidad del aire, recursos biológicos, clima, materiales peligrosos, recursos culturales, ruido, socioeconomía, tráfico y recursos hídricos. A continuación se proporciona un resumen de los hallazgos clave. En el borrador de EA se proporciona más información, análisis y determinaciones.
El Proyecto Propuesto fue evaluado para determinar sus efectos potenciales sobre especies amenazadas y en peligro de extinción incluidas en las listas estatales y federales. Dos especies de vida silvestre, la cigüeña (Mycteria americana) y murciélago con gorro de Florida (Eumops floridanus), fueron evaluados con más detalle. Se determinó que el Proyecto Propuesto "puede afectar, pero no afectar negativamente" a estas especies.
Se evaluaron los impactos sobre los recursos hídricos (por ejemplo, llanuras aluviales, humedales, aguas superficiales y subterráneas) y la calidad del agua. El aumento de la escorrentía de aguas pluviales se solucionaría mediante mejoras al sistema de gestión de aguas pluviales existente en FLL y en el derecho de paso de la autopista US 1. Las aguas pluviales tratadas se descargarían a través de la infraestructura vial existente a un humedal de manglares contiguo que actualmente se utiliza para la atenuación de las aguas pluviales tratadas. Se mejorarán varias tuberías de salida que conectan esta zona de humedal con las aguas adyacentes. Esto afectará temporalmente hasta 0,22 acres de humedales durante la construcción y no será necesaria la mitigación. El Proyecto Propuesto está ubicado dentro de una llanura aluvial; sin embargo, los impactos se compensarían mediante modificaciones del diseño del edificio y del sistema de gestión de aguas pluviales. El Proyecto Propuesto está ubicado en un área con un acuífero de fuente única. Se implementarían medidas durante las fases de construcción y operación para minimizar el potencial de impactos en el agua subterránea.
El proyecto propuesto generaría emisiones al aire de camiones y equipos durante la fase de construcción de varios años. Estas emisiones no excederían ningún umbral que indique un impacto significativo. Durante la construcción, se mantendrían los flujos y volúmenes del tráfico en la superficie. Se reducirán los retrasos de tráfico posteriores a la construcción en el área de la terminal del aeropuerto. El proyecto también promoverá el acceso intermodal desde y hacia el
aeropuerto.

En general, los análisis en el Borrador de EA no identificaron ningún impacto significativo asociado con el Proyecto Propuesto.
Disponibilidad del borrador de EA Comienzo 22 de julio de 2024, el Borrador de EA y sus apéndices estarán disponibles para revisión pública en el sitio web del Condado
enhttps://www.broward.org/Airport/Business/Community/MasterPlan/Pages/default.aspx Copias impresas del borrador de EA también estarán disponibles para su revisión durante el horario comercial habitual en las siguientes ubicaciones:
• Biblioteca Dania Beach-Paul DeMaio: 1 Park Avenue East, Dania Beach, Florida 33004
• Biblioteca sucursal de Davie/Cooper City: 4600 SW 82nd Avenue, Davie, Florida 33328
• Biblioteca principal del condado de Broward: 100 S Andrews Ave, Fort Lauderdale, FL 33301

Taller de información pública Se llevará a cabo un Taller de Información Pública para el Borrador de EA el27 de agosto de 2024en la siguiente ubicación:

Centro de naturaleza Anne Kolb751 Calle SheridanHollywood, Florida 33019

El Taller de Información Pública se llevará a cabo de 5:30 pm a 8:30 pm. Una serie de paneles informativos en el Taller brindarán una descripción general del Proyecto Propuesto, las alternativas evaluadas, los análisis de impacto y la mitigación propuesta. BCAD y sus consultores estarán disponibles durante el Taller para discutir el proyecto y el Borrador de Evaluación Ambiental.
Oportunidad para comentarios públicos El condado de Broward y la FAA están solicitando comentarios del público sobre el borrador de EA. El período de comentarios públicos comenzará el**22 de julio de 2024**y cerrará**4 de septiembre de 2024**.Los comentarios recibidos por BCAD deben tener matasellos antes de las 5:00 pm del**4 de septiembre de 2024**. Se pueden enviar comentarios por escrito al BCAD en la dirección que figura a continuación.

William Castillo, Administrador de Gestión del Programa de Capital Departamento de Aviación del Condado de Broward320 Terminal Drive, Suite 200, Fort Lauderdale, FL 33315

Los comentarios también pueden enviarse electrónicamente aFLLLandsideEA-Comments@esassoc.com
Todos los comentarios deben recibirse antes de las 5:00 p.m. hora del Este el**4 de septiembre de 2024.**Todos los comentarios recibidos serán respondidos en el documento final de EA.
Los comentarios deben ser lo más específicos posible y abordar la idoneidad de la acción propuesta, los méritos de las alternativas, el análisis de los posibles impactos ambientales y cualquier mitigación que se esté considerando. Los comentarios deben organizarse de manera que sean significativos y hagan que la FAA y el condado de Broward estén claramente conscientes de las opiniones, intereses y preocupaciones del comentarista.

AVISO DE PRIVACIDAD: Antes de incluir su dirección, número de teléfono, dirección de correo electrónico u otra información de identificación personal en su comentario, tenga en cuenta que su comentario completo, incluida su información de identificación personal, puede estar disponible públicamente en cualquier momento. Si bien puede solicitarnos en su comentario que retengamos de la
revisión pública su información de identificación personal, no podemos garantizar que podamos hacerlo.

De conformidad con las disposiciones de la Ley de Estadounidenses con Discapacidades, cualquier persona que requiera adaptaciones especiales (incluidos intérpretes para idiomas distintos del inglés y el español) para participar en el taller debe informar a BCAD al menos cinco (5) días hábiles antes de comunicarse con William Castillo. , en wcastillo@broward.org o al 954-359-2291.
IPL0185942
Jul 26 2024

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State Of Florida
County Of Orange

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Rose Williams, who on oath says that he or she is a duly authorized representative of the SUN- SENTINEL, a DAILY newspaper published in BROWARD/PALM BEACH/MIAMI-DADE County, Florida; that the attached copy of advertisement, being a Legal Notice in:

The matter of 11745-Other Legal Notices ,
Was published in said newspaper by print in the issues of, and by publication on the newspaper's website, if authorized on Jul 19, 2024
Ft. Lauderdale Airport
Affiant further says that the newspaper complies with all legal requirements for publication in Chapter 50, Florida Statutes.

Signature of Affiant

Sworn to and subscribed before me this: July 25, 2024.

Signature of Notary Public



Name of Notary, Typed, Printed, or Stamped
Personally Known (X) or Produced Identification ( )

7667691

Newspaper: Sun Sentinel - Broward Advertiser: Garth Solutions Inc.
Issue Date: Fri, 07/19/24 Ad Number: 7667691-1

U.S. Department of Transportation Federal Aviation Administration

Broward County Aviation Department

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR LANDSIDE PROJECTS AT FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT AND PUBLIC WORKSHOP

Proposed Project: Landside Projects at the Fort Lauderdale-Hollywood International Airport (FLL), located at 100 Terminal Dr, Fort Lauderdale, FL 33315.

Sponsor: Broward County Aviation Department (BCAD)

Project Description: The Broward County Aviation Department (BCAD) proposes to expand and improve facilities at FLL that provide public access to airport parking garages and the passenger terminal buildings. BCAD also proposes construction of new intermodal facility adjacent to the airport terminal area that will provide additional automobile parking space and connections to existing and future public transportation systems, including commercial passenger rail service. The Proposed Project, collectively referred to in the Draft Environmental Assessment as the "landside projects", will improve access to the passenger terminals, reduce congestion on terminal area roadways, and improve parking at FLL. Major components of the Proposed Project include: construction of an Intermodal Center (IMC) within the U.S. Highway 1 right-of-way; construction of an Automated People Mover (APM) connecting the IMC, parking garages, and terminal buildings; redevelopment of the Palm Garage to include public parking, a hotel, and commercial center; expansion of the Cypress Garage; reconfiguration of terminal access roadways; and other associated improvements. The project also includes improved access to the airport and the proposed IMC from U.S. Highway 1. These vehicle access improvements will be made within the highway's existing right-of-way.

Summary of Impacts:
The Draft Environmental Assessment (EA) evaluated environmental impacts for 14 resource categories including, but not limited to, air quality, biological resources, climate, hazardous materials, cultural resources, noise, socioeconomics, traffic, and water resources. A summary of key findings is provided below. More information, analyses, and determinations are provided in the Draft EA.

The Proposed Project was evaluated for potential effects on state and federally-listed threatened and endangered species. Two species of wildlife, the wood stork (*Mycteria americana*) and Florida bonneted bat (*Eumops floridanus*), were evaluated in more detail. It was determined the Proposed Project "may affect, but not adversely affect" these species.

Impacts to water resources (e.g., floodplains, wetlands, surface water, and groundwater) and water quality were assessed. Increased stormwater runoff would be accommodated through improvements to the existing stormwater management system at FLL and in the U.S. Highway 1 right-of-way. Treated stormwater would be discharged through existing highway infrastructure to an adjoining mangrove wetland currently used for treated stormwater attenuation. Several outlet pipes connecting this wetland area to adjoining waters will be upgraded. This will temporarily affect up to 0.22 acres of wetlands during construction and mitigation will not be required. The Proposed Project is located within a floodplain; however, impacts would be compensated through building design and stormwater management system modifications. The Proposed Project is located in an area with a sole source aquifer. Measures would be implemented during the construction and operational phases to minimize the potential for groundwater impacts.

The proposed project would generate air emissions from trucks and equipment during the multi-year construction phase. These emissions would not exceed any thresholds indicating a significant impact. During construction, surface traffic flows and volumes would be maintained. Post-construction traffic delays in the airports terminal area will be reduced. The project will also promote intermodal access to and from the airport.

Overall, the analyses in the Draft EA did not identify any significant impacts associated with the Proposed Project.

Draft EA Availability
Beginning **July 22, 2024**, the Draft EA and its appendices will be available for public review on the County's website at https://www.broward.org/Airport/Business/Community/MasterPlan/Pages/default.aspx Printed copies of the Draft EA will also be available for review during regular business hours at the following locations:

- Dania Beach-Paul DeMaio Library: 1 Park Avenue East, Dania Beach, Florida 33004
- Davie/Cooper City Branch Library: 4600 SW 82nd Avenue, Davie, Florida 33328
- Broward County Main Library: 100 S Andrews Ave, Fort Lauderdale, FL 33301

Public Information Workshop
A Public Information Workshop for the Draft EA will be held on **August 27, 2024** at the following location:

Anne Kolb Nature Center
751 Sheridan Street
Hollywood, Florida 33019

The Public Information Workshop will be conducted from 5:30 pm to 8:30 pm. A series of informational display boards at the Workshop will provide an overview of the Proposed Project, alternatives evaluated, impact analyses, and proposed mitigation. BCAD and their consultants will be available during the Workshop to discuss the project and the Draft Environmental Assessment

Opportunity for Public Comment
Broward County and FAA are soliciting public comments on the Draft EA. The public comment period will begin on **July 22, 2024** and will close on **September 4, 2024.** Comments received by BCAD must be postmarked by 5:00 pm on **September 4, 2024**. Written comments may be submitted to BCAD at the address below.

William Castillo, Capital Program Management Administrator
Broward County Aviation Department
320 Terminal Drive, Suite 200, Fort Lauderdale, FL 33315

Comments may also be submitted electronically to FLLLandsideEAComments@esassoc.com All comments must be received by 5:00 p.m. Eastern on **September 4, 2024.** All comments received will be responded to in the Final EA document.

Comments should be as specific as possible and address the adequacy of the proposed action, the merits of alternatives, the analysis of potential environmental impacts, and any mitigation being considered. Comments should be organized so that they are meaningful and make the FAA and the Broward County clearly aware of the commenter's views, interests, and concerns.

PRIVACY NOTICE: Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations (including interpreters for languages other than English and Spanish) to participate in the workshop is asked to advise BCAD at least five (5) working days prior contacting, William Castillo, at wcastillo@broward.org or 954-359-2291.

