US Army Corps of Engineers®

Final Environmental Assessment for East Airfield Development Area

Orlando International Airport
Orlando, Florida

February 1, 2016

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Orlando, Florida 32827

SCHENKELSHULTZ

ESA

Final Environmental Assessment
for
East Airfield Development Area

ORLANDO INTERNATIONAL AIRPORT
Orlando, Florida

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This Environmental Assessment becomes a Federal document when evaluated and signed by the responsible FAA Official.

Responsible FAA Official

2/1/2016
Date

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ORLANDO AIRPORTS DISTRICT OFFICE
SOUTHERN REGION
AIRPORTS DIVISION

MITIGATED FINDING OF NO SIGNIFICANT IMPACT AND RECORD of DECISION

Orlando International Airport

East Airfield Development Project

February 1, 2016

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1.0 INTRODUCTION TO THE FINDING OF NO SIGNIFICANT IMPACT / RECORD OF DECISION

1.1 Introduction

The Greater Orlando Aviation Authority (GOAA) prepared an Environmental Assessment (EA) to facilitate the Federal Aviation Administration's (FAA) review and consideration of the East Airfield as a site for future aviation-related development, the reduction of wildlife hazard attractants on the eastern portion of the Orlando International Airport (MCO) airfield, and the development of a secondary fuel storage and distribution facility at the East Airfield site. The Final (FEA) document was developed in compliance with the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. § 4321- 4370, as amended. The FAA, whose mission is to provide the safest, most efficient airspace system in the world, is responsible for ensuring compliance with NEPA with respect to FAA actions, including decisions regarding proposed Federal actions at Federally-obligated airports. As such, the FAA is the lead Federal agency for NEPA compliance regarding the Proposed Project.[1]

On January 8, 2016, the FEA was submitted by GOAA to the FAA for the Agency's decision to either prepare an Environmental Impact Statement (EIS) or issue a Finding of No Significant Impact and Record of Decision (FONSI/ROD).[2] This document presents the FAA's findings and determinations and describes the Federal actions that will be implemented by the FAA with regard to the projects being granted approval, either conditional or unconditional on the airport's Airport Layout Plan (ALP). (**See Section 3.2.1** for a discussion of conditional and unconditional ALP approval).

1.2 The Mitigated FONSI/ROD and FAA's Decision-Making Process

This document is a Mitigated FONSI/ROD, and renders the FAA's final decision on the proposed Project. The FAA's decision contained herein is based on and supported by the analysis of potential environmental impacts contained in the Orlando International Airport FEA, dated January 8, 2016. This Mitigated FONSI/ROD has been prepared and issued by the FAA in compliance with NEPA (42 United States Code (U.S.C.) Section 4321, et seq.); the implementing regulations of the

[1] If the FAA decides to proceed with the proposed Federal action, then the decision may be documented in a formal decision document called a ROD, which can be combined with the FONSI (otherwise known as a FONSI/ROD) or prepared separately. A ROD is optional for a FONSI at the discretion of the responsible FAA official because the FAA's decision to act may be evidenced by other documents such as rules, licenses, or approvals. The responsible FAA official should prepare a FONSI/ROD or separate ROD for: (1) Actions that have been redefined to include mitigation measures necessary to reduce potentially significant impacts below significant levels (see Paragraph 6-2.3.a, Mitigated FONSIs)." In keeping with this recommendation, the FAA has prepared this Mitigated FONSI/ROD to describe and document the agency's final decision on the proposed project.

[2] If FAA determines that mitigation measures can and will be used to reduce potentially significant adverse impacts below the level of significance, these mitigation measures can be used to support a "Mitigated FONSI"

Council on Environmental Quality (CEQ) (40 Code of Federal Regulations (CFR) Parts 1500-1508); and FAA Orders 1050.1E[3] and 5050.4B. This Mitigated FONSI/ROD also serves to demonstrate and document the FAA's compliance with the procedural and substantive requirements of applicable environmental and other statutes and regulations that apply to FAA decisions and actions on proposed airport development projects.

The Proposed Project was coordinated extensively with Federal, state, and local agencies; Native American Nations / Tribes; local municipalities; and the public throughout the EA process. This coordination included, but was not limited to: the U.S. Environmental Protection Agency (USEPA), the U.S. Army Corps of Engineers (USACE), the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), the Poarch Band of Creek Indians, the Muscogee (Creek) Nation, the Seminole Nation of Oklahoma, the Seminole Tribe of Florida, the Miccosukee Tribe of Indians of Florida, the Florida Department of Transportation (FDOT), the Florida Department of Environmental Protection (FDEP), the Florida State Historic Preservation Officer (FSHPO), the South Florida Water Management District (SFWMD), Orange County, the City of Orlando, the East Central Florida Regional Planning Council, and other local municipalities. The EA was also coordinated extensively with other stakeholders, including representatives of local homeowner associations (HOAs) and the general public to facilitate the understanding and consideration of key issues, the FAA's policies and procedures, and the Proposed Projects.

During the conduct of the EA, the FAA undertook and completed Section 106 consultation in accordance with the National Historic Preservation Act (NHPA) and the provisions at 36 CFR Part 800, Subpart B, Protection of Historic Properties. This consultation was conducted between the FAA and the Florida Division of Historic Resources (Florida State Historic Preservation Officer (SHPO)). The FAA undertook and completed Section 7 Consultation with the USFWS, and the Airport Sponsor undertook Section 404 Permitting consultation with the USACE and Section 401 Permitting with the SFWMD.

[3] FAA Order 1050.1F, issued on July 16, 2015, cancels FAA Order 1050.1F. Order 1050.1F states that the "procedures in this Order apply to the extent practicable to ongoing activities and environmental documents begun before the effective date. However, procedures contained in this Order should not apply to ongoing environmental reviews where substantial revisions to ongoing environmental documents would be required." Because this EA was circulated for public and agency review in draft form prior to the issuance of FAA Order 1050.1F and reformatting the document would take substantial effort and time, the FAA finalized this EA under the provisions of Order 1050.1E.

The FAA is responsible for reviewing and independently verifying the accuracy of information included in the DEA and FEA documents that were provided by the Airport Sponsor. In guiding the development of the FEA, the FAA relied on certain information prepared by outside sources as permitted by 40 CFR 1506.5. In keeping with its oversight responsibility, the FAA consistently provided guidance to the Airport Sponsor on the scope, content, and development of the DEA and FEA. The FAA also utilized its own resources to independently evaluate information and other documentation provided by the Airport Sponsor and/or other entities.

Upon signature of the FEA, the FAA becomes responsible for the accuracy of all information within the FEA and this Mitigated FONSI/ROD. The FAA independently and extensively reviewed the Airport Sponsor-provided information utilized in the EA process. The FAA believes that the degree of supervision that it exercised over the Airport Sponsor, and its participation in the review and comment on the EA documents, fully maintained the integrity and objectivity of the DEA and the FEA.

The responsible federal official's signature on the FEA signals that the FAA has accepted the Final EA as meeting all applicable requirements as to form and content, and that the FAA is ready to issue a FONSI and render a decision or prepare an EIS. Having evaluated the content of the FEA, and considering all environmental consequences discussed therein, the FAA has decided that the appropriate course of action is to prepare this Mitigated FONSI/ROD.

2.0 BACKGROUND

2.1 Orlando International Airport Overview

Orlando International Airport's location identifier code is "MCO," which is derived from the former McCoy Air Force Base, named after Colonel Michael N. W. McCoy. MCO is located in Orange County, Florida within the City of Orlando. The airport is operated by the Greater Orlando Aviation Authority (GOAA) and its property comprises approximately 13,430 acres, making it the fourth largest airport in landmass within the United States. MCO features two 12,000-foot by 200-foot runways (18L-36R and 18R-36L); one 10,000-foot by 150-foot runway (17R-35L); and one 9,000-foot by 150-foot runway (17L-35R). Runway 17L-35R, also called the "fourth runway," is the runway closest to the East Airfield site. The East Airfield site is approximately 1,342 acres in size. The FAA has designated MCO as a large-hub airport, and commercial airline service is available from MCO to almost 100 cities world-wide. Currently, MCO averages approximately 785 flight operations (arrivals and departures) per day and accommodates almost 38 million annual

passengers. In total, MCO is responsible for 18,000 jobs on airport, 267,800 direct and indirect jobs in the community, and over $31.4 billion a year in regional economic impact.

2.2 History and Overview of the Proposed Project

GOAA began purchasing the East Airfield site in 1986 with the intention of developing the area for aviation uses adjacent to Runway 17L-35R. A land purchase summary timeline and graphic are provided in **Appendix A of the FEA**. In 1999, the City of Orlando identified the Southeast Orlando Sector Plan Area[4] (which includes the East Airfield site) as a Future Growth Center with the airport as the primary economic and employment generator for the area. The Southeast Orlando Sector Plan Map designated the vast majority of the East Airfield site as Airport Support District High Intensity.

GOAA originally developed a conceptual development plan for the East Airfield in 2005 to be responsive to large-scale aviation development opportunities. This concept plan, shown on the conditionally approved 2005 MCO Airport Layout Plan (ALP), identified high intensity aviation uses for the entire site and a fuel farm located on the south side of the site adjacent to Dowden Road. An EA was initiated in June 2008 which led to ongoing coordination with Federal, state, and local government agencies and adjacent neighborhood groups. This included public workshops in 2008, a Public Hearing and comment period on a Draft EA in 2009, and multiple USACE and SFWMD permit commenting periods. The 2009 EA was put on hold by GOAA while the permitting efforts were being undertaken.

In March 2011, GOAA and neighboring communities initiated the "GOAA Lake Nona Estates/Northlake Park Neighborhood Partnership". Meetings with this group were held every six to eight weeks throughout 2011 and 2012, were attended by the City of Orlando Planning Department, and continue (on a less frequent basis) through present-day. These meetings included updates on the East Airfield development as well as topics such as review of the airport's master planning process, noise program, airport financing, traffic analysis, and review of the history of land acquisition at the airport.

[4] To comply with Florida's growth management statutes, the City of Orlando adopted the City's Growth Management Plan (GMP), which was approved August 12, 1991 (amended April 9, 2012). The GMP contains a Future Land Use Element setting forth goals, objectives, policies, and future land use descriptions. The East Airfield site is located in an portion of the GMP identified as the City of Orlando Southeast Orlando Sector Plan area. The area is one of the largest urban planning and development projects ever undertaken by the City of Orlando. The Sector Plan area is adjacent to MCO and the East Airfield site is included in the Sector Plan. The Sector Plan was adopted in 1999 and includes policies and guidelines for future development. The Sector Plan identifies specific land uses and guidance for the Sector Plan area.

Following the meetings, coordination with local and regional planning departments, and prior public outreach to stakeholder groups, GOAA initiated a series of revisions to the 2005 East Airfield Concept Plan. These modifications were agreed to by the community and the airport, and were incorporated into the 2014 East Airfield Conceptual Development Plan and subsequently on MCO's 2015 ALP. It is the 2014 East Airfield Conceptual Development Plan that was evaluated in the EA. The 2014 Conceptual Development Plan is depicted in **Figure 1.2.2 from the EA**.

2.3 Proposed Project

The Proposed Project consists of the following actions, depicted on **Figure 1.2.3**:

- Site selection of the East Airfield as a large contiguous site at MCO for development of high and medium intensity aviation and aviation support facilities, medium intensity land uses, and related infrastructure;
- Reduction of existing wildlife hazard attractants on the East Airfield site through removal of wetlands and non stormwater management surface waters and active wildlife hazard management, and
- Development of a secondary fuel storage and distribution facility that provides a redundant fuel supply at MCO to improve security from fuel supply disruptions related to storm events or other causes.

2.4 Proposed Project Implementation Schedule

Construction of the *unconditionally* approved portions of the Proposed Project is projected to start in 2016 and is scheduled for completion by 2020.

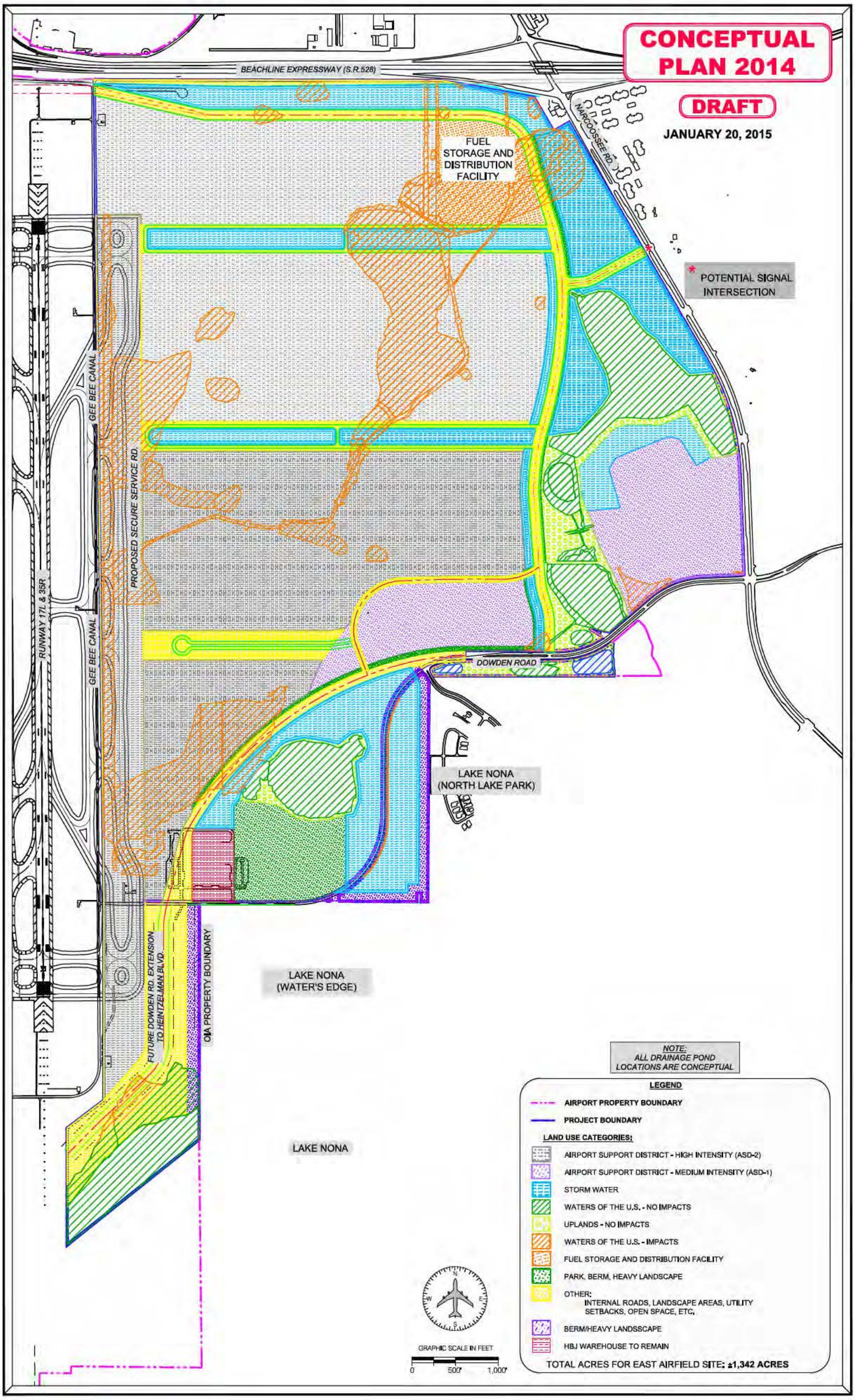
2.5 EA Study Years

The DEA and FEA evaluated the year 2018 as the year in which the *unconditionally* approved components of the Proposed Project would be implemented.

3.0 FEDERAL ACTIONS AND APPROVALS GRANTED IN THIS FONSI/ROD

3.1 Necessary Federal Actions and Approvals

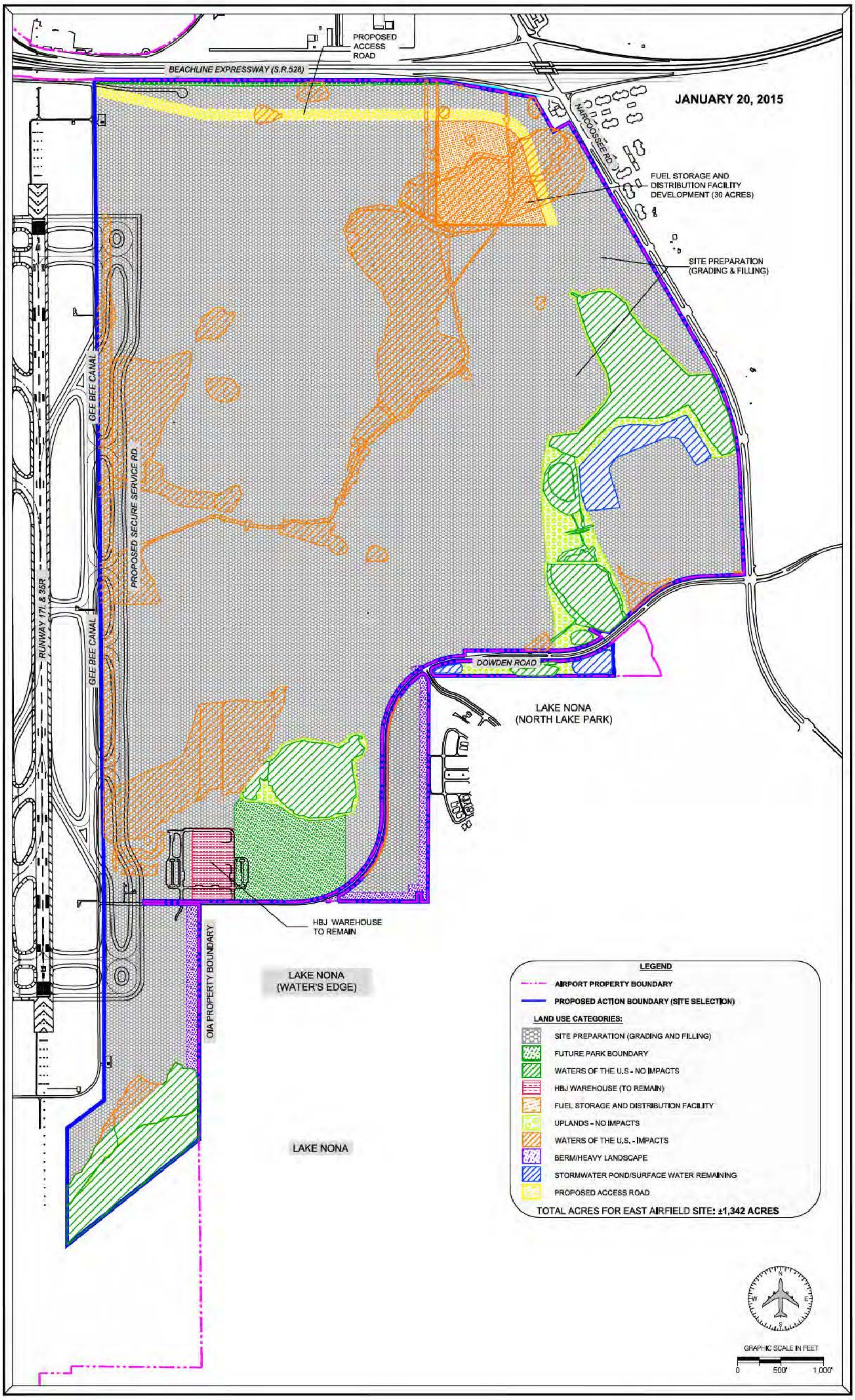
To support the proposed project identified above, the FAA must take specific federal actions, described below. The role of the Federal government is to assist airport sponsors with aviation improvements necessary to meet Federal aviation policies and objectives. For the MCO EA, the FAA's role is also to assure that the airport improvements would be implemented and operated in accordance with applicable FAA airport design and safety standards, operating requirements, and



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 1.2-2

2014 East Airfield Conceptual Plan



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 1.2-3

Proposed Action

Federal grant assurances. The Airport Sponsor has the fundamental role of first proposing what improvements it would like to make. The FAA must then undertake an appropriate level of NEPA evaluation and decide whether or not to approve the Federal actions needed to support the proposed airport improvements, or an alternative examined through the NEPA process. If airport improvements are unconditionally approved, the Airport Sponsor has the role of planning, constructing, operating, and maintaining the improvements, as well as satisfying any conditions of approval contained in an FAA Mitigated FONSI/ROD and undertaking any mandatory mitigation that the FAA and jurisdictional agencies may require.

The specific Federal Actions being considered by the FAA in this Mitigated FONSI/ROD are those necessary to support the proposed project, including: :

- *Final and unconditional approval* of revisions to the 2015 MCO ALP (hereinafter referred to as the "MCO ALP") for those portions of the ALP for which the FEA provides project-specific (as compared to programmatic) level environmental analysis. This includes the following projects:

  (1) Development of a secondary fuel storage and distribution facility on the East Airfield site.

  (2) Reduction of existing wildlife hazard attractants on the East Airfield site through removal of wetlands and non stormwater management surface waters and active wildlife hazard management.

- *Conditional approval* on the ALP of the East Airfield site as a site for future development of high and medium intensity aviation and aviation support facilities, medium intensity land uses, and related infrastructure. Because this action is programmatic in nature and does not permit development of any specific use, at this time the FAA will only provide *conditional approval* of revisions to the MCO ALP for those portions of the ALP.

The conditional ALP approval reflects the finality of the FAA's site selection decision while withholding project-specific approval that is necessary for implementation of any specific future development proposal in the area, as such development is not sufficiently concrete to be ripe for approval and implementation at this time. As noted throughout the FEA, the analysis of environmental consequences for future build-out of the East Airfield site reflected reasonable assumptions able to be made at this time based on the best information currently available about future uses of the site. However, while these assumptions are appropriate to permit a programmatic level of review associated with site selection, they may not be fully reflective of ultimate development proposals and will require refined, site specific

environmental review based on actual proposed uses. For this reason, the development of the East Airfield site for aviation-related uses is not ripe for decision at this time and warrants only conditional ALP approval.

- *Federal actions* necessary for processing of an application(s) for Federal funding for the East Airfield development projects qualifying under the Airport Improvement Program (AIP),49 U.S.C. 47101, et seq., as well as Federal actions pertaining to application to impose and use Passenger Facility Charges (PFCs), 49 U.S.C. §40117.

At this time, those portions of the MCO ALP that depict the Proposed Project would be processed by the FAA to:

- Assess operational factors affecting the safe and efficient control of air traffic;
- Establish conformance with FAA airport design criteria, Federal regulations, and Federal grant agreements, CFR Parts 77, 139, 150, 152, 157, and 169);
- Determine conformance with NEPA, the CEQ regulations, and other applicable Federal environmental requirements;
- Review and approval of construction plans and specification, where appropriate, and
- Review and approval of an amended Airport Certification Manual (Part 139).

In addition, appropriate Federal findings, which are discussed in **Section 11 of this Mitigated FONSI/ROD**, are required prior to the FAA's unconditional approval of those portions of the MCO ALP that depict the Proposed Project and for which unconditional ALP approval is appropriate at this time. Appropriate Federal findings are also required for the processing of any Airport Sponsor applications for Federal funding of eligible Proposed Project development projects.

The FAA reviewed the proposed future uses associated with the 2014 East Airfield Conceptual Development Plan at a programmatic level under NEPA, which permits a site selection decision to be made at this time. However, as discussed in the FEA, such components are not ripe for final decision or construction at this time, and therefore are receiving conditional ALP approval. Therefore, there are no Federal findings (as discussed further in **Section 11 of this Mitigated FONSI/ROD**) required of the FAA at this time with regard to the proposed future uses associated with the 2014 East Airfield Conceptual Development Plan.

3.2 List of Other Federal and State Permits and Approvals

The following are reasonably foreseeable permits and approvals that may be required by Federal (other than the FAA), state, and local resource agencies in order for the Airport Sponsor to implement the Proposed Project. The FAA acknowledges that this list may not be all-inclusive and

that the Airport Sponsor may be required to obtain other permits and approvals that are not included in this list:

- USACE - Section 404 permit for the grading and filling of Waters of the U.S. (Note: this application has already been submitted by GOAA to the USACE)
- South Florida Water Management District (SFWMD) - Clean Water Act Section 401 Water Quality Certification (Note: this application has already been submitted by GOAA to the SFWMD and conceptual approval of this permit has been granted);
- SFWMD – Approval of modifications to MCO's Surface Water Management Plan (Note: this application has already been submitted by GOAA to the SFWMD and conceptual approval of this permit has been granted);
- SFWMD – Approval of modifications to MCO's National Pollutant Discharge Elimination System (NPDES) permits for certain industrial activities and construction-related activities;
- FDEP - determination of continued consistency with the Florida Coastal Management Program (Note: this determination has already been made by the state through conceptual approval of the SFWMD permit);
- FDOT – approval of permits for state highway access and/or work within state rights-of-way;
- FDOT and/or GOAA approval of non-Federal funds for implementation and/or construction of the Unconditionally approved components of the ALP; and
- Various other local zoning approvals, building permits, occupancy permits, and traffic permits.

4.0 PURPOSE AND NEED

The following describes the purpose and need for the Proposed Project at MCO.

4.1 Large Contiguous Site with Shared Infrastructure

GOAA has proposed the designation of a large contiguous site to support future large-scale aviation development which could consist of a single large aviation tenant or multiple smaller tenants. A large contiguous site that shares infrastructure and promotes efficiencies of use would assist GOAA in attracting on-airport, aviation-related development that is dependent on existing aviation infrastructure. GOAA anticipates that large-scale aviation uses could include aircraft manufacturing, aircraft maintenance, air cargo, and fuel storage facilities. A large contiguous site would allow the airport and potential tenants to benefit from the synergy of similar types of uses and the efficiency of shared infrastructure, including access to a major air carrier runway. A large contiguous site with these attributes would enhance the attractiveness of MCO as an economic center for the development of aviation and aviation support facilities, consistent with local land use planning as approved in the City of Orlando's Growth Management Plan.

GOAA researched a number of existing aviation developments located in other areas of the United States to determine the amount of acreage and types of facilities required for large-scale aviation development. An example of a single large-scale development that could be built on the East Airfield site is the Boeing manufacturing facility in Everett, Washington. This facility is 1,025 acres in size and has access to a 9,000 foot runway (Paine Field (PAE)). Boeing also has a manufacturing and assembly plant for the Boeing 787 aircraft at the Charleston International Airport (CHS)/Charleston Air Force Base (AFB). This is a 240-acre facility, which has access to the CHS/AFB 9,000-foot runway. Vought Aircraft Industries, Inc., another major aircraft parts manufacturer, has a facility located at the Nashville International Airport (BNA). The Vought facility has access to an 11,000-foot runway at BNA. The latter two facilities are examples of multiple large-scale projects that could be developed on the East Airfield site. **Appendix C of the EA**, Large-Scale Aviation Examples, provides additional background information on the manufacturing sites described above.

The successful development of the Tradeport area at MCO over the past 30 years reflects the benefits of identifying and preparing for the development of a large contiguous site. The Tradeport area is an approximate 1,300-acre area on the west side of the airport. **Appendix D of the EA**, "Tradeport Area" identifies the location of the Tradeport area at MCO. The Tradeport area was approved as part of the original Environmental Impact Statement (EIS) completed in the early 1980s and the separate State of Florida Development of Regional Impact (DRI) study completed in 1985 for the conversion of the McCoy AFB to a commercial service international airport (MCO). The Tradeport area is adjacent to the MCO existing west ramp area and has direct access to a 12,000-foot runway (Runway 18R-36L). The Tradeport area is occupied by many aviation support facilities, including two Continental maintenance hangars, a FedEx sort facility, a US Postal Service sort facility, Flight Safety, a Cessna aircraft maintenance facility, and two Fixed Base Operators (FBOs) – Signature Flight Support and Atlantic Aviation (formerly Galaxy Aviation). Revenue generation from land leases is estimated to be $9.2 million annually. GOAA maintains that the successful build out of this area was a result of the synergies and efficiencies associated with a large contiguous site at a major international airport. The size of the site enabled it to support multiple users.

Airports share infrastructure to promote efficiencies and cost savings both for the airport and users. Shared infrastructure includes airfield facilities (runways, taxiways and aprons), stormwater facilities, and site utilities. Good access to a regional roadway network is also an important consideration for larger scale aviation development for the movement of freight and goods and employee access.

4.2 Reduction of Existing Wildlife Hazard Attractants on the East Airfield

The goal of wildlife hazard management is not to wait for an incident to occur, but rather to identify the conditions that are likely to cause risk and manage that risk before a hazard to aviation occurs. FAA AC 150/5200-33B, Hazardous Wildlife Attractants On or Near Airports, outlines criteria to minimize potential wildlife conflicts with airport facilities. Wildlife hazard attractants within the East Airfield are within the FAA separation distance criteria of 10,000 feet of the AOA. The removal and

management of existing wildlife hazard attractants on the East Airfield has been identified as a priority by the GOAA Airfield Operations Department and the USDA who conducted the WHA for the East Airfield (2010) and WHSV (2015). The recommendations, based on information and data provided in the **EA Supplemental Technical Appendix**, were incorporated into the MCO Wildlife Hazard Management Plan (WHMP). The WHMP is incorporated in the airport's Airport Certification Manual, and implementation of the WHMP is required under 14 C.F.R. §139.337.

GOAA Airfield Operations Department implements ongoing wildlife monitoring as part of their WHMP. Wildlife, specifically birds, moving to and from the East Airfield area across the AOA, Runway 17L-35R, and Runway 17R-35L, have been documented as a major wildlife hazard concern by the GOAA Operations Department.

The goals set forth in FAA AC 150/5200-33B and 14 C.F.R. §139.337, which provides the need to eliminate wildlife hazard attractants, and the goals of the Federal Clean Water Act (CWA), which provides the requirement to demonstrate avoidance and minimization of wetland impacts to the maximum extent practicable, result in an inherent tension in circumstances such as those occurring on the East Airfield site at MCO. Balancing the goals of the 14 C.F.R. Part 139 and the Clean Water Act (CWA) requires compromise of these competing interests. Wetland or natural areas located further from the AOA could be actively managed by the GOAA Airfield Operations Department to discourage movement towards the airfield and to decrease the attractiveness of these areas to high hazard species, while also avoiding or minimizing impacts to wetlands. By contrast, locations in closer proximity to the AOA require habitat removal for effective wildlife hazard management.

The location and design of stormwater detention ponds or other water bodies are key safety considerations for an airport. In accordance with FAA AC 150/5200-33B, ponds and water bodies should be removed or located as far from the runways and active airfield areas as practicable and be designed to minimize their potential as a wildlife attractant. The East Airfield site's conceptual stormwater management system is comprised of dry pretreatment swales and wet detention ponds that are primarily located on the eastern side of the development area as far from runway 17L-35R as practicable. The stormwater management system will be in compliance with the FAA AC goal to reduce or eliminate hazardous wildlife attractants through site selection, design, management, and implementation of a wildlife hazard management plan.

4.3 Secondary Fuel Supply Reliability

The development of a fuel storage and distribution facility located on the east side of MCO will provide a separate, secondary fuel storage and distribution facility. Jet fuel supply, storage and distribution facilities are critical infrastructure elements for a large hub commercial service airport such as MCO. Fuel supply reliability is not only important to ensure that the airport can maintain its critical role in transporting passengers in a consistent and predictable manner, but also in serving its critical role in disaster recovery. In 2015, the US Department of Homeland Security (DHS), the Florida Division of Emergency Management (FDEM) and the Florida Department of Law Enforcement (FDLE) initiated the 2015 Florida Fuels Regional Resiliency Assessment Project

(RRAP). The goal of the program "is to mitigate the Nation's risk of loss of life and physical and economic damage from natural and manmade hazards." On March 4th 2015, GOAA met with DHS and other stakeholders at the Port of Tampa to discuss fuel resiliency strategies. Development of a secondary fuel storage and distribution facility is consistent with the goals of RRAP and the need to ensure a consistent and stable fuel supply.

Florida experiences more hurricanes than any other state and south Florida is especially at risk. In August 2005, Hurricane Katrina resulted in shutdowns of Gulf Coast refineries which supply 13 percent of the nation's jet fuel. Airports throughout the southeast, including MCO, reached critical fuel supply levels and airlines were required to "tanker" fuel by carrying additional fuel loads when traveling into the area. While not affecting the pipeline pump facilities at the Port of Tampa, Hurricane Katrina knocked out fuel pump operations in Mississippi and Alabama – impacting supplies in areas as far away as New Jersey and Virginia. Hurricane frequency and intensity is extremely difficult to predict and varies considerably from year to year. The 2005 Atlantic hurricane season was the most active in recorded history while the 2012 season was tied for third with the most named storms. Climate change is expected to not only worsen the effects of hurricanes and storm events due to sea level rise and increased potential for flooding, but also to increase the frequency of extreme storm events such as Hurricane Katrina.

The Port of Tampa and the pipeline network are two elements of infrastructure considered "the most critical and vulnerable to natural hazards, accidents and terrorist incidents…" In 2003 and again in November 2007, an ammonia pipeline in Tampa was vandalized resulting in service disruptions.

In March 2011, an electrical problem sparked a fuel farm fire at Miami International Airport impacting the fuel distribution system and 60 percent of the airport's fuel distribution capacity. The disruption resulted in hundreds of flight cancellations and delays during the week following the fire. A similar incident occurred at Boston Logan Airport in September of 2013. While this type of accident occurs infrequently, they demonstrate the impacts that can result from disruptions in the fuel supply. Fuel contamination and equipment malfunctions are other examples of issues that can disrupt the distribution of fuel.

5.0 ALTERNATIVES

5.1 Introduction

This section of the Mitigated FONSI/ROD describes the alternatives evaluation and screening process that was used in the March 2015 DEA and the January 2016 FEA, summarizes the evaluation of alternatives to the Airport Sponsor's Proposed Project; provides reasoning as to why some alternatives were eliminated from detailed study, describes those reasonable alternatives that were retained for detailed evaluation, and presents a comparative analysis of the reasonable alternatives retained for detailed environmental impact evaluation in the EA. More detailed information on the Alternatives evaluation is contained in **Section 3.0 of the EA**.

5.2 Alternatives Evaluation and Screening Process

In the EA, three alternative screening analyses were conducted, one for each component of the Proposed Project. The initial screening analysis determined which alternatives met the purpose of and need for a large contiguous site for development of high and medium intensity aviation and aviation support facilities, medium intensity land uses, and related infrastructure. The second screening analysis focused on those factors that would most effectively minimize the risk associated with existing wildlife attractants at MCO. The third screening analysis focused on the proposed new fuel storage and distribution facility. Following these screening analyses, alternatives determined to be reasonable, along with the No-Action Alternative, were carried forward for detailed environmental analysis in **Section 5.0, Environmental Consequences, of the EA.**

5.2.1 Alternatives Screening Analysis for Large Contiguous Site for Development of High and Medium Intensity Aviation and Aviation Support Facilities

The screening criteria used for this element of the proposed project were (1) efficient use of airport property, (2) consistency with local land use and planning, and (3) development area must meet FAA design standards and provide for the safe and secure use of airport property. These three categories were further explained, as described below.

- Efficient use of airport property included three primary elements:

  1. Development area must provide a site capable of accommodating large-scale aviation use or multiple large-scale aviation uses and aviation support development;

  2. Development area is adjacent to MCO airfield infrastructure so that aviation facilities can share infrastructure and maximize operational efficiencies. This includes having access to a major air carrier runway, taxiways and aprons, stormwater facilities, regional and local roadways, and site utilities; and

  3. Development of the site would provide for future generation and diversification of MCO revenue.

- Consistency with local land use and planning (City of Orlando); and

- Development area must meet FAA design standards and provide for the safe and secure use of airport property. An alternative must be able to meet FAA airport design criteria, FAR Part 77 and TERPS standards, aircraft movement area requirements, ATC line-of site requirements, NAVAID design standards, and security requirements.

5.2.1.1 Evaluation of Off-Site Alternatives

Off-Site Alternative #1 - Lake Nona Alternative

Screening Criteria: Efficient use of airport property

The Lake Nona Alternative could provide a large, contiguous parcel of land for development. While this alternative is contiguous to MCO property, it is not contiguous to MCO airfield facilities and infrastructure. The closest runway to the Lake Nona Site is Runway 17L-35R. A taxiway would have to be constructed from Runway 17L-35R to the Lake Nona site. The taxiway would be approximately 1.5 miles in length, pass over the future extension of Dowden Road, and cross existing conservation easements around a portion of Lake Nona. Aircraft would taxi more than a mile and a half to access the site, increasing taxi times, aircraft emissions, and fuel costs. This alternative would not maximize operational efficiencies.

In order for GOAA to pursue the development of this property for aviation uses, it would need to purchase the 755-acre Lake Nona site. Purchasing this property would increase overall project development cost. This additional cost may offset revenues generated with the development of the property.

The alternative does not meet this screening criterion.

Screening Criteria: Consistency with local land use and planning

Approximately 200 acres of the 755 undeveloped acres at this site are designated as Airport Support District High Intensity (ASD-2) and are consistent with the Sector Plan land use designations. Remaining land use designations on this alternative site include conservation, residential, and village center land uses (550 acres). While the Lake Nona site has existing ASD-2 land use designation which allows industrial uses, much more of this site allows for conservation, residential, hospital, retail, and other uses that are consistent with the mixed-use development plan for the site but inconsistent with the screening criteria. These other uses preclude the reasonable development of the site with a sufficient quantity of High Intensity (ASD-2) and Medium Intensity (ASD-1) land uses and it is not consistent with GOAA's purpose and need for the proposed project.

The alternative does not meet this screening criterion.

Screening Criteria: Meets FAA regulations and requirements

This alternative could be designed to meet Part 77, TERPS, Air Traffic Control line-of-sight criteria, and FAA design standards related to aircraft movement areas. However, it would be costly to maintain a secure airside operational area because the area is bisected by a public road (the future Dowden Road extension). A taxi bridge (estimated cost $40 million) would have to be constructed over the future Dowden Road extension. Additional safety concerns include potential risk to aviation due to the proximity of hazardous wildlife attractants to the aircraft operating area.

This alternative would be adjacent to existing conservation areas that provide substantial habitat for wading birds, raptors, and mammals.

This alternative only partially meets this screening criterion due to the cost associated with the implementation of this alternative.

Off-Site Alternative #2 - Orlando Executive Airport (ORL) Alternative

Screening Criteria: Efficient use of airport property

ORL is approximately 1,000 acres in size. This alternative has about 140 acres of developable land – the rest of the property is already developed. The ORL site could only accommodate a single large-scale aviation use or multiple large-scale aviation uses if existing airside and landside infrastructure is reconfigured.

This site would not have access to a major air carrier runway (a runway of at least 9,000 feet in length) because the longest runway at ORL is only 6,003 feet long. Furthermore, ORL is constrained by physical boundaries which would generally preclude longer runway development. For example, Lake Barton is located directly northeast of the primary runway, Runway 7-25, and Crystal Lake Drive and the East Central Park community are located directly southwest of the runway. The airport's 4,625-foot crosswind runway, Runway 13-31, also has limited expansion potential due to the location of Colonial Drive to the north and State Road 408 (East West Expressway) to the south.

Any revenue generation from development of aviation uses on this site would be for ORL use and would not increase or diversify MCO revenue. While GOAA is the owner and operator of ORL and MCO, the revenue streams cannot be mixed due to Federal grant assurances and the FAA's revenue use policy.

The alternative does not meet this screening criterion.

Screening Criteria: Consistency with local land use and planning

The 140-acre site at ORL is currently designated by the City of Orlando on the Future Land Use Map as "Metropolitan Activity Center." This designation allows for aviation uses.

The alternative meets this screening criterion.

Screening Criteria: Meets FAA regulations and requirements

This alternative would meet Part 77, TERPS, Air Traffic Control line-of-sight criteria, and FAA design standards related to aircraft movement areas.

The alternative meets this screening criterion.

5.2.1.2 On-Site Alternatives

No-Action Alternative

Screening Criteria: Efficient use of airport property

Under the No-Action Alternative, a site capable of accommodating large-scale aviation uses would not be selected at MCO. Development could continue to occur in other undeveloped areas of MCO. However, these areas could not accommodate a single large-scale aviation use or multiple large-scale aviation uses that could share infrastructure or maximize operational efficiencies.

The alternative does not meet this screening criterion.

Screening Criteria: Consistency with local land use and planning

The No-Action Alternative is consistent with local land use and planning. However, it does not support Goal 4 of the City of Orlando's Growth management Plan (GMP) because it does not further the growth of airport facilities.

The alternative does not meet this screening criterion.

Screening Criteria: Meets FAA regulations and requirements

The No-Action Alternative would not promote the development of aviation-related projects, infrastructure, or stormwater management facilities. No conflicts with FAA regulations and requirements would occur.

The alternative meets this screening criterion.

On-Site Alternative #1 - East Airfield Alternative

Screening Criteria: Efficient use of airport property

The East Airfield site is approximately 1,342 acres in size. The site could support approximately 563 acres of Airport Support District High Intensity land use and approximately 95 acres of Airport Support District Medium Intensity land use. **Section 2.2 of the EA** describes how this alternative site meets the purpose and need of the Proposed Project.

The East Airfield site would have direct access to a 9,000 foot runway, Runway 17L-35R. The site could support shared infrastructure, including taxiway and aircraft aprons, stormwater facilities, and site utilities. The East Airfield site can be accessed by regional and local roadways. The East Airfield site is considered an efficient use of airport property.

The designation of the East Airfield site on MCO's Airport Layout Plan (ALP) as a large, contiguous site for on-airport development has the potential to increase and diversify MCO revenues. The site could support a combination of high intensity and medium intensity aviation use with long-term leases that potentially could generate substantial revenue.

The alternative meets this screening criterion.

Screening Criteria: Consistency with local land use and planning

As noted in **Section 2.4.2 of the EA**, future development of the East Airfield site is consistent with Goal 4 of the City of Orlando's GMP and the Sector Plan.

The alternative meets this screening criterion.

Screening Criteria: Meets FAA regulations and requirements

This alternative would meet Part 77, TERPS, Air Traffic Control tower line-of-sight criteria, and FAA design standards related to aircraft movement areas. This alternative could be developed with airfield access that provides secure airside operations.

The alternative meets this screening criterion.

On-Site Alternative #2 - Tradeport Alternative

Screening Criteria: Efficient use of airport property

This alternative currently has direct access to the 12,004-foot Runway 18R-36L at MCO and has shared infrastructure. The Tradeport Alternative site is located on the west side of MCO. Tradeport Drive bisects the site, north to south. Tradeport is bordered on the east by the Tradeport West Ramp and Runways 18R-36L and 18L-36R, two 12,000-foot runways. This 1,126 acre area is substantially developed with numerous aviation facilities, including two Continental aircraft maintenance hangars, a FedEx sort facility, a US Postal Service sort facility, Flight Safety facility, the Cessna aircraft maintenance facility, and two large FBOs. There are three non-contiguous, undeveloped areas within Tradeport: an approximate 48-acre site on the north end, a 22-acre site in the central portion, and a 75-acre site in the southern portion.

In order to develop large-scale, high intensity aviation development on this site in the future, existing business and operations that have been developed on the majority of the site would need to be relocated and demolished which is not reasonable or practicable. While the build out of the undeveloped 145 acres would generate revenue for MCO it would not be at the same rate as the Proposed Project when fully built-out.

The alternative does not meet this screening criterion.

Screening Criteria: Consistency with local land use and planning

The alternative site area is designated for aviation use, which is consistent with the City of Orlando's GMP.

The alternative meets this screening criterion.

Screening Criteria: Meets FAA regulations and requirements

This alternative would meet Part 77, TERPS, Air Traffic Control tower line-of-sight criteria, and FAA design standards related to aircraft movement areas. This alternative could be developed with airfield access that provides secure airside operations.

The alternative meets this screening criterion.

On-Site Alternative #3 - Heintzelman Boulevard Alternative

Screening Criteria: Efficient use of airport property

The Heintzelman Boulevard Alternative is comprised of two parcels totaling 229 acres. The two parcels are located north of Taxiway F and are separated by Heintzelman Boulevard.

This alternative site has future planned direct access to Runway 17L-35R (9,000 feet in length) and Runway 17R-35L (10,000 feet in length) and is capable of providing shared infrastructure.

This site is divided into four development areas by Heintzelman Boulevard and a taxiway connecting the two east-side runways. This site would not accommodate potential tenants who require large tracts of land (in excess of 400 acres). While future development of this alternative would increase and diversify MCO revenues, development would be limited to 229 acres of noncontiguous parcels located north of Taxiway F.

The alternative does not meet this criterion.

Screening Criteria: Consistency with local land use and planning

This alternative site area is designated for aviation use which is consistent with the City of Orlando's GMP.

The alternative meets this screening criterion.

Screening Criteria: Meets FAA regulations and requirements

This site has development limitations for high intensity aviation facilities due to its location between two runways. These development limitations are based on Title 14 CFR Part 77, "Safe, Efficient Use, and Preservation of the Navigable Airspace" regulations and FAA Air Traffic Control (ATC) line-of -sight standards. Part 77 surfaces must not be penetrated by any object, both natural and man-made, for the safety of aircraft operations because such objects would constitute a hazard to air navigation. FAA ATC line-of-sight standards must be maintained to avoid impeding ATC line-of-sight. Potential line of- sight problems include building structures, antennas, cooling units or other appurtenances located on top of buildings, parked aircraft, light poles, etc. **Appendix I of the EA** provides an exhibit that depicts height limitations between Runway 17R-35L and Runway 17L-35R for the Heintzelman Boulevard area.

Buildings or parked aircraft east of Heintzelman Boulevard (eastern portion of the site) would be regulated by ATCT line-of-sight standards. Height limitations for this area would range from 10 to 50 feet. High intensity aviation facilities and the aircraft that use these types of facilities often exceed these heights. To ensure adequate line-of-sight, much of the eastern portion of the site would be limited to single story facilities or uses such as vehicular surface parking.

The western portion of the site is regulated by both Part 77 and ATCT line-of-sight standards. Height limitations for this area range from 70 to 120 feet. High intensity aviation facilities and the aircraft that use these types of facilities could be accommodated in this area.

The alternative does not meet this screening criterion.

On-Site Alternative #4 - Mud Lake Alternative

Screening Criteria: Efficient use of airport property

The Mud Lake Alternative site is approximately 1,367 contiguous acres. This site includes undeveloped areas including wetlands, Mud Lake, and uplands. The majority of this site (1,083 acres out of 1,367 acres) is designated as conservation easement.

There are 284 non-contiguous acres on the site that could potentially support future large-scale aviation uses. These areas are not within existing conservation easements. The closest runway to the Mud Lake site is Runway 17R-35L. A taxiway would have to be constructed from Runway 17L-35R to the Mud Lake site. In addition, a taxi bridge would have to be built over Heintzelman Boulevard. The taxiway would need to extend more than a mile to the south and avoid the Runway Protection Zones (RPZs) and the 50:1 approach surfaces for Runways 35L and Runway 35R. Due to the distance involved, multiple taxiways would be required and taxi times would be excessive. The construction of multiple taxi lanes to service the developable areas would not maximize operational efficiencies.

In order to promote the development of this site with large-scale aviation uses, GOAA would need to vacate and mitigate impacts to the existing 1,083 acres of area under conservation easement (**See Figure 3.3-1 in the EA for the location of conservation easement**). Although a release of conservation easement is possible, GOAA would have to present suitable replacement mitigation and a new conservation easement on property with similar habitat and ecological values as that being conserved on the 1,083 acre parcel at Mud Lake to the SFWMD for review and approval. The cost of mitigating the removal of this conservation easement and to fill the site to make it developable would not be cost effective. Therefore, development of this site would not be practicable.

The alternative does not meet this screening criterion.

Screening Criteria: Consistency with local land use and planning

The majority of this site (1,083 acres out of 1,367 acres) has a designated land use of conservation and these areas are dedicated conservation easements. The development of these

conservation land use areas with large-scale aviation uses would not be consistent with the Sector Plan land use designations. In order to develop the conservations areas, the land use designations would need to be changed. The portions of the site (approximately 284 acres) that include land use designations of Aviation Support District High Intensity would be consistent with the Sector Plan.

The alternative does not meet this screening criterion.

Screening Criteria: Meets FAA regulations and requirements

This alternative could be designed to meet Part 77, TERPS, Air Traffic Control line-of–sight criteria, and FAA design standards related to aircraft movement areas. However, the Airport Surveillance Radar (ASR) is located on the northwest corner of the alternative site. Due to the restrictions within the 1,500-foot critical area radius associated with the ASR, this would further limit the available area for development. In addition, heights of buildings would be limited below the 50:1 approach surface for Runway 35L.

The alternative does not meet this screening criterion.

5.2.1.3 Summary of Alternative Screening Analysis for Large Contiguous Site for Development of High and Medium Intensity Aviation and Aviation Support Facilities

During the alternatives screening analysis, five of the seven alternatives were eliminated from further consideration because they do not satisfy the screening criteria, and therefore do not meet the Proposed Project's purpose and need. Therefore they are not reasonable. Alternatives determined not reasonable include Lake Nona, ORL, Tradeport, Heintzelman Boulevard, and Mud Lake sites. **Table 3.3-1 in the EA** provides a summary of the screening analysis.

5.2.1.4 Alternatives Retained for Detailed Environmental Review for Large Contiguous Site for Development of High and Medium Intensity Aviation and Aviation Support Facilities

Following the alternatives screening analysis, the East Airfield Alternative was retained for further analysis. Except for the No-Action Alternative, all of the other alternatives were determined to be not reasonable. Although the No-Action Alternative does not meet the purpose and need, it was retained for further screening because it provides a baseline for comparative purposes to fulfill FAA's responsibility under NEPA and the CEQ Regulations.

5.2.2 Alternatives Screening Analysis for Reduction of Existing Wildlife Hazard Attractants

The screening criteria used for this element of the proposed project were:

1. Removes wildlife hazard attractants on the East Airfield site and demonstrates avoidance and minimization of wetland impacts, to the extent practicable. According to the WHSV and the USDA WHA, wetlands on the East Airfield site were identified as wildlife hazard attractants. The removal of wetlands on the site will reduce wildlife hazard attractants and therefore decrease the risk of wildlife strikes to aircraft at MCO. The Federal Clean Water Act (CWA) requires demonstrating avoidance and

minimization of wetland impacts to the extent practicable. An alternative is considered practicable if it is "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes."

Based on the recommendations in the USDA WHA and WHSV and the WHMP that was prepared to address those assessments' recommendations for MCO, alternatives that remove wildlife hazard attractants are preferable to those alternatives that do not for screening purposes in this EA. Those alternatives that remove wildlife hazard attractants and demonstrate avoidance and minimization, while still allowing the overall project purpose to be met, satisfy this criterion (i.e. practicable avoidance and minimization).

2. Provides GOAA staff reasonable access to the East Airfield to address wildlife hazard issues in a timely manner. When a wildlife hazard issue is identified on the East Airfield, it is important for GOAA staff to be able to respond and address the issue in a timely manner to reduce risks to aircraft operations at MCO. Those alternatives that provide reasonable access to the East Airfield so that wildlife hazard issues can be addressed in a timely manner are preferable to those alternatives that do not.

No-Action Alternative

<u>Screening Criteria: Removes wildlife hazard attractants on the East Airfield site and demonstrates avoidance and minimization of wetland impacts, to the extent practicable.</u>

The No-Action Alternative would include no additional wildlife hazard management from GOAA staff, no removal of wildlife hazard attractants, and no modification of existing wildlife hazard attractants at the East Airfield site. No wetland impacts would occur on the East Airfield site; however the project purpose would not be met.

This alternative does not meet this screening criterion.

<u>Screening Criteria: Provides GOAA staff reasonable access to the East Airfield to address wildlife hazard issues in a timely manner.</u>

GOAA staff currently has limited to no access to the site due to the configuration of the wetland areas and rainy season high water on the site. This creates an inability to respond in a timely manner (either on foot or by vehicle) to address immediate wildlife hazard concerns.

This alternative does not meet this screening criterion.

Wildlife Hazard Attractant Reduction Alternative 1 (No impacts to Wetlands)

Screening Criteria: Removes wildlife hazard attractants on the East Airfield site and demonstrates avoidance and minimization of wetland impacts, to the extent practicable.

Wildlife Hazard Attractant Reduction Alternative 1 (WHAR Alternative 1) would not remove wetland habitat from the site which were recommended for removal by the WHA (**EA Appendix F**), Wildlife Data Review (**EA Appendix G**), and WHSV reports (**EA Appendix H**); and subsequently included in the WHMP that was revised in July 2015. Upland natural habitats (i.e., grassed field, brush) would be modified or removed, which would decrease the attractiveness of those areas to wildlife. However, WHAR Alternative 1 would not remove any wetland habitat which were identified as a significant concern as wildlife hazard attractants on the East Airfield site. Total wetland avoidance could be achieved; however, the primary project purpose would not be met.

This alternative does not meet this screening criterion.

Screening Criteria: Provides GOAA staff reasonable access to the East Airfield to address wildlife hazard issues in a timely manner.

Due to the location and size of the wetland systems on-site, GOAA staff would have limited ability to access the site to address immediate wildlife hazard concerns. Portions of the East Airfield site, including areas in proximity to wetlands, have poorly drained soils and areas of standing water that for periods after rainfall events substantially impede / prevent vehicle (4 wheel drive trucks) and pedestrian access. The East Airfield site is 1,342 acres in size (approximately 7,240 feet (1.3 miles) wide at its widest point). Given the size of the East Airfield site and the extent and size of wetland areas on the site, access roads (paved or unpaved) would need to be constructed to improve vehicle access to the wetlands. The access roads would provide access to the points near the periphery of the wetlands.

For the following reasons, it was determined that this alternative would not be effective and would not meet the objectives of the WHMP.

- The wetland areas at the east Airfield site rages from approximately 100 feet wide to more than 1,300 feet wide.
- Access roads would allow GOAA personnel to drive to the edge of a wetland area, but GOAA personnel would then proceed on foot to implement wildlife management measures. However, GOAA personnel and other wildlife professionals familiar with the East Airfield site state that access into the wetland areas to control wildlife would still be limited due to size of the wetlands, boggy soils, and vegetation density. Under this alternative, the ability to effectively carry out active wildlife management techniques would still be limited.
- Some measures could be implemented from the periphery of some wetland areas (e.g., noise to disperse birds), but the inability of GOAA personnel to move around

quickly within the habitat area would, in most cases, reduce the effectiveness of management measures. For example, techniques used to disperse wildlife (e.g., pyrotechnics or other auditory deterrence methods) would, for the most part, be ineffective from the edge of a large wetland as the harassed wildlife would simply relocate to other areas within the wetland.

This alternative does not meet this screening criterion.

Wildlife Hazard Attractant Reduction Alternative 2 (Partial Impacts to Wetlands)

Screening Criteria: Removes wildlife hazard attractants on the East Airfield site and demonstrates avoidance and minimization of wetland impacts, to the extent practicable.

All of the wetlands and surface waters on the East Airfield site have been identified as hazardous wildlife attractants in MCO's WHA and the WHMP has identified them for removal. GOAA evaluated methods to address these hazardous wildlife attractants while seeking to avoid and minimize impacts to Waters of the US, to the extent practicable. Based on its analysis, GOAA concluded that 85 acres of Waters of the US could potentially be avoided and actively managed to control hazardous wildlife usage of these areas.

Wildlife Hazard Attractant Reduction Alternative 2 (WHAR Alternative 2) decreases the amount of wildlife hazard attractants on the East Airfield through the removal of wetlands (**See EA Figure 3.4-2**) and uplands. This alternative would impact approximately 171 acres of Federal jurisdictional wetlands and approximately 162 acres of state jurisdictional wetlands while avoiding approximately 85 acres of on-site wetlands. The impacted wetland areas are located along the western boundary of the project (closest to the active airfield) and the central portion of the site. Non-impacted wetland areas (along the eastern portion of the property, furthest from the airfield or within the medium intensity use areas) will be actively managed by GOAA staff to decrease the attractiveness of these areas to wildlife that pose a risk to aviation at MCO by implementing the measures included in the approved WHMP. Activities may include habitat modification (without soil disturbance) and harassment techniques. This alternative provides avoidance and minimization in accordance with the Clean Water Act and allows the project purpose to be met.

This alternative meets this screening criterion.

Screening Criteria: Provides GOAA staff reasonable access to the East Airfield to address wildlife hazard issues in a timely manner.

The implementation of WHAR Alternative 2 would remove the majority of the most inaccessible wetlands (closest to the airfield). The remaining 85 acres of wetlands are located near existing roads which would provide GOAA staff better access to these areas to implement wildlife management measures from the WHMP.

This alternative meets this screening criterion.

Wildlife Hazard Attractant Reduction Alternative 3 (100% Wetland Impacts)

Screening Criteria: Removes wildlife hazard attractants on the East Airfield site and demonstrates avoidance and minimization of wetland impacts, to the extent practicable.

All of the wetlands and surface waters on the East Airfield site have been identified as hazardous wildlife attractants in MCO's WHA and the WHMP has identified them for removal. Wildlife Hazard Attractant Reduction Alternative 3 (WHAR Alternative 3) would remove all wetlands on the site as well as employ management techniques of the upland habitat, thus removing and/or managing the greatest amount of wildlife hazard attractants on the East Airfield site when compared to the other alternatives. Although this alternative is consistent with the recommendations in the WHA, Wildlife Data Review, WHSV reports, and included in the WHMP revised July 2015, it would not avoid or minimize wetland impacts.

This alternative does not satisfy this screening criterion (does not meet both criteria).

Screening Criteria: Provides GOAA staff reasonable access to the East Airfield to address wildlife hazard issues in a timely manner.

The implementation of WHAR Alternative 3 would remove all wetlands on site and employ management techniques for upland areas. This would allow GOAA staff to access the East Airfield site in a timely manner to address wildlife hazard issues as they arise.

This alternative meets this screening criterion.

Summary of Alternative Screening Analysis for Reduction of Wildlife Hazard Attractants

During the alternatives screening analysis, two of the four alternatives were eliminated from further consideration because they do not meet the screening criteria for the reduction of wildlife hazard attractants on the East Airfield. WHAR Alternative 1 and WHAR Alternative 3 were eliminated. WHAR Alternative 2 met all of the screening criteria. **EA Table 3.5-1** provides a summary of the screening analysis and while the No Action Alternative does not meet all the screening criteria, it is carried forward to meet CEQ regulations.

Alternatives Retained for Detailed Review for Reduction of Wildlife Hazard Attractants

Following this screening analysis, WHAR Alternative 2 was retained for further analysis. Except for the No-Action Alternative, all of the other alternatives were determined to be not reasonable. Although the No-Action Alternative does not meet the purpose and need, it was retained for further environmental analysis screening because it provides a baseline for comparative purposes to fulfill FAA's responsibility under NEPA and the CEQ regulations.

5.2.3 Development of a Secondary Fuel Storage and Distribution Facility at MCO

The screening criteria used for this element of the proposed project were:

1. Provides a strategically located, independent fuel storage and distribution facility.

A second independent facility provides GOAA with operational stability from man-made or natural events that would interrupt fuel supply at MCO. Those alternatives with a second facility located separate from the existing facility are preferable to those alternatives that are not.

2. Supports the future planned development on the airport. A fuel storage and distribution facility that does not conflict with planned development (as depicted on the ALP), allows efficient use of airport property, and supports long-term development of aviation facilities. Those alternatives which provide for the orderly and efficient development at MCO are preferred to those alternatives that do not.

3. Located in proximity to existing or planned surface access roads (for fuel tankers) or gas transmission corridors/lines. To have an efficient and reliable fuel storage and distribution facility, locations with good access to surface roads and/or gas transmission corridors/lines are preferable to those that do not.

No-Action Alternative

Screening Criteria: Provides a strategically located, independent fuel storage and distribution facility.

The No-Action Alternative would not result in the development of a secondary fuel storage and distribution facility at MCO. Therefore, it would not provide a separate, redundant fuel system at MCO.

This alternative does not meet this screening criterion.

Screening Criteria: Supports the future planned development on the airport.

The No-Action Alternative would not result in the development of a secondary fuel storage and distribution facility at MCO. As a result, it would not conflict with planned development.

This alternative meets this screening criterion.

Screening Criteria: Located in proximity to existing or planned surface access roads (for fuel tankers) or gas transmission corridors/lines.

The No-Action Alternative would not result in the development of a secondary fuel storage and distribution facility at MCO.

This alternative does not meet this screening criterion.

Fuel Storage and Distribution Facility Alternative 1 (East Airfield South)

Screening Criteria: Provides a strategically located, independent fuel storage and distribution facility.

Fuel Storage and Distribution Facility Alternative 1 (FSDF Alternative 1) provides a separate, redundant fuel system at MCO. This alternative would be located on the southern boundary of the East Airfield site. The existing fuel facility is located over three miles west of the Alternative 1 site.

This alternative meets this screening criterion.

Screening Criteria: Supports the future planned development on the airport.

This alternative does not conflict with planned development at MCO (as depicted on the ALP), allows efficient use of airport property, and supports long-term development of aviation facilities.

This alternative meets this screening criterion. However, as a result of extensive coordination with local and regional planning departments and in conjunction with prior and current public outreach to stakeholder groups, GOAA eliminated FSDF Alternative 1 from further consideration because of its proximity to residential communities located south of the East Airfield area. Additional information regarding public comments on this Alternative and GOAA's interaction with stakeholder groups is provided in **Section 6 of the EA**.

Screening Criteria: Located in proximity to existing or planned surface access roads (for fuel tankers) or gas transmission corridors/lines.

FSDF Alternative 1 is located adjacent to Dowden Road. Dowden Road is accessible to fuel tanker trucks from the north via State Road 528 and Narcoossee Road and from the south and east via State Road 417, Narcoossee Road and Innovation Way. This alternative is located in proximity to an existing gas transmission pipeline south of Dowden Road and 1.6 miles from the SR 528 right-of-way, which is the anticipated route for a new fuel pipeline from Port Canaveral.

This alternative meets this screening criterion.

Fuel Storage and Distribution Facility Alternative 2 (East Airfield Northwest)

Screening Criteria: Provides a strategically located, independent fuel storage and distribution facility.

Fuel Storage and Distribution Facility Alternative 2 provides a separate, redundant fuel system at MCO. This alternative would be located on the northwest side of the East Airfield site. The existing fuel facility is located approximately four miles southwest of the Alternative 2 site.

This alternative meets this screening criterion.

Screening Criteria: Supports the future planned development on the airport.

This alternative does not conflict with planned development for MCO (as depicted on the ALP). However, the proximity of the FSDF Alternative 2 site to Runway 17L/35R presents an issue in regard to the concepts of efficiency and "highest and best use" of airport property at the East Airfield site. In general, airport land located closer to runway and taxiway systems (existing and future) is best suited for aviation facilities that require airfield access. These type facilities include connector taxiways, aircraft parking and circulation aprons, hangars, cargo buildings, and other support buildings. This increases the efficiency of traffic on the airfield (i.e., reduces taxi distances and times) and results in a more efficient use of airport property. In most cases, a fuel storage facility's proximity to runway and taxiway systems is less important when compared to the type of facilities previously mentioned. Because FSDF Alternative 2 would be located in an area that would be better used for other aviation facilities, it would not fully support future planned development and, therefore, does not satisfy this criterion.

This alternative does not meet this screening criterion.

Screening Criteria: Located in proximity to existing or planned surface access roads (for fuel tankers) or gas transmission corridors/lines.

FSDF Alternative 2 is located in proximity to State Road 528 and could be accessed by fuel tanker trucks from the north via Goldenrod Road, Cargo Road, and the proposed primary roadway (internal to the East Airfield site). This alternative is also in proximity to a planned gas transmission corridor (by others) along the State Road 528 right of way.

This alternative meets this screening criterion.

Fuel Storage and Distribution Facility Alternative 3 (East Airfield Northeast)

Screening Criteria: Provides a strategically located, independent fuel storage and distribution facility.

Fuel Storage and Distribution Facility Alternative 3 (FSDF Alternative 3) provides a separate, redundant fuel system at MCO. This alternative would be located in the northeast corner of the East Airfield site. The existing fuel facility is located approximately 4.4 miles west-southwest of the alternative site.

This alternative meets this screening criterion.

Screening Criteria: Supports the future planned development on the airport

This alternative does not conflict with planned development at MCO (as depicted on the ALP), allows efficient use of airport property, and supports long-term development of aviation facilities.

This alternative meets this screening criterion.

Screening Criteria: Located in proximity to existing or planned surface access roads (for fuel tankers) or gas transmission corridors/lines.

FSDF Alternative 3 is located in proximity to State Road 528 and could be accessed by fuel tanker trucks from the north via Goldenrod Road, Cargo Road, and the proposed primary roadway (internal to the East Airfield site). This alternative is in proximity to a planned gas transmission corridor (by others) along the State Road 528 right of way.

This alternative meets this screening criterion.

Fuel Storage and Distribution Facility Alternative 4 (Expansion of the existing MCO fuel facility)

Screening Criteria: Provides a strategically located, independent fuel storage and distribution facility

FSDF Alternative 4 is located directly adjacent to the existing fuel facility. Due to its proximity to the existing fuel facility, this alternative would not ensure operational redundancy in the case of damage from natural disaster, fire, or other means. In addition, this site would not have the potential to receive fuel from alternate fuel lines or planned corridors.

This alternative does not meet this screening criterion.

Screening Criteria: Supports the future planned development on the airport

This alternative does not conflict with planned MCO development (as depicted on the ALP), allows efficient use of airport property, and supports long-term development of aviation facilities.

The alternative meets this screening criterion.

Screening Criteria: Located in proximity to existing or planned surface access roads (for fuel tankers) or gas transmission corridors/lines

FSDF Alternative 4 is located directly south of the existing fuel facility at MCO. The existing fuel facility is located on the west side of airport property adjacent to an existing gas transmission line and can also be accessed by fuel tanker trucks from the north via State Road 528 and Tradeport Drive and from the south via State Road 417, Boggy Creek Road, and Tradeport Drive. This location does not provide good access to an alternative gas transmission corridor.

This alternative partially meets this screening criterion.

Summary of Alternative Screening Analysis for Development of a Secondary Fuel Storage and Distribution Facility at MCO

During the alternatives screening analysis, two of the five alternatives were eliminated from further consideration because they do not meet the screening criteria for the location of the secondary

fuel storage distribution facility on the East Airfield. **EA Table 3.7-1** provides a summary of the screening analysis.

FSDF Alternative 1 met all the screening criteria. However, as a result of coordination with local and regional planning departments in conjunction with prior public outreach to stakeholder groups, GOAA eliminated FSDF Alternative 1 from further consideration due to its proximity to residential communities located south of the East Airfield area. Additional information regarding public comments, GOAA's interaction with stakeholder groups, and agency comments are provided in **Section 6 of the EA**.

FSDF Alternative 3 and the No-Action Alternative were retained after the secondary screening for the development of a secondary fuel storage and distribution facility. Although the No-Action Alternative does not meet the purpose and need, it was retained for further environmental analysis screening because it provides a baseline for comparative purposes to fulfill FAA's responsibility under NEPA and the CEQ regulations.

Alternatives Retained for Evaluation for Development of a Secondary Fuel Storage and Distribution Facility at MCO

Following the screening analysis related to site selection for a large, contiguous area for future aviation, aviation support, and medium intensity land uses, the East Airfield Alternative site was retained for further analysis. Through the screening analysis related to Wildlife Hazard Attractant Reduction, Alternative 2 was retained for further analysis. The Fuel Storage and Distribution Facility Alternative 3 was retained for further analysis. These alternatives collectively comprise the Proposed Project and are depicted in **Figure 3.8-1of the EA**. Except for the No Action Alternative, all of the other alternatives were determined to be not reasonable. Although the No-Action Alternative does not meet the purpose and need, it was retained for further environmental analysis because it provides a baseline for comparative purposes to fulfill FAA's responsibility under NEPA and the CEQ regulations.

6.0 PUBLIC PARTICIPATION, AGENCY COORDINATION AND COMMENTS ON THE DEA

6.1 Overview of Public Involvement

In 2011, GOAA and neighboring communities initiated the GOAA Lake Nona Estates / NorthLake Park Neighborhood Partnership, an ongoing alliance that helps to foster communication between homeowners and GOAA. Since 2011, multiple coordination meetings were held that included updates by GOAA on the status of the East Airfield project and other topics, including the airport's master planning process, noise program, airport financing, traffic analysis, and history of land acquisition at the airport. These meetings were also attended by the City of Orlando Planning Department. Information presented and discussed at these meetings is provided on the GOAA project website (http://www.orlandoairports.net/east_airfield /index.htm).

In 2013 and 2014, the meetings with the public produced modifications to the East Airfield Conceptual Plan and commitments were made by GOAA relative to the development of the East Airfield site. The resulting 2014 East Airfield Conceptual Development Plan, shown in **Figure 1.2.2 of the EA**, was developed by GOAA to incorporate comments from the community as they relate to traffic, noise, visual buffering, potential environmental impacts, and the location of the fuel storage and distribution facility.

Subsequent to the March 30, 2015 DEA that was made available for public and agency review, GOAA and the neighborhood communities continued discussions related to the 2014 East Airfield Conceptual Development Plan. These discussions continued after the publication of the DEA and, in October 2015, resulted in further refinements to the 2014 East Airfield Conceptual Development Plan (**See Appendix Y of the EA**). The FAA took notice of the recent refinements and it is understood that ongoing discussions between GOAA and the community could result in other refinements.[5] In addition to the ongoing coordination between GOAA and the neighborhood communities, **Appendix Y of the EA** provides a timeline of key events and additional community coordination information that occurred over the past 20 years related to the East Airfield site and the NorthLake Park community.

6.2 Agency, Tribal, and Local Governmental Coordination

Numerous agencies have jurisdiction or regulatory authority over various aspects of the Proposed Project and were contacted at the beginning of the EA process to obtain relevant information so that it could be considered and included in the preparation of the EA. These parties, who also received copies of the March 2015 DEA included:

Federal Agencies

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- Environmental Protection Agency - Region 4
- Federal Emergency Management Agency - Region 4
- Federal Aviation Administration

Sovereign Nations and Native American Interests

- Seminole Tribe of Florida
- Seminole Nation of Oklahoma
- Miccosukee Tribe of Indians of Florida

[5] These ongoing discussions between GOAA and the community do not affect FAA's ability to complete the current environmental process and render a final decision on the Proposed Project, as the refinements being discussed pertain to potential future uses of the East Airfield, should development of that area eventually occur. The FAA is not granting approval for any such development through this FONSI/ROD. Specific uses of the East Airfield site were not relied upon in presenting environmental impact discussions in the EA, but rather reasonable assumptions about general categories of use were relied upon for cumulative impacts and other discussions. The current refinements to the 2014 East Airfield Conceptual Development Plan would not substantially alter the evaluation of impacts contained in the EA.

- Muscogee (Creek) Nation
- Poarch Band of Creek Indians

State Agencies

- Florida Department of Environmental Protection
- Florida Department of Transportation
- Florida Fish and Wildlife Conservation Commission
- South Florida Water Management District
- Florida State Historic Preservation Officer
- Florida State Clearinghouse

Local Agencies

- City of Orlando
- Orange County
- East Central Florida Regional Planning Council
- Osceola County
- MetroPlan Orlando
- Orlando Economic Development Commission
- Central Florida Regional Transportation Authority
- GOAA Lake Nona Estates/ NorthLake Park Neighborhood Partnership

A more complete listing is provided in **Table 6.2-1 of the EA**.

6.3 Draft EA Availability

The Notice of Availability (NOA) of the DEA and Public Workshop was published in the Orlando Sentinel on March 29, 2015. The NOA was also provided to the public officials and parties listed in **Table 6.2.1 of the EA** that received a copy of the DEA. Copies of the DEA were made available for public review during regular business hours at the following locations:

- Orange County Public Library (Southeast Branch Library 5575 South Semoran Boulevard, Orlando, FL 32822)
- Lake Nona YMCA (9055 Northlake Pkwy, Orlando, FL 32827)
- GOAA Administrative Office (5855 Cargo Road, Orlando, FL 32827)
- FAA Orlando Airports District Office (5950 Hazeltine National Dr. Suite 400, Orlando FL, 32822)

The NOA also stated that an electronic copy of the DEA, in PDF format, was made available for download from the MCO website starting on March 30, 2015 (http://www.orlandoairports.net/east_airfield /index.htm). Instructions for providing comments on the DEA during the 45-day comment period (March 30, 2015 to May 14, 2015) were also provided in the NOA.

6.4 Draft EA Public Workshop

GOAA held a Public Workshop on April 30, 2015 at Lake Nona High School. The workshop started at 5:30 p.m. and ended at 8:30 p.m. The purpose of the Public Workshop was to provide information about the Proposed Project and its environmental impacts and to solicit comments on the DEA. The workshop was held in an informal format where participants were able to view maps, display boards, and informational materials and speak with GOAA representatives and their consultants. No formal presentation or formal Public Hearing session was conducted.

Both written and verbal comments relative to the DEA were invited during the Public Workshop. Comment forms and written comments were accepted at the Public Workshop and by mail after the workshop. Two court reporters were available at the Public Workshop to record individual spoken comments. All comments were reviewed and considered by GOAA and the FAA during the preparation of the FEA.

There were approximately 100 attendees at the public workshop. GOAA received a total of 116 public and four agency comment submittals on the DEA.

6.5 Comments Received on the Draft EA

GOAA and the FAA reviewed and considered all comments received on the DEA in the preparation of the FEA. A summary of the comments is provided below. A copy of the comment submittals received and the response to each substantive comment are provided in **Appendix Z of the EA**.

Federal and State Agencies - Comments on the DEA were received from four agencies: the US Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers (USACE), the Florida State Historic Preservation Officer (SHPO), and the Florida State Clearinghouse. The EPA submitted an email with comments on wetlands, water quality, and public outreach and did not object to the Proposed Project. The USACE sent an email with comments similar to EPA's and also did not object to the Proposed Project. The SHPO stated that they had no comments on the DEA and acknowledged prior Section 106 consultation and SHPO's concurrence with FAA's findings. The Florida State Clearinghouse submitted a letter addressing updates to the Conceptual Environmental Resource Permit (ERP) by the SFWMD and reiterating the Proposed Project was consistent with the Florida Coastal Management Plan.

Local Municipalities/Local Elected Officials - GOAA solicited comments on the DEA from local governments and municipalities, local elected officials, and regional planning/transportation organizations. Comments on the DEA were received from the City of Orlando's City Planning

Division. Municipalities and local government organizations that *did not* provide comments on the DEA include the Orange County Mayor's Office, Orange County, the East Central Florida Regional Planning Council, Osceola County, MetroPlan Orlando, Orlando Economic Development Commission, and the Central Florida Regional Transportation Authority.

Native American Indian Tribes - The Seminole Tribe of Florida, through its Tribal Historic Preservation Office, noted that the Tribe has no objection to the Proposed Project at this time. The Tribe indicated that they request to be notified if any Native American artifacts are uncovered during the construction phase of the project. Other Native American Indian Tribes that received a copy of the DEA but did not provide comments include the Seminole Nation of Oklahoma, the Muscogee (Creek) Nation, the Poarch Band of Creek Indians, and the Miccosukee Tribe of Indians of Florida.

Public Comments - GOAA received 116 comment submittals from the public during the 45 day comment period. Salient points were identified in each comment letter and each point was assigned an identifying number and treated as an individual comment. Responses to each comment letter are contained in **Appendix Z of the EA**. The major topics commented on by the public are summarized below (in no particular order of importance).

- There were a number of comments related to the Fuel Storage and Distribution Facility, specifically related to the safety, the proximity to residential neighborhoods, visual impacts, and potential for contamination.
- Commenters were concerned about the clearing of wetlands and the impact this would have on the environment in general, stormwater runoff, and wildlife.
- Concerns regarding the increase in traffic on Narcoossee Road that would result from both construction and operation of the proposed facilities, primarily at full build-out.
- A number of commenters suggested that an alternative site would be better suited for the airport sponsor's long-term development plans, such as the Tradeport site located on the west side of MCO.
- Concerns related to the proximity of high intensity land use to nearby residential neighborhoods.
- There were a number of requests to further extend the comment period to 60 days.
- Concern about the affect the future build-out of the 2014 East Airfield Conceptual Development Plan would have on the quality of life.
- Concerns over the economic impact the project would have on home values in the vicinity of the East Airfield site.
- Some commenters made (incorrect) statements that the land in the East Airfield site is protected and cannot be developed.

- A number of commenters requested that instead of evaluating the impacts of the Proposed Project in an EA, the FAA should prepare an Environmental Impact Statement (EIS) to determine the impacts associated with the future build-out of the 2014 East Airfield Conceptual Development Plan. Commenters also requested more specific information on what types of future development would occur.
- There were a number of comments expressing an overall dislike for the project.
- Many commenters stated the need for more visual and noise buffering for both the Proposed Project and proposed future uses associated with the 2014 East Airfield Conceptual Development Plan.
- A number of commenters mentioned their appreciation for the reduction in wetland removal when compared to the 2009 Draft EA, as well as the relocation of the Fuel Storage and Distribution Facility to the northern part of the East Airfield site.

In addition to the Proposed Project, many comments were concerned with the 2014 East Airfield Conceptual Development Plan and the future full build-out of that Plan, for which GOAA did not seek unconditional ALP approval in the 2015 Draft EA or the 2016 Final EA. Major comments submitted included topics such as:

- Noise and air quality impacts,
- Health and quality of life impacts,
- Assurances that GOAA made to the public about revisions to the 2014 East Airfield Conceptual Development Plan (were thought by many to be missing from the EA), and
- Concerns about the impact that construction activities would have on noise and air quality, as well as an increase in traffic due to construction related vehicles.

7.0 AFFECTED ENVIRONMENT

The FEA describes only those environmental resources the Proposed Project would likely affect (FAA Order 5050.4B). The amount of information on a potentially affected resource is based on the extent of the expected impact and is commensurate with the impact's importance. **Section 4 of the EA** provides details of the resources found within the Proposed Project Study Areas.

8.0 ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT

8.1 Introduction

The environmental consequences section of an EA provides analysis of environmental resources and categories that have the potential to be impacted by the Proposed Project and other

reasonable alternatives that were retained after the alternatives evaluation process. The following is a summary of the environmental consequences analysis for each of the affected environment categories applicable to the Proposed Project. Further explanation of the environmental impact analysis is provided in **Section 5 of the EA**.

8.2 Environmental Impacts Associated with the Proposed Project

Air Quality - The No Action Alternative would not result in air quality impacts. The East Airfield site is located within an attainment area and the area is not subject to a State Implementation Plan (SIP). The Proposed Project would have only a minor effect on air quality, most of which would be temporary and occur during construction. Therefore, the Proposed Project would not result in significant air quality impacts. For greenhouse gases (GHG's), the CEQ's draft GHG guidance recommends an annual level of 25,000 metric tons (mt) or more of CO2e emissions as the threshold for which a quantitative assessment could be meaningful to decisions makers and the public. As shown in **Table 5.2-1 of the EA**, the level of CO2e emissions associated with the Proposed Project is far below this threshold and would not have the potential for significant impacts.

Coastal Barriers - The No Action Alternative would not result in coastal barrier impacts. The Proposed Project would not impact any area or zone protected by the Coastal Barrier Resource Act.

Coastal Zone Management - The No Action Alternative would not result in coastal zone management impacts. The FAA has not established a threshold that would indicate a significant impact to coastal resources. However, the Coastal Barrier Resources Act (CBRA) prohibits Federal support for development on undeveloped coastal barrier resources within the Coastal Barrier Resource System and the Coastal Zone Management Act (CZMA) promotes consistency of Federal actions with the Florida Coastal Management Program (FCMP). Based on the analysis conducted for the EA, the Proposed Project would not result in direct or indirect impacts to coastal resources. In addition, the SFWMD has issued a conceptual ERP for the Proposed Project, which provides the following statement: "*The issuance of this permit constitutes a finding of consistency with the Florida Coastal Management Program*." Therefore, the Proposed Project would not result in significant coastal zone management impacts.

Compatible Land Use – The No Action Alternative would not result in compatible land use impacts. FAA Order 1050.1E describes the significance threshold for compatible land use to be when "a significant noise impact will occur over noise sensitive areas within the DNL 65 dB contour…" A "significant noise impact" is defined as an increase of DNL 1.5 dB in noise-sensitive areas exposed to DNL of 65 dBA or greater. FAA Order 1050.1E identifies that airport development actions can alter aviation-related noise impacts and affect land uses subject to those impacts. In this context, if the noise analysis concludes that there is no significant impact, a similar conclusion may be drawn with respect to compatible land use. The Proposed Project would not result in additional aircraft operations or increased aviation related noise. Temporary construction noise impacts are discussed in **Section 5.5 of the EA**. A land use certification letter from GOAA is provided in

Appendix R of the EA. Based on this information, the Proposed Project would not result in significant compatible land use impacts

Construction - The No Action Alternative would not result in construction-related impacts. The Proposed Project will include construction activities within the East Airfield site. These activities include clearing, de-mucking and back-filling, grading, and construction of internal roads, a fuel storage and distribution facility, and site infrastructure. The Proposed Project has the potential to disturb up to 1,103 acres of land.

Air Quality - Construction activities could temporarily degrade local air quality due to dust, equipment exhausts, and burning debris, but these impacts would be minor and temporary in nature. GOAA would incorporate Best Management Practices (BMP's) to minimize any temporary air impacts associated with construction activities which may include dust control and reducing idle time and using cleaner fuels for construction equipment.

Water Quality - Short-term and temporary water quality impacts may result from site grading and construction activities, including temporary increases in sedimentation and turbidity in adjacent drainage ways and outfalls. 40 CFR Part 122.26 requires an NPDES permit for stormwater discharges due to construction activities. GOAA will obtain the required NPDES permits prior to construction activities. Implementation of applicable NPDES BMP's and FAA guidance will decrease potential water quality impacts related to construction. The use of BMP's common to the region, the implementation of measures specified in FAA AC 150/5370-10G, *Standards for Specifying Construction of Airports*, and the implementation of project-specific design criteria to minimize erosion and sedimentation would be expected to preclude construction-related water quality impacts and any significant potential for the Proposed Project to exceed water quality standards. These measures may include, but not necessarily be limited to, construction of temporary retention ponds and sediment basins; installation of silt fencing and berms; soil stabilization through mulching and seeding; construction phasing; and implementation of pollution prevention plans for construction activities. The surface water management system necessary to capture and treat all stormwater runoff from the East Airfield site will be constructed prior to activities in the wetlands. The system will be designed to either prevent off site discharge to waters of the state or, if necessary, be designed in accordance with the engineering criteria of the state regulatory agency to ensure that discharges from the site do not cause violations of surface water quality criteria. **Section 5.16.1.2 of the EA** provides a more detailed discussion of water quality issues that may be affected during construction.

Noise - An increase in ambient noise levels could occur during construction activities, primarily during site grading operations. The Construction Noise Handbook published by the Federal Highway Administration (FHWA) lists various types of construction equipment and the noise levels they generate at 50 feet from the vehicles (**See Appendix S of the EA**). Typically, noisier construction equipment generates noise at 80-85 dBA at a 50 foot distance. Equipment in this noise range could include backhoes, concrete mixer trucks, dozers, dump truck graders, pavers and scrapers. Measures that are available to minimize construction noise impacts include: 1)

ensuring that construction equipment and trucks are maintained properly and have functional mufflers and 2) use of designated haul routes to avoid residential areas.

Residential areas are located south and east of the East Airfield site. Single family residential areas are located approximately 350 feet south of the East Airfield site, along Dewflower Lane (south of Dowden Road). Multifamily residential areas are located approximately 200 feet east of the site (east side of Narcoossee Road). Street construction noise might be heard near Dowden Road, but construction noise from the remaining site areas would be below ambient community background noise levels. Additional noise reduction could also result from atmospheric absorption, as well as where dense vegetation and buildings are located between the source of the noise (equipment) and the receiver (residential areas). As applicable, construction activities will comply with City of Orlando Noise Ordinance, Title II, Chapter 42 of the Orlando City Code (**See Appendix S of the EA**).

Solid Waste – Land clearing activities would generate large amounts of tree and vegetation waste. These materials would be recycled on-site (for mulch) or taken to nearby recycling centers. Construction wastes associated with the secondary fuel storage and distribution facility would be minimal and comprised of debris and waste materials associated with concrete forming and installation of tanks, piping, and control systems.

Traffic - Haul routes for vehicles and trucks would primarily be on established multi-lane highways and commercial thoroughfares in the vicinity of the airport. Haul routes would avoid streets in residential neighborhoods and adjacent to noise-sensitive land uses.

Although no specific significance thresholds have been established by the FAA for this category, GOAA would ensure that all on-site construction activities will be conducted in accordance with FAA AC 150/5370-10G, *Standards for Specifying Construction of Airports*, local noise ordinances, and by using BMPs. Therefore, the Proposed Project would not result in direct and indirect construction-related impacts.

Energy Supplies, Natural Resources and Sustainable Design – The No Action Alternative would not result in energy supply or natural resource impacts. As stated in FAA Order 1050.1E, “the Proposed Project will be examined to identify any proposed major changes in stationary facilities or the movement of aircraft and ground vehicles that would have a measurable effect on local supplies of energy or natural resources. If there are major changes, power companies or other suppliers of energy will be contacted to determine if projected demands can be met by existing or planned source facilities. The use of natural resources other than for fuel need be examined only if the action involves a need for unusual materials or those in short supply.”

The Proposed Project is not anticipated to result in a substantial, permanent change to energy demands or natural resource consumption. Because the Proposed Project is to clear and fill wetlands and construct a fuel storage and distribution facility, both of which will result in minimal stationary facilities, no changes to aircraft movement and minimal changes to ground vehicle movement, it would not result in a substantial change to energy demands or other natural resource consumption.

As described above, the No-Action Alternative and Proposed Project conceptual development plan would not meet or exceed significance thresholds for energy supply, natural resources, and sustainable design (**See Table 5.12-1 of the EA**).

Socioeconomic Impacts, Environmental Justice, And Children's Environmental Health And Safety Risks - FAA considers a Proposed Project's socioeconomic impacts, potential impacts to minority and low-income populations, and identifies and assesses potential environmental health and safety risks that the agency believes could disproportionately affect children. Neither the No Action nor the Proposed Project Alternatives would result in socioeconomic or environmental justice impacts, or have a substantial effect on products or substances that a child is likely touch, digest, or be exposed to (**See Section 5.15 and Table 5.15-1of the EA**).

Farmlands – Neither the No Action Alternative nor the Proposed Project would result in impacts to prime, unique or state significant farmlands. The Proposed Project is located in an area that is not used for agricultural purposes and it would not require the conversion of farmlands to non-agricultural uses.

Floodplains - The No Action Alternative would not result in impacts to floodplains. Executive Order 11988, "Floodplain Management," directs Federal agencies "to take actions to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by the flood plains." Department of Transportation Order 5650.2, *Floodplain Management and Protection*, and FAA Orders 1050.1E and 5050.4B contain policies and procedures for implementing the Executive Order and evaluating potential floodplain impacts. Agencies are required to make a finding that there is no practicable alternative before taking action that would encroach on a base floodplain based on a 100-year flood (7 CFR 650.25).

There are approximately 591 acres of 100-year floodplains (Zone A) within the boundaries of the East Airfield site. The Proposed Project could impact up to 442 acres of 100-year floodplains. The impact would result from the removal of wetlands associated with reducing wildlife hazard attractants, the construction of the secondary fuel storage facility, and other site grading activities.

The alternatives analysis in **Section 3 of this EA** considered seven alternatives for the selection of a site for future aviation-related development (including the No-Action Alternative), four alternatives to reduce wildlife hazard attractants on the East Airfield site, and five alternatives for development of a secondary fuel storage and distribution facility. During the alternatives screening analysis, five of the seven site selection alternatives were eliminated from further consideration because they were found to be not reasonable based on the Proposed Project's purpose and need. Three of the four alternatives to reduce wildlife hazard attractants were also found to be not reasonable and practicable. Four of the five alternatives for locating a secondary fuel storage facility were also found to be not reasonable. Following the alternative screening analysis, the Proposed Project (which includes the removal of wetlands and the development of a secondary fuel storage and distribution facility at the East Airfield site) and the No-Action Alternative were the only alternatives retained for further analysis. All other alternatives were determined to not be reasonable and practicable. Therefore, there is no practicable alternative to the encroachment of

the Proposed Project development on 100-year floodplains. See **Section 11.F of this FONSI/ROD** for further discussion of this conclusion.

GOAA received a conceptual ERP from the SFWMD on August 30, 2011 for impacts to state jurisdictional wetlands on the East Airfield site. The SFWMD is responsible for managing and protecting the water resources of south Florida, including water quality, flood control, natural systems, and water supply. The conceptual ERP states "no adverse impacts to the floodplain are expected as a result of the proposed project." Permit conditions will require that the East Airfield's conceptual surface water management system be designed and constructed to meet the full extent of the District's rules governing water quality and quantity and avoid potential downstream flooding events. Permit conditions also required that GOAA provide mitigation to offset adverse impacts to natural values associated with the impacted wetlands. With the implementation of mitigation measures, the Proposed Project would not result in significant floodplain impacts. Mitigation for unavoidable impacts is discussed in the Mitigation Section of this FONSI/ROD.

Hazardous Materials, Pollution Prevention and Solid Waste - The No Action Alternative would not result in hazardous materials impacts. FAA Order 1050.1E notes that additional information or analysis is needed only if problems are anticipated with respect to meeting the applicable local, state, Tribal, or Federal laws and regulations on hazardous or solid waste management. Typically, a Phase I Environmental Site Assessment is completed to document the presence of any sites within the action area listed or under consideration for listing on the National Priorities List (NPL). The NPL is established by the EPA in accordance with CERCLA.

If the Proposed Project would involve hazardous materials, a brief description of the methods used to ensure compliance with RCRA, CERCLA, and other applicable Federal and state regulations is provided. Methods employed to control spills and other unauthorized releases of hazardous materials during construction and operation of the Proposed Project are referenced. FAA AC 150/5320-15A, *Management of Airport Industrial Wastes*, provides detailed information on dealing with hazardous wastes and industrial chemicals typically used on airports. **Section 5.16 of the EA** provides information regarding water quality requirements and GOAA's responsibilities for pollution prevention regarding water quality.

A Phase I Environmental Site Assessment conducted for the East Airfield site indicated that no areas within the site are listed in Federal, state, or local government databases, environmental records, or enforcement lists. Therefore, the Proposed Project would not impact known hazardous waste sites.

North of the East Airfield site and off airport property, the former Alamo Rent-A-Car location (8200 McCoy Road) is documented by the Florida DEP to have soil and groundwater impacts related to petroleum products. The potential for this plume to extend under portions of the East Airfield site categorizes the Alamo Rent-A-Car location as a recognized environmental condition (REC) related to the East Airfield site. To the extent that the groundwater plume from the former off-airport Alamo Rent-a-Car location extends onto the East Airfield site, the responsible party (Alamo Rent-a-Car) is responsible for remediation.

Regulated Materials – The Proposed Project would not affect sites with known or registered petroleum storage tanks. During construction, contractor staging areas will be located at various locations in the East Airfield site. The staging areas will likely include portable aboveground storage tanks (ASTs) for fuel storage. Construction contractors will be required to implement pollution prevention, spill prevention, and response plans documenting the measures that will be taken to prevent accidental releases to the environment and, should they occur, the actions that will be undertaken to minimize the environmental impact. **See Section 5.5, Construction Impacts, and Section 5.16, Water Quality of the EA**, for more information on pollution prevention measures available to minimize construction phase and operational impacts.

The proposed secondary fuel storage and distribution facility will be designed to meet current standards and applicable regulatory requirements for operating a bulk petroleum storage facility. Similar to MCO's existing fuel storage and distribution facility, the operation of the secondary facility will be subject to regulatory requirements and oversight. This includes establishing pollution prevention plans; spill prevention control and countermeasure plans; BMPs; conducting regular facility inspections; and reporting releases, should they occur. The operation of a modern bulk fuel storage facility, assuming all operating requirements are implemented, would have a low potential for introducing hazardous materials (petroleum products) into underlying soils and groundwater.

Overall, the potential for the Proposed Project to introduce hazardous materials, including petroleum products, into the environment is considered to be low.

As discussed in **Section 4.3.8 of the EA**, the City of Orlando Solid Waste Management Bureau oversees the pick-up and transfer of solid waste. Orange County is responsible for the disposal of solid waste at the Orange County Landfill. Both the City and County are responsible for adhering to all applicable Federal, state, and local laws related to the proper handling and disposal of solid waste.

It is anticipated that Orange County has the capacity to hold the limited solid waste volumes for both the construction and operation of the Proposed Project. The Orange County Solid Waste Division has recently completed landfill expansion activities which included over 480 acres for the disposal of Class I waste and support facilities to ensure disposal needs are met for the next 25 years. Currently, the Solid Waste Division is developing a master plan for waste disposal which could extend the use of the current landfill site beyond the 25 year outlook. In addition, the solid waste handled by the City and County would meet all applicable laws and regulations including those pertinent to the minimization of the effect to the environment.

The Clean Water Act (CWA), Section 311, as amended by the Oil Pollution Act requires spill response plans for facilities that store oil-based or oil products. The Proposed Project includes a planned fuel storage and distribution facility and there may be other auxiliary-type storage oil or oil-based storage facilities associated with the high-intensity aviation development areas. This facility will be constructed and operated in accordance with Federal and state regulations and MCO operating procedures that are designed to minimize spills and impacts to the environment. GOAA

would ensure that pollution prevention plans are prepared for the secondary fuel storage and distribution facility and other facilities in accordance with these requirements.

Based on the analyses conducted for the EA, the Proposed Project would not meet or exceed significance thresholds regarding hazardous materials (**See Table 5.9-1of the EA**).

Historic, Architectural, Archaeological, and Cultural Resources – The No Action Alternative would not result in impacts to historic, architectural, archaeological, or cultural resources. Under Section 106 of the National Historic Preservation Act of 1966 (NHPA), the FAA is required to consider effects to properties listed in, or eligible for listing in, the National Register of Historic Places (NRHP) and consult with the State Historic Preservation Officer (SHPO) to substantiate findings of affect to these resources. The NHPA requires FAA to evaluate impacts to National Historic Landmarks (NHLs). There are numerous laws and executive orders regulating archeology and coordination with Native American Tribal Nations. These laws and executive orders are listed in FAA Order 1050.1E, Appendix A, Section 11.

As discussed in **Section 4.3.9 of the EA**, GOAA conducted a cultural resource assessment survey (CRAS) in 2008 for the East Airfield site. As part of the 2009 Draft EA, which was never finalized, the Florida SHPO issued a letter of concurrence with the CRAS and no effect finding on Jan 14, 2009 (**See Appendix N of the EA**). The SHPO was also provided an opportunity to review the 2015 Draft EA. The SHPO indicated that the agency had no comments on the 2015 Draft EA and acknowledged prior Section 106 consultation and SHPO's concurrence with FAA's findings. The Seminole Tribe of Florida, through its THPO, noted that the Tribe has no objection to the Proposed Project at this time. Agency and Native American Tribal Government Draft EA comments are detailed in **Section 6 of the EA**.

Based on results of the site survey, and correspondence from the Florida Department of State, Division of Historical Resources (SHPO), and the Seminole Tribe of Florida, through its THPO, The Proposed Project would have no significant impact to historical, architectural, archeological, or cultural resources.

Induced Socioeconomic Impacts - As noted in **Section 4.3.13 of the EA**, FAA considers induced or secondary impacts to surrounding communities as a result of a Proposed Project. These impacts could include shifts in patterns of population movement and growth; public service demands; and changes in business and economic activity to the extent influenced by the airport development.

The No Action Alternative would not result in induced socioeconomic impacts. The site selection, wildlife hazard attractant reduction activities, and proposed secondary fuel storage and distribution facility that comprise the Proposed Project are not anticipated, individually or collectively, to appreciably affect population movement and growth, public service demands, or business and economic activity at or in the vicinity of MCO. The Proposed Project would have a positive, yet modest effect on local construction employment. Induced impacts will normally not be significant except where there are also significant impacts in other categories, especially noise, land use, or

direct social impacts. Based on the analysis conducted for the EA, the Proposed Project would not result in significant secondary or induced impacts.

Light Emissions and Visual Effects - The No Action Alternative would not result in light or visual impacts.

