

6. Environmental Overview

The Environmental Overview (EO) summarizes environmental processing considerations for the recommended development projects proposed as part of this MPU, specifically as they relate to the requirements in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*. The recommended development projects are collectively referred to as the “MPU projects” herein.

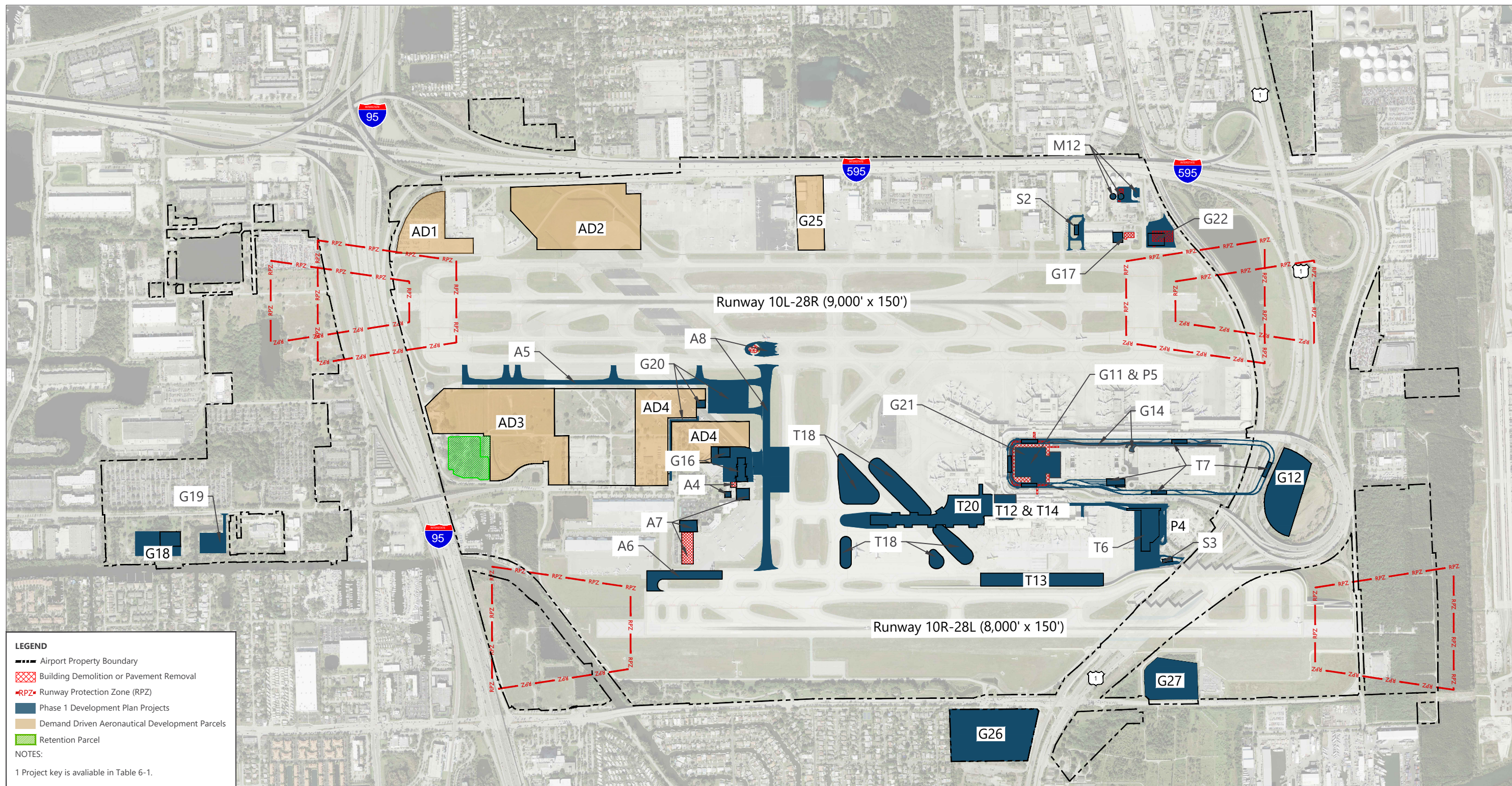
The EO is primarily based on the environmental conditions documented in Section 2.15, and information was supplemented, as appropriate, to reflect conditions in 2018. The intent of this EO is to provide decision-makers with an understanding of key environmental issues that would likely need to be addressed as part of future environmental reviews of the MPU projects. **Exhibit 6-1** graphically depicts the MPU projects anticipated to occur within Phase 1 of the Master Plan. Phase 1 addresses the growing passenger volumes requiring immediate attention to respond to planning activity level (PAL) 1 levels of demand. **Exhibit 6-2** illustrates the demand driven MPU projects anticipated to occur within Phase 2 and 3 of the Master Plan. Phase 2 and 3 represent PAL 2 and 3 forecasted passenger volumes. Demand driven aeronautical development parcels shown on Exhibit 6-1 and 6-2 represent parcels reserved for future aeronautical activity should a need arrive.

All projects that require a federal action, including receipt of federal funding, must comply with NEPA. Examples of actions include use of Airport Improvement Program (AIP) funds, use of Passenger Facility Charge (PFC) funds, or approval of the Airport Layout Plan (ALP). Compliance with NEPA occurs through one of three levels of environmental review based on the potential significance of environmental effects and/or extraordinary circumstances, as defined in the FAA Orders previously cited. The three levels of environmental review are:

- **Categorical Exclusions** – The FAA has defined several types of projects/actions that do not individually or cumulatively have a significant effect on the environment; thus, they do not require the preparation of an Environmental Assessment (EA) or an Environmental Impact Statement (EIS).
- **Environmental Assessment** – This includes actions that are not categorically excluded; they would normally be categorically excluded but involve at least one extraordinary circumstance that may significantly impact the human environment, or the action is not known to normally require an EIS. Generally, sufficient evidence and analysis suggest the action has the potential to significantly affect the environment, but mitigation measures can be implemented that would reduce the potential effects to levels below significance resulting in a Finding of No Significant Impact.
- **Environmental Impact Statement** – Actions requiring an EIS include those for which one or more environmental impacts would be significant and mitigation measures cannot reduce the impact(s) below significance levels. Direct, indirect, and cumulative impacts need to be considered in determining level of significance.



THIS PAGE INTENTIONALLY LEFT BLANK



SOURCES: Quantum, Aerial Photography, 2016 (Basemap); Ricondo & Associates, Inc., September 2018 (Master Plan Update Projects).
 PREPARED BY: Ricondo & Associates, Inc., September 2019.

