



MEMORANDUM FOR RECORD

SUBJECT: Department of the Army Environmental Assessment and Statement of Findings for the Above-Referenced Standard Individual Permit Application

This document constitutes the Environmental Assessment, 404(b)(1) Guidelines Evaluation, Public Interest Review, and Statement of Findings for the subject application.

1.0 Applicant: Greater Orlando Aviation Authority (GOAA)
Orlando International Airport
5850-A Cargo Road
Orlando, FL 32827

2.0 Project Location:

2.1 Approximate central coordinates

Latitude: 28.4408° North
Longitude: 81.2696° West

3.0 Proposed Project Information:

3.1 Proposed project description: The applicant proposed to secure a 20-year permit for the development of the ±1,342-acre GOAA East Airfield project site, which includes:

1) 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;

2) Reduction of existing wildlife hazard attractants on the East Airfield site through removal of wetlands, non-stormwater management of surface waters and active wildlife hazard management; includes the placement of fill in wetlands.

3) Development of a secondary fuel storage and distribution facility that provides a redundant fuel supply at MCO to improve security from fuel supply disruptions



Figure 1. Location of 1,342 acre GOAA East Airfield site.

related to storm events or other causes.

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The initial proposed action would require the discharge of dredged/fill material in 292.88 acres of waters of the United States (WoUS); the Least Environmentally Damaging Practicable Alternative (LEDPA) requires fill in 208.73 acres of WoUS (171.13 acres of wetlands and 37.6 acres of non-wetland waters). While not specifically evaluated in the proposed action, long-term future development would be evaluated by the Federal Aviation Administration (FAA) and may include the following seven land use categories: (A) Airport Support District High Intensity; (B) Airport Support District Medium Intensity; (C) Stormwater Treatment; (E) Fuel Storage and Distribution Facility; (F) Park, Berm and Heavy Landscape; (G) Other Use; and (H) Heavy Landscape. The Airport Support District High Intensity uses include aircraft maintenance, manufacturing, hangars, cargo and/or aviation support facilities and would be located in areas with direct access to the airfield. This area may also include passenger rail (E.g., All Aboard Florida) in a east-west corridor along SR 528 and the northern property boundary. The Airport Support District Medium Intensity area, a transition area between the high intensity uses and residential areas to the south, may include aviation business offices, flight training centers and air traffic control facilities. Stormwater treatment ponds have been located away from the 4th runway while the Fuel Farm has been located away from Lake Nona residential areas. Other Uses include rail corridor adjacent to SR 528, taxiways, roads, utilities and, open space.

- 3.2 Proposed avoidance and minimization measures: The applicant has provided information indicating there is not a practicable on- or off-site alternative configuration that meets the project purpose and results in less wetland impacts than the applicant's preferred alternative. Since the original application was submitted in 2006 there has been substantial coordination with state and federal regulatory agencies and the public. The applicant and FAA have held public information meetings, and the South Florida Water Management District has held a public hearing. Comments on two prior Corps public notices on the project have been received. GOAA has also engaged with representatives of the residential communities to the south of the East Airfield. As a result, GOAA has modified its conceptual development plan such that it meets regulatory agency requirements, is responsive to public comments and public interest factors to the extent practicable, and provides a development plan that allows GOAA to meet its basic and overall project purpose. Removal of wildlife hazards is a significant component of the project purpose.

GOAA modified the East Airfield 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 East Airfield, 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

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Project development plan modification maintains the core area 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 Project design modifications reduced the overall capacity for large scale high intensity aviation support in the Project as originally planned by approximately 38%.

GOAA also evaluated two additional configurations of the East Airfield to determine if it was practicable to preserve a majority of the two largest wetlands on the eastern half of the site (See Section 9.3 for drawings). The first alternative, Configuration 1, would further reduce the Category A building area and taxi lane and apron by an additional 40% and 36% respectively. The second alternative project design (Configuration 2) would avoid the wetlands as in Configuration 1 above and seek to recover Category A high intensity aviation land use in other parts of MCO. Configuration 2 incorporates the Heintzelman Boulevard area between the 3rd and 4th runways at MCO. The Corps determined these alternatives were not practicable).(See Section 9.3.

Finally, GOAA has further modified the configuration of the preferred alternative in a manner that reduces dredge/fill in WoUS from 292.88 acres to 208.73 acres of WoUS (171.13 acres of wetlands and 37.6 acres of non-wetland waters). 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 includes avoiding impacts to a forested wetland system, located in the south-central portion of the site, 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% from the original proposal. The applicant has implemented practicable design modifications to avoid and then minimize impacts to WoUS in accordance with the Section 404 (b)(1) Guidelines.

- 3.3 Proposed compensatory mitigation plan: In July 1999, the Corps approved a permit modification to Department of the Army Permit SAJ-1989-00232 (IP-ME), which included the approval of eight regionally significant off-site mitigation tracts located on or near the Disney Wilderness Preserve in Osceola County, Florida; this permit also established compensatory mitigation credits and a mitigation ledger to track crediting/debiting. These credits have been generated in advance of the proposed debits, thereby minimizing risk while managing success and ecological benefits. The applicant proposed to debit 89 federal mitigation credits from the Brevard Engineering – Southern Lakes (BRENSOLA) site ledger, which currently has 182.6 federal mitigation credits available. The final debit amount changed, as described in Section 13.4.

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- 3.4 Jurisdictional determination information: An approved jurisdictional determination will be issued on the same date as the permit decision for this project. A total of 340.56 acres of aquatic resources are located on the property. Approximately 25.65 acres of stormwater ponds are not considered jurisdictional, resulting in a total of 314.9 acres of WoUS (256.5 acres of wetlands; 58.4 acres of surface waters).
- 3.5 Existing conditions and project history, if applicable: The project area is surrounded by development, including airport operations to the west, SR 528 to the north, Narcoossee Road to the east, Dowden Road and Lake Nona Development of Regional Impact residential developments to the south. Currently, the site is managed for cattle and sod production. Drainage improvements implemented during the site's history of agricultural use have resulted in most wetland systems exhibiting reduced hydroperiods/seasonal high water levels; some wetlands have improved hydroperiods due to poor drainage along Gee Bee canal on the western property boundary.

Vegetative communities on the East Airfield were mapped consistent with Florida Land Use, Cover and Forms Classification System (Florida Department of Transportation, January 1999). Upland communities/cover types on the East Airfield total approximately 1001.2 acres and consist of the following cover types: Improved Pasture (FLUCCS 211), Unimproved Pasture (FLUCCS 212), Shrub and Brushland (FLUCCS 320), Palmetto Prairie (FLUCCS 321), Pine Flatwoods (FLUCCS 411), Hardwood-Coniferous Mixed (FLUCCS 434), Disturbed Land (FLUCCS 740), and Airports (FLUCCS 811). The majority of uplands on the project site are dominated by improved pasture (FLUCCS 661-acres). Aquatic resource cover types on the site total 340.5 acres. This includes 256.43-acres of wetlands dominated by Wetland Coniferous Forest (FLUCCS 620, 11.5-acres), Cypress (FLUCCS 621, 170.9-acres), Wetland Shrub (FLUCCS 631, 61.7-acres), and Freshwater Marsh (FLUCCS 641, 12.9-acres). Non-wetland waters total 84.09-acres and include stormwater

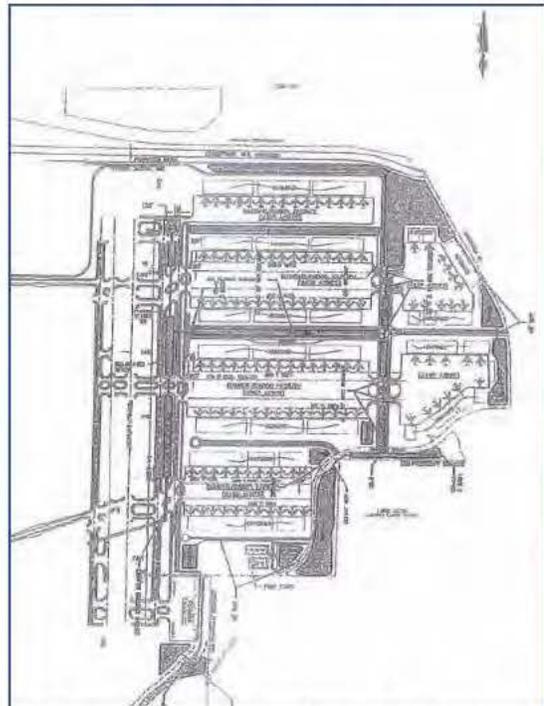


Figure 2. Site Plan from the Corps Public Notice Adverted 5 Feb 2007.

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and cattle ponds, and ditches.

The *GOAA East Airfield* project was previously noticed to the public on 5 Feb 2007 (see **Figure 2**), where it was referred to as the *GOAA Gee Bee* project. Comments were received and the applicant prepared responses but the application was withdrawn by the U.S. Army Corps of Engineers (Corps) on 22 Feb 2009 pending receipt of a Final Environmental Assessment (FEA) from the FAA for the proposed action. The Corps worked with FAA to develop project alternatives but was not a cooperating agency in the FEA process. The Corps reactivated the project on 6 Nov 2012 so review would run concurrently with development of the FAA FEA. The plan presented for the East Airfield site in the 4 Feb 2013 public notice (see **Figure 3**) went through additional planning and development, which resulted in the following site plan refinements:

- 1) The fuel farm was relocated to the north end of the site and shifted east to provide increased aircraft apron adjacent to the 4th runway.
- 2) A low-intensity land use buffer consisting of Airport Support Areas was created along the southern portion of the East Airfield site (along the north side of Dowden Road).
- 3) The storm water pond located south of the future Dowden Road extension was incorporated into an expanded storm water pond on the north side of the future Dowden Road extension. The area south of the future Dowden Road extension is shown as Lake Nona and is not to be developed.

Due to delay in response to a Corps 2 Jul 2013 Request for Additional Information (RAI), the project was again deactivated on 12 Feb 2014. A final application was received 3 Aug 2015 but was held in abeyance pending completion of the FAA FEA.

On 1 Feb 2016, the FAA approved the *Final Environmental Assessment for East Airfield Development Area (FEA) and Mitigated Finding of No Significant Impact/Record of Decision (FONSI/ROD)*. Both of these documents are hereby incorporated by reference to this Environmental Assessment and Statement of Findings.. The specific Federal



Figure 3. Proposed Action From The 4 Feb 2013 Public Notice.

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Actions considered by the FAA in the FEA and FONSI/ROD included (see **Figure 4**):

1) Final and unconditional approval of revisions to the 2015 MCO Airport Layout Plan (ALP) for the following actions:

- Development of a secondary fuel storage and distribution facility on the East Airfield site;
- 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.

2) Conditional approval of 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 the action is programmatic in nature and does not permit development of a specific use, the FAA only provided conditional approval of revisions to the MCO ALP.

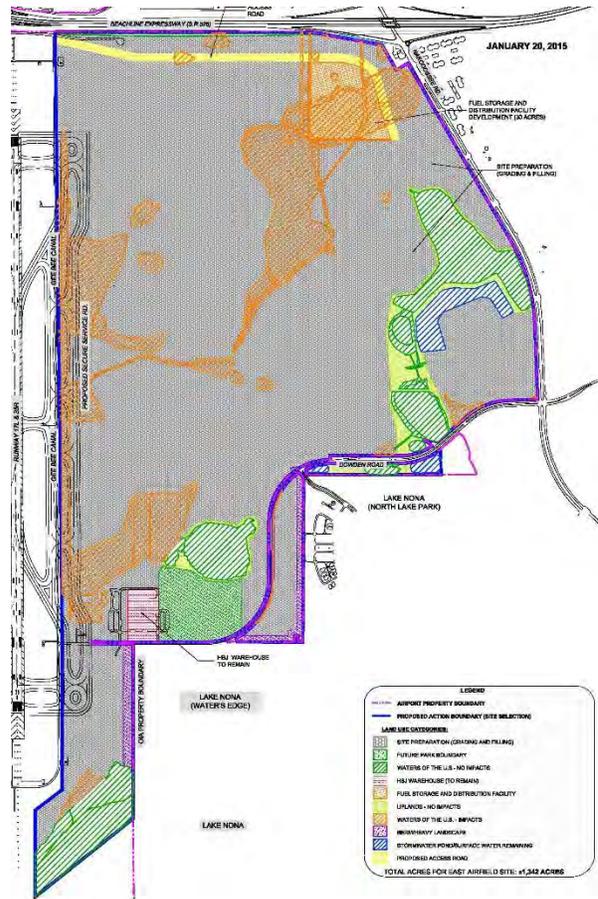


Figure 4. 2015 East Airfield Proposed Action Evaluated in the FAA FEA.

4.0 Permit Authority:

5.0 Scope of analysis for the National Environmental Policy Act, permit area for Section 106 of the National Historic Preservation Act and action area for Section 7 of the Endangered Species Act:

5.1 Determination of scope of analysis for the National Environmental Policy Act (NEPA): The proposed project is a single and complete project and not dependent on future actions to meet its overall project purpose. The project area contains jurisdictional waters of the United States which are regulated pursuant to

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Section 404 of the Clean Water Act of 1972. The site may contain resources protected under the National Historic Preservation Act, Fish and Wildlife Coordination Act, Executive Order 11990, Protection of Wetlands, and the Endangered Species Act. The property is located within the United States Fish and Wildlife Service's (FWS) Consultation Area for several federally listed species. The FAA is the lead agency for regulating activities occurring on airport lands – the ALP and future conditional land use approvals are subject to the requirements of NEPA and further FAA analysis.

Final description of scope of analysis: The extent of cumulative Federal control and responsibility extends to the entire ±1,342-acre GOAA East Airfield project site, including portions outside waters of the United States. Upland portions of the entire project are included because the Corps does have sufficient control and responsibility to warrant federal review.

5.2 Determination of permit area for Section 106 of the National Historic Preservation Act (NHPA):

The permit area includes those areas comprising waters of the U.S. that will be directly affected by the proposed work or structures, as well as activities outside of waters of the U.S. because all three tests identified in 33 CFR 325, Appendix C(g)(1) have been met.

Final description of the permit area: The permit area includes the entire ±1,342-acre GOAA East Airfield project site.

5.3 Determination of "action area" for Section 7 of the Endangered Species Act (ESA): The proposed work must occur in uplands and waters of the United States (wetlands) to accomplish its overall project purpose. The action area for ESA has been determined to include the entire ±1,342-acre GOAA East Airfield project site.

6.0 Purpose and Need:

6.1 Applicant's stated purpose and need: Construction of high and medium intensity aviation and aviation support facilities, medium intensity land uses, and related infrastructure and provides for a reduction in existing hazardous wildlife attractants on the East Airfield consistent with the FAA Advisory Circular on Hazardous Wildlife Attractants and recommendations from GOAA, the United States Department of Agriculture (USDA), and a wildlife damage biologist.

6.2 Basic purpose and need: Aviation support.

6.3 Water dependency determination: The activity does not require access or

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proximity to or sighting within a special aquatic site to fulfill its basic purpose. Therefore, the activity is not water dependent.

6.4 Public Notice Overall Purpose and Need: As stated in the 4 Feb 2013 public notice, the overall purpose of this project is the development of large-scale aviation and aviation support facilities to serve Orlando International Airport.