NOTICE OF PUBLIC HEARING RELATING TO PUBLIC IMPROVEMENTS AND LEVY OF NON AD VALOREM ASSESSMENTS

The Woodlands Section 9 Community Development District Board of Supervisors ("Board") will hold a public hearing on, Tuesday, August 13, 2024, at Billing, Cochran, Lyles, Mauro, & Ramsey, P.A., 515 E Las Olas Blvd, Fort Lauderdale, Suite 600, FL 33301, Florida, at 3:00PM to consider the adoption of an assessment roll and the imposition of special assessments to finance and secure certain public improvements of the Woodlands Section 9 Community Development District (the "District") as described in the Engineer's Report prepared by **Caulfield & Wheeler, Inc.**, dated as of and accepted by the Board on June 5, 2024 ("Engineer's Report"). The Board will consider the levy of special assessments on benefited properties within the District, a depiction of which properties is shown below, and will provide for the levy, collection and enforcement of the assessments.

The public hearing will be conducted pursuant to Chapters 170, 190 and 197, Florida Statutes. Developable areas within the District (as shown below) will be improved. The District consists of approximately 276.48 acres located east of NW 64th Avenue, north of NW 44th Street, west of Rock Island Road and south of West Commercial Boulevard within the Woodlands Country Club. It is located entirely within the City of Tamarac, in Broward County Florida. The District's proposed improvements include, but are not limited to, a stormwater management system, a water distribution system, a wastewater collection system, roadway improvements (on-site and off-site), open space improvements, including, but not limited to, walking trails, parks, landscaping, and entrance features, and all related soft and incidental costs. A description of the property to be assessed, the nature of the improvements proposed, as described in the Engineer's Report dated June 5, 2024, and the amount to be assessed to each piece or parcel of property may be reviewed at the local District's Records at the offices of Governmental Management Services, South Florida at 5385 N. Nob Hill Road, Sunrise, Florida 33351or by contacting the District Manager's Office at 954-721-8681.

The District intends to impose assessments on benefited lands within the District in the manner set forth in the District's Master Assessment Methodology, dated June 5, 2024 ("Assessment Methodology"), which is available to the public at the address provided above. Property will be assessed in the principal not to exceed amount $119,403 for single family homes in the manner described in the Assessment Methodology. The total amount to be levied against benefited lands within the District is $40,000,000, exclusive of fees and costs of collection or enforcement, discounts for early payment and the annual interest costs. The assessments may be prepaid in whole in some instances or may be paid in not more than thirty (30) annual installments, excluding any capitalized interest period, subsequent to the issuance of debt to finance the improvements. These annual assessments will be collected on the Broward County tax roll by the Tax Collector. Alternatively, the District may choose to directly collect and enforce these assessments.

The District also intends to levy and collect assessments on property within the District to cover the operation and maintenance of the District's improvements. Such annual assessments will also be collected on the Broward County tax roll by the Tax Collector. Alternatively, the District may choose to directly collect and enforce these assessments.

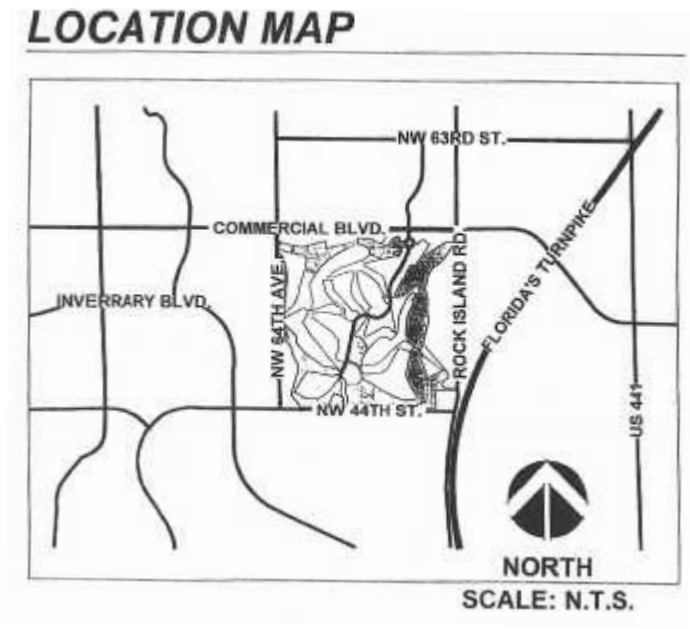
All affected property owners have the right to appear at the public hearing and the right to file written objections with the District within twenty (20) days of the publication of this notice.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this hearing and meeting is asked to contact the District Office at 954-721-8681 at least five calendar days prior to the hearing and meeting. If you are hearing or speech impaired, please contact the Florida Relay Service at 1-800-955-8770, for aid in contacting the District Office.

There may be occasions when one or more Supervisors will participate by phone. At the above referenced location a speaker phone will be available so that any interested person may attend the meeting and be fully informed of the discussions taking place either in person or by telephone communication.

If anyone chooses to appeal any decision of the Board with respect to any matter considered at the hearing or at the meeting, such person will need a record of the proceedings and should accordingly ensure that a verbatim record of the proceedings is made, which includes the testimony and evidence upon which such appeal is to be based. The public hearing may be continued to a date and time certain that will be announced at the hearing.

Rich Hans
District Manager



NOTICE OF PUBLIC HEARING CITY OF HOLLYWOOD CONSOLIDATED PLAN FOR COMMUNITY DEVELOPMENT PROPOSED CDBG-CV SUBSTANTIAL AMENDMENT TO THE ONE YEAR ACTION PLAN FOR FISCAL YEAR 2019-2020

The City of Hollywood is a recipient of Community Development Block Grant-Coronavirus funding (CDBG-CV) funding in the amount of $1,864,774.00 for activities that primarily benefit low- and moderate-income residents that have been impacted by the COVID-19 health emergency.

Eligible CDBG-CV activities include Acquisition, Public Improvements, Public Facilities, Business Assistance, Micro-Enterprise Assistance, Public Services, Homeless Services, Broadband, Planning, Capacity Building, Technical Assistance and Public Infrastructure providing the activity directly relates to the prevention, preparation, and/or response to the coronavirus pandemic.

Pursuant to regulations set forth by the U.S. Dept. of Housing and Urban Development (HUD), the City of Hollywood has developed proposed Substantial One Year Action Plan amendment for Federal Fiscal Year 2019-2020 in the amount of $370,546.12.

Preliminary details of the Proposed CDBG-CV Substantial Amendment to the One Year Action Plan for Fiscal Year 2019-2020 are as follows:

CDBG-CV Transfer from:	
HVAC (LMI Community Centers)	$ 250,000.00
Business Assistance	$ 31,701.26
Laptops and Wiring (LMI Community Centers)	$ 679.24
Homeless Services	$ 88,165.62
Total	$ 370,546.12
CDBG-CV Transfer to:	
Public Services	$ 160,546.12
Public Facilities and Improvements	$ 210,000.00
Total	$ 370,546.12

30-Day Public Comment Period: A public comment period is scheduled to be held starting on July 27, 2024, through August 27, 2024. The proposed CDBG-CV Substantial Amendment to the One Year Action Plan for Fiscal Year 2019-2020 will be available online at https://www.hollywoodfl.org/194/Plans-Policies-Reports, and at the Division of Community Development, at 2600 Hollywood Blvd., Old Library, Hollywood, FL 33022, Monday through Thursday, 7:00 A.M. to 6:00 P.M. All interested agencies, organizations and persons are invited to submit comments on the proposed One Year Action Plan for Fiscal Year 2019-2020 at the above address or to dbiederman@hollywoodfl.org on or before August 22, 2024.

A Public Hearing before Hollywood City Commission on the Proposed CDBG-CV Substantial Amendment to the One Year Action Plan for Fiscal Year 2019-2020 will be held on August 28, 2024, at City Hall, 2600 Hollywood Blvd., in the City Commission Chambers, at 1:00 p.m. or soon thereafter as the agenda permits. For more information, please email dbiederman@hollywoodfl.org.

The City of Hollywood supports policies that promote and encourage fair treatment and equal opportunity in housing and public accommodations for all persons regardless of race, color, religion, sex, handicap, national origin, familial status, or disability. Persons with disabilities who require reasonable accommodation to participate in city programs and/or services may call the division of engineering/transportation & mobility, Clarissa Ip, ADA coordinator/city engineer, five business days in advance at 954-921-3251 (voice) or email: cip@hollywoodfl.org. The current number is still in effect for the hearing and speech impaired at 800-955-8771 (V-TDD). For more information, please call Community Development (954) 921-3271.

Dated this 19th day of July 2024.

Ryon Coote
Community Development Manager
Hollywood, Florida

THE SUN-SENTINEL-LOCAL SECTION - DISPLAY AD, 1/8 PAGE
PUBLISH: JULY 19, 2024
FURNISH PROOF OF PUBLICATION

Appendix H-3
Public Workshop Materials

Broward County Aviation Department - Fort Lauderdale-Hollywood International Airport (FLL) Draft Environmental Assessment for Landside Projects

PUBLIC INFORMATION WORKSHOP

Thank you for attending the public information workshop. Your views are important to the Broward County Aviation Department. Should you have any comments or input on the draft environmental assessment materials presented this evening, please feel free to complete this comment card and drop this form in the comment box before you leave. You may also submit comments to FLLLandsideEAComments@esassoc.com.

Name: _____

Phone: _____ **Email:** _____

Please check one: ☐ **Resident** ☐ **Business** ☐ **Government** ☐ **Aviation Related** ☐ **Other**

Welcome to the Public Information Workshop for the Draft Environmental Assessment for Landside Projects at Fort Lauderdale-Hollywood International Airport (FLL)

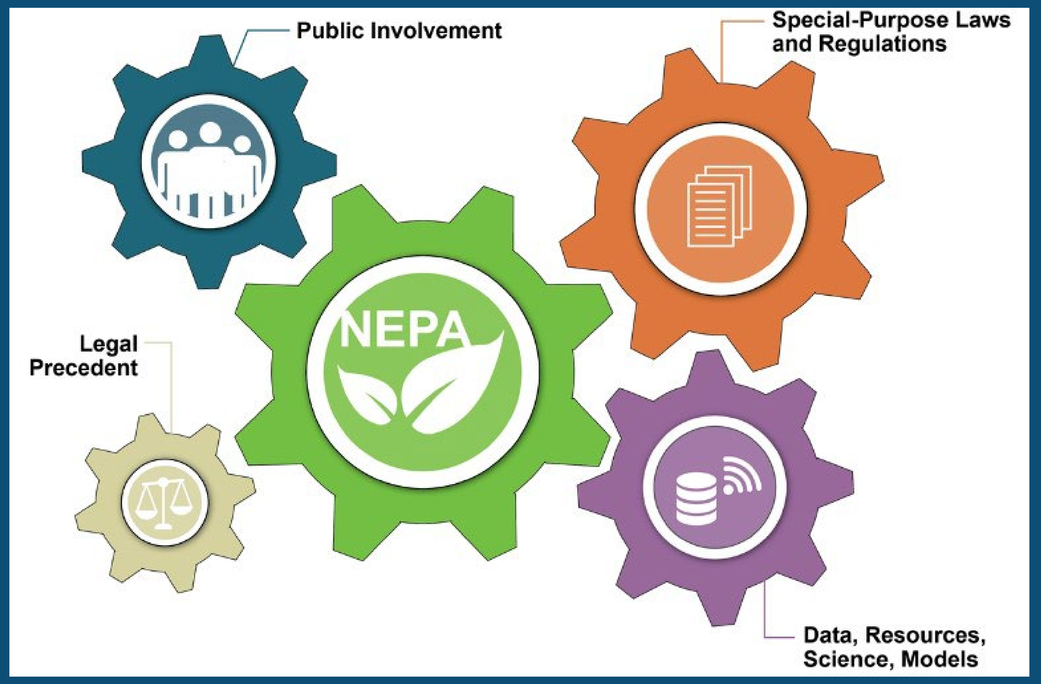
August 27, 2024

Overview of the NEPA Process

- NEPA requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions.

- The federal actions being evaluated are:
  - Approval of Airport Layout Plan to include proposed project.
  - Eligibility of the proposed project for federal funding.