EXHIBIT 6-1

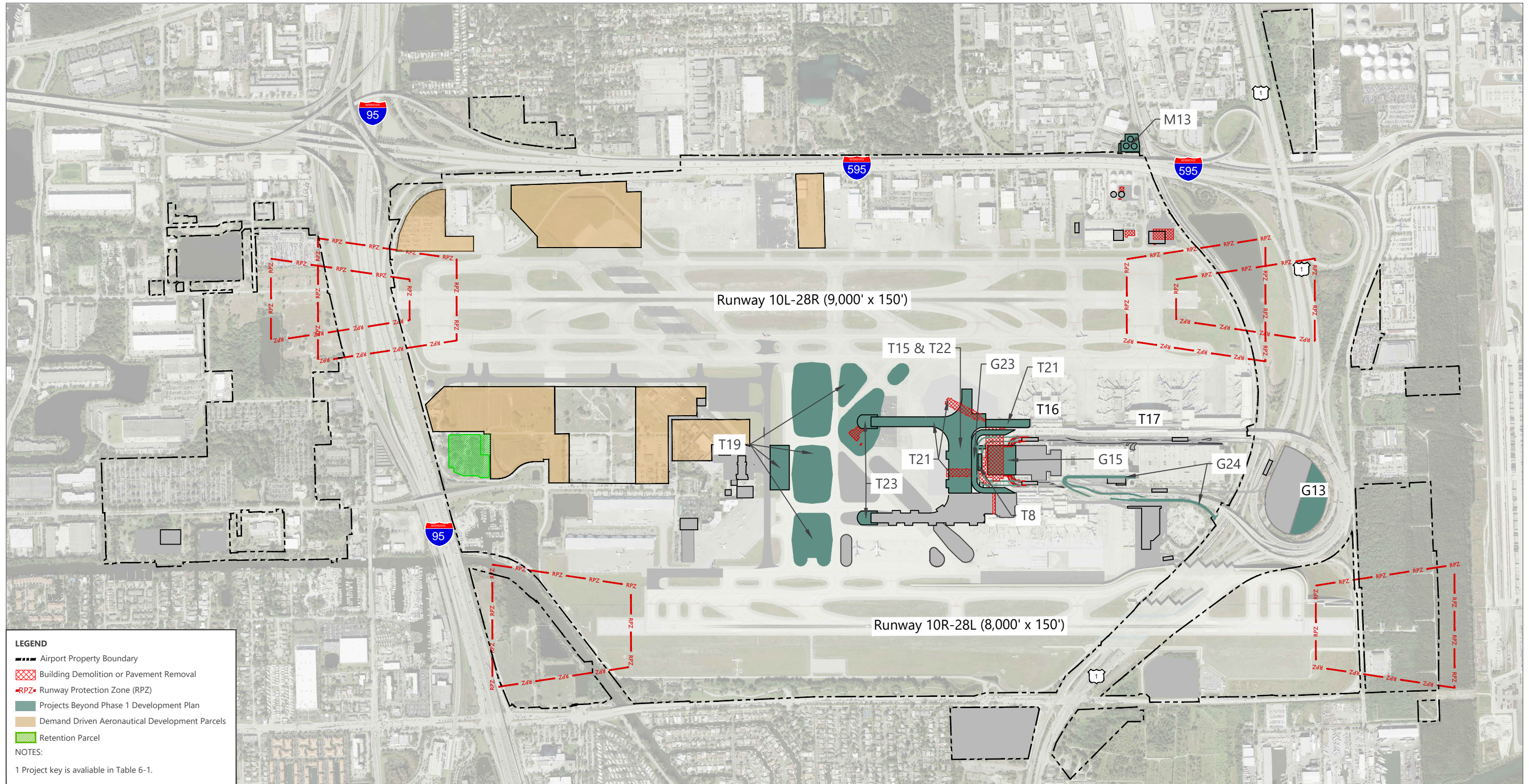


Master Plan Update Projects
 Phase 1 Development Plan Projects

Drawing: P:\Project\Miami\BCAD\2015 Master Plan Updates\01 - FLL Tasks\11-6 Environmental Overview\CAD\Exhibit 6-1.dwg; layout: Exhibit 6-1 Plotted: Oct 30, 2020, 02:53PM



THIS PAGE INTENTIONALLY LEFT BLANK



LEGEND

- Airport Property Boundary
- ▣ Building Demolition or Pavement Removal
- ▬ Runway Protection Zone (RPZ)
- ▭ Projects Beyond Phase 1 Development Plan
- ▭ Demand Driven Aeronautical Development Parcels
- ▭ Retention Parcel

NOTES:

1 Project key is available in Table 6-1.

SOURCES: Quantum, *Aerial Photography*, 2016 (Basemap); Ricondo & Associates, Inc., September 2018 (Master Plan Update Projects).
 PREPARED BY: Ricondo & Associates, Inc., September 2019.

EXHIBIT 6-2



**Master Plan Update Projects
 Projects Beyond Phase 1 Development Plan**

Drawing: P:\Project-Miami\BCAD\2015 Master Plan Updates\01 - FLL Tasks\11-6 Environmental Overview\CAD\Exhibit 6-2.dwg; Layout: Exhibit 6-2 Plotted: Oct 30, 2020, 02:47PM



THIS PAGE INTENTIONALLY LEFT BLANK

Environmental resources were considered throughout the MPU process. The existing environmental conditions were identified and documented in the inventory and then considered in the analysis of alternatives. The following sections provide an overview of the environmental issues and the processing needs associated with the MPU projects. The EO does not represent an environmental review under NEPA or a determination of the level of environmental review required; rather, it identifies potential resource issues to be considered during future environmental reviews pursuant to NEPA, and it provides a foundation for early project review with the FAA to identify NEPA processing requirements.

6.1 Environmental Considerations – Master Plan Update Projects

Based on known environmental considerations at the Airport and preliminary information on MPU projects, several NEPA environmental resource categories (defined in FAA Order 1050.1F) may be affected by MPU projects and may require assessment during future NEPA compliance efforts. As presented in **Table 6.1-1**, projects were identified as “yes” if the *potential to affect* the resource category exists; however, “yes” does not indicate a significant impact, just that detailed review of the resource category is likely required and the potential for an impact exists. Conversely, “no” in Table 6.1-1 indicates the project is not anticipated to affect the resource based on the project footprint and the known environmental conditions. The resource categories that would likely require detailed review in future environmental evaluations of MPU projects are:

- Biological Resources
- Department of Transportation Act, Section 4(f) Resources
- Hazardous Materials, Solid Waste, and Pollution Prevention
- Historical, Architectural, Archaeological, and Cultural Resources
- Floodplains
- Surface Waters and Wetlands

Additionally, some MPU projects support changes in aircraft or ground vehicle activity that may trigger the need for evaluation in future environmental reviews. As presented in Table 6.1-1, projects were identified as “likely” if a change associated with the project may require detailed evaluation, and they were identified as “not likely” if it is anticipated that the project would not change operations in such a manner as to trigger detailed evaluation. The resource categories that would likely require detailed review in future environmental evaluations of some MPU projects are:

- Air Quality
- Aircraft Noise and Compatible Land Use

The following resources are not expected to require detailed evaluation in future environmental reviews because the resources are not present at or near the Airport. Therefore, these resources are not included in Table 6.1-1:

- Farmlands
- Wild and Scenic Rivers

Table 6.1-1 (1 of 5): Potential Environmental Issues Associated with Master Plan Update Projects

MASTER PLAN UPDATE PROJECT		POTENTIAL FOR PROJECT FOOTPRINT TO AFFECT RESOURCE						ACTIVITY ASSOCIATED WITH PROJECT REQUIRES EVALUATION	
#	NAME	BIOLOGICAL RESOURCES ^{1/}	DOT SECTION 4(F) RESOURCES	HAZARDOUS MATERIALS	CULTURAL RESOURCES ^{2/}	FLOODPLAINS	SURFACE WATERS AND WETLANDS	AIR QUALITY	AIRCRAFT NOISE
General and Administrative									
G11	Commercial Center (Phase 1 + Hotel)	No	No	No	No	Yes	No	Likely	Not Likely
G12	Intermodal Center (APM Station, Transit Center, 4,500-Space Garage) Phase 1	Yes	No	No	No	Yes	Yes	Likely	Not Likely
G13	Intermodal Center (2,300-Space Garage, Mixed-Use Development) Phase 2 ^{3/}	Yes	No	No	No	Yes	Yes	Likely	Not Likely
G14	Supplemental Curb (Includes Demo of Palm Garage)	No	No	Yes	No	Yes	No	Likely	Not Likely
G15	Commercial Center (Phase 2) ^{3/}	No	No	Yes	No	Yes	No	Likely	Not Likely
G16	ARFF / BCAD Consolidated Operations Facility	No	No	Yes	No	Yes	No	Likely	Not Likely
G17	Belly Cargo Facility Expansion	No	No	No	No	Yes	No	Not Likely	Not Likely
G18	Airport Maintenance Expansion	Yes	Yes	Yes	No	Yes	No	Not Likely	Not Likely
G19	Bus Lot Staging and Maintenance	Yes	Yes	No	No	Yes	Yes	Likely	Not Likely
G20	General Aviation Customs Relocation (Includes Airside Ramp)	Yes	No	No	No	Yes	No	Not Likely	Not Likely

Table 6.1-1 (2 of 5): Potential Environmental Issues Associated with Master Plan Update Projects

MASTER PLAN UPDATE PROJECT		POTENTIAL FOR PROJECT FOOTPRINT TO AFFECT RESOURCE						ACTIVITY ASSOCIATED WITH PROJECT REQUIRES EVALUATION	
#	NAME	BIOLOGICAL RESOURCES ^{4/}	DOT SECTION 4(F) RESOURCES	HAZARDOUS MATERIALS	CULTURAL RESOURCES ^{2/}	FLOODPLAINS	SURFACE WATERS AND WETLANDS	AIR QUALITY	AIRCRAFT NOISE
G21	Central Utility Plant (Central Chiller Plant)	No	No	No	No	No	No	Likely	Not Likely
G22	Centralized Receiving and Distribution Facility	No	No	Yes	No	No	No	Not Likely	Not Likely
G23	Westward Expansion of Terminal Roadways (To New Terminal 3) ^{3/}	No	No	Yes	No	Yes	No	Likely	Not Likely
G24	Exit Roadway Improvements ^{3/}	No	No	Yes	No	Yes	No	Likely	Not Likely
G25	General Aviation Parcel ^{3/}	No	No	Yes	No	Yes	No	Likely	Likely
G26	Ground Transportation and Support Parcel	Yes	No	No	No	Yes	No	Likely	Not Likely
G27	Ground Transportation and Support Parcel	Yes	No	No	No	Yes	No	Likely	Not Likely
Airfield									
A4	Airfield Electrical Vault	No	No	Yes	No	Yes	No	Not Likely	Not Likely
A5	Taxilane (ADG III) Serving Westside Parcels	Yes	No	Yes	No	Yes	No	Likely	Likely
A6	Taxiway H Extension	Yes	No	No	No	Yes	No	Likely	Likely
A7	Enabling In-Kind Hangar Replacement (Taxiway H)	No	No	Yes	No	Yes	No	Not Likely	Not Likely
A8	Crossfield Taxiway	Yes	No	Yes	No	Yes	No	Likely	Likely

Table 6.1-1 (3 of 5): Potential Environmental Issues Associated with Master Plan Update Projects

MASTER PLAN UPDATE PROJECT		POTENTIAL FOR PROJECT FOOTPRINT TO AFFECT RESOURCE						ACTIVITY ASSOCIATED WITH PROJECT REQUIRES EVALUATION	
#	NAME	BIOLOGICAL RESOURCES ^{1/}	DOT SECTION 4(F) RESOURCES	HAZARDOUS MATERIALS	CULTURAL RESOURCES ^{2/}	FLOODPLAINS	SURFACE WATERS AND WETLANDS	AIR QUALITY	AIRCRAFT NOISE
Terminal									
T6	Gate Expansion (5-Gate Terminal)	No	No	Yes	No	Yes	No	Likely	Likely
T7	APM (Closed Loop Circulator)	No	No	No	No	Yes	No	Not Likely	Not Likely
T8	APM (West Extension to Redeveloped Terminal 3) ^{3/}	No	No	No	No	Yes	No	Not Likely	Not Likely
T12	Terminal 4 Expansion Dependencies and Code Compliance Improvements	No	No	No	No	Yes	No	Not Likely	Not Likely
T13	Hardstand Parking	No	No	No	No	Yes	No	Likely	Likely
T14	Utility Improvements (Consolidated Utility Duct Bank) Phase 1 – Terminal 4	No	No	No	No	Yes	No	Not Likely	Not Likely
T15	Utility Improvements (Consolidated Utility Duct Bank) Phase 2 – Terminal 3 ^{3/}	No	No	Yes	No	Yes	No	Not Likely	Not Likely
T16	Utility Improvements (Consolidated Utility Duct Bank) Phase 3 – Terminal 2 ^{3/}	No	No	Yes	No	Yes	No	Not Likely	Not Likely
T17	Utility Improvements (Consolidated Utility Duct Bank) Phase 4 – Terminal 1 ^{3/}	No	No	No	No	Yes	No	Not Likely	Not Likely
T18	Airfield Improvements Associated with Terminal Development Phase 1	Yes	No	No	No	Yes	No	Not Likely	Not Likely

Table 6.1-1 (4 of 5): Potential Environmental Issues Associated with Master Plan Update Projects