Airfield lighting changes associated with the Proposed Project would consist primarily of the installation of lights at the proposed secondary fuel storage and distribution facility and its access road. The lights to be installed would consist of pole and tank-mounted area flood lights to illuminate the fuel storage and distribution facility and its access road.

The area in the vicinity of the proposed secondary fuel storage contains a mix of airport, residential, and transportation land uses, which include the following: Runway 17L-35R, a six-lane section of the Martin Andersen Beachline Expressway (State Road 528), a five-lane section of Narcoossee Road, the Reserve at Beachline apartment complex, a convenience store and gas station, and an automobile salvage yard. The nearest residences to the proposed secondary fuel storage facility are located approximately 825 feet east, within the Reserve at Beachline apartment complex. The view of the proposed fuel storage facility from the apartment complex would be partially obstructed by traffic on Narcoossee Road and the convenience store/gas station.

The design of the secondary fuel storage and distribution facility may include the use of buffers along portions of the site's boundary, which would provide some physical shielding that would help reduce the view of the new light sources. In addition, the use of high-intensity light sources, directional lights, or flashing lights are not anticipated. Overall, the residents in the immediate vicinity of the proposed fuel storage and distribution facility and drivers on nearby roadways would notice a change in the areas lighting and light sources; however, the potential to cause substantial annoyance is considered to be low due to the distance of the fuel storage and distribution facility to residences, the location of adjacent highways and thoroughfares, and commercial land uses

While the visual landscape would change as a result of the Project Action, it would be compatible with the airport environs and nearby light industrial land uses. In regard to views from nearby residential areas, retaining a large wetland area and development of a public park and vegetative visual buffer would help reduce visual changes to the landscape that would occur if the Proposed Project was implemented. Based on the analysis contained in the EA, the Proposed Project would not result in significant light or visual impacts.

Noise Impacts - The No Action Alternative would not result in significant noise impacts to non-compatible land uses. FAA Order 1050.1E identifies a significant noise impact as a result of a Proposed Project as follows:

"A significant noise impact would occur if analysis shows that the Proposed Project will cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the No-Action Alternative for the same timeframe."

The East Airfield project will not result in a change in aircraft type, operations or other type of activity when compared to the No Action Alternative. As discussed in **Section 4.3.12** of the EA, the FAA has determined that the MCO 2008 noise contours are a conservative representation of the existing noise conditions at the airport; therefore, noise contours comparing the Proposed Project noise conditions to the No Action noise conditions were not prepared for this EA.

Fish, Wildlife and Plants - FAA coordinates with the U.S. Fish and Wildlife (USFWS) and/or the National Marine Fisheries Service (NMFS), as appropriate, pursuant to the Endangered Species Act (ESA) for Federally listed endangered, threatened, and candidate species or designated critical habitat. FAA coordinates with the Florida Department of Environmental Protection (FDEP) for state listed species and critical habitat. Pursuant to the Fish and Wildlife Coordination Act, the FAA also coordinates with Federal, state, local agencies and Tribes where there is a potential impact to water resources, fish, wildlife, and plant resources. The results of this coordination and of the field surveys conducted for the EA are summarized in the following paragraphs. Detailed analysis is contained in **Sections 4.3.6 and 5.7 of the EA**.

Federal and State Listed Plants - **Table 4.3-3 in the EA** provides a list of the eleven Federal and state listed plant species with the potential to occur on the East Airfield site. Of these species, no direct observations were made during on-site inspections and various other field surveys including listed wildlife species surveys and Florida Land Use, Cover and Forms Classification System (FLUCFCS) mapping. Each of the 11 listed plant species were deemed unlikely to occur within the East Airfield site (**See Table 4.3-5 of the EA**). Therefore, no significant impacts to listed plants would occur with the implementation of the Proposed Project.

Federal and State Listed Wildlife - **Table 4.3-5 in the EA** provides a list of 23 state-listed wildlife species and eight Federally-listed species that could potentially occur on or use the East Airfield site. Of these 23 species, two Federally-listed species and ten state listed species have the potential to be impacted by the Proposed Project. The wood stork and American alligator, are listed by both the state and Federal agencies. **Section 4.3.6.3 of the EA** provides a detailed description of the two Federally-listed species that have been observed on the East Airfield site. The following discusses the impacts to the two Federally-listed species on the East Airfield site. None of the impacts discussed are significant impacts under NEPA.

Federally-Listed Wildlife

Wood Stork – The USFWS uses a regulatory tool known as the Core Foraging Area (CFA) to determine the potential effects of project activities on wood stork colonies that have been active. The CFA for wood stork colonies is an area with a radius of 15 miles in north Florida, and 18.6 miles in south Florida. The Proposed Project area falls within these CFAs. Since GOAA had submitted a permit application, the U.S. Army Corps of Engineers (USACE) requested consultation with the USFWS under Section 7 of the ESA with respect to wood storks. The USACE submitted a request to the USFWS on February 6, 2007, to initiate formal consultation pursuant to Section 7 of the ESA, as amended (16 U.S. Code 1531 et seq.). The USFWS subsequently requested additional information necessary to initiate consultation that included: 1) a biological assessment (BA) of potential impacts on wood stork foraging areas, and 2) proposed compensation measures

for any impacts to wood stork foraging areas. In support of that request, a BA was prepared by GOAA and submitted to the USACE on May 18, 2009. The BA was subsequently shared with the USFWS. A copy of the BA prepared for the wood stork is provided in **Appendix T of the EA**. In the BA, it was initially concluded that the development of the East Airfield site "may affect" wood storks. The details of that assessment and basis for the conclusion are contained in the BA. Through coordination with the USACE and USFWS, GOAA identified suitable mitigation to both agencies for the Proposed Project's impacts to 48.35 acres of potentially suitable core foraging habitat for wood storks. On January 6, 2010 the USACE revised its determination regarding the wood stork from "may affect" to "may affect, not likely to adversely affect" based on GOAA's commitment to provide mitigation for the loss of wood stork core foraging habitat. On that same day the USFWS responded to the USACE concurring with the USACE's determination of "may affect, not likely to adversely affect." On December 31, 2015, in a letter to the FAA, the USFWS restated their determination that the Proposed Project "may affect, not likely to adversely affect" the wood stork provided that the mitigation proposed by GOAA is implemented. A copy of the USFWS's concurrence communication and letter for this species is provided in **Appendix N of the EA**.

American Alligator - This species is threatened only by similarity of appearance to the American crocodile; as such not all of the protections under the ESA apply. Prohibitions against take apply, however consultation under Section 7 of the ESA would not apply. Should it become necessary to relocate alligators to avoid a direct take, GOAA would conduct relocation in cooperation with the Florida Fish and Wildlife Conservation Commission (FWC) and in accordance with the FWC policies, rules, and procedures relative to alligators.

In addition to the two listed species that have been observed on the East Airfield site, the FAA informally consulted with the USFWS on the eastern indigo snake (low likelihood of occurring on the site) and the sand skink (unlikely to occur on the site) as a result of updated survey protocols. The FAA's effect determinations for these two species are provided below.

Eastern Indigo Snake - Based on a review of listed species databases and field surveys conducted in 2009 to support the preparation of permit applications for the SFWMD and USACE, it was determined that there was a low likelihood for the occurrence of eastern indigo snakes (Drymarchon corais) on the East Airfield site. Since that time, the USFWS updated the agency's survey protocol guidance for eastern indigo snakes. In May 2013, an intensive eastern indigo snake survey was conducted on the East Airfield site using survey protocols approved by the USFWS. The survey did not observe any specimens or signs of the eastern indigo snake. Based on the negative results of the survey and GOAA's agreement to utilize the USFWS's Standard Protection Measures of the Eastern Indigo Snake, the survey report recommended a "not likely to adversely affect" determination for the species. The survey report and a request for concurrence with the recommended effects determination were submitted to the USFWS on June 7, 2013. Based on the survey and its findings, the FAA determined that the Proposed Project "may affect, but [is] not likely adversely affect" the eastern indigo snake. A copy of the survey report is provided in Appendix T. The USFWS reviewed the survey report and concurred with the FAA's effect

determination for the eastern indigo snake. A copy of the USFWS's concurrence letter for this species is provided in **Appendix N of the EA**.

Sand Skink – A review for this species was initially conducted in 2005-2006 using the USFWS 2002 Sand and Bluetail Mole Skink Survey Protocol. Based on a review of existing habitat at the East Airfield site and the fact that the consultation area for the sand skink (Neoseps [=Plestiodon] reynoldsi) was located approximately 15 miles west of the East Airfield site, it was previously concluded that it was unlikely that the sand skink would occur at the East Airfield site.

A revised sand skink survey protocol, published by the USFWS in 2012, included an expanded consultation area for the sand skink and updated information regarding elevation and soil criteria describing potentially suitable skink habitat. The East Airfield site was included in the expanded consultation area. Using the updated survey protocol, a field investigation in 2013 examined areas of potential habitat at the East Airfield site to determine their suitability for sand skinks based on the areas current land use and vegetative composition. The field investigation did not observe any specimens or signs of the sand skink. A copy of the survey report is provided in **Appendix T of the EA**. Based on the results of the survey, it was concluded that the sand skink was unlikely to occupy the East Airfield site. Therefore, the FAA determined that the Proposed Project "may affect, but [is] not likely adversely affect" the sand skink. The USFWS reviewed the survey report and concurred with the FAA's effect determination for the sand skink. A copy of the USFWS's concurrence letter on this species is provided in **Appendix N of the EA**.

State Listed Wildlife

Of the 23 state-listed species, 14 have a low or unlikely potential to occur on site. Nine state listed species have been observed on site. Of these nine species, two species are also listed Federally and are discussed under the Federally-listed wildlife section above (wood stork and American alligator). The remaining seven state-listed species are discussed below.

Gopher Tortoise - GOAA holds a valid Incidental Take Permit (ORA-80) authorizing the take (destruction) of gopher tortoises, their eggs and their burrows within its development boundaries. The permit states that the criteria of Rule 39-27.002(4), F.A.C. have been satisfied; therefore, the taking as conditioned in the permit will not be detrimental to the survival potential of the species. This permit covers a portion of the East Airfield site.

However, gopher tortoise habitat exists in other areas on the East Airfield site that is not covered by this take permit. Prior to any construction in this habitat, GOAA will need to secure a gopher tortoise relocation permit in accordance with current FWC permitting guidelines.

Sandhill Crane - Sandhill cranes have nested in the East Airfield site in the past; therefore, prior to any proposed construction, GOAA will conduct a survey for active sandhill crane nests. Should any nests be located, GOAA would implement coordination with the FWC to determine the appropriate management plan to avoid adverse impacts to sandhill cranes or their nests.

State-listed Wading Birds - State-listed species of special concern include the limpkin, little blue heron, tricolored heron, white ibis, and snowy egret; these species are all protected under state law (Chapter 68A-27.005 F.A.C.). None of these species' nests have been previously documented in the East Airfield site, and activities on the site associated with development are not expected to result in the take of any listed wading birds, their parts, or their nests or eggs. Prior to construction, GOAA will conduct a survey for active nests of these listed wading birds. Should any active nests of listed species of wading birds be identified, GOAA would initiate coordination with the FWC to determine the appropriate management strategy.

Other Listed Species and Species Protected by the Migratory Bird Treaty Act (MBTA) - For all other listed species, and species protected under the MBTA, GOAA would ensure that the following BMPs are implemented:

- To the extent practicable, development activities on the East Airfield site will be undertaken outside the nesting season of listed wading bird species and Florida sandhill cranes that are nesting on the East Airfield site unless otherwise provided by law.
- Prior to undertaking development activities in the East Airfield site that could adversely affect listed protected species and species protected under the MBTA, GOAA will coordinate with USFWS Migratory Bird Office.

Based on the documentation provided in the EA, mitigation measures for protected species is only required for the wood stork. A discussion of these measures is contained in the Mitigation Section of this FONSI/ROD.

Section 4(f) Resources - The No-Action Alternative would not result in the physical or constructive use of any Section 4(f) resource. No development would occur on the East Airfield site under the No Action Alternative. As shown in **Figure 4.3-6 of the EA**, none of the surveyed Section 4(f) resources are located within MCO's 2008 DNL 65 noise contour.

The Proposed Project would not result in the physical use or constructive use of any Section 4(f) resource. No physical use would occur because all development would take place on the East Airfield site, where no Section 4(f) resources are located. As shown in **Figure 4.3-6 of the EA**, none of the surveyed Section 4(f) resources are located within MCO's 2008 DNL 65 noise contour. Based on the analysis conducted in the EA, the Proposed Project would not result in significant direct or indirect (e.g., physical disturbance, air emissions and aircraft noise) impacts to Section 4(f) resources.

Water Quality – No development would occur with the No-Action Alternative, therefore, no impacts to water quality would occur.

Section 4.3.15 of the EA provides a summary of the Federal and state regulatory framework that applies to the Proposed Project site. As stated in FAA Order 5050.4B Table 7.1, a significant impact to water quality would occur, "[w]hen an action would not meet water quality standards. Potential difficulty in obtaining a permit or authorization may indicate a significant impact".

The Proposed Project includes two projects which have the potential to adversely affect water quality; clearing and construction of a secondary fuel supply and distribution facility (30 acres) and clearing, excavation, de-mucking, back filling, and stabilizing approximately 207 acres of Waters of the U.S., which includes approximately 171 acres of Federal jurisdictional wetlands and approximately 36 acres of surfaces waters.

The fuel supply and distribution facility will increase the impervious surface on the East Airfield site (road construction and the tank farm) however, this increase in impervious surface is negligible (~2%) in the context of the 1,342 acre site. The type of pollutants expected to be generated with operation of the fuel supply and distribution facility may include petroleum organics, suspended solids, dissolved solids, and metals. Prior to the initiation of construction activities, GOAA will submit a Construction General Permit Notice of Intent (NOI) to the DEP. This NOI will include a Stormwater Pollution Prevention Plan (SWPPP) which includes: characterization of where and how pollutants may be mobilized; a site plan to manage stormwater; identification of appropriate erosion and sediment controls and stormwater best management practices; maintenance and inspection schedule; recordkeeping; and identification of stormwater discharge areas. Among the BMPs potentially included will be retention ponds, temporary sediment basins, entrance and exit controls, silt fencing, berms, stabilization measures, phased construction, oil and fuel containment, and spill prevention and clean up. The EA concludes that all runoff from construction can be contained on-site, with no discharge off site to waters of the state for the design storm events.

The clearing, excavation, de-mucking, back-filling, and stabilizing of Federal wetlands has the potential to increase runoff and generate associated pollutants. As stated above, prior to construction, GOAA will submit a Construction General Permit NOI to the DEP. The surface water management system necessary to capture and treat all stormwater runoff will be constructed prior to activities in the wetlands. The system will be designed to either prevent off site discharge to waters of the state or, if necessary, be designed in accordance with the engineering criteria of the state regulatory agency to ensure that discharges from the site do not cause violations of surface water quality criteria.

GOAA has received a conceptual ERP from the SFWMD, which constitutes water quality certification for the Proposed Project pursuant to Section 401 of the CWA. The SFWMD ERP demonstrates that the Proposed Project will comply with water quality standards. The SFWMD ERP issued on August 30, 2010 (48-00063-S-03) states the following:

> "Issuance of this Permit constitutes certification of compliance with state water quality standards where necessary pursuant to Section 401, Public Law 92-500, 33 USC Section 1341…"

GOAA will be required to submit a "Notice of Intent to Use Generic Permit for Stormwater Discharge from Large and Small Construction Activities" (Rule 62-621.300 (4), F.A.C.) to the DEP prior to land clearing activities on site. This DEP permit is issued under the NPDES and will require GOAA to submit a SWPPP.

GOAA's development of the fuel storage and distribution facility and any other regulated oil or oil-based storage areas will be subject to the Oil Pollution Act requirements and all applicable state, local, and Federal regulations. In accordance with DEP regulations, GOAA will ensure that a Spill Prevention Control and Countermeasure Plan (SPCC) is developed for all regulated facilities. Lease holders will be responsible for preparing SPCC plans as part of their lease agreements and coordinating these plans with GOAA Environmental Department.

As described above, and in more detail in the EA, the Proposed Project would not meet or exceed significant impact thresholds for water quality resources (**See Table 5.16-1 of the EA**).

Wetlands – As noted in **Section 4.3.16 of the EA**, impacts to wetlands on the East Airfield site are regulated by the USACE and the SFWMD. The FAA reviews a Proposed Project on an airport to determine if the action would result in a significant impact to wetlands. If the Proposed Project would affect wetlands and there is no practicable alternative, all reasonable means should be employed to minimize wetland impacts due to filling, run off, construction, sedimentation, land use or other reason. **Section 5.17 of the EA** provides an analysis of the wetland impacts associated with the No-Action and the Proposed Project Alternatives.

The EA analyzed the Proposed Project for wetland impacts in two sections: Federal level review for the USACE and state level review for the SFWMD.

Federal Level Review - The East Airfield site contains approximately 256.43 acres of USACE jurisdictional wetlands or Waters of the U.S. (defined under Section 404 of the CWA) (**See Figure 5.17-1 in the EA**). The Proposed Project would discharge dredged and fill material to 171.13 acres of USACE jurisdictional wetlands.

An USACE Individual Permit Application SAJ-2006-2640 (IP-JSC) was submitted by GOAA in November 2010 and an updated permit application reflecting GOAA's current Proposed Project was submitted on August 3, 2015 (these applications are on file with GOAA and USACE). The analysis for the revised 2015 permit application identified direct impacts to 171.13 acres of jurisdiction wetlands, resulting in a loss of 102.4 "functional wetland units".

State Level Review - The SFWMD has issued a conceptual ERP (SFWMD Conceptual ERP Permit Modification No. 48-00063-S-03) for the East Airfield site. The conceptual ERP identifies 319.25 acres of wetlands and other surface waters. Of these 319.25 acres, the conceptual ERP addresses the impacts to 247.77 acres of state-jurisdictional wetlands. The Proposed Project is anticipated to impact 162.19 acres of state jurisdictional wetlands and 34.37 acres of surface waters, totaling 196.56 acres (**See Figure 5.17-2 in the EA**). All of the impacts to state jurisdictional wetlands are included within the 247.77 acres of permitted impacts in the conceptual ERP. According to the analysis detailed in the conceptual ERP, the wetland impacts will result in a loss of 151.29 "functional wetland units".

Consideration of Alternatives to Avoid and Minimize Impacts - Four alternatives were examined based on their ability to achieve the purpose of and need for a reduction of existing wildlife hazard attractants on the East Airfield site. These included: No-Action Alternative; Wildlife Hazard

Attractant Reduction Alternative 1 (No impacts to Wetlands); Wildlife Hazard Attractant Reduction Alternative 2 (Partial Impacts to Wetlands) and Wildlife Hazard Attractant Reduction Alternative 3 (100% Wetland Impacts). **See Sections 3.4, 3.5 and 5.17.1.2 in the EA** for a detailed discussion of the alternatives considered. No practicable alternative for avoiding impacts to wetlands or surface waters was identified.

Proposed Project Impacts - In regard to the significance impact thresholds identified in FAA Order 1050.1E, the EA concluded the following with respect to the Proposed Project Alternative:

- The Proposed Project would remove 171 acres of wetlands on the East Airfield site. Approximately 85 acres of wetlands would be avoided. There would be no impacts to wetland functions associated with the quality or quantity of municipal water supplies, including sole source aquifers. The Proposed Project would eliminate the current wetland functions within the 171 acre area to be filled. The loss of wetland function with respect to floodwaters and storm runoff has been addressed by the Proposed Project's SFWMD permitted surface water management system. This system has been designed to ensure that the post-development discharge will not exceed the pre-development discharge and that adverse flooding will not occur off site. As noted in **Section 5.16.1.2 of the EA**, GOAA has received a conceptual ERP from the SFWMD for stormwater management system improvements, which constitutes water quality certification for the Proposed Project pursuant to Section 401 of the CWA. The SFWMD ERP demonstrates that the Proposed Project will comply with water quality standards. Mitigation measures would also compensate for the loss of beneficial wetland functions related to water quantity and quality.
- The Proposed Project would be designed to maintain the hydrology needed to sustain the functions and values of the 85-acre wetland that would be avoided and wetlands to which it is connected. As mentioned above, hydrology was addressed by the Proposed Project's proposed surface water management system, for which the SFWMD has issued an ERP, which constitutes water quality certification for the Proposed Project.
- Through the proposed (and permitted) stormwater management system, the Proposed Project would not substantially reduce the ability to retain floodwaters or storm-associated runoff on site. The system has been designed to ensure that the post-development discharge will not exceed the pre-development discharge and that adverse flooding will not occur off site. Therefore, threats to public health, safety, and welfare are not expected.
- The Proposed Project will eliminate the current wetland functions within the 171 acre area to be filled. The Proposed Project would not adversely affect the maintenance of natural systems that support wildlife and fish habitat or economically-important timber, food, or fiber resources in surrounding wetlands. Proposed mitigation measures would enhance and preserve natural habitat systems that support wildlife and fish habitat off-site.
- The Proposed Project would not promote development of secondary activities or services that would impact Waters of the U.S. or wetlands. Based on the 2010 USDA Wildlife Hazard Assessment and the 2015 Wildlife Hazard Site Visit, the 2015 updated WHMP recommended habitat removal for reducing priority hazardous wildlife attractants at the East Airfield site. No other wetland impacts on the East Airfield site are identified or proposed at this time. However, if future site conditions or wildlife activity changes in the

avoided 85-acre wetland and the changes increase the risk of a wildlife-aircraft strike, the WHMP may be revised to recommend habitat removal in this wetland area.

- The Proposed Project would be consistent with applicable state wetland strategies. Pursuant to Federal and state wetlands regulations, impacts to wetlands have been avoided to the greatest extent practicable and for those impacts which could not be avoided, they were minimized.

The No-Action Alternative would not impact wetlands. The Proposed Project would impact 171 acres of jurisdictional wetlands. However, the SFWMD issued an ERP for the Proposed Project in 2010; the M-WRAP and UMAM assessments for the proposed wetland impacts were reviewed and accepted by the SFWMD and USACE through the wetland permitting process; and the mitigation proposed (**See Section 9 of this FONSI/ROD**) would offset wetland impacts. This indicates that the Proposed Project, with required mitigation, would not exceed FAA's thresholds indicating a significant impact (**See Table 5.17- 1 in the EA**).

Cumulative Impacts – The analysis of cumulative impacts in the EA considered, to the extent reasonable and practical, the potential impacts of the No-Action Alternative and the Proposed Project and other development actions, both on and off the airport, that are related in terms of time or proximity. Although the future development of the East Airfield site is not reasonably foreseeable at this time, the EA did provide a qualitative analysis of impacts of this area and placed them in context with other development occurring off-airport in the vicinity of the EA study area.

No airport improvements would be made at MCO under the No-Action Alternative besides those that are needed for security, safety, maintenance, or projects that have already been environmentally approved and programmed separately. Therefore the No-Action Alternative would not be anticipated to have indirect impacts or to contribute to cumulative impacts in the region within which the airport is located.

The unavoidable impacts of the Proposed Project, when added to the impacts of past, present, and reasonably foreseeable future actions undertaken or proposed by GOAA is evaluated in **Section 5.18 of the EA**. **Table 5.18-1 of the EA** contains an analysis of potential cumulative impacts per environmental category by cumulative projects. Based upon this analysis, it is reasonable to conclude that the Proposed Project, together with past, present, and reasonably foreseeable projects in the study area would not result in significant cumulative impacts.

9.0 CONSISTENCY WITH APPROVED PLANS OR LAWS

The Proposed Project is consistent with plans, goals, policies, and controls that have been adopted for the area in which MCO is located. The Proposed Project is depicted on MCO's most current conditionally Airport Layout Plan (ALP) and included in the City of Orlando's Southeast Orlando Sector Plan. The Proposed Project would not require land use or zoning changes and thus would be consistent with all local land use and comprehensive plans. The project has been subject to review by regulatory agencies in association with the permitting process that is being

undertaken by GOAA, who has coordinated the Proposed Project with all of the local municipal jurisdictions. There has been no indication that any aspect of the Proposed Project is inconsistent with Federal, state, or local laws or administrative determinations related to the environment. There is every indication that the required USACE, SFWMD and FDEP permits will be obtained prior to construction of the Proposed Project. A land use certification letter from the Airport Sponsor is contained in **Appendix R of the EA**.

10.0 MITIGATION MEASURES

The Proposed Project will result in unavoidable impacts to the three environmental resource categories discussed below. As discussed in detail in **Sections 5.7, 5.8, 5.17 and Appendices "X", "W" and "N" of the EA**, GOAA has taken a very proactive approach towards providing mitigation for the Proposed Projects impacts through early coordination with Federal and state resource agencies, application for permits from both the USACE and the SFWMD, and implementing agency approved mitigation measures prior to incurring any impacts on the East Airfield site.

With the implementation of the below discussed mitigation measures, impacts for each of the environmental categories listed will be less than significant. Implementation of the mitigation measures detailed below is required and constitutes a condition of approval for this FONSI/ROD. **See Section 12 of this FONSI/ROD**.

10.1 Fish, Wildlife and Plants Mitigation

Wood Stork - The Proposed Project will result in the loss of 48.35 acres of potentially suitable core foraging habitat for wood storks. GOAA has committed, through the USACE and SFWMD permitting process, to offset these impacts through enhancement and preservation of wood stork foraging habitat at the Disney Wilderness Preserve (DWP). Mitigation for loss of wood stork foraging habitat will be provided through compensatory wetland mitigation required by USACE permit number SAJ-2006-2640 (IP-JSC), initially submitted by GOAA in 2006 and most recently updated in August 2015. The foraging habitat to be enhanced and preserved are connected to other larger tracts of preserved lands, which is consistent with the FWS's wood stork goal to acquire, enhance, preserve, and recover natural hydropatterns within foraging habitat of the wood stork (USFWS 1997, 2007b). Coordination with the FWS and USACE conducted for both the permitting and NEPA processes associated with the Proposed Project have resulted in the FWS issuing a determination that, with the implementation of the above described mitigation, the Proposed Project "may affect, [is] not likely to adversely affect" the wood stork. A copy of the USFWS's concurrence letter for this species is provided in **Appendix N of the EA.**

Eastern Indigo Snake - Coordination with the FWS and USACE conducted for both the permitting and NEPA processes associated with the Proposed Project have resulted in the FWS issuing a determination that the Proposed Project "may affect, [is] not likely to adversely affect" the Eastern Indigo Snake provided that GOAA implements the FWS's *Standard Protection Measures of the*

Eastern Indigo Snake during grading and construction activities. A copy of the FWS's concurrence letter for this species is provided in **Appendix N of the EA**.

Gopher Tortoise - Coordination with the FWS and USACE conducted for both the permitting and NEPA processes associated with the Proposed Project have resulted in the FWS issuing a determination that the Proposed Project "may affect, [is] not likely to adversely affect" the Gopher Tortoise provided that GOAA conducts updated surveys before construction activities begin and they obtain all necessary permits from the FWS to "take" gopher tortoise burrows. GOAA will also relocate and mitigate these impacts in accordance with state regulations. A copy of the FWS's concurrence letter for this species is provided in **Appendix N of the EA**.

10.2 Floodplains Mitigation

GOAA received a conceptual ERP from the SFWMD on August 30, 2011 for impacts to state jurisdictional wetlands on the East Airfield site. The SFWMD is responsible for managing and protecting the water resources of south Florida, including water quality, flood control, natural systems, and water supply. The conceptual ERP states "no adverse impacts to the floodplain are expected as a result of the proposed project." Permit conditions required that the East Airfield's conceptual surface water management system be designed and constructed to meet the full extent of the District's rules governing water quality and quantity and avoid potential downstream flooding events.

In addition, the SFWMD will require GOAA to obtain SFWMD ERP construction permits prior to any encroachment activities associated with the East Airfield site. The SFWMD conceptual ERP requires a surface water management plan ensuring no net losses to floodplain storage and that pre- and post-off-site discharges are equivalent. This permit ensures the storm water management system adequately compensates for fill material placed within the existing floodplain (SFWMD Permit Modification No. 48-00063-S-03, issued August 30, 2010).

10.3 Wetlands Mitigation

In order to meet the purpose and need of the Proposed Project, impacts to Waters of the U.S. are unavoidable. The development of the Proposed Project will impact 207 acres of Waters of the U.S., which includes approximately 171 acres of Federal jurisdictional wetlands and approximately 36 acres of surface waters. The impact will result from grading and filling activities.

USACE Permit -

Mitigation for the 171 acres of Federal-jurisdictional wetland impacts has already been completed by GOAA at the BRENSOLA site (**See Section 5.17.3.2 of the EA**). The BRENSOLA tracts are two of eight tracts which GOAA has purchased and provided funds to conduct enhancement, restoration, and preservation activities. The tracts are on or adjacent to the Disney Wilderness Preserve, an 11,500 acre regionally significant mitigation project which includes the 8,480 acre Walker Ranch mitigation site. The mitigation site is located within the upper Kissimmee watershed, which is the same watershed as the East Airfield site. The entire Disney Wilderness Preserve is

managed and maintained by the Florida Chapter of The Nature Conservancy with funds provided by GOAA and Walt Disney World Companies.

As stated, all mitigation work is complete on the BRENSOLA tracts, and the USACE has issued a letter documenting that all permit criteria have been met and that the site is released from further monitoring and reporting (**See Appendix X of the EA**). A copy of the current GOAA/USACE mitigation ledger showing the available mitigation credits is also provided in **Appendix X of the EA**. Therefore, with mitigation, the Proposed Project will not exceed any of the significance thresholds for Federal jurisdictional wetland values and functions (**See Table 5.17-1of the EA**).

SFWMD ERP Permit - In 2006, GOAA submitted an application to the South Florida Water Management District (SFWMD) for a Conceptual Environmental Resource Permit (ERP). The SFWMD issued a Conceptual ERP for the development of the East Airfield Site in August 2010. The SFWMD permit constitutes conceptual approval for the surface water management system to serve future development on the East Airfield site and to serve as the Section 401 water quality certification for the project. The Conceptual ERP approves direct impacts to 247.77 acres of state-jurisdictional wetlands. GOAA submitted a mitigation plan to the SFWMD that identified the mitigation necessary to fully offset the wetland functional loss associated with full development of the East Airfield. Mitigation credits were purchased from three wetland mitigation banks located in

Osceola County (south of MCO); Southport Mitigation Bank, Quick Draw Mitigation Bank, and Bullfrog Bay Mitigation Bank. In addition to these credits, GOAA purchased a 29-acre off-site parcel referred to as the “Hampton Bay parcel” in Orange County, east of MCO as part of the SFWMD permitted wetland mitigation plan. GOAA has received written confirmation from the SFWMD that all mitigation required under the conceptual permit was completed on April 26, 2011.

Therefore, with mitigation, the Proposed Project will not exceed any of the significance thresholds for state jurisdictional wetland values and functions (**See Table 5.17-1of the EA**). The airport sponsor (GOAA) is required to implement all mitigation identified above in this FONSI/ROD as a condition of approval of this FONSI/ROD.

11.0 IDENTIFYING THE PREFERRED AND SELECTED ALTERNATIVE

In those cases where the FAA prepares a FONSI/ROD, the content of the FONSI/ROD must satisfy the stand-alone FONSI content requirements, and generally will be consistent with the format and content of an EIS ROD.[6] In keeping with this guidance regarding the content of an FAA FONSI/ROD, this section of this FONSI/ROD identifies the environmentally preferred alternative and the alternative being selected by the FAA for implementation.

[6] Paragraph 408a. of FAA Order 1050.1e states, “The FAA FONSI/ROD has the same general content and format as one that would be prepared following an EIS”, and paragraph 201b. states that the FONSI/ROD, “should incorporate the FONSI, along with other required findings.”

11.1 Environmentally Preferred Alternative

The environmentally preferred alternative is the "alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources" (CEQ Memorandum, Forty Most Asked Questions Concerning NEPA Regulations, Question Number 6a).

Based upon the detailed analysis of the No-Action Alternative in the FEA, the No-Action Alternative would have minimal environmental impact when compared to the impacts associated with the Proposed Project. As demonstrated in the FEA, when examining all resource categories and based upon the comparative impacts of the alternatives examined in detail, the No-Action Alternative is the Environmentally Preferred Alternative.

11.2 Alternative Selected for Implementation

The FEA examined two alternatives for each element of the purpose and need – the Proposed Project as identified by the Airport Sponsor and the no action alternative. The FEA describes in detail the purpose and need for the Proposed Project as it relates to each element of the project. The FAA has determined that the purpose and need as set forth in the EA is adequately documented and justified, and therefore selects the Proposed Project for implementation. The Proposed Project is the only reasonable alternative examined in the EA and capable of satisfying the purpose and need identified for the project.

12.0 AGENCY FINDINGS

The FAA has determined the Proposed Project should be approved, and therefore has identified it as the Selected Alternative. The Proposed Project, as previously described, consists of three distinct actions which respond to three distinct purpose and need elements. Due to the nature of the Proposed Project and the Federal actions necessary to accomplish the Proposed Project, only two elements of the project are ready for implementation and unconditional ALP approval at this time (Wildlife Hazard Attractant Removal and Fuel Distribution Facility). As the Agency's Selected Alternative, the Proposed Project is subject to Agency review and specific findings required by law. The FAA has based its findings in this Mitigated FONSI/ROD regarding the Selected Alternative on information and analyses contained in the FEA and other portions of the EA record.

In addition to the FAA's unconditional ALP approval of two elements of the Selected Alternative, the conditional approval on the ALP is appropriate for one element of the Proposed Project (Site Selection of the East Airfield Site for future development of high and medium intensity aviation and aviation support facilities, medium intensity land uses, and related infrastructure). Because this element of the Selected Alternative will be reflected on the ALP conditionally, it does not constitute a final decision or grant construction approval. Implementation of any aviation-related

development on the East Airfield Site will require future FAA project-level approval after appropriate environmental documentation has been prepared and circulated.

As previously stated, any future aviation-related development project on the East Airfield site will need to be analyzed under NEPA prior to approval. In satisfying this requirement for project-specific NEPA review, future analyses may tier to the contents of the 2016 FEA. However, the FAA has a responsibility under NEPA to ensure that the environmental documentation contained in the 2016 FEA remains valid at the time such action becomes ripe for review. Validation of the 2016 FEA's contents is necessary prior to tiering of a future NEPA analysis to ensure adequate and accurate environmental documentation. This is necessary not only for purposes of satisfying NEPA and public disclosure requirements for any future development proposal, but also to permit well-reasoned and fully justified findings by the lead Federal agency as required by law (when such findings become necessary). Therefore, because it would be inappropriate to issue findings on a project that is not ripe for decision, the FAA will issue the following findings required by law only with respect to the two elements of the Selected Alternative for which the Airport Sponsor is seeking unconditional ALP approval. For those resource categories for which no formal finding has been made below, no formal finding requirement exists, or no impact in that resource category will occur that implicates the need to render a formal finding.

The FAA hereby makes the following determinations and approvals for the relevant portions of the Selected Alternative, based on the appropriate information and data contained in the FEA and the Administrative Record, and having considered: 1) the policies set forth at 49 U.S.C. 40104 and 47101; 2) the ability of the alternatives to meet the purpose and need; and 3) the Administrative Record which concerns the proposed development project.

These determinations and approvals do not signify an FAA commitment to provide a specific level of financial support for these projects. An actual funding commitment can only be made in the future, pending GOAA's grant application and FAA consideration of the separate Federal funding criteria prescribed by 49 U.S.C. 47115(d) and 49 U.S.C. 40117.

A. THE PROJECT IS CONSISTENT WITH EXISTING PLANS OF PUBLIC AGENCIES FOR THE DEVELOPMENT OF THE AREA SURROUNDING THE AIRPORT [49 U.S.C. 47106(a)(1)] AND EXECUTIVE ORDER 12372.

The determination prescribed by this statutory provision is a precondition to Agency approval of airport project funding applications. It has been the long-standing policy of the FAA to rely heavily upon actions of local planning organizations to satisfy the project consistency requirements of 49 U.S.C. 47106(a)(1) [see e.g., SOC v. Dole, 787 F.2d 186, 199 (7th Cir., 1986)]. Furthermore, both the legislative history and consistent agency interpretations of this statutory provision make it clear that reasonable, rather than absolute, consistency with these plans is all that is required.

As discussed in **Section 2.4.2 and 5.4 of the FEA**, the Proposed Project is consistent with the City of Orlando Southeast Orlando Sector Plan. A copy of the Airport Sponsor's land use certification is contained in **Appendix R of the EA**.

The FAA accordingly finds that the Proposed Project is reasonably consistent with the existing plans of public agencies authorized by the state in the area in which the airport is located to plan for the development of the area surrounding the airport, and will contribute to the purposes of the 49 U.S.C. Section 47101, et seq.

B. THE INTERESTS OF THE COMMUNITIES IN OR NEAR WHERE THE PROJECT MAY BE LOCATED HAVE BEEN GIVEN FAIR CONSIDERATION [49 U.S.C. 47106(b)(2)].

The determination prescribed by this statutory provision is a precondition to Agency approval of airport development project funding applications. The local planning process and the environmental process for the East Airfield at MCO began with GOAA purchase of the property (1986), through submittal of permit applications to the USACE (Individual Permit Application No. SAJ-2006-2640 (IP-JSC)) (submitted November, 2010 and revised October 2015) and SFWMD (SFWMD Conceptual ERP Permit Modification No. 48-00063-S-03 issued August, 2010) and it has extended to this point in the Agency's decision making process.

A complete description of the public involvement efforts for the EA process is contained in **Chapter 6.0 of the FEA** and **Section 6.0 of this Mitigated FONSI/ROD**. A list to whom copies of the DEA and FEA were sent is provided in **Chapter 6.0 of the FEA**.

The public, local elected officials, and local governments have had ample opportunity to express their thoughts on the project to GOAA and the FAA. The FAA, in the preparation of this document, carefully considered, catalogued, and responded to substantive comments received from the public, as well as from Federal, state, and local agencies and other interested parties (**See Appendix Z of the FEA**). In some cases, the FAA responded by revising information in the DEA that now appears in final form as the FEA. In all cases, the comments provided by local governmental agencies, local elected officials, as well as the general public were used to evaluate the thoroughness and accuracy of the DEA and to revise it as appropriate for inclusion in the FEA.

The FAA's outreach and consideration of local community views, as well as those of Federal, state, and local regulatory agencies and officials, Native American Nations / Tribes, public organizations, and public individuals are documented in **Chapter 6, Appendix Y and Appendix Z of the FEA** and **Section 6 of this Mitigated FONSI/ROD**. Thus, the FAA has determined that throughout the EA process, beginning at its earliest planning stages, fair consideration was given to the interest of communities in or near the Selected Alternative's location.

C. APPROPRIATE ACTION, INCLUDING THE ADOPTION OF ZONING LAWS, HAS BEEN OR WILL BE TAKEN TO THE EXTENT REASONABLE TO RESTRICT THE USE OF LAND NEXT TO OR NEAR THE AIRPORT TO USES THAT ARE COMPATIBLE WITH NORMAL AIRPORT OPERATIONS [49 U.S.C. 47107(a)(10)].

The Airport Sponsor's assurance prescribed by this statutory provision is a precondition of the approval of airport development project funding applications. The Airport Sponsor has provided

assurance that it is, and will continue to be, in compliance with 49 U.S.C. 47107 (a)(10). This assurance is related to existing and planned land use near MCO and involves the adoption of zoning regulations and other measures, to the extent reasonable, to restrict the land use adjacent to, or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and take-off of aircraft. A copy of the Airport Sponsor's Land Use Assurance Letter is provided in Appendix R of the FEA.

D. THE PROJECT INCLUDES ALL PRACTICABLE MEASURES TO MINIMIZE HARM TO ENDANGERED SPECIES AS MUCH AS SUCH HARM MAY RESULT FROM IMPLEMENTATION OF THE PROJECT (ENDANGERED SPECIES ACT OF 1974, U.S.C. SECTION 1531, AS AMENDED).

To comply with Section 7(c) of the Endangered Species Act of 1974 (ESA) as amended, agencies overseeing Federally-funded projects are required to obtain from the USFWS and NMFS information concerning any species, Federally-listed or proposed to be listed, as may be present in the area of concern. During preparation of the EA, the FAA reviewed information concerning the possible presence of Federally-listed threatened or endangered species and coordinated with the USFWS and NMFS requesting comments and information on Federally-listed species that may be affected by the Airport Sponsor's Proposed Project and its alternatives.

Although the FAA found that no Federally-listed plant species, or their critical habitat, were documented or were anticipated to occur within the EA Study Area, two Federally-listed animal species were assigned a Medium or High probability of occurrence within the EA Study Area. These two Federally-listed species are the wood stork (Mycteria americana) and the American alligator (Alligator mississippiensis). In addition, two Federally-listed animal species were assigned a Low probability of occurrence within the EA Study Area. These two Federally-listed species are the Eastern Indigo Snake (Drymarchon corais) and the Sand Skink (Neoseps [=Plestiodon] reynoldsi). The FAA determined that with the implementation of mitigation measures, the impact on natural habitats and jurisdictional Waters of the U.S. resulting from the implementation of the Selected Alternative would not result in a significant impact to these species and their foraging habitat. The USFWS reviewed the Biological Assessment (BA) and other associated documentation provided, in which the FAA determined that with mitigation, the Selected Alternative "may affect – not likely to adversely affect" the four Federally-listed species discussed above. The USFWS concurred with the FAA's determination and as a result, they determined that formal consultation under Section 7 of the ESA and preparation of a Biological Opinion (BO) were not necessary. However, because the Selected Alternative would result in adverse impacts to critical habitats, threatened or endangered species, and Waters of the U.S., the FAA has determined that mitigation is required or warranted for the Agency's consideration and unconditional ALP approval of appropriate portions of the Selected Alternative.

E. FOR THIS PROJECT, INVOLVING DIRECT EFFECTS TO WETLANDS, THERE IS NO PRACTICABLE ALTERNATIVE TO THE PROJECT AND THE PROJECT INCLUDES ALL PRACTICABLE MEASURES TO MINIMIZE HARM TO WETLANDS THAT MAY OCCUR (EXECUTIVE ORDER 11990, AS AMENDED AND DOT Order 5660.1A).

Practicability of Alternatives that Avoid Wetland Impact

In order to meet the purpose and need of the Proposed Project, impacts to Waters of the U.S. are unavoidable. The development of the Proposed Project will impact 207 acres of Waters of the U.S., which includes approximately 171 acres of Federal jurisdictional wetlands and approximately 36 acres of surface waters. The impact will result from grading and filling activities_associated with the management of habitat that is attractive to wildlife and is considered hazardous to aviation. FAA regulations found at 14 C.F.R. Part 139 provide the rules governing the certification and operation of certain airports in the United States, including airports receiving scheduled passenger service, such as MCO. Among the requirements contained in the regulations is the requirement that airports holding a Part 139 Certificate take immediate action to alleviate wildlife hazards whenever they are detected. See 14 C.F.R. §139.337(a). The regulations call for a Wildlife Hazard Assessment (WHA) whenever wildlife of a size, or in numbers, capable of causing: 1. multiple wildlife strikes, 2. substantial damage to an air carrier aircraft from striking wildlife, or 3. engine ingestion of wildlife by an air carrier aircraft, are observed to have access to any airport flight pattern or aircraft movement area. See 14 C.F.R. §139.337(b)(4). Such conditions were found at MCO and a WHA was prepared for the airport. The WHA demonstrated the presence of habitat at the airport attractive to hazardous wildlife and meeting the criteria described in 14 C.F.R. §139.337(b)(4). In addition to the need for a WHA, the regulations also detail the circumstances under which a Wildlife Hazard Management Plan (WHMP) should be prepared. See 14 C.F.R. §139.337(d). MCO meets these criteria and a WHMP was prepared and is in place at the airport. The WHMP is incorporated in the airport's Airport Certification Manual, and implementation of the WHMP is required under 14 C.F.R. §139.337(e). The Proposed Project approved in this FONSI/ROD implements measures in the updated WHMP, and satisfies the regulations described above.

Furthermore, other wildlife and habitat management options (active management) were considered to address the identified wildlife hazard attractants in lieu of wetland removal. However, several issues exist that reduce the effectiveness of such methods. Among the concerns with active management options as compared to wetland removal:

- The wetland areas at the east Airfield site rages from approximately 100 feet wide to more than 1,300 feet wide.
- Access roads would allow GOAA personnel to drive to the edge of a wetland area, but GOAA personnel would then proceed on foot to implement wildlife management measures. However, GOAA personnel and other wildlife professionals familiar with the East Airfield site state that access into the wetland areas to control wildlife would still be limited due to size of the wetlands, boggy soils, and vegetation density. The ability to effectively carry out an alternative relying on active wildlife management techniques would be limited.

- Some measures could be implemented from the periphery of some wetland areas (e.g., noise to disperse birds), but the inability of GOAA personnel to move around quickly within the habitat area would, in most cases, reduce the effectiveness of management measures. For example, techniques used to disperse wildlife (e.g., pyrotechnics or other auditory deterrence methods) would, for the most part, be ineffective from the edge of a large wetland as the harassed wildlife would simply relocate to other areas within the wetland.

As such, given the existing wildlife hazard attractants documented at the airport, the regulatory mandate to address such hazards, and the inability to effectively manage wildlife attractants on the East Airfield site using active only management techniques, the selected alternative was the only alternative capable of meeting the purpose and need for this aspect of the Proposed Project.

Minimization of Impact through Mitigation

USACE Permit - In 2006, GOAA submitted an Individual Permit Application No. SAJ-2006-2640 (IP-JSC) to the USACE to address impacts to Waters of the U.S. associated with the development of the East Airfield site. The original permit application identified 256.88 acres of direct impact to federal-jurisdictional wetlands. During the review of this application, the USACE requested that GOAA discuss the need for FAA NEPA analysis for the Proposed Project. At that time (2007-2008), GOAA engaged the FAA to initiate the NEPA process for the East Airfield site.

As a result of ongoing agency and public coordination, the USACE permit application was revised and information was resubmitted to the USACE in November 2010. Since that time, the USACE permit application has been revised again to reflect the East Airfield site described within the EA and addresses 171.13 acres of Federal-jurisdictional wetlands impacts. The August 2015 revisions to the USACE permit application showed an 85.75 acre reduction in direct impacts to Federal-jurisdictional wetlands. The revised USACE permit application is under review by the USACE.

Mitigation for the 171 acres of Federal-jurisdictional wetland impacts has already been completed by GOAA at the BRENSOLA site (**See Section 5.17.3.2 of the EA**). The BRENSOLA tracts are two of eight tracts which GOAA has purchased and provided funds to conduct enhancement, restoration, and preservation activities. The tracts are on or adjacent to the Disney Wilderness Preserve, an 11,500 acre regionally significant mitigation project which includes the 8,480 acre Walker Ranch mitigation site. The mitigation site is located within the upper Kissimmee watershed, which is the same watershed as the East Airfield site. The entire Disney Wilderness Preserve is managed and maintained by the Florida Chapter of The Nature Conservancy with funds provided by GOAA and Walt Disney World Companies.

As stated, all mitigation work is complete on the BRENSOLA tracts, and the USACE has issued a letter documenting that all permit criteria have been met and that the site is released from further monitoring and reporting (**See Appendix X of the EA**). A copy of the current

GOAA/USACE mitigation ledger showing the available mitigation credits is also provided in **Appendix X of the EA**. Therefore, with mitigation, the Proposed Project will not exceed any of the significance thresholds for Federal jurisdictional wetland values and functions (**See Table 5.17-1of the EA**).

SFWMD ERP Permit - In 2006, GOAA submitted an application to the South Florida Water Management District (SFWMD) for a Conceptual Environmental Resource Permit (ERP). The SFWMD issued a Conceptual ERP for the development of the East Airfield Site in August 2010. The SFWMD permit constitutes conceptual approval for the surface water management system to serve future development on the East Airfield site and to serve as the Section 401 water quality certification for the project. The Conceptual ERP approves direct impacts to 247.77 acres of state-jurisdictional wetlands. GOAA submitted a mitigation plan to the SFWMD that identified the mitigation necessary to fully offset the wetland functional loss associated with full development of the East Airfield. Mitigation credits were purchased from three wetland mitigation banks located in Osceola County (south of MCO); Southport Mitigation Bank, Quick Draw Mitigation Bank, and Bullfrog Bay Mitigation Bank. In addition to these credits, GOAA purchased a 29-acre off-site parcel referred to as the "Hampton Bay parcel" in Orange County, east of MCO as part of the SFWMD permitted wetland mitigation plan. GOAA has received written confirmation from the SFWMD that all mitigation required under the conceptual permit was completed on April 26, 2011.

Conclusion regarding practicable alternatives and minimization of harm

In light of the avoidance of 85.75 acres of wetlands in the project area, the extensive mitigation of wetland impacts described above, and the compelling need to address identified wildlife attractants at the airport, the FAA finds that the there is no practicable alternative to the Proposed Project and that the project incorporates all practicable measures to minimize harm to the affected wetlands. **See Section 5.17. of the FEA**.

F. FLOODPLAIN ENCROACHMENT (EXECUTIVE ORDER 11988 (AS AMENDED) AND DOT ORDER 5650.2, FLOODPLAIN MANAGEMENT AND PROTECTION).

Executive Order 11988 (Floodplain Management)(as amended), requires executive departments and agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. DOT Order 5650.2, requires a finding regarding the availability of practicable alternatives and reduction of impacts to the floodplain where a significant floodplain encroachment occurs as defined in the Order.

GOAA received a conceptual ERP from the SFWMD on August 30, 2010 for impacts to state jurisdictional wetlands on the East Airfield site. The SFWMD is responsible for managing and protecting the water resources of south Florida, including water quality, flood control, natural systems, and water supply. While encroachment into the floodplain will occur as a result of implementation of the project, the conceptual ERP states "*no adverse impacts to the floodplain*

are expected as a result of the proposed project." Therefore, the project will not create a significant floodplain encroachment as defined in DOT Order 5650.2. However, while the findings requirement outlined in DOT Order 5650.2 do not apply because there is no significant floodplain encroachment, EO 11988 requires agencies to avoid impacts to floodplains where possible and to implement other practicable alternatives that avoid floodplain impacts where such alternatives are available. As described more fully in **Section 11.E of this FONSI/ROD**, and as described in **Sections 4.3.6 and 5.7 of the FEA**, extensive evaluation of wildlife hazard attractants on the East Airfield site has been conducted, and available control measures have been examined. Based on the wildlife hazard assessment, annual wildlife observation and strike data, and the WHMP, measures that completely avoid impacts to the floodplain in question are not considered effective at MCO to address habitat areas attractive to hazardous wildlife. The WHA, annual wildlife observation and strike data, and the WHMP all document the conclusion that for a large portion of the East Airfield site, the only fully reliable method to address wildlife concerns is to remove the habitat that such wildlife prefer. **See Section 5.7 of the FEA**. The FEA documents the reasons why "active management" options that avoid floodplain impacts are not sufficiently reliable and effective to address the identified risks posed by wildlife living in or visiting the East Airfield area. In addition, **Section 11.E of this FONSI/ROD** explains the regulatory requirements of 14 C.F.R. Part 139 that require airports such as MCO to evaluate and address wildlife hazard attractants located on airports.

SFWMD permit conditions require that the East Airfield's conceptual surface water management system be designed and constructed to meet the full extent of the District's rules governing water quality and quantity and avoid potential downstream flooding events. In addition, the SFWMD will require GOAA to obtain SFWMD ERP construction permits prior to any encroachment activities within the East Airfield site. The SFWMD conceptual ERP requires a surface water management plan ensuring no net losses to floodplain storage and that pre- and post-off-site discharges are equivalent. This permit ensures the storm water management system adequately compensates for fill material placed within the existing floodplain (SFWMD Permit Modification No. 48-00063-S-03, issued August 30, 2010). For more information, see **Section 5.8 of the FEA**.

Section 11.E of this FONSI/ROD describes the reason avoidance of wetland impacts on the East Airfield is not practicable. The wetland areas on the East Airfield also comprise the area associated with floodplain impacts. For the same reasons described above in **Section 11.E of this FONSI/ROD** and based on data and analysis presented in **Section 5.8 of the FEA**, floodplains impacts associated with the Proposed Project are unavoidable and no other practicable alternative that avoids floodplain impacts is available. Furthermore, based on the mitigation required for the Proposed Project by the U.S.A.C.E. and SFWMD, the avoidance of approximately 85.75 acres of impacts in the East Airfield area, and SFWMD's conclusion that "*no adverse impacts to the floodplain are expected as a result of the proposed project,*" the FAA finds that the Proposed Project avoids, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains in the East Airfield area.

G. THE PROJECT COMPLIES WITH THE ENFORCEABLE POLICIES OF THE STATE OF FLORIDA'S APPROVED COASTAL MANAGEMENT PROGRAM AND IS CONSISTENT WITH THE FLORIDA COASTAL ZONE MANAGEMENT PROGRAM.

The Coastal Zone Management Act places obligations on both the FAA and the Airport Sponsor to ensure actions proposed within or affecting the coastal zone are consistent with the enforceable policies of the state's approved coastal zone management program (CZMP). For FAA approvals of airport sponsor-proposed projects, if the proposed project is specifically listed within an existing CZMP, the FAA must ensure the requirements of 15 CFR, Subpart D, Consistency for Activities Requiring a Federal License or Permit, are satisfied. For unlisted activities, like the Selected Alternative, compliance with this subpart is also required where the responsible state agency specifically indicates to the Airport Sponsor or the FAA that approval for a proposed project would affect coastal zone resources and that it intends to review the approval. For direct Federal actions in a coastal zone, such as installation of navigational equipment and aids, the Federal activities must be consistent with 15 CFR, Subpart C, Consistency for Federal Actions. This requires preparation of a Consistency Determination that examines how the FAA's activity will be consistent to the maximum extent practicable with the enforceable policies of the CZMP, the Florida Coastal Management Program (FCMP), and the responsible state agency's agreement with the FAA's conclusion.

The Selected Alternative does not include any direct Federal actions, such as installation or relocation of navigational aids. Therefore, the FAA's unconditional ALP approval of the relevant portions of the Selected Alterative implicates only 15 CFR, Subpart D, Consistency for Activities Requiring a Federal License or Permit, which requires a certification from the Airport Sponsor regarding consistency of its actions with the CZMP, FCMP, and the state regulatory agency's concurrence. Specifically, the Airport Sponsor must certify that, "The proposed activity complies with the enforceable policies of Florida's approved management program and will be conducted in a manner consistent with such program." This certification from the Airport Sponsor was included in the ERP application to the State. The state issued a Conceptual permit approval in August, 2010, indicating that the Proposed Project is consistent with the FCMP, and the requirements of Section 373.428, Florida Statutes has been fulfilled.

The state's continued concurrence will be based on the Selected Alternative's compliance with FCMP authorities, including Federal and state monitoring of the activity to ensure its continued conformance, and the adequate resolution of any new potential issues identified during subsequent regulatory reviews.

H. THE FAA HAS GIVEN THIS PROPOSAL THE INDEPENDENT AND OBJECTIVE EVALUATION REQUIRED BY THE COUNCIL ON ENVIRONMENTAL QUALITY (40 CFR SECTION 1506.5).

Since the beginning of the EA process, the FAA has given the Airport Sponsor's proposed project an independent and objective evaluation as required by CEQ. As documented in the FEA, the FAA engaged in an extensive process to evaluate the Airport Sponsor's Proposed Project and alternatives to the Proposed Project, and environmental consequences associated

with the reasonable alternatives. Subsequent to the DEA's release, the FAA also independently and objectively evaluated the Airport Sponsor's request to obtain a mixed ALP approval, instead of an unconditional ALP approval, of the overall Proposed Project. This evaluation was fully documented, including documentation of the environmental consequences, in the FEA released in January 8 of 2016.

13.0 CONDITIONS OF APPROVAL

13.1 Conditions of Approval for the Selected Alternative

This section of the Mitigated FONSI/ROD outlines the FAA's conditions of approval with regard to the Selected Alternative. As previously discussed in this document and in the FEA, the Airport Sponsor is seeking unconditional ALP approval for only the two of the three projects that make up the Selected Alternative. In granting the approvals contained in this Mitigated FONSI/ROD, the FAA incorporates the following conditions:

- Prior to initiating construction activities associated with the Selected Alternative, the Airport Sponsor will obtain all permits and local approvals necessary for development and operation of the project. A list of the permits and approvals that are likely to be required is provided in **Section 3.3 of this Mitigated FONSI/ROD**.
- GOAA will need to obtain the USACE Permit and SFWMD permit and implement all mitigation measures described in **Section 9 of this Mitigated FONSI/ROD** before development and preparation of the Proposed Project.

13.2 Funding Considerations

The Airport Sponsor may apply for Federal AIP and/or PFC funding for the design, construction, and implementation of eligible portions of the Selected Alternative. This Mitigated FONSI/ROD includes the environmental determinations necessary to establish eligibility for approval of grants of Federal funding. It does not signify an FAA commitment to provide a specific level of financial support, which is a separate future decision that will be made in accordance with other applicable Federal laws, FAA policies, and procedures.

FEDERAL FINDING OF NO SIGNIFICANT IMPACT WITH MITIGATION

After careful consideration of the facts contained herein, and in the attached Final EA, the undersigned finds that the proposed Federal action is consistent with existing national environmental policies and objectives as set forth in section 101 of the National Environmental Policy Act (NEPA) (42 U.S.C. §4331(a)) and other applicable environmental requirements and with the mitigation committed to by the Airport Sponsor, will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to section 102(2)(C) of NEPA. As a result, the FAA issues this Mitigated Finding of No Significant Impact determining that an Environmental Impact Statement for this action is not necessary.

APPROVED: Bart Vanacle

DATE: 2/1/2016

DISAPPROVED: _____

DATE: _____

RECORD OF DECISION AND ORDER

I have carefully considered the FAA's statutory mandate to ensure the safe and efficient use of the national airspace system as well as the other goals and objectives discussed in the attached Final EA. My review of the Final EA and determination regarding issuance of this Mitigated FONSI/ROD included evaluation of the purpose and need that the Proposed Project would serve, the alternate means of achieving the purpose and need, the environmental impacts associated with these alternatives, the mitigation committed to by GOAA that are necessary to preserve and enhance the human, cultural, and natural environment and public and agency comments on the March 2015 Draft EA.

Under the authority delegated to me by the FAA Administrator, I find the Proposed Project described in the Final EA is reasonably supported. I, therefore, direct that action be taken to carry forward the necessary agency actions evaluated in the Final EA and in this Mitigated FONSI/ROD.

This Mitigated FONSI/ROD represents the FAA's final decision and approval for the actions identified in the Final EA and constitutes a final order of the FAA Administrator subject to review by the Courts of Appeal of the United States in accordance with the provisions of 49 U.S.C. §46110. Any party seeking to stay implementation of the Mitigated FONSI/ROD must file an application with the FAA prior to seeking judicial relief, as provided in Rule 18(a) of the Federal Rules of Appellate Procedure.

APPROVED: Bart Vernace

DATE: 2/1/2016

Name: Bart Vernace, P.E.
Title: Manager, FAA Orlando Airports District Office
Address: 5950 Hazeltine National Drive, Suite 400, Orlando, FL 32822
Telephone: 407-812-6331

DISAPPROVED:_____

DATE:_____

Name:_____
Title: _____
Address:_____
Telephone: _____

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SECTION 1
Introduction and Proposed Action

1.1 Introduction

The Greater Orlando Aviation Authority (GOAA) prepared this Environmental Assessment (EA) to facilitate the Federal Aviation Administration's (FAA) review and consideration of the East Airfield as a site for future aviation development, the reduction of wildlife hazard attractants on the eastern portion of the Orlando International Airport (MCO) airfield, and the development of a secondary fuel storage and distribution facility at the East Airfield site. This document was developed in compliance with the *National Environmental Policy Act of 1969* (NEPA), 42 U.S.C. § 4321- 4370, as amended. The FAA, whose mission is to provide the safest, most efficient airspace system in the world, is responsible for ensuring compliance with NEPA with respect to FAA actions, including decisions regarding proposed Federal actions at federally-obligated airports. As such, the FAA is the lead Federal agency for NEPA compliance regarding the Proposed Action. Once completed, the EA will be submitted to the FAA for the Agency's decision to either prepare an Environmental Impact Statement (EIS) or issue a Finding of No Significant Impact and Record of Decision (FONSI/ROD).[1]

1.1.1 Orlando International Airport Overview

Orlando International Airport's location identifier code is "MCO," which is derived from the former McCoy Air Force Base, named after Colonel Michael N. W. McCoy. MCO is located in Orange County, Florida within the City of Orlando (see **Figure 1.1-1**). The airport property comprises approximately 13,430 acres, making it the fourth largest airport in landmass within the United States. MCO features two 12,000-foot by 200-foot runways (18L-36R and 18R-36L); one 10,000-foot by 150-foot runway (17R-35L); and one 9,000-foot by 150-foot runway (17L-35R). Runway 17L-35R, also called the "fourth runway," is the runway closest to the East Airfield site. The East Airfield site is approximately 1,342 acres in size.

The FAA has designated MCO as a large-hub airport, and commercial airline service is available from MCO to almost 100 cities world-wide. Currently, MCO averages approximately 785 flight operations (arrivals and departures) per day and accommodates almost 38 million annual

[1] If FAA determines that mitigation measures can and will be used to reduce potentially significant adverse impacts below the level of significance, these mitigation measures can be used to support a "mitigated FONSI."

passengers. In total, MCO is responsible for 18,000 jobs on airport, 267,800 direct and indirect jobs in the community, and over $31.4 billion a year in regional economic impact.[2]

1.1.2 History of the Proposed Action

Conceptual Land Use Planning

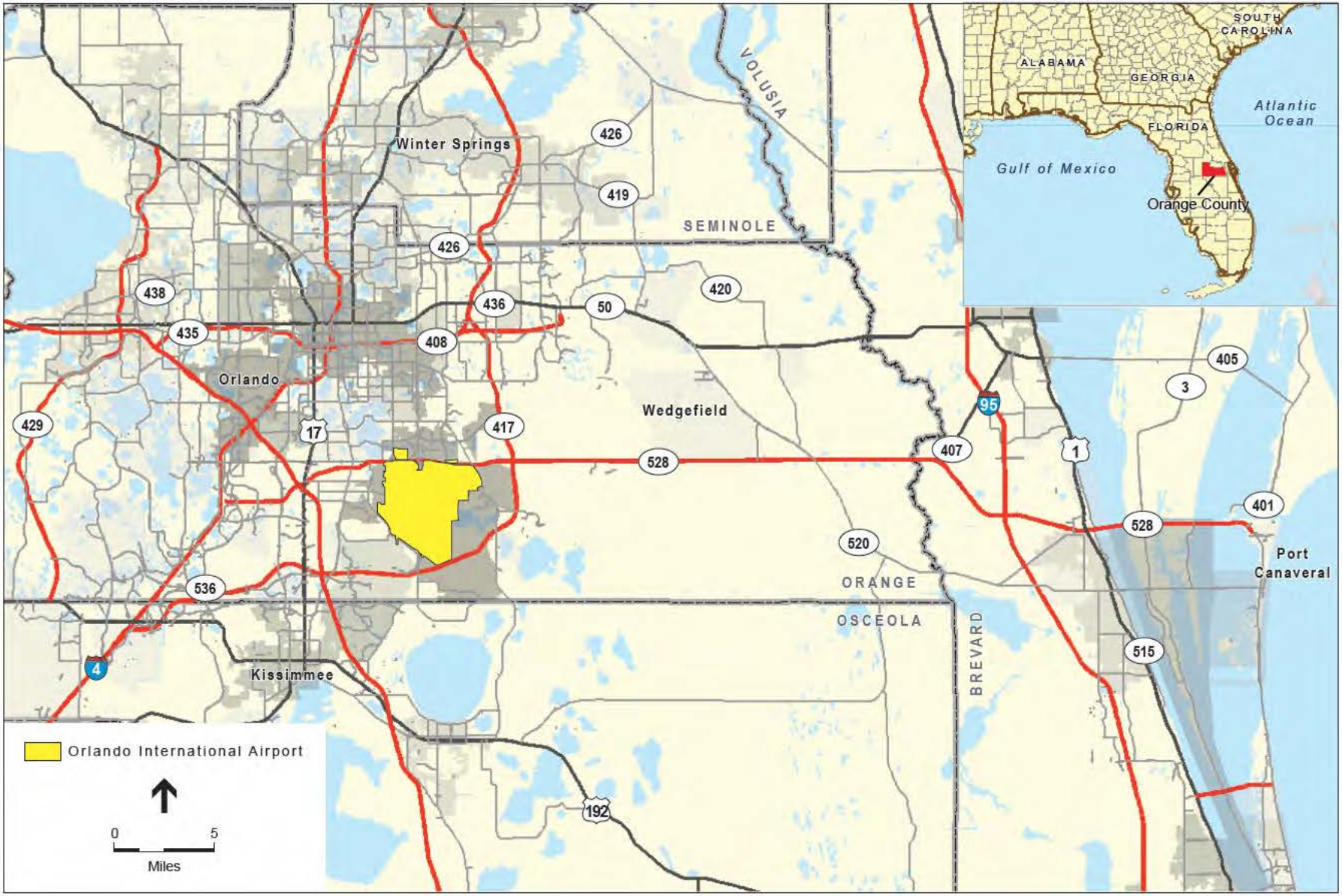
GOAA began purchasing the East Airfield site in 1986 with the intention of developing the area for aviation uses adjacent to Runway 17L-35R. A land purchase summary timeline and graphic are provided in **Appendix A**. In 1999, the City of Orlando identified the Southeast Orlando Sector Plan Area (which includes the East Airfield site) as a Future Growth Center with the airport as the primary economic and employment generator for the area. The Southeast Orlando Sector Plan Map designated the vast majority of the East Airfield site as Airport Support District High Intensity. The location of the East Airfield site is shown on **Figure 1.2-1**.

GOAA originally developed a conceptual development plan for the East Airfield in 2005 to be responsive to large-scale aviation development opportunities. This concept plan, shown on the conditionally approved 2005 MCO Airport Layout Plan (ALP), identified high intensity aviation uses for the entire site and a fuel farm located on the south side of the site adjacent to Dowden Road. An EA was initiated in June 2008 which led to ongoing coordination with Federal, state, and local government agencies and adjacent neighborhood groups. This included public workshops in 2008, a Public Hearing and comment period on a Draft EA in 2009, and multiple U.S. Army Corps of Engineers (USACE) and South Florida Water Management District (SFWMD) permit commenting periods. The 2009 EA was never finalized. In March 2011, GOAA and neighboring communities initiated the "GOAA Lake Nona Estates/Northlake Park Neighborhood Partnership". Meetings with this group were held every six to eight weeks throughout 2011 and 2012, were attended by the City of Orlando Planning Department, and continue (on a less frequent basis) through present-day. These meetings included updates on the East Airfield development as well as topics such as review of the airport's master planning process, noise program, airport financing, traffic analysis, and review of the history of land acquisition at the airport.

Following the meetings, coordination with local and regional planning departments, and prior public outreach to stakeholder groups, GOAA initiated a series of revisions to the 2005 East Airfield Concept Plan. Major revisions made to the East Airfield Conceptual Plan since 2005 include:

- March 2008 - moving the proposed fuel storage and distribution facility from the southwest corner of the East Airfield site to the northeast corner – more than one mile away from the NorthLake Park residential subdivision.
- March 2008 - increasing the amount of Airport Support District Medium Intensity land use on the southern portion of the East Airfield site.

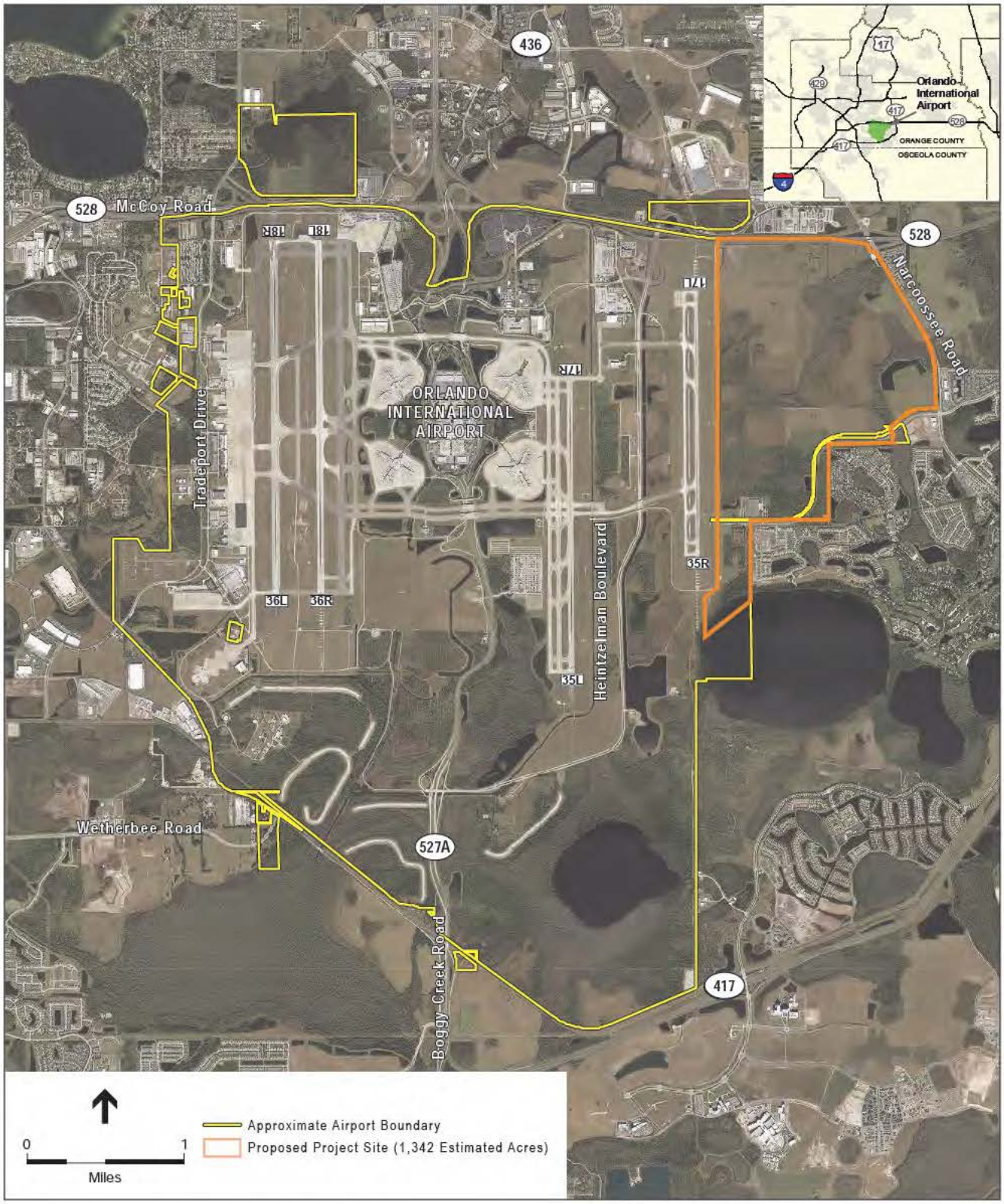
[2] FDOT Aviation Office, *The Economic Impact of Orlando International Airport [MCO]*. August 2014.



SOURCE: ESRI, 2007; Greater Orlando Aviation Authority, 2008; and ESA Airports, 2012

Orlando International Airport EA – East Airfield . 207524

Figure 1.1-1
Vicinity Map



SOURCE: Greater Orlando Aviation Authority, 2010 aerial; and ESA Airports, 2012

Orlando International Airport EA – East Airfield . 207524

Figure 1.2-1
Project Location Map

- May 2012 – GOAA committed to providing annual water quality monitoring information to neighboring residential subdivisions.
- May 2012 – GOAA committed to adopting policies to discourage airport-related truck traffic on Narcoossee Road and Dowden Road.
- May 2012 – GOAA committed to create additional buffer along Dowden Road between the East Airfield and adjacent neighborhoods.

In addition, in November 2013 GOAA incorporated the following Conceptual Plan revisions:

- Allow for more than 25 acres of the East Airfield's southern portion to be developed as a community park. The park would provide a benefit for the entire community and provide an additional buffer between the East Airfield and adjacent residential neighborhoods.
- The community park would include a lake[3] on its east side.
- Eliminate the Airport Support District High Intensity uses from the parcel west of Water's Edge.
- Place landscape buffers along the realigned internal access road.
- Allow Parcel H2 just north of North Lake Park to remain undeveloped.
- Allow Parcel H1 wetlands to remain undisturbed.
- Realign Dowden Road to accommodate the community park and allow safer transition to the future connection to the west.
- Provide only one East Airfield access point on Narcoossee Rd.

The modifications described above, that were agreed to by the community and the airport, were incorporated into the 2014 East Airfield Conceptual Plan and these modifications were examined in the EA. These conceptual plan modifications, which represent a local agreement on future development at the East Airfield site, do not constitute mitigation measures for impacts identified in the EA. The 2014 Conceptual Plan is depicted in **Figure 1.2-2**.

Subsequent to the March 30, 2015 Draft EA that was made available for public and agency review, GOAA and adjoining residential communities have continued discussions related to the 2014 Conceptual Plan. These discussions are presently ongoing and have resulted in further refinements to the 2014 Conceptual Plan in October 2015 (see Appendix Y). The FAA took notice of the recent refinements and it is understood that ongoing discussions between GOAA and the community could result in other refinements. Because of the timing of the recent refinements, beyond including the revised 2014 Conceptual Plan, the changes were not incorporated into the Final EA. The recent concept plan refinements also represent a local agreement on future development at the East Airfield site and do not affect the Near-Term Proposed Action evaluated

[3] The referenced lake, which would be a component of the Proposed Action's storm water management system, would be designed in accordance with FAA AC 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports*.

in the EA. Therefore, the refinements do not require an update or revisions to the analysis of alternatives, environmental impact analyses, or conclusions contained in the EA.

Wildlife Hazard Management

GOAA has had a formal wildlife hazard management program in place for more than 17 years. In 1997, GOAA established the first operations staff position designated to wildlife hazard management. At that time, the U.S. Department of Agriculture (USDA) Wildlife Services was retained to conduct a Wildlife Hazard Assessment (WHA) at MCO. The WHA was completed in 1999 and reviewed by the FAA. The airport was subsequently required to prepare a Wildlife Hazard Management Plan (WHMP). GOAA received FAA approval of its first WHMP in 2000. The WHMP was incorporated into the airport's Airport Certification Manual (ACM) and is required to be reviewed and updated on an annual basis. In addition, the WHMP is reviewed and, if necessary, updated more frequently in the case of a "triggering event" as required under Title 14 Code of Federal Regulation (CFR) Part 139.[4]

The MCO wildlife hazard management program includes a dedicated GOAA Wildlife Biologist and three Operations Agents who conduct wildlife observations, implement active and passive management techniques, document strikes, document wildlife deterrent and removal activities, review and revise the WHMP as needed, and work with airport stakeholders such as airport staff, airlines, airport tenants, and pilots to address wildlife hazard issues. Currently, the wildlife hazard management staff implements the following techniques to reduce wildlife hazard at MCO:

- Habitat modification including vegetation management, turf management, surface water management system modifications, and tree removal
- Harassment of wildlife including pyrotechnics, sound cannons, fogging (Methyl Anthranilate), vehicles, and falconry
- Removal of wildlife when necessary (including trap and relocation, and lethal control)

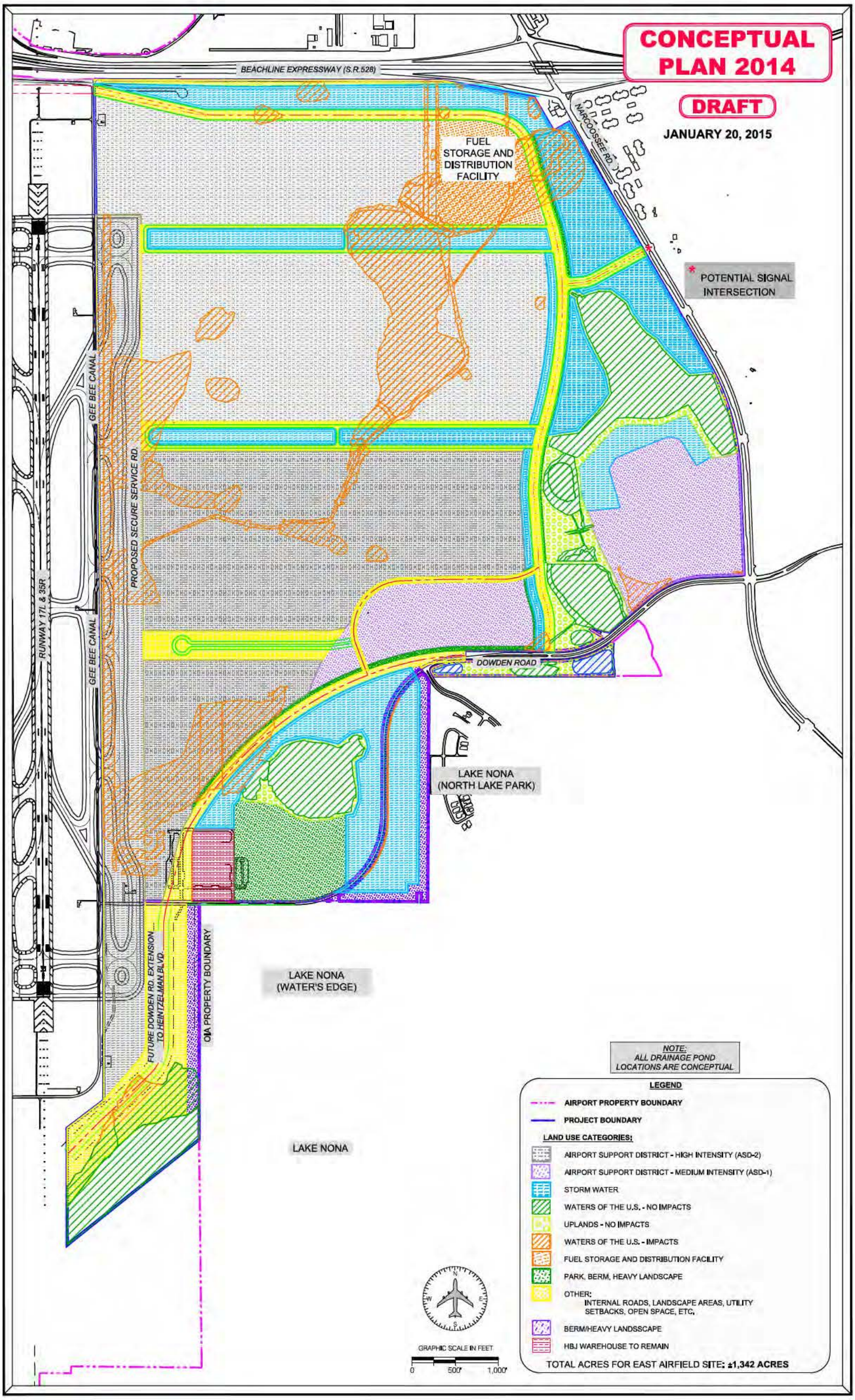
The overall goal of GOAA's wildlife hazard management program is to decrease the risk of wildlife strikes with aircraft operating at MCO.[5] The goal of wildlife hazard management is not to wait for the type of incident to occur that could provide specific evidence of an animal's starting point of origin and a resulting wildlife strike (or near miss), it is to identify the conditions that are likely to create a risk and manage or eliminate that risk before a hazard to aviation occurs.

Fuel Storage and Distribution Facility

Since the development of the 2005 MCO ALP, a second fuel farm has been proposed to provide the airport and ancillary users with a second operationally redundant and geographically separate fuel

[4] Title 14 CFR Part 139.337 (b) (1) An air carrier aircraft experiences multiple wildlife strikes; (2) An air carrier aircraft experiences substantial damage from striking wildlife. As used in this paragraph, substantial damage means damage or structural failure incurred by an aircraft that adversely affects the structural strength, performance, or flight characteristics of the aircraft and that would normally require major repair or replacement of the affected component; (3) An air carrier aircraft experiences an engine ingestion of wildlife.

[5] See the attached *Supplemental Technical Appendix*, which was developed in response to public comments.



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 1.2-2

2014 East Airfield Conceptual Plan

supply. Currently, the airport and its users have access to one fuel farm on the west side of the property. That facility is supplied by refinery sources from the gulf coast via barges across the Gulf of Mexico, a port facility in Tampa and a pipeline from the port to central Florida, and over land via a trucking operation from a recently completed fuel farm at Port Canaveral. During the past ten years, the impacts of hurricanes and other petroleum supply disruptions have caused the airport to nearly run out of fuel on several occasions. If not for the exceptional measures to "tanker" fuel to the airport via aircraft, the airport would have exhausted its fuel supply. Airport fuel system malfunctions at Miami and Boston during the same period led to multi-day disruptions at those airports, highlighting the need for redundancy. In January 2006, the Florida Department of Environmental Protection (FDEP) advanced Florida's Energy Plan to Governor Bush that included recommendations to promote fuel diversity to the State of Florida (see **Appendix B**). Development of a second fuel farm is consistent with the 2006 FDEP plan.

1.2 Proposed Action

The Proposed Action includes the following three near-term projects:

- Approval of the East Airfield as a large contiguous site at MCO for development of high and medium intensity aviation and aviation support facilities, medium intensity land uses, and related infrastructure. This element of the Proposed Action is for site selection and is programmatic in nature. Any future development on the selected site (other than the two specific projects reviewed for unconditional ALP approval in this EA) would require project-specific NEPA review and approval.

- Reduction of existing wildlife hazard attractants on the East Airfield site through removal of wetlands and surface waters and active wildlife hazard management. Necessary associated activities would include construction of temporary access roads, stormwater management facilities and staging areas, clearing vegetation, de-mucking wetlands, filling wetlands, and grading.

- The development of a secondary fuel storage and distribution facility that provides a geographically separate, redundant fuel supply at MCO to improve security from fuel supply disruptions related to storm events or other disruptions. Necessary associated activities would include construction of temporary access roads, stormwater management facilities and staging areas, clearing vegetation, installation of utilities, and grading.

The 2014 Conceptual Plan, shown on Figure 1.2-2, depicts MCO's proposed plan for a large contiguous site with high and medium intensity aviation and non-aviation development and support facilities. **Figure 1.2-3** depicts the project elements of the Proposed Action (removal/fill of wetlands and surface waters to reduce wildlife hazard attractants, construction of a fuel storage and distribution facility, primary roadways, stormwater management facilities, and grading and filling).

1.2.1 Selection of the East Airfield as a Large Contiguous Site for Aviation Development at MCO

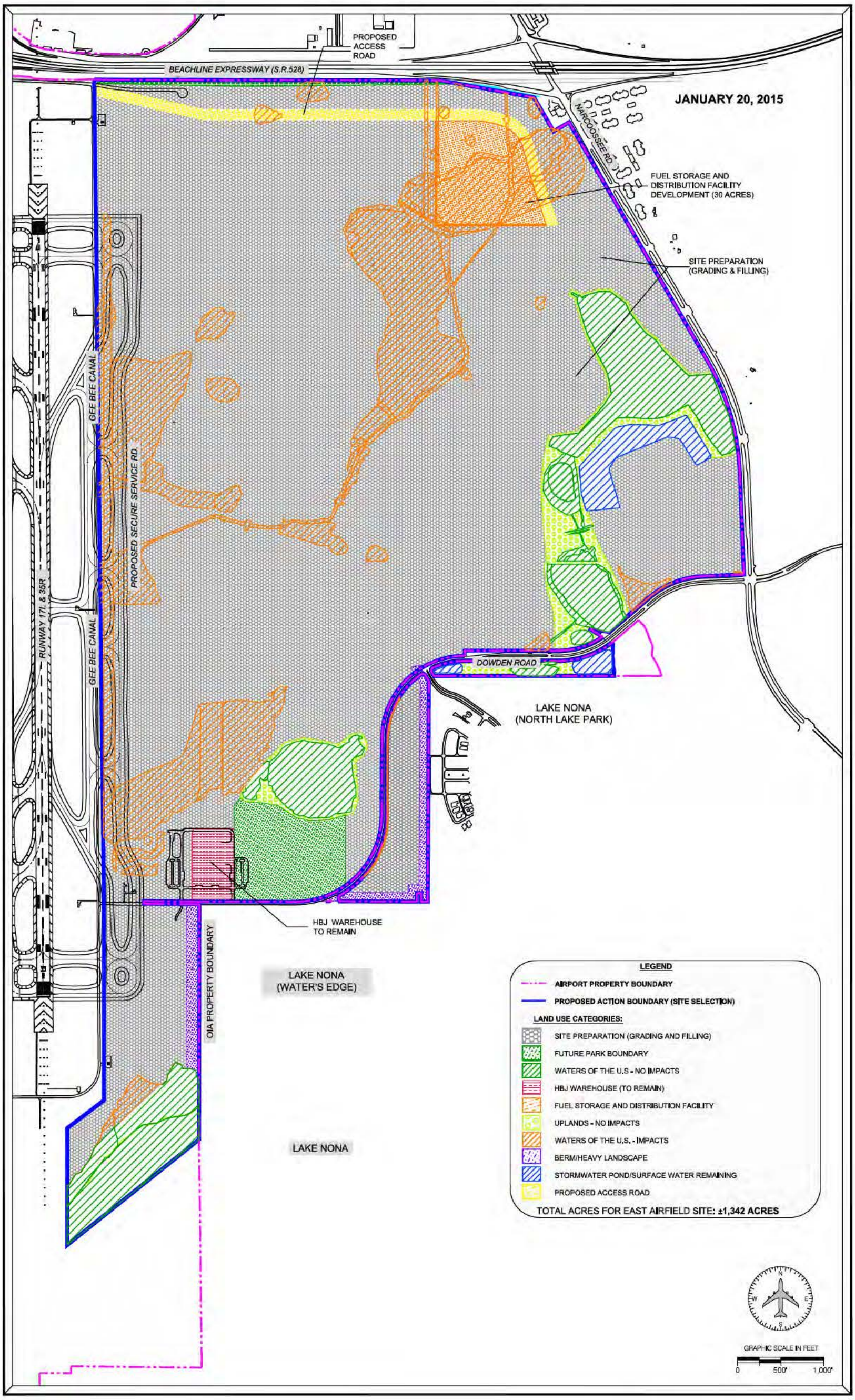
GOAA is seeking site selection approval of the East Airfield as a large contiguous site for aviation development at MCO to increase and diversify revenue generation, utilize existing available lands that could access the airfield, and provide a timely and planned approach to future development at MCO. If the proposed action receives FAA environmental approval, this will allow GOAA to seek streamlined NEPA review for future projects on the East Airfield. However, future projects would still be subject to NEPA environmental review. This is a proper approach under NEPA, given the fact that GOAA has not requested FAA approval of specific development projects and an FAA environmental decision on environmental effects would be premature at this time.

GOAA has developed a series of conceptual plans for a large contiguous site to promote a master planned development approach (avoiding a piecemeal approach) and to disclose this information to the public. In support of the intended development of the East Airfield, GOAA originally created a conceptual plan for the East Airfield in 2005 to be responsive to large-scale aviation development opportunities.[6] Site selection factors for potential aviation tenants included having adequate developable acreage, direct airfield access, a runway capable of accommodating large aircraft, good access to the area's regional roadway network, and site utilities. A key consideration in site selection includes securing Federal, state, and local property entitlements (i.e. permits, future land use, zoning) to allow for quick response to development opportunities. GOAA developed a conceptual development plan that addressed these factors. This plan identified high intensity aviation uses for the entire site and a fuel storage and distribution facility located on the south side of the site adjacent to Dowden Road (as noted in Section 1.1.2). The 2005 plan was revised several times to reflect changes in the configuration of high and medium intensity uses. These revisions resulted in the current 2014 Conceptual Plan as shown in Figure 1.2-2.

The location of the East Airfield site on the periphery of airport property, along the eastern border of the existing MCO Airfield Operating Area (AOA) reduces the potential for airspace related operational impacts with facility development. The East Airfield site is spacious enough to adequately accommodate aircraft aprons and taxilanes for large aircraft (ADG IV, V, and VI aircraft).[7] Commercial airlines already use these large aircraft to provide commercial passenger service at MCO. Based on GOAA's preliminary analysis, future buildings and infrastructure on the East Airfield are not anticipated to cause line-of-sight issues for air traffic control operations. However, each new facility will have to undergo detailed airspace and line-of-sight analysis by the FAA prior to ALP approval. The high intensity aviation use areas can be developed to have a secure

[6] GOAA submitted documentation to the Governor of the State of Florida to support the selection of the East Airfield site at MCO for EADS/Airbus Facility in March 2005 (email correspondence with letter attachment to Jeb Bush, Governor of the State of Florida From David Brown, and GOAA on Tuesday March 1, 2005).

[7] Aircraft are categorized according to Airplane Design Group (ADG) based on wingspan and tail height. For example, Group VI aircraft would have a wingspan from 214 feet up to but not including 262 feet and a tail height from 66 feet up to but not including 80 feet. FAA Advisory Circular 150/5300-13A.



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 1.2-3

Proposed Action

airside. Because GOAA already owns the undeveloped East Airfield site, additional land would not have to be purchased and no existing facilities would have to be relocated. Development of the site would increase revenues for the airport and off-set operating expenses. The site's existing future land use is approved on the City of Orlando GMP and the Sector Plan Map: Airport Support District – High Intensity (ASD-2) and Airport Support District - Medium Intensity (ASD-1).

1.2.2 Reduction of Existing Wildlife Hazard Attractants on the East Airfield

Wetlands on the East Airfield have been documented to be wildlife hazard attractants.[8] The Proposed Action will dredge and fill approximately 171 acres of Federal jurisdictional wetlands including about 162 acres of state jurisdictional wetlands on the East Airfield site (see Section 5, Wetlands, for graphic depicting wetland areas to be filled). The removal of these wildlife hazard attractants will decrease the desirability of the East Airfield site to a variety of wildlife species that either cause a direct strike risk to aircraft operations at MCO or indirect hazard attractants (such as a food source or habitat for prey). The conversion of upland habitats from natural vegetation to improved, impervious uses or maintained open space will also decrease available habitat for wildlife on the East Airfield site.

Reduction of wildlife hazard attractants (wetlands and surface waters) will require construction of stormwater management facilities to ensure that off-site discharges, if any, will meet the requirements of the SFWMD. The precise location of these facilities will be determined during project design. Additional activities necessary to complete the reduction of wildlife hazard attractants include temporary access roads, staging areas, clearing vegetation, de-mucking wetlands, filling wetlands, and grading.

1.2.3 Secondary Fuel Storage and Distribution Facility at MCO

MCO currently has one fuel facility which is located on the west side of the airport. The Proposed Action includes the development of a second fuel storage and distribution facility on the east side of MCO that provides geographical separation and system redundancy in the event one becomes inoperable. GOAA intends to designate a 30-acre area for the second fuel facility in proximity to the Beachline corridor that may, in the future, provide a direct pipeline to Port Canaveral fuel supply facilities (see **Figure 1.2-4** for a conceptual plan). The 30-acre conceptual plan for the fuel storage and distribution facility was designed to accommodate up to nine storage tanks that are approximately 100 feet in diameter and 40 feet in height as well as fueling racks, secondary containment areas, and related infrastructure. The first phase of construction, anticipated in the spring of 2018, would include three storage tanks and necessary infrastructure to operate and maintain the site. A fuel distribution line would be bored underground to connect the fuel farm to the existing fuel hydrant system at MCO. It is anticipated that the near-term fuel facility would be supplied by overland fuel trucks.

[8] Greater Orlando International Airport Airfield Operations Area Wildlife Ecological Study and Annual Report 2013. See Section 2.3.2 for additional information. See the attached *Supplemental Technical Appendix*.

Additional activities necessary to complete the development of the fuel storage and distribution facility include construction of temporary access roads, stormwater management facilities and staging areas, clearing vegetation, installation of utilities, and grading.

1.3 Aviation Forecast

The Proposed Action would not induce aviation activity, including additional aircraft operation, change in fleet mix, alteration of flight tracks, or change in approach and departure profiles. The number of aircraft operations at MCO would be the same with or without the Proposed Action.

1.4 Timeframe of Proposed Action

GOAA anticipates that the site selection and development projects described in the Proposed Action will be initiated within three to five years of FAA's NEPA determination on the Proposed Action. **Table 1.4-1** provides an implementation schedule for the three project elements included in the Proposed Action. Full build-out of the East Airfield site is anticipated to occur over a 20 year period.

TABLE 1.4-1
PROPOSED ACTION IMPLEMENTATION SCHEDULE

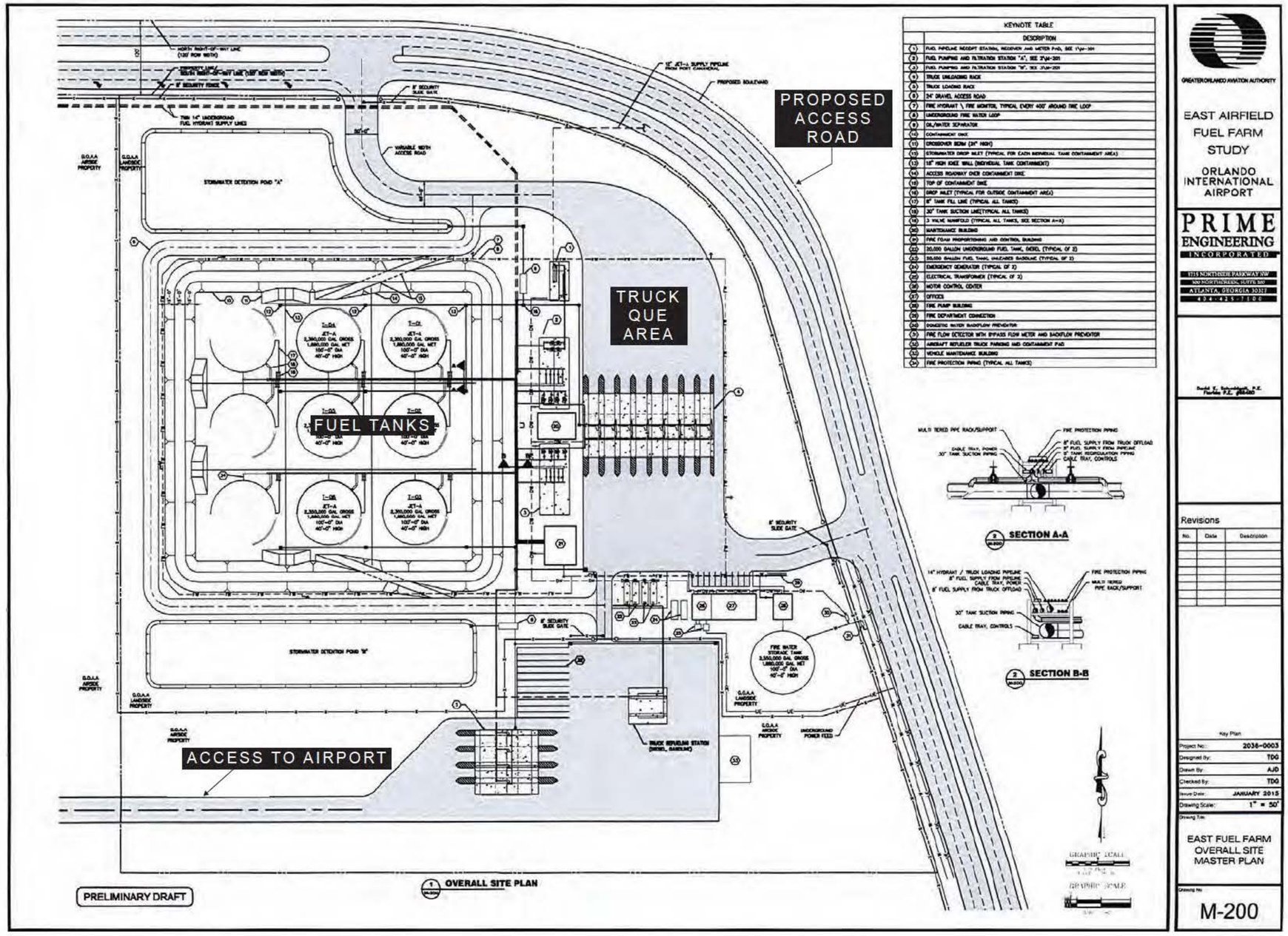
Proposed Action	Design/Permitting	Construction Start	Estimated Completion Date
Site Selection Approval	n/a	n/a	Early 2016
Wildlife Hazard Remediation	Spring/Summer 2016	Spring 2016	2020
Fuel Storage and Distr bution Facility	Spring/Summer 2017	Spring/Summer 2018	2020

SOURCE: GOAA Planning Staff, 2015

1.5 Federal Action

The FAA is the Federal agency responsible for review of and decisions concerning Federal actions at public-use airports. The Federal actions, which are the trigger for the NEPA review contained in this EA, are:

- Site Selection approval of a large contiguous site at MCO for development of high and medium intensity aviation and aviation support facilities, medium intensity land uses, and related infrastructure. The site selection approval will be reflected as a conditional ALP approval on the MCO ALP. Because development actions that are only conditionally approved on an ALP may not be constructed without further NEPA review and other compliance, a conditional approval on an ALP typically does not require NEPA review. With respect to this component of the requested Federal action, however, an EA is being prepared because the FAA's action will represent a site selection decision for the location of the requested future development actions described herein. Any further implementation of specific high or medium intensity aviation and



SOURCE: Greater Orlando Aviation Authority, 2015; Adapted by ESA Airports, 2015.