6.5 Final Overall Purpose and Need: Selection of a site for development of large-scale high and medium intensity aviation and aviation support facilities and related infrastructure to serve MCO; and reduction of existing wildlife hazard attractants on the East Airfield site.

7.0 Application Complete for Public Notice:

7.1 Date application received: 6 November 2012

7.2 Application complete for Public Notice (PN) consistent with 33 CFR 325.1(d)? 6 November 2012

7.3 If no, date(s) additional information requested

7.4 Date application complete for PN:

8.0 Coordination:

8.1 PN:

8.1.1 Date PN issued: 4 February 2013

Agencies and persons consulted: See list attached to PN in the administrative record

8.1.2 Were comments received on the PN? Yes

Date Corps acknowledged the receipt of PN comments: The Corps did not acknowledge comments but had already been working with a group of Waters Edge, North Lake Park and Lake Nona Estates homeowners (Northlake Park at Lake Nona Community Association, Inc. and Lake Nona Community Association) throughout the process to address their issues. The lead for the residents was a local attorney and Northlake Park resident, Ms. Deborah Moskowitz.

8.1.3 Summary of comments received: All comments received were in response to the 4 Feb 2013 public notice where the advertised proposed action would have

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required the dredge/fill in 256.88 acres of WoUS. Ultimately, the Least Environmentally Damaging Practicable Alternative includes dredge/fill in 208.73 acres of waters of the United States (171.13 acres of wetlands and 37.6 acres of non-wetland waters).

Federal Agencies: Environmental Protection Agency (EPA): The EPA submitted a request for an extension to the 30-day comment period; the Corps agreed to the extension by letter dated 7 March 2013. A letter dated 4 April 2013 was received, following the field level procedures outlined in the August 1992 Memorandum of Agreement between the EPA and the Department of the Army, Part IV, paragraph 3(a) regarding Section 404(q) of the Clean Water Act, designating on-site wetlands as Aquatic Resources of National Importance (ARNI) and requesting further analysis of alternatives allowing wetland avoidance and minimization. A letter dated 29 April 2013 was received, following the field level procedures outlined in the August 1992 Memorandum of Agreement between the EPA and the Department of the Army, Part IV, paragraph 3(b) regarding Section 404(q) of the Clean Water Act (3b Letter), recommending denial of a permit for the project due to unacceptable adverse impacts to 171 acres of forested cypress wetlands (FLUCCS 621) considered to be an ARNI. The EPA specifically requested avoidance of 100 percent of the 256.43 acres of functional on-site wetlands.

The Corps coordinated with EPA, GOAA, and the FAA to make project modifications and reduce wetland impacts. During development of the FAA FEA, EPA comments to the FAA included three requests: (1) EPA highly recommends a commitment from GOAA to preserve the 85 acres of wetlands that will not be impacted during the near-term phase through perpetual conservation easements; (2) EPA requests that GOAA revise its CWA Section 404 permit application to be consistent with the scope and duration of the Draft EA; (3) EPA recommends that GOAA keep the local community informed and involved throughout the project process on issues such as operation noise control by having community meetings and updating the community through local media (radio, local paper and TV).

National Marine Fisheries Service (NMFS): By letter dated 19 Feb 2013, NMFS indicated the project would not occur in Essential Fish Habitat and no further analysis or action was planned.

Federally Recognized Native American Tribes and Affiliated Groups: By letter dated 13 Feb 2013, the Seminole Tribe of Florida Tribal Historic Preservation Officer (STOF-THPO) indicated they had no objection to the project.

State and Local Agencies: State Historic Preservation Officer (SHPO): By letter dated 13 Feb 2013, the SHPO indicated their review of the Florida Master Site

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File indicates that no significant archaeological or historic resources are recorded in the project area and it is unlikely historic properties will be affected.

Individual(s) and Organized Groups: The Corps received 180 public comment letters that also requested a public hearing; 171 of these comment letters were received by email. The Corps has prepared a letter in response to public comments that includes a table identifying the location their comment is addressed in both this EASOF and the FAA EA, which will be mailed to the commenters on the same date this document is signed. Issues identified from public comments include the following:

1. Conservation/Wetlands/Fish and wildlife values:
 - Wildlife impacts and conservation
 - Off-site wetland mitigation – should be in-kind and preferably within a contiguous area
 - Wetland impacts – dredge and fill 256.88 acres of wetlands; the elimination of nearly all wetlands; preserve eastern wetland strand to protect Lake Nona.
 - American bald eagle nest adjacent to Northlake Park; impacts to federally listed species
 - Removal of endangered bird habitat
 - No substantiation of bird strike issue
 - Impacts to federally listed wildlife species

2. General needs and welfare of the people; land use:
 - Noise impacts on neighborhoods
 - Air quality concerns (traffic, fuel and other industrial fumes); smells from airport operations
 - Inadequate buffer from high-intensity land use to the north and west; buffer neighborhoods with C density land use
 - Traffic impact – amount and type of vehicles on Dowden and Narcoossee Roads; proposed future alignment of Dowden Road extension; move the road west to preserve existing tree line buffer; route traffic to Heintzelman Boulevard; impact of 46,700 new vehicle trips with existing traffic congestion
 - Location of high-intensity and medium-intensity land use to the North side of neighborhoods; too much high-intensity land use
 - Concept plan is too vague to fully consider the impacts
 - Permitting should be broken up into smaller digestible pieces
 - Opposed to ASD-2 land use, particularly on the 20 acre parcel on the western boundary of Waters Edge
 - Negatively impact quality of life

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- Industrial zoning so close to residential
 - Lighting issues and visual effects
3. Flood hazards; Floodplain Values:
 - Stormwater flooding adjacent neighborhoods
 - Impacts to 100 year floodplain
 - Wetland impacts and off-site compensatory mitigation will result in flooding
 4. Aesthetics:
 - Visual impact
 - Proposed vertical building heights
 5. Economics/Considerations of property ownership:
 - Reduced property values
 - GOAA purchased adjacent properties after neighborhoods were under construction and homes purchased by adjacent residents.
 6. Water quality: stormwater and pollution in Lake Nona
 7. Safety:
 - Location of fuel farm near residential and roadways (SR 528 and future railway)
 - Human safety as a result of adjacent hangars, taxis, flight and/or cargo operations
 - Dowden Road 90 degree turn; aircraft safety with such a close unsecured road.
 8. Wetlands:
 - Dredge and fill 256.88 acres of wetlands; the elimination of nearly all wetlands; preserve eastern wetland strand to protect Lake Nona.
 9. Water supply and conservation:
 - Effect on water charge
 - Demand on aquifer
 10. NEPA/404(b)(1) Guidelines:
 - Land is available elsewhere on OIA for this project
 - Need for project, particularly ASD-2 land use
 - Vagueness of project; other than the fuel farm, not enough detail to evaluate practicable alternatives
 - Corps should be the lead agency because their review will define the location of potential development; project is not water dependent

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- Need for an Environmental Impact Statement

8.2 Were additional issues raised by the Corps including any as a result of coordination with other Corps offices? Yes

If yes, provide discussion: The Corps provided a comment letter to the applicant dated 2 Jul 2013. In this letter, the Corps noted that wildlife hazards do exist and are documented throughout the East Airfield site. The letter stated the Corps would consider authorization of a permit to fill demonstrated wildlife hazards in the western portion of the site; this would also include an evaluation of off-site alternatives for future East Airfield site development. The Corps requested additional information for the following:

1) To support project need and the analysis of practicable alternatives:

- The Corps requested the applicant provide central Florida growth projections, specific GOAA projected growth needs, and an economic assessment supporting the need for the applicant's preferred alternative (or conversely, demonstrating how Configuration 1 would not be practicable); this may include specific information on airport economic self-sufficiency or other information you believe pertinent.

- The Corps requested additional detail on the Tradeport, South Terminal and Heintzelman Blvd. alternatives to include existing site plan approvals, land use density approvals, or other site limitations.

- The Corps also requested a modification to the alternatives analysis to include the following: define a system to rate a site against each of the site evaluation criteria (See Section 9.1 of this document) describe a method to comparatively weigh each rating as to its importance.

2) Clarifications to the *Conceptual Plan 2012*, from the 4 Feb 2013 public notice.

3) Information regarding wildlife hazard assessments.

4) Information regarding the wood stork assessment.

5) Wetland functional assessment.

6) Consistency of mitigation with the mitigation rule.

7) Information to address the comment in the EPA 3b Letter requesting avoidance and minimization of cypress forested wetlands.

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8) Details regarding drawings and wetland acreages.

8.3 Were comments and/or concerns forwarded to the applicant for response? Yes

Date(s) the applicant provided a response to the comments and concerns:
3 August 2015 and 1 Feb 2016.

Summarize applicant response: Meetings were held with the applicant and/or FAA to discuss the RAI and alternatives to be considered in the FAA FEA on the following dates: 3 February 2014; 24 April 2014; 1 May, 2014; 6 May, 2014; 25 August 2014; 5 May 2014; and 17 June 2015.. The applicant responded with a new application submittal on 3 August 2015. The FAA completed their FEA on 1 Feb 2016 and forwarded to the Corps. The new application submittals provided requisite information to evaluate the East Airfield as a large contiguous site for future airport development, overall project purpose and need and the analysis of practicable alternatives, and wildlife hazards. The submittals also included specific information regarding wetland avoidance and minimization, wetland impacts and function, compensatory mitigation, 404(B)(1) Guidelines compliance, and public interest considerations.

8.4 Corps evaluation of applicant's response: The applicant's response resulted in a change in overall project purpose from that advertised in the Corps' 4 Feb 2013 public notice. The applicant provided a detailed response in regard to wildlife strikes and included a number of supporting documents:

1) FAA FEA 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).

2) USDA Wildlife Hazard Assessment of the East Airfield, March 29, 2010.

3) GOAA Avifauna Field Data FY 2013 (Environmental Management & Design, Inc, 2013).

4) Greater Orlando Aviation Authority Airfield Operations Area Wildlife Ecological Study and Annual Report 2013

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Wildlife strike data for the 2009-2013 five year period at MCO indicate that Runway 17L-35 (i.e., runway adjacent to East Airfield) accounted for almost 40% of the wildlife strikes at MCO. Additional analysis was provided in the FAA FEA.

Based on the Applicant's submittal, the Corps determined wildlife hazards were a more significant component of the overall project purpose and included the reduction of existing wildlife hazard attractants on the East Airfield site as a component of the project purpose. The response also minimized wetland fill consistent with the EPA 3b Letter and addressed public comments.

GOAA has partially fulfilled EPA's three requests regarding the FAA FEA: (1) GOAA minimized the extent of proposed fill and will preserve the 85 acres of wetlands, and approximately 10 acres of surrounding uplands. However, placing a conservation easement on airport property is not supported by FAA [discussion with Mr. Allan Nagy (FAA) dated 22 Mar 2017]. In a meeting with GOAA and FAA on 24 January 2018, Ms. Rebecca Henry (FAA) further indicated it is contrary to FAA policy to approve a conservation easement on airport property and FAA would not be inclined to grant such approval on this project.

(2) The FAA FEA indicated construction of the unconditionally approved portions of the Proposed Project (i.e., site selection approval, wildlife hazard remediation, and fuel storage facility) is projected to start in 2016 and is scheduled for completion by 2020. Full build-out of the East Airfield site is anticipated to occur over a 20 year period and there is no expiration of the site selection approval. However, any future construction activities at the East Airfield would require approval by the FAA. The Corps considered cumulative effects through the year 2040 and any permit, if issued would be valid for a 20-year period consistent with the application request

(3) GOAA made commitments to local communities (Northlake Park at Lake Nona Community Association, Inc. and Lake Nona Community Association) on issues such as operations, noise control, lighting, buffering, traffic, parks, wetland conservation (i.e., 85 acres of wetlands) and water quality monitoring in a *Memorandum of Understanding of the East Airfield Development Area* (signed by GOAA on 15 Dec 2015).

8.5 Public hearing/meeting: A public hearing was requested.

Date Corps responded to public hearing request: The Corps addressed issues raised by the public and determined there is no valid interest served by holding a public hearing. The Corps responded to the 180 requests for a public hearing by letter of the same date as this document, in which it notified respondents the Corps would not honor their request for a hearing. The response included a table

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summarizing the issues raised by the respondents in their hearing request and the assessment of those issues in the Corps EA and/or the FAA FEA. The letter also notified respondents these documents would be placed on the Corps' website.

8.5.1 Date public hearing held: N/A

9.0 Alternatives Analysis: An evaluation of alternatives is required under both NEPA and the Section 404(b)(1) Guidelines. NEPA requires consideration of a reasonable range of alternatives, including the no action alternative; under the Guidelines, practicability of alternatives is taken into consideration and no alternative may be permitted if there is a less environmentally damaging practicable alternative. Additionally, in order to evaluate on-site alternatives, the Corps must consider a complete plan of development for the entire project site, rather than segmenting the project into smaller parcels for review. Such an approach would improperly segment the Corps' NEPA analysis, and preclude evaluation of a full range of alternatives including wetland avoidance.

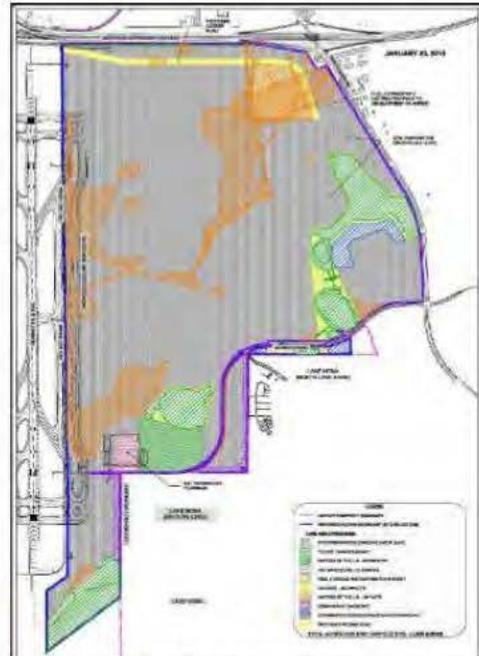


Figure 5. Revised Proposed Action from the 3 Aug 2015 Application.

The Corps is in concurrence with the off- and on-site alternatives analysis presented in the FAA FEA selecting 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; and the reduction of existing wildlife hazard attractants on the East Airfield site through removal of wetlands, non-stormwater management surface waters and active wildlife hazard management. The Corps participated in numerous meetings with the FAA developing the off- and on-site alternatives to be assessed in the FAA FEA.

9.1 Site selection/screening criteria: In order to be practicable, an alternative must be available, achieve the project purpose (as defined by the Corps), and be feasible when considering cost, logistics and technology. Based on the project purpose as defined by the Corps, the applicant provided information on site criteria that are necessary to achieve the overall project purpose.

Site selection criteria: See Sections 3.1 – 3.3.4 and 3.4 – 3.5.2 of the FAA FEA.