MASTER PLAN UPDATE PROJECT		POTENTIAL FOR PROJECT FOOTPRINT TO AFFECT RESOURCE						ACTIVITY ASSOCIATED WITH PROJECT REQUIRES EVALUATION	
#	NAME	BIOLOGICAL RESOURCES ^{4/}	DOT SECTION 4(F) RESOURCES	HAZARDOUS MATERIALS	CULTURAL RESOURCES ^{2/}	FLOODPLAINS	SURFACE WATERS AND WETLANDS	AIR QUALITY	AIRCRAFT NOISE
T19	Airfield Improvements Associated with Terminal Development Phase 2 ^{3/}	Yes	No	Yes	No	Yes	No	Not Likely	Likely
T20	Terminal Expansion Phase 1 ^{3/}	No	No	No	No	Yes	No	Likely	Likely
T21	Terminal Expansion Phase 2 – 2B and 2C Stages – Northern Concourse and Demo Existing E/F ^{3/}	No	No	No	No	Yes	No	Likely	Likely
T22	Terminal Expansion Phase 2 – 2D/2E/3A – North/South Connection ^{3/}	No	No	Yes	No	Yes	No	Likely	Likely
T23	Terminal Expansion – Phase 3 ^{3/}	Yes	No	No	No	Yes	No	Likely	Likely
Security									
S2	Gate 100 Relocation and Expansion	No	No	Yes	No	Yes	Yes	Not Likely	Not Likely
S3	South AOA Gate (Gate 504)	No	No	Yes	No	Yes	No	Not Likely	Not Likely
Machinery, Equipment, Vehicles, and Other									
M12	Fuel Farm Expansion (Short-Term) and Oil/Water Separator	No	No	Yes	No	No	No	Likely	Not Likely
M13	Fuel Farm Expansion (Long-Term) ³	Yes	No	No	No	No	No	Likely	Not Likely

Table 6.1-1 (5 of 5): Potential Environmental Issues Associated with Master Plan Update Projects

MASTER PLAN UPDATE PROJECT		POTENTIAL FOR PROJECT FOOTPRINT TO AFFECT RESOURCE						ACTIVITY ASSOCIATED WITH PROJECT REQUIRES EVALUATION	
#	NAME	BIOLOGICAL RESOURCES ^{1/}	DOT SECTION 4(F) RESOURCES	HAZARDOUS MATERIALS	CULTURAL RESOURCES ^{2/}	FLOODPLAINS	SURFACE WATERS AND WETLANDS	AIR QUALITY	AIRCRAFT NOISE
Parking									
P4	Demand Driven Parking (Optional)	No	No	Yes	No	Yes	No	Likely	Not Likely
P5	Palm Garage Redevelopment	No	No	Yes	No	Yes	No	Likely	Not Likely
Demand-Driven Aeronautical Development Parcel									
AD1	Aeronautical Demand-Driven Parcel – 1	Yes	No	No	No	Yes	No	Likely	Likely
AD2	Aeronautical Demand-Driven Parcel – 2	Yes	No	No	No	Yes	No	Likely	Likely
AD3	Aeronautical Demand-Driven Parcel – 3	Yes	Yes	Yes	Yes	Yes	No	Likely	Likely
AD4	Aeronautical Demand-Driven Parcel – 4	Yes	No	Yes	No	Yes	No	Likely	Likely

NOTES:

ADG = Airplane Design Group

AOA = Air Operations Area

APM = Automated People Mover

ARFF = Aircraft Rescue and Firefighting

DOT = Department of Transportation

Yes = Indicates a project may impact the resource based on the project footprint and/or known existing environmental conditions.

No = Indicates a project is not anticipated to impact the resource based on the project footprint and known environmental conditions.

Likely = Indicates an assessment of potential impacts may be needed based on the project definition, which indicates the potential for changes to aircraft and/or ground vehicle operations.

Not Likely = Indicates an assessment of potential impacts is not likely needed based on the project definition, which does not indicate the potential for changes to aircraft or ground vehicle operations.

1 “Yes” under biological resources means the project occurs in an area with open grass areas present, which could thus provide potential habitat for Florida burrowing owls or gopher tortoises, but it does not necessarily indicate the project would result in an impact. Surveys should be conducted.

2 “Cultural Resources” is an abbreviation of the historical, architectural, archeological, and cultural resources category defined in FAA Order 1050.1F. In addition to cultural resources effects identified in this table, it is anticipated that any project that disturbs soil would require coordination with the SHPO and Native American Tribes to evaluate the potential for archaeological effects.

3 MPU project anticipated to occur beyond initial 10-year development window.

SOURCES: Kimley-Horn and Associates, Inc., November 2018; Ricondo & Associates, Inc., November 2018.

PREPARED BY: Ricondo & Associates, Inc., November 2018.

Finally, environmental review of all MPU projects would likely need to consider the following resource categories, but it is anticipated that environmental evaluation would not likely require more than a general discussion of the effects. Therefore, these resources are not included in Table 6.1-1:

- Climate
- Coastal Resources (Section 6.1.3 provides a brief discussion of coastal resource considerations)
- Land Use
- Natural Resources and Energy Supply
- Socioeconomics, Environmental Justice, and Children’s Health and Safety Risk
- Visual Effects

6.1.1 AIR QUALITY

As identified in Section 2.15.1, the Airport is in attainment for all National Ambient Air Quality Standards (NAAQS). Broward County has been operating under a maintenance plan for ozone emissions since 1995. Therefore, under NEPA, temporary emissions from construction activities, as well as long-term changes in operational emissions (e.g., new buildings, changes that affect aircraft and vehicle emissions), would need to be evaluated.

Following criteria established by the EPA, the FAA has identified actions that are presumed to conform to a State Implementation Plan (SIP) for the NAAQS and are therefore exempt from the general conformity regulations. If an MPU project is not exempt, then a consideration of construction emissions would be necessary to determine if construction would cause pollutant concentrations to exceed thresholds established for one or more of the NAAQS.

In addition to the need to estimate construction emissions for MPU projects, Table 6.1-1 identifies those MPU projects that may affect operational emissions; thus, it is anticipated that an analysis would be required to determine if operations associated with implementation of the project(s) would cause pollutant concentrations to exceed *de minimis* thresholds or be regionally significant. If a project would exceed *de minimis* thresholds, then a conformity determination would be required. If project emissions would not exceed *de minimis* thresholds, then the FAA can determine the project is in conformity with the SIP, and no further analysis or documentation would be required.

6.1.2 BIOLOGICAL RESOURCES

The Airport is in an urban setting with minimal undeveloped areas. The Dania Canal is located south of the Airport, and the intracoastal waterway and the Atlantic Ocean are located east of the Airport. Several small mixed hardwood and mangrove wetlands exist on the Airport, and stormwater pond features are adjacent to the Airport. No native upland habitat remains on or adjacent to the Airport. Based on conditions described in Section 2.15.2, it is unlikely that federally listed species would be affected with the implementation of the MPU projects.