- The NEPA process:
  - Documents the purpose and need for a proposed project
  - Evaluates reasonable alternatives
  - Evaluates the agency's proposed actions for potential impacts to environmental resource categories which are governed by special purpose laws
    - Compliance with special purpose laws is incorporated into the NEPA process and document
  - Is used to determine if a project has the potential to result in significant environmental effects
  - Must be completed before the agency makes a decision or takes action
  - Includes public participation and disclosure



- The FAA has determined that an Environmental Assessment (EA) is the appropriate level of review for this proposed project.

Overview of Proposed Project

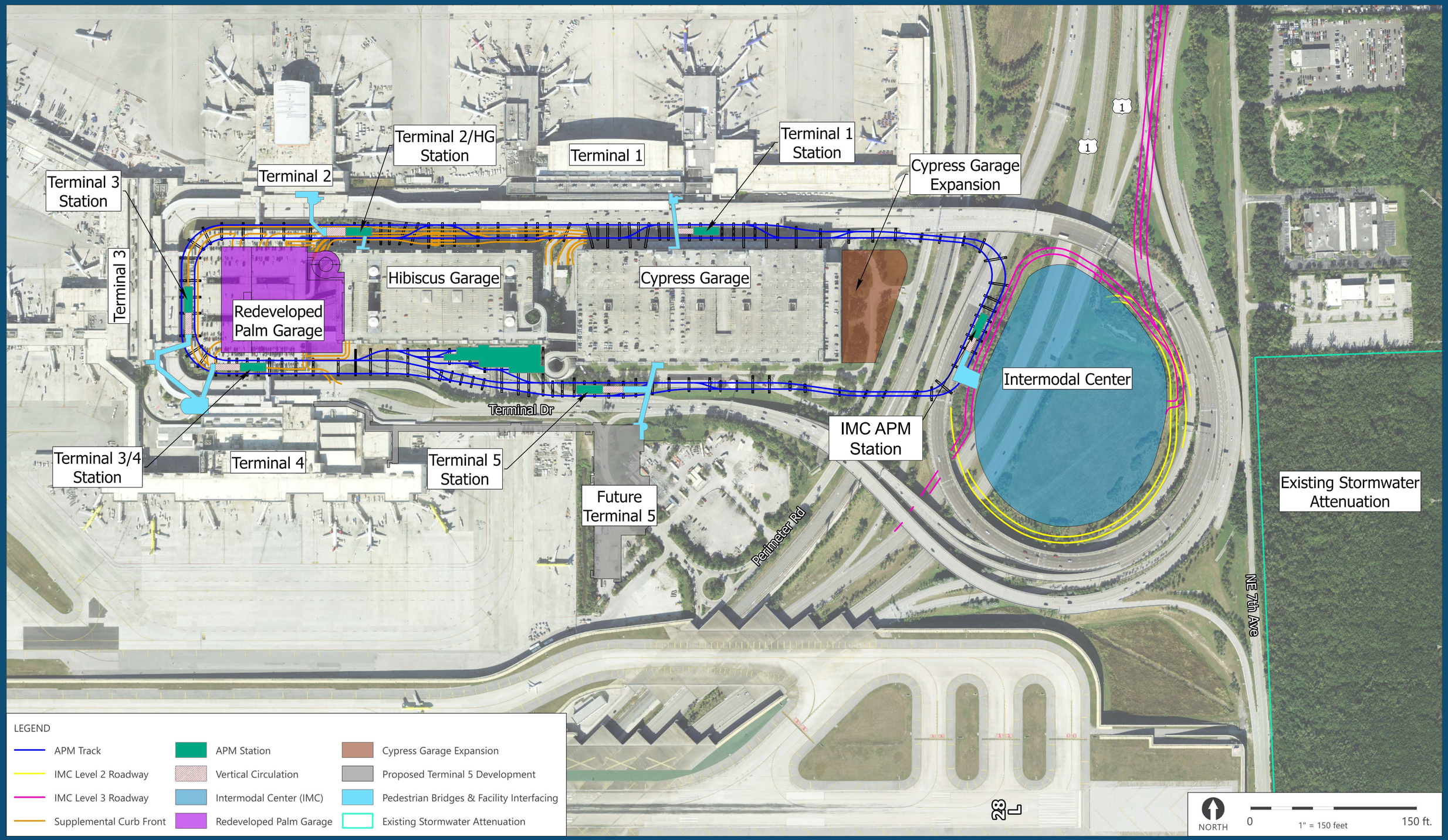
- The Proposed Project elements, collectively “Landside Projects,” include several projects to enhance the passenger experience through improved terminal access, intermodal connectivity, and parking and reduced congestion on terminal roadways at Fort Lauderdale-Hollywood International Airport (FLL).

- The Landside Project elements include:
  - Intermodal Center (IMC)
  - Automated People Mover (APM) Circulator
  - Palm Garage Redevelopment with Airport Hotel and Commercial Center
  - Cypress Garage Expansion
  - Supplemental Roadways and Curbsides

- The **purpose** of the Proposed Project is to improve landside access options and facilities to enhance the overall travel experience at FLL and meet existing and forecast passenger activity levels and parking demands while reducing congestion along the terminal roadways.

- The **need** for the Proposed Project was identified in the 2020 Master Plan Update to efficiently accommodate existing and forecast passenger demand, while improving the passenger experience at FLL’s landside facilities, which is expected to get worse with forecast growth in passenger activity.

Proposed Project Elements



SOURCE: Broward County Aviation Department, 2024.

Automated People Mover (APM)

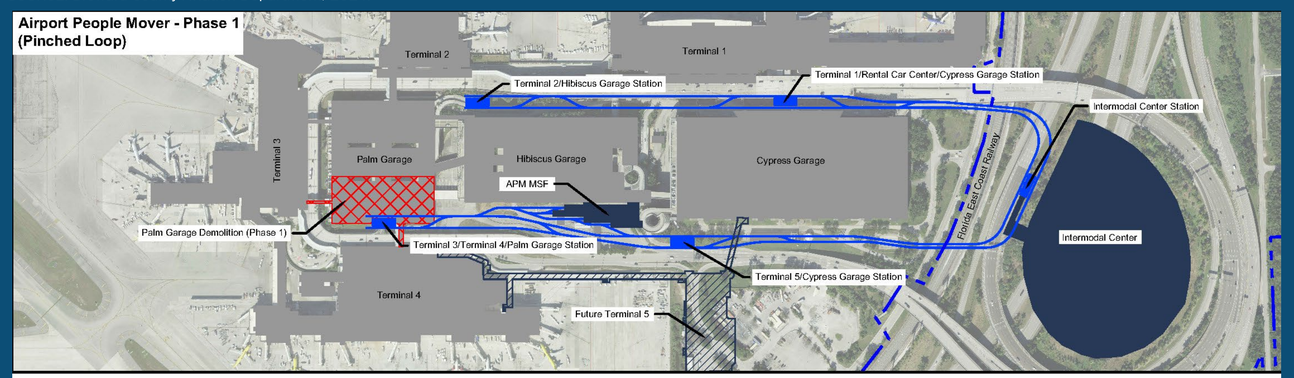
- An APM is a self-operating mode of transportation for moving passengers between key areas.

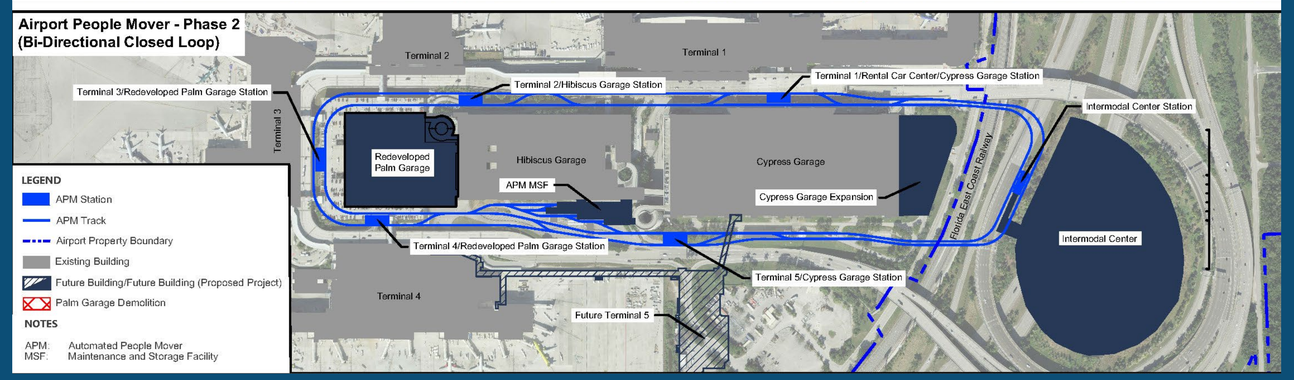
- This project includes the implementation of an elevated, bi-directional landside APM system with approximately 16,000 linear feet of dual guideway, 6 stations (IMC, T1, T2, T3, T4, T5), On-Airport Maintenance and Storage Facility (M&SF), Optimized facility interfacing at each terminal and parking garage for enhanced customer experience and connectivity across FLL's Terminal Area.

- The APM would be constructed in two phases:
  - Phase 1 establishes a partial loop during Palm Garage redevelopment
  - Phase 2 would complete the bi-directional loop



SOURCE: Broward County Aviation Department, 2024.





SOURCE: Broward County Aviation Department, 2024.

Intermodal Center (IMC)

- This project includes implementing a 4.6 million square foot 8-level facility with approximately 7,000 vehicle parking spaces. Its uses and functions include but are not necessarily limited to:
  - Multi-modal opportunities
  - Parking for Airport, Seaport and Transit passengers
  - Ground transportation center for commercial vehicle traffic
  - Commercial center for enhanced revenue opportunities
  - Potential advanced air mobility operation on top floor/roof

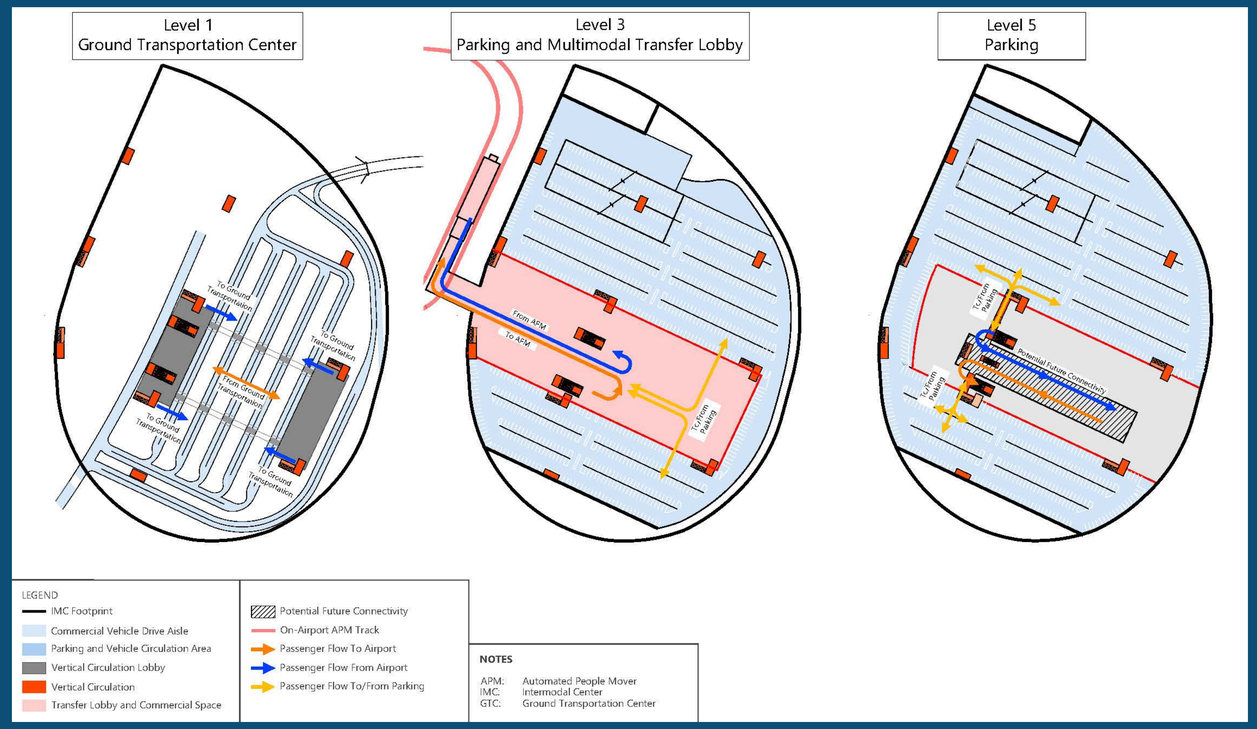
- The IMC would be located within US-1 right-of-way (ROW).