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The Corps further refined FAA FEA screening criteria to be consistent with the evaluation of off- and on-site alternatives pursuant to the 404(b)(1) Guidelines. These criteria are described as follows:

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 in reasonable proximity to MCO airfield infrastructure so that aviation facilities can share infrastructure and reduce logistical inefficiencies and resulting costs. This includes having access to a major air carrier runway, taxiways and aprons, stormwater facilities, regional and local roadways, and site utilities. Ultimately, reduced operational efficiencies translate to increased infrastructure and operational costs; and
 - Development of the site would provide for future generation and diversification of MCO revenue with a variety of land uses.

GOAA proposed the designation of a large site to support future large-scale aviation development which could consist of a single large aviation tenant or multiple smaller tenants. Two critical components of such a designation include determining the size of a “large-scale aviation development” site, and determining whether the site needs to be contiguous to MCO:

A. GOAA anticipates that large-scale aviation uses could include aircraft manufacturing, aircraft maintenance, air cargo, and fuel storage facilities, either as a single large aviation tenant or multiple smaller tenants. Based on information provided by GOAA (see table below), the Corps would conclude a reasonably-sized site required for large-scale aviation use is approximately 150 acres, with a significant portion supporting Airport Support District High Intensity land uses.

Aviation Business	Airport Location	Project Size (acres)
Vought Aircraft Ind.	Nashville, TN	150
Boeing 787 Dreamliner	Charleston, SC	240
Lockheed-Martin Aeronautics	Ft. Worth, TX	~275
Boeing Manufacturing	Everett, WA	1,025

B. All of the manufacturing sites considered in sizing a large-scale aviation site (see table above) also have access to a major air carrier runway. It is reasonable to conclude businesses such as aircraft manufacturing and maintenance, air

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cargo and fuel facilities would need access to a major air carrier runway. A large 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. Such a site would also allow potential tenants to benefit from the synergy of similar types of uses and the efficiency of shared infrastructure (e.g, access to a major air carrier runway). A large site with these attributes would need to be contiguous, or within proximity to, one of the four runways at GOAA. Such a site 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

2. Site development consistent 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.

Specific screening criteria included the following:

Factor	Measure and/or Constraint
Aquatic Resource impacts	Acres
Generates/diversifies MCO revenue	Yes/No
Cost Efficiencies: Operational efficiencies resulting in sustainable infrastructure and operating costs.	Yes/No
Logistics	
Suitable size parcel	>150 acres
Availability	Yes/No
Accommodates large-scale high intensity aviation support land use; consistency with local land use plan	Yes/No
Logistical Efficiencies – proximity to runway, shared infrastructure	Yes/No
Road Access	Yes/No
Utilities	Yes/No

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Site 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	Meets/does not meet
Ability to effectively manage for wildlife hazards	Yes/No

9.2 Alternatives to be evaluated:

9.2.1 No action alternative: See Sections 3.1 – 3.3.4 and 3.4 – 3.5.2 of the FAA FEA.

9.2.2 Off-site alternatives: See Sections 3.1 – 3.3.4 of the FAA FEA.
 The Corps evaluated four sites external, but adjacent to, the MCO property for their ability to meet the described project purpose:

Factor	Bal Bay	Lake Nona	East Boggy Creek	West Boggy Creek	East Airfield (Applicant's Preferred Alternative)
Aquatic Resource impacts	±170	±35	±40	±40	208.7
Generates/diversifies MCO revenue	No	No	No	No	Yes
Cost Efficiencies: Operational efficiencies resulting in sustainable infrastructure and operating costs).	No	No	No	No	Yes
Logistics					
Suitable size parcel (>150 acres)	Yes	No	Yes	Yes	Yes
Availability	Yes	Yes	Yes	Yes	Yes
Accommodates large-scale high intensity aviation support land use; consistency with local land use plan.	No	Yes	No	Yes	Yes

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Logistical Efficiencies – proximity to runway, shared infrastructure	No	No	No	No	Yes
Road Access	Yes	Yes	Yes	Yes	Yes
Utilities	Yes	Yes	Yes	Yes	Yes
Site 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	Partially meets	Partially meets	Partially meets	Partially meets	Meets
Ability to effectively manage for wildlife hazards	Yes	No	No	No	Yes

On November 15, 2017, GOAA submitted an analysis detailing projected infrastructure development costs, and long-term operational costs, for the off-site alternatives and East Airfield. These costs were developed based on the costs of previous construction projects and known operational costs, and standard cost estimating based on site assumptions (e.g., soil for wetland backfill, demucking).

Alternative Site Cost Analysis

Cost / Unit	East Boggy Creek		Lake Nonā		Bal Bay		East Airfield		
	Unit	Extended Cost	Unit	Extended Cost	Unit	Extended Cost	Unit	Extended Cost	
Development Costs:									
Land Cost ¹	Varies /acre	187	\$ 27,751,704	239	\$ 84,955,452	520	\$ 20,646,417	1,343	\$ -
Communication Utilities Infra structure	/LF ²	17,000	\$ 5,100,000	20,100	\$ 6,030,000	18,700	\$ 5,610,000	8,900	\$ 2,670,000
Fuel Hydrant System	\$1,350 /LF ³	17,000	\$ 22,950,000	20,100	\$ 27,135,000	18,700	\$ 25,245,000	8,900	\$ 12,015,000
2 Lane Secure Roadway	\$120 /SV ⁴	81,667	\$ 9,800,000	71,667	\$ 8,600,000	57,222	\$ 6,866,667	4,444	\$ 533,333
Dual Taxiway	\$7,500 /LF ⁵	14,700	\$ 110,250,000	12,900	\$ 96,750,000	10,300	\$ 77,250,000	800	\$ 6,000,000
Dual Bridge	\$100,00 /LF ⁶	2,000	\$ 200,000,000	0	\$ -	1,000	\$ 100,000,000	0	\$ -
Wetland Demuck for Taxiway	\$15,00 /acre ⁷	93	\$ 1,394,628	141	\$ 2,117,769	103	\$ 1,549,587	0	\$ -
Import Soils for Wetland Back fill	/CY ⁸	1,500,000	\$ 36,000,000	2,277,778	\$ 54,666,667	1,666,667	\$ 40,000,000	0	\$ -
Soft Cost (45% of Construction Cost) ⁹			\$ 173,472,583		\$ 87,884,746		\$ 115,434,564		\$ 9,548,250
<i>Subtotal</i>			\$ 586,718,915		\$ 368,139,633		\$ 392,602,234		\$ 30,766,583

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Bal Bay Site

The Bal Bay site is located east of the East Airfield site, just east of Narcoossee Road. The site is approximately 520 acres with the eastern half consisting of approximately 170 acres of wetlands. In the most aggressive development footprint, up to 170 acres of wetlands would be impacted by the project. Given surrounding development, road and utility access is available. The City of Orlando and Orange County establish land uses in the surrounding area. No zoning is established for this site but future land uses include Urban Activity Center, Office Low Intensity and Residential Low Intensity, Mixed-Use Corridor and Conservation (wetlands). These uses would not be consistent with

Operational Cost									
Plane Taxi (Per operation)	\$85 /min ¹¹	8.4	\$ 713	7.3	\$ 626	5.9	\$ 500	0.5	\$ 39
Taxiway Maintenance (Annual)	\$400 /LF ¹²	14,700	\$ 5,880,000	12,900	\$ 5,160,000	10,300	\$ 4,120,000	800	\$ 320,000
Taxiway Maintenance (Rehabilitation)	\$169 /LF ¹²	14,700	\$ 2,484,590	12,900	\$ 2,180,355	10,300	\$ 1,740,903	800	\$ 135,216
TOTAL			\$ 8,365,304		\$ 7,340,981		\$ 5,861,403		\$ 455,255
<i>Percent more than Existing Site</i>			183%		161%		128%		100%

accommodating Airport Support District High Intensity (ASD-2) land uses (due to noise constraints) and would not meet GOAA’s goal of diversifying MCO revenue.

The dual taxiway would be approximately 1.5 - 2 miles in length, require a taxi bridge over Narcoossee Road, and require additional wetland impacts on the East Airfield site. Aircraft would have to taxi more than a mile and a half to access the site, increasing taxi times, aircraft emissions, and fuel costs. In regard to screening criteria, this would result in logistical inefficiencies resulting in high infrastructure, operations and maintenance costs. Overall, infrastructure construction is estimated to be approximately 12.5 times higher than the East Airfield site. Similarly, taxiing cost and annual maintenance costs would be approximately 12.5 times higher than the East Airfield site. This would significantly reduce profits, and therefore the generation of income, that would support OIA in financing their own operations free from government grants. Wetlands on East Airfield would still require management for wildlife hazards. Presumably, 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 (Narcoossee Road). Secure operational area costs were not considered given the already significant infrastructure construction and operational costs. This site was excluded from further analysis due to the cost and logistical issues described above.

Lake Nona Central Site

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

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Orlando Sector Plan. 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 Central Alternative is an approximate 755-acre site located directly south of Lake Nona and contiguous to MCO property. 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; it is approximately 75 percent built out. Within this site, approximately 125 acres (two non-adjointing parcels) would be reasonably accessible for airport use.

While this alternative is contiguous to MCO property, it is not contiguous to MCO airfield facilities and infrastructure and is under 150 acres. 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. In regard to screening criteria, this would result in logistical inefficiencies resulting in high infrastructure, operations and maintenance costs. Overall, infrastructure construction is estimated to be approximately 12 times higher than the East Airfield site. Taxiing cost and annual maintenance costs would be approximately 16 times higher than the East Airfield site. The small parcel size and high infrastructure and operational costs would result in significantly reduced income. This would significantly reduce profits, and therefore the generation of income, that would support OIA in financing their own operations free from government grants.

The undeveloped 125 acre site could support Airport Support District High Intensity (ASD-2) land use and is consistent with the Sector Plan land use designations. However, the parcel size precludes 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 the purpose and need for the proposed project.

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 will be bisected by a public road (the future Dowden Road extension). A taxi bridge 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 and could not be effectively managed for wildlife hazards. This site was excluded from further analysis due to cost and logistical issues described above.

East Boggy Creek Site

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This site is located east of Boggy Creek Road on the northeast side of the SR 417 interchange. The site is approximately 187 acres, zoned Planned Development with an Urban Village future land use designation. While supporting mixed uses, these designations do not typically include Airport Support District High Intensity (ASD-2) land use and would not meet GOAA's goal of diversifying MCO revenue. Given surrounding development, road and utility access is available. A minimum of 40 acres of wetlands would require fill but the location in the existing conservation area would not allow for management of wildlife hazards.

The taxiway would be approximately 2 miles in length, and require a taxi bridge over Heintzelman Blvd., the existing rail line, and possibly the future alignment of Dowden Road. Aircraft would have to taxi two miles to access the site, increasing taxi times, aircraft emissions, and fuel costs. In regard to screening criteria, this would result in logistical inefficiencies resulting in high infrastructure, operations and maintenance costs. Overall, infrastructure construction would be approximately 19 times higher than the East Airfield site. Taxiing cost and annual maintenance costs would be approximately 18 times higher than the East Airfield site. This would significantly reduce profits, and therefore the generation of income, that would support OIA in financing their own operations free from government grants. Presumably, 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 would be bisected by potentially two public roads. Secure operational area costs were not considered given the already significant infrastructure construction and operational costs. This site was excluded from further analysis due to the cost and logistical issues described above. 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 and could not be effectively managed for wildlife hazards.

West Boggy Creek Site

This approximately 225 acre site is located west of Boggy Creek Road and Jeff Fuqua Blvd, and south of Boggy Creek Road where it turns northwest. It would support Airport Support District High Intensity (ASD-2) land use and would meet GOAA's goal of diversifying MCO revenue. Given surrounding development, road and utility access is available. A minimum of 40 acres of wetlands would require fill but the location in the existing conservation area would not allow for management of wildlife hazards.

In order to reach any runway at MCO, the taxiway would be approximately 2 miles in length, and require a taxi bridge over Boggy Creek Road and the existing rail line. Numerous crossings of canals and/or internal (private) MCO roads would also be required. Aircraft would have to taxi two miles to access the site, increasing taxi times, aircraft emissions, and fuel costs. In regard to screening criteria, this would result in logistical

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inefficiencies resulting in high infrastructure, operations and maintenance costs. Presumably, 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 would be bisected by Boggy Creek Road. This site was excluded from further analysis due to the cost, logistical and safety issues described above. As of December 2017, this site is no longer available. Amazon purchased the site and is currently constructing a warehouse distribution center.

East Airfield

This is the applicant's preferred alternative, located east and adjacent to the fourth runway. The 1,342 acre site is big enough to allow a large amount of Airport Support District High Intensity (ASD-2) land use and, combined with the Airport Support District Medium Intensity land use, would generate a diverse income stream for MCO . The location adjacent to the fourth runway provides logistical efficiencies resulting in reduced infrastructure construction and operational costs. These operational efficiencies would allow MCO to be competitive with other airport facilities. This alternative could be designed to meet Part 77, TERPS, Air Traffic Control line-of-sight criteria, FAA design standards related to aircraft movement areas, and operationally secure because there are no public roads internal to the site. Management for wildlife hazards is required due to proximity to the fourth runway, regardless of site selection for large-scale aviation uses, and would require fill in 208.73 acres of WoUS (see Section 9.4 of this document).

The Bal Bay, Lake Nona Central, East Boggy Creek and West Boggy Creek (no longer available) sites were excluded from further consideration due to reduced MCO operational efficiencies, high infrastructure costs, high operations and maintenance costs, and security issues. Infrastructure construction and operations costs ranged from 12-19 times higher than the east airfield site. Additionally, the Bal Bay, Lake Nona Central, East Boggy Creek alternatives would not sufficiently diversify overall MCO revenue generation due to limitation on the available extent of Airport Support District High Intensity (ASD-2) land use area. The East Airfield site was included for additional analysis of on-site alternatives.

9.2.3 On-site alternatives (selecting a large contiguous site at MCO for development of high and medium intensity aviation and aviation support facilities): See Sections 3.1 – 3.3.4 of the FAA FEA.

9.2.4 On-site alternatives (East Airfield reduction in Wildlife Hazards): See Sections 3.4 – 3.5.2 of the FAA FEA. The Corps also evaluated two additional site plans, Configurations 1 and 2, in consideration of reducing wetland fill on the East Airfield.

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9.3 Analysis of alternatives for practicability: (See Sections 3.1 – 3.3.4 and 3.4 – 3.5.2 of the FAA FEA.) GOAA modified the East Airfield project design 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 East Airfield, 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 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 Project design modifications reduced the overall capacity for large scale high intensity aviation support in the Project as originally planned by approximately 38%.

GOAA evaluated two additional configurations of the East Airfield to determine if it was practicable to preserve a majority of the two largest wetlands on the eastern half of the site. The first alternative, Configuration 1 (See Figure 6), would further reduce the Category A building area and taxi lane and apron by an additional 40% and 36% respectively. The original project design had 100 percent high intensity aviation support land uses, which is the most marketable. This was reduced to add Category B land uses as a buffer to the adjacent communities. The Corps has also required avoidance of 85 acres of WoUS. This alternative would reduce Category A land use approximately 60 percent over the original project design, such that the project would generate less income to support OIA in financing their own operations free from government grants. While Configuration 1 results in fewer direct impacts to WoUS (i.e., would avoid 115 acres of WoUS), 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 over the long-term, resulting in substantial secondary aquatic resource impacts.



Figure 6. Alternative Configuration 1.