However, MPU projects were identified in Table 6.1-1 as having the potential to affect biological resources if they occur on previously undeveloped parcels that reflect historical records documenting the presence of state-listed burrowing owls near the Airport. Based on recent correspondence from the Florida Fish and Wildlife Conservation Commission (FFWCC) for other projects at the Airport, the FFWCC recommended pre-construction surveys for the Florida burrowing owl and the gopher tortoise. These species could potentially occur on the Airport property and

would need to be assessed on a project-by-project basis. FFWCC Rule 68A-9.012, *Take of Wildlife on Airport Property*, allows for the destruction of burrows within safety areas (as defined in 14 C.F.R. § 139.5) after or while all existing burrowing owls and gopher tortoises within the burrow are flushed or live captured. State-listed species are disclosed by the FAA in NEPA documentation. The South Florida Water Management District (SFWMD) consults with FFWCC during Environmental Resource Permitting to determine if state-listed species are affected. Burrowing owls and gopher tortoises, if present, can be addressed under the state rule and are not considered a significant environmental issue that could affect MPU projects.

As part of future environmental reviews (i.e., NEPA processing, environmental permitting), current lists of federally and state-listed species should be obtained, and coordination should be conducted with FWS and FFWCC, as appropriate.

6.1.3 COASTAL RESOURCES

All federal actions associated with the MPU project implementation should be reviewed for consistency with the enforceable policies of the Florida Coastal Management Program (FCMP). Under the FCMP, federal consistency reviews are integrated into other state-level environmental evaluation processes conducted as part of review of a proposed federal action. The enforceable policies cover wide use and protection of the state's water, property, cultural, historic, and biological resources; protection of public health; minimization of the state's vulnerability to coastal hazards; assurance of orderly, managed growth; protection of the state's transportation system; and the sustainability of a vital economy.¹

All MPU projects that involve federal funding would need to be evaluated for consistency with the FCMP via state-level reviews.

6.1.4 DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(F)

U.S. DOT Section 4(f) provides protection for designated properties, including publicly owned parks, recreation areas, wildlife and waterfowl refuges, or significant historic sites. Under Section 4(f), approval of proposed federal actions that require the direct or indirect use of these properties are not permitted, unless no feasible and prudent alternatives exist, and then only if the action includes measures to mitigate such impacts. No wildlife and waterfowl refuges exist within 0.25 miles of the Airport.

Several park resources identified in Section 2.15 may be protected under Section 4(f). Additionally, the Naval Air Station Fort Lauderdale Museum on the west side of the Airport is listed on the National Register of Historic Places (NRHP) and would be protected under Section 4(f). Review of the MPU projects identified the following potential effects on identified Section 4(f) resources, as documented in Table 6.1-1:

- Project G18 (Airport Maintenance Expansion) is adjacent to Boaters Park, thus, consideration of indirect effects may be required.
- Project G19 (Bus Lot Staging and Maintenance) could potentially impact Boaters Park.

¹ Florida Coastal Office, Department of Environmental Protection, *Florida Coastal Management Program Guide*, September 7, 2018.

- Project AD3 (Aeronautical Demand-Driven Parcel 3) could impact the museum; however, development could be configured within the site to avoid adverse impacts to this resource.

Future environmental processing of these projects would likely require evaluation under Section 4(f).

6.1.5 HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

As discussed in Section 2.15.6.1, several potential contamination sites were identified within 0.5 miles of the Airport boundary; the locations of these sites and potential sites located on-Airport are shown on **Exhibit 6.1-1**. Table 6.1-1 identifies MPU projects near known potential contamination sites that would need future evaluation. The status of these sites as well as identification of any potential new sites must be conducted as part of future environmental reviews to identify potential hazardous materials impacts.

Additionally, the ability to handle solid waste, especially associated with construction and demolition activities, and pollution prevention strategies must be documented for all MPU projects.

6.1.6 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

One structure, Naval Air Station Fort Lauderdale Museum, is currently listed on the NRHP. As discussed in Section 6.1.4, Project AD3 (Aeronautical Demand-Driven Parcel 3) could impact the museum; however, development at this site could be configured to avoid adverse impacts to this historic resource. Environmental review of this project would request coordination under Section 106 of the Historic Preservation Act with the SHPO.

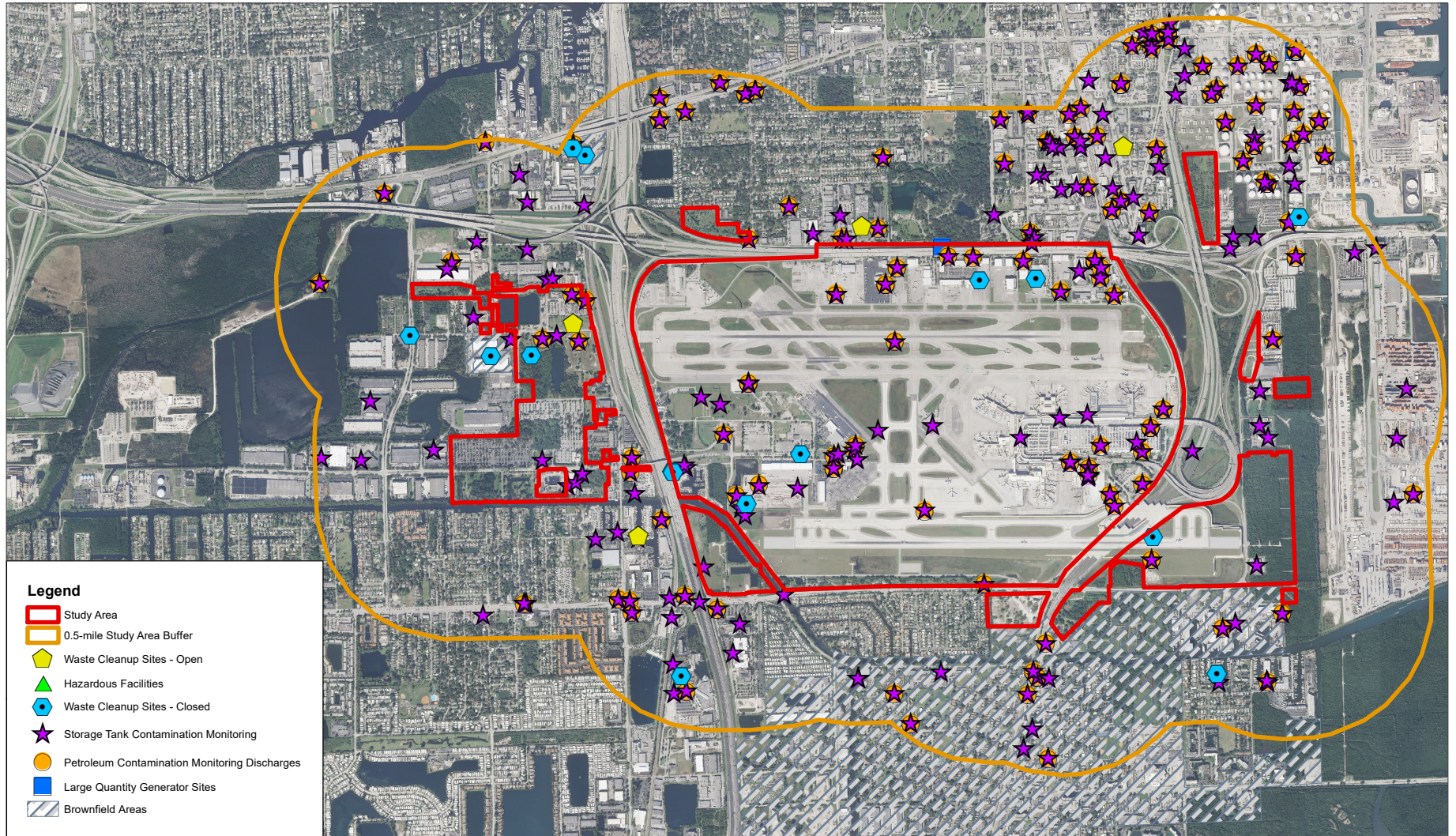
In addition to the on-Airport historic resource, several known archaeological sites are located near the Airport. Therefore, all projects that would disturb soil would require coordination with the SHPO and the Native American Tribes to evaluate the potential for archaeological effects. Additionally, an evaluation of any structure or facility that may be impacted by an MPU project would need to be conducted to determine eligibility for listing on the NRHP at the time the project is proposed for implementation.