- Connectivity between the regional roadway network and the IMC would be provided via various access points to levels 1, 2, and 3.

- IMC plans include the ability to connect to regional transportation modes (e.g., rail) developed by other entities.



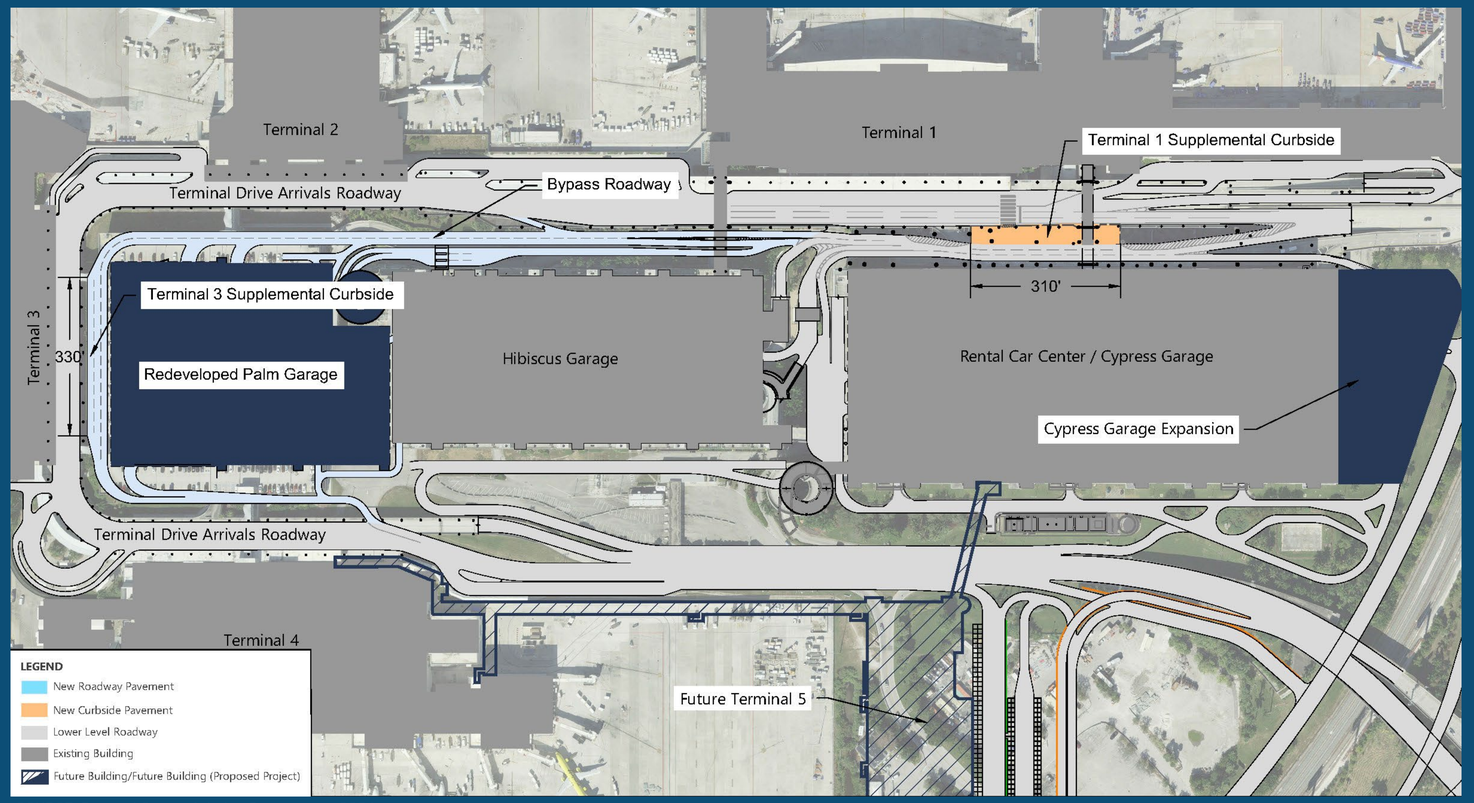
SOURCE: Broward County Aviation Department, 2024.



SOURCE: Broward County Aviation Department, 2024.

Palm Garage Redevelopment, Cypress Garage Expansion, and Supplemental Roadways and Curbsides

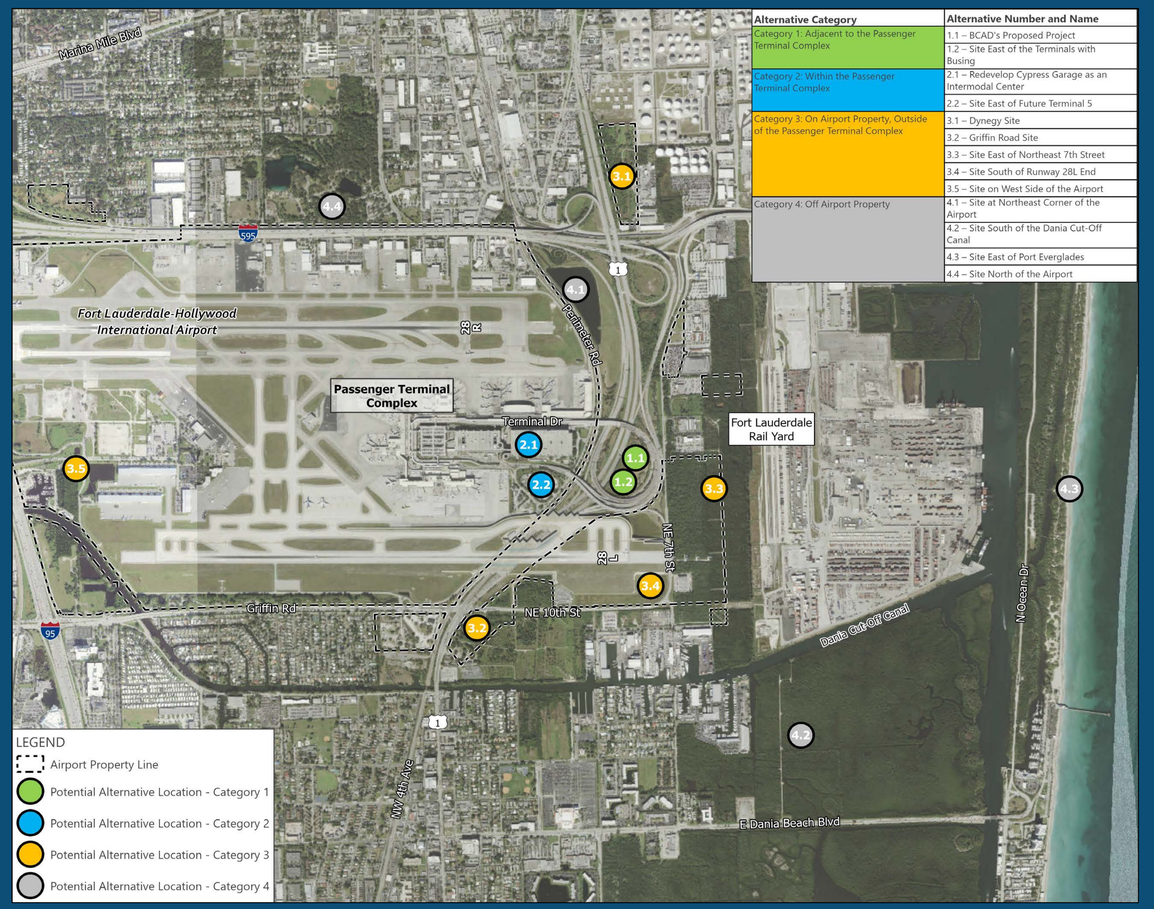
- **Palm Garage Redevelopment**
  - Includes demolition of the existing parking structure in phases and redevelopment of the garage on a smaller footprint at the same site with seven to nine levels that include additional parking and areas for commercial development.
  - Includes utility improvements to support redevelopment.
  - First phase includes demolishing the southern one-third of the Palm Garage to enable construction of the first phase of the APM.
  - The second phase includes demolition of the remaining two-thirds of the structure and site redevelopment.
- **Cypress Garage Expansion**
  - Includes a nine-level expansion on the east end of the garage adding approximately 90,000 square feet to the garage and existing Rental Car Center.
- **Supplemental Roadways and Curbsides**
  - Two additional/supplemental curb areas are proposed to address terminal curbfront capacity deficiencies.
  - Supplemental roadway is proposed to bypass the traffic congestion at the terminals and improve roadway level of service.



SOURCE: Broward County Aviation Department, 2024.

Alternatives Analysis - Screening

- NEPA regulations (40 CFR 1502.14) require that federal agencies evaluate *reasonable* alternatives to a Proposed Project.
- This Draft EA considered a reasonable range of alternatives that could potentially meet the Purpose and Need.
- The technical feasibility review considered the ability to construct and/or operate the potential alternative, and the economic feasibility review considered the financial reasonableness of implementing the potential alternative.
- The identification process considered alternate locations for project elements that would maintain efficient and convenient access to the passenger terminals.
- Eleven (11) potential alternatives were identified and reviewed for technical and economic feasibility to accommodate a landside access facility with convenient access to and from the terminals.
- Of the potential alternatives considered, five (5) were identified as technically and economically feasible and carried forward to the alternatives screening analysis in Section 2.3 of the Draft EA.



Alternative Category	Alternative Number and Name
Category 1: Adjacent to the Passenger Terminal Complex	1.1 – BCAD's Proposed Project
	1.2 – Site East of the Terminals with Busing
Category 2: Within the Passenger Terminal Complex	2.1 – Redevelop Cypress Garage as an Intermodal Center
	2.2 – Site East of Future Terminal 5
Category 3: On Airport Property, Outside of the Passenger Terminal Complex	3.1 – Dynegy Site
	3.2 – Griffin Road Site
	3.3 – Site East of Northeast 7th Street
	3.4 – Site South of Runway 28L End
	3.5 – Site on West Side of the Airport
Category 4: Off Airport Property	4.1 – Site at Northeast Corner of the Airport
	4.2 – Site South of the Dania Cut-Off Canal
	4.3 – Site East of Port Everglades
	4.4 – Site North of the Airport

SOURCE: Broward County Aviation Department, 2024.

ALTERNATIVE CATEGORY 1	ALTERNATIVE NUMBER AND NAME	FEASIBLE?
Category 1: Adjacent to the Passenger Terminal Complex	1.1 – BCAD's Proposed Project	Yes
	1.2 – Site East of the Terminals with Busing	Yes
Category 2: Within the Passenger Terminal Complex	2.1 – Redevelop Cypress Garage as an Intermodal Center	Yes
	2.2 – Site East of Future Terminal 5	No
Category 3: On Airport Property, Outside of the Passenger Terminal Complex	3.1 – Dynegy Site	Yes
	3.2 – Griffin Road Site	Yes
	3.3 – Site East of Northeast 7th Street	No
	3.4 – Site South of Runway 28L End	No
	3.5 – Site on West Side of the Airport	No
Category 4: Off Airport Property	4.1 – Site at Northeast Corner of the Airport	No
	4.2 – Site South of the Dania Cut-Off Canal	No
	4.3 – Site East of Port Everglades	No
	4.4 – Site North of the Airport	No

Alternatives Analysis

- The Proposed Project was the only alternative that improved passenger landside access along terminal roadways and curbfront.
  - An APM would not be feasible with the other alternatives.
  - Without an APM, all other alternatives would require a secondary trip along the terminal roadways via shuttle bus to transfer between IMC and the terminals.
  - The secondary trip would be inconvenient and inefficient, and thus would not improve the overall landside access experience for some passengers.
  - The alternatives would also not meet the local objective of establishing a multimodal facility at FLL.