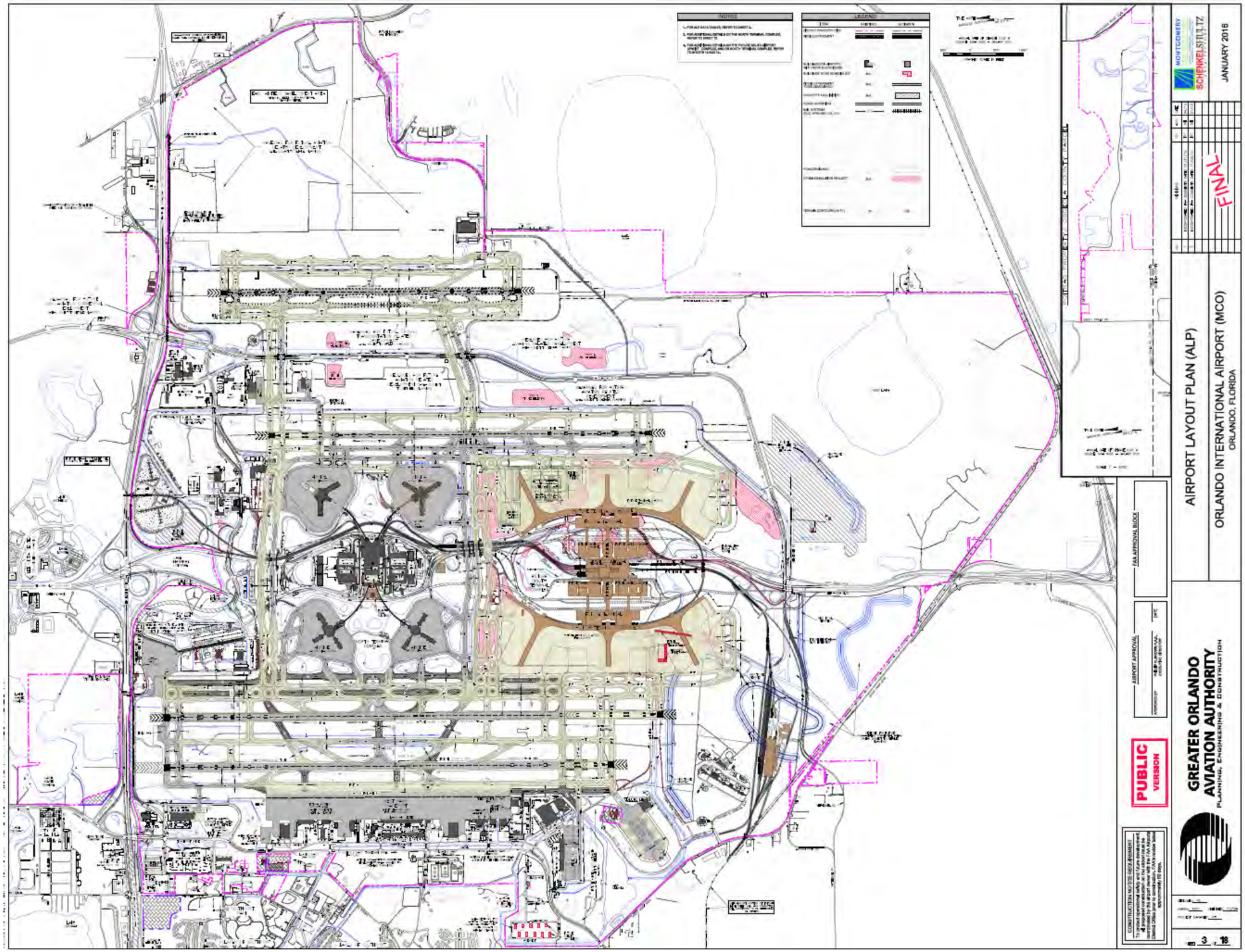
Figure 1.2-4
Fuel Farm

aviation support facilities, medium intensity land uses, or related infrastructure (other than the two specific projects reviewed for unconditional ALP approval in this EA) will require project-specific NEPA review and approval. Future review of specific development projects will comply with NEPA requirements associated with alternatives analysis, but will be limited to the site selected by the FAA in this NEPA review.

- Unconditional ALP approval for the reduction of existing wildlife hazard attractants on the East Airfield site through removal of wetlands and surface waters. GOAA will develop stormwater management facilities (in accordance with FAA stormwater pond guidance) to accommodate stormwater runoff on the East Airfield site. Associated activities will include de-mucking, clearing, grading, filling, construction of temporary access roads and staging areas.

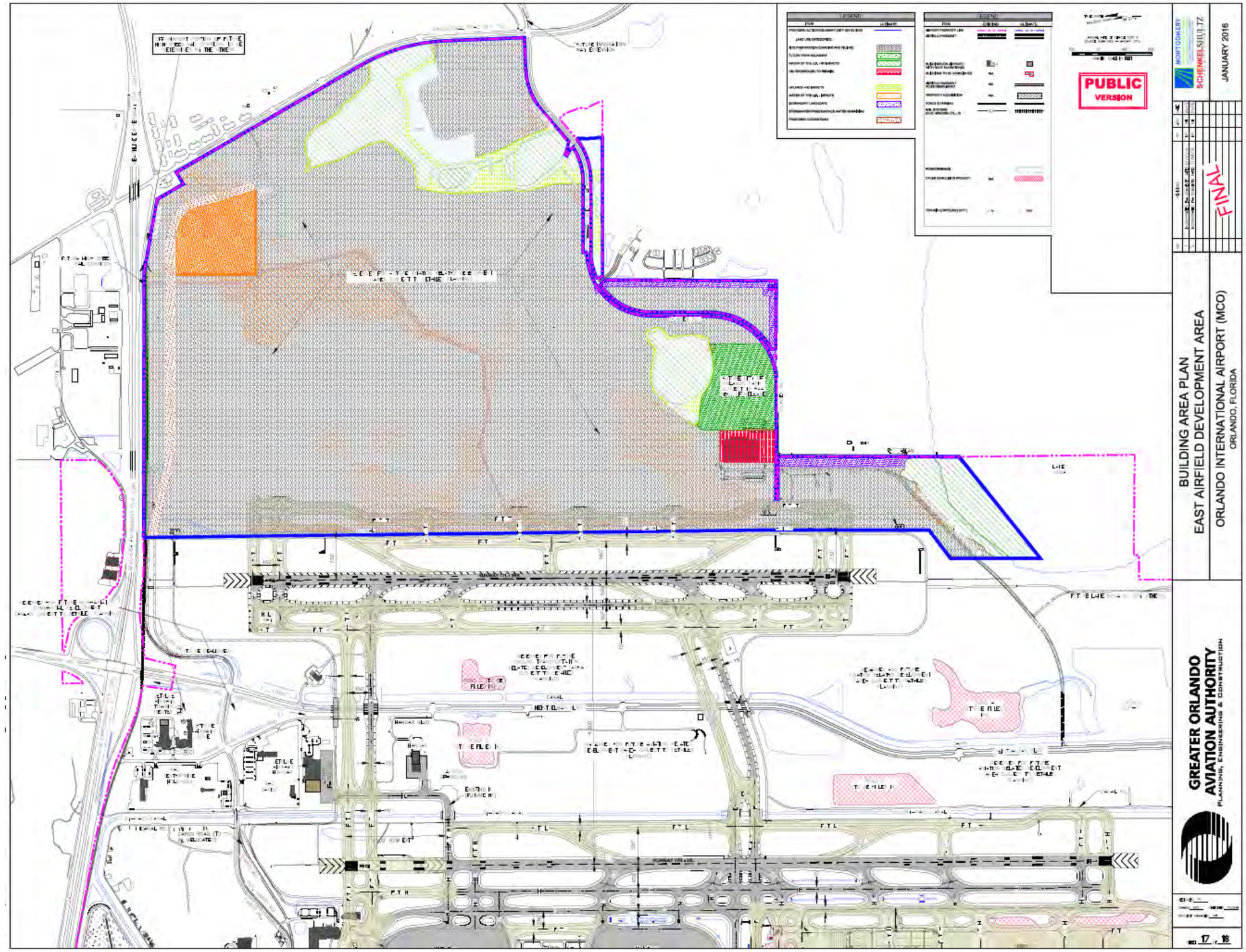
- Unconditional ALP approval of the development of a secondary fuel storage and distribution facility that provides a geographically separate and redundant fuel supply at MCO to improve security from fuel supply disruptions related to storm events or other disruptions. Associated activities will include the construction of a primary roadway to access the fuel storage facility, clearing, grading, filling of wetlands, installation of utilities, and construction of staging areas and stormwater management facilities.

GOAA has submitted an updated ALP depicting its Proposed Action to the FAA. **Figure 1.5-1** shows the MCO ALP and **Figure 1.5-2** shows the ALP's Building Area Plan for the East Airfield Development Area. This EA was prepared to identify and disclose the potential environmental impacts associated with GOAA's Proposed Action. FAA will make its determination regarding conditional and /or unconditional approval of those portions of the ALP depicting the Proposed Action after receipt and review of the Final EA. Future development depicted at the East Airfield site on the ALP, other than the Proposed Action evaluated in this EA, will be subject to a separate NEPA review(s) consistent with NEPA and FAA's implementing policies and procedures.



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 1.5-1
ALP Sheet 3



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 1.5-2
ALP Sheet 17

SECTION 2
Purpose and Need

2.1 Introduction

As part of Federal Aviation Administration (FAA) Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions* and FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*,[1] the Purpose and Need section of an Environmental Assessment (EA) briefly discusses the underlying purpose and need for the proposed Federal action. This section presents the issue being addressed and the benefits of the proposed Federal action. It provides the data to support the purpose and need for the project, identifies the parameters for defining a reasonable range of alternatives to be considered as well as the FAA safety and design criteria that the proposed Federal action will need to comply with.

This section also provides a description of the "long-term" development plan for large-scale aviation and aviation support facilities at Orlando International Airport (MCO). Any future development, except the three project elements described in the Proposed Action, will require further *National Environmental Policy Act* (NEPA) review. This section also provides a description of the purpose and need for the "near-term" proposed action elements which includes; the selection of a site for large-scale aviation and aviation support development, the removal of wildlife hazard attractants and associated activities, and the development of a fuel storage and distribution facility and associated activities.

2.2 Airport Sponsor's Long-Term Objectives

A long-term objective of the Greater Orlando Aviation Authority (GOAA) is to be responsive to large-scale aviation development opportunities and to provide a planned approach to development at MCO (avoiding piecemeal development).[2] This approach is intended to increase and diversify airport revenue so that the airport can be as self-sustaining and economically viable as possible. Other long-

[1] FAA Order 1050.1F, issued on July 16, 2015, cancels FAA Order 1050.1E. Order 1050.1F states that the "procedures in this Order apply to the extent practicable to ongoing activities and environmental documents begun before the effective date. However, procedures contained in this Order should not apply to ongoing environmental reviews where substantial revisions to ongoing environmental documents would be required." Because this EA was circulated for public and agency review in draft form prior to the issuance of FAA Order 1050.1F and reformatting the document would take substantial effort and time, the FAA finalized this EA under the provisions of Order 1050.1E.

[2] Although future development at the East Airfield site is likely, the full build-out of the property (number, size and type of tenants) has not been defined. GOAA's long-term development objectives are discussed in this document and depicted on its 2014 Conceptual Plan, the specific development actions that may ultimately be proposed may vary from the projected development described in this EA. However, the long-range development identified in this EA represents an estimate based upon the best information available at this time. Future NEPA analysis for specific development projects will be conducted for such projects when those projects become ripe for NEPA review and a Federal decision.

term objectives include the continued reduction of wildlife hazard attractants and providing operational redundancy to ensure the safe and efficient operation of the airport.

GOAA produced a conceptual development plan for the East Airfield site in 2005. Over the past ten years, the conceptual development plan has been revised to address public and adjacent neighborhood concerns, agency comments, and local land use planning changes (see Section 1.1.2, History of the Proposed Action). The 2014 East Airfield Conceptual Plan is provided in Figure 1.2-2. This plan represents an overall approach to the development of the site that provides flexibility, shared infrastructure, access to a major runway, and designates both a land use buffer to the adjacent residents south of the site and provides avoidance and minimization of wetland impacts through identifying wetland areas that will not be directly impacted due to development on the site. In addition, the master planned development of the site provides a comprehensive approach to wetland mitigation options off airport property.

As part of this planning effort, GOAA has identified potential land uses for the site with corresponding acreages. End users of the site have not been identified at this time. **Table 2.2-1** identifies all of the "use categories" and corresponding acreages of the 2014 Conceptual Plan (shown in Figure 1.2-2). The intent of the 2014 Conceptual Plan is to promote the synergy of uses and provide for the efficiencies of shared infrastructure. The medium intensity uses are also intended to provide a land use buffer between the high intensity aviation uses in the central portion of the East Airfield site and existing residential areas located to the south. Further details on the use categories are provided in Section 3, Compatible Land Use.

TABLE 2.2-1
2014 EAST AIRFIELD CONCEPTUAL PLAN - USE CATEGORY SUMMARY

Use Category	Area (approximate acres)
Airport Support District - High Intensity (ASD-2)	**563**
Building Area	
Parking	
Taxilane/Apron/Utilities	
Airport Support District – Medium Intensity (ASD-1)	**95**
Building Area	
Parking[2]	
Utility Support Areas	
Stormwater (Proposed Pond Area)	**206**
Existing Lake (not to be developed) – Lake Nona	**20**
Fuel Storage and Distribution Facility	**30**
Other	**428**
Conceptual Rail Corridor[3] Parallel Taxiway[3] External Road Areas [3], Existing Warehouse[3] Internal Roads, Landscape Areas, Utility Setbacks, Open space, Natural Buffer Heavy Landscape, Berm, and Proposed Park	
Total	**1,342**

1 Parking based on 1.5 spaces per 1,000 SF of building per City of Orlando Code, Chapter 61
2 Parking based on 4 spaces per 1,000 SF of building per City of Orlando Code, Chapter 61
3 These projects are not included in the Proposed Action and are subject to separate NEPA analysi
SOURCE: GOAA, Schenkel Shultz Analysis, ESA Airports 2014.

2.3 Near-Term Purpose of the Proposed Action

GOAA's purpose for the Proposed Action is to identify a large contiguous site for future large-scale aviation-related development consistent with aviation safety regulations and guidance, reduce wildlife hazard attractants, and develop a secondary fuel storage and distribution facility at MCO.

2.3.1 Identification of a Large Contiguous Site with Shared Infrastructure

The purpose is to select a large contiguous site with shared infrastructure for large-scale aviation, aviation support, and medium intensity development at MCO.

GOAA has proposed the designation of a large contiguous site to support future (long-term) large-scale aviation development which could consist of a single large aviation tenant or multiple smaller tenants. A large contiguous site that shares infrastructure and promotes efficiencies of use would assist GOAA in attracting on-airport, aviation-related development that is dependent on existing aviation infrastructure. GOAA anticipates that large-scale aviation uses could include aircraft manufacturing, aircraft maintenance, air cargo, and fuel storage facilities. A large contiguous site would allow the airport and potential tenants to benefit from the synergy of similar types of uses and the efficiency of shared infrastructure, including access to a major air carrier runway. A large contiguous site with these attributes would enhance the attractiveness of MCO as an economic center for the development of aviation and aviation support facilities, consistent with local land use planning as approved in the City of Orlando's Growth Management Plan.

GOAA researched a number of existing aviation developments located in other areas of the United States to determine the amount of acreage and types of facilities required for large-scale aviation development. An example of a single large-scale development that could be built on the East Airfield site is the Boeing manufacturing facility in Everett, Washington. This facility is 1,025 acres in size and has access to a 9,000 foot runway (Paine Field (PAE)). Boeing also has a manufacturing and assembly plant for the Boeing 787 aircraft at the Charleston International Airport (CHS)/Charleston Air Force Base (AFB). This is a 240-acre facility, which has access to the CHS/AFB 9,000-foot runway. Vought Aircraft Industries, Inc., another major aircraft parts manufacturer, has a facility located at the Nashville International Airport (BNA). The Vought facility has access to an 11,000-foot runway at BNA. The latter two facilities are examples of multiple large-scale projects that could be developed on the East Airfield site. **Appendix C,** Large-Scale Aviation Examples, provides additional background information on the manufacturing sites described above.

Tradeport Area - The successful development of the Tradeport area at MCO over the past 30 years reflects the benefits of identifying and preparing for the development of a large contiguous site. The Tradeport area is an approximate 1,300-acre area on the west side of the airport (**Appendix D** "Tradeport Area" identifies the location of the Tradeport area at MCO). The Tradeport area was approved as part of the original Environmental Impact Statement (EIS) completed in the early 1980s and the separate State of Florida Development of Regional Impact (DRI) study completed in 1985 for the conversion of the McCoy AFB to a commercial service international airport (MCO). The Tradeport area is adjacent to the MCO existing west ramp area and has direct access to a 12,000-foot runway

(Runway 18R-36L). The Tradeport area is occupied by many aviation support facilities, including two Continental maintenance hangars, a FedEx sort facility, a US Postal Service sort facility, Flight Safety, a Cessna aircraft maintenance facility, and two Fixed Base Operators (FBOs) – Signature Flight Support and Atlantic Aviation (formerly Galaxy Aviation). Revenue generation from land leases is estimated to be $9.2 million annually.[3] GOAA maintains that the successful build out of this area was a result of the synergies and efficiencies associated with a large contiguous site at a major international airport. The size of the site enabled it to support multiple users.

Airports share infrastructure to promote efficiencies and cost savings both for the airport and users. Shared infrastructure includes airfield facilities (runways, taxiways and aprons), stormwater facilities, and site utilities. Good access to a regional roadway network is also an important consideration for larger scale aviation development for the movement of freight and goods and employee access.

2.3.2 Reduction of Existing Wildlife Hazard Attractants on the East Airfield

The purpose is to allow the airport to implement measures to reduce existing wildlife hazard attractants on the East Airfield site that currently affect operations on the existing airfield.

GOAA currently operates MCO under a FAA-approved Wildlife Hazard Management Plan (WHMP), revised July 2015, which is also incorporated into MCO's Airport Certification Manual (ACM). The *Supplemental Technical Appendix*[4]attached to this EA contains the background information and data used to develop the wildlife management measures identified in the WHMP. As part of the Wildlife Hazard Management Program, the GOAA Airfield Operations Department oversees monthly wildlife monitoring/surveys, tracks operational activities related to wildlife on the airfield, coordinates and provides required information for wildlife strikes at MCO, and conducts deterrence and depredation of wildlife that pose a threat to aviation. The *Greater Orlando Aviation Authority Airfield Operations Area Wildlife Ecological Study and Annual Report* compiles wildlife monitoring, strike data, permit requirements, habitat evaluation, and summarizes recommendations for reducing identified wildlife hazards to air carrier operations.

The *GOAA Airfield Operations Area Wildlife Ecological Study and Annual Report 2013* identified the wetlands on the East Airfield site as a "significant concern" due to the wildlife hazard attractant created by these areas. The annual report recommended the removal of wetland areas that provide nesting and loafing sites in proximity to Runway 17L-35R (see **Appendix E**). The USDA conducted a Wildlife Hazard Assessment for the East Airfield from 2008-2009 (see **Appendix F**). The objectives of the U.S. Department of Agriculture (USDA) assessment included: 1) identifying wildlife species with the potential to cause aircraft strikes at MCO, 2) identifying wildlife hazard attractants on the East Airfield Site, and 3) providing wildlife management recommendations based on data collected during the assessment. In regards to wetland areas, the USDA assessment made the following recommendation:

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[3] Source: GOAA Commercial Properties Department, 2014

[4] This Supplemental Appendix includes the *Orlando International Airport Wildlife Hazard Assessment (1999); GOAA Air Operations Area Wildlife Ecological Study and Annual Reports (2003-Present); Monthly Synopsis Reports (2003-Present); WHMP Review Forms - Following a Triggering Event (2012-Present); MCO East Airfield - Wildlife Data Review (2014);* and the *Wildlife Hazard Site Visit Orlando International Airport East Airfield Property (2015).*

"All trees and other vegetation, including trees and vegetation in wetlands, should be cleared from the EA [East Airfield]. These areas provide cover, nesting sites, and perches for many birds species and are also utilized by other species of wildlife."[5]

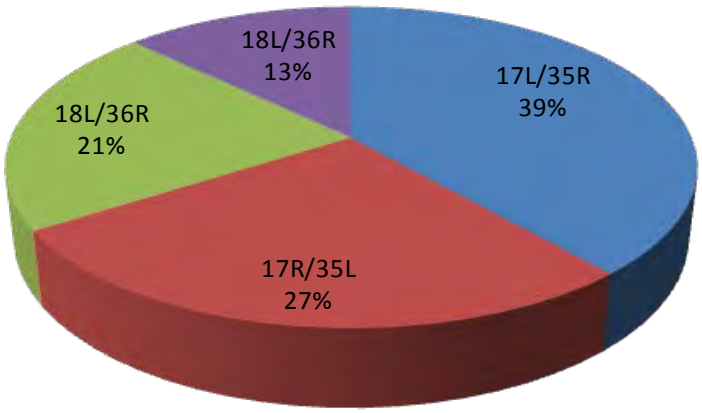
Table 2.3-1 provides a five-year summary of wildlife strike data for the number of strike reports, strikes per 10,000 aircraft movements, and damaging strikes per 100,000 movements. **Figure 2.3-1** calculates the percentage of strikes per runway over the five year period from 2009-2013. Runways 17L-35R and 17R-35L are closest to the East Airfield site, and account for approximately 66 percent of all strike reports at MCO for the same five year time period.[6]

TABLE 2.3-1
WILDLIFE STRIKE SUMMARY INFORMATION FOR MCO 2009-2013

Year	Total No. Reported Strikes[1]	Strikes / 10,000 movements[2]	Damaging Strikes / 100,000 movements[2]
2013	152	5.0	1.0
2012	144	3.7	3.0
2011	159	4.6	3.8
2010	159	4.3	1.3
2009	118	3.7	2.3

Source 1: FAA National Wildlife Strike Database (http://wildlife.faa.gov/database.aspx). Data downloaded on June 3, 2014
Source 2: Greater Orlando International Airport Airfield Operations Area Wildlife Ecological Study and Annual Report 2013.

Figure 2.3-1 MCO Wildlife Strike Reports by Runway (2009-2013)



Source: Greater Orlando International Airport Airfield Operations Area Wildlife Ecological Study and Annual Report 2013

[5] USDA Wildlife Hazard Assessment of the East Airfield, March 29, 2010. See Appendix F for a copy of the assessment.
[6] Greater Orlando Aviation Authority Airfield Operations Area Wildlife Ecological Study and Annual Report 2013. See Appendix E for a copy of this report.

During 2013, the most frequently observed bird species on the airfield during the Airport Operations Area (AOA) [7] avian surveys were sandhill cranes, cattle egret, ring bill gulls, and vultures (turkey and black). Three damaging strikes were reported at MCO during 2013. The species involved were a turkey vulture, multiple ring neck ducks, and three sandhill cranes (see **Table 2.3-2**).

TABLE 2.3-2
DAMAGING BIRD STRIKES 2013 AT MCO

Date	Runway	Phase of Flight	Altitude (AGL)	Species (number)	Damage Reported	Remarks from Strike Report
1/6/13	17L	Approach	500	Turkey Vulture (1)	Uncertain	Radome cracked and replaced
1/19/13	35L	Climb	800	Ring Neck Duck (multiple)	Substantial	Struck birds on departure returned to land w/o incident. #1 and #2 engs. both had bent turbine blades. Mult. strikes of blood splatter seen on RT wing outbd eng, left side of nose underside, inside intake of #2 eng. And inside exhaust side of eng #2. A/C was towed to gate. Landed overweight. ID by Smithsonian. [*sic*]
6/23/13	18L	Landing Roll	0	Sandhill Crane (3)	Minor	Dents to leading edge of left wing

Source: FAA Na ional Wildlife Strike Database(http://wildlife.faa.gov/database.aspx) downloaded on June 3, 2014 and Greater Orlando International Airport Airfield Operations Area Wildlife Ecological Study and Annual Report 2013

A variety of wading birds, waterfowl, raptors, and passerine species have been observed utilizing the wetland, open water, pasture, and wooded areas on the East Airfield .[8] The undeveloped areas of the East Airfield provide nesting and foraging habitat for sandhill cranes (mainly pasture and marsh areas). Birds are routinely observed moving to and from the East Airfield site to the AOA or across the AOA during daily movement patterns. Reducing these habitats will decrease the existing wildlife hazard attractants and reduce wildlife activity in proximity to the AOA.

As part of their wildlife hazard management program, GOAA has had a continued wildlife monitoring program in place since 2011 to document wildlife utilization of the existing airfield at MCO. The MCO East Airfield - Wildlife Data Review technical memorandum, prepared by an FAA-qualified Airport Wildlife Biologist, was completed on January 9, 2015 to evaluate the continued wildlife monitoring data and determine if the information collected showed any trends of wildlife utilizing or moving to or from the natural areas east of the airfield (East Airfield site) and the AOA (see **Appendix G**). This technical memorandum included an analysis of previously collected data, summaries of data on the east vs. west AOA at MCO, and a discussion of observations as it pertains to the habitats located within the East Airfield site. The technical memorandum found that the eastern portion of the AOA (adjacent to the East Airfield site) was more attractive to wildlife and this could, in part, be attributed to the surrounding land uses. The western portion of the AOA is adjacent to more developed, urban land uses while the eastern portion of the AOA is adjacent to open areas containing a variety of natural habitats,

[7] The Airport Operations Area (AOA) includes paved or unpaved areas used or intended to be used for the unobstructed movement of aircraft, in addition to its associated runways, taxiways, or aprons.
[8] GOAA Avifauna Field Data FY 2013 (Environmental Management & Design, Inc, 2013).

including wetlands and large water bodies. Additional details of the technical evaluation are provided in Appendix G.

A Wildlife Hazard Site Visit (WHSV) was conducted on the East Airfield site from January 15, 2015 to January 17, 2015. The 3-day site visit was conducted by FAA-qualified Airport Wildlife Biologists. The methods used for the WHSV were consistent with Draft FAA Advisory Circular (AC) 150/5200-38, *Protocol for the Conduct and Review of Wildlife Hazard Site Visits, Wildlife Hazard Assessments, and Wildlife Hazard Management Plans*. Over the three consecutive days, biologists conducted two surveys at dawn, midday, and dusk periods from fixed survey points throughout the 1,342-acre site and from the eastern boundary of the AOA (adjacent to the site). Two spotlight surveys were also conducted one hour past sunset. Following the completion of field surveys, the FAA-qualified Airport Wildlife Biologist prepared a WHSV report based on guidance contained in Draft AC 150/5200-38. A copy of the WHSV reports is provided in **Appendix H**. The WHSV was submitted to the FAA for review and the FAA subsequently requested that GOAA update its WHMP to reflect the findings and recommendations of the WHSV. A summary of the recommendations from the WHSV report is provided below. Additional detail on each recommendation is provided in the WHSV report and the attached *Supplemental Technical Appendix* that provides the background information and data used to develop the wildlife management measures. The recommendations were incorporated into the MCO Wildlife Management Plan, which was revised in July 2015.

Passive Management Actions

- Remove and/or fill all open marsh wetlands or areas of standing water.
- Provide routine maintenance to clear ditches and stormwater ponds.
- Remove and fill all forested wetlands to reduce significant habitat.
- Maintain a consistent grass height of 6 to 12 inches throughout the East Airfield property.
- Remove carrion promptly.
- Stabilize roads throughout property to facilitate management activities.

Active Management Actions

- Harass and/or shoot high priority species including, but not limited to, wild turkey, deer, vultures, ibis, ducks, gulls, cattle egrets, and sandhill cranes.
- Remove nesting material, nests, nesting trees, and roosting sites whenever found.

Administrative Recommendations

- Report all wildlife strikes and document all wildlife management actions.
- Consult a qualified airport wildlife biologist when drafting new construction plans.
- Continue to train personnel in wildlife identification and management procedures.

- Continue to monitor wildlife behavior and abundance at MCO and the East Airfield property.
- An independent audit of the MCO wildlife hazard management program should be conducted every five years.

2.3.3 Secondary Fuel Supply Reliability

The purpose is to allow the airport to develop a geographically separate, redundant fuel supply at the airport.

Currently, MCO has one fuel facility on the west side of the airport. That facility is supplied by refinery sources via barges from the Gulf of Mexico via the Port of Tampa (located in Hillsborough County) and a pipeline from the port to central Florida, as well as via a trucking operation from a recently completed fuel farm at Port Canaveral. This supply and distribution network is subject to natural and manmade hazards.[9] The development of a secondary fuel storage and distribution network will reduce the potential for fuel supply disruptions.

At Port Canaveral, a three million barrel fuel farm recently became operational. According to a recent Orlando Expressway Authority report, MCO will serve as the future western terminus for a jet fuel pipeline from Port Canaveral.[10] A second fuel storage and distribution facility would be located to take advantage of the new east coast fuel source and provide both system redundancy and geographic separation. This increases the likelihood that one fuel supply, storage and distribution system remains operational in the event one becomes inoperable. It would also improve the competitiveness of fuel prices for users of fuel products.

2.4 Near-Term Need for the Proposed Action

The *need* for the Proposed Action includes GOAA's need to increase and diversify airport revenues so that the airport can be as self-sustaining and economically viable as possible, improve safety, and ensure operational stability.

GOAA's review of available land areas at MCO indicates that there are limited large, contiguous, and developable sites remaining on MCO property that could accommodate large-scale aviation uses. Many of the areas at MCO are either developed, committed to future development for passenger support facilities, or have site constraints. Sites examined for their capability to support future large-scale aviation uses included the 1,300-acre Tradeport area, the 229-acre Heintzelman Boulevard area, and the 1,367-acre Mud Lake area. Detailed discussions of these potential sites are contained in Section 3, Alternatives, of this EA.

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[9] *Hillsborough County Post Disaster Redevelopment Plan*, Page 3-6, July 2010, "Forty-five percent of all petroleum products for the state come in through the Port of Tampa, including jet fuel for the MacDill Air Force Base, and Tampa International and Orlando International Airports. The gasoline that is distributed from the Port of Tampa would affect a five-county area if the Port was greatly impacted by a disaster. Short-term supplies of fuel would be all that would be available until the Port's operations were restored (Tampa Port Authority, 2009)."

[10] *SR 528 Multi-Use/Multi-Modal Corridor Study*, Orlando Expressway Authority. July 2008.

2.4.1 Efficient Use of Airport Property

There is a need for the airport sponsor to diversify and increase revenue generation through highest and best use of its property and to be responsive to potential demand for development.

Site Design and Shared Infrastructure

A large contiguous area for aviation development enables it to be designed to efficiently accommodate a single large-scale user or multiple users. The land area required to develop a commercial service airport along with the cost of providing runways, taxiways, navigational aids, surface access and other shared infrastructure can be substantial and costly. Using airport land efficiently to maximize the aviation benefit provided for those developments that require direct airfield access or access to airport infrastructure is a major consideration when addressing the development of airport property. GOAA's experience on the west side of the airfield, along Tradeport Drive, yielded important lessons on how to improve aviation building and aircraft apron use to maximize operational efficiency. The former existing military facilities in the Tradeport area consisted of long linear aircraft aprons running parallel to the runways. This design was to facilitate the rapid deployment of military aircraft. However, it limits aircraft parking apron frontage and the interface with aviation support facilities. Aircraft aprons that are perpendicular to the airfield would offer more opportunity for apron frontage use by multiple users and is a more efficient use of airport property. The FedEx apron and building project in the Tradeport area illustrate this premise, and it is a prime example of how to maximize aircraft access efficiency.

In Florida, areas that are owned and operated by an airport generally function under a master stormwater management plan or permit. Locating and sizing stormwater management areas to serve a large contiguous area under a stormwater master plan or concept provides for efficient use of land, and cost savings to the airport and end users. The stormwater facilities will be designed, constructed, and operated to meet the full extent of the South Florida Water Management District (SFWMD) rules governing water quality and quantity to avoid potential downstream flooding, and FAA criteria with respect to FAA Advisory Circular (AC) 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports*.

Site utilities would be constructed and shared by users as the large contiguous site is developed. Shared utility infrastructure would include electrical power, sanitary sewer, telephone service, lighting, potable water and other infrastructure all of which would be developed in a planned approach. The result is an efficient use of land and cost savings to the airport and end users.

The City of Orlando revised the Growth Management Plan (GMP) Transportation Element Policy and adopted a City-wide Transportation Concurrency Exception Area (TCEA) and mobility strategies in January 2011.[11] Objectives and policies of the GMP Transportation Element note that "Access to the Orlando International Airport shall be improved through a combination of improvements (including

[11] Chapter 163.3180 Florida Statutes (F.S.) authorizes local governments to establish TCEAs – special transportation management areas that are exempt from the transportation concurrency requirement. In Orlando, major thoroughfares located inside the TCEA do not have to adopt level of service standards and developments in this area do not have to meet concurrency requirements for roadways. However, developments in this area are subject to other mobility requirements. The Orlando TCEA was developed to promote infill development and to encourage the use of alternative transportation modes consistent with Florida Statutes 163.3180.

enhanced transit service and implemented roadways system expansion) implemented by the City of Orlando, adjacent jurisdictions, the Central Florida Regional Transportation Authority (dba Lynx), the Florida Department of Transportation, and the Greater Orlando Aviation Authority" and "The City shall support the growth of aviation facilities needed to keep up with the increased demand of business, tourism and conventional travel" (GMP Transportation Element Policy 1.6.1, 1.17.1). Inside the boundaries of the TCEA, the GMP Transportation Element Policy 2.4 notes that all new development and redevelopment must mitigate their impacts to public transportation facilities proportionate to the proposed development and according to the different transportation mobility needs for each Mobility area of the City. By developing a master plan for future aviation development areas at MCO, there will be increased efficiency when moving forward with planned roadway infrastructure projects.

Generation and Diversification of Revenue

The generation of revenue through aviation related development will help the airport sponsor meet the need of off-setting airport operation expenses. The generation of revenue allows the airport to become more efficient, and supports the FAA's statutory responsibilities under 49 U.S.C. § 47101 and the airport's grant obligations.[12] The airport and the East Airfield are subject to the FAA grant assurances resulting from the sponsor's acceptance of property and Federal grant funds. Grant Assurance 24 requires that the airport maintain a fee and rental structure for the facilities and services at the airport to be as self-sustaining as possible.

As a base for Florida tourism, Orlando's travelers are very cost conscious and highly price sensitive. As a result, MCO has among the cheapest fares in the US.[13] Maximizing use of available land for revenue production is a key strategy that GOAA continues to employ to help offset both the airlines and Authority's operating costs, in turn providing cost savings to the travelling public. In 2014, thirteen percent of MCO's total operating revenue was generated by the airlines, with the balance coming from a variety of sources including parking, concessions, and the airport hotel.[14]

MCO's location in central Florida makes it an attractive site for development of aviation facilities. The high volume of aviation activity at MCO could potentially provide a market for aircraft maintenance facilities at the airport. Furthermore, due to MCO's proximity to Cape Canaveral, an available skilled workforce of aerospace industry professionals could prove attractive to a variety of potential aviation businesses.

GOAA conducted a review of revenue-producing facilities at MCO in order to provide an indication of the order of magnitude of revenue that could be generated by development of the East Airfield. Existing uses at MCO that are similar to the high intensity aviation uses anticipated for the East Airfield include the ComAir hangar, the FedEx facility, the Cessna facility and the Jet Blue Maintenance Hangar Complex. These facilities total approximately 64 acres of property and generate a yearly

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[12] 49 U.S.C. §47101 (a) (13) and Grant Assurance 24.

[13] The United States Department of Transportation Bureau of Transportation Statistics (USDOT BTS), "The average cost of a domestic round-trip ticket out of Orlando during the second quarter of 2014 was about $309.31 ranking MCO as 11th-cheapest of 100 airports across the country."

[14] Greater Orlando Aviation Authority, 2014.

income of around $1 million. Existing businesses at MCO similar to the medium intensity aviation uses anticipated for the East Airfield site include the Jet Blue Training Facility and the Flight Safety Orlando Learning Facility. These facilities total approximately 18 acres and generate about $240,000 annually in revenue. These rates were applied to the acres of high and medium intensity uses identified for the East Airfield to generate an order-of-magnitude of revenue potential at build out. GOAA projects that total revenue generation could be approximately $10 million annually.

2.4.2 Consistency with Local Land Use and Planning

There is a need for the airport to develop the East Airfield consistent with the Southeast Orlando Sector Plan to support the City of Orlando and the region's economic development goals.

A relevant factor in describing the need for the Proposed Action is GOAA's objective to remain competitive in its ability to attract aviation-related firms to MCO and to further local economic development goals. As outlined below, selecting a site for future development is a fundamental first step towards achieving these objectives and would be consistent with local land use plans.

In Florida, planning is guided by long-term plans developed pursuant to guidelines set forth by the Florida legislature. Each local government is required to adopt a comprehensive plan to set forth how it will grow and meet demands to provide public services for the anticipated growth. The City, in compliance with state requirements, has adopted its comprehensive plan which is codified as the City of Orlando Growth Management Plan. All development within the City must be consistent with the Growth Management Plan. The City's Growth Management Plan includes a Future Land Use Map component which contains the various general use categories which drive planning and zoning in the City. The current Future Land Use Map series includes the East Airfield and reflects its currently approved land use categories. The East Airfield site is predominantly planned to be Aviation Support District-High Intensity, with smaller areas designated Aviation Support District-Medium Intensity and Metropolitan Activity Center. The Proposed Action is consistent with the land use categories set forth in the Growth Management Plan.

The East Airfield site is located in the City of Orlando Southeast Orlando Sector Plan (originally adopted in 1999) (see **Figure 2.4-1**). A portion of this plan's vision statement includes the following:

> "The City of Orlando has identified the Southeast Orlando Sector Plan area as a Future Growth Center with the Orlando International Airport as the primary economic and employment generator. In the near future, the Greater Orlando Aviation Authority plans to . . . ., expand terminal facilities, build new on-site roadways, pursue regional rail transit linkages, and actively market airport-related office and industrial development on the airport property."

MCO is an essential component of Orlando's continued economic development according to the City of Orlando's GMP, Future Land Use Element. Goal 4 of the GMP notes that:

"Because the airport's role in the regional and state economy is so vital, the City of Orlando is dedicated to the continued growth of airport facilities, and the planned growth of those surrounding

areas which provide support to, and are supported by the airport."[15] GOAA's research indicates that large-scale high intensity aviation development can generate employment in the local community. For example, Boeing has a manufacturing and assembly plant for the Boeing 787 aircraft at the Charleston International Airport (CHS)/Charleston Air Force Base (AFB). According to GOAA's research, the Boeing facility at the CHS/Charleston AFB provides 4,000 direct jobs on-site and 16,000 induced jobs in the surrounding communities. GOAA estimates that at full build out of the East Airfield site could create approximately 4,960 temporary construction jobs at MCO and approximately 8,840 permanent jobs.[16]

The two primary land use designations identified within the City of Orlando Southeast Sector Plan for the future development of aviation uses include:

- Airport Support District – High Intensity (ASD-2)
- Airport Support District - Medium Intensity (ASD-1)[17]

GOAA anticipates that high intensity aviation support uses could include aircraft manufacturing, aircraft maintenance, cargo, and fuel storage facilities. Medium intensity support uses could include aviation business offices, flight training centers, and other aviation and non-aviation related facilities. However, all aviation and non-aviation development proposed for the East Airfield site that requires an Airport Layout Plan (ALP) approval would have to be approved by the FAA. The FAA does not permit residential land use on airport property. A park is proposed as mitigation to the neighboring community, at the request of the City of Orlando. The park area is planned to be sold to a third party at fair market value. GOAA will seek appropriate land release from the FAA at that time.[18]

MCO functions as a multimodal hub for the Central Florida Region.[19] The City of Orlando encourages the growth of aviation facilities at MCO and high-technology businesses in the Sector Plan in order for Orlando to successfully compete with other cities in the U.S.[20]

Since the Sector Plan was adopted by the City of Orlando, GOAA has taken measures to meet the goals established for MCO in the City's plan. The fourth runway was constructed; new on-site roads (including Heintzelman Road and portions of the Goldenrod Road interchange) have been built; South Terminal expansion facilities have received Federal approval; and MCO has identified and maintained right-of-ways for regional and state rail systems on MCO property. GOAA has identified that an important step in further implementing the goals of the Sector Plan is the marketing and development of aviation uses of available airport land.

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[15] *City of Orlando Growth Management Plan*, Future Land use Element, Goal 4. Approved August 12, 1991 – Amended April 9, 2012.

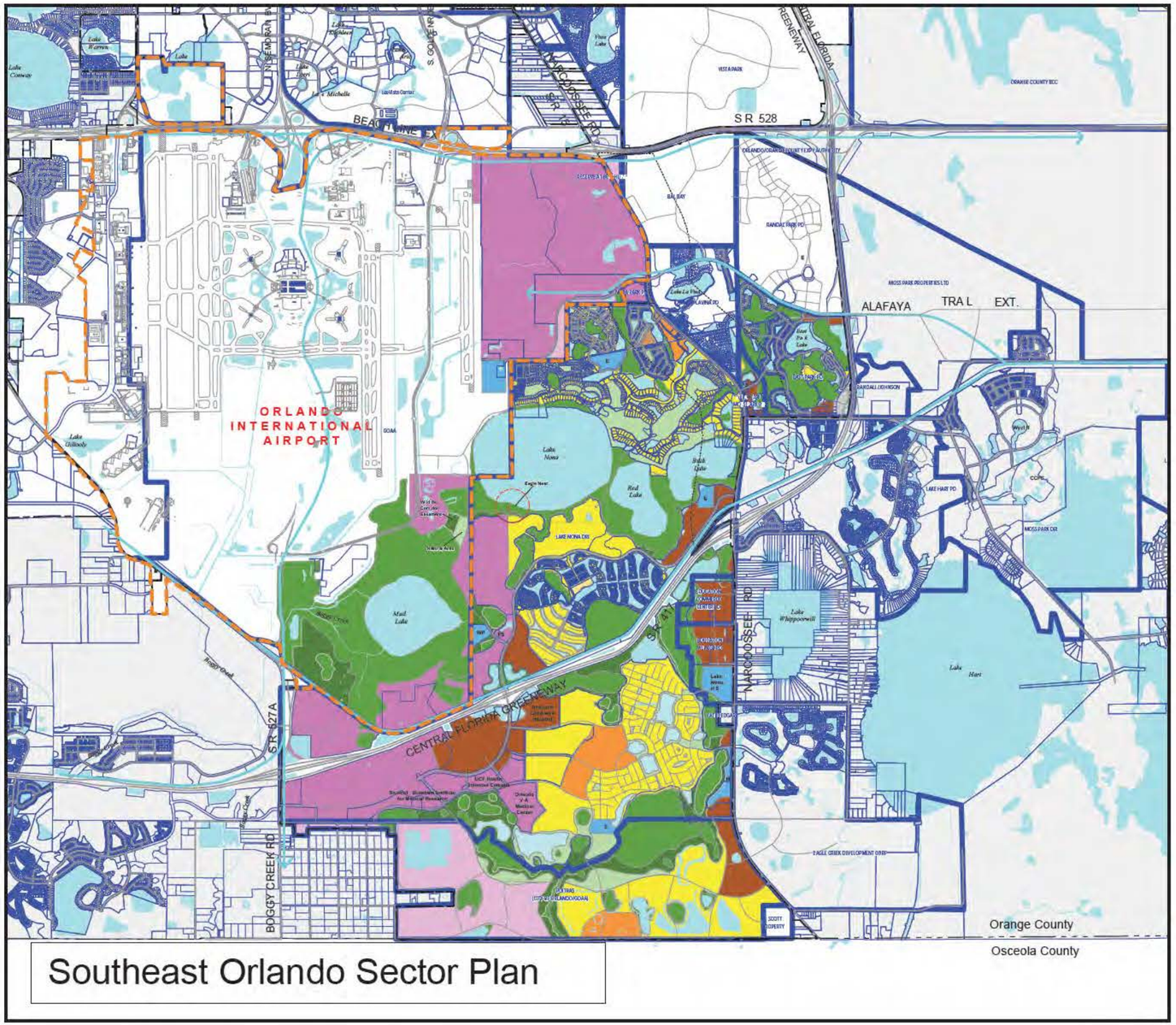
[16] Greater Orlando Airport Authority, September 2014.

[17] See section 5.3.3.2 Local Land Use and Zoning for a full listing of identified land uses and zoning categories.

[18] GOAA will record an aviation easement on the property as part of the transaction.

[19] *City of Orlando Growth Management Plan*, Future Land Use Element, Goal 4, Policy 4.2.1, Approved August 12, 1991 – Amended April 9, 2012.

[20] *City of Orlando Growth Management Plan*, Future Land Use Element, Goal 4, Policy 4.1.1, Approved August 12, 1991 – Amended April 9, 2012.



LEGEND

- Residential Neighborhood (Residential Centers may be permitted)
- Golf Course
- Public Institutional (School - H,M & E)
- Town Center
- Village Center
- Neighborhood Center
- Residential Center
- Airport Support District (High Intensity)
- Airport Support District (Medium Intensity)
- Urban Reserve
- Park, Neighborhood Greens & Plazas (Public / Recreational)
- Water Body
- Primary Conservation Network / Wetlands *SEE NOTE I*
- Electric & Gas Easement / ROW
- GOAA Property Boundary
- City Jurisdiction Boundary
- County Jurisdiction Boundary
- Transit/Increased Density Corridor *SEE NOTE II*
- Potential Rail Corridors
- Proposed Roadway *SEE NOTE III*
- Existing Road Network
- Property Owner or Project Name

City Of Orlando
Economic Development Department
City Planning Division
November 2010

NORTH

Note I: The PCN boundaries are conceptual only and will be finalized as more accurate enviromental information becomes available.

Note II: Traditional design standards shall apply where development exceeds an average density of 3 du/gross acre for areas outside of 2,000 feet from Narcoossee Rd., or an average density in excess of 5 du/gross acres within 2,000 feet of Narcoossee Rd. ROW, for the area north of the Central Florida Greeneway.

Note III: The Sector Plan shows a conceptual interconnected road network. These connections are necessary to support the land use entitlements provided by the Plan. The final alignments & connections will be established based on individual master plan proposals and existing environmental constraints.

SOURCE: http://www.cityoforlando.net/gis/pdf/Planning/Se_Sector_11_2010.pdf; and adapted by ESA Airports, 2015

Figure 2.4-1

Figure LU 2A Southeast Orlando Sector Plan (November 2010)

2.4.3 FAA Regulations and Requirements

There is a need to provide a site(s) for large-scale aviation uses that is not in conflict with Federal regulations and airport design requirements.

The FAA requires that aviation development at airports complies with FAA standards and promotes the safe and efficient use of airport property. FAA standards, outlined in the Code of Federal Regulations (CFRs), various FAA Orders and Advisory Circulars, FAA Grant Assurances, and other FAA guidance address a wide range of issues, including airspace protection, aircraft movement areas, air traffic control line-of-sight, wildlife hazard attractants, navigation aids, safety, security, and wildlife hazard management. FAA Grant Assurance 19, Operation and Maintenance, and Grant Assurance 20, Hazard Removal and Mitigation, respectively, obligate GOAA to operate the airport "at all times in a safe and serviceable condition in accordance with the minimum standards as may be required by or prescribed by applicable Federal, state and local agencies for maintenance and operation" and to "assure that such terminal airspace as is required to protect instrument and visual operations to the airport . . . will be adequately cleared and protected by . . . mitigating existing airport hazards . . . and by preventing the establishment or creation of future airport hazards." Any proposed development will need to meet all applicable FAA standards and criteria as discussed below.

Title 14 Code of Federal Regulations (CFR) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*, and FAA Order 8260, *Terminal Instrument Procedures (TERPS)*, regulate and protect airspace. Both regulations specify imaginary surfaces that must not be penetrated by any object, either natural or man-made, for the safety of aircraft operations, unless approved by the FAA. Part 77 allows the FAA to prepare an advisory opinion to identify potential aeronautical hazards in advance thus preventing or minimizing the adverse impacts to safe and efficient use of navigable airspace. TERPS establishes specific design parameters for the various types of instrument approaches that can be made to a runway. TERPS are directly related to the ability of the airport to maintain operation during inclement weather and maintaining these surfaces free of obstacles is critical to the overall capacity and safe operation of the airport. Generally, but not always, ensuring that Part 77 surfaces are not exceeded will minimize potential for impacts to TERPS. Part 77 surfaces primarily limit development along the extended runway centerline and, to a lesser extent, areas lateral to the runway. The East Airfield site is located on the periphery of MCO. By locating large-scale, high intensity aviation uses at the periphery of the airport in an area like the East Airfield, the potential for airspace related operational impacts are eliminated.[21]

Aircraft movement areas include runways, taxiways and apron areas that facilitate the movement of aircraft. FAA AC 150/5300-13A, *Airport Design*, (Change 1)[22] specifies design criteria for these areas to ensure the safe and efficient movement of aircraft while arriving/departing or transiting the airfield. These

[21] Typical heights of large-scale aviation use facilities existing on MCO property range from 27-foot single story facilities (such as the Fed Ex sort facility) to an approximately an 80-foot high hangar building (such as the Continental hangar facility). Large-scale aviation facilities include consideration of the potential building heights and aircraft tail heights that could access these areas.

[22] GOAA filed a petition for review of FAA Advisory Circular 150/5300-13A with the United States Court of Appeals for the Eleventh Circuit on November 26, 2012 (Greater Orlando Aviation Authority v. Federal Aviation Administration, appeal docketed, No. 12-15978-C (11th Cir. Nov. 26, 2012)). The parties entered into a settlement agreement on September 27, 2013 which does not preclude the planned location of the future rail corridor and the Cargo Road Extension (subject to distance and height restrictions).

design criteria address a variety of factors, including pavement width, shoulder requirements, fillet design, wing tip clearances, taxiway to runway and taxiway/taxilane to fixed or movable object clearances, among others. The clearances provided when developing new aviation facilities needs to be adequate to accommodate aircraft that might reasonably be expected to use the facilities while providing long-term flexibility. The conceptual design of the aviation use areas at the East Airfield site have been planned to accommodate large-scale aircraft (ADG IV, V and VI aircraft[23]). MCO currently accommodates these types of aircraft and the East Airfield site would be similarly designed. Examples of Group IV aircraft include B-757 and B-767 aircraft; Group V aircraft include B-777 and B-747-400 aircraft; Group VI aircraft include the A-380.

Air Traffic Control line-of-sight standards contained in AC 150/5300-13A play a key role in determining whether a new facility constructed on an airport will be compatible with air traffic control operations. Controllers must have a clear, unobstructed view of all movement areas (runways, taxiways, holding areas) on the airport. To avoid impeding line-of-sight, some areas may be restricted from development, and others may have height or other limitations placed upon them. Other factors include shadows cast by buildings, future ramp lighting, or other external light sources. By placing large-scale development in areas lateral to the runways, along the perimeter of the airport, and beyond the outermost runways, the potential for line-of-sight conflicts is reduced.

Navigational aids (NAVAIDs) provide electronic and visual guidance to aircraft arriving or departing an airport. NAVAID signals can be sensitive to fixed or movable objects located within defined critical areas. Guidance and requirements for minimizing potential signal interference are outlined in FAA Advisory Circulars and Orders. Failure to protect NAVAID critical areas can result in a reduced margin of safety and can impede the operational efficiency and capacity of an airport. NAVAIDs are generally located in the immediate vicinity of a runway or along its extended centerline, but can run laterally or be located more remotely depending on the facility. Developing large-scale aviation uses in areas lateral to the runways, along the perimeter of the airport, and beyond the outermost runways, would minimize potential NAVAID impacts.

FAA requires that certain areas of a Part 139 commercial service airport have a secure airside.[24] The development of facilities with airfield access requires that secure airside operations be maintained. Access to the airside through buildings must be controlled and secured. Access to the airside outside of buildings requires fencing and checkpoints for the secure processing of persons, materials and machinery.

[23] Aircraft are categorized according to Airplane Design Group (ADG) based on wingspan and tail height. For example, Group VI aircraft would have a wingspan from 214 feet up to but not including 262 feet and a tail height from 66 feet up to but not including 80 feet. FAA Advisory Circular 150/5300-13A.

[24] The Transportation Security Administration (TSA) has developed policies and guidelines for Part 139 commercial service airports in *Recommended Security Guidelines for Airport Planning, Design and Construction*, May 2011.

2.4.4 Reduce Wildlife Hazard Attractants

There is a need to improve safety at the airport through the reduction of wildlife hazard attractants on the East Airfield.

The goal of wildlife hazard management is not to wait for an incident to occur, but rather to identify the conditions that are likely to cause risk and manage that risk before a hazard to aviation occurs. FAA AC 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports*, outlines criteria to minimize potential wildlife conflicts with airport facilities. Wildlife hazard attractants within the East Airfield are within the FAA separation distance criteria of 10,000 feet of the AOA.[25] The removal and management of existing wildlife hazard attractants on the East Airfield has been identified as a priority by the GOAA Airfield Operations Department and the USDA who conducted the WHA for the East Airfield (2010) and WHSV (2015). The recommendations, based on information and data provided in the attached *Supplemental Technical Appendix*, were incorporated into the MCO Wildlife Management Plan.

GOAA Airfield Operations Department implements ongoing wildlife monitoring as part of their Wildlife Hazard Management Program. Wildlife, specifically birds, moving to and from the East Airfield area across the AOA, Runway 17L-35R, and Runway 17R-35L, have been documented as a major wildlife hazard concern by the GOAA Operations Department.[26]

The goals set forth in FAA AC 150/5200-33B, which provides the need to eliminate wildlife hazard attractants, and the goals of the Federal Clean Water Act (CWA), which provides the requirement to demonstrate avoidance and minimization of wetland impacts to the maximum extent practicable, appear to be in conflict. To balance the goals of the FAA and the CWA requires considering the removal of some and minimization of impacts to other wetlands. Wetland or natural areas located further from the AOA could be actively managed by the GOAA Airfield Operations Department to discourage movement towards the airfield and to decrease the attractiveness of these areas to high hazard species.

The location and design of stormwater detention ponds or other water bodies are key safety considerations for an airport. In accordance with FAA AC 150/5200-33B, ponds and water bodies should be removed or located as far from the runways and active airfield areas as practicable and be designed to minimize their potential as a wildlife attractant. The East Airfield site's conceptual stormwater management system is comprised of dry pretreatment swales and wet detention ponds that are primarily located on the eastern side of the development area as far from runway 17L-35R as practicable. The stormwater management system will be in compliance with the FAA AC goal to reduce or eliminate hazardous wildlife attractants through site selection, design, management, and implementation of a wildlife hazard management plan.

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[25] "1-3. AIRPORTS SERVING TURBINE-POWERED AIRCRAFT. Airports selling Jet-A fuel normally serve turbine-powered aircraft. Notwithstanding more stringent requirements for specific land uses, the FAA recommends a separation distance of 10,000 feet at these airports for any of the hazardous wildlife attractants mentioned in Section 2 or for new airport development projects meant to accommodate aircraft movement. This distance is to be maintained between an airport's AOA and the hazardous wildlife attractant." FAA AC 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports.*

[26] *Greater Orlando International Airport Airfield Operations Area Wildlife Ecological Study and Annual Report 2013*. See Appendix E for a copy of this report.

2.4.5 Development of a Secondary Fuel Storage and Distribution Facility at MCO

There is a need to provide additional and redundant aviation fuel and distribution facilities to ensure an adequate reliable source of fuel at MCO.

The development of a fuel storage and distribution facility located on the east side of MCO will provide a separate, secondary fuel storage and distribution facility. Jet fuel supply, storage and distribution facilities are critical infrastructure elements for a large hub commercial service airport such as MCO. Fuel supply reliability is not only important to ensure that the airport can maintain its critical role in transporting passengers in a consistent and predictable manner, but also in serving its critical role in disaster recovery. In 2015, the US Department of Homeland Security (DHS), the Florida Division of Emergency Management (FDEM) and the Florida Department of Law Enforcement (FDLE) initiated the 2015 Florida Fuels Regional Resiliency Assessment Project (RRAP). The goal of the program "is to mitigate the Nation's risk of loss of life and physical and economic damage from natural and manmade hazards." On March 4th 2015, GOAA met with DHS and other stakeholders at the Port of Tampa to discuss fuel resiliency strategies. Development of a secondary fuel storage and distribution facility is consistent with the goals of RRAP and need to ensure a consistent and stable fuel supply.

Florida experiences more hurricanes than any other state and south Florida is especially at risk.[27] In August 2005, Hurricane Katrina resulted in shutdowns of Gulf Coast refineries which supply 13 percent of the nation's jet fuel. Airports throughout the southeast, including MCO, reached critical fuel supply levels and airlines were required to "tanker" fuel by carrying additional fuel loads when traveling into the area.[28] While not affecting the pipeline pump facilities at the Port of Tampa, Hurricane Katrina knocked out fuel pump operations in Mississippi and Alabama – impacting supplies in areas as far away as New Jersey and Virginia. Hurricane frequency and intensity is extremely difficult to predict and varies considerably from year to year. The 2005 Atlantic hurricane season was the most active in recorded history while the 2012 season was tied for third with the most named storms. Climate change is expected to not only worsen the effects of hurricanes and storm events due to sea level rise and increased potential for flooding, but also to increase the frequency of extreme storm events such as Hurricane Katrina.[29]

The Port of Tampa and the pipeline network are two elements of infrastructure considered "the most critical and vulnerable to natural hazards, accidents and terrorist incidents…"[30] In 2003 and again in November 2007, an ammonia pipeline in Tampa was vandalized resulting in service disruptions.

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[27] Hillsborough County MPO 2035 Long Range Transportation Plan, Security Technical Report, March 2009, "Florida is the most hurricane prone state in the nation, and southern Florida is especially vulnerable to natural hazards. Hillsborough County has experienced hurricanes and tropical storms at a frequency of one occurrence every 3.62 years."

[28] USA Today, Shortage looms in Jet-Fuel Disruption not fixed soon, August 31, 2005

[29] Port Recovery in the Aftermath of Hurricane Sandy, Improving Port Resiliency in the Era of Climate Change, Center for New American Security, August 2014

[30] Hillsborough County MPO 2035 Long Range Transportation Plan, Security Technical Report, March 2009, "The Critical Infrastructure/Key Resources identified as being the most critical and vulnerable to natural hazards, accidents and terrorist incidents are: …Port of Tampa…Pipeline Network… Man-made threats are also a growing concern to the region, especially given the importance of the CI/KRs located in Tampa and the surrounding region."

In March 2011, an electrical problem sparked a fuel farm fire at Miami International Airport impacting the fuel distribution system and 60 percent of the airport's fuel distribution capacity. The disruption resulted in hundreds of flight cancellations and delays during the week following the fire. A similar incident occurred at Boston Logan Airport in September of 2013. While this type of accident occurs infrequently, they demonstrate the impacts that can result from disruptions in the fuel supply. Fuel contamination and equipment malfunctions are other examples of issues that can disrupt the distribution of fuel.

SECTION 3
Alternatives

3.1 Introduction

The alternatives section of an Environmental Assessment (EA) compares the No-Action Alternative, the Proposed Action, and reasonable alternatives (if any), for their ability to meet the purpose and need for the proposed project and their environmental effects.[1] Alternatives that do not meet the purpose of and need for the Proposed Action are considered not reasonable, and are not carried forward for detailed environmental analysis. An EA must consider the consequences of taking no action (the No-Action Alternative) in order to meet Council of Environmental Quality (CEQ) and *National Environmental Policy Act* (NEPA) requirements.

Three alternative screening analyses were conducted. The initial screening analysis determined which alternatives met the purpose of and need for a large contiguous site for development of high and medium intensity aviation and aviation support facilities, medium intensity land uses, and related infrastructure. The secondary screening analysis focused on those factors that would most effectively minimize the risk associated with existing wildlife attractants at Orlando International Airport (MCO) and the fuel storage and distribution facility. Following these secondary screening analyses, alternatives determined to be reasonable, along with the No-Action Alternative, were carried forward for detailed environmental analysis in Section 5, Environmental Consequences, of this EA.[2]

3.2 Large Contiguous Site for Development of High and Medium Intensity Aviation and Aviation Support Facilities - Alternatives Considered

Seven alternatives, including the Proposed Action and No-Action Alternative, were developed to potentially meet the purpose and need for a large contiguous site at MCO for development of high and medium intensity aviation and aviation support facilities, non-aviation medium intensity land uses, and related infrastructure. FAA Order 5050.4B states that alternatives considered should include those within a Sponsor's or FAA's purview and alternatives that are outside of the FAA's jurisdiction. The alternatives considered, except for the No-Action Alternative, were developed

1 FAA Order 5050.4B, paragraph 706(d).

2 The No-Action Alternative was carried forward through the alternative analysis to meet NEPA and CEQ requirements.

because they had the potential to meet one or more of the following stated purpose and need elements:

- The site provides a large contiguous site with shared infrastructure for large-scale aviation, aviation support, and medium intensity development.
- The development of the site will enable the Airport Sponsor (Greater Orlando Aviation Authority (GOAA)) to diversify and increase revenue.
- Development of a site for large-scale aviation, aviation support, and medium intensity development will be consistent with the local land use planning.

The alternatives analysis also considered two off-site alternatives. One of the off-site alternatives is outside of the FAA's jurisdiction (Lake Nona site) and the other off-site alternative is at the Orlando Executive Airport (owned and operated by GOAA). There are four on-site alternatives, all of which are located on GOAA property at MCO. The No-Action Alternative is included in the on-site alternatives analysis. Below is a list of the alternatives evaluated in this section.

Off-Site alternatives considered:

Off-Site Alternative #1 - Lake Nona Alternative

Off-Site Alternative #2 - Orlando Executive Airport Alternative

On-Site alternatives considered:

No-Action Alternative

On-Site Alternative #1 - East Airfield Alternative (Proposed Action)

On-Site Alternative #2 - Tradeport Alternative

On-Site Alternative #3 - Heintzelman Boulevard Alternative

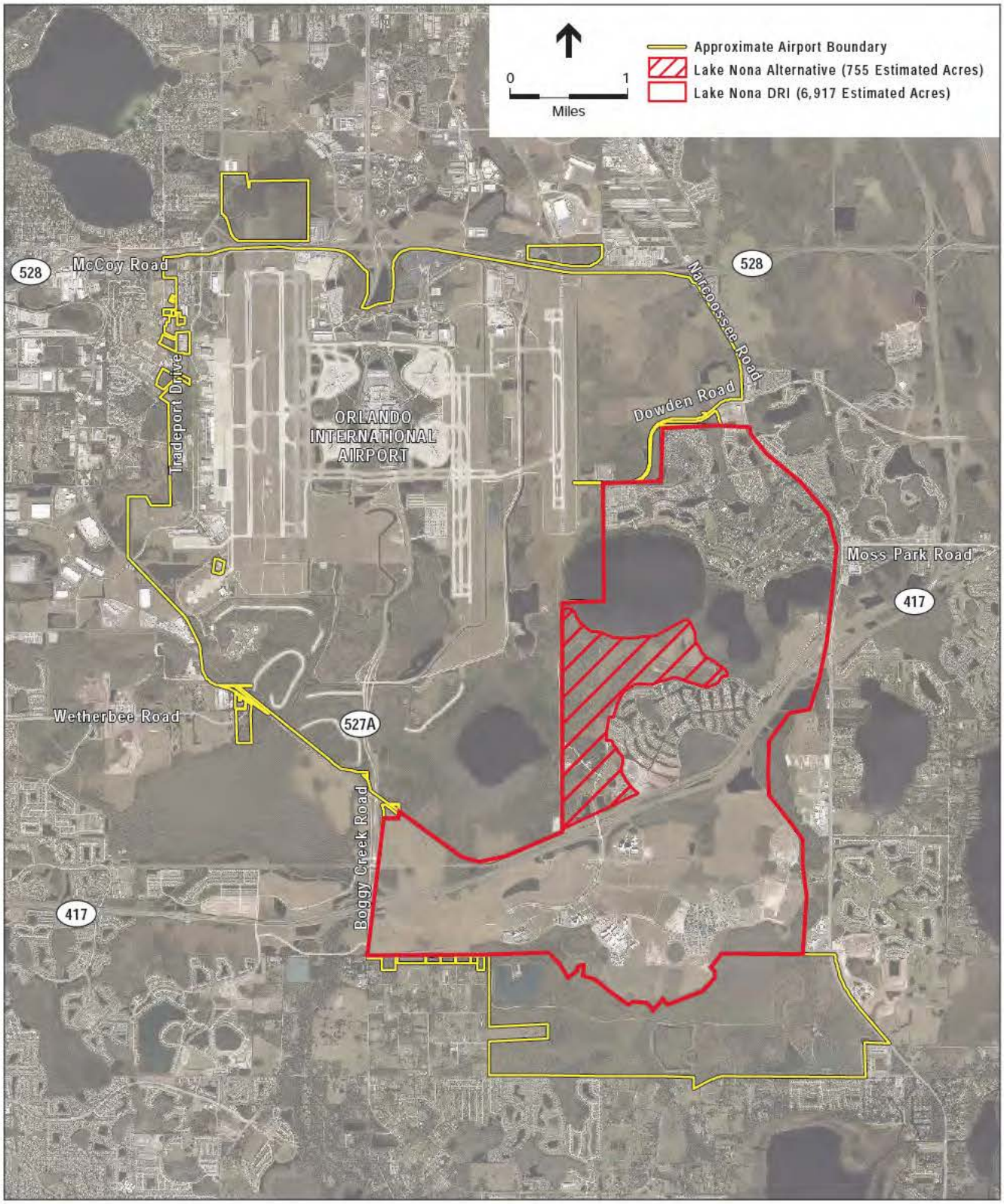
On-Site Alternative #4 - Mud Lake Alternative

3.2.1 Off-Site Alternatives

Off-Site Alternative #1 - Lake Nona Alternative

The privately-owned Lake Nona Development of Regional Impact (DRI) is approximately 6,917 acres in size; located to the south/southeast of MCO, and is within the Southeast Orlando Sector Plan. The Lake Nona DRI is bordered on the north by Dowden Road and on the east by Narcoossee Road. State Road 417 ("The Greeneway") bisects the area, east to west. The Lake Nona DRI area is currently being developed and includes residential, retail, hotel/resort, office, medical, and light/heavy industrial uses.

The Lake Nona Alternative is an approximate 755-acre site located directly south of Lake Nona and contiguous to MCO property (see **Figure 3.2-1**). This area is largely dedicated to conservation easements for wetlands and has been permitted for residential/commercial and light/heavy industrial development as part of the Lake Nona DRI. Lake Nona and the US Tennis Association



SOURCE: Greater Orlando Aviation Authority, 2010; and ESA Airports, 2012

Orlando International Airport EA – East Airfield . 207524

Figure 3.2-1
Lake Nona Alternative

(USTA) have announced plans to develop a 63-acre tennis facility with over 100 courts within the Lake Nona Alternative site. The USTA project is slated to be completed in 2016.

Off-Site Alternative #2 - Orlando Executive Airport Alternative

Orlando Executive Airport (ORL), which is owned and operated by GOAA, is a General Aviation (GA) airport located east of downtown Orlando (**Figure 3.2-2**). ORL encompasses approximately 1,000 acres. The airport has two runways, the longest of which is 6,003 feet in length (Runway 7-25). ORL is a designated Reliever Airport within the FAA National Plan of Integrated Airport Systems (NPIAS) and its primary role is to accommodate general aviation and act as a reliever airport for MCO.

As shown on Figure 3.2-2, there are approximately 140 acres of undeveloped contiguous land at ORL. The ORL airfield and landside infrastructure would be difficult to expand because of existing natural features, long-established residential communities, and major existing roadways. Lake Barton is located directly northeast of Runway 7-25. Crystal Lake Drive and the East Central Park residential community are located directly southwest of the runway. State Road 50, Colonial Drive, borders airport property to the north and State Road 408 (East-West Expressway) borders airport property to the south.

3.2.2 On-Site Alternatives

Figure 3.2-3 depicts the location of the four on-site alternative areas at MCO. The No-Action Alternative is considered an on-site alternative.

The alternatives analysis did not consider sites at MCO that are either developed with existing passenger commercial service facilities, support services, or existing airfield or airside infrastructure (runways, taxiways, aprons, and Runway Protection Zones (RPZs)). GOAA does not consider it practicable to propose future aviation related development at these existing developed areas because the facilities have already been approved, designed, permitted, and/or constructed and they provide the facilities necessary to support existing commercial air passenger service at MCO.

GOAA also does not consider it practicable to propose future aviation-related development in the area planned for the MCO South Terminal Complex. This area is needed for future passenger service requirements at MCO. The FAA environmentally approved the South Terminal Complex Development Area in 1998 (MCO South Terminal Complex Final EA FONSI/ROD, dated August 4, 1998).[3] The City of Orlando approved the South Terminal Complex as part of MCO's Development Order (South Terminal Complex DRI, November 1998). The U.S. Army Corps of Engineers (USACE) and the South Florida Water Management District (SFWMD) issued permits for the South Terminal Complex area and all wetland mitigation requirements associated with those permits have been completed off-site. Since the 1998 approvals, GOAA has initiated site

[3] The South Terminal Complex Development areas are shown on Exhibit 1-4 of the South Terminal Complex Final EA. A copy of this exhibit is provided in in **Appendix J,** of the EA. A written re-evaluation for the South Terminal Complex was approved on December 4, 2013.

clearing, site preparation, utility infrastructure, stormwater systems, and constructed a portion of the Automated People Mover (APM) system which will connect the north and south terminal facilities (estimated completion to occur in the summer of 2017).

No-Action Alternative

Under the No-Action Alternative, a large, contiguous site would not be selected as a location for future aviation-related development at MCO.

On-Site Alternative #1 - East Airfield Alternative (Proposed Action)

The East Airfield Alternative is shown in **Figure 3.2-4**. The East Airfield site consists of 1,342 acres of undeveloped airport property that were historically used for agriculture (cattle grazing and sod production) under lease to third parties. The site is bordered on the north by State Road 528, Beachline Expressway, on the east by Narcoossee Road, on the south by Dowden Road, and on the west by Runway 17L-35R.

On-Site Alternative #2 - Tradeport Alternative

The Tradeport Alternative is shown on **Figure 3.2-5**. The Tradeport Alternative site is located on the west side of MCO. Tradeport Drive bisects the site, north to south. Tradeport is bordered on the east by the Tradeport West Ramp and Runways 18R-36L and 18L-36R, two 12,000-foot runways. This 1,126-acre area is substantially developed with numerous aviation facilities, including two Continental aircraft maintenance hangars, a FedEx sort facility, a US Postal Service sort facility, Flight Safety facility, the Cessna aircraft maintenance facility, and two large FBOs. There are three non-contiguous, undeveloped areas within Tradeport: an approximate 48-acre site on the north end, a 22-acre site in the central portion, and a 75-acre site in the southern portion.

On-Site Alternative #3 - Heintzelman Boulevard Alternative

The Heintzelman Boulevard Alternative consists of 229 acres of undeveloped land located east of the existing passenger terminal complex, between Runway 17R-35L and Runway 17L-35R, and north of Taxiway F4 (see **Figure 3.2-6**). Heintzelman Boulevard bisects the area, north to south. The western portion of the site is approximately 110 acres; the eastern portion is approximately 119 acres.

On-Site Alternative #4 - Mud Lake Alternative

The Mud Lake Alternative is located in the southern portion of MCO property. This approximate 1,367-acre site is located to the south of the Runway 17R-35L (see **Figure 3.2-7**). It consists of large natural areas (including uplands and wetlands) and Mud Lake, which is approximately 240 acres in size. The site has a 1,083-acre dedicated conservation easement recorded in the Orange County Public Records. The Conservation Easement is recorded in favor of the SFWMD, which required a

[4] South of Taxiway F is approximately 418 acres of undeveloped land that was identified as part of the proposed project in the FAA South Terminal Complex EA/FONSI dated August 1998. This area was identified as the "South Midfield Area" and is intended to support commercial passenger services.

SOURCE: Greater Orlando Airport Authority, 2006; and ESA Airports, 2012

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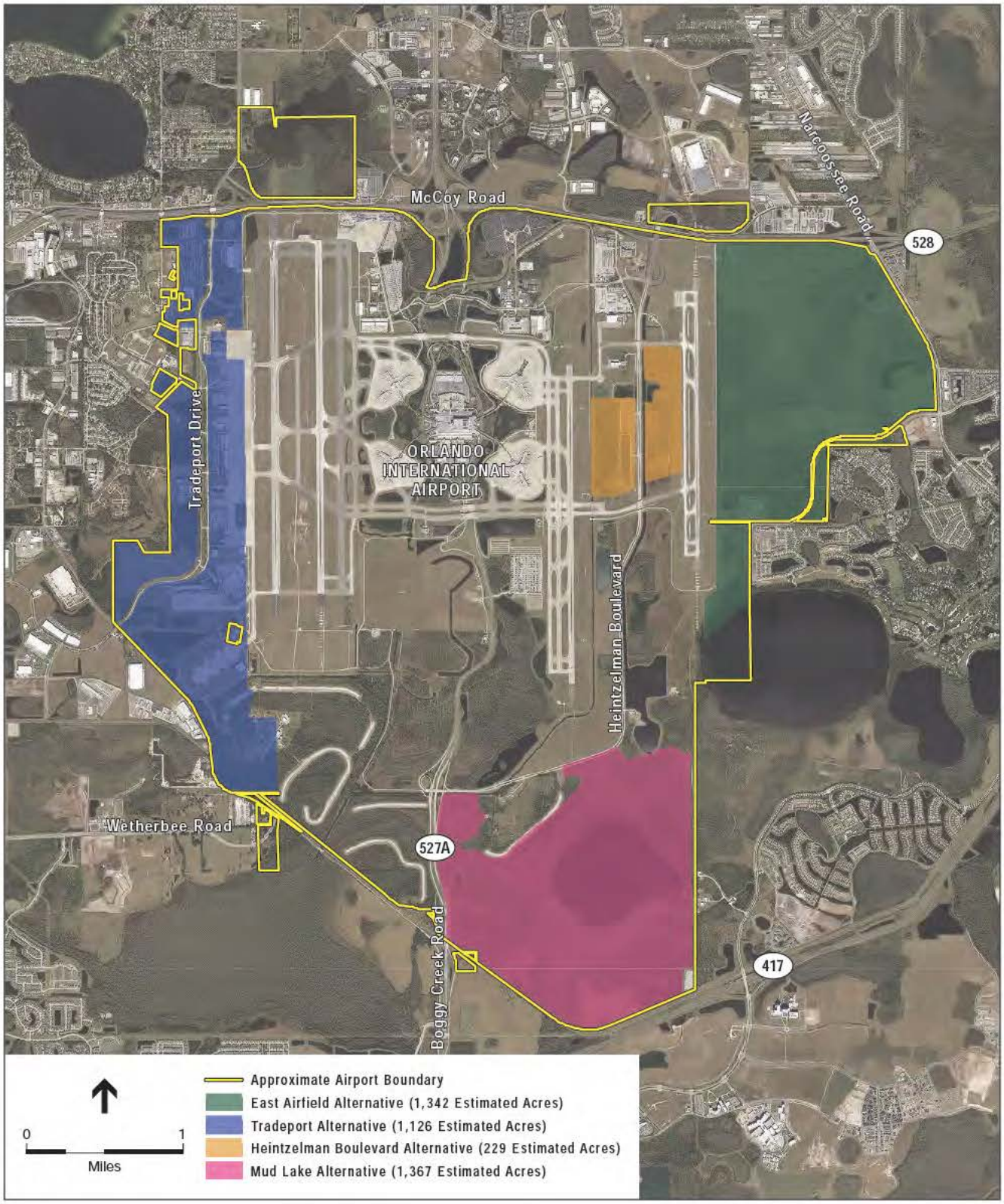
Figure 3.2-2

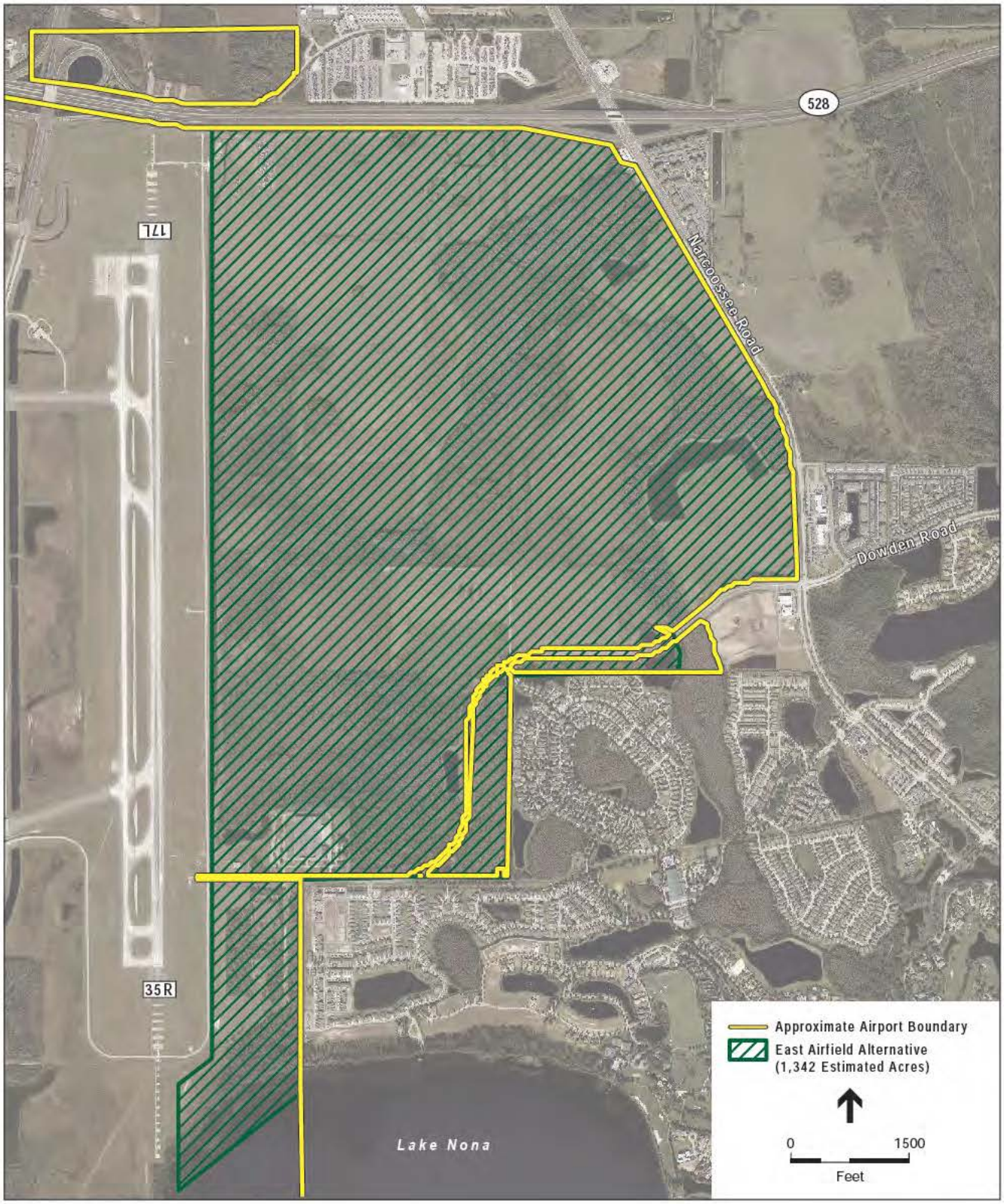
Orlando Executive Airport Alternative



SOURCE: Greater Orlando Aviation Authority, 2010 aerial; and ESA Airports, 2012

Orlando International Airport EA – East Airfield . 207524

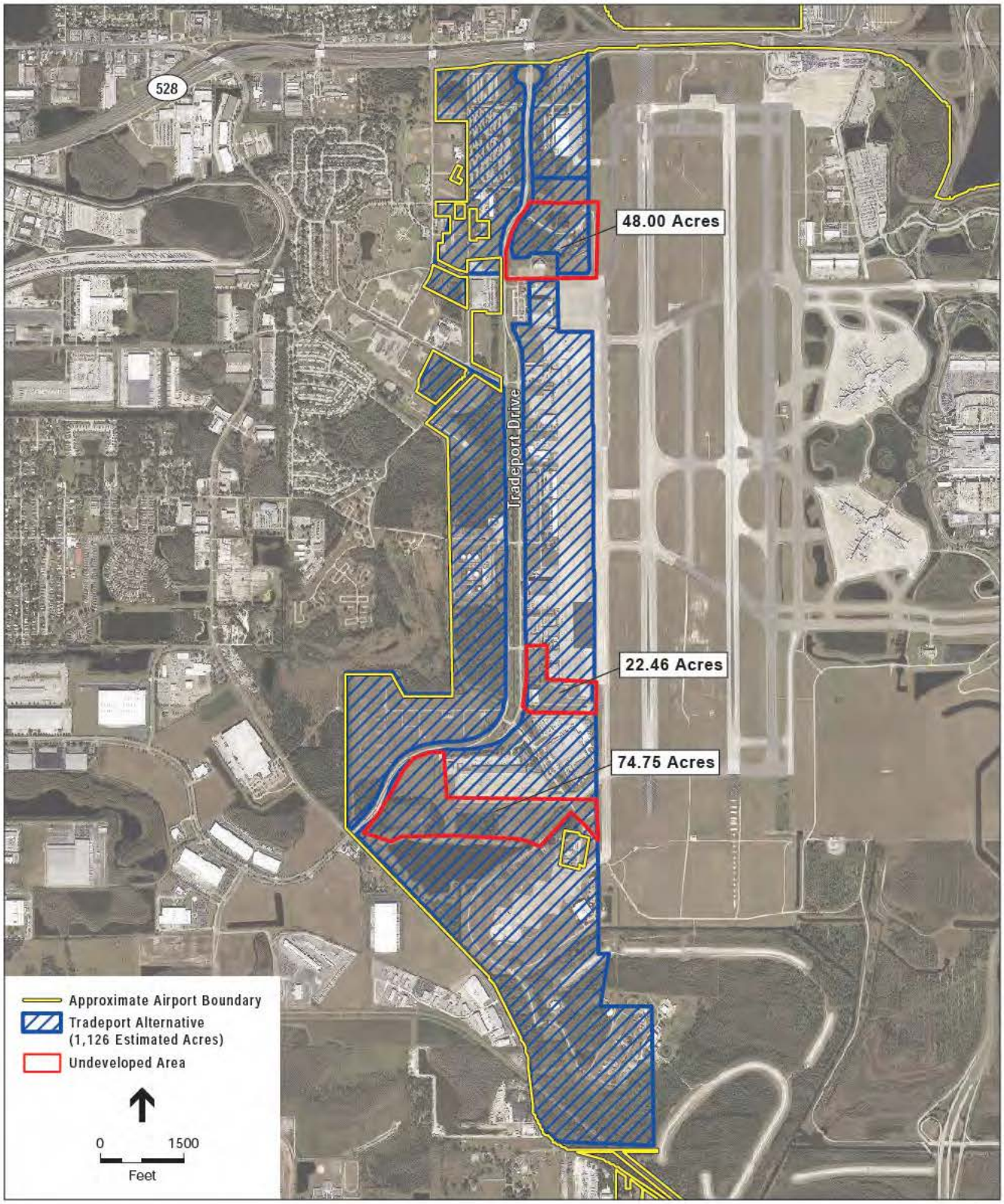
Figure 3.2-3
On-Site Alternatives



SOURCE: Greater Orlando Aviation Authority, 2010 aerial; and ESA Airports, 2012

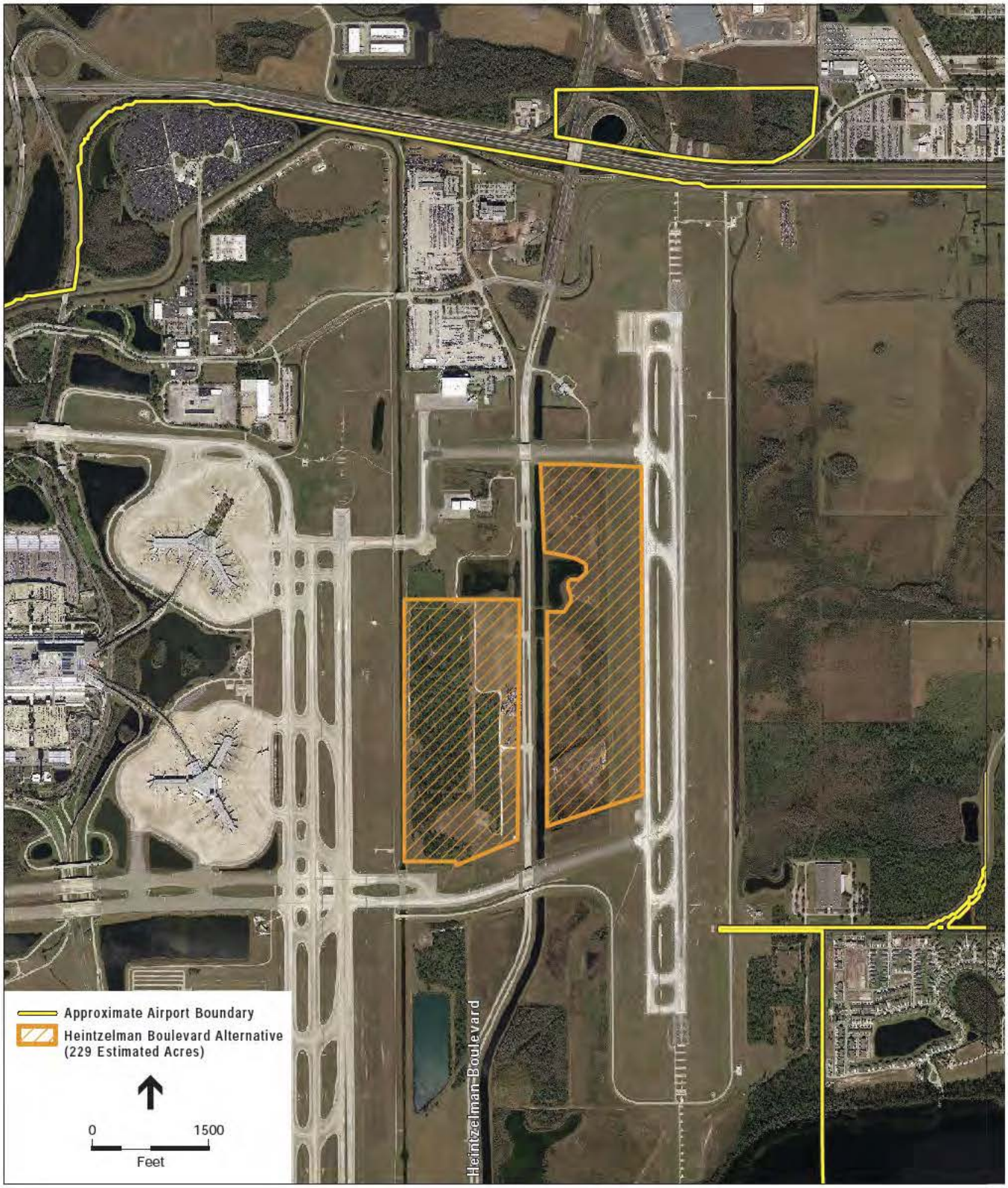
Orlando International Airport EA – East Airfield . 207524

Figure 3.2-4
East Airfield Alternative



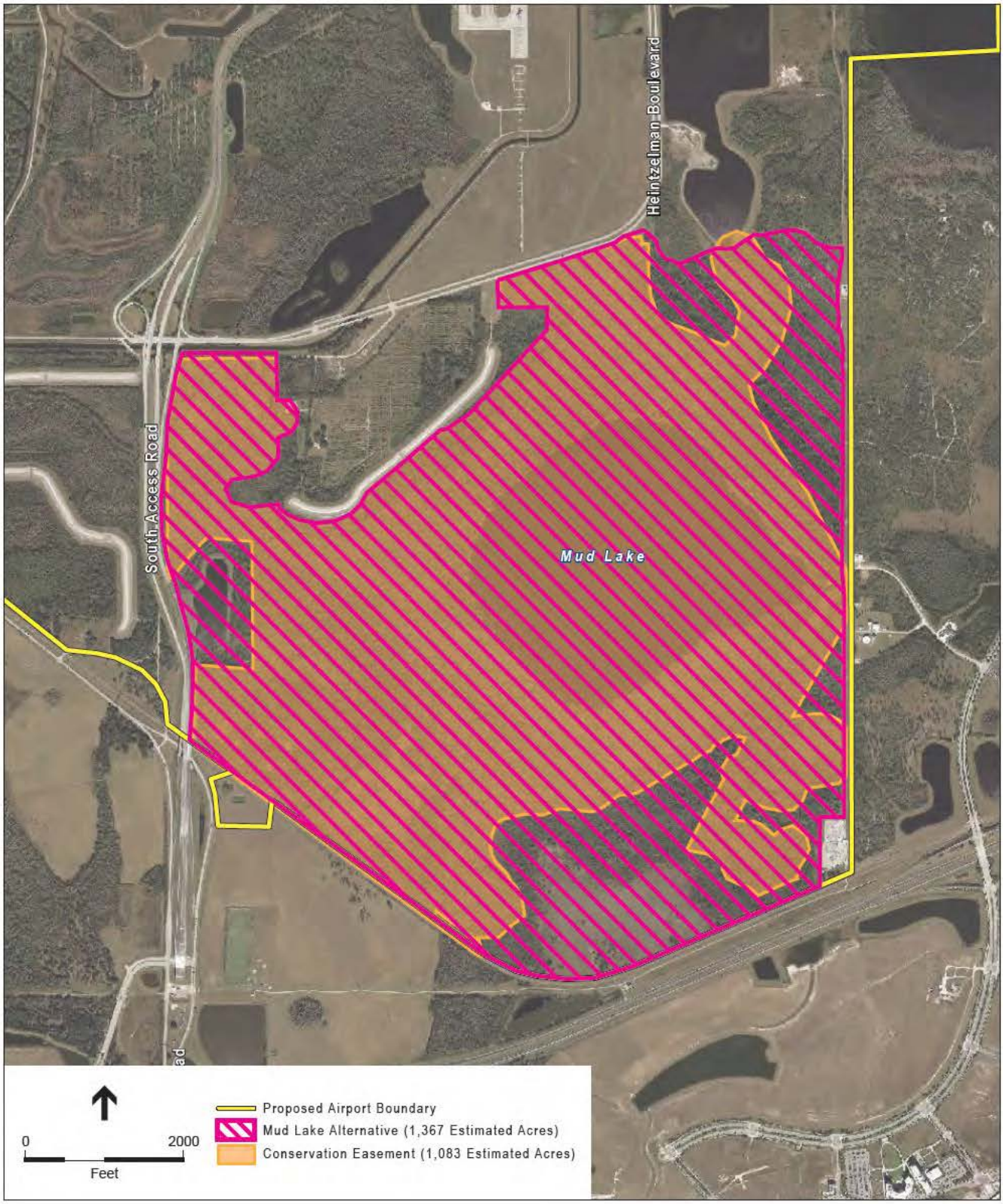
SOURCE: Greater Orlando Aviation Authority, 2010 aerial; and ESA Airports, 2012

Figure 3.2-5
Tradeport Alternative



SOURCE: Greater Orlando Aviation Authority, 2010 aerial; and ESA Airports, 2012

Figure 3.2-6
Heintzelman Boulevard Alternative



SOURCE: Greater Orlando Aviation Authority, 2010 aerial; and ESA Airports, 2012

Figure 3.2-7
Mud Lake Alternative

Conservation Easement as part of mitigation requirements for wetland impacts associated with the development of the MCO fourth runway/midfield project. Approximately 284 acres of land is available for development outside of these conservation areas; however, the 284 acres are not contiguous to exiting airfield infrastructure at MCO.

3.3 Large Contiguous Site for Development of High and Medium Intensity Aviation and Aviation Support Facilities - Screening Analysis

The following screening criteria were used for the screening of all on-site and off-site alternatives:

1. Efficient use of airport property which includes the following:
    - Development area must provide a site capable of accommodating large-scale aviation use or multiple large-scale aviation uses and aviation support development;
    - Development area is adjacent to MCO airfield infrastructure so that aviation facilities can share infrastructure and maximize operational efficiencies. This includes having access to a major air carrier runway, taxiways and aprons, stormwater facilities, regional and local roadways, and site utilities; and
    - Development of the site would provide for future generation and diversification of MCO revenue.
2. Consistency with local land use and planning (City of Orlando); and
3. Development area must meet FAA design standards and provide for the safe and secure use of airport property. An alternative must be able to meet FAA airport design criteria, Part 77 and TERPS standards, aircraft movement area requirements, ATC line-of-sight requirements, NAVAID design standards, and security requirements.

3.3.1 Off-Site Alternatives

Off-Site Alternative #1 - Lake Nona Alternative

Screening Criteria: Efficient use of airport property

The Lake Nona Alternative could provide a large, contiguous parcel of land for development. While this alternative is contiguous to MCO property, it is not contiguous to MCO airfield facilities and infrastructure. The closest runway to the Lake Nona Site is Runway 17L-35R. A taxiway would have to be constructed from Runway 17L-35R to the Lake Nona site. The taxiway would be approximately 1.5 miles in length, pass over the future extension of Dowden Road, and cross existing conservation easements around a portion of Lake Nona. Aircraft would taxi more than a mile and a half to access the site, increasing taxi times, aircraft emissions, and fuel costs. This alternative would not maximize operational efficiencies.

In order for GOAA to pursue the development of this property for aviation uses, it would need to purchase the 755-acre Lake Nona site. Purchasing this property would increase overall project development cost. This additional cost may offset revenues generated with the development of the property.

The alternative does not meet this screening criterion.

Screening Criteria: Consistency with local land use and planning

Approximately 200 acres of the 755 undeveloped acres at this site are designated as Airport Support District High Intensity (ASD-2) and are consistent with the Sector Plan land use designations. Remaining land use designations on this alternative site include conservation, residential, and village center land uses (550 acres). The Lake Nona site has existing ASD-2 land use designation which allows industrial uses, much more of this site allows for conservation, residential, hospital, retail, and other uses that are consistent with the mixed-use development plan for the site. These other uses preclude the reasonable development of the site with a sufficient quantity of High Intensity (ASD-2) and Medium Intensity (ASD-1) land uses and it is not consistent with GOAA's purpose and need for the proposed project.

The alternative does not meet this screening criterion.

Screening Criteria: Meets FAA regulations and requirements

This alternative could be designed to meet Part 77, TERPS, Air Traffic Control line-of-sight criteria, and FAA design standards related to aircraft movement areas. However, it would be costly to maintain a secure airside operational area because the area is bisected by a public road (the future Dowden Road extension). A taxi bridge (estimated cost $40 million) would have to be constructed over the future Dowden Road extension. Additional safety concerns include potential risk to aviation due to the proximity of hazardous wildlife attractants to the aircraft operating area. This alternative would be adjacent to existing conservation areas that provide substantial habitat for wading birds, raptors, and mammals.