6.1.7 NOISE AND COMPATIBLE LAND USE

Noise and compatible land use analyses would be anticipated for projects that have the potential to change runway use or the number or routing of aircraft flight paths or change the fleet mix operating at the Airport. Although no projects were identified that would directly affect aircraft operations, such as a new runway, MPU projects that change the taxiway configuration or involve terminal gate, hangar, or aircraft maintenance facilities have the potential to change aircraft taxiing patterns and could affect aircraft runway use. As such, these MPU projects are identified in Table 6.1-1. Future environmental reviews of these projects may need to include evaluation of whether changes to aircraft runway use or flight paths or the number of aircraft operations may occur, and whether those changes would significantly affect the noise environment in the Airport vicinity.



THIS PAGE INTENTIONALLY LEFT BLANK



SOURCES: Quantum, Aerial Photography, 2016 (basemap)

Exhibit 6.1-1



NORTH



2,944 ft.

K:\VRB_Environmental\042338012_FLL_Master Plan\EN\GIS\MXD\BCAD_FLL_Contamination.mxd

Hazardous Materials Map



THIS PAGE INTENTIONALLY LEFT BLANK

6.1.8 WATER RESOURCES

6.1.8.1 Floodplains

The extents of the 100-year floodplain are shown on Exhibit 2.15-5, which illustrates that a 100-year floodplain is present in certain areas of the Airport property. If the development footprint of a MPU project was identified within the 100-year floodplain, then the potential for an effect on floodplains was identified in Table 6.1-1. If the only practicable alternative to a project that affects a floodplain requires siting the project in the floodplain, then a floodplain encroachment would occur, and environmental analysis would be needed to justify this effect. Per FAA Order 1050.1F, if the project is within a floodplain, it must be determined whether the encroachment is significant based on the intensity of the encroachment and its impacts on the floodplain's natural and beneficial values. A significant floodplain encroachment is defined as one that results in one or more of the following: (1) a considerable probability of loss of human life; (2) likely future damage associated with the encroachment that could be substantial in cost or extent, including interruption of service on or loss of a vital transportation facility; and (3) a notable adverse impact on "natural and beneficial floodplain values."

A significant floodplain encroachment, however, is not necessarily considered a significant environmental impact under NEPA. The FAA may approve a project involving a floodplain encroachment if a finding can be made that there is no practicable alternative to placing a project in the floodplain and that all measures to minimize harm are included in the project. The NEPA document should identify other alternatives analyzed; justify locating the project in the floodplain as the only practicable alternative; and incorporate mitigation measures into the project to minimize potential harm to or within the floodplain. Advanced planning and design of projects that have the potential to affect floodplains should explore the ability to avoid or minimize floodplain impacts, if possible. If a floodplain effect cannot be avoided, and the project encroaches on a 100-year floodplain, then notification of a floodplain encroachment would be required as part of the NEPA analysis in compliance with DOT Order 5650.2, *Floodplain Management and Protection*.

6.1.8.2 Surface Waters, Wetlands, and Groundwater

Limited aquatic resources, including canals, detention areas, and small wetlands, are in the Airport vicinity. MPU projects that have the potential to affect these resources are identified in Table 6.1-1. These projects would likely require permits from Broward County, the South Florida Water Management District, and the U.S. Army Corps of Engineers.

Projects G12 and G13 are notable for being located within an existing detention area associated with U.S. Highway 1.

Project S2 would be located on an existing detention area serving the general aviation development in the northeast quadrant of the airport.

The Airport is located within the EPA-designated Biscayne Bay Sole Source Aquifer; at FLL, the aquifer is only several feet below the surface and susceptible to groundwater contamination. Potential effects would need to be considered if a project has the potential to affect contaminants in stormwater runoff, in which case Best Management Practices should be defined and implemented during construction and operation to address possible effects of stormwater infiltration. Potential effects should be considered as project definitions advance. If a potential groundwater impact is identified, then Section 1424(e) of the Safe Drinking Water Act would require the BCAD to coordinate impact evaluation with the FAA and the EPA.

6.2 Environmental Strategy

6.2.1 MASTER PLAN UPDATE PROJECTS WITH ENVIRONMENTAL CLEARANCE

The FAA prepared a Final Environmental Impact Statement (FEIS) for the Development and Expansion of Runway 9R-27L² and Other Associated Airport Projects, and the FAA issued its final agency action in a Record of Decision (ROD) dated December 2008. **Table 6.2-1** presents the development actions comprising the Preferred Alternative (B1b), which was analyzed in the FEIS and subsequently approved by the FAA in its ROD, along with identification of whether each action has or has not been implemented.

