DRAFT
ENVIRONMENTAL ASSESSMENT
FOR
AIRPORT DEVELOPMENT ACTIONS

May 2019

FEDERAL AVIATION ADMINISTRATION
ORLANDO AIRPORTS DISTRICT OFFICE
SOUTHERN REGION AIRPORTS DIVISION

Airport Name: Umatilla Municipal Airport (X23)

Proposed Action: Extension of Runway 1-19 and Associated Improvements

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

Responsible FAA Official: _____

Date: _____

This Environmental Assessment (EA) Form is intended for use in the Federal Aviation Administration (FAA) Orlando Airports District Office (ORL/ADO) only, and with the approval of an ORL/ADO Environmental Protection Specialist (EPS). The Airport Sponsor must discuss the use of this EA Form with an ORL/ADO EPS before beginning the EA scoping and environmental analysis process. An electronic version of this EA Form is available upon request from an ORL/ADO EPS.

APPLICABILITY

The purpose of an EA is to determine whether a proposed action has the potential to significantly affect the human environment (see FAA Order 1050.1F, Paragraph 4-3 for more information on determining significance). An EA is a concise public document that briefly provides sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significance (FONSI). An EA, at a minimum, must be prepared when the proposed action does not normally require an EIS (see Paragraph 3-13, Actions Normally Requiring an Environmental Impact Statement) and:

1) Does not fall within the scope of a Categorical Exclusion (CATEX) (see FAA Order 1050.1F, Paragraph 5-6 *The Federal Aviation Administration's Categorical Exclusions*);

2) Falls within the scope of a CATEX, but there are one or more Extraordinary Circumstances (see FAA Order 1050.1F, Paragraph 5-2 *Extraordinary Circumstances*).

See FAA Order 1050.1F, Paragraph 3-1.2. Actions Normally Requiring an Environmental Assessment.

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INSTRUCTIONS

Introduction: This EA Form is based upon the guidance in FAA Order 1050.1F – *Environmental Impacts: Policies and Procedures*, and the related publication FAA Order 1050.1F Desk Reference (1050.1F Desk Reference). The Order provides the FAA policies and procedures to ensure agency compliance with the National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] §§ 4321-4335), the requirements set forth in the Council on Environmental Quality (CEQ), Title 40, Code of Federal Regulations (CFR), parts 1500-1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (CEQ Regulations), and Department of Transportation (DOT) Order 5610.1C, *Procedures for Considering Environmental Impacts*. The CEQ Regulations establish procedures for complying with NEPA. In accordance with 40 CFR § 1507.3 of the CEQ Regulations, the Order contains the FAA's implementing procedures, which supplement those regulations. The 1050.1F Desk Reference provides details on current guidance and updated technical information. This includes information about permits, licenses, consultations, and other forms of approval or review; up-to-date details on technical information such as FAA-approved tools for analyzing noise and air emissions; overviews of special purpose laws and requirements; and specific responsibilities and guidance for gathering data, assessing impacts, consulting other agencies, and involving the public.

Early Planning: Environmental issues should be identified and considered early in a proposed action's planning process to ensure efficient, timely, and effective environmental review. Preparation for any applicable permit application and other review process requirements should be part of the planning process to ensure that necessary information is collected and provided to the permitting or reviewing agencies in a timely manner. The Airport Sponsor should identify known environmental impact categories that the Action and alternatives (if any) could affect, including specially protected resources. These tasks should be completed at the earliest possible time during Action planning to ensure full consideration of all environmental impact categories and facilitate the FAA's NEPA process. Sufficient planning and Action justification must be available to support the environmental review.

******IMPORTANT******

The Airport Sponsor must contact their ORL/ADO Program Manager if the Proposed Action is not depicted on the Airport's conditionally-approved ALP. The ORL/ADO will determine if an update to the ALP is required. If an interim ALP update is required, coordination and approval can take up to 90 days and must be finalized prior to an environmental decision.

A Proposed Action's pre-application for Federal funding (design or construction) must include an environmental finding in accordance with NEPA. Pre-applications are normally due in the ORL/ADO in January in order to receive a grant for the following fiscal year. The Airport Sponsor should allow 6-12 months prior to submitting a pre-application to the ORL/ADO for Federal funding to complete the EA process.

1. PROPOSED ACTION LOCATION

Airport Name and Identifier:	Umatilla Municipal Airport (X23)		
Airport Address:	480 East Cassidy Drive		
City:	Umatilla	**County:**	Lake
State:	Florida	**Zip Code:**	32784

2. AIRPORT SPONSOR INFORMATION

Point of Contact:	Scott Blankenship		
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3. PREPARER INFORMATION

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4. PROPOSED ACTION

Describe the Proposed Action with sufficient detail in terms that are understandable to individuals who are not familiar with aviation or commercial aerospace activities. List and describe all components of the Proposed Action including all connected actions. Summarize how the Proposed Action fits into the Airport's ALP. Attach an exhibit of the Airport's conditionally approved ALP depicting the Proposed Action, and an exhibit of the Proposed Action on a recent airport aerial. Summarize costs, including any mitigation costs, if applicable. Discuss how the Proposed Action will be funded. Provide a timeframe identifying when the Proposed Action is to be constructed and operational.

In order to accommodate the needs of existing airport tenants and their businesses, as well as public recreational flying and flight training, the City of Umatilla (City)[1] proposes to reduce operational limitations and increase flexibility for aircraft utilizing Umatilla Municipal Airport (X23) by extending Runway 1-19 to a total length of 3,000 feet. The City has prepared this Environmental Assessment (EA) for the extension of Runway 1-19 and associated improvements in accordance with the requirements of the Federal Aviation Administration (FAA) Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *National Environmental Policy Act implementing Instructions for Airport Actions*.

4.1 Airport Background and Activity

The Umatilla Municipal Airport is a public use, basic general aviation airport located in the City of Umatilla, Lake County, Florida.[2] The airport primarily serves small aircraft operated by local corporate and business users in the cities of Umatilla, Mount Dora, Eustis, and Tavares.

There is one runway at X23 (Runway 1-19). Runway 1-19 has a current length of 2,500 feet, a width of 60 feet, and is accessed by a partial parallel taxiway 25 feet in width. The City of Umatilla has made significant improvements to the airport since 2004, including resurfacing, widening, and extending the runway; rehabilitating the aircraft parking apron; installing runway edge lights; constructing hangars; and installing a 24-hour, self-service fueling system.

The FAA Terminal Area Forecast (TAF)[3] and the Florida Department of Transportation (FDOT) General Aviation Operations Forecast[4] estimate that 15 aircraft are based at X23 and 5,000 aircraft operations occur annually.[5] While the TAF indicates that steady activity has occurred at the airport for the past five years and that this activity is anticipated to continue in the forecast future years, the FDOT General Aviation Operations Forecast predicts a 0.75% increase in activity each year for the next 15 years and beyond.

4.2 Description of the Proposed Project

The Proposed Project would extend the runway at X23 from its present length of 2,500 feet to 3,000 feet. This runway extension would be accomplished by constructing 465 feet of new asphalt pavement on the north end of the runway (Runway 1) and 35 feet of new asphalt pavement on south end of the runway (Runway 19). The new runway would be the same width as the existing runway (60 feet), and the existing 200-foot displaced threshold[6] on Runway 19 would remain in its current location as a 235-foot displacement. In support of the Runway 1-19 extension, the partial parallel Taxiway A would be extended approximately 465 feet to the north, maintaining its existing width of 25 feet. Taxiway A would also be extended 35 feet south, and a new taxiway connector would be constructed at each end of the runway. The anticipated total area of new runway, taxiway, and associated connector pavement is approximately 50,000 square feet (1.15 acres).

An Airport Location Map and the Proposed Project are provided as **Exhibits 1 and 2** in **Appendix A.** In support of the Runway 1-19 extension, the Proposed Project includes additional construction and maintenance actions as listed below. Likewise, associated improvements to runway elements that will

[1] The City of Umatilla is identified as the X23 Airport Sponsor.
[2] Federal Aviation Administration. *Report to Congress - National Plan of Integrated Airport Systems (2019-2023)*. September 26, 2018.
[3] Federal Aviation Administration Office of Aviation Policy and Plans (APO), APO Terminal Area Forecast Detail Report, issued January 2018. Accessed in January 2019 at: https://www.faa.gov/data_research/aviation/taf/
[4] Available at: http://www.fdot.gov/aviation/flpub.shtm
[5] Note that information provided by the City of Umatilla lists 36 based aircraft at X23. The difference is likely attributable to recent construction of aircraft storage hangars that are not yet reflected in FAA and FDOT databases.
[6] FAA Aeronautical Information Manual, Basic with Changes (28 Feb 2019), Section 2.3.3: A displaced threshold is a runway threshold located at a point other than the physical beginning or end of the runway, generally marked on runway pavement with parallel white lines. Displacement of a threshold reduces the length of runway available for landings. The portion of runway behind a displaced threshold is available for takeoffs in either direction and landings from the opposite direction.

maintain safety and operational specifications at the airfield are also listed. These associated improvements generally modify existing runway and taxiway elements in response to the added length and largely do not confer additional environmental impacts; however, the EA analyzes potential effects across airport property, to include conceptual stormwater management activities and other actions supporting the full extent of the future runway and its associated safety areas.

Connected Actions:

- Clear and maintain approximately 2.3 acres of trees, vegetation, and objects within the future runway and taxiway object free areas (ROFA and TOFA), runway safety areas (RSA), and future approach surfaces (i.e. Runway Protection Zones [RPZ][7]). Approximately 1.94 acres associated with the future RPZ at the northern end of the new runway would be cleared and grubbed, and approximately 0.33 acres of vegetation along the East Lake shoreline would be trimmed and sporadically treated to control nuisance species, to maintain the proposed 20:1 approach slope to Runway 1[8].
- Construct graded RSAs for the new sections of runway and taxiway pavement.
- Remove approximately 33,000 square feet of existing pavement.
- Install approximately 1,500 feet of new airfield security fencing and controlled-access vehicle gates.
- Construct drainage improvements for the new airfield pavements and graded areas. Further engineering of stormwater management features will be the result of ongoing site planning and permitting processes, but generally include the construction of swales. (Onsite ponds are not required or feasible due to soil conditions in the area and would not be part of the Proposed Project.)
- Install new medium-intensity runway edge lights and medium-intensity taxiway edge lights along the new sections of runway and taxiway pavement.
- Relocate the existing runway threshold lights and the Precision Approach Path Indicator Lights on each runway end.
- Install airfield directional signs on new sections of runway and taxiway pavement.
- Apply new pavement markings on new and existing runway and taxiway pavements.
- Modify existing airspace safety procedures, including updating Instrument Approach Procedures for Runway 1-19 and Air Traffic Control procedures for aircraft below 3,000 feet.

[7] FAA Advisory Circular 150/5300-13A Change 1, *Airport Design* (2014) states that clearing RPZs is advised in order to maintain the area free of above-ground objects to enhance the protection of people and property on the ground.

[8] Title 14 Code of Federal Regulations (CFR) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*

4.3 Anticipated Induced Activity

The proposed extension of Runway 1-19 and additional actions and associated improvements would enhance the accessibility of existing X23 aviation facilities, and the Proposed Project is anticipated to result in an increase in aircraft operations at the airport. **Table 4-1** presents a forecast of future operations based on the current level of activity and the FDOT forecast. The year 2020 is anticipated to be the first full year that the Proposed Project will be in operation, and significant induced operations are not expected. After five years of operation, it is anticipated that X23 will serve 5,620 operations. When compared to the FDOT forecast for 2025 (5,388 operations), the 5,620 Proposed Project operations represent an increase of 232 annual operations, or 4.1 percent. Assuming equal distribution over a calendar year, this increase is equivalent to an additional 0.64 operations[9] per day, or a yearly average of an additional 2 planes flying in and out of X23 per week.

TABLE 4-1
OPERATIONS FORECAST: EXISTING CONDITIONS VS. PROPOSED PROJECT

Year	FDOT Existing Operations Forecast		Proposed Project Operations Forecast	
	Total Number of Operations	Percent Annual Growth	Total Number of Operations	Percent Change over Existing Operations / Annual Growth
2017	5075	0.75	N/A	N/A
2020	5,190	0.75	N/A	N/A
2025	5,388	0.75	5,620 (+232 over No Action)	0.8% annual growth (+4% over No Action)

Sources: FDOT Aviation and Spaceports Office, 2018; ESA Survey of Existing Users, 2018

4.4 Project Costs and Funding Mechanisms

The Proposed Project's conceptual development cost is approximately $2 million (**Table 4-3**). It is anticipated that funding sources will include FAA, FDOT, and/or the City of Umatilla.

TABLE 4-3
CONCEPTUAL DEVELOPMENT COST

Development Item	Probable Cost
Design Projected Costs	$250,000
Construction Projected Costs	$1,800,000

Source: GAI, 2018.

4.5 Conceptual Project Development Schedule

Table 4-4 outlines the anticipated project development schedule.

TABLE 4-4
PRELIMINARY PROJECT DEVELOPMENT SCHEDULE

Project Element	Construction Period
Design	2019
Construction	2020

Source: City of Umatilla, 2018.

[9] An operation is defined as one aircraft landing (arrival) or takeoff (departure).

5. PURPOSE AND NEED

(1) Describe the underlying purpose and need for the Proposed Action. Present the problem being addressed, describe what the Airport Sponsor is trying to achieve with the Proposed Action, and take into account the FAA's primary mission to provide the safest, most efficient aerospace system in the world. The purpose and need of the Proposed Action must be clearly explained and stated in terms that are understandable to individuals who are not familiar with aviation or commercial aerospace activities. The purpose and need must be supported by recent data. To keep this section brief, incorporate by reference any supporting data, inventories, assessments, analyses, or studies. This can include but is not limited to FAA compliance or standard changes, letters from users showing need per FAA design standards, letters of commitment from current or prospective tenants, based aircraft data, fuel data, scheduled service, critical aircraft needs, TAF and Master Plan forecasts, capacity issues (actual use/need of aircraft or airline, or scheduled commercial service. IMPORTANT: If the Airport Sponsor intends to request Federal funding, the purpose and need for the Proposed Action must be justified by recent airport planning analysis and concurred with by ADO management before initiating the EA.

5.1 Purpose of and Need for the Proposed Project

5.1.1 Purpose of the Proposed Project

The purpose of the Proposed Project is to reduce operational limitations and increase flexibility for aircraft utilizing X23. The airport's existing 2,500-foot long runway limits the utility of the airport for single-engine and twin-engine piston aircraft. Extending Runway 1-19 an additional 500 feet to a total length of 3,000 feet would accommodate increased takeoff and landing weights and would relieve weight limitations experienced by current airport users.

A number of factors (such as aircraft weight, wind direction, elevation, and temperature) can affect the take-off and landing distance required by a given aircraft on a given day. Of these factors, the take-off weight of an aircraft is the only factor that pilots can control, and as such, pilots are occasionally required to reduce the number of passengers, the amount of cargo, and/or the amount of fuel to depart from X23 under certain conditions. Reducing the number of passengers and/or cargo creates inefficiencies, especially for small businesses with aircraft based at X23 that fly their products directly to their customers. Reducing fuel load may limit the range of the aircraft or require an intermediate re-fueling stop on the way to the final destination. In some cases, the lack of adequate runway length requires the use of smaller aircraft when flying through X23 or requires the use of an alternate airport.

5.1.2 Need for the Proposed Project

The Proposed Project is needed to better accommodate existing airport tenants and their businesses, as well as the public that uses the airport for recreational flying and flight training. The City seeks to advance the objectives and goals identified in the City of Umatilla Community Redevelopment Plan (2017)[10] and the X23 Master Plan (2011)[11], which both identify the need to upgrade the municipal airport in order to fulfill its mission as an integral part of the community's transportation network. The availability of a 3,000-foot runway at X23 would: 1) reduce the incidence of weight-constrained aircraft operations; 2) reduce the amount of deferred operations; and 3) attract additional aircraft, which supports local economic growth by providing additional passengers, products, and goods. Maintaining X23 as a community asset supports local

[10] City of Umatilla, *2017 Community Redevelopment Plan, Amended* (February 2017)

[11] C&S Engineers for the Umatilla Municipal Airport, *Airport Master Plan, Final Report* (June 2011)

economic interests, and expanding its capabilities supports City economic development goals while serving the operational needs of its users.

A runway length analysis,[12] including discussions with existing and prospective tenants, was prepared in 2017 clarifying the current and latent demand to serve small airplanes with approach speeds of 50 knots or more, with maximum certificated takeoff weight of 12,000 pounds or less, and with fewer than 10 passenger seats (**Appendix B**). The 3,000-foot runway length is consistent with the runway development program outlined in the Master Plan and depicted on the Airport Layout Plan (ALP).

(2) Identify the Airport Sponsor's requested FAA Federal action in the space below. For the FAA Office of Airports (ARP), a Federal action may include one or more actions (See FAA Order 5050.4B, Paragraph 9.g.). Note: *The information provided in this EA Form allows the FAA to determine if a Finding of No Significant Impact (FONSI) can be issued because the proposed action's environmental impacts, with no additional mitigation, would not be significant, or a mitigated FONSI can be issued because the proposed action's environmental impacts, with additional mitigation, would not be significant (see FAA Order 1050.1F, Paragraph 6-2.3a). FAA environmental findings on an Action do not constitute FAA decisions or approvals regarding Federal funding of the Action.*

The specific federal actions under consideration in this EA include:

- Unconditional approval of the portion of the X23 ALP[13] that depicts the components of the Proposed Project and its connected actions pursuant to 49 U.S.C. Sections 40103(b), 44718, and 47107(a)(16), and Title 14 CFR Parts 77 and 157 (**Appendix A, Exhibit 3**).
- Determination of eligibility for federal assistance under the federal grant-in-aid program authorized by the *Airport and Airway Improvement Act of 1982*, as amended (49 U.S.C. § 47101, et. seq.).
- Approval of further processing of an application for federal assistance for eligible components of the Proposed Project as shown on the ALP, using federal funds from the Airport Improvement Program.

FAA acceptance of a NEPA document and issuance of a decision document or finding is only a determination that the NEPA document satisfies applicable environmental statutes and regulations. Similarly, FAA approval of an ALP does not indicate the FAA will participate in the cost of any proposed development; rather, ALP approval indicates that all existing and proposed airport development shown on the plan meets applicable FAA airport design standards or a current FAA-approved Modification of Airport Design Standards and that the proposed development is useful and efficient.

6. ALTERNATIVES (INCLUDING THE PROPOSED ACTION)

There is no requirement for a specific number of alternatives or a specific range of alternatives to be included in an EA. Alternatives are to be considered to the degree commensurate with the nature of the proposed Action and agency experience with the environmental issues involved. The Sponsor's preferred alternative, if one has been identified, should be indicated. For alternatives considered but eliminated from further study, the EA should briefly explain why these were eliminated. Note: *An EA may limit the range of alternatives to the proposed action and no action when there are no unresolved conflicts concerning alternative uses of available resources. This means that you*

[12] *Runway Extension Justification Report for Umatilla Municipal Airport*, 21 June 2018. Analysis was prepared in accordance with FAA methodology given in AC 150/5325-4B.
[13] The *Umatilla Municipal Airport Layout Plan* (ALP) depicts the development of the runway extension and associated projects at the Proposed Project site.

may limit the range of alternatives to the proposed action and no action if you can establish consensus based on input from interested parties that there are no unresolved conflicts, or if there are no reasonable alternatives that would be substantially different in design or effects. If you are able to do this, you must document the basis for concluding consensus and identify the parties that participated; and, you must discuss why there are no reasonable alternatives that would be substantially different in design or effects. This is why the Purpose and Need is important in helping define the range of alternatives.

(1) Discuss in comparable format to that listed below the Proposed Action and alternatives. Discuss how the Proposed Action and alternatives were developed e.g. recent planning study or Master Plan Update. Attach figures for the Proposed Action and alternatives to aid in understanding the physical layout and differences in the alternative configurations.

For each alternative:
a. Discuss to what extent an alternative meets the Purpose and Need.

b. Discuss if an alternative is technically and economically feasible e.g. operational considerations/regulations, safety considerations, constructability, infrastructure requirements, property acquisition requirements, and costs.

c. Discuss potential social, socioeconomic, and/or environmental resource impacts for each alternative e.g. business or residential relocations, road relocations or closures, environmental resources protected under Federal statutes (wetlands, floodplains, and listed species, and Section 4(f), or Section 106 resources).

d. For each alternative considered but eliminated from further study, summarize why it is not considered reasonable. Note: *To be reasonable, an alternative must respond to the purpose and need, be technically and economically feasible, and be reasonably consistent with the land use plan for management of the area.*

The 2011 Airport Master Plan identified a series of future development alternatives. Each alternative included the extension of Runway 1-19 from 2,500 to 3,000 feet and all included addition of the 500-foot extension on the north end of the runway. However, the Master Plan did note that the runway approached the south edge of East Lake and recommended further review during the later design and environmental review process. A more detailed investigation of alternatives was conducted as part of this EA.

A two-level evaluation process was used to screen potential alternatives for the Proposed Project. The first level of screening identified the landscape of alternatives that would meet the Purpose and Need as defined in Section 5 of this EA. All alternatives that met the Purpose and Need were carried forward to the next screening level. The second level of screening evaluated the remaining alternatives in terms of constructability, operational criteria, and potentially significant environmental effects. Level 2 screening narrowed the pool of alternatives to those that were reasonable and focused on cursory, fatal-flaw environmental resource review based on best available data and professional judgement. Alternatives that did not meet the evaluation criteria established at steps one and/or two were eliminated from further consideration and were not subject to a detailed analysis of environmental impacts in this EA. **Table 6-1** presents the results of the two-level screening process on all identified potential alternatives to the Proposed Project.

6.1 Alternatives Considered but Eliminated from Detailed Analysis

6.1.1 Alternative 1 - Use of Other Airports

This alternative considered the utilization of other airport(s) within a 30-minute drive (or 20 miles) of X23. According to the National Plan of Integrated Airport Systems (NPIAS), an airport system should provide convenient access to air transportation for as many people as possible, defined as typically not more than 20 miles of travel to the nearest NPIAS airport. Leesburg International Airport is located approximately 11 miles southwest of X23. It currently has two active runways; Runway 13-31 is approximately 6,300 feet long by 100 feet wide, and Runway 3-21 is approximately 4,957 feet long by 100 feet wide. Orlando Apopka Airport is also located 14 miles south of X23, which operates Runway 15-33 at approximately 4,000 feet long by 60 feet wide. These runways allow Leesburg International and Orlando Apopka Airports to serve larger aircraft without weight restrictions.

Level 1 Screening. This alternative does not address the limitations faced by existing users at X23. The use of an alternate airport would not respond to aircraft weight limitations currently imposed by the insufficient runway length at X23, nor would it allow a broader range of General Aviation aircraft to use X23. Users have determined that X23 is the most economic and efficient location to base their operations (i.e., over Leesburg and Orlando Apopka), and the City of Umatilla seeks to support the growth of the local economy as possible. Furthermore, the City does not have the authority to place restrictions on a targeted segment of the General Aviation fleet that operates at X23 and cannot dictate that General Aviation operations move to another airport. Thus, this alternative does not meet the Purpose and Need for the Proposed Project and was not carried forward for Level 2 Screening (**Table 6-1**).

6.1.2 Alternative 2 - Other Modes of Transportation

This alternative considered the use of other modes of transportation for the demand placed on X23, including the use of ground-based transportation resources such as automobiles, buses, conventional rail, and high-speed rail for the movement of people, goods, and services otherwise currently provided by X23.

Level 1 Screening. Generally, vehicular, bus, and conventional train travel do not provide the same benefit as air travel because the travel times over similar distances (e.g. regional travel) cannot compete with the speed at which air travel serves a customer. Because these other modes of transportation would not provide a meaningful alternative to air travel, they would not be expected to reduce demand at X23, eliminate operational restrictions imposed by the current runway length, or allow a broader range of aircraft to use the airport. Additionally, as there is no funding or timetable for the implementation of a high speed rail system that would serve Lake County, high-speed rail is not a reasonable alternative to the Proposed Project. Thus, the use of other modes of transportation does not meet the Purpose and Need for the Proposed Project and was not carried forward for Level 2 Screening (**Table 6-1**).

6.1.3 Alternative 3 - Extend Runway 1-19 to the South

This alternative would construct a 500-foot runway extension of the south end of the existing runway to provide an overall runway length of 3,000 feet (**Appendix A, Exhibit 4**). This alternative would include the following improvements/actions:

- Extend Runway 1-19 from its present length of 2,500 feet to 3,000 feet
- Construct additional segments of the partial parallel taxiway
- Acquire approximately 26 acres of land for the extended runway
- Relocate two residences
- Relocate the rights-of-way and portions of Rose Street and Skyline Drive
- Construct/modify/improve airfield and off-site drainage to accommodate the alternative
- Install runway and taxiway edge lights for new pavement sections
- Relocate the existing Precision Approach Path Indicator Lights at the end of Runway 1

Level 1 Screening. This alternative would satisfy the Purpose and Need, as it provides additional runway length at X23 that would reduce aircraft weight restrictions and allow a broader range of General Aviation aircraft to use the airport.

Level 2 Screening. Moderate operational impacts, constructability issues, and acquisition actions are anticipated. No significant environmental impacts are anticipated.

Construction – This alternative would require redesign and reconstruction of the current storm water management system at the airport. The runway extension would displace the current detention pond, which services the majority of the airport. A new detention pond and associated stormwater conveyance system (structures, culverts, etc.) would need to be designed for the new airport layout. Due to the existing slope of the terrain found in the area, major regrading in the current location of Rose Street would also be required to create the correct runway and taxiway profile. Existing utilities, which are currently routed in the Rose Street right-of-way, would also have to be re-routed.

Operations – Construction activities would temporarily impact airport operations, including a 2 to 4-week full airport closure in order to tie the existing runway to the proposed extension.

Land Acquisition and Relocations – This alternative would require the City of Umatilla to acquire approximately 26 acres of land (affecting 6 different landowners) south of Rose Street and Skyline Drive to support the runway and taxiway extensions, RPZ, Skyline Drive relocation, and Rose Street relocation. Of the 26 acres, approximately 23.24 acres would be for airport use and 2.76 acres for road right-of-way. This alternative would displace two residences.

Roadway Impacts/Relocations – This alternative would require the removal of 1,900 feet of existing roadway and the construction of 3,500 feet of new roadway in order to adequately relocate Rose Street and Skyline Drive. Relocations would be required to keep the road out of the RSA and ROFA/TOFA and to provide adequate approach and departure surface clearance. Ideally the road would likewise be located outside of the RPZ; however, due to proximity to the lake there is no alternative for relocating the road in this area. Both roadways would be constructed/installed on new alignments prior to the demolition of the existing roadways.

Aircraft Flight Path or Profile Changes – Using the current 3.5-degree approach path angle and the new location of the precision approach path indicators, it was determined that the extension to the south would lower the approach profile to Runway 1 approximately 31 feet. This change would reduce the height of arriving aircraft overflying Rose St. (44A) to 44 feet above ground level (agl) at the point where the extended centerline crosses the roadway. With the 500-foot southward shift of the Runway 1 departure threshold, all aircraft departing Runway 1 would be higher when they leave airport property with the exception of those aircraft requiring the full runway length for departure. Since the landing threshold for the Runway 19 arrival end does not change, there would be no change in aircraft heights as they arrive to Runway 19. Additionally, since the location that Runway 19 departures start their takeoff roll will not change, the departure profile will only change for the relatively small percentage of aircraft requiring the longer runway length. The change in the departure profile would vary based on individual aircraft types, weight, and weather, but on average is expected to be no greater than the change associated with the Runway 1 arrival profile.

Wetlands – The runway extension and the relocation of portions of Rose Street and Skyline Drive would not generate impacts to wetlands.

Historic/Archeological Resources – The proposed alternative would not impact any known or recorded historic or archeological resources.

Conclusion. This alternative requires acquisition of 26 acres of land, the displacement of two residences, demolition of 1,900 feet of existing roadway, the installation of 3,500 feet of new roadway in order to relocate Rose Street and Skyline Drive. The Level 2 screening process highlighted significant constructability issues; thus, the alternative of extending the runway 500 feet to the south was eliminated from further consideration. A summary of this alternative is provided in **Table 6-1**.

6.1.4 Alternative 4 – Construct a New Runway on a New Alignment

This alternative would construct a new 3,000-foot runway on a new alignment (Runway 2-20), which is rotated approximately 10 degrees clockwise from the south end of Runway 1-19 **(Appendix A, Exhibit 5).** This alternative would include the following improvements/actions:

- Construct a new 3,000-foot runway on a new alignment (2-20)
- Construct a new parallel taxiway (and connectors)
- Construct taxiways to connect existing airport infrastructure to the new runway
- Acquire 42 acres of land for the new runway, RPZ, and realign Rose Street and Skyline Drive
- Construct a new storm water management system for the new airfield pavements
- Install new airport electrical equipment (lighting, electrical, Precision Approach Path Indicator Lights, etc.)

Level 1 Screening. This alternative would satisfy the Purpose and Need, as it provides additional runway length at X23 that would reduce aircraft weight restrictions and allow a broader range of General Aviation aircraft to use the airport.

Level 2 Screening. Moderate operational impacts, constructability issues, and acquisition actions are anticipated. No significant environmental impacts are anticipated.

Construction – This alternative would require the demolition of the existing runway and associated taxiways. Three hangars at the southern end of the airport would need to be demolished or relocated since they would penetrate Part 77 obstruction surfaces.[14] Major grading would be required throughout the project site to create proper elevations, grades, and slopes for the new runway profile. A complete new runway and parallel taxiway, along with taxiways to connect the new runway to the existing infrastructure, would be constructed. A complete storm water management system, including conveyance, routing, and detention would be required for the new airfield pavements. All new airfield electrical equipment would be required, including but not limited to airfield cabling, conduit, lighting, and Precision Approach Path Indicator Lights.

Operations. The construction of this alternative would result in significant operational impacts to X23; in order to demolish the existing runway and build the new runway, the airport would be fully closed for a period of 4 to 6 months.

Land Acquisition and Relocations – This alternative would require approximately 46 acres of land (affecting 14 different landowners) be acquired for the newly aligned runway and taxiway extensions, RPZ, Skyline Drive relocation, and Rose Street relocation. Of the 46 acres, approximately 39.68 acres would be for airport use, 2.17 acres for Rose Street relocation, and 4.15 acres for Skyline Drive relocation. This alternative would displace 5 residences and 6 additional permanent structures.

Roadway Impacts/Relocations – This alternative would require the removal of 4,700 feet of existing roadway and the construction of 6,800 feet of new roadway in order to adequately relocate Rose

[14] 14 CFR Part 77 defines a series of three dimensional surfaces that should be kept clear for the "Safe, Efficient Use, and Preservation of the Navigable Airspace."

Street and Skyline Drive. Both roadways would be constructed/installed on new alignments prior to the demolition of the existing roadways.

Aircraft Flight Path or Profile Changes – The new runway alignment would align the new approach profiles approximately 100 and 120 feet over two remaining residences located northeast of the new runway end (4 other residences, two to the northeast and two to the southwest of the new runway, would be acquired for project development).

Wetlands – The runway extension and the relocation of portions of Rose Street and Skyline Drive would not generate impacts to wetlands.

Historic/Archeological Resources – The proposed alternative would not impact any known or recorded historic or archeological resources.

Conclusion. This alternative requires acquisition of 46 acres of land over 15 parcels, the displacement of 5 residences, removal of an additional 6 permanent structures, removal and relocation of 3 aircraft storage hangars, demolition of 4,700 feet of existing roadway, the installation of 6,800 feet of new roadway in order to relocate Rose Street and Skyline Drive, and 4 to 6 months of airport closure. The Level 2 screening process highlighted significant constructability issues and operational impacts; thus, the alternative of constructing a new runway on a new alignment was eliminated from further consideration. A summary of this alternative is provided in **Table 6-1**.

6.2 Alternatives Considered and Retained for Detailed Analysis

Two alternatives are retained beyond the two-level alternatives screening process for further analysis, including the Proposed Project and No Action Alternative. The two-level screening process failed to identify any reasonable alternatives to the Proposed Project that would be substantially different in design or effects. Likewise, the Proposed Project represents the alternative with the least anticipated impacts and identifies areas for further analysis to identify, resolve, and/or mitigate potential conflicts.

6.2.1 Proposed Project – Extend the Runway 35 feet to the South and 465 feet to the North

The Proposed Project is fully detailed in Section 4.2 (see **Appendix A, Exhibit 2)** and depicted on the conditionally-approved X23 ALP (see **Appendix A, Exhibit 3)**.

Level 1 Screening. The Proposed Project would satisfy the Purpose and Need, as it provides additional runway length at X23 that would reduce aircraft weight restrictions and allow a broader range of General Aviation aircraft to use the airport.

Level 2 Screening. Moderate operational impacts are anticipated. No significant environmental impacts are anticipated.

Construction – Construction of the runway extension to the north would require the grading of a hill that currently rises from the edge of East Lake up to the current RSA and the installation of a retaining wall to correct the 27-foot elevation difference between the existing runway 19 end and water edge.[15] The existing stormwater management system would need to be improved to handle the runoff from the new airfield pavement. New airfield electrical equipment, including but not limited to airfield cabling, conduit, and lighting would be required for the extension on each end of the runw0ay.

[15] Per FAA Advisory Circular 150/5300-13A, *Airport Design* (2014)

Operation – To complete the work at both ends of the airport, X23 would be fully closed for a period of 2-4 weeks.

Land Acquisition and Relocations – The Proposed Project would be constructed on existing airport property and would not require the acquisition of any land. No permanent or temporary structures would be impacted as a result of the Proposed Project.

Roadway Impacts/Relocations – The Proposed Project would not cause any road impacts or relocations.

Aircraft Flight Path or Profile Changes – The 465-foot runway extension to the north would lower the approach profile for Runway 19 by 28 feet. Aircraft would be at approximately 131 feet agl on the north side of East Lake at the approximate intersection of the extended runway centerline and Gregory Drive. Aircraft departing to the south on Runway 19 would typically be higher because they would be initiating their takeoff roll 465 feet earlier. The 35-foot runway extension to the south would not change the approach profile to Runway 1 or the altitude of arriving aircraft over Rose Street because of the 35-foot landing threshold displacement. All aircraft departing Runway 1 would initiate their takeoff roll 35 feet earlier, placing them slightly higher than the current departure profile with the exception of some of the larger aircraft that require the longer runway length. The change in the departure profile would vary based on individual aircraft types, weight, and weather, but on average is expected to be no greater than the change associated with the Runway 19 arrival profile.

Wetlands – The runway extension to the north would remain at least 25 feet from any existing wetlands and would not generate any impacts to wetlands that may occur adjacent to but outside of the 25-foot buffer.

Historic/Archeological Resources – The proposed alternative would not impact any known or recorded historic or archeological resources.

Conclusion. As a result of the evaluation process, it is determined that the Proposed Project is adequate to carry forward for full evaluation of potential environmental impacts. The Proposed Project meets the Purpose and Need as defined in Section 5 of this EA. Likewise, no significant constructability issues or operational impacts are anticipated, and the Proposed Project would not result in significant environmental impacts to the resources examined in the alternatives screening process.

(2) Although the No Action alternative does not meet the purpose and need, NEPA, and it's implementing regulations requires consideration of the No Action alternative. The No Action alternative, when compared with other alternatives, enables the identification of the potential environmental impacts of the Proposed Action and alternatives. Describe the consequences of the No Action alternative e.g. what are the operational, safety, efficiency, economic effects, and environmental effects of taking no action.

6.2.2 No Action Alternative

In accordance with CEQ regulations, the No Action Alternative has been retained for detailed analysis in the subsequent chapters of this EA for baseline comparative purposes and to disclose any potential environmental impacts that may occur without implementation of the Proposed Project.

The No Action Alternative would not involve any runway development or construction activities that are associated with the Proposed Project, and the length of Runway 1-19 would remain unchanged. However,

the City would continue to develop terminal area facilities (i.e. aircraft storage hangars) to accommodate existing uses at the airport. Likewise, the City would continue to operate and maintain the existing buildings, hangars, airfield pavements, access roads, stormwater and utility services, and various associated infrastructure. As necessary, the City may also undertake projects to enhance safety and maintain compliance with airport design standards and grant assurances. The No Action Alternative does not meet the Purpose and Need to reduce operational limitations and increase flexibility for aircraft utilizing X23, and both the Umatilla community and X23 would not realize the beneficial economic effects anticipated as a result of implementation of the Proposed Project.

(3) You must provide a summary table depicting the alternatives analysis that compares the Proposed Action, alternatives considered, and the No Action alternative based on the screening criteria discussed in (1) a. through d.

TABLE 6-1
SUMMARY OF TWO-LEVEL ALTERNATIVES ANALYSIS

Screening Level	Screening Criteria	No Action Alternative	Use Other Airports Alternative 1	Other Modes of Transportation Alternative 2	Extend Runway 1-19 South Alternative 3	Construct a New Runway on a New Alignment Alternative 4	Proposed Project
LEVEL 1 Purpose and Need	Reduce aircraft weight limitations imposed by the current runway length and allow a broader range of General Aviation aircraft to use the Umatilla Municipal Airport	No	No	No	Yes	Yes	Yes
Continue to Level 2 Screening?		**Yes**	**No**	**No**	**Yes**	**Yes**	**Yes**
LEVEL 2 Constructability Criteria	Constructability Issues?	No	--	--	Redesign/ reconstruct storm water management system. Major grading though existing roadway right-of-way and significant fill for new runway profile. Utility relocations. Will require 2-4 weeks of full airport closure for construction.	Demo existing runway/taxiway. Major grading required. New runway/taxiways . New electrical. New storm water management system. Will require 4-6 month full airport closure for construction.	Significant fill and grading required. Installation of a retaining wall adjacent to East Lake. Storm water management system improvements. Will require 2-4 weeks of full airport closure for construction.
	Land Acquisition and Residential or Business Relocations Required?	No	--	--	Acquire 26 acres of land. Displace 2 residences and 2 additional permanent structures, and acquire/affect 8 properties.	Acquire 46 acres of land. Displace 5 residences and 6 additional permanent structures, and acquire/affect 15 properties.	No land acquisition required. Acquisition of airspace easements will be investigated.

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	Roadway Impacts or Relocations?	No	--	--	1,900 feet of 24' wide existing roadway to be removed, and 3,500 feet of 24' wide roadway to be constructed	4,700 feet of 24' wide existing roadway to be removed, and 6,800 feet of 24' wide roadway to be constructed	No
LEVEL 2 Operational Criteria	Require Airport Closure?	No	No	No	2 to 4 weeks	4 to 6 months	2 to 4 weeks
LEVEL 2 Environmental Impacts	Aircraft Overflight or approach/ departure profile changes over nearby residences?	No	--	--	Yes. Lower approach profile over Rose Street to the south. Departure elevations to the north may increase for small percent of aircraft, depending on aircraft type, weight, and weather.	Yes. Approach/ departure surfaces realigned over two residences to the northeast. New alignment does not affect any residences to the southwest.	Yes. Lower approach/ departure profile over Gregory Drive across East Lake to the north. Departure elevations to the south may increase for small percent of aircraft, depending on aircraft type, weight, and weather.
	Wetland Impacts?	No	--	--	No	No	No
	Historic and/or Archaeological Resource Impacts?	No	--	--	No	No	No
Retain for detailed analysis in EA?		**Yes**	**No**	**No**	**No**	**No**	**Yes**

SOURCE: GAI/ESA 2018

7. AFFECTED ENVIRONMENT

Succinctly describe the existing conditions in the Proposed Action's *direct impact area* (construction footprint) and airport vicinity (land use and cover, terrain features, level and type of urbanization, biotic resources, noise sensitive sites (residential, churches, schools, parks, recreational facilities, etc.)). This *indirect impact area* should be large enough to include the area within the composite DNL 65 dB noise contour for the Proposed Action and retained alternatives (if any). The discussion of the affected environment should be no longer than is necessary to understand the impacts of the alternatives; data and analyses should be presented in detail commensurate with the importance of the impact. Discuss any actions taken or issues raised by the local community or citizen groups pertinent to the Proposed Action. If not already provided, attach a graphic and recent aerial of the area with the Proposed Action's and retained alternatives direct and indirect impact areas clearly identified.

7.1 Direct and Indirect Impact Study Areas

The direct impact area is associated with the Proposed Project footprint as depicted in **Appendix A, Exhibit 2**; however, analysis of potential direct impacts extends throughout airport property to accommodate stormwater improvements that may be required in the final site design and permitting process. The maximum indirect impact study area defined for the Proposed Project (shown as a yellow rectangle in **Appendix A, Exhibit 2**) is based on a 0.25-mile radius from the airport boundary to accommodate review of potential impacts to wildlife and is likewise inclusive of the runway and taxiway safety zones and the composite DNL 65 dB noise contour. The analysis for most resources considers the potential effects of the Proposed Project within the entire indirect study area but may be further scaled as appropriate to the individual resource.

7.2 Area Characterization

7.2.1 Physical Setting

Existing elevations across airport-owned property range from 80 feet to 135 feet. The eastern runway border is approximately 110 feet in elevation and slopes significantly down grade to an elevation of 80 feet at the normal high-water of East Lake.

7.2.2Level and Type of Urbanization

X23 is generally located in a rural setting, on the eastern outskirts of the City of Umatilla. According to 2017 population estimates from the U.S. Census Bureau, Lake County is 1,157 square miles with 346,017 persons, and the City of Umatilla is 3.1 square miles (of which 0.5 square mile is water) with a population of 3,742.[16] Within the City limits there are a total of 1,870 housing units, 324 companies, and a population density of approximately 1,473 people per square mile (considered low density).

While not located within the study area, two schools (Umatilla Middle School and Umatilla High School) are located approximately 0.4 miles and 0.6 miles northwest of X23, respectively, with an additional three daycare facilities identified within one mile of the airport (**Appendix A, Exhibit 1)**. Playgrounds associated with Gwin Cadwell Park and North Lake Community Park are also located outside of the Study Area but less than one mile from X23.

7.2.2 Aircraft Noise

The 2017 existing condition day/night average sound level (DNL) 65 decibel (dB) and higher noise contours are located almost entirely on X23 property, extending just outside of the airport boundary to the east and west of Runway End 1 and to the east of Runway End 19 directly adjacent to airport property. There are no noise sensitive land uses or sites within the area exposed to aircraft noise levels of DNL 65 dBA or higher. The 2017 existing condition noise contours are depicted in **Appendix A, Exhibit 6**.

Existing aircraft noise levels at X23 (2017) were evaluated using the FAA's Aviation Environmental Design Tool (AEDT) Version 2d. Details on the methods and information used to model existing aircraft noise levels at X23 is provided in **Appendix C**.

7.3 Biotic Resources

Best available data coupled with information collected at site visits was used to describe the affected environment and identify the potential environmental consequences that may occur with implementation of

[16] US Census Bureau. *American Fact Finder* reports for City of Umatilla, FL and Lake County, FL. Accessed February, 2018 at http://www.census.gov

the Proposed Project. A thorough review of publically available resources, prior studies, and known site conditions was conducted to characterize biological resources within the Study Area and to provide comprehensive listing of the potential for species occurrence, including any special status species, such as those listed under the Endangered Species Act. A Florida Natural Areas Inventory Tracking List for those species that may be present within Lake County is provided in **Appendix D.**

A Study Team of biologists and environmental scientists conducted onsite field surveys within the boundaries of the Proposed Project footprint and areas adjacent to it on February 7, 2018; April 3, 2018; and July 10, 11, and 13-15, 2018. These surveys included site-specific delineations of surface waters (i.e. wetlands and other waterbodies), vegetative community identification, habitat assessments / evaluations, historical review, a preliminary special status species review, and a subsequent species-specific survey within the Propose Project footprint. Field surveys were performed in accordance with local, state, and federal guidelines.

7.3.1 Land Use and Cover

Vegetative reviews of the Study Area were conducted during the site assessments, and the upland vegetation and habitat types within the Study Area were identified using the Florida Land Use, Cover, and Forms Classification System (FLUCFCS).[17] Several of the FLUCFCS classifications describe human-dominated landscapes that are generally absent of natural habitat or vegetation communities and are thus best characterized by their use and associated features; otherwise, the dominant plant species composition typically defines the vegetative community type. Wetland and waterbody features identified within the Study Area were classified according to the Cowardin classification system.[18] The vegetative communities and various land uses identified at or adjacent to X23 are detailed in **Appendix A, Exhibit 7** and further described below.

Transportation, Airports (811) – is defined by the active airfield and supporting structures associated with X23. These spaces contain paved surfaces and grassed areas that are regularly mowed and otherwise maintained as free of woody or vertical vegetation. This land use classification is located within the Proposed Project footprint.

Residential, Low Density (110) – is characterized by a relatively small number of homes (typically less than two dwelling units per acre). The residential boundary may be vague and difficult to discern and may include other habitat types such as forests, rangeland, or landscaped areas of ornamental and/or native vegetative cover.

Residential, Rural (118) – is characterized by residential areas that have one unit located on two or more acres. This classification may include other habitat types such as forests, rangeland, or landscaped areas of ornamental and/or native vegetative cover.

Horse Farms (251) – are defined as farms that breed and train horses for sport, including racing, riding, and harness racing. Vegetative cover within this land use classification includes forbs and a variety of field grasses including Bermuda-grass (*Cynodon dactylon*), bahia-grass (*Paspalum notatum*), and crabgrass (*Digitaria spp.*).

Improved Pasture (211) – Land identified under this category has been cleared, tilled, reseeded with specific grass types, and periodically improved with brush control and fertilizer application. Improved pasture communities typically contain non-native grass species that can consist of Bermuda-grass, bahia-

[17] Florida Department of Transportation 1999, *Florida Land Use, Cover, and Forms Classification System Handbook.*
[18] Cowardin, Carter, Golet, and LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*.

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grass, and crabgrass. An improved pasture area that is currently being utilized for hay production is located within the Study Area east of the airport.

Active and Abandoned Citrus Groves (221) – land cover type generally consists of both productive groves and fallow groves lacking regular maintenance and repair, both of which are common in the regional landscape adjacent to X23. Active and abandoned citrus groves may consist of orange (*Citrus* x *sinensis*), tangerine (*Citrus tangerina*), and grapefruit (*Citrus* × *paradisi)* trees, with a dense undergrowth of matted grasses and ruderal plant species that prevent open, sandy, "swimmable" soils (soil structure that allows surface or subsurface movement of wildlife) if the site is not managed. In the abandoned citrus grove, citrus trees are scattered throughout and other vegetative species are also present, including laurel oaks (*Quercus hemisphaerica*), cabbage palms (*Sabal palmetto*), black cherries (*Prunus serotina*), cherry laurels (*Prunus caroliniana*), and bahia grass. Abandoned groves also contain a large amount of nuisance and exotic species that consists of lantana (*Lantana camara*), golden bamboo (*Phyllostachys aurea*), rosary pea (*Abrus precatorius),* guinea-grass (*Panicum maximum*), and rose natal-grass (*Melinis repens*). This land use classification is located within the Proposed Project footprint.

Bamboo Thicket (234) – this classification includes areas dominated by pure stands of non-native bamboo species. The bamboo rhizome system spreads quickly and forms a dense, tangled root system within the first foot below soil surface that tends to preclude establishment of other species. A dense bamboo monoculture is found along the wetland edge of East Lake and within the Proposed Project footprint.

Herbaceous, Dry Prairie (310) – includes upland prairie grasses that occur on non-hydric soils but may be occasionally inundated by water. These grasslands are generally treeless with a variety of upland vegetation types dominated by grasses, sedges, rushes, and other herbaceous species.

Upland Hardwood Forests (420) – are lands that contain a crown canopy with a 66 percent dominance by hardwood tree species. This class is reserved for naturally-generated stands of oaks (*Quercus* spp.), black cherry (*Prunus serotina*), and cherry laurel (*Prunus caroliniana*).

Upland Hardwood – Conifer Mixed (434) – refers to those areas that support a canopy closure of 10 percent or greater, with equal canopy dominance between both conifers and hardwoods. Species observed within this vegetative community at X23 include slash pines (*Pinus elliottii*), live oak (*Quercus virginiana*), cabbage palm, black cherry, grapevine (*Vitus* sp.), saw palmetto (*Serenoa repens*), and broomsedge (*Andropogon virginicus*). This community is observed in low density residential areas within the Proposed Project footprint and in the regional landscape.

Coniferous Plantations (441) – consist almost exclusively of planted pine forests artificially generated by installing seedling stock or seeds. These stands are characterized by high numbers of trees per acre and uniform distribution.

Lakes (520; Lacustrine, Limnetic Unconsolidated Bottom (L1UB) – includes extensive natural freshwater, inland water bodies but excludes manmade reservoirs and stormwater retention features. There are two identified lakes within the Study Area; East Lake is located to the north of the Study Area, and Lake Umatilla is located southwest of the airport. These two lakes are "sinkhole lakes," which are situated within a karst geologic region and do not receive surface water flow from streams or waterways. Lakes that are located within karst topography are groundwater-fed through fractured limestone with some stormwater surface sheet flow over upland areas.

Mixed Wetland Hardwoods (617; Palustrine Forested [PFO]) – Canopy coverage within this classification is typically described as a mixture of hardwoods that are tolerant of hydric conditions. Vegetative species observed within these systems within the Study Area include: cypress (*Taxodium* sp), American elm (*Ulmus*

americana), dahoon holly (*Ilex cassine*), red maple (*Acer rubrum*), button-bush (*Cephalanthus occidentalis*), maidencane (*Panicum hemitomon*), cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis*), swamp fern (*Blechnum serrulatum*), and broomsedge (*Andropogon* spp.).

Freshwater Marshes (641; Palustrine Emergent [PEM]) – Wetlands in this classification are non-forested and are characterized by herbaceous emergent vegetation. Freshwater marshes are non-tidal systems dominated by grasses, sedges, and other emergent hydrophytes. This wetland feature is located to the north of the Proposed Project footprint and consists of the littoral edge of East Lake. Existing vegetation includes cattails (*Typha spp*.), shield fern (*Thelypteris kunthii*), Virginia chain fern (*Woodwardia virginica*), sedge (*Cyperus spp*.), elderberry (*Sambucus canadensis*), Peruvian primrose willow *(Ludwigia peruviana*), and sporadic Carolina willow (*Salix caroliniana*).

7.3.2 Jurisdictional Wetlands

Wetland surveys within the Study Area identified Jurisdictional Waters of the U.S. (including wetlands) and non-jurisdictional (state) waters. Field delineations of federal and state jurisdictional waterbodies were conducted pursuant to the *U.S. Army Corps of Engineers Wetland Delineation Manual* (1987) and the state methodology (Chapter 62-340, Florida Administrative Code [FAC]). One wetland feature and one waterbody (East Lake) are located within the Study Area but outside of the Proposed Project footprint (**Appendix A, Exhibit 2**).

The wetland is an emergent wetland located outside of but adjacent to the Proposed Project footprint to the north in the littoral zone of East Lake. This wetland supports water-dependent wildlife species that could utilize the area for nesting and roosting habitat. The wetland area is dominated by nuisance and undesirable vegetative species including cattails and Peruvian primrose willow. Beneficial native species also identified include Florida shield fern (*Dryopteris ludoviciana*), various sedges (*Cyperus* spp.), pennywort (*Hydrocotyle umbellata*), water hyssop (*Bacopa monnieri*), elderberry (*Sambucus nigra*), and Carolina willow (*Salix carolinana*).

7.3.3 Wildlife

7.3.3.1 Common Wildlife

Birds, mammals, reptiles, amphibians, and invertebrates considered relatively common within the vicinity of the airport include those generally associated with and tolerant of human presence and a manipulated rural landscape. Characteristic wildlife found in the vicinity of X23 includes small- to medium-sized mammals, such as rabbits, raccoons, opossum, armadillo, squirrels, native and nonnative anoles, and rodents; predatory animals such as coyotes, fox, and hawks; and various bird guilds including doves, crows, sparrows, starlings, finches, and swallows. Common bird species including blue jays, Northern cardinal, mourning doves, common grackles, mocking birds, cat birds, and meadow larks were observed in the Study Area. This observation included several resident species, incidental seasonal visitors or migrants, and species attracted to developed or disturbed habitats.

7.3.3.2 Special Status Species

Prior to conducting field visits, a literature search was performed in order to evaluate the potential presence of any protected species and/or their critical habitats within or adjacent to the Proposed Project area. General literature referenced included:

- Florida Fish and Wildlife Conservation Commission (FWC) *List of Florida's Endangered Wildlife Species* (68A-27.003 FAC) and *Species of Special Concern* (68A-27.005 FAC)
- FWC *Florida's Imperiled Species Management Plan* (2016)

- Florida Department of Agriculture and Consumer Services *List of Florida's Endangered Plant Species* (5B-40.0055 FAC) (2018)
- U.S. Fish and Wildlife Service (USFWS) *Endangered & Threatened Wildlife and Plants* 50 CFR 17.11 and 17.12. (2018) and *Critical Habitat Mapper* website
- FWC Bald Eagle Nest Locator
- Various USFWS, FFWCC, and Florida Natural Areas Inventory listed species occurrence data

A list of special status species with potential to occur within the vicinity of X23 is identified in **Appendix D**. Special status species having the potential to occur within the Study Area were identified based on the habitat types and soils, which were field-verified during the site assessments. The onsite species assessments and surveys performed in relation to the Proposed Project included:

- Initial habitat assessments and ground-truthing using current aerial photography and existing land use data.
- Review of upland and wetland habitat quality, including potential wildlife utilization.
- Surveys for protected plant and wildlife species, per relevant guidance.

In addition, the following species-specific surveys were completed:

- Florida scrub-jay – survey conducted July 10 – 15, 2018, following USFWS-approved survey guidelines (2007).
- Gopher tortoise – surveys conducted April 3, 2018, per FWC-approved gopher tortoise management guidelines (2017).
- Sand skink and blue-tail mole skink – pedestrian surveys conducted February 7, 2018, and April 3, 2018, following USFWS approved methodology.

Based on field observations, site conditions, and species-specific habitat requirements, the following special status species have some potential to occur in the Study Area:

Sand skink (*Neoseps reynoldsi*) and bluetail mole skink (*Eumeces egregius lividus*) – Federal and State listed as Threatened.

Sand and bluetail mole skinks are endemic to xeric habitats found along Central Florida sand ridges and remnant coastal dunes. Habitat for this species includes rosemary scrub, scrubby flatwoods, sand pine and oak scrubs, and turkey oak ridge. The Florida sand skink is only found in seven Central Florida counties: Osceola, Polk, Lake, Highlands, Putnam, Orange, and Marion. Upland portions of north Lake County are included within the USFWS Sand and Blue-tailed Mole Skinks Consultation Area, and the Proposed Project is within the consultation area. Sand skinks are a "sand–swimming" small, slender, grey-to-light brown lizard that can reach a length of five inches.

Florida Scrub Jay (*Aphelocoma coerulescens*) – Federally listed as Threatened.

Florida scrub jay is the only species of bird that is unique to Florida. Scrub-jays inhabit sand pine and xeric-oak scrub and scrubby flatwoods, which occur in some of the highest and driest areas of the state. Because of the loss of this habitat across the state, scrub-jays have adapted to inhabit abandoned citrus groves that have become overgrown with oak and other opportunistic plant species.

Eastern indigo snake (*Drymarchon couperi*) – Federally listed as Threatened.

The Eeastern indigo snake is glossy, blue-black in color and may reach a length of 8.5 feet. A wide variety of habitats are utilized by this species; however, they are more greatly associated with xeric habitat types. In more northerly portions of its range, the Eastern indigo snake occupies sandhills during the winter using gopher tortoise burrows as a retreat from cold temperatures. During the warmer months, snakes move to

nearby wetland systems to forage. Appropriate Eastern indigo snake habitat exists within the Study Area, including gopher tortoise (*Gopherus Polyphemus*) burrows.

Wood Stork (*Mycteria americana*) – Federally listed as Threatened.

Wood storks are large, bald-headed wading birds. Wood stork habitat includes freshwater and estuarine wetlands, and they primarily nest in cypress or mangrove swamps. The stork feeds in freshwater marshes, narrow tidal creeks, or flooded tidal pools.

American Alligator (*Alligator mississippiensis*) – Federally listed as Threatened due to similarity of appearance with the federally listed American crocodile (*Crocodylus acutus*).

Wetlands within the Study Area provide potential habitat for the American alligator.

Bald Eagle (*Haliaeetus leucocephalus*) – Federally protected by the Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, and state and federal management plans, which dictate that activities beyond 660 feet from an eagle nest should not disturb the nest.

Gopher Tortoise (*Gopherus polyphemus*) – Federal Candidate Species / State-listed Threatened[19]

Gopher tortoises are long-lived reptiles that occupy upland habitat throughout Florida including forests, pastures, and other open areas. The gopher tortoise is known for excavating deep burrows that are shared by many other species of animals, including the Eastern indigo snake.

Florida Burrowing Owl (*Athene cunicularia*) – State listed as Threatened. The Migratory Bird Treaty Act and FAC 68A-16 prohibit the take of birds, nests, or eggs.

Florida burrowing owl inhabit high, sparsely vegetated, sandy land and ruderal areas.

8. ENVIRONMENTAL CONSEQUENCES –IMPACT CATEGORIES

Environmental impact categories that may be relevant to FAA actions are identified below in sections (1) through (14). Construction and secondary (induced) impacts should be addressed within the relevant environmental impact category. FAA-specific requirements for assessing impacts are highlighted in FAA Order 1050.1F, Appendix B *Federal Aviation Administration Requirements for Assessing Impacts Related to Noise and Noise-Compatible Land Use and Section 4(f) of the Department of Transportation Act (49 U.S.C. § 303).* Methodologies for conducting the analyses are discussed in detail in the 1050.1F Desk Reference. The latest FAA-approved models must be used for both air quality and noise analysis. A list of approved models for each type of analysis is available in the 1050.1F Desk Reference.
Note: *The Desk Reference may be cited only as a reference for the methodologies and processes it contains, and may not be cited as the source of requirements under laws, regulations, Executive Orders, DOT or FAA directives, or other authorities. It further notes that you should cite the original source when citing requirements from laws, regulations, or other authorities*.

FAA Order 1050.1F, paragraph 4-3.3, Significance Thresholds and Exhibit 4-1, provide a significance determination table for the Proposed Action and retained alternatives (if any) based on the analysis in sections (1) through (14) below. Note: *Quantitative significance thresholds do not exist for all impact categories; however, consistent with the CEQ Regulations, the FAA has identified factors that should be*

[19] East of the Tombigbee River (in Alabama, Mississippi, and Louisiana), the gopher tortoise is a Candidate Species under the Endangered Species Act. Candidate Species have no statutory protection under the Endangered Species Act and a federal determination is not required. However, the USFWS encourages cooperative conservation efforts for these species because they are, by definition, species that may warrant future protection under the Endangered Species Act.

considered in evaluating the context and intensity of potential environmental impacts.

*******IMPORTANT*******

Environmental impacts for the following categories must be calculated for the year of project implementation and the planning horizon year in this EA Form. The implementation year represents the first year in which the Proposed Action would be fully operational. The planning horizon year typically represents the implementation year plus five years. Sometimes if appropriate due to project phasing or if requested by a reviewing agency, impact analysis may need to be conducted for intermediate years. Coordinate with an FAA ORL-ADO environmental specialist before conducting an intermediate year impact analysis.

Table 8-1
Significance Determination

Environmental Impact Category	FAA Significance Thresholds[20]	Summary of Findings
Air Quality	*The action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the Environmental Protection Agency under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations*.	The Proposed Project would not exceed federal thresholds indicating a significant impact.
Biological Resources (including fish, wildlife, and plants)	*The U.S. Fish and Wildlife Service or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species, or would result in the destruction or adverse modification of federally designated critical habitat.* The FAA has not established a significance threshold for non-listed species.	The Proposed Project would not exceed federal thresholds indicating a significant impact.
Climate	The FAA has not established a significance threshold for Climate.	There are no FAA significance thresholds applicable to the Proposed Project for Climate.
Costal Resources	The FAA has not established a significance threshold for Coastal Resources.	The Proposed Project would not exceed any thresholds indicating a significant impact.
DOT Section 4(f)	*The action involves more than a minimal physical use of a Section 4(f) resource or constitutes a "constructive use" based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource*. Resources that are protected by Section 4(f) are publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance; and publicly or privately owned land from an historic site of national, state, or local significance. FAA defines a "Substantial Impairment" to occur when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished.	The Proposed Project would not exceed FAA thresholds indicating a significant impact.
Farmlands	*The total combined score on Form AD-1006, "Farmland Conversion Impact Rating," ranges between 200 and 260 points*.	The Proposed Project would not exceed FAA thresholds indicating a significant impact.
Hazardous Materials, Pollution Prevention and Solid Waste	The FAA has not established a significance threshold for Hazardous Materials, Solid Waste, and Pollution Prevention.	The Proposed Project would not exceed any thresholds indicating a significant impact.
Historical, Architectural, Archaeological, and Cultural Resources	The FAA has not established a significance threshold for Historical, Architectural, Archeological, and Cultural Resources.	The Proposed Project would not exceed any thresholds indicating a significant impact.
Land Use	The FAA has not established a significance threshold for Land Use.	The Proposed Project would not exceed any thresholds indicating a significant impact.

[20] Italicized text indicates thresholds identified in FAA Order 1050.1F and/or Order 5050.4B.

Natural Resources and Energy Supply	The FAA has not established a significance threshold for Natural Resources and Energy Supply.	The Proposed Project would not exceed any thresholds indicating a significant impact.
Noise and Noise Compatible Land Uses	*The action would increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.* For example, an increase from DNL 65.5 dB to 67 dB is considered a significant impact, as is an increase from DNL 63.5 dB to 65 dB.	The Proposed Project would not exceed FAA thresholds indicating a significant impact.
Socioeconomic, Environmental Justice, Children's Health Safety	The FAA has not established a significance threshold for Socioeconomics.	The Proposed Project would not exceed any thresholds indicating a significant impact.
Environmental Justice	The FAA has not established a significance threshold for Environmental Justice.	The Proposed Project would not exceed any thresholds indicating a significant impact.
Children's Environmental Health and Safety Risks	The FAA has not established a significance threshold for Children's Environmental Health and Safety Risks.	The Proposed Project would not exceed any thresholds indicating a significant impact.
Surface Transportation	The FAA has not established a significance threshold for. However, substantial impacts would occur if an action would degrade the Level-of-Service at any off-airport roadways or intersections below unacceptable levels.	The Proposed Project would not exceed any thresholds indicating a significant impact.
Light Emissions	The FAA has not established a significance threshold for Light Emissions.	The Proposed Project would not exceed any thresholds indicating a significant impact.
Visual Effects	The FAA has not established a significance threshold for Visual Resources / Visual Character.	The Proposed Project would not exceed any thresholds indicating a significant impact.
Wetlands	*The action would:* *1. Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;* *2. Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected;* *3. Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public);* *4. Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands;* *5. Promote development of secondary activities or services that would cause the circumstances listed above to occur; or* *6. Be inconsistent with applicable state wetland strategies*.	Impacts to jurisdictional wetlands and waterbodies are not anticipated; therefore the Proposed Project would not exceed any federal thresholds indicating a significant impact.
Floodplains	*The action would cause notable adverse impacts on natural and beneficial floodplain values*. Natural and beneficial floodplain values are defined in Paragraph 4.k of DOT Order 5650.2, *Floodplain Management and Protection*	The Proposed Project would not exceed established thresholds indicating a significant impact.
Surface Water Resources	*The action would:* *1. Exceed water quality standards established by federal, state, local, and tribal regulatory agencies; or* *2. Contaminate public drinking water supply such that public health may be adversely affected.*	The Proposed Project would not exceed established thresholds indicating a significant impact.
Ground Water Resources	*The action would:* *1. Exceed groundwater quality standards established by federal, state, local, and tribal regulatory agencies; or* *2. Contaminate an aquifer used for public water supply such that public health may be adversely affected.*	The Proposed Project would not exceed established thresholds indicating a significant impact.
Wild and Scenic Rivers	The FAA has not established a significance threshold for Wild and Scenic Rivers.	The Proposed Project would not affect wild and scenic rivers and therefore has no effect on this resource..

(1) AIR QUALITY

The FAA has a responsibility under NEPA to include in its EA's sufficient analysis to disclose the extent of a project's impact on the attainment and maintenance of the National Ambient Air Quality Standards (NAAQS) and any applicable state air quality standards. Thus, a project's impact on air quality is assessed by evaluating whether it would cause a new violation of a NAAQS or contribute to a new violation in a manner that would increase the frequency or severity of the new violation. Very small projects sometimes can be evaluated qualitatively or by comparison to a previous project for which a quantitative air quality analysis is available. However, if a project requires the preparation of an EA, it is likely that a quantitative, project-specific air quality assessment would be needed. This can be accomplished by first identifying the emissions sources associated with a project, and then estimating the emissions for each retained alternative. Knowing the emissions may help to characterize a project's impact for the EA. The FAA's *Air Quality Handbook* provides information on how to conduct an air quality analysis.
https://www.faa.gov/regulations_policies/policy_guidance/envir_policy/airquality_handbook/

(a) Compared to the No Action alternative, will the Proposed Action or any of the retained alternatives cause or create a reasonably foreseeable increase in air emissions due to implementation? If the action will not cause a reasonably foreseeable emission increase, a *qualitative* air quality assessment is justifiable for disclosure purposes under NEPA. Provide an explanation of the conditions and rationale upon which this finding is based along with any supporting data, reasoning and/or justification. The assessment should explain how or why implementation of the Proposed Action or any of the retained alternatives will not cause or create a reasonably foreseeable increase in air emissions. **Note:** *Examples of projects and actions that will likely cause or create a reasonably foreseeable increase in emissions include those that will cause or create an increase in aircraft operations and/or ground access vehicle trips. Other projects such as runway/taxiway improvements, roadway modifications, and/or parking facility expansions, may cause or create reasonably foreseeable increases in emissions by changing aircraft and vehicle travel patterns. By comparison, examples of projects and actions that will not likely cause or create increases in emissions include land acquisition programs or the upgrading of airfield lighting systems.*

Discuss the potential for a reasonably foreseeable increase in air emissions:

The implementation of the Proposed Project would result in negligible increases in air emissions as a result of operation of construction vehicles and future induced aircraft operations. In general, combustion emissions and fugitive dust would produce localized, short-term elevated air pollutant concentrations, which would disperse quickly in the ambient environment and are not expected to result in any long-term impacts to the air quality in Lake County.

Under the No Action Alternative, the sources of air emissions associated with the airport would remain relatively the same as existing conditions, with a 0.75 percent increase in activity predicted each year for the next 15 years and beyond (see **Section 4.3, Table 4-1**).[21] The Proposed Project is anticipated to increase the number of annual aircraft operations at X23 over the No Action Alternative by 232 (or 4 percent) in 2025. The Proposed Project is projected to induce an average of 2 additional aircraft flying in and out of X23 per week throughout a calendar year.

The principal air quality concerns during construction activities would be temporary emissions from material stockpiles and runway, taxiway, and road paving as well as fugitive dust emissions and mobile emissions from construction vehicles, equipment, and private automobiles used to access the Proposed Project area. Construction effects would be temporary, lasting only for the duration of construction and would affect only the immediate vicinity of the construction site and access routes to and from the airport. Emissions from

[21] FDOT General Aviation Operations Forecast

fugitive dust would be minimized by the use of practices that comply with *FAA Standards for Specifying Construction of Airports* (FAA AC 150/5370-10H, 2018).

(b) Is the Proposed Action located in a nonattainment or maintenance area for any of the NAAQS established under the Clean Air Act? If the Proposed Project is in a nonattainment or maintenance area, identify for what pollutant(s), and do not complete this EA Form without first contacting an ORL-ADO EPS for further guidance. **Note:** *To review the current list of areas designated nonattainment, see the U.S. Environmental Protection Agency reference book, The Green Book Nonattainment Areas for Criteria Pollutants at* www.epa.gov/oaqps001/greenbk/.

Document area status:

Lake County is currently classified as in attainment for all criteria pollutants.[22]

(c) If the action is located in an attainment area and will cause a reasonably foreseeable emission increase, you must prepare an emissions inventory for NAAQS priority pollutants and Green House Gases (GHG's) and disclose the results. You must contact an ORL-ADO EPS before conducting an air quality analysis. **Note:** *As the Aviation Emissions and Air Quality Handbook explains, there are different types or components of an air quality analysis that can be undertaken depending on project/action type, the change(s) to the emission sources affected, and other relevant factors. There is no single, universal criterion for determining what type of analysis is appropriate for FAA-supported projects or actions. As an aid in selecting the appropriate air quality assessment methodology, see Figure 4-5 (Air Quality Assessment Examples) in the Aviation Emissions and Air Quality Handbook. Figure 4-5 identifies the types of air quality analyses (i.e., emissions inventory, dispersion modeling, etc.) that may be appropriate for FAA-supported projects and actions. Listed by project/action type, each assessment method is generally symbolized as High, Medium or Low in terms of the likely applicability of the analysis to the project/action type. Review the Aviation Emissions and Air Quality Handbook to understand how to prepare the analysis (including selecting the analysis years, identifying the emission types and emission sources of interest, obtaining and/or developing the necessary input data, and running the appropriate models and/or supplemental analyses.*

******IMPORTANT******

As of May 29, 2015, the FAA accepted modeling tool for predicting air emissions is the Aviation Environmental Design Tool (AEDT). The most current version of this model, currently AEDT2b *must* be used for any new analysis started after that date. Please contact an ORL-ADO Environmental Specialist if you have any questions regarding the emissions analysis or the current version of the model to use in your analysis.

Provide the emissions inventory for the No Action Alternative, Proposed Action and Retained Alternatives for the EA Study Years including both direct and indirect emissions that are reasonably foreseeable which includes operational as well as construction emissions.

[22] Environmental Protection Agency. *Currently Designated Nonattainment Areas for All Criteria Pollutants (as of January 31, 2018)*. https://www3.epa.gov/airquality/greenbook/anayo_fl.html.

According to FAA Orders 5050.4B, an air emissions inventory must be performed if annual enplanements exceed 1.3 million passengers and/or General Aviation annual operations are greater than 180,000. X23 is not expected to exceed 5,620 operations by 2025. Therefore, due to the low level of current and anticipated activity at X23, a detailed analysis of air quality impacts is not required. Section 8.1(a) presents a qualitative assessment of anticipated air emissions associated with the Proposed Project and No Action Alternative.