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Avoiding the north-central large wetland strand may not allow adequate management of identified wildlife hazards, which would not meet the overall project purpose, and Configuration 1 could make these wetlands more attractive for some species, particularly large avifauna such as vultures. Historically, landfills have been a concern for airports within the Air Operations Area (AOA – i.e., areas with moving aircraft) because they attract very large numbers of vultures, crows and gulls. Advisory Circular 150/5200-34A *Construction or Establishment of Landfills Near Public Airports* recommends a distance of six miles between a new landfill and public airport. It is highly probable that vulture migrate back and forth between the East Airfield and the Orange County Landfill (Landfill), located approximately three miles northeast of East Airfield. Vultures feed at the Landfill and are then drawn to OIA where forested wetlands provide abundant roosting and nesting (along upland/wetland edge) habitat, and they're located in the midst of warm air currents for soaring. Observations from the report entitled *Wildlife Hazard Site Visit, Orlando International Airport East Airfield Property*, noted the majority of wildlife crossing the AOA were headed east towards the east airfield property or flying north towards the landfill. Warm air currents would likely increase due to constructed areas surrounding the north-central large wetland strand and this wetland may be attractive to nesting vulture. The Corps has observed vulture nesting on the southern perimeter of Lake Nona and Red Lake and this combination of foraging, roosting and nesting habitat could contribute to high numbers on the site under this scenario. Removing canopy trees creates an herbaceous wetland attractive to wading birds (large species), so the most effective management is to convert the forested wetland to uplands or open water, where prey species are managed (see Section 9.4 of this document for additional discussion regarding wildlife management).

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 would not be the direct result of wetland fill, mitigation to offset the reduced functions would not likely be required. Additionally, this configuration may not substantially reduce the hazardous wildlife attractants on East Airfield. The reduction of hazardous wildlife attractants on OIA includes passive and active management actions. Passive actions include removal/fill of marsh and forested wetlands and standing water; routine maintenance of ditches/ponds, including their prey species; carrion removal; and maintenance of grass height of 6-12 inches. Active actions include harassment and/or shooting of high priority species and removal of nests, nesting trees and roosting sites. Wildlife habituate to harassment measures (e.g.,

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pyrotechnics) and shooting can be labor intensive and unacceptable to the public. Filling of wetlands is the most certain method of controlling hazardous wildlife attractants.

The Corps determined Configuration 1 is not a practicable alternative. This alternative was excluded due to the inability to effectively manage for wildlife hazards, aquatic resource impacts (i.e. unmitigated secondary effects from attempted wildlife management and surrounding development), a significantly reduced high-intensity land use acreage, and corresponding reduction in revenue diversity and overall revenue generation.

The Corps also evaluated a second alternative project design (Configuration 2; see **Figure 7**) that would exclude the wetlands as in Configuration 1 above 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. When applying the screening criteria identified in Section 9.1 above, the Corps identified several issues with regard to Configuration 2:

- 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 aquatic resource functions in those wetlands as discussed above. As noted regarding Configuration 1 and the aquatic resource screening criterion, there would be fewer direct impacts to WoUS. However, 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 and attempted hazardous wildlife management, wildlife recruitment and movement into and out of these wetlands by mammals, amphibians, and reptiles would be substantially reduced, resulting in substantial secondary impacts under the aquatic resource impact criterion.
- The majority of the Heintzelman Boulevard area cannot accommodate Category A uses because of air traffic control line of site constraints imposed by FAR Part 77 height restrictions (FAA airport design, safety and



Figure 7. Alternative Configuration 2.

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security criterion). The remaining portion of the Heintzelman Boulevard area that is not restricted by line of sight constraints, and that could accommodate large hangars, is relatively small (86 acres). This does not sufficiently mitigate the significantly reduced high-intensity land use acreage, and corresponding reduction in revenue diversity and overall revenue generation criterion, resulting from Configuration 1.

- The remaining portions of the Heintzelman Boulevard area not restricted by line of sight constraints is 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 the MCO to locate the South Terminal Complex aviation support uses. Relocating such aviation support uses to other locations at MCO would create logistical and operational inefficiencies, resulting in higher costs, and unnecessary safety and security issues (i.e, would not meet the FAA design criterion). This is no longer practicable since the main portion of the South Terminal Complex has been constructed and options to consider relocating other project components (e.g., access roads, tram and rail) is no longer possible.
- The Heintzelman Boulevard area is not contiguous to the East Airfield and would require the extension of at least one additional taxiway for access. Additionally, the non-contiguous location would result in logistical and 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 East Airfield.
- Implementation of this alternative would leave significant wildlife hazards within the AOA. Principally, avoiding the north-central large wetland strand would not allow adequate management of identified wildlife hazards (as described under Configuration 1), and would not be practicable under the wildlife hazard criterion.

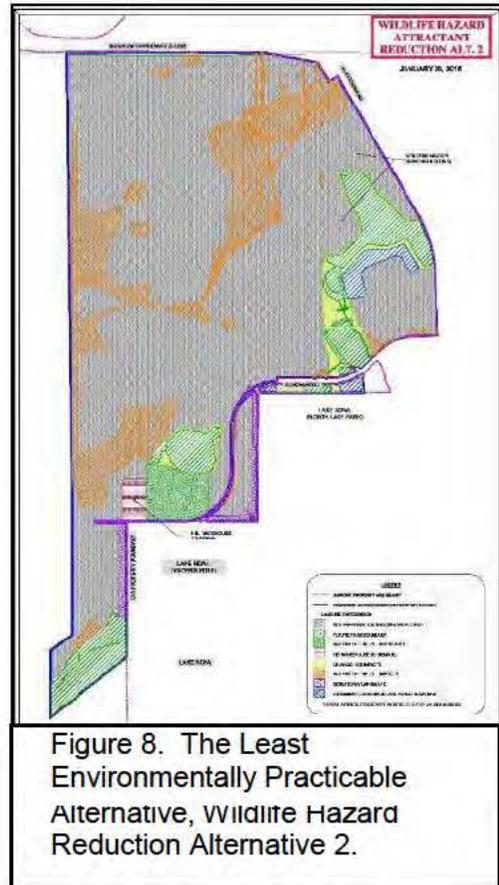
This alternative was excluded due to secondary wetland impacts (aquatic resource impact criterion), the inability to effectively manage for wildlife hazards (wildlife hazard criterion), logistical and operational inefficiencies resulting in higher costs (logistical and cost efficiency criterions), and a significantly reduced high-intensity aviation support land use acreage. Logistical and operational inefficiencies combine to result in a reduction in revenue diversity and overall revenue generation. There are also safety/line of sight issues and much of the site would not meet FAA airport design criteria for high-intensity airport support uses (FAA airport design, safety and security criterion). Further, the Heintzelman Boulevard area between the 3rd and 4th runways already has a federal permit for

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the South Terminal Complex and aviation support uses specific to the South Terminal, so it is not available for use. The Corps determined Configuration 2 does not result in a project that meets the overall project purpose.

9.3.1 Summary of alternative(s) that are practicable: See Sections 3.1 – 3.3.4 and 3.4 – 3.5.2 of the FAA FEA.

9.4 Identification of the alternative that is the least environmentally damaging practicable alternative (LEDPA): The Corps determined that *Wildlife Hazard Attractant Reduction Alternative 2* (Partial Impacts to Wetlands) was the LEDPA (see **Figure 8**). This is the 2015 East Airfield proposed action evaluated in the FAA FEA, minus the FAA conditional authorization of the fuel farm land (See Section 3.5 and Figure 4 of this document). This alternative includes the removal of wetlands and non-wetland 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 208.73 acres of waters of the United States (171.13 acres of wetlands and 37.6 acres of non-wetland waters). GOAA would avoid impacting approximately 85 acres of WoUS. 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.



The Corps seeks to balance efforts to minimize wildlife risks to aviation and human safety while protecting the Nation's aquatic resources. The FAA ADVISORY CIRCULAR 150/5200-33B *HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS* (DATED AUGUST 28, 2007) recommends removal of hazardous wildlife attractants a distance of 10,000 feet from nearest AOA for turbine-powered aircraft, the FAA and GOAA worked with the Corps to identify an alternative that avoided and minimized wetland fills to the maximum extent practicable while also considering safety issues as stated in the MEMORANDUM OF AGREEMENT BETWEEN FEDERAL RESOURCE AGENCIES (2003). The Corps has given substantial consideration to FAA's technical expertise in evaluating wildlife risks to aviation and human safety in making its permit decision.

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Wildlife strike data for the 2009-2013 five year period at MCO indicate that Runway 17L-35 (i.e., 4th runway, adjacent to East Airfield) accounted for almost 40% of the wildlife strikes at MCO. During 2013, the most frequently observed bird species on the airfield during the AOA 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. 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. The pasture and marsh vegetative communities on the East Airfield provide nesting and foraging habitat for sandhill cranes. 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 would decrease the existing wildlife hazard attractants and reduce wildlife activity in proximity to the AOA.

The *MCO East Airfield - Wildlife Data Review* technical memorandum (9 Jan 2015), prepared by an FAA-qualified Airport Wildlife Biologist, evaluated the continued wildlife monitoring data and sought to 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. 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.

GOAA currently operates MCO under an FAA approved Wildlife Hazard Management Plan (Updated in July 2013) that is incorporated into the Airport Certification Manual. 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

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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. Additionally, the U.S. Department of Agriculture (USDA) conducted a Wildlife Hazard Assessment for the East Airfield from 2008-2009. The objectives of the 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. The report identified a number of wildlife species representing hazards to aircraft, most notably white-tailed deer and vultures. In FAA ADVISORY CIRCULAR 150/5200-33B, these two species rank #1 and #2, respectively, as the most hazardous species to aircraft, while gull and waterfowl rank lower but typically have a higher percentage of aircraft strikes. White tailed deer were observed 41 times during fixed-point surveys and 52 times during spotlight surveys, and were in greatest abundance between June and September. The report recommended improved fencing and removal at night with a light and gun. However, hunting with a rifle is not practicable considering the extent of roads and development surrounding the East Airfield. While the report suggests grassed areas are heavily used by white-tail deer, the reason deer are able to routinely use this site, in particular, is due to abundant cover provided by forested wetlands. Without these forested wetlands, deer would have no cover during daylight hours and would be forced to move southwest towards Mud Lake.

In the USDA study, vulture (black and turkey) were observed 734 times and accounted for 14% of all wildlife observations. It was noted that vultures were prevalent throughout the study, often soaring over the property. While a dead cow on the property may have contributed to these high numbers during the study, it is highly probable that vulture migrate

back and forth between the East Airfield and the Landfill, located approximately three miles northeast of East Airfield (see **Figure 9**). Vultures feed at the Landfill and are then drawn to OIA where forested wetlands provide abundant roosting habitat, located in the midst of warm air currents for soaring. The Corps has observed vulture nesting on the southern perimeter of Lake Nona and Red Lake and this combination of foraging, roosting and nesting habitat may contribute to

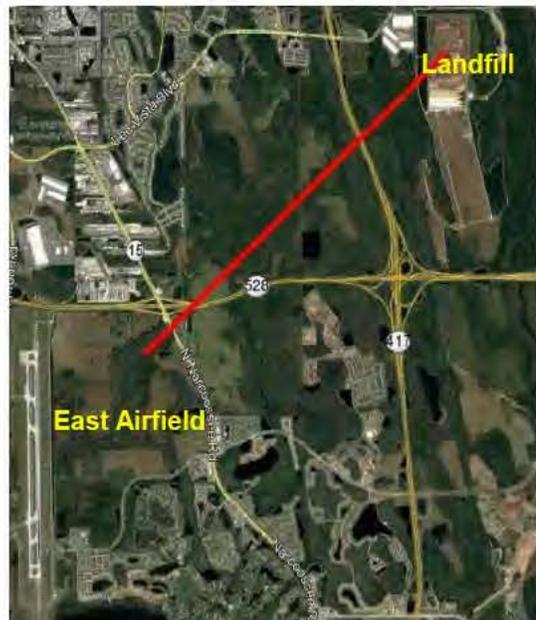
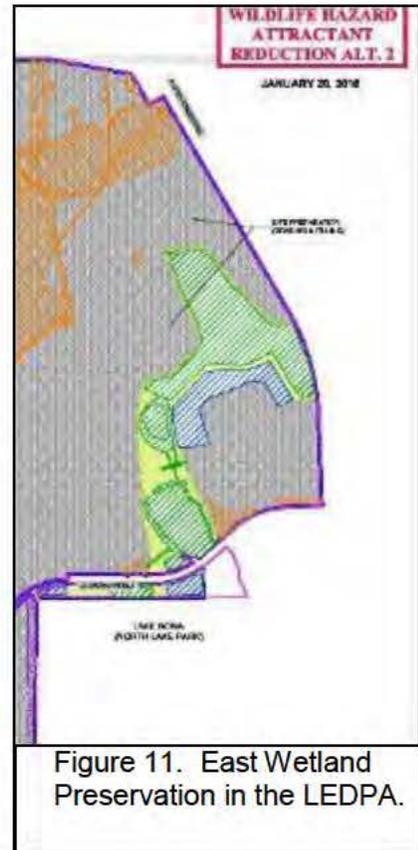


Figure 9. Location of the Orange County Landfill in Relation to the East Airfield Site.

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Similarly wetlands and uplands on the east side of the East Airfield site will be preserved to avoid and minimize wetland impacts pursuant to the EPA 3b letter, and to the benefit of adjacent communities and downstream water quality in Lake Nona (see **Figure 11**).

Finally, GOAA has further modified the configuration of the development plan in a manner that reduces discharges of dredge/fill material in WoUS from 292.88 acres to 208.73 acres (171.13 acres of wetlands and 37.6 acres of non-wetland waters). 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 includes avoiding impacts to a forested wetland system (B2), located in the south-central portion of the site, and approximately 12 acres of wetlands (SE 4.0) 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% from the original proposal. The applicant has implemented practicable design modifications to avoid and then minimize impacts to WoUS in accordance with the Section 404 (b)(1) Guidelines.



10.0 Evaluation of the Section 404(b)(1) Guidelines:

Because the discharge is not covered by a general permit, the following sequence as described in the 404(b)(1) Guidelines will be followed (see 40 CFR 230.5).

- 10.1 Examine whether there are practicable alternatives to the proposed discharge that would have less adverse impact on the aquatic ecosystem without having other significant adverse environmental consequences (Subpart B, 40 CFR 230.10(a)):
 - 10.1.1 Based on the discussion in Section 9.0, there are no practicable alternatives to the proposed discharge which would have less adverse impact on the aquatic ecosystem, and the practicable alternative with the least adverse aquatic impacts does not have other significant adverse environmental consequences. Concur - see section 9.0 of this document.
 - 10.1.2 Based on the discussion in Section 9.0, if the discharge is proposed in a special

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aquatic site and if the activity is not water-dependent, the applicant has clearly demonstrated that there are no practicable alternative sites that do not involve special aquatic sites. Concur
 - see Section 9.0 of this document.

10.2 Candidate disposal site delineation (Subpart B, 40 CFR 230.11(f)): Each disposal site shall be specified through the application of these Guidelines.

Discussion: The disposal site is a jurisdictional wetland and/or surface water.