Table 6.2-1: Implementation Status of Runway 9R-27L Approved Development Actions

PREFERRED ALTERNATIVE B1b	IMPLEMENTATION STATUS
Expand and elevate Runway 9R-27L to an overall length of 8,000 feet and a width of 150 feet with an Engineered Materials Arresting System (EMAS) at both runway ends.	Completed
Construct new full-length parallel taxiway 75 feet wide on the north side of Runway 9R-27L with a separation of 400 feet from Runway 9R-27L.	Completed
Construct an outer dual parallel taxiway that would be separated from the proposed north side parallel taxiway by 276 feet.	Completed
Construct connecting taxiways from the proposed full-length parallel taxiway to existing taxiways.	Completed
Construct an Instrument Landing System (ILS) for landings on Runways 9R and 27L; Runway ends 9R and 27L would have a Category I ILS, which includes a Medium Intensity Approach Light System with runway alignment indicator lights (MALSR), localizer, and glideslope.	Completed
Decommission and permanently close Runway 13-31, the crosswind runway.	Completed
Terminal redevelopment envelope, which would accommodate a 67- to 77-gate complex and the potential redevelopment of Terminals 2, 3, and 4.	Approved but Not Implemented
Connected Actions	
Close Airport Perimeter Road located within the approach to Runway 9R.	Completed
Relocate ASR-9.	Completed
Acquire all, or a portion, of the Hilton Fort Lauderdale Airport Hotel (formerly the Wyndham Fort Lauderdale Airport Hotel).	Completed
Acquire all, or a portion, of Dania Boat Sales.	Completed

NOTE: At the time the FEIS and ROD were developed, the south parallel runway at FLL was designated 9R-27L. However, since that time the runway name and corresponding designation markings have been updated to Runway 10R-28L.

SOURCE: U.S. Department of Transportation, Federal Aviation Administration, *Record of Decision, The Development and Expansion of Runway 9R/27L and Other Associated Airport Projects at Fort Lauderdale-Hollywood International Airport, Broward County, Florida*, December 2008.

PREPARED BY: Kimley-Horn and Associates, Inc., November 2018.

² At the time the FEIS and ROD were developed, the south parallel runway at FLL was designated 9R-27L. However, since that time the runway name and corresponding designation markings have been updated to Runway 10R-28L.

As indicated in Table 6.2-1, the proposed actions approved in the FEIS have been completed, except for the terminal redevelopment envelope project. MPU Projects T18–T23 (phased terminal expansion and associated airfield improvements) are within the approved terminal redevelopment footprint, though the facility redevelopment configurations differ.

6.2.2 NATIONAL ENVIRONMENTAL POLICY ACT REQUIREMENTS FOR MASTER PLAN UPDATE PROJECTS

Airport-specific actions identified as eligible for categorical exclusion under FAA Order 1050.1F were reviewed to determine the potential NEPA processing requirements for the MPU projects. Coordination with the FAA on the level of NEPA review (i.e., categorical exclusion, EA, or EIS) would need to occur for each project or set of connected projects. The FAA would make the final decision on the level of NEPA review.

In general, MPU projects are not well defined at the master plan level (e.g., the Aeronautical Development Projects AD1–AD4), and MPU projects that have the potential to affect surface traffic volumes and patterns (e.g., General and Administrative Projects G11–G15 and potentially G26–G27) would not likely be eligible for a categorical exclusion. Other projects, as indicated in **Table 6.2-2**, generally align with definitions for actions that are eligible for categorical exclusion as long as no extraordinary circumstances, as defined in FAA Order 1050.1F, exist. However, the dependencies and connections among projects must be considered when determining eligibility for categorical exclusion. The Council on Environmental Quality regulations require that connected projects be considered in the same environmental document. Projects may be connected either because one project enables another or because one project would not happen without a second. In addition, projects occurring in a similar location and/or timeframe should be considered in the same environmental document. When proceeding with environmental review and approval of projects that have the potential to be connected to other projects, independent utility must be demonstrated if those potentially connected actions are not considered.

As the anticipated timing for undertaking MPU projects is further refined through advanced planning and design, the issues identified in the EO, as well as other emerging environmental issues and conditions, should be reflected in the NEPA processing strategy. Ongoing collaboration with the FAA regarding updates and refinements to future project assumptions, such as timing and anticipated impacts, will be critical to refining a NEPA processing strategy and associated timeline for MPU projects.

Table 6.2-2 (1 of 2): Identification of Projects Potentially Eligible for Categorical Exclusion

MASTER PLAN UPDATE PROJECT		POTENTIALLY ELIGIBLE FOR CATEGORICAL EXCLUSION (CITATION) ¹
#	NAME	
General and Administrative		
G11	Commercial Center (Phase 1 + Hotel)	--
G12	Intermodal Center (Transit Center, 4,500-Space Garage) Phase 1	--
G13	Intermodal Center (APM Station, 3,500-Space Garage, Mixed-Use Development) Phase 2	--
G14	Supplemental Curb (Includes Demo of Palm Garage)	--
G15	Commercial Center (Phase 2)	--
G16	ARFF / BCAD Consolidated Operations Facility	Yes (5-6.4.f)
G17	Belly Cargo Facility Expansion	Yes (5-6.4.f)
G18	Airport Maintenance Expansion	Yes (5-6.4.f)
G19	Bus Lot Staging and Maintenance	--
G20	General Aviation Customs Relocation (Includes Airside Ramp)	Yes (5-6.4.h)
G21	Central Utility Plant (Central Chiller Plant)	--
G22	Centralized Receiving and Distribution Facility	Yes (5-6.4.f)
G23	Westward Expansion of Terminal Roadways (to New Terminal 3)	Yes (5-6.4.a)
G24	Exit Roadway Improvements	Yes (5-6.4.a)
G25	General Aviation Parcel	Yes (5-6.4.f)
G26	Ground Transportation and Support Parcel	--
G27	Ground Transportation and Support Parcel	--
Airfield		
A4	Airfield Electrical Vault	Yes (5-6.3.b)
A5	Taxilane (ADG III) Serving Westside Parcels	Yes (5-6.4.e)
A6	Taxiway H Extension	Yes (5-6.4.e)
A7	Enabling In-Kind Hangar Replacement (Taxiway H)	Yes (5-6.4.f)
A8	Crossfield Taxiway	Yes (5-6.4.e)
Terminal		
T6	Gate Expansion (5-Gate Terminal) – Phase 2	Yes (5-6.4.h)
T7	APM (Closed Loop Circulator)	--
T8	APM (West Extension to Redeveloped Terminal 3)	--
T12	Terminal 4 Expansion Dependencies and Code Compliance Improvements	Yes (5-6.4.e)
T13	Hardstand Parking	Yes (5-6.4.h)
T14	Utility Improvements (Consolidated Utility Duct Bank) Phase 1 – Terminal 4	Yes (5-6.4.j)
T15	Utility Improvements (Consolidated Utility Duct Bank) Phase 2 – Terminal 3	Yes (5-6.4.j)
T16	Utility Improvements (Consolidated Utility Duct Bank) Phase 3 – Terminal 2	Yes (5-6.4.j)
T17	Utility Improvements (Consolidated Utility Duct Bank) Phase 4 – Terminal 1	Yes (5-6.4.j)
T18	Airfield Improvements Associated with Terminal Development Phase 1	See Note 2
T19	Airfield Improvements Associated with Terminal Development Phase 2	See Note 2
T20	Terminal Expansion Phase 1	See Note 2
T21	Terminal Expansion Phase 2 – 2B and 2C Stages – Northern Concourse/Demo Existing E/F	See Note 2
T22	Terminal Expansion Phase 2 – 2D/2E/3A – North/South Connection	See Note 2
T23	Terminal Expansion – Phase 3	See Note 2
Security		
S2	Gate 100 Relocation and Expansion	--
S3	South AOA Gate (Gate 504)	Yes (5-6.4.f)
Machinery, Equipment, Vehicles, and Other		
M12	Fuel Farm Expansion (Short-Term) and Oil/Water Separator	Yes (5-6.4.u)



