NORTHEAST FLORIDA REGIONAL AIRPORT AT ST. AUGUSTINE

(FORMERLY KNOWN AS ST. AUGUSTINE AIRPORT)

ENVIRONMENTAL ASSESSMENT FOR

TAXIWAY 'C' REPLACEMENT, RSA COMPLIANCE, AND APPROACH LIGHTING SYSTEM

JUNE 2010

PREPARED FOR:
ST. AUGUSTINE – ST. JOHNS COUNTY
AIRPORT AUTHORITY
4796 U.S. 1 NORTH
ST. AUGUSTINE, FL 32095

PREPARED BY:
PASSERO ASSOCIATES, LLC
13453 N. MAIN ST, SUITE 106
JACKSONVILLE, FL 32218

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

Responsible FAA Official _____ Date

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Northeast Florida Regional Airport
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JUNE 2010

PREPARED FOR:
ST. AUGUSTINE – ST. JOHNS COUNTY
AIRPORT AUTHORITY
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EXECUTIVE SUMMARY

Location

Northeast Florida Regional Airport at St. Augustine (Formerly known as, St. Augustine Airport) (SGJ)
St. Augustine, Florida

Proposed Federal Action

The proposed federal action is Federal Aviation Administration (FAA) environmental approval of the Proposed Projects described below. The Airport Sponsor has submitted to the FAA a revised Airport Layout Plan (ALP) that depicts the Proposed Projects. Subsequent to this environmental approval, the FAA will unconditionally approve the revised ALP for the Proposed Projects. Other FAA actions that must be completed include: approval of a modification of FAA design standards for the Approach Lighting System (ALS), any modifications of flight approach procedures as a result of the installation of the ALS will be determined by FAA. These FAA actions do not constitute a commitment of federal funds.

Purpose and Need and Proposed Projects

The three proposed actions being analyzed in this EA are as follows: improve access to Runway 31 by replacing Taxiway 'C'; bring the Runway 31 Runway Safety Area (RSA) back into compliance with current FAA design standards; and add an ALS system to the Runway 31 approach.

1) **The replacement of existing parallel Taxiway C to Runway 31**
   Taxiway 'C' provides access to the south end of Runway 31. The current location of parallel taxiway 'C' is less than the minimum FAA design standard distance from runway centerline to taxiway centerline. The minimum distance from runway centerline to parallel taxiway centerline for this runway should be 400 feet. The current distance from Taxiway 'C' centerline to Runway 13-31 centerline is 215 feet, 185 feet below the minimum standard. There are currently no taxiways accessing runway 31 at its full length that meet this criteria. By re-aligning and replacing Taxiway 'C' as a continuation of full parallel Taxiway 'B', the Airport will then have one taxiway within the optimum range, providing access to the full length of Runway 13-31.

   This proposed project would replace the existing Taxiway 'C' with an alignment that meets FAA standards and minimizes environmental impacts, while also enhancing the operational safety and efficiency of the taxiway and runway system. The alternatives section of this EA analyzes several alternatives for this proposed project.

   The Proposed Project for Taxiway 'C' is Alternative 3. Alternative 3 includes the installation of a full length parallel taxiway, in two segments (800-feet and 820 feet in length), leading from Taxiway 'D' to the south end of Runway 31. Existing Taxiway 'C' would be removed from Taxiway 'D' to the south end of Runway 31. The distance from the aircraft hold line to both the displaced threshold and the physical end of Runway 31 is reduced to 250 feet. Alternative 3 is shown in Figure 2.02.3.

2) **Runway Safety Area (RSA) Compliance**
   A runway safety area is defined as the "*surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the*

runway"[1]. The runway safety area must also be able to support aircraft rescue and firefighting (ARFF) vehicles. The current runway safety area on the east and south side of Runway 13-31 is less than the minimum design standard advised by the FAA. The minimum width of the runway safety area for Runway 13-31 is 500 feet (250 feet off each side of the runway centerline). The current distance for the east side of the safety area ranges between the full standard width of 250 feet, down to 140 feet, which is 110 feet below the design standard. This area was originally permitted, graded, and installed at the proper distance of 250 feet from runway centerline. It has been eroded by weather events because of its close proximity to the Tolomato River. The proposed project stabilizes and re-grades the safety area on the east side of the runway to the proper design standard of 250 feet from runway centerline. The restoration of the runway safety area will meet FAA design standards and enhance operational safety for arriving and departing aircraft.

This proposed project would rebuild and stabilize the eroded area to bring the RSA back into compliance, within FAA design standards and enhance safe operations at the Airport. The only alternative for this proposed project is the no action alternative.

The Proposed Project for the RSA is Alternative 8, which includes the rehabilitation and stabilization of the RSA on the east side of Runway 31 (2,750 linear feet) per FAA Advisory Circular 150/5300-13 Airport Design standards for runway safety area (RSA) compliance. Alternative 8 is shown in **Figure 2.02.8.**

3) Approach Lighting System (ALS)

The Airport has an incomplete precision instrument approach (Instrument Landing System-ILS) procedure to Runway 31, without the benefit of an ALS. In accordance with the FAA's Aeronautical Information Manual (AIM), sections 1-1-9 and 2-1-1, a complete ILS includes the installation of an ALS, which can extend at least 2,400 feet beyond the approach end of the runway, to serve arriving aircraft during periods of low visibility and extreme weather conditions. Most Federal Aviation Regulation Part 139 airports in the state of Florida have an ILS, including an ALS. The installation of the ALS will complete the ILS, provide improved capabilities during periods of low visibility and enhance operational safety and efficiency for arriving and departing aircraft.

The Proposed Project for the ALS is Alternative 10, which includes the installation of an intermediate ALS (1,800 feet in length), extending from the Runway 31 southern displaced threshold into the saltmarsh area south of Runway 13-31. An intermediate 1,800' ALS is recommended for the Airport based on DOT/FAA/AR-02/81[2] and discussions with FAA (refer to **Appendix U**). The Airport has submitted a request for a modification of FAA design standards for the intermediate ALS. The ALS extends off of airport property into State Sovereign Submerged Lands for a distance of 610 linear feet. Alternative 10 is shown in **Figure 2.02.10.**

Background

The Airport is a public use facility, owned and operated by the St. Augustine – St. Johns County Airport Authority. The Airport is located on approximately 750 acres of property within St. Johns County, east of US Route 1 and just north of the limits of the City of St. Augustine. The existing

[1] FAA Advisory Circular 150/5300-13 Airport Design
[2] DOT/FF/AR-02/81, FAA, Reduced Approach Lighting Systems (ALS) Configuration Simulation Testing, July 2002

airport consists of three intersecting asphalt runways (see **Figure 1.02.1)**, designated as Runway 13 – 31, Runway 6 – 24 and Runway 2 – 20.