- Two (2) alternatives were carried forward for detailed analysis of environmental effects.

PURPOSE AND NEED EVALUATION CRITERIA	NO ACTION ALTERNATIVE	ALTERNATIVE 1.1 BCAD'S PROPOSED PROJECT	ALTERNATIVE 1.2 SITE EAST OF THE TERMINALS WITH BUSING (NO APM)	ALTERNATIVE 2.1 REDEVELOP CYPRESS GARAGE AS AN INTERMODAL CENTER	ALTERNATIVE 3.1 DYNEGY SITE	ALTERNATIVE 3.2 GRIFFIN ROAD SITE
Does the alternative meet forecast parking demand?	No	Yes	Yes	Yes	Yes	Yes
Does the alternative reduce terminal roadway and curbside configuration challenges?	No	Yes	Yes	Yes	Yes	Yes
Does the alternative reduce traffic volumes along the terminal roadway?	No	Yes	Yes	Yes	Yes	Yes
Does the alternative improve the passenger landside access experience?	No	Yes	No	No	No	No
Does the alternative meet local the objective of establishing a multimodal facility at FLL, a large-hub airport?	No	Yes	Yes	No	Yes	No
Does the alternative support BCAD's goal to increase generation of nonaeronautical revenues to support Airport operating expenses?	No	Yes	Yes	Yes	Yes	Yes
Does the alternative meet the Purpose and Need for the Proposed Project?	**No**	**Yes**	**No**	**No**	**No**	**No**
Was the alternative carried forward for detailed analysis of environmental affects?	**Yes** *	**Yes**	**No**	**No**	**No**	**No**

* The No Action alternative is carried forward for analysis of environmental effects as required by 40 CFR 1502.14(d).

Summary of Resources Evaluated

Summary of Environmental Categories Evaluated

Resource	Draft EA Section and Appendix	Potential Impacts of Proposed Project
Air Quality	Section 3.2 Appendix B	• Potential for air quality impacts was evaluated for construction and operation phases. Analysis identified that there would be localized temporary air quality impacts during construction from equipment and vehicle trips; however, the Proposed Project would not cause significant impacts and would result in air quality benefits by reducing vehicle congestion in the terminal area. No mitigation is required.
Biological Resources	Section 3.3 Appendix C	• Surveys and analyses were conducted to determine potential impacts to resources, including federally listed species. While there were no significant impacts to biological resources identified, the potential for occurrence of two species resulted in determinations of “May Affect, Not Likely to Adversely Affect” from the US Fish and Wildlife Service. It was determined that there would be “No Effect” on any other listed species. Essential Fish Habitat coordination with NOAA Fisheries is in progress. No mitigation is required.
Climate	Section 3.4 Appendices B and D	• Potential for climate and Greenhouse Gas (GHG) impacts were evaluated for construction and operation phases. Analysis identified that there would be localized increases in carbon dioxide equivalent (CO2e) emissions during construction; however, the Proposed Project would not cause significant impacts and would result in reduced GHG emissions from passenger vehicles by reducing traffic congestion. No mitigation is required.
Coastal Resources	Section 3.5 Appendix E	• The State Clearinghouse provided concurrence that the Proposed Project “is consistent with the Florida Coastal Management Program.” • There would be no significant impacts to coastal resources. No mitigation is required.
DOT Section 4(f)	Section 3.6	• The construction and operation of the Proposed Project would not involve the physical use or constructive use of Section 4(f) resources. • There would be no impacts to Section 4(f) properties. No mitigation is required.
Hazardous Materials, Solid Waste, and Pollution Prevention	Section 3.7	• Four contaminated sites exist within the Proposed Project footprint but there would be no substantial changes in the handling, use, or disposal of hazardous materials. • BCAD will implement their Construction Management Plan (CMP) and Best Management Practices (BMPs) during construction. • An increase in solid waste would result from construction and operation of the Proposed Project. The local landfill has sufficient capacity to accommodate the waste disposal. • There would be no significant impacts to hazardous materials, solid waste, and pollution prevention. No mitigation is required.
Historic, Architectural, Archaeological, and Cultural Resources	Section 3.8 Appendix G	• There are no National Register of Historic Places (NRHP) listed buildings within the area of potential effects (APE); nor any evidence of prior occupation or expectation that archaeological artifacts would be discovered during Proposed Project construction. • There would be no significant impacts to historical, architectural, archeological, and cultural resources. No mitigation is required.
Land Use	Section 3.9	• The Proposed Project would not result in changes to local land uses or conversion of adjacent land uses to airport use. • There would be no significant impacts to land use. No mitigation is required.
Natural Resources and Energy Supply	Section 3.10	• The Proposed Project is anticipated to result in a short-term increase in demand for fuel during construction and increased demand for electricity for operation. The demand is not anticipated to exceed current or future local supplies of electricity. • There would be no significant impacts to natural resources and energy supply. No mitigation is required.
Noise and Noise-Compatible Land Use	Section 3.11	• There are no residential land uses near the Proposed Project and there are no noise sensitive areas that would experience an increase in noise due to the Proposed Project. • The Proposed Project is in a high traffic transportation corridor subject to high levels of ambient noise. Temporary construction noise is unlikely to be distinguishable from existing conditions. • There would be no significant impacts to noise and noise-compatible land use. No mitigation is required.
Socioeconomics and Environmental Justice	Section 3.12	• The Proposed Project would not result in disproportionately high and adverse human health or environmental effects to environmental justice communities. • There would be no significant impacts to socioeconomics and environmental justice. No mitigation is required.
Visual Effects	Section 3.13	• There are no open established views or viewpoints of concern surrounding the Airport and the nearest residential developments are approximately 0.7 mile south of the Proposed Project. The facilities would be designed to visually align with and enhance existing airport facilities. • Construction lighting would be limited to the work area and new light sources for the APM and IMC would be designed to minimize impacts. • There would be no significant impacts to visual resources. No mitigation is required.
Water Resources (Wetlands, Floodplains, Surface Waters, Groundwater)	Section 3.14 Appendix F	• The Proposed Project would result in <0.22 acre of temporary impacts to a mangrove wetland which currently serves as the receiving waterbody for the US-1 drainage system. • The Proposed Project would impact the 100-year floodplain; however, stormwater management and compensating storage would offset potential for flooding. • The Proposed Project is within the limits of the three impaired waterbodies; however, BMPs would be employed during construction to protect water quality and control siltation and sedimentation. Stormwater treatment would ensure state water quality criteria are met prior to discharge from the system. • The Proposed Project may impact the sole-source Biscayne Aquifer during construction through pile driving and other structural improvements; however, BMPs would be employed to ensure no adverse impacts occur to that groundwater source. • There would be no significant impacts to water resources. No mitigation is required.

NOTES: Environmental resource categories are listed in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*.

Summary of Resources Evaluated

Summary of Environmental Categories Evaluated

Resource	Draft EA Section and Appendix	Potential Impacts of Proposed Project
Air Quality	Section 3.2 Appendix B	• Potential for air quality impacts was evaluated for construction and operation phases. Analysis identified that there would be localized temporary air quality impacts during construction from equipment and vehicle trips; however, the Proposed Project would not cause significant impacts and would result in air quality benefits by reducing vehicle congestion in the terminal area. No mitigation is required.
Biological Resources	Section 3.3 Appendix C	• Surveys and analyses were conducted to determine potential impacts to resources, including federally listed species. While there were no significant impacts to biological resources identified, the potential for occurrence of two species resulted in determinations of “May Affect, Not Likely to Adversely Affect” from the US Fish and Wildlife Service. It was determined that there would be “No Effect” on any other listed species. Essential Fish Habitat coordination with NOAA Fisheries is in progress. No mitigation is required.
Climate	Section 3.4 Appendices B and D	• Potential for climate and Greenhouse Gas (GHG) impacts were evaluated for construction and operation phases. Analysis identified that there would be localized increases in carbon dioxide equivalent (CO2e) emissions during construction; however, the Proposed Project would not cause significant impacts and would result in reduced GHG emissions from passenger vehicles by reducing traffic congestion. No mitigation is required.
Coastal Resources	Section 3.5 Appendix E	• The State Clearinghouse provided concurrence that the Proposed Project “is consistent with the Florida Coastal Management Program.” • There would be no significant impacts to coastal resources. No mitigation is required.
DOT Section 4(f)	Section 3.6	• The construction and operation of the Proposed Project would not involve the physical use or constructive use of Section 4(f) resources. • There would be no impacts to Section 4(f) properties. No mitigation is required.
Hazardous Materials, Solid Waste, and Pollution Prevention	Section 3.7	• Four contaminated sites exist within the Proposed Project footprint but there would be no substantial changes in the handling, use, or disposal of hazardous materials. • BCAD will implement their Construction Management Plan (CMP) and Best Management Practices (BMPs) during construction. • An increase in solid waste would result from construction and operation of the Proposed Project. The local landfill has sufficient capacity to accommodate the waste disposal. • There would be no significant impacts to hazardous materials, solid waste, and pollution prevention. No mitigation is required.
Historic, Architectural, Archaeological, and Cultural Resources	Section 3.8 Appendix G	• There are no National Register of Historic Places (NRHP) listed buildings within the area of potential effects (APE); nor any evidence of prior occupation or expectation that archaeological artifacts would be discovered during Proposed Project construction. • There would be no significant impacts to historical, architectural, archeological, and cultural resources. No mitigation is required.
Land Use	Section 3.9	• The Proposed Project would not result in changes to local land uses or conversion of adjacent land uses to airport use. • There would be no significant impacts to land use. No mitigation is required.
Natural Resources and Energy Supply	Section 3.10	• The Proposed Project is anticipated to result in a short-term increase in demand for fuel during construction and increased demand for electricity for operation. The demand is not anticipated to exceed current or future local supplies of electricity. • There would be no significant impacts to natural resources and energy supply. No mitigation is required.
Noise and Noise-Compatible Land Use	Section 3.11	• There are no residential land uses near the Proposed Project and there are no noise sensitive areas that would experience an increase in noise due to the Proposed Project. • The Proposed Project is in a high traffic transportation corridor subject to high levels of ambient noise. Temporary construction noise is unlikely to be distinguishable from existing conditions. • There would be no significant impacts to noise and noise-compatible land use. No mitigation is required.
Socioeconomics and Environmental Justice	Section 3.12	• The Proposed Project would not result in disproportionately high and adverse human health or environmental effects to environmental justice communities. • There would be no significant impacts to socioeconomics and environmental justice. No mitigation is required.
Visual Effects	Section 3.13	• There are no open established views or viewpoints of concern surrounding the Airport and the nearest residential developments are approximately 0.7 mile south of the Proposed Project. The facilities would be designed to visually align with and enhance existing airport facilities. • Construction lighting would be limited to the work area and new light sources for the APM and IMC would be designed to minimize impacts. • There would be no significant impacts to visual resources. No mitigation is required.
Water Resources (Wetlands, Floodplains, Surface Waters, Groundwater)	Section 3.14 Appendix F	• The Proposed Project would result in <0.22 acre of temporary impacts to a mangrove wetland which currently serves as the receiving waterbody for the US-1 drainage system. • The Proposed Project would impact the 100-year floodplain; however, stormwater management and compensating storage would offset potential for flooding. • The Proposed Project is within the limits of the three impaired waterbodies; however, BMPs would be employed during construction to protect water quality and control siltation and sedimentation. Stormwater treatment would ensure state water quality criteria are met prior to discharge from the system. • The Proposed Project may impact the sole-source Biscayne Aquifer during construction through pile driving and other structural improvements; however, BMPs would be employed to ensure no adverse impacts occur to that groundwater source. • There would be no significant impacts to water resources. No mitigation is required.