The alternative partially meets this screening criterion due to the cost associated with the implementation of this alternative.

Off-Site Alternative #2 - Orlando Executive Airport Alternative

Screening Criteria: Efficient use of airport property

ORL is approximately 1,000 acres in size. This alternative has about 140 acres of developable land – the rest of the property is already developed. The ORL site could only accommodate a single large-scale aviation use or multiple large-scale aviation uses if existing airside and landside infrastructure is reconfigured.

This site would not have access to a major air carrier runway (a runway of at least 9,000 feet in length) because the longest runway at ORL is only 6,003 feet long. Furthermore, ORL is constrained by physical boundaries which would generally preclude longer runway development. For example, Lake Barton is located directly northeast of the primary runway, Runway 7-25, and

Crystal Lake Drive and the East Central Park community are located directly southwest of the runway. The airport's 4,625-foot crosswind runway, Runway 13-31, also has limited expansion potential due to the location of Colonial Drive to the north and State Road 408 (East-West Expressway) to the south.

Any revenue generation from development of aviation uses on this site would be for ORL use and would not increase or diversify MCO revenue. While GOAA is the owner and operator of ORL and MCO, the revenue streams cannot be mixed due to Federal grant assurances and the FAA's revenue use policy.

The alternative does not meet this screening criterion.

Screening Criteria: Consistency with local land use and planning

The 140-acre site at ORL is currently designated by the City of Orlando on the Future Land Use Map as "Metropolitan Activity Center." This designation allows for aviation uses.

The alternative meets this screening criterion.

Screening Criteria: Meets FAA regulations and requirements

This alternative would meet Part 77, TERPS, Air Traffic Control line-of-sight criteria, and FAA design standards related to aircraft movement areas.

The alternative meets this screening criterion.

3.3.2 On-Site Alternatives

No-Action Alternative

Screening Criteria: Efficient use of airport property

Under the No-Action Alternative, a site capable of accommodating large-scale aviation uses would not be selected at MCO. Development could continue to occur in other undeveloped areas of MCO. However, these areas could not accommodate a single large-scale aviation use or multiple large-scale aviation uses that could share infrastructure or maximize operational efficiencies.

The alternative does not meet this screening criterion.

Screening Criteria: Consistency with local land use and planning

The No-Action Alternative is consistent with local land use and planning. However, it does not support Goal 4 of the City of Orlando's GMP because it does not further the growth of airport facilities.

The alternative does not meet this screening criterion.

Screening Criteria: Meets FAA regulations and requirements

The No-Action Alternative would not promote the development of aviation-related projects, infrastructure, or stormwater management facilities. No conflicts with FAA regulations and requirements would occur.

The alternative meets this screening criterion.

On-Site Alternative #1 - East Airfield Alternative

Screening Criteria: Efficient use of airport property

The East Airfield site is approximately 1,342 acres in size. The site could support approximately 563 acres of Airport Support District High Intensity land use and approximately 95 acres of Airport Support District Medium Intensity land use. Section 2.2 describes how the 2014 Conceptual Plan for the East Airfield meets the purpose of the Proposed Action.

The East Airfield site would have direct access to a 9,000 foot runway, Runway 17L-35R. The site could support shared infrastructure, including taxiway and aircraft aprons, stormwater facilities, and site utilities. The East Airfield site can be accessed by regional and local roadways. The East Airfield site is considered an efficient use of airport property, since it could accommodate large-scale aviation development with perpendicular aircraft apron development.

The designation of the East Airfield site on MCO's Airport Layout Plan (ALP) as a large, contiguous site for on-airport development and future development of the East Airfield site has the potential to increase and diversify MCO revenues. The site could support a combination of high intensity and medium intensity aviation use with long-term leases that potentially could generate substantial revenue.

The alternative meets this screening criterion.

Screening Criteria: Consistency with local land use and planning

As noted in Section 2.4.2, future development of the East Airfield site is consistent with Goal 4 of the City of Orlando's GMP and the Sector Plan.

The alternative meets this screening criterion.

Screening Criteria: Meets FAA regulations and requirements

This alternative would meet Part 77, TERPS, Air Traffic Control tower line-of-sight criteria, and FAA design standards related to aircraft movement areas. This alternative could be developed with airfield access that provides secure airside operations.

The alternative meets this screening criterion.

On-Site Alternative #2 - Tradeport Alternative

Screening Criteria: Efficient use of airport property

The Tradeport Alternative currently has aviation and aviation support facilities adjacent to Runway 18R-36L at MCO. While the site comprises approximately 1,126 acres, the majority of the site is already developed. The undeveloped areas on this site include an approximate 48-acre site on the north end, an approximate 22-acre site in the central portion, and an approximately 75-acre site in the southern portion.

This alternative currently has direct access to the 12,004-foot Runway 18R-36L at MCO and has shared infrastructure. This alternative is not considered an efficient use of airport property since it cannot accommodate future large-scale aviation development with operational efficiencies created by perpendicular aircraft apron development (the alternative configuration is too narrow and cannot accommodate perpendicular development due to the location of Tradeport Drive).

In order to develop large-scale, high intensity aviation development on this site in the future, existing business and operations that have been developed on the majority of the site would need to be relocated and demolished which is not reasonable or practicable. The existing aviation facilities include two Continental maintenance hangars, a FedEx sort facility, a US Postal Service sort facility, a Flight Safety facility, the Cessna maintenance facility and two FBOs. This alternative has three undeveloped, non-contiguous sites totaling 145 acres. While the build out of the undeveloped 145 acres would generate revenue for MCO it would not be at the same rate as the East Airfield when fully built-out.

The alternative does not meet this screening criterion.

Screening Criteria: Consistency with local land use and planning

The alternative site area is designated for aviation use, which is consistent with the City of Orlando's GMP.

The alternative meets this screening criterion.

Screening Criteria: Meets FAA regulations and requirements

This alternative would meet Part 77, TERPS, Air Traffic Control tower line-of-sight criteria, and FAA design standards related to aircraft movement areas. This alternative could be developed with airfield access that provides secure airside operations.

The alternative meets this screening criterion.

On-Site Alternative #3 - Heintzelman Boulevard Alternative

Screening Criteria: Efficient use of airport property

The Heintzelman Boulevard Alternative is comprised of two parcels totaling 229 acres. The two parcels are located north of Taxiway F and are separated by Heintzelman Boulevard.

This alternative site has future planned direct access to Runway 17L-35R (9,000 feet in length) and Runway 17R-35L (10,000 feet in length) and is capable of providing shared infrastructure.

This site is divided into four development areas by Heintzelman Boulevard and a taxiway connecting the two east-side runways. This site would not accommodate potential tenants who require large tracts of land (in excess of 400 acres). While future development of this alternative would increase and diversify MCO revenues, development would be limited to 229 acres of noncontiguous parcels located north of Taxiway F.

The alternative does not meet this criterion.

Screening Criteria: Consistency with local land use and planning

This alternative site area is designated for aviation use which is consistent with the City of Orlando's Growth Management Plan.

The alternative meets this screening criterion.

Screening Criteria: Meets FAA regulations and requirements

This site has development limitations for high intensity aviation facilities due to its location between two runways. These development limitations are based on Title 14 CFR Part 77, "Safe, Efficient Use, and Preservation of the Navigable Airspace" regulations and FAA Air Traffic Control (ATC) line-of -sight standards. Part 77 surfaces must not be penetrated by any object, both natural and man-made, for the safety of aircraft operations unless approved by the FAA. FAA ATC line-of-sight standards must be maintained to avoid impeding ATC line-of-sight. Potential line-of-sight problems include building structures, antennas, cooling units or other appurtenances located on top of buildings, parked aircraft, light poles, etc. **Appendix I** provides an exhibit that depicts height limitations between Runway 17R-35L and Runway 17L-35R for the Heintzelman Boulevard area.

Buildings or parked aircraft east of Heintzelman Boulevard (eastern portion of the site) would be regulated by ATCT line-of-sight standards. Height limitations for this area would range from 10 to 50 feet. High intensity aviation facilities and the aircraft that use these types of facilities often exceed these heights. To ensure adequate line-of-sight, much of the eastern portion of the site would be limited to single story facilities or uses such as vehicular surface parking.

The western portion of the site is regulated by both Part 77 and ATCT line-of-sight standards. Height limitations for this area range from 70 to 120 feet. High intensity aviation facilities and the aircraft that use these types of facilities could be accommodated in this area.

The alternative does not meet this screening criterion.

On-Site Alternative #4 - Mud Lake Alternative

Screening Criteria: Efficient use of airport property

The Mud Lake Alternative site is approximately 1,367 contiguous acres. This site includes undeveloped areas including wetlands, Mud Lake, and uplands. The majority of this site (1,083 acres out of 1,367 acres) is designated as conservation easement.

There are 284 non-contiguous acres on the site that could potentially support future large-scale aviation uses. These areas are not within existing conservation easements. The closest runway to the Mud Lake site is Runway 17R-35L. A taxiway would have to be constructed from Runway 17L-35R to the Mud Lake site. In addition, a taxi bridge would have to be built over Heintzelman Boulevard. The taxiway would need to extend more than a mile to the south and avoid the Runway Protection Zones (RPZs) and the 50:1 approach surfaces for Runways 35L and Runway 35R. Due to the distance involved, multiple taxiways would be required and taxi times would be excessive. The construction of multiple taxi lanes to service the developable areas would not maximize operational efficiencies.

In order to promote the development of this site with large-scale aviation uses, GOAA would need to vacate and mitigate impacts to the existing 1,083 acres of area under conservation easement (SFWMD) (see **Figure 3.3-1** for the location of conservation easements). Although a release of conservation easement is possible, GOAA would have to present suitable replacement mitigation and a new conservation easement on property with similar habitat and ecological values as that being conserved on the 1,083 acre parcel at Mud Lake to the SFWMD for review and approval. The cost of mitigating the removal of this conservation easement and to fill the site to make it developable would not be cost effective. Therefore, development of this site would not be practicable.

The alternative does not meet this screening criterion.

Screening Criteria: Consistency with local land use and planning

The majority of this site (1,083 acres out of 1,367 acres) has a designated land use of conservation and these areas are dedicated conservation easements. The development of these conservation land use areas with large-scale aviation uses would not be consistent with the Sector Plan land use designations. In order to develop the conservations areas, the land use designations would need to be changed. The portions of the site (approximately 284 acres) that include land use designations of Aviation Support District High Intensity would be consistent with the Sector Plan.

The alternative does not meet this screening criterion.

Screening Criteria: Meets FAA regulations and requirements

This alternative could be designed to meet Part 77, TERPS, Air Traffic Control line-of–sight criteria, and FAA design standards related to aircraft movement areas. However, the Airport Surveillance Radar (ASR) is located on the northwest corner of the alternative site. Due to the restrictions within the 1,500-foot critical area radius associated with the ASR, this would further

limit the available area for development. In addition, heights of buildings would be limited below the 50:1 approach surface for Runway 35L.

The alternative does not meet this screening criterion.

3.3.3 Summary of Alternative Screening Analysis

During the alternatives screening analysis, five of the seven alternatives were eliminated from further consideration because they do not meet the Proposed Action's purpose and need and therefore are not reasonable. Alternatives determined not reasonable include Lake Nona, ORL, Tradeport, Heintzelman Boulevard, and Mud Lake sites. **Table 3.3-1** provides a summary of the screening analysis.

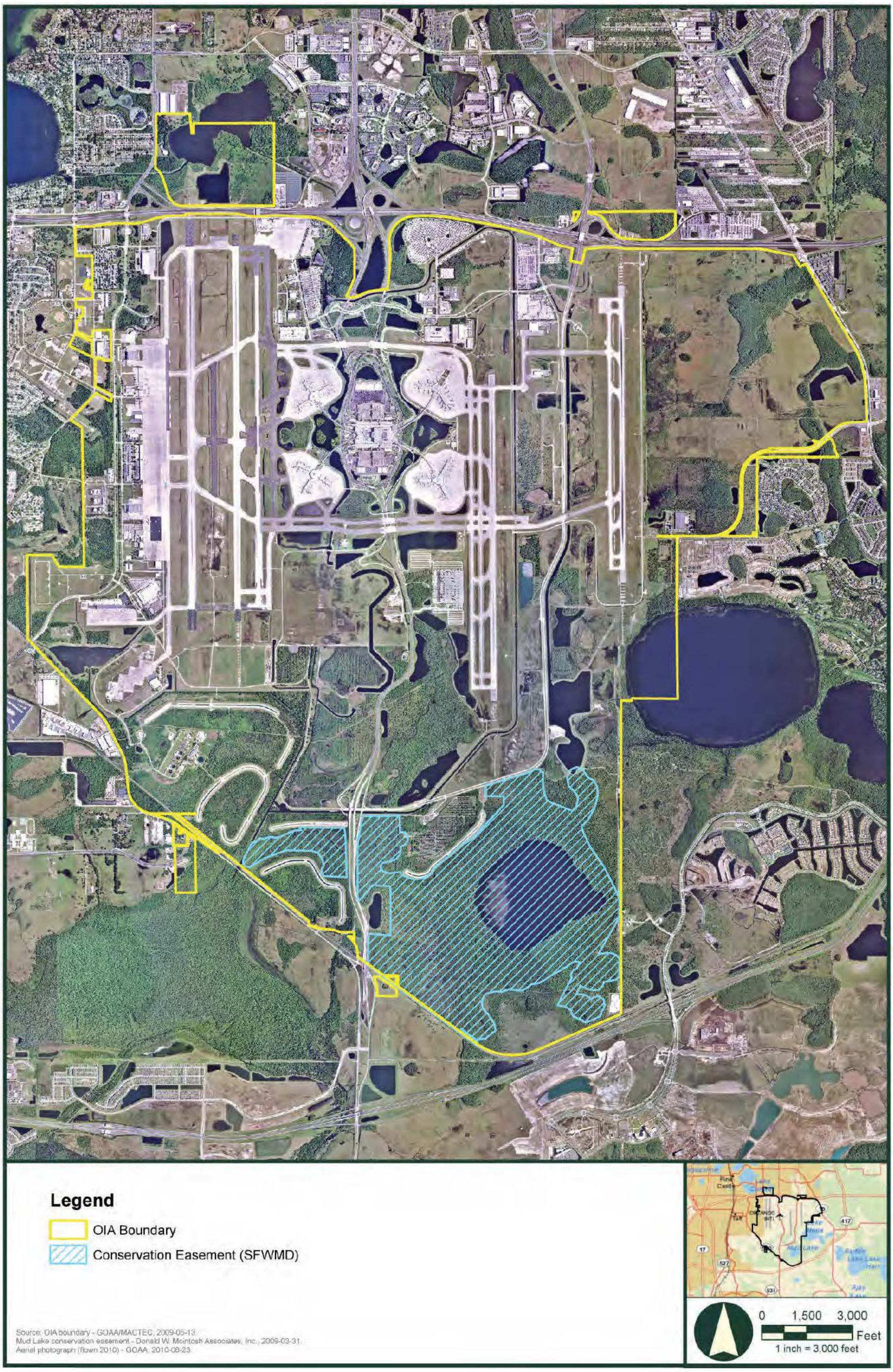
TABLE 3.3-1
SUMMARY OF ALTERNATIVES SCREENING ANALYSIS FOR LARGE CONTIGUOUS SITE FOR DEVELOPMENT OF HIGH AND MEDIUM INTENSITY AVIATION AND AVIATION SUPPORT FACILITIES

		Off-Site Alternative #1 Lake Nona	Off-Site Alternative #2 ORL	No-Action Alternative	On-Site Alternative #1 East Airfield	On-Site Alternative #2 Tradeport	On-Site Alternative #3 Heintzelman	On-Site Alternative #4 Mud Lake
Screening Criteria	Efficient use of airport property	No	No	No	Yes	No	No	No
	Consistency with local land use and planning	No	Yes	No	Yes	Yes	Yes	No
	Meets FAA regulations and requirements	Yes[1]	Yes	Yes	Yes	Yes	No	No
Retained for Detailed Evaluation in the EA		No	No	Yes[2]	Yes	No	No	No

Note 1: Only partially meets the screening criteria
Note 2: The No-Action Alternative is carried through to the detailed evalua ion in the EA to meet the requirements of NEPA and CEQ.

3.3.4 Alternatives Retained for Detailed Environmental Review

Following the initial screening analysis, the East Airfield Alternative was retained for further analysis. Except for the No-Action Alternative, all of the other alternatives were determined to be not reasonable. Although the No-Action Alternative does not meet the purpose and need, it was retained for further screening because it provides a baseline for comparative purposes to fulfill FAA's responsibility under NEPA and the CEQ Regulations.



SOURCE: Greater Orlando Aviation Authority, 2011; and ESA Airports, 2011

Figure 3.3-1
Conservation Easements

3.4 Reduction of Existing Wildlife Hazard Attractants – Alternatives Considered

As stated in Section 1.2.2, wetlands on the East Airfield site were documented to be wildlife hazard attractants by the U.S. Department of Agriculture (USDA) (Appendix F), the MCO East Airfield - Wildlife Data Review which evaluated ongoing wildlife monitoring conducted by GOAA (Appendix G), as well as the Wildlife Hazard Site Visit Report (Appendix H). As a result of these studies, GOAA updated its Wildlife Hazard Management Plan (WHMP) in July 2015 to address the existing wildlife issues at the East Airfield Development Site. The attached *Supplemental Technical Appendix*[5] presents additional background information and data used to develop the wildlife control measures identified in the WHMP. The priority wildlife attractants to be addressed at the site are wetlands (wooded and marsh) and surface water areas because the types of wildlife that utilize them have higher hazard scores (i.e., raptors) or are utilized in greater number (i.e., doves, pigeons, blackbirds) (see Appendix H). The goal of this element of the proposed project is to decrease the attractiveness of the East Airfield site to a variety of wildlife species that either cause a direct strike risk to aircraft operations at MCO or indirect hazard attractants (such as a food source or habitat for prey).

GOAA considered three alternatives to reduce wildlife hazard attractants on the East Airfield site. The No-Action Alternative was also considered to meet CEQ requirements.

3.4.1 Alternatives

No-Action Alternative

The No-Action Alternative would include no wetland impacts and no additional wildlife hazard management activities from GOAA staff. At this time, limited active and passive management techniques to decrease the attractiveness of the habitats are implemented on the East Airfield site. This is due to a lack of ability to modify or remove the wetland areas, limited access to the site due to the wetland areas and rainy season high water on the site, which creates the inability to respond in a timely manner to address immediate wildlife concerns. Numerous high risk bird species and their prey utilize the wetland areas on the site for shelter, roosting, and foraging and at times, traverse across the airfield and fly in close proximity to the airfield. Activities associated with modifying or filling wetlands and surface waters are prohibited without prior NEPA review and Federal and state permits.

Wildlife Hazard Attractant Reduction Alternative 1 (No Impacts to Wetlands)

This alternative does not include any wetland impacts or removal of wetlands on site (see **Figure 3.4-1**). GOAA would increase their staffing levels, available equipment, and annual budget to increase both active and passive wildlife hazard management techniques on the East Airfield site.

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5 This Supplemental Appendix includes the *Orlando International Airport Wildlife Hazard Assessment (1999); GOAA Air Operations Area Wildlife Ecological Study and Annual Reports (2003-Present); Monthly Synopsis Reports (2003-Present); WHMP Review Forms - Following a Triggering Event (2012-Present); MCO East Airfield - Wildlife Data Review (2014);* and the *Wildlife Hazard Site Visit Orlando International Airport East Airfield Property (2015).*

Active wildlife control techniques include wildlife dispersal through the use of sound cannons, pyrotechnics, falconry, and other sound and visual tools, lethal control, trapping, and potential relocation of wildlife. Other management methods include mowing, vegetation removal, perch removal, and upland habitat modification.[6] This alternative would not remove wetlands that have been documented as wildlife hazard attractant areas. Thus, the alternative can, to a limited degree, reduce but not eliminate conditions to which wildlife are attracted. In addition, the presence of wetland areas along the western boundary and central portion of the East Airfield site limit access to the site which affects the implementation of wildlife hazard management activities.

Wildlife Hazard Attractant Reduction Alternative 2 (Partial Impacts to Wetlands)

This alternative includes the removal of wetlands and surface waters closest to the airfield (along the western boundary of the project site) and the large central wetland area. The development of this alternative would impact approximately 171 acres of Federal jurisdictional wetlands including approximately 162 acres of state jurisdictional wetlands.[7] GOAA would minimize wetland impacts to this site by avoiding approximately 85 acres of Federal and state jurisdictional wetlands. Non-impacted wetlands would be generally located along the eastern boundary of the site (furthest from the airfield) or within the proposed medium intensity land use areas (see **Figure 3.4-2**). In conjunction with this alternative, GOAA staff would work with project engineers and permitting agencies to ensure all surface water management systems are designed to meet FAA Advisory Circular 150/5200-33B best management practices to decrease the attractiveness of these areas to wildlife that may pose a threat to aviation.[8] GOAA staff would also employ active and passive wildlife hazard management techniques on the site (including the non-impacted wetland and existing or created surface water areas) to decrease risks to aviation at MCO.

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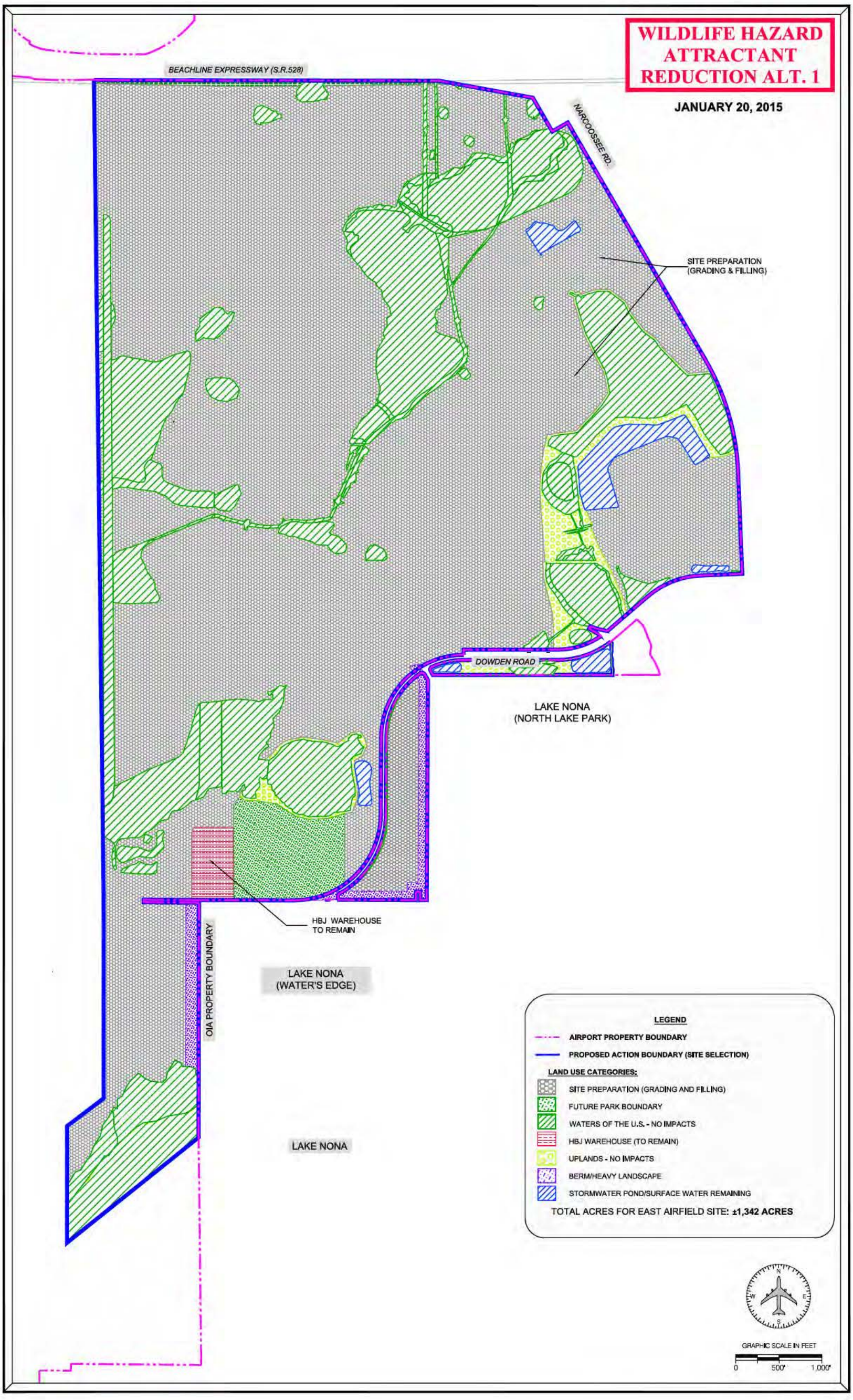
[6] Cutting or removal of vegetation above the ground (e.g. mowing, rotary cutting, chain sawing) where activities do not substantially disturb root systems or involved mechanized pushing, dragging, or similar activities are not considered a discharge of dredge materials. (33 CFR 323.2 (d)(2))

[7] Total Waters of the U.S impacts include 171.13 acres of Federal jurisdictional wetlands and 36.32 acres of surfaces waters. At this time, GOAA was not required to provide mitigation for surface waters by the state and is not proposing mitigation for surface water impacts in the current USACE permit application.

[8] FAA AC 150/5200-33B Section 2-3 Water Management Facilities, Part b. New storm water management facilities:

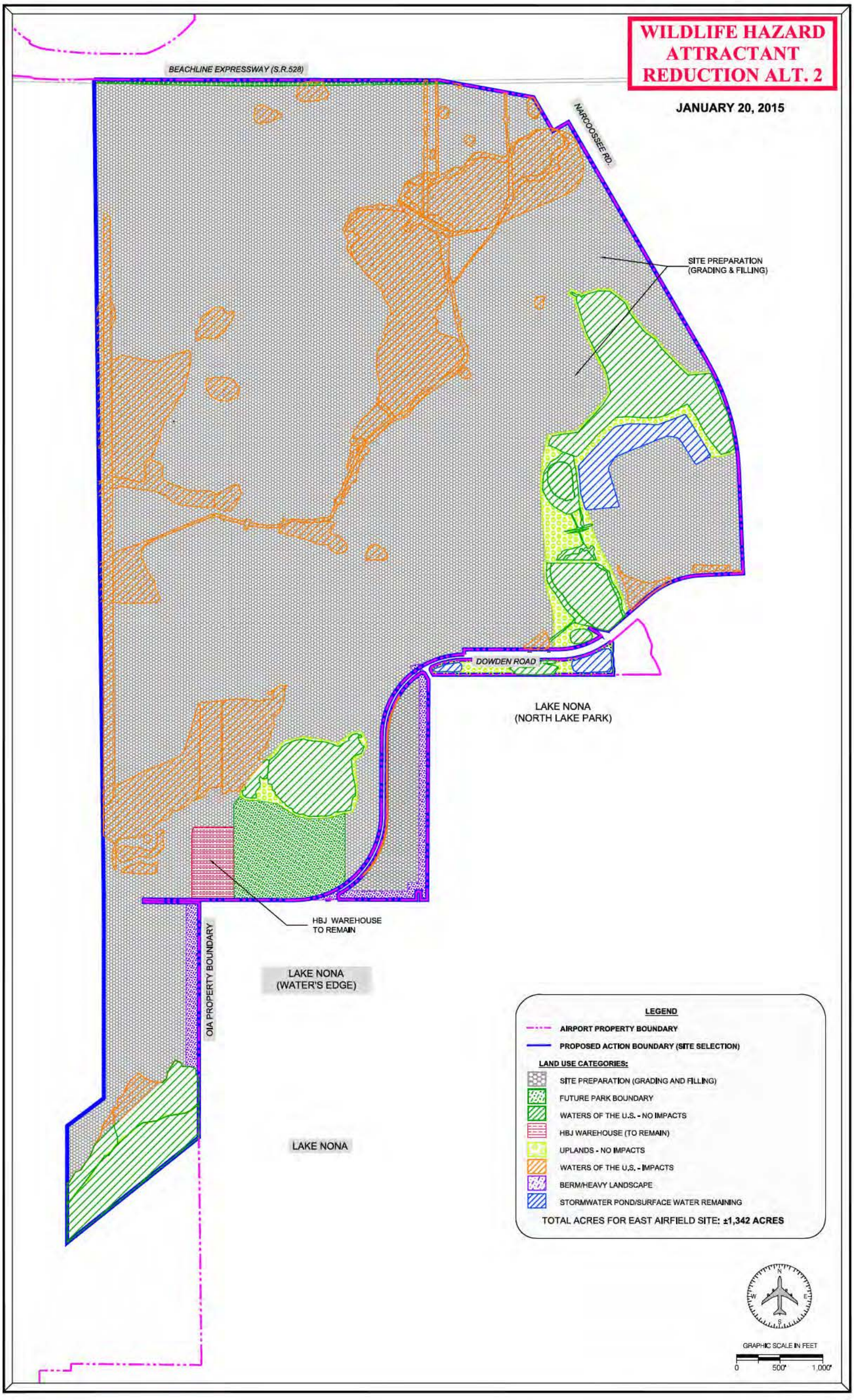
> The FAA strongly recommends that off-airport storm water management systems located within the separations identified in Sections 1-2 through 1-4 be designed and operated so as not to create above-ground standing water. Stormwater detention ponds should be designed, engineered, constructed, and maintained for a maximum 48–hour detention period after the design storm and remain completely dry between storms. To facilitate the control of hazardous wildlife, the FAA recommends the use of steep-sided, rip-rap lined, narrow, linearly shaped water detention basins. When it is not possible to place these ponds away from an airport's AOA, airport operators should use physical barriers, such as bird balls, wires grids, pillows, or netting, to prevent access of hazardous wildlife to open water and minimize aircraft-wildlife interactions. When physical barriers are used, airport operators must evaluate their use and ensure they will not adversely affect water rescue. Before installing any physical barriers over detention ponds on Part 139 airports, airport operators must get approval from the appropriate FAA Airports Division Office. All vegetation in or around detention basins that provide food or cover for hazardous wildlife should be eliminated. If soil conditions and other requirements allow, the FAA encourages the use of underground storm water infiltration systems, such as French drains or buried rock fields, because they are less attractive to wildlife.



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 3.4-1

Wildlife Hazard Attractant Reduction – Alternative 1



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 3.4-2

Wildlife Hazard Attractant Reduction – Alternative 2

Wildlife Hazard Attractant Reduction Alternative 3 (100% Wetland Impacts)

This alternative includes the removal of all wetlands on the East Airfield site (see **Figure 3.4-3**) as recommended in the WHSV. Approximately 256 acres of Federal jurisdictional wetlands including 247 acres of state jurisdictional wetlands would be impacted. Avoidance and minimization of wetland impacts could not be implemented as part of this alternative. In conjunction with this alternative, GOAA staff would work with project engineers and permitting agencies to ensure all surface water management systems are designed to meet FAA Advisory Circular 150/5200-33B best management practices to decrease the attractiveness of these areas to wildlife that may pose a risk to aviation. GOAA staff would also employ active and passive wildlife hazard management techniques on the site to decrease risks to aviation at MCO.

3.4.2 Screening Criteria

Screening criteria were based on the purpose and need to reduce wildlife hazard attractants[9] (described in Section 2.3.2 and 2.4.4), address avoidance and minimization of wetland impacts, and ensure reasonable and timely access to GOAA staff to address wildlife hazard issues as they arise on the East Airfield. The following two screening criteria were used in this analysis:

1. Removes wildlife hazard attractants on the East Airfield site and demonstrates avoidance and minimization of wetland impacts, to the extent practicable.

   According to the WHSV, Wildlife Data Review, USDA WHA, and subsequent updated WHMP revised in July 2015, wetlands on the East Airfield site were identified as wildlife hazard attractants. The removal of wetlands on the site will reduce wildlife hazard attractants and therefore decrease the risk of wildlife strikes to aircraft at MCO. The *Clean Water Act* (CWA) requires demonstrating avoidance and minimization of wetland impacts to the extent practicable. An alternative is considered practicable if it is "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes."

   For screening purposes in this EA, alternatives that remove wildlife hazard attractants are preferable to those alternatives that do not. Those alternatives that remove wildlife hazard attractants and demonstrate avoidance and minimization, while still allowing the overall project purpose to be met, satisfy this criterion (i.e. practicable avoidance and minimization).

2. Provides GOAA staff reasonable access to the East Airfield to address wildlife hazard issues in a timely manner.

   When a wildlife hazard issue is identified on the East Airfield, it is important for GOAA staff to be able to respond and address the issue in a timely manner to reduce risks to

[9] Although other wildlife attractants exists on the East Airfield site, the *GOAA Airfield Operations Area Wildlife Ecological Study and Annual Report 2013* (Appendix E), as well as the *2015 WHSV* (Appendix H) identified the wetlands on the East Airfield site as a significant concern.

aircraft operations at MCO. Those alternatives that provide reasonable access to the East Airfield so that wildlife hazard issues can be addressed in a timely manner are preferable to those alternatives that do not.

3.5 Reduction of Existing Wildlife Hazard Attractants - Alternative Screening Analysis

No-Action Alternative

Screening Criteria: Removes wildlife hazard attractants on the East Airfield site and demonstrates avoidance and minimization of wetland impacts, to the extent practicable.

The No-Action Alternative would include no additional wildlife hazard management from GOAA staff, no removal of wildlife hazard attractants, and no modification of existing wildlife hazard attractants at the East Airfield site. No wetland impacts would occur on the East Airfield site; however the project purpose would not be met.

This alternative does not meet this screening criterion.

Screening Criteria: Provides GOAA staff reasonable access to the East Airfield to address wildlife hazard issues in a timely manner.

GOAA staff currently has limited to no access to the site due to the configuration of the wetland areas and rainy season high water on the site. This creates an inability to respond in a timely manner (either on foot or by vehicle) to address immediate wildlife hazard concerns.

This alternative does not meet this screening criterion.

Wildlife Hazard Attractant Reduction Alternative 1 (No impacts to Wetlands)

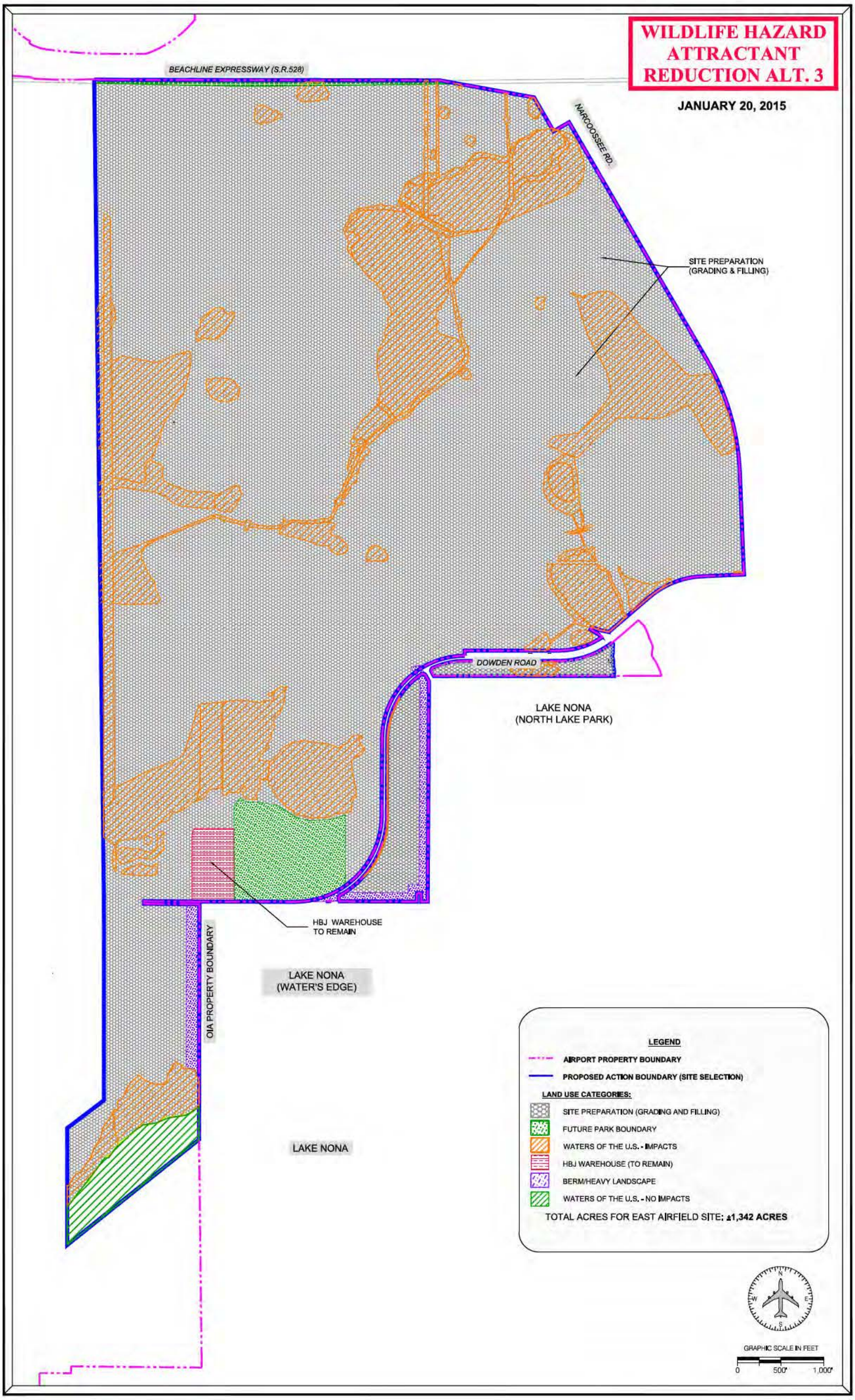
Screening Criteria: Removes wildlife hazard attractants on the East Airfield site and demonstrates avoidance and minimization of wetland impacts, to the extent practicable.

Wildlife Hazard Attractant Reduction Alternative 1 (WHAR Alternative 1) would not remove wetland habitat from the site which were recommended for removal by the WHA (Appendix F), Wildlife Data Review (Appendix G), and WHSV reports (Appendix H); and subsequently the WHMP that was revised in July 2015. Upland natural habitats (i.e., grassed field, brush) would be modified or removed, which would decrease the attractiveness of those areas to wildlife. However, WHAR Alternative 1 would not remove any wetland habitat which were identified as a significant concern as wildlife hazard attractants on the East Airfield site. Total wetland avoidance could be achieved; however, the primary project purpose would not be met.

This alternative does not meet this screening criterion.

Screening Criteria: Provides GOAA staff reasonable access to the East Airfield to address wildlife hazard issues in a timely manner.

Due to the location and size of the wetland systems on-site, GOAA staff would have limited ability to access the site to address immediate wildlife hazard concerns. Portions of the East Airfield site, including areas in proximity to wetlands, have poorly drained soils and areas of standing water that for periods after rainfall events substantially impede / prevent vehicle



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 3.4-3
Wildlife Hazard Attractant Reduction – Alternative 3

(4-wheel drive trucks) and pedestrian access. The East Airfield site is 1,342 acres in size (approximately 7,240 feet (1.3 miles) wide at its widest point). Given the size of the East Airfield site and the extent and size of wetland areas on the site, access roads (paved or unpaved) would need to be constructed to improve vehicle access to the wetlands. The access roads would provide access to the points near the periphery of the wetlands.

For the following reasons, it was determined that this alternative would not be effective and would not meet the objectives of the WHMP.

- The wetland areas at the east Airfield site rages from approximately 100 feet wide to more than 1,300 feet wide.
- Access roads would allow GOAA personnel to drive to the edge of a wetland area, but GOAA personnel would then proceed on foot to implement wildlife management measures. However, GOAA personnel and other wildlife professionals familiar with the East Airfield site state that access into the wetland areas to control wildlife would still be limited due to size of the wetlands, boggy soils, and vegetation density. Under this alternative, the ability to effectively carry out active wildlife management techniques would still be limited.
- Some measures could be implemented from the periphery of some wetland areas (e.g., noise to disperse birds), but the inability of GOAA personnel to move around quickly within the habitat area would, in most cases, reduce the effectiveness of management measures. For example, techniques used to disperse wildlife (e.g., pyrotechnics or other auditory deterrence methods) would, for the most part, be ineffective from the edge of a large wetland as the harassed wildlife would simply relocate to other areas within the wetland.

This alternative does not meet this screening criterion.

Wildlife Hazard Attractant Reduction Alternative 2 (Partial Impacts to Wetlands)

Screening Criteria: Removes wildlife hazard attractants on the East Airfield site and demonstrates avoidance and minimization of wetland impacts, to the extent practicable.

All of the wetlands and surface waters on the East Airfield site have been identified as hazardous wildlife attractants in MCO's WHMP, which recommended that they be eliminated. GOAA evaluated methods to address these hazardous wildlife attractants while seeking to avoid and minimize impacts to Waters of the US, to the extent practicable. Based on its analysis, GOAA concluded that 85 acres of Waters of the US could potentially be avoided and actively managed to control hazardous wildlife usage of these areas.

Wildlife Hazard Attractant Reduction Alternative 2 (WHAR Alternative 2) decreases the amount of wildlife hazard attractants on the East Airfield through the removal of wetlands (see Figure 3.4-2) and uplands. This alternative would impact approximately 171 acres of Federal jurisdictional wetlands and approximately 162 acres of state jurisdictional wetlands while avoiding approximately 85 acres of on-site wetlands. The impacted wetland areas are located

along the western boundary of the project (closest to the active airfield) and the central portion of the site. Non-impacted wetland areas (along the eastern portion of the property, furthest from the airfield or within the medium intensity use areas) will be actively managed by GOAA staff to decrease the attractiveness of these areas to wildlife that pose a risk to aviation at MCO by implementing the measures included in the approved WHMP. Activities may include habitat modification (without soil disturbance) and harassment techniques. This alternative provides avoidance and minimization in accordance with the *Clean Water Act* and allows the project purpose to be met.

This alternative meets this screening criterion.

Screening Criteria: Provides GOAA staff reasonable access to the East Airfield to address wildlife hazard issues in a timely manner.

The implementation of WHAR Alternative 2 would remove the majority of the most inaccessible wetlands (closest to the airfield). The remaining 85 acres of wetlands are located near existing roads and have more reasonable access than the interior wetland areas that would be removed.

This alternative meets this screening criterion.

Wildlife Hazard Attractant Reduction Alternative 3 (100% Wetland Impacts)

Screening Criteria: Removes wildlife hazard attractants on the East Airfield site and demonstrates avoidance and minimization of wetland impacts, to the extent practicable.

All of the wetlands and surface waters on the East Airfield site have been identified as hazardous wildlife attractants in MCO's WHMP, which recommended that they be eliminated. Wildlife Hazard Attractant Reduction Alternative 3 (WHAR Alternative 3) would remove all wetlands on the site as well as employ management techniques of the upland habitat, thus removing and/or managing the greatest amount of wildlife hazard attractants on the East Airfield site when compared to the other alternatives. Although this alternative is consistent with the recommendations in the WHA, Wildlife Data Review, WHSV reports, and WHMP revised July 2015, it would not avoid or minimize wetland impacts.

This alternative does not satisfy this screening criterion (meet both elements).

Screening Criteria: Provides GOAA staff reasonable access to the East Airfield to address wildlife hazard issues in a timely manner.

The implementation of WHAR Alternative 3 would remove all wetlands on site and employ management techniques for upland areas. This would allow GOAA staff to access the East Airfield site in a timely manner to address wildlife hazard issues as they arise.

This alternative meets this screening criterion.

3.5.1 Summary of Alternative Screening Analysis

During the alternatives screening analysis, two of the four alternatives were eliminated from further consideration because they do not meet the screening criteria for the reduction of wildlife hazard attractants on the East Airfield. WHAR Alternative 1 and WHAR Alternative 3 were

eliminated. WHAR Alternative 2 met all of the screening criteria. **Table 3.5-1** provides a summary of the screening analysis and while the No Action Alternative does not meet all the screening criteria, it is carried forward to meet CEQ regulations.

3.5.2 Reduction of Wildlife Hazard Attractants Alternatives Retained for Detailed Review

Following this screening analysis, WHAR Alternative 2 was retained for further analysis. Except for the No-Action Alternative, all of the other alternatives were determined to be not reasonable. Although the No-Action Alternative does not meet the purpose and need, it was retained for further environmental analysis screening because it provides a baseline for comparative purposes to fulfill FAA's responsibility under NEPA and the CEQ regulations.

TABLE 3.5-1
SUMMARY OF ALTERNATIVES SCREENING ANALYSIS FOR REDUCTION OF EXISTING WILDLIFE HAZARD ATTRACTANTS

	Wildlife Hazard Attractant Reduction Alternative 1 (No Wetland Impacts)	Wildlife Hazard Attractant Reduction Alternative 2 (Partial Wetland Impacts)	Wildlife Hazard Alternative Reduction Alternative 3 (100% Wetland Impacts)	No-Action Alternative
Removes priority wildlife hazard attractants on the East Airfield site and demonstrates avoidance and minimization of wetland impacts, to the extent practicable.	No	Yes	No	No
Provides GOAA staff reasonable access to the East Airfield to address wildlife hazard issues in a timely manner.	No	Yes	Yes	No
Retained for Detailed Evaluation in the EA	No	Yes	No	Yes[1]

Note 1: The No-Action Alternative is carried through to the detailed evaluation in the EA to meet the requirements of NEPA and CEQ.

3.6 Development of a Secondary Fuel Storage and Distribution Facility at MCO – Alternatives Considered

GOAA has proposed the development of a secondary fuel storage and distribution facility on a 30-acre site to provide operational redundancy and provide a geographically separate, redundant

fuel supply at MCO for purposes of addressing fueling needs at MCO if natural disasters, equipment failure, or supply interruption occurred.

3.6.1 Alternatives

GOAA considered four alternate locations for a secondary fuel storage and distribution facility. These alternatives consisted of three locations on the East Airfield, and the expansion of the existing fuel facility at MCO. The No-Action Alternative was also considered to meet CEQ requirements.

No-Action Alternative

The No-Action Alternative would not result in the development of a secondary fuel storage and distribution facility at MCO. No additional fuel storage capacity or redundant system would be provided for MCO.

Fuel Storage and Distribution Facility Alternative 1 (East Airfield South)

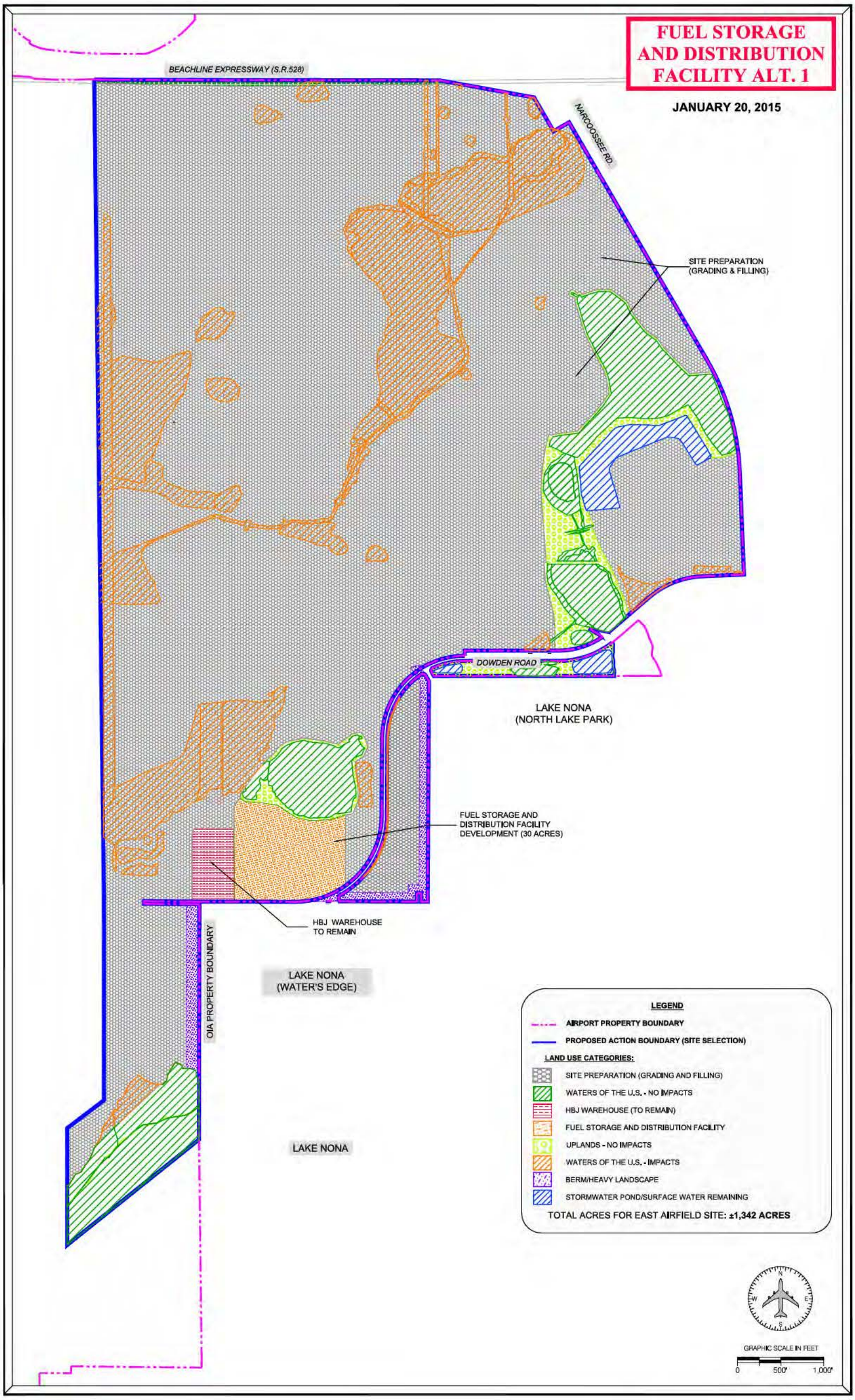
This alternative is located in the southern portion of the East Airfield site adjacent to Dowden Road (see **Figure 3.6-1**). This alternative involves the development of a 30-acre site to accommodate up to nine storage tanks each approximately 100 feet in diameter and 40 feet in height, and includes fueling racks, secondary containment areas, and related infrastructure. The first phase of construction would include three storage tanks and necessary infrastructure to access, operate and maintain the site. A fuel distribution line would be bored underground to connect the fuel facility to the existing fuel hydrant system at MCO. Fuel tanker trucks could supply the fuel storage tanks from the north via State Road 528 and Narcoossee Road to Dowden Road and from the south and east via State Road 417, Narcoossee Road and Innovation Way to Dowden Road.

Fuel Storage and Distribution Facility Alternative 2 (East Airfield Northwest)

This alternative is located in the northwest portion of the East Airfield site (see **Figure 3.6-2**). This alternative involves the development of a 30-acre site to accommodate up to nine storage tanks that are approximately 100 feet in diameter and 40 feet in height, and includes fueling racks, secondary containment areas, and related infrastructure. The first phase of construction would include three storage tanks and necessary infrastructure to access, operate and maintain the site. A fuel distribution line would be bored underground to connect the fuel facility to the existing fuel hydrant system at MCO. Fuel tanker trucks could supply the fuel storage tanks via State Road 528, Goldenrod Road, Cargo Road, and the primary road identified in Figure 3.6-2.

Fuel Storage and Distribution Facility Alternative 3 (East Airfield Northeast)

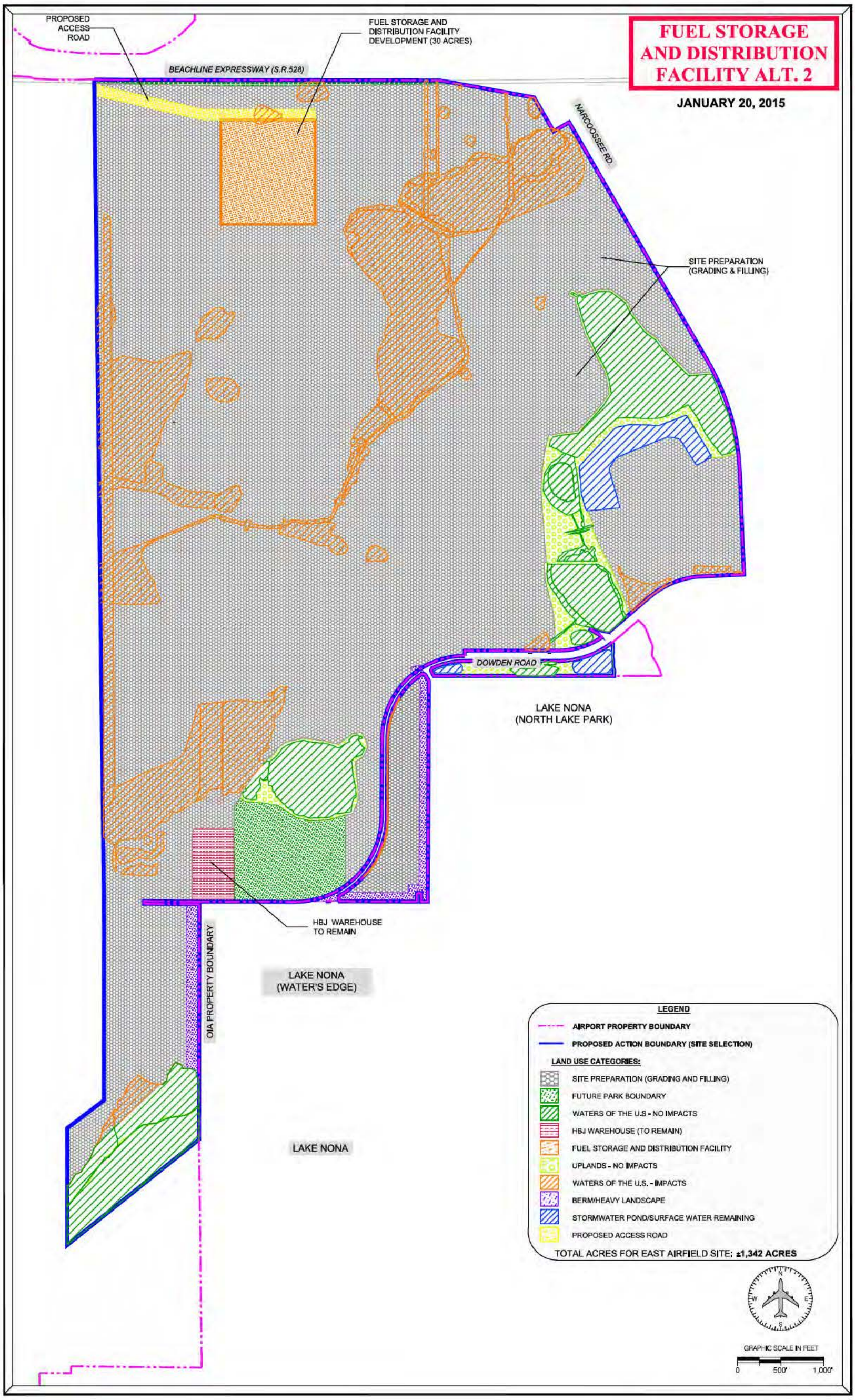
This alternate is located in the northeast portion of the East Airfield site (see **Figure 3.6-3**). This alternative involves the development of a 30-acre site to accommodate up to nine storage tanks that are approximately 100 feet in diameter and 40 feet in height, and includes fueling racks, secondary containment areas, and related infrastructure. The first phase of construction would include three storage tanks and necessary infrastructure to access, operate and maintain the site. A fuel distribution line would be bored underground to connect the fuel facility to the existing fuel hydrant system at MCO. Fuel tanker trucks could supply the fuel storage tanks via State Road 528, Goldenrod Road, Cargo Road, and the primary road identified in Figure 3.6-3.



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 3.6-1

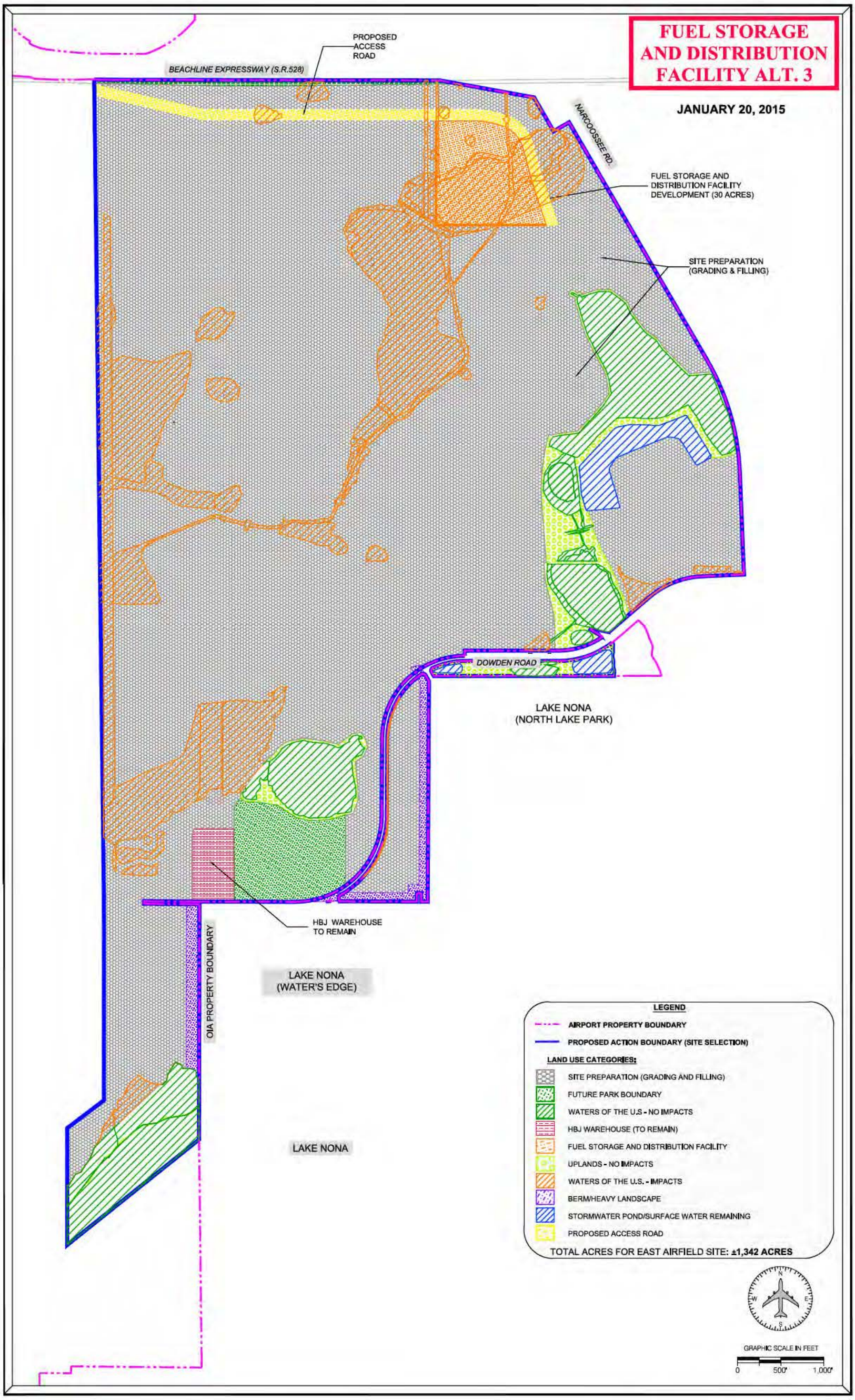
Fuel Storage and Distribution Facility – Alternative 1



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 3.6-2

Fuel Storage and Distribution Facility – Alternative 2



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 3.6-3

Fuel Storage and Distribution Facility – Alternative 3

Fuel Storage and Distribution Facility Alternative 4 (Expansion of the existing MCO fuel facility)

This alternative is located south of the existing MCO fuel facility on the west side of airport property (see **Figure 3.6-4**). This alternative involves the development of a 30-acre site to accommodate up to nine storage tanks that are approximately 100 feet in diameter and 40 feet in height, and includes fueling racks, secondary containment areas, and related infrastructure. The first phase of construction would include three storage tanks and necessary infrastructure to access, operate and maintain the site. A fuel distribution line would be bored underground to connect the new fuel storage areas to the existing fuel hydrant system. Fuel tanker trucks could supply the fuel storage tanks from the north via State Road 528 and Tradeport Drive and from the south via State Road 417, Boggy Creek Road, and Tradeport Drive. This alternative can also be supplied by the existing gas transmission line from the Port of Tampa that serves the existing fuel facility.

3.6.2 Screening Criteria

Screening criteria were based on the purpose and need to develop a secondary redundant fuel storage and distribution facility (described in Section 2.3.3 and 2.4.5), consistent with good planning practices located to take advantage of access to surface transportation and fuel sources.

The following three screening criteria were used in this analysis.

1. Provides a strategically located, independent fuel storage and distribution facility.

   A second independent facility provides GOAA with operational stability from man-made or natural events that would interrupt fuel supply at MCO. Those alternatives with a second facility located separate from the existing facility are preferable to those alternatives that are not.

2. Supports the future planned development on the airport.

   A fuel storage and distribution facility that does not conflict with planned development (as depicted on the ALP), allows efficient use of airport property, and supports long-term development of aviation facilities. Those alternatives which provide for the orderly and efficient development at MCO are preferred to those alternatives that do not.

3. Located in proximity to existing or planned surface access roads (for fuel tankers) or gas transmission corridors/lines.

   To have an efficient and reliable fuel storage and distribution facility, locations with good access to surface roads and/or gas transmission corridors/lines are preferable to those that do not.

3.7 Development of a Secondary Fuel Storage and Distribution Facility at MCO - Screening Analysis

No-Action Alternative

Screening Criteria: Provides a strategically located, independent fuel storage and distribution facility.

The No-Action Alternative would not result in the development of a secondary fuel storage and distribution facility at MCO. Therefore, it would not provide a separate, redundant fuel system at MCO.

This alternative does not meet this screening criterion.

Screening Criteria: Supports the future planned development on the airport.

The No-Action Alternative would not result in the development of a secondary fuel storage and distribution facility at MCO. As a result, it would not conflict with planned development.

This alternative meets this screening criterion.

Screening Criteria: Located in proximity to existing or planned surface access roads (for fuel tankers) or gas transmission corridors/lines.

The No-Action Alternative would not result in the development of a secondary fuel storage and distribution facility at MCO.

This alternative does not meet this screening criterion.

Fuel Storage and Distribution Facility Alternative 1 (East Airfield South)

Screening Criteria: Provides a strategically located, independent fuel storage and distribution facility.

Fuel Storage and Distribution Facility Alternative 1 (FSDF Alternative 1) provides a separate, redundant fuel system at MCO. This alternative would be located on the southern boundary of the East Airfield site. The existing fuel facility is located over three miles west of the Alternative 1 site.

This alternative meets this screening criterion.

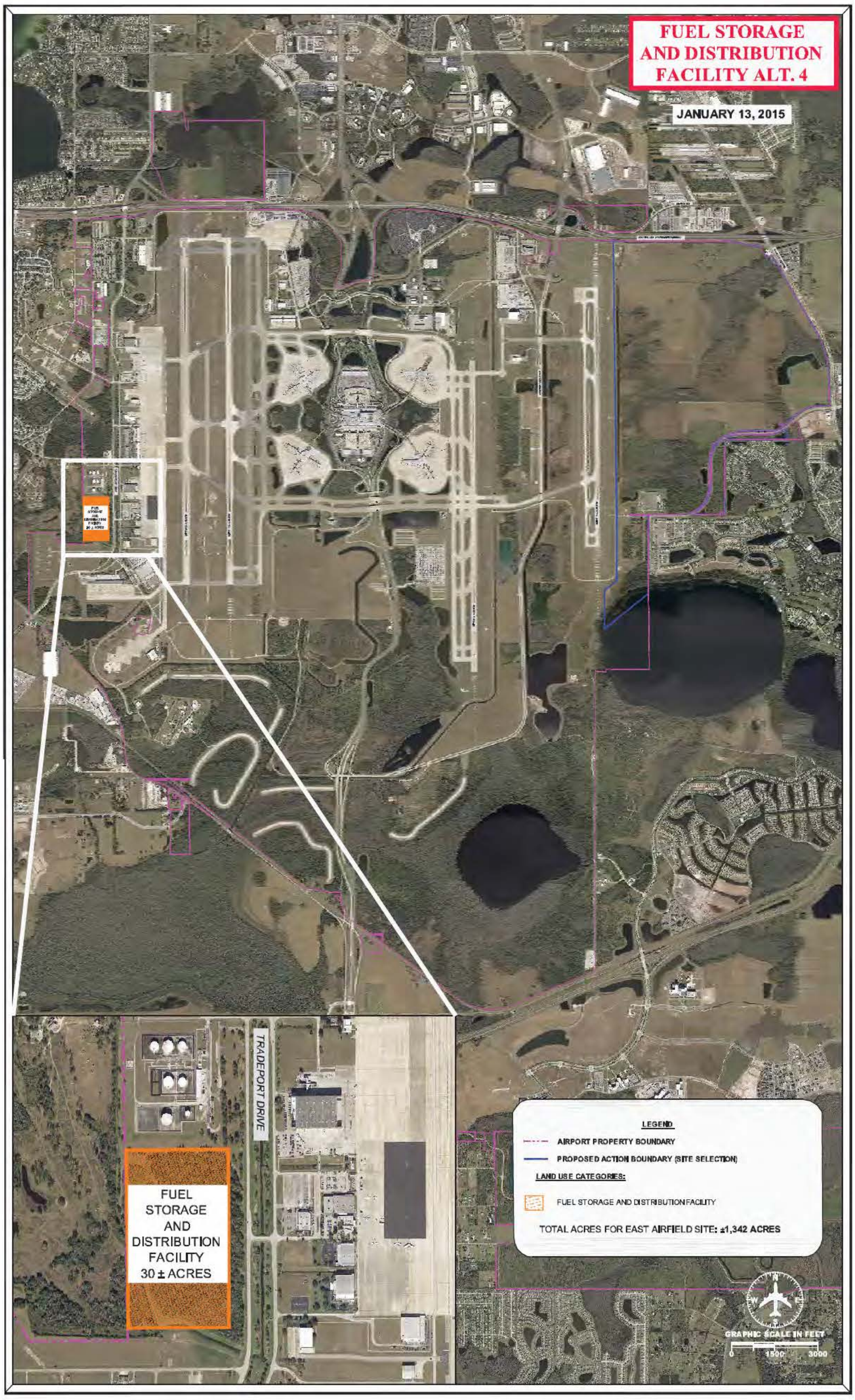
Screening Criteria: Supports the future planned development on the airport.

This alternative does not conflict with planned development at MCO (as depicted on the ALP), allows efficient use of airport property, and supports long-term development of aviation facilities.

This alternative does not meet this screening criterion

Screening Criteria: Located in proximity to existing or planned surface access roads (for fuel tankers) or gas transmission corridors/lines.

FSDF Alternative 1 is located adjacent to Dowden Road. Dowden Road is accessible to fuel tanker trucks from the north via State Road 528 and Narcoossee Road and from the south and east



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 3.6-4

Fuel Storage and Distribution Facility – Alternative 4

via State Road 417, Narcoossee Road and Innovation Way. This alternative is located in proximity to an existing gas transmission pipeline south of Dowden Road and 1.6 miles from the SR 528 right-of-way, which is the anticipated route for a new fuel pipeline from Port Canaveral.

This alternative meets this screening criterion.

Fuel Storage and Distribution Facility Alternative 2 (East Airfield Northwest)

Screening Criteria: Provides a strategically located, independent fuel storage and distribution facility.

Fuel Storage and Distribution Facility Alternative 2 (FSDF Alternative 2) provides a separate, redundant fuel system at MCO. This alternative would be located on the northwest side of the East Airfield site. The existing fuel facility is located approximately four miles southwest of the Alternative 2 site.

This alternative meets this screening criterion.

Screening Criteria: Supports the future planned development on the airport.

This alternative does not conflict with planned development for MCO (as depicted on the ALP. However, the proximity of the FSDF Alternative 2 site to Runway 17L/35R presents an issue in regard to the concepts of efficiency and "highest and best use" of airport property at the East Airfield site. In general, airport land located closer to runway and taxiway systems (existing and future) is best suited for aviation facilities that require airfield access. These type facilities include connector taxiways, aircraft parking and circulation aprons, hangars, cargo buildings, and other support buildings. This increases the efficiency of traffic on the airfield (i.e., reduces taxi distances and times) and results in a more efficient use of airport property. In most cases, a fuel storage facility's proximity to runway and taxiway systems is less important when compared to the type of facilities previously mentioned. Because FSDF Alternative 2 would be located in an area that would be better used for other aviation facilities, it would not fully support future planned development and, therefore, does not satisfy this criterion.

This alternative does not meet this screening criterion.

Screening Criteria: Located in proximity to existing or planned surface access roads (for fuel tankers) or gas transmission corridors/lines.

FSDF Alternative 2 is located in proximity to State Road 528 and could be accessed by fuel tanker trucks from the north via Goldenrod Road, Cargo Road, and the proposed primary roadway (internal to the East Airfield site). This alternative is also in proximity to a planned gas transmission corridor (by others) along the State Road 528 right of way.

This alternative meets this screening criterion.

Fuel Storage and Distribution Facility Alternative 3 (East Airfield Northeast)

Screening Criteria: Provides a strategically located, independent fuel storage and distribution facility.

Fuel Storage and Distribution Facility Alternative 3 (FSDF Alternative 3) provides a separate, redundant fuel system at MCO. This alternative would be located in the northeast corner of the

East Airfield site. The existing fuel facility is located approximately 4.4 miles west-southwest of the alternative site.

This alternative meets this screening criterion.

Screening Criteria: Supports the future planned development on the airport.

This alternative does not conflict with planned development at MCO (as depicted on the ALP), allows efficient use of airport property, and supports long-term development of aviation facilities.

This alternative meets this screening criterion.

Screening Criteria: Located in proximity to existing or planned surface access roads (for fuel tankers) or gas transmission corridors/lines.

FSDF Alternative 3 is located in proximity to State Road 528 and could be accessed by fuel tanker trucks from the north via Goldenrod Road, Cargo Road, and the proposed primary roadway (internal to the East Airfield site). This alternative is in proximity to a planned gas transmission corridor (by others) along the State Road 528 right of way.

This alternative meets this screening criterion.

Fuel Storage and Distribution Facility Alternative 4 (Expansion of the existing MCO fuel facility)

Screening Criteria: Provides a strategically located, independent fuel storage and distribution facility.

FSDF Alternative 4 is located directly adjacent to the existing fuel facility. Due to its proximity to the existing fuel facility, this alternative would not ensure operational redundancy in the case of damage from natural disaster, fire, or other means. In addition, this site would not have the potential to receive fuel from alternate fuel lines or planned corridors.

This alternative does not meet this screening criterion.

Screening Criteria: Supports the future planned development on the airport.

This alternative does not conflict with planned MCO development (as depicted on the ALP), allows efficient use of airport property, and supports long-term development of aviation facilities.

The alternative meets this screening criterion.

Screening Criteria: Located in proximity to existing or planned surface access roads (for fuel tankers) or gas transmission corridors/lines.

FSDF Alternative 4 is located directly south of the existing fuel facility at MCO. The existing fuel facility is located on the west side of airport property adjacent to an existing gas transmission line and can also be accessed by fuel tanker trucks from the north via State Road 528 and Tradeport Drive and from the south via State Road 417, Boggy Creek Road, and Tradeport Drive. This location does not provide good access to an alternative gas transmission corridor.

This alternative partially meets this screening criterion.

3.7.1 Summary of Alternative Screening Analysis

During the alternatives screening analysis, two of the five alternatives were eliminated from further consideration because they do not meet the screening criteria for the location of the secondary fuel storage distribution facility on the East Airfield. **Table 3.7-1** provides a summary of the screening analysis.

TABLE 3.7-1
SUMMARY OF ALTERNATIVES SCREENING ANALYSIS FOR DEVELOPMENT OF A SECONDARY FUEL STORAGE AND DISTRIBUTION FACILITY AT MCO

	Fuel Storage & Distribution Facility Alternative #1 (East Airfield South)	Fuel Storage & Distribution Facility Alternative # 2(East Airfield Northwest)	Fuel Storage & Distribution Facility Alternative #3 (East Airfield Northeast)	Fuel Storage & Distribution Facility Alternative # 4 (Expand Existing Fuel Facility)	No-Action Alternative
Provides a strategically located, independent fuel storage and distribution facility.	Yes	Yes	Yes	No	No
Supports the future planned development on the airport.	Yes	No	Yes	Yes	No
Located in proximity to existing or planned surface access roads (for fuel tankers) or gas transmission corridors/lines.	Yes	Yes	Yes	Yes[1]	Yes
Retained for Detailed Evaluation in the EA	No[2]	No	Yes	No	Yes[3]

Note 1: Only partially meets the screening criteria.
Note 2: This alternative was eliminated as a result of coordination with local and regional planning departments.
Note 3: The No-Action Alternative is carried through to he detailed evaluation in the EA to meet the requirements of NEPA and CEQ.

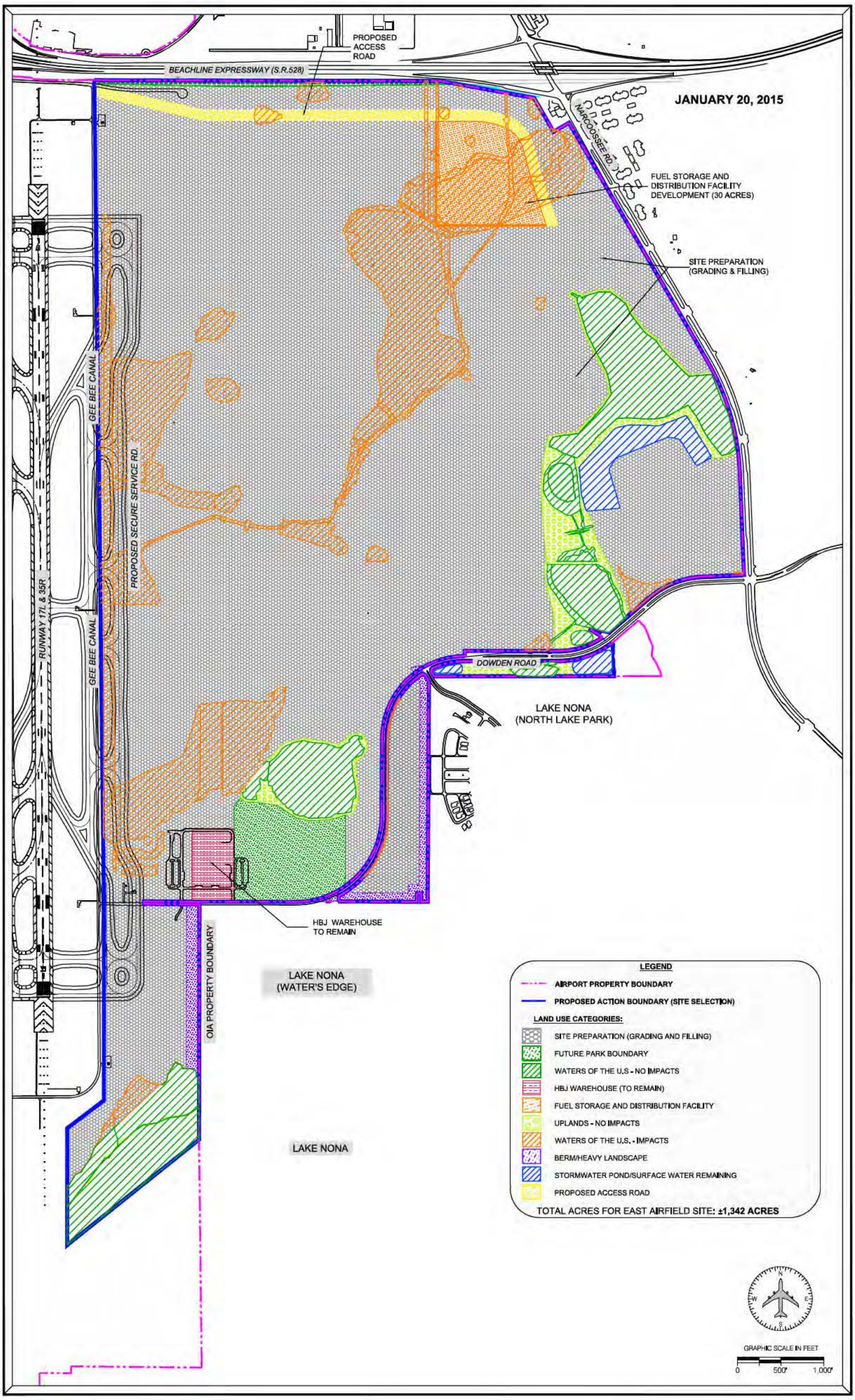
3.7.2 Fuel Storage and Distribution Facility Alternatives Retained for Detailed Review

FSDF Alternative 1 and FSDF Alternative 3 both met all the screening criteria. However, as a result of coordination with local and regional planning departments in conjunction with prior public outreach to stakeholder groups, GOAA has eliminated FSDF Alternative 1 from further consideration. Additional information regarding public comments, GOAA's interaction with stakeholder groups, and agency comments are provided in Section 6 of this EA.

FSDF Alternative 3 and the No-Action Alternative were retained after the secondary screening for the development of a secondary fuel storage and distribution facility. Although the No-Action Alternative does not meet the purpose and need, it was retained for further environmental analysis screening because it provides a baseline for comparative purposes to fulfill FAA's responsibility under NEPA and the CEQ regulations.

3.8 Alternatives Retained for Evaluation

Following the screening analysis related to site selection for a large, contiguous area for future aviation, aviation support, and medium intensity land uses, the East Airfield Alternative site was retained for further analysis. Through the screening analysis related to Wildlife Hazard Attractant Reduction Alternative 2 was retained for further analysis. The Fuel Storage and Distribution Facility Alternative 3 was retained for further analysis. These alternatives collectively comprise the Proposed Action and are depicted in **Figure 3.8-1.** Except for the No-Action Alternative, all of the other alternatives were determined to be not reasonable. Although the No-Action Alternative does not meet the purpose and need, it was retained for further environmental analysis because it provides a baseline for comparative purposes to fulfill FAA's responsibility under NEPA and the CEQ regulations.



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 3.8-1

Proposed Action

SECTION 4
Affected Environment

4.1 Introduction

The affected environment section of an Environmental Assessment (EA) describes the existing environmental conditions of the potentially affected geographic area (the project area and vicinity). This includes a discussion of land cover, terrain features, level of urbanization, sensitive populations, etc. The discussion highlights important background material, such as previous and reasonably foreseeable development and actions, whether Federal or non-Federal. It also includes such information as actions, taken or proposed by the community or citizen groups, pertinent to the proposal, or any other unique factors associated with the action.[1]

Federal Aviation Administration (FAA) Order 1050.1E identifies environmental impact categories that the FAA examines for most of its actions. This section of the EA provides data and supporting documentation for resources that could potentially be affected by the Proposed Action. Environmental impact categories examined in this EA include the following:

- Air Quality
- Coastal Resources
- Compatible Land Use
- Construction Impacts
- Department of Transportation Act: Section 4(f)
- Fish, Wildlife, and Plants
- Floodplains
- Hazardous Materials, Pollution Prevention, and Solid Waste
- Historic, Architectural, and Archeological Resources
- Light Emissions and Visual Impacts
- Natural Resources and Energy Supply
- Noise
- Secondary (Induced) Impacts

[1] FAA Order 1050.1E paragraph 405e.

- Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks
- Water Quality
- Wetlands

FAA Order 1050.1E notes that if the proposed action and its alternatives will not cause impacts within specific environmental categories, a brief statement describing the factual basis for the conclusion that the action is not likely to cause environmental impacts within these categories is sufficient. The following is a list of environmental impact categories that the Proposed Action and No-Action Alternative would not affect, and are therefore not evaluated further within this EA:

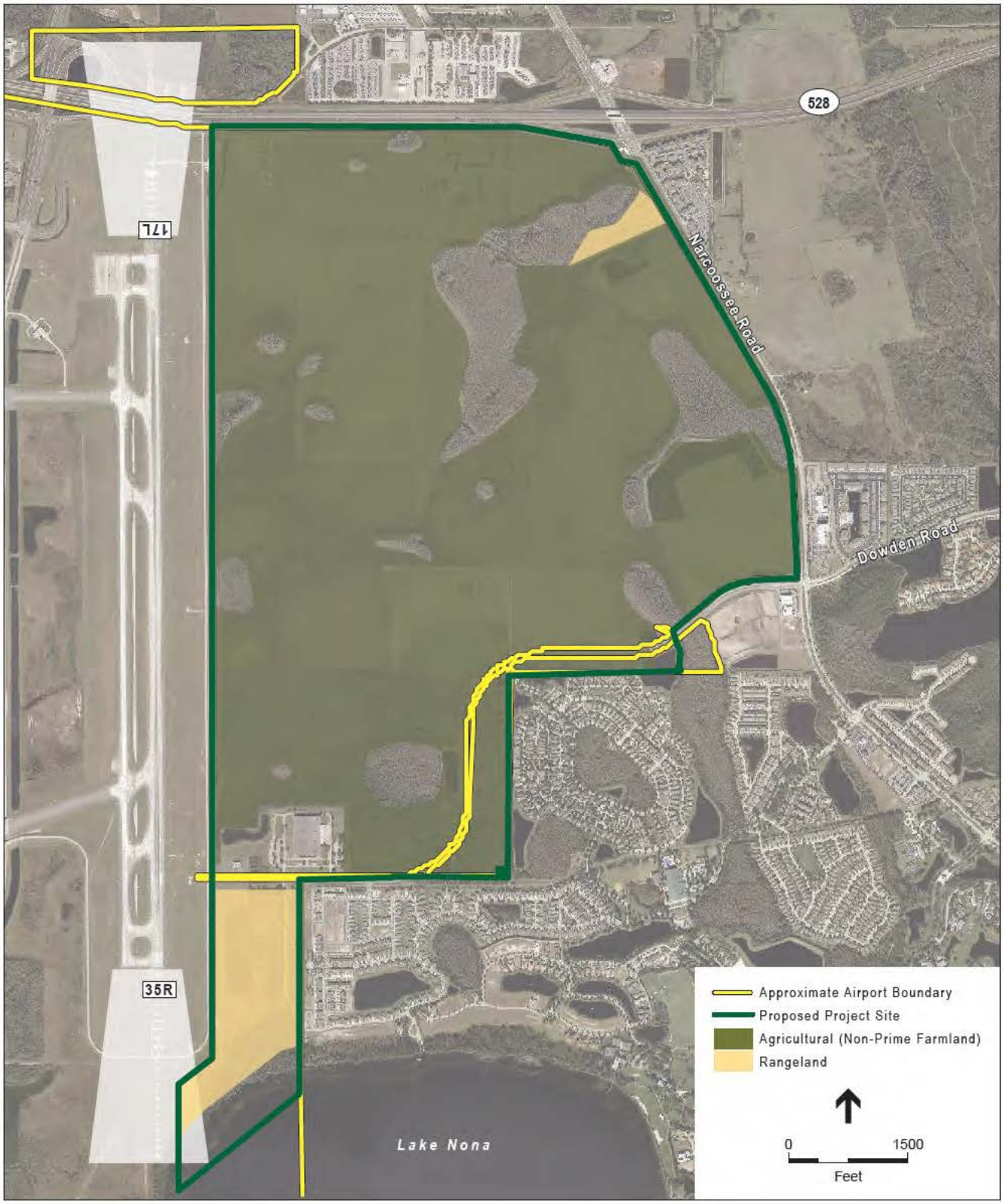
- ***Farmland*** – The Proposed Action and No-Action Alternative would not require the acquisition of prime, unique, or state or locally significant farmland or the conversion/use of these types of farmlands that are protected by the *Federal Farmland Protection Policy Act* (FPPA) or by the State of Florida. The US Department of Agriculture's Natural Resource Conservation Service (NRCS) has authority for designating important farmlands and keeps lists of important farmlands for each state. Designations for the East Airfield site are Agricultural (Non-Prime Farmland) and Rangeland. **Figure 4.1-1** provides a graphic that displays the NRCS designation of farmlands for the East Airfield site.

- ***Wild and Scenic Rivers*** – Florida has two rivers designated as Wild and Scenic River System (WSRS) rivers in accordance with the *Wild and Scenic Rivers Act of 1968*: the Loxahatchee River in southeast Florida and the Wekiva River in central Florida.[2] In accordance with these regulations, an analysis is required if a proposed action is within one quarter mile of the ordinary high water mark on each side of a WSRS river. The Proposed Action and the No-Action Alternative are more than 18 miles from the closest WSRS river segment (the Wekiva River). A river is also protected if it is listed on the National Rivers Inventory (NRI).[3] In order to be listed on the NRI, a river must be free-flowing and possess one or more Outstanding Remarkable Values (ORVs). The Wekiva River and Rock Springs Run, portions of which are located in Orange County, are listed on the NRI. The Proposed Action and No-Action Alternative are more than18 miles from an NRI river.

4.2 Project Location & Vicinity

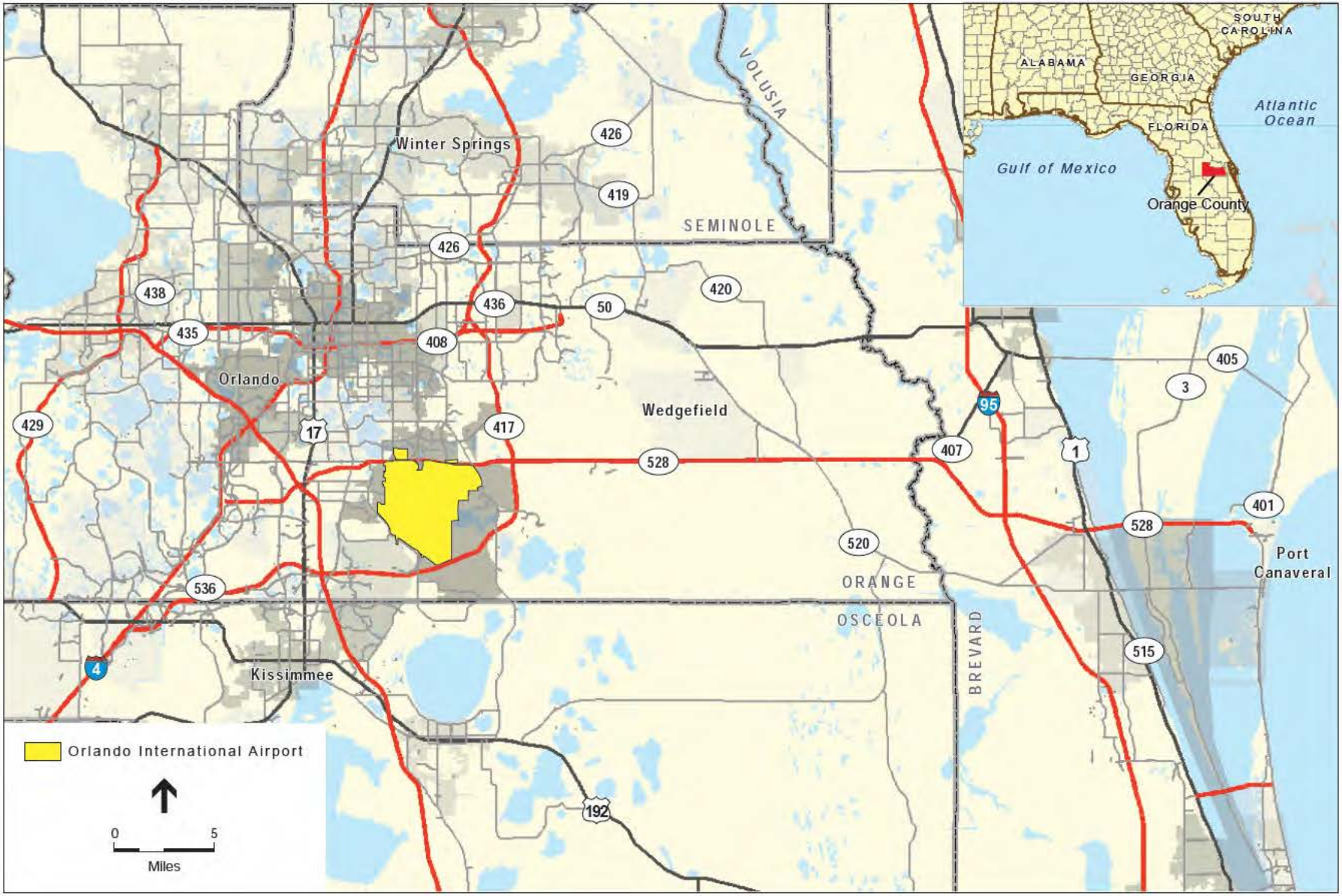
The East Airfield site is located within the existing property boundary line of the Orlando International Airport (MCO). MCO is located in Orange County, which is located in central Florida (see **Figure 4.2-1**). The airport is also located within the political jurisdiction of the City of Orlando. The East Airfield site is located east of the existing airfield and consists of approximately 1,342 acres of undeveloped land (see **Figure 4.2-2**). The site is bounded to the north by

[2] http://www rivers.gov/rivers/florida.php
[3] http://www nps.gov/ncrc/programs/rtca/nri/



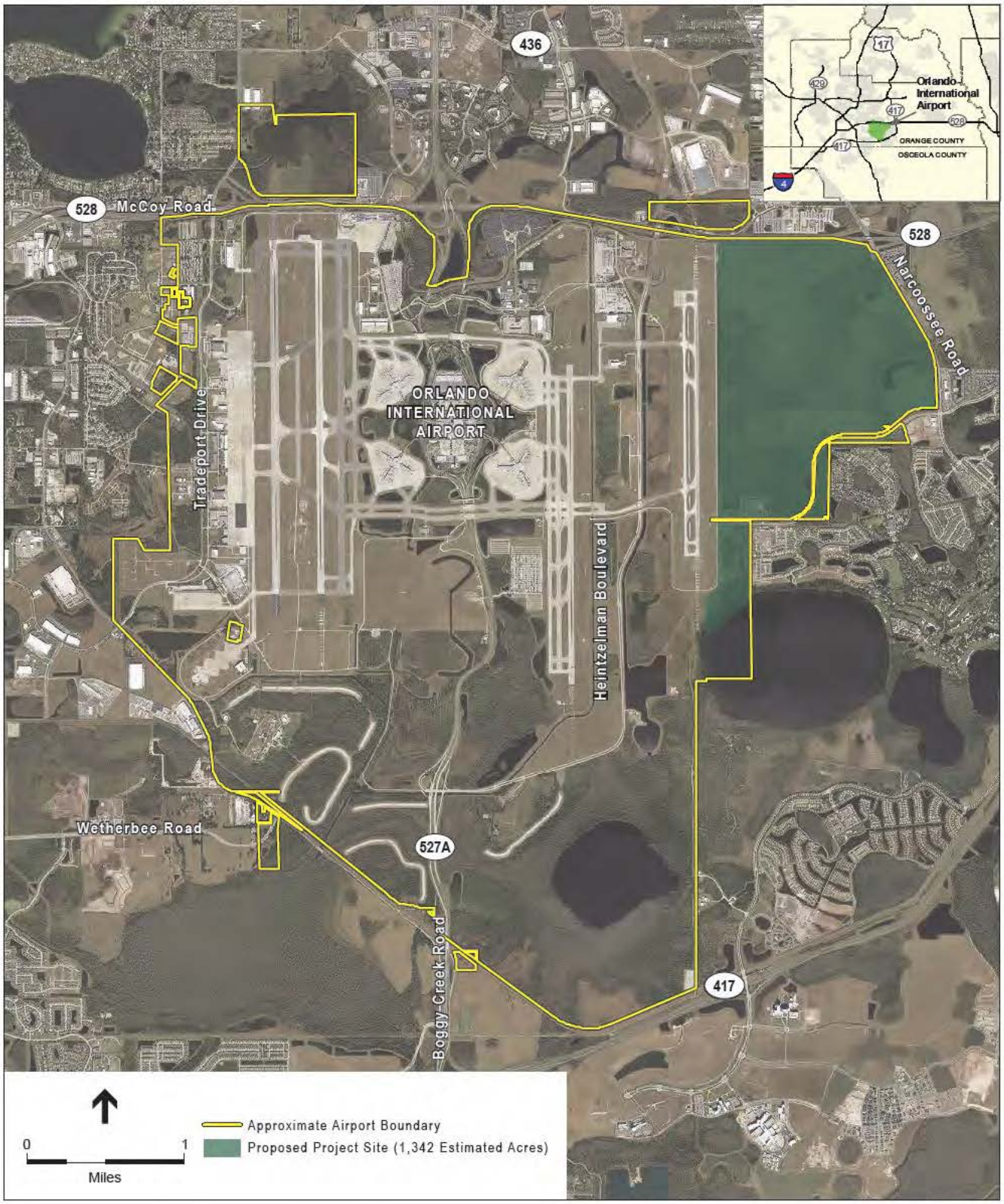
SOURCE: Greater Orlando Aviation Authority, 2010 aerial; and ESA Airports, 2012

Figure 4.1-1
Farmland Designations for the Proposed Action Site



SOURCE: ESRI, 2007; Greater Orlando Aviation Authority, 2008; and ESA Airports, 2012

Figure 4.2-1
Vicinity Map



SOURCE: Greater Orlando Aviation Authority, 2010 aerial; and ESA Airports, 2012

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Figure 4.2-2
Project Location Map

the Beachline Expressway (State Road 528), to the east by Narcoossee Road (State Road 15), to the south by Dowden Road, and to the west by the airport operations area (AOA), including Runway 17L-35R.

Directly east of the site and to the east of Narcoossee Road, are two Planned Development (PD) areas (Bal Bay PD and La Vina PD) that consist of a mix of commercial, office, and residential uses. These PDs are currently under development. To the south of the site are existing residential areas, including the NorthLake Park community. NorthLake Park is part of the Lake Nona development area. To the southeast of the site, there is also a recently developed commercial area located at the intersection of Dowden and Narcoossee Roads.

The existing surface roadway system in the immediate vicinity of the East Airfield site consists of State Road 528 to the north, which is a six-lane limited access toll road; Narcoossee Road (State Road 15) to the east which is a four-lane divided road; and to the south is Dowden Road, which is an existing two-lane local road. Dowden Road is planned to be extended west from its current terminus at the MCO property boundary through airport property to Heintzelman Road, a public on-airport road. The extension is identified in the Florida Department of Transportation's (FDOT) current Work Program. This project is also identified in the 2005 and Draft 2014 MCO Master Plan as an important roadway facility to provide vehicular access to the proposed South Terminal Complex and associated development areas.

The Detailed Study Area for the Proposed Action is the boundary of the East Airfield site (see **Figure 4.2-3**). General study areas vary depending on the environmental resource category being described or evaluated. Information regarding the different general study areas is described, as necessary, within each environmental impact category.

4.3 Existing Affected Environment by Environmental Impact Category

4.3.1 Air Quality

An airport air quality assessment requires consideration under both the *Clean Air Act* (CAA), including its 1990 Amendments, and the *National Environmental Policy Act* (NEPA). These legislative and regulatory acts require distinct analyses and may separately apply to an airport project depending on the type of project and whether the area in which a project is proposed meets standards for criteria air pollutants ("attainment") or does not meet standards ("non-attainment").