The primary runway, Runway 13 – 31, has overall dimensions of 7,996 feet by 150 feet; Runway 13 is marked with a displaced threshold of 1,058 feet and Runway 31 with a displaced threshold of 800 feet. The displaced thresholds are necessary to partially accommodate the required RSA dimensions of 1,000 feet by 500 feet on the ends of the runway. Runway 31 is equipped with an ILS and provides Category I precision approaches with landing minimums, a non – precision approach utilizing a Very High Frequency Omnidirectional Radio Range (VOR) approach, and a non - precision Global Positioning System (GPS) approach. Runway 13 has a VOR approach and a GPS approach as well.

Runway 6 – 24 is one of two crosswind runways at SGJ, has an overall dimension of 2,701 feet by 60 feet, and is a visual approach runway. Runway 2 – 20 is the second of the two crosswind runways and has overall dimensions of 2,614 feet by 75 feet and is a visual approach runway.

Alternatives Considered:

- Alternative 1 – No Action

- Taxiway 'C' Replacement alternatives
    - Alternative 2 – Taxiway 'C' (Option 2, Partial Length: 850-feet)
    - Alternative 3 – Taxiway 'C' (Option 3, Full Length, 2 Segments: 1,620-feet)
    - Alternative 4 – Taxiway 'C' (Option 4, Full Length, 3 Segments: 1,675-feet)
    - Alternative 5 – Taxiway 'C' (Option 5, Full Length, Direct: 1,678-feet)
    - Alternative 6 – Taxiway 'C' (Option 6, Full Length, 2 Segments: 1,944-feet)
    - Alternative 7 – Taxiway 'C' (Option 7, Full Length: 1,657-feet)

- Runway Safety Area Alternative
    - Alternative 8 – RSA Compliance

- ALS Alternatives
    - Alternative 9 – ALS (Short: 1,400-feet)
    - Alternative 10 – ALS (Intermediate: 1,800-feet)
    - Alternative 11 – ALS (Full: 2,400-feet)

- Proposed/Preferred Alternative
    - Alternative 12 – Proposed Project Alternative [Alternative 3 – Taxiway 'C' (Option 3, Full Length, 2 Segments: 1,620-feet); Alternative 8 – RSA Compliance; Alternative 10 – ALS (Intermediate: 1,800-feet)],

Affected Environment and Environmental Consequences

Chapter 3 discusses the environmental categories for the project site, airport property and surrounding vicinity that may be affected by the no action or Proposed Projects. These include Biotic Resources, Coastal Zone Management, Compatible Land Use, Construction, Federally – Listed Endangered and Threatened Species, Energy Supplies, Natural Resources, and Sustainable Design, Floodplains, Hazardous Materials, Light Emissions and Visual Impacts, Noise, Social and

Socioeconomic, Solid Waste, Water Quality, and Wetlands. Section 3.18 of the EA discusses environmental resources that would not be affected by the proposed project. These resources include Air Quality, Coastal Barriers, DOT Section 4(f) Lands, Environmental Justice, Farmland, Historical, Architectural, and Archeological Resources, Induced Socioeconomic, and Wild and Scenic Rivers.

Table E-1 provides a summary of temporary and permanent impacts that would occur with implementation of the Proposed Projects. Chapter 4 discusses each of these temporary and permanent impacts in detail.

Permits that have been applied for and those that will be applied for once construction begins can be found in Table E-2.

Public Involvement

The Draft Environmental Assessment (Draft EA) was made available to Federal, state, and local agencies and the public in December 2009. A notice of the Draft EA availability was published December 11, 2009 in the St. Augustine Record and the Draft EA was made available on the Airport's website. Hard copies of the Draft EA were available for public review at the Airport upon request. A Public Information Workshop, followed by a Public Hearing, was held on January 11, 2010. Agency and public comments were received on the Draft EA until February 19, 2010. Comments and the Airport's responses to agency comments can be found in **Appendix T** and responses to public comments can be found in **Appendix S**.

The Final EA will be placed on the Airport's website for thirty (30) days and a hard copy will be available for review upon request.

Mitigation Measures

The Airport Sponsor proposes to mitigate for unavoidable impacts to wetlands, biotic communities, wildlife, and water quality through the restoration of historic salt marsh habitat on Airport property that had been converted to a spoil island. Chapter 5 provides detail information regarding the proposed mitigation plan. Final mitigation plans and regulatory requirements and conditions will be determined during the USACE and SJRWMD permit application processes.

Table E-1
Summary of Environmental Impacts for the No Action and Proposed Project Alternatives

Category	Environmental Impacts of the Proposed Project	Anticipated Permits and Approval Required for the Proposed Project	Environmental Impacts of the No Action Alternative	Mitigation for the Proposed Project
Biotic Resources	Permanent impacts to 7.46 acres of saltmarsh and 2.57 acres of open water habitat impacts; habitat loss for state listed species.	USACE will review as part of Standard Permit and coordinate with NMFS, USFWS, and EPA.	No impact	Proposed mitigation including the restoration of 0.2 acres of open water along the shoreline of the proposed project area; restoration of a spoil island (with creation of a tidal creek) will result in no net loss of wetlands and open water
Coastal Zone Management	Consistent with the CZMP	Consistency determination in ERP from SJRWMD.	Consistent with CZMP	Proposed mitigation will result in no net loss to coastal wetlands and estuarine waters
Compatible Land Use	No impact	No impact	No impact	N/A
Construction Impacts	No significant permanent impacts; temporary impacts	NPDES Generic Permit for Stormwater Discharge from Large Construction; ERP as required by SJRWMD	No impact	N/A

` *Source: Passero Associates, LLC

Table E-1 Continued
Summary of Environmental Impacts for the No Action and Proposed Project Alternatives

Category	Environmental Impacts of the Proposed Project	Anticipated Permits and Approval Required for the Proposed Project	Environmental Impacts of the No Action Alternative	Mitigation for the Proposed Project
Federally Listed Threatened and Endangered Species	Permanent impacts to 7.5 acres of wetlands and 2.6 acres of open water; habitat loss for Federally listed species including Wood Stork foraging habitat.	USACE will review during the 404(b)/Section 10 permitting process for consistency with Section 8 of the Endangered Species Act of 1973.	No impact	Proposed mitigation will result in no net loss of wetlands and open water habitats.
Energy Supply, Natural Resources, and Sustainability	No impact	None	No impact	N/A
Floodplains	No impact	None	No impact	N/A
Hazardous Materials	No impact	None. NPDES Generic Permit for Stormwater Discharge for Large Construction; Construction SWPP	No impact	N/A
Light Emissions and Visual Impacts	No significant impact	None	No impact	N/A
Noise	No significant impact	None	No impact	N/A
Socioeconomic Impacts	No impact	None	No impact	N/A
Solid Waste	No significant impact	None	No impact	N/A

*Source: Passero Associates, LLC

Table E-1 Continued
Summary of Environmental Impacts for the No Action and Proposed Project Alternatives