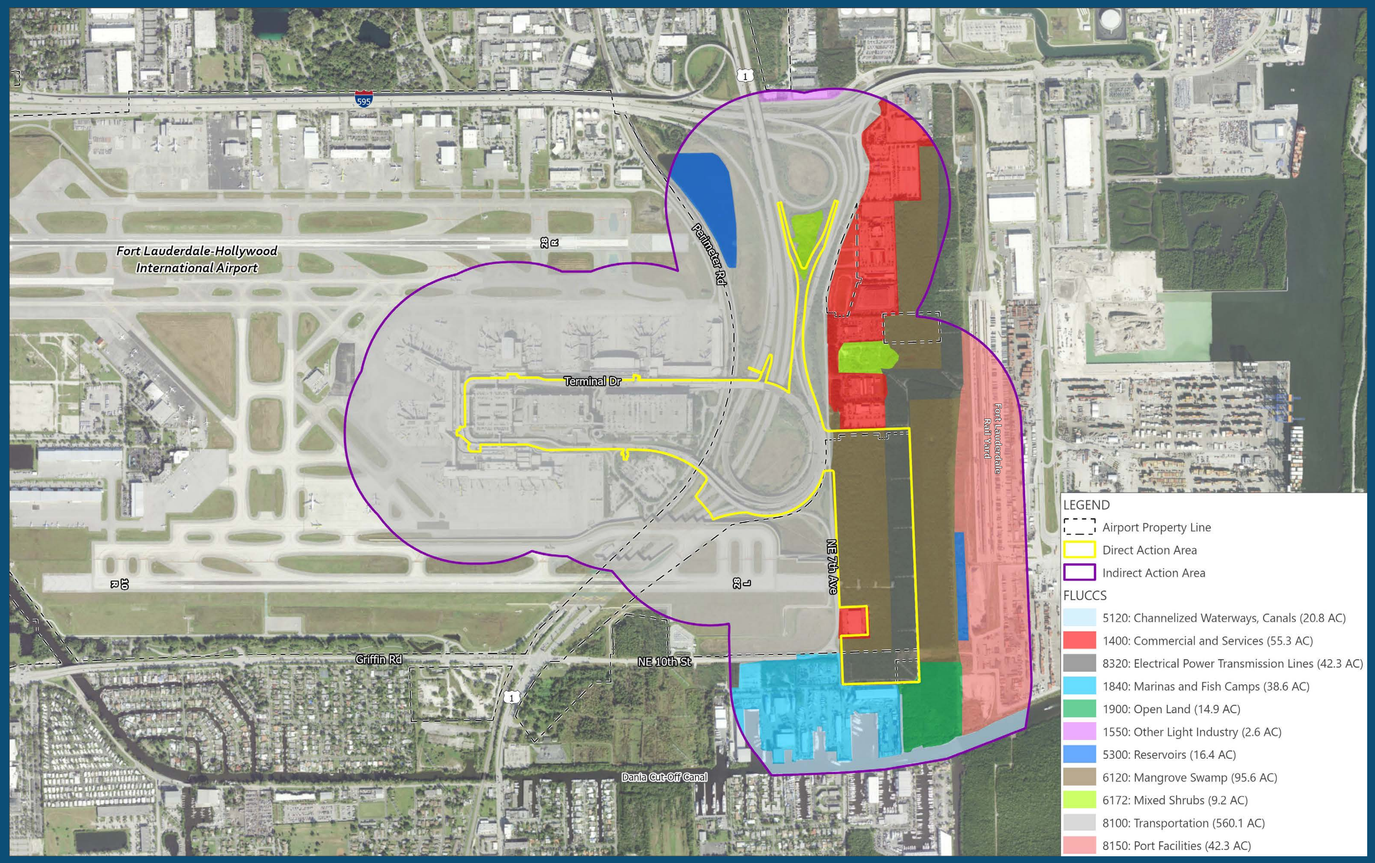
NOTES: Environmental resource categories are listed in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*.

Biological Resources

- Action Areas were established to delineate areas to be evaluated for potential impacts on biological resources.
  - The direct Action Area is the area proposed for development.
  - The indirect Action Area includes an approximate quarter-mile buffer around the direct Action Area.

- The direct Action Area includes a highly urbanized and industrial area of Broward County with very little open space and habitat.

- Natural area is limited to an area of undeveloped land between NE 7th Avenue and the Fort Lauderdale Rail Yard.
  - This area consists of ~25 acres of utility easement (disturbed wetland and upland habitat) and ~34 acres of mangrove swamp that currently serves as the receiving waterbody for the US-1 drainage system.



SOURCE: Broward County Aviation Department, 2024.

- Based on the site conditions and analysis, including multiple field surveys, it was determined that the Action Area has some potential to support twenty-two (22) federally listed species, two federal candidate species, and Essential Fish Habitat (EFH).
  - Twelve (12) were determined to have no potential for occurrence in the direct and indirect Action Area.
  - Ten (10) listed species were carried forward for further analysis having some potential for occurrence.
  - The existing mangrove swamp was identified as potential EFH and evaluated for potential effects.

Biological Resources

- Replacement of seven (7) existing culverts along the eastern berm of the stormwater attenuation area would result in temporary impacts to less than 0.22 acres of open water, upland and wetland habitat (approximately 1,400 sf at each culvert location). Vegetation will be allowed to re-establish after construction. There are no permanent impacts to wetlands or listed species habitat associated with the Proposed Project.

- Section 7 consultation is the process of evaluating how federal agency actions may affect federally endangered and/or threatened species and their critical habitats in accordance with the Endangered Species Act (ESA).

- Section 7 coordination with the US Fish and Wildlife Service (USFWS) resulted in "May Affect, Not Likely to Adversely Affect" (MANLAA) determinations for two (2) listed species:
  - Wood Stork (federally threatened) - Impacts to Suitable Foraging Habitat (SFH) for wood stork are de minimus (<0.22 ac) and temporary.
  - Florida Bonneted Bat (FBB - federally endangered) – no roosting habitat identified through surveys.

- Section 7 consultation with USFWS and NOAA Fisheries is concluded, and no mitigation is required.

- The mangrove / stormwater attenuation area is designated as Essential Fish Habitat (EFH); however, there is no anticipated adverse impact from the Proposed Project. Coordination with NOAA Fisheries is in progress.



SOURCE: Broward County Aviation Department, 2024.



SOURCE: Broward County Aviation Department, 2024.

Please see Section 3.3, Biological Resources, and Appendix C in the Draft EA for more information

Water Resources – Stormwater

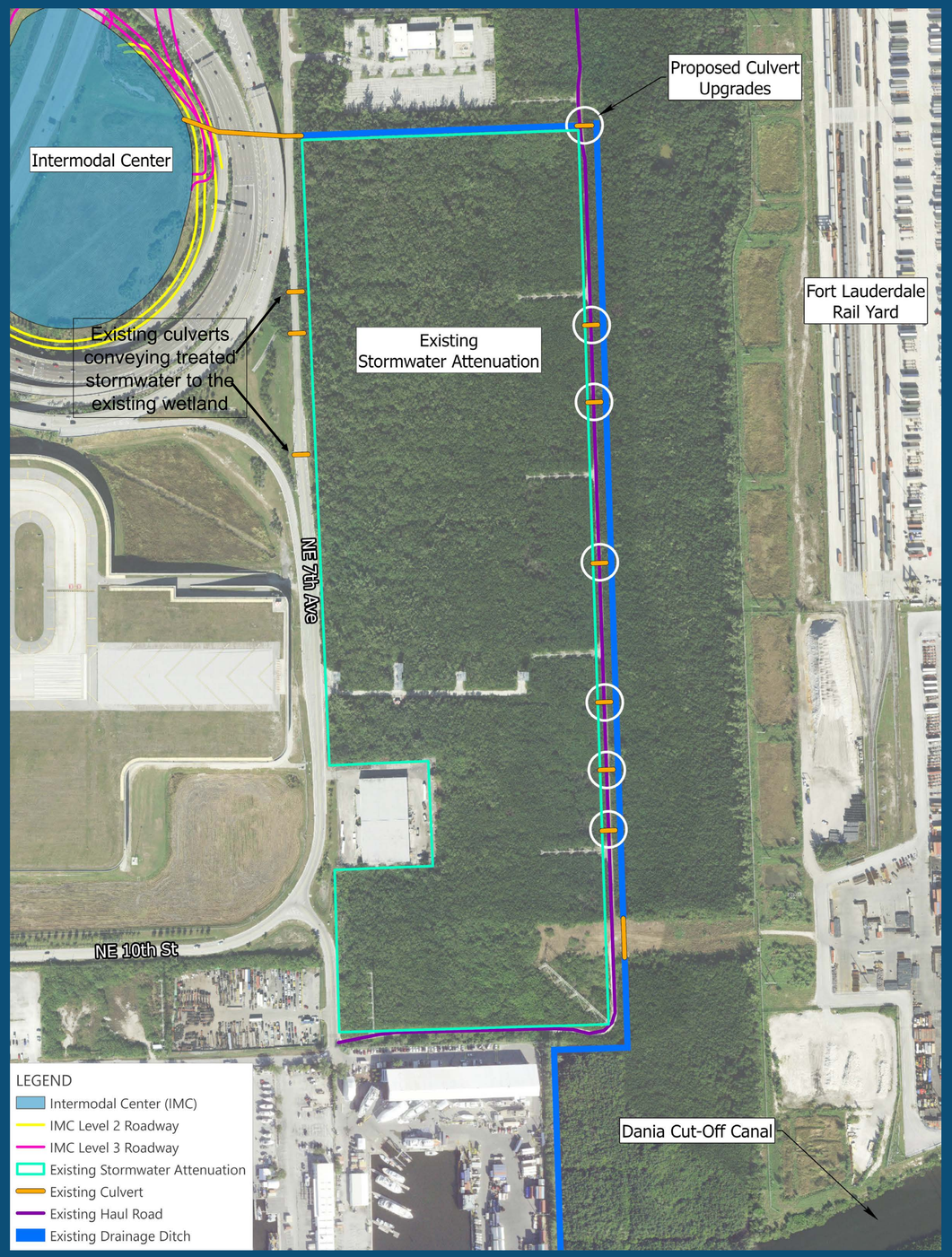
- The IMC would add impervious surface to the US-1 drainage basin and modify an existing stormwater retention area. All other landside project elements are within the Airport property boundary and redevelopment of existing impervious areas.

- Currently treated stormwater from US-1 drains through a series of existing outfalls into an existing mangrove wetland east of Northeast 7th Avenue.

- Preliminary modeling has identified the IMC would result in only a minor wet weather increase in discharge (periodic) to the existing wetland. Prior to entering the wetland, stormwater from the IMC would be treated in accordance with state water quality criteria. The IMC may also include the following upgrades:
  - Stormwater Storage Chambers – Under the IMC
  - Dry Retention Areas – Open space around the IMC
  - Surface Filters – On existing elevated roadway embankments
  - Upsized Stormwater Piping Network

- Retention of stormwater in the existing receiving wetland would continue to ensure that water enters the canal system without adversely affecting quality of the receiving waterbody(s).

- Design of the stormwater management system would 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



SOURCE: Broward County Aviation Department, 2024.

Water Resources – Wetlands and Floodplains

Wetlands

- Construction would result in a total potential temporary impact to uplands, wetlands, and open water of up to 9,800 sf or 0.22 acre for replacement of seven (7) culverts along the eastern berm of the stormwater attenuation area.

- Best Management Practices (BMPs) would be implemented during the construction phase to reduce temporary impacts, and vegetation would re-establish post-construction.

- The area would remain and continue to serve as a receiving body for treated stormwater from the US-1 drainage system in wet conditions.

Floodplains

- Construction of Proposed Project is primarily on developed Airport property although the IMC construction would impact the 100-year floodplain.

- All construction staging on Airport property would take place on existing transportation infrastructure and no temporary access roads would be built.

- The Proposed Project is not anticipated to create or worsen existing flood hazard conditions or increase flood risk.

- The Proposed Project includes development of stormwater management features that are intended to manage all stormwater within the existing US-1 drainage system and to facilitate floodwater flow to the extent possible in the event of a major storm event.



SOURCE: Broward County Aviation Department, 2024.



SOURCE: Broward County Aviation Department, 2024.