10.3 Potential impacts on physical and chemical characteristics of the non-living environment (Subpart C): See Table 1

Table 1						
Physical and Chemical Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect (Significant)
Substrate					X	
Suspended particulates/ turbidity				X		
Water					X	
Current patterns and water circulation	X					
Normal water fluctuations			X			
Salinity gradients	X					

Discussion: The discharge of fill material in wetlands is expected to have a minor long-term effect to substrate through the removal, or capping, of hydric soils. Effects of suspended particulates/ turbidity are expected to have a minor short-term effect on water during construction because the applicant would implement erosion and sediment control plan in accordance with their water quality certification. Subtle changes in water chemistry will likely occur as water flows from hardscape to stormwater ponds, rather than through natural systems in the pre-development conditions. Specific minor long-term effects could occur to water quality parameters, including iron, specific conductance, alkalinity, pH, nutrients and apparent color. As water flows downstream, through Mud Lake and Boggy Creek, any changes in water chemistry should be normalized through natural processes. The project if constructed would include the use of best management practices during construction as well as compliance with state and federal water

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quality standards.

10.4 Potential impacts on the living communities or human uses (Subparts D, E, and F):

10.4.1 Potential impacts on biological characteristics of the aquatic ecosystem (Subpart D): See Table 2

Table 2						
Biological characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect (Significant)
Threatened and endangered species					X	
Fish, crustaceans, mollusk, and other aquatic organisms					X	
Other wildlife					X	

Discussion: The Corps has determined the proposed action will have minor long term effects on biological characteristics of the aquatic ecosystem, within the area of proposed wetland fills. On-site wetlands, while somewhat fragmented from downstream habitat, provide suitable habitat for wood stork, fish, crustaceans, and other aquatic organisms, and other wildlife species. While these biological benefits would be lost long-term, the effect would be minor as there would be long-term benefits associated with compensatory mitigation provided at Disney Wilderness Preserve. The proposed action has been coordinated with the FWS who determined the proposed action will not adversely affect any federally listed species. Further, the applicant has agreed to implement the Eastern Indigo Snake Protection Measures. Compensatory mitigation would offset the loss of wood stork suitable foraging habitat.

10.4.2 Potential impacts on special aquatic sites (Subpart E): See Table 3

Table 3						
Special Aquatic Sites	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect (Significant)
Sanctuaries and refuges	X					
Wetlands			X			

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Mud flats	X					
Vegetated shallows	X					
Coral reefs	X					
Riffle pool complexes	X					

Discussion: The discharge of fill material will have adverse effects on wetlands, including wetland substrate, hydrology, and vegetation. The project includes removal of 171.13 acres of wetlands 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 reduce the attractiveness of these areas to hazardous wildlife. The wetlands to be eliminated have relatively low functional value, having been timbered, impacted by cattle utilization, and subjected to altered surface hydrology. The functional value of these wetlands has been calculated and compensatory mitigation to fully offset the functional loss has been provided on a sustainable site in a regionally significant area of habitat conservation within the upper Kissimmee River watershed. This increased wetland functional capacity has been generated in advance of the proposed impacts, thereby minimizing risk while managing success and ecological benefits. While there is a permanent loss of wetlands on the project site, benefits to the watershed through compensatory mitigation located within a regional wildlife corridor (i.e. Kissimmee River and associated habitats) and maintained in perpetuity will offset the impacts of the project, resulting in a negligible effect to wetlands.

10.4.3 Potential impacts on human use characteristics (Subpart F): See Table 4

Human Use Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect (Significant)
Municipal and private water supplies			X			
Recreational and commercial fisheries		X				
Water-related recreation		X				
Aesthetics			X			
Parks, national and historical monuments, national seashores, wilderness areas,		X				

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research sites, and similar preserves						
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Discussion: The proposed project will not have an adverse effect on wellfields or potable surface water sources. However, future development on the site will place continued demand on municipal water supplies. The effect on the area's aesthetics is extremely subjective, with adjacent property owners likely holding a different perspective than members of the public that will hold jobs on the East Airfield site in the future. Area development has occurred over the past 20 years, including the transition from wetland/pasture areas to residential and commercial development, and the construction of Dowden Road. While the airport support uses proposed for the East Airfield are industrial, efforts have been made to mitigate negative aesthetic effects through buffering with landscape berms, wetland conservation, a park, and lower intensity airport businesses along Dowden Road.

- 10.5 Pre-testing evaluation (Subpart G, 40 CFR 230.60): The following information, as appropriate, has been considered in evaluating the biological availability of possible contaminants in dredged or fill material: See Table 5

Physical characteristics	X
Hydrography in relation to known or anticipated sources of contaminants	
Results from previous testing of the material or similar material in the vicinity of the project	
Known, significant sources of persistent pesticides from land runoff or percolation	
Spill records for petroleum products or designated (Section 331 of CWA) hazardous substances	
Other public records or significant introduction of contaminants from industries, municipalities, or other sources	
Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities	

Discussion: The subject site is not known to contain contaminates. The Corps expects that the discharged dredged and fill material would be obtained from on-site excavation, an off-site sand mine, and/or from reshaping of the surface of the project site and the potential for contaminates is negligible. The specific source(s) of off-site derived fill material is unknown at this time. The Department of the Army (DA) permit, if issued, would require the use of clean fill material compatible with existing soils (e.g., soil, rock, sand, marl, clay, stone, and/or concrete rubble). Since material obtained from an off-site source would be clean material and the fill

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disposal sites are not known to have contaminants, it is unlikely that contaminants would be release in association with the proposed discharges of fill material. Turbidity and erosion controls will be maintained during construction of the project, as required by the Corps’ erosion control special condition, if a DA permit is issued, and by the state’s Section 401 Water Quality Certification. Turbidity, erosion and stormwater controls would be maintained in the post-construction operation of the project, as required by the Section 401 Water Quality Certification.

It has been determined that testing is not required because the proposed material is not likely to be a carrier of contaminants because it is comprised of sand, gravel or other naturally occurring inert material.

10.6 Evaluation and testing (Subpart G, 40 CFR 230.61): As a special condition of the permit all fill material placed within WoUS is required to be clean fill material free of any contaminants. Any fill material excavated on the subject site is not expected to carry contaminants and therefore will not require specific Chemical, Biological and/or Physical testing.

10.7 Actions to minimize adverse impacts (Subpart H):
The following actions, as appropriate, have been taken through application of recommendations of 40 CFR 230.70 - 230.77 to ensure minimal adverse effects of the proposed discharge. See Table 6

Table 6	
Actions concerning the location of the discharge	X
Actions concerning the material to be discharged	X
Actions controlling the material after discharge	X
Actions affecting the method of dispersion	X
Actions affecting plant and animal populations	X
Actions affecting human use	X

Discussion: Any authorization issued by the Corps would include special conditions requiring the installation of erosion control features, the use of clean fill, the stabilization of all fill areas, the correct construction of the proposed stormwater treatment system, protection measure for federally listed species, and the implementation of the proposed compensatory mitigation plan.

10.8 Factual Determinations (Subpart B, 40 CFR 230.11): See Table 7

Table 7

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Site	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect (Significant)
Physical substrate					X	
Water circulation, fluctuation and salinity			X			
Suspended particulates/turbidity				X		
Contaminants			X			
Aquatic ecosystem and organisms					X	
Proposed disposal site			X			
Cumulative effects on the aquatic ecosystem			X			
Secondary effects on the aquatic ecosystem			X			

Discussion: Previous sections addressed effects on physical substrate and suspended particles/turbidity (Section 10.3) and aquatic ecosystem/organisms (Section 10.4.1). Effects on water circulation, contaminants, and the proposed disposal site would be reduced to negligible through mitigation in the form of stormwater treatment and floodplain compensation, and the use of clean fill material. Cumulative and secondary effects would be negligible, as addressed in Section 12.0 of this document.

10.9 Findings of compliance or non-compliance with the restrictions on discharges. (40 CFR 230.10(a-d) and 230.12):

10.9.1 Based on the information above, including the factual determinations, the proposed discharge has been evaluated to determine whether any of the restrictions on discharge would occur. See Table 8

Subject	Yes	No
Is there a practicable alternative to the proposed discharge which would have less adverse impacts on the aquatic ecosystem, and does the alternative with less aquatic impacts have other significant adverse environmental consequences?		X
Will the discharge cause or contribute to violations of any applicable water quality standards?		X

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Will the discharge violate any toxic effluent standards (under Section 307 of the Act)?	X
Will the discharge jeopardize the continued existence of endangered or threatened species or their critical habitat?	X
Will the discharge violate standards set by the Department of Commerce to protect marine sanctuaries?	X
Will the discharge cause or contribute to significant degradation of waters of the U.S.?	X
Have all appropriate and practicable steps (Subpart H, 40 CFR 230.70) been taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem?	X

Discussion: Reference Section 9.0 for a discussion of alternative sites considered and the minimization measures proposed; also Section 12.0 for cumulative and secondary impacts and Section 14.0 for threatened and endangered species. The project has received a state 401 water quality certification which provides requirements for stormwater treatment and implementation. The discharge will not cause or contribute to significant degradation of waters of the U.S.

11.0 General Public Interest Review (33 CFR 320.4 and RGL 84-09):

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest. Among those are: conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership, and in general needs and welfare of the people (Reference 33 CFR 320.4(a)). To the extent appropriate, the public interest review below also includes consideration of additional policies as described in 33 CFR 320.4(b) through (r).

11.1 Only those public interest factors which are relevant to the proposal will be considered and discussed below:

11.1.1 Conservation: Neutral as a result of mitigative action

Discussion: The wetland systems proposed for impact have reduced function due to historic and current agricultural practices and their location in the landscape in an urbanizing setting which has affected hydrology; therefore they have low conservation value. The FAA Advisory Circular 150/1500-33B recommends a 10,000-foot separation when planning new airport development projects, and the

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entire East Airfield falls within this zone. The GOAA Air Operations Department, Qualified Airport Biologists conducting monitoring at GOAA, Qualified Airport Biologists conducting a Wildlife Hazard Site Visit, and the APHIS-WS has recommended certain measures, including removal of trees and vegetation in wetlands, in order to respond to identified hazardous wildlife attractants on the East Airfield. These actions further reduce wetland functions and conservation value. In addition to other considerations, the presence of these identified hazardous wildlife attractants on the East Airfield is an important aviation and public safety consideration for project development.

The project will avoid 85 acres of wetlands on the East Airfield site. It is generally contrary to FAA policy to approve a conservation easement on airport property and FAA would not be inclined to grant such approval on this project. The Corps would condition the permit to accommodate both wetland protection and flexibility to manage wildlife hazards in these areas in the absence of a conservation easement. A permit special condition would prohibit the wetland from being disturbed by development activities that would degrade the ecological integrity of the site including dredging, filling, land clearing, or other construction work whatsoever except as required or authorized by the permit. The Corps would reserve the right to deny review of any requests for future impacts to these avoided wetland areas. This would allow for some management of wildlife hazards but prohibit clearing and development activities in preserved wetlands.

Ultimately, three permit conditions would serve to protect avoided wetlands on East Airfield:

- **Wetland Avoidance Areas:** The Permittee shall avoid the remaining approximately 85 acres of onsite wetlands, as detailed on Drawings 3 and 4 of 4/(Attachment 1). These wetland areas were avoided as part of this permit application review process; and, therefore, the remaining wetland areas will not be disturbed by any activities that would degrade the ecological integrity of the site including dredging, filling, land clearing, or other construction work whatsoever except as required or authorized by this permit. The Corps reserves the right to deny review of any requests for future impacts to these avoided wetland areas.
- **Conservation Areas:** Within 30 days from the date of initiating the authorized work, the Permittee shall submit to the Corps a survey delineating all conservation land uses, including wetland avoidance areas, surface waters, and upland buffers. These natural preserve areas will not be disturbed by construction work whatsoever except as required or authorized by this permit. The Permittee agrees that the only future utilization of the preserved areas in question will be as a purely natural

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area.

- **Regulatory Agency Changes:** Should any other regulatory agency require changes to the work authorized or obligated by this permit, the Permittee is advised that a modification to this permit instrument is required prior to initiation of those changes. It is the Permittee's responsibility to request a modification of this permit from the Cocoa Regulatory Office.

Appropriate mitigation in accordance with regulatory agency requirements has been proposed to offset the functional loss resulting from the discharge of dredged or fill material to WoUS within the East Airfield. Therefore, conservation of wetlands at a safe distance from the airport, such as those within the BRENSOLA Tracts utilized for mitigation, provide improved ecological functions and wildlife support, and also provide greater aviation safety.

The tracts are within the Disney Wilderness Preserve, an 11,500 acre regionally significant mitigation project which includes the 8,480 acre Walker Ranch mitigation site. As Florida grows to an estimated 35 million people over the next 20-30 years, in order to provide meaningful fish and wildlife habitat, conservation areas must be established within the context of a larger corridor of conservation areas and diverse habitat matrices. Such areas will be sustainable long-term and provide the requisite needs of fish and wildlife species removed from urban areas. Disney Wilderness Preserve is a large site ideally situated within the Kissimmee River corridor with connectivity to other natural or agricultural lands, and conservation areas, throughout the corridor and south to the Everglades. The entire Disney Wilderness Preserve is owned, managed, and maintained by the Florida Chapter of The Nature Conservancy with funds provided by GOAA and Walt Disney World Companies.

11.1.2 Economics: Beneficial Impacts

Discussion: In response to the 4 Feb 2013 public notice, adjacent communities commented regarding concerns over decreased property values as a result of development of the site. The conceptual site plan evaluated in the FAA FEA shows Dowden Road routed away from the Water's Edge Community, additional wetland preservation that will buffer adjacent communities and provide additional water quality treatment for water flowing to Lake Nona, landscape buffers, and the addition of a park. GOAA made commitments to local communities (Northlake Park at Lake Nona Community Association, Inc. and Lake Nona Community Association) on issues such as operations, noise control, lighting, buffering, traffic, parks, wetland conservation and water quality monitoring in a *Memorandum of Understanding of the East Airfield Development Area* (signed by GOAA on 15 Dec 2015).

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As a result of the reduction in hazardous wildlife attractants, a corresponding reduction in wildlife strikes is expected. This will provide an economic benefit to the GOAA and the airlines through improved aviation safety and a reduction in wildlife strike damage to aircraft. In the long-term, development of the site will significantly enhance employment and commerce. The volume and diversity of economic growth in Orange County, Florida, has dramatically changed the demographics of the region over the last decade. The four-county region, composed of Orange County, Seminole County, Lake County, and Osceola County, grew from just over 800,000 people in 1980 to 1.6 million by 2000. In addition, tourism is a large driver of the region's economy. The airport is integral to the region's economy since it supports a tourism-based economy. MCO possesses characteristics unique in the eastern United States that can accommodate large scale aviation support and provide important economic benefits to the Central Florida region with regard to jobs, taxes, and stimulation to the regional economy.

11.1.3 Aesthetics: Negligible

Discussion: The East Airfield exists in a highly urbanized setting and, since the early 1990s, has been designated for high and medium intensity aviation uses. Dowden Road has also been in place since the early 1990s. As an accommodation to surrounding land uses, the proposed development has been planned to include significant natural buffers, berms, heavy landscaping, and the designation of an approximately 30-acre park site. Stormwater features and lower intensity land uses with landscaping are proposed on the south and east side of the East Airfield which are most visible to the general public. Building heights are regulated by local government and must meet FAA requirements.