Category	Environmental Impacts of the Proposed Project	Anticipated Permits and Approval Required for the Proposed Project	Environmental Impacts of the No Action Alternative	Mitigation for the Proposed Project
Water Quality	Temporary impacts during construction	Standard permit for the USACE for wetland impacts; Class II water variance; ERP from SJRWMD; NPDES Generic Permit for Stormwater Discharge from Large Construction Section 401 Water Quality Certification from DEP	No impact	N/A
Wetland Impacts	Permanent impact to approximately 7.5 acres of intertidal saltmarsh wetlands and sand flats; 2.6 acres of surface waters	ERP from SJRWMD; Standard permit for the USACE for wetland impacts	No impact	Proposed mitigation will result in no net loss of wetlands and open water habitats.
Cumulative Impacts	None	None	None	Proposed mitigation will result in no cumulative impacts to biotic resources, federally protected species, wetlands, and water quality

**Source: Passero Associates, LLC*

Table E-2
Permits

Permit/Approval	Agency	Submitted	Status
ALS and Control Panel			
Standard General Environmental Resource Permit	SJRWMD	February 25, 2010	Request for Additional Information (RAI) response submitted May 14, 2010; under review by SJRWMD for completion
Class II Waters Variance	SJRWMD	February 25, 2010	Request for Additional Information (RAI) response submitted May 14, 2010; under review by SJRWMD for completion
Federal USACE approval	USACE	February 25, 2010	Received permit and approval on March 11, 2010 through Regional General Permits SAJ-17 and SAJ-14 and Nationwide Permit Number 33
NPDES Construction Permit	FDEP	--	Will be submitted by the contractor prior to commencement of construction activities
RSA Restoration (East) and Mitigation			
Individual Environmental Resource Permit	SJRWMD	April 14, 2010	Request for Additional Information (RAI) received May 14, 2010; Responses in preparation
Class II Waters Variance	SJRWMD	April 14, 2010	Request for Additional Information (RAI) received May 14, 2010; Responses in preparation
404(b)(1) and Section 10	USACE	April 15, 2010	Public Notice distributed by USACE for agency comments
NPDES Construction Permit	FDEP	--	Will be submitted by the contractor prior to commencement of construction activities

**Source: Birkitt Environmental Services, Inc.*

Table E-2 Continued
Permits

Permit/Approval	Agency	Submitted	Status
Taxiway C Replacement, Tidal Canal Relocation, and RSA Improvement			
Individual Environmental Resource Permit	SJRWMD	April 14, 2010	Request for Additional Information (RAI) received May 14, 2010; Responses in preparation
Class II Waters Variance	SJRWMD	April 14, 2010	Request for Additional Information (RAI) received May 14, 2010; Responses in preparation
404(b)(1) and Section 10	USACE	April 15, 2010	Public Notice distributed by USACE for agency comments
NPDES Construction Permit	FDEP	--	Will be submitted by the contractor prior to commencement of construction activities

*Source: Birkitt Environmental Services, Inc.

CHAPTER 1

INTRODUCTION

JUNE 2010

PREPARED FOR:
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4796 U.S. 1 NORTH
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CHAPTER 1 – INTRODUCTION

1.01 PURPOSE AND NEED AND PROPOSED ACTIONS

This Environmental Assessment (EA) is being prepared by the St. Augustine - St. Johns County Airport Authority (Authority) to evaluate the potential environmental impacts associated with improvements to the existing airfield that were recommended in the 2005 Northeast Florida Regional Airport at St. Augustine (formerly known as, St. Augustine Airport) (Airport) Airport Master Plan (AMP). The improvements being analyzed in this EA are as follows: improve access to Runway 31 by replacing Taxiway 'C'; bring the Runway 31 Runway Safety Area (RSA) back into compliance with current FAA design standards; and add an Approach Lighting System (ALS) system to the Runway 31 approach.

The need for these improvements are discussed in the 2005 AMP and are shown on the revised ALP (**Appendix U)**. The AMP is incorporated by reference as part of this EA. The FAA is currently reviewing the revised ALP.

The airport planning process conducted as part of the AMP determined that these improvements are important for the Airport in order to enhance safety and efficiency. The AMP planning process was also an opportunity to revisit airport development and examine new layouts. The ultimate AMP recommendations reflect the best options for developing the projects within the existing airport boundaries. The basis for the airport planning safety and operational compliance standards are described in FAA Advisory Circular (AC) 150/5300 - 13, *Airport Design.*

Using the data developed in the AMP, this EA provides the purpose and need for each proposed action, an inventory of the existing environmental conditions, and the results of an environmental analysis associated with each proposed action. This EA has been developed in accordance with the National Environmental Policy Act (NEPA) of 1969; the Federal Council on Environmental Quality's (CEQ) NEPA regulations (40 Code of Federal Regulations (CFR) Part 1500 - 1508), and FAA Orders 5050.4B, (Chapter 7, Part 702 (a through j) and 1050.1E.

The following paragraphs describe the purpose and need of each proposed action:

1) **The replacement of existing parallel Taxiway 'C' to Runway 31**
   Taxiway 'C' provides access to the south end of Runway 31. The current location of parallel Taxiway 'C' is less than the minimum design standard distance from runway centerline to taxiway centerline, advised by the FAA. The minimum distance from runway centerline to parallel taxiway centerline for this runway should be 400 feet. The current distance from Taxiway 'C' centerline to Runway 13-31 centerline is 215 feet, 185 feet below the minimum standard. In addition, aircraft utilizing Runway 31 that request to use the full length of runway pavement for takeoff are required to back taxi down Runway 31 due to the current runway / taxiway configuration. FAA AC 150 / 5060 - 5, *Airport Capacity and Delay,* defines optimum ranges that a taxiway should be located from the runway arrival end. There are currently no taxiways accessing Runway 31 at its full length that meet this criteria. By re-aligning and replacing Taxiway 'C' as a continuation of full parallel Taxiway 'B', the Airport will then have one taxiway within the optimum range, providing access to the full length of Runway 13-31.

This proposed project would replace the existing Taxiway 'C' with an alignment that meets FAA standards and minimizes environmental impacts, while also enhancing the operational safety and efficiency of the taxiway and runway system. The alternatives section of this EA analyzes several alternatives for this proposed project.

Additional technical justification and letters of support for the three projects have been provided in **Appendix U** by the FAA Runway Safety Action Team (RSAT), Galaxy Aviation (Fixed Base Operator), and Robinson Aviation, Inc. (the Air Traffic Control Contract Tower Operator).