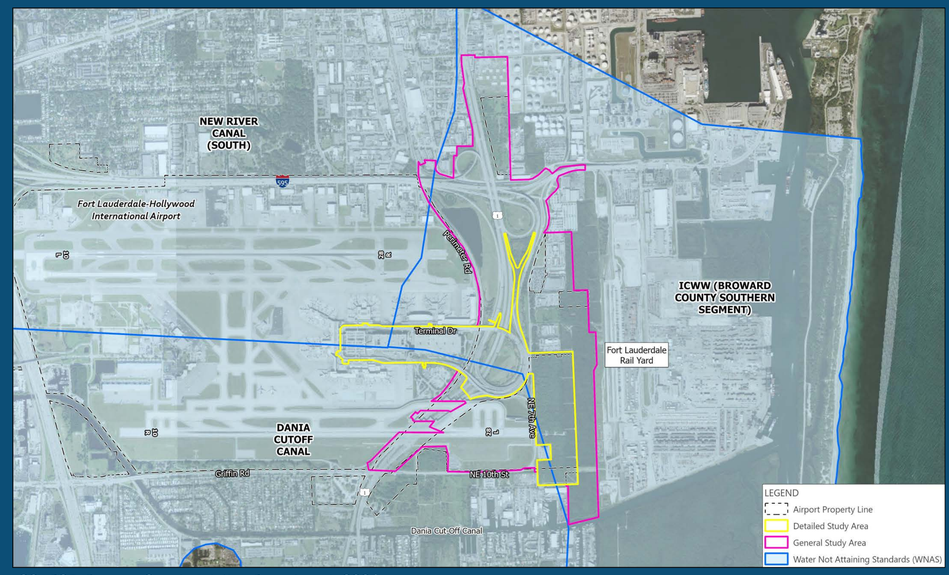
Water Resources – Water Quality and Groundwater

Water Quality

- The study area includes primarily manmade impoundments and conveyance structures designed for stormwater transport and treatment.

- Stormwater from US-1 currently discharges into an existing mangrove area to the east of Northeast 7th Avenue which discharges east into a manmade channel that conveys water southward into the Dania Cut-Off Canal.

- There are three waterbodies present within the study area which are considered “impaired” for water quality. The proposed project includes design features to treat and store stormwater before discharge so that the water quality of these waterbodies is not further degraded.



SOURCE: Broward County Aviation Department, 2024.

- The IMC would result in additional periodic discharge of stormwater; however, the project would be designed to reduce water quality impacts, including maximizing onsite treatment and storage prior to discharge. The receiving wetland would continue to accommodate treated stormwater with minor upgrades to infrastructure.

Groundwater

- The Proposed Project is located above the Biscayne Aquifer, a sole source aquifer.

- BCAD would strictly adhere to Construction Management Plan and implement BMPs to reduce the potential for spills and leaks from construction equipment.

- Design of the IMC would prioritize onsite treatment and storage to reduce potential effects to municipal drinking water supplies, important sole-source aquifers, or protected groundwater supplies.

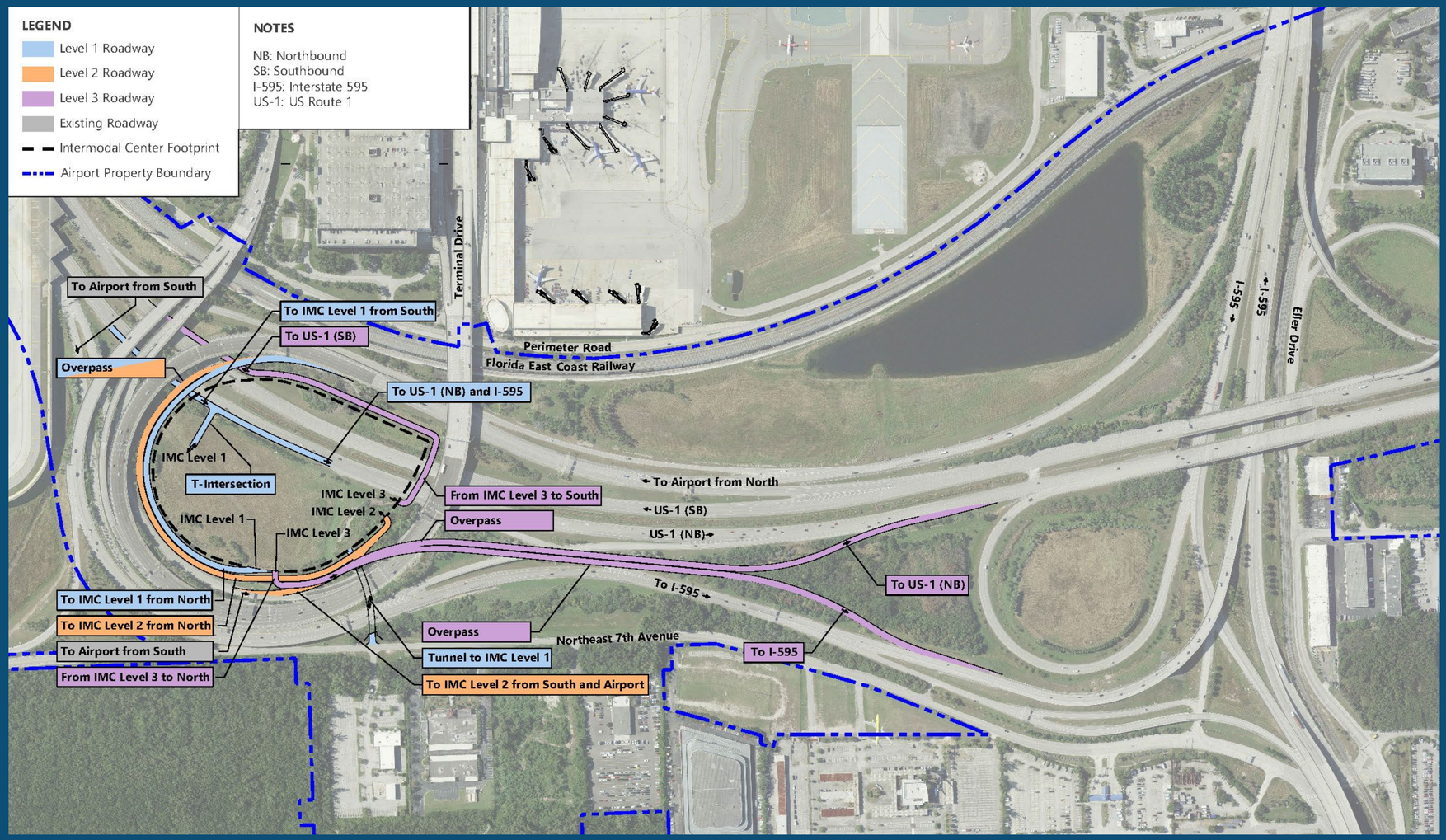
Surface Transportation

- FDOT lease agreement for the IMC site requires approval of an Interchange Modification Report (IMR) for the new ramps and roadways, and access/egress points to and from the proposed IMC at FLL with Interstate 595 (I-595) and US-1.

- The Proposed Project would improve landside access options and facilities to enhance the overall travel experience at FLL.

- BCAD conducted a traffic analysis for the internal circulation airport roadway system as part of the Master Plan Update.

- No increase in vehicular traffic on local roadways is anticipated.



SOURCE: Broward County Aviation Department, 2024.

Cumulative Impacts

- A NEPA analysis requires the consideration of cumulative impacts which are those impacts that may result from an action “when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7 [1978, as amended in 1986 and 2005).

- The past, present, and reasonably foreseeable projects were reviewed for a period of 10 years before the Study Year (2023) and five years beyond the 2033 opening of facility operations (2038).

- Major transportation and development projects in the vicinity of FLL that could have some effect within the study area (e.g., Broward Commuter Rail South) were identified and considered in the assessment of cumulative impacts. The complete list of projects considered in the cumulative impact analysis are provided in Section 3.15, Cumulative Impacts, of the Draft EA.

- The analysis concluded there would be no significant cumulative impacts to any of the environmental resource categories as a result of the Proposed Project.

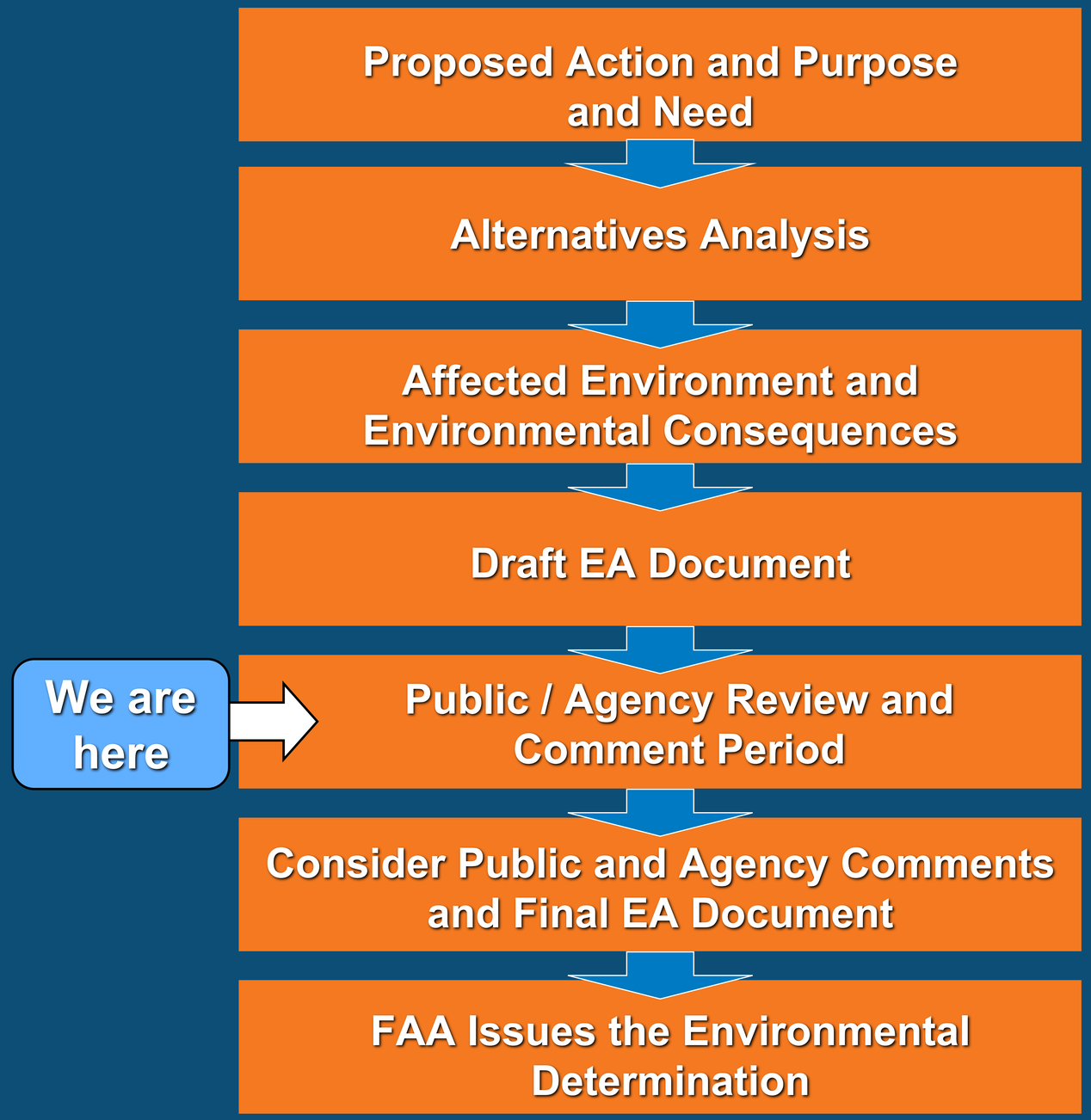
- The list of projects and summary of analysis is in Section 3.15, Cumulative Impacts, of the Draft EA.

Next Steps

- FAA and BCAD will review and prepare responses to each comment received.
  - <u>Comments must be received by 5 p.m. EST on September 4, 2024.</u>

- FAA and BCAD will prepare the Final Environmental Assessment which will include the responses to public comments.
  - Final EA is anticipated to be complete Fall 2024

- FAA will decide whether to either issue a Finding of No Significant Impact/Record of Decision (FONSI/ROD) or prepare an Environmental Impact Statement.