11.1.4 Wetlands: Neutral as a result of mitigative action

Discussion: Proposed wetland fills have been reduced on the East Airfield site compared to the 4 Feb 2013 site plan. Approximately 85 acres of wetlands have been preserved, including the eastern wetland strand, which will continue to provide benefits to Lake Nona downstream. Compensatory mitigation has been provided in advance of the project on the BRENSOLA Tracts, located within Disney Wilderness Preserve.

The Mitigation Rule established a mitigation preference hierarchy which dictates that site selection should be done on a watershed scale. In this case, mitigation would be provided within 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 owned,

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managed, and maintained by the Florida Chapter of The Nature Conservancy with funds provided by GOAA and Walt Disney World Companies and for all intents and purposes, provides the benefits of a mitigation bank. The mitigation site is ideally situated within the Kissimmee River corridor with connectivity to other natural and agricultural lands, and conservation areas, making it an important site in the watershed. It will be managed in perpetuity and provide sustainable ecological functions consistent with benefits provided by mitigation banks.

Wetlands preserved within the East Airfield will not be placed under conservation easement. Since the State did not require their preservation, they will not accept a conservation easement on these areas.

11.1.5 Historic properties: None

Discussion: A cultural resource assessment survey (August 2008. Cultural Resource Assessment Survey of the East Airfield Development Area, Orange County Florida. Archaeological Consultants Inc.) of the site was completed and provided to SHPO by the consulting archaeologist. The SHPO concurred with the consulting archaeologist by letter dated January 14, 2009, that the project would have no effect on cultural resources listed, or eligible for listing, in the National Register of Historic Places. By letter to the Corps dated 13 Feb 2013, the SHPO indicated their review of the Florida Master Site File indicates that no significant archaeological or historic resources are recorded in the project area and it is unlikely historic properties will be affected.

11.1.6 Fish and wildlife values: Neutral as a result of mitigative action

Discussion: The East Airfield site is at the northern extent of the Kissimmee River Watershed and has become increasingly fragmented from downstream systems as the area has urbanized. There will be a loss of aquatic and terrestrial wildlife habitat on the East Airfield site. In part, this is a desired outcome as GOAA seeks to reduce wildlife hazards across the site. As Florida grows to an estimated 35 million people over the next 20-30 years, in order to provide meaningful fish and wildlife habitat, conservation areas must be established within the context of a larger corridor of conservation areas and diverse habitat matrices. Such areas will be sustainable long-term and provide the requisite needs of fish and wildlife species removed from urban habitats. Disney Wilderness Preserve is a large site ideally situated within the Kissimmee River corridor with connectivity to other natural and agricultural lands, and conservation areas. The site will provide habitat for numerous federally and state listed plant and wildlife species.

Impacts to federally listed species, primarily wood stork (observed on-site) and potentially eastern indigo snake, have been evaluated and concurrence provided

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by the USFWS (see Section 14.2 of this document). These species, particularly eastern indigo snake with its large home range, will be better protected and have requisite needs met on the Disney Wilderness Preserve.

Bald eagle were removed from the endangered species list in August 2007 and are not known to occur on or adjacent to the East Airfield. However, the species is provided protection under the Bald and Gold Eagle Protection Act (16 USC 668-668c). The Bald and Gold Eagle Protection Act prohibits anyone from taking, possessing, or transporting a bald eagle or the parts, nests, or eggs of such birds without prior authorization. The Florida Fish and Wildlife Commission (FWC) has developed a bald eagle management plan to further guide the conservation of bald eagles throughout Florida. FWC eagle permits are not required for activities that occur more than 660 feet from any active or alternate bald eagle nests.

11.1.7 Flood hazards: Neutral as a result of mitigative action

Discussion: See 11.1.8 below.

11.1.8 Floodplain values: Neutral as a result of mitigative action

Discussion: Removal of 208.73 acres of waters of the United States (171.13 acres of wetlands and 37.6 acres of non-wetland waters) will require the placement of fill in as many acres of floodplain. Approximately 591 acres of Zone A 100-year floodplain occur on the East Airfield site, with approximately 85 acres located on wetlands/uplands proposed for preservation. Prior to the placement of fill in 100-year floodplain, GOAA coordinated with South Florida Water Management District to secure a permit to allow such fills, with provisions for compensatory storage to ensure there are no adverse flood effects. Compensatory storage is incorporated into the stormwater pond design.

11.1.9 Land use: Neutral as a result of mitigative action

Discussion: GOAA began purchasing the East Airfield site in 1986, with the majority purchased by 1994. One critical parcel adjacent to Dowden Road was not acquired until 2005. While there has been an expectation of future development, the Corps has sought to balance selection of the East Airfield as a large contiguous site at MCO for development of high and medium intensity aviation and aviation support facilities, and wildlife hazard management, with public interest criteria, including potential adverse effects on homeowners. The Corps' LEDPA and the 2014 East Airfield Conceptual Development Plan evaluated in the FAA FEA appears to reach a balance as a practicable alternative that meets the project purpose while also protecting land use rights of adjacent homeowners. The 2014 East Airfield Conceptual Development Plan (also MCO's

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2015 ALP) routes Dowden Road away from existing homeowners, provides for a community park, buffers homeowners from high intensity aviation land uses with business land uses along Dowden Road, and preserves wetlands in the Lake Nona watershed. Following 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, memorialized in a *Memorandum of Understanding of the East Airfield Development Area* (signed by GOAA on 15 Dec 2015), and were incorporated into the 2014 East Airfield Conceptual Development Plan and subsequently on MCO's 2015 ALP. GOAA made commitments to local communities (Northlake Park at Lake Nona Community Association, Inc. and Lake Nona Community Association) on issues such as operations, noise control, lighting, buffering, traffic, parks, wetland conservation (i.e., 85 acres of wetlands) and water quality monitoring. Changes to East Airfield project design, rerouting of Dowden Road, provision for a community park, and the *Memorandum of Understanding of the East Airfield Development Area* serve to protect homeowner land use rights while providing GOAA with viable land uses.

11.1.10 Navigation: None

Discussion: N/A

11.1.11 Shore erosion and accretion: None

Discussion: N/A

11.1.12 Recreation: Beneficial Impacts

Discussion: GOAA will provide a public park on the north side of Dowden Road.

11.1.13 Water supply and conservation: Negligible

Discussion: The proposed project will not have an adverse effect on wellfields or potable surface water sources. However, future development on the site and throughout central Florida will place continued demand on municipal water supplies.

11.1.14 Water quality: Neutral as a result of mitigative action

Discussion: The South Florida Water Management District issued a water quality certification under Section 401 of the Clean Water Act. The State will evaluate land uses, impervious surface, and floodplain fills and require stormwater

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treatment and attenuation consistent to meet EPA requirements.

11.1.15 Energy needs: Negligible

Discussion: The project will not provide energy, but energy will be required during construction and operation of any facilities on the East Airfield. Energy needs will likely be met by power production at the Stanton Energy Center in east Orlando.

11.1.16 Safety: Beneficial Impacts

Discussion: The fuel farm and high intensity land uses have been moved away from residential development due, in part, to safety concerns expressed by adjacent homeowners. Future proposed land uses would be evaluated by the FAA for impacts to the human environment. The FAA FEA notes that, in conjunction with the applicant's preferred 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. 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.

11.1.17 Food and fiber production: None

Discussion: N/A

11.1.18 Mineral needs: None

Discussion: N/A

11.1.19 Considerations of property ownership: Beneficial Impacts

Discussion: See Section 11.1.2. GOAA would experience a benefit having use of the East Airfield property. Adverse effects to surrounding residents have been mitigated by site design incorporating buffers, rerouting Dowden Road, and GOAA's commitment to adjacent neighborhoods by entering into the *Memorandum of Understanding of the East Airfield Development Area*.

11.1.20 General needs and welfare of the people: Neutral as a result of mitigative action

Discussion: The LEDPA (*Wildlife Hazard Attractant Reduction Alternative 2*) reaches a balance as a practicable alternative that meets the project purpose

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while also meeting the needs and welfare of the people. Managing for wildlife hazards is needed for the welfare of those people flying in and out of GOAA using the 4th runway. Similarly, adjacent landowners should have their land use rights protected, including their right to acceptable noise, air quality and land use buffering; reduced traffic impacts; light/visual issues and preservation of quality of life. As an accommodation to surrounding homeowners, the proposed development has been planned to include significant natural buffers, berms, heavy landscaping and the designation of an approximately 30-acre park site. Stormwater features and lower intensity land uses with landscaping are proposed on the south and east side of the East Airfield which are most visible to the general public, as agreed to in *Memorandum of Understanding of the East Airfield Development Area*. In addition, a portion of Dowden Road is conceptually relocated so that it is further removed from the Water's Edge community.

11.2 The relative extent of the public and private need for the proposed structure or work: OIA is the gateway to central Florida and is critical to area tourism, other business, and residents alike. Florida's population is projected to double in the next 20-30 years, and OIA is critical to both the public transportation infrastructure and the provision of jobs now and in the future.

11.3 If there are unresolved conflicts as to resource use, explain how the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work was considered. There are no unresolved conflicts regarding resource use.

11.4 The extent and permanence of the beneficial and/or detrimental effects that the proposed work is likely to have on the public and private use to which the area is suited:

Detrimental effects are expected to be minimal and permanent.

Beneficial effects are expected to be more than minimal and permanent.

12.0 Cumulative and Secondary Impacts:

(40 CFR 230.11(g) and 40 CFR 1508.7, RGL 84-9) Cumulative impacts result from the incremental environmental impact of an action when added to all other past, present, and reasonably foreseeable future actions. They can result from individually minor but collectively significant actions taking place over a period of time. A cumulative effects assessment should consider both direct and indirect, or secondary, impacts. Indirect impacts result from actions that occur later in time or are farther removed in distance from the original action, but still reasonably foreseeable.

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- 12.1 Identify/describe the direct and indirect effects of the proposed activity:
Key issues affected by the project include loss of headwater wetlands. The magnitude of the proposed effect is minimal within the watershed. Avoidance and minimization methods include an analysis of on- and off-site alternatives, which would result in a loss of the permittee's project if the Corps determined it could not be mitigated. Compensatory mitigation, specifically the conservation of a portion of Disney Wilderness Preserve, would result in a finding of no significant impact. No unmitigated secondary wetland impacts are anticipated as a result of this project.

In consideration of secondary/indirect impacts resulting from partial fills in preservation wetlands B2 and SE 4.0, the Corps determined an additional 0.5 mitigation credit would be required. The Corps defined secondary impact areas to include the area located within approximately 300 feet of proposed fills in preservation wetlands B2 (1.5 acre assessment area) and SE 4.0 (5 acre assessment area), and applied m-WRAP to the current and with-project conditions. These wetlands would be expected to provide reduced wildlife utilization and experience minor alterations in ground cover in the future as a result of the proposed project.

Wetlands proposed for preservation in the post-development condition, where there is development in surrounding uplands and no direct or partial wetland fills, and there is adequate buffer protecting the wetland subsequent to development, are generally considered to experience negligible secondary/indirect effects and compensatory mitigation is not required. Therefore, while the remaining 78.8 acres of preservation wetlands could have a slightly reduced wildlife utilization due to upland land use changes, no additional mitigation is required.

- 12.2 The geographic scope for the cumulative effects assessment is:
The geographic area for this assessment is the 1,875,920 acre Kissimmee River Watershed (HUC 03090101).
- 12.3 The temporal scope of this assessment covers: From 2006 to 2040.
- 12.4 Describe the affected environment: Approximately 23 percent of the watershed area is wetland.

(a) Receiving Waters/Physiography: The headwaters of this watershed originate within the City of Orlando, a highly urbanized area. Ultimately, rainfall within the City of Orlando can flow to Lake Okeechobee, the Everglades, and continue on to Florida Bay. This area is within the Eastern Flatwoods District ecoregion. Counties within the watershed include Orange, Osceola, Lake, Polk, Highlands, Okeechobee and Glades.

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(b) Land Use: Historically, the Kissimmee River meandered approximately 103 miles from Lake Kissimmee to Lake Okeechobee through a 1-2 mile wide floodplain. The river and its floodplain consisted of a mosaic of wetland plant communities and supported a diverse group of waterfowl, wading birds, fish and other wildlife. Between 1962 and 1971, the river was channelized and two-thirds of the historical floodplain was drained through the Kissimmee Flood Control project. Excavation of the canal and placement of the spoil material destroyed one-third of the river channel. Implementation of the Kissimmee Flood Control project led to drastic declines in wintering waterfowl, wading bird and game fish populations, as well as loss of ecosystem functions. Land uses within the watershed are primarily agricultural, and include beef production, citrus, sod production and truck crops. Minimal sand and peat mining also occur. Urban development occurs from the City of Orlando south to Lake Tohopekaliga. The Osceola County urban service area boundary extends to just south of Lake Tohopekaliga.

(c) Acres/Percent Wetland Area: It would appear that the National Wetland Inventory (NWI) map underestimates the extent of waters of the U.S. (i.e., wetlands) in the Kissimmee Watershed. This is likely the result of inaccuracies in the NWI datasets, state and/or federal wetland restoration projects (e.g., the Kissimmee River Restoration Project), and compensatory mitigation projects (i.e., wetlands created and/or restored through mitigation banks, private/public mitigation projects conducted on private and/or state-owned lands) that have not been captured in the datasets. Approximately 23% of the watershed area is wetland. As of October 2006, in the Kissimmee River Cataloging HUC there were approximately 365,810 acres of palustrine vegetated wetlands, 10,000 acres of palustrine unvegetated, 5,744 acres of riverine habitat, and 196,316 acres of lacustrine systems.

(d) Outstanding Aquatic Resources: An Outstanding Florida Water, (OFW), is water designated worthy of special protection because of its natural attributes. This special designation is applied to certain waters, and is intended to protect existing good water quality. Typically, OFWs include areas managed by the state or federal government as parks, including wildlife refuges, preserves, marine sanctuaries, estuarine research reserves, certain waters within state or national forests, scenic and wild rivers, or aquatic preserves. Generally, the waters within these managed areas are OFWs because the managing agency has requested this special protection. Waters that are not already in a state or federally managed area may be designated as "special water" OFWs if certain requirements are met including a public process of designation. OFW's within this watershed include Catfish Creek Preserve State Park, Lake Kissimmee State Park, Lake Arbuckle State Park, Crooked Lake, Prairie Lakes State Preserve, and

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Three Lakes Prairie Lakes. Additional OFW's may be included in the following conservation lands: Avon Park Air Force Range, Kissimmee Prairie Preserve State Park, Florida Forever Projects (Pine Island Slough, Bombing Range Ridge, Catfish Creek, Big Bend Swamp/Holopaw Ranch, Lake Hatchineha Watershed), Lake Wales Ridge State Forest, Kissimmee Chain of Lakes (Lake shoreline acquisition for Kissimmee River restoration project), Three Lakes Wildlife Management Area, and the Upper Lakes Basin Watershed.