Discuss the results of the emissions inventory and make a determination if the impacts are considered significant.

No emissions inventory was performed.

The Proposed Project would not exceed any air quality threshold indicating a significant impact (**Table 8-1**). Minor, temporary construction activities and negligible levels of induced operations are not anticipated to generate a substantial amount of criteria air pollutants and thus are expected to have minimal effect on air quality.

(2) BIOLOGICAL RESOURCES (INCLUDING FISH, WILDLIFE, AND PLANTS)

(a) Using the Florida Land Use and Cover Classification System (FLUCCS), provide an assessment of the Proposed Action's and retained alternatives (if any) direct impact area (construction footprint) and indirect impact area (area indirectly impacted through facility lighting, noise contours, air emissions, and changes to water quality or quantity caused by construction equipment or facility operations). Attach a figure and table (for direct and indirect impact areas) with acreages per land use cover type to assist in the explanation.

Quantitatively discuss potential direct and indirect impacts:

Impacts to biological resources would be confined to the Proposed Project footprint and within existing airport property, and the Proposed Project would not directly or indirectly affect the adjacent study area. Land within that area is classified as airports, abandoned citrus grove, bamboo thickets, or freshwater marsh (**Appendix A, Exhibit 7**). All land within the Proposed Project footprint is disturbed, meaning it has been previously cleared of native vegetation and is dominated by non-native and ruderal vegetative species.

It is anticipated that the extent of the existing and future runway and associated safety areas may be directly or indirectly impacted during construction activities as construction equipment is used and transported throughout the airport and as stormwater management features are modified. These impacts may temporarily affect up to 24.6 acres of previously disturbed land on airport property.

The runway and taxiway extension will convert 1.12 acres of grassed airport property to pavement. 1.7 acres of abandoned citrus grove and a portion of the 0.3 acres of bamboo thicket will be cleared, grubbed, and converted to turf grass with ongoing maintenance per FAA safety requirements, including mowing and herbicide application/nuisance species control as needed. The remaining bamboo thicket and approximately 0.2 acres of freshwater marsh habitat will be trimmed as needed to maintain adequate vegetation height and sporadically treated to control nuisance species (**Table 8-2**). The FLUCFCS Map is provided as **Exhibit 7 in Appendix A**.

Table 8-2
Vegetation Community Impacts

FLUCFCS Classifications	FLUCFCS Classification Code	Proposed Project Impact (acres)
Abandoned Citrus Groves	221	1.7
Upland – Bamboo Thicket	234	0.3
Freshwater Marshes	641	0
Transportation - Airports	811	24.6
	Total	26.8

Source: Environmental Science Associates, 2018.

(b) Describe the potential for the Proposed Action and retained alternatives (if any) to result in long-term or permanent loss of plant or wildlife species, to directly or indirectly affect plant communities, and/or involve the displacement of wildlife. Cross reference Category (14) Water Resources, if jurisdictional water bodies or wetlands are present.

Quantitatively discuss potential direct and indirect impacts:

The Proposed Project would result in a permanent alteration of approximately 3.5 acres of previously disturbed upland area, but will not result in loss of plant or wildlife species. Affects to plant communities are described in Section 8(a).

The Proposed Project is not anticipated to impact jurisdictional wetlands or waterbodies. While marsh habitat may be periodically maintained to control growth of nuisance and exotic vegetation, no dredge, fill, or conversion of wetlands will occur. A 25-ft buffer will be maintained between construction, clearing, and grubbing activities and delineated wetland boundaries to meet regulatory criteria and assurance of no secondary impacts (see Section 8.14).

No direct impacts to special status or common wildlife species observed onsite are anticipated; however, various species (such as rabbits, possums, raccoons, and other mobile wildlife) may relocate to nearby suitable upland and wetland habitats to avoid disturbance from construction activities and additional aircraft operations and in response to the removal of vegetation and habitat.

(c) Using U.S. Fish and Wildlife (FWS) and National Marine Fisheries Service (NMFS) flora and fauna species lists for the Action vicinity, describe the potential for the Proposed Action and retained alternatives (if any) to directly or indirectly affect any federally listed or candidate species of flora or fauna or designated critical habitat protected under the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), or affect Essential Fish Habitat (EFH) identified under the Magnuson-Stevens Act. You must attach records of consultation with FWS and NMFS, as appropriate, in an appendix to the EA. **Note:** *If the Proposed Action and retained alternatives (if any) would potentially affect federally protected or candidate species, or designated critical habitat,* ***do not complete this EA*** *and immediately contact an FAA ORL-ADO EPS.*

Quantitatively discuss the potential for the Proposed Action and retained alternatives to directly or indirectly impact federally-protected species and designated critical habitat:

The comprehensive analysis (including database review and onsite surveys of the Study Area) performed to ascertain the potential occurrence of special status and common species within the Study Area is

described in Section 7.2. The determination for the likelihood of occurrence of special status species within the Study Area and the potential for the Proposed Project to affect each species is provided below.

Sand Skink and Bluetail Mole Skink (Federally Listed – Threatened)

Pedestrian surveys were performed in accordance with *USFWS Skink Survey Protocol* (2011) by ESA scientists on February 7, 2018, and April 3, 2018. The area evaluated included 2.1 acres of potential habitat within the Proposed Project footprint and 19.6 acres adjacent to the action area within X23 property boundary. Scientists sought visual confirmation of skink presence through observation of sinusoidal skink trails on the surface of open, sandy areas. The following mapped suitable habitat areas were eliminated from consideration:

- Existing pavement (airport runways, taxiways, and parking);
- High soil disturbance (fill, soil grading);
- Dense grass that make the soil not swimmable (sodded, maintained/mowed ROFA and TOFA)
- Abandoned citrus groves (dense matted grass; legacy effects from historically intense agriculture systems)
- Bamboo thicket with dense sub-surface rhizomes and rooting

Minimal open, sandy “swimmable soils” and no skink trails were observed during the site visits. Based on the site conditions, it is unlikely that skinks occur within or adjacent to the Proposed Project. USFWS North Florida Ecological Service Office guidance to other transportation entities, including FDOT, recommends that further investigation (i.e., cover board surveys) for skink utilization and potential emigration are not necessary within active citrus groves or fallow groves with no adjacent natural scrub habitat once intensive agricultural activities are discontinued. The land on which the airport was constructed, and all land surrounding the airport, was historically citrus groves. There are no native soils or scrub communities in areas surrounding the Proposed Project area that have not been adversely impacted by decades of intense citrus agricultural practices, thus reducing the likelihood that skinks could re-populate the fallow grove habitat within airport property.

Due to lack of observed habitat and "swimmable soils," ESA scientists determined that there is no appropriate skink habitat within the Proposed Project limits. The USFWS concurred with the conclusion that skinks are unlikely to inhabit areas within airport property and that the Proposed Project will have “**No Effect**” on the sand or bluetail mole skink (August 17, 2018; **Appendix D)**.

Florida Scrub Jay (Federally Listed – Threatened)

Based on initial field reconnaissance and FLUCFCS data, scrub-jay call play stations were established within the abandoned citrus grove area of the airport property (FLUCFCS 211), including the Proposed Project footprint (**Appendix A, Exhibit 8**). This area includes 9.1 acres, of which 1.6 acres is located within the Proposed Project footprint. Although this abandoned citrus grove was originally classified as potential Type III habitat (upland or seasonally-dry wetland within 0.25 mile of Type I or II Habitat), over the course of the survey it was determined that neither Type I Habitat (upland with over 15 percent scrub oak cover) nor Type II Habitat (any presence of scrub oak) occur within a quarter-mile range from the Proposed Project.

Scrub jay call stations were located, flagged, and numbered in the field to sub-meter accuracy using a Trimble GeoXT Global Positioning System (GPS) receiver. All call play stations were performed according to USFWS

and FWC accepted methodology.[23] The survey was performed for five days (July 10th, 11th, and 13th – 15th, 2018) in mid-summer when young-of-the-year are independent but still distinguishable by plumage. The surveys were carried out on calm, clear days beginning either one hour after sunrise to 11:00 AM or after 3:00 PM to just before sunset.

The species-specific survey for Florida scrub-jay did not result in any observations of scrub jay presence within the Proposed Project or on adjacent airport property.[24] After playing territorial scrub-jay calls, and receiving zero defense response by a resident breeding pair, their "helper" adult male offspring, or juveniles of the year, it is concluded that the abandoned citrus grove within the survey area is not being utilized as scrub-jay breeding or foraging habitat. Furthermore, no scrub oaks were noted on airport property or within the Study Area; thus, no viable (Type I, II, or III) scrub jay habitat exists within the Action Area. Based on these observations, the Proposed Project is determined to have "**No Effect**" on scrub jays or their habitat (**Appendix D**).

Eastern Indigo Snake (Federally Listed – Threatened)

Although five gopher tortoise burrows[25] were observed within the Proposed Project footprint, no xeric habitat exists within the Proposed Project area, and Indigo snakes were not observed during the field reviews and surveys. However, due to the existing gopher tortoise population, conservation measures for the Eastern indigo snake will be implemented prior to site preparation and construction activities in accordance with the *Standard Protection Measures for the Eastern Indigo Snake.*[26] Gopher tortoise burrows potentially impacted by the construction activities will be resurveyed, permitted, and excavated by Authorized Gopher Tortoise Agents in order to relocate recovered tortoises to off-site, long-term conservation areas. Holes, or other refugia where a snake could reside, will also be examined prior to the initiation of construction activities.

Per the *Eastern Indigo Snake Effects Determination Key*,[27] the Proposed Project **"May Affect, but is Not Likely to Adversely Affect"** Eastern indigo snake (**Appendix D**).

Wood stork (Federally Listed – Threatened)

The closest active wood stork colony (Mud Lake) is approximately 16.5 miles east of the Proposed Project; thus, the Study Area is outside the 15-mile Core Foraging Area for wood storks. Likewise, the Proposed Project will not impact any suitable foraging habitat as determined per the *Effect Determination Key for Wood Stork.*[28] The Proposed Project will have "**No Effect**" on the wood stork (**Appendix D**).

American Alligator (Federally Protected for the Similarity of Appearance to the American Crocodile)

No alligators were observed during field observations, and the Proposed Project will not impact wetlands and/or waterbodies. The Proposed Project will have "**No Effect**" on the American alligator, the American crocodile, or their habitat (**Appendix D**).

[23] FWC methodology is adapted from the Florida Game and Fresh Water Fish Commission, *Ecology and Development-related Habitat Requirements of the Florida Scrub Jay*, Nongame Wildlife Technical Report No. 8. USFWS Guidelines are accessible at: *https://www.fws.gov/northflorida/Scrub-Jays/general-survey-guide-082407.htm*

[24] Scrub jay survey field data sheets are available upon request as part of the project file.

[25] East of the Tombigbee River (in Alabama, Mississippi, and Louisiana), the gopher tortoise is a Candidate Species under the Endangered Species Act. Candidate species have no statutory protection under the Endangered Species Act and a Federal determination is not required. However, the USFWS encourages cooperative conservation efforts for these species because they are, by definition, species that may warrant future protection under the Endangered Species Act.

[26] USFWS *Standard Protection Measures for the Easter Indigo Snake* (2013), accessed in December 2018 at: https://www.fws.gov/northflorida/IndigoSnakes/20130812_Eastern_indigo_snake_Standard_Protection_Measures.htm

[27] The Corps of Engineers, Jacksonville District; U. S. Fish and Wildlife Service, North and South Florida Ecological Services Field Offices; and State of Florida (2010) *Eastern Indigo Snake Programmatic Effects Determination Key and Update Addendum*

[28] The Corps of Engineers, Jacksonville District; U. S. Fish and Wildlife Service, Jacksonville Ecological Services Field Office; and State of Florida (2008) *Effect Determination Key for the Wood Stork in Central and North Peninsular Florida.*

Section 7 Consultation

A Biological Assessment (BA) was submitted to the USFWS on 13 February 2019, and USFWS concurrence with special status species effect determinations made pursuant to Title 50 CFR Part 402 was received by FAA on 21 March 2019 (**Appendix D**). The BA determined that the Proposed Project will have "no affect" on the sand skink, bluetail mole skink, Florida scrub jay, wood stork, American alligator and crocodile, bald eagle, and the burrowing owl. In addition, the Proposed Project "may affect, but is not likely to adversely affect" the Eastern indigo snake and gopher tortoise

Conclusions

Thresholds indicating adverse impacts include actions that would jeopardize the continued existence of threatened or endangered species, result in the destruction or adverse modification of federally-designated critical habitat, or have substantial impacts to non-listed species. The Proposed Project would be constructed in previously disturbed airport property with no native, natural habitat and minimal marginal habitat available, and multiple surveys and conservation measures will be implemented. No adverse impacts to special status species or their habitats or substantial loss or fragmentation of native species' habitats or their populations are anticipated.

(d) Using Florida Fish and Wildlife Commission (FWC) flora and fauna species lists for the Action vicinity, describe the potential for the Proposed Action and retained alternatives (if any) to directly or indirectly affect any state-listed species protected in the State of Florida. You must attach records of consultation with state jurisdictional agencies such as the FWC and Florida Department of Environmental Protection (DEP), as appropriate, in an appendix to the EA.

Quantitatively discuss the potential for the Proposed Action and retained alternatives to directly or indirectly impact state-protected species and designated critical habitat:

Gopher Tortoise (State Listed – Threatened)

ESA scientists observed substantial presence of gopher tortoise during field survey events, including the identification of at least 5 burrows within the Proposed Project footprint. Within 90-days prior to construction of the Proposed Project, a FWC-Authorized Agent will conduct a species-specific re-survey covering 100% of potentially suitable gopher tortoise habitat within the Limits of Construction of the Proposed Project, which includes areas for construction equipment access and all laydown areas. In order to safely protect or remove individuals and other organisms that co-inhabit the burrows (e.g., Eastern indigo snake), biologists will use the burrow locations from the updated survey results to develop a tortoise relocation and protection plan. Silt fences will be erected along the Limits of Construction delimiting acceptable equipment access pathways, which will be established no closer than 25 feet from any potentially occupied gopher tortoise burrow. Fencing will prevent damage to individual burrows and keep individual tortoises from wandering into an active construction site. Any burrows that cannot be avoided or properly protected from construction activities will be permitted and relocated to a protected long-term conservation bank per FWC gopher tortoise management guidelines.

Because all tortoises will either be protected from construction activities using exclusionary silt fencing or relocated, the Proposed Project is not likely to have an adverse effect on the gopher tortoise population.

The Proposed Project "**May Affect but is Not Likely to Adversely Affect**" the gopher tortoise (**Appendix D**).

Florida Burrowing Owl – (State Listed – Threatened / Federally Protected Under the Migratory Bird Treaty Act)

Suitable Florida burrowing owl habitat is located within proximity to the Proposed Project area at several locations outside of airport property; however, no burrowing owls or their burrows were observed within the Proposed Project during the various site assessments. As such, it is not anticipated that the burrowing owl will be impacted by the Proposed Project. However, as an added conservation measure, the survey methodology applied to the conduct of the required 100 percent gopher tortoise survey would also locate any burrowing owl burrows that may exist onsite. Should burrows be identified within the Proposed Project footprint, proper FWC permitting and relocation guidelines will be implemented prior to the initiation of construction activities. The Proposed Project will have "**No Effect**" on Florida burrowing owl (**Appendix D**).

(e) Describe the potential for the Proposed Action and retained alternatives (if any) to directly or indirectly affect species protected under the Migratory Bird Act. You must attach a record of consultation with FWS in an appendix to the EA.

Quantitatively discuss the potential impacts:

(Potential effects to Florida Burrowing Owl are discussed in Section 8.2(c).)

Bald Eagle (Federally Protected under Bald and Golden Eagle Act and the Migratory Bird Treaty Act)

Bald eagle nesting habitat does not occur within the Proposed Project footprint. The closest documented nest (LA138) is approximately 2.8 miles southeast of the airport, well beyond the established USFWS National Bald Eagle Management Guideline Protective 660-foot Nest Buffer Protection Area for this nest. Likewise, bald eagle foraging habitat does not occur on airport property. Stormwater management features at X23 are constructed and maintained to reduce the possibility that they would become attractive to wildlife. The on-site swale systems are constructed to move stormwater rapidly from the airfield and are treated and mowed on a regular basis to prevent suitable foraging habitat from establishing. The Proposed Project will have "**No Effect**" to the bald eagle (**Appendix D**).

(f) Discuss any operational, avoidance, minimization or mitigation measures (including construction mitigation measures) that have been considered in the siting of the Proposed Action and retained alternatives (if any) to mitigate impacts to biological resources. Identify all required Federal, state or local permits. ***Note:*** *Analyses for undisturbed areas including water bodies must be conducted in consultation with FWS, other Federal agencies (NMFS, EPA, USACE), and state agencies (DEP, FWC, and water management districts), having expertise on potentially affected biotic resources and their habitats. Federal and state-listed species lists must be consulted and the potential for occurrence in the Proposed Action area must be documented. Include an analysis of construction impacts and measures to avoid and minimize impacts to ensure that this document properly addresses both permanent and temporary, constructed-related impacts on these resources.*

Quantitatively discuss any operational, avoidance, minimization or mitigation measures:

No mitigation measures are required for the Proposed Project as no impacts to jurisdictional wetlands and waterbodies or to federal and state listed wildlife species are anticipated. Protective conservation measures are discussed for Eastern indigo snake, gopher tortoise, and Florida burrowing owl in Sections 8.2(a-c).

(3) CLIMATE

(a) Affected Environment - For airport actions, the study area is defined by the extent of the project changes (i.e., immediate vicinity of the airport) and should reflect the full extent of aircraft movements as part of the project changes. Consult the FAA's Air Quality Handbook for more information on defining the study area. As explained in the 1050.1F Desk Reference, analysis of GHG emissions should be quantitatively assessed in certain circumstances, but otherwise may be qualitatively assessed. Where the analysis is quantitative, the affected environment section for climate should provide the quantitative data for the existing condition, which provides the baseline of existing GHG emissions in the study area. The affected environment section should also discuss the current level of preparedness in the study area with respect to the impacts of climate change. This involves describing current measures that are in place within the study area to adapt to the impacts of climate change (e.g., sea level rise, stronger or more frequent storms, etc.). This discussion should be concise and may be quantitative or qualitative, depending on the nature of the project area.

Describe the current Climate and level of preparedness conditions in the Study Area:

The City of Umatilla has a humid, subtropical climate characterized by hot and humid summers. Although the airport is located 50 miles inland of the Atlantic Ocean and approximately 63 miles east of the Gulf of Mexico, X23 can be affected by the high winds and rain from tropical storms and hurricanes. Lake County receives an average of 53 inches of rain per year, and the average annual high and low temperatures in Lake County are 82.5 and 63 degrees Fahrenheit (^{o}F), respectively. The mean monthly high temperature of 92.3^{o}F occurs in July, while the mean monthly low temperature of 44.7^{o}F occurs in January.

Although stormwater is considered in the planning of this and other onsite improvement projects, the provision of a Stormwater Master Plan or Master Drainage Plan has been determined to be unnecessary at X23 given the lack of impervious surface, distance from a mapped 100-year floodplain, and general rural character of the location. The airport is not disproportionately vulnerable to severe or extreme storm events and thus does not have a specific Disaster Preparedness Plan.

Although the Lake County Comprehensive Plan (2011) recommends the establishment of a formal greenhouse gas (GHG) reduction program, this program has not been initiated to date. The Comprehensive Plan considers a Climate Protection Program, which is a performance-oriented campaign that offers a framework for local governments to reduce GHG emissions, improve air quality, and enhance livability within their communities.

(b) Environmental Consequences - If GHG's and climate are not relevant to the Proposed Action and alternative(s) (i.e., because there would be no GHG emissions), this should be briefly noted and no further analysis is required.

Qualitatively discuss the reasons that the Proposed Action and retained alternatives would not affect GHG's or Climate Change:

Not applicable. As discussed in Section 8.1(a-c), Air Quality, the Proposed Project would negligibly increase the amount of air emissions at X23.

(c) Where the Proposed Action or alternative(s) *would not* result in a net increase in GHG emissions (as indicated by quantitative data or proxy measures such as reduction in fuel burn, delay, or flight operations), a brief statement describing the factual basis for this conclusion is sufficient and no further analysis is required.

Not applicable. As discussed in Section 8.1(a-c), Air Quality, the Proposed Project would negligibly increase the amount of air emissions at X23.

(d) Where the Proposed Action or alternative(s) *would* result in an increase in GHG emissions as *compared* to the No Action alternative for the same study year, the emissions should be assessed either qualitatively or quantitatively using the methodology described in FAA's 1050.1F Desk Reference, Section 3.3.2 (Data Analysis). **Note:** Contact an ORL-ADO EPS prior to undertaking a quantitative analysis.

Explain

An increase in GHG emissions would result from implementation of the Proposed Project, including the combustion of fossil fuels for aircraft, facilities use, user and employee vehicles, and the temporary use of construction equipment. As described in Section 8.1(a), the Proposed Project is anticipated to increase the number of annual aircraft operations at X23 over the No Action Alternative by 232 (or 4 percent) in 2025, which would increase in GHG emissions in the vicinity of X23[29] by approximately 11.1 metric tons of CO_2 annually by 2025 (**Table 8-3**). As described in Section 4.5, the construction phase is anticipated to be temporary and would conclude within approximately 12 months.

(e) Documentation - When CO2e is quantified, the metric tonnes (MT) CO2e results should be provided in a table or similar format that compares the alternatives directly. When fuel burn is computed, the MT CO2 equal to that fuel content should be documented and discussed. See Section 3.3.3 of 1050.1F. **Note:** *There are no significance thresholds for aviation or commercial space launch GHG emissions, nor has the FAA identified specific factors to consider in making a significance determination for GHG emissions. There are currently no accepted methods of determining significance applicable to aviation or commercial space launch projects given the small percentage of emissions they contribute. CEQ has noted that "it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions, as such direct linkage is difficult to isolate and to understand." Accordingly, it is not useful to attempt to determine the significance of such impacts. There is a considerable amount of ongoing scientific research to improve understanding of global climate change and FAA guidance will evolve as the science matures or if new Federal requirements are established.*

Provide a discussion of the analysis including data tables comparing the No Action and retained alternatives for each study year:

GHG emissions derived from aircraft operations are given in **Table 8-3**. Note that, due to the negligible GHG emissions anticipated from the Proposed Action in regards to increased facility operations and user and employee vehicles to support the 4 percent increase in aircraft operations, and because of the small project footprint and the temporary nature of construction equipment, only aircraft emissions were quantified.

Table 8-3
Annual Aircraft Greenhouse Gas Emissions at X23

[29] For further description of area within which GHG was calculated see definition of flight tracks given in **Appendix C**, Section 2.1.4

Scenario	Metric Tons of CO_2e per year
2017 Baseline	138.77
2020	
2020 Proposed Project	142.35
2020 No Action	142.28
2020 Proposed Project - 2020 No Action	0.08
2025	
2025 Proposed Project	158.41
2025 No Action	147.30
2025 Proposed Project - 2025 No Action	11.10

SOURCE: ESA, 2019 - AEDT, 2d.
NOTE: GHG emissions are calculated from aircraft emissions only. Per Appendix C of the FAA Order 1050.1F Desk Reference (2015), GHG estimates include CO_2 produced from fuel consumption calculated by AEDT through the full extents of modeled aircraft flights (flight track information is available in **Appendix C)**.

(f) Reducing Emissions - Reduction of GHG emissions resulting from FAA actions contributes towards the U.S. goal of reducing aviation's impacts on climate. For NEPA reviews of proposed FAA actions that would result in increased emissions of GHGs, consideration should be given to whether there are areas within the scope of a project where such emissions could be reduced. GHG emission reduction can come from measures such as changes to more fuel efficient equipment, delay reductions, use of renewable fuels, and operational changes (e.g., performance-based navigation procedures). However, GHG emission reduction is not mandated and will not be possible in all situations.

Discuss measures to reduce emissions associated with the Proposed Action:

The Proposed Project would result in a negligible increase in GHG at X23. Although emissions from increased aircraft operations at X23 would contribute to the cumulative rise in atmospheric carbon, these contributions are anticipated to be insignificant. There are no known additional measures within the scope of the Proposed Project that would reduce or offset the anticipated GHG emissions.

(g) Climate Adaptation - The environmental consequences section should include a discussion of the extent to which the proposed action or alternatives(s) could be affected by future climate conditions, based on published sources applicable to the study area. For example, a project area's ability to sustain impacts caused by climate changes should be described (e.g., identify current robustness and height of seawalls for coastal airports). This discussion should include any considerations to adapt to forecasted climate change conditions.
Discuss potential climate conditions relevant to the Proposed Action:

X23 is located between 80 to 132 feet above mean sea level, 50-62 miles from the ocean, and is not considered susceptible to the direct effects of sea level rise in the foreseeable future. However, the Central Florida region could encounter changes in rainfall patterns, temperature levels, and tropical storm frequency and intensity. X23 is likely to be able to adapt to changes in rainfall patterns and temperature without a loss of service or substantial impact on its facilities; however, changes in tropical storm frequency and/or intensity over Central Florida could affect structures at X23.

(4) COASTAL RESOURCES

(a) Is the Proposed Action located within the Coastal Barrier Resources System (CBRS), as delineated by the U.S. Fish and Wildlife Service (FWS) Official CBRS maps? If the Proposed Action is located within the CBRS, **do not complete this EA** and immediately contact an FAA ORL-ADO EPS.

Explain:

X23 is not located within the Coastal Barrier Resources System.

(b) The Florida Department of Environmental Protection (DEP), Florida State Clearinghouse, Office of Intergovernmental Programs, will coordinate a consistency review of the Proposed Action under the following authorities: Presidential Executive Order 12372; § 403.061 (42), Florida Statutes; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended. The ORL-ADO EPS must review the Draft EA prior to submittal to the Clearinghouse for consistency review. The Airport Sponsor then submits the Draft EA to the Clearinghouse. Contact the Clearinghouse (850-245-2161) for the required number of copies and format. The Clearinghouse will make a determination of the Proposed Action's consistency with Florida's Coastal Management Program (FCMP) based on information contained in the Draft EA. ***Note:*** *The FCMP consistency review process normally takes 30 to 45 days and is conducted during the public and agency review of the Draft EA. The Clearinghouse will send a consistency determination letter with state comments to the Airport Sponsor. The Airport Sponsor must include a copy of the consistency letter and the Airport Sponsor's responses to any comments received from state agencies in an appendix to the Final EA submitted to the FAA ORL-ADO.*

Ensure that the Proposed Action is consistent with the enforceable policies of the FCMP (http://www.dep.state.fl.us/cmp/Federal/). Acknowledge submittal of the Draft EA to the Clearinghouse for review.

As noted in the *Florida Coastal Management Program Guide*, the entire state of Florida is included within the coastal zone, and the Florida Department of Environmental Protection conducts consistency reviews in coastal counties.[30] Lake County is not designated as a coastal county; however, Green Swamp, located within Lake County, is identified as an Area of Critical State Concern. Areas of Critical State Concern are designated to assist local government planning and protection of resources with statewide and regional importance.

X23 is located 50-62 miles from the ocean and approximately 30 miles from Green Swamp. Due to this distance, as well as the isolated nature of anticipated impacts and commitment to water quality protection (Section 8.15(d)), it is anticipated that the Proposed Project will have no direct or indirect impacts on coastal resources or Areas of Critical State Concern. A coordination letter providing notice of the preparation on this EA was submitted to the Florida State Clearinghouse on November 5, 2018.

(5) DOT SECTION 4(f)

(a) Describe and identify on an attached figure all DOT Section 4(f) resources both on-airport and within the airport's vicinity (or area encompassed by the composite DNL 65 dBA noise contour for the Proposed Action, reasonable alternatives (if any) and No Action alternative). Resources that are protected by Section 4(f) are publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance; and

[30] Florida Department of Environmental Protection, *Florida Coastal Management Program Guide*. 11 October 2017.

publicly or privately owned land from an historic site of national, state, or local significance. Cross-reference Category (11) Noise and Compatible Land Use, as applicable.

Describe 4(f) resources and attach a figure if applicable:

There are no 4(f) resources within the Proposed Project footprint. One publicly-owned park/recreation area was identified within the Study Area (**Appendix A, Exhibit 6**). North Lake Community Park is owned/operated by Lake County and located approximately 0.6 miles northeast of the northern end of Runway 1-19. Amenities at North Lake Community Park include a playground; picnic pavilions; basketball, tennis, and sand volleyball courts; baseball, softball, and multi-use fields; and a walking/jogging trail.

Two additional parks occur outside of the Study Area but within a one-mile radius of X23 (**Appendix A, Exhibit 1**). Guerrant Park is located approximately 0.5 miles southwest of the southern end of Runway 1-19 and includes approximately 17 acres of land that is primarily undeveloped, but provides a boat ramp and fishing pier on Lake Umatilla, a nature trail, and a native vegetation conservation area. Gwin Cadwell Park is located approximately 0.8 miles west of X23, and includes open space and developed recreation amenities such as a playground, basketball court, and recreation building. Additionally, the Pine Meadows Conservation Area and the Ocala National Forest are located approximately 1.5 miles south and 3 miles north of the Study Area, respectively.

There are no properties listed or eligible for listing in the National Register of Historic Places (NRHP) within the Study Area. The nearest historic property listed in the NRHP, the Methodist Episcopal Church South at Umatilla, is located approximately 1 mile west of X23.

(b) Compared to the No Action alternative, would the Proposed Action and retained alternatives (if any) have a direct impact (physical use or "taking") or indirect impact (constructive use) on any of any Section 4(f) sites or facilities? To assess constructive use refer to *"FAR Part 150, Appendix "A", Table 1, Land Use Compatibility With Yearly Day-Night Average Sound Levels"* If **YES**, **do not complete this EA** and contact the FAA ORL-ADO EPS.

Discuss the results of the analysis:

The Proposed Project would not result in a physical use or "taking" (direct impact) of a Section 4(f) resource. Furthermore, the Proposed Project is located entirely within the airport boundary and, although operations may increase 4 percent by 2025 over the No Action Alternative as a result of the Proposed Project, flight paths are not anticipated to change in a way that would cause additional constructive use (indirect impacts) to 4(f) resources in the vicinity of the Study Area.

(6) FARMLANDS--PRIME, UNIQUE OR STATE-SIGNIFICANT FARMLAND

(a) Compared to the No Action alternative does the Proposed Action and retained alternatives (if any) involve the acquisition of Prime, Unique or statewide and locally important farmland, or the conversion/use of these types of farmlands that are protected by the Federal Farmland Protection Policy Act (FPPA)? Contact the Florida Natural Resources Conservation Service (NRCS). For more information see: http://www.nrcs.usda.gov/wps/portal/nrcs/main/fl/soils/

If appropriate, attach record of coordination with the Florida NRCS, including a completed Form AD-1006. ***Note:*** *Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not land used for water storage or urban built-up land. Also, the "Part 523-Farmland Protection Policy Manual" notes that lands identified as "urbanized area" (UA) on Census Bureau maps are not subject to*

the provisions of the FPPA. See https://www.census.gov/geo/maps-data/maps/2010ua.html for Census Bureau maps.

Discuss analysis and add tables and graphics as appropriate:

The entire airport property is located upon land designated by the Natural Resources Conservation Service (NRCS) as Farmland of Unique Importance, defined as Candler sand, 0 to 5 and 5 to 12 percent slopes.[31] Per the NRCS, unique farmland produces high yields of specific high-value crops (e.g., citrus) due to a combination of attributes such as soil quality, climate, and access to markets. X23 is flanked on all sides by citrus groves or other agricultural activities. Portions of fallow groves on airport property have been cleared over the past 60 years to accommodate incremental improvements to the airfield.[32] X23 began functioning as an airstrip in 1940 and was originally developed as an airport in 1947 (for history of airfield development see **Appendix F**).

Per Section 658.2 of the Farmland Protection Policy Act, the Proposed Project is subject to the provisions of the Farmland Protection Policy Act. As described in **Table 8-2**, 26.8 acres of airport property will be impacted in support of the Proposed Project, including converting 1.12 acres of grassed airport property to pavement for the runway and taxiway extension and converting 1.7 acres of abandoned citrus grove and 0.3 acres of bamboo thicket to turf grass. The remaining 24.6 acres of previously disturbed airport land may be temporarily directly or indirectly impacted during construction activities as construction equipment is used and transported throughout the airport and as stormwater management features are modified.

The Florida NRCS has prepared form AD-1006, Farmland Conversion Impact Rating, in accordance with the Farmland Protection Policy Act and determined that the Proposed Project scores a 34.5 with regard to proposed conversion of 2.92 acres of Farmland of Unique Importance (April 18, 2019; **Appendix E**). This value is well below the FAA threshold of significance for this resource (established at 200); therefore, the FAA has determined that the Proposed Project will not significantly impact Farmland of Unique Importance.

(7) HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

(a) Compared to the No Action alternative, would the Proposed Action and reasonable alternatives (if any) violate applicable Federal, state, tribal or local laws or regulations regarding hazardous materials and/or solid waste management?

Explain:

The Proposed Project would not violate applicable federal, state, tribal or local laws or regulations regarding hazardous materials or solid waste management.

All hazardous substances at X23 are strictly managed in accordance with federal and state of Florida hazardous material management protocols. Hazardous materials are used and stored onsite at X23 and hazardous wastes are generated in support of airport management and aircraft operation and maintenance. Such substances include petroleum, oils, and lubricants and other materials used for aircraft and ground vehicle maintenance. Chemical de-icing systems are not operated at X23. Potential hazardous materials associated with construction activities may include various oils, lubricants, solvents, sealants, and paints.

[31] U.S. Department of Agriculture Natural Resources Conservation Service, *Web Soil Survey*. Accessed 3 April 2019.

[32] Florida Department of Transportation 1999, *Florida Land Use, Cover, and Forms Classification System Handbook*; *U.S. Geological Survey Topographic Map* 2018, Umatilla. Accessed on 4 April 2019 at: https://store.usgs.gov/filter-products?country=US&region=FL&sort=relevance&lq=Umatilla; and *U.S. Census, Cartographic Boundary Shapefiles* (2015). Accessed on 4 April 2019 at: https://gis-portal.data.census.gov/arcgis/apps/MapSeries/index.html?appid=7a41374f6b03456e9d138cb014711e01

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Hazardous material use and hazardous waste generation will occur in support of the Proposed Project. Induced small aircraft operations and future airport maintenance activities could potentially require increased use of hazardous materials at a rate commensurate with the rate of operations increase and could generate increased volumes of hazardous wastes as a result. Hazardous materials and pollution prevention would be addressed in the contractor's plans and specifications for the Proposed Project, and the contractor would be required to develop and follow the specific plans they prepare. During construction activities, handling of all hazardous materials used and hazardous waste generated would be the responsibility of the construction contractor and stored, used, and disposed according to the contractor's material handling and management plans and other federal and state of Florida hazardous material management protocols. Although some hazardous materials would be stored onsite, no equipment maintenance activities would be conducted near surface water resources. The construction contractor will be required to implement pollution prevention, spill prevention, and response plans documenting the measures that will be taken to prevent accidental releases to the environment and, should they occur, the actions that will be undertaken to minimize the environmental impact. Due to the small increase of hazardous materials used and hazardous waste generated in association with the Proposed Project and adherence to established regulations, policies, guidelines, and management plans by airport personnel and construction contractors, it is not anticipated that there would be increased risks associated with hazardous materials management or generation of hazardous waste.

A negligible increase of solid waste generation at X23 may result from the use forecasted with implementation of the Proposed Project. This waste generation would be managed in accordance with ongoing solid waste procedures. Solid waste associated with the construction phase of the Proposed Project would include generation of typical construction debris, such as approximately 33,000 square feet of asphalt pavement to be removed between the runway and taxiway at each existing Runway End. Land clearing activities would also generate debris debris from clearing of approximately 2 acres of abandoned citrus grove and ongoing maintenance of object free areas. Solid waste that is not recycled would be transported to the Lake County landfill. Clearing debris produced through airport grounds maintenance is collected and composted at this location. Construction waste that is not recycled would be disposed at the Sumter County landfill.

The Pollution Prevention Act of 1990 (42 U.S.C. §§13101-13109) requires prevention and reduction of pollution at the source, when possible, so that waste has a reduced impact on the environment. Source reduction includes practices that reduce hazardous and other substances from being released into the environment prior to recycling, treatment, or disposal. Although at this time no specific pollution prevention measures are in place at X23, the City of Umatilla is committed to sustainable environmental stewardship and is dedicated to the ongoing pursuit of pollution prevention activities that may be relevant to airport management and aircraft operations.

(b) Compared to the No Action alternative, would the Proposed Action and retained alternatives (if any) involve a contaminated site (including but not limited to a site listed on the National Priorities List)? Describe how the Proposed Action site was evaluated for hazardous substance contamination. Reference electronic database searches and attach in an appendix any record of consultation with appropriate expertise agencies (e.g., US Environmental Protection Agency (EPA), Florida DEP).

Explain:

A search of the following databases was conducted to evaluate the Proposed Project site and adjacent properties for hazardous materials and related environmental concerns:

- Florida Department of Environmental Protection online "*Contamination Locator Map*"

- US Environmental Protection Agency "*NEPAssist*" website
- US Environmental Protection Agency "*My Environment*" website

Based on the database search, review of other relevant airport documents, and site assessments, it is not anticipated that the Proposed Project will impact National Priorities List (NPL) sites, Resource Conservation and Recovery Act (RCRA) sites, or fuel storage locations. No known NPL or hazardous waste disposal or contaminated areas are located within or adjacent to the Study Area. No fuel tank discharges have occurred or are suspected at X23. One 12,000-gallon above ground fuel storage tank is currently in service at X23, and two 2,000-gallon underground fuel storage tanks have been closed onsite. Finally, while no RCRA sites were identified on airport property, one was identified within the Study Area at Umatilla Middle School approximately 0.6 miles from X23. The school is identified as a conditionally-exempt small quantity generator and has not had any violations within the previous 12 months or any enforcement actions (formal or informal) within the past five years. It is not anticipated that the Proposed Project will affect contaminated, NPL, RCRA, or fuel storage locations.

(c) Compared to the No Action alternative would the Proposed Action and retained alternatives (if any) produce an appreciably different quantity or type of hazardous waste?
Explain:

As the airport would continue to serve General Aviation aircraft, the Proposed Project would not produce a change in the types of hazardous materials used and hazardous wastes generated at X23. Induced operations and future airport maintenance activities could potentially require increased use of hazardous materials at a rate commensurate with the rate of operations increase and could generate increased volumes of hazardous wastes as a result; however, this increase is anticipated to be negligible and would not exceed the capacity of current hazardous material and waste management protocols.

(d) Compared to the No Action alternative, would the Proposed Action and retained alternatives (if any) generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity? If **YES**, are local disposal facilities capable of handling the additional volumes of solid waste resulting from the Action? A letter from the local waste management handling facility may be necessary.
Explain:

It is not anticipated that the Proposed Project would generate an appreciable quantity or type of solid waste, use a different method of collection or disposal, or exceed the capacity of the local disposal authority. Induced operations would confer a negligible, incremental increase in solid waste produced by airport users and management activities. While construction would generate wastes associated with land clearing, earthwork, and paving, no substantial construction waste impacts are anticipated. Construction waste not diverted or recycled by the contractor would be handled in accordance with applicable state and local requirements and disposed of in permitted facilities.

(e) Compared to the No Action alternative, would the Proposed Action and retained alternatives (if any) adversely affect human health and the environment with regards to hazardous materials or solid waste?

Explain:

The Proposed Project would not adversely affect human health and the environment with regards to the management of hazardous materials or solid waste.

(f) Is there a sanitary landfill containing municipal solid waste (MSW) located within 10,000 feet of a runway serving turbo-powered aircraft, or 5,000 feet of a runway serving piston-powered aircraft? **Note:** *A sanitary landfill containing municipal solid waste (MSW) is incompatible with airport operations if the landfill is located within 10,000 feet of a runway serving turbo-powered aircraft, or 5,000 feet of a runway serving piston-powered aircraft. Refer to FAA Advisory Circular 150/5200.33 " Hazardous Wildlife Attractants on or Near Airports," and FAA Order 5200.5B, "Guidance Concerning Sanitary Landfills on or Near Airports."*

Explain:

The Proposed Project is in compliance with FAA's 10,000-foot and 5,000-foot thresholds for safe distances to sanitary landfills containing municipal solid waste. The nearest landfill to the Proposed Project is the Lake County Landfill, located approximately 12 miles (63,360 feet) south/southwest of X23. Based on FAA threshold criteria, operations at this facility would not have an effect on the aircraft operations associated with the Proposed Project.

(8) HISTORICAL, ARCHITECTURAL, ARCHEOLOGICAL, AND CULTURAL RESOURCES

(a) Describe and identify on an attached figure any *known* sites listed-in or eligible for listing on the National Register of Historic Places (NRHP) within the Proposed Action's and retained alternatives (if any) Area of Potential Effect (APE), which is defined as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties". The APE includes the direct impact area (limits of ground disturbance) and as applicable the indirect impact area encompassed by the composite DNL 65 dBA noise contour of the Proposed Action, No Action, and retained alternatives (if any). Protected resources include historic sites, districts, objects, archaeological remains, historic structures, public parks, publicly-owned recreation areas, and wildlife or waterfowl refuges. Accomplish this review through searching the NRHP database, consultation with the Florida State Historic Preservation Officer (SHPO), local historic groups, local jurisdictions, federally recognized tribes in the State of Florida, and airport staff. Historic airport facilities (50 years or older) must be included. **Note:** *If any known listed or eligible NRHP sites are identified within the Proposed Action's APE (direct or indirect), you must immediately contact the ORL/ADO Environmental Specialist for further instruction regarding Section 106 of the National Historic Preservation Act (NHPA).*

Describe and identify on attached figure (as applicable) any known sites in the direct and indirect impacts APE:

There are no previously recorded cultural resources found within the Study Area (Florida Master Site File review,13 March 2018; **Appendix F**). There are no sites listed, or eligible for listing in the NRHP within the Area of Potential Effect (APE) designated for the Proposed Project.

A Cultural Resources Assessment Survey was performed within the Proposed Project footprint (**Appendix F**). No archaeological sites were discovered during field investigations. There are two archaeological sites recorded within two miles of the APE, and given the known patterns of aboriginal settlement, the APE was considered to have a variable probability for archaeological site occurrence. The area proximate to East Lake was considered to have a high probability of encountering cultural resources, while the disturbed areas adjacent to the runway were considered of have a moderate to low probability. An archaeological field survey included surface reconnaissance and systematic and judgmental subsurface testing, which resulted in the excavation of 37 shovel tests (18 tests in the former citrus grove and 19 tests adjacent to and at the base of the runway).

(b) Consultation with the SHPO and tribes should be conducted early in the process and prior to submittal of the preliminary Draft EA to the ORL/ADO EPS. Discuss Florida SHPO and tribal consultation responses below. **Records of consultation with the Florida SHPO and federally recognized tribes and their responses must be included in an appendix to the EA**. All public out-reach efforts should apply to these groups as well. **Note:** *Letters to the Florida SHPO and federally recognized tribes must come from the FAA. Draft letters for FAA signature. Discuss the proposed action and attach a figure identifying the area of potential effect (APE) on a recent aerial. Include in the discussion whether a cultural resource assessment study (CRAS) has been done for the APE. Provide a written effects determination along with supporting documentation to the SHPO/THPO and the consulting parties (see 36 CFR § 800.5). Make one of the following conclusions: (1) no historic properties present in the APE; (2) no adverse effect on historic properties; or (3) adverse effect on historic properties. You must review* http://www.dot.state.fl.us *for a list of federally recognized tribes, contacts and addresses. If any known listed or eligible NRHP sites are identified within the Proposed Action's APE, you must immediately contact the ORL/ADO Environmental Specialist for further instruction regarding Section 106 of the National Historic Preservation Act (NHPA).*

Discuss Florida SHPO and tribal consultation responses.

In accordance with Section 106 of the *National Historic Preservation Act* of 1966, the FAA provided a copy of the Cultural Resource Assessment Survey to the Florida Department of State, Division of Historical Resources (25 February 2019; **Appendix F)** and potentially interested tribal nations, including Muscogee (Creek) Nation, Miccosukee Tribe of Indians of Florida, Seminole Nation of Oklahoma, and Seminole Tribe of Florida (5 March 2019). The State Historic Preservation Officer (SHPO) concurred with the findings that the Proposed Project will have no effect on historic properties and found that the Cultural Resources Assessment Survey was complete and sufficient (27 March 2019; **Appendix F**). Although tribes listed above have been incorporated into the Proposed Project consultation process, no response has been received as of the date of publication of this Draft EA.

(c) Compared to the No Action alternative, would the Proposed Action or retained alternatives (if any) result in *direct effects* (physical disturbance or destruction, damage, alteration, isolation of the property from its surroundings, or moving a property from its historic location), or *indirect effects* (introduction of visual, auditory, or atmospheric elements that are out of character with the property or that would diminish the integrity of the property's setting), on any NRHP property or NHRP-eligible property? Cross reference your response with other applicable impact categories such as noise and compatible land use, air quality and Section 4(f)/6(f) resources.

Discuss direct or indirect effects on NRHP or NHRP-eligible properties.

As there are no NRHP-listed properties within the APE established for the Proposed Project, it is anticipated that the Proposed Project would not directly or indirectly affect any NRHP-listed or-eligible properties. Likewise, it is not anticipated that undiscovered artifacts are present or are at risk from further site clearing and grading activities. However, in the event an unanticipated discovery of previously unidentified archaeological resources is made during construction of the proposed undertaking, construction activities in the vicinity of the discovery will stop, and all reasonable measures will be taken to avoid or minimize harm to the property until the FAA and the City conclude consultation with the SHPO.

(9) LAND USE

(a) Compared to the No Action Alternative, would the Proposed Action and retained alternatives (if any) result in any impacts to off-airport land uses and/or require a change to the local comprehensive plan and zoning map?

Discuss any impacts to off-airport land uses or changes to a local comprehensive plan or zoning.

The Proposed Project would be constructed entirely on existing airport property. No land acquisition is required. The Proposed Project would not require a change to local Comprehensive Plans or zoning maps.

(b) Compared to the No Action alternative, would the Proposed Action and retained alternatives (if any) be located near or create a potential wildlife hazard as defined in FAA Advisory Circular 150/5200-33, "Wildlife Hazards on and Near Airports"?

Discuss potential wildlife hazards.

The Proposed Project would not create potential wildlife hazards. Any stormwater management features (swales) constructed or improved for the Proposed Project would be designed to move stormwater rapidly from the airfield and would be treated and mowed on a regular basis to prevent them from becoming attractive wildlife habitat (i.e., managed in accordance with FAA and other hazardous wildlife guidance).

(c) If the Airport Sponsor is filing a Federal Airport Improvement Program (AIP) grant application for construction of the Proposed Action, an *executed* letter from the Airport Sponsor to the FAA with the land use assurance language noted below must be attached as an appendix to this EA.

> "Per 49 USC Section 47107(a)(10), that appropriate action, including adopting zoning laws, has been or will be taken to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including the landing and takeoff of aircraft."

Note: *The Sponsor's assurance letter must be related to existing and future planned land uses in the airport vicinity.*

Identify Draft EA Appendix that contains the Airport Sponsor's land use assurance letter or explain why one is not required.

The Airport Sponsor's Land Use Assurance Letter is provided as **Appendix G**.

(10) NATURAL RESOURCES AND ENERGY SUPPLY

(a) Identify suppliers of energy resources found in the area such as power plants, water utilities, sewage disposal utilities, and suppliers of natural gas and petroleum, as applicable. Identify the approximate amount of other resources such as water, asphalt, aggregate, and wood a project would use in the construction, operation, and maintenance of a project and identify where the suppliers are located.

Discuss:

Airport water and sewer utilities are provided by the City of Umatilla. Electricity is provided by Duke Energy through the Eustis Operation Center. In general, Duke Energy uses a variety of electricity sources such as nuclear, coal-fired, oil- and natural gas-fired, and hydroelectric power plants; however, in 2017 coal was

only 33 percent of the total generation, and over 38 percent of the total power produced was from zero carbon sources.[33] The plant powering the Umatilla area utilizes natural gas.

As detailed in Section 4.2, the Proposed Project would require the construction of less than 50,000 square feet (5,556 square yards) of pavement, 1,500 linear feet of security fencing, pavement marking (paint), and lighting systems. Additional identification of construction materials and other resources needed to implement the Proposed Project will occur as the design and permitting phase is progressed. The provision of petroleum and other construction equipment and vehicle maintenance materials would be the responsibility of the construction contractor. Although the volume of construction and related materials required and the suppliers are unknown at this time, the type of construction is common and would likely involve contractors and suppliers located in Lake or adjoining counties, the scale of the project is relatively small, and the project would use materials that are not unusual in nature and are not in short supply.

(b) Compared to the No Action alternative, what effect would the Proposed Action and retained alternatives (if any) have on energy supplies or other natural resource consumption? Would demand exceed supply?

Explain:

Implementation of the Proposed Project would not cause a substantial increase in utility or fuel consumption over the existing demand and would not overwhelm existing or future supply. The Proposed Project is anticipated to induce a 4 percent increase in X23 aircraft operations over 2025 baseline conditions, for a forecasted total of 5,620 annual operations. In general, increased operations may require the increased use of aviation gasoline (i.e., AvGas100LL), including up to 1,294 gallons annually by 2025 to power aircraft operations in the vicinity of X23 (**Table 8-4**). However, increasing the runway length would reduce existing inefficiencies and operational limitations that currently require additional flights in smaller aircraft or multiple takeoff and landings to refuel – both of which currently result in a net increase of fuel consumed to support an operation.

Table 8-4
Annual Aircraft Fuel Consumption at X23

Scenario	Gallons of AvGas 100LL per year
2017 Baseline	16,162
2020	
2020 Proposed Project	16,579
2020 No Action	16,570
2020 Proposed Project - 2020 No Action	9.4
2025	
2025 Proposed Project	18,449
2025 No Action	17,155
2025 Proposed Project - 2025 No Action	1,294

SOURCE: ESA, 2019 - AEDT, 2d.
NOTE: Fuel burned is calculated for aircraft operations only. As with GHG calculations, per Appendix C of the FAA Order 1050.1F Desk Reference (2015), estimates are based on fuel consumption calculated by AEDT through the full extents of modeled aircraft flights (flight track information is available in **Appendix C)**.

[33] Duke Energy Operations, *On the Path to a Lower-Carbon Future*. Accessed in January 2019 at: https://sustainabilityreport.duke-energy.com/operations/on-the-path-to-a-lower-carbon-future/

It is not anticipated that the temporary construction phase or future aircraft fueling requirements associated with the Proposed Project would impact the supply of or demand for natural resources in the area.

(c) Identify whether the Proposed Action and retained alternatives (if any) would incorporate sustainable design features such as conservation of resources, use of pollution prevention measures, minimization of aesthetic effects, and address public (both local and traveling) sensitivity to these concerns.

Explain:

Pollution prevention and conservation in relation to the use of hazardous material and the generation of hazardous and solid waste is discussed in section 7. Although it is anticipated that the construction contractor would proceed with judicious and efficient use of natural resources, further sustainable design and aesthetic consideration is not relevant to this Proposed Project as it chiefly focuses on the extension of Runway 1-19 and no additional facilities or actions are proposed.

(11) NOISE AND COMPATIBLE LAND USE

(a) Determine if a noise analysis should be conducted per FAA Order 1050.1F, Appendix B. Airport operations must not exceed the threshold for both existing and forecast years (with and without the Proposed Action). If operations exceed the threshold, coordinate with the ORL/ADO EPS prior to conducting a noise analysis. **Note:** *No noise analysis is needed for projects involving Design Group I and II airplanes (wingspan less than 79 feet) in Approach Categories A through D (landing speed less than 166 knots) operating at airports whose forecast operations in the period covered by the NEPA document do not exceed 90,000 annual propeller operations (247 average daily operations) or 700 annual jet operations (2 average daily operations). These numbers of propeller and jet operations result in DNL 60 dB contours of less than 1.1 square miles that extend no more than 12,500 feet from start of takeoff roll. The DNL 65 dB contour areas would be 0.5 square mile or less and extend no more than 10,000 feet from start of takeoff roll. Also, no noise analysis is needed for projects involving existing heliports or airports whose forecast helicopter operations in the period covered by the NEPA document do not exceed 10 annual daily average operations with hover times not exceeding 2 minutes. These numbers of helicopter operations result in DNL 60 dB contours of less than 0.1 square mile that extend no more than 1,000 feet from the pad. Note that this rule applies to the Sikorsky S-70 with a maximum gross takeoff weight of 20,224 pounds and any other helicopter weighing less or producing equal or less noise levels. Airport forecasts must be consistent with the most recent FAA Terminal Area Forecast (TAF).*

Document the most recent TAF for the airport, the existing and forecast annual operations in the EA study years for the No Action alternative, the Proposed Action and any retained alternatives. Discuss whether the thresholds described above would be exceeded or not and whether a quantitative or qualitative noise analysis is appropriate for the Proposed Action.

A quantitative noise analysis was prepared to evaluate the change in aircraft noise exposure at and in the vicinity of X23 that may occur with the implementation of the Proposed Project. The noise analysis was prepared using the latest version of the FAA AEDT, Version 2d (**Appendix C**). **Table 4-1** provides information pertaining to the number of existing and forecast annual aircraft operations, both with and without the Proposed Project.

(b) Aircraft noise screening may rule out the need for more detailed noise analysis if screening shows no potential for significant noise impacts. The Area Equivalent Method (AEM) can be used in evaluating proposed actions and alternative(s) at an airport which result in a general overall increase in daily aircraft operations or the use of larger/noisier aircraft, as long as there are no changes in ground tracks or flight profiles. If the AEM calculations indicate that the action would result in less than a 17 percent (approximately a DNL 1 dB) increase in the DNL 65 dB contour area, there would be no significant impact over noise sensitive areas and no further noise analysis would be required. If the AEM calculations indicate an increase of 17 percent or more, or if the action is such that use of the AEM is not appropriate, then the noise analysis must be performed using the Aviation Environmental Design Tool (AEDT) to determine if significant noise impacts would result. See the Area Equivalent Method (AEM) Version 7.0c User's Guide, October 2012 for further information on conducting an AEM screening procedure. **Note:** *If more detailed noise analysis is required, the model must be used to determine if significant noise impacts would result from implementation of the Proposed Action. Information regarding the FAA's AEDT 2b can be found in the 1050.1F Desk Reference and at* https://aedt.faa.gov/ .

Explain the results of the AEM analysis if used.

The Area Equivalent Method was not used in this analysis.

(c) Describe the affected environment for noise and noise compatible land use. Refer to the 1050.1F Desk Reference section 11.2, Affected Environment, for necessary information. The steps generally required to describe the affected environment for noise and noise compatible land are as follows:

• *Determine the study area for noise analysis*. An airport environs study area must be large enough to include the area within the DNL 65 dB contour, and may be larger.
• *Identify noise sensitive areas in the study area and pertinent land use information*; A noise sensitive area is defined in Paragraph 11-5.b (8) of FAA Order 1050.1F.
• *Describe **current** noise conditions in the study area*. Noise exposure contours must include DNL 65, 70, and 75 dB levels. Identify the number of residences or people residing within each noise contour where aircraft noise exposure is at or above DNL 65 dB. Identify the location and number of noise sensitive uses in addition to residences (e.g., schools, hospitals, nursing homes, parks, recreation areas, historic structures) that could be significantly impacted by noise. Use recent aerial photographs, GIS mapping and other resources to depict land uses within the noise study area.

There are no residences or noise sensitive land uses located within the 65 DNL contour. The 2017 existing condition noise exposure contours are almost completely contained on X23 property. The contours extend just outside the airport property line directly adjacent to the airport in three locations: directly to the east and west of the End of Runway 1 and to the east of the End of Runway 19. These areas are summarized in **Table 8-5.**

TABLE 8-5
LAND USES WITHIN THE DNL 65 AND HIGHER CONTOURS
2017 EXISTING CONDITION

Land Use		DNL 65-70	DNL 70-75	DNL 75+	Total
On-Airport Property		12.9	7.0	0.1	20.0
On-Airport Property Total (Acres)		**12.9**	**7.0**	**0.1**	**20.0**
Off-Airport Property	Agriculture	<0.0	-	-	<0.0
	Airports	0.3			0.3
	Open Space	<0.0	-	-	<0.0
Off-Airport Property Total (Acres)		**13.2**	**-**	**-**	**0.3**
Total Acres		**13.2**	**7.0**	**0.7**	**20.3**

SOURCES: SJRWMD, 2014; Adapted by Environmental Science Associates, 2018.
Note: Numbers may not add due to rounding.

(d) Describe the potential noise impacts of the proposed action and alternative(s), if any, for each timeframe evaluated. Use the AEDT to provide noise exposure contours for DNL 5 dB increments for the DNL 65, 70, and 75 dB levels. For all comparisons analyzed, the analysis needs to identify noise increases of DNL 1.5 dB or more over noise sensitive areas that are exposed to noise at or above the DNL 65 dB noise exposure level, ***or*** that would be exposed at or above the DNL 65 dB level due to a 1.5 dB or greater increase, when compared to the No Action alternative for the same timeframe. For each modeling scenario analyzed, disclose, quantify and discuss:

- number of residences or people residing within each noise contour interval where aircraft noise exposure is at or above DNL 65 dB,
- the net increase or decrease in the number of people or residences exposed to each increment of noise
- location and number of noise sensitive land uses in addition to residences (e.g., schools, hospitals, nursing homes, parks, recreation areas, historic structures) exposed to DNL 65 dB or greater
- when DNL 1.5 dB increases to noise sensitive land uses are documented within the DNL 65 dB contour, also identify the location and number of noise sensitive land uses within the DNL 60 dB contour that are exposed to aircraft noise levels at or above DNL 60 dB but below DNL 65 dB and are projected to experience a noise increase of DNL 3 dB or more
- noise impact on noise sensitive areas within the DNL 65 dB contour.

Use multiple graphics to depict the noise contours and land uses and noise sensitive resources within the noise contours for all alternatives. Include arrival, departure and touch and go flight tracks. Graphics should be scaled and sufficiently large and clear to be readily understood.

2020 No Action Alternative

The 2020 No Action Alternative DNL 65 and higher noise contours would be contained almost entirely on X23 property and do not include or encroach upon any noise sensitive land uses or receptors. There would be no housing units or people residing in the DNL 65 or higher contours under the 2020 No Action Alternative. Similar to the 2017 Existing Condition, the 2020 No Action Alternative DNL 65 dB contour would extend just outside of X23 property to the east and west of Runway End 1 and the east of Runway End 19 (**Table 8-6**). The 2020 No Action Alternative noise contours are depicted in **Appendix A, Exhibit 9**.

2020 Proposed Project

The 2020 DNL 65 and higher noise contours that would be anticipated with implementation of the Proposed Project would be contained almost entirely on X23 property and would not include or encroach upon any noise sensitive land uses or receptors. Similar to the 2020 No Action Alternative, the 2020 Proposed Project DNL 65 dB contour would extend just outside of X23 property to the east and west of Runway End 1 and the east of Runway End 19 (**Table 8-6)**. The 2020 Proposed Project noise contours are depicted in **Appendix A, Exhibit 9**.

It is anticipated that X23 would experience incremental growth in operations, and as 2020 is anticipated as the first year of the Proposed Project implementation, few additional aircraft operations would be expected. Therefore, there would be negligible change in aircraft noise when compared to the No Action Alternative for 2020. No housing units or people would reside within the DNL 65 or higher contours associated with the Proposed Project, and there would be no noise sensitive sites (e.g., churches or schools) within the 2020 DNL 65 dB or higher noise contours for either the No Action Alternative or Proposed Project.

2025 No Action Alternative

The 2025 No Action Alternative DNL 65 and higher noise contours would be contained almost entirely on X23 property and do not include any noise sensitive land uses or receptors. There would be no housing units or people residing in the DNL 65 dB or higher contours under the 2025 No Action Alternative. Similar to the 2020 No Action Alternative, the 2025 No Action Alternative DNL 65 dB contour would extend just outside of X23 property to the east and west of Runway End 1 and the east of Runway End 19 (**Table 8-7**). The 2025 No Action Alternative noise contours are depicted in **Appendix A, Exhibit 10**.

2025 Proposed Project

The 2025 DNL 65 dB and higher noise contours with the Proposed Project would be contained almost entirely on X23 property and do not include any noise sensitive land uses or receptors. Similar to the 2020 Proposed Project, the 2025 Proposed Project DNL 65 dB contour would extend just outside of X23 property to the east and west of Runway End 1 and the east of Runway End 19 (**Table 8-7**). The 2025 Proposed Project noise contours are depicted in **Appendix A, Exhibit 10**.

As shown in **Table 4-1**, it is expected that the Proposed Project will result in approximately 232 additional General Aviation operations by 2025. Due to the relatively low amount of expected induced activity, there would be negligible change in aircraft noise when compared to the No Action Alternative for the same year. There would be no housing units or people residing in the DNL 65 dB or higher contours associated with the Proposed Project, and there would be no noise sensitive sites (e.g., churches or schools) within the 2025 DNL 65 dB or higher noise contours for either the No Action Alternative or Proposed Project.

TABLE 8-6
LAND USES WITHIN THE CNEL 65 AND HIGHER CONTOURS
2020 AND 2025 NO ACTION ALTERNATIVE

Land Use		CNEL 65-70	CNEL 70-75	CNEL 75+	Total
2020 No Action					
On-Airport Property		12.9	7.3	0.1	20.3
On-Airport Property Total (Acres)		**12.9**	**7.3**	**0.1**	**20.3**
Off-Airport Property	Agriculture	0.1	-	-	**0.1**
	Airports	0.3	-	-	0.3
	Open Space	<0.0	-	-	<0.0
Off-Airport Property Total (Acres)		**0.4**	**-**	**-**	**0.4**
Total Acres		**13.3**	**7.3**	**0.1**	**20.7**
2025 No Action					
On-Airport Property		12.9	7.7	0.1	20.7
On-Airport Property Total (Acres)		**12.9**	**7.7**	**0.1**	**20.7**
Off-Airport Property	Agriculture	0.1	-	-	0.1
	Airports	0.4	-	-	0.4
	Open Space	0.1	-	-	0.1
Off-Airport Property Total (Acres)		**0.6**	**-**	**-**	**0.6**
Total Acres		**13.5**	**7.7**	**0.1**	**21.3**

SOURCES: SJRWMD, 2014; Adapted by Environmental Science Associates, 2018.
Note: Numbers may not add due to rounding.

TABLE 8-7
LAND USES WITHIN THE DNL 65 AND HIGHER CONTOURS
2020 AND 2025 PROPOSED PROJECT

Land Use		DNL 65-70	DNL 70-75	DNL 75+	Total
2020 Proposed Project					
On-Airport Property		16.1	5.3	0.2	21.6
On-Airport Property Total (Acres)		**16.1**	**5.3**	**0.2**	**21.6**
Off-Airport Property	Agriculture	<0.0	-	-	<0.0
	Airports	0.2	-	-	0.2
Off-Airport Property Total (Acres)		**0.2**	-	-	**0.2**
Total Acres		**16.3**	**5.3**	**0.2**	**21.8**
2025 Proposed Project					
On-Airport Property		16.3	6.1	0.3	22.7
On-Airport Property Total (Acres)		**16.3**	**6.1**	**0.3**	**22.7**
Off-Airport Property	Airports	0.3	-	-	0.3
	Agriculture	0.1	-	-	0.1

Off-Airport Property Total (Acres)	**0.4**	**-**	**-**	**0.4**
Total Acres	**16.7**	**6.1**	**0.3**	**23.1**

SOURCES: SJRWMD, 2014; Adapted by Environmental Science Associates, 2018.
Note: Numbers may not add due to rounding.

Summary

In 2020 and 2025, negligible increases in aircraft noise exposure would result from the increased number of small aircraft operations at X23.

When compared with the 2020 and 2025 No Action Alternative, non-airport land exposed to noise levels of DNL 65 dB or higher would increase by 0.2 and 0.4 acres, respectively, as a result of the Proposed Project. There would be no residences or people living within the DNL 65 dB or greater noise contours under either alternative. Therefore, no land use compatibility impacts would occur if the Proposed Project was implemented.

(e) Discuss whether there is a significant noise impact for the Proposed Action and retained alternatives (if any) compared to the No Action alternative. FAA Order 1050.1F Exhibit 4-1 provides the FAA's significance threshold for noise i.e. *The action would increase noise by DNL6 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level,* ***or*** *that will be exposed at or above the DNL 65dB level due to a DNL 1.5dB or greater increase, when compared to the no action alternative for the same timeframe.* For example, an increase from DNL 65.5 dB to 67 dB is considered a significant impact, as is an increase from DNL 63.5 dB to 65 dB. The determination of significance must be obtained through the use of noise contours and/or grid point analysis along with local land use information and general guidance contained in Appendix "A", Table 1 of 14 CFR part 150. If there is a potential significant noise impact for the Proposed Action, **do not** complete this EA and contact the ORL ADO/EPS for further guidance.
Explain:

The increased number of annual aircraft operations associated with the Proposed Project in 2020 and 2025 would not expose noise sensitive areas to noise levels of DNL 65 dB or greater. Accordingly, there would be no noise sensitive areas that would experience an increase in aircraft noise of DNL 1.5 dB or more in areas exposed to DNL 65 dB or greater as a result of the Proposed Project when compared to the No Action Alternative. Therefore, no significant noise impact would occur in 2020 or 2025 if the Proposed Project is implemented.

(e) For some noise analyses, it may be necessary to include noise sources other than aircraft departures and arrivals in the noise analysis. This can be determined by examining the action and determining the potential impacts caused by noise other than aircraft departures and arrivals. Some examples are engine run-ups, aircraft taxiing, construction noise, and noise from related roadway work and roadway noise. The inclusion of these sources should be considered on a case-by-case basis, as appropriate. Discuss whether the Proposed Action and retained alternatives (if any) have the potential to cause noise other than aircraft related noise. See 1050.1F Desk Reference, Section 11.5 for additional information.

Discuss if analysis of other noise sources is warranted. If it is, conduct the analysis and describe the results here.

Given the type of construction associated with the Proposed Project and the distance from construction areas to noise sensitive land uses, no significant construction noise impacts would occur. Despite attenuation, temporary, intermittent noise from site grading and road construction may be noticeable in the

vicinity of construction activities. In particular, there are several residences established directly across East Lake (approximately 800 feet from the nearest edge of the Proposed Project) and one residence/farm directly adjacent to the northeast of the airport property that may perceive noise that is produced during site clearing, grading, and paving activities; however, construction activities would be limited to working, daylight hours to the extent possible and would follow City protocols to reduce the potential nuisance that may be experienced.

(f) Discuss any mitigation measures that are in effect at the time of the proposal or are proposed to be taken to mitigate significant impacts resulting from the Proposed Action and/or the retained alternatives. See 1050.1F Desk Reference, Section 11.6 for common operational measures to mitigate noise, common mitigation measures related to noise and noise-compatible land use, and common construction mitigation measures. Local land use actions are within the purview of local governments. The FAA encourages local governments to take actions to reduce and prevent land uses around airports that are not compatible with airport operations and aircraft noise. Airports receiving Federal grant funding have a compatible land use obligation, as described in 1050.1F Desk Reference, Section 11.5.3 Airport Actions. Discuss what is being done regarding compatible land use by the local jurisdiction(s) with land use control authority.

Because there would be no significant noise impacts, mitigation is not required.

(12) SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

(a) When compared to the No Action alternative, would the Proposed Project and retained alternatives (if any) change business and economic activity in the community; impact public service demands; induce shifts in population movement and growth, or other factors identified by the public, etc.? If **YES**, describe how these impacts would be minimized or mitigated.

Explain:

It is not anticipated that the Proposed Project would have any affect to public service demands or induce shifts in population movement and growth.

The Proposed Project is intended to provide positive economic benefits to local businesses by reducing inefficiencies and higher operating costs resulting from inadequate runway length, and to the airport, which is expected to see a 4 percent increase in utilization by 2025.

(b) When compared to the No Action alternative, would the Proposed Project and retained alternatives (if any) result in the need to relocate any homes or businesses? If **YES**, **do not** complete this EA and contact the ORL/ADO EPS for further guidance.

Explain:

No residences or businesses would be relocated, and no new property would be acquired for airport use.

(c) Cause an alteration in surface traffic patterns, or cause a noticeable increase in surface traffic congestion or a decrease in Level of Service (LOS) on local roadways?

Explain:

A negligible increase in traffic on area roads would result from the forecasted increase in aviation utilization, and this increase is not anticipated to alter surface traffic patterns and would not degrade the Level-of-Service on existing roads or at nearby intersections.

(d) Would the Proposed Action and retained alternatives (if any) have the potential to lead to a disproportionately high and adverse impact to an environmental justice population, i.e., a low-income or minority population? Consider impacts in other environmental impact categories (noise, air); or impacts on the physical or natural environment that affect an environmental justice population in a way that the FAA would determine are unique to the environmental justice population and significant to that population. *See 1050.1F Desk Reference, Chapter 12 for guidance*. If **YES**, **do not** complete this EA and contact the ORL/ADO EPS for further guidance.

Explain:

The Proposed Project would not directly impact (acquire property from and/or displace) any residences. No residences or noise sensitive land uses are located within the DNL 65 dB noise exposure contour and there would be little to no other indirect impacts associated with the Proposed Project.