In support of the Taxiway 'C' project, the RSAT notes "**Taxiway 'C'** gets limited use due to the alignment within the runway safety area through its entire length and therefore cannot be accessed until ATC has the proper spacing between a preceding departure, a preceding arrival, or a subsequent inbound. For this reason and other ongoing issues with the pavement width and strength, Taxiway 'C' is seldom used. Taxiway 'B' (South) is being developed by the Authority with an EA presently underway. Taxiway 'B' (South) would replace the functionally and operationally deficient Taxiway 'C'. The construction of Taxiway 'B' would greatly reduce the likelihood of incursions; as the location, geometry, signage and markings would be typical of what users would expect to see. The elimination of Taxiway 'C', in the interim is not desirable. The RRSIT supports the extension of Taxiway 'B' (South) to eliminate the confusion and threats of possible runway incidents that have occurred at D-1/D/C intersections, which is the access point to both Runways 31 and 6-24. Request that ORL ADO look into feasibility for funding availability and coordinate with airport authority."

Galaxy Aviation, the Fixed Base Operator (FBO) states that "Realignment of Taxiway 'C' as an extension of Taxiway 'B' in order to complete an uninterrupted taxiway along the full length of runway 13-31 is essential for increased safety of operations at KSGJ. The existing Taxiway 'C' lies within the runway 31 runway safety area (RSA). As such, all departing aircraft utilizing runway 31 are directed to taxi to and hold short as Taxiway 'D1' intersection.

This intersection has recently been identified by the FAA as a "Hot Spot" due to its orientation to the primary runway 13-31 and the close proximity of the intersection of runway 6-24 and 13-31. Aircraft holding short at the D1 intersection may request further taxi clearance on Taxiway 'C' for full length departure on runway 31. Clearance is only given if no aircraft are on approach to runway 31. This creates a backlog of traffic at D1 on a daily basis. Furthermore, many aircraft accept a D1 intersection departure, using less than the full available runway length in lieu of back – taxiing on runway 31 or waiting for further taxi clearance to the end of runway 31.

A realignment of Taxiway 'C' would essentially allow it to be a fully – usable extension of Taxiway 'B'. This realignment would eliminate the hold short clearance for D1 and allow the tower to issue full length departure as the standard clearance." The FBO's letter is in **Appendix U**.

2) Runway Safety Area (RSA) Compliance

A runway safety area is defined as the "*surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway*"[1]. The runway safety area must also be able to support aircraft rescue and firefighting

[1] FAA Advisory Circular 150/5300-13 Airport Design

(ARFF) vehicles. The current runway safety area for Runway 13-31 is less than the minimum design standard advised by the FAA. The minimum width of the runway safety area for Runway 13-31 is 500 feet (250 feet off each side of the runway centerline). The current distance for the east side of the safety area ranges between the full standard width of 250 feet, down to 140 feet, which is 110 feet below the design standard. This area was originally permitted, graded and installed at the proper distance of 250 feet from runway centerline. It has been eroded by weather events because of its close proximity to the Tolomato River. The proposed project stabilizes and re-grades the safety area on the east side of the runway to the proper design standard of 250 feet from runway centerline. The restoration of the runway safety area will meet FAA design standards and enhance operational safety for arriving and departing aircraft.

This proposed project would rebuild and stabilize the eroded area to bring the RSA back into compliance, within FAA design standards and enhance safe operations at the Airport. The only alternative for this proposed project is the no action alternative.

3) Approach Lighting System (ALS)

The Airport has an incomplete precision instrument approach (Instrument Landing System-ILS) procedure to Runway 31, without the benefit of an ALS. In accordance with the FAA's Aeronautical Information Manual (AIM), sections 1-1-9 and 2-1-1, a complete ILS includes the installation of an ALS, extending 2,400 feet beyond the approach end of the runway, to serve arriving aircraft during periods of low visibility and extreme weather conditions. Most Federal Aviation Regulation Part 139 airports in the state of Florida have a full ILS, including an approach lighting system. The installation of the ALS will complete the full ILS, provide improved capabilities during periods of low visibility and enhance operational safety and efficiency for arriving and departing aircraft.

Galaxy Aviation, the Fixed Base Operator (FBO) states that "the next important project is the much needed completion of the Instrument Landing System (ILS) with the installation of an Approach Lighting System (ALS), which is needed to complete the ILS to Runway 31. With the currently incomplete, non – standard ILS approach to Runway 31, the airport has a minimum decent height (DH) of 250 feet above the TDZE and ¾ mile forward visibility. This in itself is acceptable for a precision approach in a non – radar environment. However, since the airport is located adjacent to the inter – coastal waterway, just 2.5 miles from the Atlantic Ocean, we experience a high percentage of IFR weather due to advection fog (low – level ground fog) caused by coastal temperature differentials.

From mid October to early April, an advection fog cycle usually begins 3 – 4 days after a frontal passage and does not dissipate until the next frontal system moves through. Early in an advection fog cycle, the fog bank over land will dissipate by mid – morning due to normal heating. In a true advection fog situation, when the surface winds are sustained at 6 – 10 knots, the fog bank will remain adjacent to the immediate coast over water. When the land areas begin to cool, the fog bank will move back over land areas. Later in the advection fog cycle, dissipation occurs later in the day if at all.

Instrument approach completions during periods of advection fog are very difficult. Ground based weather observations will inform pilots of ceiling and visibility distances higher than what the pilot may actually experience during flight. This is due to the nature of the fog bank that is typically 200 – 300 feet thick and 200 – 300 above ground. As the pilot descends on the approach, forward or slant visibility is reduced. Descent must be stopped at the published decision height (DH) unless the "runway environment" is in sight. The pilots will

call a missed approach at DH only to report then, that they actually saw the runway when flying directly overhead. Yet, the runway environment is not visible on approach. The runway environment would be visible on approach if Approach Lights were present. This condition is faced by pilots of hundreds (or thousands) of operations at St. Augustine each year.

Current FAA regulations state that with an appropriate ALS, the sighting of the lights by the pilot is considered runway environment and continued approach is allowed with further descent up to 100 feet. This further descent on the ILS will usually allow for successful completion of the approach. The ALS adds another safety factor as it not only provides recognition of the runway environment at times of reduced visibility, it gives reinforcement of lateral position in relationship to the runway centerline.

With the length of Runway 31, and the ILS along with DME and GPS defined step down fixes, it makes clear sense to add the safety of an ALS to further aid the pilots in completion of instrument approaches.

I am unaware of any other similar airport of this magnitude, licensed under FAR Part 139 in Florida or the US, without an ALS as a component of the ILS. Without it, the U.S. remains incomplete and a standard, expected level of safety is missing." The FBO's letter is in **Appendix U**.

Each of the three projects described above are proposed for implementation in the 2010-2011 timeframe. Section 2.04 of this document provides additional information regarding the anticipated project schedule. Each project is shown on the revised ALP, see **Appendix U.**

1.02 BACKGROUND

The Airport is a public use facility, owned and operated by the St. Augustine – St. Johns County Airport Authority. The Airport is located on approximately 750 acres of property within St. Johns County, east of US Route 1 and just north of the limits of the City of St. Augustine. The existing airport consists of three intersecting asphalt runways (see **Figure 1.02.1)**, designated as Runway 13 – 31, Runway 6 – 24 and Runway 2 – 20.