Other important conservation lands include Reedy Creek and large tracts of mitigation lands such as Disney Wilderness Preserve, London Creek/McKinney tracts, Florida Mitigation Bank, Reedy Creek Mitigation Bank, and the Habitat Restoration, Inc. mitigation site.

12.5 Determine the environmental consequences: Corps permits for the period CY06 to CY10 have authorized the discharge of fill in approximately 453.7 acres of wetlands. Currently, the 1,875,920 acre Kissimmee watershed has approximately 595,281 acres of aquatic resources (wetlands and non-wetland waters). In *Florida 2060, A Population Distribution Scenario for the State of Florida* (August 2006. Zwick and Carr. GeoPlan Center at the University of Florida), the Kissimmee watershed is

mapped as approximately 10 percent developed in the 2006 scenario, with an increase to approximately 16.6 percent in 2016. In the 2040 future development map (see **Figure 12**), approximately 28.3 percent of the watershed is projected to

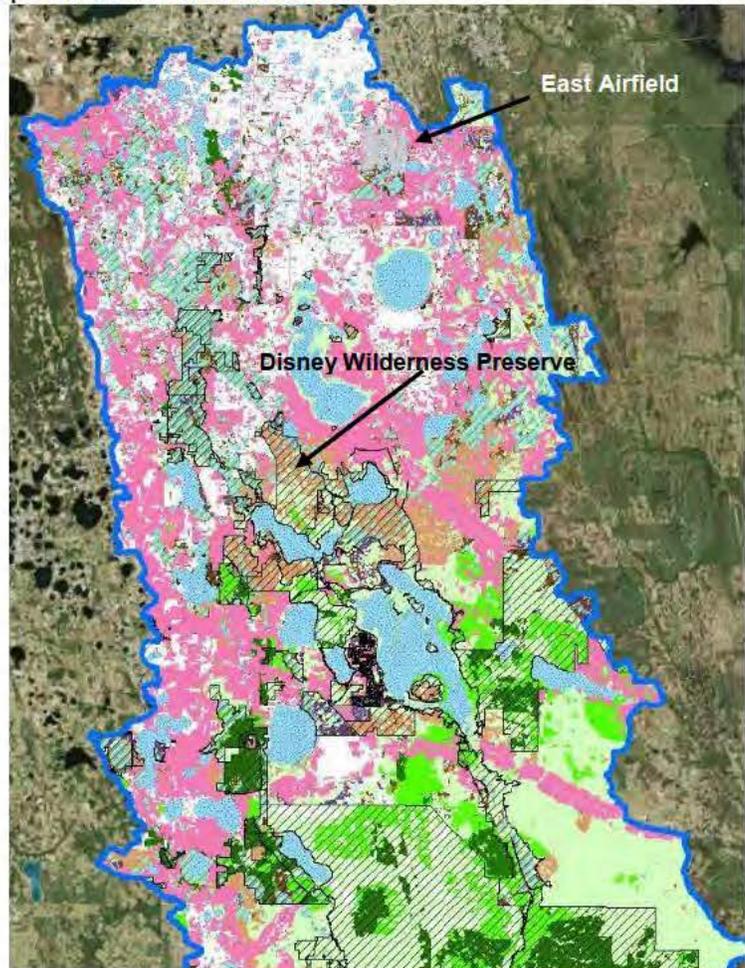


Figure 12. Development Through the Year 2040, and Current Conservation Lands, in the Upper Kissimmee River Watershed (White = Current Urban Area; Pink = Urban Growth through 2040; Hatch = Current Conservation Lands; Blue = Water; Green = FFWCC Priority Habitats).

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be developed and is clustered in the northern half of Osceola County, along the western edge of the watershed in Polk County, and along SR 60.

a) Development through 2040 could see expansion of urban development from a current estimated 312,003 acres to a total of approximately 531,271 acres. The majority of this development will occur in uplands and possibly not require a Corps permit. Based on CY06 to CY10 fill authorizations, the estimated extent of wetlands filled through the year 2040 for development totals approximately 10,900 acres.

b) Through the year 2040:

- Approximately 2.8% of current wetlands would be impacted due to future projected Corps fill authorizations through the year 2040. An estimated 595,281 acres of aquatic resources are currently in the watershed and approximately 584,381 acres of aquatic resources are anticipated to remain through the year 2040. Aquatic resources would comprise approximately 31% of the 2040 watershed land cover. A significant portion of these wetlands are currently protected as existing public conservation lands.
- An estimated 75,000 acres of WoUS may be located within urban areas, some portion of which could experience secondary/indirect impacts (e.g., noise, light, traffic, and other anthropogenic effects) as a result of edge effects. Some of these wetland systems are very large and insulated from such effects, so the Corps would expect overall minimal effects from secondary/indirect impacts.
- The urban envelope in the watershed may expand by approximately 70% through 2040, with an estimated 28.3% of the 2040 watershed land cover comprised of urban/built up areas.
- Reductions in native/agricultural upland habitats to an estimated 40.5% of the 2040 watershed land cover could have implications for federally listed species, including sand skink (*Neoseps reynoldsi*) and/or blue-tailed mole skink (*Eumeces egregius lividus*), wood stork (*Mycteria americana*), eastern indigo snake (*Drymarchon corais couperi*), Florida scrub Jay (*Aphelocoma coerulescens*), and Audubon's crested caracara (*Polyborus plancus audubonii*). While these species may be extirpated from some areas, the future extent of remaining aquatic resources, current conservation lands totaling 422,247 acres, connected riverine corridor from Disney south to Lake Okeechobee, and conservation practices required through consultation with the USFWS are expected to sustain these species through 2040.

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- c) The direct loss of wetlands due to fill, and resulting secondary effects would not appear to reach a level of significance. Through the year 2040, approximately 97% of the current wetland extent will remain. The 208,000 acre loss of primarily agricultural and native upland habitats could affect general environmental concerns (e.g., habitat fragmentation, etc.), wildlife and listed species. However, this loss would not be expected to achieve significance since approximately 72 percent of the watershed, and habitats, will remain intact. The Kissimmee River, with corridor connections to other streams and abutting habitats from Disney south to Lake Okeechobee, mitigation banks, and over 422,000 acres of public lands, will remain to sustain wildlife and listed species.
- 12.6 Discuss any mitigation to avoid, minimize or compensate for cumulative effects: In order to compensate for 171.13 acres of wetland fill/conversion, the permittee will be required to debit a total of 111.4 mitigation credits (102.9 debits for wetland fill; 8.5 debits for surface water fill) from the BRENSOLA site ledger which currently has 182.6 federal mitigation credits available. Conservation of the BRENSOLA site on the Disney Wilderness Preserve in Osceola County conserves larger, more sustainable, tracts of land connected to the Kissimmee River, and forms a significant part of that wildlife corridor (see Figure 12).
- 12.7 Conclusions: When considering the overall impacts that will result from this project, in relation to the overall impacts from similar past, present, and reasonably foreseeable future projects, the cumulative impacts are not considered to be significantly adverse. Compensatory mitigation will be required to help offset the impacts. It is likely similar activities will be proposed in the future, and these will be subject to the appropriate review process at that time.
- 13.0 Mitigation:**
- 13.1 Are project modifications needed to minimize adverse project impacts? (see 33 CFR 320.4(r)(1)(i)) No
- 13.2 Is compensatory mitigation required to offset environmental losses resulting from proposed unavoidable impacts to waters of the United States? Yes
- If no, rationale:
- 13.3 Type and location of compensatory mitigation:
- 13.3.1 Is the impact in the service area of an approved mitigation bank? Yes

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If yes, does the mitigation bank have appropriate number and resource type of credits available? Yes

13.3.2 Is the impact in the service area of an approved in-lieu fee program? No

If yes, does the in-lieu fee program have the appropriate number and resource type of credits available?

13.3.3 Selected compensatory mitigation type/location(s): See Table 9

Table 9	
Mitigation bank credits	
In-lieu fee program credits	
Permittee-responsible mitigation under a watershed approach	X
Permittee-responsible mitigation, on-site and in-kind	
Permittee-responsible mitigation, off-site and/or out of kind	

13.3.4 Does the selected compensatory mitigation option deviate from the order of the options presented in §332.3(b)(2)-(6)? Yes

If yes, provide rationale for the deviation, including the likelihood for ecological success and sustainability, location of the compensation site relative to the impact site and their significance within the watershed, and/or the costs of the compensatory mitigation project (see 33 CFR §332.3(a)(1)):

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The mitigation-site is located greater than 20 miles from MCO and therefore will not provide wetland habitat for wildlife that might pose a risk to aircraft safety as defined by the FAA Advisory Circular. It is also located in the Upper Kissimmee River watershed as are the proposed impacts to WoUS. GOAA proposes to fully offset the functional loss of 171.13 acres of WoUS, by deducting mitigation credits previously authorized by the Corps at the BRENSOLA site on the Disney Wilderness Preserve in Osceola County, Florida, within the same watershed (Upper Kissimmee River Basin) as the proposed discharge (See **Figure 13**). The BRENSOLA tracts are two of eight tracts which GOAA purchased and provided funds to conduct enhancement, restoration, and preservation activities. The tracts are within 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 owned, managed and maintained by the Florida Chapter of The Nature Conservancy with funds provided by GOAA and Walt Disney World Companies. Conservation of the mitigation site conserves larger, more sustainable, tracts of land connected to the Kissimmee River, and forms a significant part of that wildlife corridor.

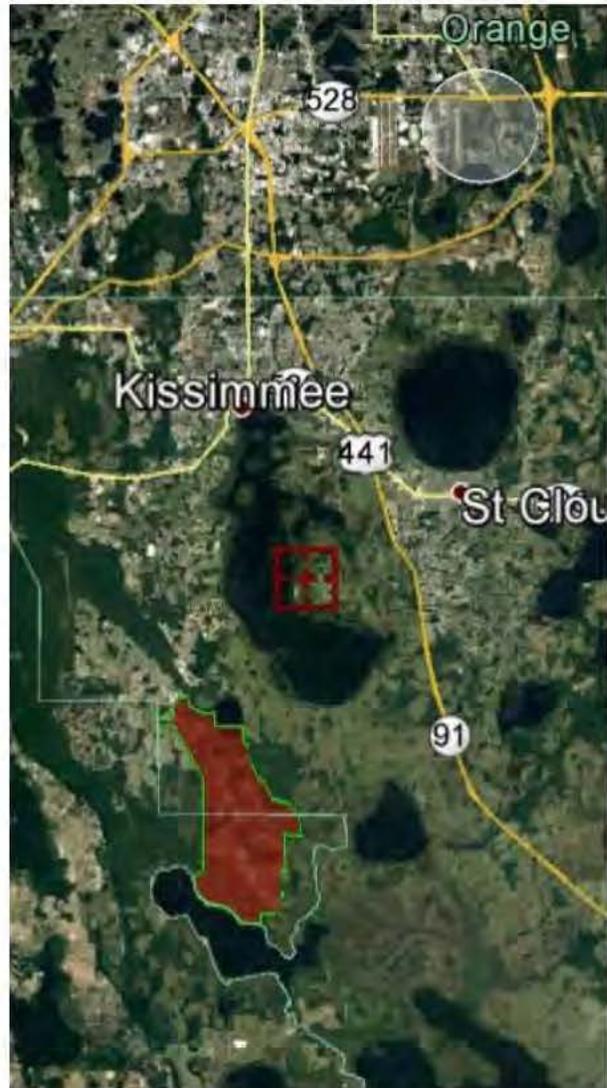


Figure 12. Disney Wilderness Preserve/GOAA Mitigation Site (in red).

Mitigation functional capacity created on the BRENSOLA tracts, which total 182.6 m-WRAP (modified Wetland Rapid Assessment Procedure) credits, were authorized by Corps Permit No. SAJ-1989-00232 on July 21, 1999. All mitigation work is complete on the BRENSOLA tracts, and the Corps issued a letter dated 13 Aug 2007 documenting that all permit criteria have been met and that the site is released from further monitoring and reporting.

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The selected compensatory mitigation plan deviates from the options presented in §332.3(b)(2)-(6). In regard to 33 CFR §332.3(a)(1), the BRENSOLA mitigation tracts are a component of the regionally significant Disney Wilderness Preserve, an 11,500 acre mitigation area that is larger than most mitigation banks nationwide. In terms of watershed approach, this area was selected by numerous regulatory agencies and environmental groups approximately 30 years ago due to its importance in the watershed. Management of the site has provided demonstrable ecological success (e.g., wetland and upland enhancement and management) and the size and location in the Kissimmee River corridor promote natural and sustainability maintenance functions (e.g., naturally occurring fires). Costs of the compensatory mitigation project have already been realized and the combination of sites has promoted the consolidation of resources. The BRENSOLA tracts are ecologically important (i.e., include a matrix of upland/wetland habitats and provide important wetland functions and services; in addition to non-listed plants and wildlife, support threatened and endangered plant and wildlife species) and sustainable in the watershed, the costs for implementation of the mitigation have already been realized by GOAA and the mitigation has been deemed successful. The Corps previously authorized the development and use of this mitigation under a permit SAJ-1998-00201) and the Corps determined it is appropriate to deviate from the mitigation hierarchy established in §332.3(b)(2)-(6).

13.3.5 Is the proposed compensatory mitigation plan permittee-responsible? Yes

If yes, the final mitigation plan must include the items described in 33 CFR 332.4(c)(2) through (c)(14) at a level of detail commensurate with the scale and scope of the impacts. As an alternative, the district engineer may determine that it would be more appropriate to address any of the items described in (c)(2) through (c)(14) as permit conditions, instead of components of a compensatory mitigation plan. Presence of sufficient information related to each of these requirements in the applicant’s mitigation plan is indicated by “Yes” in Table 10. “No” indicates absence or insufficient information in the plan, in which case, additional rationale must be provided below on how these requirements will be addressed through special conditions:

Table 10		
Requirement	Yes	No
Objectives	X	
Site selection	X	
Site protection instrument	X	
Baseline information	X	
Determination of credits	X	

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Mitigation work plan	X	
Maintenance plan	X	
Performance standards	X	
Monitoring requirements	X	
Long-term management plan	X	
Adaptive management plan	X	
Financial assurances	X	
Other	X	

If selected “no”, provide rationale on how the subject component(s) of the compensatory mitigation plan will be addressed as special conditions:

13.4 Amount of compensatory mitigation: Authorizing the LEDPA would allow the applicant to place fill in 208.73 acres of WoUS (171.13 acres of wetlands and 37.6 acres of non-wetland waters). The Corps determined a total of 114.7 mitigation credits would need to be debited from the BRENSOLA site ledger to offset lost functional capacity resulting from fill in aquatic resources. BRENSOLA currently has 182.6 federal mitigation credits available.

Rationale for required compensatory mitigation amount: Authorization of the BRENSOLA mitigation site under SAJ-1998-00201 required the use of m-WRAP for the determination of compensatory mitigation debits and credits. Based on m-WRAP assessment of the proposed East Airfield wetland fills, 102.9 debits would result from wetland fill; 11.3 debits from non-wetland fills. In consideration of secondary/indirect impacts resulting from partial fills in preservation wetlands B2 and SE 4.0, the Corps determined an additional 0.5 mitigation credit would be required. The Corps assessed the area located within approximately 300 feet of proposed fill in preservation wetlands B2 (1.5 acre assessment area) and SE 4.0 (5 acre assessment area), and applied m-WRAP to the current and with-project conditions. These wetlands would be expected to provide reduced wildlife utilization and experience minor alterations in ground cover in the future as a result of the proposed project.