The U.S. Environmental Protection Agency (EPA) sets National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. There are two types of NAAQS: (i) *Primary* standards that provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly; and (ii) *Secondary* standards that provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. NAAQS have been

established for six common air pollutants, referred to as "criteria" pollutants, which consist of carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), lead (Pb), and particulate matter (PM). Particulate pollutants include those with a diameter of 10 microns or less (PM_{10}) and those with a diameter of 2.5 microns or less ($PM_{2.5}$). Nitrogen oxides (NO_x) and volatile organic compound (VOC) emissions are precursors to ozone formation. The NAAQS are listed in **Table 4.3-1**. Units of measure for the standards are parts per million (ppm) by volume, and micrograms per cubic meter of air (ug/m^3).[4]

TABLE 4.3-1
NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant		Averaging Time	Threshold	Type of Standard[1]
Carbon Monoxide (CO)		1-hour	35 ppm	Primary
		8-hour	9 ppm	
Nitrogen Dioxide (NO_2)		1-hour	0.100 ppm	Primary
		Annual	0.053 ppm	Primary and Secondary
Sulfur Dioxide (SO_2)[2]		1-hour	0.075 ppm	Primary
		3-hour	0.5 ppm	Secondary
Ozone (O_3)[3]		8-hour	0.075 ppm	Primary and Secondary
Particulate Matter	$PM_{2.5}$	24-hour	35 µg/m^3	Primary and Secondary
		Annual	12 µg/m^3	Primary
		Annual	15 µg/m^3	Secondary
	PM_{10}	24-hour	150 µg/m^3	Primary and Secondary
Lead (Pb)[4]		Rolling 3-month	0.15 µg/m^3	Primary and Secondary

1 Primary standards protect human health; secondary standards protect human and environmental welfare, including aesthetic qualities and prevention of collateral damage.

2 Final rule signed June 2, 2010.

3 Final rule signed March 12, 2008.

4 Final rule signed October 15, 2008.

ppm = parts per million
µg/m^3 = micrograms per cubic meter

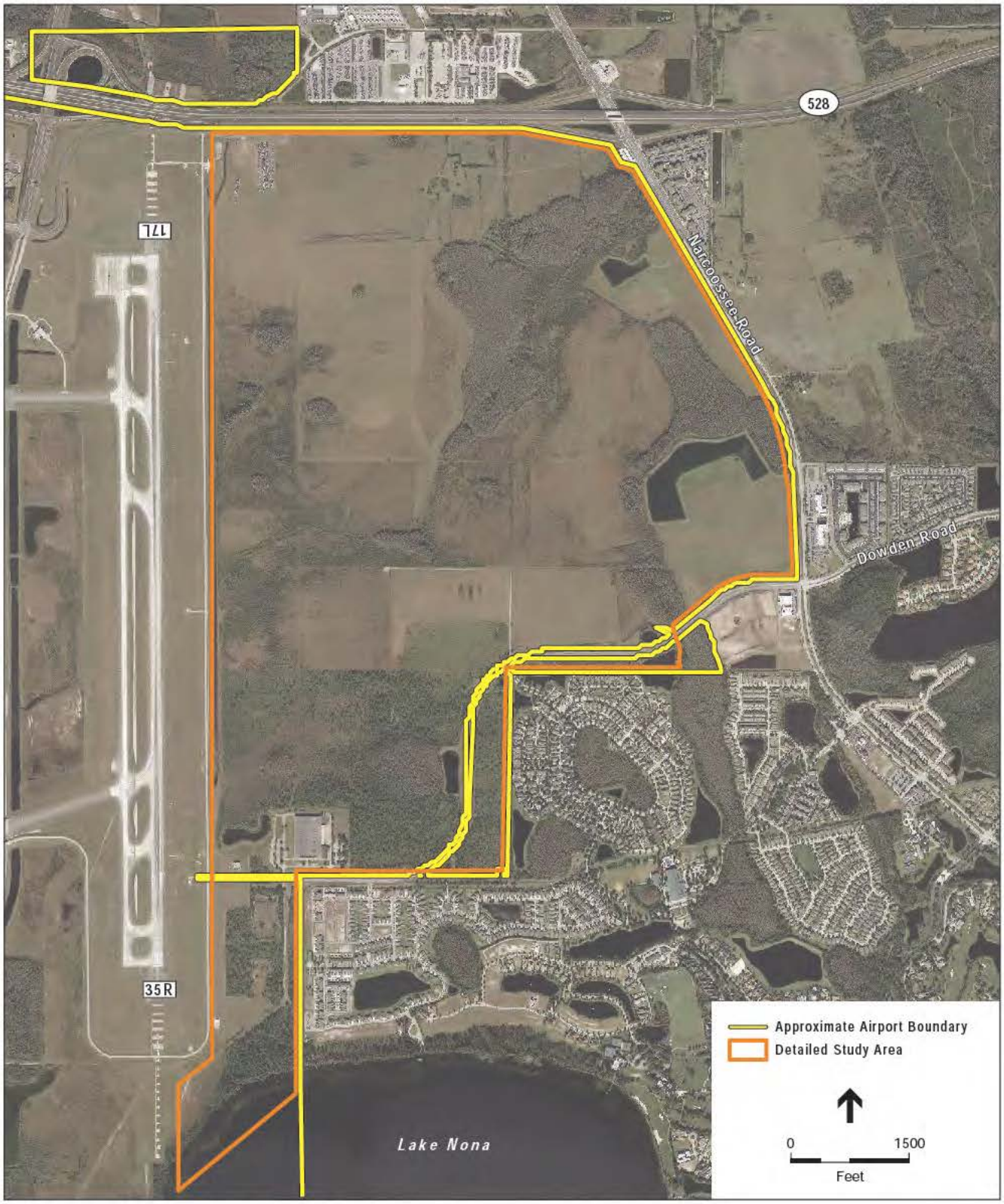
SOURCE: EPA, National Ambient Air Quality Standards (NAAQS), 2015. Current as of October, 2011. NAAQS could change by the year 2030. http://www.epa.gov/air/criteria.html.

Orange County, including the City of Orlando, is currently designated as an "attainment" area for all of the NAAQS criteria pollutants. "Attainment" is a designation by the EPA that means air pollutant levels in an area meet the primary and secondary NAAQS.[5]

As previously stated, an airport air quality assessment potentially requires consideration under both the CAA and NEPA. However, because the East Airfield site is located in an attainment area, only an air quality analysis addressing NEPA is required:

[4] EPA, *National Ambient Air Quality Standards (NAAQS)*, http://www.epa.gov/air/criteria html.

[5] The EPA must designate areas as meeting (attainment) or not meeting (nonattainment) the standards. The most recent information on nonattainment areas for criteria pollutants is located at http://www.epa.gov/oaqps001/greenbk/.



SOURCE: Greater Orlando Aviation Authority, 2010 aerial; and ESA Airports, 2012

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Figure 4.2-3
Detailed Study Area

1. CAA-related General Conformity Rule Assessment

   An airport action is subject to the General Conformity Rule (under Section 176 of the Clean Air Act, 42 USC 7571-7574) only if it would occur in a nonattainment or maintenance area.[6] Because the East Airfield site is in an attainment area, the General Conformity Rule does not apply and, therefore, this assessment is not provided as part of this EA.

2. NEPA-related Assessment

   For an airport action in an attainment area, air quality emissions, including greenhouse gas (GHG) emissions are disclosed under NEPA,[7] and therefore are provided in Section 5.2 of this EA.

Additionally, research has shown there is a direct correlation between fuel combustion and GHG emissions. The scientific community is continuing efforts to better understand the impact of aviation-related GHG emissions on the global atmosphere. The FAA is leading and participating in a number of initiatives intended to clarify the role that commercial aviation plays in GHG emissions and climate. NEPA is also applicable to emissions of GHG and potential climatological changes. Notably, the Council on Environmental Quality (CEQ) has stated that "…it is not currently useful for a 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. The estimated level of GHG emissions can serve as a reasonable proxy for assessing potential climate change impacts…"[8] To comply with NEPA, emission inventories were prepared for three of the six GHGs identified in the Kyoto Protocol[9] — carbon dioxide (CO2), methane (CH4), and nitrous oxide (N_2O) (see Table 5.2-1in Section 5, Environmental Consequences). Notably, CO2, CH4, and N_2O are the predominant GHGs associated with airports. The remaining three GHGs (i.e., hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6)), occur at airports, but to a far lesser extent, and were therefore not included in the GHG emissions inventory.

4.3.2 Coastal Resources

The U.S. Fish and Wildlife Service (USFWS) maintains Coastal Barrier Resources System (CBRS) maps for the State of Florida. These maps designate which lands are within coastal areas regulated by the *Coastal Barrier Resource Act* (CBRA).[10] The East Airfield site is not located

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[6] FAA, *Environmental Desk Reference for Airport Actions,* Chapter 1, Section 3 (a) (2). p.6, October 2007.

[7] FAA, *Aviation Emissions and Air Quality Handbook*, Version 3, July 2014, https://www.faa.gov/regulations_policies/policy_guidance/envir_policy/airquality_handbook/.

[8] CEQ, *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*, February 18, 2010.

[9] The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change, which commits its members by setting internationally binding targets to limit their emissions of the six GHGs (i.e., carbon dioxide, methane, nitrous oxide, hydroflorocarbons, perfluorcarbons, and sulfur hexafluoride), http://unfccc.int/kyoto_protocol/items/2830.php.

[10] Official CBRS map for the state of Florida can be viewed at: http://fws.gov/CBRA/Maps.index html

within the CBRS and, therefore, no further analysis related to the *Coastal Barrier Resource Act* is required.

The Florida Department of Environmental Protection (DEP), Office of Intergovernmental Programs, Florida State Clearinghouse (FSC) coordinates a review of Federal actions under the following authorities: *Presidential Executive Order 12372*; Section 403.061 (42), Florida Statutes; *Coastal Zone Management Act*, 16 U.S.C. Sections 1451-1464, as amended; and, *National Environmental Policy Act*, 42 U.S.C. Sections 4321-4347, as amended. The Proposed Action's consistency with the Enforceable Policies[11] of the Florida Coastal Management Program (CMP) will be reviewed in Section 5.3, Coastal Resources.

4.3.3 Compatible Land Use

The compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of the airport's noise impacts. FAA regulations[12] are used to define and categorize compatible land uses in a project's study area. Residential areas are considered non-compatible with aircraft noise exposure levels at or greater than DNL 65.[13]

The most recent noise contours, 2008 DNL 65+ noise contours, were prepared to describe baseline conditions for the study area associated with the Proposed Action (see Section 4.3.12). No residential or other noise sensitive uses (churches, schools, hospitals, etc.) are within the limits of the 2008 DNL 65+ noise contour.[14]

4.3.3.1 Existing Noise Overlay Zoning

As part of GOAA's on-going compatible land use efforts, a Title 14 Code of Federal Regulations (CFR) Part 150 Noise and Land Use Compatibility Study for MCO was completed in 2001. The study developed long-term DNL noise contours used as a basis for the City of Orlando and Orange County to revise their aircraft-related noise ordinances for areas around both MCO and Orlando Executive Airports. For MCO, DNL noise contours were used to define a series of noise overlay zones that required future development be compatible with the future operation of the airport. The overlay zones are shown on **Figure 4.3-1.**

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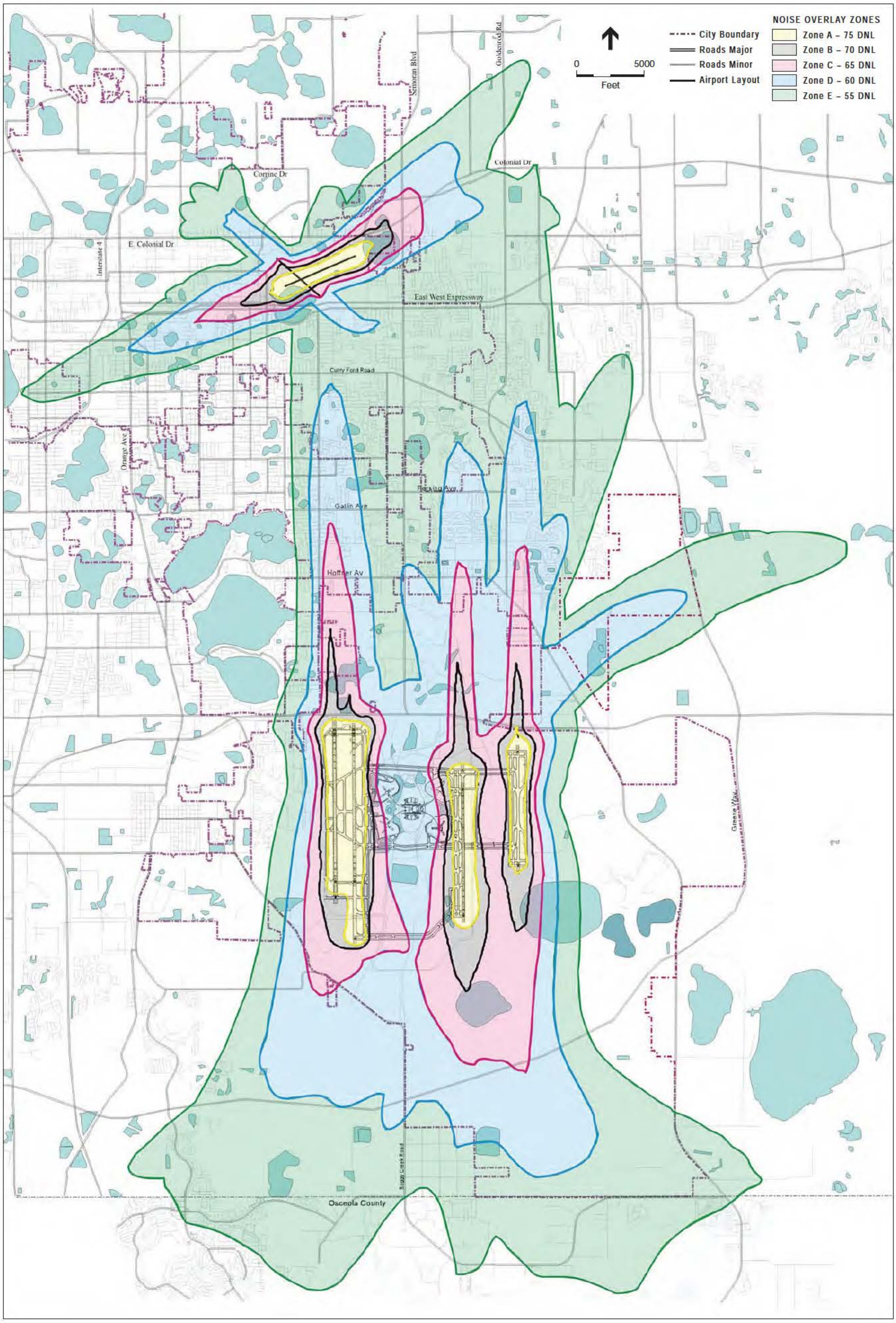
[11] The Florida CMP federal consistency process consists of a network of 24 Florida Statutes (i.e. Enforceable policies) administered by DEP and a group of partner state agencies responsible for implementing the statutes. http://www.dep.state fl.us/cmp/default htm

[12] Title 14 *Code of Federal Regulations* (CFR) Part 150, *Airport Noise Compatibility Planning*; FAA Advisory Circular (AC) 150/5020-1, *Noise Control and Compatibility Planning for Airports*. August 5, 1983. Appendix 1.

[13] Day Night Sound Level (DNL) - is the standard Federal metric for determining cumulative exposure of individuals to noise. DNL is the 24-hour average sound level in decibels (dB). This average is derived from all aircraft operations during a 24-hour period that represents an airport's average annual operational day.

[14] The 2008 contours represent the noise conditions resulting from modeling 348,177 aircraft operations including 294,900 air carrier operations. The airport actually experienced 295,403 operations including 264,283 air carrier operations in FY2014.



SOURCE: OIA FAR Part 150 Study, 2001; and ESA Airports, 2012

Figure 4.3-1
Noise Overlay Zones

Five individual overlay zones, identified as A through E, were established with each having its own control. The City of Orlando and Orange County adopted these controls through ordinances in 1999 and 2000 respectively. The following presents the controls within each zone.

- ZONE A - (75 DNL) - No residential uses allowed.
- ZONE B - (70 DNL) - No new residential uses should occur with the exception of hotel/motel type uses. Avigation easement, waiver of claim and notification to be provided.
- ZONE C – (65 DNL) - New residential uses should be avoided and no mobile home development should occur. If current zoning allows for residential development, such development should be limited to rental units only. Avigation easement, waiver of claim and notification to be provided. Minimum residential sound level reduction requirement of 25 dB, 30 dB preferred.
- ZONE D – (60 DNL) - New residential uses are acceptable. Waiver of claim and notification to be provided. Sound level reduction requirement of 25 dB.
- ZONE E – (55 DNL) - New residential uses are acceptable. Notification to be provided for all new development. No residential sound level reduction requirement.

A portion of the East Airfield site adjacent to runway 17L-35R includes overlay zones A through E. The eastern portion of the site is not within an overlay zone.

4.3.3.2 Local Land Use and Zoning

Future Land Use

To comply with Florida's growth management statutes, the City of Orlando adopted the City's *Growth Management Plan* (GMP), which was approved August 12, 1991 (amended April 9, 2012). The GMP contains a Future Land Use Element setting forth goals, objectives, policies, and future land use descriptions.[15] The East Airfield site is located in the City of Orlando Southeast Orlando Sector Plan (Sector Plan) area. The area is one of the largest urban planning and development projects ever undertaken by the City of Orlando. The Sector Plan area is adjacent to MCO and the East Airfield site is included in the Sector Plan. The Sector Plan was adopted in 1999 and includes policies and guidelines for future development. The Sector Plan identifies specific land uses and guidance for the Sector Plan area. **Figure 4.3-2** depicts the future land use designations for the East Airfield site and vicinity based on the City of Orlando's official Future Land Use Map Series (City of Orlando Future Land Use Map Series, Future Land Use Map 21).[16] The following land uses are identified for the East Airfield site:

- Airport Support District High Intensity
- Airport Support District Medium Intensity

[15] http://www.cityoforlando.net/planning/cityplanning/GMP htm

[16] The Official Future Land Use Map Series is a visual representation of the type, intensity, and location of development that will be allowed to occur throughout the city; and forms the basis for zoning.

- Lake/Conservation
- Public Recreational & Institutional
- Metropolitan Activity Center (M-AC)

Airport Support District High Intensity land uses would permit aviation-related and non-aviation land uses, including heavy and light manufacturing, warehouse, office, hotel, hospital, retail and service, and automobile and truck rental. Residential uses are not permitted. Airport Support District Medium Intensity land uses would permit aviation-related and non-aviation land uses, such as light manufacturing, warehouse, office, hotel, retail and service, automobile and truck rental. The development of certain land uses, such as residential, would not be allowed at MCO.

Lake/Conservation land use designation depicts existing open water areas on the East Airfield site. Lake/Conservation land use areas are restricted to the open water portion of Lake Nona and existing stormwater facilities within the East Airfield site.

Public/Recreational & Institutional land use is designated for an approximately 20-acre area of the East Airfield site near the southern extent of the project boundary. This area was previously the site of the Lake Nona Water Treatment Plant, which has been decommissioned. The property was transferred to GOAA as part of the 1999 Narcoossee Road Widening Agreement between GOAA and City of Orlando. GOAA will seek a future land use change from Public/ Recreational & Institutional to Metropolitan Activity Center (M-AC) concurrent with the local permitting approval process for the East Airfield.

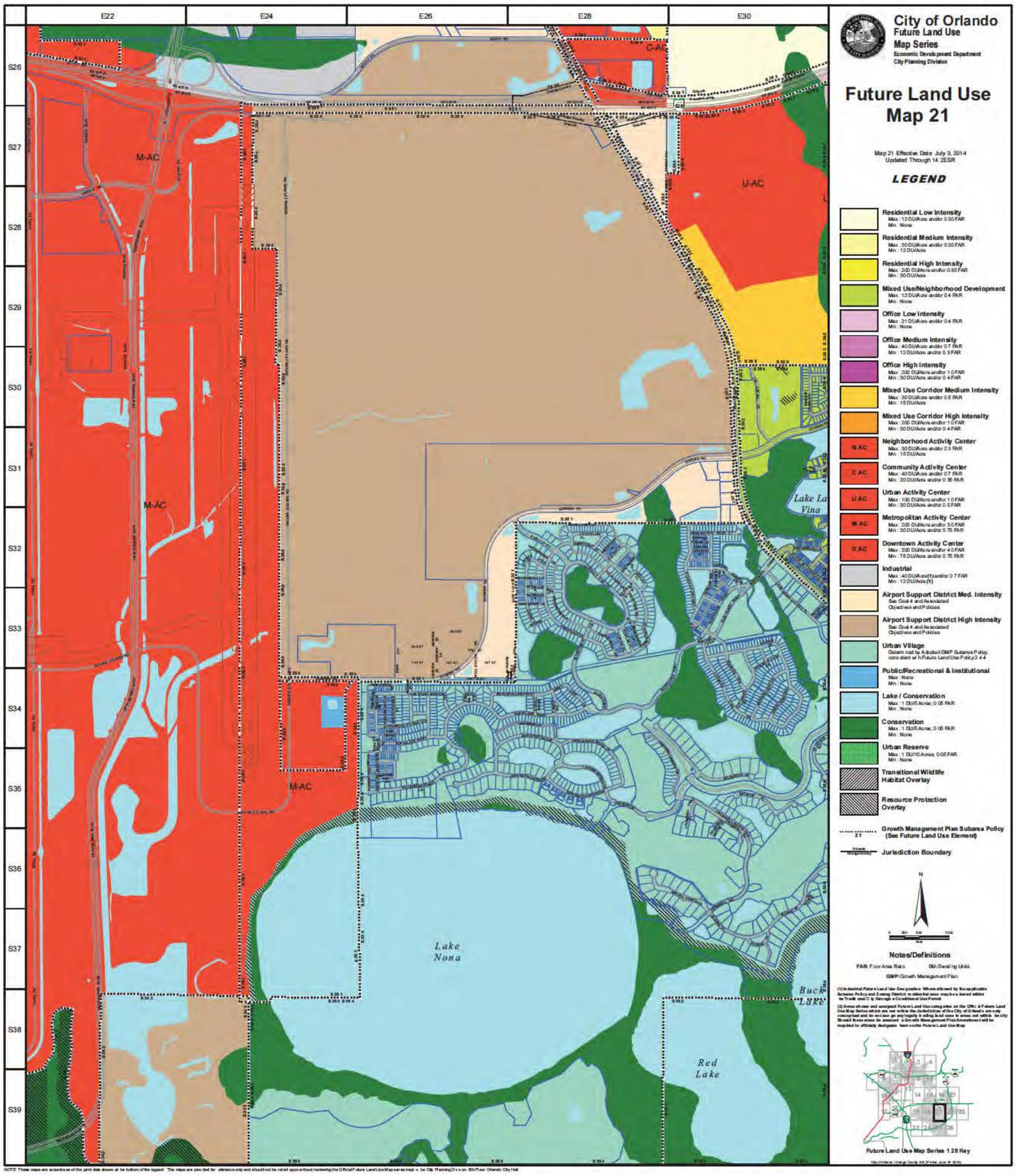
Metropolitan Activity Center (M-AC) land use is designated for the majority of the air operations area and commercial service passenger facilities at MCO. This designation is in the southern most portion of the East Airfield site.

More details regarding these future land use designations are found on the City of Orlando's City Planning website: http://www.cityoforlando.net/planning/cityplanning/GMP.htm.

Current Zoning

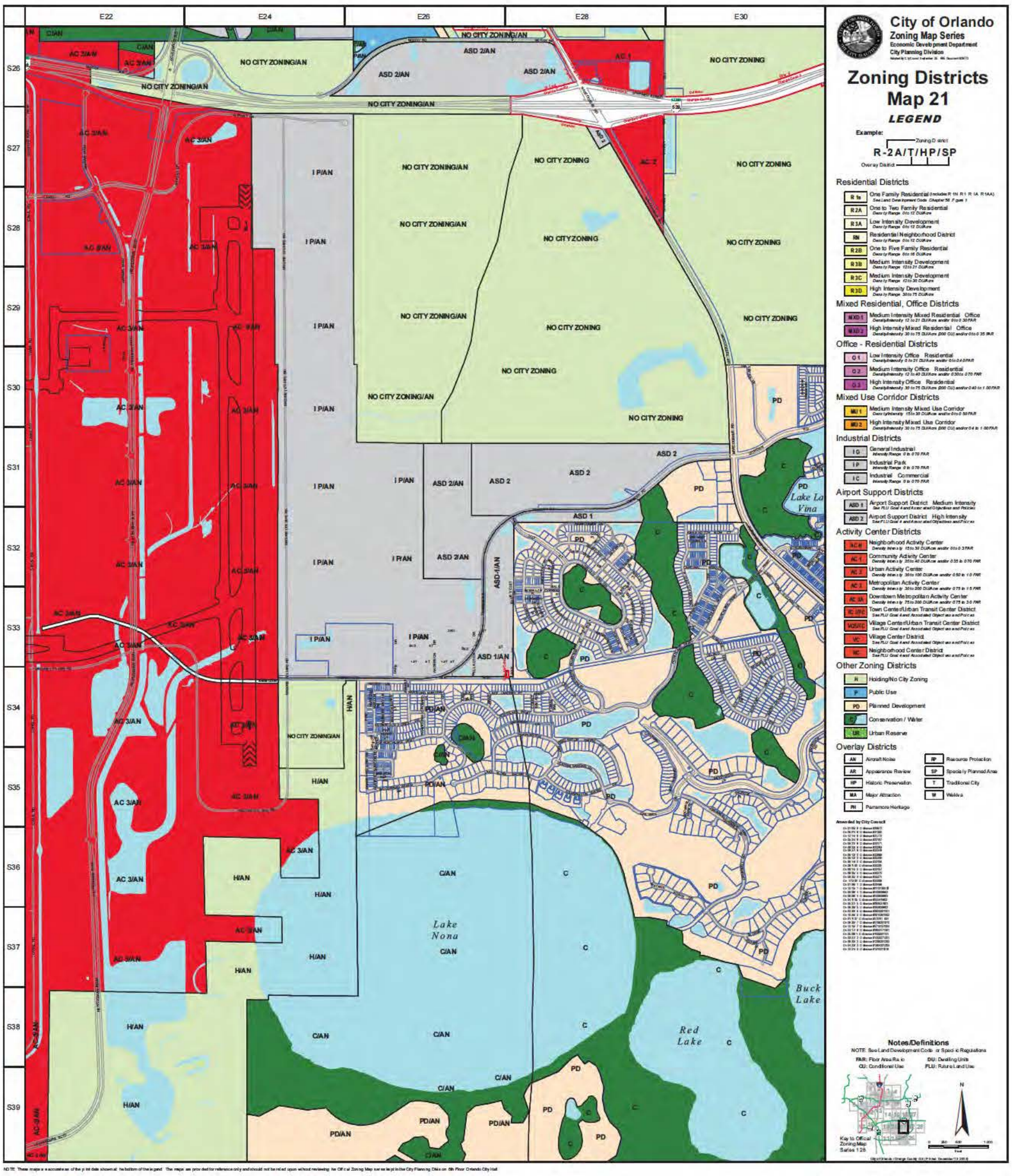
A portion of the current City of Orlando Zoning map that includes the East Airfield Site is depicted in **Figure 4.3-3**. The East Airfield site has eight zoning designations. It should be noted that some of the zoning districts contain an "AN" which means they are part of an established City of Orlando noise overlay zone. Below is a list of the current zoning designations for the East Airfield site.

- Airport Support District – High Intensity (ASD-2)
- Airport Support District – High Intensity with Aircraft Noise Overlay (ASD-2/AN)
- Airport Support District – Medium Intensity (ASD-1)
- Airport Support District – Medium Intensity with Aircraft Noise Overlay (ASD-1/AN)
- Holding/No City Zoning (Areas annexed into the City of Orlando without current City zoning)



SOURCE: http://www.cityoforlando.net/planning/cityplanning/maps.htm, 2012; and ESA Airports, 2012

Figure 4.3-2
City of Orlando FLUM –
Effective Date: May 24, 2012



SOURCE: http://www.cityoforlando.net/planning/cityplanning/maps.htm, 2012; and ESA Airports, 2012

Figure 4.3-3
City of Orlando Zoning –
Ammended February 27, 2012

- Holding with Aircraft Noise Overlay (H/AN) (Areas annexed into the City of Orlando without City zoning with Aircraft Noise Overlay)
- No City Zoning with Aircraft Noise Overlay (No City Zoning/AN)
- Industrial Park with Aircraft Noise Overlay (I-P/AN)

Zoning districts, permitted uses, and development regulations for the City of Orlando can be viewed at http://www.cityoforlando.net/city-planning. See Chapter 58- Zoning District and Uses, Part 2- District Regulations.

Surrounding Area Development

Southeast Orlando Sector Plan

The *Southeast Orlando Sector Plan* (Sector Plan) was adopted by the City of Orlando in 1999. The area is one of the largest urban planning and development projects ever undertaken by the City. The Sector Plan identifies specific land uses for the Sector Plan area (see Figure 4.3-2). The East Airfield site is located in the Sector Plan area. More details regarding the future land use designation identified on the plan are found on the City of Orlando's City Planning website: http://www.cityoforlando.net/city-planning/southeast-town-design-review-committee/.

The Southeast Orlando Sector Plan area is intended as a Future Growth Center with the Orlando International Airport as the primary economic and employment generator. The City of Orlando anticipates that MCO's growth will generate a significant need for housing to serve airport employees. The City's projections for the Sector Plan area indicate a potential for over 13,300 residential units, 2.1 million square feet of retail space, 3.3 million square feet of office space, 1,950 hotel rooms, 4.7 million square feet of industrial space, and 600,000 square feet of civic/government space by the year 2020. By 2020, the Plan area could house more than 28,000 residents.

The City of Orlando entered into a partnership with the southeast area property owners, GOAA, Orlando Utilities Commission, representatives of other local, regional, and state agencies affected by or having permitting jurisdiction of aspects of the project, and representatives of neighborhood interest groups. This partnership was responsible for master planning and the technical design of infrastructure, developing and implementing a financing strategy for the early provision of public facilities such as schools, the preparation of the urban design/land use plan, along with development standards and an administrative process to implement the Plan.

In addition to state and Federal level permitting/approvals and local zoning, projects within the Sector Plan areas must also be processed by the City of Orlando approvals set forth in the Southeast Orlando Sector Plan Development Guidelines and Standards. The guidelines provide specific policy and land development standards for the area including, building (height, set-backs, and architectural), traffic circulation, and open space (parks, green space, and landscaping).

Orange County's Innovation Way

Orange County completed a regional study in 2005 for the area between the City's Sector Plan study area and the University of Central Florida (located near the Seminole County line). The

County's study area became known as Innovation Way, which is shown in **Figure 4.3-4**. After initial evaluation the study focused on a smaller study area. Within this area, a corridor was defined centered around the new Innovation Way Boulevard was defined. Innovation Way is proposed to eventually connect to Dowden Road at Narcoossee Road. The higher density development would be concentrated within this corridor area.

Development of Regional Impacts

Under Florida law, certain developments, referred to as Developments of Regional Impact (DRIs), require review by Regional Planning Councils (RPC), various resource agencies, and the Florida Department of Economic Opportunity (DEO) prior to local government approval through the issuance of a local development order. As provided by Section 380.06, Florida Statutes, any development which, because of its character, magnitude, or location, would have a substantial effect upon the health, safety, or welfare of citizens of more than one county constitutes a DRI. Section 380.0651, Florida Statutes, provides that any development which exceeds the thresholds established in that section is required to undergo a DRI level of review established in Section 380.06, Florida Statutes.

The development of MCO as an international airport in the 1980s was subject to DRI review. The 1999 Amended and Restated Development Order (Amended and Restated DO) did not include reference to the East Airfield site and requires that it be added to the current Orlando International Airport DRI as a substantial deviation. Therefore, the East Airfield site is subject to DRI regulations and an application will be submitted subsequent to the FAA's determination on the EA.

Development Areas in the Vicinity of the East Airfield Site

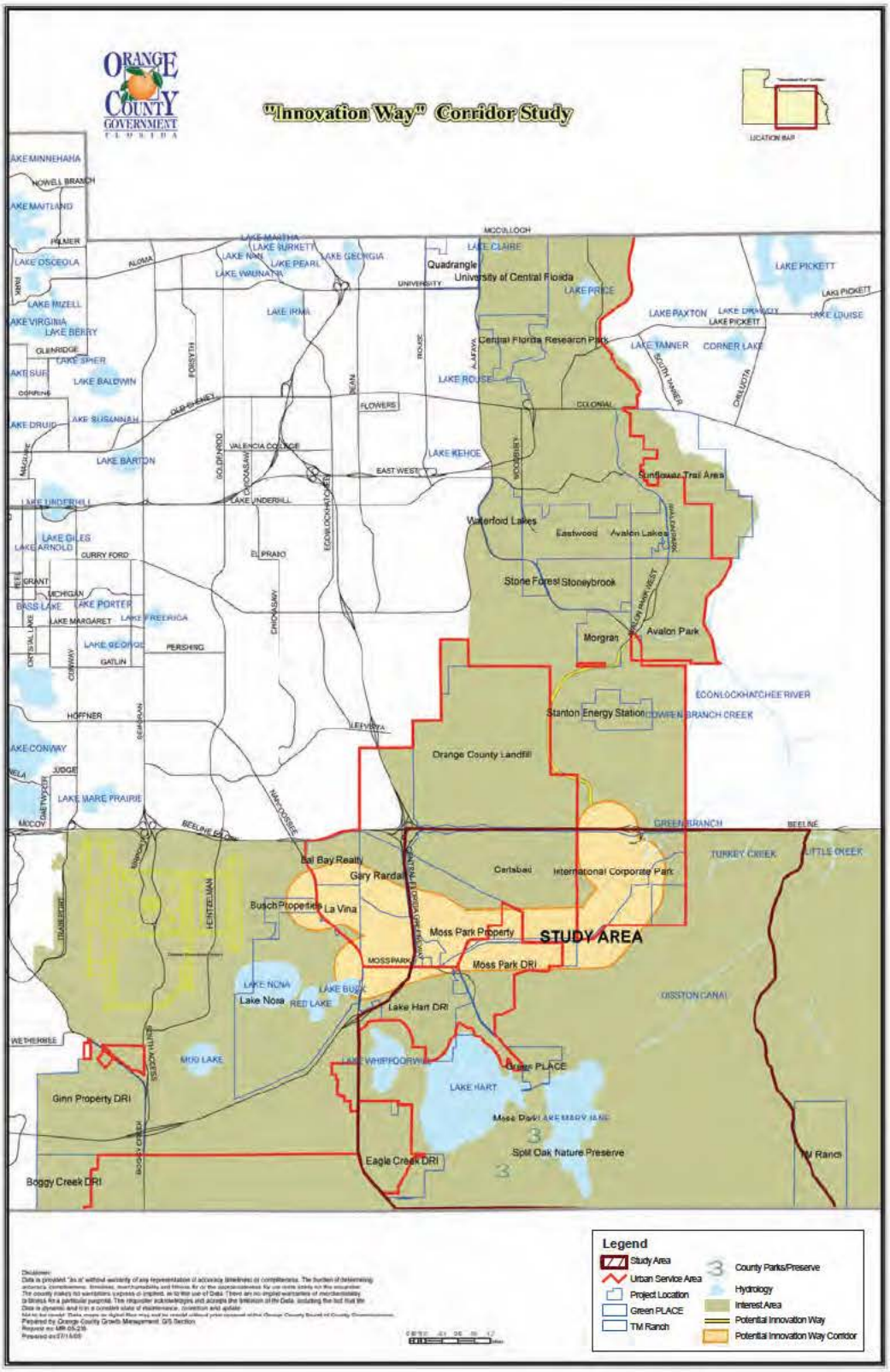
Located to the south of the East Airfield site, Lake Nona DRI is a 6,917-acre planned development area with a mixture of land uses including residential, school, retail, airport support district – industrial, office, and hotel. It received initial DRI approval in 1983. A recent change to the Lake Nona DRI is the development of a medical campus in the southern portion of the development area, which will include: the University of Central Florida nursing and medical schools, the Veterans Administration Hospital, and the Burnham Institute. In addition to the Lake Nona DRI, there are other development activities and planned developments in the vicinity. **Figure 4.3-5** shows the following development areas near the East Airfield site:

- Lake Nona DRI
- Vista Park PD
- Bal Bay Development
- La Vina PD
- Lee Vista DRI

A brief description of the development areas listed above is provided in **Appendix K.**

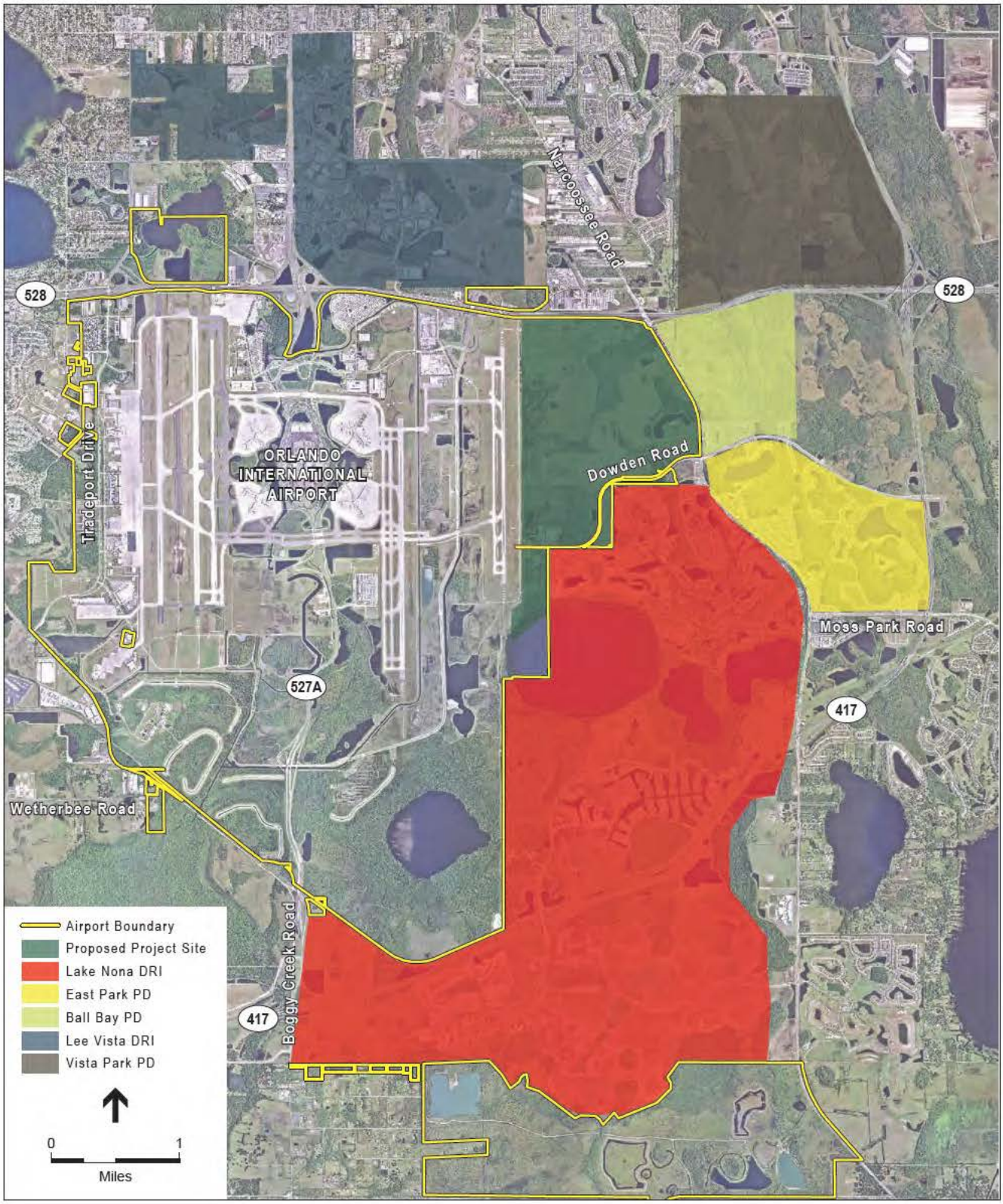
4.3.4 Construction

The East Airfield site is currently undeveloped except for an industrial warehouse located on the southern portion of the site along Dowden Road. Currently, there is no construction activity on the site.



SOURCE: Orange County, 2005; and ESA Airports, 2012

Figure 4.3-4
Innovation Way Corridor Study



SOURCE: Greater Orlando Aviation Authority, 2010; and ESA Airports, 2012

Figure 4.3-5
Surrounding Area Development

4.3.5 Department of Transportation: Section 4(f)

Section 4(f) of the *Department of Transportation Act* (DOT Act), which was re-codified and renumbered as section 303 (c) of 49 U.S.C., states that the Secretary of Transportation will not approve any program that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land from a historic site of national, State, or local significance as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use.

A review of potential Section 4(f) resources in the vicinity of MCO was conducted. This review included a search of City of Orlando Parks and Recreation, Orange County Parks, and recreational facilities associated with Orange County schools within one mile of the East Airfield site and within the 2008 DNL 65 dB+ noise contour (see **Figure 4.3-6**).

Based on the results of the review, Section 4(f) resources in the vicinity of MCO include four public schools and Warren Park, (see Figure 4.3-6). Three of these properties are on the west side of the airfield with virtually the entire existing airfield between them and the East Airfield site. None of these Section 4(f) resources are within the 2008 DNL 65+ dB noise contour. No other Section 4(f) resources were identified in the study area.

4.3.6 Fish, Wildlife, and Plants

Biologists compiled data from the following databases and resources to determine the Federal and state listed species that could occur on the East Airfield site based on a record for the particular species reported for Orange County:

- *Endangered and Threatened Species of the Southeast United States* (The Redbook), U.S. Fish and Wildlife Service (USFWS)
- *Florida Endangered Species, Threatened Species, and Species of Special Concern*, Fish and Wildlife Conservation Commission (FWC) (2004)
- *Field Guide to the Rare Animals of Florida*, Florida Natural Areas Inventory, FDOT(2001)
- *Field Guide to the Rare Plants of Florida*, Florida Natural Areas Inventory, FDOT (2001)
- Atlas of Florida Vascular Plants: http://www.plantatlas.usf.edu
- *County Distribution and Habitats of Rare and Endangered Species in Florida*, Florida Natural Areas Inventory (1997)
- *The Birdlife of Florida*. Stevenson, Henry M. and Bruce H. Anderson. 1994. University Press, Gainesville, FL

Biologists then examined aerial photographs and Florida Land Use, Cover and Forms Classification System[17] (FLUCFCS) maps and conducted on-site surveys to determine the likelihood that particular species utilized the East Airfield site. The likelihood of occurrence is based on a comparison of the known habitat used by the listed species and the habitats found within the overall East Airfield site, the quantity, quality, and adjacency of these habitats, as well as observations of any taxa during field reconnaissance.

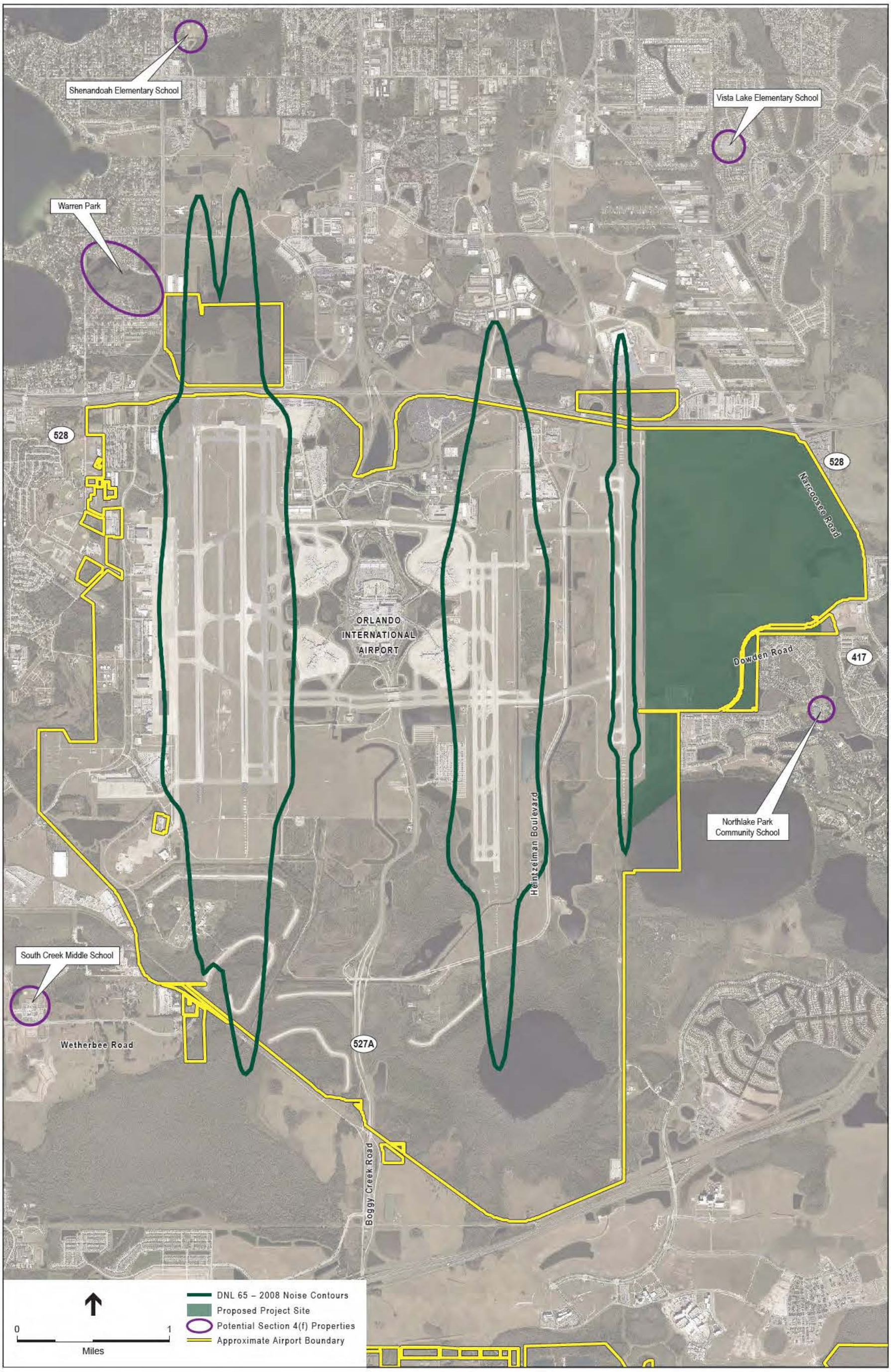
4.3.6.1 Existing Habitat

Currently, the East Airfield site consists primarily of pasture land that was historically leased by GOAA for cattle grazing and sod farming. The site also includes areas of wetlands, uplands, open water, and conveyance ditches. Natural vegetation, pasture areas, and water habitats found on the site would be considered typical, either currently or historically for the surrounding area. Land use type mapping of the East Airfield site was completed and estimated acres for each classification of land use was calculated. Due to differing state and federal review criteria in determining jurisdictional wetlands for the 1,342 acre site, two separate land use tables are provided below. Following the tables are descriptions of the land use types identified on the East Airfield site. **Table 4.3-2 (a)** provides the estimated acres and percent areal coverage for each land use type based on USACE wetland delineations. **Table 4.3-2 (b)** provides the estimated acres and percent areal coverage for each land use type based on the South Florida Water Management District (SFWMD) wetland delineation. **Figures 4.3-7a** and **b** depict the location and extent of the FLUCFCS (including the Federal jurisdictional wetlands) within the site. Figure 4.3-7a depicts the northern portion of the site and Figure 4.3-7b depicts the southern portion of the site.

TABLE 4.3-2 (a)
LAND USE TYPES FOR EAST AIRFIELD – USACE WETLAND DELINEATIONS

FLUCFCS Code	Description	Approximate Acreage	Percent Land Area
211	Improved Pastures	665.45	49.6%
212	Unimproved Pasture	19.59	1.5%
320	Shrub and Brushland	99.64	7.4%
321	Palmetto Prairies	26.41	2.0%
411	Pine Flatwoods	132.91	9.9%
434	Hardwood-Coniferous Mixed	1.34	0.1%
510	Streams and Waterways/Man-Made Ditches/Swales	38.04	2.8%
516	Ditches	0.56	0.0%
520	Lakes	19.84	1.5%
524	Lakes Less than 10 Acres (4 Hectares) which are Dominant Features/Cattle Ponds	0.43	0.0%
534	Reservoirs Less than 10 Acres (4 Hectares) which are Dominant Features/Stormwater Ponds	25.65	1.9%
611	Bay Swamps	1.98	0.1%
613	Gum Swamps	0.79	0.1%
619	Exotic Wetland Hardwoods	0.17	0.0%
620	Wetlands Coniferous Forests	11.52	0. 9%

[17] Florida Land Use, Cover and Forms Classification System (Florida Department of Transportation, Jan 1999)



SOURCE: Greater Orlando Aviation Authority, 2012; and ESA Airports, 2012

Figure 4.3-6
Potential Section 4(f) Properties in the Vicinity of MCO

SOURCE: Breedlove, Dennis & Associates, Inc., 2014

Figure 4.3-7a
East Airfield Vegetative Cover and Land Use

BDA BREEDLOVE, DENNIS & ASSOCIATES, INC.
Environmental Consultants
330 W. Canton Ave., Winter Park, FL 32789 • 407-677-1882

0 375 750 Feet
1 inch = 750 feet

Sources: Esri, HERE, DeLorme, USGS, Intermap,

Legend

East Airfield Development Site (1342.2 ac)

Vegetative Cover and Land Use

- 211 - Improved Pastures (657.22 ac)
- 212 - Unimproved Pastures (19.59 ac)
- 320 - Shrub and Brushland (117.84 ac)
- 321 - Palmetto Prairies (26.41 ac)
- 411 - Pine Flatwoods (133.65 ac)
- 434 - Hardwood - Coniferous Mixed (1 28 ac)
- 510 - Streams and Waterways / Man-Made Ditches / Swales (25.62 ac)
- 516 - Ditches (0.56 ac)
- 520 - Lakes (19.84 ac)
- 524 - Lakes less than 10 acres / Cattle Ponds (0.43 ac)
- 534 - Reservoirs less than 10 acres / Stormwater Ponds (25.65 ac)
- 611 - Bay Swamps (2.47 ac)
- 613 - Gum Swamps (0.79 ac)
- 619 - Exotic Wetland Hardwoods (0.45 ac)
- 620 - Wetland Coniferous Forests (11.52 ac)
- 621 - Cypress (180.21 ac)
- 631 - Wetland Shrub (24.94 ac)
- 641 - Freshwater Marshes (19.64 ac)
- 6419 - Buttonbush (1.08 ac)
- 643 - Wet Prairies (6.45 ac)
- 740 - Disturbed Land (25 08 ac)
- 811 - Airports (41.47 ac)

Source: OIA boundary - GOAA/MACTEC, 2009-05-13. Wetlands and other linework, GOAA, 1999-2011; EED, Inc., 1999-2003; Breedlove, Dennis & Associates, Inc. (including GPS wetland flagging, photointerpretation and selective groundtruthing), 1999-2013.

SOURCE: Breedlove, Dennis & Associates, Inc., 2014

Figure 4.3-7b
East Airfield Vegetative Cover and Land Use

TABLE 4.3-2 (a)(Continued)
LAND USE TYPES FOR EAST AIRFIELD – USACE WETLAND DELINEATIONS

FLUCFCS Code	Description	Approximate Acreage	Percent Land Area
621	Cypress	166.8	12.4%
631	Wetland Shrub	55.6	4.1%
641	Freshwater Marshes	12.69	1.0%
643	Wet Prairies	6.87	0.5%
740	Disturbed Land	25.08	1.9%
811	Airports	30.82	2.3%
	Total	**1342.2**	**100%**

SOURCE: Compiled by Breedlove, Dennis & Associates, Inc., 2015

TABLE 4.3-2 (b)
LAND USE TYPES FOR EAST AIRFIELD –SFWMD WETLAND DELINEATIONS

FLUCFCS Code	Description	Approximate Acreage	Percent Land Area
211	Improved Pastures	657.22	49.0%
212	Unimproved Pasture	19.59	1.5%
320	Shrub and Brushland	117.84	8.8%
321	Palmetto Prairies	26.41	2.0%
411	Pine Flatwoods	133.65	10.0%
434	Hardwood-Coniferous Mixed	1.28	0.1%
510	Streams and Waterways/Man-Made Ditches/Swales	25.62	1.9%
516	Ditches	0.56	0.0%
520	Lakes	19.84	1.5%
524	Lakes Less than 10 Acres (4 Hectares) which are Dominant Features/Cattle Ponds	0.43	0.0%
534	Reservoirs Less than 10 Acres (4 Hectares) which are Dominant Features/Stormwater Ponds	25.65	1.9%
611	Bay Swamps	2.47	0.2%
613	Gum Swamps	0.79	0.1%
619	Exotic Wetland Hardwoods	0.45	0.0%
620	Wetlands Coniferous Forests	11.52	0. 9%
621	Cypress	180.21	13.4%
631	Wetland Shrub	24.94	1.9%
641	Freshwater Marshes	19.64	1.5%
6419	Buttonbush	1.08	0.1%
643	Wet Prairies	6.45	0.5%
740	Disturbed Land	25.08	1.9%
811	Airports	41.47	3.1%
	Total	**1342.2**	**100%**

SOURCE: Compiled by Breedlove, Dennis & Associates, Inc., 2015

Upland Community Descriptions

Upland communities on the East Airfield site consist of the following cover types: Improved Pastures (211), Unimproved Pastures (212), Shrub and Brushland (320), Palmetto Prairies (321), Pine Flatwoods (411), Hardwood-Coniferous Mixed (434), Disturbed Land (740), and Airports (811).

The Improved Pastures (211) encompass the majority of the site. The pasture was historically grazed by cattle and portions were used for sod production. The improved pasture contains an herbaceous stratum including bahiagrass (*Paspalum notatum*), bermudagrass (*Cynodon dactylon*), and tropical Mexican clover (*Richardia brasiliensis*).

The Unimproved Pastures (212) are comprised of herbaceous taxa including bahiagrass, broomsedge bluestem (*Andropogon virginicus*), blue maidencane (*Amphicarpum muhlenbergianum*), cogongrass (*Imperata cylindric*a), and spadeleaf (*Centellaasiatica*). Wax myrtle (*Myrica cerifera*), slash pine (*Pinus elliottii*), and groundsel tree (*Baccharis halimifolia*) were also observed scattered throughout this land use cover type.

The Shrub and Brushlands (320) were observed to have dominant shrub taxa, including wax myrtle with lesser numbers of groundsel tree and red maple (*Acer rubrum*). The herbaceous understory consisted of blackberry (*Rubus* sp.), broomsedge bluestem, blue maidencane, and bahiagrass.

The Palmetto Prairies (321) are also utilized by the cattle on-site for grazing. Saw palmetto (*Serenoa repens*) is the dominant shrub in this area, with an herbaceous understory of primarily wiregrass (*Aristida beyrichiana*). Other vegetative taxa observed include broomsedge bluestem, bahiagrass, blackberry, and pawpaw (*Asimina* sp.).

The canopy in the Pine Flatwoods (411) consists of longleaf pine (*Pinus palustris*) and slash pine with a dominant shrub layer of saw palmetto. The subcanopy and additional shrub taxa include wax myrtle, loblolly bay (*Gordonia lasianthus*), gallberry (*Ilex glabra*), and fetterbush (*Lyonia lucida*) in areas with a higher water table and a variety of oaks (*Quercus* sp.) such as myrtle oak (*Quercus myrtifolia*), Chapman's oak (*Quercus chapmanii*), and turkey oak (*Quercus laevis*) in areas that contain soils with a lower water table. The dominant herbaceous species is wiregrass with scattered pawpaw, blackberry, and bracken fern (*Pteridium aquilinum*).

The Hardwood-Coniferous Mixed (434) areas contain slash pine and Virginia live oak (*Quercus virginiana*) with herbaceous taxa including bahiagrass, broomsedge bluestem, blue maidencane, cogongrass, and spadeleaf.

The Disturbed Land (740) area occurs in the northwest portion of the East Airfield site. Vegetation is sparse with bahiagrass predominating.

The Airports (811) areas include parcels in the southern portion of the site with an existing warehouse and small parcels adjacent to the AOA. These contain buildings with maintained bahiagrass and scattered trees including live oak, laurel oak (*Quercus laurifolia*), and ornamentals.

Wetland Community Descriptions

Wetland communities/cover types on the East Airfield site consist of the following: Streams and Waterways/Man-Made Ditches/Swales (510); Ditches (516); Lakes (520); Lakes Less than 10 Acres; which are Dominant Features/Cattle Ponds (524); Reservoirs Less than 10 Acres; which are Dominant Features/Stormwater Ponds (534); Bay Swamps (611); Gum Swamps (613);

Exotic Wetland Hardwoods (619); Wetland Coniferous Forests (620); Cypress (621); Wetland Shrub (631); Freshwater Marshes (641); and Wet Prairies (643).

Several surface waters are located within the East Airfield site boundaries. These include man-made ditches (510), Ditches (516), Lakes (520), cattle ponds (524), and stormwater ponds (534). The maintained areas adjacent to these surface water features are included in the acreages for this land use. The stormwater ponds and cattle ponds contain a variety of wetland vegetation such as spadeleaf, manyflower marshpennywort (*Hydrocotyle umbellata*), torpedograss (*Panicum repens*), umbrellasedge (*Fuirena scirpoidea*), duck potato (*Sagittaria latifolia*), and American white waterlily (*Nymphaea odorata*) in the open water. The ditches/swales contain spadeleaf, soft rush (*Juncus effusus*), dotted smartweed (*Polygonum punctatum*), and bahiagrass.

The Cypress (621) canopy is made up of cypress (*Taxodium* sp.), with loblolly bay, red maple, and sweetbay (*Magnolia virginiana*) scattered throughout the subcanopy and within the transitional zones. The groundcover species are sparse due to the dense canopy and include netted chain fern (*Woodwardia areolata*), Virginia chain fern (*Woodwardia virginica*), wild taro (*Colocasia esculenta*), and witchgrass (*Dichanthelium* sp.).

The Wetland Shrub (631) habitat has a vegetation layer consisting primarily of wax myrtle, groundsel tree, saw palmetto, and gallberry. The herbaceous species include seedbox (*Ludwigia alternifolia*), sweetscent (*Pluchea odorata*), bushy bluestem (*Andropogon glomeratus*), wiregrass, manyflower marshpennywort, broomsedge bluestem, and soft rush.

The Wet Prairies (643) are dominated by dotted smartweed, soft rush, wiregrass, spadeleaf, manyflower marshpennywort, broomsedge bluestem, bushy bluestem, maidencane (*Panicum hemitomon*), yelloweyed grass (*Xyris* sp.), fascicled beaksedge (*Rhynchospora fascicularis*), creeping primrosewillow (*Ludwigia repens*), climbing dayflower (*Commelina diffusa*), and spikerush (*Eleocharis* sp.).

The Freshwater Marshes (641) cover types include bushy bluestem, saw palmetto, wax myrtle, false reinorchid (*Habenaria* sp.), soft rush, floating marshpennywort (*Hydrocotyle ranunculoides*), spikerush, water spangles (*Salvinia minima*), hempvine (*Mikania* sp.), tropical soda apple (*Solanum viarum*), yelloweyed grass, spadeleaf, creeping primrosewillow, maiden fern (*Thelypteris* sp.), St. John's-wort (*Hypericum* sp.), and swamp bay (*Persea palustris*) seedlings.

The Bay Swamps (611) are dominated by sweetbay with shrub species of wax myrtle and sweetbay seedlings. Herbaceous vegetation includes soft rush, Asian marshweed (*Limnophila sessiliflora*), climbing hempvine (*Mikania scandens*), water spangles, creeping primrosewillow, and manatee mudflower (*Micranthemum glomeratum*).

The Gum Swamps (613) cover type contains canopy vegetation dominated by blackgum (*Nyssa sylvatica* var. *sylvatica*). Shrub and herbaceous species include wax myrtle, Peruvian primrosewillow (*Ludwigia peruviana*), maidencane, pickerelweed (*Pontederia cordata*), blue waterhyssop (*Bacopa caroliniana*), clustered sedge (*Carex glaucescens*), and bushy bluestem.

The Exotic Wetland Hardwoods (619) are dominated by Chinese tallowtree (*Sapium sebiferum*) with a wax myrtle shrub layer. Herbaceous species include soft rush, Virginia chain fern, and Peruvian primrosewillow.

The canopy of the Wetland Coniferous Forests (620) is dominated by loblolly pine with a subcanopy of swamp bay, saw palmetto, and wax myrtle. Herbaceous vegetation includes false reinorchid, tropical soda apple, yelloweyed grass, spadeleaf, creeping primrosewillow, maiden fern, St. John's-wort, and swamp bay seedlings.

Essential Fish Habitat

The *Magnuson-Stevens Act*, as amended by the *Sustainable Fisheries Act*, regulates actions that may affect Essential Fish Habitat (EFH). Based on past coordination with NMFS, no EFH exists on the East Airfield site or within the study area (see **Appendix L**).

Migratory Bird Treaty Act

Under the *Migratory Bird Treaty Act* (MBTA) of 1918 (16 USC Sections 703-711), "any migratory bird, any part, nest, or eggs of any such bird" is afforded protection from "any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export…" There is a potential for occurrence of species protected under the MBTA within the East Airfield site. With the exception of the wild turkey, avian species listed as observed in Section 4.3.6.3 include those species common to the area that would be subject to the provisions of the MBTA. Migratory bird species protected by the MBTA are listed in 50 CFR 10.13.

4.3.6.2 Federal and State Listed Plants

Numerous plant species (ground cover, shrub, and trees) currently exist in the habitat types mentioned in the above sections; upland communities and wetlands communities. **Table 4.3-3** provides a list of Federal or state listed plant species that may occur on the East Airfield site. The likelihood of occurrences listed in the table is based on a comparison of the known habitat types for these taxa and the habitats found within the overall site, the quantity, quality, and adjacency of these habitats; as well as observations of any taxa observed during field reconnaissance.[18] No listed plant species were observed on-site during the reconnaissance. The likelihood for occurrence for listed plant species was rated as high, medium, low, or unlikely based on knowledge of a species group's habitat preference and site conditions. A likelihood of occurrence given as "unlikely" indicates that no, or very limited, suitable habitat for this species exists on-site. Table 4.3-3 provides information on both state and Federal listings of plant species.

[18] Meandering pedestrian transects were conducted across the site to document existing habitat and record observations or sign of wildlife and plant species.

TABLE 4.3-3
LISTED PLANT SPECIES THAT COULD OCCUR WITHIN THE EAST AIRFIELD SITE

Common Name	Scientific Name	Habitat of Occurrence	Likelihood of Occurrence	Designation Status[1]	
				USFWS[2]	FDACS[3]
Florida bonamia	*Bonamia grandiflora*	Sand pine scrub, white sands	Unlikely	T	E
Pigeon wing	*Clitoria fragrans*	Dry sandhills and scrub.	Unlikely	T	E
Beautiful Pawpaw	*Deeringothamnus pulchellus*	Open slash or longleaf pine flatwoods	Unlikely	E	E
Scrub buckwheat	*Eriogonum longifolium var. gnaphalifolium*	Dry Pinelands and scrub.	Unlikely	T	E
McFarlin's (scrub) lupine	*Lupinus westianus var. aridorum*	Sand pine scrub; sandy disturbed edges of scrub or sandhill communities.	Unlikely	E	E
Britton's beargrass	*Nolina brittoniana*	Dry pinelands and sand pine scrub.	Unlikely	E	E
Papery whitlow-wort	*Paronychia chartacea*	Sand pine scrub.	Unlikely	T	E
Lewton's polygala	*Polygala lewtonii*	Dry oak woods, sand scrub, sandhills.	Unlikely	E	E
Small's jointweed; sandlace	*Polygonella myriophylla*	Sand pine scrub.	Unlikely	E	E
Scrub plum	*Prunus geniculata*	Sand pine scrub.	Unlikely	E	E
Wide-leaf warea	*Warea amplexifolia*	*Sandhills; dry pinelands – north and central counties.*	Unlikely	E	E

1 E= endangered, T= threatened
2 US Fish and Wildlife Service
3 Florida Department of Agriculture & Consumer Services, Division of Plant Industry, 2015.

4.3.6.3 Federal and State Listed Wildlife

The East Airfield site currently supports wildlife utilization for native and non-native species commonly found in the area. **Table 4.3-4** lists the direct observations of wildlife that have been documented during field reconnaissance events over the period from 2005 to 2015.

Reviews of the East Airfield site were conducted between 2006 and 2014 to determine occurrence or potential occurrence, of Federal and state protected wildlife species. Biologists re-validated this information in 2015.[19] Based on the results of the on-site reconnaissance efforts (i.e., observation or evidence of species individuals, scat, vocalizations, tracks, etc.) and reviews of maps, and relevant databases, it was determined that the East Airfield site does provide suitable habitat for some protected species. Protected wildlife species that may occur on the East Airfield site or in the vicinity of the site are listed in **Table 4.3-5**. The likelihood of occurrences is based on a

[19] Site visits and re-evaluation of the East Airfield site over the period from 2005 to 2015 included field reconnaissance and regulatory/wildlife and plant listing review for the East Airfield site.

comparison of the known habitat use by these species and the habitats found within the overall project site, the quantity, quality, and adjacency of these habitats; as well as observations of any species observed during field reconnaissance. The likelihood for occurrence of listed species was rated as high, medium, low, or unlikely based on knowledge of a species group's habitat preference and site conditions. If a species occurrence is deemed "unlikely," this indicates that no, or very limited, suitable habitat for this species exists on-site. Table 4.3-5 provides information on both state and Federal listings of wildlife species.

Descriptions of Federal-Listed Wildlife Species

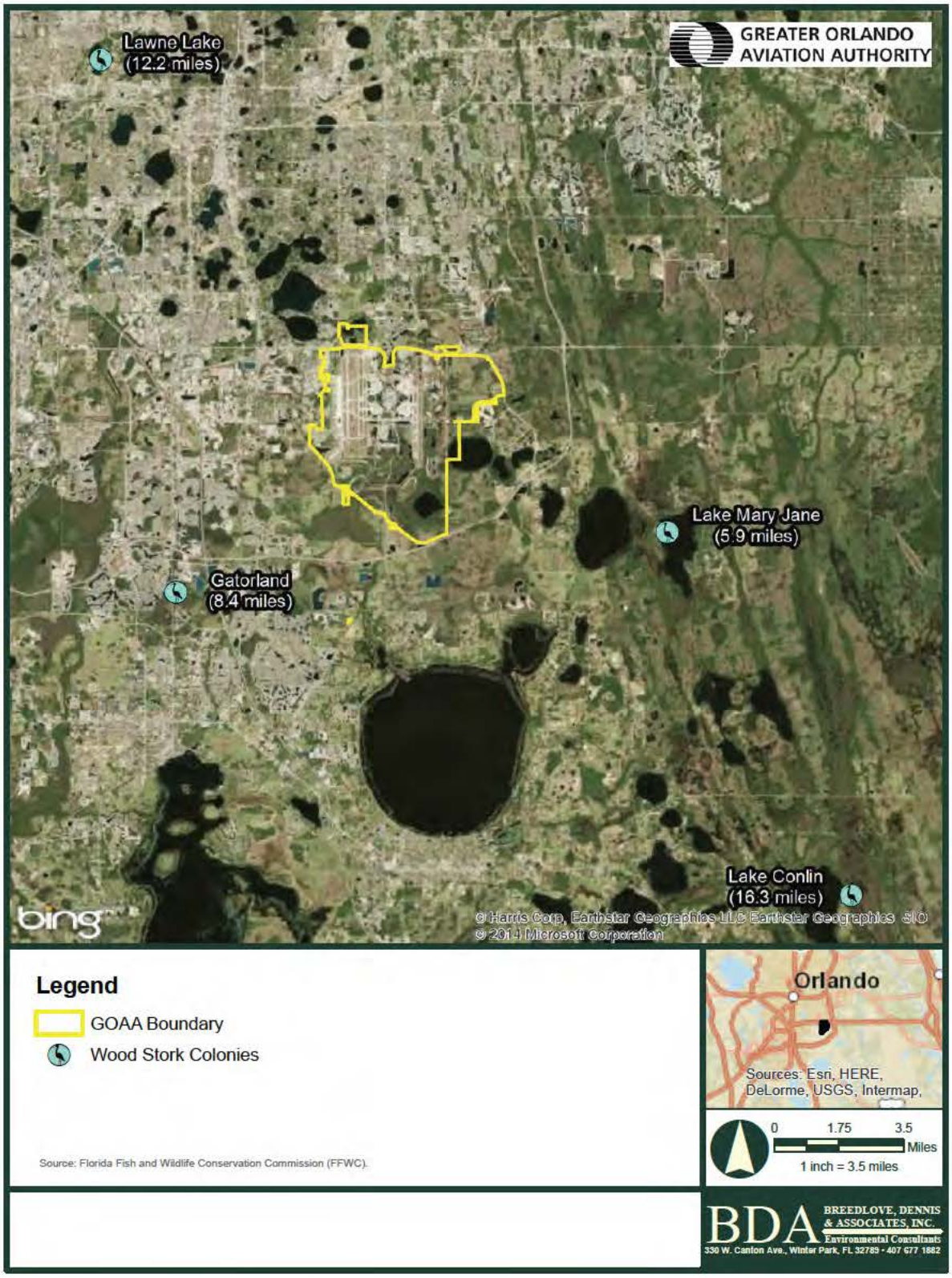
Table 4.3-5 lists eight Federally-listed wildlife species having the potential to occur on the East Airfield site. Of these eight species, six have a low or unlikely potential to occur on site. Two species have been observed on-site or in the immediate vicinity of the site: the wood stork and American alligator. One candidate species for listing, the gopher tortoise, has been observed on-site. The gopher tortoise, which is afforded no protection under the *Endangered Species Act* (ESA), is described in the state-listed section below. Based on review of data from USFWS, no critical habitat associated with these species is located on the East Airfield site.[20] This EA provides further information on listed species that either have a moderate or high likelihood to occur on the site or have been observed on site. A description of the two Federally-listed species that have been observed on site is provided below:

Wood Stork (*Mycteria americana*) (FT) – The wood stork is a large wading bird, primarily white in color with black wings and a short black tail. Adults have bare, scaly, dark-gray heads and necks and long, heavy decurved bills. They prefer to forage in shallow open water areas where they probe the water with their bills in search of food, primarily small fish. Wood storks have been observed on the East Airfield site.

Wood storks commonly nest in colonies. There are four wood stork nesting colony sites in proximity to the East Airfield site (**Figure 4.3-8**). Lake Mary Jane is located approximately 5.9 miles southeast of the East Airfield site and was last determined active in 2014. Gatorland is located approximately 8.4 miles southwest of the site and was last determined active in 2013. Lawne Lake is located approximately 12.2 miles northwest of the site and was last determined active in 2014. Lake Conlin is located approximately 16.3 miles southeast of the East Airfield site and was last determined active in 2013.

American Alligator (*Alligator mississippiensis*) (FT) – The American alligator is a large, primarily black crocodilian with a broadly rounded snout. Young alligators have yellow cross bands on the back, tail, and sides. The head is smooth with no front eyes and absence of a prominent visible tooth in the lower jaw when the mouth is closed. Alligators are found throughout Florida and are relatively common. American alligators have not been observed on the East Airfield site but have been observed on other areas of MCO property.

[20] The following USFWS can be searched for the location of critical habitats: http://ecos fws.gov/crithab/



SOURCE: Breedlove Dennis and Associates, Inc., 2014; and ESA Airports, 2012

Orlando International Airport EA – East Airfield . 207524

Figure 4.3-8
Woodstork Colony Locations

TABLE 4.3-4
EAST AIRFIELD SITE WILDLIFE OBSERVATIONS

Common Name	Scientific Name	Common Name	Scientific Name
Mammals			
Bobcat	*Lynx rufus*	Raccoon	*Procyon lotor*
Nine-banded armadillo[1]	*Dasypus novemcinctus*	Wild boar	*Sus scrofa*
White-tailed deer	*Odocoileus virginianus*		
Birds			
Eastern meadowlark	*Sturnella magna*	Loggerhead shrike	*Lanius ludovicianus*
American robin	*Turdus migratorius*	American swallow-tailed kite	*Elanoides forficatus*
Turkey vulture	*Cathartes aura*	Northern harrier	*Circus cyaneus*
Limpkin	*Aramus guarauna*	Tricolored heron	*Egretta tricolor*
Snowy egret	*Egretta thula*	White bis	*Eudocimus albus*
Black vulture	*Coragyps atratus*	Barn swallow	*Hirundo rustica*
Killdeer	*Charadrius vociferous*	Tufted titmouse	*Parus bicolor*
Florida sandhill crane	*Grus canadensis pratensis*	Mottled duck	*Anas fulvigula fulvigula*
Boat-tailed grackle	*Quiscalus major*	Woodpecker	*Picidae sp.*
Cattle egret	*Bubulcus isbis*	Pine warbler	*Dendroica pinus*
Red-shouldered hawk	*Buteo lineatus*	Mourning dove	*Zendaida macroura*
Red-tailed hawk	*Buteo jamaicensis*	Northern cardinal	*Cadinalis cardinalis*
Common snipe	*Gallinago gallinago*	Wood stork	*Mycterias ameriana*
Bald eagle	*Haliaeetus leucocephalus*	Belted kingfisher	*Ceryle alcyon*
Wild turkey	*Melagris gallopavo*	Blue-gray gnatcatcher	*Polioptila caerulea*
Little blue heron	*Egretta caerulea*	Barred owl	*Strix varia*
Anhinga	*Anhinga anhinga*	Northern mockingbird	*Mimus polyglottos*
Great egret	*Casmedodius albus*		
Amphibians			
Cricket frog	*Acris gryllus*	Green tree frog	*Hyla cinera*
Reptiles			
Gopher tortoise	*Gopherus polyphemus*		

1 Denotes exotic species

SOURCE: Compiled by Breedlove, Dennis & Associates, Inc. (SFWMD ERP Application No. 060331-11 03/31/06).

TABLE 4.3-5
LISTED WILDLIFE SPECIES THAT OCCUR IN ORANGE COUNTY - LIKELIHOOD TO OCCUR ON EAST AIRFIELD SITE

Common Name	Scientific Name	Habitat of Occurrence	Likelihood of Occurrence on East Airfield Site	Designation Status[1]	
				USFWS[2]	FWC[3]
Amphibians					
Gopher Frog	*Lithobates capito*	Sandhills with turkey and bluejack oaks; sand pine scrub, in and around gopher tortoise burrows.	Low		SSC
Birds					
Florida scrub-jay	*Aphelocoma coerulescens*	Oak scrub with shrubs of live, myrtle, and Chapman's oaks, palmettos and sand pine.	Unlikely	T	FT
Limpkin	*Aramus guarauna*	Slow moving freshwater streams and rivers, swamps, marshes and lakeshores.	Observed		SSC
Little blue heron	*Egretta caerulea*	Shallow freshwater, brackish, and saltwater habitats.	Observed		SSC
Snowy egret	*Egretta thula*	Ponds, stream banks, marshes, and pastures.	Observed		SSC
Tricolored heron	*Egretta tricolor*	Ponds, stream banks, marshes, and pastures.	Observed		SSC
White ibis	*Eudocimus albus*	Freshwater, brackish, and saline environment.	Observed		SSC
Southeastern American kestrel	*Falco sparverius paulus*	Pine flatwoods, dry prairies.	Low		ST
Florida sandhill crane	*Grus canadensis pratensis*	Wet prairies, marshy lake margins, and low-lying improved cattle pastures.	Observed; Nest		ST
Wood stork	*Mycteria americana*	Wetlands; nesting in cypress swamps.	Observed	T	FT
Red-cockaded woodpecker	*Picoides borealis*	Pinewoods with mature to over mature pines.	Unlikely	E	FE
Everglade's Snail kite	*Rostrhamus sociabilis plumbeus*	Marsh with distant horizon and low vegetative profile.	Low	E/CH	FE
Florida burrowing owl	*Athene cunicularia floridana*	High sandy ground with little growth, particularly prairies, sandhills, and pastures, and on prairie-like expanses of airports, industrial plants, and campuses.	Low		SSC
Least tern	*Sterna antillarum*	Open, flat beach with coarse sand or shell. Nests seaward of vegetation.	Unlikely		ST
Audubon's crested caracara	*Caracara cheriway*	Dry prairie, cabbage palm-live oak hammock, fresh water marsh, pasture	Low	T	FT
Mammals					
Florida mouse	*Podomys floridanus*	Xeric sand pine scrub in early succession, and longleaf pine/turkey oak.	Low		SSC
Sherman's fox squirrel	*Sciurus niger shermani*	Sandhills in longleaf pine/turkey oak associations, sand pine scrub and live oak hammocks.	Low		SSC
Reptiles					
American Alligator	*Alligator mississippiensis*	Wetlands, lakes, and streams	Observed	T(S/A)	FT (S/A)

TABLE 4.3-5 (Continued)
LISTED WILDLIFE SPECIES THAT OCCUR IN ORANGE COUNTY - LIKELIHOOD TO OCCUR ON EAST AIRFIELD SITE

Common Name	Scientific Name	Habitat of Occurrence	Likelihood of Occurrence on East Airfield Site	Designation Status[1]	
				USFWS[2]	FWC[3]
Eastern indigo snake	*Drymarchon couperi*	Pine flatwoods, tropical hammocks.	Low	T	FT
Gopher tortoise	*Gopherus polyphemus*	Xeric; sand pine, longleaf pine, turkey oak, and live oak hammocks and sand pine scrub.	Observed	C	ST
Sand skink	*Neoseps reynoldsi*	Loose sand on high elevation, central Florida ridges; sand pine scrub.	Unlikely	T	FT
Florida pine snake	*Pituophis melanoleucus mugitus*	Sandy habitats, particularly longleaf pine/turkey oak associations.	Low		SSC
Short-tailed snake	*Stilosoma extenuatum*	Longleaf pine/turkey oak association; occasionally in upland hammock and sand pine scrub.	Unlikely		ST

1 E= endangered, T= threatened, SSC= species of special concern, C= Candidate for listing in Florida, CH= critical habitat has been designated, FT= Federally-designated threatened, ST= state threatened, FE= Federally-designated endangered
2 US Fish and Wildlife Service
3 Florida Fish and Wildlife Conservation Commission

SOURCE: Compiled by Breedlove Dennis & Associates, Inc. (SFWMD ERP Application No. 060331-11 (03/31/06) and USACE Individual Permit Application No. SAJ-2006-2640 (IP-JSC) (11/11/10)).

Descriptions of State-Listed Wildlife Species

There are twenty-three state-listed wildlife species that could potentially occur on the East Airfield site (see Table 4.3-5). State-listed species are designated under the *Florida's State Endangered Species Act*, FL ST § 379.2291 - 379.231 (formerly FL ST § 372.072 - 074). Rules and regulations related to the state-listed species are found within Florida Administrative Code Chapter 68A-27 (September 9, 2012). Of the 23 state-listed species, eight species are also Federally-listed species.

Of these 23 state-listed species, 14 species have a low or unlikely potential to occur on the East Airfield site. Nine species have been observed on-site. Of these nine species, two are also Federally-listed under the ESA and are discussed under the Federally-listed wildlife section above (wood stork and American alligator). The remaining seven state-listed species that have been observed or have a moderate potential to occur on the East Airfield site are discussed below.

The **limpkin** (SSC) is a relatively large, long-billed, long-legged wading bird found in a variety of wetland habitats including mangroves, freshwater marshes, swamps, springs, ponds, and river runs as well as lake margins. It may also be found in manmade features such as drainage canals and ditches. It utilizes a variety of nesting sites which include mounds of aquatic vegetation or marsh grasses as well as tree tops. The limpkin has been observed on the East Airfield site however, nesting has not been documented.

The **little blue heron** (SSC) is a medium-sized heron which forages in shallow freshwater, brackish, and saltwater habitats. Nests are generally constructed in woody vegetation and this species most commonly nests in mixed-species colonies. The little blue Heron has been observed on the East Airfield site; however, nesting has not been documented.

The **tricolored heron** (SSC) is a medium-sized heron with a slender neck. It commonly feeds in permanently and seasonally flooded wetlands, mangrove swamps, tidal creeks, ditches, and pond and lake margins. Most nesting occurs in colonies on mangrove islands or in freshwater willow thickets. The tricolored heron has been observed on the East Airfield site; however, nesting has not been documented and the preferred nesting habitat does not occur on the site.

The **white ibis** (SSC) is a medium-sized wading bird with a long downward curving bill. It is found in a variety of habitats including freshwater and brackish marshes, salt flats, forested wetlands, wet prairies, swales, seasonally inundated fields, and manmade ditches. Nesting sites are highly variable but are colonial. The white ibis has been observed on the site; however, nesting has not been documented.

The **snowy egret** (SSC) is a medium-sized white wading bird with bright yellow feet. It is found in a variety of habitats including seasonally and permanently flooded wetlands, streams, lakes, swamps, manmade ponds and ditches. Nesting sites are usually in woody shrubs especially mangroves or willows and most often over shallow water or on islands separated from the shoreline by water. The snowy egret has been observed on the East Airfield site; however, nesting has not been documented.

The **Florida sandhill crane** (ST) is a resident, breeding, non-migratory subspecies of sandhill crane (*Grus canadensis*). The greater sandhill crane (*Grus canadensis tabida*) also occurs in Florida as a wintering migrant, arriving in Florida during October and November and beginning spring migration in late February.[21] Florida sandhill cranes nest in shallow, emergent palustrine wetlands, particularly those dominated by pickerelweed (*Pontederia cordata*) and maidencane (*Panicum hemitomon*). Core nesting territories within home ranges vary from approximately 300 acres to 625 acres and are aggressively defended from other cranes (*Grus* spp.).[22] They feed in a variety of open, upland habitats, mostly prairies, but also human-manipulated habitats such as sod farms, ranchlands, pastures, golf courses, airports, and suburban subdivisions.[23] Home ranges of individual pairs overlap with those of adjacent pairs and average approximately 1,100 acres. Sandhill crane nests were documented in the East Airfield site in 2004, 2005 and 2013. None were documented in a 2007 survey.

The **gopher tortoise** (state and Federal Candidate Species) is a medium-sized turtle fully adapted to life on land. It is typically found in dry upland habitats including sandhills, scrub, xeric oak and dry pine flatwoods. It also is commonly found in disturbed sites including pastures, old fields, and roadsides. The gopher tortoise excavates burrows used as refuge from predators, weather, and fire. Many other species are often found in association with gopher tortoise burrows. Gopher tortoises and burrows have been observed on the East Airfield site in the pine flatwoods that are found in the southern portion of the site.

Bald and Golden Eagle Protection Act

The bald eagle is not state or Federally-listed as an endangered or threatened species. The bald eagle is protected by the USFWS under provisions of the *Bald and Golden Eagle Protection Act* (BGEPA) and the *Migratory Bird Treaty Act* (effective August 9, 2007). Recovery goals have been achieved for this species; therefore, the bald eagle is no longer listed or protected as a "threatened" species under the *Endangered Species Act of 1973*, as amended. The USFWS has implemented National Bald Eagle Management Guidelines (National Guidelines) (May 2007) to assist the planning of land-use activities in proximity to active bald eagle nests by identifying measures that will minimize the likelihood of causing "disturbance" to nesting bald eagles, as defined under the BGEPA. The FWC also removed the bald eagle from classification and protection as a "threatened" species under Florida Rule and implemented a Florida Bald Eagle Management Plan (Florida Plan) (effective May 9, 2008). The Florida Plan includes Florida Bald Eagle Management Guidelines (Florida Guidelines) and permit provisions.

The FWC Bald Eagle Nest Database was reviewed to determine the locations of all nests that occur on or in close proximity to the East Airfield site. The FWC database does not include any records of a bald eagle nest on or within 660 feet of the East Airfield site. The nearest recorded bald eagle nest (OR011) is located approximately 0.61 miles south of the site (see **Figure 4.3-9**) and it was documented as active during the 2011 nest survey. The second nearest nest (OR065) is located approximately 1.52 miles west of the site (see Figure 4.3-9) and it was documented as active during

[21] Stys 1997
[22] Wood 2001
[23] Nesbitt 1996, Wood 2001

the 2011 nest survey. Project activities occurring beyond 660 feet from active bald eagle nests would be in compliance with both the National Guidelines and the Florida Guidelines.

4.3.7 Floodplains

The Federal Emergency Management Agency (FEMA) identifies flood hazard areas that are depicted on Flood Insurance Rate Maps (FIRMs). A floodplain is defined as the lowlands and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, at a minimum, that are prone to the 100-year flood. The 100-year floodplain is considered the base floodplain.

FEMA defines floodplain management as the operation of a community program of corrective and preventative measures for reducing flood damage. Flood hazard mapping constitutes an integral part of floodplain management. In order to differentiate between differing levels of flood hazard, FEMA created an array of zones corresponding to a location's actual flood risk.

Flood hazard areas identified on FIRMs are defined as Special Flood Hazard Area (SFHA). SFHAs are assigned with various zone designations signifying their individual characteristics. There are two FIRM Zones designations located on and in the vicinity of the East Airfield site: Zone A (100-Year-Flood) and Zone B (500-year-flood). These flood zones are depicted in **Figure 4.3-10**. The amount of floodplains on the East Airfield site is approximately 591 acres of Zone A floodplains. There are no Zone B floodplains on the site.

Zone A (100-Year-Flood) - Areas subject to inundation by one percent annual chance flood event generally determined using approximate methodologies. Mandatory flood insurance purchase requirements and floodplain management standards apply.

Zone B (500-Year-Flood) - Moderate flood hazard areas, labeled Zone B are also shown on the FIRM, and are areas between the limits of the base flood and the 0.2 percent annual chance (or 500-Year) flood.[24]

4.3.8 Hazardous Materials, Pollution Prevention, and Solid Waste

The handling and disposal of hazardous materials, chemicals, substances, and wastes is governed by Federal regulations, and the EPA has Federal regulatory oversight.[25] As authorized by EPA, states also administer their own oversight programs. In Florida, the state agency with regulatory oversight is the Department of Environmental Protection (DEP).[26]

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[24] Flood Insurance Rate Map, Orange County Florida and incorporated Areas. Map Number 12095C0445F, Panels 445 (revised September 25, 2009) and Map Number 12095C0435F, Panels 435 (revised September 25, 2009).

[25] FAA Order 1050.1E Appendix A Section 10.

[26] http://www.dep.state.fl.us/waste/categories/hwRegulation/

SOURCE: Breedlove Dennis and Associates, Inc., 2014; and ESA Airports, 2012

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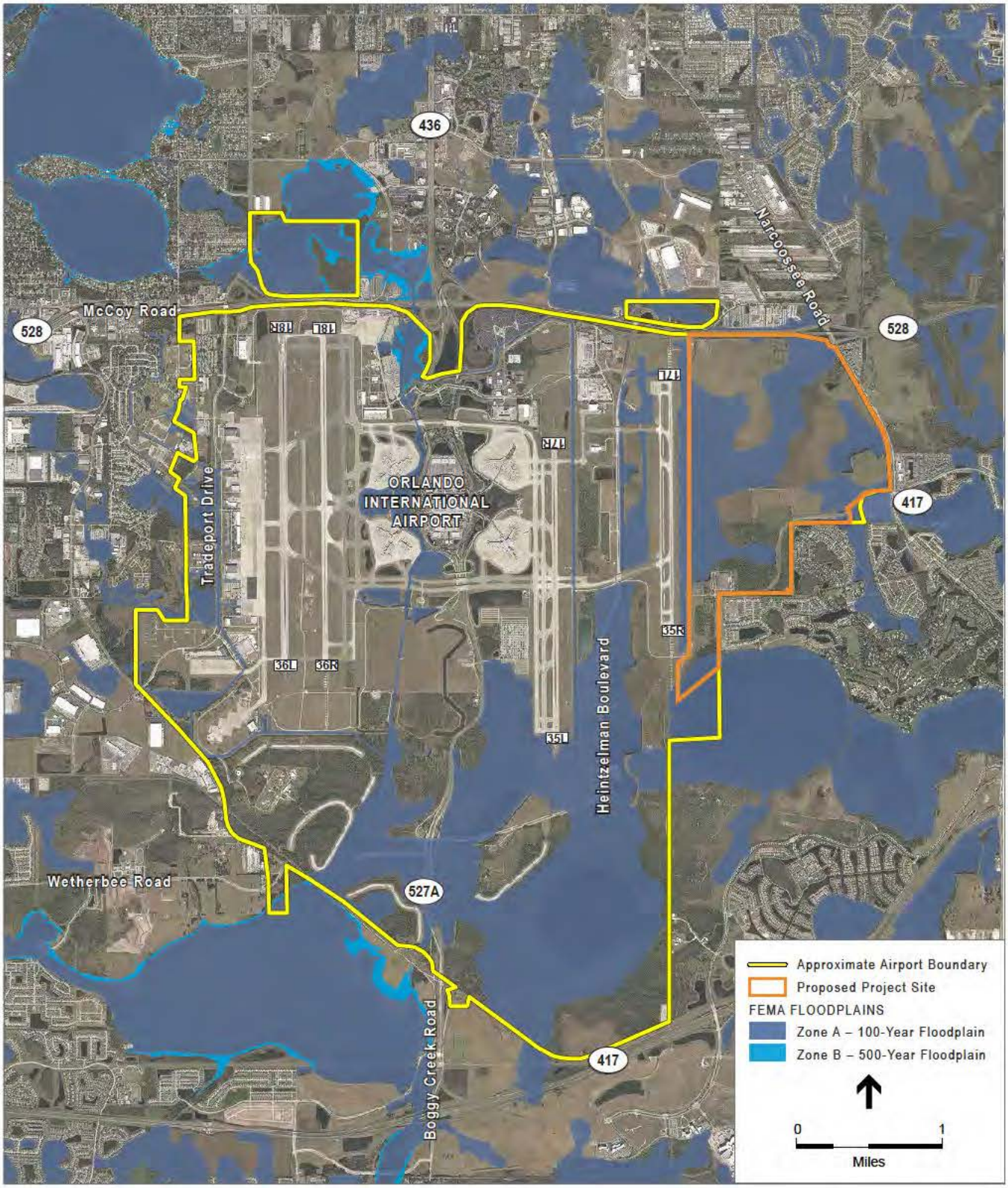
Figure 4.3-9
Eagle Nest Location



SOURCE: FEMA, September 25, 2009; Greater Orlando Aviation Authority, 2008; and ESA Airports, 2012

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Figure 4.3-10
FEMA FIRM Map

The statutory framework related to hazardous materials in FAA actions, projects, and decisions is mainly contained in the *Resource Conservation and Recovery Act* (RCRA), the *Comprehensive Environmental Response Compensation and Liability Act* (CERCLA), and the *Community Environmental Response Facilitation Act* (CERFA). RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment. CERFA provides conditions for the sale, release or transfer of Federal lands or facilities with regard to hazardous materials. FAA AC 150/5320-15A, *Management of Airport Industrial Wastes*, provides detailed information on dealing with hazardous wastes and industrial chemicals typically used on airports. The CWA, Section 311, as amended by the *Oil Pollution Act*, requires spill response plans for facilities that store oil-based or oil products.

The primary objectives of hazardous material environmental analysis are to identify and evaluate sites, facilities, or properties where hazardous materials (including environmental contamination) could hinder or affect an airport project. Doing so allows for the disclosure and compliance with RCRA, CERCLA, and other related laws and regulations. In accordance with these objectives, GOAA conducted a Phase I Environmental Site Assessment[27] on September 15, 2008 to determine if there were any historic or existing hazardous waste sites or environmentally contaminated property related to the East Airfield site.[28] The Assessment included a review of regulatory records associated with the East Airfield site, field surveys (on and off-site reconnaissance), a review of the National Priority List (NPL)[29], current and de-listed sites, along with various other databases. The Phase I Environmental Site Assessment indicated that areas within the site are not listed in any of the Federal, state, or local government databases, environmental records, or enforcement lists related to hazardous materials.

However, the Phase I Environmental Site Assessment indicated that north of the East Airfield site and off-airport property, the former Alamo Rent-A-Car location (8200 McCoy Road) is documented by the Florida DEP to have soil and groundwater impacts related to petroleum products (see **Figure 4.3-11** for site location). The Alamo site is identified on the Florida DEP's Petroleum Liability Restoration Insurance Program (PLRIP) (ID # 488512629) and is currently ranked 29th on the state priority list for cleanup,[30] therefore little to no clean-up activities have been conducted to-date. The responsibility to clean up the Alamo site is not the airport's responsibility. However, the airport will cooperate with the responsible party when funding becomes available.

GOAA has no knowledge of any additional information pertaining to hazardous materials, chemicals, substances, or wastes related to the East Airfield site.

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[27] *Phase I Environmental Site Assessment*, September 15, 2008, Nodarse & Associates.

[28] The objective of a Phase 1 Environmental Site Assessment is to evaluate whether recognized environmental conditions (RECs) are present.

[29] The NPL is the list of national priorities among the known releases or threatened releases of hazardous substances pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation.

[30] Ranked 29th in 2009.

The City of Orlando Solid Waste Management Bureau oversees the pick-up and transfer of solid waste from MCO to the Orange County Landfill. The landfill is located approximately four miles northeast of the East Airfield site. Orange County is responsible for the disposal of solid waste at the Orange County Landfill. Both the City and County are responsible for adhering to all applicable Federal, state and local laws related to the proper handling and disposal of solid waste.

On May 6, 2013, GOAA received the following information in correspondence from the City of Orlando Solid Waste Division Manager:

> "Chapter 28 of the City Code charges the City of Orlando with providing Solid Waste service to all commercial properties within Orlando City Limits. The City crews provide exclusive commercial sold [solid] waste collection service in front load containers. In addition, the City and 26 private franchise firms provide solid waste roll off service. The City maintains contracts and interlocal agreements to ensure disposal capacity for City commercial properties. The City has the capacity and resources to provide solid waste service to all planned commercial growth for the next 25 years."

Appendix M provides a copy of the City of Orlando Solid Waste Division's correspondence to GOAA.

4.3.9 Historic, Architectural, Archaeological, and Cultural Resources

A cultural resource assessment survey (CRAS) of the East Airfield site was conducted in July 2008.[31] The purpose of the CRAS was to locate and identify any prehistoric and historic period archaeological sites and historic resources, and to assess their significance in terms of eligibility for listing in the National Register of Historic Places (NRHP). Fieldwork was preceded by comprehensive background research that identified all known cultural resources in the vicinity.

Background research included a review of the Florida Master Site File (FMSF), the NRHP, cultural resource survey reports, published books and articles, unpublished manuscripts, and maps. Archaeological field methodology consisted of surface reconnaissance combined with systematic and judgmental subsurface testing. One informant interview was conducted.

Background research indicated an absence of previously recorded archaeological sites or historic structures within the East Airfield site. However, the tract was considered to have a moderate potential for archaeological sites, and there was the possibility of several historic structures based upon a 1953 quadrangle map and 1947 and 1954 aerials. The field investigations revealed that the historic structures that were depicted on the 1953 quadrangle map are no longer extant.

As a result of the field survey, the East Airfield Development Areas Resource Group (8OR9851) was identified and recorded within the East Airfield site. This mixed district resource group

[31] *Cultural Resource Assessment Survey of the East Airfield Development Area, Orange County, Florida,* Archaeological Consultants, Inc., August 2008. The report is on file with GOAA.

SOURCE: Greater Orlando Aviation Authority, 2010 aerial; and ESA Airports, 2014

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Figure 4.3-11
Alamo Rent-A-Car Location (8200 McCoy Road)

consists of six contributing resources: one archaeological site, Four Pier (8OR9849); one linear resource, the Bull Slough Drainage Ditches (8OR9850); and four structures: Windmill 1 (8OR9852), Windmill 2 (8OR9853), Cattle Pen 1 (8OR9854), and Cattle Pen 2 (8OR9855). None of the resources were considered significant due to their low research potential, commonality in the region, and lack of association with important individuals or events. The CRAS concluded that project development would have no effect on historic properties listed in, or eligible for listing in, the NRHP. **Appendix N** provides letter correspondence from the Florida SHPO for the project site during the 2009 Draft EA review.

Coordination with Native American Tribal Governments

The Draft EA was sent to the following Native American Tribal Governments.[32]

- Seminole Nation of Oklahoma
- Muscogee (Creek) Nation
- Seminole Tribe of Florida
- Miccosukee Tribe of Indians of Florida
- Poarch Band of Creek Indians

According to the CRAS and past Tribal coordination (conducted in 2009), GOAA is unaware of any Tribal sites within the East Airfield site. The Seminole Tribe of Florida, through its Tribal Historic Preservation Office, noted in its comments on the Draft EA that the Tribe has no objection to the project at this time. The Tribe indicated that they request to be notified if any Native American artifacts are uncovered during the construction phase of the project.