The primary runway, Runway 13 – 31, has overall dimensions of 7,996 feet by 150 feet; Runway 13 is marked with a displaced threshold of 1,058 feet and Runway 31 with a displaced threshold of 800 feet. The displaced thresholds are necessary to partially accommodate the required RSA dimensions of 1,000 feet by 500 feet on the ends of the runway. Runway 31 is equipped with an ILS and provides Category I precision approaches with landing minimums, a non – precision approach utilizing a Very High Frequency Omnidirectional Radio Range (VOR) approach, and a non - precision Global Positioning System (GPS) approach. Runway 13 has a VOR approach and a GPS approach as well.

Runway 6 – 24 is one of two crosswind runways at SGJ, has an overall dimension of 2,701 feet by 60 feet, and is a visual approach runway. Runway 2 – 20 is the second of the two crosswind runways and has overall dimensions of 2,614 feet by 75 feet and is a visual approach runway.

ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY

SCALE:	AS SHOWN
DESIGNED BY:	P. HONORE
DRAWN BY:	W. REID
CHECKED BY:	A. HOLESKO

PRIME CONSULTANT:
Passero Associates
Engineering Surveying
Architecture Planning
CERTIFICATE OF AUTHORIZATION #3428

SUBCONSULTANT:

DATE: NOV. 2009

PROJECT NO. 23081.38

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

Existing Airport Layout

FIGURE NUMBER: 1.02.1

Airport lighting consists of the following:

- High intensity runway lights (HIRL) on Runway 13 – 31;
- Medium intensity runway lights (MIRL) on Runway 6 – 24;
- Four box precision approach path indicator (PAPI) on Runway 31, a 2 box PAPI on Runway 6;
- Four box visual approach slope indicator (VASI) on Runway 13;
- Four standard inboard threshold lights on each side of Runways 2, 20, 6, 24 located on each side of the runway centerlines;
- Two sets of threshold lights on approach ends of Runways 13 and 31.

The Airport is equipped with a rotating beacon, lighted wind cone, and segmented circle. The Airport maintains several T-hangars, corporate hangars, a terminal building, a fuel storage system, an electrical vault, and an equipment storage building. The Airport offers U.S. Customs service to international arriving aircraft and passengers. Historically, there had been scheduled commercial service operations of Airbus 319 aircraft operated by Skybus Airlines (and others), which ended service in the spring of 2008.

CHAPTER 2

ALTERNATIVES

JUNE 2010

PREPARED FOR:
ST. AUGUSTINE – ST. JOHNS COUNTY
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4796 U.S. 1 NORTH
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CHAPTER 2 – ALTERNATIVES

2.01 INTRODUCTION

The NEPA process requires the identification of a reasonable range of alternatives that could meet the stated purpose and need[1]. A No Action alternative is also required to be evaluated through the NEPA process. This section describes the no action alternative, identifies reasonable build alternatives, and the Airport Sponsor's proposed actions. This section provides information concerning the alternative screening process that was used to determine which build alternative(s) should be carried forward for detailed analysis. The analysis explains the extent to which these alternatives meet the purpose and need of the project. Reasonable alternative(s) remaining after the screening analysis are carried forward, along with the No Action alternative, for detailed environmental analysis in the environmental consequences section of this document.

2.02 ALTERNATIVES CONSIDERED

Twelve (12) alternatives, including the No Action alternative, were considered and included in the analysis. Under NEPA, the No Action alternative (Alternative 1) must be carried through screening analysis. The build alternatives represent viable options for consideration of Taxiway 'C' Replacement / Taxiway 'B' development (Alternatives 2-7); RSA development (Alternative 8) and ALS installation (Alternatives 9-11). The Airport Sponsor's proposed actions are identified as Alternative 12, and includes all three proposed projects: the Taxiway 'C' replacement/Taxiway 'B' alternative (Alternative 3); the RSA alternative (Alternative 8); and, the ALS alternative (Alternative 10).

Alternatives Considered:

- Alternative 1 – No Action

- Taxiway 'C' Replacement alternatives
  - Alternative 2 – Taxiway 'C' (Option 2, Partial Length: 850-feet)
  - Alternative 3 – Taxiway 'C' (Option 3, Full Length, 2 Segments: 1,620-feet)
  - Alternative 4 – Taxiway 'C' (Option 4, Full Length, 3 Segments: 1,675-feet)
  - Alternative 5 – Taxiway 'C' (Option 5, Full Length, Direct: 1,678-feet)
  - Alternative 6 – Taxiway 'C' (Option 6, Full Length, 2 Segments: 1,944-feet)
  - Alternative 7 – Taxiway 'C' (Option 7, Full Length: 1,657-feet)

- Runway Safety Area Alternative
  - Alternative 8 – RSA Compliance

- ALS Alternatives
  - Alternative 9 – ALS (Short: 1,400-feet)
  - Alternative 10 – ALS (Intermediate: 1,800-feet)
  - Alternative 11 – ALS (Full: 2,400-feet)

- Proposed Projects Alternative
  - Alternative 12 – Proposed Projects Alternative (Alternatives 3, 8, and 10).

[1] 40 FAA Order 5050.4B Chapter 4 Section 405d

The following sections describe each of the alternatives listed above. At the end of Section **2.02.1**, each alternative is presented in a graphic format.

2.02.1 Description of Alternatives

2.02.1.1 Alternative 1: No Action

The No Action alternative would result in no physical changes to the proposed project areas. Although the No Action Alternative does not meet the purpose and need criteria. The No Action Alternative would not meet FAA standards, and would not enhance safety and efficiency at the Airport. However, it is retained for further environmental analysis for baseline comparative purposes to fulfill FAA's responsibility under NEPA and the CEQ Guidelines.

The distance from the aircraft hold line (the line which aircraft may not pass to access Runway 31 without air traffic control clearance) to the physical end of Runway 31 (1,524 feet) would remain unchanged. Existing Taxiway 'C' would remain as shown on **Figure 2.02.1**. No runway safety area improvements are included; no ALS is included. Alternative 1 is shown as **Figure 2.02.1**.

2.02.1.2 Taxiway 'C' Replacement Alternatives (Taxiway 'C')

Alternative 2: Alternative 2 – Taxiway 'C' (Option 2, Partial Length: 850 feet)

Alternative 2 includes the installation of a partial length parallel taxiway (850 feet in length), leading from Taxiway 'D' / Runway 6-24 to the displaced threshold to Runway 31. Existing Taxiway 'C' would be removed, south of the displaced threshold to Runway 31.

The distance from the aircraft hold line to the displaced threshold to Runway 31 is reduced to 250-feet. Alternative 2 is shown in **Figure 2.02.2**.

Alternative 3: Taxiway 'C' (Option 3, Full Length, 2 Segments: 1,620 feet)

Alternative 3 includes the installation of a full length parallel taxiway, in two segments (800-feet and 820 feet in length), leading from Taxiway 'D' to the south end of Runway 31. Existing Taxiway 'C' would be removed from Taxiway 'D' to the south end of Runway 31.