Wetlands proposed for preservation in the post-development condition, where there is development in surrounding uplands and no direct or partial wetland fills, and there is adequate buffer protecting the wetland subsequent to development, are generally considered to experience negligible secondary/indirect effects and compensatory mitigation is not required. Therefore, while the remaining 78.8 acres of preservation wetlands could have slightly reduced wildlife utilization due to upland land use changes, no additional mitigation is required.

14.0 Compliance with Other Laws, Policies, and Requirements:

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14.1 Has a federal agency other than the Corps Regulatory office documented that the proposed project complies with applicable federal laws, to include Section 7 of the Endangered Species Act (ESA), the essential fish habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), and/or Section 106 of the National Historic Preservation Act (NHPA), as appropriate? Yes.

14.1.1 Identify the federal agency that has documented compliance with these applicable federal laws, as appropriate, and summarize the action(s) taken by that agency to ensure compliance with the applicable requirement(s) of Section 7 of the ESA, the EFH provisions of the MSA, and/or Section 106 of the NHPA. Include discussion of whether those actions are sufficient to ensure the activity(s) requiring DA authorization is in compliance with these other federal laws:

14.2 Section 7(a)(2) of the ESA:

14.2.1 Known species/habitat present: Yes

14.2.2 Name of species and/or critical habitat considered: sand skink (*Neoseps reynoldsi*) and/or blue-tailed mole skink (*Eumeces egregius lividus*); wood stork (*Mycteria americana*), eastern indigo snake (*Drymarchon corais couperi*), Florida scrub Jay (*Aphelocoma coerulescens*), Audubon’s crested caracara (*Polyborus plancus audubonii*), Everglade snail kite (*Rostrhamus sociabilis plumbeus*) and red-cockaded woodpecker (*Picoides borealis*).

14.2.3 Effect determination(s): See Table 11

Table 11	
No effect; consultation not required	X
May affect, not likely to adversely affect; informal consultation	X
May affect, likely to adversely affect; formal consultation required	

Basis for determination(s):

Sand skink and/or blue-tailed mole skink: “may affect, not likely to adversely affect” (NLAA)

Basis: A revised sand skink consultation area and survey protocol was published by the USFWS in 2012 [(Conservation and Consultation Guide for Sand and Blue-tail Mole Skinks (Guidelines)]. The Guidelines expanded the consultation area to all of Orange County where suitable elevation and soil types occur. A field investigation was conducted on April 25, 2013 within 126 acres of suitable potential habitats on the East Airfield. A report of findings including an opinion that sand skinks do not occupy the East Airfield (resulting in a NLAA

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determination) was prepared and submitted to the USFWS on 1 May and 17 September 2013. By letter dated 31 Dec 2015, the USFWS concurred with the FAA's NLAA determination.

Wood Stork: NLAA

Basis: Wood storks were observed foraging in shallow ditches and ponds on the East Airfield, a behavior commonly observed in similar habitats throughout the region. There are no wood stork rookeries on-site, however, the East Airfield lies within the Core Foraging Area (CFA) established by the USFWS for wood stork colony number 612037 (Lake Mary Jane Colony) and Suitable Foraging Habitat (SFH) occurs on the project site. GOAA's consultant prepared a biological assessment for the wood stork and submitted it to the Corps on 18 May 2009. The Corps completed an evaluation of the project based upon the USFWS *North Florida Ecological Services Field Offices Programmatic Concurrence for use with the Wood Stork* (September 2008). Use of the Key for Wood Stork resulted in the following sequential determination: A (The project is more than 2,500 feet from a colony site.) > B (Project impacts SFH.) > C (Project impacts to SFH greater than or equal to 0.5 acres.) > D (Project impacts to SFH are within the Core Foraging Area of a colony site) > E (Project provides SFH compensation within the CFA consisting of enhancement, restoration or creation in a project phased approach that provides an amount of habitat and foraging function equivalent to that of impacted SFH) = NLAA. While no further coordination is required with a determination of NLAA using the programmatic key, the Corps requested concurrence from USFWS 6 Jan 2010; USFWS concurred by email dated 6 Jan 2010.

Eastern Indigo Snake: NLAA

Basis: The Corps initially determined the project "may affect" eastern indigo snake. Based on the Eastern Indigo Snake Effect Determination Key (dated January 25, 2010; August 13, 2013 Addendum), the Corps' determination sequence is as follows: A (The project is not located in open water or salt marsh.) > B (The permit will be conditioned for use of the Service's standard Protection Measures for the Eastern Indigo snake during site preparation and construction) > C (There are gopher tortoise burrows or other refugia.) > D (Project will impact more than 25 active and inactive burrows) = May Affect.

Biologists from Breedlove Dennis & Associates, Inc. (BDA) conducted field surveys on the East Airfield beginning on 7 May 2013 and no eastern indigo snake were observed on the project site. A report of findings was submitted directly to the USFWS on 7 Jun 2013. USFWS responded to the 4 Feb 2013 public notice, by email dated 28 Jul 2013, concurring with a NLAA determination contingent upon use of the August 2013 Standard Protection Measures for the eastern indigo snake.

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The permit will be conditioned with the standard protection measure for the Indigo Snake. All gopher tortoise burrows, active or inactive, will be excavated prior to site manipulation in the burrow vicinity. If excavating potentially occupied burrows, active or inactive, individuals must first obtain state authorization from the Florida Fish and Wildlife Conservation Commission. The excavation method selected should also minimize the potential for injury of an indigo snake. Holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and if occupied by an indigo snake, no work will commence until the snake has vacated the vicinity of proposed work; the permittee agrees to use the Standard Protection Measures for the Eastern Indigo Snake (dated August 12, 2013).

Florida scrub Jay, Audubon's crested caracara, Everglade snail kite, red-cockaded woodpecker: No Effect

Basis: While the East Airfield lies within the Consultation Area for these species, suitable habitat does not occur on the project site, or in the surrounding vicinity, for these species. No Critical Habitat has been designated. The Corps determined the proposed project would have no effect on Florida scrub Jay, Audubon's crested caracara, Everglade snail kite, or red-cockaded woodpecker.

14.2.4 Was Section 7 ESA consultation required? Informal consultation was required.

Date Section 7 ESA consultation initiated: 6 Jan 2010 for wood stork; 4 Feb 2013 for eastern indigo snake; 18 Dec 2015 for sand skink.

Date Section 7 ESA consultation completed: 6 Jan 2010 for wood stork; 28 Jul 2013 for eastern indigo snake; 31 Dec 2015 for sand skink.

14.2.5 Additional information: The FAA consulted with USFWS on FEA determinations for sand skink and/or blue-tailed mole skink, wood stork and eastern indigo snake. USFWS concluded with NLAA determinations for these species based on activities associated with the proposed action.

14.2.6 Based on a review of the above information, the Corps has determined that it has fulfilled its responsibilities under Section 7(a)(2) of the ESA.

14.3 Magnuson-Stevens Fishery Conservation and Management Act, EFH:

14.3.1 Is EFH present in the project area? No

14.3.2 EFH species or complexes considered:

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Effect determination:

Basis for determination:

14.3.3 Date EFH assessment completed by Corps and transmitted to National Marine Fisheries Service (NMFS)

Summary of NMFS EFH comments:

Corps' response to NMFS:

14.3.4 Additional information:

14.3.5 Based on a review of the above information, the Corps has determined that it has fulfilled its responsibilities under the MSA.

14.4 Section 106 of the NHPA:

14.4.1 Known cultural resource sites present and/or survey or other additional information needed? No

14.4.2 Identify cultural resource sites(s): No known eligible sites.

Effect Determination(s): See Table 12

Table 12	
No potential to cause effects; consultation not required	
No effect; consultation required	X
No adverse effect; consultation required	
Adverse effect; consultation required	

Basis for determination(s):

14.4.3 Was Section 106 NHPA consultation required? Yes

Date consultation initiated: 4 February 2013

Date consultation completed: 13 February 2013

14.4.4 Additional information: A cultural resource assessment survey (August 2008. *Cultural Resource Assessment Survey of the East Airfield Development Area, Orange County Florida.* Archaeological Consultants Inc.) of the site was completed and provided to SHPO by the consulting archaeologist. The SHPO

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concluded with the consulting archaeologist by letter dated January 14, 2009, that the project would have no effect on cultural resources listed, or eligible for listing, in the National Register of Historic Places. By letter to the Corps dated 13 Feb 2013, the SHPO indicated their review of the Florida Master Site File indicates that no significant archaeological or historic resources are recorded in the project area and it is unlikely historic properties will be affected.

14.4.5 Based on a review of the above information, the Corps has determined that it has fulfilled its responsibilities under Section 106 of the NHPA.

14.5 Tribal Trust Responsibilities:

14.5.1 Was government-to-government consultation conducted because proposed activity requiring DA authorization has the potential to significantly affect protected tribal resources, tribal rights (including treaty rights) and/or Indian lands or because consultation was requested? No.

If project-specific government-to-government consultation was conducted, provide a summary of the consultation and findings: By letter dated 13 Feb 2013, and in response to the 4 Feb 2013 public notice, the STOF-THPO indicated they had no objection to the project.

14.5.2 Based on a review of the above information, the Corps has determined that it has fulfilled its tribal trust responsibilities.

14.6 Section 401 of the Clean Water Act – Water Quality Certification (WQC):

14.6.1 Is a Section 401 WQC required? Yes

14.6.2 Type of certification: Individual

14.6.3 Date of individual WQC decision, if applicable: 11 July 2016

14.7 Coastal Zone Management Act (CZMA):

14.7.1 Is a CZMA consistency concurrence required? Yes

14.7.2 Type of consistency concurrence: Individual

14.7.3 Date of individual CZMA consistency concurrence, if applicable: 11 July 2016

14.8 Wild and Scenic Rivers Act:

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14.8.1 Is the project located in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system? No

If yes, identify the managing agency:

Date written determination provided that the project will not adversely affect the Wild and Scenic River designation or study status:

14.8.2 Additional information:

14.8.3 Based on a review of the above information, the Corps has determined that it has fulfilled its responsibilities under the Wild and Scenic Rivers Act.

14.9 Effects on Federal Projects (33 USC 408):

14.9.1 Does the project require permission under Section 14 of the Rivers and Harbors Act (33 USC 408) because of potential for modifications to a federal project? No, There will be no effect to federal projects.

If yes, provide date that permission is provided:

14.10 Corps Wetland Policy (33 CFR 320.4(b)):

14.10.1 Does the project propose to impact wetlands? Yes

14.10.2 Based on the public interest review herein, the beneficial effects of the project outweigh the detrimental impacts of the project.

14.11 Other (as needed):

15.0 Special Conditions:

15.1 Special conditions required? Yes

If no, rationale:

15.2 Required special condition(s):

15.2.1 Special condition 1: **Reporting Address**

Rationale: Provides Corps’ address for permittee correspondence.

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15.2.2 Special condition 2: **Commencement Notification**

Rationale: Requires the permittee to provide to the Corps a written notification of the date of commencement of work within 10 days from the date of initiating the authorized work.

15.2.3 Special condition 3: **Erosion Control**

Rationale: Requires implementation of erosion control measures to protect downstream waters.

15.2.4 Special condition 4: **Compensatory Mitigation**

Rationale: Stipulates the compensatory mitigation requirement, based on functional loss due to fill authorized by this permit.

15.2.5 Special condition 5: **As-Builts**

Rationale: Requires the submittal of as-built drawings for future compliance determinations.

15.2.6 Special condition 6: **Eastern Indigo Snake Protection Measures**

Rationale: Required for the protection of eastern indigo snake.

15.2.7 Special condition 7: **Cultural Resources**

Rationale: Protects historic properties and cultural resources, in the event of an unexpected discovery.

15.2.8 Special condition 8: **Fill Material**

Rationale: Stipulates the use of clean fill material for the protection of wetlands and surface waters.

15.2.9 Special condition 9: **Wetland Avoidance Areas**

Rationale: To protect the 85 acres of avoided wetlands in the absence of a conservation easement, the Permittee shall avoid the remaining 85 acres of onsite wetlands. These wetland areas were avoided as part of this permit application review process; and, therefore, the remaining wetland areas will not be disturbed by any activities that would degrade the ecological integrity of the site including

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dredging, filling, mechanized land clearing, or other construction work whatsoever except as required or authorized by this permit. The Corps reserves the right to deny review of any requests for future impacts to these avoided wetland areas.

- 15.2.10 Special condition 10: **Conservation Areas:** Within 30 days from the date of initiating the authorized work, the Permittee shall submit to the Corps a survey delineating all conservation land uses, including wetland avoidance areas, surface waters, and upland buffers. These natural preserve areas will not be disturbed by construction work whatsoever except as required or authorized by this permit. The Permittee agrees that the only future utilization of the preserved areas in question will be as a purely natural area.

Rationale: Additional protection for avoided wetland systems, particularly during construction.

- 15.2.11 Special condition 11: **Regulatory Agency Changes**

Rationale: Clarifies for the permittee that any changes in work require a modification to the permit.

16.0 Findings and Determinations:

- 16.1 Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de minimis levels of direct or indirect emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps' continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.
- 16.2 Presidential Executive Orders (EO):
- 16.2.1 EO 13175, Consultation with Indian Tribes, Alaska Natives, and Native Hawaiians:
- 16.2.2 EO 11988, Floodplain Management: Alternatives to location within the floodplain, minimization and compensatory mitigation of the effects were considered above.
- 16.2.3 EO 12898, Environmental Justice: The Corps has determined that the proposed project would not use methods or practices that discriminate on the basis of race, color or national origin nor would it have a disproportionate effect on minority or low-income communities.

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- 16.2.4 EO 13112, Invasive Species: The evaluation provided above included invasive species concerns in the analysis of impacts at the project site and associated compensatory mitigation projects.
- 16.2.5 EO 13212 and EO 13302, Energy Supply and Availability: The proposal is not one that will increase the production, transmission, or conservation of energy, or strengthen pipeline safety.
- 16.3 Findings of No Significant Impact: Having reviewed the information provided by the applicant and all interested parties and an assessment of the environmental impacts, I find that this permit action will not have a significant impact on the quality of the human environment. Therefore, an environmental impact statement will not be required.
- 16.4 Compliance with the Section 404(b)(1) Guidelines: Having completed the evaluation above, I have determined that the proposed discharge complies with the Guidelines, with the inclusion of the appropriate and practicable special conditions to minimize pollution or adverse effects to the affected ecosystem.
- 16.5 Public interest determination: Having reviewed and considered the information above, I find that the proposed project is not contrary to the public interest.

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Prepared By:



Jeffrey S. Collins
Senior Project Manager

Date: _____ April 23, 2018 _____

Reviewed By:



Clif Payne
Branch Chief, North Permits Branch

Date: _____ 24 April 2018 _____

Approved By:

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Digitally signed by
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DN: c=US, o=U.S. Government, ou=DoD,
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Date: 2018.04.25 07:13:50 -04'00'

For **Timika M. Wilson**
Lieutenant Colonel, U.S. Army
District Commander

Date: _____ 25 April 2018 _____