No minority populations were identified in the census tract adjacent to airport. A minority population is identified as a minority population that is greater than 50% and/or meaningfully greater than the minority population in the reference population.[34] For the purposes of this analysis, a "meaningfully greater" percentage is defined as being 1.5 times or more than that of the general population. Lake County has a minority population of 28.9%; therefore, if a census tract had a minority population of 43.35 or greater (1.5 times 28.9%) it would be identified as a minority population. Approximately 16.8 and 15.8 percent of people in the census tracts adjacent to X23 (tracts 301.04 and 301.05, respectively) are minority populations; however, Lake County as a whole has a 28.9 percent minority population, suggesting that the communities within these census tracts are not considered minority populations. [35]

No low-income populations were identified in the census tracts adjacent to airport. For the purposes of this analysis, low-income populations are identified if the percentage of individuals below the federal poverty threshold within a census tract is 1.5 times greater than that of the reference population. Lake County has a poverty rate of 12.8%; therefore, if a census tract had a poverty rate of 19.2 or greater (1.5 times 12.8%) it would be identified as a low-income population. Approximately 14.5 and 14.8 percent of people in the census tracts adjacent to X23 (tracts 301.04 and 301.05, respectively) have incomes below federal poverty levels; however, Lake County as a whole has a 12.89 percent poverty rate, suggesting that these census tracts are not economically disadvantaged areas.[36]

The Proposed Project would not have the potential to lead to a disproportionately high and adverse impact to an environmental justice population as potential environmental justice census tracts of concern were not identified within the Study Area and off-airport impacts anticipated from the Proposed Project are negligible.

(e) Would the Proposed Action and retained alternatives (if any) result in any environmental health risks and/or safety risks that may disproportionately affect children? Environmental

[34] U.S. Executive Office of the President, Council on Environmental Quality 1997. *Environmental Justice: Guidance Under the National Environmental Policy Act*. December 10. U.S. Environmental Protection Agency 1998. *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses*. April.
[35] U.S. Census Bureau, 2017. *2013-2017 American Community Survey 5-Year Estimates. Form DP05: ACS Demographic and Housing Estimates. Selected Geographies.*
[36] U.S. Census Bureau, 2017. *2013-2017 American Community Survey 5-Year Estimates. Form S1701: Poverty Status in the Past 12 Months. Selected Geographies: Census Tracts 301.04, 301.05, and Lake County.*

health risks and safety risks include risks to health or to safety that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products they might use or be exposed to. It may be beneficial to determine the number of schools, daycares, parks, and children's health clinics in the study area. Consider impacts to children's health and safety in the context of other impact categories (air, noise, water quality).

Explain:

The Proposed Project would not result in disproportionate or adverse health or safety risks to children. Because there are no residences, schools, daycare centers, or other similar facilities within the Study Area, the Proposed Project would not increase the likelihood of a child coming into contact with or be exposed to substances that would adversely affect their health. The Proposed Project would not result in the acquisition or relocation of any schools, child care centers, or other similar facilities, and no schools or child care facilities are within the DNL 65 dB noise contour (**Appendix A, Exhibits 9 and 10**). The Proposed Project would be constructed on X23 property, which is fenced, and most environmental effects would be constrained to the property.

(13) VISUAL EFFECTS INCLUDING LIGHT EMISSIONS

(a) Compared to the No Action alternative, describe any new lighting systems associated with the Proposed Action and retained alternatives (if any). Describe the new types of lighting, their intensity, height and direction of emissions that would be constructed and operational.

Explain:

The Proposed Project would install new medium-intensity runway edge lights and medium-intensity taxiway edge lights along the new sections of runway and taxiway pavement and relocate the existing runway threshold lights and the Precision Approach Path Indicator Lights on each runway end (see Section 4.2). The additional 500 feet of runway would require 6 additional lights (one light spaced at 200-foot intervals per edge) and the additional taxiway would require an additional 10 lights (one light every 100 feet per edge),[37] and this lighting is similar to what is already installed on the runway. However, the airfield lighting is a pilot-controlled lighting system, which is typically activated by an incoming pilot for the duration of the landing operation and is otherwise not illuminated. All lights will be installed in accordance to FAA specifications, which seeks to maximize visibility to and safety of X23 aircraft, but minimize impacts to wildlife, residents, and other receptors in proximity to the lighting source.

(b) Would the Proposed Action and retained alternatives (if any) have the potential to create annoyance or interfere with normal activities for nearby residential areas or other light-sensitive resources or affect the visual character of the area due to the light emissions, including the importance, uniqueness, and aesthetic value of the affected visual resources? If appropriate, provide a graphic depicting the location of residential areas or other light-sensitive resources in the airport vicinity in relation to the Proposed Action's and retained alternatives (if any) new lighting system.

Explain:

It is not anticipated that the proposed additions to the lighting system would create annoyance or interference with or affect the visual character of the area. X23 is located on the outskirts of the City in an otherwise relatively rural/agricultural and uninhabited area, and new lighting sources may be more

[37] Per FAA Advisory Circular 150/5340-30J *Design and Installation details for Airport Visual Aids* (2018).

prominent in this location than if the airport was located in a more urban setting. However, there are few viewers in the area and to most viewers, the addition of new runway and taxiway lighting along the 500-foot extension would be nearly indistinguishable against the lighting system currently supporting the existing 2,500-foot runway and taxiway. Furthermore, the lights would continue to only be activated by an incoming pilot and would be shut off after the landing is complete.

(c) Identify whether a local community, government or jurisdictional agency would consider visual effects from the Proposed Action's (and retained alternatives) lighting objectionable to people's properties and people's use of resources covered by DOT Section 4(f), LWCF Section 6(f), and the National Historic Preservation Act (NHPA) Section 106. Consider the potential extent the proposed action would have to: affect the nature of the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources; contrast with the visual resources and/or visual character in the study area; and block or obstruct the views of visual resources, including whether these resources would still be viewable from other locations.

Explain:

The Proposed Project would have minimal impact on the visual character and scenic quality of the area as extending the runway is not out of character with the existing airport and runway development and thus would maintain the surrounding visual setting. It is not anticipated that sensitive viewers would be affected by the Proposed Project as nearby residential areas are generally located outside of the Proposed Project's viewshed.

There are several residences established directly across East Lake and one residence/farm directly adjacent to the northeast of the airport property that, after the RPZ is cleared of existing vegetation that may be acting as a visual buffer from airport activities, would have increased view of the airport and intermittent nighttime lighting. For the locations across East Lake, the runway and taxiway system may become visible beyond the shoreline and may change the lakeside/natural character of their existing viewshed.

(14) WATER RESOURCES - WETLANDS, FLOODPLAINS SURFACE WATERS, GROUNDWATER, AND WILD AND SCENIC RIVERS

WETLANDS

(a) Compared to the No Action alternative, would the Proposed Action and retained alternatives (if any) impact Federal or state jurisdictional and non-jurisdictional wetlands? If **YES**, provide an assessment of the Proposed Action and retained alternatives (if any) wetland impacts. **Quantify** *both* acreage and Functional Loss in accordance with U.S. Army Corps of Engineers (USACE) and state agency (water management district (WMD)) or Florida Department of Environmental Protection (FDEP) requirements. If protected species or habitat resources are affected, USFWS and FWC must be consulted and consultation must be attached as an appendix to this EA. Cross-reference with Category (2) Biotic Resources, as applicable.

Provide assessment of wetland impacts:

One jurisdictional wetland feature and one waterbody (East Lake) are located within the Study Area but outside of the Proposed Project footprint (see Section 7.3.2 and **Appendix A, Exhibit 2**). The wetland is an emergent wetland, located outside of but adjacent to the Proposed Project footprint to the north in the littoral zone of East Lake.

The Proposed Project is not anticipated to impact jurisdictional wetlands or waterbodies. While marsh habitat may be periodically maintained to control growth of nuisance and exotic vegetation, no dredge, fill, or conversion of wetlands will occur. A 25-ft buffer will be maintained between construction, clearing, and grubbing activities and delineated wetland boundaries to meet regulatory criteria and assurance of no secondary impacts (see Section 8.2(b)).

(b) If the Proposed Action would unavoidably impact a wetland, explain why the wetland is the only practicable location for the Proposed Action. Consider the purpose and need, FAA design standards, engineering, environmental, economic, technical feasibility or any other applicable factor. FAA will consider this information in its independent evaluation of alternatives (see 40 CFR 1506.5.) **Note:** *Federal regulations require "that no discharge shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact to the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences" (per Memorandum of Agreement between The Department of the Army and Environmental Protection Agency, The Determination of Mitigation under the Clean Water Act Section 404 (b)(1) Guidelines, February 1990*.

Discuss:

The Proposed Project is not anticipated to impact jurisdictional wetlands.

(c) If the Proposed Action would affect Federal and/or state jurisdictional wetlands, discuss all practicable means to avoid and minimize wetland impacts through modifications or permit conditions. FAA will consider this information in its independent evaluation of measures that will be used to minimize harm to wetlands (see 40 CFR 1506.5).

Discuss avoidance and minimization measures evaluated and unavoidable wetland impacts:

The Proposed Project is not anticipated to impact jurisdictional wetlands.

(d) Discuss appropriate and practicable compensatory mitigation for unavoidable adverse impacts which remain after all appropriate and practicable minimization has been provided. Identify the location of proposed compensatory mitigation, including acreage, Functional Gain, and estimated cost. USACE and WMD or FDEP consultation must be attached in an appendix to this EA that includes acknowledgement of required permits and proposed mitigation.

Discuss compensatory mitigation and attach record of jurisdictional agency consultation:

The Proposed Project is not anticipated to impact jurisdictional wetlands; therefore, compensatory mitigation is not required.

(e) List all required permits that will be obtained for wetland impacts (USACE Section 404, WMD, FDEP or local). *USACE Standard Individual Permits require public notice*. For NEPA purposes, this is conducted during public and agency review of the Draft EA. ***Note:*** *Nationwide General Permits authorize a category of activities throughout the U.S., Puerto Rico, and U.S. Virgin Islands that are similar in nature and cause only minimal individual and cumulative environmental impacts. Nationwide General Permits may authorize minor filling, roads, utility lines, maintenance of existing structures and other minor activities; they may require mitigation. Standard Individual Permits are required for activities which may cause more than minimal adverse effects to the aquatic environment and exceed the terms and conditions of a general permit; they require public notice and review by state and Federal resource agencies; most require mitigation.*

List all wetland permits:

The Proposed Project is not anticipated to impact jurisdictional wetlands; therefore, a Section 404 permit is not required.

(f) Attach a statement from the Airport Sponsor committing to the implementation of a mitigation plan developed to the satisfaction of the USACE in consultation with state and local agencies having an interest in the affected wetland.

The Proposed Project is not anticipated to impact jurisdictional wetlands; therefore, further consultation with wetland resource agencies and a mitigation plan is not required.

FLOODPLAINS

(a) Compared to the No Action alternative, would the Proposed Action and retained alternatives (if any) be located in, or encroach upon, any base/100-year floodplains, as designated by the Federal Emergency Management Agency (FEMA)? If **YES**, you must quantify the encroachment and attach the corresponding FEMA Flood Insurance Rate Map (FIRM) and proceed to (b) and (c).

Explain and quantify the floodplain encroachment and attach FEMA FIRM Map, if applicable:

The entire X23 property, which includes the Proposed Project footprint, is located wholly outside of the designated Flood Zone (identified as Flood Zone X, area of minimal flood hazard).[38] Although the northern limits of the airport property and Proposed Project footprint abut East Lake, which is identified within Flood Zone AE/100-year flood zone, construction associated with the Proposed Project will not impact or encroach upon the designated floodplain.

(b) In accordance with Executive Order 11988, explain why the Proposed Action and retained alternatives (if any) must be located in or affect the base/100-year floodplain. Include (1) a description of significant facts considered in making the decision to locate the Proposed Action in or to affect the floodplain, including alternative sites and actions; (2) a statement indicating whether the Proposed Action (and retained alternatives if any) conforms to applicable state or local floodplain protection standards; (3) a description of the design steps taken to modify the Proposed Action to minimize potential harm to or within the floodplain; and (4) a statement indicating how the Proposed Action affects the natural or beneficial values of the floodplain.

Explain:

The Proposed Project will not be located within or affect the base/100-year floodplain.

(c) If the Proposed Action or retained alternative would cause an encroachment of a base/100-year floodplain, the Airport Sponsor must provide an opportunity for early public review during the EA process, in accordance with Section 2(a)(4) of Executive Order 11988 and Paragraph 7 of DOT Order 5650.2. For NEPA purposes, this is conducted during public and agency review of the Draft EA.

Discuss what actions were taken to make the Draft EA available for early public review and what notification of floodplain impacts was made.

[38] Federal Emergency Management Agency Flood Insurance Rate Map for Lake County, 2012. Map Panel Number: 12069C0220E

The Proposed Project will not encroach upon the base/100-year floodplain; therefore, early public review is not required.

(15) SURFACE WATERS AND GROUND WATERS

(a) When compared to the No Action alternative, will the Proposed Action and retained alternatives (if any) require a Section 401 water quality certificate (WQC) for construction activities or impacts to navigable waters, including jurisdictional wetlands? Explain the status of and/or any issues associated with obtaining this certificate. Attach any correspondence from the issuing agency. Cross reference your response with Wetlands, as applicable.

Explain:

The Proposed Project will not impact navigable waters or jurisdictional wetlands; therefore a Section 401 Water Quality Certificate is not required.

(b) Is a National Pollutant Discharge Elimination System (NPDES) permit required for the Proposed Action and retained alternatives (if any)? If **YES**, explain the status and attach any comments received from the issuing agency or a copy of the permit.

Explain:

The project will require Notice of Intent (NOI) to use the generic permit under the National Pollutant Discharge Elimination System (NPDES). The NOI will be coordinated prior to construction.

(c) Would the Proposed Action and retained alternatives (if any) affect a public drinking water supply, a sole source aquifer, or a Comprehensive State Groundwater Protection Program (CSGWPP)? If **YES**, attach records of consultation with EPA and state, local or tribal water quality agencies responsible for protection programs.

Explain:

The Proposed Project will not affect a sole source aquifer, public drinking water supplies, or a Comprehensive State Groundwater Protection Program; therefore, further consultation with water protection agencies is not required.

(d) Provide sufficient description of the mitigation measures the Airport Sponsor will carry out for the Proposed Action to: meet WQC terms or the conditions of any applicable NPDES permits; protect public drinking water supplies or comply with applicable CSGWPPs; develop response plans to contain any potential spills of oil or oil-based products associated with the Proposed Action; meet any other substantial water quality concerns that water quality agencies identify; or, use best management practices (BMPs) or best available technologies (BATs).

The risk of and procedures to avoid or minimize potential damage from accidental spills of oil or oil-based products are discussed in Section 8.7.

In the absence of appropriate best management practices, which are often identified during permitting processes, the earth moving activities associated with the Proposed Project (runway paving and clearing and grubbing of the ROFA, TOFA, and RSA) could result in erosion and sedimentation that may impact water quality and function of the onsite stormwater management features and water quality of East Lake. Due to the minimal slope in this area, minimal impervious surfaces in the RSA and RPZ, and existing

drainage system, it is not anticipated that the Proposed Project would result in extensive risk to water quality from erosion and sedimentation. However, such negative impacts to water quality and stormwater management will be avoided and minimized to the extent possible through the application of best management practices and adherence to water quality permit requirements.

Stormwater Treatment and Discharge

The Proposed Project would construct drainage improvements (swales) for the new airfield pavements and graded areas, and all stormwater would be managed on airport property. Further engineering of stormwater management features will be the result of ongoing site planning and permitting processes; however, the EA analyzes potential effects across airport property, to include conceptual stormwater management activities and other actions supporting the full extent of the future runway and its associated safety areas.

Minimization of Construction-Related Water Quality Impacts

An NPDES General Permit for construction is required for projects at X23 that disturb more than 0.5 acre, and the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) is required as part of this permit. The SWPPP details erosion control, sediment control, waste management, and other general best management practices to be implemented onsite to protect water quality. Additionally, X23 is required to obtain an Environmental Resource Permit from the St. Johns Water Management District prior to construction. This permit authorizes new development or construction activities to occur in a manner that will prevent adverse flooding, manage surface water, and protect water quality, wetlands, and other surface waters. Land development and construction guidance provided in FAA AC 150/5370.10H, *Standards for Specifying the Construction of Airports*, would also be incorporated into Project plans and specifications to reduce potential for erosion and minimize construction-related impacts. X23 requires best management practices to protect water resources during construction, some of which may include, but are not limited to, the following measures and practices:

- *Stormwater Pollution Prevention Plan* – as discussed above, the SWPPP identifies equipment storage, cleaning, and maintenance areas/activities; points of ingress and egress to the construction site; material loading, unloading, and storage practices and areas, including construction materials, building materials and waste materials; and materials, equipment, or vehicles that may come in contact with storm water.
- *Construction Sequencing and Erosion Control Measures* – Construction sequencing and phasing would be specified in individual project plans and specifications. Construction sequencing is an effective method to minimize erosion by reducing the amount of exposed land at any one time. In addition to construction sequencing, erosion control measures further reduce the potential to exceed water quality standards. These measures consist of reducing erosive effects of rain on exposed soils through the use of temporary and permanent soil stabilization measures, stabilizing slopes, and re-establishing vegetation to stabilize disturbed areas and reduce stormwater flow velocities. Common erosion control measures that may be used during construction include mulching, sodding, and/or seeding to stabilize exposed soils and establish ground cover.
- *Structural Controls to Minimize Sediment Transport* – The use of structural controls during construction to minimize erosion and sediment transport would be further detailed in individual project plans and specifications. Structural controls may include, but not necessarily be limited to: staked hay bales, silt fences, and floating baffles in adjacent water bodies.

- *Pollution Prevention and Control* – Pollution prevention and waste management plans provide an effective means to address the storage, handling, and disposal of fuels, lubricants, and other materials used during construction (see Section 8.7). Pollution prevention planning may include, but not be limited to, implementing a construction-phase SWPPP, Solid Waste Management Plan, and spill prevention and response plans documenting the measures that will be taken to prevent accidental releases to the environment and, should they occur, the actions that will be undertaken to minimize the environmental impact. In addition, the contractor would be required to comply with federal, state, and local hazardous materials/waste management regulations to assure proper management of hazardous and other special waste streams for the Proposed Project

It is not anticipated that construction activities will contribute pollutants to the watershed.

(16) WILD AND SCENIC RIVERS

(a) Is the Proposed Action's project study area within any Wild and Scenic Rivers System (WSRS), study rivers, National Rivers Inventory (NRI), or otherwise eligible rivers or river segments under Section 5(d)? If no Wild and Scenic Rivers, study rivers, NRI, or Section 5(d) rivers are found within the study area, no further analysis is needed. If **YES**, contact an FAA ORL/ADO EPS for further guidance. **Note:** *The study area should be defined as the entire geographic area with the potential to be either directly or indirectly impacted by the proposed action and alternative(s). For example, if construction of a new facility is part of the proposed action or alternative(s), the study area should include any areas directly impacted through any visual, audible, or other type of intrusion that is out of character with the river or alters the outstanding features of the river's setting. The study area should also include any area indirectly impacted by the proposed action and alternative(s), such as rivers or river segments many miles downstream from the construction footprint of a project which may experience changes in water quality or quantity due to the proposed action and alternative(s). In addition, the default boundaries of Wild and Scenic Rivers as defined in the Wild and Scenic Rivers Act extend to a maximum of one-quarter mile from the ordinary high water mark on each side of the river (an average of not more than 320 acres per mile). As a result, be sure to consider any area within this boundary as part of the study area. Florida has two rivers designated as wild and scenic in accordance with the Wild and Scenic Rivers Act; the Loxahatchee River in southeast Florida, and the Wekiva River in central Florida. The NPS's NRI website at:* http://www.nps.gov/ncrc/programs/rtca/nri/ *provides a map which can assist in determining if any rivers in the study area are included on the NRI; and the National Wild and Scenic River's Designated Wild and Scenic Rivers website at:* http://www.rivers.gov/map.php *provides a list of all designated Wild and Scenic Rivers in the National System as well as all study rivers.*

Explain:

The Proposed Project Study Area is not within any Wild and Scenic River System, study rivers, National Rivers Inventory, or otherwise eligible rivers or river segments under Section 5(d).

9. CUMULATIVE IMPACTS

Cumulative impacts are impacts that a proposed action and retained alternatives (if any) would have on a particular resource when added to impacts on that resource from past, present, and reasonably foreseeable future actions undertaken or proposed by the Airport Sponsor, the FAA, other Federal, state or local agencies, or a private entity. **Note:** *List all sources of information including projects shown on an airport's ALP or identified in an airport's master plan, on airport*

projects approved by the FAA, the airport's 5 year CIP, the local jurisdiction's approved land use map and long range transportation plan, and substantial locally approved development projects. Identify off-airport projects that are within the same political jurisdiction or within approximately 5 miles of the airport, and the existing and future 65 DNL noise contour. For wetland and biotic resource impacts consider water management district basin boundaries.

(a) In order to determine whether the Proposed Action and retained alternatives (if any) would have a cumulative effect on any of the environmental impact categories discussed above, identify any on-airport projects that may have common timing and/or location; and any off-airport projects in the airport's vicinity outside of the Airport Sponsor or FAA's jurisdiction. Generally use 3 years for past projects and 5 years for future foreseeable projects. For each past, present, and future project, you must discuss environmental impacts and any required permits.

Explain:

On-Airport Development Projects

A list of past, current, and future airport projects is given below. Some of these projects were originally described in the X23 Master Plan Update (2011), ALP (2018), and Joint Airport Capital Improvement Program but have been updated to capture the evolution of specific decisions as airport planning and development progresses.

Airport Projects Completed within Last Three Years

- Runway Object Free Area Improvements (including grading of ROFA)
- Automobile Access and Parking Area
- Storage Hangar Development

Current Airport Projects

- Construction of a Partial Taxiway (South)

Airport Projects Anticipated Within the Next Five Years:

- West-side Hangar Development
- General Aviation Terminal and Apron Expansion

Off-Airport Development Projects

There are no known off-airport development projects in the area that would interact with resources potentially impacted by the Proposed Project. However, the Study Area may be trending away from a more rural, agricultural setting as population in the area continues to grow and the health of citrus in the region declines, as evidenced by the abandonment of several citrus groves in the vicinity of the airport and the multiple properties for sale in the area.

(b) Considering the impacts of the Proposed Action (and retained alternatives if any) together with the environmental impacts of past, present, and future projects discussed in 12(a) above, discuss whether cumulative impacts would exceed a significant impact threshold where one is provided. If no threshold is provided, discuss whether potential cumulative impacts would be considered substantial by any Federal, state, or local agency, or the public. *Significant impact thresholds are provided in Exhibit 4-1 of FAA Order 1050.1F and in 5050.4B Table 7-1 for each resource category.*

Explain:

The Proposed Project will not result in significant environmental impacts for any environmental resource, and most impacts would be imperceptible or negligible. As detailed in the Environmental Consequences analysis, it is anticipated that the Proposed Project would result in no substantial or significant direct or indirect effects on the following resources: coastal barriers; Department of Transportation Act, Section 4(f) resources; energy supplies, natural resources, and sustainable design; farmlands; hazardous material, hazardous waste, and contaminated sites; solid waste and pollution prevention; wild and scenic rivers; historic, architectural, archaeological, and cultural resources; socioeconomics; noise; environmental justice and children's environmental health and safety risks; coastal zone management; wetlands; floodplains; surface and ground water; land use; and transportation. The Proposed Project is anticipated to account for negligible incremental impacts to resources that may be affected by other stressors in the greater landscape, including visual resources, biological resources, and air quality (including GHG).

9.1 Visual Resources

Visual impacts associated with the Proposed Project may combine with or further enable additional, reasonably foreseeable airport development projects and thus may incrementally contribute to the alteration of the natural viewshed of properties on the northeast side of East Lake facing the airport property. While this change would not exceed any significance threshold established for visual resources, increased industrial-type development at the airport may incrementally affect the rural/agrarian and natural character of the existing viewscape, especially as other agricultural land in the area may be converted from citrus or other crops to alternative uses.

9.2 Biological Resources

The Proposed Project does not affect quality habitat availability or cause direct impacts to most wildlife species or vegetation in the region, including sensitive or protected species. However, the Proposed Project and other reasonably foreseeable airport projects may displace some common resident, migrant, and special status species, including the relocation of gopher tortoises and their commensals as they are discovered in each project footprint. Considering the abundance of open agriculture, green space, and conservation areas in the vicinity of X23 (including the large, contiguous area of quality habitat available in the Osceola National Forest two miles north of the Proposed Project location), it is not anticipated that the negligible impacts to wildlife associated with the Proposed Project will become cumulatively significant when added to other past, present, or reasonably foreseeable future projects.

9.3 Air Quality and GHG

Construction and operation of all projects listed in Section 9(a), including the construction, operation, and induced aircraft associated with Proposed Project, would result in negligible but incremental impacts to air quality in the vicinity of the Study Area. Most of these impacts would be temporary in nature and are not likely to intermingle with other air quality impacts produced by additional projects in the region.

Air emissions are closely monitored, managed, improved, and otherwise considered by various federal, state, and local agencies and activities to maintain or improve air quality. Temporary, periodic impacts can be minimized through the use of environmental controls (i.e., BMPs) that are required in accordance with federal, state, and local construction air quality guidelines. Emissions from new and existing sources are regulated by the FDEP Division of Air Resources Management, which monitors air quality, licenses or permits facilities, and enforces compliance of new and existing emission sources. Furthermore, efficiencies and sustainable technologies are often incorporated into the design, construction, and operation of facilities that are continually evolving to reduce and offset increased additional impacts to air quality.

Due to the existing good air quality status, the temporary nature of construction activities, oversight of ongoing emissions throughout the state, and commitment from agencies and others for continual improvement, the cumulative effect of all past actions, present uses, and future projects, including the Proposed Project, is unlikely to become significant in the region.

10. MITIGATION MEASURES

(a) As defined in the CEQ Regulations at 40 CFR § 1508.20, mitigation includes avoiding the impact; minimizing the impact; rectifying the impact by repairing, rehabilitating, or restoring the environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and compensating for the impact by replacing or providing substitute resources.

Summarize all mitigation measures discussed in the Environmental Impact Categories of this EA that will be taken to avoid creation of significant impacts to a particular resource as a result of the Proposed Action. Discuss any impacts that cannot be mitigated, or that cannot be mitigated below the threshold of significance. *Significant impact thresholds are provided in Exhibit 4-1 of FAA Order 1050.1F for each resource impact category and in 5050.4B Table 7-1.*

Because the Proposed Project does not have any impacts that would exceed thresholds indicating a significant impact (**Table 8-1**), no mitigation is required. The City will implement conservation measures and best management practices during construction to minimize potential impacts to state and federally listed species, air quality, and surface water.

11. PERMITS

List all required permits for the Proposed Action, including the lead agency, status, and responsible entity. Discuss coordination with appropriate agencies and the expected time frame for receiving identified permits. Indicate whether any difficulties are anticipated in obtaining required permits. ***Note:*** *Even though the Airport Sponsor has/shall obtain one or more permits from the appropriate Federal, state, and local agencies for the Proposed Action, initiation of any construction activities shall* ***NOT*** *begin until the FAA has issued its environmental determination based on the information in this EA.*

Permits that may be required to implement the Proposed Project are listed **Table 11-1**.

TABLE 11-1
SUMMARY OF REQUIRED PERMITS AND APPROVALS

Permit	Lead Agency	Status	Responsible Entity	Permit Process Timeframe
State				
National Pollutant Discharge Elimination System (NPDES)	Florida Department of Environmental Protection	Permit required prior to construction.	City of Umatilla	30-60 days
Gopher Tortoise Relocation Permit	Florida Fish and Wildlife Conservation Commission	Permit required if individual tortoises are discovered in pre-construction survey.	X23	90 days
Environmental Resource Permit (ERP)	St. Johns Water Management District	Permit required prior to construction.	X23	30-60 days
Local				
Tree Removal Permit	City of Umatilla / Lake County	Permit may be required prior to construction.	X23	30-60 days
Local Construction Permits	City of Umatilla	Permit required prior to construction.	Construction Contractor	N/A

Source: Environmental Science Associates, 2018.

12. CONSISTENCY WITH APPROVED PLANS OR LAWS

(a) Is the Proposed Action consistent with existing environmental plans, laws, and administrative determinations of Federal, state, regional, or local agencies?

Explain:

The Proposed Project would be consistent with federal, state, and local laws and regulations. Select federal and state agencies, local governments, Native American Indian tribes, and regional planning organizations were notified of the project and preparation of this EA. No objections or concerns have been received from these agencies.

(b) Are there any other Federal approvals or permits required?

Explain:

No federal approvals or permits are required. (Permits are listed in **Table 11-1**).

(c) Is the Proposed Action consistent with plans, goals, policies, or controls that have been adopted for the area in which the airport is located?

Explain:

The Proposed Project is consistent with local plans, goals, policies, and controls. Local governments and agencies were notified of the project and preparation of this EA, including the provision of a Proposed Project presentation to the City Council in May 2018. No objections or concerns were received.

13. PUBLIC AVAILABILITY

(a) Discuss whether any public meetings were held during development of the Draft EA. Provide a list of all agencies and persons consulted in the preparation of this EA. Discuss any input from local officials or public groups regarding the Proposed Action. Discuss whether a public hearing is warranted i.e. there is substantial environmental controversy concerning the Proposed Action or there is substantial interest in holding a hearing or another agency with jurisdiction over the action requests a public hearing.

A Public Information Workshop was held on May 1, 2018, to provide information on the proposed runway extension and associated improvements, the EA process, and how to submit comments. No specific comments were received, although a local lakeside resident noted their general concerns with the Proposed Project.

For the purpose of soliciting input for the development of the EA, the following governments, organizations, and agencies were provided written notification of the preparation of the EA and information describing the Proposed Project: Department of the Army Corps of Engineers; USFWS; Florida State Clearinghouse; Florida Department of State, Division of Historical Resources; Muscogee (Creek) Nation; Miccosukee Tribe

of Indians of Florida; Seminole Nation of Oklahoma; Seminole Tribe of Florida; and the City Manager (City of Umatilla). Initial responses from these agencies are described in the relevant sections of this EA.

Public or agency controversy is not anticipated.

(b) After review by the FAA ORL/ADO EPS, the EA must be issued by the Airport Sponsor as a Draft EA for a 30-day public and agency review period. Concurrent with the 30-day public review period, the Airport Sponsor must submit the Draft EA to the Florida State Clearinghouse and to Federal, state and local agencies (as determined by the ORL/ADO EPS). The Airport Sponsor must publish a notice of availability of the Draft EA for public review in the local newspaper and airport sponsor's website, if available. ***Note:*** *Certain special purpose environmental laws, regulations, or executive orders require public notice, and must be included as part of the Draft EA notice of availability. These include but are not limited to section 2(1)(4) of E.O. 11988, Floodplain Management, section 2(b) of E.O. 11990, Protection of Wetlands, Section 7 of the Endangered Species Act, Section 106 of the National Historic Preservation Act, and Order DOT 5610.2, Environmental Justice.*

The Draft EA is available for review by the public, government agencies, and interested parties through X. A Notice of Availability of the Draft EA was published in the X newspaper on X and X. The Notice was also placed on The City of Umatilla website on X at: X.

Copies of the Draft EA were available for public review during regular business hours at the locations listed below. The Draft EA was also made available electronically (in PDF format) for download on the Airport's website at the link provided above.

- X23 Administrative Office - ADDRESS
- X Library - ADDRESS

The following agencies and officials were provided a copy of the Draft EA on X:

- U.S. Army Corps of Engineers
- USFWS
- Florida State Clearinghouse
- Florida Department of State, Division of Historical Resources
- Muscogee (Creek) Nation
- Miccosukee Tribe of Indians of Florida
- Seminole Nation of Oklahoma
- Seminole Tribe of Florida
- City Manager (City of Umatilla).

(c) Comments on the Draft EA received from the Florida State Clearinghouse, Federal and state agencies, and the public must be attached to the Final EA. The Airport Sponsor must provide draft responses for FAA review by the ORL/ADO EPS.

Summarize comments received and identify an appendix to the EA within which the comments and responses are found.

All public and federal, state, and local agency comments received during the comment period will be reviewed, considered, and incorporated into the Final EA and Proposed Project decision as relevant. All comments will be made available as **Appendix H**.

14. LIST ALL ATTACHMENTS TO THIS EA

Appendix A Figures

Exhibit 1. Airport Location

Exhibit 2. Proposed Project

Exhibit 3. Conditional X23 Airport Layout Plan with Proposed Project

Exhibit 4. Alternative 3: Extend Runway 1-19 to the South

Exhibit 5. Alternative 4: Construct a New Runway on a New Alignment

Exhibit 6. 2017 Baseline DNL Contours and Land Use Within the Study Area

Exhibit 7. Land Use and Vegetative Communities in the Proposed Project Study Area

Exhibit 8. Florida Scrub Jay Survey Locations and Area of Review

Exhibit 9. 2020 No Action Alternative and 2020 Proposed Project DNL Contours

Exhibit 10. 2025 No Action Alternative and 2020 Proposed Project DNL Contours

Appendix B Runway Length Analysis

Appendix C Noise Technical Report

Appendix D Special Status Species

Lake County, Florida, Natural Areas Inventory Tracking List for Special Status Species

Special Status Species Occurrence in the Proposed Project Study Area

USFWS Concurrence with No Affect Determination for Sand and Bluetail Mole Skink for the Proposed Project at X23

USFWS Concurrence with Affect Determinations for Special Status Species and Biological Assessment for the Umatilla Municipal Airport Runway 1-19 Extension Project

Appendix E U.S. Department of Agriculture Form AD-1006, Farmland Conversion Impact Rating

Appendix F Cultural Resources

Florida Master Site File Review

Coordination (SHPO Concurrence)

Cultural Resources Assessment Survey

Appendix G Airport Sponsor Land Use Assurance Letter

Appendix H Public Comments (reserved)

Appendix I Acronyms and Abbreviations

15. PREPARER CERTIFICATION

I certify that the information I have provided above is, to the best of my knowledge, true and correct.

Signature:	
Name, Title:	
Affiliation:	
Date:	
Phone Number:	
Email:	

Signature:	
Name, Title:	Amy Paulson
Affiliation:	Environmental Science Associates
Date:	
Phone Number:	(251) 210-6757
Email:	apaulson@esassoc.com

16. AIRPORT SPONSOR CERTIFICATION

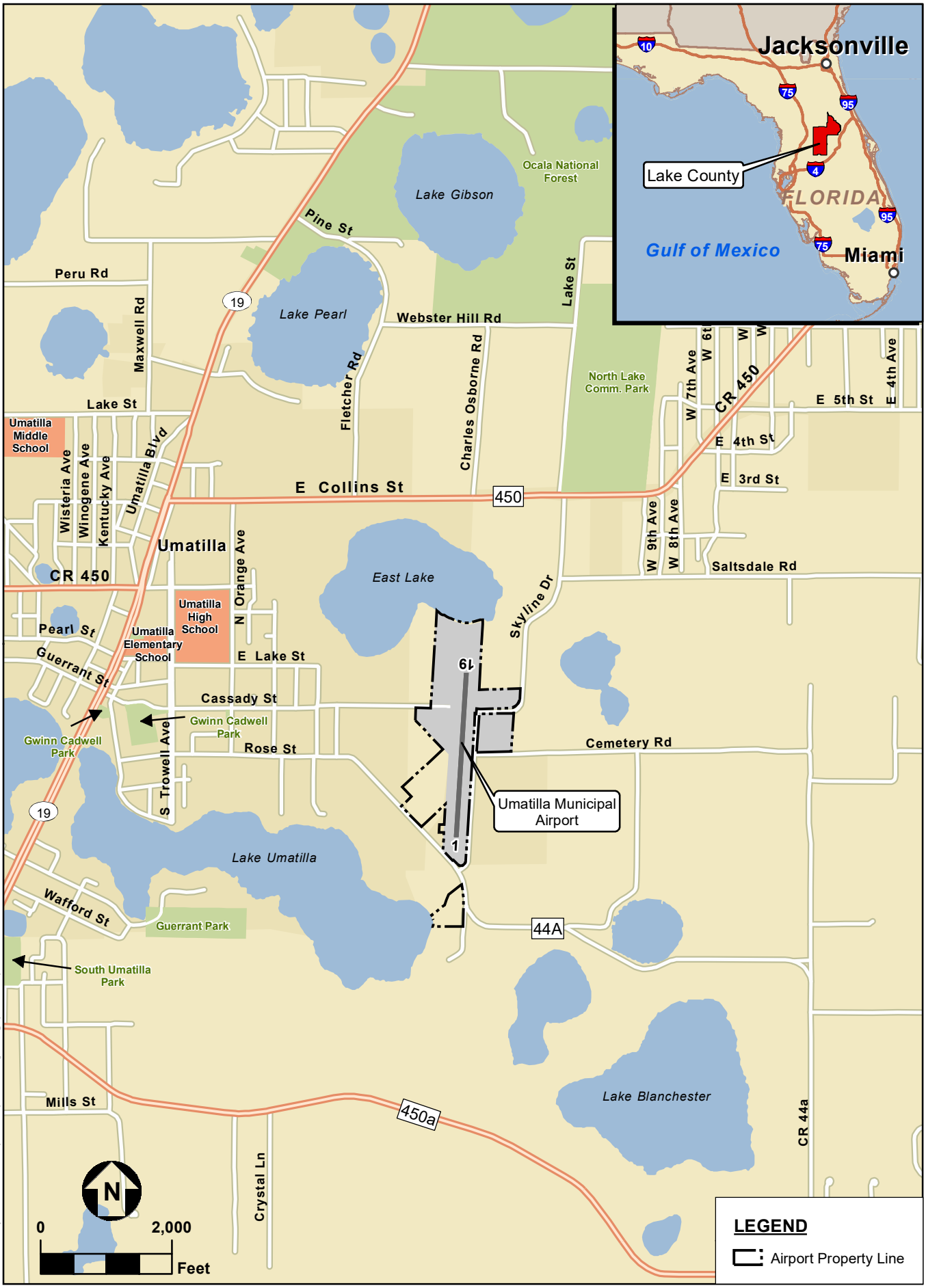
I certify that the information I have provided above is, to the best of my knowledge, true and correct. I also recognize and agree that no construction activity, including but not limited to site preparation, demolition, or land disturbance, shall proceed for the above proposed action(s) until FAA issues a final environmental decision for the proposed action(s), and until compliance with all other applicable FAA approval actions (e.g., ALP approval, airspace approval, grant approval) has occurred and all appropriate Federal, state and local permits and certifications have been obtained.

Signature:	
Name, Title:	Scott Blankenship, City Manager
Affiliation:	City of Umatilla, Umatilla Municipal Airport
Date:	
Phone Number:	352-669-3125
Email:	sblankenship@umatillafl.org

END NOTES: None.

Appendix A
Figures

ESA



Source: Esri; ESA, 2018

Umatilla Municipal Airport

EXHIBIT 1

AIRPORT LOCATION MAP

LEGEND

ROFA	RUNWAY OBJECT FREE AREA
RSA	RUNWAY SAFETY AREA
PROFA	PROPOSED RUNWAY OBJECT FREE AREA
PRPZ	PROPOSED RUNWAY PROTECTION ZONE
PRSA	PROPOSED RUNWAY SAFETY AREA

LAKE UMATILLA

ROSE STREET

WEST SKYLINE DRIVE

EAST LAKE

EXISTING RUNWAY 1-19 (2,500' X 60')

PROPOSED RUNWAY 1-19 (3,000' X 60')

ROFA

RSA

PRPZ

25'

60'

35'

465'

SKYLINE DRIVE

TWIN PONDS ROAD

SCALE: 1" = 450'

450' 0' 450' 900'

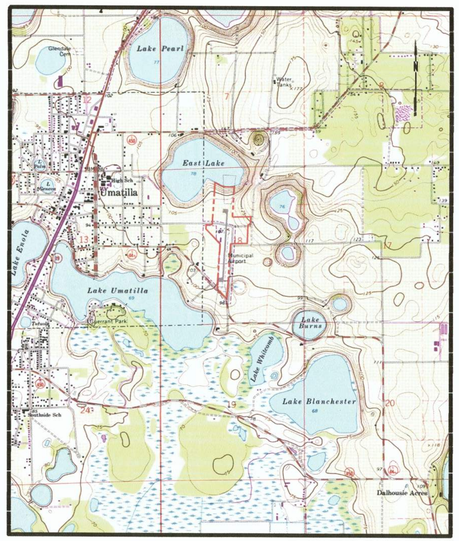
LEGEND

- PROPOSED RUNWAY AND TAXIWAY EXTENSION
- EXISTING PAVEMENT
- EXISTING PAVEMENT TO BE REMOVED
- AIRPORT PROPERTY BOUNDARY
- CLEARING AND GRUBBING
- NUISANCE VEGETATION MAINTENANCE
- SURVEYED WETLAND LIMIT
- STUDY AREA

Source: ESA, 2019. GAI, 2019.

Umatilla Municipal Airport

EXHIBIT 2 PROPOSED PROJECT



LOCATION MAP
NOT TO SCALE

LEGEND		
Existing	Description	Proposed
	Runway Centerline	
RSA	Runway Safety Area (RSA)	RSA
ROFA	Runway Object Free Area (ROFA)	ROFA
ROFZ	Runway Obstacle Free Zone (ROFZ)	ROFZ
	Runway Protection Zone (RPZ)	
TOFA	Taxiway Object Free Area (TOFA)	TOFA
TSA	Taxiway Safety Area	TSA
BRL	Building Restriction Line (BRL)	BRL
	Pavement	
ARP	Airport Reference Point	ARP
	Airport Buildings	
	Other Buildings	
EAPL	Airport Property Line	EAPL
	Other Property Lines	
	Railroad	
	Fence	
	Tree Line	
	Wetlands	
300	Ground Elevation Contours	300
	Proposed Land Acquisition	

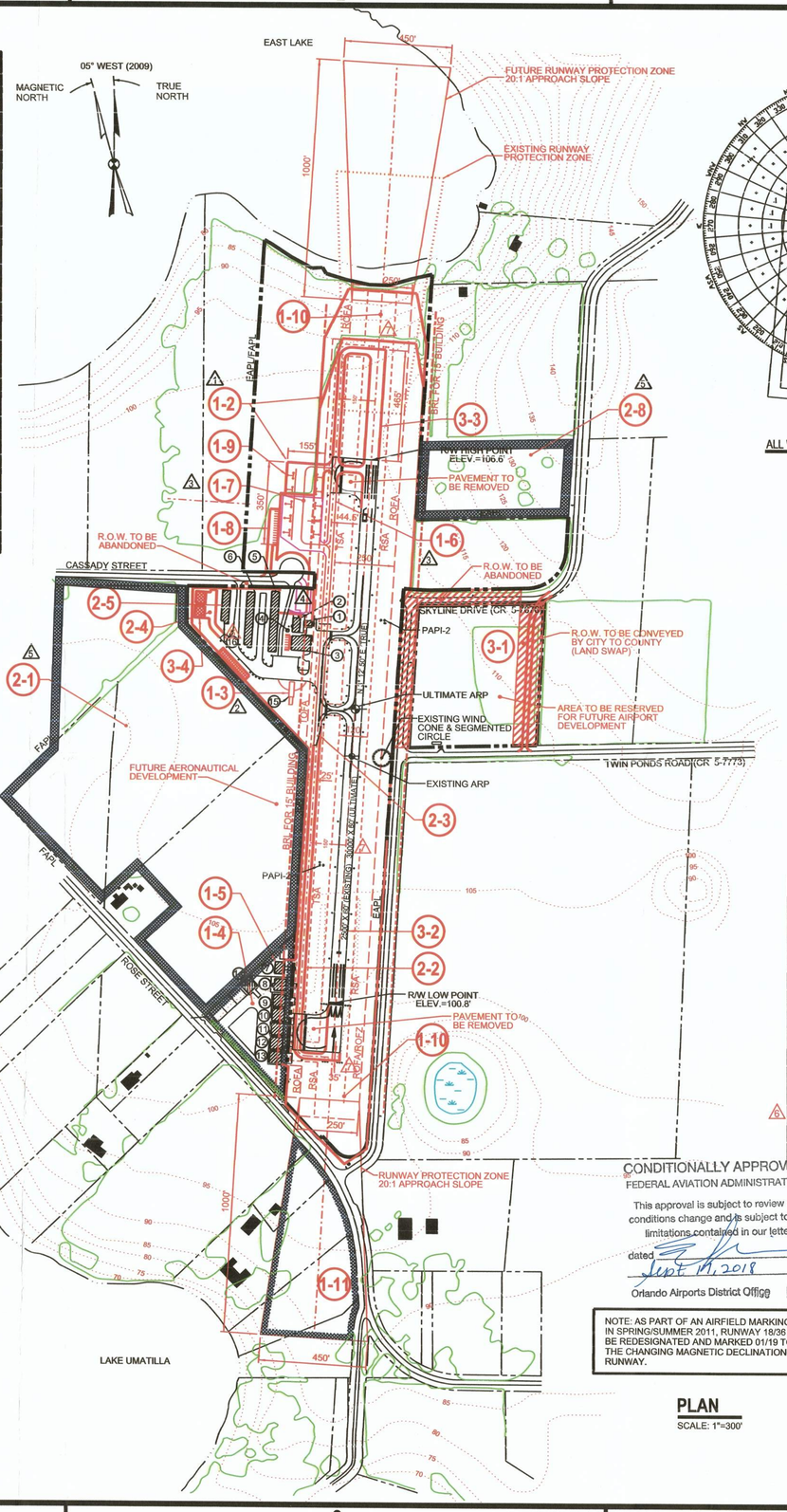
FAA's approval of this Airport Layout Plan (ALP) represents acceptance of the general location of future facilities depicted. During the preliminary design phase, the airport owner is required to resubmit for approval the final locations, heights and exterior finish of structures. FAA's concern is obstructions, impact on electronic aids or adverse effects on controller view of aircraft approach and ground movement areas which could adversely affect the safety, efficiency or utility of the airport.

DEVELOPMENT PROJECT PHASING

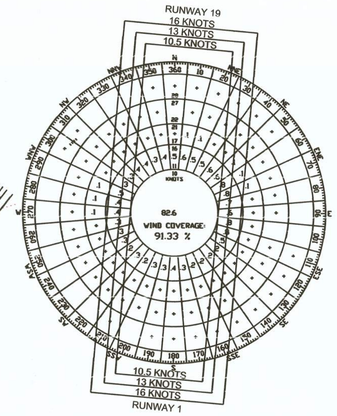
PHASE 1 (2010-2014)
- 1-1 Environmental Assessment (NEPA EA) for 1-5 Year Development
- ~~1-2 Fencing & Security Enhancements~~
- ~~1-3 Aviation Fuel Farm~~
- 1-4 Land Acquisition - Corporate Hangar Area
- 1-5 Building Acquisition - Corporate Hangar Area
- ~~1-6 Parallel Taxiway (Phase 1 - North)~~
- ~~1-7 Transient Aircraft Parking Apron (6,000 SY)~~
- 1-8 Automobile Access and Parking Area (900 SY)
- 1-9 Aircraft Storage Hangars (Shade Structures)
- 1-10 Develop GPS Approaches to Runways 1(36) and 19 (18)

PHASE 2 (2015-2019)
- 2-1 Land Acquisition - Central Terminal Area ~~(4 acres)~~ (Approx. 32 Acres) 5
- 2-2 Parallel Taxiway (Phase 2- South)
- 2-3 Rehabilitate Taxiway Pavement
- 2-4 Terminal Area Apron Expansion
- ~~2-5 T-Hangar Development~~ 4
- 2-6 Road Realignment - Skyline Drive
- 2-7 Environmental Assessment (MEPA EA) for Runway Extension
- 2-8 Land Acquisition - North East (Approx. 5 acres) 5

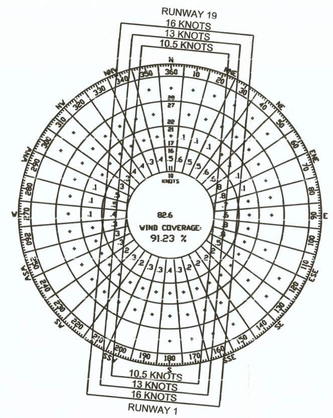
PHASE 3 (2020-2029)
- 3-1 Land/Easement for Runway 1 Approach & RPZ
- 3-2 Rehabilitate Runway Pavement
- 3-3 Runway and Taxiway Extension
- 3-4 Corporate Hangar Development



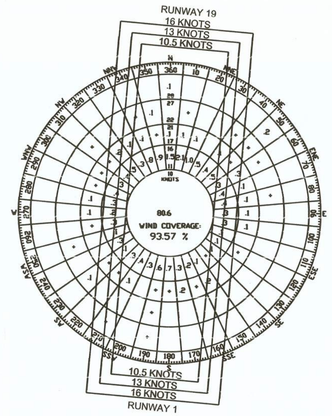
PLAN
SCALE: 1"=300'



ALL WEATHER WIND ROSE



VFR WIND ROSE



IFR WIND ROSE

RUNWAY	PERCENT WIND COVERAGE								
	12 MPH (10.5 KNOT)			15 MPH (13 KNOT)			18 MPH (16 KNOT)		
	ALL WEATHER	VFR	IFR	ALL WEATHER	VFR	IFR	ALL WEATHER	VFR	IFR
1	78.31%	78.24%	78.61%	81.60%	81.58%	80.64%	84.80%	84.84%	82.53%
19	70.95%	71.11%	64.38%	73.59%	73.79%	65.76%	76.45%	76.72%	67.11%
1-19	91.33%	91.23%	93.57%	95.30%	95.27%	96.04%	99.00%	99.03%	98.16%

SOURCE: NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION,
NATIONAL CLIMATIC DATA CENTER,
ASHEVILLE, NORTH CAROLINA

OBSERVATIONS TAKEN AT ORLANDO INTERNATIONAL AIRPORT
FOR THE PERIOD BETWEEN 1999 - 2008

APPROVED BY: _____ CITY OF UMATILLA
DATE: 8/27/18

APPROVED BY: _____ FEDERAL AVIATION ADMINISTRATION
ORLANDO AIRPORTS DISTRICT OFFICE
DATE: _____

CONDITIONALLY APPROVED
FEDERAL AVIATION ADMINISTRATION

This approval is subject to review as conditions change and is subject to the limitations contained in our letter dated Sept. 11, 2018

Orlando Airports District Office — Date

NOTE: AS PART OF AN AIRFIELD MARKING PROJECT IN SPRING/SUMMER 2011, RUNWAY 18/36 ENDS WILL BE REDESIGNATED AND MARKED 01/19 TO REFLECT THE CHANGING MAGNETIC DECLINATION OF THE RUNWAY.

FACILITIES TABLE					
Existing			Proposed		
#	Facility Name	Top Elevation	#	Facility Name	Top Elevation
1	GA Terminal Building	116.5'	1	GA Terminal Building	116.5'
2	Apartment Building/Storage	128.5'	2	Apartment Building/Storage	128.5'
3	Communal/Maintenance Hangar	128.5'	3	Communal/Maintenance Hangar	128.5'
4	Electrical Vault	115'	4	Electrical Vault	115'
5	T-Hangar Building A	122'	5	T-Hangar Building A	122'
6	T-Hangar Building B	121'	6	T-Hangar Building B	121'
7	Corporate Hangar	121.5'	7	Corporate Hangar	121.5'
8	Corporate Hangar	124.5'	8	Corporate Hangar	124.5'
9	Corporate Hangar	120.5'	9	Corporate Hangar	120.5'
10	Corporate Hangar	117'	10	Corporate Hangar	117'
11	Corporate Hangar	116.5'	11	Corporate Hangar	116.5'
12	Corporate Hangar	116.5'	12	Corporate Hangar	116.5'
13	Corporate Hangar	116'	13	Corporate Hangar	116'
14	Corporate Hangar	118'	14	Corporate Hangar	118'
15	Aviation Fuel Farm		15	Shade Hangar	115'
16	Box Hangar Building C		16	Shade Hangar	115'
			17	T-Hangar Building C	121'
			18	T-Hangar Building D	122'
			19	Corporate Hangar	121'
			20	Corporate Hangar	121'

AIRPORT DATA TABLE		
Airport Data	Existing	Proposed
Airport Elevation (MSL)	106.6'	106.6'
Airport Reference Point (NAD 83)		
Latitude	28° 55' 27" N	28° 55' 29" N
Longitude	81° 39' 07" W	81° 39' 06" W
Mean Max Temperature of Hottest Month	91° F	91° F
Airport Terminal Area NAVAIDS	wind cone, segmented circle, rotating beacon	wind cone, segmented circle, rotating beacon
Magnetic Variation	05° W	05° W
Date of Magnetic Variation	2009	2009
NPIAS Service Level	GA	GA
State Service Level	community airport	community airport
Wind Coverage Crosswind Component (12 MPH)		
VFR	91.23%	91.23%
IFR	93.57%	93.57%
All Weather	91.33%	91.33%
Airport Reference Code	A-I	A-I/B-I
Design Aircraft	Piper Seneca	small aircraft excl.
Taxiway Lighting	MITL	MITL
Taxiway Marking	STD	STD

RUNWAY DATA TABLE		
Runway Data	Runway 1/19	
	Existing	Ultimate
Effective Gradient (%)	0.2	0.2
Maximum Grade Change	5.8'	5.8'
Wind Coverage (%)	91.81%	91.81%
Max. Elevation (MSL)	106.6'	106.6'
Runway Length	2500'	3,000' 1
Runway Width	60'	60'
Displaced Threshold	– / 200'	– / 235' 2
Usable Runway Length	2500'	3,000' 2
Surface Type	asphalt	asphalt
Pavement Strength		
Single Wheel	12,500	12,500
Dual Wheel		
Dual Tandem		
Approach Surface Slope	20:1 / 20:1	20:1 / 20:1
Approach Minimums	n/a	not lower than 1 mile
Visual Approach Aids	PAPI-2 and threshold/runway end lights / PAPI-2 and threshold/runway end lights	PAPI-2 and threshold/runway end lights / PAPI-2 and threshold/runway end lights
Instrument Approach Aids	GPS / GPS	GPS / GPS
Runway Lighting	MIRL	MIRL
Runway Marking	Non-Precision	Non-Precision
Airport Reference Code (ARC)	A-I	A-I/B-I
Critical Aircraft	Piper Seneca	Piper Seneca
Stage Length	500 miles	500 miles
Runway Object Free Area (ROFA)		
Length Beyond Runway	240'	240'
Width	250'	250'
Runway Safety Area (RSA)		
Length Beyond Runway	240'	240'
Width	120'	120'
Obstacle Free Zone (OFZ)	250'	250'
FAR Part 77 Category	Visual / Visual	Visual / Visual
Runway End Coordinates (NAD 83)		
Latitude	18: 28° 55' 39.55" N	18: 28° 55' 43.51" N
Longitude	18: 81° 39' 05.74" W	18: 81° 39' 05.48" W
Latitude	36: 28° 55' 14.84" N	36: 28° 55' 14.84" N
Longitude	36: 81° 39' 07.31" W	36: 81° 39' 07.31" W
Runway End Elevations (MSL)	106.6' / 100.9'	103.2' / 100.9'
Displaced Threshold Elevation (MSL)	– / 100.8'	– / 100.8'
TDZ Elevation (MSL)	106.6' / 106.6'	106.6' / 106.6'
Line of Sight Violations	n/a	n/a

MARK	DESCRIPTION	DATE
7	ULT. RUNWAY LENGTH UPDATE	8/2018
6	3-UNIT AIRCRAFT BOX HANGAR	8/2018
5	INCREASED PROPERTY ACQUISITION	10/2017
4	LA'OSIDE PARKING LOT	12/2014
3	TAXIWAY & APRON	2/2012
2	FUEL FACILITY	12/2010
1	FENCING & SECURITY PH 1	11/2010

PROJECT MGR: KCK
DESIGNED BY: JCT
DRAWN BY: JCT
CHECKED BY: KCK
CADD FILE NO.: UMATILLA ALP.DGN
SCALE: AS SHOWN
DATE: OCTOBER 20'10
PROJECT NO: 80.031.001

NO ALTERATION ON THESE DRAWINGS IS ALLOWED UNLESS SAID ALTERATIONS ARE MADE BY THE ENGINEER WHO PREPARED THE ORIGINAL DRAWINGS. IF AN ITEM BOUND BY THE SEAL OF AN ENGINEER IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL, AND THE NOTATION 'ALTERED BY' FOLLOWED BY HIS SIGNATURE AND THE SPECIFIC DESCRIPTION OF SUCH ALTERATION.

UMATILLA MUNICIPAL AIRPORT
CITY OF UMATILLA
LAKE COUNTY, FLORIDA

AIRPORT LAYOUT PLAN UPDATE
AIRPORT LAYOUT PLAN

SHEET REFERENCE NO.
3
SHEET 3 OF 8

Copyright©

"SYTIME" "TIME"
"DATE"
"USER"

LAKE UMATILLA

EAST LAKE

STRUCTURES(OTHER)
TO BE REMOVED

RESIDENCES TO
BE REMOVED

PROPOSED
ROADWAY

ROSE STREET

W. SKYLINE DR.

AIRPORT
PROPERTY LINE

EXISTING AIRPORT
PAVEMENT TO BE
REMOVED

NEW RUNWAY 1-19 (3000' X 60')

EXISTING RUNWAY 1-19 (2500' X 60')

500'

FRENCH LN

SKYLINE DR.

TWIN POND ROAD

SKYLINE DR.

PROPERTY TO
BE ACQUIRED

EXISTING ROADWAY
TO BE REMOVED

LEGEND

- PROPOSED AIRPORT PAVEMENT
- PROPERTY TO BE ACQUIRED
- AIPORT PROPERTY
- FLAGGED WETLAND LINE
- EXISTING PARCEL BOUNDARIES

SCALE: 1" = 400'

400' 0' 400' 800'

RSA - RUNWAY SAFETY AREA
ROFA - RUNWAY OBJECT FREE AREA
RPZ - RUNWAY PROTECTION ZONE
PAPI - PRECISION APPROACH PATH INDICATOR
PRSA - PROPOSED RUNWAY SAFETY AREA
PROFA - PROPOSED RUNWAY OBJECT FREE AREA
PRPZ - PROPOSED RUNWAY PROTECTION ZONE
TORA - TAKE OFF RUN AVAILABLE
ASDA - ACCELRATE STOP DISTANCE AVAILABLE
TODA - TAKE OFF DISTANCE AVAILABLE
LDA - LANDING DISTANCE AVAILABLE

ALTERNATIVE 3 STATISTICS

LAND TO BE ACQUIRED: 26 ACRES
PROPERTIES ACQUIRED/AFFECTED: 8
LAND OWNERS AFFECTED: 6
RESIDENCES TO BE REMOVED: 2
STRUCTURES (OTHER) TO BE REMOVED: 2
ROADWAY TO BE REMOVED: 1900 LF
NEW ROADWAY REQUIRED: 3500 LF

ALTERNATIVE 3 DECLARED DISTANCES:

	RUNWAY 1	RUNWAY 19
TORA	3000'	3000'
ASDA	3000'	3000'
TODA	3000'	3000'
LDA	3000'	3000'

Apr 03, 2019 - 2:24pm
Z:\Work\2017\A17043305 - TO 5 EA for Rwy 1-19\CAD\New Runway Exhibit\Future Runway Extension Alternative 2 (500' S).dwg

Source: GAI 2018

Umatilla Municipal Airport

EXHIBIT 4

ALTERNATIVE NO. 3 - EXTEND RUNWAY 1-19 500 FEET TO THE SOUTH

STRUCTURES(OTHER) TO BE REMOVED

PROPOSED ROADWAY

RESIDENCES TO BE REMOVED

HANGARS TO BE REMOVED

EXISTING AIRPORT PAVEMENT TO BE REMOVED

AIRPORT PROPERTY LINE

PROPERTY TO BE ACQUIRED

STRUCTURES(OTHER) TO BE REMOVED

EXISTING ROADWAY TO BE REMOVED

PROPERTY TO BE ACQUIRED

PROPOSED ROADWAY

RESIDENCES TO BE REMOVED

ROSE STREET

W. SKYLINE DR.

SKYLINE DR.

TWIN POND ROAD

FRENCH LN

EAST LAKE

10°

20

LEGEND

- PROPOSED AIRPORT PAVEMENT
- PROPERTY TO BE ACQUIRED
- AIPORT PROPERTY
- FLAGGED WETLAND LINE
- EXISTING PARCEL BOUNDARIES

SCALE: 1" = 400'

400' 0' 400' 800'

RSA - RUNWAY SAFETY AREA
ROFA - RUNWAY OBJECT FREE AREA
RPZ - RUNWAY PROTECTION ZONE
PAPI - PRECISION APPROACH PATH INDICATOR
PRSA - PROPOSED RUNWAY SAFETY AREA
PROFA - PROPOSED RUNWAY OBJECT FREE AREA
PRPZ - PROPOSED RUNWAY PROTECTION ZONE
TORA - TAKE OFF RUN AVAILABLE
ASDA - ACCELRATE STOP DISTANCE AVAILABLE
TODA - TAKE OFF DISTANCE AVAILABLE
LDA - LANDING DISTANCE AVAILABLE

ALTERNATIVE 4 STATISTICS
LAND TO BE ACQUIRED: 42 ACRES
PROPERTIES ACQUIRED/AFFECTED: 15
LAND OWNERS AFFECTED: 14
RESIDENCES TO BE REMOVED: 5
HANGARS TO BE REMOVED: 3
STRUCTURES (OTHER) TO BE REMOVED: 6
ROADWAY TO BE REMOVED: 4700 LF
NEW ROADWAY REQUIRED: 6800 LF

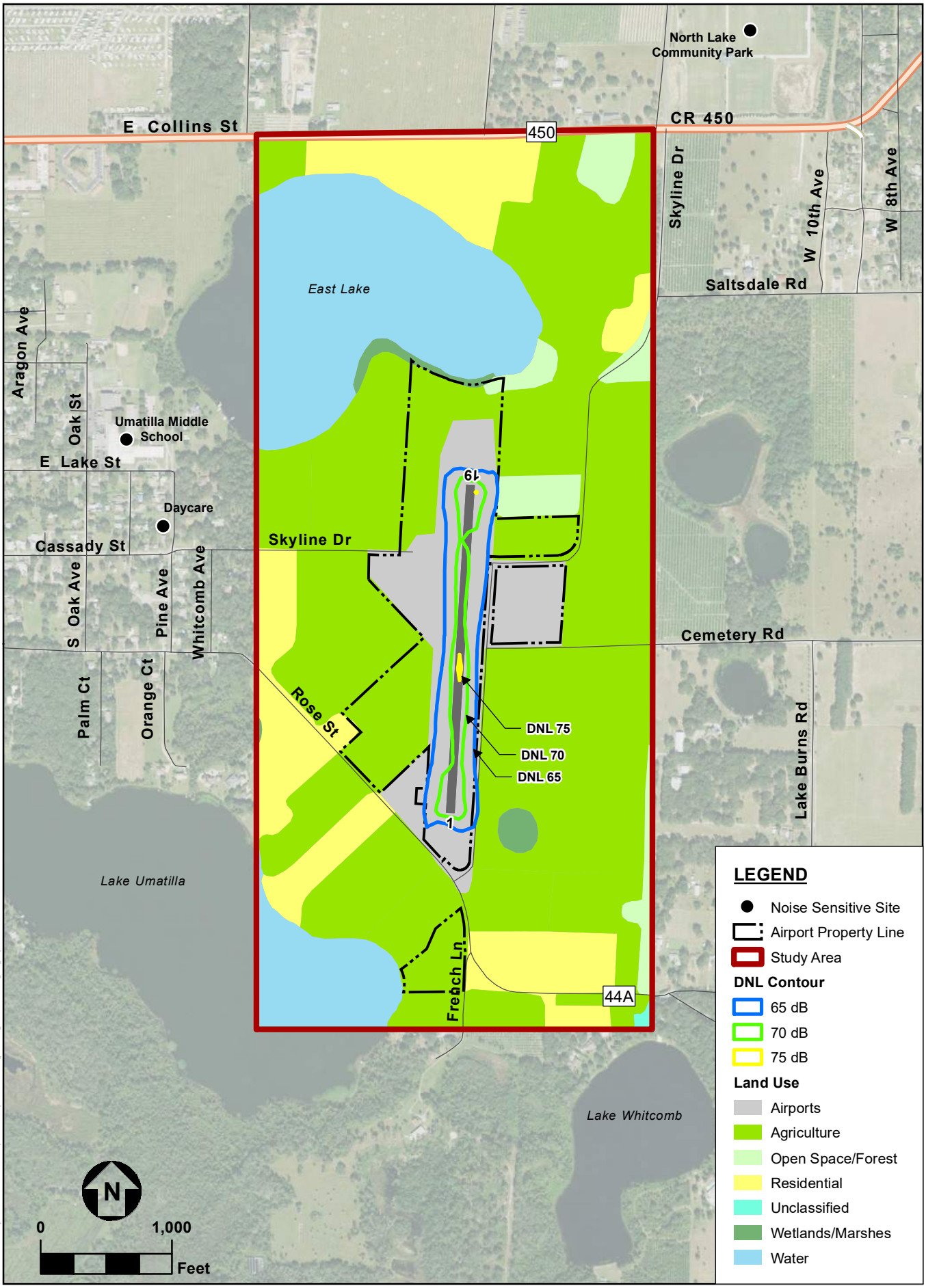
ALTERNATIVE 4 DECLARED DISTANCES:

	RUNWAY 1	RUNWAY 19
TORA	3000'	3000'
ASDA	3000'	3000'
TODA	3000'	3000'
LDA	3000'	3000'

Apr 03, 2019 - 2:20pm
Z:\Work\2017\A17043\05 - TO 5 EA for Rwy 1-19\CAD\New Runway Exhibit\Future Runway Extension Alternative 3 (New Alignment).dwg

Source: GAI 2018

Umatilla Municipal Airport
EXHIBIT 5
ALTERNATIVE NO. 4 - NEW RUNWAY ON A NEW ALIGNMENT