The distance from the aircraft hold line to both the displaced threshold and the physical end of Runway 31 is reduced to 250 feet. Alternative 3 is shown in **Figure 2.02.3**.

Alternative 4 – Taxiway 'C' (Option 4, Full Length, 3 Segments: 1,675 feet)

Alternative 4 includes the installation of a full length parallel taxiway, in three segments (715 feet, 560 feet and 400 feet in length), leading from Taxiway 'D' to the south end of Runway 31. Existing Taxiway 'C' would be removed from Taxiway 'D' to the south end of Runway 31.

The distance from the aircraft hold line to the displaced threshold to Runway 31 is reduced to 250 feet, and the distance from the aircraft hold line to the physical end of Runway 31 is reduced to 640 feet. Alternative 4 is shown in **Figure 2.02.4**.

Alternative 5 – Taxiway 'C' (Option 5, Full Length, and Direct: 1,678 feet)

Alternative 5 includes the installation of a full length parallel taxiway, in one segment (1,678 feet in length), leading directly from Taxiway 'D' to the south end of Runway 31. Existing Taxiway 'C' would be removed from Taxiway 'D' to the south end of Runway 31.

The distance from the aircraft hold line to the displaced threshold to Runway 31 is reduced to 540-feet, and the distance from the aircraft hold line to the physical end of Runway 31 is reduced to 1,100-feet. Alternative 5 is shown in **Figure 2.02.5**.

Alternative 6 – Taxiway 'C' (Option 6, Full Length, 2 Segments: 1,944 feet)
Alternative 6 includes the installation of a full length parallel taxiway, in two segments (420 feet and 1,524 feet in length), leading directly from Taxiway 'D' to the south end of Runway 31. This alternative basically presents the widening and rehabilitation of existing Taxiway 'C' as a viable alternative.

The distance from the aircraft hold line to the physical end of Runway 31 remains at 1,524 feet. Alternative 6 is in **Figure 2.02.6**.

Alternative 7 – Taxiway 'C' (Option 7, Full Length, Full Separation from Runway: 1,657 feet)
Alternative 7 includes the installation of a full length parallel taxiway, in a single segment (1,657 feet in length), leading directly from Taxiway 'D' to the south end of Runway 31.

The distance from the aircraft hold line to the displaced threshold to Runway 31 and to the physical end of Runway 31 is reduced to 250 feet. Alternative 7 is shown in **Figure 2.02.7**.

2.02.1.3 Runway Safety Area Alternative

Alternative 8 – Runway Safety Area: (Option 1, 1 Segment: 2,750 feet)
Alternative 8 includes the rehabilitation and stabilization of the RSA on the east side of Runway 31 (2,750 linear feet) per FAA Advisory Circular 150/5300-13 Airport Design standards for RSA compliance. Alternative 8 is shown in **Figure 2.02.8**.

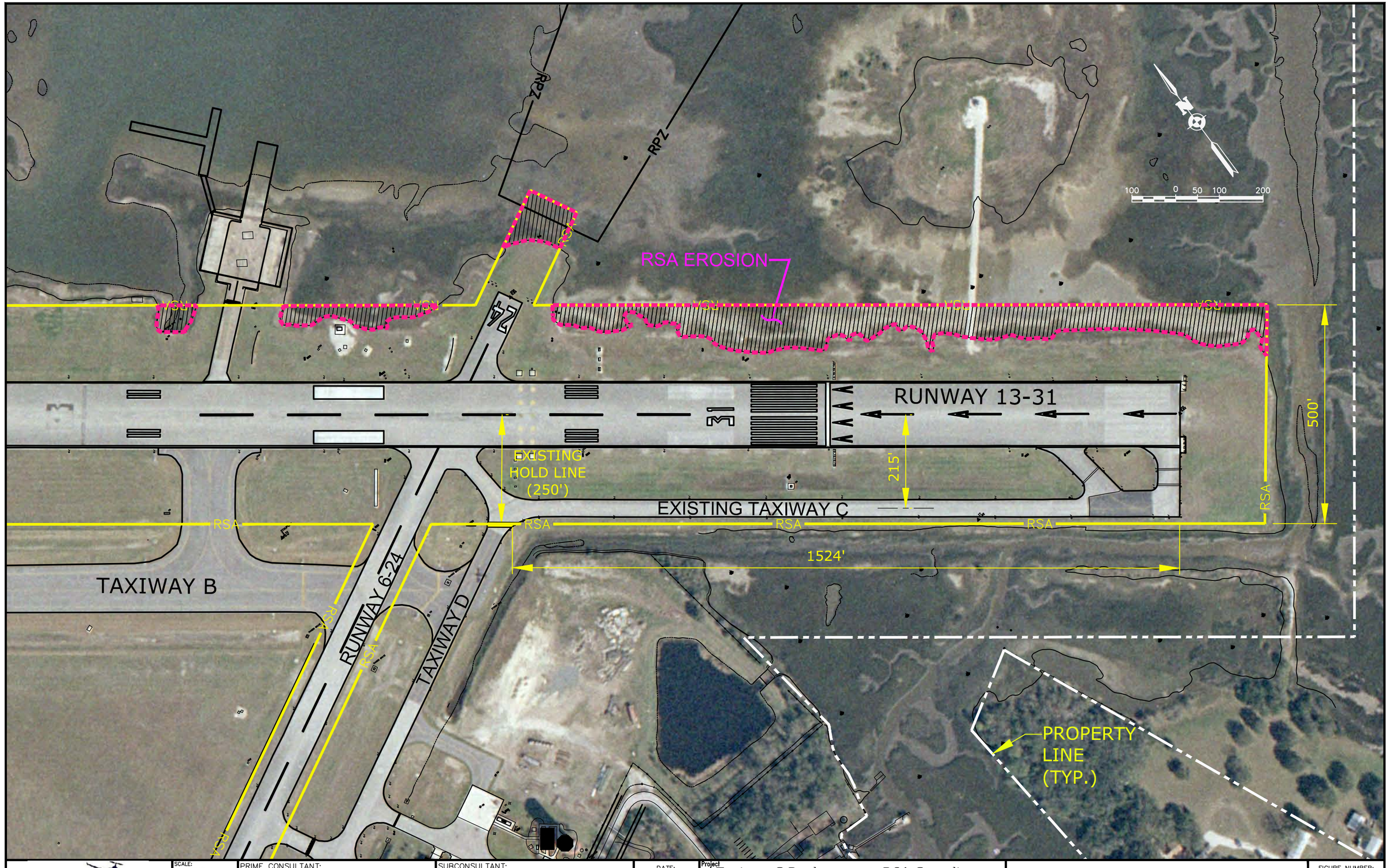
2.02.1.4 ALS Alternatives

Alternative 9 – ALS (Option 1, Short: 1,400 feet)
Alternative 9 includes the installation of a shortened ALS (1,400 feet in length), extending from the Runway 31 southern displaced threshold into the saltmarsh area south of Runway 13-31. The lighting system extends off of airport property into State Sovereign Submerged Lands for a distance of 210 linear feet. Alternative 9 is shown in **Figure 2.02.9**.