Public Comments

- Submitting Public Comments
  - Public comment period started on July 22, 2024, and will end on September 4, 2024, at 5:00 P.M. Eastern time.
  - Written comments may be mailed to the address below.

William Castillo, Interim Capital Project Management Administrator
Broward County Aviation Department
320 Terminal Drive, Suite 200
Fort Lauderdale, FL 33315

- Comments may also be submitted electronically to FLLLandsideEAComments@esassoc.com

- **All comments must be received by 5:00 p.m. Eastern on September 4, 2024.**

PRIVACY NOTICE: *Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.*

Broward County Aviation Department - Fort Lauderdale-Hollywood International Airport (FLL)

Draft Environmental Assessment for Landside Projects Public Information Workshop

Public Sign-In Sheet

Date / Time: Tuesday, August 27, 2024 5:30 PM - 8:30 PM **Location: Anne Kolb Nature Center**

First & Last Name	Address	Email	Organization	Signature
Jacob Bortz	2844 Humboldt St, Brooklyn	jacob.bortz@exodiso.ai	Exodiso	
Jim Eriksen	"	jeriksen@hntb.com	HNTB	
SAMBIT BHATTA.		SambitB@leaelliott.com	Lea Elliott.	
Claudia Batista	100 W. Dania Beach Blvd	cbatista@daniabeachfl.gov	Dania Beach	CMB.
Jessica Mackey	100 W. Dania Beach Blvd	jmackey@daniabeachfl.gov	City of Dania Beach	JM
ANGEL CHAVARRIA	7050 CORP CENTER	angel.chavarria@wsp.com	WSP	ACH
Jose de Almagro		jdealmagro@hntb.com	HNTB	
Candice Ericks	110 SE 6th St, Ft Lauderdale	Candice@tseccgov.com	HNTB/TSE Consulting	
JUSTIN HOLOBER	4580 CARAMBOLA CIRCLE S COCONUT CREEK	JHOLOBER@BROWARD.ORG	PORT EVERGLADES	
FERNANDO MOINO	5200 Waterford District #400	fmoino@hntb.com	HNTB	
SANTOS VALLADOLID	1770 NW 64th St. Suite 620 Ft Lauderdale	svalladolid@primecontracting.com	Prime Contracting LLC	
Paris Tyburski	103 Hidden Court Rd. Hollywood 33023	ptyburski@broward.org	BCAD	
DAVID PUPKIEWICZ		dpupkiewicz@flatironcorp.com	FLATIRON DRAGADOS	

Broward County Aviation Department - Fort Lauderdale-Hollywood International Airport (FLL)

Draft Environmental Assessment for Landside Projects Public Information Workshop

Public Sign-In Sheet

Date / Time: Tuesday, August 27, 2024 5:30 PM - 8:30 PM **Location: Anne Kolb Nature Center**

First & Last Name	Address	Email	Organization	Signature
JUAN RESTREPO	901 PONCE DE LEON BLVD. SUITE 900	JUAN.RESTREPO@STANTEC.COM	STANTEC	
MARIO NUEVO	5200 WATERFORD DISTRICT SUITE 900 MIAMI, FL 33126	MNUEVO@HNTB.COM	HNTB	
Lauren Jackson	1920 S. Ocean Dr. #1710 fort lauderdale, FL 33316	lauren@tsecgov.com	TSE Consulting	
Carlos Lopez	301 E Las Olas Blvd. #230 FTL, FL 33301	CALopez@PCL.com	PCL Construction Services	
Mark Santos	110 SE 6th St., Suite 1420 Ft. Laud, 33301	msantos@walkerconsultants.com	Walker Consultants	
BRADY BREWSTER	110 N. Federal Hwy Fort Lauderdale, FL	bbrewster@mjinc.com	McFarland Johnson	
Daniel Frankel	2101 N. Andrews Ave Ft lauderdale FL 33311	dfrankel@mosscm.com	Moss	
Cheryl Seinfeld	400 N. Andrews Ave #400, FLL, FL 33301	CSeinfeld@hntb.com	HNTB	
Bon Soukamneuth	Blue Lagoon Miami	bon.soukamneuth@kci.com	KCI	
Jeff Kyser		jeff.kyser@parsons.com	Parsons	
JOHN KULPA	500 cypress creek Rd #600 FORT LAUDERDALE 33309	JOHN.KULPA@PARSONS.COM	PARSONS	
Michael Melendez	3400 COMMERCIAL BLVD FORT LAUDERDALE, FL 33309	michael.melendez@dot.state.fl.us	FDOT	

Broward County Aviation Department - Fort Lauderdale-Hollywood International Airport (FLL)

Draft Environmental Assessment for Landside Projects Public Information Workshop

Public Sign-In Sheet

Date / Time: Tuesday, August 27, 2024 5:30 PM - 8:30 PM **Location: Anne Kolb Nature Center**

First & Last Name	Address	Email	Organization	Signature
Eduardo Esteves	2906 Executive Way Miramar, FL	edd:e.eduardo.esteves@gmail.com	Turner Construction	
Jill Capelli	828 Crestview Circle Weston, FL	~~jill.anm~~ jill.capelli@kimley-horn.com	Kimley-Horn	Jill Capelli
Tomas Oliva	4200 Pine Island Dr. Plantation FL	tomas.oliveva@kimley-horn.com	Kimley-Horn	
A. Celeste Saucedo	320 Terminal Dr.	asaucedo@broward.org	BCAD	ASaucedo

Broward County Aviation Department - Fort Lauderdale-Hollywood International Airport (FLL)

Draft Environmental Assessment for Landside Projects Public Information Workshop

Elected Officials Sign-In Sheet

Date / Time: Tuesday, August 27, 2024 5:30 PM - 8:30 PM **Location: Anne Kolb Nature Center**

First & Last Name	Address	Email	Organization	Signature
GIUSEPPE SANTORO		GIUSEPPE.SANTORO@PARSONS.COM	PARSONS	

Appendix H-4
Public Comments and Responses

A-1

Broward MPO
Metropolitan Planning Organization
Move People & Goods | Create Jobs | Strengthen Communities

Chair
Yvette Colbourne

Vice Chair
Joy Cooper

Deputy Vice Chair
Byron Jaffe

Members | Alternates
Torey Alston
Vinnie Andreano
Antonio V. Arserio
Samson Borgelin
Felicia M. Brunson
Chris Caputo
Tycie Causwell
Yvette Colbourne
Joy Cooper
Kicia Daniel
Richard DeNapoli
Tim Fadgen
Lamar Fisher
Beam Furr
Bill Ganz
Thomas Good Jr
Bob Hartmann
William "Bill" Hodgkins
Byron Jaffe
Lori Lewellen
Tim Lonergan
Lisa Mallozzi
Lawrence "Jabbow" Martin
Andrea McGee
Hazelle Rogers
Tim Ryan
Joseph A. Scuotto
Caryl S. Shuham
Joshua Simmons
Warren Sturman
Dean J. Trantalis
Michael Udine
Kyle Van Buskirk
Rich Walker
Sandra L. Welch
Michelle Whitman

Executive Director
Gregory Stuart

General Counsel
Alan Gabriel

August 27, 2024

Mr. William Castillo
Capital Program Management Administrator
Broward County Aviation Department
320 Terminal Drive, Suite 200
Fort Lauderdale, FL 33315

RE: Draft Environmental Assessment for Landside Projects at Fort Lauderdale-Hollywood International Airport (FLL)

Mr. William Castillo,

The Broward Metropolitan Planning Organization (MPO) offers our full support for the proposed Landside Projects at Fort Lauderdale-Hollywood International Airport (FLL). These projects, which include an Intermodal Center (IMC), Automated People Mover (APM) Circulator, and parking garage expansions, when completed, will improve airport access with reduced congestion and enhanced parking accommodations, and upgrade the overall passenger experience at FLL. The Landside Projects at FLL were approved by the Broward MPO Board and amended into the 2045 Metropolitan Transportation Plan on February 8, 2024.

The Broward MPO is committed to improving transportation infrastructure within the region, and we believe that these projects are critical to achieving our goals of reducing traffic congestion, improving mobility, and supporting economic growth. The proposed IMC, in particular, aligns with our long-term vision of creating a multimodal transportation network that seamlessly connects all travelers with other modes of transportation, including rail and bus services. Additionally, the improvements to parking facilities and the development of new roadways will ease congestion in the terminal areas, contributing to a more efficient and sustainable transportation system.

We commend the Broward County Aviation Department and its partners for their forward-thinking approach to addressing the current and future needs of FLL. The comprehensive planning and coordination efforts undertaken in this Draft Environmental Assessment demonstrate a clear commitment to meeting the needs of the traveling public while minimizing environmental impacts.

A-1

Broward MPO
Metropolitan Planning Organization
Move People & Goods | Create Jobs | Strengthen Communities

The Broward MPO supports the advancement of these projects and urges the Federal Aviation Administration to provide the necessary approvals and funding to bring these critical improvements to fruition.

Sincerely,



Gregory Stuart, AICP
Executive Director

Cc: William Cross, P.E., Deputy Executive Director
Peter Gies, Regional Planning Manager

For complaints, questions or concerns about civil rights or nondiscrimination; or for special requests under the Americans with Disabilities Act,
please contact Carl Ema, Title VI Coordinator at (954) 876-0052 or emac@browardmpo.org

A-1

AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
320 Terminal Drive, Suite 200 • Fort Lauderdale, Florida 33315 • 954-359-6100

September 5, 2024

Broward County Metropolitan Planning Organization
Gregory Stuart, AICP, Executive Director
Trade Centre South
100 West Cypress Creek Road
6th Floor, Suite 650
Fort Lauderdale, Florida 33309-2181

RE: Comment on Draft Environmental Assessment for Landside Projects at Fort Lauderdale-Hollywood International Airport (FLL), Florida

Dear Gregory Stuart, AICP,

Thank you for submitting your comments regarding the Draft Environmental Assessment (EA) for Landside Projects at Fort Lauderdale-Hollywood International Airport (FLL). The Broward County Aviation Department (BCAD) sincerely appreciates the Broward Metropolitan Planning Organization's (MPO) letter of support for these crucial landside projects. As detailed in your letter, BCAD agrees that the landside projects included in the Draft EA are necessary to improve transportation infrastructure within the region to reduce traffic congestion, improve mobility, and support economic growth. BCAD agrees that the proposed landside projects are in alignment with Broward MPO's long-term vision of creating a multimodal transportation network that seamlessly connects all travelers with other modes of transportation, including rail and bus services. Additionally, BCAD agrees that the landside projects will ease congestion in the terminal areas, contributing to a more efficient and sustainable transportation system.

P-1

Michael Binnie -

Michael Binnie <mbinnie@easternmetal.com>

Tue 8/27/2024 12:37 PM

To:FLLLandsideEAComments <flllandsideeacomments@esassoc.com>

Good afternoon,

Unfortunately, I am not able to make it this evening. Is there anyway to obtain the information discussed at another time?

Mike

P-1

AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
320 Terminal Drive, Suite 200 • Fort Lauderdale, Florida 33315 • 954-359-6100

September 5, 2024

Michael Binnie
mbinnie@easternmetal.com

RE: Comment on Draft Environmental Assessment for Landside Projects at Fort Lauderdale-Hollywood International Airport (FLL), Florida

Dear Michael Binnie,

Thank you for submitting your comment regarding the Draft Environmental Assessment (EA) for Landside Projects at Fort Lauderdale-Hollywood International Airport. The Public Workshop held on August 27, 2024, at Ann Kolb Nature Center, 751 Sheridan Street Hollywood, Florida, 33019 was an Open House style workshop; there was no formal presentation. There were project boards displayed that describe the National Environmental Policy Act (NEPA) process, alternatives considered, and an overview of the Draft EA environmental analyses. The Study Team was available to answer questions. The public workshop boards have been added to the project website at the following address: https://www.broward.org/Airport/Business/Community/MasterPlan/Pages/default.aspx.

Broward County Board of County Commissioners
Mark D. Bogen • Lamar P. Fisher • Beam Furr • Steve Geller • Robert McKinzie • Nan H. Rich • Hazelle P. Rogers • Tim Ryan • Michael Udine
www.broward.org/www.fll.net