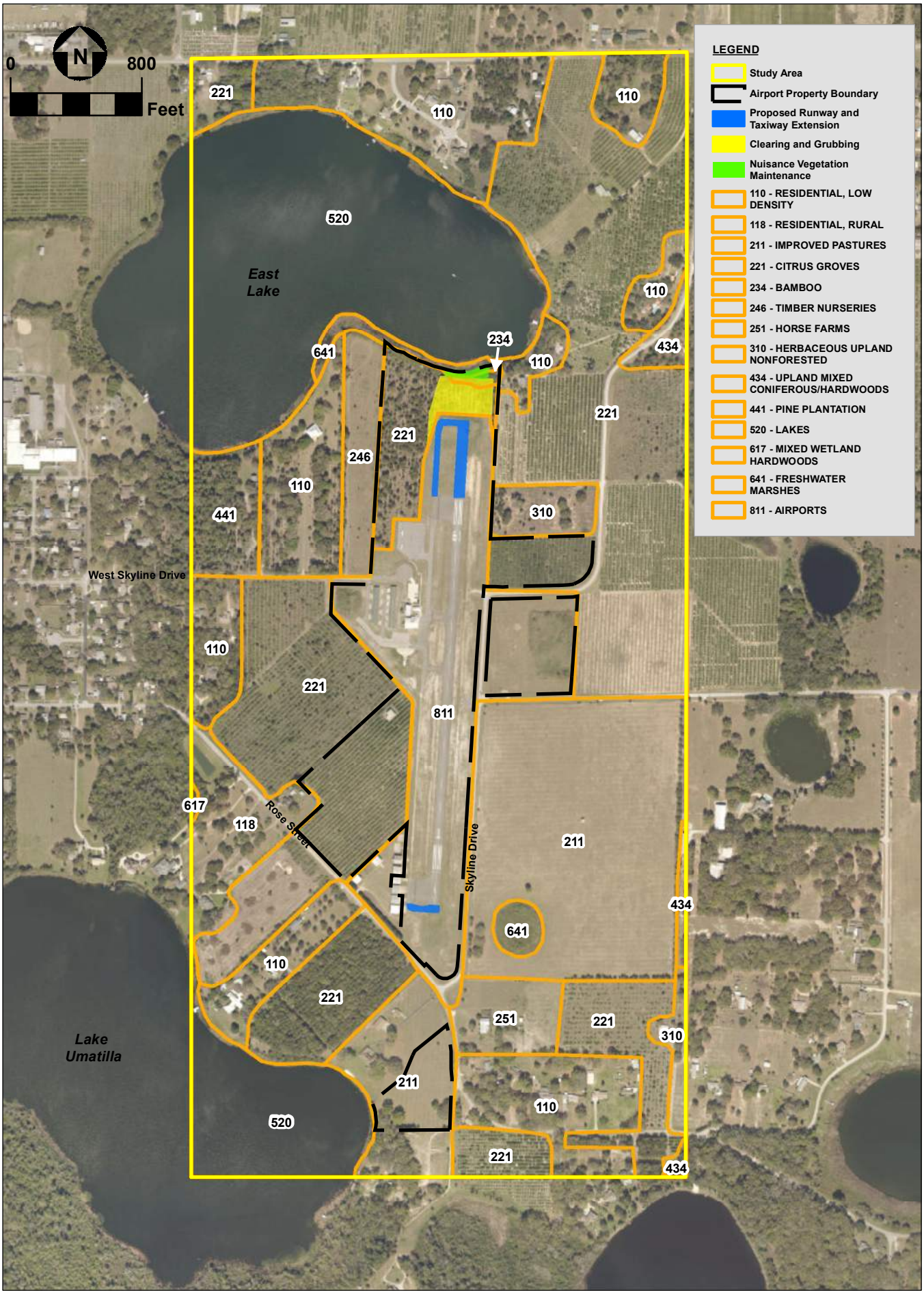


Source: AEDT 2d; SJRWMD, 2014; Esri; USDA NAIP (Aerial); ESA, 2018

Umatilla Municipal Airport

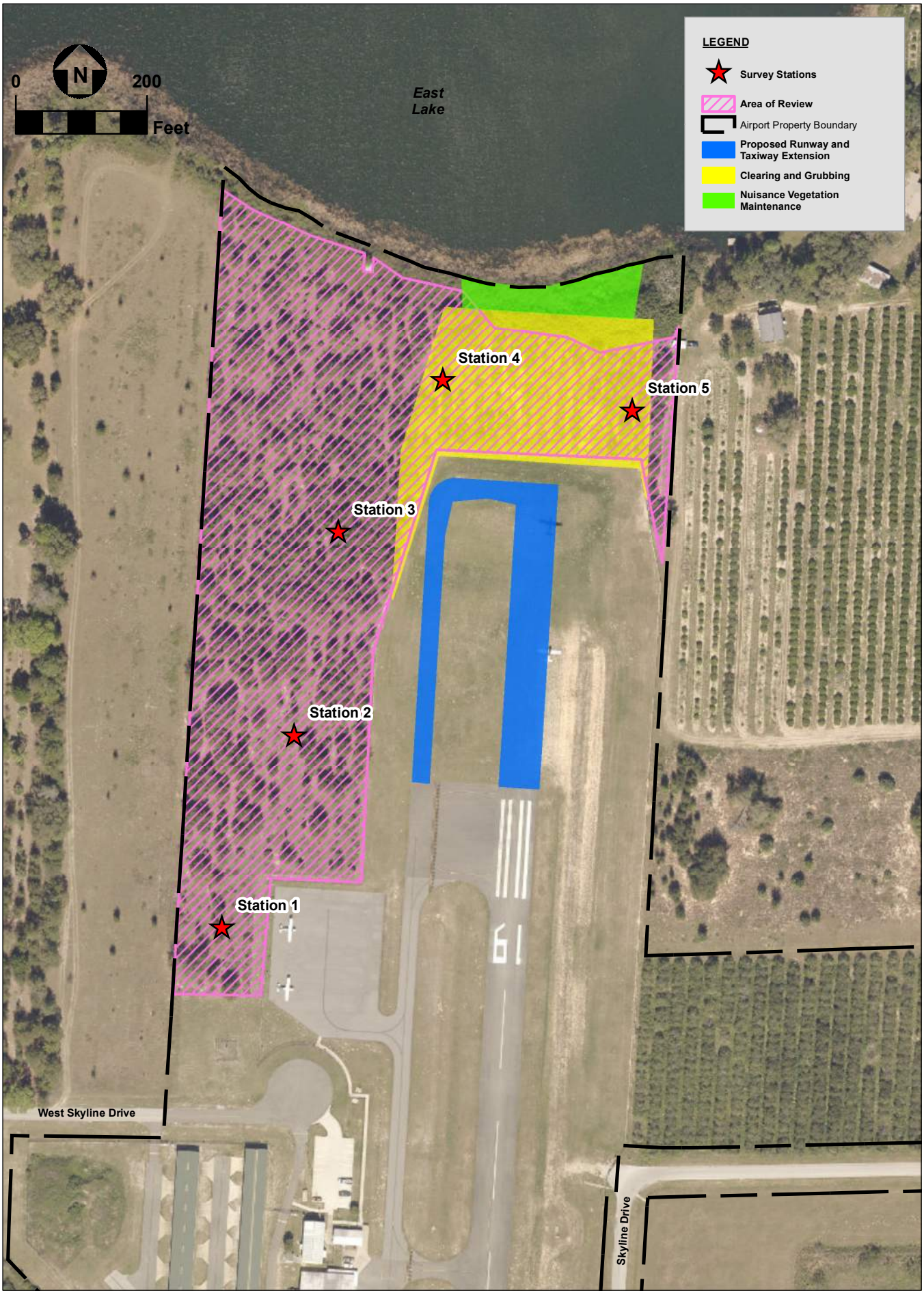
EXHIBIT 6

2017 BASELINE DNL CONTOURS AND LAND USE WITHIN THE STUDY AREA



Source: FDOT, 1999; Adapted by ESA, 2018

Umatilla Municipal Airport
EXHIBIT 7
LAND USE MAP

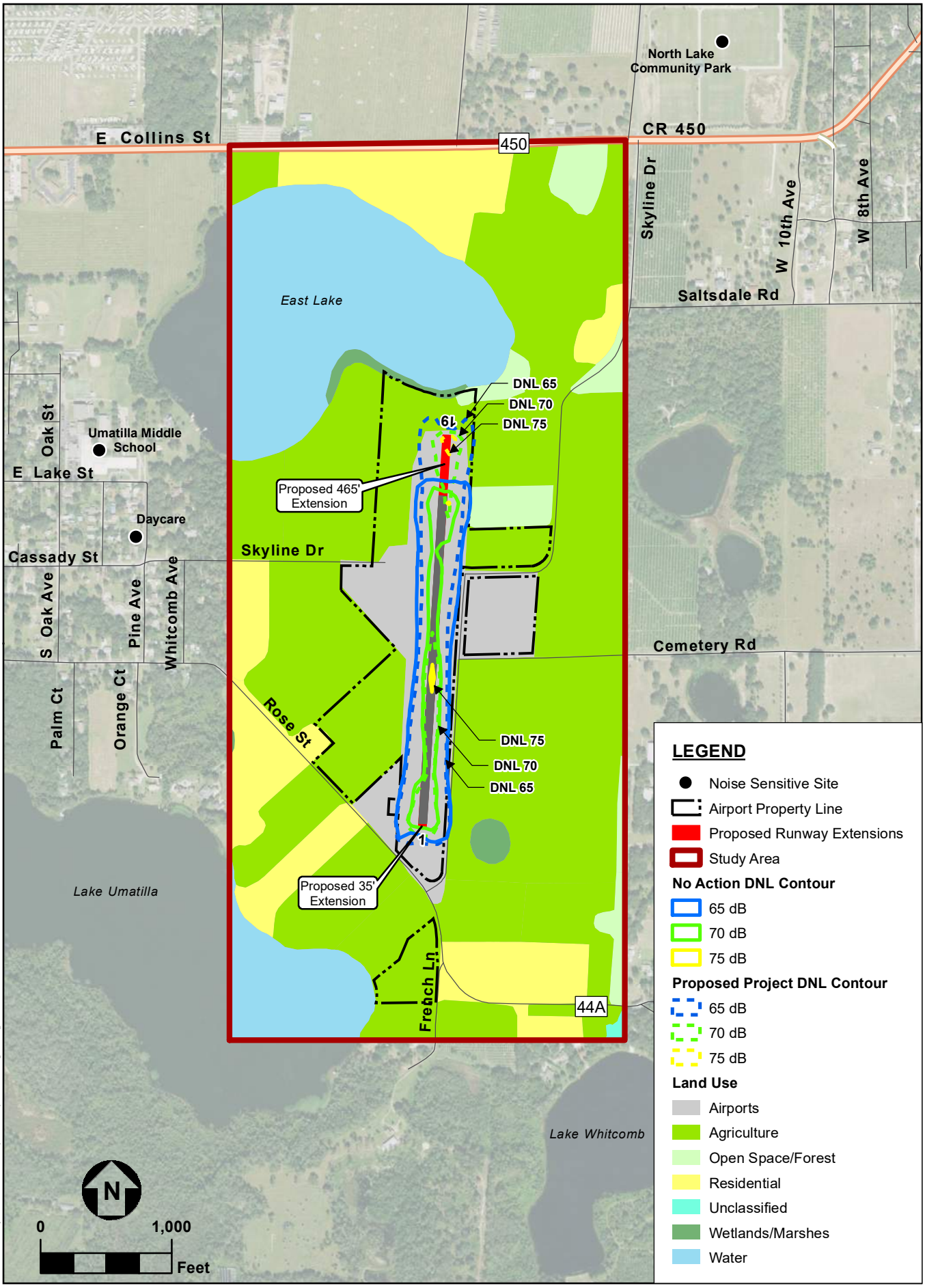


Source: ESA, 2018

Umatilla Municipal Airport

EXHIBIT 8

FLORIDA SCRUB JAY SURVEY LOCATIONS AND AREA OF REVIEW MAP

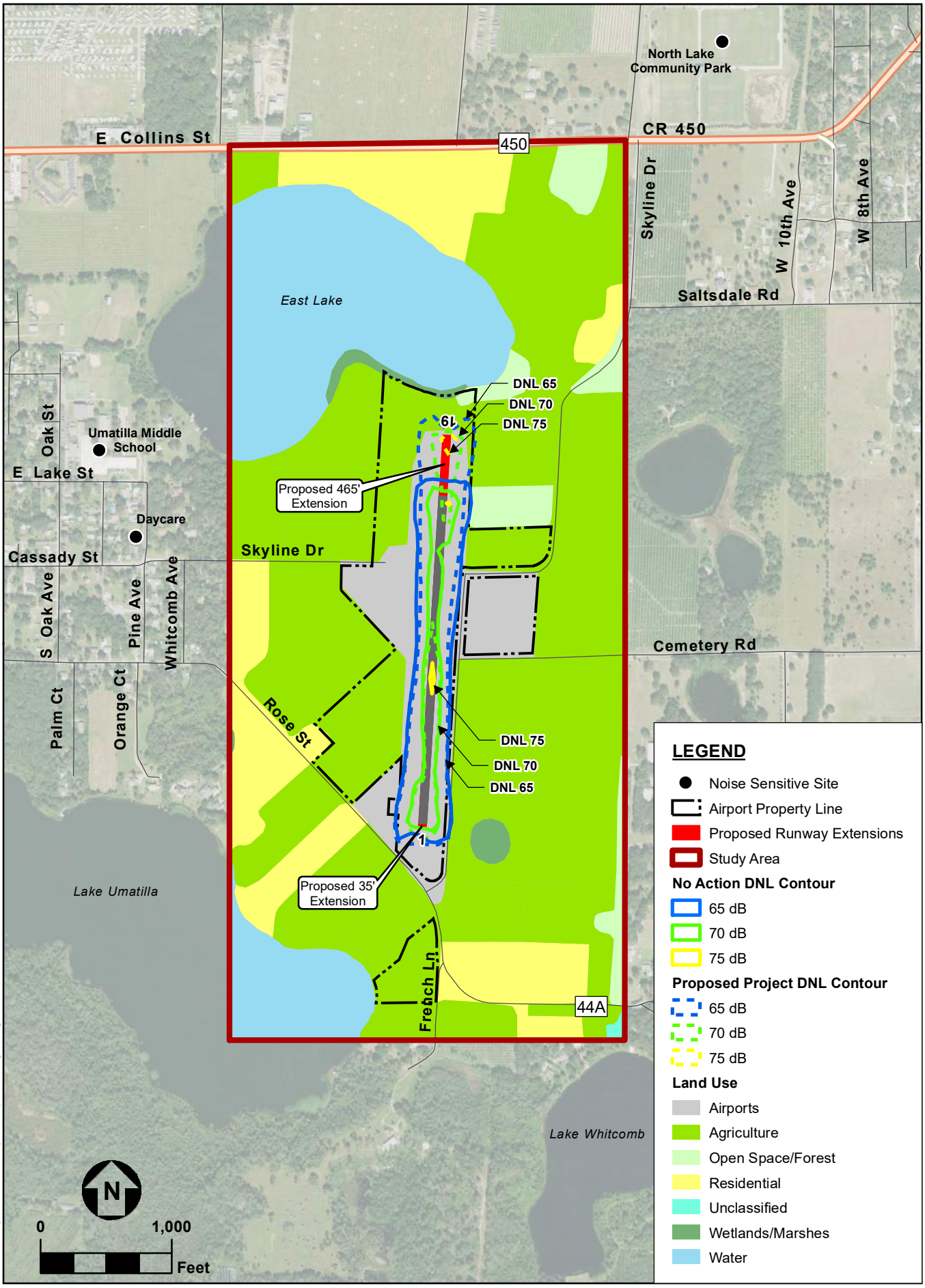


Source: AEDT 2d; Esri; USDA NAIP (Aerial); ESA, 2018

Umatilla Municipal Airport

EXHIBIT 9

2020 NO ACTION ALTERNATIVE AND 2020 PROPOSED PROJECT DNL CONTOURS



Source: AEDT 2d; Esri; USDA NAIP (Aerial); ESA, 2018

Umatilla Municipal Airport

EXHIBIT 10

2025 NO ACTION ALTERNATIVE AND 2020 PROPOSED PROJECT DNL CONTOURS

Appendix B
Runway Length Analysis

ESA

U.S. Department
of Transportation

**Federal Aviation
Administration**

ORLANDO AIRPORTS DISTRICT OFFICE
8427 South Park Circle, Suite 524
Orlando, Florida 32819-9058
Phone: (407) 487-7220 Fax: (407) 487-7135

August 20, 2018

Mr. Scott Blankenship
City Manager, Umatilla
P.O. Box 2286
Umatilla, FL 32784

Dear Mr. Blankenship:

RE: Umatilla Municipal Airport (X23); Umatilla, Florida
Runway Extension Justification Report

The Federal Aviation Administration (FAA) has reviewed the Umatilla Municipal Airport Runway Extension Justification Report. We have determined that it establishes the purpose and need for a 500' extension. This information should be used moving forward in the environmental assessment.

This recommended runway length was determined using FAA Advisory Circular 150/5325-4B, "Runway Length Requirements For Airport Design". Based on the information provided we have determined that based on the aircraft family, the most critical aircraft at Umatilla Municipal Airport can be classified as a small airplane with fewer than 10 seats. Using Figure 2-1 in the Advisory Circular and applying the airport's elevation and mean daily maximum temperature to the 95% of fleet category results in a recommended runway length of 3,800'. We understand that due to airport constraints you are requesting an extension of 500' for a total of 3,000' runway length.

Although there is justification to extend the runway to 3,000', this letter is not a commitment of federal discretionary funding for this project.

Please do not hesitate to call us if you have any questions.

Sincerely,

Original Signed By

Jenny Iglesias-Hamann
Community Planner

cc:
Mr. Jack Thompson, C.M., LEED AP, GAI Consultants
Mr. Dan Nickols, P.E., GAI Consultants

gai consultants

Orlando Office
618 East South Street
Suite 700
Orlando, Florida 32801

T 407.423.8398
F 407.843.1070

June 25th, 2018

Environmental Assessment for the Extension of Runway 1-19

Jenny Iglesias-Hamann
Program Manager/Community Planner
Federal Aviation Administration
Orlando Airports District Office
8427 South Park Circle, 5th Floor
Orlando, FL 32819

Runway Extension Justification Report
Umatilla Municipal Airport (X23)

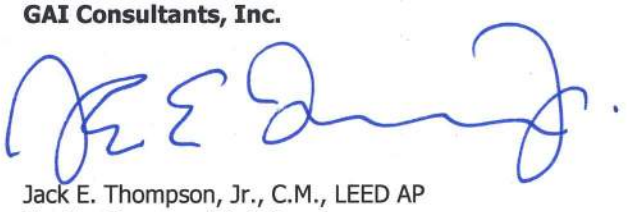
Dear Jenny:

Included with this transmittal letter you will find the Runway Extension Justification Report completed by GAI Consultants and Environmental Science Associates (ESA). This report is being submitted on behalf of the City of Umatilla.

Based on the information gathered, the included analysis, and the methods prescribed in the Advisory Circular, the recommended length for Runway 1-19 is 3,090 feet. This recommended length clearly supports the proposed length of 3,000 feet for Umatilla Municipal Airport's Runway 1-19.

Should you have any questions or comments regarding the contents of this report, feel free to contact me by phone or email.

Sincerely,
GAI Consultants, Inc.



Jack E. Thompson, Jr., C.M., LEED AP
Florida Director of Aviation
GAI Consultants
618 E. South Street, Suite 700
Orlando, FL 32801

Enc.: Runway Extension Justification Report

cc:	Jennifer A. Ganley, P.E.	FAA
	Allison D. McCuddy	FDOT
	Scott Blankenship	City of Umatilla

RUNWAY EXTENSION JUSTIFICATION REPORT

Umatilla Municipal Airport (X23)

Umatilla, Florida

Prepared for

GAI Consultants, Inc.
618 E. South Street, Suite 700
Orlando, FL 32801

June 21, 2018

by

ENVIRONMENTAL SCIENCE ASSOCIATES
5401 South Kirkman Road, Suite 405
Orlando, Florida 32819

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3.1 Operational Restrictions Imposed by Runway Length 2
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2 Recommended Runway Length 5

Appendices

A Airport User Surveys A-1

1.0 Introduction

The City of Umatilla, Florida desires to provide a runway at the Umatilla Municipal Airport (X23) that can better accommodate the needs of existing airport tenants and their businesses, as well as the needs of the public that uses the airport for recreational flying and flight training. The airport's existing 2,500-foot long runway limits the utility of the airport and many aircraft operators that use the airport incur operational restrictions imposed by inadequate runway length that does not accommodate the needs of all airport users. To address this issue, airport users were contacted to obtain information and to document the need for additional runway length at the airport. This report summarizes the information provided by airport users and evaluates runway length requirements at the airport.

1.1 Airport Background and Classification

1.1.1 Background

X23 presently has one runway which primarily serves single-engine and twin-engine piston aircraft. Runway 1/19 is 2,500 feet long and 60 feet wide. The 2,500-foot runway, which is essentially the minimum runway length for a public use airport, supports only small aircraft. The Runway 1 threshold is displaced 200 feet for landings. The City of Umatilla has made significant improvements to the airport since 2004. The improvements include resurfacing, widening and extension of the runway; rehabilitation of the aircraft parking apron; installation of runway edge lights, construction of hangars; and installation of a 24-hour AvGas tank equipped with self-fueling equipment. These improvements have resulted in increased demand by local and itinerant aircraft operators – including those that require a longer runway length capable of supporting their business-related flights. In order for the airport to meet the demands of general aviation aircraft operators that use the Umatilla Municipal Airport, a runway extension is required.

FAA and Florida Department of Transportation (FDOT) databases estimate 15 based aircraft at X23. The databases also estimate 5,000 annual aircraft operations at X23. It should be noted that information provided by the City of Umatilla lists 36 based aircraft at X23. The difference is likely attributable to the recent construction of aircraft storage hangars that are not yet reflected in FAA and FDOT databases.

1.1.2 Airport Classification

The Umatilla Municipal Airport (X23) is a public-use general aviation airport located within the corporate limits of the City of Umatilla, in north Lake County, Florida. The airport, which is owned and operated by the City of Umatilla, serves the general aviation needs of the cities of Umatilla, Mount Dora, Eustis and Tavares. The airport is classified as a Basic General Aviation Airport in the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems.[1]

According to the Florida Department of Transportation, X23 is a Basic Utility General Aviation Airport. FDOT states in its facility profile that the airport supports local corporate and business users.[2] The report notes that airport management estimated that "15 percent of its annual aircraft operations are business

[1] Federal Aviation Administration. *Report to Congress - National Plan of Integrated Airport Systems (NPIAS) (2017-2021).* September 30, 2016.

[2] Florida Department of Transportation. *Umatilla Municipal Airport Facility Profile.* https://www.florida-aviation-database.com/facility/Facility/Default.aspx?section=profile. Accessed May 2018.

related and approximately 20 percent of the airport's based aircraft are owned by local businesses." In addition, approximately 15 percent of all visiting general aviation aircraft are business-related. The report states that the short runway length at X23 (2,500 feet) "negatively impacts its Business/Recreational and Corporate service potential."

2.0 Runway Length Evaluation Process

This report documents that there is sufficient aviation demand for additional runway length at X23. The objectives of this runway length evaluation were to:

1. Identify the list of critical aircraft that will regularly use the airport and are expected to use the airport within the next five-year period.[3]
2. Review runway length needs of the aircraft that use the airport and identify the planes that will require the longest runway length.
3. Use the tables in FAA Advisory Circular (AC) 150/5325-4B, *Runway Length Requirements for Airport Design*, to select a recommended runway length and apply the necessary adjustments to obtain a final recommended runway length.

The process for determining runway length requirements at X23 involved documenting the types of aircraft that use the airport and what operational restrictions are imposed by the length of Runway 1/19. This included gathering statements and information from aircraft operators that use X23, but may encounter operational restrictions, and from aircraft operators that would prefer to use X23, but cannot due to the existing runway length.

For federally-funded projects, Advisory Circular (AC) 150/5325-4B, *Runway Length Requirements for Airport Design*, defines regular use as "substantial use" that requires the "critical design airplanes have at least 500 or more annual itinerant operations at the airport (landings and takeoffs are considered as separate operations) for an individual airplane or a family grouping of airplanes…" The proposed extension of Runway 1/19 would be accomplished using a combination of state and local funds. Therefore, the requirement to meet the substantial use threshold is not necessarily required, but was considered a measure in this report to help demonstrate the need for and purpose of the proposed runway extension.

3.0 Runway Length Needs

3.1 Operational Restrictions Imposed by Runway Length

Aircraft operators that use X23 on a regular basis stated that they have operational restrictions, which results in either constrained or deferred aircraft operations. For this evaluation, a constrained operation is one in which aircraft weight must be limited for departures, and sometimes landings, because of insufficient available runway length. Constrained operations usually result in a limit on the number of passengers; amount of product, goods, and cargo; and/or the amount of fuel that can be loaded on the aircraft. Constrained operations may also require an intermediate stop at another airport to obtain additional fuel

3 An aircraft operation is defined as a take-off or a landing.

needed to complete the trip. Deferred operations occur when an aircraft operator would prefer to use X23, but cannot due to insufficient runway length or when the aircraft operator is forced to use a smaller aircraft when using X23. To quantify the constrained and deferred operations at X23, letters of interest were received by the City from owners of based aircraft and itinerant aircraft operators that use X23 on a regular basis.

3.2 Airport User Information

The City of Umatilla regularly receives comments that the existing 2,500-foot runway is not long enough to meet the needs of airport users. As part of this study, aircraft owners with based aircraft at X23, regular airport users, and select local business owners were contacted to determine their operational requirements and document the need for a longer runway.

Eight aircraft operators provided information regarding runway use and the length requirements of each aircraft operator. Information provided by each aircraft operator is summarized in **Table 1** and a copy of each letter of interest is provided in **Appendix A**. Of particular note, the owner of a local business, Electron Machine Corporation, has two based aircraft at X23 and regularly uses the airport to transport employees and product. The owner states that the 'limited runway length' restricts the number of passengers and amount of cargo and fuel for departures at X23 when using their Piper Seneca V. The owner often must stop at an intermediate airport to take on additional fuel to reach the destination airport. The owner would prefer to use their Piper Navajo for business travel, but that aircraft requires 3,000 feet of runway length to meet their business needs. Overall, the owner stated that a 3,000-foot runway at X23 would have significant cost savings (e.g., depart with more weight, avoid intermediate stops, etc.). These operational restrictions are also cited by other business owners that use X23. Most of the aircraft owners that provided information for this study also indicated they would increase the use of X23 if an additional 500 feet of runway length was available. Several aircraft owners noted that a 3,000-foot runway would allow them to use larger aircraft when using X23.

As shown in Table 1, the aircraft operators that provided information on their use of X23 generate approximately 688 annual aircraft operations at the airport. Six of the operators stated that a runway length of 3,000 feet would substantially reduce operational restrictions when flying in and out of X23, especially during summer months. Airport users also noted that the 2,500-foot runway often requires the use of Short Field Take-Off procedures and it was unanimously stated that extending the runway from 2,500 feet to 3,000 feet would increase the margin of safety during take-offs and landings.

Although the aircraft operators that provided information for this study represent only a fraction of the pilots that use the Umatilla Municipal Airport, they would collectively have 244 *current* annual aircraft operations that would benefit from a longer runway.[4] If a 3,000-foot runway was available at X23, the same aircraft operators would increase their use of the airport and be able to fly in larger aircraft. In total, the aircraft operators would have a total of 476 annual constrained and deferred aircraft operations at X23 that would benefit from a longer runway.

[4] The number of aircraft operators that provided letters of interest reflects only a portion of the operators of aircraft at the Umatilla Municipal Airport. Therefore, the number of aircraft operations that would benefit from a longer runway at would be greater than the number identified in this report.

Overall, the users of the Umatilla Municipal Airport need additional runway length to reduce operational restrictions and enhance safety. Further, a longer runway would allow other pilots to fly directly to Umatilla (instead of other area airports) and have flexibility in the types of aircraft they can use when visiting the area.

TABLE 1
AIRPORT USER RUNWAY LENGTH NEEDS

Aircraft Operator	Aircraft Type	Runway Length Required by Operator	Number of Current Annual Operations at X23	Number of Current Operations that would Benefit from Additional Runway Length	Number of Additional Operations if a Longer Runway was Available	Total
Electron Machine Corporation	Piper Seneca V (PA-34)	3,000	200	200	--	200
	Piper Navajo (PA-31)	3,000	0	--	50	50
Carl A. Vossberg III	Piper Seneca V (PA-34)	3,000	100	--	25	25
	Piper Navajo (PA-31)	3,000	100	--	25	25
	Piper Arrow II (PA-28R)	3,000	50	--	--	--
Christine Vossberg	Piper Arrow II (PA-28R)	3,000	100	--	50	50
The Villages	A36 Bonanza	3,000	40	20	--	20
Rentio Ria, LLC	Mooney 20R Ovation	3,500	14	--	--	--
CBTM Aviation	Piper Twin Comanche (PA-30)	2,500	18	18	--	18
	Cessna 421C Golden Eagle	3,000	6	6	32	38
Jon Burgess	Piper Saratoga (PA-32R-301)	2,500	20	--	20	20
Charelle Burgess	Piper Arrow II (PA-28R)	2,500	40	--	30	30
			688	**244**	**232**	**476**

Source: Data compiled by ESA, 2018.

4.0 Runway Length Analysis

4.1 Runway Length Analysis Using FAA Methodology

FAA Guidance contained in AC 150/5325-4B was used to conduct the runway length analysis for Umatilla Municipal Airport. An initial step is to define the category of aircraft considered in the analysis. The AC divides aircraft into three primary categories:

- Small Airplanes with Maximum Certified takeoff weights of 12,500 pounds or less.
- Airplanes with maximum certificated takeoff weights greater than 12,500 pounds and up to 60,000 pounds.

- Airplanes with maximum certificated takeoff weights greater than 60,000 pounds.

A majority of the aircraft that use, or would like to use the airport if an additional 500 feet of runway length was available, fall into the first category of aircraft – Small Airplanes with Maximum Certified takeoff weights of 12,500 pounds or less. The design concept starts by grouping these small planes according to approach speed. The majority of aircraft that use X23 have approach speeds greater than 50 knots, which directs the analysis to use methods specified for Small Airplanes with Approach Speeds of 50 knots or More, With Maximum Certificated Takeoff Weight of 12,500 Pounds (5,670 kg) or Less.

The analysis further breaks these aircraft into those with approach speeds that have fewer than 10 passenger seats and those with 10 or more passenger seats (excluding pilot and co-pilot). Based on the current and projected users of X23, the former category (10 or fewer passenger seats) would apply. The analysis then categorizes this family of aircraft according to those that represent 95 percent of the fleet and 100 percent of the fleet. Figure 2-1 in AC 150/5325-4B provides runway length charts that are used to determine a recommended runway length for the family of aircraft operating at an airport at mean maximum temperature and at the airfield's elevation above mean sea level (msl).

The analysis requires the following information to determine runway length needs at X23: airfield elevation, which is 106.6 feet msl and mean daily maximum temperature on the hottest month (91 degrees Fahrenheit). Based on this information, Figure 2-1 of AC 150/5325-4B was used to obtain a recommended runway length at the X23 for both 95 percent of the fleet and 100 percent of the fleet. **Table 2** provides the recommended runway lengths for X23 as determined by the methods prescribed in the Advisory Circular.

TABLE 2
RECOMMENDED RUNWAY LENGTH

Referenced Figure from AC 150/5325-4B	Recommended Runway Length
Figure 2-1 (95% of fleet)	3,090 feet
Figure 2-1 (100% of fleet)	3,550 feet

Note: Runway lengths account for local temperature (91° F) and elevation (106.6 feet MSL).
Source: FAA Advisory Circular 150/ 5325-4B, *Runway Length Requirements for Airport Design*.

5.0 Conclusion

The current and latent demand for additional runway length at the Umatilla Municipal Airport was documented through information obtained from and discussions with airport users. As shown in the preceding analysis, the methods prescribed in Advisory Circular 5325-4B identified a runway design length of 3,090 feet at the Umatilla Municipal Airport that would serve 95 percent of the small aircraft fleet. Therefore, a runway length of 3,090 feet is recommended for the airport.

Based on the information evaluated in this study, extending the 2,500-foot runway at the Umatilla Municipal Airport to 3,000 feet is clearly supported. This runway length is consistent with the runway development program outlined in the Umatilla Municipal Airport Master Plan and depicted on the Airport Layout Plan.

Appendix B-1
Airport User Surveys

ESA

ELECTRON MACHINE CORPORATION
15824 County Rd 450 W • Umatilla, FL 32784-2349 • 352-669-3101
www.electronmachine.com • sales@electronmachine.com

March 14, 2018

Daniel J. Nickols, Jr., P.E.
Senior Project Engineer
GAI Consultants
618 E. South Street, Suite 700
Orlando, Florida 32801
T: 321-319-3055
d.nickols@gaiconsultants.com

RE: NEED FOR ADDITIONAL RUNWAY LENGTH
UMATILLA MUNICIPAL AIRPORT

Dear Daniel,

I am glad that the City of Umatilla is considering the extension of Runway 1/19 at the Umatilla Municipal Airport (X23). My frequently use of X23 has helped me increase in my company's gross revenue by 100% since 2011. However, my operations are restricted by the current runway length. Among the airports I use on a regular basis, X23 has the shortest runway.

I fly into X23 approximately 100 times per year (200 operations). However, during peak periods I perform approximately 10 operations per week. When I operate from X23, I typically use a Piper Seneca V. Because of the limited runway length at the airport, I always have to limit passengers/cargo and cannot take on enough fuel to reach my destination without an intermediate stop. Hot days and/or wet runway conditions further exacerbate my operational restrictions. For this aircraft, I need at least 3000 feet of runway at X23 to meet my operational needs without these restrictions.

To better fulfill my requirements, I would prefer to fly a Piper Navajo into X23, but do not do so because of the short runway. The Piper Navajo requires 3000 feet of runway length to meet my needs. If the runway was extended, I would use this aircraft more often (approximately 50 additional operations per year) as well as have the capability to load more passengers/cargo and purchase more fuel. This would result in less intermediate stops, providing a significant savings for Electron Machine. More importantly, the longer runway would allow me to continue the expansion of my business, utilizing a more capable airplane to reach additional customers, providing additional jobs and revenue for our local economy.

Sincerely,

C.A. Vossberg IV

Carl "C.A." Vossberg IV, President
Electron Machine Corporation

AIRPORT CUSTOMER RUNWAY USE SURVEY

Umatilla Municipal Airport
Umatilla, Florida

The City of Umatilla is working to improve the Umatilla Municipal Airport. On behalf of the City, we would like to know more about your visits to the airport and what restrictions, if any, are imposed by the current runway lengths at the airport. To help the City identify and document any need for a longer runway, please take a few minutes of your time and complete the following survey. Feel free to attach additional documentation. Thank you for participating in this survey!

Aircraft Owner/Company Name	**Carl A. Vossberg**
Address	**PO Box 2246** **Umatilla, FL 32784**
Phone Number	**(352) 406-3150**
Point of Contact / Title	**N/A**
Date	**4/18/18**

1. Do you or your company use the Umatilla Municipal Airport? **Yes**

2. If yes, approximately how many times do you visit X23 per year? **100 visits (200 Operations)**

3. What aircraft do you regularly use when you visit X23?

Aircraft Make & Model	"N" Number	Runway Take-Off Length Needed for Departures at X23 (Hot Day, Max. Take-Off Weight, Wet Runway)	Number of Annual Visits to X23 with this Aircraft
Piper Seneca V	N898PC	Minimum 2500 feet	50+ (over 100 operations)
Piper Navajo	N476AB	Minimum 3000 feet (gross weight)	50+ (over 100 operations)
Piper Arrow II	N8647N	2500 feet	25+

4. What is your longest non-stop trip and destination airport when departing from X23? San Antonio, TX

5. Does the 2,500-foot runway at X23 prohibit or limit your use of the airport? When you visit X23, are payload and/or fuel weights restricted for departures? If yes, please describe. Yes.
In order to utilize either the Seneca or Navajo, payload & fuel must be restricted.

6. What minimum runway length is required at X23 to accommodate your aircraft's departures (or landings) during hottest day and/or contaminated (wet) runway conditions?

3,000 Feet (or more)

7. If you currently use X23, how many of your visits (per year) would benefit from a longer runway? **100 visits (200 Operations)**

8. If a 3,000-foot runway was available, how many *additional* visits per year would you make at X23? **25 visits (50 Operations)**
(*not including those estimated in Question #7*)

9. If the runway was extended, would you use other (e.g., larger) aircraft for your visits to X23? If so, what type and how many visits with this aircraft (*not including those estimated in Questions #7 and #8*) with this aircraft? Would utilize the Navajo more frequently (25+) rather than nearby Leesburg International (KLEE) when hot and/or heavy.

Your participation and information is greatly appreciated!

AIRPORT CUSTOMER RUNWAY USE SURVEY

Umatilla Municipal Airport
Umatilla, Florida

The City of Umatilla is working to improve the Umatilla Municipal Airport. On behalf of the City, we would like to know more about your visits to the airport and what restrictions, if any, are imposed by the current runway lengths at the airport. To help the City identify and document any need for a longer runway, please take a few minutes of your time and complete the following survey. Feel free to attach additional documentation. Thank you for participating in this survey!

Aircraft Owner/Company Name	**Christine Vossberg**
Address	**PO Box 2246** **Umatilla, FL 32784**
Phone Number	**(352) 406-3150**
Point of Contact / Title	**N/A**
Date	**4/18/18**

1. Do you or your company use the Umatilla Municipal Airport? **Yes**

2. If yes, approximately how many times do you visit X23 per year? **50 visits (100 Operations)**

3. What aircraft do you regularly use when you visit X23?

Aircraft Make & Model	"N" Number	Runway Take-Off Length Needed for Departures at X23 (Hot Day, Max. Take-Off Weight, Wet Runway)	Number of Annual Visits to X23 with this Aircraft
Piper Arrow II	N8647N	2500 feet	25+

4. What is your longest non-stop trip and destination airport when departing from X23? Myrtle Beach, SC

5. Does the 2,500-foot runway at X23 prohibit or limit your use of the airport? When you visit X23, are payload and/or fuel weights restricted for departures? If yes, please describe. 2500 feet is the absolute minimum for safe operations of a Piper Arrow on a hot day or with a full load.

6. What minimum runway length is required at X23 to accommodate your aircraft's departures (or landings) during hottest day and/or contaminated (wet) runway conditions?

3,000 Feet

7. If you currently use X23, how many of your visits (per year) would benefit from a longer runway? **100 visits (200 Operations)**

8. If a 3,000-foot runway was available, how many *additional* visits per year would you make at X23? **25 visits (50 Operations)**
(*not including those estimated in Question #7*)

9. If the runway was extended, would you use other (e.g., larger) aircraft for your visits to X23? If so, what type and how many visits with this aircraft (*not including those estimated in Questions #7 and #8*) with this aircraft?

Your participation and information is greatly appreciated!

Return survey form to: Dan Nickols, P.E. E-mail: d.nickols@gaiconsultants.com

Villages Equipment Co.
32734 Echo Dr.
Leesburg, FL 34788
352-365-1470

March 8, 2018

Daniel J. Nickols, Jr., P.E.
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GAI Consultants
618 E. South Street, Suite 700
Orlando, Florida 32801
T: 321-319-3055
d.nickols@gaiconsultants.com

RE: NEED FOR ADDITIONAL RUNWAY LENGTH
UMATILLA MUNICIPAL AIRPORT

Dear Daniel,

We are glad to see that the City of Umatilla is considering the extension of Runway 1/19 at the Umatilla Municipal Airport (X23). We often come in to X23 in our A36 Bonanza and frequently must be careful as to the load aboard the aircraft when coming in to top off with fuel. Sometimes we will come in and fuel then go pick up the passengers to keep the airplane lighter. X23 is the shortest runway we normally use.

We fly into X23 approximately 20 times per year but occasionally it can be as many as 3 times in a single week. An additional 500 feet or more of length would certainly make the airport safer for our operations and completion of the parallel taxiway to the south end of the runway will make the airport more efficient and improve safety as well. My best wishes to you and the City in getting this project completed.

Sincerely,

Lester Coggins
Manager/Chief Pilot
Villages Equipment Co.
lester.coggins@thevillages.com

AIRPORT CUSTOMER RUNWAY USE SURVEY

Umatilla Municipal Airport
Umatilla, Florida

The City of Umatilla is working to improve the Umatilla Municipal Airport. On behalf of the City, we would like to know more about your visits to the airport and what restrictions, if any, are imposed by the current runway lengths at the airport. To help the City identify and document any need for a longer runway, please take a few minutes of your time and complete the following survey. Feel free to attach additional documentation. Thank you for participating in this survey!

Aircraft Owner/Company Name	Rentrio Ria, LLC
Address	15825 Acorn Circle Tavares, FL 32778
Phone Number	352-455-4877
Point of Contact / Title	Rick Pitner
Date	3/13/18

1. Do you or your company use the Umatilla Municipal Airport ()? Yes
2. If yes, approximately how many times do you visit X23 per year? 6-8

3. What aircraft do you regularly use when you visit X23?

Aircraft Make & Model	"N" Number	Runway Take-Off Length Needed for Departures at X23 (Hot Day, Max. Take-Off Weight, Wet Runway)	Number of Annual Visits to X23 with this Aircraft
M20R	650PS	Would not do a TO	6-8
		under the stated	
		conditions above	
		from X23	

4. What is your longest non-stop trip and destination airport when departing from X23?
Potentially Dallas, TX

5. Does the 2,500-foot runway at X23 prohibit or limit your use of the airport? When you visit X23, are payload and/or fuel weights restricted for departures? If yes, please describe.
See answer to #3

6. What minimum runway length is required at X23 to accommodate your aircraft's departures (or landings) during hottest day and/or contaminated (wet) runway conditions?
Comfortably 3,500'

7. If you currently use X23, how many of your visits (per year) would benefit from a longer runway?
Would double or triple # of visits due to favorable fuel pricing

8. If a 3,000-foot runway was available, how many *additional* visits per year would you make at X23?
See #7 (*not including those estimated in Question #7*)

9. If the runway was extended, would you use other (e.g., larger) aircraft for your visits to X23? If so, what type and how many visits with this aircraft (*not including those estimated in Questions #7 and #8*) with this aircraft?
N/A

AIRPORT CUSTOMER RUNWAY USE SURVEY

Umatilla Municipal Airport
Umatilla, Florida

The City of Umatilla is working to improve the Umatilla Municipal Airport. On behalf of the City, we would like to know more about your visits to the airport and what restrictions, if any, are imposed by the current runway lengths at the airport. To help the City identify and document any need for a longer runway, please take a few minutes of your time and complete the following survey. Feel free to attach additional documentation. Thank you for participating in this survey!

Aircraft Owner/Company Name	CBTM Aviation
Address	6525 Sunnyside Drive Leesburg, FL 34748
Phone Number	352-406-1998
Point of Contact / Title	Chris Bridges
Date	3/15/2018

1. Do you or your company use the Umatilla Municipal Airport ()? Yes

2. If yes, approximately how many times do you visit X23 per year? 18

3. What aircraft do you regularly use when you visit X23?

Aircraft Make & Model	"N" Number	Runway Take-Off Length Needed for Departures at X23 (Hot Day, Max. Take-Off Weight, Wet Runway)	Number of Annual Visits to X23 with this Aircraft
Piper Twin Comanche	30B	2500	15
Cessna 421C	517MH	3000 t/o (4000 accel-stop)	3

4. What is your longest non-stop trip and destination airport when departing from X23? Right now, N/A. With extension, 650 nm

5. Does the 2,500-foot runway at X23 prohibit or limit your use of the airport? When you visit X23, are payload and/or fuel weights restricted for departures? If yes, please describe. Yes. When I was flying the PA-30 up until June of 2017, I went there 1 or 2 times a month. With the 421, I can only go without passengers and in cooler weather. I like to have accelerate-stop distance, so 2500 is extremely limiting. 3000 would be a very good improvement and I would certainly use the field more if that happens. Likely back to 18 visits per year mainly for fuel.

6. What minimum runway length is required at X23 to accommodate your aircraft's departures (or landings) during hottest day and/or contaminated (wet) runway conditions?

3000 ft

7. If you currently use X23, how many of your visits (per year) would benefit from a longer runway? All.

8. If a 3,000-foot runway was available, how many ***additional*** visits per year would you make at X23? 18 total visits (*not including those estimated in Question #7*)

9. If the runway was extended, would you use other (e.g., larger) aircraft for your visits to X23? If so, what type and how many visits with this aircraft (*not including those estimated in Questions #7 and #8*) with this aircraft? No, just the Cessna 421.

Your participation and information is greatly appreciated!

Return survey form to: Dan Nickols, P.E.
GAI Consultants, Inc.
E-mail: d.nickols@gaiconsultants.com
Mail: 618 E. South Street, Suite 700
Orlando, Florida 32801

DRAFT

AIRPORT CUSTOMER RUNWAY USE SURVEY

Umatilla Municipal Airport
Umatilla, Florida

The City of Umatilla is working to improve the Umatilla Municipal Airport. On behalf of the City, we would like to know more about your visits to the airport and what restrictions, if any, are imposed by the current runway lengths at the airport. To help the City identify and document any need for a longer runway, please take a few minutes of your time and complete the following survey. Feel free to attach additional documentation. Thank you for participating in this survey!

Aircraft Owner/Company Name	Charlie Burgess
Address	655 SE 30th Ct Homestead, FL 33033
Phone Number	305 608 4026
Point of Contact / Title	
Date	7/19/18

1. Do you or your company use the Umatilla Municipal Airport? yes

2. If yes, approximately how many times do you visit X23 per year? 25 visits (50 take off/landings)

3. What aircraft do you regularly use when you visit X23?

Aircraft Make & Model	"N" Number	Runway Take-Off Length Needed for Departures at X23 (Hot Day, Max. Take-Off Weight, Wet Runway)	Number of Annual Visits to X23 with this Aircraft
Piper Arrow	N8647N	2500 ft.	20+

4. What is your longest non-stop trip and destination airport when departing from X23? Homestead, FL

5. Does the 2,500-foot runway at X23 prohibit or limit your use of the airport? When you visit X23, are payload and/or fuel weights restricted for departures? If yes, please describe. When fully loaded and on a hot day it is the bare minimum of runway. I have had to divert to Leesburg (KLEE) on several occasions

6. What minimum runway length is required at X23 to accommodate your aircraft's departures (or landings) during hottest day and/or contaminated (wet) runway conditions?
3000+ feet

7. If you currently use X23, how many of your visits (per year) would benefit from a longer runway? all 25 visits

8. If a 3,000-foot runway was available, how many *additional* visits per year would you make at X23? another 15+
(not including those estimated in Question #7)

9. If the runway was extended, would you use other (e.g., larger) aircraft for your visits to X23? If so, what type and how many visits with this aircraft *(not including those estimated in Questions #7 and #8)* with this aircraft? yes, Piper Saratoga (PA32) or Piper Seneca - all (25+)

Your participation and information is greatly appreciated!

Return survey form to: Dan Nickols, P.E.
GAI Consultants, Inc.

E-mail: d.nickols@gaiconsultants.com
Mail: 618 E. South Street, Suite 700
Orlando, Florida 32801

AIRPORT CUSTOMER RUNWAY USE SURVEY

Umatilla Municipal Airport
Umatilla, Florida

The City of Umatilla is working to improve the Umatilla Municipal Airport. On behalf of the City, we would like to know more about your visits to the airport and what restrictions, if any, are imposed by the current runway lengths at the airport. To help the City identify and document any need for a longer runway, please take a few minutes of your time and complete the following survey. Feel free to attach additional documentation. Thank you for participating in this survey!

Aircraft Owner/Company Name	Jon Burgess
Address	655 SE 30th Dr Homestead, FL 33033
Phone Number	786-255-9862
Point of Contact / Title	
Date	4/19/18

1. Do you or your company use the Umatilla Municipal Airport? yes

2. If yes, approximately how many times do you visit X23 per year? 10 visits

3. What aircraft do you regularly use when you visit X23?

Aircraft Make & Model	"N" Number	Runway Take-Off Length Needed for Departures at X23 (Hot Day, Max. Take-Off Weight, Wet Runway)	Number of Annual Visits to X23 with this Aircraft
Piper Saratoga	N9265B	2500 ft.	10

4. What is your longest non-stop trip and destination airport when departing from X23? Hilton Head Island, SC

5. Does the 2,500-foot runway at X23 prohibit or limit your use of the airport? When you visit X23, are payload and/or fuel weights restricted for departures? If yes, please describe. Yes, an extra 500ft would be helpful on a hot day and with full loads

6. What minimum runway length is required at X23 to accommodate your aircraft's departures (or landings) during hottest day and/or contaminated (wet) runway conditions? 3000 ft.

7. If you currently use X23, how many of your visits (per year) would benefit from a longer runway? all 10 visits

8. If a 3,000-foot runway was available, how many *additional* visits per year would you make at X23? another lot
(*not including those estimated in Question #7*)

9. If the runway was extended, would you use other (e.g., larger) aircraft for your visits to X23? If so, what type and how many visits with this aircraft (*not including those estimated in Questions #7 and #8*) with this aircraft?

Your participation and information is greatly appreciated!

Return survey form to: Dan Nickols, P.E.
GAI Consultants, Inc
E-mail: d.nickols@gaiconsultants.com
Mail: 618 E. South Street, Suite 700
Orlando, Florida 32801

CHAPTER 2. RUNWAY LENGTHS FOR SMALL AIRPLANES WITH MAXIMUM CERTIFICATED TAKEOFF WEIGHT OF 12,500 POUNDS (5,670 KG) OR LESS

201. DESIGN GUIDELINES. The design procedure for small airplanes requires the following information: the critical design airplanes under evaluation, approach speed in knots (1.3 x stall speed), number of passenger seats, airport elevation above mean sea level, and the mean daily maximum temperature of the hottest month at the airport. Once obtained, apply the guidance from the appropriate paragraph below to obtain the recommended runway length. For this airplane weight category, no further adjustment to the obtained length from the figures 2.1 or 2.2 is necessary. For example, there is no operational requirement to take into account the effect of effective runway gradient for takeoff or landing performance.

202. DESIGN APPROACH. For purposes of design, this AC provides a design concept for airports that serve only airplanes with a maximum certificated takeoff weight of 12,500 pounds (5,670 kg) or less. The design concept starts by grouping all small airplanes, that is, the critical design airplanes, according to approach speed. The highest approach speed group is divided on the basis of passenger seats, namely, "airplanes having fewer than 10 passenger seats" as compared to "airplanes having 10 or more passenger seats." The less than 10 passenger seats category is further based on two percentages of fleet, namely, "95 percent of the fleet" or "100 percent of the fleet" categories, as explained in paragraph 205. For these airplanes, figures 2-1 and 2-2 show only a single curve that takes into account the most demanding operations to obtain the recommended runway length. Although both figures pertain mainly to small propeller driven airplanes, figure 2-2 does include small turbo-powered airplanes. Airport designers can, instead of applying the small airplane design concept, determine the recommended runway length from airplane flight manuals for the airplanes to be accommodated by the airport in lieu of the runway length curves depicted in figures 2-1 or 2-2. For example, owners of multi-engine airplanes may require that their pilots use the airplane's accelerate-stop distance in determining the length of runway available for takeoff.

203. SMALL AIRPLANES WITH APPROACH SPEEDS OF LESS THAN 30 KNOTS. Airplanes with approach speeds of less than 30 knots are considered to be short takeoff and landing or ultra light airplanes. Their recommended runway length is 300 feet (92 meters) at mean sea level. Runways located above mean sea level should be increased at the rate of 0.03 x airport elevation above mean sea level to obtain the recommended runway length at that elevation.

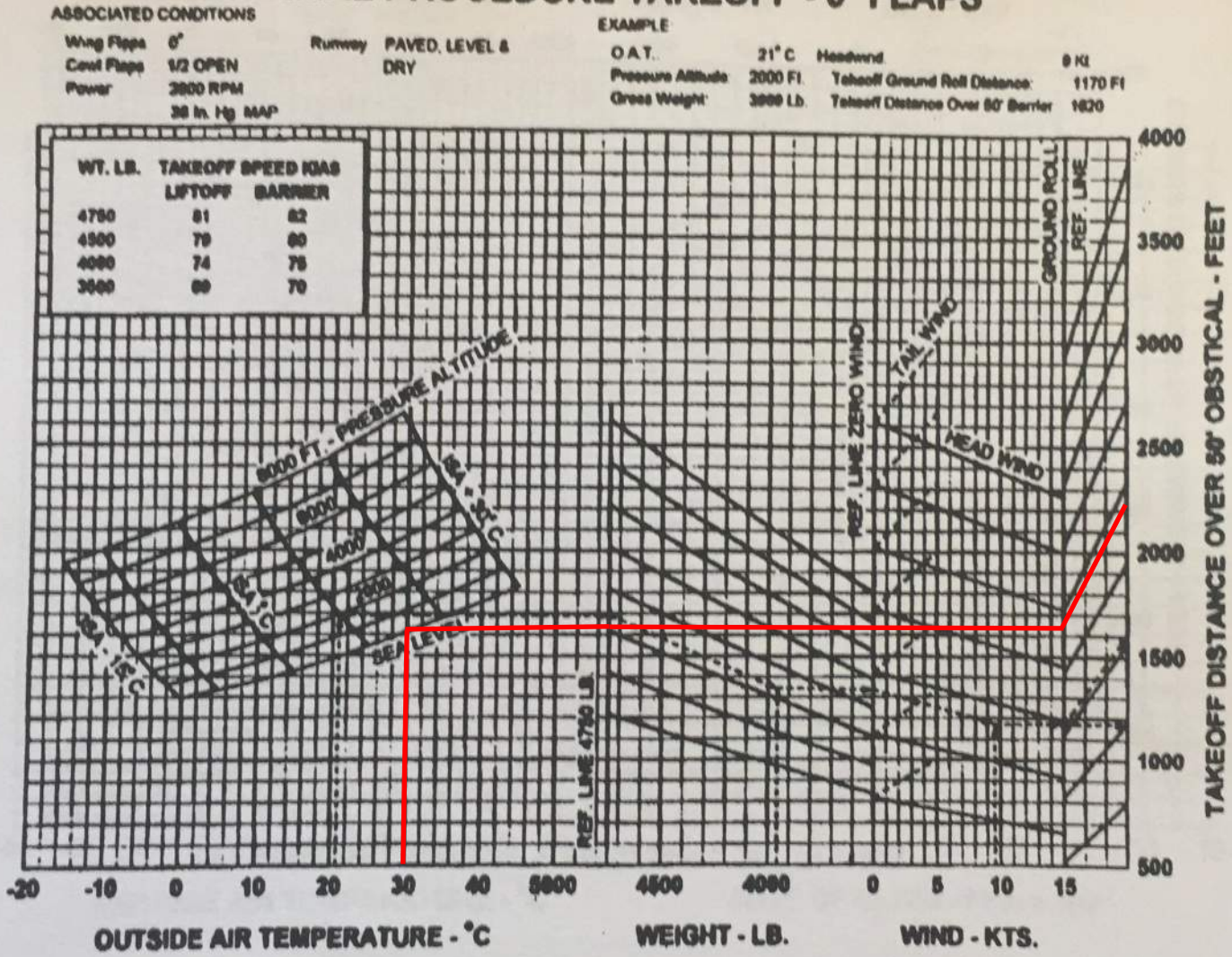
204. SMALL AIRPLANES WITH APPROACH SPEEDS OF 30 KNOTS OR MORE BUT LESS THAN 50 KNOTS. The recommended runway length is 800 feet (244 meters) at mean sea level. Runway lengths above mean sea level should be increased at the rate of 0.08 x airport elevation above mean sea level to obtain the recommended runway length at that elevation.

205. SMALL AIRPLANES WITH APPROACH SPEEDS OF 50 KNOTS OR MORE WITH MAXIMUM CERTIFICATED TAKEOFF WEIGHT OF 12,500 POUNDS (5,670 KG) OR LESS. Figures 2-1 and 2-2 provide the recommended runway lengths based on the seating capacity and the mean daily maximum temperature of the hottest month of the year at the airport. The fleet used in the development of the figures consisted of small airplanes certificated in the United States. Figure 2-1 categorizes small airplanes with less than 10 passenger seats (excludes pilot and co-pilot) into two family groupings according to "percent of fleet," namely, 95 and 100 percent of the fleet. Figure 2-2 categorizes all small airplanes with 10 or more passenger seats into one family grouping. Figure 2-2 further alerts the airport designer that for airport elevations above 3,000 feet (914 m), that the airport designer must use the 100 percent of fleet chart of figure 2-1 instead of using figure 2-2. As shown, both figures provide examples that start with the horizontal temperature axis then, proceed vertically to the applicable airport elevation curve, followed by proceeding horizontally to the vertical axis to read the recommended runway length.

a. Selecting Percentage of Fleet for Figure 2-1. The differences between the two percentage categories are based on the airport's location and the amount of existing or planned aviation activities. The airport designer should make the selection based on the following criteria.

(1) 95 Percent of Fleet. This category applies to airports that are primarily intended to serve medium size population communities with a diversity of usage and a greater potential for increased aviation activities. Also included in this category are those airports that are primarily intended to serve low-activity

NORMAL PROCEDURE TAKEOFF - 0° FLAPS



NORMAL PROCEDURE TAKEOFF - 0° FLAPS
Figure 11-5

Example Scenario: (Assuming Dry Conditions)
* 30° C (85°F)
* At Sea Level
* Fully Loaded (4,750 lbs.)
* No Wind
= ± 2,250'

PA34-220T
PIPER SENECA V

ACCELERATE AND STOP DISTANCE - 0° FLAPS

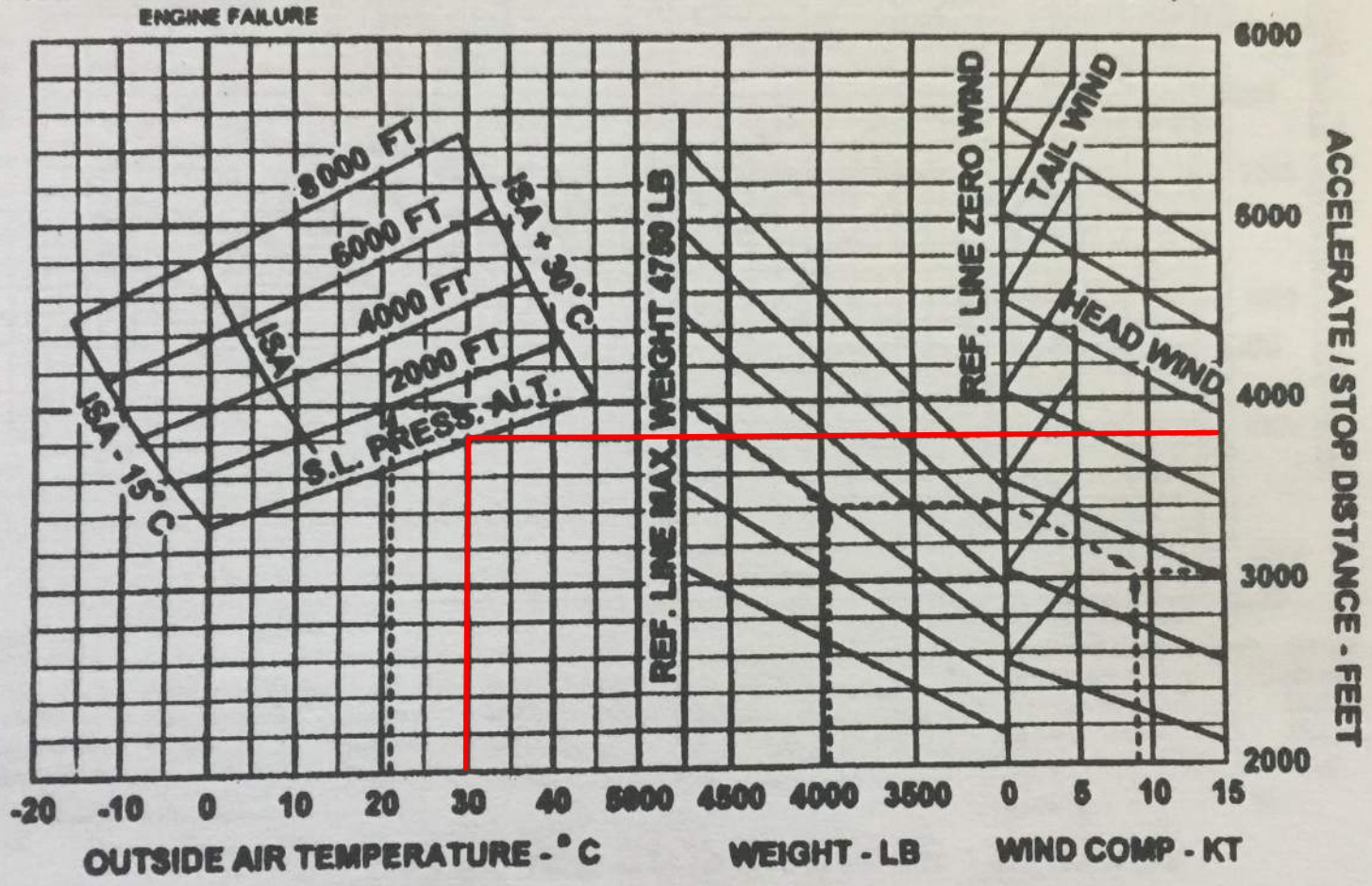
ASSOCIATED CONDITIONS:

Wing Flaps:	0°	Cowl Flaps:	1/2 OPEN
Abort Speed:	79 KIAS	Braking:	MAXIMUM
Power:	FULL BEFORE BRAKE RELEASE	Runway:	PAVED, LEVEL & DRY
Throttles:	BOTH CLOSED AT ENGINE FAILURE		

NOTE
Distances include a three second recognition time

EXAMPLE:

O.A.T:	21°C
Pressure Altitude:	2000 FT
Gross Weight:	3960 LB
Headwind:	9 KT
Accelerate & Stop Distance:	3032 FT



ACCELERATE AND STOP DISTANCE - 0° FLAPS
Figure 11-3

Example Scenario:
* 30°C (85°F)
* At Sea Level
* Fully Loaded (4,750 lbs.)
* No wind
= 3,800 feet of accel/stop distance required.

PA34-220T
PIPER SENECA V

Appendix C
Noise Technical Report

ESA

AIRCRAFT NOISE ASSESSMENT TECHNICAL REPORT

ENVIRONMENTAL ASSESSMENT FOR RUNWAY EXTENSION

UMATILLA MUNICIPAL AIRPORT

December 2018

1.0 AIRCRAFT NOISE METRICS

The following metrics were employed, or referenced, in the noise analysis prepared for the Environmental Assessment prepared for the proposed runway extension at Umatilla Municipal Airport (X23):

Decibel, dB – Sound is a complex physical phenomenon consisting of many minute vibrations traveling through a medium, such as air. The human ear senses these vibrations as sound pressure. Because of the vast range of sound pressure or intensity detectable by the human ear, sound pressure level (SPL) is represented on a logarithmic scale known as decibels (dB). An SPL of 0 dB is the approximate threshold of human hearing and is barely audible under extremely quiet (laboratory-type) listening conditions. A person begins to feel a SPL of 120 dB inside the ear as discomfort, and pain begins at approximately 140 dB. Most environmental sounds have SPLs ranging from 30 to 100 dB.

Because decibels are logarithmic, they cannot be added or subtracted directly like other (linear) numbers. For example, if two sound sources each produce 100 dB, when they are operated together they will produce 103 dB, not 200 dB. Four 100 dB sources operating together double the sound energy again, resulting in a total SPL of 106 dB, and so on. In addition, if one source is much louder than another, the two sources operating together will produce the same SPL as if the louder source were operating alone. For example, a 100 dB source plus an 80 dB source produces 100 dB when operating together. The louder source masks the quieter one.

Two useful rules to remember when comparing SPLs are: (1) most people perceive a 6 to 10 dB increase in SPL between two noise events to be a doubling of loudness, and (2) a change in SPL of less than 3 dB between two events is not easily detected outside of a laboratory.

A-Weighted Decibel, dBA – Frequency, or pitch, is a basic physical characteristic of sound and is expressed in units of cycles per second or hertz (Hz). The normal frequency range of hearing for most people extends from about 20 to 15,000 Hz. Because the human ear is more sensitive to middle and high frequencies (i.e., 1,000 to 4,000 Hz), a frequency weighting called “A” weighting is applied to the measurement of sound. The internationally standardized "A" filter approximates the sensitivity of the human ear and helps in assessing the perceived loudness of various sounds. For this Environmental Assessment, all sound levels are A-weighted sound levels and the text typically omits the adjective "A-weighted".

Day-Night Average Sound Level, DNL – Time-average sound levels are measurements of sound averaged over a specified length of time. These levels provide a measure of the average sound energy during the measurement period. For the evaluation of community noise effects, and particularly aircraft noise effects, the Day-Night Average Sound Level (abbreviated DNL) is used. DNL logarithmically averages aircraft sound levels at a location over a complete 24-hour period, with a 10-decibel adjustment added to those noise events occurring between 10:00 p.m. and 6:59 a.m. (local time) the following morning. The FAA defines the 10:00 p.m. to 6:59 a.m. period as nighttime (or night) and the 7:00 a.m. to 9:59 p.m. period as daytime (or day). Because of the increased sensitivity to noise during normal sleeping hours and because ambient (without aircraft) sound levels during nighttime are typically about 10 dB lower than during daytime hours, the 10-decibel adjustment, or "penalty," represents the added intrusiveness of sounds occurring during nighttime hours.

DNL accounts for the noise levels (in terms of SEL) of all individual aircraft events, the number of times those events occur and the period of day/night in which they occur. Values of DNL can be measured with standard monitoring equipment or predicted with computer models such as the AEDT.

Due to the DNL descriptor's close correlation with the degree of community annoyance from aircraft noise, most federal agencies have formally adopted DNL for measuring and evaluating aircraft noise for land use planning and noise impact assessment. Federal committees such as the Federal Interagency Committee on Urban Noise (FICUN) and the Federal Interagency Committee on Noise (FICON), which include the Environmental Protection Agency (EPA), the FAA, Department of Defense, Department of Housing and Urban Development, and the Veterans Administration, found DNL to be the best metric for land use planning. They also found no new cumulative sound descriptors or metrics of sufficient scientific standing to substitute for DNL. Other cumulative metrics are used only to supplement, not replace, DNL. Furthermore, FAA Order 1050.1E, *Policies and Procedures for Considering Environmental Impacts*, requires DNL be used in describing cumulative noise exposure and in identifying aircraft noise/land use compatibility issues (EPA, 1974; FICUN, 1980; FICON, 1992; 14 CFR part 150, 2004; FAA, 2006).

The accuracy and validity of DNL calculations depend on the basic information used in the calculations. At airports, the reliability of DNL calculations is affected by a number of uncertainties:

- The noise descriptions used in the DNL procedure represent the typical human response to aircraft noise. Since people vary in their response to noise and because the physical measure of noise accounts for only a portion of an individual's reaction to that noise, the DNL scale can show only an average response to aircraft noise that may be expected from a community.
- Future aviation activity levels such as the forecast number of operations, the operational fleet mix, the times of operation (day versus night) and flight tracks are estimates. Achievement of forecasted levels of activity cannot be assured.

- Aircraft acoustical and performance characteristics for new aircraft designs are estimates.

2.0 FAA METHODS FOR EVALUATING AIRCRAFT NOISE

The evaluation of the X23 noise environment was completed using the methods and standards specified in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*. These documents, and supplemental FAA guidance, require that the cumulative noise energy exposure of individuals to noise resulting from aviation activities be established in terms of yearly day/night average sound level (DNL). The DNL is the FAA's primary noise metric.

2.1 AVIATION ENVIRONMENTAL DESIGN TOOL (AEDT)

The noise analysis was conducted using the most current version of the FAA's Aviation Environmental Design Tool (AEDT). The AEDT is the FAA's standard model for evaluating aircraft noise, fuel burn/consumption, and emissions at airports. For this analysis, AEDT, Version 2d, was used to model aircraft noise exposure at X23 for the 2017 baseline condition and the two future year (2020 and 2025) scenarios, with and without the Proposed Project.

The AEDT produces noise exposure contours that are used for land use compatibility maps. The program includes a built-in Geographic Information System (GIS) platform and tools for comparing contours and utilities that facilitate easy export to other GIS software suites. The model can also calculate predicted noise at specific sites such as hospitals, schools, or other noise-sensitive locations. For these discrete locations, the AEDT has the capability to report noise exposure levels at the specific location.

During an average 24-hour period, the AEDT accounts for each aircraft flight along flight tracks leading to or from the airport, or aircraft overflying the airport. Flight track definitions are coupled with information in the model's databases relating to noise levels at varying distances and flight performance data for each distinct type of aircraft selected. In general, the model computes noise levels at regularly-spaced grid receptors at ground level around the airport. The distance to each aircraft in flight is computed (slant distance), and the associated noise exposure of each aircraft flying along each flight track within the vicinity of the grid receptor is determined. The logarithmic acoustical energy levels for each individual aircraft single-event are then summed for each grid receptor. The AEDT can create contours of specific noise levels based on the acoustical energy summed at each of the grid receptors for the selected metric. The cumulative values of noise exposure at each grid receptor are used to interpolate contours of equal noise exposure. The AEDT can also compute noise levels at user-defined points on the ground.

Information required to run the AEDT includes:

- A physical description of the airport layout, including location, length and orientation of all runways, and airport elevation,
- The aircraft fleet mix for the average day,
- The number of daytime flight and run-up operations (7:00 a.m. to 9:59 p.m.),
- The number of nighttime flight and run-up operations (10:00 p.m. to 6:59 a.m.),
- Runway utilization rates,
- Primary departure and arrival flight tracks, and
- Flight track utilization rates.

2.1.1 Aircraft Operations and Fleet Mix

Fleet mix defines the various types of aircraft and allows development of very specific input data, such as engine type, title 14 CFR Part 36 Noise Stage Certification, gross weight, and departure stage length. The AEDT aircraft database contains actual noise and performance data for 305 different standard types of aircraft and helicopters. Although the AEDT aircraft database provides a large selection of aircraft to model, it does not contain every known aircraft. For this reason, the FAA has developed an approved aircraft substitution list, containing 270 types of aircraft, which allows the modeler to substitute similar aircraft when necessary for modeling purposes. These substitutions represent a very close estimate of the noise produced by the actual aircraft. AEDT also has the functionality to allow the modeler to combine different airframes and engine types, resulting in a database of approximately 35,000 different individually custom tailored aircraft. All modeled aircraft in this study are either a true representative of an aircraft type or an FAA approved substitution.

Tables 2-3 through 2-5 detail the fleet mix used to model noise exposure at X23 for the 2017 baseline condition, 2020 No Action Alternative and Proposed Project, and 2025 No Action Alternative. **Table 2-6** details the fleet mix for the 2025 Proposed Project. The tables also provide the number of annual aircraft operations and the number of average annual day (AAD) aircraft operations[1], for each aircraft type. X23's fleet mix and the level of aviation activity at the airport were derived from several sources, including:

- A review of FAA's Airport Master Record (FAA Form 5010) for X23.
- A review of reasonably available fleet mix information from X23 Fixed Base Operators, as well as major tenants and users, including Electron Machine Corp., The Villages, Rentio Ria, LLC, and CBTM Aviation.
- Based aircraft fleet information provided by X23 Management.
- Information provided by X23 Management and tenants regarding the types of aircraft anticipated to use the proposed runway extension and the number of annual operations by these aircraft.

[1] An operation is either an aircraft landing or aircraft departure.

Table 2-1 provides the number of annual aircraft operations that are expected to occur at X23 if the Proposed Project was implemented.

TABLE 2-1
X23 Estimate of Induced Activity

Study Year	Alternatives	Annual Aircraft Operations	Induced Aircraft Operations
2017	Existing Conditions	5,075	--
2020	No Action Alternative	5,190	--[1]
	Proposed Project (year of runway extension open)	5,190	
2025	No Action Alternative	5,388	**232 (232 GA operations)**
	Proposed Project (runway extension in operation for five years)	5,620	

Sources: FDOT General Aviation Operations Forecast, 2016; Umatilla Municipal Airport, 2018.
[1]Year of Proposed Project open not expected to induce significant operations.

Table 2-2 provides shows the general distribution of the aircraft operations, by operation type.

TABLE 2-2
X23 ANNUAL AIRCRAFT OPERATIONS

Year	Alternatives	General Aviation		
		Itinerant	Local	Total
2017	Baseline Condition	3,553	1,523	5,075
2020	No Action Alternative	3,633	1,557	5,190
	Proposed Project	3,633	1,557	5,190
2025	No Action Alternative	3,772	1,616	5,388
	Proposed Project	3,934	1,686	5,620

Sources:
2017 Baseline – FDOT General Aviation Operations Forecast, 2016.
2020 and 2025 No Action Alternative – FDOT General Aviation Operations Forecast, 2016.
2020 and 2025 Proposed Project – FDOT General Aviation Operations Forecast, 2016; Umatilla Municipal Airport, 2018.

The followings assumptions were made for the noise analysis.

- The general aviation fleet mix was primarily derived from the FAA Airport Master Record, information available from airport tenants and users, and a based aircraft list provided by the airport.
- The fleet mix for future study years 2020 and 2025 were determined to remain relatively unchanged from the baseline 2017 fleet mix, with the exception of additional aircraft for the Proposed Project.
- The Proposed Project will add 232 aircraft operations (general aviation) in 2025. The GA aircraft types include additional Piper Navajo (PA-31), Piper Seneca (PA-34), Piper Arrow II (PA-28R), Piper Saratoga (PA-32R-301), and Cessna 421C Golden Eagles.

2.1.2 Time of Day

The time of day that aircraft operations occur is an important factor in the calculation of cumulative noise exposure. The DNL treats nighttime (10:00 p.m. to 6:59 a.m.) noise differently from daytime (7:00 a.m. to 9:59 p.m.) noise. DNL multiplies each nighttime operation by a factor of 10. This weighting of the operations effectively adds 10 dB to the A-weighted levels of each nighttime operation. This accounts for people's greater sensitivity to nighttime noise.

The approximate split between daytime and nighttime aircraft operations was derived from discussions with other X23 consultants and a review of other reasonably available information. For itinerant and local operations, the noise analysis used a 95 percent day and 5 percent night split. This time-of-day split was used for all scenarios modeled for the environmental assessment.