Alternative 10 - ALS (Option 2, Intermediate: 1,800 feet)
Alternative 10 includes the installation of an intermediate ALS (1,800 feet in length), extending from the Runway 31 southern displaced threshold into the saltmarsh area south of Runway 13-31. The 1,800' ALS is recommended for the Airport based on DOT/FA/AR-02/81[2] and conversations with FAA (refer to **Appendix T**). The lighting system extends off of airport property into State Sovereign Submerged Lands for a distance of 610 linear feet. Alternative 10 is shown in **Figure 2.02.10**.

Alternative 11 - ALS (Option 3, Full: 2,400 feet)
Alternative 11 includes the installation of an intermediate ALS (2,400 feet in length), extending from the Runway 31 southern displaced threshold into the saltmarsh area south of Runway 13-31. The lighting system extends off of airport property into State Sovereign Submerged Lands for a distance of 1,210 linear feet. Alternative 11 is shown in **Figure 2.02.11**.

[2] DOT/FF/AR-02/81, FAA, Reduced Approach Lighting Systems (ALS) Configuration Simulation Testing, July 2002



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DESIGNED BY:	P. HONORE
DRAWN BY:	W. REID
CHECKED BY:	A. HOLESKO

PRIME CONSULTANT:
Passero Associates
Engineering Surveying
Architecture Planning
CERTIFICATE OF AUTHORIZATION #3428

SUBCONSULTANT:

DATE: NOV. 2009

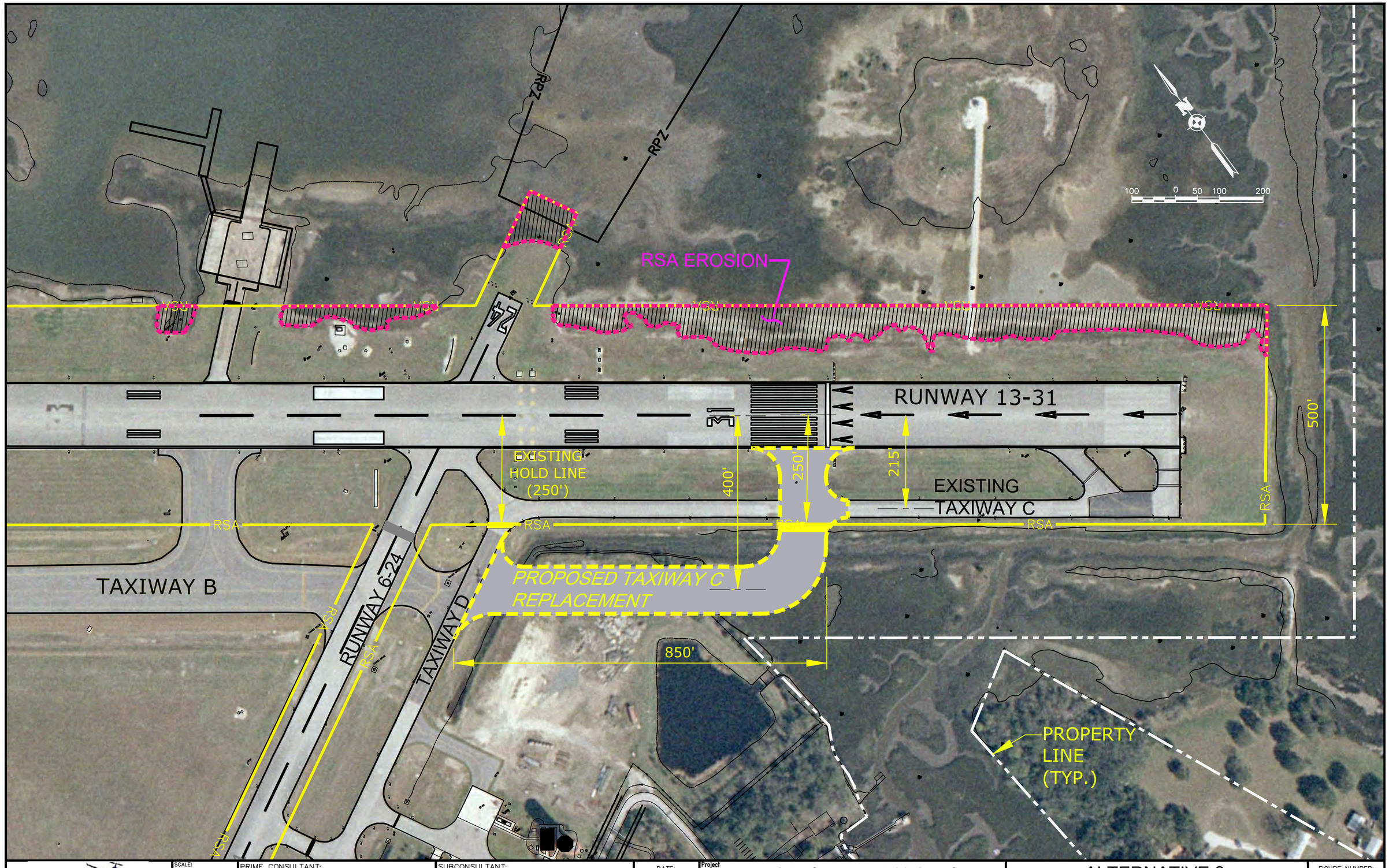
PROJECT NO. 23081.38

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

ALTERNATIVE 1:
(No Action)