4.3.10 Light Emissions and Visual Impacts

The FAA encourages airport sponsors to consider the effects of light emissions (e.g., strobe lights, high-intensity airfield or facility lighting) and visual effects on sensitive areas (including residential areas, parks, and recreational areas).

The East Airfield site is currently undeveloped and does not produce light emissions or have any adverse visual impacts.

4.3.11 Natural Resources, Energy Supply and Sustainable Design

The East Airfield site is currently undeveloped and does not consume any natural resources or have any energy requirements other than routine mowing and maintenance.

[32] Additionally, the Early Notification Package for 2009 Draft EA document sent to the three (3) Native American Tribal Governments on May 14, 2009 from Virginia Lane, FAA Environmental Program Specialist. The 2009 Draft EA was never finalized.

4.3.12 Noise

FAA's noise analysis in an EA primarily focuses on how proposed airport actions would change the cumulative noise exposure of individuals to aircraft noise in areas surrounding the airport. Day Night Average Sound Level (DNL) is the standard Federal metric for determining cumulative exposure of individuals to noise. In 1981, the FAA formally adopted DNL as its primary metric to evaluate cumulative noise effects on people due to aviation activities.

The FAA established land use compatibility guidelines relative to certain DNL noise levels in 14 CFR Part 150 Appendix A, Table 1 or 14. Most land uses are compatible with noise levels less than DNL 65 dBA. Local needs or values may dictate further delineation based on local requirements or determinations. Residential land uses are not compatible with DNLs greater than DNL 65 dBA.

Integrated Noise Model

At the time this EA was prepared, the FAA required the use of the Integrated Noise Model (INM) for airport development actions that required a detailed noise analysis.[33] The INM incorporates the number of annual average daily daytime, evening, and nighttime flight operations, flight paths, and flight profiles of the aircraft along with its extensive internal database of aircraft noise and performance information, to calculate aircraft noise exposure levels in the vicinity of an airport. The INM calculates DNL noise exposure and generates contours of equal DNL (e.g., DNL 65, 70, and 75) that can be superimposed onto land use maps. The INM can calculate sound levels at any specified point so that noise exposure at representative locations around an airport can be obtained. Version 7.0a was the model version used to prepare the noise analysis (using 2008 data) for this EA.

INM Input Data

The INM uses a series of input data to develop the DNL noise contours. Some of these factors are included in the database for the model (such as engine noise levels, thrust settings, arrival and departure profiles and aircraft speeds) and others are airport-specific and need to be determined for each condition analyzed. The airport-specific data includes the airport elevation, average annual temperature, runway layout, and the assignment of specific aircraft with specific engine types at specific takeoff weights to individual flight tracks. Other INM input factors include:

- Runway use
- Baseline 2008 aircraft operations and fleet mix for MCO
- Time of day/night operations
- Stage lengths of aircraft

[33] The FAA's Aviation Environmental Design Tool (AEDT) replaced the Integrated Noise Model (INM) and Emissions and Dispersion Modeling System (EDMS) as the required tool for noise, fuel burn, and emissions modeling on May 29, 2015. Updating the aircraft noise exposure information in this EA was not required because the Proposed Action evaluated in this EA did not require a detailed noise analysis and the Draft EA was circulated for agency and public review prior to May 29, 2015.

Existing Operations and Fleet Mix

The noise contours used the 2008 operational activity which was based on the FAA Air Traffic Activity Data System (ATADS)[34] from the period of December 1, 2007 through November 30, 2008. The ATADS includes the official Federal Aviation Administration's National Airspace System (NAS) operational data, which is recorded daily by air traffic control personnel. Twelve months of the daily counts were obtained to determine the total operations that occurred over a year as required for input into the INM. The 2008 annual operations data by major aircraft categories are listed in **Table 4.3-6**.

TABLE 4.3-6
EXISTING AIRCRAFT OPERATIONS

Year	Air Carrier / Cargo	General Aviation / Air Taxi	Military	Total
2008	294,900	52,774	503	348,177
2015	274,276	34,318	341	308,935

SOURCE: Air Traffic Activity Data System (ATADS), 12/1/2007 To 11/30/2008; FAA January 2015 TAF

This annual data is then divided by 365 to obtain the number of operations for an average annual day. In 2008, a total of 348,177 operations occurred at MCO, which is an average of 954 operations per day. Based on the FAA's January 2015 TAF, a total of 308,935 operations will occur, which is an average of 846 operations per day.

The data must be further refined into operations by specific aircraft types within each major category to prepare the DNL noise contours. GOAA currently has a Noise and Operations Monitoring System (NOMS) that includes 13 permanent monitor stations surrounding both MCO and Orlando Executive Airport (ORL). The system records the aircraft type, location of the flight track, departure profile, time that the aircraft arrived or departed, the origin or destination of the aircraft and the runway end from which each aircraft operation occurred.

Runway use is an important element affecting the size and shape of noise contours. The runway use for departures and arrivals for daytime and nighttime activity is included in **Table 4.3-7**. This runway use was established based on the airport's NOMS data.

A review of runway use for MCO during CY 2014 indicates that the airport operated in a south flow 57 percent of the time and a north flow the remaining 43 percent (see **Figure 4.3-12**). These flows and runway use are generally consistent with those used in modeling the 2008 noise conditions.

2008 DNL Contours

The 2008 DNL contours (including the 65, 70, and 75 DNL dBA) are shown on **Figure 4.3-13**. No residences or other noise sensitive land uses are within the limits of the 2008 65+ DNL contour. Due to the decrease in aviation activity from 2008 to that predicted in the January 2015

[34] FAA's ATADS contains the official NAS air traffic operations data available for public release.

TAF as shown above in Table 4.3-6, this is not expected to change. The FAA believes that the 2008 noise contours for MCO are a conservative representation of the noise conditions at the airport based on the number of aircraft operations and runway usage/aircraft flow described above. **Appendix O** provides letter correspondence from the FAA approving the use of the 2008 DNL contours for this EA.

TABLE 4.3-7
EXISTING 2008 RUNWAY USE

Flow	Operation Type	Runway	Percent Use Daytime	Percent Use Nighttime
Departures				
	North	36L	8%	10%
		36R	20%	9%
		35L	30%	29%
		35R	1%	<1%
		Total	**59%**	**48%**
	South	18R	8%	14%
		18L	23%	22%
		17R	10%	16%
		17L	<1%	<1%
		Total	**41%**	**52%**
Arrivals				
	North	36L	5%	8%
		36R	17%	21%
		35L	9%	20%
		35R	11%	4%
		Total	**42%**	**53%**
	South	18R	18%	12%
		18L	15%	13%
		17R	11%	19%
		17L	15%	3%
		Total	**58%**	**47%**

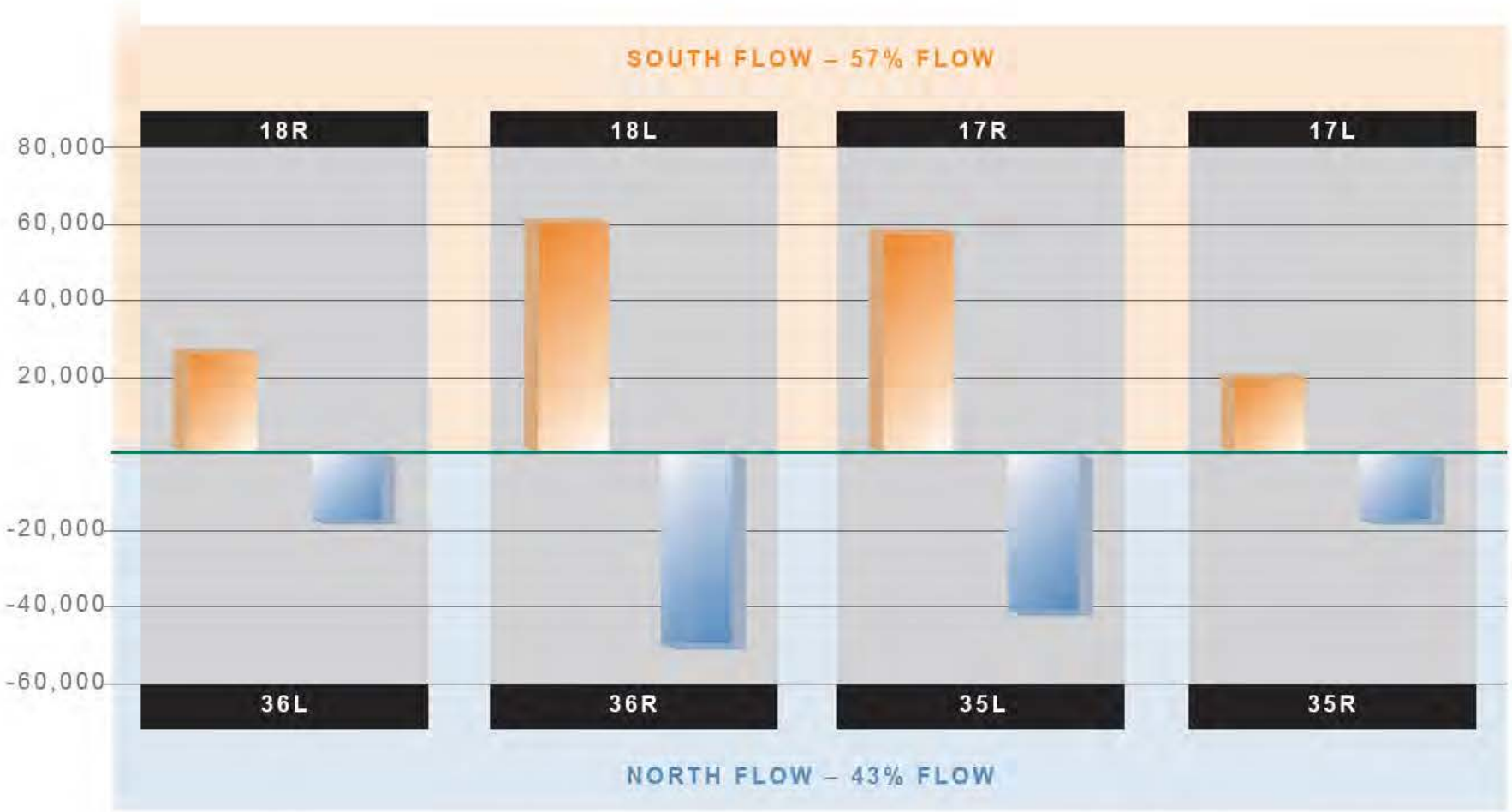
SOURCE: GOAA NOMS, 12/1/2007 To 11/30/2008

4.3.13 Secondary (Induced) Impacts

Actions at airports often involve the potential for secondary (induced) impacts on surrounding communities. Examples of secondary or induced impacts include: shifts in patterns of population movement and growth; public service demands; and changes in business and economic activity to the extent influenced by the airport development. Induced impacts will normally not be significant except where there are also significant impacts in other categories, especially noise, land use, or direct social impacts.[35]

This impact category does not require Federal permits, certifications or approvals; but the EA should contain evidence of coordination with potentially affected jurisdictions and other interested parties located in the affected area.

[35] FAA Order 1050.1E Appendix A Section 15, Secondary (Induced) Impacts



SOURCE: Greater Orlando Airport Au hority, 2015; and Adapted by ESA Airports, 2015

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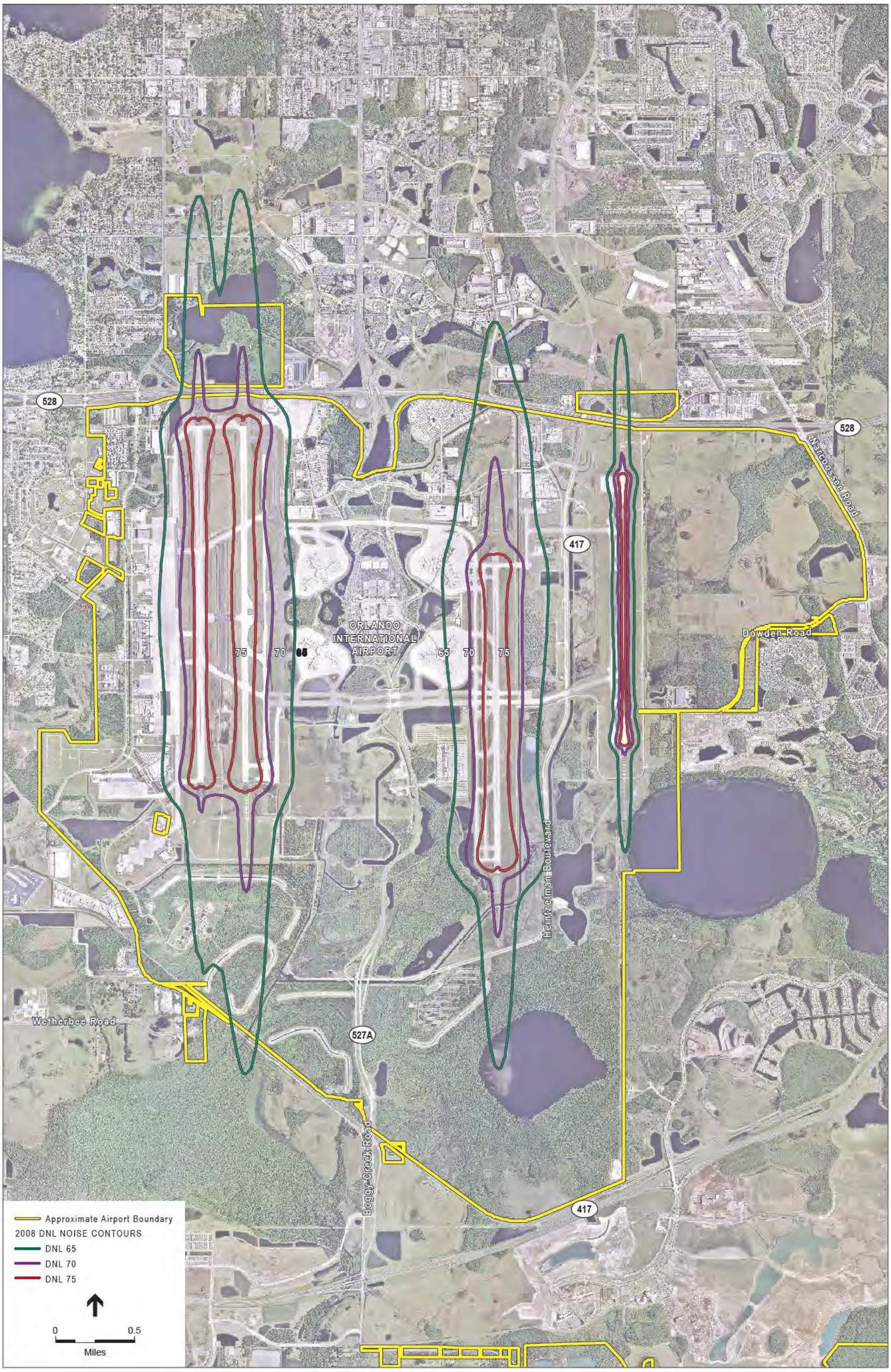
Figure 4.3-12

Runway Usage – Calendar Year 2014



SOURCE: Greater Orlando Aviation Authority, 2012; and ESA Airports, 2012

Figure 4.3-13
2008 DNL Noise Contours

The East Airfield site is within the City of Orlando's Southeast Orlando Sector Plan. Section 4.3 of this EA discusses the City of Orlando's GMP, Southeast Orlando Sector Plan and Orange County's Innovation Way Corridor Study. These plans identify population and growth anticipated for the area and region. Section 4.3.3 of the EA provides information on the planned land uses for the East Airfield site and vicinity and identifies the East Airfield site as it relates to economic and business development.

The City of Orlando has identified the Southeast Orlando Sector Plan area as a Future Growth Center, with the Orlando International Airport as the primary economic and employment generator. A full range of uses, services, amenities, and activities are planned in Southeast Orlando to fill the needs of an ultimate population of 65,000 people"[36] (Section 68.102, *Orlando City Code*). To address potential changes in business and economic activity, GOAA compiled information regarding MCO employment. In 2014, MCO employed approximately 17,785 employees across more than 150 business and government agencies within the airport community. **Table 4.3-8** presents MCO 2014 employment numbers broken down by ten areas of economic activity.

Direct employment at MCO also generates secondary employment, including indirect employment through firms that provide business supplies and services in support of airport operations and travelers. In 2014 an economic impact study prepared by the FDOT for MCO estimated that the airport's total economic impact included directly and indirectly generating 267,800 jobs.[37]

TABLE 4.3-8
DIRECT EMPLOYMENT AT MCO (2014)

Business Type	Employment (Number of Jobs)
Non-GOAA Employment	
Airline Ticket Revenue	3,884
On Site, Off Site Parking	132
Commercial Ground Transportation	688
Rental Cars Sales On-Site	917
Security	795
Concessions / On-site Vendors	3,114
Terminal Hotel	350
On-Site Private Operations	3,553
Construction	1,702
Other (Federal, state, Local)	2,000
GOAA Employees	
GOAA Employees	650
Total	**17,785**

SOURCE: GOAA, 2014

[36] Within the Southeast Orlando Sector Plan, "the ASD-1 and ASD-2 districts shall be the primary employment locations within the Southeast Plan area." (Section 68.208 Orlando City Code)

[37] *The Economic Impact of Orlando International Airport.* Florida Department of Transportation, Aviation Office. August 2014.

Public service demands such as police protection, schools, and fire/rescue service for the community are addressed by the City of Orlando and Orange County through their respective local development approval processes.

4.3.14 Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks

FAA considers a proposed action's socioeconomic impacts including the relocation of residences or community businesses and traffic effects, potential effects to minority and low income populations (environmental justice impacts), and potential environmental health and safety risks disproportionately affecting children. Applicable Federal statutes, Executive Orders, and DOT Orders include:

- *Executive Order 12898*, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations";
- DOT Order 5610.2, *Environmental Justice in Minority and Low-Income Populations*, April 15, 1997;
- *Executive Order13045*, "Protection of Children from Environmental Health Risks and Safety Risks"; and,
- *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* as amended by the *Surface Transportation and Uniform Relocation Act Amendments of 1987*.

Socioeconomic Impacts

Socioeconomic impacts to consider include the following:

(1) Extensive relocation of residents is required, but sufficient replacement housing is unavailable.

(2) Extensive relocation of community businesses that would create severe economic hardship for the affected communities.

(3) Disruptions of local traffic patterns that substantially reduce the levels of service (LOS) of the roads serving the airport and its surrounding communities.

(4) A substantial loss in community tax base.

The East Airfield site is owned by GOAA. Section 4.2 of the EA provides information regarding the site's location within the property boundaries of MCO.

Section 4.2 of the EA also provides a discussion of the existing surface roadway network in the vicinity of the East Airfield site. As discussed in Section 2.0, Purpose and Need, the City revised the GMP Transportation Element Policy and adopted a City-wide Transportation Concurrency Exception Area (TCEA) and mobility strategies in January 2011. MCO is within the TCEA

boundary, Mobility area "C". Objectives and policies of the GMP Transportation Element note that "Access to the Orlando International Airport shall be improved through a combination of improvements (including enhanced transit service and implemented roadways system expansion) implemented by the City of Orlando, adjacent jurisdictions, the Central Florida Regional Transportation Authority (dba Lynx), the Florida Department of Transportation, and the Greater Orlando Aviation Authority" and "The City shall support the growth of aviation facilities needed to keep up with the increased demand of business, tourism and conventional travel" (GMP Transportation Element Policy 1.6.1, 1.17.1). Inside the boundaries of the TCEA, the GMP Transportation Element Policy 2.4 notes that all new development and redevelopment must mitigate their impacts to public transportation facilities proportionate to the proposed development and according to the different transportation mobility needs for each mobility area of the City.

Environmental Justice

Environmental justice impacts are considered when "disproportionately high and adverse human health or environmental effects on minority and low-income populations may represent a significant impact."[38] Environmental justice effects are considered during evaluation of other environmental impact categories such as air quality, hazardous materials, cultural resources, noise, water quality, and cumulative impacts related to the affected environment. This information is provided in Sections 4.3.1, 4.3.8, 4.3.12, 4.3.15, and 4.4 respectively.

Race and poverty characteristics for Florida, Orange County, and the socioeconomic study area are provided in **Table 4.3-9**. **Figure 4.3-14** depicts the socioeconomic study area. As shown in the table, the area in the vicinity of the East Airfield site has a lower minority population than Orange County and substantially fewer people at or below poverty level.

TABLE 4.3-9
RACE AND POVERTY CHARACTERISTICS (PERCENT OF OVERALL POPULATION)

Subject	Study Area	Orange County	Florida
Race			
White	74%	69.4%	78.1%
Black or African American	8%	22.0%	16.7%
American Indian	0%	0.6%	0.5%
Asian	8%	5.4%	2.7%
Native Hawaiian and Other Pacific Islander	0%	0.2%	0.1%
Two or More Races (and Some Other Race)	6%	2.4%	1.9%
Hispanic or Latino	33%	28.7%	23.6%
Poverty Level			
Persons Below Poverty Level (2009-2013)	5%[1]	17.0%	16.3%

Note1: Estimated based on number of households in he study area with $25,000 or less annual income and having four persons in the household.

Sources: U.S. Census Bureau Quickfacts, 2015. http://quickfacts.census.gov/qfd/states/12/12095.html. Accessed on January 13, 2015.
EJView Census 2010 Summary Report. US Environmental Protection Agency, 2015.

[38] FAA Order 1050.1E Appendix A Section 16

Children's Environmental Health and Safety Risks

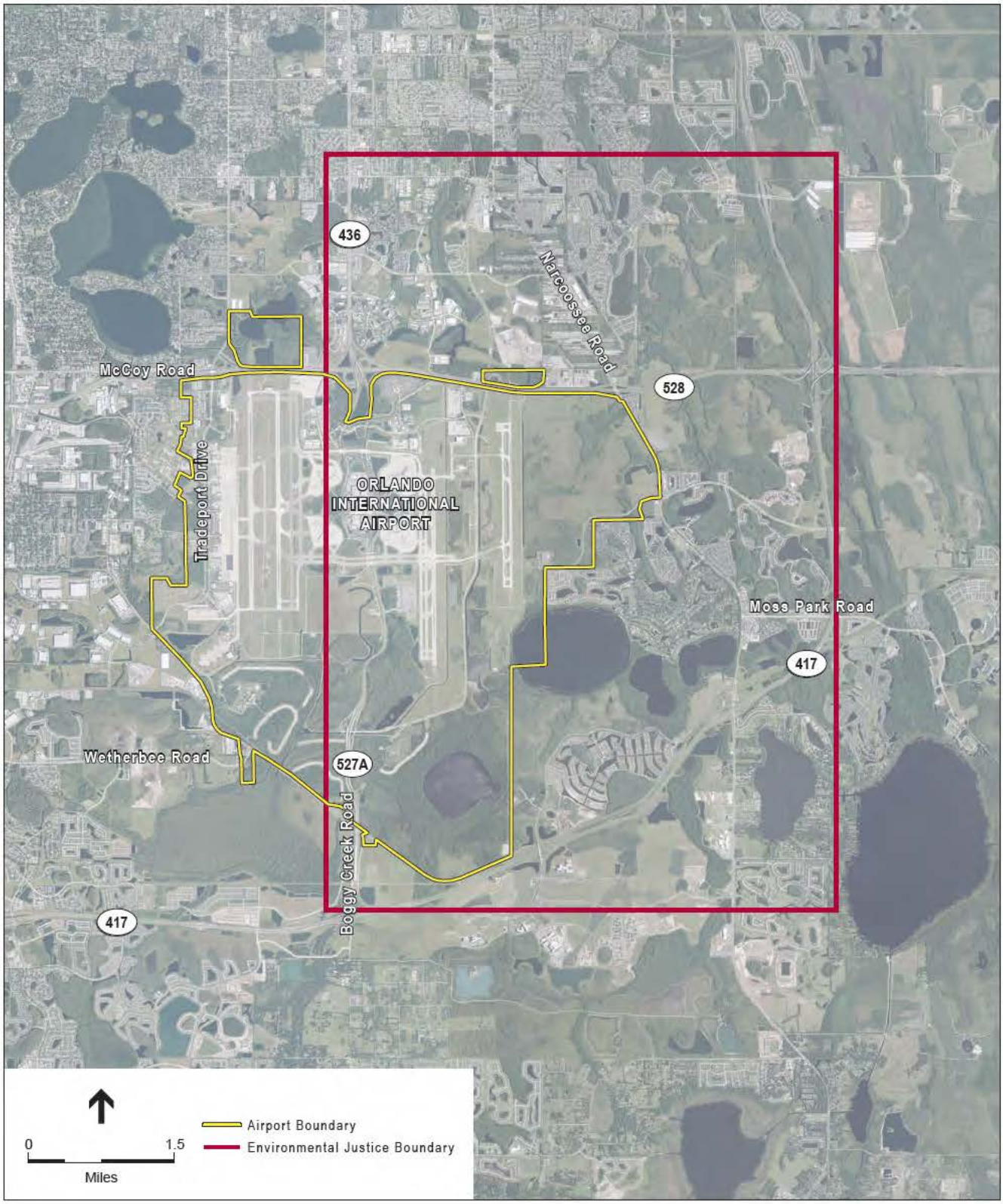
Children's environmental health and safety risks are considered when "disproportionate health and safety risks to children may represent a significant impact."[39] Environmental health risks and safety risks include risks to health or to safety that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products they might use or be exposed to.[40] Information on air quality, hazardous materials, cultural resources, noise, water quality, and cumulative impacts related to the affected environment is provided in Sections 4.3.1, 4.3.8, 4.3.12, 4.3.15, and 4.4 respectively.

4.3.15 Water Quality

The *Federal Water Pollution Control Act*, as amended by the *Clean Water Floodplains and Floodways Act of 1977* (CWA and 1987 amendment) provides the regulatory framework for water quality requirements for waters of the United States.[41] Under Section 33 U.S.C. Sections 1341 and 1362, Section 401 of the CWA, and 40 C.F.R Section 121.1(e), the Governor of the State of Florida designated the DEP as the lead agency responsible for state water quality standards in 1998. The DEP oversees permitting processes and the issuance or denial of water quality certifications. Water management districts in Florida were delegated concurrent authority to issue, deny, or waive water quality certification under FS Part IV Chapter 373. The SFWMD has been delegated the authority to issue, deny, or waive a water quality certification. Issuance of a "standard general, individual, or conceptual approval of environmental resource permits, and individual wetland resource permits issued under FS Part IV of Chapter 373" by the SFWMD constitute the granting of water quality certification and compliance with state water quality standards and the CWA unless specifically stated differently in the permit. [42]

Existing surface water conveyance (sheet flow, ditches, canals, etc.) on the East Airfield site consists of stormwater contributions from off-site developed areas and on-site land uses. Stormwater from a developed area to the north of the East Airfield site is routed in a conveyance ditch along the north perimeter of the site to the Gee Bee Canal on the west perimeter with ultimate discharge to the Boggy Creek Drainage Basin. Stormwater runoff from two small areas of Narcoossee Road on the east perimeter of the site is contained in two stormwater areas on the East Airfield site. These stormwater areas discharge off-site to the Lake Hart Drainage Basin and/or Boggy Creek Basin through the Gee Bee Canal. Stormwater runoff from Dowden Road on the southern perimeter of the site is contained on the East Airfield site and is discharged to on-site wetlands and ultimately, to the Gee Bee Canal. All other stormwater runoff on the East Airfield site consists of sheetflow into wetlands and upland cut ditches with discharge either to the Gee Bee Canal or to

[39] FAA Order 1050.1E Appendix A Section 16
[40] FAA Order 1050.1E Appendix A Section 16
[41] 33 USC Chapter 26
[42] Operating Agreement Between USACE, DEP, and the Water Management Districts Concerning Regulatory Programs for Activities in Wetlands and Other Surface Waters (November, 1998)



SOURCE: Greater Orlando Aviation Authority, 2008 aerial; USDA, 2013; and ESA Airports, 2015

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Figure 4.3-14
Environmental Justice

wetlands off-site draining to the Lake Hart Basin. None of the discharges are to Outstanding Florida Waters or Outstanding Natural Resource Waters. [43]

GOAA operates a series of water quality monitoring stations which collect water on a continuing basis for testing of temperature, specific conductance, and turbidity. At most of these stations, monthly samples are collected and summarized annually[44] (see **Figure 4.3-15**). Most of the monitoring stations are internal to MCO. Station WQ-2 receives stormwater from off-site and discharges from wetlands on the east airfield when water levels reach sufficient levels in the wetlands adjacent to the Gee Bee Canal. WQ-15 is a station which discharges off-site to wetlands south of Dowden Road and ultimately to Lake Hart. Sources of water at WQ-5 currently consist of discharges from wetlands on the east airfield. Finally WQ-5 is the location where combined internal discharges are released off-site to the Boggy Creek swamp system and Boggy Creek.

4.3.16 Wetlands

This section discusses Federal, state, and locally regulated wetlands associated with the East Airfield site. Wetlands addressed in this section include jurisdictional wetlands, non-jurisdictional wetlands, and other "Waters of the U.S" designated under Section 404 of the *Clean Water Act*. The USACE has lead regulatory responsibility for review and permitting of Federal jurisdictional wetland impacts.

The State of Florida delegates authority to the Water Management Districts to approve permit applications related to water resources and the environment, including wetlands. The East Airfield site is within the SFWMD regulatory area. State jurisdictional wetlands are under the purview of the SFWMD under Chapter 62-340, FAC. Section 4.3.6.1 provides wetland community descriptions for the East Airfield site.

Federal Jurisdictional Wetlands

The USACE participated with GOAA in an on-site inspection on July 21, 2006 to determine the extent of Federal jurisdictional wetlands at the East Airfield site under Section 404 of the CWA. GOAA submitted an Individual Permit Application No. SAJ-2006-2640 (IP-JSC) to the USACE on September 18, 2006. In November 2010, GOAA revised the application to address comments received from the USACE Public Notice (2006). The application was revised in August 2015 and submitted to the USACE. The revised application reflects the East Airfield site as described in this EA.

The East Airfield site consists of approximately 256.43 acres of Federal jurisdictional wetlands or "waters of the United States" (defined under Section 404 of the CWA). **Figure 4.3-16** provides an overview of the federal jurisdictional wetlands and **Figures 4.3-17a** and **4.3-17b** provide further detail.

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[43] Chapter 62-302.700 Florida Administrative Code (FAC)

[44] Environmental Management & Design. 2008. Water Quality Data Analysis, 2007 Summary Report. 307 pp.

State Jurisdictional Wetlands

GOAA received a Conceptual Environmental Resource Permit (ERP) from the SFWMD on August 30, 2010 (Permit No. 48-00063-S-03) for the East Airfield site. This permit identified approximately 319.89 acres of wetlands and other surface waters consisting of 247.77 acres of wetlands and 72.12 acres of surface waters. **Figure 4.3-18** provides and overview of the state jurisdictional wetlands, **Figure 4.3-19a** and **4.3-19b** provides further detail. Of the 72.12 acres of surface water on the East Airfield site, 19.85 acres of surface waters are within Lake Nona.

4.4 Past, Present and Reasonably Foreseeable Future Actions

A cumulative impact is an impact that is created as a result of the combination of an alternative evaluated together with other projects causing related impacts. These impacts can occur when the incremental impact of the Proposed Action, when combined with the effects of other past, present, and reasonably foreseeable future projects, are cumulatively considered. Guidance from the Council on Environmental Quality (CEQ) notes that the focus of NEPA analyses are forward-looking (they focus on the impact of a project) and that review of past actions is required to the extent that this review informs agency decision-making regarding the Proposed Action.

This section of the EA describes past, present, and reasonably foreseeable major actions in the East Airfield site area for the purpose of considering potential cumulative impacts. The projects described below have been, or could be, undertaken with or without implementation of the East Airfield project.

4.4.1 MCO Development Actions

A review of several information sources was conducted to determine past, present, and reasonably foreseeable development actions at MCO. This review included the Orlando International Airport Capital Improvement Plan 2013-2018, additional CIP information provided by GOAA, a review of the 2011 MCO Master Plan, and a review of the MCO Airport Layout Plan (ALP). This review identified major capital improvement projects. Projects listed in the 5 year CIP Exhibit B "Approved Capital Expenditures" are included in **Appendix P**. Given MCO's size and complexity of operations, only major actions and projects undertaken by GOAA and its tenants were selected for this analysis.

The FDOT's 2015 – 2019 Adopted Five Year Work Program was also reviewed to identify MCO projects that were included in the FDOT's capital improvement funding program.[45] The FDOT Work Program indicates that the agency will participate financially in many of the upcoming airfield improvement, terminal capacity improvement, security enhancement, and South Airport Automated People Mover (APM) Complex projects planned at MCO. The FDOT Work Program

[45] http://www2.dot.state.fl.us/fmsupportapps/workprogram/WorkProgram.aspx

SOURCE: Breedlove Dennis and Associates, Inc., 2014

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Figure 4.3-15

Water Quality Monitoring Sites

Legend

- East Airfield Development Site (1342.2 ac)
- Surface Waters (84.09 ac)
- Wetlands (256.43 ac)

Source: OIA boundary - GOAA/MACTEC, 2009-05-13. Wetlands and other linework, GOAA, 1999-2011; EED, Inc., 1999-2003; Breedlove, Dennis & Associates, Inc. (including GPS wetland flagging, photointerpretation and selective groundtruthing), 1999-2013.

0 550 1,100 Feet

1 inch = 1,100 feet

BDA BREEDLOVE, DENNIS & ASSOCIATES, INC. Environmental Consultants
330 W. Canton Ave., Winter Park, FL 32789 • 407-677-1882

SOURCE: Breedlove, Dennis & Associates, Inc., 2015

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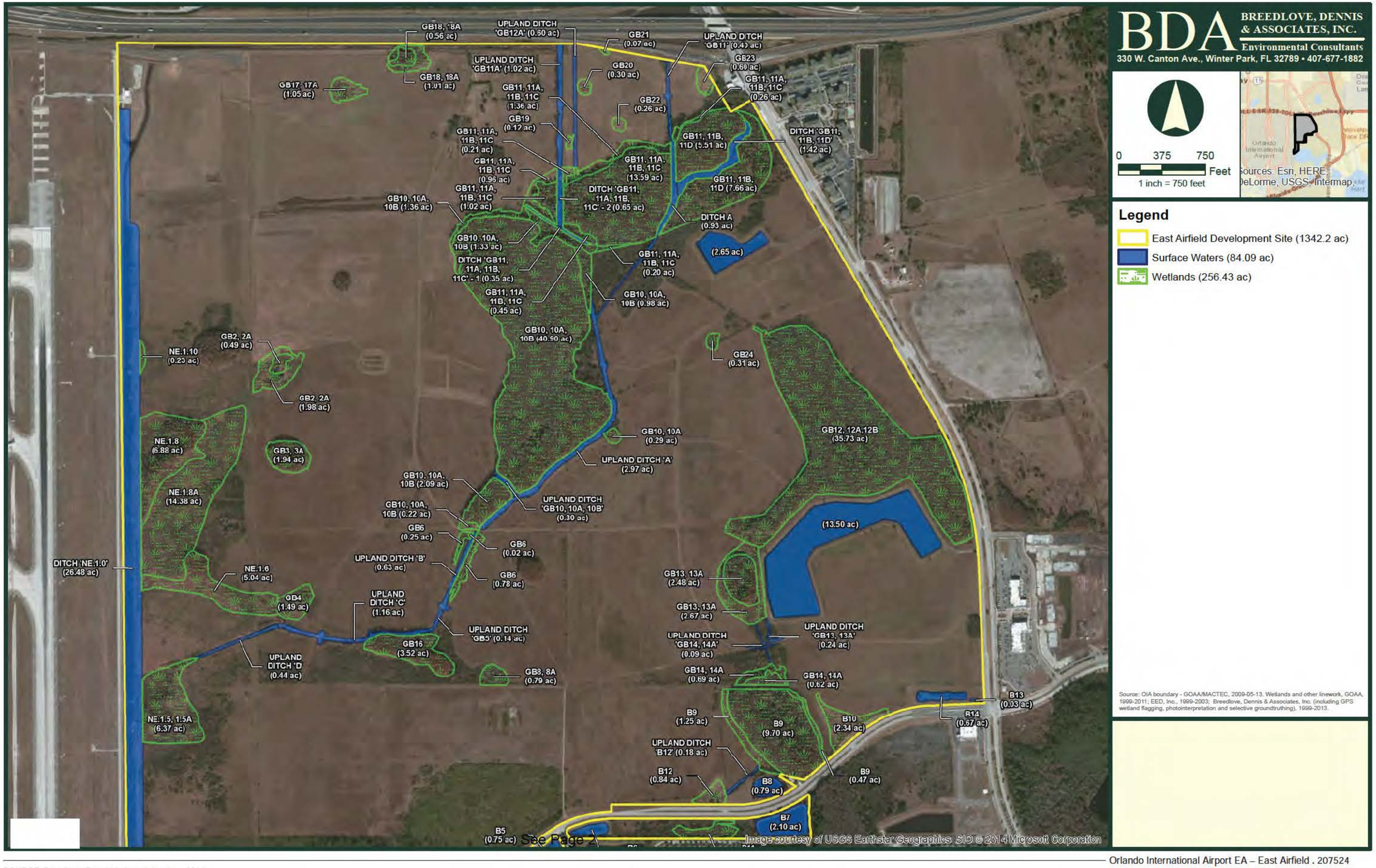
Figure 4.3-16

Federal Wetland Overview Map



SOURCE: Breedlove, Dennis & Associates, Inc., 2014

Figure 4.3-17a
Federal Wetland Map

SOURCE: Breedlove, Dennis & Associates, Inc., 2014

Figure 4.3-17b
Federal Wetland Map

SOURCE: Breedlove, Dennis & Associates, Inc., 2015

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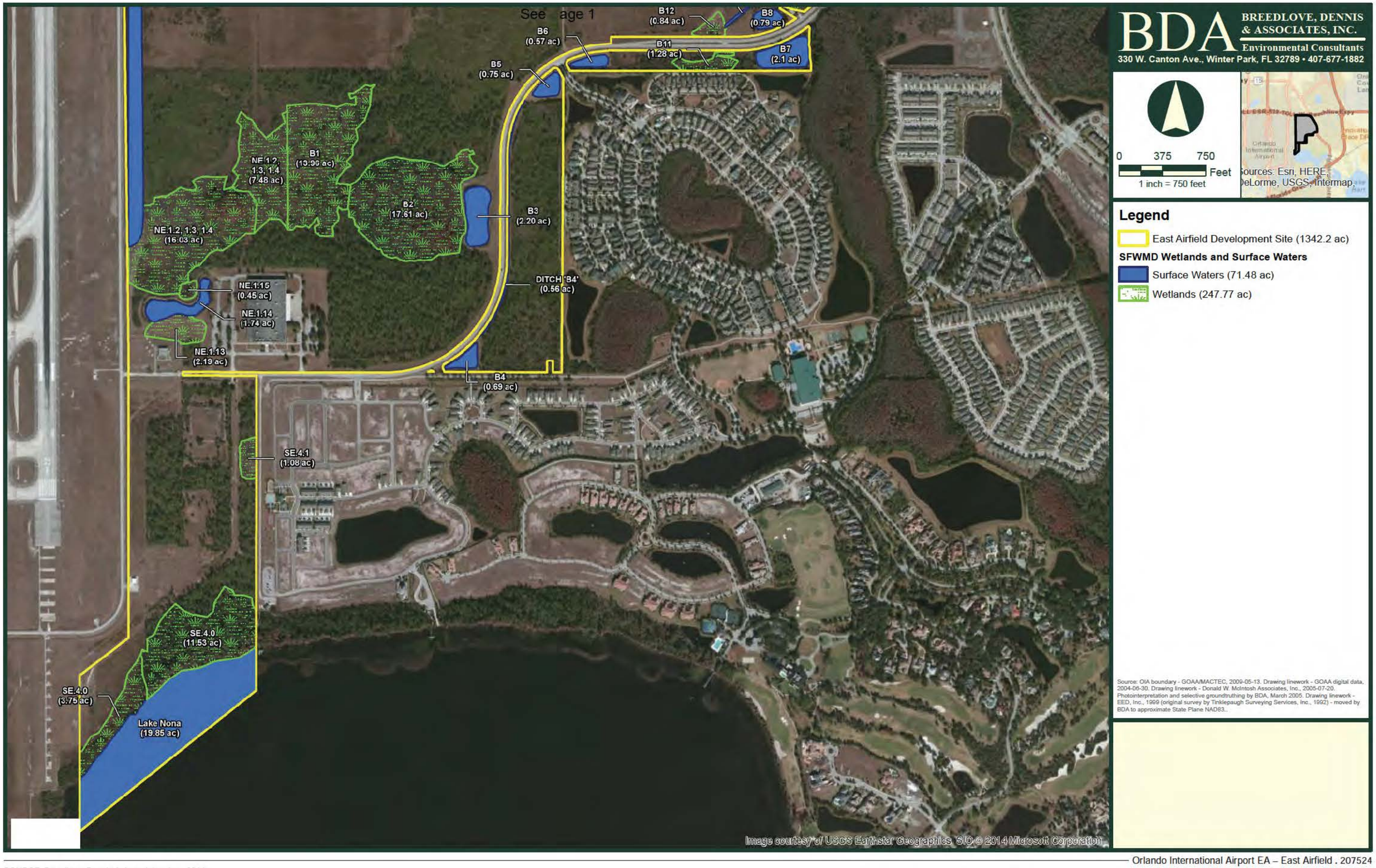
Figure 4.3-18

State Wetland Overview Map

SOURCE: Breedlove, Dennis & Associates, Inc., 2014

Figure 4.3-19a
State Wetland Map



SOURCE: Breedlove, Dennis & Associates, Inc., 2014

Figure 4.3-19b
State Wetland Map

notes that the projects are part of Florida's Strategic Intermodal System initiative.[46] The major capital improvement projects at MCO are described in **Table 4.4-1**.

4.4.2 Other Development Actions in the Study Area

Areas north, east and south of the East Airfield site have experienced development in recent years. These areas were predominately agricultural, but now include a mix of residential, retail, industrial, agricultural, conservation, and light industrial land uses. The development is guided by the Southeast Orlando Sector Plan and local land development guidelines. A discussion of the Sector Plan and planned development is provided in Section 4.3.3.2 of this EA. Development in this area is expected to continue over time. Major reasonably foreseeable development actions in the study area are summarized in Table 4.4-1.

4.4.3 Transportation Improvements in the Study Area

The organization charged with developing long range transportation plans for the Orlando region is Metro Plan Orlando (MPO). The MPO has developed a long-range transportation plan that provides a 20 year transportation blueprint for central Florida. This plan, the *2040 Long Range Transportation Plan*, adopted June 2014, identifies current and future needs based on population projections and travel demands.[47] Identified projects include highway, toll, and transit projects expected to be complete between 2015 and 2040. **Appendix Q** provides the MPO's list of recommended projects for the Central Florida Region. Projects in the study area are highlighted in the table.

In recent years, several transportation infrastructure projects were constructed in the vicinity of the East Airfield site. These projects included road extensions, road widenings, and highway interchange improvements. The transportation projects are summarized in Table 4.4-1.

[46] The Strategic Intermodal System (SIS) was established by the Florida legislature in 2003 to enhance Florida's transportation mobility and economic competitiveness. The SIS is a state-wide network of high-priority facilities.

[47] http://www.metroplanorlando.com

TABLE 4.4-1
CUMULATIVE PROJECTS

Cumulative Projects	Description	Time Frame	On-Airport	Off-Airport
Past Projects				
Lake Nona Estates DRI and Northlake Park/Waters Edge Residential Subdivisions	Lake Nona Estates is a residential estate community located immediately southeast of MCO. The Lake Nona DRI provides entitlements for 9,000 residential units, 2,250 hotel units, 1.2 million square feet (sf) of retail, 1 million sf of office, and 4.2 million sf of airport support use. The overall DRI has been under development since 1983 and is continuing to develop. Several sections of the Lake Nona DRI are presently developed. As part of the Lake Nona DRI, the Northlake Park and Waters Edge residential subdivisions were developed near the eastern boundary of MCO (generally south of Dowden Road and west of Narcoossee Road). These two neighborhoods are comprised of approximately 766 single family residential units and 347 multi-family residential units, which are located just south of the of East Airfield site. The Northlake Park and Waters Edge residential development was initiated in 1999 and is expected to continue in the future. The overall development plan includes a medical campus (medical school, hospitals, research facilities, and offices). Development of the medical campus is expected to continue over time.	1983 - ongoing		X
La Vina Planned Development	The La Vina Planned Development is a 426-acre master planned, mixed-use development that was approved in 2001 and includes retail, commercial, residential and civic uses. La Vina includes about 180 acres of single family residential development and 40 acres of commercial/multi-family development. The remainder of the acreage is stormwater ponds and conservation. As of 2014, about 10% of the project remains undeveloped.	2001 - ongoing		X
Lee Vista Center DRI	Lee Vista Center DRI is a 1,900-acre master planned, mixed-use development that was approved in 1984 and includes primarily retail, industrial, and office uses. Phases I through IV of the DRI were for the years 1984-2014 and included entitlements for approximately 3 million sf of Industrial uses, 1.7 million sf of office uses and 1 million sf of retail uses. Phase V of the DRI for the period of 2014-2016 includes entitlements for 800,000 sf of industrial uses, 350,000 sf of office uses and 250,000 sf of retail uses. The total development contains about 3,000 residential and hotel units. The current uses within this DRI are restaurants, offices, warehouses, distribution centers, and hotels.	1984 - ongoing		X
JetBlue University	JetBlue University is an airline training facility for JetBlue crewmembers. The training and support campus, constructed near the north end of the airport between the 3rd and 4th runways along Heintzelman Boulevard, is comprised of approximately 107,000 sf of building space that includes classrooms, training facilities, and aircraft simulators.	2005	X	
Narcoossee Road/ State Highway 528 Interchange Improvements	This project improved the interchange at Narcoossee Road and State Road 528 (Beachline Express) to accommodate the increased traffic and the widening of Narcoossee Road.	2008-2009		X

TABLE 4.4-1
CUMULATIVE PROJECTS (Continued)

Cumulative Projects	Description	Time Frame	On-Airport	Off-Airport
Narcoossee Widening to Lee Vista (2-4 Lanes)	The project widened Narcoossee Road north of the airport from 2 lanes to a 4-lane, median-separated roadway. The project started at the interchange at State Road 528 (Beachline Express) and terminated at Lee Vista Boulevard, a distance of approximately 1.25 miles.	2010-2011		X
Narcoossee Road Corridor Development	Over time, the Narcoossee Road corridor between Lee Vista Boulevard north of MCO to areas south of State Road 417 has experienced growth associated with large planned developments (i.e., Lake Nona DRI) and other development projects, including the widening of Narcoossee Road from 2 lanes to 4 lanes in the 2002 time frame. Development along the road corridor has included retail, commercial, and residential development. These include restaurants, gas stations, offices, and retail stores. It is anticipated that similar development along the Narcoossee Road corridor will continue over time.	2005 (ongoing)		X
GOAA Annex Building	This project involved the construction of a 60,000 sf three-story administrative office building and parking lot on Cargo Road (north side of the airfield).	2007	X	
Atlantic Aviation Hangar (formerly Galaxy Aviation)	This project involved construction of a new aircraft hangar, Fixed Base Operator (FBO) facilities, and parking lot. The size of the hangar/FBO structure is approximately 36,000 sf The facility is located on Tradeport Drive (west side of the airfield).	2009	X	
Interim Widening of South Access Road (Jeff Fuqua Boulevard South)	This road widening SIS project is funded by the FDOT. This project widened the South Access Road from 2 lanes to 4 lanes between the midfield cross-taxiway bridge and Heintzelman Boulevard.	2009	X	
Southwest Operations Center (formerly AirTran)	This project involved construction of a 16,000 sf Operations Center adjacent to Southwest's (formerly AirTran's) existing corporate office building on the west side of the airfield, along Tradeport Drive.	2010	X	
Taxiway B1 and B2 Extension and Rehabilitation	This project extended the existing Taxiway B2 from Runway 18L-36R to Runway 18R-36L and associated connecting taxiway to Taxiway B1, as well as rehabilitate the existing Taxiway B1 pavement and widening its shoulders	2013	X	
Taxiway A Widening	This project rehabilitated, widened and re-aligned a section of Taxiway A between the West Ramp and the Runway 18R threshold.	2013	X	
Taxiway F Bridge Improvements	This project strengthened part of the existing Taxiway F bridge.	2013	X	

TABLE 4.4-1
CUMULATIVE PROJECTS (Continued)

Cumulative Projects	Description	Time Frame	On-Airport	Off-Airport
Other Past MCO Projects	GOAA and its tenants have completed a wide range of other projects over the last ten years. Many of these projects were routine projects that maintained, repaired, rehabilitated, and enhanced facilities at MCO. Projects implemented by GOAA over the last 10-year period included, but were not limited to, terminal building improvements; baggage handling system improvements (i.e., in-line EDS); airfield (runway, taxiway and apron) improvements/rehabilitation; utility improvements; security improvements; and roadway, parking, and signage improvements. MCO tenant projects included, but were not limited to, building, hangar, and operating space construction, expansion, and rehabilitation.	2005 to 2013	X	
Current projects				
Publix Distribution Center	This project consisted of the construction of a 1.1 million sf Publix grocery chain warehouse and distribution facility on an 109-acre site located on Goldenrod Road, just north of MCO (north of State Road 528).	2014		X
South Airport Automated People Mover (APM) Program	MCO is the final destination of the All Aboard Florida rail project connecting Miami, Fort Lauderdale, West Palm Beach, and Orlando. A planned Intermodal Transportation Facility at MCO will serve rail passengers arriving at the airport and is one component of the airport's planned South Airport Automated People Mover (APM) Complex. The project site was environmentally reviewed in 1998 in an EA for the South Terminal Complex (the FAA issued a Finding of No Significant Impact and a Record of Decision). A written reevaluation of the EA was completed by the FAA in 2013. The South Airport APM Complex is a multi-year program and includes the following projects that are in various stages of planning, design, and development: • APM System - this component includes the construction of a new guideway from the existing North Terminal to the South Terminal Complex (STC) site that will join the existing APM track at the mid-crossfield taxiway to Level 2 of the APM station under construction (see below). The APM System project includes approximately 4,800 linear feet (lf) of dual guideway (sections on-grade and elevated) and 925 linear feet on-grade spur to the future APM maintenance facility. • APM Station - this project includes the construction of a 108,000 sf APM Station that will be integrated into a new parking garage structure and Intermodal Transportation Facility. The two-level APM Station is a two-level structure designed to accommodate the APM station on Level 2 and the Passenger Drop-Off Facility on Level 1. • Parking Facility – this project includes a 5-level parking structure that will provide up to 2,500 parking spaces. • Roadway Systems - this project includes South Airport APM Complex access roads, roadway lighting, and overhead signage. New low-level bridges are required over drainage waterways. This project will require modifications to an existing drainage waterway to the east of the South Airport APM Complex site and relocation and installation of underground utilities to support the new parking facility and APM Station.	2014 to 2017	X	

TABLE 4.4-1
CUMULATIVE PROJECTS (Continued)

Cumulative Projects	Description	Time Frame	On-Airport	Off-Airport
JetBlue Lodge	A JetBlue dormitory located between the 3rd and 4th runways near the north end of the airport along Heintzelman Boulevard opened in 2015.	2015	X	
Compressed Natural Gas (CNG) Station	A Compressed Natural Gas (CNG) station was completed in December 2014, north of the terminal area along Cargo Road near Casa Verde Road.	2014	X	
Jeff Fuqua Boulevard South Interchange Improvements at State Road 417	A project is presently under construction at State Road 417 and Boggy Creek Road interchange to provide improved access to the airport from State Road 417. The project includes the improvements to the interchange, including direct access to the south entrance to MCO (Jeff Fuqua Boulevard).	2014 (ongoing)		X
MCO Capital Improvement Plan Projects	GOAA and its tenants are presently conducting a wide range of routine projects to maintain, repair, rehabilitate, and enhance facilities at MCO. The projects vary widely in regard to scale, duration, and impact. Notable projects that were recently completed or are presently in various stages of design or construction are listed below. Several of these projects are multi-year projects that are ongoing. These projects will not generate substantial impacts on the environment. • North Terminal ticket lobby, airline relocation, and signage improvements – this program will improve the ticket lobby (post in-line EDS implementation), reconfigure and balance airline lease space, and upgrade signage and informational displays. • North Terminal baggage handling system improvements – this includes projects to improve checked baggage handling and screening and upgrade baggage handling area ventilation. • North Terminal emergency electrical system improvements • North Terminal security improvements • Airside 1 and 3 train and running surface replacement. • West Security Checkpoint Expansion – this project reconfigured space to increase the footprint of the existing security checkpoint. • AS4-Federal Inspection Services (FIS) Improvements – this project includes complete FIS facility renovations, including new interior finishes, new baggage handling system, new booths, new self-service kiosks, new restrooms, new offices, TSA inspection area improvements, and other related improvements. • 90's Wing Improvements - this project involves widening the concourse building approximately 20 feet and converting four existing domestic gates into international gates and establishing a sterile area. The project also includes interior renovations.	2014 (several of the multi-year projects are on-going)	X	

TABLE 4.4-1
CUMULATIVE PROJECTS (Continued)

Cumulative Projects	Description	Time Frame	On-Airport	Off-Airport
	• Central Plant Improvement & AHU Replacement – this project provides a new Central Energy Plant (approximately 11,800 sf building and related infrastructure) approximately one quarter mile northeast of Airside 4. The site was occupied by a drainage point that required infill. The CEP project also includes the replacement of all AHU operating at the airside. • Airside 4 Restroom Improvements - This project involves a complete finishes update for all public restrooms on Level 2 of Airside 4. • Runway 18R-36L rehabilitation - this project includes an overlay of the outer sections of the runway, re-sealing concrete joints, and reconstruction of the north threshold of Runway 18R. • North Cell Parking Lot - the project includes construction of a cell phone waiting lot with approximately 277 spaces, lot access and return-to-terminal roadway improvements, and roadway signage. The cell lot also includes restrooms and flight information displays. • Fiber Infrastructure Program – this project will complete the fiber-optic loop connecting major nodes on airport property. This work includes additional duct banks, conduit and cable, and associated electronic devices and facilities improvements.			
Future Projects				
Dowden Boulevard Extension to Heintzelman Boulevard	This project would extend Dowden Road west to Heintzelman Boulevard on an alignment south and west of Runway 35R. This project is included in the FDOT Work Program as a Florida SIS project.	2020	X	
East Airfield Long-Term Development Plan	The Long-Term Development Plan for the East Airfield site anticipates the establishment of aviation and non-aviation businesses within the East Airfield site, consistent with approved land uses. Aviation and non-aviation facilities that may be developed on the site include, but would not be limited to, large aircraft hangars, air cargo buildings, aerospace and aircraft manufacturing buildings, aircraft maintenance and repair facilities, and office buildings. In addition to these types of buildings, the Long-Term Development Plan is anticipated to include construction of taxiways, aircraft parking aprons, hangars, and access roads and parking lots. The 2014 East Airfield Conceptual Plan is depicted in Figure 5.1-1 of this EA.	TBD. Development expected to occur over a 20-year period.	X	
South Airport Automated People Mover (APM) Program	Elements of the South Airport APM Program discussed above are expected to continue through 2017.	2017	X	

TABLE 4.4-1
CUMULATIVE PROJECTS (Continued)

Cumulative Projects	Description	Time Frame	On-Airport	Off-Airport
Ongoing MCO Capital Improvement Plan Projects	Several of the MCO CIP projects are multi-year projects and are expected to continue to be implemented over the next one to five-year period. These projects include: • North Terminal ticket lobby, airline relocation, and signage improvements (anticipated completion in 2019) • North Terminal baggage handling system improvements (anticipated completion in 2016) • North Terminal security improvements (anticipated completion in 2016) • APM West Station Modernization (anticipated completion in 2016) • West Security Check Point Expansion (anticipated completion in 2016) • AS4-Federal Inspection Services (FIS) Improvements (anticipated completion in 2016) • 90's Wing Improvements (anticipated completion in 2016) • Central Plant Improvement & AHU Replacement (anticipated completion in 2016) • Airside 4 Restroom Improvements (anticipated completion in 2016)		X	
Planned MCO Capital Improvement Plan Projects	In the future, GOAA and its tenants are expected to continue to conduct a wide range of routine projects to maintain, repair, rehabilitate, and enhance facilities at MCO. Future MCO Capital Improvement Program projects include: • Taxiway J Rehabilitation - this project includes the rehabilitation of a section of Taxiway J between Taxiway C and Taxiway H1, including all Taxiway Connectors, Taxiway C1, and all taxiway shoulders. • Runway 17R-35L Improvements - this project includes the removal and replacement of all joints in the Runway 17R-35L concrete pavement and connecting taxiway between the runway and Taxiway H. The project also includes joint rehabilitation on Taxiway K; the repair of cracks, spalls and patches on Taxiway K; and paved shoulder rehabilitation. • Rehabilitate Taxiway C- this project includes the rehabilitation of a section of Taxiway C south of Taxiway F. The project includes pavement repairs and replacement, joint rehabilitation, the repair of cracks, spalls and patches, and paved shoulder rehabilitation. • Rehabilitate Airside Apron 3 – this project includes concrete pavement repairs and replacement, joint rehabilitation, and the repair of cracks, spalls and patches. • Rehabilitate Taxiways G and H – This project includes pavement repairs and replacement, joint rehabilitation, the repair of cracks, spalls and patches, and paved shoulder rehabilitation. • East Security Checkpoint Expansion – this project will reconfigure and improve space allocation at the existing security checkpoint.	2016 to 2020	X	

TABLE 4.4-1
CUMULATIVE PROJECTS (Continued)

Cumulative Projects	Description	Time Frame	On-Airport	Off-Airport
	• Relocate International Trash Processing Facility – this project will relocate the facility that processes trash from international flights to another location on the airport. • Expand Ductbanks at Airsides 2 and 4 – this project will upgrade the ductbanks serving the two airside terminals. • Update Runway Markings and Directional Signs – this project will update the runway numeric markings, related taxiway pavement markings, and airfield directional signs. • Develop Infrastructure to accommodate existing and potential tenant needs at MCO.			
South Terminal Complex	Future development plans at MCO include development of a new 120-gate passenger terminal complex south of existing Terminals A and B. The project, which will be demand driven, would be implemented at such time to accommodate an increased level of commercial flights and passenger levels at MCO. The project site was environmentally reviewed in 1998 in an EA for the South Terminal Complex (the FAA issued a Finding of No Significant Impact and a Record of Decision). A written reevaluation of the EA, in light of the planned APM discussed above, was completed by the FAA in 2013. The South Terminal Complex site contained a large expanse of floodplains and approximately 463 acres of wetlands and 183 acres of aquatic systems (i.e., ditches, ponds, borrow pits). The site was also noted to contain habitat for several listed species. All applicable state and federal permits to commence construction activities were obtained by GOAA and initial site preparation and grading in some portions of the development area has taken place. Design of the South Terminal Complex will begin in 2016. It is anticipated to open in 2019.	2019	X	
Bal Bay Development	The Bal Bay development area was annexed by the City, but has not received DRI approval. The maximum densities and uses for this area are set forth in Subarea Policy S.35.5 of the City's Future Land Use Element of the Growth Management Plan. This provides for a base development capacity of 1,100 residential units, 207,000 sf of office, 1.4 million sf of retail and 300 hotel rooms. The Subarea policy requires the owner to seek a DRI prior to development. As of 2014, the owner has not sought any DRI approvals and the property has not been developed.	TBD		X
Vista Park Planned Development	Vista Park development area was annexed into the City, but has not received a Planned Development approval. The maximum densities and uses for this area are set forth in Subarea Policy S.39.3 of the City's Future Land Use Element of the Growth Management Plan. The Subarea Policy provides for a base development capacity of 2,955 residential units, 55,000 sf of office and 166,000 sf of retail uses. The Subarea Policy requires the owner to seek a Planned Development approval prior to development. As of 2014, the owner has not sought any Planned Development approvals and the property has not been developed.	TBD		X
Innovation Way	The construction of Innovation Way Boulevard is a component of a planned economic corridor connecting the University of Central Florida and the emerging Medical City at the Lake Nona Estates DRI and the planned All Aboard Florida rail connection at MCO.	Ongoing		X

Source: Compiled by ESA, 2014.

SECTION 5
Environmental Consequences and Mitigation

5.1 Introduction

The environmental consequences section of an Environmental Assessment (EA) document provides concise analyses of the potential environmental impacts that the No-Action Alternative, Proposed Action, and its reasonable alternatives, if any, may cause. The alternatives analysis conducted in Section 3 of this EA determined that the Proposed Action and the No-Action Alternative would be carried forward for detailed environmental analysis. Although the No-Action Alternative does not meet the purpose and need criteria established for the proposed project, it was retained for detailed environmental analysis as it provides a baseline for comparative purposes, fulfills FAA's responsibility under the *National Environmental Policy Act* (NEPA), and meets Council on Environmental Quality (CEQ) regulations.

Appendix A in FAA Order 1050.1E lists the environmental impact categories to be evaluated in this EA. The Order outlines the procedures for conducting the environmental impact analyses and provides guidance and thresholds that would indicate whether or not an impact may be significant and require mitigation.

This section evaluates the potential environmental impacts of the Proposed Action which includes the three elements listed below. A detailed description of the Proposed Action and its individual elements is provided in Section 1 of this EA.

- Site selection of the East Airfield as a large contiguous site at Orlando International Airport (MCO) for development of high and medium intensity aviation and aviation support facilities, medium intensity land uses, and related infrastructure. This element of the Proposed Action is for site selection and is programmatic in nature, and future development on the selected site (other than the two projects evaluated in this EA) will require NEPA review at such time that a specific development project is proposed.

- Reduction of existing wildlife hazard attractants on the East Airfield site through removal of wetlands and surface waters and active wildlife hazard management. Necessary associated activities will include construction of temporary access roads, stormwater management facilities and staging areas, clearing vegetation, de-mucking wetlands, filling wetlands, and grading.

- The development of a secondary fuel storage and distribution facility that provides a redundant fuel supply at MCO to improve security from fuel supply disruptions related to

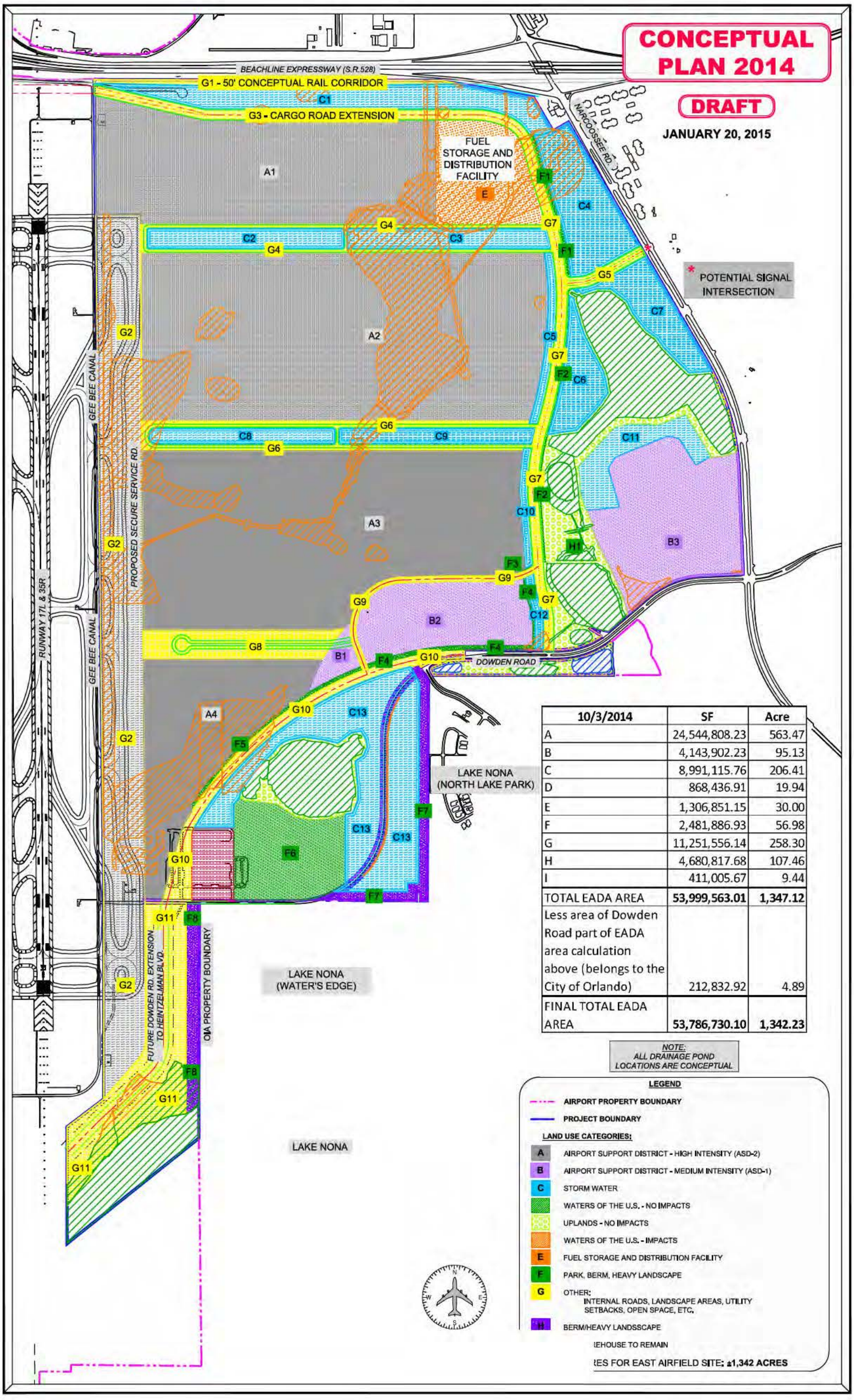
storm events or other disruptions. Necessary associated activities will include construction of temporary access roads, stormwater management facilities and staging areas, clearing vegetation, installation of utilities, and grading.

The Proposed Action does not include: the construction of airfield infrastructure (i.e., taxiways, aircraft parking aprons, airfield lighting) or the construction and operation of aviation and/or non-aviation commercial facilities (i.e., hangars, air cargo buildings, office buildings).

In addition, potential environmental impacts associated with the East Airfield site "Long-Term Development Plan" (2014 East Airfield Conceptual Plan) are evaluated qualitatively in this section. The 2014 Conceptual Plan is described in detail in Section 2.2 of this EA (see **Figure 5.1-1**). The 2014 Conceptual Plan represents an overall approach to the development of the site that provides flexibility, shared infrastructure, access to a major runway, and designates both a land use buffer to the adjacent residents south of the site and provide avoidance and minimization of wetland impacts through identifying wetland areas that will not be directly impacted through development on the site. In addition, the master planned development of the site provides a comprehensive approach to wetland mitigation options off airport property. Proposed land use types are provided in Section 2 (Table 2.2-1) and include Airport Support District High Intensity, Airport Support District Medium Intensity, stormwater, fuel storage, existing warehouse, conceptual rail corridor, future parallel taxiway, future roadways, future landscape areas and natural buffer areas. For this EA, it is assumed that full build-out of the East Airfield site would occur over a 20-year period.

Although unconditional FAA approval for the development of aviation and non-aviation facilities associated with the East Airfield Long-Term Development Plan is not being requested by GOAA at this time, potential long-term impacts that may occur if the Long-Term Development Plan was implemented are qualitatively assessed in this EA. However, this assessment does not provide a basis for determining, at this time, whether or not environmental impacts associated with future development at the East Airfield site may be significant or if mitigation measures would be required. Under typical circumstances, both the nature and timing of the full extent of anticipated environmental consequences would be disclosed in a NEPA document. However, the exact site layout(s), composition (number and size of tenants), and development schedule for the build-out of the East Airfield site is unknown at this time.[1] The qualitative assessment of the Long-Term Development Plan in this EA, based on reasonable assumptions regarding future uses, provides appropriate data upon which to inform decision makers and the public of potential impacts and support a site selection decision. If GOAA's Proposed Action evaluated in this EA is conditionally and/or unconditionally approved by the FAA, and when environmental approval of future individual development projects at the East Airfield site associated with the Long-Term Development Plan are requested by GOAA, the FAA will assess and disclose the potential environmental and cumulative impacts associated with the future development project(s) in subsequent environmental documents and findings in accordance with NEPA.

[1] The action requested for FAA approval at this time – site selection at a programmatic level and conditional approval of the Airport Layout Plan – does not require speculation regarding future uses and development.



10/3/2014	SF	Acre
A	24,544,808.23	563.47
B	4,143,902.23	95.13
C	8,991,115.76	206.41
D	868,436.91	19.94
E	1,306,851.15	30.00
F	2,481,886.93	56.98
G	11,251,556.14	258.30
H	4,680,817.68	107.46
I	411,005.67	9.44
TOTAL EADA AREA	**53,999,563.01**	**1,347.12**
Less area of Dowden Road part of EADA area calculation above (belongs to the City of Orlando)	212,832.92	4.89
FINAL TOTAL EADA AREA	**53,786,730.10**	**1,342.23**

SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 5.1-1

2014 East Airfield Conceptual Plan

5.2 Air Quality

As stated in the Affected Environment section of this EA, an air quality assessment is not required under the *Clean Air Act* (CAA), as amended, but is required for disclosure purposes under the NEPA. There are two potential parts to an air quality assessment: (i) an emissions inventory, and (ii) pollutant concentration dispersion modeling. A description of what constitutes an emissions inventory and pollutant concentration dispersion modeling effort are provided below:

a) *Emissions Inventory* - For the purpose of disclosure and to satisfy the requirements of NEPA, inventories of direct and indirect criteria air pollutants, criteria pollutant precursors, and greenhouse gas (GHG) emissions were performed. For the criteria air pollutants/precursors, these inventories provide an estimate of the tons per year of carbon dioxide (CO), nitrogen oxide (NO_x), sulfur oxide (SO_x), particulate matter (PM_{10} and $PM_{2.5}$), and volatile organic compound (VOC) emissions that would occur with the East Airfield project. For GHGs, the inventories provide an estimate of the metric tons of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The GHG estimates are further provided as CO_2 equivalent (CO_2e) values which combine the different GHGs into a common unit.[2] For GHGs, the CEQ has established an annual level of 25,000 metric tons or more of CO_2e emissions, as the threshold for which a quantitative assessment could be meaningful to decision makers and the public.

b) *Pollutant Concentration Dispersion Modeling* - Dispersion modeling is only performed when, during project scoping, an agency and/or the public express concern regarding the impact of the project on air quality conditions and/or when this type of assessment is specifically requested by either an agency or the public. Because no state or local agencies requested such an assessment, it was not performed.

5.2.1 Near-Term Impact Analysis

5.2.1.1 No-Action Alternative

No development would occur on the East Airfield site with the No-Action Alternative; therefore, there would not be an increase in any criteria air pollutants, criteria pollutant precursors, or GHG.

5.2.1.2 Proposed Action

The Proposed Action would result in construction-related emissions, as well as operational emissions associated with the three fuel tanks.

[2] The expression CO_2e normalizes the warming effects of individual GHG to the warming potential of CO_2. Consistent with current Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report, CH_4 and N_2O are considered 34 and 298 times as potent as CO_2, respectively, although they are emitted in much smaller quantities compared to overall CO_2 emissions.

Construction activities would be temporary and variable depending on project location, duration and level of activity. The emissions would occur predominantly in the engine exhaust of construction equipment and vehicles (e.g., scrapers, dozers, delivery trucks, etc.), but also occur from construction material staging, soil handling, and un-stabilized land and wind erosion (i.e., fugitive dust).

The type of construction equipment typically utilized in airport projects is comprised of both on-road (i.e., road-licensed) and non-road equipment (i.e., off-road). The former category of vehicles are used for the transport and delivery of supplies, material and equipment to and from the site, and also includes construction worker vehicles. The latter category of equipment is vehicles that are operated on-site for activities such as soil/material handling, site clearing and grubbing.

The Airport Construction Emissions Inventory Tool (ACEIT), a tool prepared by the Transportation Research Board's (TRB) Airport Cooperative Research Program (ACRP) Report 102)[3] was used to estimate emissions from the Proposed Action. This tool was specifically developed to estimate airport construction-related emissions. The ACEIT uses default emission factors derived from EPA-approved emissions models for both non-road construction equipment (i.e., NONROAD) and on-road vehicles (i.e., MOVES). NONROAD provides emission factors for off-road equipment/vehicles (e.g., dozers, tractors, loaders, etc.). In contrast, MOVES is used to develop emission factors for on-road vehicles (e.g., passenger cars, delivery trucks, etc.). Both exhaust and fugitive (e.g., evaporative) emission factors were developed using these models for both non-road construction equipment and on-road vehicles and are incorporated into ACEIT. The following project assumptions were used in the ACEIT to prepare the emission inventories.

1. *Clearing, grading, and filling of the site*

   Clearing, grading and fill activities would begin Spring 2016 and be completed by the end of 2020. This project element is estimated to involve approximately 1,100 acres of land.

2. *Fuel Storage and Distribution Facility (First Phase)*

   Construction of the first phase of the fuel storage and distribution facility (three tanks) would begin in the year 2018 and be completed by 2020. A connection to the airport's existing hydrant system is also proposed for the fuel facility. The total area of airport property that would be used for the farm is 30 acres.

The estimated construction-related emissions associated with the Proposed Action are presented in **Table 5.2-1**. As shown, the greatest level of annual emissions of NO_x, PM_{10}, and $PM_{2.5}$ would occur in the year 2016; the greatest annual levels of CO, SO_x, and VOC would occur in the year 2018. The greatest level of CO_2e, (1,957 metric tons) would also occur in the year 2018.

[3] TRB, ACRP Report 102, *Guidance for Estimating Airport Construction Emissions*, 2014, http://onlinepubs.trb.org/onlinepubs/acrp/acrp_rpt_102.pdf.

TABLE 5.2-1
PROPOSED PROJECT RELATED CONSTRUCTION EMISSIONS

Year	Emission Source	Criteria Air Pollutant/Pollutant Precursor (tons)[1]						GHG (metric tons)[1]			
		CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$	VOC	CO_2	CH_4	N_2O	CO_2e
2016	Non-Road	4.05	4.22	0.015	0.41	0.38	0.88	1180	--	--	1,180
	On-Road	0.6	0.23	0.001	0.01	0.01	0.03	107	0.03	0.003	110
	Fugitive	0.00	0.00	0.00	0.09	0.09	0.00	--	--	--	--
	Total	**4.65**	**4.45**	**0.016**	**0.51**	**0.48**	**0.91**	**1,287**	**0.03**	**0.003**	**1,290**
2017	Non-Road	2.34	2.16	0.007	0.21	0.19	0.56	787	--	--	787
	On-Road	0.39	0.13	0.001	0.01	0.01	0.02	70	0.01	0.002	71
	Fugitive	0.00	0.00	0.000	0.06	0.06	0.00	--	--	--	--
	Total	**2.73**	**2.29**	**0.008**	**0.28**	**0.26**	**0.58**	**857**	**0.01**	**0.002**	**858**
2018	Non-Road	2.48	2.84	0.009	0.21	0.20	0.76	1,456	--	--	1,456
	On-Road	5.91	0.24	0.008	0.01	0.01	0.27	496	0.08	0.01	501
	Fugitive	0.03	0.00	0.000	0.17	0.17	0.52	--	--	--	--
	Total	**8.42**	**3.08**	**0.017**	**0.40**	**0.38**	**1.55**	**1,952**	**0.08**	**0.01**	**1,957**
2019	Non-Road	0.37	1.04	0.004	0.05	0.04	0.21	673	--	--	673
	On-Road	5.89	0.33	0.008	0.01	0.01	0.29	483	0.09	0.01	488
	Fugitive	0.03	0.00	0.000	0.12	0.12	0.52	--	--	--	--
	Total	**6.29**	**1.38**	**0.012**	**0.17**	**0.17**	**1.02**	**1,156**	**0.09**	**0.01**	**1,161**
2020	Non-Road	0.33	0.90	0.004	0.04	0.04	0.21	673	--	--	673
	On-Road	5.79	0.31	0.008	0.01	0.01	0.28	476	0.09	0.01	481
	Fugitive	0.03	0.00	0.000	0.12	0.12	0.52	--	--	--	--
	Total	**6.16**	**1.21**	**0.012**	**0.17**	**0.16**	**1.01**	**1,149**	**0.24**	**0.01**	**1,154**

1 Values may reflect rounding.
SOURCE: Emissions estimated using the Airport Construction Emissions Inventory Tool (ACEIT).

Fuel storage activities represent sources of evaporative hydrocarbon emissions, which occur from "breathing losses" (or "standing losses") and "working losses" (or "withdrawal losses"). Breathing losses are the result of the natural expansion and contraction of the fuel caused by changes in ambient temperature and the resultant evaporative emissions escaping from the fuel storage tanks. Working losses are the combined losses from filling and emptying the storage tanks.[4]

Evaporative emissions (VOCs) from the three proposed fuel storage tanks at MCO were estimated using FAA's Emissions and Dispersion Modeling System. For this assessment it was assumed that the tanks are internal floating roof tanks containing Jet-A fuel with each a shell height of 40 feet and shell diameter of 100 feet. The estimated VOC emissions amounted to 0.022 tons per year per tank.

[4] EPA, AP-42, *Chapter 7- Liquid Storage Tanks*, http://www.epa.gov/ttnchie1/ap42/.

5.2.1.3 Long-Term Development Plan

Construction-Related Emissions

Construction activities associated with the Long-Term Development Plan that may impact air quality include grading and site preparation and the construction of taxiways, aircraft parking aprons, hangar, buildings, access roads, and parking lots. These activities would generate construction emissions from heavy equipment, motor vehicles, paving, and fugitive dust operations. Depending on the type of project (i.e., paving versus building erection), construction activities would generate varying levels of air emission that include CO, NO_x, SO_2, PM_{10}, $PM_{2.5}$, and VOCs. It is anticipated that long-term construction activities would be conducted periodically over a 20-year time frame and that the resulting construction-related air emissions would not be concentrated in time.

Operational Emissions

The Long-Term Development Plan would increase the number of aircraft operations and aviation activity at MCO. The number of annual aircraft operations and type of aircraft activity induced by the Long-Term Development Plan would depend greatly upon the nature of the aviation-related businesses that establish themselves at the East Airfield site. Based on the types of potential tenants, the probable increase in aircraft operations would be a relatively modest percentage of the overall number of existing air carrier, air cargo, and general aviation aircraft operations generated at MCO over the same time frame. The induced aircraft operations and aviation activity associated with the Long-Term Development Plan, including the continued expansion and operation of the East Airfield's secondary fuel storage and distribution facility, would generate air emission that include CO, NO_x, SO_2, PM_{10}, $PM_{2.5}$, and VOCs.

Because the types of facilities and processes that future tenants may develop at MCO are unknown at this time, the types of air quality emissions and the associated permits which may be required are also unknown. Operational air permits will be obtained by the tenants for proposed facilities and processes at MCO, as appropriate.

5.2.2 Comparison to Significant Impact Thresholds

Potentially significant air quality impacts associated with a Sponsor's proposed airport development project and the associated Federal action would be demonstrated by the project or action exceeding one or more of the National Ambient Air Quality Standards for any of the time periods analyzed. The East Airfield site is located within an attainment area and the area is not subject to a State Implementation Plan. The Proposed Action would have only a minor effect on air quality, most of which would be temporary and occur during construction. As previously stated, for GHGs, the CEQ established an annual level of 25,000 metric tons or more of CO_2e emissions as the threshold for which a quantitative assessment could be meaningful to decisions makers and the public. As shown in Table 5.2-1, the level of CO_2e emissions associated with the Proposed Action is far below this threshold. Therefore, the Proposed Action would not result in significant air quality impacts.

5.2.3 Mitigation

As previously stated, when a project is located within an attainment area, project-related emissions of the criteria air pollutants/pollutant precursors are reported for disclosure purposes under NEPA. Emission levels of GHGs are also reported for disclosure purposes only. Therefore, there is no requirement to mitigate the emissions associated with the Near-Term East Airfield project. While this is the case, emissions from construction activities and fugitive dust could be reduced by employing the following measures:

- Curtailing construction activities during periods of high wind conditions
- Reducing exposed erodible surface area through appropriate materials and equipment staging procedures
- Stabilize soils and establish ground cover as soon as possible after grading and construction activities
- Reducing equipment idling times and vehicle speeds on-site
- Ensuring contractor knowledge of appropriate fugitive dust and equipment exhaust controls
- Stabilize soils, stock-piles of raw materials, and other disturbed areas with water or ground covers
- Require contractor employee training for fugitive-dust prevention/reduction measures and equipment exhaust controls
- Utilize vapor-recovery systems for fuel-storage facilities
- Use of low- or zero-emissions equipment
- Use of covered haul trucks during materials transportation

5.3 Coastal Resources

Two regulatory requirements were reviewed to consider potential impacts to coastal resources. First, the Florida Coastal Management Program (FCMP) coordinates Federal, state, and local programs for the management of Florida's coastal resources. Under provisions of the *Coastal Zone Management Act of 1972* (CZMA), any Federal activity that has the potential to impact Florida's coastal resources must be consistent with the goals and policies of the FCMP. In addition, the *Coastal Barrier Resource Act* (CBRA) designates certain undeveloped coastal areas for inclusion into the Coastal Barrier Resource System (CBRS), which precludes Federal subsidies for development in sensitive coastal areas. MCO is located in an area subject to FCMP.

The Florida Department of Environmental Protection (DEP), Office of Intergovernmental Programs, Florida State Clearinghouse (FSC) coordinates a review of Federal actions under the following authorities: *Presidential Executive Order 12372*; Section 403.061 (42), Florida Statutes; CZMA, 16 U.S.C. Sections 1451-1464, as amended; and, *National Environmental*

Policy Act, 42 U.S.C. Sections 4321-4347, as amended.[5] The No-Action and Proposed Action's consistency with the Enforceable Policies[6] of the FCMP are discussed below.

5.3.1 Near-Term Impact Analysis

5.3.1.1 No-Action Alternative

No development would occur on the East Airfield site with the No-Action Alternative; therefore, the DEP FSC would not coordinate any consistency reviews per requirements of the FCMP. There would be no impact on coastal resources.

5.3.1.2 Proposed Action

GOAA conducted a review of applicable Florida Statutes to determine the Proposed Action's consistency with the FCMP. **Table 5.3-1** provides the results of this review. GOAA also submitted the Draft EA to the FSC for state clearinghouse review during the Draft EA's agency and public comment period. Based on the information contained in the Draft EA and prior issuance of an ERP by the SFWMD, the FSC determined that the "proposed project is consistent with the Florida Coastal Management Program (FCMP). The state's continued concurrence will be based on the activity's compliance with FCMP authorities, including federal and state monitoring of the activity to ensure its continued conformance, and the adequate resolution of any issues identified during subsequent reviews. The state's final concurrence of the project's consistency with the FCMP was determined during the environmental permitting process, in accordance with Section 373.428, *Florida Statutes*.[7] A copy of the FCS correspondence is provided in Appendix Z.

MCO is not located in the vicinity of any CBRS resources. No impacts to barrier island resources would occur.

5.3.1.3 Long-Term Development Plan

The Long-Term Development Plan would not directly affect coastal resources or designated coastal barrier resources. In addition, most if not all of the wetland and floodplain impacts would have occurred previously under the Proposed Action. Potential water resource impacts that may result from future construction and operation of facilities on the sites would be minimized through commonly-accepted methods and practices and are not expected to exceed applicable state water quality standards. Based on review of the Florida statutes summarized in Table 5.3.1, and for many of the same reasons cited for the Proposed Action, the build-out of aviation and non-aviation facilities under the Long-Term Development Plan would likely have minimal impact on coastal

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5 http://www.dep.state fl.us/cmp/default htm

6 The FCMP federal consistency process consists of a network of 24 Florida Statutes (Enforceable Policies) administered by DEP and a group of partner state agencies responsible for implementing the statutes. Thirteen of the 24 statutes apply to the Proposed Action conceptual plan.

7 The FSC previously coordinated a review of the South Florida Water Management District (SFWMD) conceptual Environmental Resource Permit (ERP 48-00063-S-03), issued August 30, 2010, for impacts to state protected resources associated with the Proposed Action. The SFWMD conceptual ERP permit notes that "…issuance of this permit constitutes a finding of consistency with the Florida Coastal Management Program."

resources. Individual development projects would require compliance with Federal and state environmental programs and regulations.

TABLE 5.3-1
FCMP STATE STATUTE CONSISTENCY

Statute	Consistency
Chapter 161 *Beach and Shore Preservation* authorizes the Bureau of Beaches and Coastal Systems within Florida Department of Environmental Protection (DEP) to regulate construction on or seaward of the States' beaches.	Construction of the Proposed Action would not occur on or seaward of any state beach.
Chapter 163, Part II *Growth Policy: County and Municipal Planning; Land Development Regulation* requires the local governments to prepare, adopt and implement comprehensive plans that encourage the most appropriate use of land and natural resources in a manner consistent with the public interest.	The Proposed Action would be implemented in accordance with local governments' 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 water use, land development, and transportation.	The Proposed Action will be developed in accordance with any special statewide plans governing water use, land development, and transportation.
Chapter 252 *Emergency Management* provides for planning and implementation of the State's response to, efforts to recover from, and the control of natural and manmade disasters.	The Proposed Action does not increase the State's vulnerability to natural disasters. Emergency response and evacuation procedures would not be impacted.
Chapter 258 *State Parks and Preserves* addresses administration and management of state parks and preserves (Chapter 258). Chapter 259 *Land Acquisition for Conservation or Recreation* authorizes acquisition of environmentally endangered lands and outdoor recreation lands (Chapter 259). Chapter 260 *Recreational Trails System* Authorizes acquisition of land to create a recreational trails system and to facilitate management of the system (Chapter 260). Chapter 375 *Multipurpose, Outdoor Recreation, Land Acquisition, Management, and Conservation* Develops a comprehensive multipurpose 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 (Chapter 375).	No direct impacts would occur to state parks, recreational areas, and aquatic preserves due to implementation of the Proposed Action. State tourism and outdoor recreation areas owned and operated by the State would not be affected. Opportunities for recreation on state lands would not be affected.
Chapter 267 *Historical Resources* Addresses management and preservation of the State's archaeological and historical resources.	The Proposed Action will not affect any historic properties that are eligible or potentially eligible for listing on the National Register of Historic Places (NRHP) as historic districts or individual structures. The Proposed Action will not adversely affect any archaeological resources that are elig ble or potentially elig ble for listing on the NRHP.
Chapter 334 and 339 Transportation Administration and Transportation Finance and Planning	No anticipated adverse effects associated with the Proposed Action.
Chapter 373 Water Resources, Chapter 376 Pollution Discharge Prevention and Removal	The Proposed Action will be developed in accordance with any special statewide plans governing water use, land development, and transportation.

SOURCE: FAA, Orlando ADO 2012, ESA, 2012

5.3.2 Comparison to Significant Impact Thresholds

The FAA has not established a threshold that would indicate a significant impact to coastal resources. However, the CBRA prohibits Federal support for development on undeveloped coastal barrier resources within the Coastal Barrier Resource System and the CZMA promotes consistency of Federal actions with the FCMP. Based on the analysis conducted for this EA, the

Proposed Action would not result in direct or indirect impacts to coastal resources. In addition, SFWMD has issued a conceptual ERP for the Proposed Action, which provides the following statement, "The issuance of this permit constitutes a finding of consistency with the Florida Coastal Management Program."

5.3.3 Mitigation

Mitigation for impacts to state-protected resources is discussed in Section 5.16 Water Quality and Section 5.17 Wetlands.

5.4 Compatible Land Use

The compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of the airport's noise impacts. FAA regulations[8] are used to define and categorize compatible land uses in a project's study area. Residential areas are considered non-compatible with aircraft noise exposure levels at or greater than Day Night Sound Level (DNL) 65 dBA.[9]

The compatible land use section of an EA also considers other potential impacts (besides noise) that might exceed thresholds of significance and have land use ramifications, such as disruption of communities, relocation of residences or businesses or impacts to natural resource areas; and, considers whether a proposed action is consistent with local planning.

5.4.1 Near-Term Impact Analysis

FAA Order 1050.1E describes the significance threshold for compatible land use to be when "a significant noise impact will occur over noise sensitive areas within the DNL 65 dB contour…"[10] A "significant noise impact" is defined as an increase of DNL 1.5 dB in noise-sensitive areas exposed to DNL of 65 dBA or greater . FAA Order 1050.1E identifies that airport development actions can alter aviation-related noise impacts and affect land uses subject to those impacts. In this context, if the noise analysis concludes that there is no significant impact, a similar conclusion may be drawn with respect to compatible land use.

5.4.1.1 No-Action Alternative

No development would occur on the East Airfield site with the No-Action Alternative; therefore, no additional aircraft operations, aviation related noise, or temporary construction noise impacts are anticipated.

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8 Title 14 Code of Federal Regulations (CFR) Part 150, *Airport Noise Compatibility Planning*; FAA Advisory Circular (AC) 150/5020-1 Appendix 1 (1983).

9 Day Night Sound Level (DNL) - is the standard Federal metric for determining cumulative exposure of individuals to noise. DNL is the 24-hour average sound level in decibels (dB). This average is derived from all aircraft operations during a 24-hour period that represents an airport's average annual operational day.

10 FAA Order 1050.1E, Appendix A, Section 4.3

5.4.1.2 Proposed Action

The Proposed Action does not result in additional aircraft operations or increased aviation related noise. Temporary construction noise impacts are discussed in Section 5.5. No additional analysis for noise impacts is required. **Appendix R** provides a land use certification letter from GOAA.

5.4.1.3 Long-Term Development Plan

The Long-Term Development Plan is anticipated to include construction of taxiways, aircraft parking aprons, hangars, buildings and access roads and parking lots. These uses are consistent with the City of Orlando's future land use plans for the site. The number of annual aircraft operations and the type of activity induced by the Long-Term Development Plan will result in a modest increase in aviation related noise. This increase would depend greatly on the nature of the aviation-related businesses that establish themselves at the East Airfield site. Because noise impacts associated with the Long-Term Development Plan (increase of DNL 1.5 dB within the DNL 65 contour) are not expected to be substantial, the potential for compatible land use impacts is low.

5.4.2 Comparison to Significant Impact Thresholds

There would be no change in aircraft operations resulting in aviation related noise for either the No-Action Alternative or the Proposed Action. Therefore, neither alternative would result in a significant impact to noise sensitive areas.

5.4.3 Mitigation

Since no impacts will occur in this category, no mitigation is required.

5.5 Construction

This EA includes a general description of the type and nature of the construction associated with the Proposed Action and measures taken to minimize potential adverse effects. Construction impacts are generally short-term and can include construction noise, dust and noise from heavy equipment traffic, disposal of construction debris, and short term impacts to air and water quality. FAA ensures that, at a minimum, an Airport Sponsor will incorporate the construction guidance and impact minimization measures prescribed in FAA Advisory Circular (AC) 150/5370-10G, *Standards for Specifying Construction at Airports*. An Airport Sponsor must also comply with 40 Code of Federal Regulation (CFR) Part 122, *EPA Administered Permit Programs: The National Pollution Discharge Elimination System* (NPDES) for construction activities.

5.5.1 Near-Term Impact Analysis

As stated in FAA Order 1050.1E, "Construction impacts alone are rarely considered significant pursuant to NEPA. Refer to the water quality, hazardous materials, and biotic resources, and other

relevant impact categories for further guidance in assessing the significance of the potential construction impacts."[11]

5.5.1.1 No-Action Alternative

The No-Action Alternative would not include construction activities on the East Airfield site. Construction not related to the Proposed Action would occur at other areas on MCO in accordance with applicable regulations.

5.5.1.2 Proposed Action

The Proposed Action will include construction activities within the East Airfield site. These activities include clearing, de-mucking and back-filling, grading, and construction of internal roads, a fuel storage and distribution facility, and site infrastructure. The Proposed Action has the potential to impact (disturb) up to 1,103 acres of land.

Air Quality - Construction activities could temporarily degrade local air quality due to dust, equipment exhausts, and burning debris, but these impacts would be minor and temporary in nature. GOAA would incorporate BMPs to minimize any temporary air impacts associated with construction activities which may include dust control and reducing idle time and using cleaner fuels for construction equipment.

Water Quality - Short-term and temporary water quality impacts may result from site grading and construction activities, including temporary increases in sedimentation and turbidity in adjacent drainage ways and outfalls. 40 CFR Part 122.26 requires an NPDES permit for stormwater discharges due to construction activities. GOAA will obtain required NPDES permits prior to construction activities. Implementation of applicable NPDES Best Management Practices (BMPs) and FAA guidance will decrease potential water quality impacts related to construction. The use of BMPs common to the region, the implementation of measures specified in FAA AC 150/5370-10G, and the implementation of project-specific design criteria to minimize erosion and sedimentation would be expected to preclude construction-related water quality impacts and any significant potential for the Proposed Action to exceed water quality standards. These measures may include, but not necessarily be limited to, construction of temporary retention ponds and sediment basins; installation of silt fencing and berms; soil stabilization through mulching and seeding; construction phasing; and implementation of pollution prevention plans for construction activities. The surface water management system necessary to capture and treat all stormwater runoff from the East Airfield site will be constructed prior to activities in the wetlands. The system will be designed to either prevent off site discharge to waters of the state or if necessary be designed in accordance with the engineering criteria of the state regulatory agency to ensure that discharges from the site do not cause violations of surface water quality criteria. See Section 5.16.1.2 for a more detailed discussion of water quality issues that may be affected during construction.

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[11] FAA 1050.1E, Appendix A, Section 5.4, Significant Impact Threshold.

Noise - An increase in ambient noise levels could occur during construction activities, primarily during site grading operations. The *Construction Noise Handbook* published by the Federal Highway Administration (FHWA)[12] lists various types of construction equipment and the noise levels they generate at 50 feet from the vehicles (see **Appendix S**). Typically, noisier construction equipment generates noise at 80-85 dBA at a 50 foot distance. Equipment in this noise range could include backhoes, concrete mixer trucks, dozers, dump truck graders, pavers and scrapers. Measures that are available to minimize construction noise impacts include: 1) ensuring that construction equipment and trucks are maintained properly and have functional mufflers and 2) use of designated haul routes to avoid residential areas.

Residential areas are located south and east of the East Airfield site. Single family residential areas are located approximately 350 feet south of the East Airfield site, along Dewflower Lane (south of Dowden Road). Multifamily residential areas are located approximately 200 feet east of the site (east side of Narcoossee Road). Street construction noise might be heard near Dowden Road, but construction noise from the remaining site areas would be below ambient community background noise levels.[13] Additional noise reduction could also result from atmospheric absorption, as well as where dense vegetation and buildings are located between the source of the noise (equipment) and the receiver (residential areas). As applicable, construction activities will comply with City of Orlando Noise Ordinance, Title II, Chapter 42 of the *Orlando City Code* (see Appendix S).

Solid Waste – Land clearing activities would generate large amounts of tree and vegetation waste. These materials would be recycled on-site (for mulch) or taken to nearby recycling centers. Construction wastes associated with the secondary fuel storage and distribution facility would be minimal and comprised of debris and waste materials associated with concrete forming and installation of tanks, piping, and control systems.

Traffic - Haul routes for vehicles and trucks would primarily be on established multi-lane highways and commercial thoroughfares in the vicinity of the airport. Haul routes would avoid streets in residential neighborhoods and adjacent to noise-sensitive land uses.

5.5.1.3 Long-Term Development Plan

The Long-Term Development Plan is anticipated to include grading, site preparation, and the construction of taxiways, aircraft parking aprons, hangar, buildings, access roads, and parking lots. It is assumed that construction activities would take place periodically over a 20-year period. Specific construction activities will be determined by GOAA, respective developers, and/or prospective tenants.

Construction activities associated with the Long-Term Development Plan would result in temporary, unavoidable impacts related to air quality, noise levels, water quality, solid waste, and

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[12] *Construction Noise Handbook*. Federal Highway Administration. August 2006. Table 7.3, Example of Possible Construction Equipment Noise Emission Criteria Limits.