TABLE 2-3
X23 FLEET MIX AND OPERATIONS - 2017 BASELINE CONDITION

Aircraft Type	Airframe	Engine Code	Engine Mod	Annual Operations*	Annual-Average Day Operations*
Single and Multi-engine Propeller	Cessna 150 Series	O200	NONE	1,476	4.0438
	Cessna 172 Skyhawk	IO360	NONE	1,108	3.0356
	Cessna 182	IO360	NONE	162	0.4438
	Cessna 208 Caravan	PT6A14	NONE	81	0.2219
	1985-ENG COMP	TIO540	NONE	81	0.2219
	Piper PA-28 Cherokee Series	IO320	NONE	242	0.6630
	Piper PA-32 Cherokee Six	TIO540	NONE	1,230	3.3699
	Piper PA-30 Twin Comanche	IO320	NONE	81	0.2219
	Piper PA-31 Navajo	TIO540	NONE	615	1.6849
Total		**--**	**--**	**5,075**	**13.9068**

Sources: FDOT General Aviation Operations Forecast, 2016; and ESA, 2018.
*Numbers may not add due to rounding.

TABLE 2-4
X23 FLEET MIX AND OPERATIONS – 2020 NO ACTION ALTERNATIVE AND 2020 PROPOSED PROJECT[1]

Aircraft Type	Airframe	Engine Code	Engine Mod	Annual Operations*	Annual-Average Day Operations*
Single and Multi-engine Propeller	Cessna 150 Series	O200	NONE	1,510	4.1365
	Cessna 172 Skyhawk	IO360	NONE	1,132	3.1024
	Cessna 182	IO360	NONE	165	0.4524
	Cessna 208 Caravan	PT6A14	NONE	83	0.2262
	1985-ENG COMP	TIO540	NONE	83	0.2262
	Piper PA-28 Cherokee Series	IO320	NONE	248	0.6786
	Piper PA-32 Cherokee Six	TIO540	NONE	1,258	3.4471
	Piper PA-30 Twin Comanche	IO320	NONE	83	0.2262
	Piper PA-31 Navajo	TIO540	NONE	629	1.7235
Total		**--**	**--**	**5,190**	**14.2192**

Sources: FDOT General Aviation Operations Forecast, 2016; and ESA, 2018.
*Numbers may not add due to rounding.
[1]Year of Proposed Project open not expected to induce significant operations.

TABLE 2-5
X23 FLEET MIX AND OPERATIONS – 2025 NO ACTION ALTERNATIVE

Aircraft Type	Airframe	Engine Code	Engine Mod	Annual Operations*	Annual-Average Day Operations*
Single and Multi-engine Propeller	Cessna 150 Series	O200	NONE	1,568	4.2946
	Cessna 172 Skyhawk	IO360	NONE	1,176	3.2209
	Cessna 182	IO360	NONE	171	0.4697
	Cessna 208 Caravan	PT6A14	NONE	86	0.2349
	1985-ENG COMP	TIO540	NONE	86	0.2349
	Piper PA-28 Cherokee Series	IO320	NONE	257	0.7046
	Piper PA-32 Cherokee Six	TIO540	NONE	1,306	3.5788
	Piper PA-30 Twin Comanche	IO320	NONE	86	0.2349
	Piper PA-31 Navajo	TIO540	NONE	653	1.7894

Total	**--**	**--**	**5,388**	**14.7627**

Sources: FDOT General Aviation Operations Forecast, 2016; and ESA, 2018.
*Numbers may not add due to rounding.

TABLE 2-6
X23 FLEET MIX AND OPERATIONS – 2025 PROPOSED PROJECT[1]

Aircraft Type	Airframe	Engine Code	Engine Mod	Annual Operations*	Annual-Average Day Operations*
Single and Multi-engine Propeller	Cessna 150 Series	O200	NONE	1,648	4.5138
	Cessna 172 Skyhawk	IO360	NONE	1,176	3.2209
	Cessna 182	IO360	NONE	171	0.4697
	Cessna 208 Caravan	PT6A14	NONE	86	0.2349
	1985-ENG COMP	TIO540	NONE	86	0.2349
	Piper PA-28 Cherokee Series	IO320	NONE	257	0.7046
	Piper PA-32 Cherokee Six	TIO540	NONE	1,326	3.6336
	Piper PA-30 Twin Comanche	IO320	NONE	86	.02349
	Piper PA-31 Navajo	TIO540	NONE	785	2.1511
Total		**--**	**--**	**5,620**	**15.3984**

Sources: FDOT General Aviation Operations Forecast, 2016; and ESA, 2018.
*Numbers may not add due to rounding.
[1]Includes the anticipated 232 operations induced by the operation of the Proposed Project.

2.1.3 Runway Utilization

Runway use refers to the frequency with which aircraft utilize each runway end during the course of a year for departures and arrivals. Runway use is often dictated by wind patterns. The more often a runway is used throughout the year, the more noise is created in areas located off each end of that runway. Runway utilization data was derived from discussions with other X23 consultants and a review of other reasonably available information. **Table 2-7** depicts the runway utilization for all the scenarios modeled for the environmental assessment.

TABLE 2-7
X23 RUNWAWY UTILIZATION – ALL MODELED SCENARIOS

Aircraft Type	Departures		Arrivals		Touch-and-Go	
	01	19	01	19	01	19
Single and Multi-Engine Propeller	50%	50%	50%	50%	50%	50%

2.1.4 Flight Tracks and Flight Track Utilization

Flight tracks depict the path of aircraft over the ground for aircraft arrival, departure, closed pattern (touch-and-go), and overflight operations. In order to calculate the annual average noise exposure, it is necessary to identify the predominant arrival, departure and pattern flight tracks for each runway, and the number of aircraft that used each runway and flight track. The use of individual flight tracks is dependent on a variety of factors such as standard procedures, the aircraft's origin or destination, aircraft performance, and weather conditions.

AEDT representative flight tracks at X23 were based on discussions with X23 Management and tenants, as well as a review of other reasonably available information. Modeled flight tracks do not represent the precise paths flown by all aircraft utilizing X23. Instead, they represent the primary flight corridors for the aircraft using X23. It should be noted that flight tracks remain unchanged for all conditions assessed in this report with the exception of the 2020 and 2025 Proposed Project. Flight tracks were modified for the aforementioned conditions in order to facilitate the proposed runway extension. It should be noted that the displaced threshold on Runway 1 is expected to remain at the same location and was modeled as such. As a result, 35 feet was added to the displaced threshold in the AEDT to account for the 35-foot extension to Runway 1. Baseline (2017), No Action Alternative, and Proposed Project flight tracks are depicted in **Exhibits 1** through **4,** which are attached to the end of this appendix. Flight track utilization percentages are detailed in **Table 2-8**.

TABLE 2-8
X23 FLIGHT TRACK UTILIZATION– ALL MODELED SCENARIOS

	Departures		Arrivals		Touch-and-Go	
Runway	**Track ID**	**Flight Track Use %**	**Track ID**	**Flight Track Use %**	**Track ID**	**Flight Track Use %**
1	01D1	80%	01A1	80%	01TG1	100%
	01D2	10%	01A2	10%		
	01D3	10%	01A3	10%		
19	19D1	80%	19A1	80%	19TG1	100%
	19D2	10%	19A2	10%		
	19D3	10%	19A3	10%		

2.1.5 Departure Stage Length

The AEDT database contains several departure profiles for each fixed-wing aircraft type representing the varying performance characteristics for that aircraft at a particular take-off weight. Use of appropriate departure profiles is an important component of calculating DNL noise exposure contours. Historically, it has been easier to obtain trip length data than average weight data, so the AEDT uses "departure stage length" to best represent typical aircraft take-off weight.

Departure stage length is the distance between the departure airport and the destination airport. As the departure stage length increases, the aircraft's required fuel load and take-off weight also increase. The increase in take-off weight equates to a decrease in aircraft take-off and climb performance. A decrease in aircraft performance results in a longer takeoff departure roll and decreased climb rates. These performance characteristics produce increased noise exposure impacts. The aircraft's noise impacts are greater because the aircraft is producing noise closer to the ground longer. The FAA's Integrated Noise Model (INM), Version 7.0d, departure stage lengths are defined in **Table 2-9**. AEDT utilizes the same stage length definitions.

X23's fleet mix is comprised of only general aviation aircraft. The only stage length option included in the AEDT for the aircraft that make up the fleet is stage length 1. Consequently, all departure operations were assigned a stage length of 1.

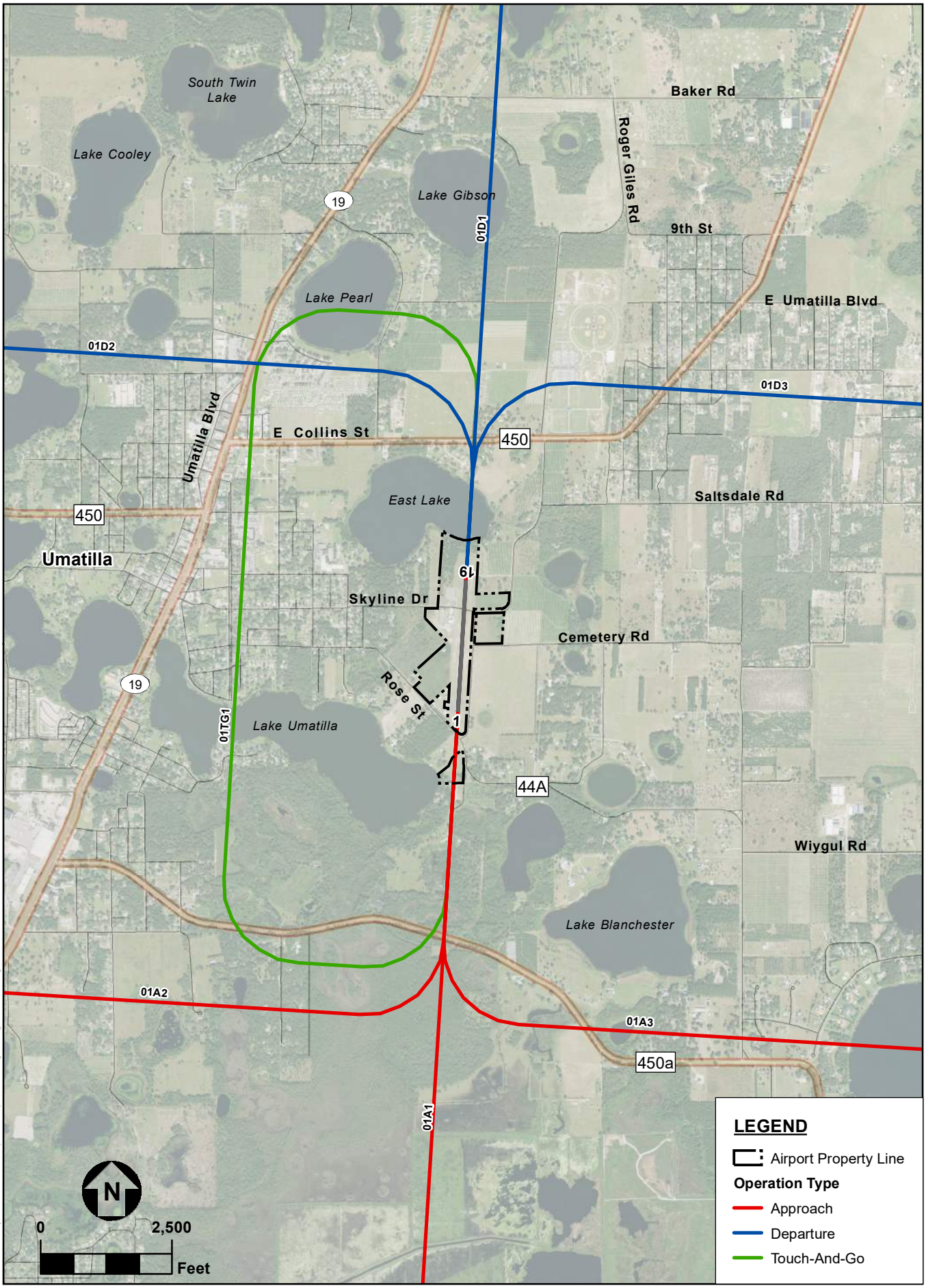
TABLE 2-9
INM STAGE LENGTH DISTANCES

Stage Number	Distance (nm)
1	0 - 500
2	501 - 1,000
3	1,001 - 1,500
4	1,501 - 2,500
5	2,501 - 3,500
6	3,501 - 4,500
7	4,501 - 5,500
8	5,501 - 6,500
9	> 6,500

Source: FAA INM Version 7.0d User's Guide, 2007.

2.1.6 Noise Model Outputs

AEDT has many output capabilities. Charts, graphics, and tables can be viewed, exported, or printed. The most common outputs are the noise contours that AEDT produces. Additionally, there are many other outputs, such as aircraft performance characteristics, receptor point analyses for several noise metrics, and input characteristics such as runways and flight tracks. A complete description of model outputs can be found in the AEDT 2d Users Guide (FAA, 2017).

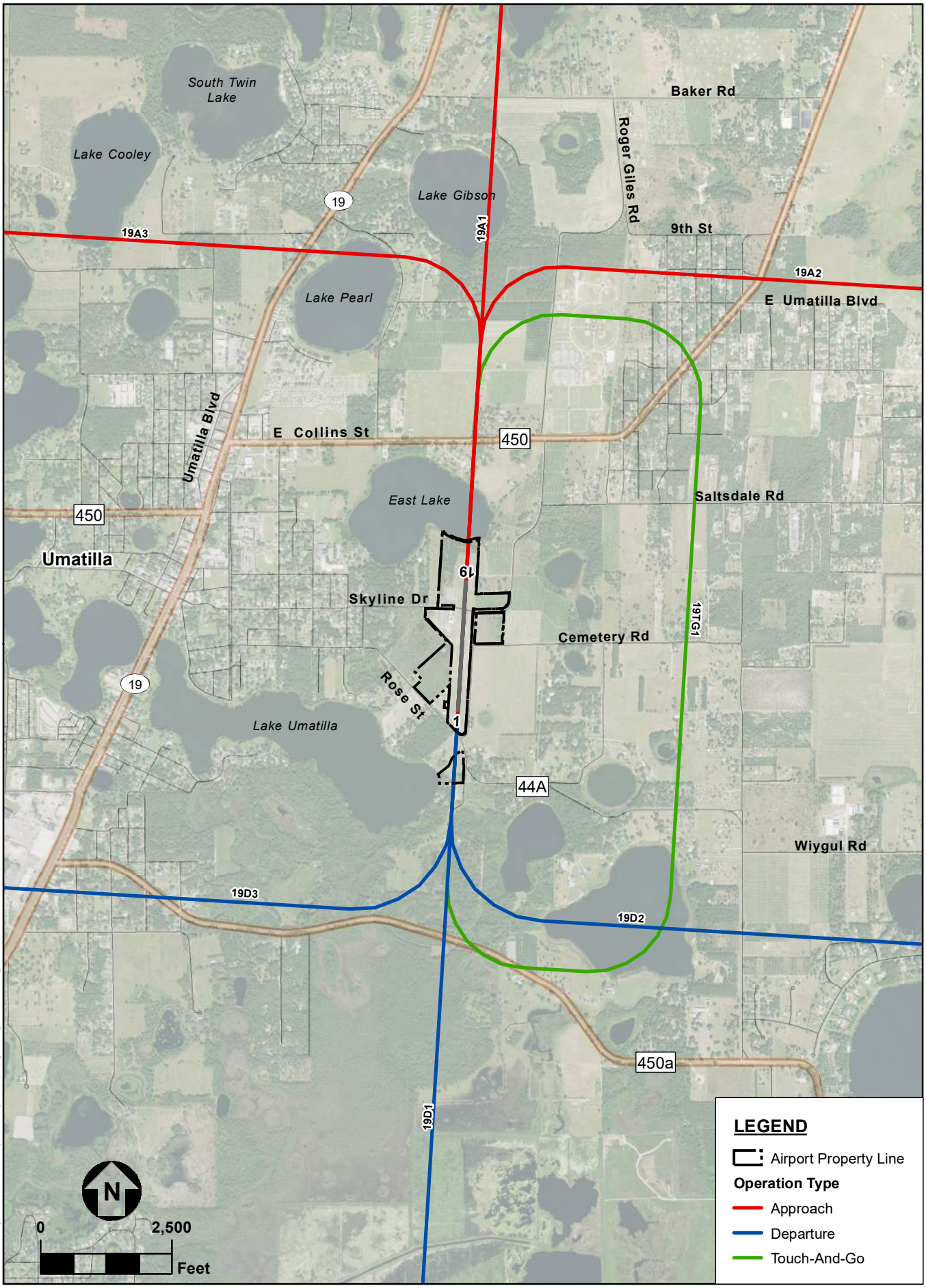


Source: AEDT 2d; Esri; USDA NAIP (Aerial); ESA, 2018

Umatilla Municipal Airport

EXHIBIT 1

BASELINE AND NO ACTION ALTERNATIVE MODELED FLIGHT TRACKS - NORTH FLOW

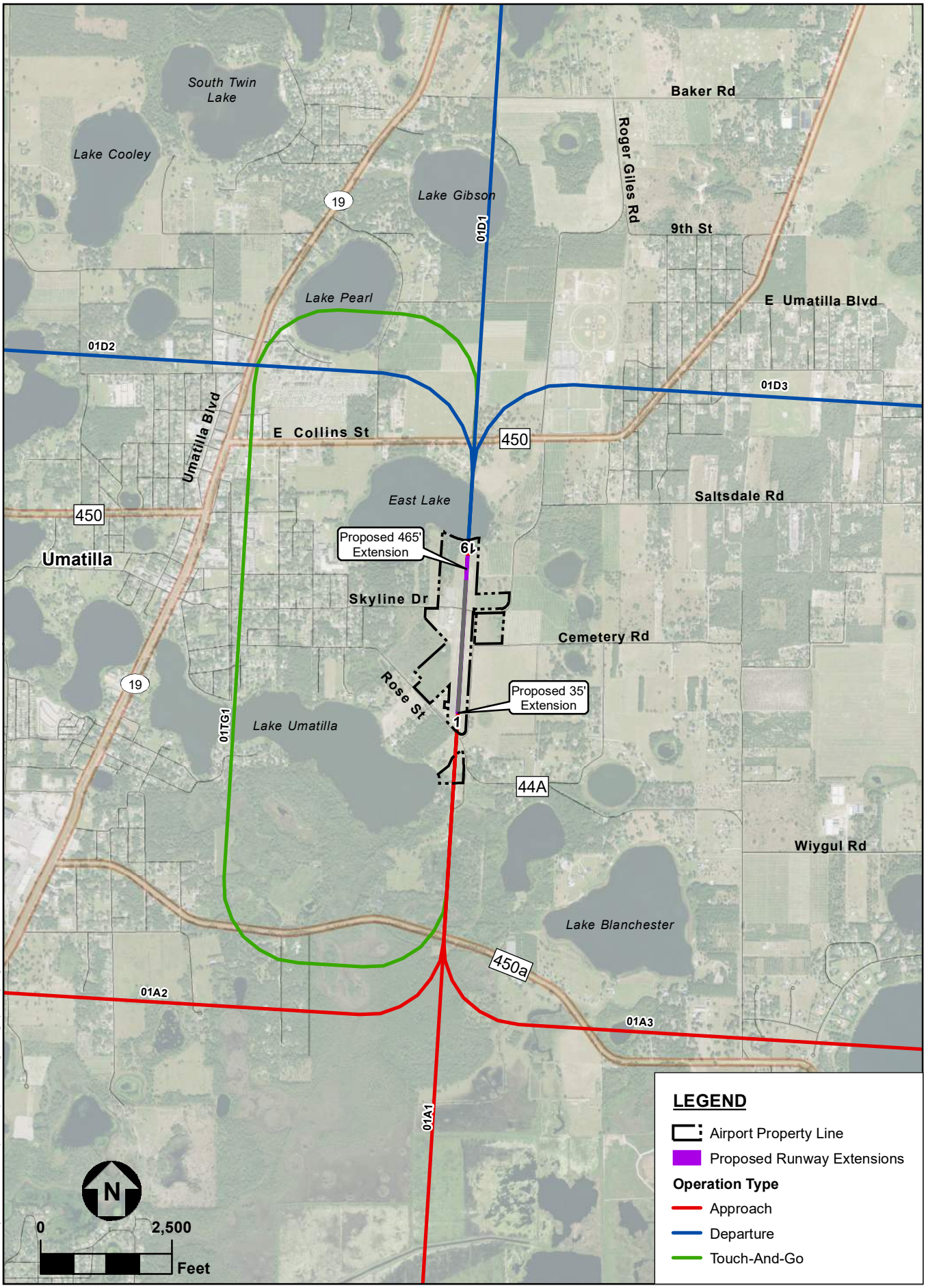


Source: AEDT 2d; Esri; USDA NAIP (Aerial); ESA, 2018

Umatilla Municipal Airport

EXHIBIT 2

BASELINE AND NO ACTION ALTERNATIVE MODELED FLIGHT TRACKS - SOUTH FLOW

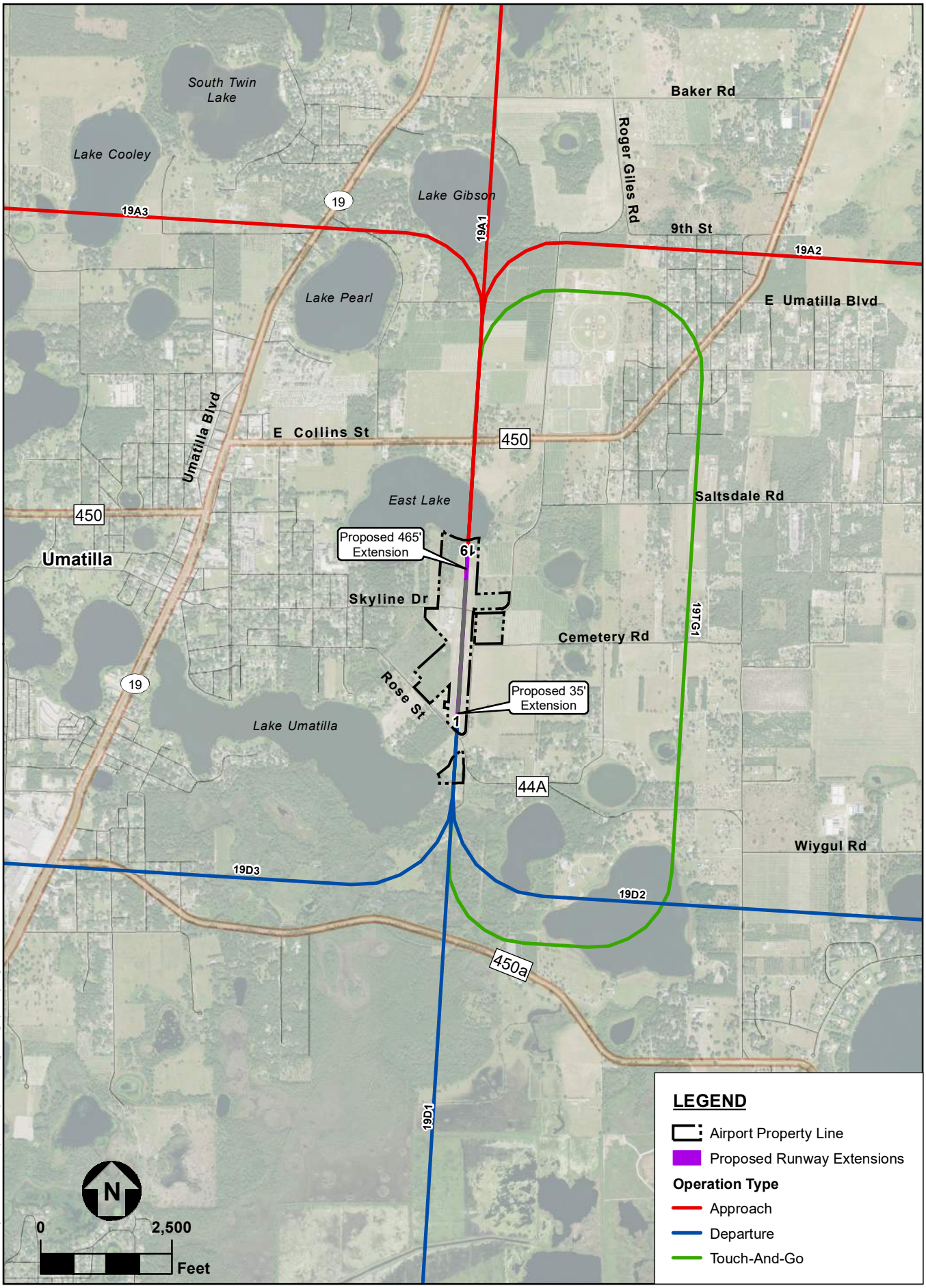


Source: AEDT 2d; Esri; USDA NAIP (Aerial); ESA, 2018

Umatilla Municipal Airport

EXHIBIT 3

PROPOSED PROJECT MODELED FLIGHT TRACKS - NORTH FLOW



Source: AEDT 2d; Esri; USDA NAIP (Aerial); ESA, 2018

Umatilla Municipal Airport

EXHIBIT 4

PROPOSED PROJECT MODELED FLIGHT TRACKS - SOUTH FLOW

Appendix D
Special Status Species

ESA

FNAI Tracking List

LAKE COUNTY
137 Total Elements Found
Last Updated: July 2017

Scientific Name is linked to the FNAI Online Field Guides when available.
- links to NatureServe Explorer, an online encyclopedia of more than 55,000 plants, animals, and natural communities in North America, compiled by the NatureServe network of natural heritage programs, of which the Florida Natural Areas Inventory is a member.

- links to a species distribution map (Adobe SVG viewer required). If your browser does not support Adobe SVG, try this link

SEARCH RESULTS

NOTE: This is not a comprehensive list of all species and natural communities occurring in the location searched. Only elements documented in the FNAI database are included and occurrences of natural communities are excluded. Please see FNAI Land Cover information or Reference Natural Community map for more information on communities.

Plants and Lichens — EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Bonamia grandiflora	Florida Bonamia	G3	S3	T	E
Carex chapmanii	Chapman's Sedge	G3	S3	N	T
Centrosema arenicola	Sand Butterfly Pea	G2Q	S2	N	E
Chionanthus pygmaeus	Pygmy Fringe Tree	G2G3	S2S3	E	E
Clitoria fragrans	Scrub Pigeon-wing	G3	S3	T	E
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	T
Cucurbita okeechobeensis	Okeechobee Gourd	G1	S1	E	E
Digitaria gracillima	Longleaf Fingergrass	G1	S1	N	N
Eriogonum longifolium var. gnaphalifolium	Scrub Buckwheat	G4T3	S3	T	E
Hartwrightia floridana	Hartwrightia	G2	S2	N	T
Hasteola robertiorum	Florida Hasteola	G1	S1	N	E

Illicium parviflorum	Star Anise	G2	S2	N	E
Monotropa hypopithys	Pinesap	G5	S1	N	E
Najas filifolia	Narrowleaf Naiad	G1	S1	N	T
Nemastylis floridana	Celestial Lily	G2	S2	N	E
Nolina brittoniana	Britton's Beargrass	G3	S3	E	E
Panicum abscissum	Cutthroat Grass	G3	S3	N	E
Paronychia chartacea ssp. chartacea	Paper-like Nailwort	G3T3	S3	T	E
Polygala lewtonii	Lewton's Polygala	G2G3	S2S3	E	E
Prunus geniculata	Scrub Plum	G3	S3	E	E
Pteroglossaspis ecristata	Giant Orchid	G2G3	S2	N	T
Salix floridana	Florida Willow	G2	S2	N	E
Sideroxylon alachuense	Silver Buckthorn	G1	S1	N	E
Stylisma abdita	Scrub Stylisma	G3	S3	N	E
Vicia ocalensis	Ocala Vetch	G1	S1	N	E
Warea amplexifolia	Clasping Warea	G1	S1	E	E

Clams and Mussels EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Elliptio monroensis	St. Johns Elephantear	G2G3	S2S3	N	N
Villosa amygdala	Florida Rainbow	G3	S3	N	N

Snails and Allies EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Aphaostracon pycnus	Dense Hydrobe Snail	G1	S1	N	N
Floridobia alexander	Alexander Siltsnail	G1	S1	N	N
Floridobia leptospira	Flatwood Siltsnail	G1G2	S1S2	N	N
Floridobia vanhyningi	Seminole Spring Siltsnail	G1	S1	N	N

Spiders EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Geolycosa xera	McCrone's Burrowing Wolf Spider	G2G3	S2S3	N	N
Latrodectus bishopi	Red Widow Spider	G2G3	S2S3	N	N
Phidippus workmani	Workman's Jumping Spider	G2G3	S2S3	N	N

Crabs, Crayfishes, and Shrimps

EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Procambarus delicatus	Big-cheeked Cave Crayfish	G1	S1	N	N

Mayflies

EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Stenacron floridense	A Mayfly	G3G4	S3S4	N	N

Dragonflies and Damselflies

EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Libellula jesseana	Purple Skimmer	G1	S1	N	N

Grasshoppers and Allies

EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Melanoplus nanciae	Ocala Claw-Cercus Grasshopper	G1?	S1?	N	N
Schistocerca ceratiola	Rosemary Grasshopper	G2G3	S2S3	N	N

Beetles

EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Anomala exigua	Pygmy Anomala Scarab Beetle	G1	S1	N	N
Aphodius aegrotus	Small Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N
Aphodius laevigatus	Large Pocket Gopher Aphodius Beetle	G3G4	S3?	N	N
Aphodius troglodytes	Gopher Tortoise Aphodius Beetle	G2G3	S2	N	N
Copris gopheri	Gopher Tortoise Copris Beetle	G2	S2	N	N
Cremastocheilus squamulosus	Scaly Anteater Scarab Beetle	G2G3	S1S2	N	N
Diplotaxis rufa	Red Diplotaxis Beetle	G2G3	S2S3	N	N

Geopsammodius relictillus	Relictual Tiny Sand-loving Scarab	G2G3	S2S3	N	N
Haroldiataenius saramari	Sand Pine Scrub Ataenius Beetle	G3G4	S3S4	N	N
Hypotrichia spissipes	Florida Hypotrichia Scarab Beetle	G3G4	S3S4	N	N
Ischyrus dunedinensis	Three Spotted Pleasing Fungus Beetle	G2G3	S2S3	N	N
Onthophagus polyphemi polyphemi	Punctate Gopher Tortoise Onthophagus Beetle	G2G3T2T3	S2	N	N
Peltotrupes profundus	Florida Deepdigger Scarab Beetle	G3	S3	N	N
Phyllophaga elongata	Elongate June Beetle	G3	S3	N	N
Phyllophaga okeechobea	Diurnal Scrub June Beetle	G2	S2	N	N
Phyllophaga skelleyi	Skelley's June Beetle	G2	S2	N	N
Romulus globosus	Round-Necked Romulus Long-Horned Beetle	G1G2	S1S2	N	N
Selonodon floridensis	Florida Cebrionid Beetle	G2G4	S2S4	N	N
Selonodon mandibularis	Large-Jawed Cebrionid Beetle	G2G4	S2S4	N	N
Serica frosti	Frost's Silky June Beetle	G1G2	S1S2	N	N
Serica pusilla	Pygmy Silky June Beetle	G2G3	S2S3	N	N
Trigonopeltastes floridana	Scrub Palmetto Flower Scarab Beetle	G2G3	S2S3	N	N
Typocerus fulvocinctus	Yellow-banded Typocerus Long-horned Beetle	G2G3	S2S3	N	N

Caddisflies EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Cernotina truncona	Florida Cernotinan Caddisfly	G4	S3	N	N
Chimarra florida	Floridian Finger-net Caddisfly	G4	S3S4	N	N
Hydroptila berneri	Berner's Microcaddisfly	G4G5	S3	N	N
Hydroptila wakulla	Wakulla Springs Vari-colored Microcaddisfly	G2	S2	N	N
Nectopsyche tavara	Tavares White Miller Caddisfly	G3	S3	N	N
Neotrichia rasmusseni	Rasmussen's Neotrichia Caddisfly	G1G2	S1S2	N	N
Oecetis parva	Little Oecetis Longhorned Caddisfly	G2	S2	N	N
Oecetis porteri	Porter's Long-horn Caddisfly	G3G4	S2S3	N	N
Oxyethira pescadori	Pescador's Bottle-Cased Caddisfly	G3G4	S3	N	N
Triaenodes florida	Floridian Triaenode Caddisfly	G2	S2	N	N
Triaenodes furcellus	Little-fork Triaenode Caddisfly	G3	S3	N	N

Butterflies and Moths

EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Amblyscirtes aesculapius	Lace-winged Roadside Skipper	G3G4	S3S4	N	N
Atrytone arogos arogos	Arogos Skipper	G3T1T2	S1	N	N
Callophrys niphon	Eastern Pine Elfin	G5	S2	N	N
Enodia portlandia floralae	Florida Pearly Eye	G4TU	SU	N	N
Euphyes berryi	Berry's Skipper	G2	S2	N	N
Hesperia attalus slossonae	Seminole Skipper	G3G4T3	S3	N	N
Hesperia meskei straton	Eastern Meske's Skipper	G3G4T3	S2S3	N	N

Flies

EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Eutrichota gopheri	Gopher Tortoise Burrow Fly	G2G3	S2S3	N	N

Ants, Bees, and Wasps

EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Triepeolus rugosus	Punctate Central Florida Cuckoo Bee	G1	S1	N	N

Fishes

EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Ameiurus brunneus	Snail Bullhead	G4	S3	N	N
Cyprinodon variegatus hubbsi	Lake Eustis Pupfish	G5T2Q	S2	N	N
Enneacanthus chaetodon	Blackbanded Sunfish	G3G4	S3	N	N
Pteronotropis welaka	Bluenose Shiner	G3G4	S3S4	N	ST

Amphibians

EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Lithobates capito	Gopher Frog	G3	S3	N	N
Notophthalmus perstriatus	Striped Newt	G2G3	S2	C	N

Reptiles

EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Alligator mississippiensis	American Alligator	G5	S4	SAT	FT(S/A)
Clemmys guttata	Spotted Turtle	G5	S2S3	N	N
Crotalus adamanteus	Eastern Diamondback Rattlesnake	G4	S3	N	N
Drymarchon couperi	Eastern Indigo Snake	G3Q	S3	T	FT
Gopherus polyphemus	Gopher Tortoise	G3	S3	C	ST
Heterodon simus	Southern Hognose Snake	G2	S2	N	N
Lampropeltis calligaster	Mole Kingsnake	G5	S2S3	N	N
Lampropeltis extenuata	Short-tailed Snake	G3	S3	N	ST
Lampropeltis getula	Common Kingsnake	G5	S2S3	N	N
Pituophis melanoleucus	Pine Snake	G4	S3	N	ST
Plestiodon reynoldsi	Sand Skink	G2	S2	T	FT
Pseudemys concinna suwanniensis	Suwannee Cooter	G5T3	S3	N	N
Sceloporus woodi	Florida Scrub Lizard	G2G3	S2S3	N	N

Birds

EXPLANATION

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Antigone canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Aphelocoma coerulescens	Florida Scrub-Jay	G2	S2	T	FT
Aramus guarauna	Limpkin	G5	S3	N	N
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	ST
Buteo brachyurus	Short-tailed Hawk	G4G5	S1	N	N
Egretta caerulea	Little Blue Heron	G5	S4	N	ST
Egretta thula	Snowy Egret	G5	S3	N	N
Egretta tricolor	Tricolored Heron	G5	S4	N	ST
Elanoides forficatus	Swallow-tailed Kite	G5	S2	N	N
Eudocimus albus	White Ibis	G5	S4	N	N
Falco columbarius	Merlin	G5	S2	N	N
Falco peregrinus	Peregrine Falcon	G4	S2	N	N
Falco sparverius paulus	Southeastern American Kestrel	G5T4	S3	N	ST
Haliaeetus leucocephalus	Bald Eagle	G5	S3	N	N
Laterallus jamaicensis	Black Rail	G3G4	S2	N	N
Mycteria americana	Wood Stork	G4	S2	T	FT

Nyctanassa violacea		Yellow-crowned Night-heron	G5	S3	N	N
Nycticorax nycticorax		Black-crowned Night-heron	G5	S3	N	N
Pandion haliaetus		Osprey	G5	S3S4	N	SSC*
Peucaea aestivalis		Bachman's Sparrow	G3	S3	N	N
Picoides borealis		Red-cockaded Woodpecker	G3	S2	E	FE
Picoides villosus		Hairy Woodpecker	G5	S3	N	N
Plegadis falcinellus		Glossy Ibis	G5	S3	N	N
Sternula antillarum		Least Tern	G4	S3	N	ST

Mammals EXPLANATION

Scientific Name		Common Name	Global Rank	State Rank	Federal Status	State Status
Corynorhinus rafinesquii		Rafinesque's Big-eared Bat	G3G4	S2	N	N
Mustela frenata olivacea		Southeastern Weasel	G5T4	S3?	N	N
Mustela frenata peninsulae		Florida Long-tailed Weasel	G5T3	S3	N	N
Myotis austroriparius		Southeastern Bat	G4	S3	N	N
Neofiber alleni		Round-tailed Muskrat	G3	S3	N	N
Podomys floridanus		Florida Mouse	G3	S3	N	N
Sciurus niger shermani		Sherman's Fox Squirrel	G5T3	S3	N	SSC
Trichechus manatus		West Indian Manatee	G2	S2	T	FE
Ursus americanus floridanus		Florida Black Bear	G5T2	S2	N	N

Other Elements EXPLANATION

Scientific Name		Common Name	Global Rank	State Rank	Federal Status	State Status
Bird Rookery			G5	SNR	N	N
Geological feature			GNR	SNR	N	N

PROTECTED SPECIES WITH LIKELIHOOD OF OCCURRENCE WITHIN THE PROJECT AREA

Scientific Name	Common Name	Listing Status		Likelihood of Occurrence	Habitat Preference
		Federal	State		
Birds					
Aphelocoma coerulescens	Florida scrub-jay	T	T	Low	Ancient dune ecosystems or scrubs, which occur on well-drained sandy soils
Athene cunicularia	Burrowing owl	NL	T	Possible	Dry prairie and sandhill. Ruderal areas such as pastures, airports, ball fields, parks, schools, road right-of-ways, and vacant spaces in residential areas.
Egretta caerulea	Little blue heron	NL	T	Likely	Freshwater, brackish, and saltwater wetlands
Egretta tricolor	Tricolored heron	NL	T	Likely	Freshwater and estuarine wetlands
Grus canadensis pratensis	Florida sandhill crane	NL	T	Possible	Various open grassy areas and marshes
Haliaeetus leucocephalus	Bald eagle*	NL	NL	Possible	Forested uplands and wetlands in close proximity to open water
Mycteria americana	Wood stork	T	T	Possible	Shallow freshwater and brackish wetlands; roadside ditches
Mammals					
Sciurus niger shermani	Sherman's fox squirrel	NL	SSC	Low	Open, fire maintained longleaf pine, turkey oak, sandhills, flatwooods.
Ursus americanus floridanus	Florida black bear	NL	NL**	Low	A wide variety of forested to sparsely forested upland/wetland communities.
Plants					
Bonamia grandiflora	Florida bonamia	T	E	Low	Deep, white, dry sands of ancient dunes and sandy ridges in clearings; openings within scrub habitat.
Calamintha ashei	Ashe's savory	NL	T	Low	Pinelands and sand pine scrub canopy openings; disturbed areas.
Salix floridana	Florida willow	NL	E	Low	Wet, calcareous soils, dense floodplain woods, edges of spring runs, and ditches. Springheads, spring runs, hydric hammock, floodplains.
Reptiles					
Alligator mississippiensis	American alligator	T(S/A)	SSC	Possible	Typically found in most open water bodies in Florida.
Drymarchon corais couperi	Eastern indigo snake	T	T	Possible	Utilizes variety of habitats including wet flatwoods, mesic hammocks, tidal swamps, sandhills, scrub, and upland forests.
Gopherus polyphemus	Gopher tortoise	C	T	Burrows Observed	Xeric, flatwoods, disturbed/spoil areas, and coastal habitats with loose, well-drained, sandy soil with herbaceous vegetation
Lampropeltis extenuate	Short-tailed snake	NL	T	Low	Sandy soils, particularly longleaf pine and xeric oak sandhills. May also be found in scrub and xeric hammock habitats.
Neoseps reynoldsi	Sand skink	T	T	Low	Xeric habitats found along Central Florida sand ridges and remnants of ancient coastal areas. Habitats include rosemary scrub, scrubby flatwoods, sand pine and oak scrubs, and turkey oak ridge.
Eumeces egregius lividus	Bluetail mole skink	T	T	Low	Same habitats as sand skink (above).
Pituophis melanoleucus mugitus	Florida pine snake	NL	T	Low	Open canopies with dry sandy soils; sandhill or former sandhill (oldfields, pastures), sand pine scrub, and scrubby flatwoods.

NOTES: E = Endangered; T = Threatened; T(S/A) = Similarity of appearance; SSC = Species of Special Concern; NL= Not Listed; C = Candidate for Listing; * = Protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act; ** = Protected by Florida Black Bear Conservation Rule 68A-4.009, F.A.C.

Amy Paulson

From: Amy Paulson
Sent: Friday, April 5, 2019 2:04 PM
To: Amy Paulson
Subject: [EXTERNAL] Umatilla Airport, Lake County, FL; Skink habitat/survey concurrence

From: Erin Gawera
Sent: Friday, August 17, 2018 1:25 PM
To: Douglas Skurski
Cc: Anthony Daly-Crews
Subject: [EXTERNAL] Umatilla Airport, Lake County, FL; Skink habitat/survey concurrence

Hi Doug,

Based on your report the Service agrees that this property does not have habitat suitable for sand skinks and is not likely to be occupied. No cover board surveys will be required. Have a great day.

Erin

****

Erin M. Gawera, Fish and Wildlife Biologist
US Fish and Wildlife Service
http://www.fws.gov/northflorida
7915 Baymeadows Way, Suite 200
Jacksonville, FL 32256-7517
904/731-3336 (main)
Fax: 904/731-3045 or 3048

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Douglas Skurski
Sent: Monday, August 13, 2018 2:17 PM
To: Erin Gawera
Cc: Anthony Daly-Crews
Subject: [EXTERNAL] Umatilla Airport, Lake County, FL; Skink habitat/survey concurrence

Erin,

ESA conducted desktop reviews and field evaluations to evaluate airport land, proposed for a minor airport runway extension, for potential to support sand skink and bluetail mole skink. Based on negative findings during Spring pedestrian surveys, evaluation of historic & current land use (citrus groves), presence of existing soil disturbance (fill material), and lack of surrounding native xeric habitat from which skinks might emigrate, we do not believe the habitat to be affected by the proposed runway extension has the potential support skinks, and that performing cover board surveys in such altered habitat is not warranted. Please review the attached letter and exhibits which document our findings. Please provide concurrence with our determination, and if you have any questions, please feel free to contact me directly.

Thanks,

Doug

Douglas A. Skurski, MS, PWS
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August 13, 2018

Erin Gawera
U.S. Fish and Wildlife Service
North Florida Ecological Services Office
7915 Baymeadows Way, Suite 200
Jacksonville, Florida 32256-7517

Subject: Umatilla Municipal Airport (X23); Lake County, Florida
Runway 1-19 Extension
Request for concurrence with determination of sand skink survey requirements

Dear Ms. Gawera:

The Umatilla Municipal Airport (X23) is proposing the Runway 1-19 Extension Project. The project is located in Umatilla, Florida. Regionally, Umatilla Municipal Airport sits within north Lake County, north of Eustis, and south of Ocala National Forest, within Township 18S, Range 27E, Section 18. Specifically, the runway extension occurs at the north end of the existing facility, south of East Lake, at 28° 55' 45" N, 81° 39' 06" W (lat/long). (**Exhibit 1**). ESA, the airport's environmental consultant, has reviewed the project limits as it pertains to state and federally listed species, and is requesting USFWS's concurrence with assessment of habitat suitability for sand skink (*Neoseps reynoldsi*) and bluetail mole skink (*Eumeces egregius lividus*) within the areas of soil disturbance associated with the proposed runwayproject.

Preliminary Habitat Suitability; Desktop Analysis

ESA provided preliminary site assessments for the areas of proposed project improvements, in regards to the existing environmental conditions and the potential for suitable sand skink habitat within and abutting the project footprint. Prior to the site assessment, a desktop review of the airport property was conducted to identify habitat suitable for sand skink that may be impacted by the proposed runway extension (**Exhibit 2**). In accordance with the U. S. Fish and Wildlife Service (USFWS) Skink Survey Protocol (April 2011), review of project area included:

- Elevation: Based on the United States Geological Survey (USGS), existing elevations airport owned property 80 feet to 135 feet in elevation. Within the project site, elevations range from 110 feet at the eastern runway border, and slopes significantly down grade to a normal high water elevation of East Lake at around 80 feet (**Exhibit 3**).

- Location: Upland portions of north Lake County are included within the USFWS Sand and Blue-tailed Mole Skinks Consultation Area. The proposed project is within the consultation area.

- Soils: A review of the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) soil survey indicates that of the four soil types found around the project site, three are considered suitable for sand skinks. These soil types include: 8) Candler fine sand - 0 to 5 percent slopes, 9) Candler fine sand - 5 to 12 percent slopes, and 3) Candler fine sand - 12 to 40 percent slopes. One soil type at the north of the airport property, 99) water, is incompatible with skink habitat (**Exhibit 3**).

Per evaluation of elevation, location, and soils, as specified in the USFWS's Skink Survey Protocol, the project area meets the minimum criteria to define suitable sand skink habitat. Our desktop review of the soils and elevations indicate that there are about 6.6 acres of mapped sand skink habitat, within the project area.

Historic aerials, from 1947 to 2013, illustrating conditions before the construction of the airport, and at various phases of airport development, are provided in **Figure 1**. Initial aerial photography from the 1940's depicts a landscape that was historically dominated by citrus groves, and has since been subject to 70+ years of agricultural maintenance and modifications. As phases of the airport were constructed, citrus groves were cleared for runway, taxiway, parking, and building surfaces, as well as cleared, mowed, & maintained sod areas surrounding the airport facilities. In the 90's and early 2000's, the airport facilities were all south of Skyline Drive, until the runway was extended north in mid-2000's. During that latest extension, significant clearing and fill was evident north of the pavement limits, comprising the Runway Object Free Area (ROFA) and the Taxiway Object Free Area (TOFA), per Federal Aviation Authority (FAA) safety requirements.

Preliminary Habitat Suitability; Field Analysis

On February 7 and April 3, 2018, ESA biologists conducted field reviews of the project area. Land use (**Exhibit 5**) and soils characteristics were reviewed to determine if significant fill or cut had occurred on the parcels due to prior land development within the immediate area and field verify if the existing soil are consistent with mapped soil types. Observed upland habitat communities included open land, abandoned citrus grove, and bamboo thicket.

Airport Open Land (FLUCFCS 8111) – 4.4 acres

Areas of ROFA/TOFA comprised of significant fill material and sodded and mowed/maintained grasses. Photo documentation of these areas are provided in **Figure 2**, Photos 1 & 2.

Abandoned Citrus Grove (FLUCFCS 2211) – 2.0 acres

Areas beyond the existing ROFA/TOFA are consistent with a fallow citrus grove, lacking in maintenance and repair. Vegetation is comprised of citrus trees (*Citrus* spp), lantana (*Lantana camara*), sabal palm (*Sabal palmetto*), sand laurel oak (*Quercus hemisphaerica*), oak hybrid (*Quercus* spp), black cherry (*Prunus serotina*), bamboo (*Bambusa* spp) with ground cover of natal grass (*Melinis repens*), bahia grass (*Paspalum notatum*), ceasarweed (*Urena lobata*), and rosary pea (*Abrus precatorius*). Dense ground cover of matted grasses precluded open sandy "swimmable" soils. Photo documentation of these areas are provided in **Figure 2**, Photos 3-5.

Bamboo Thicket (FLUCFCS 2431) – 0.2 acres

This patch of bamboo along the wetland edge of East Lake was a dense monoculture. The leptomorph rhizome system spreads quickly, with dense, tangled root system within the first foot below soil surface. There are no "swimmable" soils within this plant community. Photo documentation of this area is provided in **Figure 2**, Photo 6.

Pedestrian surveys were performed on February 7 and April 3, 2018, within and around the proposed project area in order to further evaluate the potential for sand skink utilization, looking for visual observation of sinusoidal sand skink trails on the surface of open sandy areas. Minimal open sandy "swimmable soils" and no sand skink trails were observed during the site visits.

Based on the site conditions, it is unlikely that sand skinks occur within or adjacent to the project limits. Due to lack of observed habitat and "swimmable soils," it is our determination that there is no appropriate sand skink habitat within the project limits. The following mapped suitable habitat areas were eliminated from consideration:

- Existing pavement (airport runways, taxiways, and parking);
- High soil disturbance (fill, soil grading/disturbance);
- Dense grass that make the soil not swimmable (sodded, maintained/mowed ROFA & TOFA)
- Abandoned citrus groves (dense matted grass, historically intense agricultural effects)
- Bamboo thicket with dense sub-surface rhizomes & rooting

USFWS North Florida Ecological Service Office has recently provided guidance to other transportation entities, including Florida Department of Transportation (FDOT), that cover board surveys for skink were not necessary within active citrus groves, or fallow groves with no adjacent natural scrub habitat, from which sand skinks could emigrate, once intensive agricultural activities were discontinued. As demonstrated by the historic aerial photography and existing land use map, the land on which the airport was constructed, and all land uses surrounding, were historically citrus grove, and much of this landscape remains so currently. There are no native soils or scrub communities surrounding this project area, which haven't been adversely impacted by decades of intense citrus agricultural practices, thus reducing the likelihood that skinks could re-populate the fallow grove habitat within airport property.

Due to the constrained/disturbed habitat conditions of the site, we request agency concurrence that a formal skink cover board survey should not be required prior to these proposed project improvements. Should you require a site review, project personnel will meet you on-site to further assess the proposed runway extension and to confirm the site conditions in order to assist in your determination.

Sincerely,

Environmental Science Associates

Doug Skurski, MS, PWS
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Enclosures:
Exhibit 1: Location Map
Exhibit 2: Proposed Improvements
Exhibit 3: Quadrangle Map
Exhibit 4: NRCS Soils Map
Exhibit 5: Land Use Map
Runway Extension Concept Plan

Figure 1. Historic Aerials; Airport Development Progression

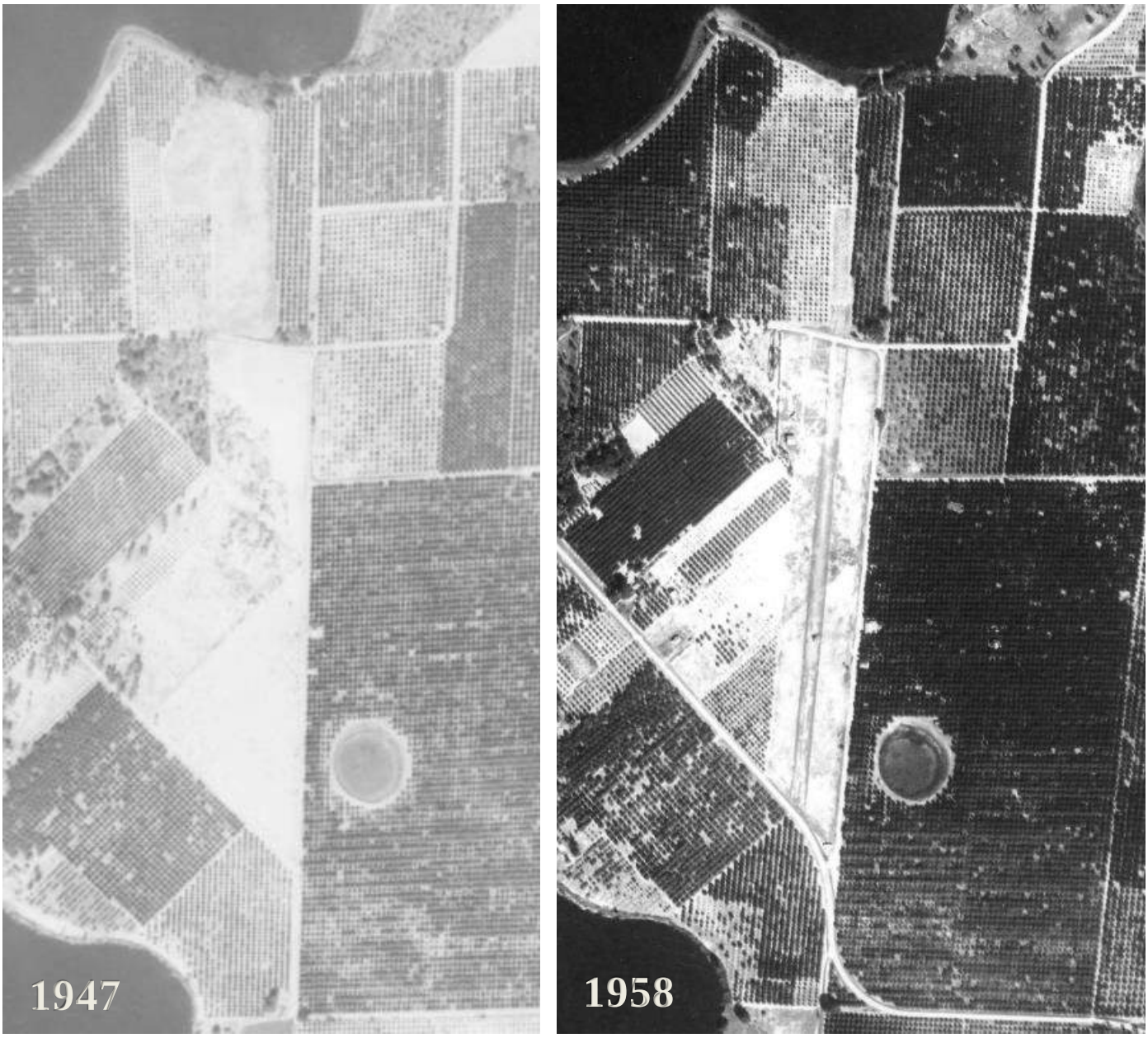


Figure 1. Historic Aerials; Airport Development Progression (continued)

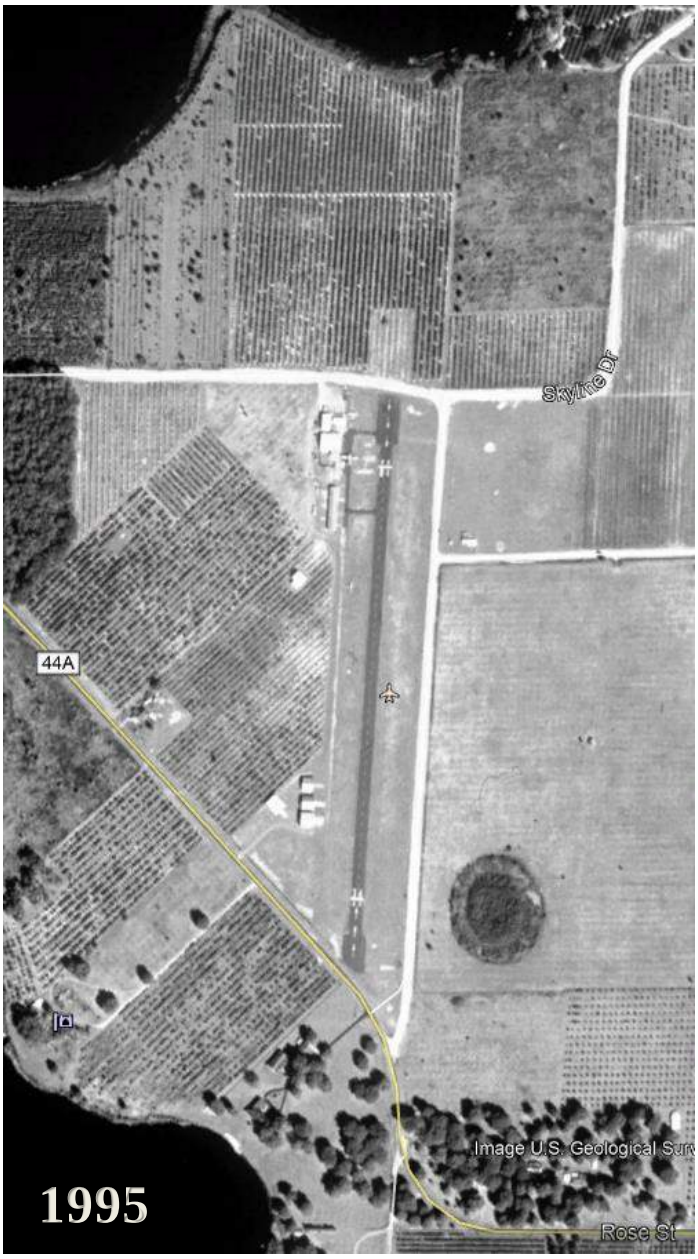


Figure 1. Historic Aerials; Airport Development Progression (continued)

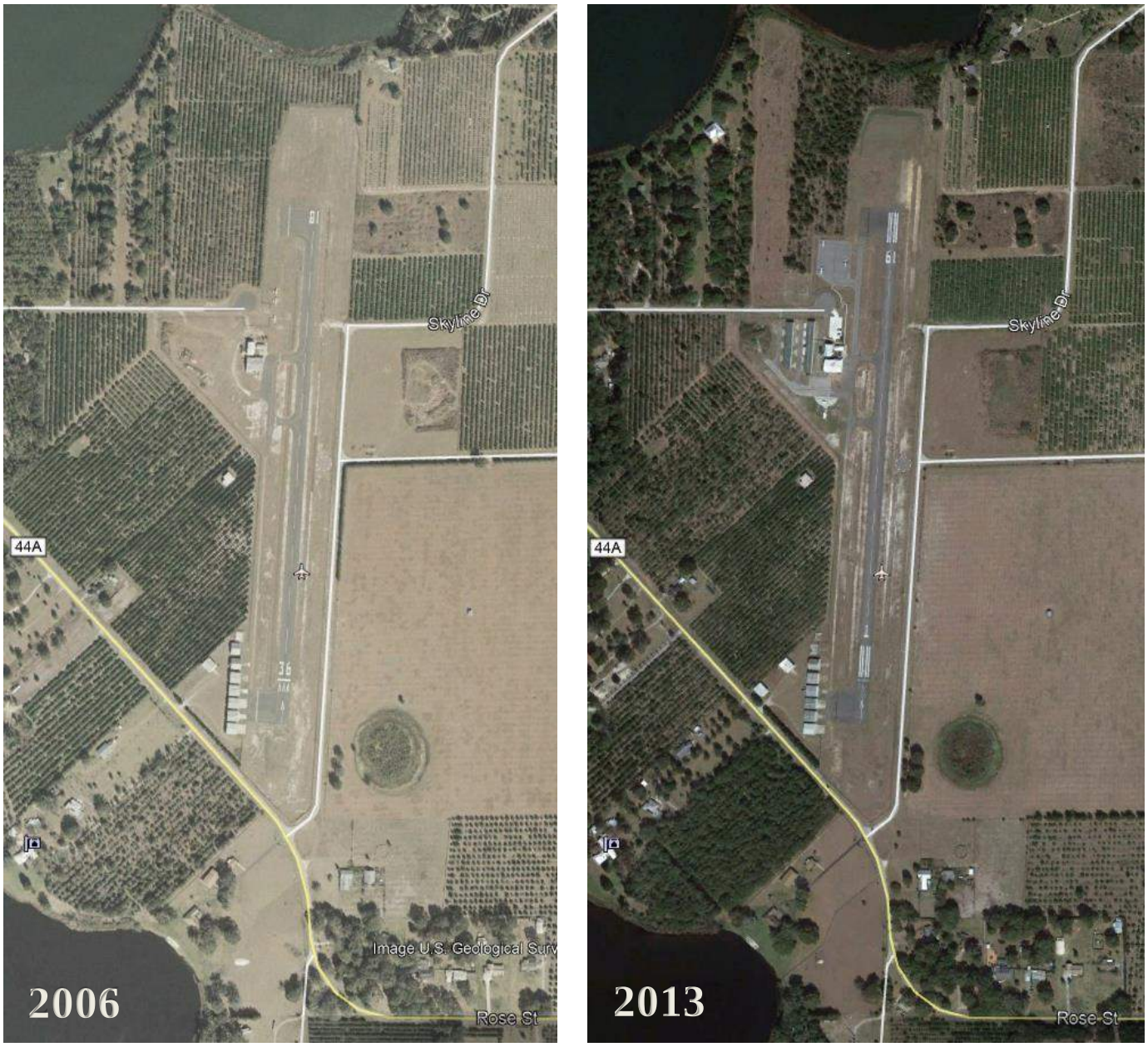


Figure 2. Site-specific photos

Photo 1: Significant fill observed associated with the existing ROFA & TOFA, north of existing runway.

Photo 2: Dense grasses with no “swimmable soils” observed within the ROFA & TOFA, north of existing runway.

Figure 2. Site-specific photos (continued)

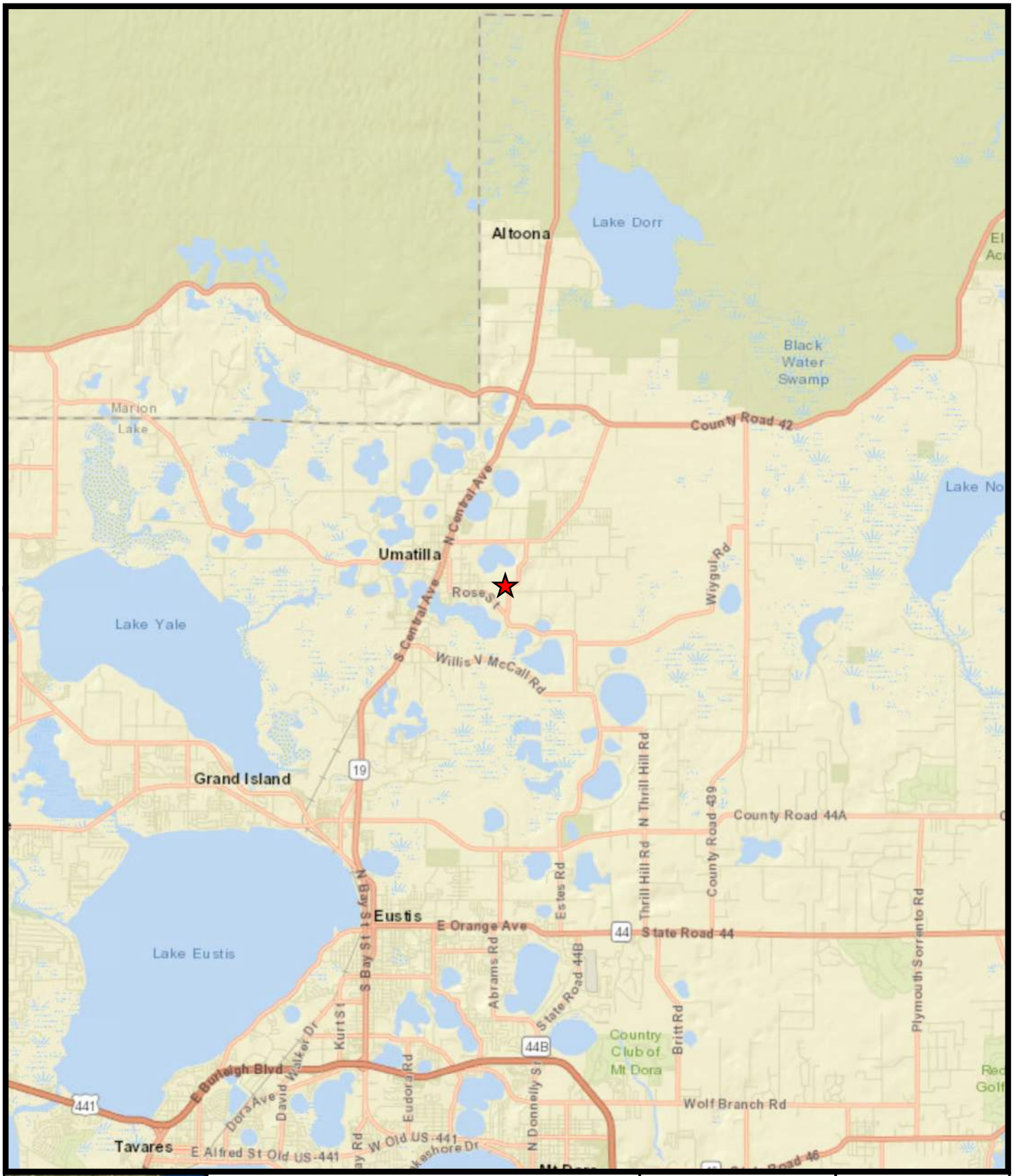
Photo 3: Representative picture of fallow orange grove, north of existing cleared, filled ROFA & TOFA.

Photo 4: Representative picture of fallow orange grove, north of existing cleared, filled ROFA & TOFA.

Figure 2. Site-specific photos (continued)

Photo 5: Representative picture of fallow orange grove (foreground) transitioning to dense bamboo (background).

Photo 6: Dense bamboo along northern limits of upland habitat, abutting the wetland limits of East Lake.