Table 6.2-2 (2 of 2): Identification of Projects Potentially Eligible for Categorical Exclusion

MASTER PLAN UPDATE PROJECT		POTENTIALLY ELIGIBLE FOR CATEGORICAL EXCLUSION (CITATION) ¹
#	NAME	
M13	Fuel Farm Expansion (Long-Term)	--
Parking		
P4	Demand Driven Parking (Optional)	Yes (5-6.4.h)
P5	Palm Garage Redevelopment	Yes (5-6.4.h)
Demand-Driven Aeronautical Development Parcel		
AD1	Aeronautical Demand-Driven Parcel - 1	--
AD2	Aeronautical Demand-Driven Parcel - 2	--
AD3	Aeronautical Demand-Driven Parcel - 3	--
AD4	Aeronautical Demand-Driven Parcel - 4	--

NOTES: – Not typically eligible for categorical exclusion or insufficient information to confirm potentially applicable categorical exclusion citation.

ADG = Airplane Design Group

AOA = Air Operations Area

APM = Automated People Mover

ARFF = Aircraft Rescue and Firefighting

5-6.3.b – Establishment, installation, upgrade, or relocation of any of the following on designated airport or FAA property: airfield or approach lighting systems, visual approach aids, beacons, and electrical distribution systems as described in FAA Order 6850.2, Visual Guidance Lighting Systems, and other related facilities. (ATO, ARP)

5-6.4.a – Access road construction, and construction, relocation, or repair of entrance and service roadways that do not reduce the level of service on local traffic systems below acceptable levels. (ATO, ARP, AST)

5-6.4.e – Federal financial assistance, licensing, or Airport Layout Plan (ALP) approval for the following actions, provided the action would not result in significant erosion or sedimentation, and will not result in a significant noise increase over noise sensitive areas or result in significant impacts on air quality. (1) Construction, repair, reconstruction, resurfacing, extending, strengthening, or widening of a taxiway, apron, loading ramp, or runway safety area (RSA), including an RSA using Engineered Material Arresting System (EMAS); or (2) Reconstruction, resurfacing, extending, strengthening, or widening of an existing runway. This CATEX includes marking, grooving, fillets, and jet blast facilities associated with any of the above facilities. (ARP, AST)

5-6.4.f – Federal financial assistance, licensing, Airport Layout Plan (ALP) approval, or FAA construction or limited expansion of accessory on-site structures, including storage buildings, garages, hangars, t-hangars, small parking areas, signs, fences, and other essentially similar minor development items. (ATO, ARP, AST)

5-6.4.h – Federal financial assistance, licensing, or Airport Layout Plan (ALP) approval for construction or expansion of facilities—such as terminal passenger handling and parking facilities or cargo buildings, or facilities for non-aeronautical uses at existing airports and commercial space launch sites—that do not substantially expand those facilities (see the FAA’s presumed to conform list; 72 Federal Register 41565 [July 30, 2007]). (All)

5-6.4.i – Demolition and removal of FAA buildings and structures, or financial assistance for or approval of an Airport Layout Plan (ALP) for the demolition or removal of non-FAA owned, on-airport buildings and structures, provided no hazardous substances or contaminated equipment are present on the site of the existing facility. This CATEX does not apply to buildings and structures of historic, archaeological, or architectural significance as officially designated by Federal, state, tribal, or local governments. (ATO, AST, ARP)

5-6.4.j – Removal or extension of water, sewage, electrical, gas, or other utilities of temporary duration to serve construction. (ATO, AST)

5-6.4.u – Approval of an Airport Layout Plan (ALP) for installation of on-airport, aboveground storage tanks or underground storage tanks (USTs) on airport property or FAA installation, repair, or replacement of USTs and aboveground storage tanks at FAA facilities. These actions must comply with FAA Order 1050.15, Fuel Storage Tanks at FAA Facilities, and EPA regulations, 40 CFR Parts 112, 280, and 281, as applicable. This CATEX includes the closure and removal of a fuel storage tank, and remediation of contaminants resulting from a fuel storage tank at an FAA facility or on an airport, provided those actions occur in accordance with the order and the regulations noted above. The establishment of bulk fuel storage and associated distribution systems is not within the scope of this CATEX. Those actions are subject to Paragraph 3-1.2.b.(5) of this Order. (ATO, ARP)

1 Citations reference paragraphs in U.S. Department of Transportation, Federal Aviation Administration, Order 1050.1F, *Environmental Impacts: Policies and Procedures*, July 16, 2015. Applicability of Categorical Exclusion citations is subject to FAA review for the potential for extraordinary circumstances (i.e., factors or circumstances in which a normally categorically excluded action may have a significant environmental impact that requires further analysis in an Environmental Assessment or an Environmental Impact Statement) before finalizing a decision to categorically exclude a proposed action.

2 MPU Projects T18–T23 are within the footprint of the approved terminal redevelopment project approved by the Federal Aviation Administration’s *Record of Decision for The Development and Expansion of Runway 9R/27L and Other Associated Airport Projects at Fort Lauderdale–Hollywood International Airport, Broward County, Florida*, December 2008. Therefore, current environmental approvals may be applicable; although, the facility redevelopment configurations differ.

SOURCE: U.S. Department of Transportation, Federal Aviation Administration, Order 1050.1F, *Environmental Impacts: Policies and Procedures*, July 16, 2015.

PREPARED BY: Ricondo & Associates, Inc., November 2018.

6.2.3 LOCAL ENVIRONMENTAL REQUIREMENTS FOR MASTER PLAN UPDATE PROJECTS

State-level environmental review of MPU projects occurs through coordination with state agencies during the NEPA process as well as through environmental permitting processes. The following environmental permitting requirements were identified as potentially required for MPU projects:

- Each MPU project would require a General National Pollutant Discharge Elimination System (NPDES) Permit from the FDEP for construction.
- MPU projects that include the handling, storage, or use of hazardous materials (including fuel) would be required to obtain an NPDES permit (separate from the General NPDES Permit for construction).
- Each MPU project would require a South Florida Water Management District Environmental Resource Permit and a Broward County Stormwater License.
- For MPU projects that affect Waters of the United States, including wetlands, U.S. Army Corps of Engineers Section 404 dredge and fill permits would be required (see Table 6.1-1 for MPU projects that may affect wetlands).
- FDOT permits may be required for roadway improvements associated with development parcels along state roads (i.e., Projects M13, G18, G19, G26, and G27) and for Projects G12 and G13 at the U.S. Highway 1 interchange with the Airport.