[13] According to EPA, ambient noise levels for suburban areas are in the range of 55-60 dBA.

traffic. The following is a discussion of the temporary construction-related impacts that would occur with the implementation of the Long-Term Development Plan.

Noise - Temporary increases in noise associated with earthwork, grading and paving, and building construction would affect only the immediate project area on MCO property. Because distance rapidly attenuates noise levels, construction noise impacts may be noticeable, but would not be substantial. Examples of common measures to minimize construction noise impacts include: 1) ensuring that construction equipment and trucks are maintained properly and have functional mufflers and 2) trucks use designated haul routes that avoid residential areas.

Air Quality - During construction, temporary air emissions are possible from a variety of sources such as material stockpiles, exhaust from construction equipment and delivery trucks, and taxiway, apron, and road paving. Common measures are available and can be implemented during construction to control fugitive dust and minimize emissions from construction equipment (see Section 5.2.3). Therefore, substantial construction-related air quality impacts would not occur if the Long-Term Development Plan was implemented.

Water Quality - Temporary water quality impacts during construction may include increases in sedimentation and turbidity in stormwater-receiving bodies during rainfall events. Direct impacts to surface water resources would be minimal because most direct impacts would have occurred under the Proposed Action. As with the Proposed Action, project-specific BMPs; implementation of erosion-control measures specified in FAA AC 150/5370-10G; and the implementation of project-specific design criteria to minimize erosion and sedimentation would prevent and/or minimize potential water quality impacts. Based on anticipated tenants and site needs, most development projects at the East Airfield site will require an NPDES Permit for construction activities. Construction-related water quality impacts are also discussed in detail in Section 4.16, Water Quality, of this EA. Substantial and permanent water quality impacts resulting from construction activities associated with the Long-Term Development Plan would not occur.

Solid Waste - Construction wastes associated with the Long-Term Development Plan are expected to be comprised of debris and waste materials normally generated by site preparation, building construction, and paving projects. In addition, construction contractors and workers will generate relatively small amounts what can be characterized as traditional municipal solid waste during construction. The waste stream volume is expected to be relatively low during construction and much of the waste can be recycled under the City of Orlando's recycling program. Construction waste not diverted, recycled, or re-used would be transported to and disposed of in local permitted construction/demolition facilities. Solid waste impacts are further considered in Section 4.9 of this EA. No substantial construction-related solid waste impacts would occur.

Traffic - Haul routes for vehicles and trucks would be primarily on established multi-lane highways and commercial thoroughfares in the vicinity of the airport. Use of streets in residential neighborhoods and adjacent to noise-sensitive land uses is not anticipated. No major road work or

lane closures are anticipated to be required. No substantial or long-term traffic impacts would occur from the construction activities associated with the Long-Term Development Project.

5.5.2 Comparison to Significant Impact Thresholds

Although, no specific significance thresholds have been established by the FAA for this impact category, GOAA would ensure that all on-site construction activities will be conducted in accordance with FAA AC 150/5370-10G, *Standards for Specifying Construction of Airports*, local noise ordinances, and by using BMPs. Therefore, the Proposed Action would not result in direct and indirect construction-related impacts.

5.5.3 Mitigation

Since no impacts will occur in this category, no mitigation is required.

5.6 Department of Transportation Act: Section 4(f)

The No-Action Alternative and the Proposed Action were reviewed for potential impacts to Section 4(f) resources in the vicinity of MCO.

5.6.1 Near-Term Impact Analysis

Section 4.3.5 provides the survey results of the number and location of Section 4(f) resources within one mile of the East Airfield site and within the 2008 DNL 65 DB noise contour. This section includes a review of the identified Section 4(f) resources to determine if the Proposed Action or No-Action Alternative would require use of a resource.[14]

5.6.1.1 No-Action Alternative

The No-Action Alternative would not result in the physical or constructive use of any Section 4(f) resource. No development would occur on the East Airfield site under the No-Action Alternative. As shown in Figure 4.3-6 none of the surveyed Section 4(f) resources are located within the No-Action Alternative 2008 DNL 65 noise contour.

5.6.1.2 Proposed Action

The Proposed Action would not result in the physical use or constructive use of any Section 4(f) resource. No physical use would occur because all development would take place on the East Airfield site. Because no substantial direct or indirect (e.g., air emissions and aircraft noise)

[14] Use of Section 4(f) land occurs when: 1) land is acquired from a Section 4(f) resource for a transportation project, 2) there is a temporary occupancy of Section 4(f) land that is adverse, or 3) the project's proximity impacts are so severe that the Section 4(f) property is substantially impaired (referred to as "constructive use").

impacts are anticipated with the implementation of the Proposed Action, there would be no constructive use of any Section 4(f) resources.

5.6.1.3 Long-Term Development Plan

As discussed above, there are no Section 4(f) resources located on, or in the immediate vicinity of, the East Airfield site. Similar to the Proposed Action, the construction of aviation and non-aviation facilities under the Long-Term Development Plan would not directly impact any Section 4(f) resources. Because indirect impacts associated with the Long-Term Development Plan (i.e., air emissions and aircraft) would not be substantial, the potential for constructive use impacts (where proximity impacts would substantially impair a resource) is low.

5.6.2 Comparison to Significant Impact Thresholds

As described above, the No-Action Alternative and the Proposed Action would not meet or exceed significance thresholds for Section 4(f) resources (see **Table 5.6.1**).

TABLE 5.6-1
SUMMARY OF SECTION 4(F) IMPACTS – SIGNIFICANCE THRESHOLDS

Alternative	Significance Threshold [1]	Does the alternative meet or exceed the Significance Threshold?
No-Action	Results in more than a "minimal physical use" or a "constructive use" of Section 4(f) properties	**No**
Proposed Action	Results in more than a " minimal physical use" or a "constructive use" of Section 4(f) properties	**No**

[1] Significance Thresholds are established in FAA Order 1050.1E Appendix A and FAA Order 5050.4B Table 7-1.

SOURCE: ESA Airports, 2015

5.6.3 Mitigation

Since no impacts will occur in this category, no mitigation is required.

5.7 Fish, Wildlife, and Plants

FAA coordinates with the U.S. Fish and Wildlife (USFWS) and/or the National Marine Fisheries Service (NMFS), as appropriate, pursuant to the *Endangered Species Act* (ESA) for Federally listed endangered, threatened, and candidate species or designated critical habitat. Pursuant to the *Fish and Wildlife Coordination Act*, the FAA also coordinates with Federal, state, local agencies and Tribes where there is a potential impact to water resources, fish, wildlife, and plant resources.

5.7.1 Near-Term Impact Analysis

This section examines the No-Action and Proposed Action's potential to directly or indirectly impact plant communities and Federal, state-listed, or candidate species of flora and fauna. As

noted in Section 4.3.6, the East Airfield site does not include any critical habitat protected under the ESA or Essential Fish Habitat (EFH) protected under the *Magnuson-Stevens Act*. Potential impacts to bird species protected under the Migratory Bird Treaty Act (MBTA) are identified in this section.

5.7.1.1 No-Action Alternative

The No-Action Alternative would not change existing site conditions or habitats. Therefore, there would be no impacts to fish, wildlife, or plants.

5.7.1.2 Proposed Action

Habitat

The Proposed Action includes clearing, excavation, de-mucking, back filling, and stabilizing approximately 171 acres of wetlands on the East Airfield site. The elimination of the wetland habitat would reduce available habitat at MCO and some species of wildlife may be displaced, as is the case when any development occurs in native habitats.

Section 4.3.6.1 provides information regarding the existing habitats within the East Airfield site. None of the habitat types are considered unique in the regional setting, and none comprise a substantial percentage of the habitat types available regionally. The largest percentage of habitat type on the East Airfield site is improved pasture, which was historically used for agricultural purposes and secondarily provides habitat for wildlife. **Table 5.7-1** provides a comparison of on-site habitat types with similar habitat types occurring in the region (within 20 miles of MCO). Based on an assessment of on-site habitats and field observations of wildlife utilization of the East Airfield site, the Proposed Action's impact to the upland and wetland habitats within the site is not anticipated to affect the area's ecological stability or species that are not commonly found in the surrounding area. Pasturelands, wetland systems (including numerous cypress systems), and surface water bodies similar to those on the East Airfield site are all found in proximity to the site.

TABLE 5.7-1
ON-SITE HABITAT AND REGIONAL HABITAT COVERAGE COMPARISON

		East Airfield Site		20 Mile Region		Percentage of East Airfield Land Area to 20 Mile Region
FLUCFCS Code	**Description[1]**	**Acreage**	**Percent Land Area**	**Acreage**	**Percent Land Area**	**Percent Land Area**
211	Improved Pastures	665.45	49.6%	93,357.97	10.5%	0.7%
320	Shrub and Brushland	99.64	7.4%	17,284.01	1.9%	0.6%
411	Pine Flatwoods	132.91	9.9%	38,487.18	4.3%	0.3%
621	Cypress	118.3	8.8%	39,970.62	4.5%	0.34%
	Total	1,016.3.	75.7%	189.099.78	21.2%	0.1%

[1] Only major land use types are represented in this table
SOURCE: Breedlove Dennis & Associates, 2015

Federal and State Listed Plants

Table 4.3-3 provides a list of the eleven Federal and state listed plant species with the potential to occur on the East Airfield site. Of these species, no direct observations were made during on-site inspections and various other field surveys including listed wildlife species surveys and Florida Land Use, Cover and Forms Classification System (FLUCFCS) mapping (29 field days between 2004-2007, 21 field days between 2003 and 2007, one field day in 2010, and one field day in 2014). Each of the 11 listed plant species were deemed unlikely to occur within the East Airfield site (see Table 5.3-5). No significant impacts to listed plants are anticipated.

Federal and State Listed Wildlife

Table 4.3-5 provides a list of 23 state-listed wildlife species and eight Federally-listed species that could potentially occur on or use the East Airfield site. Of these 23 species, two Federally-listed species and ten state listed species have the potential to be impacted by the Proposed Action. Two of these species, the wood stork and American alligator, are listed by both the state and Federal agencies. Species that are both state and Federally-listed are addressed only in the Federally-listed wildlife section. A discussion of potential impacts and the mitigation measures associated with each species is provided.

Federally Listed Wildlife

Section 4.3.6.3 provides a description of the two Federally-listed species that have been observed on site. These include the wood stork and the American alligator.

Wood Stork – The USFWS[15] uses a regulatory tool known as the Core Foraging Area (CFA) to determine the potential effects of project activities on wood stork colonies that have been active. The CFA for wood stork colonies is an area with a radius of 15 miles in north Florida, and 18.6 miles in south Florida. The Proposed Action area falls within these CFAs. As such, the U.S. Army Corps of Engineers (USACE) requested consultation with the USFWS under Section 7 of the ESA with respect to wood storks. The USACE determined as part of the initial permit review, that development of the site may affect wood storks. The USACE submitted a request to the USFWS on February 6, 2007, to initiate formal consultation pursuant to Section 7 of the ESA, as amended (16 U.S. Code 1531 *et seq*.). The USFWS subsequently requested additional information necessary to initiate consultation that included: 1) a biological assessment (BA) of potential impacts on wood stork foraging areas, and 2) proposed compensation measures for any impacts to wood stork foraging areas. In support of that request, a BA was prepared by GOAA and submitted to the USACE on May 18, 2009.[16] A copy of the BA prepared for the wood stork is provided in **Appendix T**. In the BA, it was concluded that the development of the East Airfield site "may affect, but is not likely to adversely affect" wood storks. The details of that assessment and basis for the conclusion are contained in the BA. On January 6, 2010 the USACE revised its determination regarding the wood stork from "may affect" to "may affect, not likely to adversely affect". On

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15 U.S. Fish and Wildlife Service. 2007. *Florida Wood Stork Colonies Core Foraging Areas.* North Florida Ecological Services Office, Jacksonville, Florida. 1pp. pdf.

16 *Biological Assessment for the Wood Stork, Greater Orlando Aviation Authority, East Airfield Project Site, Orange County, FL*. Breedlove Dennis & Associates, Inc. May 18, 2009.

that same day the USFWS responded to the USACE concurring with the USACE determination of "may affect, not likely to adversely affect." A copy of the USFWS's concurrence letter for this species is provided in Appendix N.

The East Airfield site is located within two CFA that are established by the USFWS. The Proposed Action will result in the loss of 48.35 acres of potentially suitable core foraging habitat for wood storks.

American Alligator - This species is threatened only by similarity of appearance to the American crocodile; as such not all of the protections under the ESA apply. Prohibitions against take apply, however consultation under Section 7 of the ESA would not apply. Should it become necessary to relocate alligators to avoid a direct take, GOAA would conduct relocation in cooperation with the Florida Fish and Wildlife Conservation Commission (FWC) and in accordance with the FWC policies, rules, and procedures relative to alligators.

In addition to the two listed species that have been observed on the East Airfield site, the FAA informally consulted with the USFWS on the eastern indigo snake (low likelihood of occurring on the site) and the sand skink (unlikely to occur on the site) as a result of updated survey protocols. The FAA's effect determinations for these two species are provided below.

Eastern Indigo Snake - Based on a review of listed species databases and field surveys conducted in 2009 to support the preparation of permit applications for the SFWMD and USACE, it was determined that there was a low likelihood for the occurrence of eastern indigo snakes (*Drymarchon corais*) on the East Airfield site. Since that time, the USFWS updated the agency's survey protocol guidance for eastern indigo snakes.[17] In May 2013, an intensive eastern indigo snake survey was conducted on the East Airfield site using survey protocols approved by the USFWS. The survey did not observe any specimens or signs of the eastern indigo snake. Based on the negative results of the survey and GOAA's agreement to utilize the USFWS's *Standard Protection Measures of the Eastern Indigo Snake*, the survey report recommended a "not likely to adversely affect" determination for the species. The survey report and a request for concurrence with the recommended effect determination were submitted to the USFWS on June 7, 2013.[18] Based on the survey and its findings, the FAA determined that the Proposed Action "may affect, but not likely adversely affect" the eastern indigo snake. A copy of the survey report is provided in Appendix T. The USFWS reviewed the survey report and concurred with the FAA's effect determination for the eastern indigo snake. A copy of the USFWS's concurrence letter for this species is provided in Appendix N.

Sand Skink – A review for this project was initially conducted in 2005-2006 using the USFWS 2002 Sand and Bluetail Mole Skink Survey Protocol. Based on a review of existing habitat at the East Airfield site and the fact that the consultation area for the sand skink *(Neoseps*

[17] *Survey Protocol for the Eastern Indigo Snake, Drymarchon couperi, in North and Central Florida*. U.S. Fish and Wildlife Service. September 2011.

[18] Eastern indigo snake consultation letter from Breedlove Dennis & Associates, Inc. to the U.S. Fish and Wildlife Service. June 7, 2013.

[=Plestiodon] reynoldsi) was located approximately 15 miles west of the East Airfield site, it was previously concluded that it was unlikely that the sand skink would occur at the East Airfield site.

A revised sand skink survey protocol, published by the USFWS in 2012, included an expanded consultation area for the sand skink and updated information regarding elevation and soil criteria describing potentially suitable skink habitat. The East Airfield site was included in the expanded consultation area. Using the updated survey protocol, a field investigation in 2013 examined areas of potential habitat at the East Airfield site to determine their suitability for skinks based on their current land use and vegetative composition. The field investigation did not observe any specimens or signs of the sand skink.[19] A copy of the survey report is provided in Appendix T. Based on the results of the survey, it was concluded again that the sand skink was unlikely to occupy the East Airfield site. Therefore, the FAA determined that the Proposed Action "may affect, but not likely adversely affect" the sand skink. The USFWS reviewed the survey report and concurred with the FAA's effect determination for the sand skink. A copy of the USFWS's concurrence letter on this species is provided in Appendix N.

State Listed Wildlife

Of the 23 state-listed species, 14 have a low or unlikely potential to occur on site. Nine state listed species have been observed on site. Of these nine species, two species are also listed Federally and are discussed under the Federally-listed wildlife section above (wood stork and American alligator). The remaining seven state-listed species are discussed below.

Gopher Tortoise - GOAA holds a valid Incidental Take Permit (ORA-80) authorizing the take (destruction) of gopher tortoises, their eggs and their burrows within its development boundaries. The permit states that the criteria of Rule 39-27.002(4), F.A.C. have been satisfied; therefore, the taking as conditioned in the permit will not be detrimental to the survival potential of the species. This permit covers a portion of the East Airfield site.

However, gopher tortoise habitat exists in other areas on the East Airfield site that is not covered by this take permit. Prior to any construction in this habitat, GOAA will need to secure a gopher tortoise relocation permit in accordance with current FWC permitting guidelines.

Sandhill Crane - Sandhill cranes have nested in the East Airfield site in the past; therefore, prior to any proposed construction, GOAA will conduct a survey for active sandhill crane nests. Should any nests be located, GOAA would implement coordination with the FWC to determine the appropriate management plan to avoid adverse impacts to sandhill cranes or their nests.

State-listed Wading Birds - State-listed species of special concern include the limpkin, little blue heron, tricolored heron, white ibis**,** and snowy egret; these species are all protected under state law (Chapter 68A-27.005 F.A.C.). None of these species' nests have been previously documented

[19] Sand skink consultation letter from Breedlove Dennis & Associates, Inc. to the U.S. Fish and Wildlife Service. May 1, 2013.

in the East Airfield site, and activities on the site associated with development are not expected to result in the take of any listed wading birds, their parts, or their nests or eggs; therefore, no mitigation is proposed. Prior to construction, GOAA will conduct a survey for active nests of these listed wading birds. Should any active nests of listed species of wading birds be identified, GOAA would initiate coordination with the FWC to determine the appropriate management strategy.

Other Listed Species and Species Protected by the Migratory Bird Treaty Act (MBTA) - For all other listed species, and species protected under the MBTA, GOAA would ensure that the following BMPs are implemented:

- To the extent practicable, development activities on the East Airfield site will be undertaken outside the nesting season of listed wading bird species and Florida sandhill cranes that are nesting on the East Airfield site unless otherwise provided by law.
- Prior to undertaking development activities in the East Airfield site that could adversely affect listed protected species and species protected under the MBTA, GOAA will coordinate with USFWS Migratory Bird Office.

5.7.1.3 Long-Term Development Plan

Long-term impacts to habitat would occur on graded and filled areas resulting from the Proposed Action. Long-term impacts to listed species of wildlife would be similar to those described above for the Proposed Action. The timing of when the impacts might occur may vary. Changes to species listed, the level of protection and management options to address impacts could change in the long-term. GOAA will abide by all applicable rules and regulations in place at the time of development.

5.7.2 Comparison to Significant Impact Thresholds

As described above, the No-Action Alternative and the Proposed Action (with required mitigation) would not meet or exceed significance thresholds for biotic resources (see **Table 5.7-2**).

TABLE 5.7-2
SUMMARY OF BIOTIC RESOURCES IMPACTS – SIGNIFICANCE THRESHOLDS

Alternative	Significance Threshold [1]	Does the alternative meet or exceed the Significance Threshold?
No-Action	USFWS or NMFS has determined the action would jeopardize a Federally-listed species continued existence or destroy or adversely affect a species critical habitat.	**No**
	The action would have a significant effect on state-listed species regarding: population dynamics; sustainability; reproduction rates; natural and artificial mortality (aircraft strikes); and the minimum population size needed to maintain the affected population.	**No**
Proposed Action	USFWS or NMFS has determined the action would jeopardize a Federally-listed species continued existence or destroy or adversely affect a species critical habitat.	**No**

TABLE 5.7-2 (Continued)
SUMMARY OF BIOTIC RESOURCES IMPACTS – SIGNIFICANCE THRESHOLDS

Alternative	Significance Threshold [1]	Does the alternative meet or exceed the Significance Threshold?
	The action would have a significant effect on state-listed species regarding: population dynamics; sustainability; reproduction rates; natural and artificial mortality (aircraft str kes); and the minimum population size needed to maintain the affected population.	**No**

[1] Significance Thresholds are established in FAA Order 1050.1E Appendix A

SOURCE: ESA Airports, 2015

5.7.3 Mitigation

Wood Stork - GOAA will offset impacts through enhancement and preservation of wood stork foraging habitat at the Disney Wilderness Preserve (DWP). Mitigation for loss of wood stork foraging habitat will be provided through compensatory wetland mitigation required by the USACE permit (see Section 5.17, Wetlands). The foraging habitat to be enhanced and preserved are connected to other larger tracts of preserved lands, which is consistent with the USFWS's wood stork goal to acquire, enhance, preserve, and recover natural hydropatterns within foraging habitat of the wood stork (USFWS 1997, 2007b).

Eastern Indigo Snake - GOAA will implement the USFWS's *Standard Protection Measures of the Eastern Indigo Snake* during grading and construction activities.

Gopher Tortoise - GOAA will conduct updated surveys before construction activities begin and obtain all necessary permits to take gopher tortoise burrows. GOAA will also relocate and mitigate these impacts in accordance with state regulations.

5.8 Floodplains

Executive Order 11988, "Floodplain Management,"[20] directs Federal agencies "to take actions to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by the flood plains."[21] Department of Transportation Order 5650.2, *Floodplain Management and Protection*, and FAA Orders 1050.1E and 5050.4B contain policies and procedures for implementing the Executive Order and evaluating potential floodplain impacts. Agencies are required to make a finding that there is no practicable alternative before taking action that would encroach on a base floodplain based on a 100-year flood (7 CFR 650.25).

[20] *Executive Order 11988*, "Floodplain Management", May 24, 1977 (42 FR 26951).
[21] FAA Order 1050.1E, Appendix A Section 9 9.1.

5.8.1 Near-Term Impact Analysis

The significance thresholds for floodplain impacts are "when notable adverse impacts on natural and beneficial floodplain values would occur."[22] A floodplain is defined as the lowlands and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, at a minimum, that are prone to the 100-year flood. The 100-year floodplain is considered the base floodplain. The objective of the analysis is to determine if an action encroaches on the base floodplain. The East Airfield site includes areas designated as Zone A (100-year floodplain). These areas are subject to inundation by a 1-percent annual chance flood. Mandatory flood insurance purchase requirements and floodplain management standards apply. These areas are depicted in Figure 4.3-10.

5.8.1.1 No-Action Alternative

No development on the East Airfield site would occur under the No-Action Alternative. Therefore, no encroachment to 100-year floodplains would occur.

5.8.1.2 Proposed Action

There are approximately 591 acres of 100-year floodplains (Zone A) within the boundaries of the East Airfield site. The Proposed Action could impact up to 442 acres of 100-year floodplains. The impact would result from the removal of wetlands associated with reducing wildlife hazard attractants, the construction of the secondary fuel storage facility, and other site grading activities.

The alternatives analysis in Section 3 of this EA considered seven alternatives for the selection of a site for future aviation-related development (including the No-Action Alternative), four alternatives to reduce wildlife hazard attractants on the East Airfield site, and five alternatives for development of a secondary fuel storage and distribution facility. During the alternatives screening analysis, five of the seven site selection alternatives were eliminated from further consideration because they were found to be not reasonable based on the Proposed Action's purpose and need. Three of the four alternatives to reduce wildlife hazard attractants were also found to be not reasonable and practicable. Four of the five alternatives for locating a secondary fuel storage facility were also found to be not reasonable. Following the alternative screening analysis, the Proposed Action (which includes the removal of wetlands and the development of a secondary fuel storage and distribution facility at the East Airfield site) and the No-Action Alternative were the only alternatives retained for further analysis. All other alternatives were determined to not be reasonable and practicable. Therefore, there is no practicable alternative to the encroachment of the Proposed Action development on 100-year floodplains.

GOAA received a conceptual ERP from the SFWMD on August 30, 2011 for impacts to state jurisdictional wetlands on the East Airfield site. The SFWMD is responsible for managing and protecting the water resources of south Florida, including water quality, flood control, natural systems, and water supply. The conceptual ERP states "no adverse impacts to the floodplain are

[22] FAA Order 5050.4B, Table 7.1-3 Floodplains.

expected as a result of the proposed project." [23] Permit conditions will require that the East Airfield's conceptual surface water management system be designed and constructed to meet the full extent of the District's rules governing water quality and quantity and avoid potential downstream flooding events. Permit conditions also required that GOAA provide mitigation to offset adverse impacts to natural values associated with the impacted wetlands.

5.8.1.3 Long-Term Development Plan

The Long-Term Development Plan has a low potential to encroach on portions of 100-year floodplain remaining on the site after implementation of the Proposed Action. This is due to the fact that the remaining floodplains would be associated with areas not planned for development. At this time, the amount of potential encroachment and the effects on beneficial floodplain values, if any, are unknown and cannot be quantified. As discussed above, it is anticipated that GOAA and its prospective tenants would evaluate alternatives and seek to avoid floodplains to the greatest extent possible as airfield infrastructure, aviation-related facilities, and non-aviation facilities are developed. GOAA and its tenants would also be required under local floodplain management programs to avoid, minimize, and mitigate unavoidable impacts. For the same reasoning provided in the discussion of the Proposed Action, the incremental and total floodplain encroachment at full build-out is not anticipated to be significant.

5.8.2 Comparison to Significant Impact Thresholds

As described above, the No-Action Alternative and Proposed Action (with required mitigation) would not meet or exceed significance thresholds for floodplains (see **Table 5.8-1**).

5.8.3 Mitigation

The SFWMD will require GOAA to obtain SFWMD ERP construction permits prior to any encroachment activities associated with the East Airfield site. The SFWMD conceptual ERP requires a surface water management plan ensuring no net losses to floodplain storage and that pre- and post-off-site discharges are equivalent. This permit ensures the storm water management system adequately compensates for fill material placed within the existing floodplain (SFWMD Permit Modification No. 48-00063-S-03, issued August 30, 2010).

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[23] Chapter 40E-4, *Florida Administrative Code* (South Florida Water Management Districts -- Environmental Resource Permits)

40E-4.301 Conditions for Issuance of Permits.

(1) In order to obtain a standard general, individual, or conceptual approval permit under this chapter or Chapter 40E-40, F.A.C., an applicant must provide reasonable assurance that the construction, alteration, operation, maintenance, removal or abandonment of a surface water management system:

(b) Will not cause adverse flooding to on-site or off-site property

TABLE 5.8-1
SUMMARY OF FLOODPLAIN IMPACTS – SIGNIFICANCE THRESHOLDS

Alternative	Significance Threshold [1]	Does the alternative meet or exceed the Significance Threshold?
No-Action	Notable adverse impacts on natural and beneficial floodplain values would occur	**No**
Proposed Action	Notable adverse impacts on natural and beneficial floodplain values would occur	**No**

[1] Significance Thresholds are established in FAA Order 1050.1E Appendix A and FAA Order 5050.B Table 7-1.
SOURCE: ESA Airports, 2015

5.9 Hazardous Materials, Pollution Prevention, and Solid Waste

The handling and disposal of hazardous materials, chemicals, substances, and wastes is governed by Federal regulations; the EPA has Federal regulatory oversight.[24] As authorized by the EPA, the states also administer their own oversight programs. In Florida, the regulatory state agency is DEP.[25] The *Resource Conservation and Recovery Act* (RCRA) and the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) are important statutes used in the analysis of hazardous wastes for actions occurring at public airports.

5.9.1 Near-Term Impact Analysis

FAA Order 1050.1E notes that additional information or analysis is needed only if problems are anticipated with respect to meeting the applicable local, state, Tribal, or Federal laws and regulations on hazardous or solid waste management. Typically, a Phase I Environmental Site Assessment is completed to document the presence of any sites within the action area listed or under consideration for listing on the National Priorities List (NPL). The NPL is established by the EPA in accordance with CERCLA.

If the Proposed Action would involve hazardous materials, a brief description of the methods used to ensure compliance with RCRA, CERCLA, and other applicable Federal and state regulations is provided. Methods employed to control spills and other unauthorized releases of hazardous materials during construction and operation of the Proposed Action are referenced. FAA AC 150/5320-15A, *Management of Airport Industrial Wastes*, provides detailed information on dealing with hazardous wastes and industrial chemicals typically used on airports. Section 5.16 of this EA (Water Quality) provides information regarding water quality requirements and GOAA's responsibilities for pollution prevention regarding water quality.

A Phase I Environmental Site Assessment conducted for the East Airfield site[26] included a review of regulatory records associated with the site, field surveys (on and off site reconnaissance), a

[24] FAA Order 1050.1E Appendix A Section 10.
[25] http://www.dep.state.fl.us/waste/categories/hwRegulation/
[26] *Phase I Environmental Site Assessment*. September 15, 2008. Nodarse & Associates.

review of the National Priority List (NPL)[27], current and de-listed sites, along with various other databases. The Phase I Assessment indicated that no areas on the site are listed in Federal, state, or local government databases, environmental records, or enforcement lists.

5.9.1.1 No-Action Alternative

No development would occur on the East Airfield site. Therefore, there would be no change to existing conditions.

5.9.1.2 Proposed Action

The Phase I Environmental Site Assessment indicated that no areas within the East Airfield site are listed in Federal, state, or local government databases, environmental records, or enforcement lists. Therefore, the Proposed Action would not impact known hazardous waste sites.

North of the East Airfield site and off airport property, the former Alamo Rent-A-Car location (8200 McCoy Road) is documented by the Florida DEP to have soil and groundwater impacts related to petroleum products. The potential for this plume to extend under portions of the East Airfield site categorizes the Alamo Rent-A-Car location as a recognized environmental condition (REC) [28] related to the East Airfield site. To the extent that the groundwater plume from the former off-airport Alamo Rent-a-Car location extends onto the East Airfield site, the responsible party (Alamo Rent-a-Car) is responsible for remediation.

Regulated Materials – The Proposed Action will involve clearing and filling wetlands, storm water management system modifications, and the construction of a secondary fuel storage and distribution facility and an access road. The projects will require tree and vegetation removal, grading, de-mucking wetlands, filling wetlands, filling non-stormwater management surface waters at the East Airfield site, access road and temporary road construction, and establishing a contractor staging area.

The Proposed Action would not affect sites with known or registered petroleum storage tanks. During construction, contractor staging areas will be located at various locations in the East Airfield site. The staging areas will likely include portable aboveground storage tanks (ASTs) for fuel storage. Construction contractors will be required to implement pollution prevention, spill prevention, and response plans documenting the measures that will be taken to prevent accidental releases to the environment and, should they occur, the actions that will be undertaken to minimize the environmental impact. See Section 5.5, Construction Impacts, and Section 5.16,

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27 The NPL is the list of national priorities among the known releases or threatened releases of hazardous substances pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation.

28 A recognized environmental condition (REC) is defined in the American Society of Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process (ASTM E1527-05). A REC means "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property".

Water Quality, for more information on pollution prevention measures available to minimize construction phase and operational impacts.

The proposed secondary fuel storage and distribution facility will be designed to meet current standards and applicable regulatory requirements for operating a bulk petroleum storage facility. Similar to MCO's existing fuel storage and distribution facility, the operation of the secondary facility will be subject to regulatory requirements and oversight. This includes establishing pollution prevention plans; spill prevention control and countermeasure plans; BMPs; conducting regular facility inspections; and reporting releases, should they occur. The operation of a modern bulk fuel storage facility, assuming all operating requirements are implemented, would have a low potential for introducing hazardous materials (petroleum products) into underlying soils and groundwater.

Overall, the potential for the Proposed Action to introduce hazardous materials, including petroleum products, into the environment is considered to be low.

As discussed in Section 4.3.8, the City of Orlando Solid Waste Management Bureau oversees the pick-up and transfer of solid waste. Orange County is responsible for the disposal of solid waste at the Orange County Landfill. Both the City and County are responsible for adhering to all applicable Federal, state, and local laws related to the proper handling and disposal of solid waste.

It is anticipated that Orange County has the capacity to hold the limited solid waste volumes for both the construction and operation of the Proposed Action. The Orange County Solid Waste Division has recently completed landfill expansion activities which included over 480 acres for the disposal of Class I waste and support facilities to ensure disposal needs are met for the next 25 years. Currently, the Solid Waste Division is developing a master plan for waste disposal which could extend the use of the current landfill site beyond the 25 year outlook. In addition, the solid waste handled by the City and County would meet all applicable laws and regulations including those pertinent to the minimization of the effect to the environment.

The *Clean Water Act* (CWA), Section 311, as amended by the *Oil Pollution Act* requires spill response plans for facilities that store oil-based or oil products. The Proposed Action includes a planned fuel storage and distribution facility and there may be other auxiliary-type storage oil or oil-based storage facilities associated with the high-intensity aviation development areas. This facility will be constructed and operated in accordance with Federal and state regulations and MCO operating procedures that are designed to minimize spills and impacts to the environment. GOAA would ensure that pollution prevention plans are prepared for the secondary fuel storage and distribution facility and other facilities in accordance with these requirements.

5.9.1.3 Long-Term Development Plan

Based on the information reviewed for this EA and the analysis conducted for the Proposed Action, the Long-Term Development Plan is not anticipated to substantially impact known hazardous waste sites or areas with known environmental concerns. The former Alamo Rent-A-Car location, as discussed above, is a known site with environmental conditions that is subject to

state regulatory programs and remediation requirements. Remediation of soil and groundwater contamination associated with this site should not have a substantial effect on, or be affected by, the implementation of the Long-Range Development Plan.

The build-out of the Long-Term Development Plan would not affect any RCRA sites or petroleum storage facilities. No sites on the EPA NPL are located within or in the vicinity of the East Airfield site.

The storage and handling of fuel and other regulated materials during construction will be subject to pollution prevention controls and requirements that would minimize the potential for a release of fuel and regulated materials into the environment. The continued operation of the secondary fuel storage and distribution facility and the operation of new aviation and non-aviation facilities will also be subject to pollution prevention and regulated materials management requirements. Collectively, these measures reduce the potential for the release of hazardous and regulated materials into the environment as the Long-Term Development Plan is implemented and the East Airfield site is built-out.

The volume of solid waste generated at MCO would increase as tenant facilities are developed and become operational. Much of the solid waste generated by new aircraft maintenance facilities, air cargo operations, and/or manufacturing processes and their employees would likely be recycled. Non-recyclable waste would be disposed in local landfills. Overall, local waste handling and disposal facilities could accommodate non-recyclable wastes generated by the Long-Term Development Plan.

5.9.2 Comparison to Significant Impact Thresholds

As described above, the No-Action Alternative and Proposed Action would not meet or exceed significance thresholds regarding hazardous materials (see **Table 5.9-1**).

TABLE 5.9-1
SUMMARY OF HAZARDOUS MATERIALS IMPACTS – SIGNIFICANCE THRESHOLDS

Alternative	Significance Threshold [1]	Does the alternative meet or exceed the Significance Threshold?
No-Action	Involves a property on or elig ble for the National Priority List	**No**
Proposed Action	Involves a property on or elig ble for the National Priority List	**No**

[1] Significance Thresholds are established in FAA Order 1050.1E Appendix A and FAA Order 5050.4B Table 7-1.
SOURCE: ESA Airports, 2015

5.9.3 Mitigation

Since no significant impacts would occur, no mitigation is required.

5.10 Historical, Architectural, Archeological, and Cultural Resources

Under Section 106 of the *National Historic Preservation Act of 1966* (NHPA), the FAA is required to consider effects to properties listed in, or eligible for listing in, the National Register of Historic Places (NRHP) and consult with the State Historic Preservation Officer (SHPO) to substantiate findings of affect to these resources. The NHPA requires FAA to evaluate impacts to National Historic Landmarks (NHLs). There are numerous laws and executive orders regulating archeology and coordination with Native American Tribal Nations. These laws and executive orders are listed in FAA Order 1050.1E, Appendix A, Section 11.

5.10.1 Near-Term Impact Analysis

The FAA consults with the SHPO, Tribal Historic Preservation Officers (THPO), and other appropriate sources early in the environmental process to determine if a Proposed Action has the potential to effect historic properties on or eligible for listing on the NRHP.

5.10.1.1 No-Action Alternative

No development would occur with the No-Action Alternative. Therefore, there is no potential for impacts to historic or archeological resources.

5.10.1.2 Proposed Action

As discussed in Section 4.3.9, GOAA conducted a cultural resource assessment survey (CRAS) in 2008 for the East Airfield site. No impact to historic properties is anticipated with development of the Proposed Action. No additional research or investigation was recommended. As part of the 2009 Draft EA, which was never finalized, the Florida SHPO issued a letter of concurrence with the CRAS and no effect finding on Jan 14, 2009[29] (see **Appendix N**). The SHPO was provided an opportunity to review the 2015 Draft EA. The SHPO stated that the agency had no comments on the Draft EA and acknowledged prior Section 106 consultation and SHPO's concurrence with FAA findings. The Seminole Tribe of Florida, through its THPO, noted that the Tribe has no objection to the project at this time. Agency and Native American Tribal Government Draft EA comments are detailed in Section 6 of this EA.

There would be no significant impact to historical, architectural, archeological, or cultural resources with development of the Proposed Action.

5.10.1.3 Long-Term Development Plan

As noted in the section above, a CRAS was conducted for the East Airfield site and the SHPO concurred that none of the resources on the site were considered significant and there would be no

[29] Cultural Resource Assessment Survey of the East Airfield Development Area, Orange County, Florida. Archaeological Consultants, Inc. August 2008.

impact to any historic properties. Therefore implementation of the Long-Range Development Plan is not expected to affect any significant cultural, archeological, and historic resources.

5.10.2 Comparison to Significant Impact Thresholds

As described above, the No-Action Alternative and Proposed Action would not meet or exceed significance thresholds for historic and archeological resources (see **Table 5.10-1**).

TABLE 5.10-1
SUMMARY OF HISTORIC AND ARCHEOLOGICAL IMPACTS – SIGNIFICANCE THRESHOLDS

Alternative	Significance Threshold [1]	Does the alternative meet or exceed the Significance Threshold?
No-Action	Adversely affects a protected property under the NHPA	**No**
	SHPO or THPO findings of adverse effects on protected property	**No**
Proposed Action	Adversely affects a protected property under the NHPA	**No**
	SHPO or THPO findings of adverse effects on protected property	**No**

[1] Significance Thresholds are established in FAA Order 1050.1E Appendix A and FAA Order 5050.4B Table 7-1.

SOURCE: ESA Airports, 2015

5.10.3 Mitigation

No adverse effects to historic or cultural resources are expected to occur from implementation of the Proposed Action; thus, no mitigation is required.

5.11 Light Emissions and Visual Effects

The FAA encourages Airport Sponsors to consider the effects of light emissions and visual effects on sensitive areas in the vicinity of an airport development project.

5.11.1 Near-Term Impact Analysis

Although there are no significance thresholds established by the FAA for light emissions and visual effects, the agency recommends the following topics be considered during the analysis:

- If light emissions create an annoyance or interfere with normal activities; and
- If local, state, or Federal agencies determine that visual effects are objectionable due to their contrast with existing environments.

Local development lighting standards in the City of Orlando reference compliance with standards contained in Orange County's lighting ordinance (Ordinance No 2003-08).

5.11.1.1 No-Action Alternative

Because the No-Action Alternative would not include airfield changes or aviation-related development associated with the Proposed Action, no impacts to light-sensitive land uses would occur and no change to the visual landscape in the vicinity of MCO would occur.

5.11.1.2 Proposed Action

Light Emissions

Airfield lighting changes associated with the Proposed Action would consist primarily of the installation of lights at the proposed secondary fuel storage and distribution facility and its access road. These lights to be installed would consist of pole and tank-mounted area flood lights to illuminate the fuel storage and distribution facility and its access road.

The area in the vicinity of the proposed secondary fuel storage contains a mix of airport, residential, and transportation land uses, which include the following: Runway 17L-35R, a six-lane section of the Martin Andersen Beachline Expressway (State Road 528), a five-lane section of Narcoossee Road, the Reserve at Beachline apartment complex, a 7-11 convenience store and gas station, and an automobile salvage yard. The nearest residences to the proposed secondary fuel storage facility are located approximately 825 feet east of the proposed fuel storage facility, within the Reserve at Beachline apartment complex. The view of the proposed fuel storage facility from the apartment complex would be partially obstructed by traffic on Narcoossee Road and the convenience store/gas station.

The design of the secondary fuel storage and distribution facility may include the use of buffers along portions of the site's boundary, which would provide some physical shielding that would help reduce the view of the new light sources. In addition, the use of high-intensity light sources, directional lights, or flashing lights are not anticipated. Overall, the residents in the immediate vicinity of the proposed fuel storage and distribution facility and drivers on nearby roadways would notice a change in the areas lighting and light sources; however, the potential to cause substantial annoyance is considered to be low due to the distance of the fuel storage and distribution facility to residences, the location of adjacent highways and thoroughfares, and commercial land uses (i.e., 7-11 convenience store).

Visual Impacts

The Proposed Action includes construction of three 40-foot tall, 100-foot wide fuel storage tanks on airport property. Additional tanks could be developed at the site over time as the need arises. The fuel storage tanks, support buildings and related infrastructure would be developed in context with other existing structures at MCO (i.e., similar size, type and construction).

The Proposed Action would include the removal of trees and grading land within several wetland areas at the East Airfield site. The Proposed Action would remove large stands of trees (mostly within wetland areas) and conduct grading of upland areas, which would alter the visual landscape from adjoining roadways and residential areas located east and south of

the site. The affected wetland areas would be graded and maintained by MCO as grassed field. A large wetland area in the southeast quadrant of the site (along Narcoossee Road) would not be affected. In addition a large public park and a visual (vegetative) buffer would be established along a portion of the southern boundary of the site.

While the visual landscape would change as a result of the Project Action, it would be compatible with the airport environs and nearby light industrial land uses. In regard to views from nearby residential areas, retaining a large wetland area and development of a public park and vegetative visual buffer[30] would mitigate visual impacts that would occur if the Proposed Action was implemented. Therefore, the Proposed Action would not result in substantial intrusive visual impacts.

5.11.1.3 Long-Term Development Plan

Light Emissions

Airfield lighting changes associated with the Long-Term Development Plan is expected to result from the construction of taxiways and aircraft parking aprons, construction and operation of aviation and non-aviation facilities, and construction of access roads. The aviation and non-aviation facilities may include, but would not be limited to, large aircraft hangars, air cargo buildings, aerospace and aircraft manufacturing buildings, aircraft maintenance and repair facilities, and office buildings. Lighting typically associated with this type development includes:

- Pole- and building-mounted area flood lights to illuminate building exteriors, portions of aircraft parking aprons, access roads, parking lots, and other related outdoor improvements.
- Edge lighting would be installed along new sections of taxiway and entrances to aircraft parking aprons. Lighted directional signs would also be installed to provide directional guidance to and from the new taxiways and the aviation facilities located within the East Airfield site.
- Temporary exterior lighting may also be installed at construction staging areas and project work sites.

The Long-Term Development Plan is expected to attract tenants, types of activity, and construction of buildings similar to those already established at other locations on the airport. However, the development would occur within a largely undeveloped area on MCO. In addition to the residential apartment building discussed above, the Long-Term Development Plan would allow high intensity development approximately 1,500 feet from a large residential subdivision located south of the site. Medium intensity development would be allowed along the north side of a section of Dowden Road, which separates the East Airfield site from a residential subdivision.

[30] It is anticipated that the visual buffer would be comprised of both an earthen berm planted with shrubs and trees and areas of densely planted shrubs and trees at-grade. Details of the vegetative barrier will be determined through ongoing coordination between GOAA and adjoining residential communities and the site design process.

Residents at the apartment complex on Narcoossee Road and in the subdivisions south and east of the site would experience a change in lighting and light sources that would result from the long-term development of aviation and non-aviation facilities at the East Airfield site. The change would result from the construction of new access roads, new hangars and buildings, and new taxiways and aprons on the East Airfield site. Development at the site would incorporate measures to minimize light impacts on nearby residences and drivers on Narcoossee Road. This could be accomplished through site layout and design decisions (e.g., landscaping and parking lot and building placement), use of shielded light fixtures on buildings and in parking lots, and installation of vegetative visual buffers. The use of high-intensity light sources, directional lights, or flashing lights is not anticipated. Therefore, the change of light would be noticeable compared to the No-Action Alternative, but the potential to cause substantial annoyance or interfere with activities would be low.

Visual Impacts

For the same reasons discussed above for the near-term Proposed Action, changes in the visual landscape are not expected to result in intrusive visual impacts.

5.11.2 Comparison of Significant Impact Thresholds

Thresholds to determine the significance of lighting and visual impacts have not been established by the FAA due to their subjective nature. However, a possible threshold indicating the need for further study may include cases with substantial light annoyance, substantial interference with activities, and/or substantial public concern regarding views. The airfield lighting modifications associated with the Proposed Action would not cause changes in light emissions that would result in substantial annoyance or cause interference with normal activities. The new fuel facilities and land clearing associated with this project will be visually noticeable; however, the visual impacts would not reach a level that would indicate a significant impact.

5.11.3 Mitigation

No mitigation is required for light emissions or visual effects. Orange County design standard conformance will be required, as applicable, as the site is developed. Orange County Code requires the selection of lighting components that prevent potential glare from affecting residential areas and vehicles.

As noted above, GOAA has addressed effects to the Lake Nona community with the official change to the City of Orlando Future Land Use Map 21; this change creates a land use buffer consisting of medium intensity aviation land use between the high intensity aviation land use and existing residential areas.

In addition to the land use map change, a “Bufferyard Agreement” was entered into on March 6, 2000 between The City of Orlando, the Busch Properties of Florida, Inc., and Lake Nona Land Company (on file with GOAA). At the time of the agreement, a portion of the East Airfield site

closest to the Lake Nona area was under the ownership of Busch Properties of Florida.[31] This legal agreement was conveyed to GOAA when they purchased the property. Some of the key elements to the Bufferyard Agreement in reference to this topic are included in the summary below (also see **Appendix U**).

- The intent of the "Bufferyard" is to provide a landscaped area and section of berm to "be used to buffer and screen the industrial/commercial uses that are anticipated to develop on the Busch Property from the residential uses to be developed on the Lake Nona Property."
- The agreement includes the conveyance of easements on the Busch property to Lake Nona to allow the community to extend an access road from the community to Dowden Rd.
- The agreement includes landscape/buffer easements from both the Lake Nona property and the Busch Property that are to be conveyed to the City of Orlando (see exhibits E & F of the "Bufferyard Agreement"). Together, the landscape/buffer easements are referred to in the agreement as the "Bufferyard."
- The agreement further states that "Lake Nona shall, at its own costs and expense construct, install, maintain, operate, and repair all of the landscape improvements within the Bufferyard…" The Bufferyard Plan is depicted in Exhibit F of the agreement.
- There is also a stipulation to the Bufferyard Plan that allows Busch to locate retention ponds within the portion of the Bufferyard located on the Busch Property (with a "durable landscaped screen" described in the agreement).
- All landscape requirements identified in the Bufferyard Agreement have been completed by Lake Nona.

In addition to the above, GOAA continues to coordinate with residential communities near the East Airfield site and modified its Conceptual Plan in 2014 to minimize impacts on the local community. Modifications that would minimize lighting and visual impacts include development of a park, a lake, and landscape buffers.[32] GOAA and adjoining residential communities have continued discussions related to the 2014 East Airfield Conceptual Plan that have resulted in further refinements (see Appendix Y).

5.12 Natural Resources, Energy Supply, and Sustainable Design

As stated in FAA Order 1050.1E, "the proposed action will be examined to identify any proposed major changes in stationary facilities or the movement of aircraft and ground vehicles that would have a measurable effect on local supplies of energy or natural resources. If there are major changes, power companies or other suppliers of energy will be contacted to determine if projected demands can be met by existing or planned source facilities. The use of

[31] The "Busch Property" was acquired by GOAA in 2005 and consisted of 176.2 acres.
[32] The lake, which would be a component of the Proposed Action's storm water management system, would be designed in accordance with FAA AC 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports*.

natural resources other than for fuel need be examined only if the action involves a need for unusual materials or those in short supply."

5.12.1 Near-Term Impact Analysis

FAA recommends the Proposed Action be examined to identify any major changes in stationary facilities or the movement of aircraft and ground vehicles that would have a measurable effect on local supplies of energy or natural resources. FAA recommends that measures such as more efficient airfield design, ground access improvements, or energy and resource efficient building design be considered and described where applicable.

5.12.1.1 No-Action Alternative

The No-Action Alternative would not change the existing conditions. Therefore, no new natural resources or energy supplies would be used.

5.12.1.2 Proposed Action

The Proposed Action is not anticipated to result in a substantial, permanent change to energy demands or natural resource consumption. Because the Proposed Action is to clear and fill wetlands and construct a fuel storage and distribution facility, both of which will result in minimal stationary facilities, no changes to aircraft movement and minimal changes to ground vehicle movement, it would not result in a substantial change to energy demands or other natural resource consumption.

5.12.1.3 Long-Term Development Plan

Natural Resources

The size and types of buildings and facilities that may be constructed under the Long-Term Development Plan are typical and similar to those previously developed at MCO and at other airports in the region. Because the anticipated buildings and facilities would be common to the region, the Long-Term Development Plan is not anticipated to have a substantial impact on any natural resources that are unusual in nature or are in short supply. There are no known natural resources within the East Airfield site that are unusual in nature or are in short supply.

Energy Supply

The development of aviation and non-aviation facilities at MCO is expected to center around aircraft manufacturing; aircraft parts manufacturing; aircraft maintenance, repair and overhaul; air cargo; office space and aerospace research centers; and related facilities. These type facilities may include large manufacturing buildings, large hangars, warehouses, and support buildings that require lighting, air conditioning, and power for office equipment and specialized production equipment. The Orlando Utilities Commission, the electric power supplier to MCO, has a network of power generation plants, substations, and distribution lines capable of serving existing and prospective tenants at MCO. The existing infrastructure serving MCO is sized to accommodate the terminal buildings, aircraft maintenance facilities, air cargo facilities, and other large facilities

operating at the airport. As the East Airfield site is developed and prospective tenants are identified, the tenant(s), GOAA and economic development agencies would help coordinate electric and gas power needs with utility companies and energy suppliers. Based on the specific demands of prospective tenants, existing electric service infrastructure in the vicinity of MCO may need to be upgraded or augmented (i.e., additional substations). At this time there are no known issues related to local energy suppliers meeting the increased demand.

Overall, there appears to be sufficient capacity to meet the projected increased energy demand and energy suppliers are expected to accommodate the increased demand. No substantial energy-related impacts are expected with the implementation of the Long-Term Development Plan.

Sustainable Design

GOAA implements a Sustainability Management Plan that identifies several policy objectives, some of which are reducing energy use; reducing solid wastes to landfills; reducing water consumption; and improving sustainable construction, engineering and design practices.[33] Based on this guiding management plan, it is anticipated that the future development of facilities at the East Airfield site will incorporate sustainability decisions and practices into the design, construction, and operation of each facility.

5.12.2 Comparison to Significant Impact Thresholds

As described above, the No-Action Alternative and Proposed Action conceptual development plan would not meet or exceed significance thresholds for energy supply, natural resources, and sustainable design (see **Table 5.12-1**).

5.12.3 Mitigation

Because no significant impacts are anticipated, no mitigation is required.

TABLE 5.12-1
SUMMARY OF ENERGY SUPPLY, NATURAL RESOURCES, AND SUSTAINABLE DESIGN – SIGNIFICANCE THRESHOLDS

Alternative	Significance Threshold [1]	Does the alternative meet or exceed the Significance Threshold?
No-Action	Energy or natural resource demands exceed available supply.	**No**
Proposed Action	Energy or natural resource demands exceed available supply.	**No**

[1] Significance Thresholds are established in FAA Order 1050.1E Appendix A and FAA Order 5050.4B Table 7-1.

SOURCE: ESA Airports, 2015,

[33] *Greater Orlando Aviation Authority Sustainability Management Plan 2014 – 2020*. Greater Orlando Aviation Authority. 2013.

5.13 Noise

As noted in Section 4.3.12, Title 14 CFR Part 150 provides the regulatory framework for analyzing noise impacts related to aircraft operations. Residential land uses are not compatible with noise levels greater than DNL 65 dBA.

FAA Order 1050.1E identifies a significant noise impact as a result of a proposed action as follows:

> "A significant noise impact would occur if analysis shows that the proposed action will cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the No-Action Alternative for the same timeframe."[34]

5.13.1 Near-Term Impact Analysis

5.13.1.1 No-Action Alternative

Aircraft noise associated with the No-Action Alternative may vary based on changes to airport operations or aircraft handling unrelated to the Proposed Action. Because activity levels are lower than those used to establish future land use controls and zoning (Section 4.3.3) and current activity levels are well below 2008 levels (Table 4.3-6), no impacts are anticipated.

5.13.1.2 Proposed Action

The East Airfield project will not result in a change in aircraft activity, when compared to the No-Action Alternative. As discussed in Section 4.3.12, the FAA has determined that the 2008 noise contours are a conservative representation of the existing noise conditions at the airport; therefore, noise contours comparing the near-term East Airfield noise conditions to the No-Action noise conditions were not prepared for this EA.

5.13.1.3 Long-Term Development Plan

The Long-Term Development would increase the number of aircraft operations and aviation activity at MCO. The number of annual operations and type of aircraft activity induced by the Long-Term Development Plan would depend greatly upon the nature of the aviation-related businesses that establish themselves on the East Airfield site. For instance, an air cargo operator typically generates a steady level of daily aircraft operations and may accommodate a wide range of cargo aircraft. Aircraft manufacturing, assembly, and maintenance/repair facilities typically generate fewer daily aircraft operations and involve specific aircraft types or classes of aircraft. Based on the types of potential tenants, the probable increase in aircraft operations generated by the Long-Term Development Plan would be a relatively modest percentage of the overall number of existing air carrier, air cargo, and general aviation aircraft operations that would be expected to occur over the next 20 year period at MCO.

[34] FAA Order 1050.1E, Appendix A Section 14.3

5.13.2 Comparison to Significant Impact Thresholds

As described above, the No-Action Alternative and Proposed Action would not change the MCO noise contours, and therefore would not meet or exceed significance thresholds for noise (see **Table 5.13-1**).

TABLE 5.13-1
SUMMARY OF NOISE IMPACTS – SIGNIFICANCE THRESHOLDS

Alternative	Significance Threshold [1]	Does the alternative meet or exceed the Significance Threshold?
No-Action	A DNL 1.5 dB increase at a noise sensitive area within the DNL 65 dB	**No**
Proposed Action	A DNL 1.5 dB increase at a noise sensitive area within the DNL 65 dB	**No**

[1] Significance Thresholds are established in FAA Order 1050.1E Appendix A and FAA Order 5050.4B Table 7-1.

SOURCE: ESA Airports, 2015

5.13.3 Mitigation

The Proposed Action will not result in a change in aircraft activity and will therefore not cause any noise sensitive areas located at or above DNL 65 dB to experience a noise increase of DNL 1.5 dB. Therefore, no significant impact would occur and no mitigation is required.

5.14 Secondary (Induced) Impacts

As noted in Section 4.3.13, FAA considers induced or secondary impacts to surrounding communities as a result of a proposed action. These impacts could include shifts in patterns of population movement and growth; public service demands; and changes in business and economic activity to the extent influenced by the airport development.

5.14.1 Near-Term Impact Analysis

In this section, the No-Action's and Proposed Action's potential to cause shifts in patterns of population movement and growth; public service demands; and changes in business and economic activity to the extent influenced by the airport development is examined. FAA Order 1050.1E and FAA Order 5050.4B do not provide specific significance thresholds for evaluating changes in employment or housing demand. Induced impacts will normally not be significant except where there are also significant impacts in other categories, especially noise, land use, or direct social impacts.

5.14.1.1 No-Action Alternative

No development would occur with the No-Action Alternative. There would be no secondary (induced) impacts to surrounding communities.

5.14.1.2 Proposed Action

The site selection, wildlife hazard attractant reduction activities, and proposed secondary fuel storage and distribution facility that comprise the Proposed Action are not anticipated, individually or collectively, to appreciably affect population movement and growth, public service demands, or business and economic activity at or in the vicinity of MCO. The Proposed Action would have a positive, yet modest effect on local construction employment.

5.14.1.3 Long-Term Development Plan

Population Movement and Growth

The Long-Term Development Plan is anticipated to create approximately 4,960 temporary construction jobs at MCO.[35] However, construction employment is anticipated to be spread out over time as GOAA installs access roads and utilities and individual tenants construct facilities (i.e., hangars). It is also anticipated that the Long-Term Development Plan, at full build-out, would create approximately 8,840 permanent jobs. It is likely that a majority of the construction and non-construction jobs would likely be filled by the managerial, trade, skilled, and unskilled labor force within the greater Orlando area and surrounding communities. In regard to non-construction jobs, the labor markets in Orlando and along the east coast of Florida (i.e., Cocoa Beach (50 driving miles), Melbourne (63 driving miles)) have a substantial aerospace and aviation component. Due to proximity of these labor markets to MCO, it is anticipated that many employees would retain their current residences and commute to MCO. However, some jobs associated with the Long-Term Development Plan may require relocation of employees to Orlando from other parts of the US and the decision by people in other parts of Florida and the United States to move to Orlando for employment at MCO.

The Long-Term Development Plan would cause a shift (movement) in population and population growth in Orlando and its surrounding communities. However, because the Long-Term Development Plan is anticipated to draw a majority of employees from the Orlando and communities within commuting distance the potential to have a significant shift in population and significant increase in population is not anticipated. For those employees that move to Orlando, a review of the Multiple Listing Service (MLS) on March 3, 2015 showed 2,340 residential properties available for purchase in the City of Orlando (not including surrounding communities). In addition, the increase in employment associated with the development of the East Airfield site was contemplated and included in the Southeast Orlando Sector Plan, and GOAA traffic studies.

Changes in Public Service Demand

The Long-Term Development Plan is anticipated to have some potential to increase the demand for public services, such as police, fire, and emergency response at MCO. Because the future facilities at the East Airfield site are expected to be similar in size and nature to those already in place at MCO, the effect would be associated with the increased number of such facilities at the

[35] Greater Orlando Airport Authority. September 2014.

airport. This is not anticipated to have a substantial impact on the ability to provide public services to the new facilities or degrade the services provided to the community as GOAA and the City of Orlando would augment its public services, as needed, to serve new facilities at the East Airfield site in accordance with local ordinances and plans.

Changes in Business and Economic Activity

The Long-Term Development Plan would not acquire land or displace any residences or businesses. It is anticipated that aviation and non-aviation businesses would establish operations at the East Airfield site over time. As previously discussed, the precise nature of the businesses and their facilities is unknown at this time. Therefore, quantification of potential effects on the local economy is difficult to estimate. However, it is anticipated that the Long-Term Development Plan would accommodate new or expanded businesses, create jobs, and have a positive impact on the local economy and the region.

Appreciable Change in Employment

As noted above, the Long-Term Development Plan would create approximately 4,960 temporary construction jobs, but the jobs would be created over time. The periodic increases in construction jobs would be expected to be filled by local workers and those within the region.

At full build-out, the change in local employment associated with the Long-Term Development Plan would depend on the type of aviation-related businesses that establish themselves at the East Airfield site. As noted above, the Long-Term Development Plan, at full build-out, would create approximately 8,840 permanent jobs and it is likely that a majority of the construction and non-construction jobs would likely be filled by the managerial, trade, skilled, and unskilled labor force within the greater Orlando area and surrounding communities. Off-airport businesses in the area may also experience an increase in employment as a result of the Long-Term Development Plan. This increase in jobs would have a positive impact on the economy in the greater Orlando area.

5.14.2 Comparison to Significant Impact Threshold

As described above, induced impacts will normally not be significant except where there are also significant impacts in other categories, especially noise, land use, or direct social impacts. Based on the analysis conducted for this category as well as other associated categories in this EA, the No-Action Alternative and Proposed Action would not result in significant secondary or induced impacts.

5.14.3 Mitigation

Because no significant impacts would occur, no mitigation is required.

5.15 Socioeconomic Impacts, Environmental Justice, and Children's Health and Safety Risks

As noted in Section 4.3.14, this FAA considers a proposed action's socioeconomic impacts, potential impacts to minority and low income populations, and identifies and assesses potential environmental health and safety risks that the agency believes could disproportionately affect children.

Socioeconomic

Socioeconomic impacts include but are not limited to the following:

(1) Extensive relocation of residents is required, but sufficient replacement housing is unavailable.

(2) Extensive relocation of community businesses that would create severe economic hardship for the affected communities.

(3) Disruption of local traffic patterns that substantially reduce the Level of Service (LOS) provided by the roads serving the airport and its surrounding communities.

(4) A substantial loss in community tax base.

Section 4.2 provides information regarding the East Airfield site location within the property boundaries of MCO and a discussion of the existing surface roadway network in the vicinity.

Environmental Justice

Environmental justice considers the potential of Federal actions to cause disproportionate and adverse effects on low-income or minority populations. Environmental justice is considered in evaluation of other impact categories, such as noise, air quality, water, hazardous materials, and cultural resources. Proposed Action impacts related to noise, air quality, water quality, hazardous materials, and cultural resources are provided in Sections 5.13, 5.2, 5.16, 5.9, and 5.10, respectively. An environmental justice analysis discusses impacts that a proposed action would cause and identifies affected populations. If a proposed action would affect low income or minority populations at a disproportionately higher level than it would other population segments, an environmental justice impact is likely.

Children's Environmental Health and Safety Risks

Children's environmental health and safety risks are considered when "disproportionate health and safety risks to children may represent a significant impact." Environmental health risks and safety risks include risks to health or to safety that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products they might use or be exposed to.[36] Impacts related

[36] FAA Order 1050.1E Appendix A Section 16

to air quality, water quality, and hazardous materials are provided in Sections 5.2, 5.16, and 5.9, respectively.

5.15.1 Near-Term Impact Analysis

5.15.1.1 No-Action Alternative

No development would occur on the East Airfield site under the No-Action Alternative; therefore, no socioeconomic impacts, environmental justice effects, or children's environmental health and safety risks would occur.

5.15.1.2 Proposed Action

Socioeconomic

Residential and Business Acquisitions and Relocations

The Proposed Action would occur within the airport property boundary and the acquisition of land is not required to implement the Proposed Action. No residences or businesses would be displaced. There would be no loss in community tax base.

Disruption of Established Communities and Planned Developments

Development activities associated with the Proposed Action would not result in the disruption of established communities or orderly planned developments adjacent to MCO or in the vicinity of MCO.

Disruption of Local Transportation Patterns

The Proposed Action is not anticipated to disrupt any local traffic patterns. Other than periodic fuel delivery trucks and operations/maintenance vehicles, off-site traffic is expected to be minimal and the Proposed Action would not substantially reduce the level of service (LOS) of any local roadway segments. In support of this conclusion, GOAA's traffic engineer conducted a study of the traffic impacts and does not anticipate any disruption to local traffic patterns that substantially reduce the LOS of any local roadway segments. The report is attached hereto as **Appendix V**. Temporary construction traffic related to the Proposed Action and traffic serving the fuel storage and distribution facility are planned to access the East Airfield from the northeast through Cargo Road and Heintzelman Boulevard. Both roadways are connected to limited access high volume roadways via the Goldenrod interchange to SR 528 and the South Jeff Fuqua Boulevard interchange to SR 417. A paved two-lane road would be constructed to provide on-airport access to the secondary fuel storage and distribution facility from Cargo Road. There are no planned permanent connections to Narcoossee Road or Dowden Road associated with the Proposed Action.

Traffic-related impacts that may result from the Proposed Action would be subject to local review under the City of Orlando's Mobility Plan and the Southeast Sector Plan. The City is the lead agency responsible for coordinating the local process for the East Airfield Development Area which will include a review of traffic impact analysis pursuant to the local

permitting process and in accordance with the City's Growth Management Plan (GMP) and the Southeast Orlando Sector Plan.

Environmental Justice

Implementation of the Proposed Action would not result in significant direct off-airport impacts and would not displace any residences and businesses. Substantial indirect impacts (i.e., air emissions, noise, etc.) are not anticipated.

Census data (discussed in Section 4.3.14) reveals that the white population comprises approximately 74 percent of the study area's total population; the black or African American population 8 percent; and the combined percentage of American Indian, Asian, and other races is 14 percent. The total Hispanic population in the study area is 33 percent. Data for Orange County shows the white population comprising 69.1 percent of the County's total population; the black or African American population 22 percent; and the combined percentage of American Indian, Asian, and other races combined are approximately 8.6 percent. The total Hispanic population in the County is 28.7 percent. Based on the census data and the lack of significant off-site impacts identified in this EA, it was determined that the Proposed Action would not cause disproportionate and adverse effects on low-income or minority populations.

Children's Environmental Health and Safety Risks

As noted in other sections of this EA, the Proposed Action would not have any significant impacts with regards to air quality, water quality, or hazardous materials. Therefore, the Proposed Action would not result in any disproportionate health or safety risks to children.

5.15.1.3 Long-Term Development Plan

Socioeconomic

Residential and Business Acquisitions and Relocations

Implementation of the Long-Term Development Plan would not require the acquisition of land. No residences, businesses, or non-profit organizations would be displaced. There would be no adverse impact to local tax bases.

Disruption of Established Communities and Planned Developments

Development activities associated with the Long-Term Development Plan would not result in the disruption of established communities or orderly planned developments adjacent to MCO or in the vicinity of MCO.

Changes in Local Traffic Patterns

The Long-Term Development Plan would not result in any disruption of local transportation patterns or road networks. The Long-Term Development Plan includes realignment of an existing section of Dowden Road south of the East Airfield site for the development of a public park. The Long-Term Development Plan is anticipated to increase traffic on the road network on

the east side of MCO and in the vicinity of the airport; however, the level of increase is unknown at this time. The size and type of future tenant operations at the East Airfield site may require some improvements to accommodate traffic (i.e., traffic signals). In accordance with local ordinances and development guidelines, each new development at the East Airfield site would require an analysis or traffic impacts and, if necessary, roadway improvements to maintain an acceptable LOS on area roads.

Potential traffic that may be generated under the Long-Term Development Plan was analyzed by GOAA's traffic engineer. The report concluded that the potential full-build out is not anticipated to reduce the LOS of any local roadway segments.

Environmental Justice and Children's Health

Because the Long-Term Development Plan is not anticipated to have significant impacts and for the same reasons cited above for the Proposed Action, the Long-Term Development Plan would not cause disproportionate and adverse effects on low-income or minority populations or affect children's environmental health or safety.

5.15.2 Comparison to Significant Impact Thresholds

As described above, no significant socioeconomic impacts, environmental justice effects, or potential environmental health risks and safety risks that could disproportionately affect children would occur for either the No-Action Alternative or the Proposed Action (see **Table 5.15-1**).

5.15.3 Mitigation

Because no significant impacts would occur, no mitigation is required.

TABLE 5.15-1
SUMMARY OF SOCIOECONOMIC IMPACTS – SIGNIFICANCE THRESHOLDS

Alternative	Significance Threshold [1]	Does the alternative meet or exceed the Significance Threshold?
No-Action	Would cause extensive residential or business relocations.	**No**
	Would cause substantial loss in community tax base.	**No**
	Would cause disruption in local traffic patterns that substantially reduces the Level of Service for roads serving the airport and its surrounding communities.	**No**
	Would cause environmental justice effects or would result in disproportionate health effects or safety risks to children.	**No**
Proposed Action	Would cause extensive residential or business relocation.	**No**
	Would cause substantial loss in community tax base.	**No**
	Disruption in local traffic patterns that substantially reduces the Level of Service for	**No**

TABLE 5.15-1 (Continued)
SUMMARY OF SOCIOECONOMIC IMPACTS – SIGNIFICANCE THRESHOLDS

Alternative	Significance Threshold [1]	Does the alternative meet or exceed the Significance Threshold?
	roads serving the airport and its surrounding communities.	
	Would cause environmental justice effects or would result in disproportionate health effects or safety risks to children.	**No**

[1] Significance Thresholds are established in FAA Order 1050.1E Appendix A and FAA Order 5050.B Table 7-1.

SOURCE: ESA Airports, 2015, HDR, 2008

5.16 Water Quality

Section 4.3.15 provides a summary of the Federal and state regulatory framework that applies to the Proposed Action site. As stated in FAA Order 5050.4B Table 7.1, a significant impact to water quality would occur, "[w]hen an action would not meet water quality standards. Potential difficulty in obtaining a permit or authorization may indicate a significant impact."[37]

5.16.1 Near-Term Impact Analysis

5.16.1.1 No-Action Alternative

No development would occur with the No-Action Alternative, therefore, no impacts to water quality would occur.

5.16.1.2 Proposed Action

The Proposed Action includes two projects which have the potential to adversely affect water quality; clearing and construction of a secondary fuel supply and distribution facility (30 acres) and clearing, excavation, de-mucking, back filling, and stabilizing approximately 207 acres of Waters of the U.S, which includes approximately 171 acres of Federal jurisdictional wetlands and approximately 36 acres of surfaces waters.

The fuel supply and distribution facility will increase the impervious surface on the East Airfield site (road construction and the tank farm) however, this increase in impervious surface is negligible (~2%) in the context of the 1,342 acre site. The type of pollutants expected to be generated with operation of the fuel supply and distribution facility may include petroleum organics, suspended solids, dissolved solids, and metals. Additionally, prior to construction, GOAA will submit a Construction General Permit Notice of Intent (NOI) to the DEP. This NOI will include a Stormwater Pollution Prevention Plan (SWPPP) which includes: characterization of where and how pollutants may be mobilized; a site plan to manage stormwater; identification of appropriate erosion and sediment controls and stormwater best management practices;

[37] FAA Order 5050.4B Table 7.1-6

maintenance and inspection schedule; recordkeeping; and identification of stormwater discharge areas. Among the BMPs potentially included will be retention ponds, temporary sediment basins, entrance and exit controls, silt fencing, berms, stabilization measures, phased construction, oil and fuel containment, and spill prevention and clean up. It is expected that all runoff from construction can be contained on-site with no discharge off site to waters of the state for the design storm events.

The clearing, excavation, de-mucking, back-filling, and stabilizing of Federal wetlands has the potential to increase runoff and generate associated pollutants. As stated above, prior to construction, GOAA will submit a Construction General Permit NOI to the DEP. The surface water management system necessary to capture and treat all stormwater runoff will be constructed prior to activities in the wetlands. The system will be designed to either prevent off site discharge to waters of the state or, if necessary, be designed in accordance with the engineering criteria of the state regulatory agency to ensure that discharges from the site do not cause violations of surface water quality criteria.

The Proposed Action includes land clearing activity, the construction of a surface water management system, the discharge of dredged and filled material to Waters of the U.S., and construction of a 30-acre fuel supply and distribution facility (See Section 3.0, Proposed Action). GOAA has received a conceptual ERP from the SFWMD, which constitutes water quality certification for the Proposed Action pursuant to Section 401 of the CWA. The SFWMD ERP demonstrates that the Proposed Action will comply with water quality standards. The SFWMD ERP issued on August 30, 2010 (48-00063-S-03) states the following:[38]

> "Issuance of this Permit constitutes certification of compliance with state water quality standards where necessary pursuant to Section 401, Public Law 92-500, 33 USC Section 1341…"

GOAA will be required to submit a "Notice of Intent to Use Generic Permit for Stormwater Discharge from Large and Small Construction Activities" (Rule 62-621.300 (4), F.A.C.) to the DEP prior to land clearing activities on site. This DEP permit is issued under the NPDES and will require GOAA to submit a SWPPP.

GOAA's development of the fuel storage and distribution facility and any other regulated oil or oil-based storage areas will be subject to the *Oil Pollution Act* requirements and all applicable state, local, and Federal regulations. In accordance with DEP regulations, GOAA will ensure that a Spill Prevention Control and Countermeasure Plan (SPCC) is developed for all regulated facilities. Lease holders will be responsible for preparing SPCC plans as part of their lease agreements and coordinating these plans with GOAA Environmental Department.

[38] The ERP issued on August 30, 2010 (48-00063-S-03) is on file with GOAA.

5.16.1.3 Long-Term Development Plan

Surface Water Quality

The Long-Term Development Plan (i.e., construction of buildings, roads, aircraft parking aprons, and taxiways) would increase the amount of impervious surface at MCO. Potential surface water quality concerns associated with the Long-Term Development Plan consist of sediment transport and potential release of pollutants during construction, increased stormwater runoff volumes, and potential release of pollutants following project completion.

Stormwater Treatment and Discharge – The change in storm water runoff from future facilities could be substantial, when compared to the No-Action Alternative. However, it is anticipated that storm water run-off from the new facilities can be attenuated and treated in accordance with existing conceptual SFWMD ERP discussed above. NPDES permits for construction activities would also be required for each development project (see Section 5.5 for more information).

Storm water management systems designed for the Long-Term Development Plan would meet the requirements of FAA AC 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports,* for maximum water detention periods.

Operational-Related Water Quality Impacts – From an operational standpoint, the future operation of aviation and non-aviation facilities could potentially introduce new or higher levels of pollutants such as petroleum organics, suspended solids, dissolved solids, and metals to surface waters, when compared to the No-Action Alternative. The types of pollutants typically associated with large-scale aviation activity include fuel (aviation gasoline and Jet-A fuel), oil and grease, solvents, and paint. In regard to aircraft movements on runways and taxiways, studies have shown that these aircraft movements are not a substantial source of pollutants, such as oil and grease, on airfield pavements. Runoff from these areas can often meet applicable treatment requirements through overland flow.[39] Stormwater runoff from aircraft parking aprons and airport industrial facilities would be appropriately attenuated and treated under the existing conceptual ERP permit discussed above. In addition, it is anticipated that each new facility would comply with and implement GOAA's SWPPP, SPCC, and BMPs. Therefore, the potential for substantial operational water quality impacts associated with the Long-Term Development Plan is expected to be low.

Construction-Related Water Quality Impacts

Measures to minimize erosion and sedimentation and maintain water quality throughout the construction phase are available and would be implemented for each development project. As discussed above for the Proposed Action, the development of BMPs and construction guidance provided in FAA AC 150/5370.10G would also be incorporated into the project plans and specifications to reduce potential for erosion and minimize construction-related impacts.

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[39] *Florida Airports Stormwater Best Management Practices Manual*. Statewide Airport Stormwater Study. Florida Department of Transportation. June 2005.

Collectively, erosion control measures, BMPs, and pollution prevention plans would minimize the potential for construction-related water quality impacts and minimize the potential for future development projects at the East Airfield site to exceed applicable water quality standards.

Groundwater

Under the Long-Term Development Plan, the potential for substantial groundwater impacts is considered to be minimal. There is a possibility of the release of contaminants to groundwater during construction or operation of the new aviation facilities. However, the use of BMPs and SWPPPs would minimize the potential to release of contaminants into groundwater.

Water Supply

The types of tenants expected to occupy the site include aerospace manufacturers, aircraft parts manufacturers, aircraft repair and maintenance operations, air cargo operations, and other similar businesses. These types of operations typically do not have high water demands and do not involve water-intensive industrial processes. However, the potential aviation-related industrial development anticipated under the Long-Term Development Plan would result in an increase in the use of potable water at MCO. The increased demand for water is anticipated to primarily result from water consumption by new employees.

The development of facilities at the East Airfield site would require the installation of water utilities with the capacity and pressure to meet local fire protection code requirements. This would entail sizing water mains to handle daily potable water consumption and fire protection flows or installation of separate fire protection systems.

Wastewater

Potential future aviation and non-aviation facilities at the East Airfield site is expected to increase the amount of process wastewater and sanitary wastewater generated at MCO.

5.16.2 Comparison to Significant Impact Thresholds

As described above, the No-Action Alternative and Proposed Action would not meet or exceed significance thresholds for water quality resources (see **Table 5.16-1**).

5.16.3 Mitigation

Because significant impacts would not occur, mitigation is not required.

TABLE 5.16-1
SUMMARY OF WATER QUALITY IMPACTS – SIGNIFICANCE THRESHOLDS

Alternative	Significance Threshold [1]	Does the alternative meet or exceed the Significance Threshold?
No-Action	Would not meet water quality standards.	**No**
	Potential difficulty in obtaining a permit or	**No**

TABLE 5.16-1 (Continued)
SUMMARY OF WATER QUALITY IMPACTS – SIGNIFICANCE THRESHOLDS

Alternative	Significance Threshold [1]	Does the alternative meet or exceed the Significance Threshold?
	authorization may indicate a significant impact.	
Proposed Action	Would not meet water quality standards.	**No**
	Potential difficulty in obtaining a permit or authorization may indicate a significant impact.	**No**

[1] Significance Thresholds are established in FAA Order 1050.1E Appendix A and FAA Order 5050.B Table 7-1.
SOURCE: ESA Airports, 2015

5.17 Wetlands

As noted in Section 4.3.16, impacts to wetlands on the East Airfield site are regulated by the USACE and the SFWMD. The FAA reviews a proposed action on an airport to determine if the action would affect wetlands. If the action would affect wetlands and there is no practicable alternative, all reasonable means should be employed to minimize wetland impacts due to filling, run off, construction, sedimentation, land use or other reason. This section provides a qualitative analysis of the impacts associated with the No-Action Alternative and the Proposed Action and describes mitigation measures/actions necessary to offset unavoidable impacts and meet applicable Federal and state requirements.

5.17.1 Near-Term Impact Analysis

Section 4.3.16 provides the quantification of wetlands on the East Airfield site for wetlands that fall under the jurisdiction of the USACE and the SFWMD. This section describes the information contained in Individual Permit Application No. SAJ-2006-2640 (IP-JSC) submitted to the USACE in November 2010 and the revised application that was submitted to the USACE on August 3, 2015. This section also provides information contained in the SFWMD Conceptual ERP (Permit Modification No. 48-00063-S-03). The SFWMD issued this permit on August 30, 2010.

5.17.1.1 No-Action Alternative

No development would occur on the East Airfield site with the No-Action Alternative. Therefore, no impacts to Federal or state jurisdictional wetlands would occur. Consequently, adopting the No-Action Alternative would not adversely affect any wetland functions and therefore would not exceed any of the significance thresholds for wetland functions (Table 5.17-1).

5.17.1.2 Proposed Action

GOAA analyzed the Proposed Action for wetland impacts in two sections: Federal level review for the USACE and state level review for the SFWMD. The delineation of wetlands at the East Airfield site, as well as the corresponding Modified Wetland Rapid Assessment Procedure (M-WRAP) and Uniform Mitigation Assessment Method (UMAM) assessments were reviewed

and accepted by the SFWMD and USACE through the wetland permitting process. The sections below address specific regulatory requirements of each agency.

Federal Level Review

The East Airfield Development Site contains approximately 256.43 acres of USACE jurisdictional wetlands or Waters of the U.S. (defined under Section 404 of the CWA) (See **Figure 5.17-1**). The Proposed Action would discharge dredged and fill material to 171.13 acres of USACE jurisdictional wetlands.

GOAA assessed the functions and value of the on-site jurisdictional wetlands in December 2005 and February 2006 using the M-WRAP (per SFWMD Technical Publication REG-001, updated August 1999, and the Joint State/Federal Mitigation Bank Review Team Process for Florida).[40] The M-WRAP methodology assesses the following variables: wildlife utilization, wetland overstory/shrub canopy, wetland vegetative groundcover, adjacent upland/wetland buffer, field indicators of wetland hydrology, and water quality input and treatment.

The USACE Individual Permit Application SAJ-2006-2640 (IP-JSC) and the 2015 revised permit application include data sheets used in the M-WRAP assessment (on file with GOAA and USACE). The M-WRAP analysis identified direct impact to 171.13 acres of jurisdiction wetlands, resulting in a loss of 102.4 M-WRAP functional wetland units. GOAA is proposing off site mitigation to offset the 102.4 functional wetland unit loss at an already established off-site mitigation area.

State Level Review

The SFWMD has issued a conceptual ERP for the East Airfield site.[41] An ERP considers the following elements:

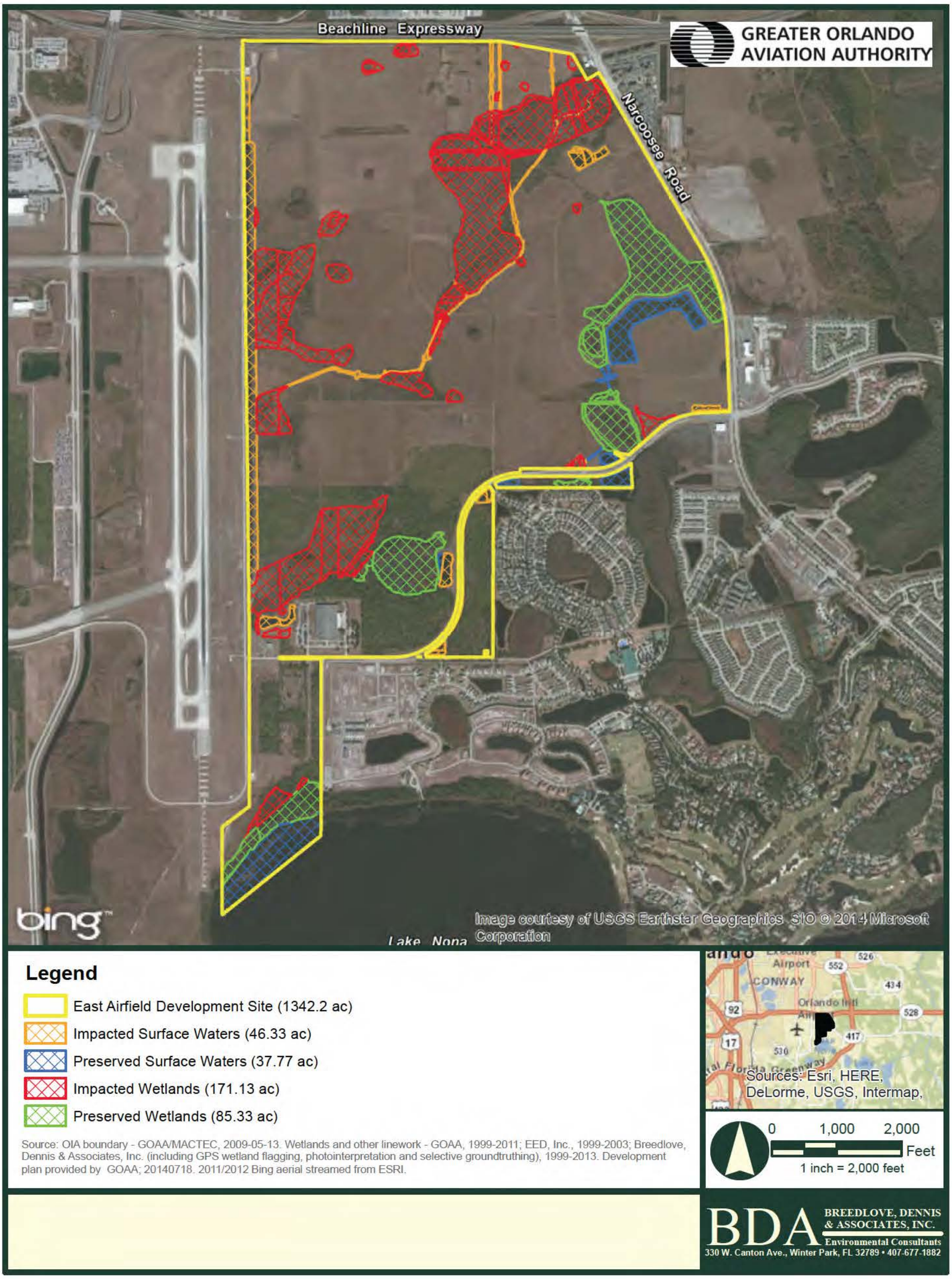
> An ERP covers activities such as dredging and filling in wetlands, constructing flood protection facilities, providing stormwater containment and treatment, site grading, building dams or reservoirs, and other activities affecting state waters. The ERP combines wetland resources permitting with management and storage of surface waters permitting into a single permit, to streamline the permitting process.

The conceptual ERP identifies 319.25 acres of wetlands and other surface waters. Of these 319.25 acres, the conceptual ERP addresses the impacts to 247.77 acres of state-jurisdictional wetlands. The Proposed Action is anticipated to impact 162.19 acres of state jurisdictional wetlands and 34.37 acres of surface waters, totaling 196.56 acres (see **Figure 5.17-2**). All of the impacts to state jurisdictional wetlands are included within the 247.77 acres of permitted impacts in the conceptual ERP.

The UMAM, as outlined in Chapter 62-345, Florida Administrative Code, was used to quantify the wetland functional loss. UMAM provides a standardized procedure for assessing the functions

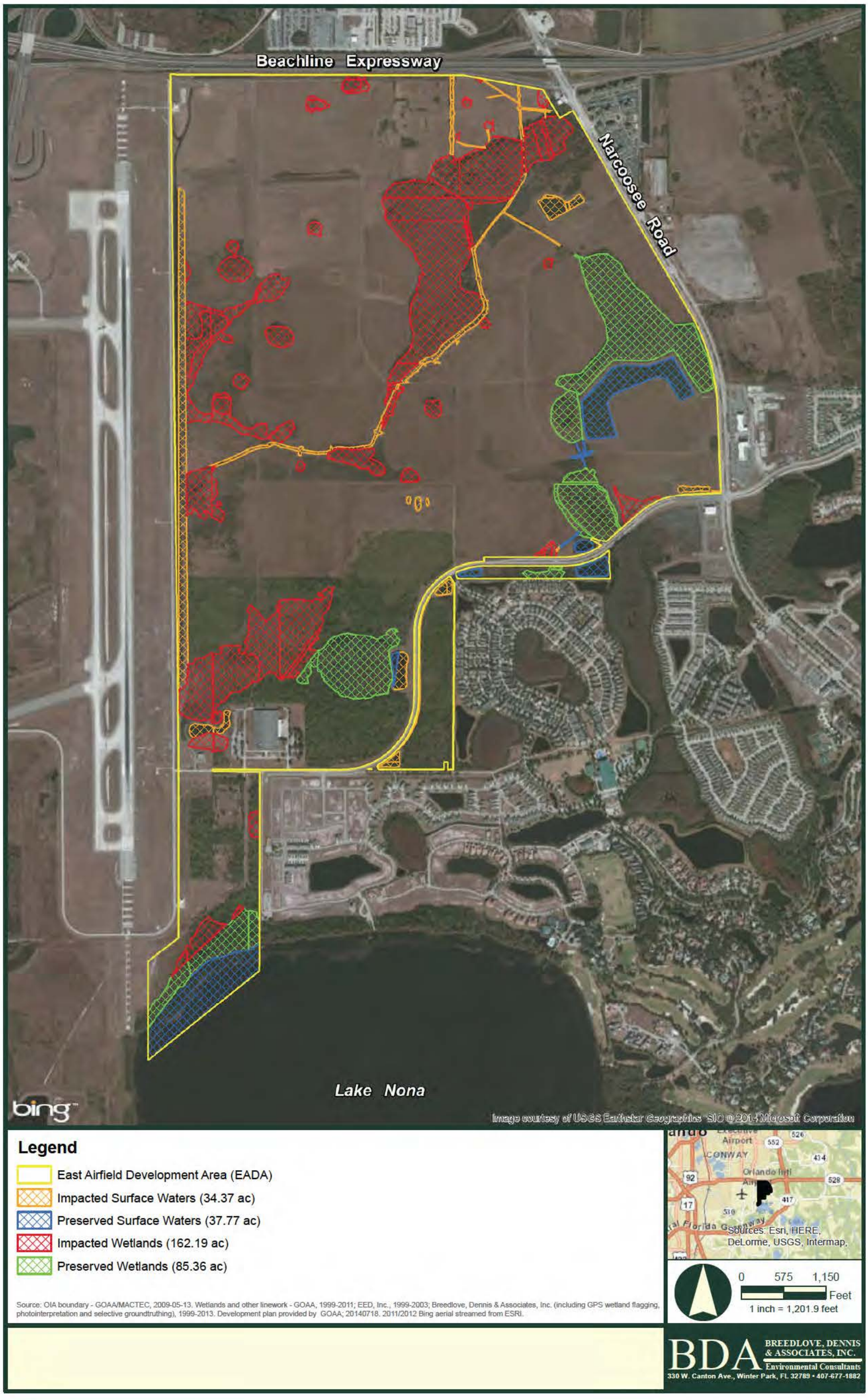
[40] BDA reviewed and re-validated M-WRAP information in 2010 and 2014.

[41] SFWMD Conceptual ERP Permit Modification No. 48-00063-S-03 issued August 30, 2010.



SOURCE: Breedlove, Dennis & Associates, Inc., 2014

Figure 5.17-1
Federal Wetland Impact Map



SOURCE: Breedlove, Dennis & Associates, Inc., 2014

Figure 5.17-2
State Wetland Impact Map

provided by wetlands, the amount by which those functions are reduced by a proposed impact, and the amount of mitigation (in units) required to offset that loss. UMAM analyzes three (3) categories of indicators of wetland function. The three categories are: location and landscape support, water environment, and community structure. According to the UMAM analysis detailed in the conceptual ERP, the wetland impacts will result in a loss of 151.29 functional units. SFWMD approved off-site wetland mitigation through the purchase 151.29 mitigation credits at established mitigation banks and the acquisition of a 29 acre off-site mitigation area known as Hampton Bay.

Consideration of Alternatives to Avoid and Minimize Impacts

Four alternatives were examined based on their ability to achieve the purpose of and need for a reduction of existing wildlife hazard attractants on the East Airfield site. See Section 3.0, Alternatives, for a detailed discussion of alternatives considered. No practicable alternative for avoiding wetlands or surface waters was identified. The alternatives were as follows:

No-Action Alternative – This alternative would not impact wetlands. However, this alternative would not address the need to remove wildlife hazard attractants at the East Airfield site as recommended in the MCO Wildlife Hazard Management Plan (revised July 2015).[42]

Wildlife Hazard Attractant Reduction Alternative 1 (No impacts to Wetlands) – This alternative would not remove wetland habitat from the site. Instead, GOAA would implement both active and passive wildlife hazard management techniques on the East Airfield site. Active management requires reasonable and prompt access to wildlife hazard attractants. Due to limited access (e.g., wetlands, soil conditions, standing water, and natural habitats) this alternative was not considered to be reasonable or effective in managing hazardous wildlife on the East Airfield site.

Wildlife Hazard Attractant Reduction Alternative 2 (Partial Impacts to Wetlands) – This alternative (selected by GOAA as the Proposed Action) decreases the amount of wildlife hazard attractants on the East Airfield through the removal of wetlands (171 acres) while avoiding approximately 85 acres of on-site wetlands. The avoided wetlands (along the eastern portion of the property, furthest from the airfield) would be actively managed by GOAA staff to decrease the attractiveness of these areas to wildlife that pose a risk to aviation at MCO by implementing the measures included in the approved WHMP.

All of the wetlands and surface waters on the East Airfield site were identified as hazardous wildlife attractants in MCO's WHMP, which recommended that they be eliminated.

[42] To provide scheduled commercial passenger service at MCO, GOAA operates the airport in accordance with a certificate issued by the FAA (Title 14 CFR Part 139, *Certification of Airports)*. Airport Operating Certificates serve to ensure safety in air transportation. Section 139.337 of the regulation requires that GOAA assess wildlife hazards and attractants at MCO, formulate a plan to alleviate or eliminate wildlife hazards to air carrier operations, and take immediate action to alleviate wildlife hazards whenever they are detected. Based on an analysis of data collected at MCO over several years and an evaluation of hazardous wildlife attractants at MCO (the entire airport), GOAA developed a Wildlife Hazard Management Plan (WHMP) for the airport. All of the wetlands and surface waters on the East Airfield site have been identified as hazardous wildlife attractants in MCO's WHMP which recommended that they be eliminated recommended removal of hazardous wildlife habitat at the East Airfield site.

However, this addresses hazardous wildlife attractants while seeking to avoid and minimize impacts to Waters of the U.S. (to the extent practicable). Based on regular hazardous wildlife monitoring, aircraft strike data for MCO, and a specific Wildlife Hazard Site Visit conducted in 2015 for the East Airfield site, the wetlands identified for elimination on the East Airfield site were those considered to be wildlife hazards and were identified for removal in the MCO WHMP in order to reduce hazardous wildlife attractants, improve aviation safety and to avoid and minimize wetland impacts to the extent practicable. This alternative was selected by GOAA as the Sponsor's Preferred Alternative and was retained for detailed analysis in the EA.[43]

Wildlife Hazard Attractant Reduction Alternative 3 (100% Wetland Impacts) – This alternative would remove all wetlands on the site, but would not avoid or minimize wetland impacts. In response to comments provided by the EPA that elimination of all wetlands was not permittable, GOAA sought an alternative that lessened direct wetland impacts. Because this alternative would not avoid or minimize wetland impacts, it was not retained for further analysis.

Following screening analysis described in Section 3, Wildlife Hazard Attractant Reduction Alternative 2 was the only alternative that would address long-term wildlife hazard management goals and objectives of the WHMP while avoiding and minimizing wetland impacts.

Proposed Action Impacts

In regard to impact thresholds identified in FAA Order 1050.1E, the following statements can be made:

- The Proposed Action would remove 171 acres of wetlands on the East Airfield site. Approximately 85 acres of wetlands would be avoided. There would be no impacts to wetland functions associated with the quality or quantity of municipal water supplies, including sole source aquifers.

  The Proposed Action would eliminate the current wetland functions within the 171 acres area to be filled. The loss of wetland function with respect to floodwaters and storm runoff has been addressed by the Proposed Action's permitted surface water management system. This system has been designed to ensure that the post-development discharge will not exceed the pre-development discharge and that adverse flooding will not occur off site. As noted in Section 5.16.1.2, GOAA has received a conceptual ERP from the SFWMD for stormwater management system improvements, which constitutes water quality certification for the Proposed Action pursuant to Section 401 of the CWA. The SFWMD ERP demonstrates that the Proposed Action will comply with water quality standards. Mitigation measures would also compensate for the loss of beneficial wetland functions related to water quantity and quality.

[43] GOAA updates the WHMP annually. If future site conditions or wildlife activity changes in the avoided 85-acre wetland and the changes increase the risk of a strike, the WHMP may be revised to recommend habitat removal.

- The Proposed Action would be designed to maintain the hydrology needed to sustain the functions and values of the 85-acre wetland that would be avoided and wetlands to which is connected. As mentioned above, hydrology was addressed by the Proposed Action's proposed surface water management system, for which the SFWMD has issued an ERP, which constitutes water quality certification for the Proposed Action.
- Through the proposed (and permitted) stormwater management system, the Proposed Action would not substantially reduce the ability to retain floodwaters or storm-associated runoff on site. As noted previously, the system has been designed to ensure that the post-development discharge will not exceed the pre-development discharge and that adverse flooding will not occur off site. Therefore, threats to public health, safety, and welfare are not expected.
- The Proposed Action will eliminate the current wetland functions within the 171 acres area to be filled. The Proposed Action would not adversely affect the maintenance of natural systems that support wildlife and fish habitat or economically-important timber, food, or fiber resources in surrounding wetlands. Proposed mitigation measures would enhance and preserve natural habitat systems that support wildlife and fish habitat.

  Included in M-WRAP are quantitative assessments of wildlife utilization, wetland canopy, wetland ground cover, upland/wetland buffer, wetlands hydrology, and water quality. Based on this M-WRAP assessment 102.4 M-Wrap units of functional loss will result from implementing the Proposed Action. GOAA currently has USACE approved M-WRAP based mitigation credits available for use at the BRENSOLA site on the Disney Wilderness Preserve in Osceola County, Florida (see Section 5.17.2.2 below). The mitigation work completed at BRENSOLA will fully offset the wetland functional loss resulting from the Proposed Action. Therefore, with mitigation, the Proposed Action will not exceed any of the significance thresholds for wetland functions (**Table 5.17-1**). The mitigation site is located within the upper Kissimmee watershed as is the East Airfield.

- The Proposed Action would not promote development of secondary activities or services that would impact Waters of the U.S. or wetlands. Based on the 2010 USDA Wildlife Hazard Assessment and the 2015 Wildlife Hazard Site Visit, the WHMP recommended habitat removal for reducing priority hazardous wildlife attractants at the East Airfield site. No other wetland impacts on the East Airfield site are identified or proposed at this time. However, if future site conditions or wildlife activity changes in the avoided 85-acre wetland and the changes increase the risk of a strike, the WHMP may be revised to recommend habitat removal in this wetland area.

  The requested approval of a site at MCO for future development, in and of itself, indicates that the site would be available for future development needs at MCO. Sections 1.2.1 and 2.2 in this EA disclose this fact and discuss GOAA's long-term intention to have suitable land available to accommodate requests to establish new and/or expand existing businesses at MCO. Because the need to reduce hazardous wildlife attractants

on the East Airfield site would remove most wetlands on the site, it is unlikely that future development would involve wetland impacts.