Location Map
Umatilla Municipal Airport (X23)
Runway 1-19 Extension
Umatilla, Florida

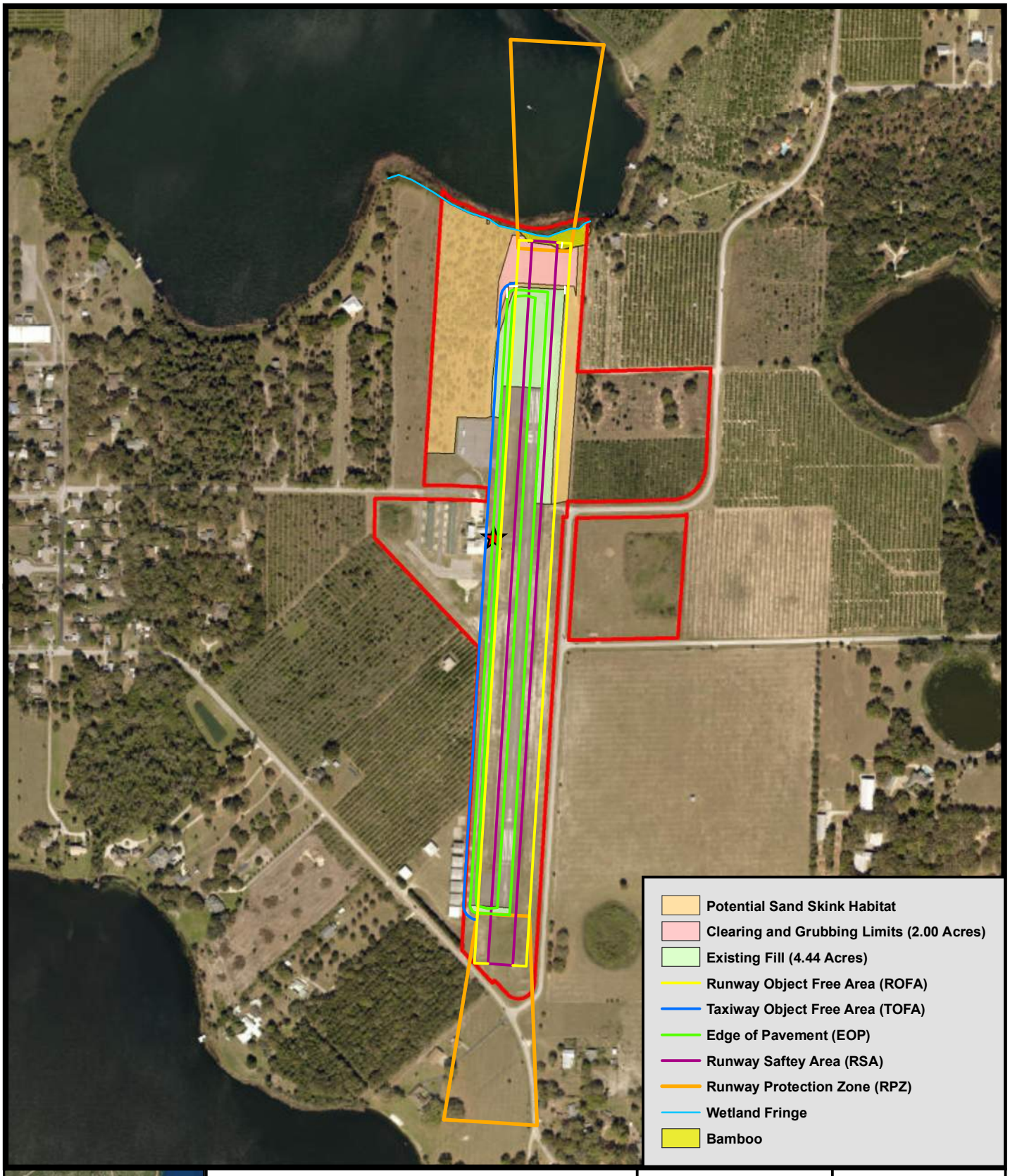
★ **Project Location**

Exhibit 1

N

1 in = 2 miles

Section: 18
Township: 18 South
Range: 27 East



Proposed Improvements Map
Umatilla Municipal Airport (X23)
Runway 1-19 Extension
Umatilla, Florida

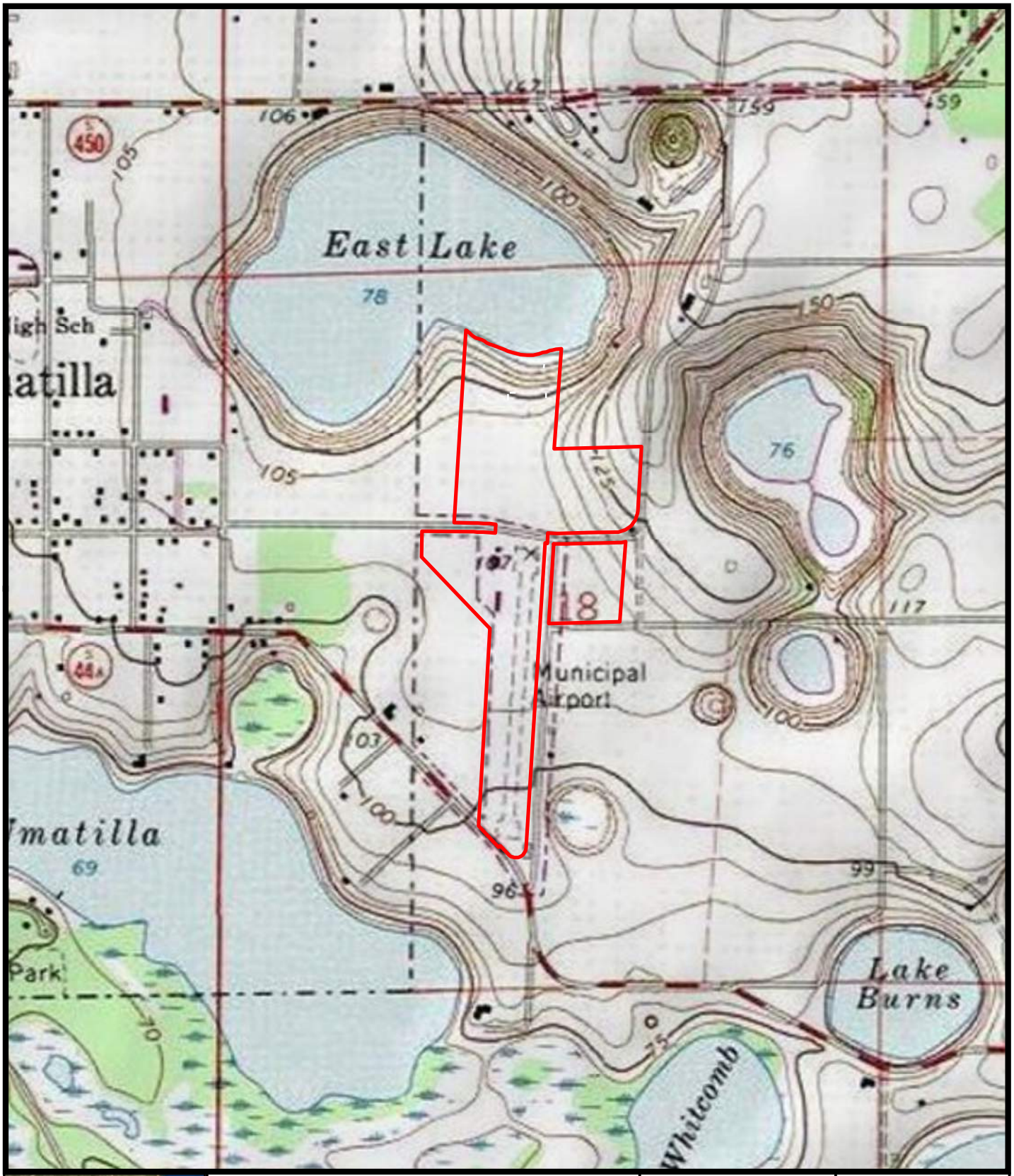
Airport Property Boundary

Exhibit 2

N

1 in = 650 feet

Section: 18
Township: 18 South
Range: 27 East



USGS Topographic Quadrangle Map
Umatilla Municipal Airport (X23)
Runway 1-19 Extension
Umatilla, Florida

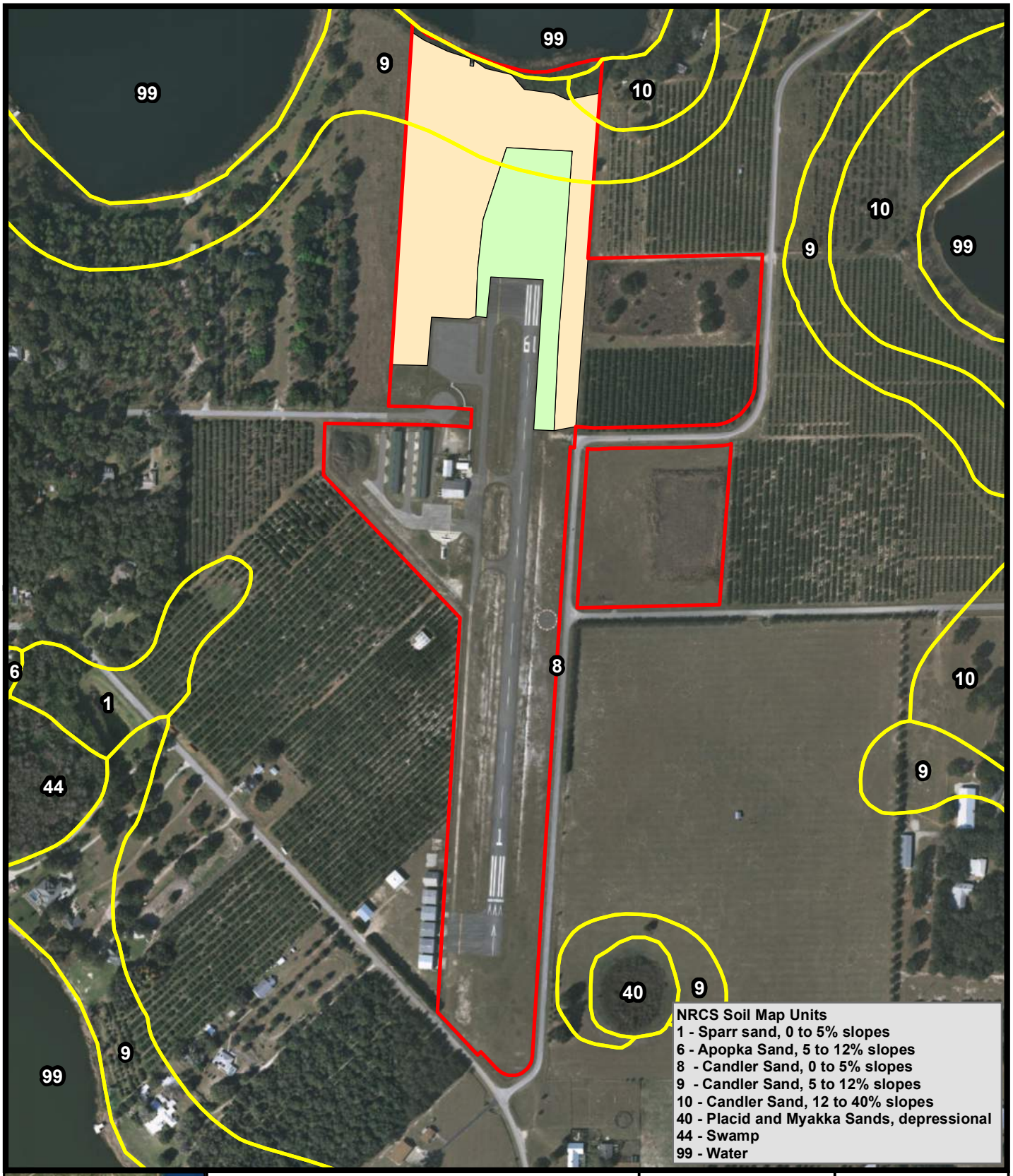
Airport Property Boundary

Exhibit 3

N

1 in = 1,000 ft

Section: 18
Township: 18 South
Range: 27 East



NRCS Soils Map
Umatilla Municipal Airport (X23)
Runway 1-19 Extension
Umatilla, Florida

Potential Sand Skink Habitat

Fill

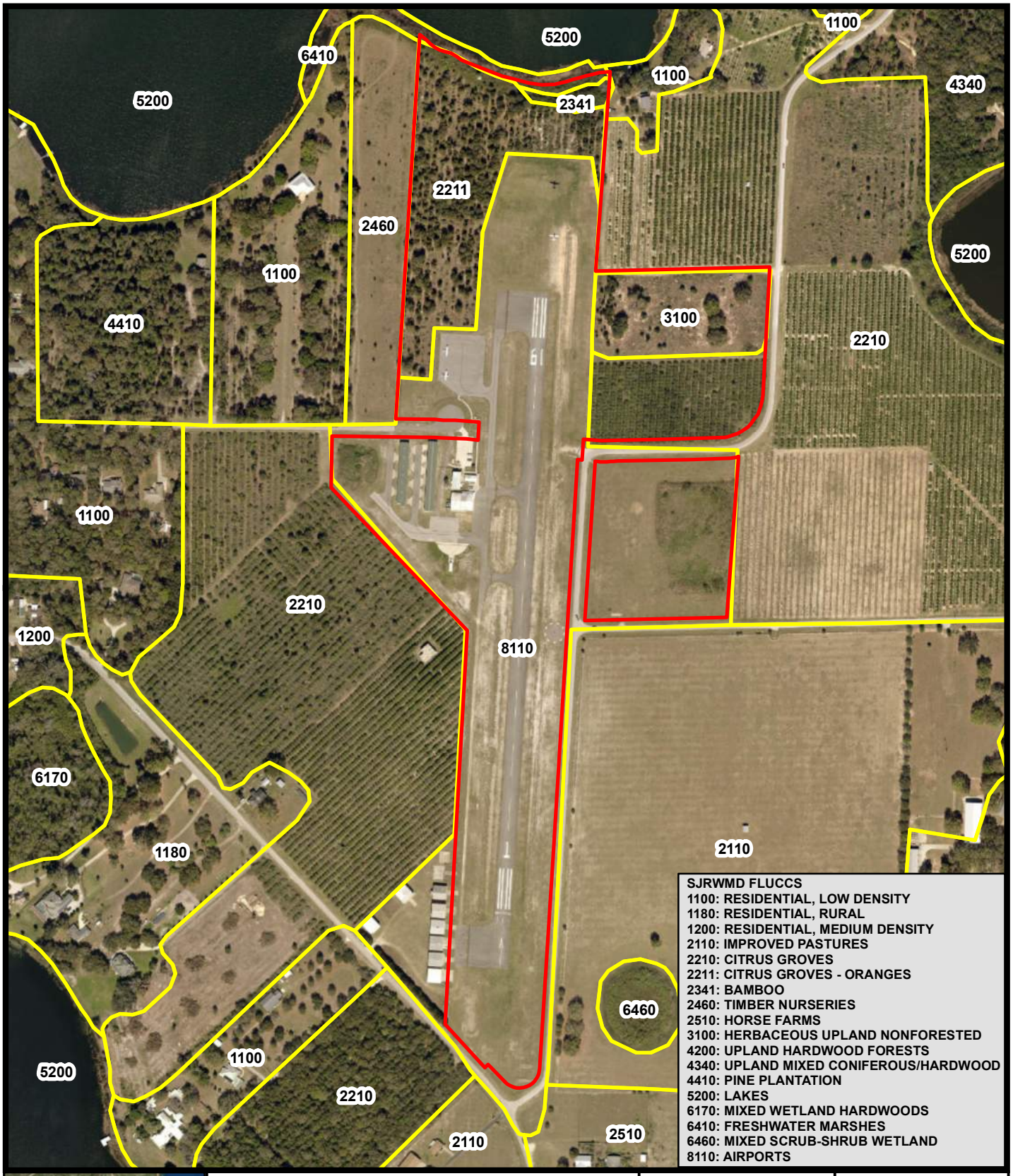
Airport Property Boundary

Exhibit 4

N

1 in = 500 feet

Section: 18
Township: 18 South
Range: 27 East



SJRWMD Land Use Map
Umatilla Municipal Airport (X23)
Runway 1-19 Extension
Umatilla, Florida

Airport Property Boundary

SJRWMD Land Use

Exhibit 5

N

1 in = 500 ft

Section: 18
Township: 18 South
Range: 27 East

LAKE UMATILLA

EAST LAKE

ROSE STREET

W. SKYLINE DR.

AIRPORT PROPERTY LINE

HANGARS

SELF SERVE FUELING AREA

EXISTING PAVEMENT TO BE REMOVED

SURVEYED WETLAND LIMIT

EXISTING PAVEMENT TO BE REMOVED

HANGARS (OFF AIRPORT)

EXISTING FENCELINE

PROPOSED RUNWAY AND TAXIWAY EXTENSION

EXISTING 2-BOX RWY 01 PAPI

25'

APRON

25'

FBO

PARKING

150'

EXISTING RUNWAY 1-19 (2,500' X 60')

PROPOSED RUNWAY 1-19 (3,000' X 60')

60'

ANTICIPATED TREE CLEARING

SKYLINE DR.

465'

EXISTING 2-BOX RUNWAY 19 PAPI

PROPOSED 2-BOX RUNWAY 19 PAPI

PROPOSED CLEARING & GRUBBING LIMITS

TWIN POND ROAD

SKYLINE DR.

SCALE: 1" = 350'

350' 0' 350' 700'

LEGEND

RSA	-	RUNWAY SAFETY AREA	PRSA	-	PROPOSED RUNWAY SAFETY AREA
ROFA	-	RUNWAY OBJECT FREE AREA	PROFA	-	PROPOSED RUNWAY OBJECT FREE AREA
RPZ	-	RUNWAY PROTECTION ZONE	PRPZ	-	PROPOSED RUNWAY PROTECTION ZONE
PAPI	-	PRECISION APPROACH PATH INDICATOR			

EXHIBIT - FUTURE RUNWAY 1-19 EXTENSION

PROJECT	CLIENT
ENVIRONMENTAL ASSESSMENT FOR RUNWAY 1-19 EXTENSION	UMATILLA MUNICPAL AIRPORT CITY OF UMATILLA

UMATILLA NATURE'S HOMETOWN est 1904

ESA

gai consultants

EXISTING PAVEMENT TO BE REMOVED

EXISTING FENCELINE

PROPOSED CLEARING AND GRUBBING LIMITS

PROPOSED TAXIWAY EXTENSION

PROPOSED FENCELINE

EXISTING RUNWAY PROTECTION ZONE

PROPOSED RUNWAY PROTECTION ZONE

PROPOSED RUNWAY OBJECT FREE AREA

EXISTING RUNWAY THRESHOLD LIGHTS

ANTICIPATED TREE CLEARING

465'

PROPOSED RUNWAY SAFETY AREA

PROPOSED RUNWAY EXTENSION

PROPOSED RUNWAY THRESHOLD LIGHTS

SURVEYED WETLAND LIMIT

AIRPORT PROPERTY LINE

PROPOSED 2-BOX RUNWAY 19 PAPI

PROPOSED RUNWAY PROTECTION ZONE

PROPOSED RUNWAY OBJECT FREE AREA

PROPOSED RUNWAY SAFETY AREA

EXISTING FENCELINE

AIRPORT PROPERTY LINE

EXISTING RUNWAY PROTECTION ZONE

EXISTING PAVEMENT TO BE REMOVED

PROPOSED TAXIWAY EXTENSION

PROPOSED DISPLACED THRESHOLD

PROPOSED RUNWAY EXTENSION

35'

35'

PROPOSED RUNWAY END LIGHTS

EXISTING RUNWAY END LIGHTS

200'

200'

EXISTING DISPLACED THRESHOLD

PROPOSED RUNWAY THRESHOLD LIGHTS

EXISTING RUNWAY THRESHOLD LIGHTS

SKYLINE DR.

SCALE: 1" = 100'

100' 0' 100' 200'

LEGEND

RSA	-	RUNWAY SAFETY AREA
ROFA	-	RUNWAY OBJECT FREE AREA
RPZ	-	RUNWAY PROTECTION ZONE
PRSA	-	PROPOSED RUNWAY SAFETY AREA
PROFA	-	PROPOSED RUNWAY OBJECT FREE AREA
PRPZ	-	PROPOSED RUNWAY PROTECTION ZONE

EXHIBIT - DETAILED VIEW OF RUNWAY 01 & RUNWAY 19 ENDS FOR THE EXTENSION OF RUNWAY 1-19

PROJECT	CLIENT
ENVIRONMENTAL ASSESSMENT FOR RUNWAY 1-19 EXTENSION	UMATILLA MUNICPAL AIRPORT CITY OF UMATILLA

UMATILLA NATURE'S HOMETOWN 1904

ESA

gai consultants

U.S. Department
of Transportation
Federal Aviation Administration

FWS Log No 19-I-0533

The Service concurs with your effect determination(s) for resources protected by the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). This finding fulfills the requirements of the Act.

for **Jay B. Herrington** 3/21/19
Field Supervisor **Date**

February 13, 2019

Ms. Annie Dziergowski
Project Consultation Supervisor
U.S. Fish and Wildlife Service
North Florida Ecological Services Offic
7915 Baymeadows Way, Suite 200
Jacksonville, FL 32256-7517

RE: Section 7 Consultation
Proposed Runway Extension and Related Improvements
Umatilla Municipal Airport
Umatilla, Florida

Dear Ms. Dziergowski:

The City of Umatilla has requested environmental approval from the Federal Aviation Administration (FAA) to extend Runway 1/19 at the Umatilla Municipal Airport from its present length of 2,500 feet to 3,000 feet. The federal actions associated with the proposed action requires consultation with the US Fish and Wildlife Service in accordance with Section 7 of the *Endangered Species Act* and its implementing regulations at 50 CFR Part 402. The federal actions are also subject to the *National Environmental Policy Act* (NEPA). An Environmental Assessment is being prepared to meet FAA's obligations under NEPA. The agency intends to complete Section 7 consultation in conjunction with the NEPA process. The purpose of this letter is to provide information on the Proposed Project and its effect on listed species and to fulfill FAA's consultation obligations.

Description of the Proposed Action

The proposed action's major elements and connected actions are outlined below. Additional information, as well as graphics depicting the proposed action and Action Area, are included in the Biological Assessment that accompanies this letter.[1]

- Extend Runway 1/19 approximately 500 feet to provide a runway length of 3,000 feet. This would be accomplished by constructing 465 feet of new asphalt runway pavement on the north end of the runway and 35 feet of new asphalt pavement on south end of the runway. The new sections of runway pavement would be constructed at the same width as the existing 60-foot wide runway.
- Extend partial parallel Taxiway A approximately 465 feet to the north and 35 feet to the south to provide access to both ends of the extended runway.
- Construct graded and compacted Safety Areas[2] for the new runway and taxiway sections.

[1] *Umatilla Municipal Airport (X23) Runway 1/19 Extension Project Biological Assessment*. Prepared by Environmental Science Associates. November 2018.

[2] Safety Areas are ground surfaces adjoining runway and taxiway pavements. The Safety Areas are smooth and free from ruts and must be capable of supporting aircraft and emergency equipment in case an aircraft overshoots, undershoots, or veers off runway or taxiway pavements.

- Install new medium-intensity runway and taxiway edge lights; relocate existing visual approach aids; and install new airfield directional signs.
- Clear trees, vegetation, and objects necessary for the construction and operation of the new runway.
- Install new sections of airfield security fencing and install controlled-access vehicle gates.
- Modify the existing airport drainage system.

Effects Determination

Research and a field review of the project area was conducted by professional biologists. The effort also included an evaluation of potential occurrences of federal and state-listed species.

The following federally-listed species are known to occur, or have the potential to occur within the vicinity of the Detailed Study Area, which encompasses the Action Area: the threatened sand skink (*Neoseps reynoldsi*) and bluetail mole skink (*Eumeces egregious lividus*), threatened Florida scrub-jay (*Aphelocoma coerulescens coerulescens*), the threatened Eastern indigo snake (*Drymarchon couperi*), American alligator (*Alligator mississippiensis*), and the wood stork (*Mycteria Americana*). The gopher tortoise (*Gopherus polyphemus*) was also assessed as a federal candidate species.

The Florida scrub-jay, sand skink, bluetail mole skink, American alligator, and Eastern indigo snake all have potential for occurrence within the Action Area based on designated USFWS Consultation Areas and the presence of suitable habitat types. The Action Area is not located within a USFWS designated Wood Stork Core Foraging Area and the proposed action was found not to have suitable wood stork foraging habitat. The gopher tortoise was observed on-site. Based on the information provided in the enclosed Biological Assessment, the FAA has made the following determinations regarding the proposed action's effect on federally-listed species:

Sand Skink and Bluetail Mole Skink (Threatened)

Land within the Action Area includes fallow citrus grove and a portion of the developed airfield (including pavement and Safety Areas). Consequently, no native soils or scrub communities are present, which reduces the likelihood that the skinks could utilize the fallow grove habitat within the action area. The City's consultant (Environmental Science Associates) coordinated with the USFWS to discuss site conditions and the opinion that the Action Area does not contain suitable sand and bluetail mole skink habitat. Based on the foregoing, the FAA has determined that the proposed action will have ***no effect*** on the sand skink and the bluetail mole skink.

Florida Scrub Jay (Threatened)

The Action Area is located within the USFWS Florida Scrub Jay Consultation Area. A species-specific scrub-jay survey, following USFWS-approved survey methodology, was performed in July 2018. No scrub-jays were observed during any of the five survey days, indicating the habitat within the Action Area is not utilized by scrub-jays for breeding or foraging territory. In addition, no Type III habitat exists within the airport property limits. Therefore, the FAA has determined that the proposed action will have ***no effect*** on the Florida scrub jay.

American Alligator (Threatened)

East Lake and its peripheral wetlands that adjoin the Action Area will not be altered by the proposed action. The American alligator, listed due to its similarity of appearance with the American crocodile, was not observed during field visits. Therefore, FAA has determined that the proposed action will have ***no effect*** on the American alligator.

Eastern Indigo Snake (Threatened)

No Eastern indigo snakes were observed during field reviews. The proposed action will impact less than twenty-five gopher tortoise burrows and less than twenty five acres of xeric habitat. Pursuant to the USFWS letter dated August 13, 2013, which amended prior updates and revisions to Eastern Indigo Snake Programmatic Effect Determination Key, the effect of the proposed runway extension project was determined using the referenced key. Based on this assessment, the FAA has determined that the project ***may affect, but is not likely to adversely affect*** the Eastern indigo snake.

Prior to initiating site preparation and construction activities, *Standard Protection Measures for the Eastern Indigo Snake* will be implemented. The Action Area will be resurveyed and state authorization will be obtained for an Authorized Gopher Tortoise Agent to excavate the burrows and relocate gopher tortoises to an offsite conservation area. During the gopher tortoise burrow survey, other holes and refugia will also be examined. Appropriate excavation methods will be used to minimize the potential to injure the eastern indigo snake.

Wood Stork (Threatened)

The USFWS wood stork database was queried to determine if Core Foraging Areas and known wood stork colonies were located near the Action Area. The Action Area not located within fifteen miles of a Core Foraging Area. The nearest active colony (Mud Lake) is located approximately 16.5 miles east of the airport. Based on the field reviews, the proposed action will not affect any Suitable Foraging Habitat. The project's potential effect on the wood stork was assessed using *The Corps of Engineers, Jacksonville District, U.S. Fish and Wildlife Service, Jacksonville Ecological Services Field Office, and State of Florida Effect Determination Key for the Wood Stork in Central and North Peninsular Florida* (September 2008). Based on this assessment, the FAA has determined that the project will have ***no effect*** on the wood stork.

Request for Concurrence

The FAA requests the Service's concurrence with the effects determination summarized in this letter and detailed within the enclosed Biological Assessment. Please respond to me within 30 days of receipt of this letter at the address provided above with the Service's concurrence or if you have any comments.

If you have any questions during your review of the enclosed materials, please contact me at (407) 487-7296 or at peter.m.green@faa.gov.

Sincerely,

Peter M. Green, AICP
Environmental Protection Specialist

Enclosure

UMATILLA MUNICIPAL AIRPORT (X23)
RUNWAY 1/19 EXTENSION PROJECT
Biological Assessment

Prepared for
Umatilla Municipal Airport

November 2018

ESA

UMATILLA MUNICIPAL AIRPORT (X23)
RUNWAY 1/19 EXTENSION PROJECT
Biological Assessment

Prepared for
Umatilla Municipal Airport

November 2018

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ESA

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180074

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Exhibit 3 – Detailed Study Area, Action Area and Airport Property Boundary
Exhibit 4 – SJRWMD Land Use Map
Exhibit 5 – Florida Scrub Jay Habitat and Reported Observations Map
Exhibit 6 – Florida Scrub Jay Survey Locations and Area of Review Map
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Exhibit 8 – Wood Stork Nesting Colonies and Core Foraging Area Map
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B. Florida Scrub-Jay Survey Methodology
C. Florida Scrub Jay Survey Data Sheets
D. Sand Skink Survey Methodology
E. Sand Skink Consultation & USFWS Concurrence
F. Eastern Indigo Snake Effect Determination Key
G. Eastern Indigo Snake Standard Construction Protection Measures
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EXECUTIVE SUMMARY

Project Description and Action Area

The Proposed Project would extend Runway 1/19 at the Umatilla Municipal Airport from its present length of 2,500 feet to 3,000 feet. The additional 500 feet of runway length would reduce access and operational restrictions (e.g., fuel or weigh restrictions) for existing airport tenants and airport users. The Proposed Project's elements are described below. The location of the airport, the layout of the Proposed Project, the Detailed Study Area, and the Action Area are depicted on the attached exhibits.

Runway and Taxiway Improvements

- Extend Runway 1/19 approximately 500 feet to provide a runway length of 3,000 feet. This would be accomplished by constructing 465 feet of new asphalt runway pavement on the north end of the runway (Runway 1) and 35 feet of new asphalt pavement on south end of the runway (Runway 19). The new runway pavement would be constructed at the same width as the existing runway (60 feet).
- Extend partial parallel Taxiway A approximately 465 feet to the north and 35 feet to the south.
- Install new medium-intensity runway edge lights (MIRL) and medium-intensity taxiway edge lights (MITL) along the new sections of runway and taxiway pavement.
- Relocate the existing Precision Approach Path Indicator Lights (PAPI) on end of Runway 19.
- Install airfield directional signs on new sections of runway and taxiway pavement.
- Construct a graded Safety Areas for the new sections of runway and taxiway pavement.
- Apply new pavement markings on new and existing runway and taxiway pavements.

Other Project Improvements and Actions

- Clear trees, vegetation, and objects necessary for the construction and operation of the extended runway and taxiway.
- Remove sections of existing pavement.
- Modify existing Instrument Approach Procedures for Runway 1/19 and update Air Traffic Control procedures for aircraft below 3,000 feet.
- Install new sections of airfield security fencing and install controlled-access vehicle gates.
- Construct drainage improvements for the new airfield pavements

Purpose of this Biological Assessment

The purpose of this Biological Assessment (BA) is to review and analyze the impacts the Proposed Project would have on federally-listed threatened or endangered species and designated or proposed critical habitats protected under the *Endangered Species Act* of 1973. The following federally-listed species are known to occur, or have the potential to occur within the vicinity of the Detailed Study Area (that contains the Action Area) delineated for the Proposed Project: federally threatened sand skink (*Neoseps reynoldsi*) and bluetail mole skink (*Eumeces egregius lividus*), the federally threatened Florida scrub-jay (*Aphelocoma coerulescens coerulescens*), and the federally threatened Eastern indigo snake (*Drymarchon couperi*). Review of a fifth species, the American alligator (*Alligator mississippiensis*) is also included within this BA since it is provided protection listed federally as threatened - similarity in appearance to a threatened taxon. In addition, impacts to wood stork (*Mycteria Americana*) habitat and foraging areas were initially assessed, however, the Detailed Study Area is not located within a USFWS designated Wood Stork Core Foraging Area. Additionally, the Proposed Project will not impact suitable wood stork foraging habitat.

This BA also considered the state-listed gopher tortoise (*Gopherus polyphemus*). The gopher tortoise is listed as threatened by the State of Florida, per the Florida Endangered and Threatened Species List (Rule 68A-27.003, F.A.C.) or the Species of Special Concern list (Rule 68A-27.005, F.A.C.) and was observed within the Action Area.

Effects to Federally Listed Species

The Florida scrub-jay, sand and bluetail mole skink, American alligator, and eastern indigo snake all have potential for occurrence within the Action Area based on designated Consultation Areas published by US Fish & Wildlife Service (USFWS), and the presence of suitable habitat types with potential to support listed species.

- Because the project is within the USFWS Sand and Bluetail Mole Skink Consultation Area and habitat was evaluated for “swimmable” soil conditions conducive to supporting these fossorial reptiles, initial consultation with USFWS was conducted to obtain survey guidance. The land on which the airport was constructed, and all land uses surrounding, were historically citrus grove, and much of this landscape remains so currently. There are no native soils or scrub communities surrounding this project area, which haven’t been adversely impacted by decades of intense citrus agricultural practices, thus reducing the likelihood that skinks could utilize the fallow grove habitat within airport property. Due to the existing site conditions, USFWS has concurred that the airport property does not provide suitable sand and bluetail mole skink habitat, therefore, cover board surveys for species utilization was not required by USFWS. For these reasons, we conclude that the Proposed Project will have a “No Effect” to these species.

- The Proposed Project is located within the USFWS Florida Scrub Jay Consultation Area. A species-specific scrub-jay survey, following USFWS-approved survey methodology, was performed in July 2018. No scrub-jays were observed during any of the five survey days, indicating the habitat within the Proposed Project limits is not utilized by scrub-jays for breeding or foraging territory. In addition, based on the current land use map, no Type III

habitat exists within the airport property limits. Therefore, we conclude the Proposed Project will have "No Effect" to this species.

- Based on the USFWS Programmatic Eastern Indigo Snake Key for the Northern Office, Eastern indigo snakes have the potential to occur on site, since active and inactive gopher tortoise burrows were observed within and adjacent to the Proposed Project. Impacts to burrows will be permitted through the Florida Fish and Wildlife Conservation Commission (FFWCC) and the tortoises relocated in accordance with state regulations. For the affects determination for the eastern indigo snake, the August 2013 "Updated Addendum to the USFWS Concurrence Letter to the U.S. Army Corps of Engineers (ACOE) Regarding Use of the Eastern Indigo Snake Programmatic Effect Determination Key*"* was applied. Based upon the Programmatic Key, it was determined that the Proposed Project "may affect, not likely to adversely affect - NLAA" the Eastern indigo snake.

  Prior to construction of the Proposed Project, a 100 percent FFWCC Gopher Tortoise Burrow Survey will need to be conducted and a Gopher Tortoise Conservation Permit will need to be obtained in order to excavate and relocate potential gopher tortoises and their commensals from burrows located within the Proposed Project footprint. Additional surveys, permitting and relocation services will be conducted by Authorized Gopher Tortoise Agent(s) and any species encountered within the burrow will be relocated from the project area to a protected, off-site conservation bank, in accordance with FFWCC permit criteria. It is anticipated that gopher tortoise excavations will be coordinated and conducted prior to the initial phases of site clearing and development. In addition to excavating all potentially impacted gopher tortoise burrows, the USFWS "Standard Protection Measures for the Eastern Indigo Snake" will be implemented during site preparation and construction.

- Wetlands / waterbodies that could support American alligator habitat, exist within the Detailed Study Area. This species is listed and protected due to its similarity of appearance with the American crocodile (*Crocodylus acutus*). However, since the American crocodile is limited in range to brackish waters in the southern half of Florida, no impacts to this species will occur within Lake County. No alligators were observed during field observations and no wetlands are anticipated to be impacted by the Proposed Project. As such, the Proposed Project will have "no effect" to the species, or to the American crocodile.

- The Detailed Study Area is not located within a USFWS Wood Stork Core Foraging Area, nor is the Proposed Project impacting wood stork foraging habitat. Therefore, the Proposed Project will have "no effect" to this species.

State Listed Species

Based on field observations, gopher tortoise burrows have been documented within the Detailed Study Area, including burrows observed within the immediate Action Area. At this time a total of 14 potentially occupied burrows were documented within X23's property boundary. Of the 14 burrows observed, 5 are located within the Action Area. Prior to construction, a 100 Percent Gopher Tortoise Burrow Survey will need to be conducted within the Action Area. At that time, burrows that are identified as potentially impacted by the Proposed Project will be permitted, excavated, and relocated to a long –term off-site conservation area by Authorized Gopher Tortoise Agents. The remaining on-site burrows can be protected in place by installing silt fence to exclude tortoises from the construction footprint, including the contractor's path to access the work zone with construction equipment. Tortoise burrows that could be impacted by construction

activity will be permitted and relocated in accordance with FFWCC tortoise management guidelines.

Conservation Measures

The Airport will ensure conservation measures are implemented that avoid, minimize, and/or mitigate potential effects to state or federally listed species within the Action Area. Conservation measures are summarized below.

- Utilization of erosion control Best Management Practices (BMP's)
- Pre-activity gopher tortoise surveys and exclusionary services
- Pre-activity burrowing owl surveys, prior to construction
- Implementation of Standard Protection Measures for Eastern Indigo Snake during construction activities
- Protection of gopher tortoise burrows beyond 25 feet from construction activities, and/or capture of gopher tortoises within 25 feet from construction activities, for on-site relocation to safe, undisturbed habitat within airport property.

Conclusions

The Proposed Project will have *no effect* on sand and bluetail mole skink, Florida scrub-jay, American alligator / American crocodile and wood stork populations, however, will have a *may affect, not likely to adversely affect* determination for Eastern indigo snakes. This conclusion is derived from assessment of on-site habitats, USFWS guidance from past programmatic consultation, and the conservation measures to be implemented. The Proposed Project will not harm the state-listed gopher tortoise, as tortoises will be protected or relocated prior to construction activities, in accordance with FFWCC gopher tortoise management guidelines.

FEDERALLY LISTED SPECIES POTENTIAL OCCURRENCE AND RECOMMENDED EFFECT SUMMARY

Common Name	Scientific Name	Protected Status	Potential Occurrence	Recommended Effect Summary
Sand skink	*Neoseps reynoldsi*	Federal - Threatened	None	**No Effect** Action Area located within FWS's Consultation Area, but historic habitat alterations within the airport's property limits does not support suitable sand skink habitat. based on USFWS Consultation and Confirmation.
Bluetail mole skink	*Eumeces egregius lividus*	Federal - Threatened	None	**No Effect** Action Area within FWS's Consultation Area, but historic habitat alterations within the airport's property limits does not support suitable blue-tail mole skink habitat. USFWS Consultation and Confirmation.
Florida scrub-jay	*Aphelocoma coerulescens*	Federal - Threatened	Low - None	**No Effect** The Action Area is located within FWS's Consultation Area, but no appropriate type I, II or III scrub habitat occurs within the airport's property

				limits, no the Action Area. USFWS scrub-jay surveys preformed with no jays observed during the five day survey window.
Eastern indigo snake	*Drymarchon couperi*	Federal - Threatened	Low - Moderate	**May Affect, Not Likely to Adversely Affect** Utilizing the USACE Programmatic Effect Determination Key for Eastern Indigo Snake, effect determination is appropriate. All Gopher tortoise burrows that are identified within the Action Area will be permitted through FFWCC and all tortoises and their commensals relocated per state regulations. In addition, Standard Protection Measures for the Eastern Indigo Snake will be implemented prior to and during the construction process.
American alligator	*Alligator mississippiensis)*	Federal – Threatened – Similar in appearance	None	**No Effect** Proposed Project is not anticipated to impact wetlands or waterbodies, therefore, the Proposed Project will not impact alligators or American crocodiles
Wood stork	*Mycteria americana*	Federal – Threatened	None	**No Effect** The Action Area is located outside the 15-mile Core Foraging Area of any active wood stork rookery, and will impact no suitable foraging habitat.

SOURCE: Environmental Science Associates, 2018

BIOLOGICAL ASSESSMENT

Umatilla Municipal Airport (X23)
Runway 1/19 Extension Project

1.0 Introduction

Section 7 of the federal *Endangered Species Act of 1973* directs federal agencies, in consultation with and with the assistance of the Secretary of the Interior (United States Fish and Wildlife Service [FWS] and/or National Marine Fisheries Service), to ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat of such species. Section 7 applies to management of federal lands as well as other federal actions that would affect listed species such as federal approval of private activities through the issuance of federal permits, licenses, or other actions. The purpose of this Biological Assessment is to initiate informal consultation with the United States Fish and Wildlife Service relative to findings related to the extension of the Runway 1/19 at Umatilla Municipal Airport (X23).

X23 is a public use, General Aviation (GA) airport located in the City of Umatilla, Lake County, Florida. The airport utilizes a single runway (Runway 1/19) with a current length of 2,500 feet and a width of 60 feet, served by a parallel taxiway 25 feet in width. The FAA's Terminal Area Forecast (TAF)[1] and the Florida Department of Transportation's (FDOT's) General Aviation Operations Forecast[2] were accessed to view the historical and forecast aviation activity at X23. While the TAF indicates steady activity at the airport for the past five years, as well as in the forecast future years, the FDOT General Aviation Operations Forecast predicts a 0.75% increase in activity each year for the next 15-plus years.

The Proposed Project would extend the runway at the Umatilla Municipal Airport from its present length of 2,500 feet to 3,000 feet. The additional 500 feet of runway length would reduce access and operational restrictions (e.g., fuel or weigh restrictions) for existing airport tenants and airport users. The Proposed Project's elements are described below. The location of the airport and the layout of the Proposed Project are depicted on the attached exhibits.

The City of Umatilla (City) is seeking unconditional approval of the portion of the Umatilla Municipal Airport Layout Plan (ALP) that depicts the components of the Proposed Project and its connected actions pursuant to 49 U.S.C. Sections 40103(b), 44718, and 47107(a)(16), and Title

1 Available at: https://www.faa.gov/data_research/aviation/taf/

2 Available at: http://www.fdot.gov/aviation/flpub.shtm

14 CFR Parts 77, and 157. Because of the requested federal actions, the FAA has prepared this Biological Assessment (BA) to review and analyze the impacts of the Proposed Project on federally-listed threatened or endangered species and designated (or proposed) critical habitat. Impacts to state-listed species were also evaluated and disclosed in this BA. However, impacts to state-listed species would be coordinated through the state regulatory process.

This BA identifies the potential environmental biological effects that would result from implementation of the construction and operation of the Proposed Project. A literature search was performed, including resource management plans and other available documents containing pertinent information on the species discussed in this BA.

1.1 Project Site Location

The Proposed Project is located in Umatilla, Florida. Regionally, X23 sits within north Lake County, north of Eustis, and south of Ocala National Forest, within Township 18S, Range 27E, Section 18. Specifically, the runway extension occurs at the north end of the existing facility, south of East Lake, at 28o 55' 45" N, 81o 39' 06" W (lat/long). (**Exhibit 1, Appendix A**).

1.2 Need for the Proposed Project

The purpose of the project is to extend Runway 1/19 500 feet for a total length of 3,000 feet. Doing so would reduce operational limitations and increase flexibility for aircraft currently utilizing X23 in that the additional runway length would allow for greater takeoff and landing weights. Current users of the airport are subject to weight limitations (i.e., reduced fuel, passengers, cargo, etc.) in order to safely arrive/depart given the current length of Runway 1/19.

1.3 Description of the Proposed Project

The Proposed Project would extend the runway at X23 from its present length of 2,500 feet to 3,000 feet. The additional 500 feet of runway length would reduce access and operational restrictions (e.g., fuel or weigh restrictions) for existing airport tenants and airport users. The Proposed Project's elements are described below and depicted in **Exhibit 2, Appendix A**.

Runway and Taxiway Improvements

- Extend Runway 1/19 approximately 500 feet to provide a runway length of 3,000 feet. This would be accomplished by constructing 465 feet of new asphalt runway pavement on the north end of the runway (Runway 1) and 35 feet of new asphalt pavement on south end of the runway (Runway 19). The new runway pavement would be constructed at the same width as the existing runway (60 feet).
- Extend partial parallel Taxiway A approximately 465 feet to the north and 35 feet to the south.
- Install new medium-intensity runway edge lights (MIRL) and medium-intensity taxiway edge lights (MITL) along the new sections of runway and taxiway pavement.
- Relocate the existing Precision Approach Path Indicator Lights (PAPI) on end of Runway 19.
- Install airfield directional signs on new sections of runway and taxiway pavement.

- Construct a graded Safety Areas for the new sections of runway and taxiway pavement.
- Apply new pavement markings on new and existing runway and taxiway pavements.

Other Project Improvements and Actions

- Clear trees, vegetation, and objects necessary for the construction and operation of the extended runway and taxiway.
- Remove sections of existing pavement.
- Modify existing Instrument Approach Procedures for Runway 1/19 and update Air Traffic Control procedures for aircraft below 3,000 feet.
- Install new sections of airfield security fencing and install controlled-access vehicle gates.
- Construct drainage improvements for the new airfield pavements.

This BA identifies the potential biological effects that would result from implementation of the construction and operation of the Proposed Project. A literature search was performed, including resource management plans and other available documents containing pertinent information on the species discussed in this BA.

2.0 Identification of a Detailed Study Area and Action Area

2.1 Detailed Study Area

Given the type of listed species that are recorded to occur within Lake County, a Detailed Study Area (DSA) was identified that incorporated a broader area of literature and field review. The DSA (illustrated in **Exhibit 3, Appendix A**) was utilized to provide a comprehensive understanding of the type and quality of habitat located adjacent to X23. Information collected from within the DSA such: as updated land use coverage and existing soils, is pertinent in determining the potential for species utilization.

2.1 Action Area

The Proposed Project's Action Area includes the Proposed Project footprint and extends outside from the footprint 25 feet, in all cardinal directions, as illustrated in Exhibit 3. The Proposed Project's Action Area is comprised mostly of relatively flat, maintained grassland adjacent to airport-related land uses. For this BA, the Action Area was defined by the Proposed Project's direct impact boundaries. Since the implementation of the Proposed Project would include removal of all biological resources within the Action Area, indirect impacts to listed species within this same area would be eliminated.

3.0 Species Considered

3.1 Species Considered

Section 7 of the federal *Endangered Species Act of 1973* directs federal agencies, in consultation with and with the assistance of the Secretary of the Interior (United States Fish and Wildlife Service and/or National Marine Fisheries Service), to ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat of such species. Section 7 applies to management of federal lands as well as other federal actions that would affect listed species such as federal approval of private activities through the issuance of federal permits, licenses, or other actions.

This section considers species protected under the Endangered Species Act with potential occurrence within the Proposed Project's Action Area. Prior to conducting field visits, a literature search was performed in order to evaluate the potential presence of any protected species and/or their critical habitats within the Detailed Study Area. General literature referenced included:

- Florida Fish and Wildlife Conservation Commission (FFWCC) List of Florida's Endangered Wildlife Species (68A-27.003 FAC) and Species of Special Concern (68A-27.005 FAC)
- FFWCC Florida's Imperiled Species Management Plan (2016)
- Florida Department of Agriculture and Consumer Services (FDACS) List of Florida's Endangered Plant Species (5B-40.0055 FAC) (2018)
- U.S. Fish and Wildlife Service (USFWS) Endangered & Threatened Wildlife and Plants 50 CFR 17.11 and 17.12. (2018)
- Various USFWS, FFWCC, & Florida Natural Areas Inventory (FNAI) listed species occurrence data.

Based on the habitat types present within the Detailed Study Area, a list of protected species was derived from this literature search and is presented in **Table 3.1**. This list was then utilized to refine the potential utilization and occurrence of each listed species that could be present within the Action Area, based on additional literature review, aerial photography to identify suitable habitat, and field investigations this list is not meant to preclude the possibility of other protected species occurring on-site. Historical occurrences, as well as any direct observations of protected species, are illustrated in specific Exhibits within **Appendix A**.

TABLE 3.1
PROTECTED SPECIES WITH LIKELIHOOD OF OCCURRENCE WITHIN THE DETAILED STUDY AREA

Scientific Name	Common Name	Listing Status		Likelihood of Occurrence within the Action Area	Habitat Preference
		Federal	State		
Birds					
Aphelocoma coerulescens	Florida scrub-jay	T	T	None	Ancient dune ecosystems or scrubs, which occur on well-drained sandy soils.
Athene cunicularia	Burrowing owl	NL	T	Low	Dry prairie and sandhill. Ruderal areas such as pastures, airports, ball fields, parks, schools, road ROWs, & vacant spaces in residential.
Egretta caerulea	Little blue heron	NL	T	None	Freshwater, brackish, and saltwater wetlands
Egretta tricolor	Tricolored heron	NL	T	None	Freshwater and estuarine wetlands
Grus canadensis pratensis	Florida sandhill crane	NL	T	Possible	Various open grassy areas and marshes
Haliaeetus leucocephalus	Bald eagle*	NL	NL	Possible	Forested uplands and wetlands in close proximity to open water
Mycteria americana	Wood stork	T	T	None	Shallow freshwater and brackish wetlands, roadside ditches
Mammals					
Sciurus niger shermani	Sherman's fox squirrel	NL	SSC	None	Open, fire maintained longleaf pine, turkey oak, sandhills, flatwooods.
Ursus americanus floridanus	Florida black bear	NL	NL**	Low	A wide variety of forested, sparsely forested upland/wetland communities.
Plants					
Bonamia grandiflora	Florida bonamia	T	E	None	Deep, white, dry sands of ancient dunes and sandy ridges in clearings, openings scrub habitat.
Calamintha ashei	Ashe's savory	NL	T	None	Pinelands and sand pine scrub canopy openings, disturbed areas.
Salix floridana	Florida willow	NL	E	None	Wet, calcareous soils, dense floodplain woods, edges of spring runs, & ditches. Springheads, spring runs, hydric hammock, floodplains.
Reptiles					
Alligator mississippiensis	American alligator	T(S/A)	SSC	None	Typically found in most open water bodies in Florida.
Drymarchon corais couperi	Eastern indigo snake	T	T	Possible	Utilizes variety of habitats including, wet flatwoods, mesic hammocks, tidal swamps, sandhills, scrub & upland forests
Gopherus polyphemus	Gopher tortoise	C	T	Burrows Observed	Xeric, flatwoods, disturbed/spoil areas and coastal habitats with loose, well-drained, sandy soil with herbaceous vegetation
Lampropeltis extenuate	Short-tailed snake	NL	T	Low	Sandy soils, particularly longleaf pine and xeric oak sandhills. May also be found in scrub and xeric hammock habitats
Neoseps reynoldsi	Sand skink	T	T	None	Xeric habitats found along Central Florida sand ridges, and remnants of ancient coastal. Habitats include rosemary scrub, scrubby flatwoods, sand pine and oak scrubs, and turkey oak ridge.
Eumeces egregius lividus	Bluetail mole skink	T	T	None	Same habitats as sand skink (above)
Pituophis melanoleucus mugitus	Florida pine snake	NL	T	Low	Open canopies w/dry sandy soils; sandhill or former sandhill (oldfields, pastures), sand pine scrub, and scrubby flatwoods.

NOTES: E = Endangered, T = Threatened, T(S/A) = Similarity of appearance, SSC = Species of Special Concern, NL= Not Listed, C = Candidate for Listing, * = Protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, ** = Protected by Florida Black Bear Conservation Rule 68A-4.009, F.A.C.

4.0 Existing Environment

Historic aerials, from 1947 to 2013, illustrate conditions before the construction of the airport, and at various phases of airport development. Initial aerial photography from the 1940's depicts a landscape that was historically dominated by citrus groves, and has since been subject to 70+ years of agricultural maintenance and modifications. As phases of the airport were constructed, citrus groves were cleared for runway, taxiway, parking, and building surfaces, as well as cleared, mowed, & maintained sod areas surrounding the airport facilities. In the 90's and early 2000's, the airport facilities were all south of Skyline Drive, until the runway was extended north in mid-2000's. During that latest extension, significant clearing and fill was evident north of the pavement limits, comprising the Runway Object Free Area (ROFA) and the Taxiway Object Free Area (TOFA), per Federal Aviation Authority (FAA) safety requirements.

The Action Area consists of 26.8 acres of previously disturbed ruderal habitat, developed areas, abandoned citrus grove, bamboo thicket, and freshwater marsh habitat. The vegetative communities are described below, per Florida Department of Transportation (FDOT) Florida Land Use, Form, & Cover Classification System (FLUCFCS, 1999, **Exhibit 4, Appendix A**), and field-verified by ESA biologists. Acreages for each land use classification identified on airport property and within the Action Area is provided in **Table 4.0**.

4.1 Existing Land Use

Observed habitat communities included open land, abandoned citrus grove, bamboo thicket and freshwater marsh.

Airport Open Land (FLUCFCS 811). Areas of ROFA/TOFA comprised of significant fill material and sodded and mowed/maintained non-native grasses. This land use accounts for 69.2% (43.3 acres) of the total land use identified within the airport property boundary and 92.0% (24.6 acres) of the land use identified within the Action Area.

Abandoned Citrus Grove (FLUCFCS 221). Areas beyond the existing ROFA/TOFA are consistent with a fallow citrus grove, lacking in maintenance and repair. Vegetation is comprised of citrus trees (*Citrus* spp), lantana (*Lantana camara*), sabal palm (*Sabal palmetto*), laurel oak (*Quercus hemisphaerica*), black cherry (*Prunus serotina*), bamboo (*Bambusa* spp) with ground cover of natal grass (*Melinis repens*), bahia grass (*Paspalum notatum*), ceasarweed (*Urena lobata*), and rosary pea (*Abrus precatorius*). Dense ground cover of matted grasses precluded open sandy "swimmable" soils and no scrub oaks were noted on property. A total of 14.0 acres, or 22.4 % of abandoned citrus groves exist on airport property, of which 1.7 acres or 6.3% occurs within the Action Area.

Bamboo Thicket (FLUCFCS 234). This patch of a non-native species of bamboo along the wetland edge of East Lake was a dense monoculture. The leptomorph rhizome system spreads quickly, with dense, tangled root systems within the first foot below soil surface. There are no "swimmable" soils within this plant community. This land use classification accounted for 0.5 acres, or 0.8% of the total land use classified identified on airport property. Approximately 0.3 acres, or 1.1% is located within Action Area.

Freshwater Marsh (FLUCFCS 641). This marsh system is located along the southern shore of East Lake, just within the Action Area. This emergent wetland is inclusive of the littoral

zone of East Lake that was dominated by a thick growth of nuisance and undesirable vegetative species such as: cattails (*Typhus* spp.) and Peruvian primrose willow (*Ludwigia peruviana*). Beneficial species included shield fern (*Dryopteris* spp.), sedge (C*arex* spp.), pennywort (*Hydrocotyle umbellata*), water hyssop (*Bacopa monnieri*), elderberry (*Sambucus nigra*) and Carolina willow (*Salix caroliniana*), located in minor amounts. Although this wetland system is located just inside the Action Area no direct impacts as a result of the Proposed Project is anticipated. However, after the construction of the Proposed Project, this area will be located within the Runway Protection Zone (RPZ) and woody shrubs will be trimmed/maintained in accordance with FAA requirements. Agency permits for maintenance trimming activities of a nuisance / exotic vegetative species is not anticipated for this area. This land use designation accounts for 0.3, approximately 0.5 % of the total land use cover within the airport property and 0.2 acres, or 0.7 % of the total land use cover within the Action Area.

The Proposed project will result in no permanent or temporary dredge/fill activities in wetlands; thus construction will have no permanent adverse effect on wetlands or surface waters jurisdictional to the state of Florida, pursuant to 62-340, Florida Administrative Code (FAC) or the Army Corp of Engineers, pursuant to 1987 ACOE Wetland Delineation Manual (Regional Supplement – November 2010). Temporary clearing of woody shrub vegetation within the small freshwater marsh described above, will cause no discernable loss of wetland function.

Table 4.0 Land Use Acreages – Within Airport Property Boundary v/s Action Area

Land Use Description	FLUCFCS Designation	X23 Property Boundary	Action Area
Citrus Groves	221	14.0	1.7
Bamboo	234	0.5	0.3
Herbaceous Upland Non-Forested	310	4.5	0.0
Fresh Water Marsh	641	0.3	0.2
Airports	811	43.3	24.6
	Total Acreages	**62.6**	**26.8**

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5.0 State and Federally Listed Species and Their Habitats

5.1 Survey Methodologies

1. General wildlife surveys for protected wildlife and plant species were conducted in February 7, 2018, April 3, 2018, and July 10-15, 2018, within the airport property boundary and the Action Area. Field evaluations of the existing habitat included:

    - Initial habitat assessments and ground-truthing using current aerial photography and existing land use data.
    - Evaluation of upland and wetland habitat quality, including potential wildlife utilization.
    - General surveys for protected plant and wildlife species, per current state and/or federal guidelines.

2. Species-specific survey for Florida scrub-jay was conducted in July 2018 (10th, 11th, 13th – 15th), per USFWS-approved survey guidelines (2007).

3. Species-specific surveys for burrowing owl (*Athene cunicularia*) and gopher tortoise burrows was conducted on April 3, 2018, per FFWCC-approved management guidelines.

4. Pedestrian surveys for sand skink and blue-tail mole skink were conducted February 7, 2018 and April 3, 2018.

5.2 Federally Listed Species Under Review

5.2.1 Florida Scrub Jay

The Florida scrub jay is the only species of bird that is unique to Florida. Scrub jays inhabit sand pine and xeric-oak scrub, and scrubby flatwoods, which occur in some of the highest and driest areas of the state. Because of the loss of this habitat across the state, scrub jays have adapted and may inhabit abandoned citrus groves that have become overgrown with oak and other opportunistic plant species. Numerous Florida scrub jay occurrence datasets (USFWS, 1994; Lake County, 2003; Florida Audubon Jay Watch, 2009) were queried to determine if there were any records of scrub jay populations located within close proximity to the site. Per the databases, there are numerous historically documented populations in proximity to the Proposed Project location. The closest documented occurrences were located approximately 2.0 miles northeast in remnant scrub scattered amongst residential, 4.3 miles north within Ocala National Forest, 7.8 miles south along SR 19 in Eustis, or 6.7 miles west, just northwest of Lake Yale (**Exhibit 5,** found in **Appendix A**). With the Proposed Project wholly located within the Scrub Jay Consultation Area, historic scrub jay occurrence observations, and sub-optimal laurel oak/citrus grove habitat on-site, the potential for the Action Area to support scrub jays may exist, so additional field evaluations were conducted. A total of 9.1 acres of initially classified Type III habitat exists within the airport property boundary, of with 1.6 acres are located directly within the Action Area (**Exhibit 6**, in **Appendix A**).

The presence of scrub oaks, no matter how sparsely or densely distributed, is the key indicator of "scrub" habitat. Three specific habitat types are utilized by scrub jays and described in the

Nongame Wildlife Technical Report No. 8[3]. These habitat types are defined by FFWCC as follows:

> **Type I Habitat:** Any upland plant community in which percent cover of the substrate by scrub oak species is 15% or more.
>
> **Type II Habitat:** Any plant community, not meeting the definition of Type I habitat, in which one or more scrub oak species is represented.
>
> **Type III Habitat:** Any upland or seasonally dry wetland within 1/4 mile of any area designated as Type I or Type II habitat.

Habitat to be included as potential scrub jay habitat included not only more "classic" xeric oak scrub, scrubby pine flatwoods, scrubby coastal strand, and sand pine scrub, but also:

- xeric oak (Type I);
- sand live oak (Type I);
- longleaf pine xeric oak (Type I);
- pine-mesic oak (Type II);
- improved, unimproved, and woodland pastures (Type II);
- sand pine (Type II);
- forest regeneration areas (Type II);
- sand other than beaches (Type II);
- citrus groves (Type III);
- rangeland (Type III);
- pine flatwoods (Type III);
- sand pine plantations (Type III);
- disturbed rural land in transition without positive indicators of intended activity (Type III);
- disturbed burned areas (Type III)

5.2.1.1 Species-Specific Survey Methodology

Based on initial field reconnaissance and St. Johns River Water Management District (SJRWMD) 2014 land use data, scrub-jay call play stations were established within the abandoned citrus area of the airport property. This area was originally classified as potential Type III habitat, however, over the course of the survey event, Type I and II habitats were not identified within a ¼ mile range from the Action Area. Call stations were located, flagged, and numbered in the field to sub-meter accuracy using a Trimble GeoXT GPS receiver. GPS receivers were used to navigate to play stations each day. All call play stations were performed according to USFWS and FFWCC accepted methodology, adapted from the Florida Game and Fresh Water Fish Commission, Ecology and development-related habitat requirements of the Florida scrub jay (*Aphelocoma coerulescens coerulescens*), Nongame Wildlife Technical Report No. 8. A copy of USFWS guidelines is

[3] Fitzpatrick, et al. 1991

provided as **Appendix B**, and can be viewed in their entirety at: *https://www.fws.gov/northflorida/Scrub-Jays/general-survey-guide-082407.htm*.

This species-specific survey methodology was performed for five days; July 10th, 11th, 13th – 15th, 2018, within midsummer when young of the year are independent but still distinguishable by plumage. The surveys were carried out on calm, clear days beginning one hour after sunrise to 11:00 AM. During mid-day hours, between 11:00 AM and 3:00 PM when the heat of the day is typically highest, no scrub jay calls were played. Standardized data collection worksheets were utilized by the biologist to collect data. Data recorded for each play station includes date, time, temperature, wind, precipitation, habitat description, and scrub jay response.

At each call station, recordings of Florida scrub jay territorial scolding, including the female "hiccup" call, were broadcast using a hand-held MP3 player, broadcasting at full volume. Scrub jay calls were recorded from "Bird Songs of Florida," a compilation of bird calls, acquired from the Library of Natural Sounds[4]. Scrub jay calls were played for a minimum of one minute in each of the four cardinal directions, while watching for territorial response from any scrub jays in the area. Exhibit 6 depicts the approximate location of each call station surveyed. In total, five call stations were established.

5.2.1.2 Species-Specific Survey Results

The species-specific survey for Florida scrub-jay did not result in any observations of scrub jay presence within the Action Area, or within any adjacent habitat owned by the airport (scrub jay survey field data sheets provided as **Appendix C)**. After playing territorial scrub-jay calls, and receiving zero defense response by a resident breeding pair, their "helper" adult male offspring, or juveniles of the year, it can be concluded that the habitat within the survey area is not being utilized as scrub-jay breeding or foraging habitat. Furthermore, the habitat is classified as abandoned citrus, however, no scrub oaks were noted on property or within a ¼ mile from the Action Area. Oaks present on site were identified as large laurel and hybridized laurel-water oaks. Therefore, no viable scrub jay habitat, identified as Type I, II or III, exists within the Action Area. Based on these observations the Proposed Project will have "**No Effect"** on scrub jays or their habitat.

5.2.2 Sand Skink and Bluetail Mole Skink

The sand skink and bluetail mole skink are listed as a threatened species by the USFWS and FFWCC. Sand skinks are a "sand–swimming" small, slender, grey to light brown lizard that can reach a length of five inches. In accordance with the U. S. Fish and Wildlife Service (USFWS) Skink Survey Protocol (April 2011; **Appendix D**), review of Action Area included:

- Elevation: Based on the United States Geological Survey (USGS), existing elevations airport owned property 80 feet to 135 feet in elevation. Within the project site, elevations range from 110 feet at the eastern runway border, and slopes significantly down grade to a normal high water elevation of East Lake at around 80 feet.

[4] Cornell Laboratory of Ornithology (1997)

- Location: Upland portions of north Lake County are included within the USFWS Sand and Blue-tailed Mole Skinks Consultation Area. The proposed project is within the consultation area.

- Soils: A review of the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) soil survey indicates that of the four soil types found within the Action Area, three are considered suitable for sand skinks. These soil types include: 8) Candler fine sand - 0 to 5 percent slopes, 9) Candler fine sand - 5 to 12 percent slopes, and 3) Candler fine sand - 12 to 40 percent slopes. One soil type at the north end of the airport property, 99) water, is incompatible with skink habitat.

Per evaluation of elevation, location, and soils, as specified in the USFWS's Skink Survey Protocol, the Action Area meets the minimum criteria to define suitable skink habitat. Our desktop review of the soils and elevations indicate that there are about 19.6 acres, of mapped skink habitat, located within the airport property, of which approximately 2.1 acres are located within the Action Area (**Exhibit 7**, in **Appendix A**).

Pedestrian surveys were performed on February 7, 2018 and April 3, 2018, within and around the Action Area in order to further evaluate the potential for sand and blue-tailed mole skink utilization, looking for visual observation of sinusoidal sand skink trails on the surface of open sandy areas. Minimal open sandy "swimmable soils" and no skink trails were observed during the site visits.

Based on the site conditions, it is unlikely that skinks occur within or adjacent to the project limits. Due to lack of observed habitat and "swimmable soils," ESA scientists determined that there is no appropriate skink habitat within the airport property boundary, including the Action Area. The following mapped suitable habitat areas were eliminated from consideration:

- Existing pavement (airport runways, taxiways, and parking);
- High soil disturbance (fill, soil grading/disturbance);
- Dense grass that make the soil not swimmable (sodded, maintained/mowed ROFA & TOFA,)
- Abandoned citrus groves (dense matted grass, historically intense agricultural effects)
- Bamboo thicket with dense sub-surface rhizomes & rooting

USFWS North Florida Ecological Service Office recently provided guidance to other transportation entities, including Florida Department of Transportation (FDOT), that cover board surveys for skinks were not necessary within active citrus groves, or fallow groves with no adjacent natural scrub habitat, from which skinks could emigrate, once intensive agricultural activities were discontinued. As indicated by the historic aerial photography and existing land use maps, the land on which the airport was constructed, and all land uses surrounding, were historically citrus grove, and much of this landscape remains so currently. There are no native soils or scrub communities surrounding the Action Area, which haven't been adversely impacted by decades of intense citrus agricultural practices, thus reducing the likelihood that skinks could re-populate the fallow grove habitat within airport property.

Due to the constrained/disturbed habitat conditions of the site, ESA requested USFWS review of these findings and concurrence with the conclusion skinks are unlikely to inhabit areas within the

Action Area. As such, USFWS has determined that suitable skink soils are not present within Action Area, therefore the Proposed Project will have "**No Effect"** on this species (**Appendix E**, USFWS's Erin Gawera email correspondence on existing habitat at X23).

5.2.3 Eastern Indigo Snake

This species is found in a broad range of habitats, from scrub and sandhill to wet prairies and mangrove swamps, often wintering in gopher tortoise burrows but foraging in more hydric habitats. Wetland and upland areas may be used as foraging habitat by the eastern indigo snake. No indigo snakes were observed during the field reviews, the Proposed Project will impact less than 25 gopher tortoise burrows and less than 25 acres of xeric habitat within Action Area. Prior to site preparation and construction activities *Standard Protection Measures for the Eastern Indigo Snake* will be implemented. In addition, gopher tortoise burrows potentially impacted by the construction activities will be resurveyed, permitted, and excavated for relocation to an off-site, long-term conservation area, by Authorized Gopher Tortoise Agents. Holes, or other refugia where a snake could reside will also be examined, prior to the initiation of construction activities.

Per the USACE Programmatic Effect Determination Key for Eastern Indigo Snake (August 2013, **Appendix F**), as approved by USFWS, a **"May Affect, Not Likely to Adversely Affect (NLAA)"** determination is appropriate., With an outcome of either "No Effect" or "NLAA" as outlined in the key, the requirements of section 7 of the act are fulfilled for the eastern indigo snake, and no further actions are required[5].

5.2.3.1 *Species-Specific Conservation Measures for Eastern Indigo Snake*

While no impacts to eastern indigo snakes are anticipated, *Standard Protection Measures for the Eastern Indigo Snake* following USFWS-approved protocol (**Appendix G**) will be employed during construction to assure no adverse effects to the species. Gopher tortoise burrows located within 25 feet of the Action Area will be protected onsite, or excavated and relocated per FFWCC gopher tortoise guidelines.

5.2.4 Wood Stork

Wood storks were upgraded from endangered to threatened classification by the USFWS (June 2014), indicating progress towards species recovery, though they are still afforded protection under the Endangered Species Act (ESA). The USFWS wood stork database (2010) was queried to determine if there were any documented wood stork colonies within close proximity to the Action Area. The entire airport and Detailed Study Area is outside the 15-mile Core Foraging Areas (CFA) of the closest active colony (Mud Lake), which is approximately 16.5 miles east of the Action Area (**Exhibit 8**). The project will not impact any Suitable Foraging Habitat (SFH). Per the wood stork Effect Determination Key (**Appendix H**), in a letter from USFWS to ACOE (May 2010), a **"No Effect"** determination is appropriate.

[5] Amended USFWS concurrence in USACOE use of the Eastern Indigo Snake Programmatic Use of the Effect Determination Key.

Additionally, stormwater components (ditches, ponds, canals, swales) at X23 are either constructed and/or maintained to reduce hazardous wildlife attractants on airport property[6]. The on-site swale systems are constructed to move stormwater flow rapidly from the airfield and are treated and mowed on a regular basis to prevent suitable foraging habitat.

5.2.5 American Alligator

The Wetland system located within the Action Area is not anticipated to be impacted by the Proposed Project. This species is listed and protected due to its similarity of appearance with the American crocodile. However, since the American crocodile is limited in range to brackish waters in the southern half of Florida, no impacts to this species will occur within Lake County. No alligators were observed during field observations. As such, a **"No Effect"** is appropriate for this species.

5.3 State Listed Species Under Review

5.3.1 Gopher Tortoise

The state listed gopher tortoise[7] prefers habitat with loose, well-drained, sandy soils for burrowing and an abundance of low growing herbaceous vegetation for food. The Action Area contains suitable upland habitat for gopher tortoise. A species-specific survey covering 100% of potentially suitable habitat within a 25-foot buffer of the Proposed Project footprint, including areas for construction equipment access, was conducted. Several gopher tortoise burrows were observed within proximity of the Action Area during field surveys. A total of 14 burrows) were documented during the field evaluations. Only five (5) burrows were observed directly within the Action Area. The additional burrows were observed just adjacent to the Action Area, along the western edge of the Proposed Project. See **Exhibit 9,** in **Appendix A,** for observed burrow locations.

Within no more than 90-days prior to construction, a FFWCC-Authorized Agent will conduct a species-specific re-survey covering 100% of potentially suitable habitat within the Action Area, including areas for construction equipment access. Biologists will use the burrow locations from the updated survey results to develop a tortoise relocation and protection plan. Silt fence will be erected along the Action Area periphery, and demarking acceptable equipment access pathways, no closer than 25 feet to any potentially occupied gopher tortoise burrow, which will prevent damage to individual burrows, and keep individual tortoises from wandering into an active construction site. Any burrows which cannot be avoided or properly protected from construction activities will be relocated to suitable habitat elsewhere on airport property, per FFWCC gopher tortoise management guidelines.

[6] USDOT/FAA Circular Advisor 150/5200-38, Protocol for the Conduct and Review of Wildlife Hazard Site Visits, Wildlife Hazard Assessments, and Wildlife Hazard Management Plans

[7] East of the Tombigbee River (in Alabama, Mississippi, and Louisiana), the gopher tortoise is a Candidate Species under the *Endangered Species Act* (ESA). Candidate species have no statutory protection under the ESA and a federal determination is not required. However, the USFWS encourages cooperative conservation efforts for these species because they are, by definition, species that may warrant future protection under the ESA.

Based on the current survey, it appears 5 burrows cannot be avoided at this time and must be relocated. An Authorized Gopher Tortoise Agent will obtain a 10 or Fewer Burrows Relocation Permit from FFWCC, allowing the GTs to be excavated with a track hoe, and moved to suitable habitat elsewhere within adjacent habitat owned by the airport. All tortoise burrows will either be protected from construction activities using exclusionary silt fencing, or relocated out of harm's way, in accordance with FFWCC permit criteria.

5.3.1.1 *Species-Specific Conservation Measures for Gopher Tortoise*

A species-specific survey covering 100% of potentially suitable habitat within the Action Area, including areas for construction equipment access, will be conducted prior to construction. Biologists will use the burrow locations from the survey results to develop a tortoise relocation and protection plan. Silt fence will be erected along the Action Area periphery, and demarking acceptable equipment access pathways, no closer than 25 feet to any potentially occupied gopher tortoise burrow, which will prevent damage to individual burrows, and keep individual tortoises from wandering into an active construction site. Any burrows which cannot be avoided or properly protected from construction activities will be relocated to suitable habitat elsewhere on airport property, per FFWCC Gopher Tortoise Management Guidelines.

5.3.2 Florida Burrowing Owl

The Florida burrowing owl is listed as a threatened species in Florida. The Migratory Bird Treaty Act (MBTA) and Florida Administrative Code (FAC) 68A-16 prohibit the take of birds, nests, or eggs. Florida burrowing owls inhabit high, sparsely vegetated, sandy land and ruderal areas. Suitable habitat is located within proximity to the Action Area at several locations. However, no burrowing owl burrows or individuals were observed during general wildlife surveys or FFWCC approved burrowing owl surveys. Impacts to this species is not anticipated as a result of the Proposed Project.

5.3.2.1 *Species-Specific Conservation Measures for Florida Burrowing Owls*

Prior to construction activates, a 100 percent burrowing owl re-survey will be completed to ensure that the Proposed Project does not impact this species. Should burrows be observed prior to construction, all construction activities shall be halted, while the impacts are defined, approved and permitted through FFWCC.

5.3.3 State-protected Wading Birds

The FFWCC Waterbird Colony Locator database (2009) was queried to determine if there were any colonies located within close proximity to the Action Area. Per the database, two historically documented rookeries are located within three mile of the Proposed Project site (#612031, 2.6 mi SW, #612027, 2.9 mi WSW). Protected and non-listed wading birds, including cattle egret, white ibis, tri-colored heron, and green heron have been documented in these rookeries and are regularly observed foraging within wet ditches and stormwater ponds. Stormwater components (ditches, ponds, canals, swales) at X23 are either constructed and/or maintained to reduce hazardous wildlife attractants on airport property. The on-site swale systems are constructed to move stormwater flow rapidly from the airfield and are treated and mowed on a regular basis to

prevent suitable foraging habitat. Therefore, these species will not be impacted since suitable habitat does not exist within the Action Area.

5.4 Other Protected Species

5.4.1 Bald Eagle

While the bald eagle is no longer federally or state-listed as threatened or endangered, it is still afforded protection by the Bald and Golden Eagle Protection Act, MBTA, and state and federal management plans. These management plans dictate that activities beyond 660 feet from an eagle nest should not disturb the nest. The FFWCC Bald Eagle Nest Locator database (2017) was queried to review locations of documented eagle nests within close proximity to the Action Area. The closest documented nest (LA138) was located approximately 2.8 miles southeast of the airport (**Exhibit 10**), well outside the 660' protection zone in which eagle nests should be protected from construction disturbance. Stormwater components (ditches, ponds, canals, swales) at X23 are either constructed and/or maintained to reduce hazardous wildlife attractants on airport property. The on-site swale systems are constructed to move stormwater flow rapidly from the airfield and are treated and mowed on a regular basis to prevent suitable foraging habitat. Therefore, this species will not be impacted by the construction or implementation of the Proposed Project.

6.0 Cumulative Effects

The cumulative analysis looks at the potential take of the Proposed Project in relationship to range and impacts associated with listed species, and other projects within the immediate area which, may also create a cumulative impact on the listed species addressed within this BA. The past, present, and future projects on and in the vicinity of the airport have generated (or will generate) mostly low to moderate environmental impacts. Although, each of the cumulative development projects has potential to generate some environmental impacts, it is expected that existing programs, policies, and regulatory requirements would prevent and/or minimize the potential for the impacts to reach significant levels. Where significant impacts may occur, it is anticipated they would be mitigated. This project having zero adverse impact to wetlands, listed species, and floodplains, when considered in conjunction with impacts associated with past, present, and future development projects, are not expected to result in substantial cumulative impacts.

7.0 Conclusions

The Proposed Project will have "no effect" on sand skink, bluetail mole skink, Florida scrub-jay, American alligator and the wood stork, however, it is recommended that the Proposed Project will have a "May Affect, Not Likely to Adversely Affect" for the Eastern indigo snake populations. This conclusion is derived from assessment of on-site habitats, USFWS guidance from past programmatic consultation, and the conservation measures to be implemented. The Proposed Project is not likely to harm the state-listed gopher tortoise, as tortoises will be protected or relocated prior to construction activities, in accordance with FFWCC Gopher

Tortoise Management Guidelines. Nor is the Proposed Project likely to impact wading birds and bald eagles

TABLE 7.0
FEDERALLY LISTED SPECIES POTENTIAL OCCURRENCE AND EFFECT SUMMARY

Common Name	Scientific Name	Protected Status	Potential Occurrence	Recommended Effect Summary
Sand skink	*Neoseps reynoldsi*	Federal - Threatened	low	**No Effect** Project within FWS's Consultation Area, but historic habitat alterations within the airport's property limit does not support suitable sand skink habitat. based on USFWS Consultation and Confirmation.
Bluetail mole skink	*Eumeces egregius lividus*	Federal - Threatened	low	**No Effect** Project within FWS's Consultation Area, but historic habitat alterations within the airports property limits does not support suitable sand skink habitat. USFWS Consultation and Confirmation.
Florida scrub-jay	*Aphelocoma coerulescens*	Federal - Threatened	low	**No Effect** Project within FWS's Consultation Area, but no appropriate Type I, II or III scrub habitat occurs within the airport property limits, or within the Action Area. USFWS scrub-jay surveys preformed with no jays observed during the five day survey window.
Eastern indigo snake	*Drymarchon couperi*	Federal - Threatened	moderate	**May Affect, Not Likely to Adversely Affect** Utilizing the USACE Programmatic Effect Determination Key for Eastern Indigo Snake, effect determination is appropriate. All Gopher tortoise burrows that are identified within the Action Area will be permitted through FFWCC and all tortoises and their commensals relocated per state regulations. In addition, Standard Protection Measures for the Eastern Indigo Snake will be implemented prior to and during the construction process.
American alligator	*Alligator mississippiensis)*	Federal – Threatened – Similar in appearance	None	**No Effect** The Proposed Projec is not anticipated to impact wetlands or waterbodies, therefore, the Proposed Project will not impact alligators or American crocodiles.
Wood stork	*Mycteria americana*	Federal – Threatened	low	**No Effect** The Action Area is outside of 15-mile Core Foraging Area of any active wood stork rookery, and will impact no suitable foraging habitat.

SOURCE: Environmental Science Associates, 2018

8.0 References

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9.0 List of Preparers / Contributors

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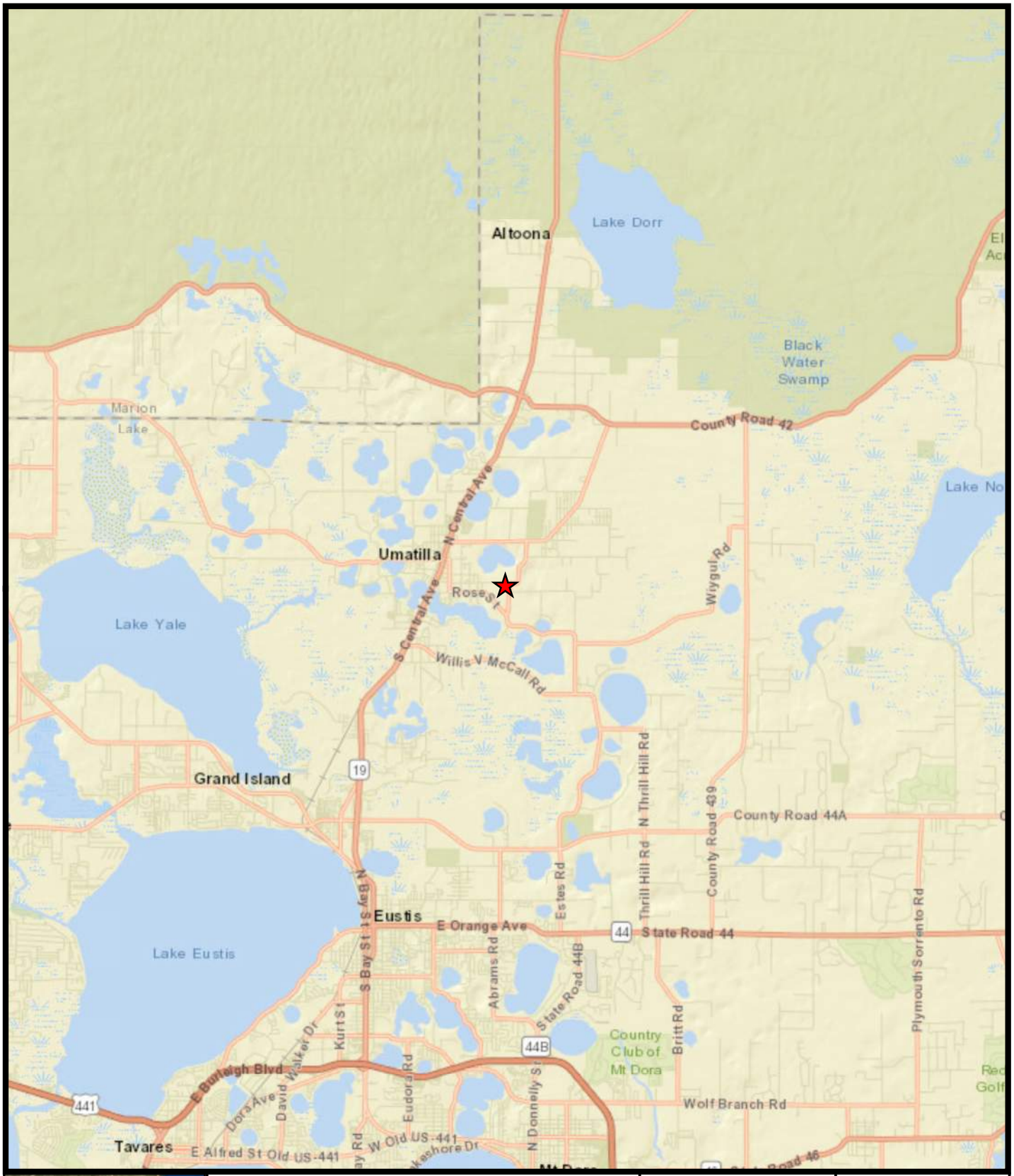
Appendix A
Exhibits

Exhibit 1 – Umatilla Municipal Airport Location Map
Exhibit 2 – Proposed Project Layout
Exhibit 3 – Detailed Study Area, Action Area and Airport Property Boundary
Exhibit 4 – SJRWMD Land Use Map
Exhibit 5 – Florida Scrub-Jay Habitat and Reported Observations Map
Exhibit 6 – Florida Scrub-Jay Survey Locations and Area of Review Map
Exhibit 7 – Sand and Blue-tailed Mole Skink Area of Review Map
Exhibit 8 – Wood Stork Nesting Colonies and Core Foraging Area Map
Exhibit 9 – Gopher Tortoise Burrow Location Map
Exhibit 10 – Bald Eagle Nest Location Map



Location Map
Umatilla Municipal Airport (X23)
Runway 1-19 Extension
Umatilla, Florida

Project Location

Exhibit 1

N

1 in = 2 miles

Section: 18
Township: 18 South
Range: 27 East

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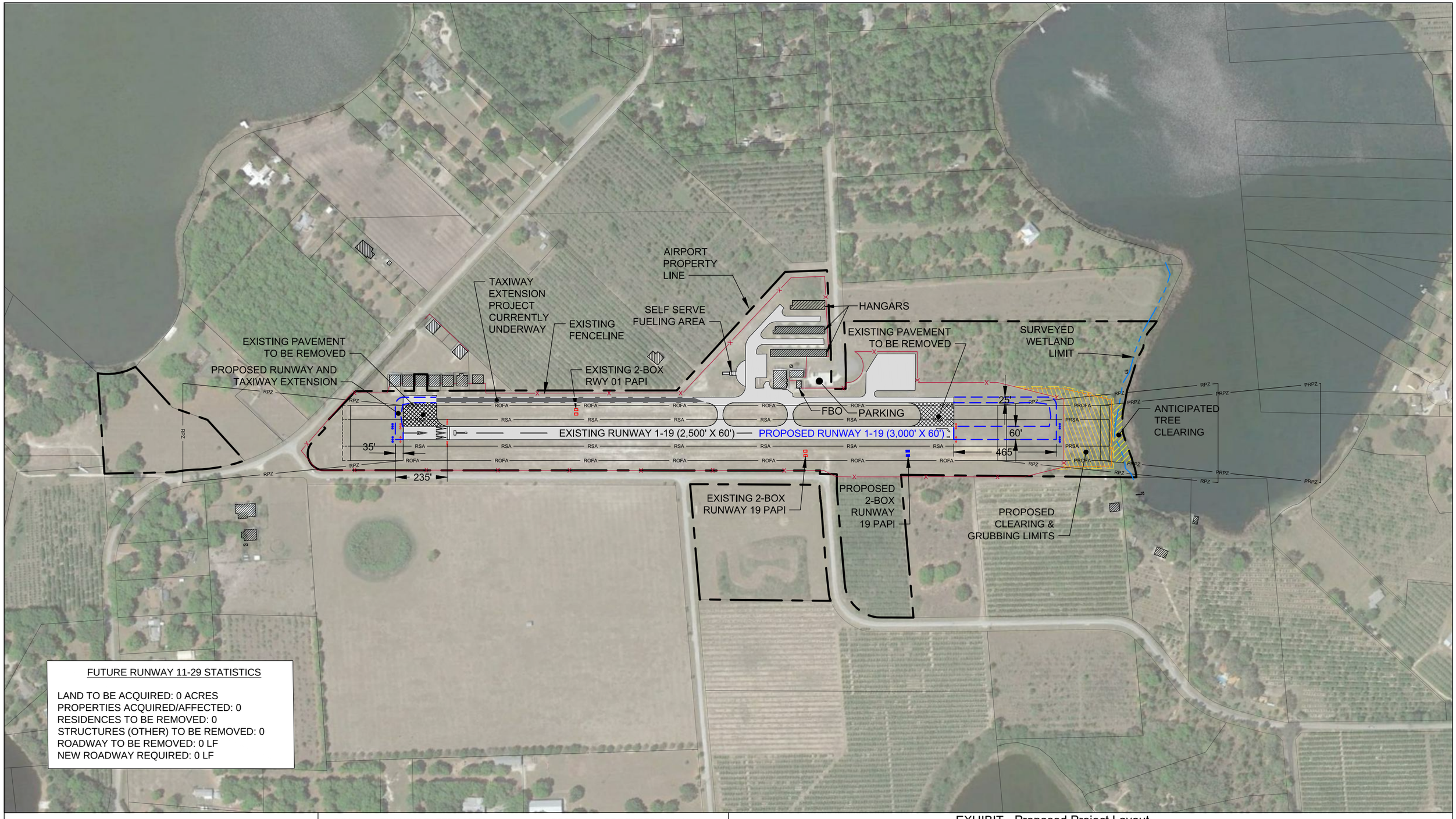
Exhibit Date: 09.12.2018



FUTURE RUNWAY 11-29 STATISTICS

LAND TO BE ACQUIRED: 0 ACRES
PROPERTIES ACQUIRED/AFFECTED: 0
RESIDENCES TO BE REMOVED: 0
STRUCTURES (OTHER) TO BE REMOVED: 0
ROADWAY TO BE REMOVED: 0 LF
NEW ROADWAY REQUIRED: 0 LF

SCALE: 1" = 400'

400' 0' 400' 800'

RSA - RUNWAY SAFETY AREA
ROFA - RUNWAY OBJECT FREE AREA
RPZ - RUNWAY PROTECTION ZONE
PAPI - PRECISION APPROACH PATH INDICATOR
PRSA - PROPOSED RUNWAY SAFETY AREA
PROFA - PROPOSED RUNWAY OBJECT FREE AREA
PRPZ - PROPOSED RUNWAY PROTECTION ZONE
TORA - TAKE OFF RUN AVAILABLE
ASDA - ACCELRATE STOP DISTANCE AVAILABLE
TODA - TAKE OFF DISTANCE AVAILABLE
LDA - LANDING DISTANCE AVAILABLE

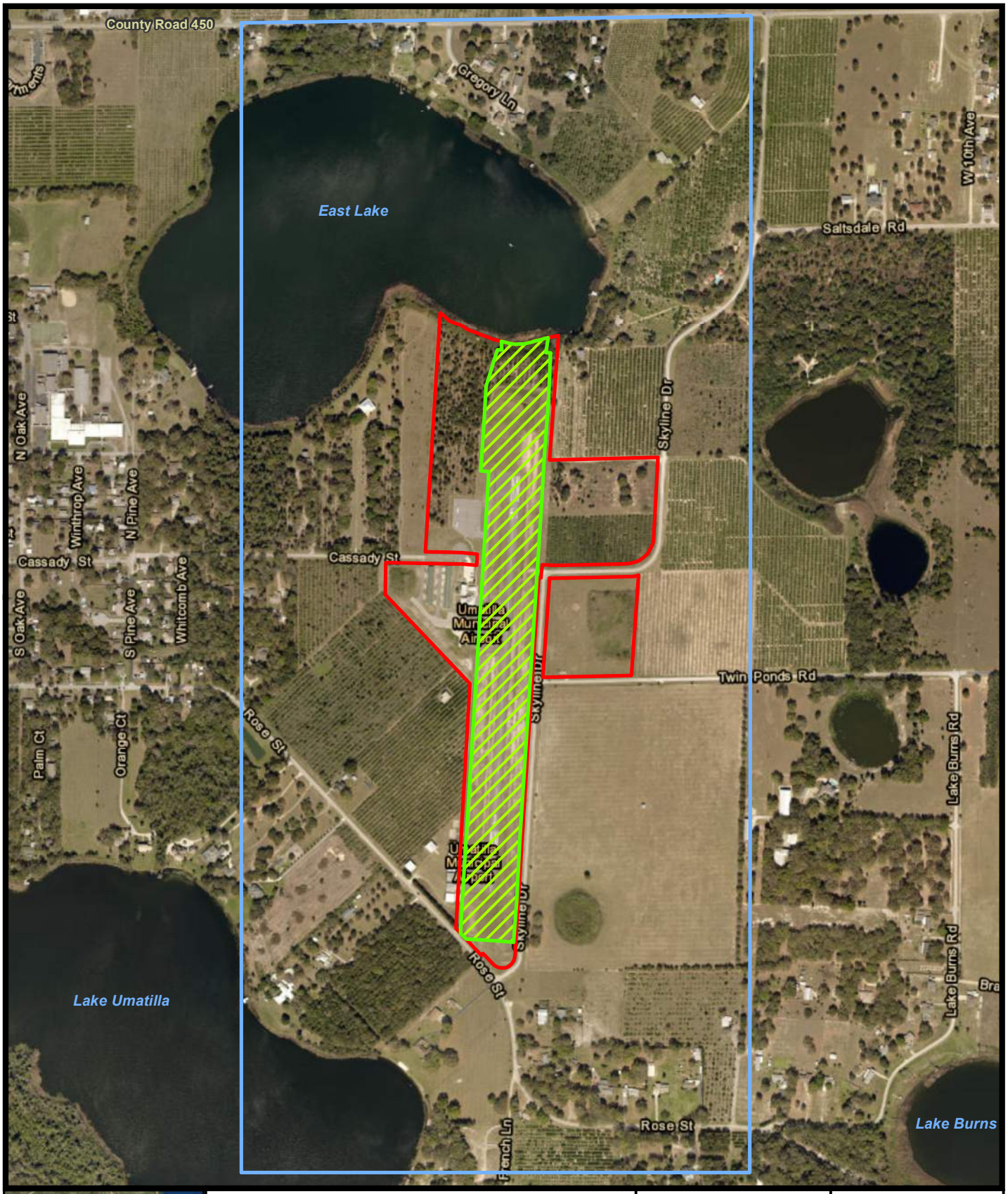
EXHIBIT - Proposed Project Layout

PROJECT	CLIENT
ENVIRONMENTAL ASSESSMENT FOR RUNWAY 1-19 EXTENSION	UMATILLA MUNICPAL AIRPORT CITY OF UMATILLA

UMATILLA NATURE'S HOMETOWN est.1904

ESA

gai consultants



Detailed Study Area, Action Area and Airport Property Boundary Map
Umatilla Municipal Airport (X23)
Runway 1-19 Extension
Umatilla, Florida

- Detailed Study Area
- Action Area
- Airport Property Boundary

Exhibit 3

N

1 in = 800 ft

Section: 18
Township: 18 South
Range: 27 East

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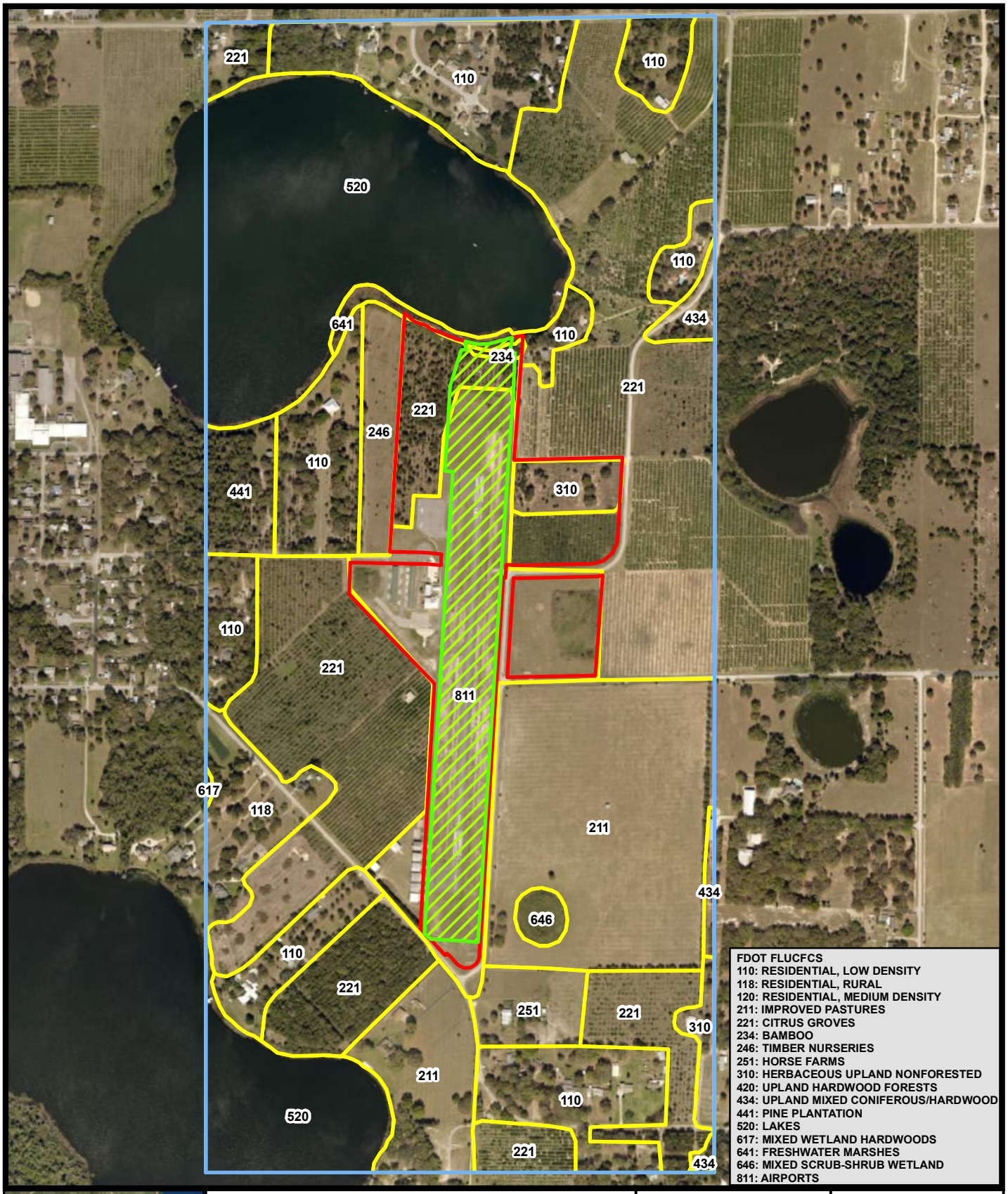
Exhibit Date 10.24.2018



SJRWMD Land Use Map
Umatilla Municipal Airport (X23)
Runway 1-19 Extension
Umatilla, Florida

Action Area

Detailed Study Area

Airport Property Boundary

Exhibit 4

N

1 in = 800 ft

Section: 18
Township: 18 South
Range: 27 East

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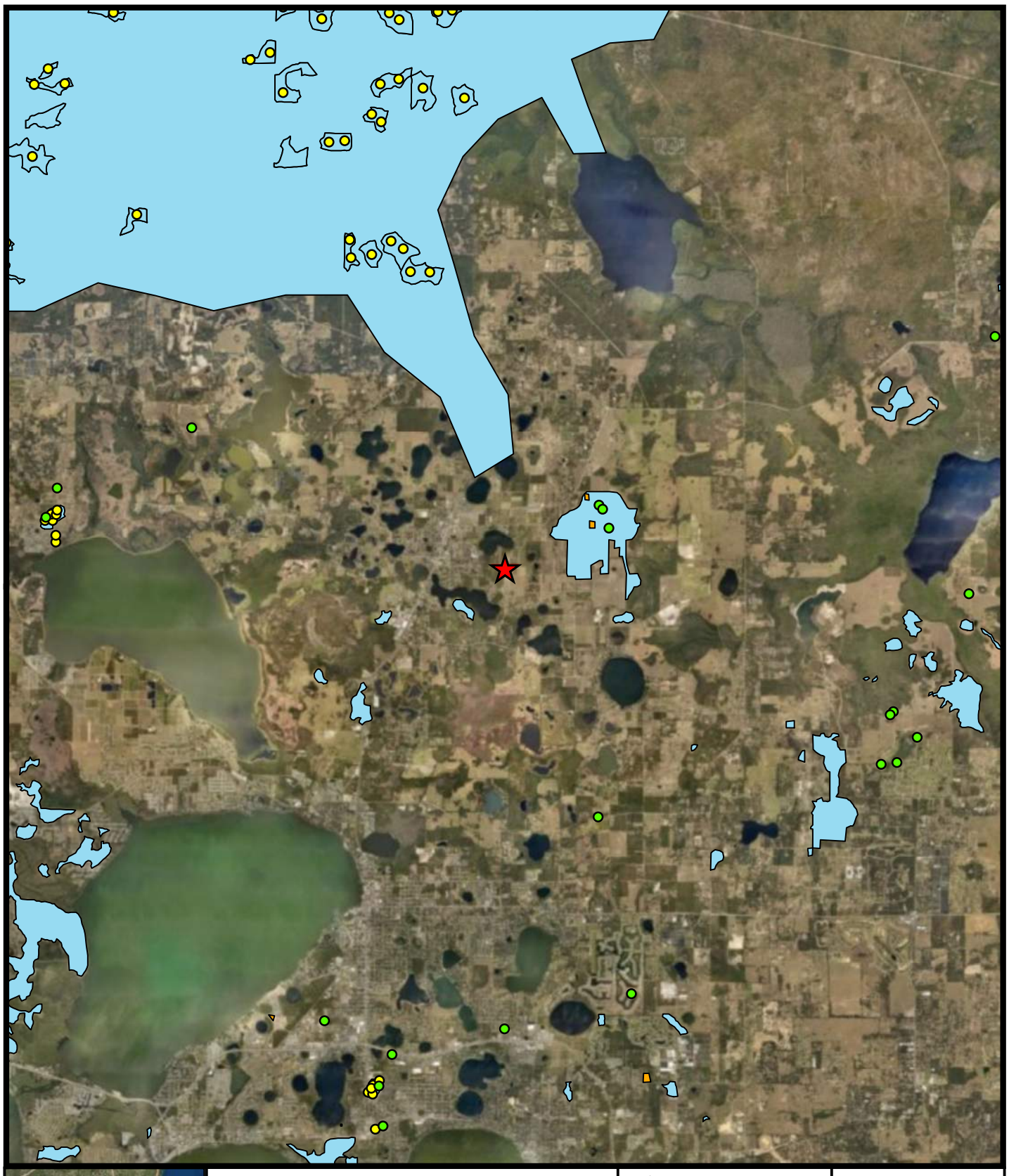

Florida Scrub-Jay Habitat and Reported Observations Map
Umatilla Municipal Airport (X23)
Runway 1-19 Extension
Umatilla, Florida

Project Location

Scrub-Jay Habitat (1993 - USFWS)

Scrub-Jay Observations (2009 - Jay Watch)

Scrub-Jay Observations (2003 - Lake County)

Scrub-Jay Observations (1993 - USFWS)

Exhibit 5

N

1 inch = 2 miles

Section: 18
Township: 18 South
Range: 27 East

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Exhibit Date: 09.12.2018

Florida Scrub Jay Survey Locations and Area of Review Map
Umatilla Municipal Airport (X23)
Runway 1-19 Extension
Umatilla, Florida

Survey Stations
Area of Review
Action Area
Airport Property Boundary

Exhibit 6

N

1 in = 250 ft

Section: 18
Township: 18 South
Range: 27 East

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Exhibit Date 10.31.2018

Sand and Blue-tailed Mole Skink
Area of Review Map
Umatilla Municipal Airport (X23)
Runway 1-19 Extension
Umatilla, Florida

Area of Review
Action Area
Airport Property Boundary

Exhibit 7

N

1 in = 250 ft

Section: 18
Township: 18 South
Range: 27 East

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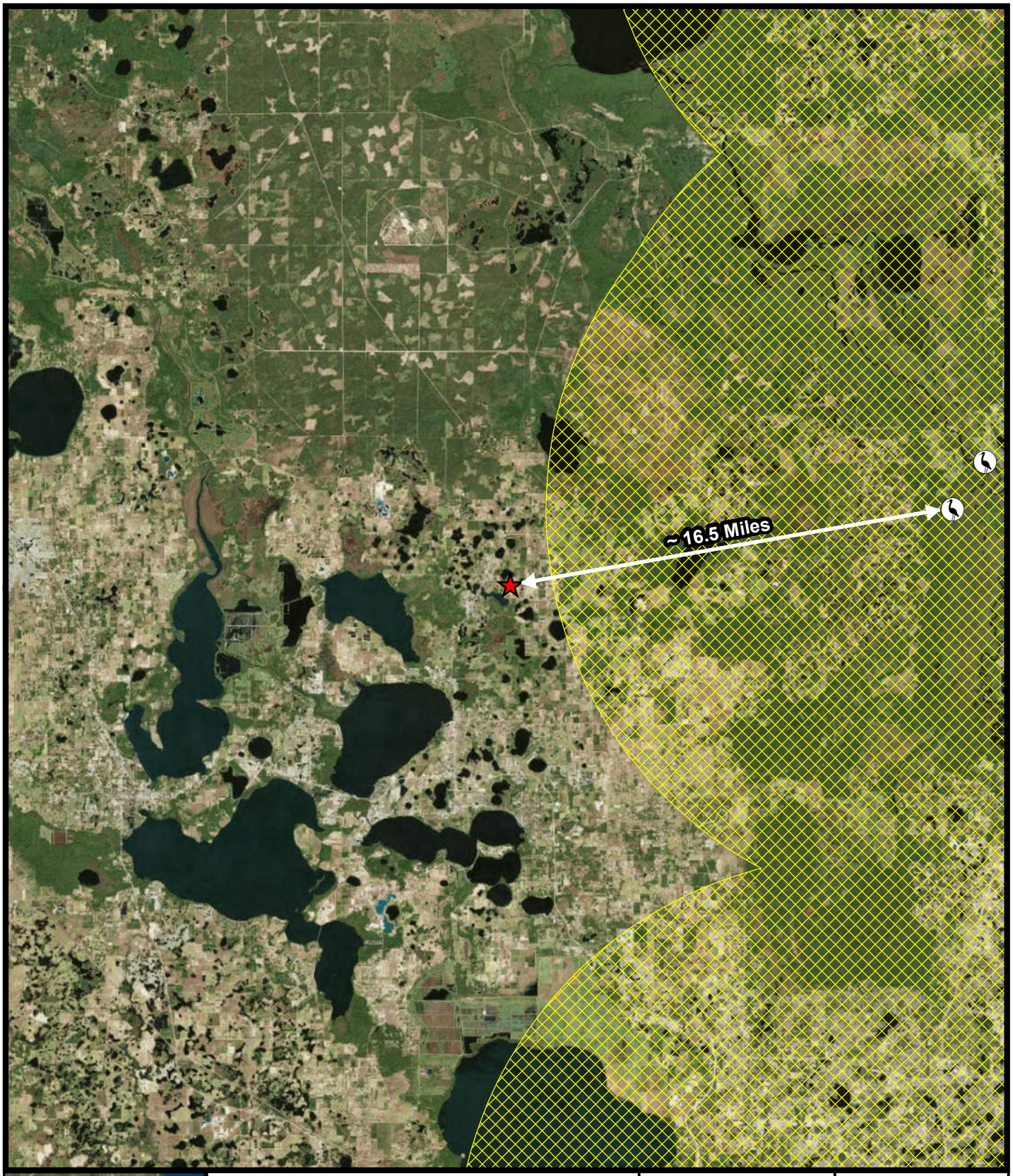

Wood Stork Nesting Colonies and Core Foraging Area Map
Umatilla Municipal Airport (X23)
Runway 1-19 Extension
Umatilla, Florida

Project Location

Wood Stork Nesting Colonies

Wood Stork CFA

Exhibit 8

N

1 inch = 5 miles

Section: 18
Township: 18 South
Range: 27 East

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Exhibit Date: 09.12.2018

Gopher Tortoise Burrow Location Map
Umatilla Municipal Airport (X23)
Runway 1-19 Extension
Umatilla, Florida

Gopher Tortoise Burrows
Impacted Burrows
Action Area
Airport Property Boundary

Exhibit 9

N

1 in = 250 feet

Section: 18
Township: 18 South
Range: 27 East

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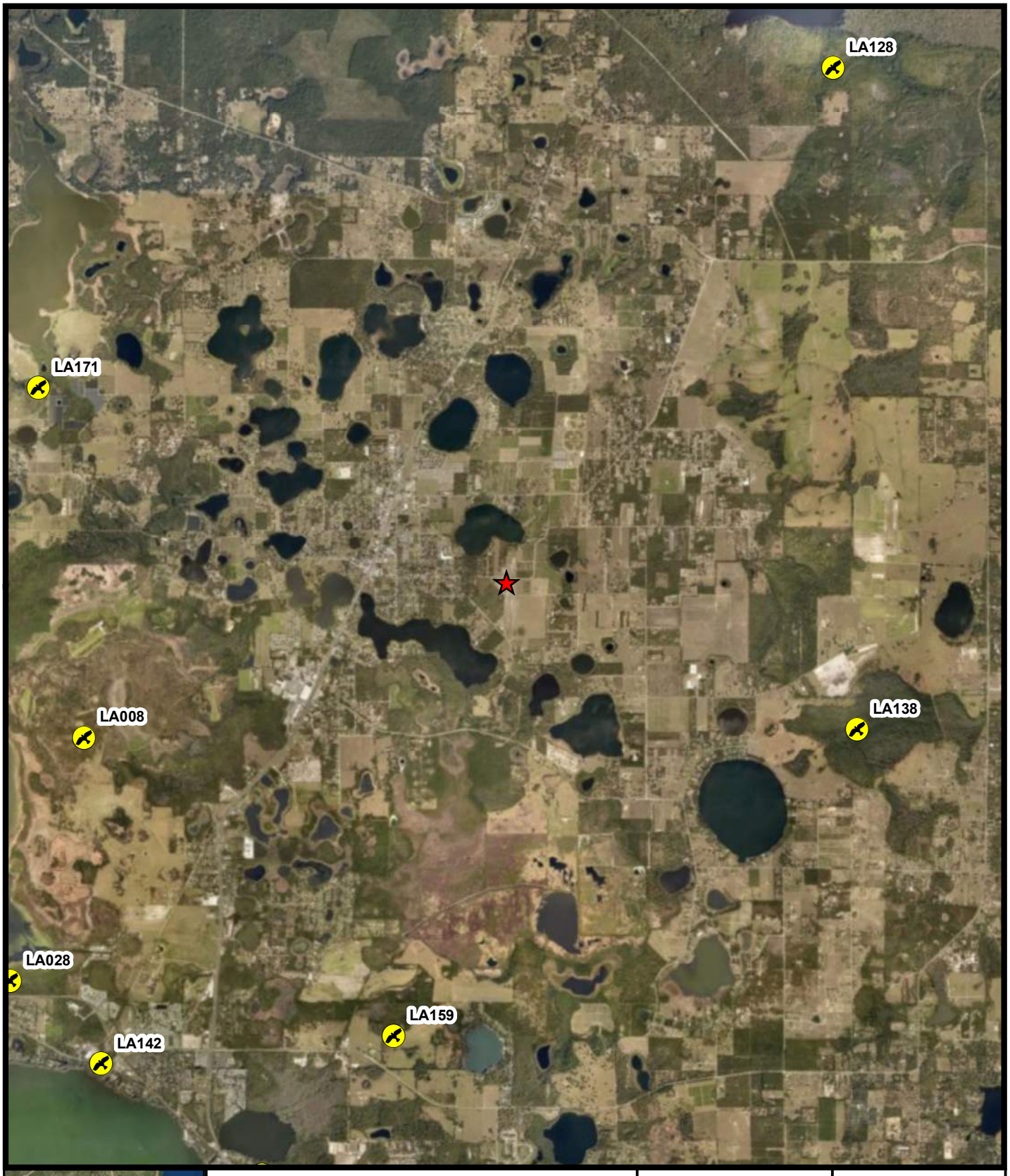
Exhibit Date: 09.12.2018



Bald Eagle Nest Location Map
Umatilla Municipal Airport (X23)
Runway 1-19 Extension
Umatilla, Florida

Project Location

Bald Eagle Nests

Exhibit 10

N

1 inch = 1 mile

Section: 18
Township: 18 South
Range: 27 East

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Exhibit Date: 09.12.2018

Appendix E

U.S. Department of Agriculture Form AD-1006, Farmland Conversion Impact Rating

ESA

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request April 9, 2019
Name of Project Umatilla Municipal Airport Runway 1/19 I	Federal Agency Involved Federal Aviation Administration (FA
Proposed Land Use Airport	County and State Lake County, Florida
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 4/9/2019 / Person Completing Form: LeRov Crockett

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES	NO	Acres Irrigated	Average Farm Size
	✔		15163	85

Major Crop(s)	Farmable Land In Govt. Jurisdiction	Amount of Farmland As Defined in FPPA
Citrus Forage(hay)	Acres: 51164 % 8.39	Acres: 26397 % 0.0433

Name of Land Evaluation System Used	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS
Soil Potential Rating	None	4/18/2019

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	2.92			
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	26.8			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	25.41			
B. Total Acres Statewide Important or Local Important Farmland	0			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.0005			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	13.3			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	34.5			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)				
2. Perimeter In Non-urban Use	(10)				
3. Percent Of Site Being Farmed	(20)				
4. Protection Provided By State and Local Government	(20)				
5. Distance From Urban Built-up Area	(15)				
6. Distance To Urban Support Services	(15)				
7. Size Of Present Farm Unit Compared To Average	(10)				
8. Creation Of Non-farmable Farmland	(10)				
9. Availability Of Farm Support Services	(5)				
10. On-Farm Investments	(20)				
11. Effects Of Conversion On Farm Support Services	(10)				
12. Compatibility With Existing Agricultural Use	(10)				
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	34.5	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	0	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	34.5	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map**,** or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Appendix F
Cultural Resources

ESA

This record search is for informational purposes only and does NOT constitute a project review. This search only identifies resources recorded at the Florida Master Site File and does NOT provide project approval from the Division of Historical Resources. Contact the Compliance and Review Section of the Division of Historical Resources at 850-245-6333 for project review information.

March 13, 2018

Florida Master Site File

Michael Mulbarger
ESA
4200 W Cypress St, Suite 450
Tampa, FL 33607
Phone: 813.207.7207
Email: mmulbarger@esassoc.com

In response to your inquiry of March 13, 2018, the Florida Master Site File lists no previously recorded cultural resources found in the following section of Lake County:

T 18S R 26E Sections 12, 13, 24 and T 18S R 27E Sections 7, 8, 17, 18, 19 with a 50 foot buffer as shown on the corresponding map.

When interpreting the results of our search, please consider the following information:

- **This search area may contain *unrecorded* archaeological sites, historical structures or other resources even if previously surveyed for cultural resources.**
- **Because vandalism and looting are common at Florida sites, we ask that you limit the distribution of location information on archaeological sites.**
- **While many of our records document historically significant resources, the documentation of a resource at the Florida Master Site File does not necessarily mean the resource is historically significant.**
- **Federal, state and local laws require formal environmental review for most projects. This search DOES NOT constitute such a review. If your project falls under these laws, you should contact the Compliance and Review Section of the Division of Historical Resources at 850-245-6333.**

Please do not hesitate to contact us if you have any questions regarding the results of this search.

Sincerely,

Cody VanderPloeg
Archaeological Data Analyst
Florida Master Site File
Cody.VanderPloeg@dos.myflorida.com

FLORIDA DEPARTMENT of STATE

RON DESANTIS
Governor

LAUREL M. LEE
Secretary of State

Mr. Peter M. Green, AICP
U.S. Department of Transportation
Federal Aviation Administration
Orlando Airports District Office
8427 South Park Circle, Suite 524
Orlando, FL 32819

March 27, 2019

RE: DHR Project File No.: 2019-1334, Received by DHR: February 25, 2019
Cultural Resource Assessment Survey of the Umatilla Municipal Airport Project, Lake County, Florida

Dear Mr. Green,

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

In October 2018, Archaeological Consultants, Inc., (ACI) conducted the above referenced cultural resource assessment survey (CRAS) on behalf of ESA/Southeast Region as due diligence. The project is subject to compliance with Federal Aviation Administration (FAA) obligations to complete Section 106 consultation in conjunction with the *National Environmental Protection Act* (NEPA) process.

ACI encountered no cultural resources within the 6.3-acre area of potential effect (APE) during their investigation. Further, they documented disturbed fill in many of the runway-adjacent shovel tests and documented that the fill was spread across the airport some time in the 1950s to a depth of approximately 10 meters or more. ACI concluded that the proposed project will have no effect on cultural resources listed, or eligible for listing, in the NRHP, and that no additional work is recommended.

Following review of the above referenced survey report and the results presented therein, the FAA finds "no historic properties affected" for the proposed undertaking under CFR Part 800.4(d)(1).

Based on the information provided, our office concurs that the proposed project will have no effect on historic properties listed, or eligible for listing, on the NRHP, and we find the submitted report complete and sufficient in accordance with Chapter 1A-46, *Florida Administrative Code*. If I can be of any further help, or if you have any questions about this letter, please contact Lindsay Rothrock at *Lindsay.Rothrock@dos.myflorida.com*.

Sincerely,

Jason Aldridge
For

Timothy A. Parsons, Ph.D.
Director, Division of Historical Resources
and State Historic Preservation Officer

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

Orlando Airports District Office
8427 SouthPark Circle, Suite 524
Orlando, FL 32819
Phone: (407) 487-7720
Fax: (407) 487-7135

February 25, 2019

VIA EMAIL

Timothy A. Parsons, Ph.D.
Director and State Historic Preservation Officer
Florida Department of State Division of Historical Resources
500 South Bronough Street, Room 305
Tallahassee, FL 32399-0250

Re: Section 106 Consultation
Proposed Runway Extension and Related Improvements
Umatilla Municipal Airport (Lake County)

Dear Dr. Parsons,

The City of Umatilla (County) has requested environmental approval from the Federal Aviation Administration (FAA) for the extension of Runway 1/19 at the Umatilla Municipal Airport. The federal actions associated with the proposed runway extension project is an "undertaking" subject to the *National Historic Preservation Act* (Section 106) and its implementing regulations at 36 CFR Part 800. The federal actions are also subject to the *National Environmental Policy Act* (NEPA). An Environmental Assessment is being prepared to meet FAA's obligations under NEPA. The agency intends to complete Section 106 in conjunction with the NEPA process.

Proposed Undertaking

The City of Umatilla, the owner and operator of the airport, proposes a project to extend the airport's runway (Runway 1/19) from its present length of 2,500 feet to approximately 3,000 feet. The purpose of the project is to reduce landing and departure limitations for existing airport users. Major project elements include:

- Construct approximately 500 feet of new paved runway
- Construct approximately 500 feet of parallel taxiway (and connectors)
- Clear approximately 2.3 acres of trees, vegetation, and objects
- Construct Safety Areas[1] for new sections of runway and taxiway
- Remove approximately 33,000 square feet of existing taxiway pavement.
- Install approximately 1,500 feet of new airfield security fencing and controlled-access vehicle gates.
- Construct drainage improvements for the new airfield pavements and graded areas.

[1] Safety Areas include the ground adjoining paved runway and taxiway surfaces capable of supporting aircraft and emergency equipment. The Safety Areas are typically improved (e.g. graded) to be free of ruts, holes, and objects that can damage aircraft.

Tribal Consultation

The FAA is also consulting with the following Native American tribes: Seminole Tribe of Florida, Seminole Nation of Oklahoma, Miccosukee Tribe of Indians of Florida, Muscogee (Creek) Nation, and Poarch Band of Creek Indians.

Area of Potential Effect

The Area of Potential Effects (APE) was designated to include areas in which the undertaking may directly or indirectly cause alterations in the character or use of historic properties. Because the airport exclusively serves small aircraft and the proposed project would not attract large aircraft to the airport or substantially increase activity, the potential for any indirect or cumulative effects would be negligible outside the immediate footprint of construction. Therefore, the APE was limited to the footprint of proposed activities on land and within the existing boundaries of the project. The location and extent of the 6.3-acre APE is depicted on Figure 1.1 of the enclosed Cultural Resource Assessment Survey report.[2]

Historic and Cultural Resources in the APE

A CRAS was prepared to identify cultural resources within the APE and assess their eligibility for listing in the *National Register of Historic Places* (National Register) according to the criteria set forth in 36 CFR Section 60.4. The archaeological and historical field surveys, completed in October 2018, were conducted as due diligence. All work was carried out in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations in 36 CFR Part 800: Protection of Historic Properties, and in conformity with the standards contained in the FDHR Cultural Resource Management Standards and Operational Manual (Florida Division of Historical Resources [FDHR] 2003). The resulting survey and report meets specifications in Chapter 1A-46, Florida Administrative Code (FAC), and complies with Chapters 267 and 373.

Archaeological background research and a review of the Florida Master Site File (FMSF) and the National Register indicated that no previously recorded archaeological sites are within the APE. Two archaeological sites were recorded within two miles of the APE. No archaeological sites were discovered during field investigations. The field reconnaissance confirmed the absence of historic structures.

Based on the results of the research effort and the field survey, Cultural Resource Assessment Survey recommended that the proposed project would have no effect on any cultural resources listed or considered eligible, or which appear to be eligible for listing in the NRHP. No additional work is recommended.

FAA Determination of Effect

Based on an evaluation of the proposed runway project, in conjunction with the research summarized above and contained in the enclosed Cultural Resource Assessment Survey report, the FAA has determined there are no historic properties within the APE that are listed, or eligible

---

[2] *Cultural Resource Assessment Survey of the Umatilla Municipal Airport Project, Lake County, Florida.* Archaeological Consultants, Inc. November 2018.

for listing, in the National Register of Historic Places. Therefore, the FAA finds "no historic properties affected" for the proposed undertaking under 36 CFR Part 800.4(d)(1).

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

Sincerely,

Peter M. Green, AICP
Environmental Protection Specialist

Enclosure

CULTURAL RESOURCE ASSESSMENT SURVEY OF THE UMATILLA MUNICIPAL AIRPORT PROJECT, LAKE COUNTY, FLORIDA

Prepared for:

ESA/Southeast Region
5401 South Kirkman Road, Suite 405
Orlando, Florida 32819

Prepared by:

Florida's First Choice in Cultural Resource Management

Archaeological Consultants, Inc.
8110 Blaikie Court, Suite A
Sarasota, Florida 34240
(941) 379-6206

November 2018

CULTURAL RESOURCE ASSESSMENT SURVEY OF THE UMATILLA MUNICIPAL AIRPORT PROJECT, LAKE COUNTY, FLORIDA

Prepared for:

ESA/Southeast Region
5401 South Kirkman Road, Suite 405
Orlando, Florida 32819

By:

Archaeological Consultants, Inc.
8110 Blaikie Court, Suite A
Sarasota, Florida 34240

Marion Almy - Principal Investigator
Christine Newman - Project Archaeologists
Stephen Nazian - Archaeologist

November 2018

EXECUTIVE SUMMARY

Archaeological Consultants, Inc. (ACI) conducted a cultural resource assessment survey (CRAS) of the Umatilla Municipal Airport Project in Lake County for ESA/Southeast. The project Area of Potential Effects (APE) is approximately 6.3 acres and is located west of Skyline Drive. Rose Street borders the southern boundary and East Lake is to the north. The APE consists of several discrete locations: an area adjacent to East Lake; a corridor adjacent and west of the Umatilla Municipal Airport landing strip; and a corridor to the south of landing strip; all within the Umatilla Municipal Airport property. The APE is within the city limits of Umatilla.

The purpose of this investigation was to locate and identify any cultural resources within the project APE and to assess their significance in terms of eligibility for listing in the National Register of Historic Places (NRHP). As defined in 36 CFR Part § 800.16(d), the APE is the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." Based on the scale and nature of the activities, the project has a limited potential for any indirect (visual or audible) or cumulative effects outside the immediate footprint of construction. Therefore, the APE was limited to the footprint of proposed activities on land and within the existing boundaries of the project. The archaeological and historical field surveys, completed in October 2018, were conducted as due diligence. All work was carried out in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations in 36 CFR Part 800: Protection of Historic Properties, and in conformity with the standards contained in the FDHR Cultural Resource Management Standards and Operational Manual (Florida Division of Historical Resources [FDHR] 2003). The resulting survey and report meets specifications in Chapter 1A-46, Florida Administrative Code (FAC), and complies with Chapters 267 and 373, Florida Statutes (FS), as well as Florida's Coastal Management Program. Principal Investigators meet the *Secretary of the Interior's Historic Preservation Professional Qualification Standards* (62 FR 33708) for archaeology, history, architecture, architectural history, or historic architecture.

Archaeological background research and a review of the Florida Master Site File (FMSF) and the NRHP indicated that no previously recorded archaeological sites are within the APE. However, there are two archaeological sites recorded within two miles of the APE. Given the known patterns of aboriginal settlement, the APE was considered to have a variable probability for archaeological site occurrence. The area of better drained soil proximate to East Lake was considered to have a high probability, while the disturbed areas adjacent to the runway were considered to have a moderate to low probability. In addition, it was determined that there was a low potential for historic archaeological sites based on the absence of development in the 1840s, as well as the absence of historic structures or development as depicted on the historic aerial photographs and historic quadrangle maps. No archaeological sites were discovered during these investigations

Historical background research, including a review of the FMSF and the NRHP, indicated that no historic properties (50 years of age or older) were previously recorded within the tract. The property appraiser data indicates no potential for historic structures on the property (Baker 2018). No structures are visible within the APE on the aerial photographs from 1941 to 1974 or the historic United States Geological Survey (USGS) maps (United States Department of Agriculture [USDA] 1941, 1947, 1958, 1974; USGS 1965a-c). The field reconnaissance confirmed the absence of historic structures.

Based on the results of the background research and the field survey, it is the opinion of ACI that development of the Umatilla Municipal Airport APE will have no effect on any cultural resources

listed or considered eligible, or which appear to be eligible for listing in the NRHP. No additional work is recommended.

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1.0 INTRODUCTION

1.1 Project Description

Archaeological Consultants, Inc. (ACI) conducted a cultural resource assessment survey (CRAS) of the Umatilla Municipal Airport Project in Lake County for ESA/Southeast. The project Area of Potential Effects (APE) is approximately 6.3 acres and is located west of Skyline Drive (**Figure 1.1**). Rose Street borders the southern boundary and East Lake is to the north. The APE consists of several discrete locations: an area adjacent to East Lake; a corridor adjacent and west of the Umatilla airport landing strip; and a corridor to the south of landing strip; all within the Umatilla Municipal Airport property. The project is within the city limits of Umatilla.

1.2 Purpose

The purpose of this investigation was to locate and identify any cultural resources within the project APE and to assess their significance in terms of eligibility for listing in the National Register of Historic Places (NRHP). As defined in 36 CFR Part § 800.16(d), the APE is the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." Based on the scale and nature of the activities, the project has a limited potential for any indirect (visual or audible) or cumulative effects outside the immediate footprint of construction. Therefore, the APE was limited to the footprint of proposed activities on land and within the existing boundaries of the project. The archaeological and historical field surveys, completed in October 2018, were conducted as due diligence. All work was carried out in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations in 36 CFR Part 800: Protection of Historic Properties, and in conformity with the standards contained in the FDHR Cultural Resource Management Standards and Operational Manual (Florida Division of Historical Resources [FDHR] 2003). The resulting survey and report meets specifications in Chapter 1A-46, Florida Administrative Code (FAC), and complies with Chapters 267 and 373, Florida Statutes (FS), as well as Florida's Coastal Management Program. Principal Investigators meet the *Secretary of the Interior's Historic Preservation Professional Qualification Standards* (62 FR 33708) for archaeology, history, architecture, architectural history, or historic architecture.

Background research preceded the field investigations. Such work provided both an informed set of expectations concerning the kinds of cultural resources that might be anticipated to occur within the APE, as well as a basis for evaluating any new sites discovered.

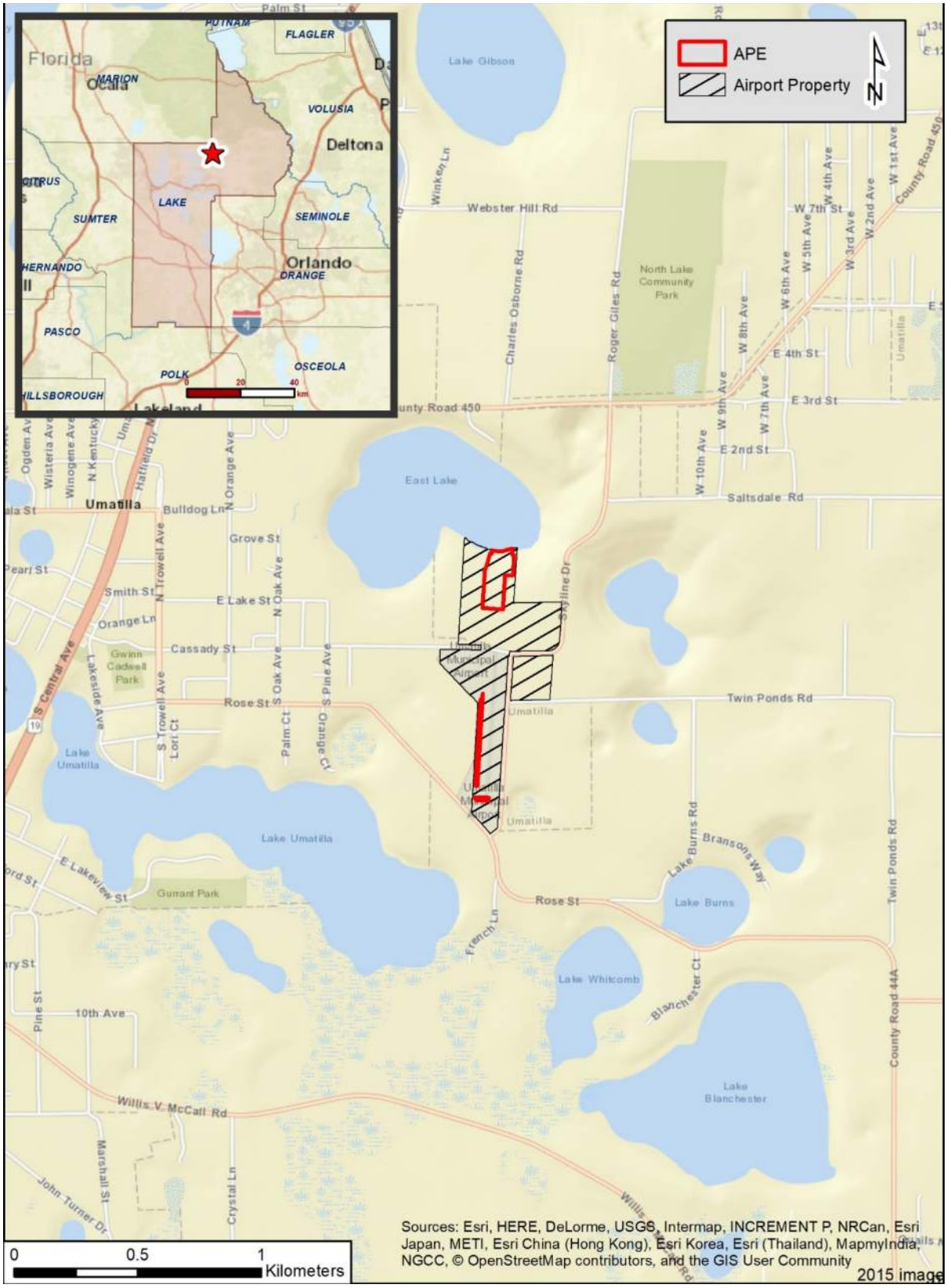

Figure 1.1. Location of the Airport and APE, Lake County.

2.0 ENVIRONMENTAL SETTING

Environmental factors such as geology, topography, relative elevation, soils, vegetation, and water resources are important in determining where pre-colonial and historic period archaeological sites are likely to be located. These variables influenced what types of resources were available for utilization in each area. This, in turn, influenced decisions regarding settlement location and land-use patterns. Because of the influence of the local environmental factors upon the local populations, a discussion of the effective environment is included.

2.1 Location and Setting

The APE is located in Section 18 of Township 18 South, Range 27 East in central Lake County (United States Geological Survey [USGS] Umatilla) (**Figure 2.1**). It is located immediately south of East Lake and northwest of Lake Umatilla. Lake Whitcomb, Lake Burns, and Lake Blanchester are to the southeast and an unnamed lake is located to the east. The northern most portion of the APE, adjacent to East Lake and outside the airport runway safety perimeter, is a relic grove with mixed oaks, palmetto, palm and a relatively clear understory (**Photo 2.1**). Just to the south, within the same northern portion of the APE but inside the safety perimeter, the area has been cleared and fill has been placed on the property (**Photo 2.2**). Fill has been placed on the remainder of the APE; the area adjacent and west of the runway and the area to the south. Additional disturbance within these areas include drainage ditching.

Photo 2.1. Looking to the north at oaks and abandoned citrus in northern portion of APE adjacent to East Lake.

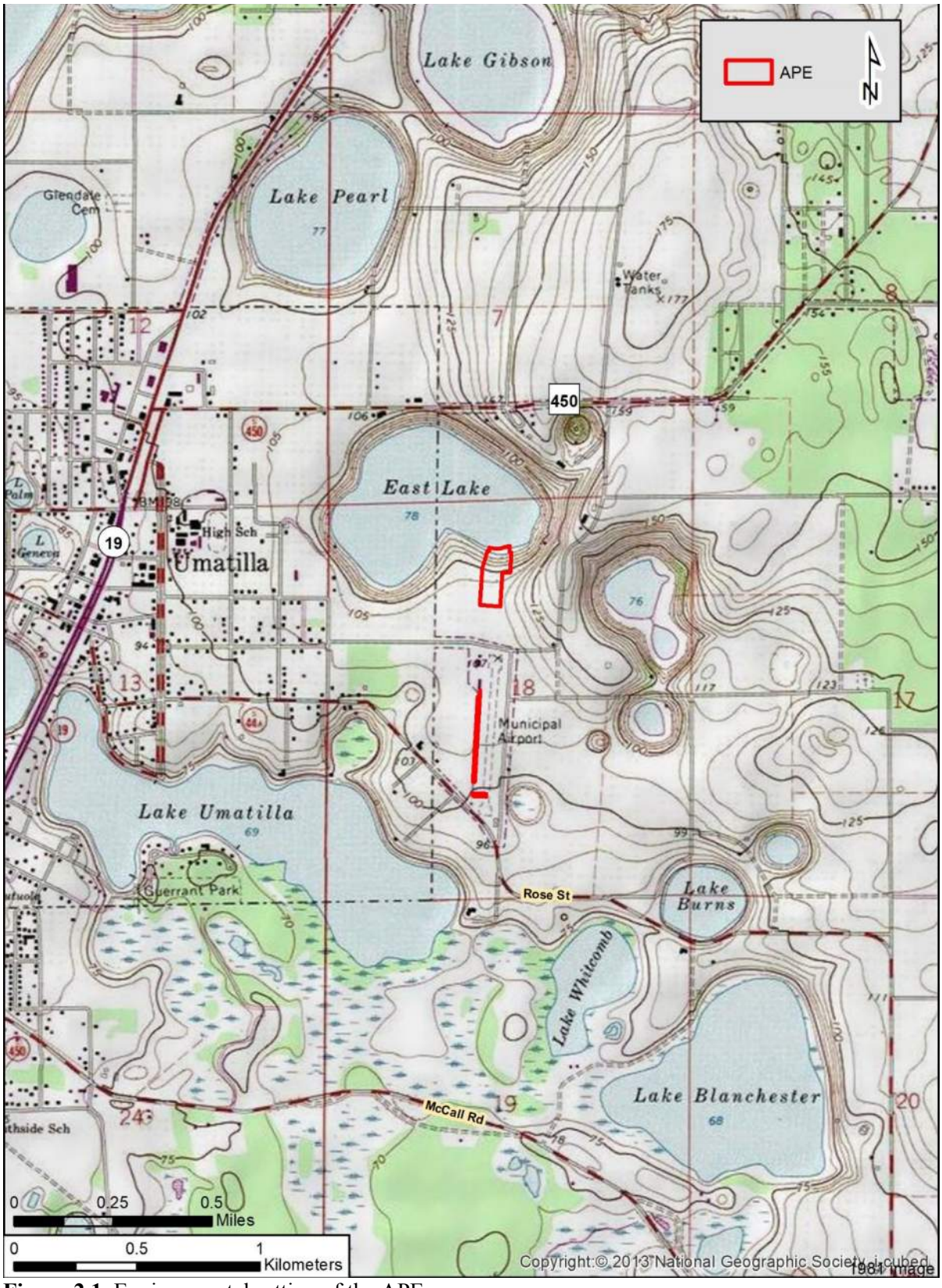

Figure 2.1. Environmental setting of the APE.

Photo 2.2. Looking to the northeast at the area north of the runway. Note the amount of fill that has been placed on the property.

Photo 2.3. Looking south at the APE at the western side of the runway. This area is clay fill.

Photo 2.4. Looking to the east at the southern end of the runway. Note the fill and drainage ditch**.**

2.2 Physiography and Geology

The APE is in the Central or Mid-peninsular physiographic zone, and more specifically within in the Central Valley (White 1970). The area's surface lithology consists of clayey sand (Scott 1978). Geologically, undifferentiated, reworked Cypresshead formation sediments of the Plio-Pleistocene underlay the project area (Scott 2001; Scott et al. 2001). Elevation is 29 to 33.5 meters (m) (95 to 110 feet [ft]) above mean sea level (amsl).

2.3 Soils and vegetation

The APE is underlain by the Astatula-Apopka soil association, which consists of nearly level to strongly sloping, excessively and well drained sandy soils of broad ridges interspersed with large lakes, ponds, and wet depressions (Furman et al. 1975). **Table 2.1** and **Figure 2.2** provides specific soil types, drainage, slope, and general topographic setting for the APE.

Table 2.1. Soil types, drainage characteristics, and setting within the APE.

Soil Type & slope	Drainage	Topographic Setting
Candler sand, 0-5%	Excessive	Uplands
Candler sand, 5-12%	Excessive	Uplands
Candler sand, 12-40%	Excessive	Upland

Soil types are often associated with a certain vegetative regime; thus, information can be inferred concerning the environmental setting for the past 5000 years. The native vegetation of the Astatula-Apopka soil association included scrub oak, bluejack oak and sawpalmetto, with an understory of running oak and other shrubs and grasses (Furman et al. 1975).The *General Map of Natural Vegetation of Florida* indicates that the APE is in a zone of longleaf pine and xerophytic oak forests thirds (Davis 1967).

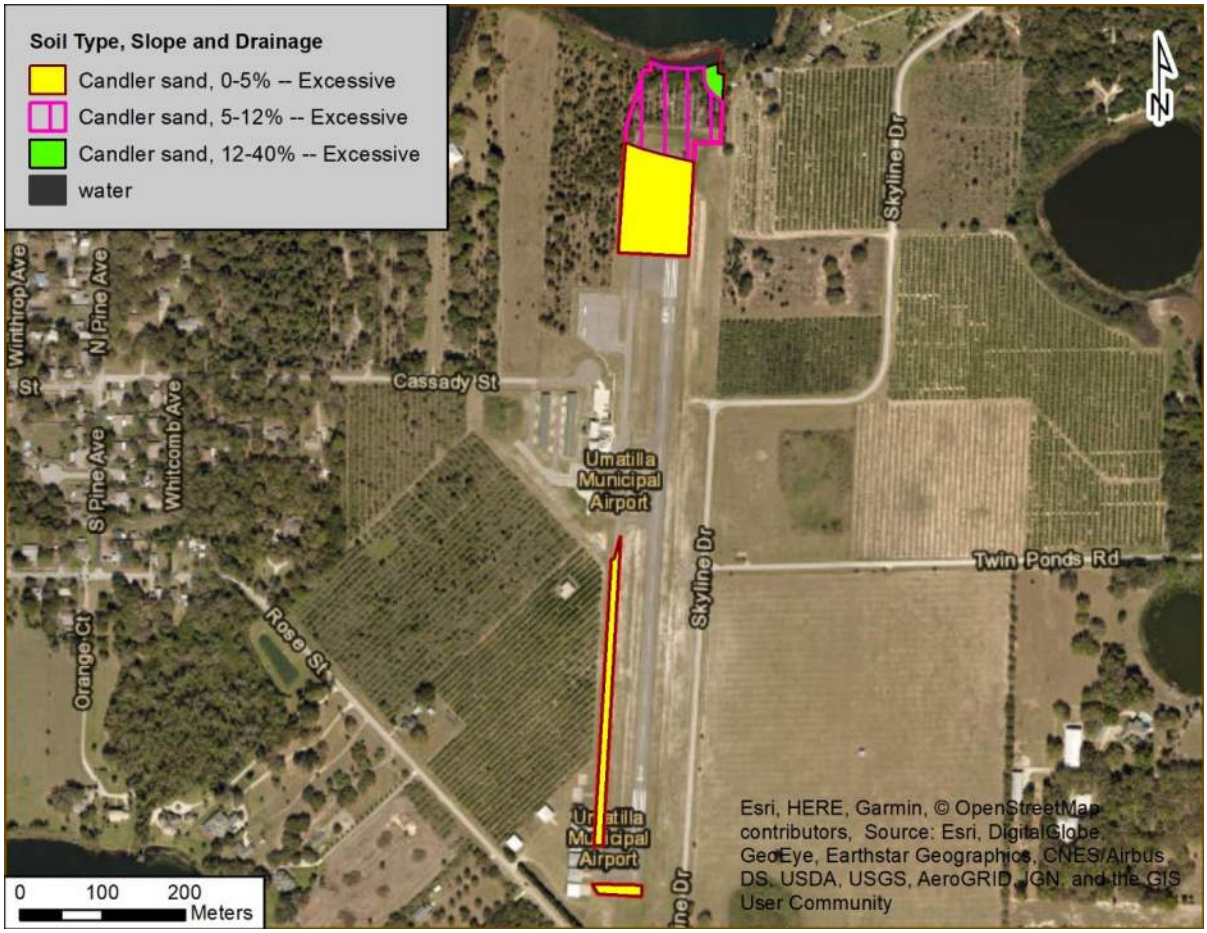

Figure 2.2. Soil types in the APE.

2.4 Paleoenvironmental Considerations

The early environment of the region was different from that seen today. Sea levels were lower, the climate was arid, and fresh water was scarce. An understanding of human ecology during the earliest periods of human occupation in Florida cannot be based on observations of the modern environment because of changes in water availability, botanical communities, and faunal resources. Aboriginal inhabitants adapted to the environmental changes taking place, as reflected by changes in settlement patterns, site types, artifact forms, and subsistence economies.

Due to the arid conditions between 16,500 and 12,500 years ago, the perched water aquifer and potable water supplies were absent (Dunbar 1981:95). Palynological studies conducted in Florida and Georgia suggest that between 13,000 and 5000 years ago, this area was covered with an upland vegetation community of scrub oak and prairie (Watts 1969, 1971, 1975). However, the environment was not static. Evidence recovered from the inundated Page-Ladson Site in north Florida has clearly demonstrated that there were two periods of low water tables and dry climatic conditions and two episodes of elevated water tables and wet conditions (Dunbar 2006c). The rise of sea level reduced xeric habitats over the next several millennia.

By 5000 years ago, a climatic event marking a brief return to Pleistocene conditions induced a change toward more open vegetation. Southern pine forests replaced the oak savannahs. Extensive marshes and swamps developed along the coasts and subtropical hardwood forests became established

along the southern tip of Florida (Delcourt and Delcourt 1981). Northern Florida saw an increase in oak species, grasses, and sedges (Carbone 1983). At Lake Annie, in south central Florida, waxmyrtle and pine dominated pollen cores. The assemblage suggests that by this time, a forest dominated by longleaf pine along with cypress swamps and bayheads existed in the area (Watts 1971, 1975). Surface water was plentiful in karst terrains and the level of the Floridan aquifer rose to 1.5 m (5 ft) above present levels. With the establishment of warmer winters and cooler summers than in the preceding early Holocene, the fire-adapted pine communities prevailed. These depend on the high summer precipitation caused by the thunderstorms and the accompanying lightning strikes to spark the fires (Watts et al. 1996; Watts and Hansen 1994). The increased precipitation also resulted in the formation of the large swamp systems such as the Okefenokee and Everglades (Gleason and Stone 1994). After this time, modern floral, climatic, and environmental conditions began to be established.

3.0 CULTURE HISTORY

A discussion of the regional culture history is included to provide a framework within which to examine the local archaeological and historical record. Archaeological and historic sites are not individual entities, but were once part of a dynamic cultural system. Thus, individual sites cannot be adequately examined or interpreted without reference to other sites and resources in the area. The culture history of an area (i.e. the archaeological region) outlines the sequence of archaeological and historical cultures through time. These are defined largely in geographical terms, but also reflect shared environmental and cultural traits. The project area is within the East and Central archaeological region (Milanich 1994) (**Figure 3.1**). The Paleoindian, Archaic, Formative, and Mississippian stages have been defined based on material culture traits such as stone tool forms and ceramics, as well as subsistence, settlement, and burial patterns.

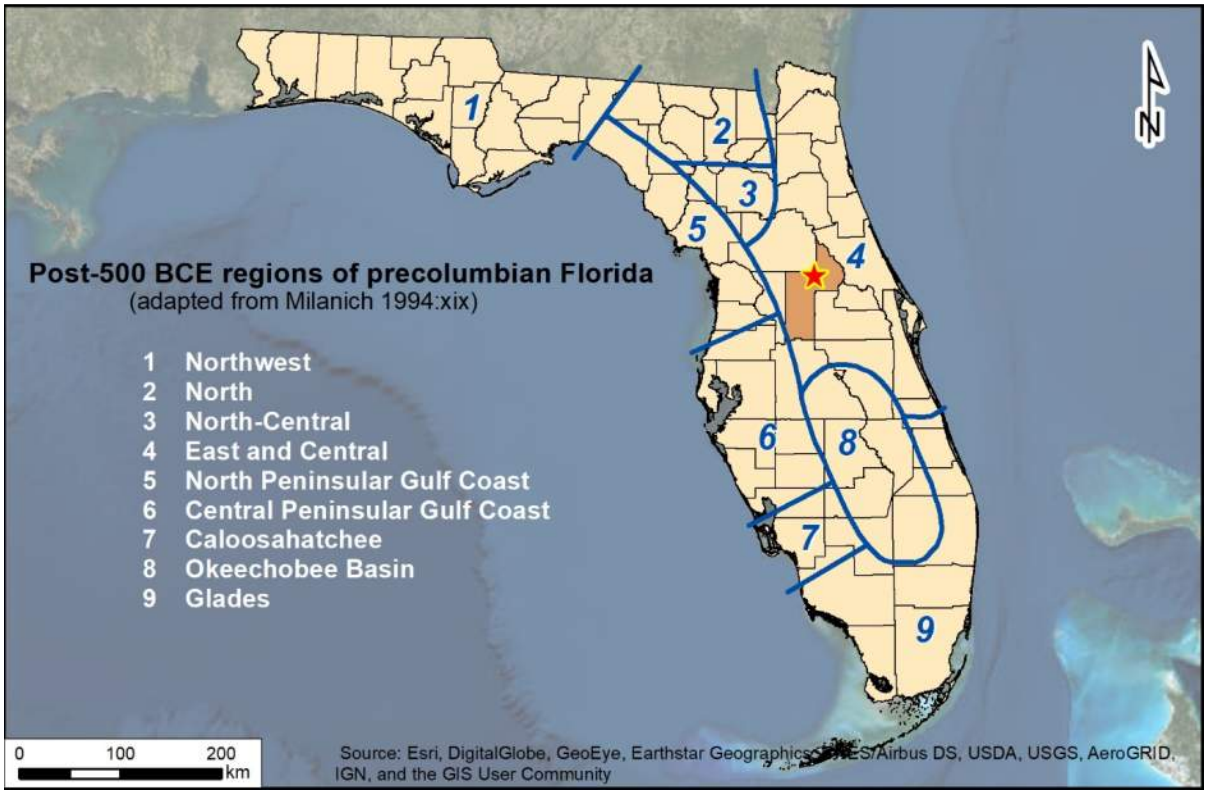

Figure 3.1. Florida Archaeological Regions.