- The Proposed Action would be consistent with applicable state wetland strategies. Pursuant to Federal and state wetlands regulations, impacts to wetlands have been avoided to the greatest extent practicable and for those impacts which could not be avoided, they were minimized.

5.17.1.3 Long-Term Development Plan

No additional wetland impacts are anticipated if the Long-Term Development Plan was implemented.

5.17.2 Comparison to Significant Impact Thresholds

As described above, the No-Action Alternative would not impact wetlands. The Proposed Action would impact 171 acres of jurisdictional wetlands. However, the SFWMD issued an ERP for the Proposed Action in 2010; the M-WRAP and UMAM assessments for the proposed wetland impacts were reviewed and accepted by the SFWMD and USACE through the wetland permitting process; and the mitigation proposed would offset wetland impacts. This indicates that the Proposed Action, with required mitigation, would not exceed thresholds indicating a significant impact (see Table 5.17-1).

TABLE 5.17-1
SUMMARY OF WETLAND IMPACTS – SIGNIFICANCE THRESHOLDS

Alternative	Significance Threshold [1]	Does the alternative meet or exceed the Significance Threshold?
No-Action	Adversely affect a wetland's function to protect the quality or quantity of a municipal water supply, including sole source aquifers and a potable water aquifer.	**No**
	Substantially alter the hydrology needed to sustain the affected wetland's values and functions or those of a wetland to which it is connected.	**No**
	Substantially reduce the affected wetlands' ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare. The last term includes cultural, recreational, and scientific public resources or property.	**No**
	Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically-important timber, food, or f ber resources of the affected or surrounding wetlands.	**No**
	Promote development that causes any of the above impacts.	**No**
	Be inconsistent with applicable State wetland strategies.	**No**
Proposed Action	Adversely affect a wetland's function to protect the quality or quantity of a municipal water supply, including sole source aquifers and a potable water aquifer.	**No** (with permitted stormwater management system and proposed mitigation)
	Substantially alter the hydrology needed to sustain the affected wetland's values and functions or those of a wetland to which it is connected.	**No** (with permitted stormwater management system)
	Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare. The last term includes cultural,	**No** (with permitted stormwater management system)

TABLE 5.17-1 (Continued)
SUMMARY OF WETLAND IMPACTS – SIGNIFICANCE THRESHOLDS

Alternative	Significance Threshold [1]	Does the alternative meet or exceed the Significance Threshold?
	recreational, and scientific public resources or property.	
	Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically-important timber, food, or fiber resources of the affected or surrounding wetlands.	**No** (with proposed mitigation)
	Promote development that causes any of the above impacts.	**No**
	Be inconsistent with applicable State wetland strategies.	**No**

[1] Significance Thresholds are established in FAA Order 1050.1E Appendix A and FAA Order 5050.4B Table 7-1 and FAA Environmental Desk Reference for Airport Actions (2007).

SOURCE: ESA Airports, 2015

5.17.3 Mitigation

5.17.3.1 Avoidance, Minimization, Mitigation

In order to meet the purpose and need of the Proposed Action, impacts to Waters of the U.S. are unavoidable. Since the original USACE application was submitted in 2006 (USACE Individual Permit Application SAJ-2006-2640 (IP-JSC)), there has been substantial coordination with state and Federal regulatory agencies and the public. Public information meetings, a public hearing, and comments on the prior two public notices on the project have been received. GOAA has also engaged with representatives of the residential communities to the south of the Proposed Action site. As a result, GOAA has modified its Conceptual Plan such that it meets regulatory agency requirements, is responsive to public comments to the extent practicable, and provides a development plan that allows GOAA to meet its basic and overall project purpose.

The development of the Proposed Action will impact 207 acres of Waters of the U.S, which includes approximately 171 acres of Federal jurisdictional wetlands and approximately 36 acres of surface waters. The impact will result from filling activities.

Since the submittal of the USACE Permit Application on September 18, 2006, GOAA has modified the East Airfield Conceptual Plan. First, the fuel storage and distribution facility was relocated to the north portion of the East Airfield site. In the original concept plan, the fuel storage facility was located near the southern boundary of the site near an existing natural gas pipeline. In response to comments regarding the proximity of the fuel storage facility to residential communities, GOAA shifted the fuel storage facility to the north part of the site. However, the relocation of the fuel storage facility reduced the flexibility in the north part of the East Airfield site to accommodate the previously identified aviation uses proposed by GOAA.

Secondly, GOAA modified the concept plan to include three primary types of land uses – Category A (high intensity aviation support), Category B (medium intensity aviation support), and Category C (stormwater ponds). To provide less intensive uses adjacent to the residential community to the south of the site, the aviation support north and south of the Dowden Road extension was changed from Category A (as originally planned) to Category B and Category C.

While this project development plan modification maintains the core area of the East Airfield site for large-scale high intensity aviation support, it replaces the hangars with potential aircraft movement in this area with office buildings or stormwater ponds to accommodate less intense aviation support uses. These conceptual plan modifications reduced the overall capacity for large-scale high intensity aviation support, in the project as originally planned, by approximately 38 percent.

GOAA also evaluated two additional configurations of the development plan to determine if it was practicable to exclude a majority of the two largest wetlands on the eastern half of the site. The first alternative (Configuration 1) would further reduce the Category A building area and taxi lane and apron by an additional 40 percent and 36 percent respectively (see **Appendix W** for Configuration 1 graphic). Such a reduction in Category A area would result in a project significantly different in both type and function and would not meet the project purpose. In addition, while Configuration 1 results in fewer direct impacts to Waters of the U.S., implementing Configuration 1 would isolate the wetland systems and further reduce the already limited wetland functions provided by these wetland systems. Because of the encroaching aviation land use, wildlife recruitment and movement into and out of these wetlands by mammals, amphibians, and reptiles would be substantially reduced. Although birds would still be able to utilize these wetlands for roosting, resting, and some foraging, a wetland within immediate proximity to aircraft movement areas would necessarily be subject to an aggressive wildlife hazard management plan to reduce or eliminate wildlife utilization of these wetlands in order to protect public safety. Since the reduced functions described above are not caused by elimination (filling) of a wetland, mitigation to offset the reduced functions would not be required, therefore Configuration 1 does not result in an alternative that meets the project purpose and also does not result in minimizing adverse environmental impacts.

GOAA also evaluated a second alternative project concept (Configuration 2) that would exclude the wetlands as described above in Configuration 1 and seek to recover Category A area in other parts of MCO. Configuration 2 incorporates the Heintzelman Boulevard area between the 3rd and 4th runways at MCO. GOAA determined Configuration 2 is not practicable for the following reasons:

- Utilizing some of the Heintzelman Boulevard area to offset the Category A areas lost by excluding the two large wetlands from development does not improve the reduced functions in those wetlands as discussed above.
- The majority of the Heintzelman Boulevard area cannot accommodate Category A uses because of air traffic control tower line-of-sight constraints imposed by 14 CFR Part 77 height restrictions.
- The remaining portion of the Heintzelman Boulevard area not restricted by line-of-sight constraints that could accommodate large hangars is relatively small (86 acres).
- The remaining portions of the Heintzelman Boulevard area not restricted by line-of-sight constraints are already permitted for the South Terminal Complex and the aviation support uses for the South Terminal. Utilizing these areas for Category A or B uses

would then require GOAA to designate other areas within MCO to locate the South Terminal Complex aviation support uses. Relocating such aviation support uses to other locations at MCO would create operational inefficiencies and unnecessary safety and security issues.

- The Heintzelman Boulevard area is not contiguous to the Proposed Action site and would require the extension of at least one additional taxiway for access. Additionally, the non-contiguous location would result in operational inefficiencies including increased taxi time and fuel consumption.
- The relatively small area of Heintzelman Boulevard which could accommodate Category A uses would be further reduced by stormwater management requirements which would otherwise be consolidated on the Proposed Action site.

Finally, GOAA has further modified the configuration of the conceptual plan in a manner that reduces impacts to Waters of the U.S from 256.43 acres to 207 acres. This minimization results in the conservation of a large cypress strand wetland system and associated upland buffer connecting off site through Lake Nona and ultimately to Lake Hart. Other minimization efforts include avoiding impacts to a forested wetland system on the south, and approximately 12 acres of wetlands adjacent to Lake Nona between the proposed Dowden Road extension and Lake Nona. As a result, GOAA has reduced its Category A land use by 40 percent from the original proposal. In addition to the Category A, B, and C uses described above, other land uses shown on the 2014 Conceptual Plan include: a portion of Lake Nona (not to be developed); a park, berm, and heavy landscaped areas; internal roads, landscape areas, utility setbacks, and open space; natural buffers including wetlands not impacted as part of the Proposed Action. Accordingly, GOAA has implemented all practicable design modifications to avoid and then minimize impacts to Waters of the U.S. in accordance with the Section 404 (b) (1) Guidelines.

Furthermore, the isolation and fragmentation of on-site wetlands (i.e. minimization) would further reduce the values and functions of remaining wetlands on site and continue to provide the potential for wildlife hazard attractants. A U.S. Department of Agriculture (USDA) Wildlife Hazard Assessment determined that the site's existing wetlands, among other areas on the East Airfield site, are attractants to hazardous wildlife groups and species (wildlife that may pose a hazard to flight operations at MCO).[44] The attached *Supplemental Technical Appendix*[45] presents additional background information and data, including information from a Wildlife Hazard Site Visit, used to develop the wildlife control measures identified in the Wildlife Hazard Management Plan (revised July 2015).

[44] USDA Wildlife Hazard Assessment for East Airfield Orlando FL December 2008-Dember 2009 provided to GOAA in January 2010 (on file with GOAA).

[45] This *Supplemental Technical Appendix* includes the *Orlando International Airport Wildlife Hazard Assessment (1999); GOAA Air Operations Area Wildlife Ecological Study and Annual Reports (2003-Present); Monthly Synopsis Reports (2003-Present); WHMP Review Forms - Following a Triggering Event (2012-Present); MCO East Airfield - Wildlife Data Review (2014);* and the *Wildlife Hazard Site Visit Orlando International Airport East Airfield Property (2015).*

FAA recommends locating wetland mitigation outside of the separation distance identified in FAA AC 150/5200-33B, *Wildlife Hazard Attractants On or Near Airports*. There is a Federal agency Memorandum of Agreement (MOA) between the U.S. Air Force, U.S. Army, EPA, USFWS, and USDA to address aircraft to wildlife strikes that is used in the development of off-site wetland mitigation strategies.[46] Proposed Federal wetland mitigation and permitted state wetland mitigation is described below.

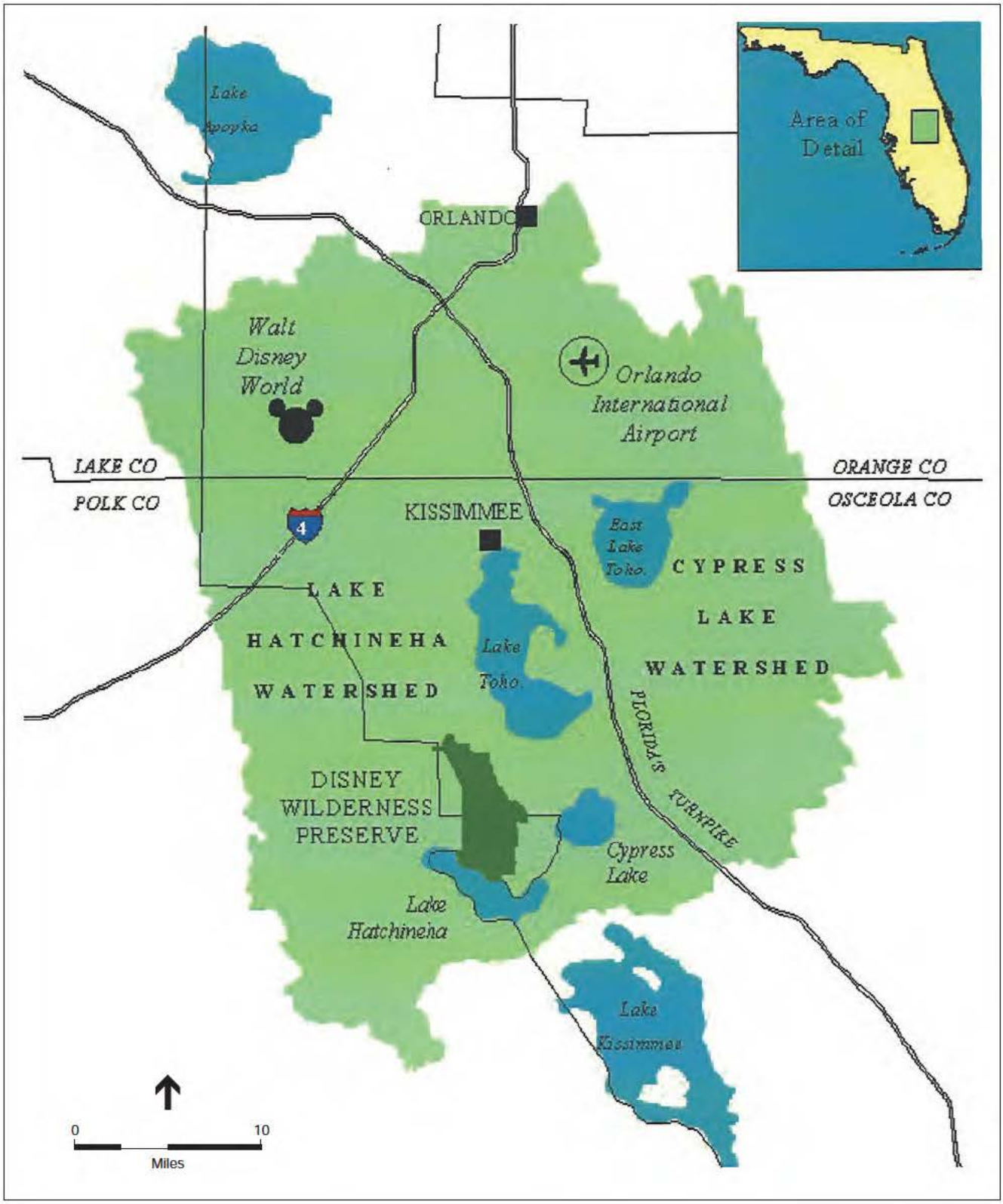
5.17.3.2 Federal Wetland Mitigation

The operation of MCO is subject to FAA AC 150/5200-33B and the 2003 *Memorandum of Agreement between the FAA and U.S. Air Force, U.S. Army, EPA, USFWS, and the USDA to Address Aircraft-Wildlife Strikes*. This AC provides guidance on certain land uses that have the potential to attract hazardous wildlife which present threats to aviation safety. Section 2-4c(2) of the AC recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside the separation distances described in Sections 1-2 through 1-4 unless they provide unique functions that must remain on site [see 2-4c(1)]. Since the wetlands on the East Airfield site do not meet the criteria in Section 2-4c(1), the separation criteria in Sections 1-2 through 1-4 apply to any proposed compensatory mitigation required to offset functional loss to Waters of the U.S. on the East Airfield site. Section 1-2 of the AC recommends a separation distance of 5,000 feet between the airport's Air Operations Area (AOA) and the hazardous wildlife attractant. Section 1-4 provides for protection of approach, departure, and circling airspace by recommending a distance of five statute miles between the farthest edge of the AOA and the hazardous wildlife attractant. Compliance with this AC precludes mitigation projects within these separation criteria. The Florida Department of Transportation (FDOT) *Airport Compatible Land Use Guidebook* (2012) also discourages wetland conservation, preservation, or mitigation on airport property and for any property within the 5,000 and 10,000-foot separation criteria.[47]

GOAA proposes to fully offset the functional loss of 171.13 acres of wetlands by deducting mitigation credits previously authorized by the USACE at the BRENSOLA site on the Disney Wilderness Preserve in Osceola County, Florida, well outside the separation criteria discussed above but within the same watershed (Upper Kissimmee River Basin, see **Figure 5.17-3**) as the proposed discharge. To determine the amount of mitigation credit required by the USACE for the unavoidable impacts associated with the proposed discharge, an M-WRAP analysis was conducted for each area and mitigation area pursuant to the Joint State/Federal Mitigation Bank Review Team Process for Florida, dated October 1998. The total number of debits calculated for the proposed wetland impacts on the East Airfield site is 89.47.

[46] Memorandum of Agreement Between the Federal Aviation Administration, the U.S. Air Force, the U.S. Army, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the U.S. Department of Agriculture to Address Aircraft-Wildlife Strikes (2003).

[47] The FDOT Airport Compatible Land Use Guidebook is available for download at: http://www.dot.state.fl.us/aviation/compland.shtm



SOURCE: Greater Orlando Aviation Authority, 2008; Breedlove Dennis, 2009; and ESA Airports, 2012

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Figure 5.17-3
Location of Mitigation Area/
Disney Wilderness Preserve

The BRENSOLA tracts are two of eight tracts which GOAA has purchased and provided funds to conduct enhancement, restoration, and preservation activities. The tracts are on or adjacent to the Disney Wilderness Preserve, an 11,500 acre regionally significant mitigation project which includes the 8,480 acre Walker Ranch mitigation site. The entire Disney Wilderness Preserve is managed and maintained by the Florida Chapter of The Nature Conservancy with funds provided by GOAA and Walt Disney World Companies. All mitigation work is complete on the BRENSOLA tracts, and the USACE has issued a letter documenting that all permit criteria have been met and that the site is released from further monitoring and reporting (**Appendix X**). A copy of the current GOAA/USACE mitigation ledger showing the available mitigation credits is also provided in Appendix X.

5.17.3.3 State Wetland Mitigation

The SFWMD conceptual ERP addresses conceptual impacts to 247.77 acres of state jurisdictional wetlands which will require mitigation. Mitigation is based on a quantitative functional assessment of wetlands known as the UMAM. UMAM integrates field data collected relative to wetland location and landscape, hydrology, and community composition. This data is used to calculate functional loss in the case of wetland impacts or functional gain in the case of wetland mitigation. Based on the UMAM assessment prepared within SFWMD conceptual ERP Permit Modification No. 48-00063-S-03 issued August 30, 2010, the 2014 Concept Plan will result in 151.29 UMAM functional units of loss (debits).

The mitigation plan approved in the conceptual ERP required the purchase of 151.29 UMAM credits in order to fully offset wetland impacts associated with the East Airfield Site. GOAA purchased the mitigation credits from three wetland mitigation banks located in Osceola County (south of MCO); Southport Mitigation Bank, Quick Draw Mitigation Bank, and Bullfrog Bay Mitigation Bank. In addition as part of the mitigation plan, GOAA purchased and recorded a conservation easement over a 29-acre off-site parcel referred to as the "Hampton Bay" parcel in Orange County. In accordance with the requirements of the conceptual Permit, GOAA fully implemented and completed the mitigation plan in advance of any wetland impacts, and has received written confirmation from the SFWMD that all mitigation required under the conceptual permit was completed on April 26, 2011.[48] The total cost of mitigation required by the SFWMD conceptual Permit was $11,450,401.60.

5.18 Cumulative Impacts

According to the CEQ, cumulative impacts represent the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or

[48] Letter correspondence received April 26, 2011. To Chris Wilson, Marchena and Graham, PA., from Susan Elfers, Lead Environmental Analyst, Environmental Resource Compliance, Orlando Service Center South Florida Water Management District, Subject: Notice of Inspection, Environmental, Greater Orlando Aviation Authority (GOAA) East Airfield, Permit No. 48-00063-S-03 Application No. 060331-11 Orange County, S1,2,11/T23S/R30E. This letter is on file with GOAA.

person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

The analysis of cumulative impacts in this EA considered, to the extent reasonable and practical, the potential impacts of the Proposed Action, the No-Action Alternative, and other development actions, both on and off the airport, that are related in terms of time or proximity. Although the future development of the East Airfield site is not reasonably foreseeable at this time, the EA did provide a qualitative analysis of impacts of this area and placed them in context with other development occurring off-airport in the vicinity. Where there is a potential for substantial cumulative impact between the alternatives, it is noted in the following discussion.

5.18.1 Impact Analysis Approach

This section describes those environmental resources that could potentially be impacted by the development projects in the study area (past, present, and reasonably foreseeable actions) that were identified in Section 4.4 of this EA. For this discussion, the projects identified in Section 4.4 are referred to as the "cumulative projects." Information from several different sources was reviewed for this study, including GOAA project descriptions, past MCO environmental studies, local land development approval documents, aerial photographs, historic aerial photographs, and environmental resources databases (i.e., USFWS National Wetlands Inventory maps, FEMA floodplain maps).

Based on a review of each cumulative project, the severity of potential impacts in a given environmental impact category was given a subjective ranking of Low, Moderate, or High. A rating of Low indicates that there was/would be no or minimal impact associated with a project. A Moderate impact indicates that there was/would be potential to impact a resource, but the impact does not appear to be significant or could be effectively mitigated. A High level of impact indicates that there was/would be a strong probability of a significant impact to the resource and/or extensive mitigation would be required. **Table 5.18-1** provides a summary of the impact analysis for the cumulative projects. When interpreting the ranking information in this table, consideration should be given to the fact that several of the projects listed are in a conceptual or early development phase. As such, planners developing these projects have the opportunity and would likely incorporate design features to minimize and mitigate potential impacts and that project impacts are not known at this time. Consideration should also be given to the fact that some project-specific impact information is not available or was not readily available for use in this study. Therefore, it was not possible to fully define and quantify impacts associated with several projects. In such cases, a qualitative evaluation of the potential environmental impacts associated with these projects was conducted.

This cumulative impact analysis considers the environmental impacts of the Proposed Action together with environmental impacts of the projects and actions discussed in Section 4.4 of this EA. A discussion is provided below as to whether these impacts cumulatively would exceed significant impact thresholds identified in FAA Order 1050.1E for each resource category.

TABLE 5-18-1
POTENTIAL FOR ENVIRONMENTAL IMPACTS OF CUMULATIVE PROJECTS

	Cumulative Projects Level of Impact							
Environmental Categories	**Lake Nona Estates DRI and Northlake Park/ Waters Edge Residential Subdivisions**	**La Vina Planned Development**	**Lee Vista Center DRI**	**JetBlue University**	**Narcoossee Road/State Road 528 Interchange Improvements**	**Narcoossee Road Widening to Lee Vista**	**Narcoossee Road Corridor Development**	**GOAA Annex Building**
Air Quality	Low	Low	Low	Low	Low	Low	Moderate	Low
Coastal Resources	Low	Low	Low	Low	Low	Low	Low	Low
Compatible Land Use	Low	Low	Low	Low	Low	Low	Moderate	Low
Construction Impacts	Moderate	Moderate	Moderate	Low	Moderate	Moderate	Moderate	Low
DOT Section 4(f)	Low	Low	Low	Low	Low	Low	Low	Low
Fish, Wildlife, and Plants	Moderate	Moderate	Moderate	Low	Low	Low	Moderate	Low
Floodplains	Moderate	Moderate	Moderate	Low	Moderate	Moderate	Moderate	Low
Hazardous Materials	Low	Low	Low	Low	Low	Moderate	Low	Low
Historic, Architectural, and Cultural	Low	Low	Low	Low	Low	Low	Low	Low
Light Emission and Visual	Low	Low	Low	Low	Low	Low	Moderate	Low
Natural Resources and Energy	Low	Low	Low	Low	Low	Low	Low	Low
Noise	Low	Low	Low	Low	Low	Low	Moderate	Low
Secondary (Induced) Impacts	Moderate	Low	Moderate	Low	Low	Moderate	Moderate	Low
Socioeconomic Impacts	Low	Low	Moderate	Low	Low	Low	Low	Low
Surface Transportation	Moderate	Moderate	Moderate	Low	Low	Moderate	Moderate	Low
Water Resources	Moderate	Moderate	Moderate	Low	Moderate	Low	Moderate	Low
Wetlands/Waters of the U.S.	Moderate	Moderate	Moderate	Low	Moderate	Moderate	Moderate	Low

TABLE 5-18-1 (Continued)
POTENTIAL FOR ENVIRONMENTAL IMPACTS OF CUMULATIVE PROJECTS

	Cumulative Projects Level of Impact							
Environmental Categories	**Atlantic Aviation Hangar (formerly Galaxy Aviation)**	**Interim Widening of South Access Road (Jeff Fuqua Boulevard South)**	**Southwest (Air Tran) Operations Center**	**Taxiway B1 and B2 Extension and Rehabilitation**	**Taxiway A Widening**	**Taxiway F Bridge Improvements**	**Other Past MCO Projects**	**Publix Distribution Center**
Air Quality	Low	Low	Low	Low	Low	Low	Moderate	Low
Coastal Resources	Low	Low	Low	Low	Low	Low	Low	Low
Compat ble Land Use	Low	Low	Low	Low	Low	Low	Low	Low
Construction Impacts	Low	Low	Low	Low	Low	Moderate	Moderate	Moderate
DOT Section 4(f)	Low	Low	Low	Low	Low	Low	Low	Low
Fish, Wildlife, and Plants	Low	Low	Low	Low	Low	Low	Moderate	Low
Floodplains	Low	Moderate	Low	Low	Low	Low	Moderate	Moderate
Hazardous Materials	Moderate	Low	Low	Low	Low	Low	Moderate	Low
Historic, Architectural, and Cultural	Low	Low	Low	Low	Low	Low	Low	Low
Light Emission and Visual	Low	Low	Low	Low	Low	Low	Low	Low
Natural Resources and Energy	Low	Low	Low	Low	Low	Low	Low	Low
Noise	Moderate	Low	Low	Low	Low	Low	Low	Low
Secondary (Induced) Impacts	Moderate	Low	Low	Low	Low	Low	Moderate	Moderate
Socioeconomic Impacts	Low	Low	Low	Low	Low	Low	Low	Low
Surface Transportation	Low	Low	Low	Low	Low	Low	Moderate	Moderate
Water Resources	Low	Moderate	Low	Low	Low	Low	Moderate	Moderate
Wetlands/Waters of the U.S.	Low	Moderate	Low	Low	Low	Low	Moderate	Moderate

TABLE 5-18-1(Continued)
POTENTIAL FOR ENVIRONMENTAL IMPACTS OF CUMULATIVE PROJECTS

	Cumulative Projects Level of Impact						
Environmental Categories	**South Airport Automated People Mover (APM) Program**	**Jet Blue Lodge**	**Compressed Natural Gas Station**	**Jeff Fuqua Boulevard South Interchange Improvements at State Road 417**	**MCO Capital Improvement Plan Projects (Present)**	**Dowden Boulevard Extension to Heintzelman Boulevard**	**South Airport APM Program (Future)**
Air Quality	Moderate	Low	Low	Low	Low	Low	Low
Coastal Resources	Low	Low	Low	Low	Low	Low	Low
Compatible Land Use	Low	Low	Low	Low	Low	Low	Low
Construction Impacts	Moderate	Low	Low	Low	Moderate	Moderate	Moderate
DOT Section 4(f)	Low	Low	Low	Low	Low	Low	Low
Fish, Wildlife, and Plants	Moderate	Low	Low	Low	Low	Moderate	Moderate
Floodplains	Moderate	Low	Low	Moderate	Low	Moderate	Moderate
Hazardous Materials	Low	Low	Low	Low	Low	Low	Low
Historic, Architectural, and Cultural	Low	Low	Low	Low	Low	Low	Low
Light Emission and Visual	Low	Low	Low	Low	Low	Moderate	Low
Natural Resources and Energy	Moderate	Low	Low	Low	Low	Low	Moderate
Noise	Moderate	Low	Low	Low	Low	Low	Moderate
Secondary (Induced) Impacts	Moderate	Low	Low	Low	Low	Low	Moderate
Socioeconomic impacts	Low	Low	Low	Low	Low	Low	Low
Surface Transportation	Moderate	Low	Low	Low	Moderate	Moderate	Moderate
Water Resources	Moderate	Low	Low	Moderate	Moderate	Moderate	Moderate
Wetlands/Waters of the U.S.	Moderate	Low	Low	Moderate	Low	Moderate	Moderate

TABLE 5-18-1 (Continued)
POTENTIAL FOR ENVIRONMENTAL IMPACTS OF CUMULATIVE PROJECTS

	Cumulative Projects Level of Impact						
Environmental Categories	**Planned MCO Capital Improvement Plan Projects**	**South Terminal Complex**	**Bal Bay Planned Development**	**Vista Park Planned Development**	**Innovation Way**	**Proposed Action (Near-Term)**	**Long-Term Development Plan**
Air Quality	Low	Low	Low	Low	Low	Low	Moderate
Coastal Resources	Low	Low	Low	Low	Low	Low	Low
Compat ble Land Use	Low	Low	Low	Low	Moderate	Low	Low
Construction Impacts	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
DOT Section 4(f)	Low	Low	Low	Low	Low	Low	Low
Fish, Wildlife, and Plants	Low	Moderate	Moderate	Moderate	Moderate	Moderate	Low
Floodplains	Low	High	Moderate	Moderate	Moderate	High	Low
Hazardous Materials	Low	Low	Low	Low	Low	Low	Moderate
Historic, Architectural, and Cultural	Low	Low	Low	Low	Low	Low	Low
Light Emission and Visual	Low	Moderate	Low	Low	Low	Moderate	Moderate
Natural Resources and Energy	Low	Moderate	Low	Low	Low	Low	Moderate
Noise	Low	Moderate	Low	Low	Moderate	Low	Moderate
Secondary (Induced) Impacts	Low	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Socioeconomic impacts	Low	Low	Low	Low	Moderate	Low	Moderate
Surface Transportation	Low	Moderate	Moderate	Moderate	Moderate	Low	Moderate
Water Resources	Low	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Wetlands/Waters of the U.S.	Low	High	Moderate	Moderate	Moderate	High	Low

Source: ESA, 2014.

5.18.1.1 Air Quality

Construction and operation of the cumulative projects would result in temporary impacts to air quality in the vicinity of the East Airfield site. Overall, the cumulative projects have a moderate to low potential to result in permanent, significant air quality impacts. Because the Proposed Action would have only temporary construction-related air emissions, they would not contribute to any potential significant air quality impacts that may result from the cumulative projects.

The Long-Term Development Plan at the East Airfield site is anticipated to increase aircraft operations and aviation activity at MCO. Additionally, the development of the South Terminal and the South Airport Automated People Mover (APM) Program could induce aircraft operations and activity at MCO. Collectively, these projects are anticipated to have some effect on aircraft and vehicle air emissions at MCO; however, the amount is unknown at this time. Off-airport, the continued development of the Narcoossee Road corridor, the construction of Innovation Way, continued residential development, and continued development of the Lake Nona Development of Regional Impact (DRI) medical complex are expected to continue to increase vehicle traffic in the vicinity of the East Airfield site, which would increase air emissions. As noted in a January 19, 2015 traffic study prepared for the proposed development of the East Airfield site (near-term and long-term), the project would not disrupt local traffic and would not substantially reduce the LOS on local roads (HDR, 2015). A copy of the report is contained in Appendix V. In addition, GOAA has a long history of visionary planning for the implementation of critical transportation corridors in the vicinity of MCO, and has been a significant contributor to intergovernmental efforts to improve arterial and highway corridors that not only provide access to MCO, but have enhanced regional mobility as well. Therefore, the anticipated increase in traffic caused by the Proposed Action and cumulative projects would be accompanied by continued transportation system improvements that would also serve to minimize congestion and, in turn, concentrations of vehicle emissions.

Over time, the airport development projects, transportation projects, and other area development projects would generate temporary impacts to air quality during construction and demolition activities. To a large extent, the current and proposed capital improvement projects at MCO are related to terminal improvements and airfield pavement rehabilitation. The Long-Term Development Plan at the East Airfield site, the South Terminal, the South Airport APM Program, and foreseeable large-scale residential development projects can generate moderate amounts of air emissions during construction. These temporary, periodic impacts can be minimized through the use of environmental controls (i.e., BMPs) that would minimize emissions according to Federal, state, and local construction air quality guidelines.

Based on the types of cumulative projects identified, and the fact that Orange County is an attainment area for all primary air pollutants, it was concluded that the implementation of the Proposed Action and the cumulative development projects would not result in significant air quality impacts.

5.18.1.2 Coastal Resources

The Proposed Action and the cumulative projects would not directly affect coastal resources. Although the Proposed Action and several of the cumulative projects would impact (to varying degrees) water bodies, storm water management systems, wetlands, and floodplains, the distance of MCO to the east or west coast of Florida would make it unlikely that any impacts would have a measurable effect on coastal resources.

As noted in Section 5.3, the SFWMD has issued a conceptual ERP for the Proposed Action. The SFWMD conceptual permit stated the "issuance of this permit constitutes a finding of consistency with the Florida Coastal Management Program (FCMP)." Because the cumulative project involving land development would generate similar impacts (type and possibly scale) as the Proposed Action and include appropriate mitigation, it is anticipated that the cumulative projects would also be consistent with the FCMP. Therefore, the Proposed Action and the cumulative projects are anticipated to result in a low level of cumulative impact on coastal resources, which would not be considered significant.

5.18.1.3 Compatible Land Use

Implementation of the cumulative projects has a low potential to result in land-use impacts. Based on the types of cumulative projects planned for the study area, and the fact that the East Airfield site is located adjacent to an area that is guided by the Southeast Orlando Sector Plan and subject to local zoning and development plan approvals, implementation of the Proposed Action and the cumulative projects would not create incompatible land uses. As discussed in Section 5.4, noise impacts would be minimal and the Proposed Action is consistent with local planning objectives. In addition, many of the cumulative projects are subject to Federal and state environmental reviews.

The Proposed Action would not require the acquisition of land or the conversion of off-airport land to airport use. The Proposed Action (and Long-Term Development Plan) would also be located entirely on existing MCO property and would be expected to generate no direct land use impacts. The overall plan for the East Airfield site was modified over time to minimize indirect impacts to nearby residential areas. This included the relocation of the proposed secondary fuel facility to the north part of the site and the planned development of a buffer and large public park along portions of the south side of the site that adjoins residential areas.

The cumulative projects will continue to convert former agricultural land (primarily pasture) to urban and suburban land uses. As discussed above, past, present, and future development in the study area is guided by a detailed Sector Plan and development projects are subject to local ordinances, development agreements, and land development approvals. Certain development impacts (i.e., wetlands) would be subject to state and Federal regulatory agencies review and approvals and mitigation may be required for unavoidable impacts. Therefore, impacts resulting from the cumulative projects are anticipated, but are expected to be limited (low) as development projects would be implemented in light of local land use and zoning plans. In summary, the low land use impacts of the Proposed Action, when considered in addition to the low to moderate land

use impacts associated with the cumulative projects, are expected to result in low cumulative land use impacts, which are not significant.

5.18.1.4 Construction

Overall, construction of the Proposed Action and cumulative projects has a moderate potential to result in construction impacts. Construction activities associated with the cumulative projects would include, but may not be limited to, land clearing; demolition; grading and excavation; airfield pavement rehabilitation and related improvements; roadway, rail, and bridge construction; installation of utilities; and building/housing construction. Impacts could result from increased noise from construction operations, temporary increase in water turbidity, temporary increase in air emissions, and disposal and management of construction and/or demolition wastes.

Although noise levels in the project areas will increase periodically during construction, construction activities are expected to have a minor impact on residential areas. Construction would result in a temporary increase in noise in the immediate areas surrounding the facility; however, distance would rapidly attenuate noise levels so area residences would only experience a slight increase in ambient background conditions.

In regard to water quality, it is expected that turbidity and sedimentation from construction projects would be minimized by the implementation of BMPs, such as mulching, silt fences, and/or staked hay bales.

Temporary air quality impacts during construction would vary depending on the local weather conditions, level of construction activity, and the nature of the construction operation. It is expected that construction-related air emissions would be minimized by the use of BMPs that would control fugitive dust with proper maintenance of construction equipment. Construction wastes would be recycled to the extent possible and any non-recycled wastes would be disposed of in permitted landfills.

Overall construction-related impacts discussed above would be temporary in nature. The cumulative impact of construction activities associated with the Proposed Action and the cumulative projects are expected to be low to moderate because each major construction project would require approvals from local agencies and would not be concentrated in time. In summary, the moderate construction impacts associated with the Proposed Action, when considered in addition to the low to moderate construction impacts associated with the cumulative projects, are expected to result in moderate cumulative construction impacts, but is not expected to reach a threshold indicating a significant impact.

5.18.1.5 Section 4(f) Resources

The Proposed Action would not directly or indirectly impact Section 4(f) resources. Based on a review of the cumulative projects, impacts to Section 4(f) resources are not anticipated. This is mostly due to the Federal and local protections afforded public parks, refuges, and historic sites.

Thus, planning for major projects would be expected to avoid impacts to Section 4(f) resources unless there is no practicable alternative.

Because the Proposed Action is not expected to directly or indirectly impact Section 4(f) resources and the cumulative projects are not anticipated to have Section 4(f) resource impacts, there would be no cumulative impacts.

5.18.1.6 Fish, Wildlife and Plants

The Proposed Action would impact up to 665.5 acres of improved pasture, 99.6 acres of shrub and brushland, 132.9 acres of pine flatwoods and 118 acres of Cypress. This represents 0.1 percent of the similar land cover types within a 20 mile radius of the East Airfield site. Within the aforementioned land cover types, the Proposed Action would impact approximately 171 acres of wetlands for the purpose of reducing hazardous wildlife attractants at the East Airfield site.

The Proposed Action would have a moderate impact on natural habitat availability in the study area and common wildlife species. The Proposed Action is not anticipated to adversely affect state- or Federally-listed plant species. As discussed in Section 5.7, the Proposed Action has the potential to affect ten state-listed wildlife species and two Federally-listed species observed on the East Airfield site (wood stork and American alligator). A Biological Assessment was prepared for wood storks and submitted to the USFWS and USACE (see Appendix T). Both agencies concluded that the Proposed Action "may affect, but is not likely to adversely affect" the wood stork. Should it become necessary to relocate alligators to avoid a direct take, GOAA would conduct relocation in cooperation with the Florida Fish and Wildlife Conservation Commission (FWC) and in accordance with the FWC policies, rules, and procedures relative to alligators. In addition to the two listed species that have been observed on the East Airfield site, the FAA determined the Proposed Action "may affect, but not likely adversely affect" the eastern indigo snake and the sand skink. Nine state listed species, which include the two Federally-listed species, have been observed on site. Impacts to these species can be minimized through commonly-accepted methods, which may include but not be limited to habitat mitigation, conducting nest surveys prior to construction, avoiding nests during construction, and relocating individuals. A review of the cumulative projects indicate that those projects that would continue to convert habitat to airport or other land uses would impact similar species of wildlife as the Proposed Action and each of those projects would be expected to implement measures to minimize impacts. Overall, the Proposed Action and cumulative projects would alter habitat and affect listed species in the study area. The cumulative impact is considered to be moderate, but is not expected to reach a threshold indicating a significant impact.

Cumulative projects in the study area have also contributed to the conversion of former agricultural land (primarily pasture) to urban and suburban land uses. A review of available information, aerial photographs, and environmental database information indicates that the roadway and residential developments in the study area have generally avoided wetland areas and water bodies. Impacts associated with these developments appear to be associated with the construction of road crossings and fill on wetland fringes. Future on- and off-airport projects, such as the South Terminal, South Airport APM Program, Extension of Dowden Road, and

Innovation Way would affect wetlands, however, the extent of habitat and wetland impacts are not fully known at this time. The Proposed Action includes off-site mitigation measures for unavoidable wetland impacts, which also serve to offset wetland habitat impacts. For the cumulative projects that have, or would, impact wetland habitat, mitigation measures would also be required. Overall, the Proposed Action and cumulative projects would continue to alter habitat in the study area and, in some cases (i.e., wetland habitat), include mitigation measures. Given that much of the land in the study area historically has been associated with aviation and agricultural use, cumulative natural habitat impacts are considered to be moderate, but would not be expected to reach a threshold indicating a significant impact.

5.18.1.7 Floodplains

The Proposed Action would impact up to 442 acres of 100-year floodplain. Where possible, the Proposed Action's removal of select wetlands and construction of a secondary fuel facility at the East Airfield site sought to avoid and minimize floodplain impacts. The encroachment is not considered to be significant because: 1) the floodplain impact does not have a high probability of loss of human life, 2) does not have substantial encroachment-related costs or damage and would not cause interruption of aircraft service or loss of a vital transportation facility, and 3) would not have an adverse impact on natural and beneficial floodplain values (when incorporating measures to mitigate unavoidable impacts). The SFWMD issued a conceptual ERP that would have impacted the entire site. Since that time, the wetland and floodplain impacts have been reduced. The SFWMD, in its conceptual permit, determined that the surface water management system would not cause adverse flooding to on-site or off-site property and would not result in any net encroachment into the 100-year floodplain. The SFWMD conceptual ERP permit also authorized the adverse impacts to the ecological value of the on-site 100-year floodplain, requiring compensatory mitigation which has been fully completed in advance of any construction associated with the Proposed Action.

Based on a review of FEMA flood maps, floodplains in the study area have been altered to some extent by past development and it appears that future cumulative projects would result in additional 100-year floodplain encroachments. Impacts associated with the residential and commercial cumulative projects appear to be associated with the construction of road crossings and fill on floodplain fringes. Additional floodplain impacts associated with the cumulative projects could occur from the creation of additional impervious surface and the subsequent increase in stormwater runoff discharges to the floodplains. Future on- and off-airport projects, such as the South Terminal, South Airport APM Program, Extension of Dowden Road, and Innovation Way would affect floodplains, however, the extent of floodplain impacts are not fully known at this time. Encroachment associated with the cumulative projects may be avoided, and if unavoidable, mitigated during the planning and design phases of the cumulative projects such that most 100-year floodplain impacts would be minimized. Because the land in the study area is subject to growth management and floodplain management regulations, the number and extent of new encroachments is expected to be low to moderate. Development project sponsors would be required to comply with local floodplain management regulations and mitigate adverse floodplain impacts.

Past, present, and future floodplain impacts in the study area are substantial. However, the impacts require coordination and permit approvals from state and local agencies, which typically require mitigation for unavoidable floodplain impacts. Therefore, the cumulative impact of the Proposed Action, when considered in conjunction with other development actions, is expected to be high, but not reach a threshold indicating a significant impact.

5.18.1.8 Hazardous Materials

The Proposed Action would be constructed, to a large extent, on undeveloped land and has a low potential to affect hazardous materials. A Phase I Environmental Site Assessment indicated that no areas within the East Airfield site are listed in Federal, state, or local government databases, environmental records, or enforcement lists. To the extent that a groundwater plume from the former off-airport Alamo Rent-a-Car location extends onto the East Airfield site, the responsible party (Alamo Rent-a-Car) is responsible for remediation.

The Proposed Action includes a planned fuel storage and distribution facility which may include other auxiliary-type storage oil or oil-based storage. In accordance with Federal and state regulations, GOAA would ensure that pollution prevention plans are prepared for the fuel storage facility and other facilities in accordance with these requirements.

If hazardous substances are found during construction of the Proposed Action or any of the cumulative projects, the project sponsor would be required to comply with Federal, state, and local regulations governing hazardous wastes and substances. Construction and earthmoving activities that are anticipated for the Proposed Action and cumulative projects could result in a release or accidental spill of hazardous substances. In the event of a spill or unanticipated release of regulated materials, including fuels, contractors would be required to cease work in the immediate area and report the release to the appropriate regulatory authorities.

The Proposed Action and cumulative projects have the potential to generate construction wastes and municipal solid wastes (MSW). Implementation of the projects, particularly the passenger terminal, residential, medical, and commercial development projects, would result in increased demand for MSW collection and disposal. The County implements a recycling program and there are no known capacity issues at local landfills that indicate that MSW disposal would be of concern.

In summary, the moderate cumulative hazardous material, pollution, and solid waste impacts of the Proposed Action, when considered in addition to other on- or off-airport cumulative projects, are expected to lead to low cumulative hazardous material and solid waste impacts, which are not significant.

5.18.1.9 Historical, Architectural, Archeological, and Cultural Resources

The Florida SHPO concluded in 2009 that the Proposed Action site would have no effect on any significant cultural resources that are listed in, or eligible for listing in, the NRHP. After reviewing the 2015 EA, the SHPO stated that the agency had no comments on the Draft EA and acknowledged prior Section 106 consultation and SHPO's concurrence with FAA findings.

It is possible that other development actions in the study area could have direct or indirect impacts upon resources listed, or eligible for listing, in the NRHP. Federal and state-funded projects with potential impacts on cultural and historic resources would require coordination with the SHPO, documentation of any adverse impacts, and mitigation measures (if warranted). The Proposed Action, when considered in addition to potential impacts of the cumulative projects, is expected to lead to low cumulative impacts on cultural and historic resources.

5.18.1.10 Light Emissions and Visual Effects

The Proposed Action would increase light emissions and have a visual impact in the study area. However, the lighting and visual impacts are not expected to be significant. GOAA has addressed community concerns by integrating a buffer between the East Airfield site and existing residential areas south of the site.

The cumulative projects would also include grading, clearing, and construction that would continue to alter the visual landscape in the study area. The cumulative projects would also introduce new lights associated with buildings and roads. It is anticipated that the projects would be designed, constructed, and operated (where applicable) to be sensitive to the surrounding land uses and be in compliance with local master planning efforts and initiatives to regulate development. Specifically, outdoor lighting would also be required to comply with the City of Orlando's standards for lighting (Orange County Lighting Ordinance No 2003-08) and the City of Orlando's Southeast Sector Plan's *Development Guidelines and Standards*, which address visual effect elements.

Overall, the study area would continue to experience new lighting sources and visual changes. However, it is anticipated that the Proposed Project, in addition to the cumulative projects, would result in moderate light emission and visual impacts, which would not be significant.

5.18.1.11 Natural Resources, Energy Supply and Sustainable Design

Other than a temporary increase in energy consumption during construction, the Proposed Action is not anticipated to increase energy demand or affect natural resources that may be unusual in nature or in short supply.

The cumulative projects that involve the development of new aviation facilities, businesses, and residences will increase energy demand in the study area. Compared to off-airport commercial and residential development projects, airport projects have and will likely continue to generate the greatest demand for energy and have the greatest amount of fuel consumption. This includes the Long-Term Development Plan at the East Airfield site, the proposed South Terminal, and the South Airport APM Program. The cumulative projects are not anticipated to affect natural resources that may be unusual in nature or in short supply.

Because it is anticipated that local energy providers can meet the need for existing and future airport facilities and off-airport development, the cumulative impact is considered to be moderate, but not significant.

5.18.1.12 Noise

Construction of the cumulative projects would result in temporary noise impacts to the human and natural environment. Construction noise impacts would primarily occur from activities such as land clearing, grading, hauling, paving, and general construction operations.

The transportation cumulative projects in the study area would alter the noise environment to varying degrees. This may occur where vehicles may be operating closer to noise-sensitive receptors and/or would accommodate higher volumes of traffic. The Federal and state agencies sponsoring the transportation projects would consider potential noise impacts and mitigate those determined to be significant.

Although the Near-Term Development Plan would not have noise impacts, the Long-Term Development Plan at the East Airfield site, the proposed South Terminal, and the South Airport APM Program are cumulative projects that have potential to increase airport activity and the number of aircraft operations at MCO, which would alter noise exposure levels. Growth in aviation activity at MCO was contemplated in the 2011 Master Plan Forecast and is reflected in the FAA's Terminal Area Forecast. However, the potential change attributable to these projects is difficult to definitively determine at this time. Cumulative impacts associated with construction noise are expected to be minimal. Traffic-related noise is expected to increase in the study area as development continues. However, traffic noise is anticipated to be moderate, but not significant.

5.18.1.13 Secondary (Induced) Impacts

Past development projects at MCO and in the study area have resulted in growth and development. However, the Proposed Action is not expected to generate substantial secondary (induced) impacts in the near-term, including changes in population movement and growth or changes in public service demands. In the long-term, the Proposed Action would support the development of aviation facilities that may have a moderate cumulative impact. The Long-Term Development Plan is anticipated to create approximately 4,960 temporary construction jobs at MCO.[49] At full build-out, the Long-Term Development Plan would create approximately 8,840 permanent jobs.[50] It is likely that a majority of the construction and non-construction jobs would likely be filled by people within the greater Orlando area and surrounding communities. Adequate housing would be available for employees moving to the area. The increase in employment associated with the development of the East Airfield site was contemplated and included in the Southeast Orlando Sector Plan and GOAA traffic studies.

The Long-Term Development Plan, future cumulative projects, and continued development of property in the study area for residential, commercial, healthcare, light industrial, and airport uses are expected to increase the number of residents in the study area, increase employment in the study area, and have a positive effect on economic activity. Reasonably foreseeable on-airport

[49] Greater Orlando Aviation Authority. September 2014.
[50] Ibid.

and off-airport cumulative projects may also spur additional development within or adjacent to the study area.

The increase in housing, businesses, and airport structures in the study area will increase the demand for public services in the study area. Public service demands such as police protection, schools, and fire/rescue service needs of the community are addressed by the City of Orlando and Orange County through their respective local development approval processes. The City of Orlando's Orlando Southeast Sector Plan and local development approval process guides and regulates growth, public service demands, business and economic activities in the vicinity of the Proposed Action site. The Sector Plan's *Development Guidelines and Standards* provide a review process at the local level to avoid potential cumulative effects of secondary (induced) development for present and future projects on airport (as applicable) and off airport in the vicinity of the Proposed Action site.

Given the above, limited secondary (induced) impacts associated with the Near-Term Proposed Action, when considered in addition to the cumulative projects, are expected to have moderate cumulative secondary (induced) impacts, which would not be significant.

5.18.1.14 Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks

The Proposed Action would not result in any significant socioeconomic impacts, environmental justice effects, or potential environmental health risks and safety risks that could disproportionately affect children.

Cumulative transportation projects may have required, in some cases, the acquisition of right-of-way, which may have resulted in the displacement of residences and businesses. The overall impact of these projects was considered to be low to moderate. Other cumulative projects have low potential to generate residential and business relocations.

Overall, the cumulative projects have a low potential to alter or degrade local transportation patterns, or disrupt established or planned communities. This is due to the nature of the development projects and development policies and controls of the City of Orlando and Orange County. The negligible community disruption impacts of the Proposed Action, when considered in addition to those associated with other development projects, are not expected to lead to significant cumulative impacts.

The cumulative projects are also considered to have low potential to generate disproportionately high adverse impact on minority and low-income populations and households. The limited socioeconomic, environmental justice, and children's health impacts associated with the Proposed Action, when considered in addition to those associated with the cumulative projects, is expected to lead to a low level of cumulative impacts.

As noted in a January 19, 2015 traffic study prepared for the proposed development of the East Airfield site (near-term and long-term), the project would not disrupt local traffic and would not

substantially reduce the LOS on local roads (HDR, 2015 (see Appendix V)). Traffic impacts that may result from the Proposed Action can be properly addressed in the local review process through the City of Orlando's Mobility Plan and the Southeast Sector Plan. The City is the lead agency responsible for coordinating the local process for the East Airfield Development Area which will include a review of traffic impact analysis, pursuant to the local permitting process in accordance with the City's GMP and the Southeast Orlando Sector Plan. The updated traffic analysis concludes that based on the application of the new GMP policies related to the City-wide Transportation Concurrency Exception Area (TCEA) and mobility strategies no roadway segments will experience a disruption in local traffic patterns that substantially reduce the LOS as a result the Proposed Action or full build-out of the 2014 East Airfield Conceptual Plan.

As a result of these reviews and processes, and Federal and state regulations and review as applicable, it is reasonable to expect that the Proposed Action together with impacts of the past, present, or future projects in the study area would result in low cumulative impacts with regards to socioeconomic impacts, environmental justice effects, or potential environmental health risks and safety risks that could disproportionately affect children.

5.18.1.15 Water Quality

Land clearing, grading, the construction of a secondary fuel farm, construction of a surface water management system, and the discharge of fill material to Waters of the U.S. (wetlands) associated with the Proposed Action will have the potential to exceed applicable state water quality standards. In addition the construction and operation of the cumulative projects will also have the potential to exceed applicable state water quality standards.

Typical construction impacts include increased erosion, sediment transport, siltation, and on-site storage and use of lubricants and fuels. Temporary construction impacts of both the Proposed Action and cumulative projects could be minimized through use of project-specific BMPs and applicable Federal, state, and local construction mitigation guidelines. Permanent water quality impacts could result from stormwater runoff from newly constructed impervious surfaces associated with airport, industrial, commercial, and residential developments. The Proposed Action and cumulative projects would be expected to comply with applicable state regulations that require on-site attenuation and treatment of stormwater. The potential to attract new residents, employees, and airport customers to the study area has the potential to increase local water consumption and commercial and residential wastewater treatment volumes. As discussed in Section 5.16, construction-related and operational water quality impacts are not anticipated to be significant. The Sector Plan and the review of planned developments have taken into consideration water use and each proposed development will be required to comply with local and state water regulations regarding use and quality.

GOAA has received a conceptual ERP from the SFWMD, which constitutes water quality certification for the Proposed Action pursuant to Section 401 of the CWA. GOAA's development of the fuel facility and any other regulated oil or oil-based storage areas will be in accordance with all applicable state, local, and Federal regulations. GOAA will ensure that a

SPCC is developed for all regulated facilities. Lease holders will be responsible for preparing SPCC plans and coordinating these plans with GOAA's Environmental Department.

Other past, present, and reasonably foreseeable future projects within the airport boundary and study area have either obtained or will be required to obtain an ERP from the SFWMD to construct/modify their surface water management systems. It is expected that existing programs, policies, and regulatory requirements would prevent and/or minimize potential water quality impacts. The moderate impacts associated with the Proposed Action, together with the low to moderate impacts of the cumulative projects, are anticipated to result in moderate cumulative impacts with regards to water quality and supplies, but would not reach a threshold indicating a significant impact.

5.18.1.16 Wetlands

Proposed Action

The Proposed Action would result in impacts to approximately 207 acres of Waters of the U.S., including (171 acres of federally jurisdictional wetlands). The Section 404 permitting is still in process; however, GOAA intends to use available credits under an existing USACE Individual Permit to satisfy Federal mitigation requirements. GOAA proposes to fully offset the functional loss of 171 acres of wetlands by deducting mitigation credits previously authorized by the USACE at the BRENSOLA site on the Disney Wilderness Preserve in Osceola County, Florida. GOAA has fully implemented and completed the mitigation plan in advance of any wetland impacts and has received written confirmation from the SFWMD that all state required mitigation was completed on April 26, 2011. With the proposed mitigation, the Proposed Action would not have a significant impact on wetlands.

The Proposed Action will impact approximately 2 percent of the remaining wetlands in the Boggy Creek drainage basin and 5 percent of the remaining wetlands not protected under conservation easement. The Proposed Action will impact approximately 1% of the remaining wetlands in the Lake Hart drainage basin and 3 percent of the remaining wetlands not protected under conservation easement. Consistent with FAA guidance on hazardous wildlife attractants on or near airports, GOAA has provided compensatory mitigation for wetland impacts associated with MCO projects at off-site locations since 1999. The mitigation sites were generally outside of the Boggy Creek and Lake Hart drainage basins. For past and present projects at MCO, the permitting agencies determined that off-site and out-of-basin compensatory mitigation provided reasonable assurance that unacceptable adverse cumulative impacts would not occur within the drainage basins.

The USACE and EPA have reviewed and commented on the wetland impacts associated with the Proposed Action (see Appendix Z). The EPA requested that the avoided 85 acres of wetland be preserved through a conservation easement. However, this would not be consistent with FAA policy and GOAA's obligation to implement its WHMP, which may require removing wetland habitat on the 85-acre site in the future, if the need arises. The USACE noted that it is reviewing the revised permit application that reflects the 85-acre reduction in wetland impacts.

On-Airport and Off-Airport Development

The majority of land in the vicinity of MCO has experienced substantial growth and development in recent years. This growth included MCO development and improvement projects, including runways, taxiways, hangars, terminal building improvements, access roads, and the South Airport Automated People Mover program. Planned MCO development projects include routine airfield pavement maintenance, the South Terminal Complex, and the Long-Term Development Plan at the East Airfield site. Recent off-airport development in the vicinity of MCO includes several large residential subdivisions along Narcoossee Road, development of a regional medical center complex south of MCO, expansion of Narcoossee Road, commercial development along the Narcoossee Road corridor, and highway interchange improvements at SR 417 and Jeff Fuqua Boulevard. Over time, urban development is expected to continue in the vicinity of MCO. Much of the natural wetland systems on and in the vicinity of MCO have been impacted by past on- and off-airport development, resulting in a considerable modification to the existing landscape and a reduction in wetlands. Reasonably foreseeable projects are expected to result in additional changes in natural habitats and an appreciable further reduction in wetlands. However, the intensity of wetland impacts is expected to be less as GOAA and developers seek to avoid and minimize wetlands, where practicable.

Although future airport, residential, commercial, and transportation development projects could result in additional impacts to wetlands, the net effect of these projects is not expected to be significant as mitigation for these impacts would be required by both state and Federal agencies. Required mitigation would offset these impacts and result in minimal to no overall impact to wetlands in the vicinity of MCO.

Summary

For past and present projects at MCO, the permitting agencies determined that off-site and out-of-basin compensatory mitigation provided reasonable assurance that unacceptable adverse cumulative impacts would not occur within the drainage basins. Compensatory mitigation has been provided for the past and present development projects that had wetland impacts. In addition, future development projects having wetland impacts will have required mitigation. Therefore, the Proposed Action, when considered in addition to other cumulative projects, would not lead to significant cumulative wetland impacts.

5.18.2 Summary of Cumulative Impacts

Based upon this analysis of cumulative impacts, it is reasonable to conclude that the Proposed Action, together with past, present, and reasonably foreseeable projects in the study area would not result in significant cumulative impacts. The No-Action Alternative would not contribute to any cumulative impacts.

SECTION 6
Agency and Public Coordination

6.1 Overview

This section of the Environmental Assessment (EA) provides a history of the East Airfield property, a history of environmental permitting actions associated with the East Airfield site, a description of the ongoing Federal Aviation Administration (FAA) National Environmental Policy Act (NEPA) process for the conduct of the EA, and public coordination efforts related to the development of the EA for the East Airfield project. During a previous NEPA review of proposed development at the East Airfield site, the Greater Orlando Aviation Authority (GOAA) published a Draft EA in 2009 for agency and public comment. The 2009 Draft EA was never finalized. As a result of agency and public comments on the 2009 Draft EA and on-going public coordination efforts, GOAA revised the conceptual plan for the East Airfield development area the specific development projects for which GOAA has requested FAA environmental approval. The 2014 East Airfield Conceptual Plan evaluated in this EA was made available for agency and public review and comment.

GOAA used guidance contained in the FAA's Community Involvement Policy to plan and implement the public involvement program for the EA for the East Airfield site.

> **FAA Order 5050.4B Paragraph 401. FAA'S COMMUNITY INVOLVEMENT POLICY.** FAA has a community involvement policy (FAA-EE-90-03, August 1990). That policy recognizes community involvement as an essential part of FAA programs and decisions. ARP [Office of Airports], like each FAA office, must incorporate open, effective community involvement to achieve the following goals and tasks.
>
> a. Provide active, early, and continuous public involvement and reasonable public access to information that accurately describes a proposed project and its environmental effects.
>
> b. Ask for and consider public input on plans, proposals, alternatives, impacts, and mitigation.
>
> c. Use public involvement techniques designed to meet the needs of different interest groups and individuals.
>
> d. Promote an active public role to lessen potentially adverse community reaction to agency actions needed for safe, efficient aviation.

6.1.1 History of the East Airfield Property

GOAA purchased a majority of the 1,342 acre East Airfield site (formerly known as the "Gee Bee Parcel") between 1987 and 1994. In 1995, GOAA identified this area on their Airport Layout Plan (ALP) for future aviation use. In 1999, the City of Orlando identified the Southeast Orlando Sector Plan Area (which includes the Orlando International Airport (MCO)) as a Future Growth Center with the airport as the primary economic and employment generator for the area. The Southeast Orlando Sector Plan Map designated the vast majority of the East Airfield site as Airport Support District High Intensity. In 2005, GOAA made a final purchase of an additional 176 acres of Airport Support District High Intensity property along the south side of the East Airfield Site (known as the Busch Property). Since that time, GOAA has worked with the City of Orlando to update the Southeast Orlando Sector Plan Map to reflect planned Airport Support District High Intensity and Medium Intensity Use areas. This includes modifying land designated for High Intensity uses located between the NorthLake Park community and Dowden Road to provide a land use buffer. Currently, the East Airfield site has a mix of zoning categories that will be consolidated during a rezoning process that will be initiated by GOAA in early 2016. **Appendix Y** provides a timeline of key events and additional community coordination information that occurred over the past 20 years related to the East Airfield site and the Proposed Action evaluated in this EA.

6.1.2 History of Federal and State Agency Coordination, the Environmental Permitting Actions and Previous NEPA Process for the East Airfield Site

US Army Corps of Engineers (USACE) Coordination – Individual Permit Application

In 2006, GOAA submitted an Individual Permit Application No. SAJ-2006-2640 (IP-JSC) to the USACE to address impacts to Waters of the U.S associated with the development of the East Airfield site. The original permit application identified 256.88 acres of direct impact to federal-jurisdictional wetlands. During the review of this application, the USACE requested that GOAA discuss the need for FAA NEPA analysis for the Proposed Action. At that time (2007-2008), GOAA engaged the FAA to initiate the NEPA process for the East Airfield site.

A Public Notice was issued by the USACE in 2006 associated with the USACE Individual Permit Application No. SAJ-2006-2640 (IP-JSC); in 2008, a meeting with GOAA management was requested by representatives of the NorthLake Park community to discuss GOAA's preliminary conceptual site plan for the East Airfield area. Two key concerns expressed by the community in that meeting included the:

- Location of the proposed fuel facility in proximity to residential areas (the secondary fuel storage facility was originally proposed on the south side of the East Airfield site, just north of Dowden Road); and
- Request for a buffer area between the residential areas and the high intensity aviation activity.

After coordination with local and regional planning departments and prior public outreach to stakeholder groups, GOAA revised the initial concept plan. The revisions included:

- Relocating the proposed secondary fuel storage facility from the south side of the site to the north side, south of SR 528; and
- Expanding the previously designated medium intensity land use buffer area between the residential areas and the high intensity aviation use by modifying the proposed land use along the north side of Dowden Road from high intensity aviation use to medium intensity use.

A second meeting was held in 2008 with representatives of the NorthLake Park community and GOAA management to discuss the revisions made to the original conceptual plan. The revised plan became the conceptual plan for the East Airfield site at the initiation of the NEPA process for the 2009 Draft EA, which was never finalized.

As a result of the ongoing agency and public coordination, the USACE permit application was revised and information was resubmitted to the USACE in November 2010. Since that time, the USACE permit application has been revised again to reflect the East Airfield site described within this EA and addresses 171.13 acres of Federal-jurisdictional wetlands impacts. The August 2015 revisions to the USACE permit application showed the 85.75 acre reduction in direct impacts to Federal-jurisdictional wetlands. The revised USACE permit application is under review by the USACE. Mitigation to be provided for 171 acres of Federal-jurisdictional wetlands has already been completed by GOAA at the BRENSOLA site (see Section 5.17.3.2). Available mitigation credits at BRENSOLA (182.59) are more than necessary to off-set the 89.47 mitigation credits needed for impacts to Federal-jurisdictional wetlands on the East Airfield.

US Fish and Wildlife Service Consultation

A Biological Assessment (BA) for the wood stork was prepared and submitted to the USFWS. The BA used a regulatory tool known as the Core Foraging Area to determine potential effects of project activities on wood stork colonies that have been active. The USFWS concurred with the determination that the Proposed Action “may affect, but not likely adversely affect” the wood stork. See Section 5.7.1.2 of the EA for more information on the wood stork analysis, Appendix T for the wood stork BA, and USFWS correspondence in Appendix N.

The American alligator is threatened only by similarity of appearance to the American crocodile and consultation for this species under Section 7 of the Endangered Species Act was not required.

A consultation report summarizing the results of a May 2013 eastern indigo snake survey was submitted to the USFWS. The USFWS concurred with the determination that the Proposed Action “may affect, but not likely adversely affect” the eastern indigo snake. See Section 5.7.1.2 of the EA for more information on the eastern indigo snake, Appendix T for the consultation report, and USFWS correspondence on this species in Appendix N.

A consultation report summarizing the results of a 2013 sand skink survey on the East Airfield site was submitted to the USFWS. The USFWS concurred with the determination that the Proposed Action "may affect, but not likely adversely affect" the sand skink. See Section 5.7.1.2 of the EA for more information on the sand skin, Appendix T for the consultation report, and USFWS correspondence on this species in Appendix N.

South Florida Water Management District Coordination – Conceptual ERP

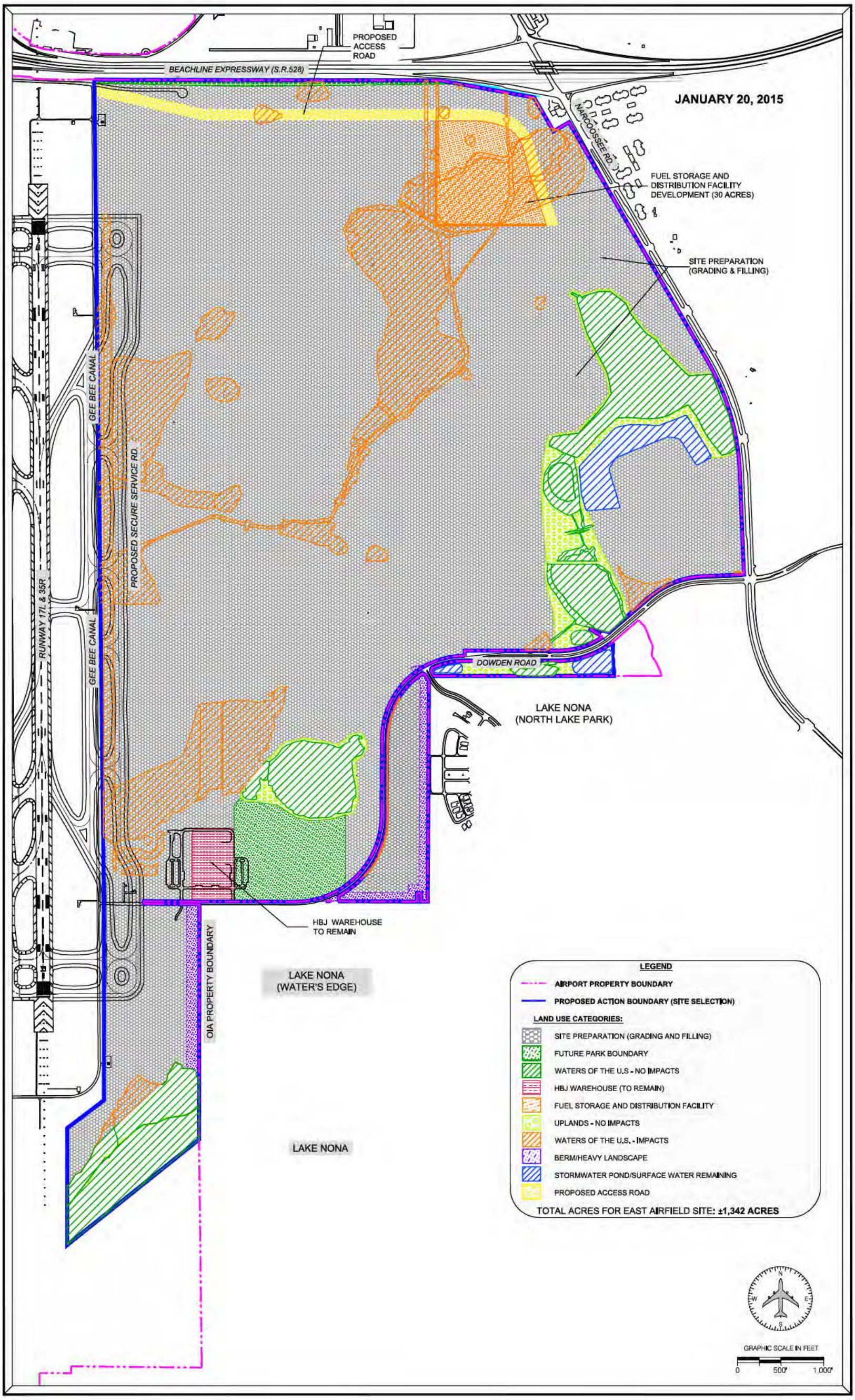
In 2006, GOAA submitted an application to the South Florida Water Management District (SFWMD) for a Conceptual Environmental Resource Permit (ERP). The SFWMD issued a Conceptual ERP for the development of the East Airfield Site in August 2010. The SFWMD permit constitutes conceptual approval for the surface water management system to serve future development on the East Airfield site and to serve as the Section 401 water quality certification for the project. The Conceptual ERP approves direct impacts to 247.77 acres of state-jurisdictional wetlands. GOAA submitted a mitigation plan to the SFWMD that identified the mitigation necessary to fully offset the wetland functional loss associated with full development of the East Airfield. Mitigation credits were purchased from three wetland mitigation banks located in Osceola County (south of MCO); Southport Mitigation Bank, Quick Draw Mitigation Bank, and Bullfrog Bay Mitigation Bank. In addition to these credits, GOAA purchased a 29-acre off-site parcel referred to as the "Hampton Bay parcel" in Orange County, east of MCO as part of the SFWMD permitted wetland mitigation plan. GOAA completed these transactions in advance of any wetland impacts. GOAA has purchased all required state mitigation for the impacts addressed in the Conceptual ERP, which cost approximately $12 million dollars.

FAA Coordination - NEPA

As mentioned above, GOAA initiated the NEPA process with the FAA in 2007. During preparation of the 2009 Draft EA, which was never finalized, GOAA held two public workshops to share information with the community about the EA process, discuss the conceptual plan for the East Airfield site, and to collect input from the community. The public workshops were held on September 18, 2008 and October 5, 2008.

The 2009 Draft EA was made available for public and agency review on October 5, 2009. The 2009 Draft EA analyzed potential environmental impacts related to the development of the entire East Airfield site. In the 2009 Draft EA, GOAA identified the full build-out of the East Airfield site as the EA's Proposed Action. As a result of the agency and public comments, the 2009 Draft EA was put on hold while GOAA and FAA considered the comments received. The 2009 Draft EA was never finalized.

From 2010 to the present time, GOAA and the FAA coordinated to address agency and public comments. The East Airfield project, through a series of modifications, was revised by GOAA in 2014 to include only the development actions (the Proposed Action) summarized below and described in more detail in Section 1.2 of the this EA (see **Figure 6.1-1)**:



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 6.1-1

Proposed Action

- Site selection of the East Airfield as a large contiguous site at MCO for development of high and medium intensity aviation and aviation support facilities, medium intensity land uses, and related infrastructure.
- Reduction of existing wildlife hazard attractants on the East Airfield site through removal of wetlands and non stormwater management surface waters and active wildlife hazard management.
- The development of a secondary fuel storage and distribution facility that provides a geographically separate redundant fuel supply at MCO to improve security from fuel supply disruptions related to storm events or other disruptions.

In March 2015, a Draft EA that evaluated the revised Proposed Action, described above, and qualitatively assessed GOAA's long-term conceptual plans for the East Airfield site was distributed for agency and public review and comment. A Public Meeting was held and all agency and public comments were considered and responded to during the preparation of this Final EA.

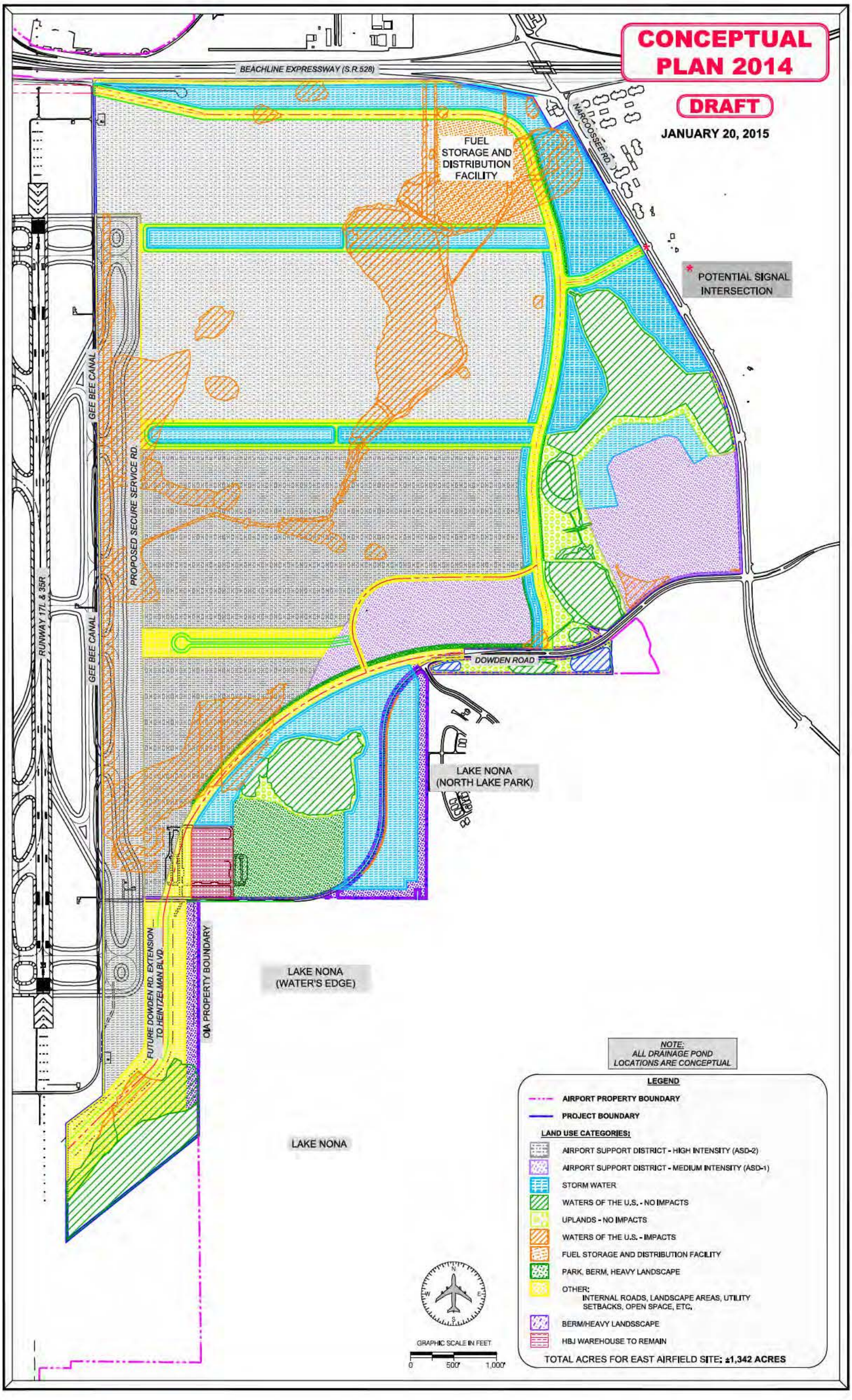
Ongoing Public Coordination

In 2011, GOAA and neighboring communities initiated the GOAA Lake Nona Estates / NorthLake Park Neighborhood Partnership, an ongoing alliance that helps to foster communication between homeowners and GOAA. Since 2011, multiple coordination meetings were held that included updates by GOAA on the status of the East Airfield project and other topics, including the airport's master planning process, noise program, airport financing, traffic analysis, and history of land acquisition at the airport. These meetings were also attended by the City of Orlando Planning Department. Information presented and discussed at these meetings is provided on the GOAA project website (http://www.orlandoairports.net/east_airfield /index.htm).

In 2013 and 2014, the meetings produced modifications to the East Airfield Conceptual Plan and commitments by GOAA relative to the development of the East Airfield site. The resulting 2014 East Airfield Conceptual Plan, shown in **Figure 6.1-2**, was developed by GOAA to incorporate comments from the community as they relate to traffic, noise, visual buffering, potential environmental impacts, and the location of the fuel storage and distribution facility.

Subsequent to the March 30, 2015 Draft EA that was made available for public and agency review, GOAA and the neighborhood communities continued discussions related to the 2014 East Airfield Conceptual Plan. These discussions are presently ongoing and, in October 2015, resulted in further refinements to the 2014 Conceptual Plan (see Appendix Y). The FAA took notice of the recent refinements and it is understood that ongoing discussions between GOOA and the community could result in other refinements.[1]

[1] Because of the timing of the October 2015 refinements, the changes were not incorporated into the Final EA. The concept plan refinements represent a local agreement on future development at the East Airfield site and do not affect the Proposed Action evaluated in this EA. Therefore, the refinements do not require an update or revisions to the analysis of alternatives, environmental impact analyses, or conclusions contained in this EA.



SOURCE: Greater Orlando Aviation Authority, 2015; and ESA Airports, 2015

Figure 6.1-2

2014 East Airfield Conceptual Plan

In addition to the ongoing coordination between GOAA and the neighborhood communities, Appendix Y provides a timeline of key events and additional community coordination information that occurred over the past 20 years related to the East Airfield site and the NorthLake Park community.

6.2 Agency, Tribal, and Local Governmental Coordination

As part of the agency and public review process, the Draft EA was provided to Federal, state and local agencies; interested Tribal Nations; and local governments listed in **Table 6.2-1**. A 45 day agency comment period for the Draft EA was open from March 30, 2015 to May 14, 2015.

TABLE 6.2-1
AGENCY, TRIBAL, AND LOCAL GOVERNMENT DRAFT EA DISTRIBUTION LIST

Federal
Irene Sadowski – U.S. Army Corps of Engineers
Heath Rauschenberger – U.S. Fish and Wildlife Service
James Giattina – Environmental Protection Agency - Region 4
Federal Emergency Management Agency - Region 4
Dapne Fuller – Federal Aviation Administration
Danielle Rinsler - Federal Aviation Administration
Gail Orendorff - Federal Aviation Administration
Jackie Sweatt-Essick - Federal Aviation Administration
Allan Nagy - Federal Aviation Administration
Tom Cuddy - Federal Aviation Administration
Michael Fineman - Federal Aviation Administration
Native American Indian Tribes
Seminole Nation of Oklahoma
Muscogee (Creek) Nation
Poarch Band of Creek Indians
Seminole Tr be of Florida
Miccosukee Tribe of Indians of Florida
State Clearing House
Lauren Milligan, Florida Department of Environmental Protection State Clearinghouse (NOTE: this agency coordinates with all other state of Florida departments including the SHPO and SFWMD and provides consolidated comments from each department)
Local
Greater Orlando Aviation Authority Board Members
Executive Director Greater Orlando Aviation Authority
Greater Orlando Aviation Authority Executive Staff
Marcos Marchena - Marchena & Graham, P.A
Elected Officials
Mayor Buddy Dyer- City of Orlando
Commissioner Jim Gray - City of Orlando District 1
Commissioner Tony Ortiz - City of Orlando District 2
Commissioner Pete Clarke - Orange County District 3
Commissioner Jennifer Thompson - Orange County District 4
Commissioner Ted Edwards - Orange County District 5

TABLE 6.2-1 (Continued)
AGENCY, TRIBAL, AND LOCAL GOVERNMENT DRAFT EA DISTRIBUTION LIST

Commissioner Victoria Siplin - Orange County District 6
Orange County Mayor Teresa Jacobs
Commissioner S. Scott Boyd - Orange County District 1
Commissioner Bryan Nelson - Orange County District 2
Commissioner Pete Clarke - Orange County District 3
Commissioner Jennifer Thompson - Orange County District 4
Commissioner Ted Edwards - Orange County District 5
Commissioner Victoria Siplin - Orange County District 6
Commissioner Michael Harford - Osceola County
Commissioner Viviana Janer - Osceola County
Commissioner Brandon Arrington - Osceola County
Commissioner Cheryl Grieb - Osceola County
Commissioner Fred Hawkins, Jr. - Osceola County
Senator Marco Rubio - US Senate
Senator Bill Nelson - US Senate
Congressman Alan Grayson - US House of Representatives
Congresswoman Frederica Wilson - US House of Representatives
Congressman John Mica - US House of Representatives
Congresswoman Corrine Brown - US House of Representatives
Office of the Governor
Representative Victor Manuel Torres, Jr. – State House, District 48
Representative Mike Miller – State House, District 47
Representative Tom Goodson – State House, District 50
Senator Andy Gardiner – State Senate, District 13
Senator Darren Soto – State Senate, District 14
Local Government Officials
Dean Grandin, Jr., Planning Division Manager - City of Orlando
Paul Lewis, Chief Planner - City of Orlando
Deborah Girard, Deputy Chief of Administration - City of Orlando
Kyle Shephard, Assistant City Attorney - City of Orlando
Byron Brooks, Chief Administrative Officer - City of Orlando
Graciela Noriega Jacoby, Chief of Staff - Orange County Mayor's Office
Christopher Testerman, Deputy County Administrator - Orange County
Hugh W. Harling, Jr. , Executive Director - East Central FL Regional Planning Council
County Manager, Don Fisher – Osceola County
MetroPlan Orlando
Orlando Economic Development Commission
Central Florida Regional Transportation Authority
GOAA Lake Nona Estates/ NorthLake Park Neighborhood Partnership – Representative
State Agencies (in addition to Clearinghouse coordination)
Florida Department of Transportation (FDOT) Aviation Office
State Historic Preservation Officer

Source: ESA, 2015

6.3 Public Coordination

This EA was developed through the ongoing agency and public coordination efforts described in Section 6.1.2, which resulted in a revised East Airfield project. In light of the revised East Airfield project, the Draft EA was made available for public review both online at MCO's website and at the locations listed in Section 6.3.1. There was a 45 day public review and comment period on the Draft EA. Public comments on the Draft EA were encouraged. It was requested that comments be as specific as possible and address the analysis of potential environmental impacts, the adequacy of the proposed action, or the merits of alternatives.

6.3.1 Notice of Availability

The Notice of Availability (NOA) of the Draft EA and Public Workshop was published in the Orlando Sentinel on March 29, 2015. The NOA was also provided to the public officials and parties listed in Table 6.2.1 that received a copy of the Draft EA. Copies of the Draft EA were made available for public review during regular business hours at the:

- Orange County Public Library (Southeast Branch Library 5575 South Semoran Boulevard, Orlando, FL 32822)
- Lake Nona YMCA (9055 Northlake Pkwy, Orlando, FL 32827)
- GOAA Administrative offices (5855 Cargo Road, Orlando, FL 32827)
- FAA Orlando Airports District Office (5950 Hazeltine National Dr. Suite 400, Orlando FL, 32822)

The NOA also stated that an electronic copy of the Draft EA, in PDF format, was made available for download from the MCO website starting on March 30, 2015 (http://www.orlandoairports.net/east_airfield /index.htm). Instructions for providing comments on the Draft EA during the 45-day comment period (March 30, 2015 to May 14, 2015) were also provided in the NOA.

6.3.2 Public Workshop Meeting

GOAA held a Public Workshop on April 30, 2015 at the Lake Nona High School. The workshop started at 5:30 p.m. and ended at 8:30 p.m. The purpose of the Public Workshop was to provide information about the Proposed Action and its environmental impacts and to solicit comments on the Draft EA. The workshop was held in an informal format where participants were able to view maps, display boards, and informational materials and speak with GOAA representatives and their consultants. No formal presentation or formal Public Hearing session was conducted.

Both written and verbal comments relative to the Draft EA were invited during the Public Workshop. Comment forms and written comments were accepted at the Public Workshop and by mail after the workshop. Two court reporters were available at the Public Workshop to record

individual spoken comments. All comments were reviewed and considered by GOAA and the FAA during the preparation of the Final EA.

There were approximately 100 attendees at the public workshop. GOAA received a total of 116 public comment submittals on the Draft EA.

6.3.3 Comments Received

GOAA and the FAA reviewed and considered all comments received on the Draft EA in the preparation of the Final EA. A summary of the comments is provided below. A copy of the comment submittals received and the response to each substantive comment are provided in **Appendix Z**.

6.3.3.1 Agency, Local, and Tribal Comments

Federal and State Agencies

Comments on the Draft EA were received from four agencies: the US Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers (USACE), the Florida State Historic Preservation Officer (SHPO), and the Florida State Clearinghouse. The EPA submitted an email with comments on wetlands, water quality, and public outreach and did not object to the Proposed Action. The USACE sent an email with comments similar to EPA's and did not object to the Proposed Action. The SHPO stated that the agency had no comments on the Draft EA and acknowledged prior Section 106 consultation and SHPO's concurrence with FAA's findings. The Florida State Clearinghouse submitted a letter addressing updates to the Conceptual ERP by the SFWMD and reiterating the Proposed Action was consistent with the Florida Coastal Management Plan.

Local Municipalities/Local Elected Officials

GOAA solicited comments on the Draft EA from local governments and municipalities, local elected officials, and regional planning/transportation organizations. Comments on the Draft EA were received from the City of Orlando's City Planning Division. Municipalities and local government organizations that did not provide comments on the Draft EA include the Orange County Mayor's Office, Orange County, the East Central Florida Regional Planning Council, Osceola County, MetroPlan Orlando, Orlando Economic Development Commission, and the Central Florida Regional Transportation Authority.

Native American Indian Tribes

The Seminole Tribe of Florida, through its Tribal Historic Preservation Office, noted that the Tribe has no objection to the project at this time. The Tribe indicated that they request to be notified if any Native American artifacts are uncovered during the construction phase of the project. Other Native American Indian Tribes that received a copy of the Draft EA but did not provide comments include the Seminole Nation of Oklahoma, the Muscogee (Creek) Nation, the Poarch Band of Creek Indians, and the Miccosukee Tribe of Indians of Florida.

6.3.3.2 Public Comments

GOAA received 116 comment submittals from the public during the 45 day comment period. Salient points were identified in each comment letter and each point was assigned an identifying number and treated as an individual comment. Responses to each comment letter are contained in Appendix Z. The major topics commented on by the public are summarized below (in no particular order of importance).

- In addition to the Proposed Action, many comments were concerned with the 2014 East Airfield Conceptual Plan and the future full build-out of the East Airfield site (Long-Term Development Plan). Major concerns included:
    - Noise and air quality impacts
    - Health and quality of life impacts
    - Assurances that GOAA made to the public about revisions to the 2014 Conceptual Plan (were thought by many to be missing from the EA).
    - Concerns about the impact that construction activities would have on noise and air quality, as well as an increase in traffic due to construction-related vehicles.
- There were a number of comments related to the Fuel Storage and Distribution Facility, specifically related to the safety, the proximity to residential neighborhoods, visual impacts, and potential for contamination.
- Commenters were concerned about the clearing of wetlands and the impact this would have on the environment in general, stormwater runoff, and wildlife.
- Concerns regarding the increase in traffic on Narcoossee Road that would result from both construction and operation of the proposed facilities, primarily at full build-out.
- A number of commenters suggested that an alternative site would be better suited for a project of this nature, such as the Tradeport site located on the west side of MCO.
- Concerns related to the proximity of high intensity land use to nearby residential neighborhoods.
- There were a number of requests to further extend the comment period to 60 days.
- Concern about the affect the full build-out (Long-Term Development Plan) would have on the quality of life.
- Concerns over the economic impact the project would have on home values in the vicinity of the East Airfield site.
- Some commenters made (incorrect) statements that the land in the East Airfield site is protected and cannot be developed.
- A number of commenters requested that instead of evaluating the impacts of the Proposed Action in an EA, the FAA prepare an Environmental Impact Statement (EIS) to determine the impacts associated with the full-buildout of the East Airfield site.

Commenters also requested more specific information on what types of future development would occur.

- There were a number of comments expressing an overall dislike for the project.
- Many commenters stated the need for more visual and noise buffering for both the Proposed Action and Long-Term Development Plan.
- A number of commenters mentioned their appreciation for the reduction in wetland removal when compared to the 2009 Draft EA, as well as the relocation of the Fuel Storage and Distribution Facility to the northern part of the East Airfield.

SECTION 7
List of Preparers

7.1 List of Preparers

As required by Federal Aviation Administration (FAA) Order 5050.4B, the names and qualifications of the principal persons contributing information to this Environmental Assessment (EA) are identified. It should be noted, in accordance with Section 1502.6 of the Council on Environmental Quality (CEQ) regulations, the efforts of an interdisciplinary team, consisting of technicians and experts in various fields, were required to accomplish this study.

TABLE 7.1-1
LIST OF PREPARERS

Name	Position	Years Experience	Degree(s) / License (s)	Project Role
Greater Orlando Aviation Authority				
Bradley E Friel	Director of Planning	23	B.S. Economics, MS Urban and Regional Planning	Senior Project Manager
Kimberly Peterson	GIS Analyst/Planner	15	A.A. General Studies, GIS Certified	Graphics
Alejandro M. Sorondo	Senior Project Manager	18	B.S. Environmental Engineering, P.E.	Project Coordinator
Marchena & Graham, P.A.				
Chris Wilson	Partner	10	B.S. Marketing/Management, Juris Doctor	General Counsel
Schenkel Shultz, Inc				
J. David Torbert	Partner	20	Bachelor of Design (Architectural) Master of Science Building Construction	Project Manager for GOAA General Consultant
ESA Airports				
Michael Arnold	Vice President/Manager of Airport Planning	24	B.S. Civil Engineering (BSCE)	ESA Project Manager, Purpose and Need, Forecasting, Alternatives, QA/QC
Peter Green	Aviation Program Manager	27	B.S. Environmental Resource Management & Planning, MPA Public Administration (Coastal Zone Studies) / AICP	Long-Term Development Plan Impacts, Cumulative Impacts, Technical Editing, QA/QC

TABLE 7.1-1
LIST OF PREPARERS (Continued)

Name	Position	Years Experience	Degree(s) / License (s)	Project Role
Richard A berts (Retired)	Principal – Alberts & Assoc. Inc	40	B.S. Civil Engineering / P.E.	Technical Support, QA/QC
Rachael Mitchell	Project Administrator	10	B.S. Environmental Policy and Behavior	Public Coordination, Public Involvement, Response to Comments, Technical Support and Editing, QA/QC, Document Production
Autumn Ward	Senior Airport Planner	11	B.S. Aviation Business Administration M.S. Aeronautics	Public Involvement, Response to Comments, Technical Editing, QA/QC
Tom Wyatt	Senior Graphics Designer	27	A.A., Art and Photography	Graphics
Environmental Resource Solutions				
Sarah Brammell	SW Florida Regional Director	15	B.A. Biology Master of Public Administration – Environmental Policy	ERS Project Manager, Wildlife, Project Coordination
Nodarse & Associates, Inc.				
Debra R. Harrington	Environmental Department Manager	22	B.S. & M.S. Environmental Engineering / P.E.	Hazardous Materials
Kristen Johannessen	Environmental Scientist	8	B.A., Neurobiology	Hazardous Materials
KB Environmental Sciences, Inc.				
L. Carrol Bryant	Senior Environmental Specialist	33	B.A. Geography	Air Quality Analysis
Michael A berts	Managing Associate	21	B.A. Geography	Noise Analysis, Compatible Land Use, and Solid Waste
Archaeological Consultants, Inc				
Joan Deming	Vice-President	41	B.A., M.A. / Register of Professional Archaeologists	Historical and Archeological
Laura Turner Planning Services				
Laura Turner	Principal	30	B.A., M.A. City Planning / AICP	Land Use Setting (local/state)
HDR Engineering				
Jamie Krzeminski	Senior Engineer	17	BSCE; MS Transportation Engineering / PE; PTOE	Traffic/Transportation
Jason McGlashan	Vice President	20	BSCE / PE; PTOE	Traffic/Transportation
Breedlove Dennis and Associates, Inc.				
W. Jeffrey Pardue	Senior Vice President	38	B.S. Biology, M.S. Biology, M.B.A. Certified Environmental Professional C.E.P. (No. 93045277)	Biological, Listed Species, Wetlands, Environmental Setting

SECTION 8
Acronyms

A

AC	Advisory Circular
ACEIT	Airport Construction Emissions Inventory Tool
ACM	Airport Certification Manual
ACRP	Airport Cooperative Research Program
ADG	Airport Design Group
AGL	Above Ground Level
ALP	Airport Layout Plan
AMP	Automated People Mover
AOA	Airport Operations Area
ARP	Office of Airports
ASD-1	Airport Support Designation – Medium Intensity
ASD-1AN	Airport Support Designation – Medium Intensity with Aircraft Noise Overlay
ASD-2	Airport Support Designation – High Intensity
ASD-2AN	Airport Support Designation High Intensity with Aircraft Noise Overlay
AST	Aboveground Storage Tank
ASR	Airport Surveillance Radar
ATADS	Air Traffic Activity Data System
ATCT	Airport Traffic Control Tower

B

BA	Biological Assessment
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practices

C

CAA	Clean Air Act
CBRS	Coastal Barrier Resource System
CEQ	Council of Environmental Quality
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFA	Core Foraging Area
CFR	Code of Federal Regulation
CO	Carbon Monoxide
CRAS	Cultural Resource Assessment Survey
CWA	Clean Water Act
CY	Calendar Year
CZMA	Coastal Zone Management Act

D

dba	Doing business as
DEO	Florida Department of Economic Opportunity
DEP	Florida Department of Environmental Protection
DHR	Division of Historical Resources
DHS	Department of Homeland Security
DNL	Day-Night Average Sound Level
DOT	Department of Transportation
DRI	Development of Regional Impact
DWP	Disney Wilderness Preserve

E

EA	Environmental Assessment
EDMS	Emissions and Dispersion Modeling System
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ERP	Environmental Resource Permit
ESA	Endangered Species Act

F

FAA	Federal Aviation Administration
FAC	Florida Administrative Code
FBO	Fixed Base Operator
FCMP	Florida Coastal Management Program
FDEP	Florida Department of Environmental Protection
FDLE	Florida Department of Law Enforcement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FLUCFCS	Florida Land Use, Cover and Forms Classification System
FLUM	Future Land Use Map
FMSF	Florida Master Site File
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FSC	Florida State Clearinghouse
FSDF	Fuel Storage and Distribution Facility Alternative
FT	Federally Threatened
FWC	Florida Fish and Wildlife Conservation Commission
FY	Fiscal Year

G

GHG	Green House Gas
GMP	City of Orlando Growth Management Plan
GOAA	Greater Orlando Aviation Authority

I

INM	Integrated Noise Model

L

LOS	Level of Service

M

MBTA	Migratory Bird Treaty Act
MCO	Orlando International Airport
MPO	Metropolitan Planning Organization
MSW	Municipal Solid Waste
M-WRAP	Modified Wetland Rapid Assessment Procedure

N

NAAQS	National Ambient Air Quality Standards
NAS	National Airspace System
NAVAID	Navigational Aid
NEPA	National Environmental Policy Act
NHL	National Historic Landmarks
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO_2	Nitrogen Dioxide
NOA	Notice of Availability
NOI	Notice of Intent
NOMS	Noise and Operations Monitoring System
NOPC	Notice of Proposed Change
NPDES	National Pollution Discharge Elimination System
NPIAS	National Plan of Integrated Airport Systems
NPL	National Priorities List
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NRHP	National Registry of Historic Places
NRI	National Rivers Inventory

O

O_3	Ozone
ORL	Orlando Executive Airport

P

Pb	Lead
PCN	Primary Conservation Network
PD	Planned Development
PM	Particulate Matter

R

RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
ROD	Record of Decision
RPC	Regional Planning Council
RRAP	Florida Fuels Regional Resiliency Assessment Project
RPZ	Runway Protection Zone

S

SFHA	Special Flood Hazard Area
SFWMD	South Florida Water Management District
SHPO	State Historic Preservation Officer
SO_2	Sulfur Dioxide
SPCC	Spill Prevention Control and Countermeasure Plan
SR	State Route
SSC	Species of Special Concern
ST	State Threatened
SWPPP	Stormwater Pollution Prevention Plan

T

TAF	Terminal Area Forecast
TCEA	Transportation Concurrency Exception Area
THPO	Tribal Historic Preservation Officer
TRB	Transportation Research Board

U

USDA	U.S. Department of Agriculture
UMAM	Florida Unified Mitigation Assessment Method
USACE	U.S. Army Corp of Engineers
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Services
USGS	United States Geological Survey

W

WHA	Wildlife Hazard Assessment
WHAR	Wildlife Hazard Attractant Alternative
WHMP	Wildlife Hazard Management Plan
WHSV	Wildlife Hazard Site Visit
WSRS	National Wild and Scenic River System