The local history of the region is divided into four broad periods based initially upon the major governmental powers. The first period, Colonialism, occurred during the exploration and control of Florida by the Spanish and British from around 1513 until 1821. At that time, Florida became a territory of the U.S. and 21 years later became a State (Territorial and Statehood). The Civil War and Aftermath (1861-1899) period deals with the Civil War, the period of Reconstruction following the war, and the late 1800s, when the transportation systems were dramatically increased and development throughout the state expanded. The Twentieth Century period includes sub-periods defined by important historic events such as the World Wars, the Boom of the 1920s, and the Depression. Each of these periods evidenced differential development and utilization of the region, thus effecting historic site distribution.

3.1 Paleoindian

The Paleoindian stage is the earliest known cultural manifestation in Florida, dating from roughly 12,000 to 7500 BCE (Before Common Era) (Milanich 1994). Archaeological evidence for Paleoindians consists primarily of scattered finds of diagnostic lanceolate-shaped projectile points. The Florida peninsula at that time was quite different than today. In general, the climate was cooler and drier with vegetation typified by xerophytic species with scrub oak, pine, open grassy prairies, and savannas (Milanich 1994:40). When human populations were arriving in Florida, the sea levels were still as much as 40 to 60 m (130-200 ft) below present levels and coastal regions of Florida extended miles beyond present-day shorelines (Faught 2004). Thus, many of these sites have been inundated (cf., Faught and Donoghue 1997).

The Paleoindian period has been sub-divided into three horizons based upon characteristic stone tool forms (Austin 2001). Traditionally, it is believed that the Clovis Horizon (10,500-9000 BCE) represents the initial occupation of Florida and is defined by the presence of the fluted Clovis points. These are more common in north Florida. However, recent work, may indicate that Suwannee and Simpson points are contemporary with or predate Clovis (Dunbar 2016; Stanford et al. 2005). The Suwannee Horizon (9000-8500 BCE) is the best known of the three Paleoindian horizons. The lanceolate-shaped, unfluted Simpson and Suwannee projectile points are diagnostic of this time (Bullen 1975; Daniel and Wisenbaker 1987; Purdy 1981). The Suwannee tool kit includes a variety of scrapers, adzes, spokeshaves, unifacially retouched flakes, and blade-like flakes as well as bone and ivory foreshafts, pins, awls, daggers, anvils, and abraders (Austin 2001:23).

Following the Suwannee Horizon is the Late Paleoindian Horizon (8500-8000 BCE). The smaller Tallahassee, Santa Fe, and Beaver Lake projectile points have traditionally been attributed to this horizon (Milanich 1994). However, many of these points have been recovered stratigraphically from Late Archaic and Early Woodland period components and thus, may not date to this time at all (Austin 2001; Farr 2006). Florida notched or pseudo-notched points, including the Union, Greenbriar, and Hardaway-like points, may represent Late Paleoindian types, but these types have not been recovered from datable contexts and their temporal placement remains uncertain (Dunbar 2006a:410).

Archaeologists hypothesize that Paleoindians lived in migratory bands and subsisted by gathering and hunting, including the now-extinct Pleistocene megafauna. In addition, they likely trapped smaller animals such as mink, muskrat, and rabbit for their fur and medium sized mammals, such as deer, for food as well as raw materials (Dunbar 2016; Dunbar and Vojnovski 2007). It is likely that these nomadic hunters traveled between permanent and semi-permanent sources of water, such as artesian springs, exploiting the available resources. These watering holes would have attracted the animals, thus providing food and drink. In addition to being tied to water sources, most Paleoindian sites are close to good quality lithic resources. The settlement pattern consisted of the establishment of semi-permanent habitation areas and the movement of the resources from their sources of procurement to the residential locale by specialized task groups (Austin 2001:25).

Although the Paleoindian period is generally considered to have been cooler and drier, there were major variations in the inland water tables resulting from large-scale environmental fluctuations. There are two major theories as to why most Paleoindian materials have been recovered from inundated sites. The Oasis theory posits that due to low water tables and scarcity of potable water, the Paleoindians, and the game animals upon which they depended, clustered around the few available water holes that were associated with sinkholes (Neill 1964). Whereas, others believe that the Paleoindians gathered around river-crossings to ambush the large Pleistocene animals as they crossed the rivers (Waller 1970). This implies periods of elevated water levels. Based on the research along the Aucilla and Wacissa Rivers, it appears that both theories are correct, depending upon what the local

environmental conditions were at that time (Dunbar 2006b). During the wetter periods, populations became more dispersed because the water resources were abundant and the animals they relied on could roam over a wider range.

Some of the information about this period has been derived from the underwater excavations at two inland spring sites in Sarasota County: Little Salt Spring and Warm Mineral Springs (Clausen et al. 1979). Excavation at the Harney Flats Site in Hillsborough County has provided a rich body of data concerning Paleoindian life ways. Analysis indicates that this site was used as a quarry-related base camp with special use activity areas (Daniel and Wisenbaker 1987). It has been suggested that Paleoindian settlement may not have been related as much to seasonal changes as generally postulated for the succeeding Archaic period, but instead movement was perhaps related to the scheduling of tool-kit replacement, social needs, and the availability of water, among other factors (Daniel and Wisenbaker 1987:175). Investigations along the Aucilla and Wacissa Rivers, as well as other sites within the north Florida rivers, have provided important information on the Paleoindian period and how the aboriginals adapted to their environmental setting (Webb 2006). Studies of the Pleistocene faunal remains from these sites clearly demonstrate the importance of the animals not for food alone, but as the raw material for their bone tool industry (Dunbar and Webb 1996).

3.2 Archaic

Climatic changes occurred, resulting in the disappearance of the Pleistocene megafauna and the demise of the Paleoindian culture. The disappearance of the mammoths and mastodons resulted in a reduction of open grazing lands, and thus, the subsequent disappearance of grazers such as horse, bison, and camels. With the reduction of open habitat, the more solitary, woodland browser, white-tailed deer replaced the herd animals (Dunbar 2006a:426). The intertwined data of megafauna' extinction and cultural change suggests a rapid and significant disruption in both the faunal and floral assemblages. The Bolen people represent the first culture adapted to the Holocene environment (Carter and Dunbar 2006). Theirs included a more specialized toolkit and the introduction of chipped-stone woodworking implements.

Due to a lack of controlled excavations and the poor preservation of organic materials in the upland sites, our knowledge of the Early Archaic artifact assemblage is limited (Carter and Dunbar 2006; Milanich 1994). Discoveries at several sites indicate that bone and wood tools were used (Clausen et al. 1979; Doran 2002; Webb 2006). The archaeological record suggests a diffuse, yet well-scheduled, pattern of exploiting both coastal and interior resources. Since water sources were more numerous and larger than previously, the Early Archaic peoples sustained larger populations, occupied sites for longer periods, and performed activities requiring longer occupation at a specific locale (Milanich 1994:67).

During the Middle Archaic, wetter conditions prevailed, sea levels began to rise, and pine forests and swamps began to emerge (Watts et al. 1996). The climate was changed to one of more pronounced seasonality with warmer summers and colder winters and by 4000 BCE the climate became essentially the same as that of today (Watts et al. 1996:29). Miller (1998:68) suggests that when sea levels reached their current positions, the St. Johns River changed its riverine characteristics to become like a lake in the upper reaches and estuarine in the lower reaches. This allowed for the development of a wide resource base. Settlement became focused within coastal and riverine locales (Milanich 1994:64). The Mount Taylor period has been identified for the period 5000-2000 BCE (Milanich 1994). Subsistence was based on hunting, fishing, shellfish collecting, and plant gathering. Sites are generally located along the Atlantic coast, the upper reaches of the St. Johns River, and the Ocklawaha and Wekiva Rivers (Ste. Claire 1990; Weisman 1993; Wheeler et al. 2000). The theory that Archaic populations practiced a seasonal migration pattern between the interior and the coast has been called

into question as investigations have confirmed year-round occupation of some sites (Russo 1992, 1996b; Russo et al. 1993; Russo and Ste. Claire 1992; Ste. Claire 1990).

The archaeobotanical research at the Groves' Orange Midden and the Lake Monroe Outlet Midden confirms an environment like today (ACI/Janus Research 2001; Newsom 1994; Purdy 1994b). Most of the botanical remains were from wetland species common along the lake's margin, river swamp, and backwaters. Upland species were also utilized. Middens of mystery snail, apple snail, and mussel provide evidence of occupation and resource exploitation along the rivers of east and central Florida (Cumbaa 1976; Ellis et al. 1994; Fryman et al. 1978).

Mount Taylor sites include large base camps, smaller special-use campsites, burial areas, and extensive shell middens. The artifact inventory of the Mt. Taylor people includes stone projectile points, tools, and microliths, as well as tools and decorative items of shell, bone, and wood (ACI/Janus Research 2001; Purdy 1994a; Wheeler and McGee 1994a, 1994b). The large stemmed projectile points, especially the Newnan type, are diagnostic of this time. Other common point types include Hillsborough, Levy, Putnam, Alachua, and Marion (Bullen 1975). Silicified coral was more prevalent as a raw material (Milanich 1994) and thermal alteration of the stone became common (Ste. Claire 1987). Numerous shell and bone items indicate contact with coast.

One of the most interesting aspects of the Mount Taylor culture is evidence for mass burial interments in specially prepared areas within shell middens (Milanich and Fairbanks 1980). Such burials were found at Tick Island along the St. Johns River (Aten 1999; Bullen 1962; Jahn and Bullen 1978). Milanich (1994:81) suggests that Early and Middle Archaic peoples used aquatic environments for burial. The Early Archaic Windover Site contained primary and flexed burials within a peat pond. These were held in place with wooden stakes and the interments included grave goods such as textiles and worked bone, shell, and wood (Doran 2002). The Gauthier cemetery, situated on a palm island within a slough between a pond and Lake Poinsett, contained primary and flexed burials (Carr and Jones 1981; Sigler-Eisenberg 1984b).

Interior sites include the smaller lithic and ceramic scatter campsites that were most likely used for hunting or served as special use extractive sites for such activities as gathering nuts or other botanical materials (Ste. Claire 1989, 1990). The Tomoka Site is a complex of nine mounds and a surrounding village midden located near the confluence of the Tomoka and Halifax River. Occupants utilized estuarine and coastal resources as evidenced by the midden of coquina and oysters. No ceramics have been recovered from this site complex (Douglass 1882; Piatek 1992, 1994). The burial mound at Tomoka is one of the earliest in Florida (Piatek 1994). Russo (1996a:284) suggests that Florida's Archaic burial mounds were not the precursors to the extensive burial mound use seen in the more recent past, rather, they were short-lived, dead-end traditions.

Evidence from the Groves' Orange Midden indicates contact, either physically or through trade, with the Tampa Bay and possibly the Suwannee River valley areas (Purdy 1994a). The occupants of the Lake Monroe Outlet Midden obtained most of their chert from Ocala limestone (ACI/Janus Research 2001). More specifically, the materials were attributed to the Gainesville, Ocala, Lake Panasoffkee East, and Lake Panasoffkee West quarry clusters (Endonino 2007). Other evidence of trade is seen in the use of soapstone, which was imported from Georgia, South Carolina, and Virginia (Yates 2000). Soapstone transportation most likely occurred via canoe, and evidence for canoe usage is well-documented (Newsom and Purdy 1990; Purdy 1988; Wheeler et al. 2003).

By about 2000 BCE, fired clay pottery was introduced in Florida. The first ceramic types, tempered with fiber (Spanish moss or palmetto), are referred to as the Orange series. It was originally believed that the ceramics lacked decoration until about 1650 BCE when they were decorated with

geometric designs and punctations. Research has called that Orange chronology into question (Sassaman 2003). Based on a series of accelerator mass spectrometry (AMS) dates on soot from Orange Incised sherds from the middle St. Johns Valley and from radiocarbon dates on oyster and charcoal in association with Orange ceramics near the mouth of the river, all the various Orange ceramic types occur within the time span of roughly 2150-1650 BCE. The incidence of incising is also a function of site type as well as time; incising occurs more frequently at shell ring sites that were used for feasting (Saunders and Wrenn 2014). In addition, research by Cordell (2004) has documented the presence of sponge spicules in the Orange ceramic paste (the diagnostic trait of St. Johns wares) which suggest that the St. Johns ceramic tradition extends back to the beginning of ceramic use in the region (Sassaman 2003:11). The projectile point assemblage included the addition of the Clay, Culbreath, and Lafayette types (Bullen 1975).

There is little difference between Middle/Late Archaic and Orange populations except that there are more Orange sites and the density of sites is higher. Orange settlements were primarily located near wetland locales. The abundance of resources located in and near the wetlands permitted larger settlements. The adaptation to this environment allowed for a wider variety of resources to be exploited and greater variability in settlement patterns. Shellfish, fish, and other food sources were now available from coastal and freshwater wetlands resulting in an increase in population size.

Bridging the end of the Archaic and the beginning of the Formative stage is the Transitional period (1200 to 500 BCE), which was characterized by increased regionalism, population growth, and socio-cultural complexity (Bullen 1959, 1970). The diffusion of culture traits, resulting from the movements of small groups of people, led to the spread of several ceramic and tool traditions (Bullen 1959). The major changes in post-Transitional cultures cannot be attributed to environmental changes but rather the result of social, political, religious, and technological innovations introduced from elsewhere in the eastern U.S. (Miller 1998:76).

3.3 Formative

The period from about 500 BCE until 750 CE (Common Era) in this area is referred to as St. Johns I, which has been divided into three sub-periods: St. Johns I (500 BCE-100 CE), St. Johns Ia (100-500 CE), and St. Johns Ib (500-750 CE) based on characteristic ceramic types (Milanich 1994:247). There are two regional variants of this tradition: St. Marys to the north and Indian River to the south. The St. Marys Region is located at the mouth of the St. Johns and extends northward into Georgia (Russo 1992). Sites in this area contain a mixture of Georgia ceramics as well as St. Johns ceramics. At the southern end is the Indian River Region which was first defined by Rouse (1951). There is a higher prevalence of sand-tempered wares in this region. Malabar I is coeval with St. Johns I. Malabar II occurs at the same time as St. Johns.

Settlement patterns during this time were virtually the same as that seen for the earlier periods, i.e. along the coastal estuaries and larger rivers. The Twin Mounds Site faunal analysis suggests that there was a slight decrease in the dependence on freshwater shellfish during the St. Johns periods as opposed to the preceding Orange period (Weisman 1993). Based on that analysis, there was an increase in the use of reptilian resources. There was also a tremendous increase in the number of archaeological sites during this time. An apparent trend from St. Johns I through Ib times was a population shift into the northern part of the St. Johns River valley, possibly due to the need for more arable land (Milanich and Fairbanks 1980:158).

Village wares were almost all St. Johns Plain throughout this period. St. Johns Incised is associated with the early St. Johns I period. Deptford and Swift Creek pottery or copies are occasionally

present in St. Johns I and Ia period sites. St. Johns Cordmarked ceramics are associated with the St. Johns Ia period while Dunns Creek Red is associated with the St. Johns Ia and Ib periods. In her analysis of the ceramics from Edgewater Landing, Cordell (Russo et al. 1989:68) notes that through time, St. Johns Plain ceramics become sandier due to increased use of quartz sand as an aplastic agent.

Evidence of the continuous use of burial mounds begins at that time. Many of the burials were found in large central pits, probably the result of secondary interments. Some changes in the burial practices include the possible use of log tombs during the St. Johns Ia period as well as inclusion of Hopewellian-Yent complex exotic trade items (Milanich 1994:261). Much of the information on St. Johns I period burial practices have been obtained from the Ross Hammock Site in Volusia County (Bullen et al. 1967). This site complex consists of two large burial mounds and an extensive village midden located on the west shore of Mosquito Lagoon (Bullen et al. 1967:16). The Benton Mound dates to the St. Johns Ia period (Miller 1994). Other ceremonial activities associated with these sites include the "killing" of ceramic pots.

Year-round occupation of the coast and along the rivers occurred with special use-activity sites located in other locales, including short-term coastal campsites. Excavations at the Sligh and Lake Jessup South sites suggest that they served as villages or long-term encampments (Dickinson and Wayne 1996; Wayne and Dickinson 1993). The wide variety of tools and abundance of ceramics suggests a relatively sedentary group. Hunting, food preparation, and tool making were common site activities. The site pattern consists of small, probably individual household midden deposits with structural evidence limited to arcs of shallow post holes, often shell-filled, and fire pits (Dickinson and Wayne 1996:108). Hontoon Island has provided a wealth of data due to the preservation of many classes of artifacts within the inundated midden deposits. Evidence of an extensive wood-working tradition is noted by the numerous carved items recovered from the river as well as the debitage remaining from the carving activities (Purdy 1987). The faunal and botanical analyses suggested that the site was occupied on a year-round basis and that most of the resources were collected within 5-10 kilometers (3-6 miles) of the site (Newsom 1987; Wing and McKean 1987).

The survey of the Edgewater Landing tract recorded several shell midden deposits that date to this period (Johnson and Ste. Claire 1988). Excavations conducted at two of the sites indicated occupation during the St. Johns Ia and St. Johns Ib periods. Both sites were characterized as short-term camps established to harvest oysters and hardshell clams. The sites were occupied irregularly throughout the year, but contained evidence indicating that the sites were utilized during all seasons of the year (Russo et al. 1989). The Seminole Rest site is a large quahog clam-processing center located along Mosquito Lagoon (Horvath 1995). The faunal analysis indicated that the site was used throughout the year, but did not appear to be occupied on a year-round basis (Quitmyer 1995). Although located along the lagoon's shore, fish made up only a small portion of the diet, less than 15%, and mammals even less (Kozuch 1995).

3.4 Mississippian

The St. Johns II period has been divided into three sub-periods: St. Johns IIa (750-1050 CE), St. Johns IIb (1050-1513 CE), and St. Johns IIc (1513-1565 CE). The presence of St. Johns Check Stamped pottery marks these periods. St. Johns II carries on the tradition and is marked only by the introduction of check-stamped pottery (Goggin 1952:70). Occupation of riverine and coastal shell middens continued, although Miller (1998:80) notes that there is a relative increase in the number of non-riverine and non-coastal sites, perhaps due to locating sites in more agriculturally suited locales.

Hunting and gathering remained important but the dependence upon cultivated crops such as maize, squash, and gourds increased in some areas. The use of gourds as domesticates is still being studied as there is no evidence for cultivation even though gourds and squashes have been around for thousands of years prior to this period (Newsom et al. 1993). In the upper St. Johns basin, the practice of horticulture was not adopted because the wetland ecology and subsistence strategies were different (Russo 1984; Sigler-Eisenberg 1984a; Sigler-Eisenberg et al. 1985). At the Gauthier Site, fish and aquatic turtles were the primary subsistence items, with relatively little reliance upon terrestrial game or freshwater shellfish (Sigler-Eisenberg 1984b).

There was an increase in the number and size of villages during the St. Johns IIa period suggesting population expansion. A ranked society may have evolved as evidenced by the differential burial customs. No longer were all people interred in burial mounds. Deagan (1978:109) notes that around 1000 CE a population shift from the more southern and southwestern areas into the northern area. As is evidenced by changes in relative frequencies of burial mounds in the areas over time. Excavations of several burial mounds revealed a new pattern in that the burials were placed on their backs with their heads or feet pointing toward the mound center (Jennings et al. 1957; Willey 1954).

The St. Johns IIb period (ca. 900-1250/1300 CE) is characterized by the adoption of some Mississippian traits into the ceremonial system as well as the presence of St. Johns Simple Stamped ceramics. The Mississippian lifestyle, however, never became dominant, possibly because the soils were not suitable for full agricultural pursuits. The presence of platform mounds at the ceremonial centers suggest a more complex socio-political organization. These centers include the Mill Cove Complex near the mouth of the St. Johns River and Mt. Royal just north of Lake George (Ashley 2012). Copper beads and ornaments, as well as greenstone celts, have been recovered from several sites, indicating contact with the Mississippian world. Mt. Royal has been considered a center of dispersal in the marine shell trade due to the tremendous quality of unmodified whelk shells recovered from the mound (Ashley 2005). By around 1300 CE, influence from the Mississippian world waned, probably due to the fall and abandonment of the Macon Plateau to the north and the disruption of the existing interaction networks. At that time, the major sites were apparently abandoned and the St. Johns II people moved further south, up the St. Johns River. However, within two centuries, the introduction of corn farming and the shift from long-distance trading to territorial raiding created the volatile landscape that was encountered by the Europeans when they first arrived (Ashley 2012:125).

The St. Johns IIc period is marked by the introduction of European artifacts. Three Native American ethnic groups were known to inhabit east central Florida at the time of Spanish contact: the Ais, the Mayaca, and the Jororo. The Ais lived along the Atlantic Coast and were closely involved with the Spanish. They inhabited the coastal strand and Indian River areas. They apparently mixed indigenous hunting/gathering/fishing economy with the salvaging of Spanish shipwrecks (Milanich 1995:64-65). The Mayaca occupied eastern Lake, western Volusia, and Seminole counties. The Jororo occupied the area of Orange and Seminole Counties, extending southward into Polk and Highlands Counties (Milanich 1995). They pursued a hunting-gathering-fishing economy (Newsom 1987). Although these Indians apparently continued the St. Johns tradition, they did not share the same Timucuan language as the St. Johns people further north (Milanich 1995).

3.5 Colonialism

The cultural traditions of the native Floridians ended with the advent of European expeditions to the New World. The initial events, authorized by the Spanish Crown in the 1500s, ushered in devastating European contact. After Ponce de Leon landed near St. Augustine in 1513, Spanish explorations were confined along the west coast of Florida and European contact along the east coast

was left to a few shipwrecked sailors from treasure ships that sailed through the Straits of Florida on their way to Spain. Cape Canaveral was a landmark for these explorers and sailors. The French established Fort Caroline, near today's Jacksonville, to promote their interests in the New World. The need to protect the treasure galleons led Spain to remove the French from the region. Pedro Menéndez de Avilés led the Spanish fleet in its conquest of Fort Caroline and the destruction of the French.

During Spain's first period of occupancy (1565-1763), it failed to establish permanent settlements in the project area. Located on the fringe of Spanish activity centered in St. Augustine, Orange County was too far removed for Spain to exert political control (Milanich and Fairbanks 1980). Missionization of the Jororo and Mayaca began in the late 1600s, and in 1728 Joseph de Bullones wrote to the king that the Jororo were "gone" (Hann 2003:132). Evidence of European contact with the Jororo is seen at the Philip and Goodnow mounds where glass beads and iron scissors have been recovered (Milanich 1995). Due to the attempts of the Spanish military and missionaries to alter the traditional lifeways, by the end of the seventeenth century these aboriginal populations were virtually extinct.

The area that now constitutes the State of Florida was ceded to England in 1763 after two centuries of Spanish possession. England governed Florida until 1783, when the Treaty of Paris returned Florida to Spain. Spanish influence was nominal during this second period of ownership. Prior to the American colonial settlement of Florida, portions of the Creek Nation and remnants of other Indian groups from Alabama, Georgia, and South Carolina moved into Florida and repopulated the vacuum created by the decimation of the aboriginal inhabitants. The Seminoles, as these migrating groups of Indians became known, formed at various times loose confederacies for mutual protection against the new American Nation to the north (Tebeau 1980).

3.6 Territorial and Statehood

The bloody conflict between the Americans and the Seminoles over Florida first came to a head in 1818, and was subsequently known as the First Seminole War. Florida became a United States Territory in 1821 because of the war and the Adams-Onis Treaty of 1819. Andrew Jackson, named provisional governor, divided the territory into St. Johns and Escambia Counties. At that time, St. Johns County encompassed all of Florida lying east of the Suwannee River including present day Sumter County, and Escambia County included the land lying to the west. In the first territorial census in 1825, some 5077 persons reportedly lived east of the Suwannee River; by 1830 that number had risen to 8956 (Tebeau 1980:134).

Even though the First Seminole War was fought in north Florida, the Treaty of Moultrie Creek in 1823, at the end of the War, was to affect the settlement of South Florida. The Seminoles relinquished their claim to the whole peninsula in return for an approximately four-million-acre reservation south of Ocala and north of Charlotte Harbor (Mahon 1985). The treaty never satisfied the Indians or the Anglo-Americans. The inadequacy of the reservation and desperate situation of the Seminoles living there, plus the mounting demand of the whites for their removal, soon produced another conflict.

By 1835, the Second Seminole War was underway. Mosquito County, created in 1824, encompassed present-day Osceola, Lake, Orange, Seminole, Brevard, and Volusia Counties as well as parts of several other counties. Mosquito County was sparsely occupied with mostly sugar plantations along the rivers near the coast. In 1835, the Territory's legislative council established the county seat at John Bunch's plantation in New Smyrna. However, before the first session could be held, the threat of Indian attacks forced the county government to move to St. Augustine, the seat of St. Johns County, for safety. During the war, court was held concurrently with that for St. Johns County (Robison and Andrews 1995).

The Second Seminole War lasted until 1842, when the federal government decided to end the conflict by withdrawing troops from Florida. Some of the battle-weary Seminoles were persuaded to migrate west where the federal government had set aside land for Native American inhabitation. By 1843, 3,824 Seminoles were transported west. However, those who wished to remain were allowed to do so, but were pushed further south into the Everglades and Big Cypress Swamp (Mahon 1967:321). This area became the last stronghold for the Seminole. The surveys, military trails, and forts resulting from the war provided invaluable assistance in the settlement of Florida.

Encouraged by the passage of the Armed Occupation Act in 1842, which was designed to promote settlement and protect the Florida frontier, Anglo-American pioneers and their families moved south through Florida. During the nine-month period the law was in effect, 1,184 permits were issued totaling some 189,440 acres (Covington 1961:48). Early settlers reported encountering many Native-Americans in the area of what would later be known as Lake County, with some villages housing as many as 200 residents (Allen 1936:2). Homesteading began in Lake County in the 1850s; however widespread settlement was not prevalent until after the Civil War (Allen 1936:3-4).

In 1845, the Union admitted the State of Florida, with Tallahassee as the state capital. The poorly conceived name of Mosquito County was changed to Orange County. New boundaries were established to encompass present-day Seminole and Volusia Counties and parts of Brevard, Flagler, and Lake Counties (Fernald and Purdum 1996). During this period, the federal government initiated surveys near the project area. Township 18 South, Range 27 East was surveyed by C.C. Tracy in 1848 and J.M. Gould in 1848/9. Tracey described the general area as 2nd rate open rolling pine and Gould described it as 3rd rate pine and ponds (State of Florida 1848:195, 1848/9:144, 164, 170). The *Plat* shows the northern portion of the APE within a lake, and no historic features such as homesteads, roads, or forts, are shown proximate to the property (State of Florida 1849) (**Figure 3.2).**

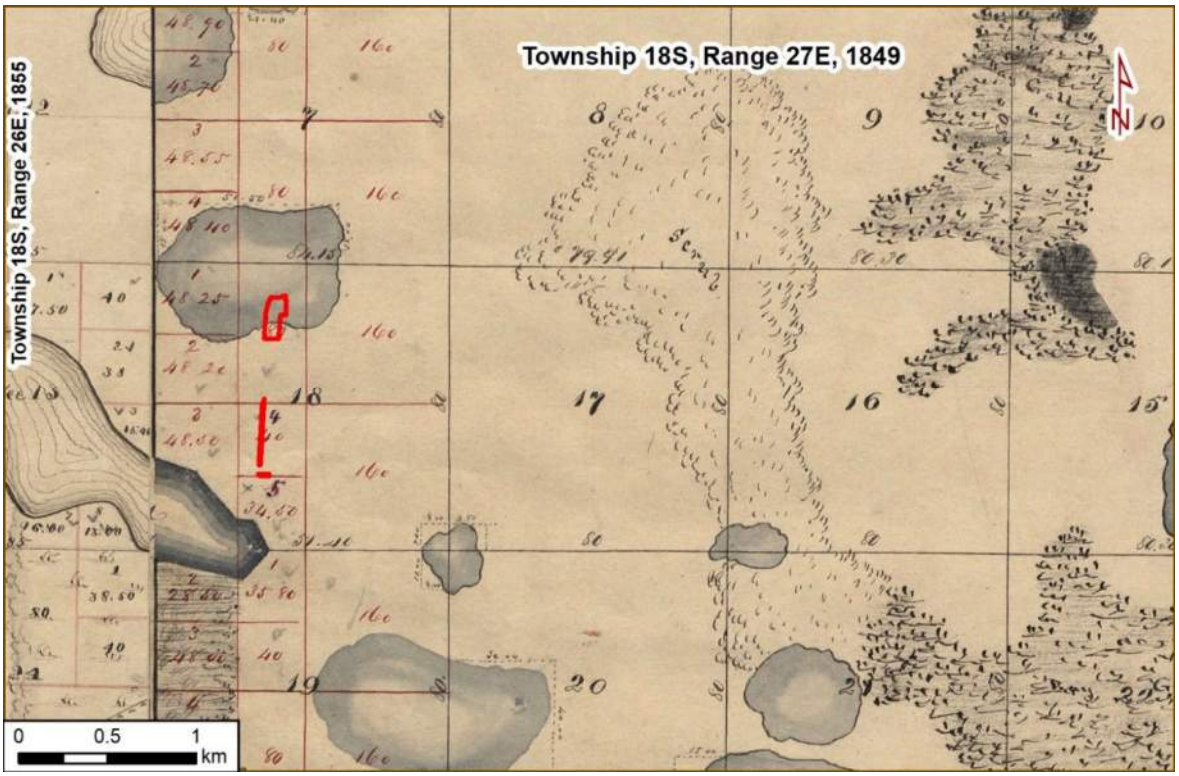

Figure 3.2. 1849 *Plat* showing the project area.

In December of 1855, the Third Seminole War, or the Billy Bowlegs War (1855-1858), started as a result of pressure placed on Native Americans remaining in Florida to emigrate to the west. The war started in what is now Collier County and served to renew state and federal interest in the final elimination of the Seminoles from Florida. Military action was not decisive in this Third Seminole War; therefore, in 1858 the U.S. Government resorted to monetary persuasion to induce the remaining Seminoles to migrate west. A total of 165 Seminoles accepted money in exchange for relocation. On May 8, 1858, the Third Seminole War was officially declared at an end (Covington 1982:78-80).

3.7 Civil War and Aftermath

In 1861, Florida followed South Carolina's lead and seceded from the Union as a prelude to the Civil War. Florida had much at stake in this war as evidenced in a report released from Tallahassee in June of 1861. It listed the value of land in Florida as $35,127,721 and the value of slaves at $29,024,513 (Dunn 1989:59). Even though the coast of Florida experienced a naval blockade during the war, the interior of the state saw very little military action. One of the major contributions of the state to the war effort was in the supplying of beef to the Confederate Government. The blockade along the coast made it very difficult to ship cattle from Florida to Cuba. Therefore, the ranchers from Florida herded their cattle to Charleston, South Carolina and sold them to the Confederate Government. The Confederate Government estimated that three-fourths of the cattle which Florida supplied to the Confederacy originated from Brevard and Manatee Counties (Shofner 1995b:72). The war lasted until 1865.

The end of the Civil War stimulated growth in the area. Southerners sought new homes to escape the unrest in the neighboring ex-Confederate states, and the war brought prosperity to a large number of Northerners who sought vacation homes in warmer climates. Immediately following the war, the South underwent a period of "Reconstruction" to prepare the Confederate States for readmission to the Union. The program, administered by the U.S. Congress, established the Homestead Act of 1866, which opened public land in Florida to homesteaders. However, ex-confederates were ineligible; only freed slaves and loyal white settlers were eligible for the 80-acre farms. Florida officially returned to the Union on July 25, 1868 (Tebeau 1971:251). In 1872, William Whitcomb was deeded the land within the APE (State of Florida n.d.:227).

During the Reconstruction period, Florida's financial crisis, born of pre-war railroad bonded indebtedness, led Governor William Bloxham to search for a buyer for an immense amount of state lands. Bloxham's task was to raise adequate capital in one sale to free from litigation the remainder of state lands for desperately needed revenue. In 1881, Hamilton Disston, a Philadelphia investor and friend of Governor Bloxham, formed the Florida Land and Improvement Company which purchased four million acres of swamp and overflowed land for one million dollars from the State of Florida in order to clear the state's debt. This transaction, which became known as the Disston Purchase, enabled the distribution of large land subsidies to railroad companies, inducing them to begin extensive construction programs for new lines throughout the state. Hamilton Disston and the railroad companies in turn sold smaller parcels of land (Tebeau 1971).

The railroad, with its ability to rapidly transport produce and people, had an immediate impact on the entire region. New residents and the increased income due to the sale of products to distant markets prompted the creation of new communities, which prospered. Land for citrus groves grew more accessible, and adequate and economical transportation for citrus crops and naval stores destined for northern markets became a reality.

The late 1870s, to early 1880s, saw the development of communities in Lake County. Tavares, the present-day seat of Lake County, was named in 1875 by its founder, Alexander St. Clair Abrams, for a Spanish ancestor. Abrams originally planned the town as a tourist community, and spent more than $500,000 building a hotel, lumber mills, stores, a cigar factory, and in financing railroads (Federal Writers' Project [FWP] 1939:531). In 1888, a large part of the town was destroyed by fire, and later, after a destructive freeze, the town was partially abandoned for a few years (FWP 1939:530). In 1876, the town name Umatilla, was registered with the U.S. Land Office in Gainesville (City of Umatilla 2018). In 1874, the first schoolhouse was built and in 1878, a post office was established (Bradbury and Hallock 1962; City of Umatilla 2018). The town had been founded in 1856 by Nathan J. Trowell (City of Umatilla 2018).

The St. Johns and Lake Eustis Railroad, connecting Astor to Fort Mason, became Lake County's first railroad line. Tracks were extended to Tavares, Lake Park, and finally Leesburg in 1882. Two years later, a narrow gauge track was constructed between Ocala and Leesburg by way of Lady Lake. This line was then extended to Okahumpka, Lakeland, and Tampa, before reverting back to standard gauge in 1896 (Florida Preservation Services [FPS] 1986:45). As a result of the stimulus caused by the capital of the railroads and the improved transportation systems, central Florida prospered. The town of Umatilla also prospered as a result of the railroad line. According to the Florida State Gazetteer and Business Directory of 1886-87, the population of the town was 200 with seven stores, two saw mills, a grist mill, church organization, and good schools (Lake County Historical Society 2018).

Lake County was carved from portions of Orange and Sumter Counties on May 27, 1887. It was the 43rd county to be established in Florida (Morris 1995:138). The name Lake County was chosen due to the abundance of lakes (1,400) within the county's boundaries. County Commissioners were appointed from throughout the area, and after meeting successively in Bloomfield (the temporary seat), Orlando, Sumterville, and other towns, late in the 1880s the Lake County Commission designated Tavares the county seat (Kennedy 1988:24; Lake County Public Records n.d.: 1, 32, 36, 40).

Many small communities developed largely as lumber and turpentine towns along the route of the railroads. From the 1870s until World War II, turpentine and lumber played a major role in the development of Lake and surrounding counties. Lumber, mill, crate, and turpentine companies thrived, and mill towns were built. Harvesting of naval stores brought turpentine camps. These camps might encompass a turpentine still, living quarters, buildings for producing barrels and pots, maintenance sheds for wagons, along with mule barns, a commissary, etc. Workers cutting "catfaces" onto pine trunks supervised by "woodsriders" became a common scene within the area (Kennedy 1988:25). Giant cypress trees, a major portion of Lake County's massive lumbering industry, were marketed through Volusia County and rafted down the St. Johns River (Dreggors and Hess 1989:iii).

Railroads in the area, which were originally independent, eventually consolidated into the Plant system and, in 1902 all of the Plant system holdings were consolidated with the Atlantic Coast Line (Robison and Andrews 1995:166-67; Mann 1983:68). These railroads allowed the rapid entry of tourists and permanent settlers, while facilitating the export of products to northern markets. The railroad also helped to foster the growth of businesses directly and indirectly associated with the tourist and fruit industries such as ice plants, packing houses, and canneries (Shofner 1995a:106-113).

The town of Clermont was established between Lake Minnehaha and Lake Minneola as early as 1884. The Clermont Improvement Company was the primary developer and promoter of the community, with A.F. Wrotnoski as the manager. Clermont received its name from Wrotnoski's birthplace, Clermont, France. This area became known as the "Gem of the Hills," due to the number of lakes and green hills above (Morris 1995:52). The post office was established on January 21, 1885, and

soon after the community began developing (Bradbury and Hallock 1962:17). In addition to Clermont, the towns of Taylorville, now known as Groveland, and Mascotte were also founded during the 1880s.

The Great Freeze of 1894-95 severely impacted the citrus industry in the region. In 1894, growers in the state shipped more than one billion oranges to markets in the nation; only three percent of that amount was shipped the following year. The freeze in 1894-95 not only destroyed the fruit on the trees, but also killed the trees. The region entered a period of depression with many residents leaving Florida, thereby causing the dissolution of many small towns. The freeze permanently moved Florida's citrus belt southward and created ghost towns seemingly overnight. Growers who remained diversified into cattle, poultry, and truck crops, including watermelons, cantaloupes, cabbage and cucumbers.

Over the twenty years following the freeze, small growers increasingly joined together to form cooperative associations and packing houses to jointly market their produce (FPS 1986:34-37). Leesburg served as the shipping center for the county, and watermelon and citrus were transported via the Seaboard Coast Line Railroad to points north (Kennedy 1988:133). In the 1928 season alone, 5805 acres of watermelons were planted in Lake County, for a gross return of $752,385.00 (Kennedy 1988:128). Annual citrus production in Lake County also increased drastically from 147,000 boxes in 1895, to 13,000,000 boxes in 1922 (Elliot 1994:4).

3.8 Twentieth Century

The turn of the century prompted optimism and excitement over growth and development. With increased financial resources and machinery, extensive reaches of land were now available for development. An improving road system, increasing services, and a growing population were additional significant features of the era. The first twenty years of the new century witnessed the advent of progressivism in which governments expanded their services beyond the traditional limits of the previous century.

Lake County became host to corporations such as the American Land and Mining Company of New York, which initiated operations in 1908. The Richmond China Clay Corporation operated in the production of fine chinaware from Lake County's natural clay deposits of fuller's earth. The Good Roads Movement stimulated construction of a number of hard-surfaced roads, and the Dixie Highway, built between 1916 and 1918, encouraged travel and commerce between Lake County and adjoining areas (Elliott 1994:3). During this period, Lake County was also home to two of the largest lumber mills in the state of Florida (Allen 1936:20).

Florida experienced an unprecedented period of population growth during the land boom of the 1920s, following World War I. Stimulated by a dramatic increase in real estate transactions and the widespread perception of cheap land, Florida's population swelled by 300,000 between 1923 and 1925. New construction of roads, bridges, railroads, airports, and other elements of the transportation network accompanied this growth (Gannon 1996:290-293).

By 1926-27, the Florida real estate market collapsed. Massive freight car congestion from hundreds of loaded cars sitting in railroad yards caused the Florida East Coast Railway to embargo all but perishable goods in August of 1925. The embargo spread to other railroads throughout the state, and, as a result, most construction halted. The 1926 real estate economy in Florida was based upon such wild land speculation that banks could not keep track of loans or property values. By October, rumors were rampant in northern newspapers concerning fraudulent practices in the real estate market in south Florida. Confidence in the Florida real estate market quickly diminished, investors could not sell lots, and depression hit Florida earlier than the rest of the nation. At the same time, the agricultural industry

suffered a devastating infestation by the Mediterranean fruit fly, which endangered the future of the entire citrus industry (Mormino and Pizzo 1983:167). To make the situation even worse, two hurricanes hit south Florida in 1926 and 1928. The hurricanes destroyed confidence in Florida as a tropical paradise and created a flood of refugees fleeing northward. Soon after, the October 1929 stock market crash and the onset of the Great Depression left the area in a state of stagnation.

The 1930s saw the closing of mines and mills and widespread unemployment. The decline in citrus production echoed to the railroad industry, as the need for freight shipping was very low. Prices for the citrus that did survive were at an all time low and the residents came up with alternative solutions for survival. By the mid-1930s, federal programs implemented by the Roosevelt administration started employing large numbers of workers, helping to revive the economy of the state. The programs, aimed at pulling the nation out of the Depression, were instrumental in the construction of parks, bridges, and public buildings. One of these forms of assistance was the Works Progress (later Projects) Administration (WPA) which was established by the Emergency Relief Appropriation Act of 1935. The WPA provided funding for local, non-federal projects by supplying money to hire local workers to perform the construction.

Florida did not truly begin to recover from the effects of the Depression until the onset of America's involvement in World War II in the early 1940s. Florida railroads were used to move soldiers, munitions and wartime supplies through the many newly established military installations throughout Florida (Turner 2003:136). Overseas travel was suspended and rations were placed on the use of gas resulting in a revival of passenger rail travel. By 1942, ACL revenues increased to over $115 million (Turner 2003:136). However, following the war automobile travel increased to new heights and the revival of the rail was at an end.

After World War II, the incoming servicemen and women renewed the area economy. Federal roads, channel building, and airfield construction for the wartime defense effort brought numerous Americans into Florida. As World War II ended, Florida experienced a population boom during which the state's population increased from 1,897,414 to 2,771,305 from 1940 to 1950 (Tebeau 1971:431). After the war, car ownership increased, making the American public more mobile and vacations inexpensive. Many who had served at Florida's military bases during World War II returned with their families to live. As veterans returned, the trend in new housing focused on the development of small tract homes in new subdivisions bordering larger cities.

Development and settlement patterns over the latter half of the twentieth century have led to increasing numbers of automobiles and asphalt, an interstate highway system, suburban sprawl, and strip development along major state highways. By the late 1980s, Lake County was Florida's second largest producer of citrus. The Christmas Day freeze of 1983, followed by additional freezes in 1984, 1985, and 1989, dealt the industry a crippling blow, from which the region never fully recovered. As of 1994, only 20 percent of the original citrus acreage was replanted (Peter 1994:133).

Today, Lake County is the 18th most populated county in the state. Between the years 1980 and 1990, the population increased 45%, between 1990 and 2000, it increased 38%, and between 2000 and 2010, it increased 41%. In 2017, the population estimate was 331,724. The three largest industry sectors in the county are trade, transportation, and Utilities (21.6%), Education and health services (19.3%), and government (14.1%) (Enterprise Florida 2018).

3.9 Project Area Specifics

A review of the aerial photographs available from the Publication of Archival and Museum Materials (PALMM) and the USGS quadrangle maps indicate that portions of APE had been cleared and planted in citrus by as early as 1941 (USDA 1941) (**Figure 3.3**). During the 1940s, Jordan Demuth used what today is Umatilla Municipal Airport, as his private airfield. In 1942, the field was deeded to the City of Umatilla and several local aircraft owners also utilized the airfield. Additionally, the U.S Navy used the airport in support of the Pine Castle and Lake George bombing ranges and the Harry-Ana Children's hospital would fly in patients and doctors (City of Umatilla 2011:2.1-2.2). In 1948, the Umatilla Municipal Airport was opened to the public (AirNav.com 2018) and, while the runway is not apparent on the 1947 aerial, it appears that the area has been cleared in preparation for airport construction (USDA 1947). In the 1950s, clay was spread at the airport (City of Umatilla 2011:2.2). By 1958, the northernmost portion of the APE is all grove with the exception of a small area immediately adjacent to East Lake (USDA 1958). The 1965 and 1970 photorevised USDA maps and the 1971 aerial photograph show the area around the airport as groves (USDA 1971; USGS 1965a-b).

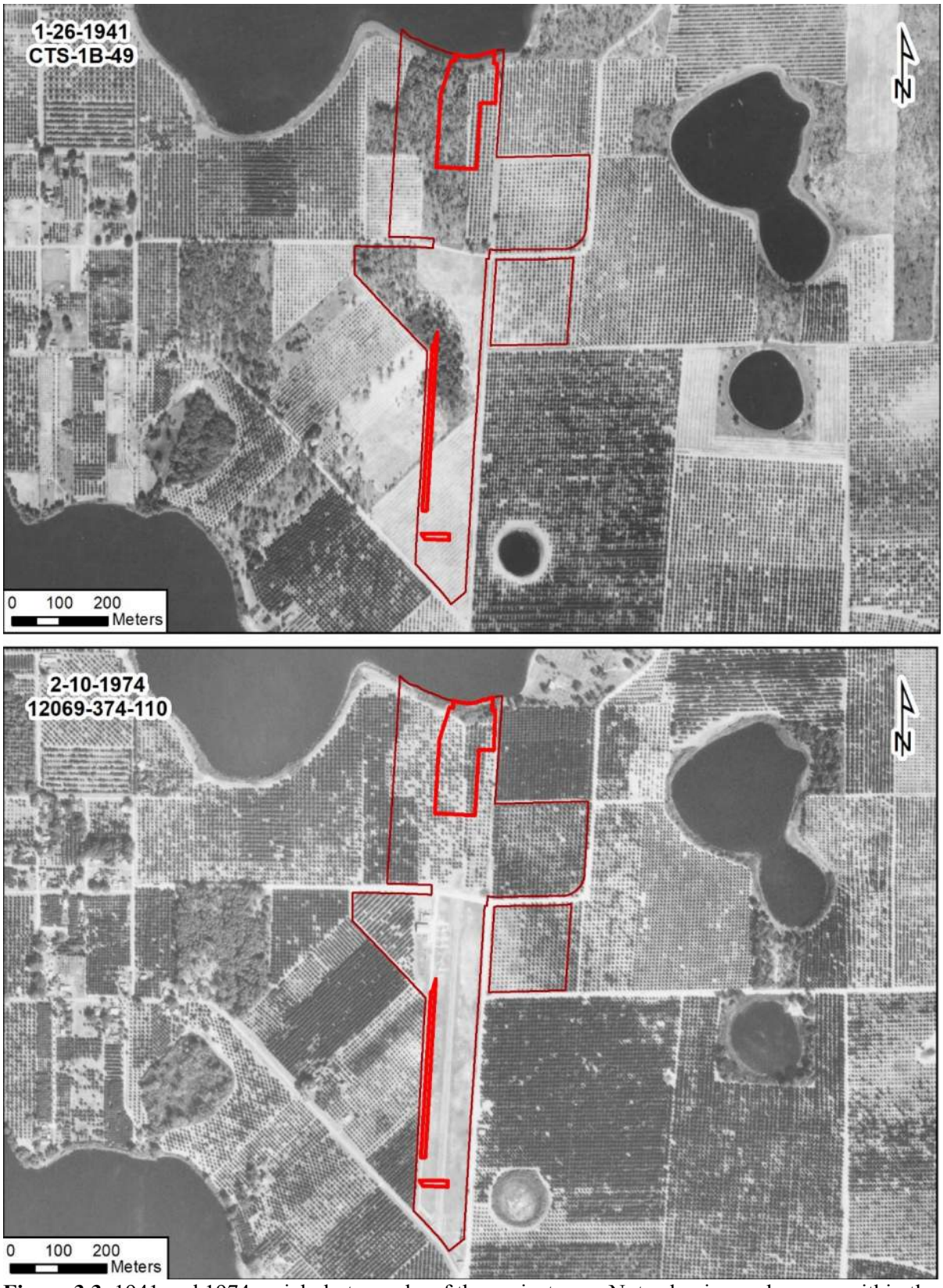

Figure 3.3. 1941 and 1974 aerial photographs of the project area. Note clearing and groves within the APE.

4.0 RESEARCH CONSIDERATIONS AND METHODOLOGIES

4.1 Background Research and Literature Review

A review of archaeological and historical literature, records and other documents and data pertaining to the project area was conducted. The focus of this research was to ascertain the types of cultural resources known in the project area and vicinity, their temporal/cultural affiliations, site location information, and other relevant data. This included a review of sites listed in the NRHP, the FMSF, cultural resource survey reports, published books and articles, and historic aerial photographs. The FMSF information used in this report dates from October 2018, which is the most recent edition. However, according to FMSF staff, input may be a month or more behind receipt of reports and site files. An informal interview was conducted with Matthew Humphrey of GAI Consultants. He provided deep core data and subsurface disturbance information and served as a safety escort for ACI field personnel.

A review of archaeological and historical literature, records, and other documents and data pertaining to the APE was conducted. The focus of this research was to ascertain the types of cultural resources known in the project area and vicinity, their temporal/cultural affiliations, site location information, and other relevant data. This included a review of sites listed in the NRHP, the FMSF, cultural resource survey reports, published articles, and unpublished manuscripts and maps.

4.2 Archaeological Considerations

Background research revealed that no archaeological sites have been recorded within the APE and two sites, 8LA02116 and 8LA2117, have been recorded within two miles (**Figure 4.1; Table 4.1**). Both are small lithics scatters; three lithic waste flakes were recovered from site 8LA02116 and two flakes from site 8LA02117. The sites, located to the northwest of the APE, were discovered during a survey of SR19 (Janus 1998). According to the State Historic Preservation Officer (SHPO), the sites are ineligible for NRHP listing.

Table 4.1. Archaeological sites within two miles of the APE.

FMSF #	SITE NAME	SITE TYPE	CULTURE	REFERENCE	SHPO EVAL
8LA02116	Sinkhole	Artifact scatter	Prehistoric	Janus 1998	Ineligible
8LA02117	Yancy	Lithic scatter	Prehistoric	Janus 1998	Ineligible

In addition to the survey of SR 19 (Janus 1998), only one other archaeological survey has been conducted within one mile of the APE (**Table 4.2**). This project, conducted in 2011 was a survey of the Cadwell Park Drainage Improvement Project (Bamat 2011).

Table 4.2. Previous archaeological surveys within one mile of the APE.

REFERENCE	PROJECT
Janus 1998	CRAS, State Road 19, PD&E Study from CR420W to CR42W, Lake County, Florida
Bamat 2011	Phase I Archaeological Survey, Proposed Cadwell Park Drainage Improvement Project, City of Umatilla, Lake County, Florida

In general, survey reports and countywide assessments similarly illustrate that above all factors, proximity to freshwater is a key to aboriginal site location. Water sources include rivers, lakes, ponds, wet prairies, marshes, springs, as well as smaller seep type springs and seasonally ponded depressions. In their assessment of Marion County, the Withlacoochee Regional Planning Council (WRPC) researchers found that the average site distance from a permanent source of potable water is 281 m (927 ft). The most common site locations are near lakes and ponds (51%) and rivers (38%) (WRPC 1981). Conversely, numerous cultural resource assessment surveys have served to illustrate that in the absence of freshwater, or a seasonal water source, no prehistoric sites are found.

In addition to water, relative elevation is another important predictive factor. Most aboriginal sites are situated on topographic highs relative to the water source. Thus, the elevated margins of lakes and ponds, and the slopes of small ridges and knolls proximate to a wetland, are correlated with aboriginal site occurrence. The type of vegetation community, soils, and presence of rock outcrops containing raw materials suitable for tool manufacture are among the other environmental factors demonstrated to relate to prehistoric site location. Numerous surveys have been conducted in Lake County and nearby Sumter County recording almost 200 sites, most of which were located on the better-drained soils proximate to water (ACI 1999a, 1999b, 2001, 2002, 2003a, 2003b, 2004a, 2004b, 2011, 2015, 2016a, 2016b, 2016c, 2016d, 2016e).

In applying the known site location predictive factors to the APE, it was concluded that the areas surrounding the wetland features had moderate to high potential for aboriginal site occurrence. The types of sites expected include small artifact or lithic scatter type-sites, which would be representative of special-use activity sites established to utilize the locally available resources. The discovery of large habitation and/or ceremonial sites was considered unlikely. In addition to aboriginal archaeological sites, the potential for yet unrecorded historic period archaeological sites were assessed. Historical documents and literature, including the nineteenth century federal surveyor's plats and field notes, historic USGS quadrangle maps, and historic aerial photographs were reviewed (State of Florida 1848, 1848/9, 1849; USDA 1941, 1947, 1958, 1974; USGS 1965a-c). Given the results of the historic research, no nineteenth or twentieth century homesteads, forts, military trails, or Indian encampments were expected.

4.3 Historical Considerations

Examination of the FMSF indicated that no historic resources are recorded within the property; none is listed in the Property Appraiser's data (Baker 2018). A review of the aerial photographs and USGS quadrangle maps revealed no structures on the property from 1941 until 1974 (USDA 1941, 1947, 1958, 1974; USGS 1965a-c).

4.4 Field Methodology

The FDHR's Module Three, Guidelines for Use by Historic Professionals, indicates that the first stage of archaeological field survey is a reconnaissance of the project area to "ground truth," or ascertain the validity of the predictive model (FDHR 2003). During this part of the survey, the researcher assesses whether the initial predictive model needs adjustment based on disturbance or conditions such as constructed features (i.e., parking lots, buildings, etc.), underground utilities, landscape alterations (i.e., ditches and swales, mined land, dredged and filled land, agricultural fields), or other constraints that may affect the archaeological potential. Additionally, these Guidelines indicate that non-systematic "judgmental" testing may be appropriate in urbanized environments where pavement, utilities, and constructed features make systematic testing unfeasible; in geographically restricted areas such as proposed pond sites; or within project areas that have limited high and moderate

probability zones, but where a larger subsurface testing sample may be desired. While predictive models are useful in determining preliminary testing strategies in a broad context, it is understood that testing intervals may be altered due to conditions encountered by the field crew at the time of survey.

Planned archaeological field methodology consisted of a reconnaissance of the APE followed by systematic and judgmental subsurface shovel testing placed at 25 and 50 m (82 and 164 ft) intervals, as well as judgmentally. Shovel tests were circular and measured approximately 50 centimeters (cm) in diameter by at least 1 m in depth, unless precluded by natural impediments such as water, clay, and limestone. The soil removed from the shovel tests was screened through .64 cm (.25 in) mesh hardware cloth to assure the recovery of any artifacts. The locations of all shovel tests were recorded on an aerial photograph and, following the recording of relevant data such as environmental setting, stratigraphic profile, and artifact finds, all shovel tests were backfilled.

Historic field methodology consisted of a survey of the project APE to determine the location of all historic properties believed to be 50 years of age or older, and to ascertain if any resources within the project APE could be eligible for listing in the NRHP. If found, an in-depth study of each identified historic resource would have been conducted, photographs taken, and the information needed for the completion of FMSF forms gathered. In addition to architectural descriptions, each historic resource would have been reviewed to assess style, historic context, condition, and potential NRHP eligibility.

4.5 Laboratory Methods and Curation

There were no cultural materials recovered, thus no laboratory methods were used. Project-related materials will be maintained at ACI's Sarasota office (P18113) unless the client requests otherwise.

4.6 Inadvertent/Unanticipated Discoveries

Occasionally, archaeological deposits, subsurface features or unmarked human remains are encountered during the course of development, even though the project area may have previously received a thorough and professionally adequate cultural resources assessment. Such events are rare, but they do occur. In the event that human remains are encountered during the course of development, the procedures outlined in Chapter 872, *FS* must be followed. However, it was not anticipated that such sites would be found during this survey.

In the event such discoveries are made during the development process, all activities in the immediate vicinity of the discovery will be suspended, and a professional archaeologist will be contacted to evaluate the importance of the discovery. The area will be examined by the archaeologist, who, in consultation with staff of the Florida SHPO, will determine if the discovery is significant or potentially significant. In the event the discovery is found to be not significant, the work may immediately resume. If, on the other hand, the discovery is found to be significant or potentially significant, then development activities in the immediate vicinity of the discovery will continue to be suspended until such time as a mitigation plan, acceptable to SHPO, is developed and implemented. Development activities may then resume within the discovery area, but only when conducted in accordance with the guidelines and conditions of the approved mitigation plan.

5.0 SURVEY RESULTS AND CONCLUSIONS

5.1 Archaeological

Archaeological field survey included surface reconnaissance, systematic, and judgmental subsurface testing. This resulted in the excavation of 37 shovel tests; 18 tests at 25 m (82 ft) intervals in the former citrus grove, 18 tests at approximately 50 m (164 ft) intervals adjacent to and at the base of the runway, and one judgmental test also at the base of the runway (**Figure 5.1**). A reasonable and good faith effort was made per the regulations laid out in 36 CFR § 800.4(b) (1) (Advisory Council on Historic Preservation n.d.) to test all areas of the project.

The general stratigraphy consisted of two types. Within the northern former grove area, the stratigraphy was 0 to 40 centimeters below surface (cmbs) (0 to 16 in) of grayish brown sand followed by 40 to 100 cmbs (16 to 39 in) of light gray or pale brown sand. The stratigraphy adjacent to the runway was 0 to 100 cmbs (0 to 39 in) of a mottled clay fill, and the area at the end of the runway was 0 to 100 cmbs (0 to 39 in) of grayish brown sand fill. According to Matthew Humphrey, GAI Consultants, the fill material around the runway is present to a depth of 10 m or more. The clay was spread throughout the area in the 1950s (City of Umatilla 2011:2.1). No artifacts were recovered from any of the shovel tests and no artifacts were noted on the surface. Thus, no archaeological sites are located within the APE.

5.2 Historic/Architectural

The historical/architectural resource survey indicated an absence of historic resources (50 years of age or older) within the project APE. Thus, no historic resources which are listed, determined eligible, or appear to be considered potentially eligible for listing in the NRHP are located within the project APE.

5.3 Conclusions

Based on background research and field survey, it is the opinion of ACI archaeologists and architectural historians that development of the APE will not impact any resource listed, determined eligible, or which appear to be eligible for listing in the NRHP.

Figure 5.1. Location of the shovel tests within the APE.

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APPENDIX E

Survey Log

Ent D (FMSF only)_____

Survey Log Sheet

Florida Master Site File
Version 4.1 1/07

Survey # (FMSF only) _____

Consult *Guide to the Survey Log Sheet* for detailed instructions.

Identification and Bibliographic Information

Survey Project (name and project phase) CRAS, Umatilla Municipal Airport Project, Lake Co., Phase I

Report Title (exactly as on title page) Cultural Resource Assessment Survey of the Umatilla Municipal Airport Project, Lake County, Florida

Report Authors (as on title page, last names first) 1. ACI 3. _____ 2. _____ 4. _____

Publication Date (year) 2018 **Total Number of Pages in Report** (count text, figures, tables, not site forms) 45

Publication Information (Give series, number in series, publisher and city. For article or chapter, cite page numbers. Use the style of *American Antiquity*.)

P18113 ACI, Sarasota.

Supervisors of Fieldwork (even if same as author) Names Almy, Marion

Affiliation of Fieldworkers: Organization Archaeological Consultants Inc City Sarasota

Key Words/Phrases (Don't use county name, or common words like *archaeology*, *structure*, *survey, architecture, etc.*)

1. No sites 3. _____ 5. _____ 7. _____
2. _____ 4. _____ 6. _____ 8. _____

Survey Sponsors (corporation, government unit, organization or person directly funding fieldwork)

Name ESA/Southeast Region Organization _____

Address/Phone/E-mail 5401 South Kirkman road, Suite 405, Orlando, Florida 34240

Recorder of Log Sheet Christine Newman **Date Log Sheet Completed** 10-31-2018

Is this survey or project a continuation of a previous project? ☒ No ☐ Yes: **Previous survey #s (FMSF only)** _____

Mapping

Counties (List each one in which field survey was done; attach additional sheet if necessary)

1. Lake 3. _____ 5. _____
2. _____ 4. _____ 6. _____

USGS 1:24,000 Map Names/Year of Latest Revision (attach additional sheet if necessary)

1. Name UMATILLA Year _____ 4. Name _____ Year _____
2. Name _____ Year _____ 5. Name _____ Year _____
3. Name _____ Year _____ 6. Name _____ Year _____

Description of Survey Area

Dates for Fieldwork: Start 10-22-2018 End 10-23-2018 **Total Area Surveyed** (fill in one) _____ hectares 6.3 acres

Number of Distinct Tracts or Areas Surveyed 1

If Corridor (fill in one for each) **Width:** _____ meters _____ feet **Length:** _____ kilometers _____ miles

Florida Master Site File / Div. of Historical Resources / R.A. Gray Bldg / 500 S Bronough St., Tallahassee, Florida 32399-0250
Phone 850.245.6440, Fax 850.245.6439, Email: SiteFile@dos.myflorida.com

Survey Log Sheet

Survey #_____

Research and Field Methods

Types of Survey (check all that apply): ☒archaeological ☒architectural ☒historical/archival ☐underwater
☐damage assessment ☐monitoring report ☐other(describe): _____

Scope/Intensity/Procedures background research, systematic & judgmental subsurface testing (37 test pits; 18 @ 25 m, 18 @ 50 m, 1 judgmental), 50 cm diameter, 1 m deep, 1/4" screen; historic reconnaissance

Preliminary Methods (check as many as apply to the project as a whole)

☐Florida Archives (Gray Building)	☒library research- *local public*	☐local property or tax records	☒other historic maps
☐Florida Photo Archives (Gray Building)	☐library-special collection - *nonlocal*	☐newspaper files	☒soils maps or data
☒Site File property search	☒Public Lands Survey (maps at DEP)	☒literature search	☒windshield survey
☒Site File survey search	☒local informant(s)	☐Sanborn Insurance maps	☒aerial photography

☐other (describe): _____

Archaeological Methods (check as many as apply to the project as a whole)

☐Check here if **NO** archaeological methods were used.

☐surface collection, controlled	☐shovel test-other screen size	☐block excavation (at least 2x2 m)
☒surface collection, **un**controlled	☐water screen	☐soil resistivity
☒shovel test-1/4"screen	☐posthole tests	☐magnetometer
☐shovel test-1/8" screen	☐auger tests	☐side scan sonar
☐shovel test 1/16"screen	☐coring	☒pedestrian survey
☐shovel test-unscreened	☐test excavation (at least 1x2 m)	☐unknown

☐other (describe): _____

Historical/Architectural Methods (check as many as apply to the project as a whole)

☐Check here if **NO** historical/architectural methods were used.

☐building permits	☐demolition permits	☐neighbor interview	☐subdivision maps
☐commercial permits	☒exposed ground inspected	☐occupant interview	☐tax records
☐interior documentation	☒local property records	☐occupation permits	☐unknown

☐other (describe): _____

Survey Results (cultural resources recorded)

Site Significance Evaluated? ☐Yes ☒No

Count of Previously Recorded Sites 0 **Count of Newly Recorded Sites** 0

Previously Recorded Site #'s with Site File Update Forms (List site #'s without "8". Attach additional pages if necessary.) N/A

Newly Recorded Site #'s (Are all originals and not updates? List site #'s without "8". Attach additional pages if necessary.) N/A

Site Forms Used: ☐Site File Paper Form ☒Site File Electronic Recording Form

*****REQUIRED: ATTACH PLOT OF SURVEY AREA ON PHOTOCOPY OF USGS 1:24,000 MAP(S)*****

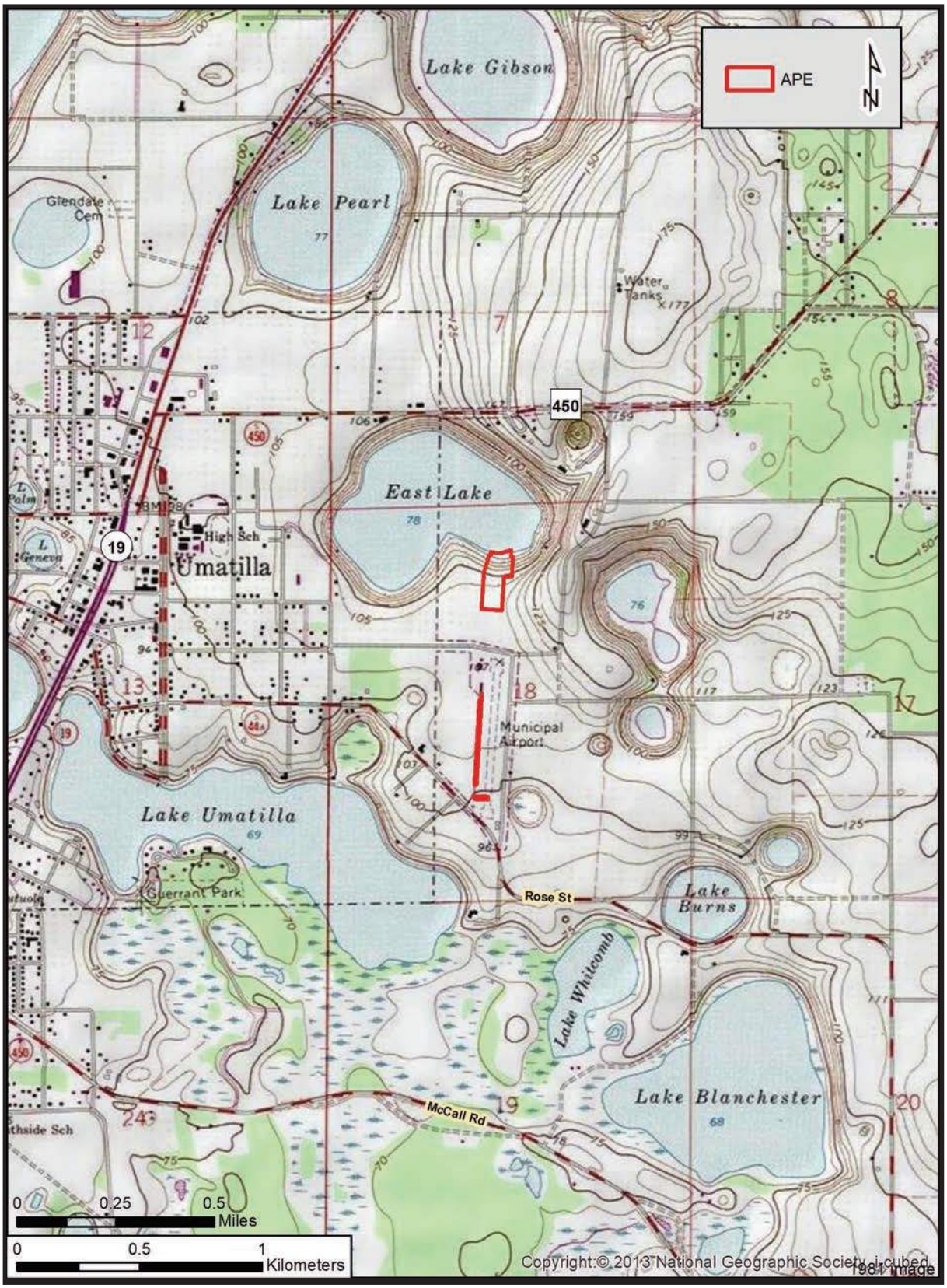
SHPO USE ONLY **SHPO USE ONLY** **SHPO USE ONLY**

Origin of Report: ☐872 ☐CARL ☐UW ☐1A32 # _____ ☐Academic ☐Contract ☐Avocational
☐Grant Project # _____ ☐Compliance Review: CRAT # _____

Type of Document: ☐Archaeological Survey ☐Historical/Architectural Survey ☐Marine Survey ☐Cell Tower CRAS ☐Monitoring Report
☐Overview ☐Excavation Report ☐Multi-Site Excavation Report ☐Structure Detailed Report ☐Library, Hist. or Archival Doc
☐MPS ☐MRA ☐TG ☐Other: _____

Document Destination: _____ **Plotability:** _____

Florida Master Site File / Div. of Historical Resources / R.A. Gray Bldg / 500 S Bronough St., Tallahassee, Florida 32399-0250
Phone 850.245.6440, Fax 850.245.6439, Email: SiteFile@dos.myflorida.com



Umatilla Municipal Airport
Township 18 South, Range 27 East, Section 18
USGS Umatilla
Lake County

Appendix G

Airport Sponsor Land Use Assurance Letter

ESA

City of Umatilla

"NATURE'S HOMETOWN"

April 11, 2019

Peter Green
Environmental Specialist
FAA Orlando Airports District Office
8427 South Park Circle, 5th Floor
Orlando, FL 32819

The City of Umatilla's 2035 adopted comprehensive plan, which was adopted in 2012, includes an airport element which sets out the goals, objectives and policies of the city in regards to airport planning and the assurance of safe operations. Policies 10-1.1.1 and 10-1.1.2 require land uses adjacent to the airport to be appropriate and compatible. The airport element complies with Chapter 163, F.S.

The City's existing land development regulations (LDRs) were amended in 2017 (Ordinance 2017-E) to comply with Chapter 333, F.S. and further implement the adopted comprehensive plan. Chapter 5 of the LDRs were amended to address land use restrictions and create the airport overlay district. The airport overlay district addresses aircraft safety, noise zone, and land uses. Properties within the overlay zone are required to notify prospective buyers or lessees in writing that the land is within the aircraft safety and noise zone. Densities are prohibited greater than 1 unit/2 acres and land uses which accommodate large groups, such as hospitals, churches, schools, etc. are prohibited.

The City of Umatilla hereby assures and certifies that it will take appropriate action, to the maximum extent possible and reasonable, to restrict by zoning or other means, the use of land adjacent to or in the immediate vicinity of the airport to activities and uses that are compatible with normal airport operations.

Should you have any further questions or require additional information please feel free to contact me.

Sincerely,

Scott Blankenship
City Manager
Airport Manager
City of Umatilla

Appendix H
Public Comments (reserved)

ESA

Appendix I
Acronyms and Abbreviations

ESA

APPENDIX I

Acronyms and Abbreviations

AEDT	Aviation Environmental Design Tool
ALP	Airport Layout Plan
APE	Area of Potential Effect
BA	Biological Assessment
dB	Decibel
DNL	Day/Night Average Sound Level
EA	Environmental Assessment
ESA	Environmental Science Associates
FAA	Federal Aviation Administration
FAC	Florida Administrative Code
FDOT	Florida Department of Transportation
FLUCFCS	Florida Land Use, Cover, and Forms Classification System
^{0}F	Degrees Fahrenheit
FWC	Florida Fish and Wildlife Conservation Commission
GPS	Global Positioning System
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPIAS	National Plan of Integrated Airport Systems
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
ROFA	Runway Object Free Areas
RPZ	Runway Protection Zone
RSA	Runway Safety Zone
SWPPP	Storm Water Pollution Prevention Plan
TAF	Terminal Area Forecast
TOFA	Taxiway Object Free Areas
USFWS	U.S. Fish and Wildlife Service
X23	Umatilla Municipal Airport