FIGURE NUMBER: 2.02.1



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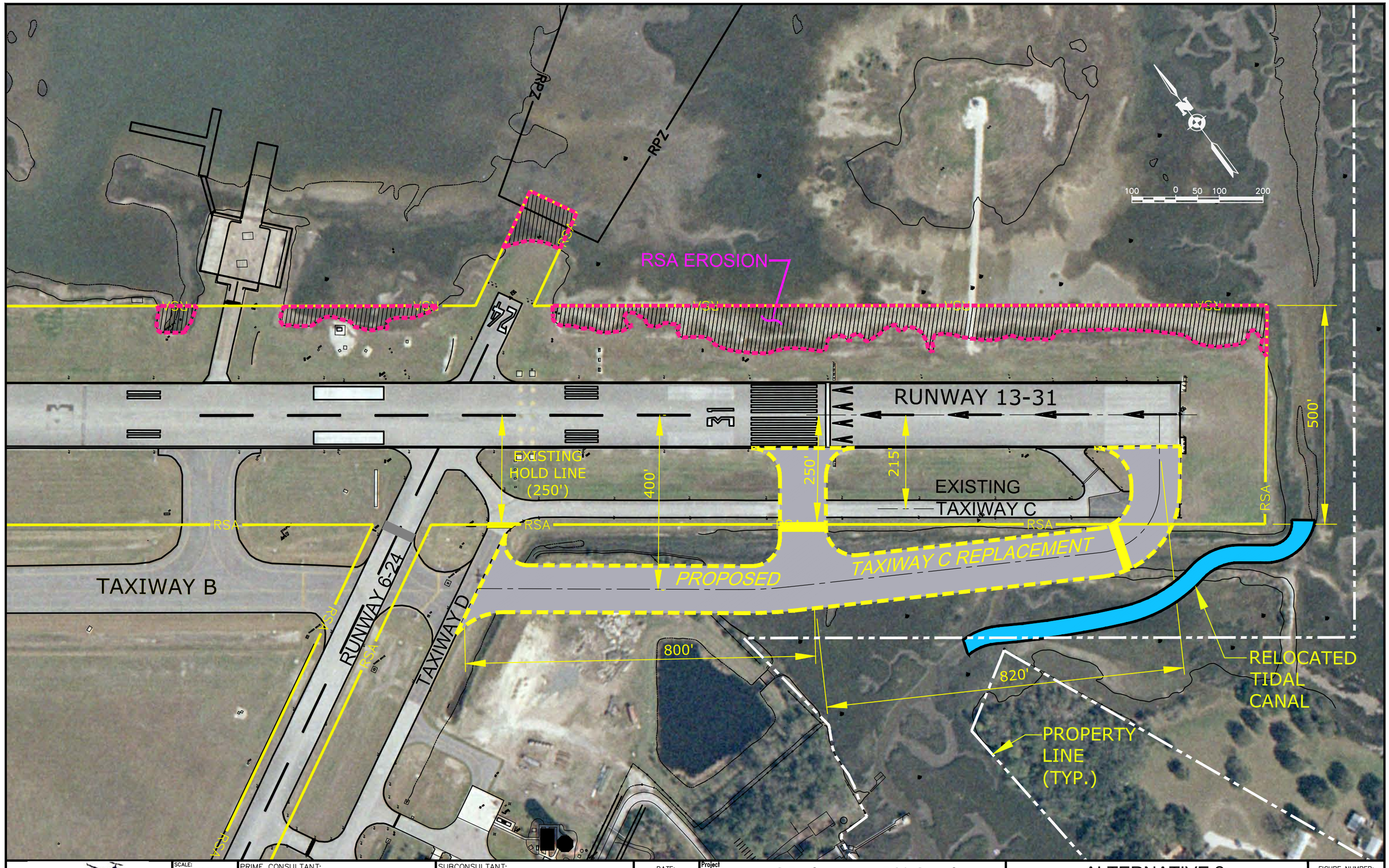
ALTERNATIVE 2:
Taxiway C - Option 2
(Partial Length: 850 Feet)

FIGURE NUMBER: 2.02.2



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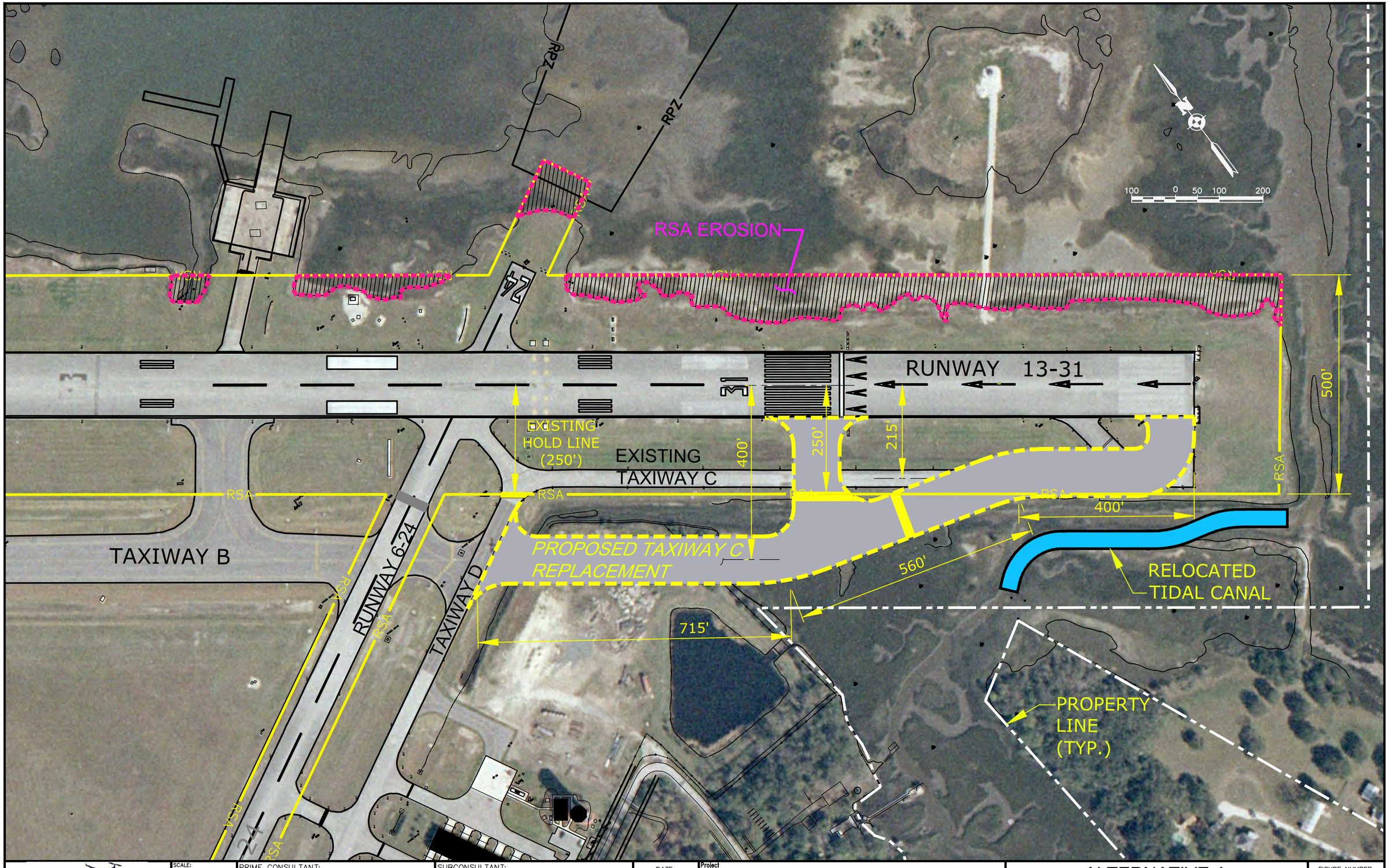
PROJECT NO. 23081.38

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

ALTERNATIVE 3:
Taxiway C - Option 3
(Full Length, 2 Segments: 1,620 Feet)

FIGURE NUMBER: 2.02.3



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SUBCONSULTANT:

DATE: NOV. 2009

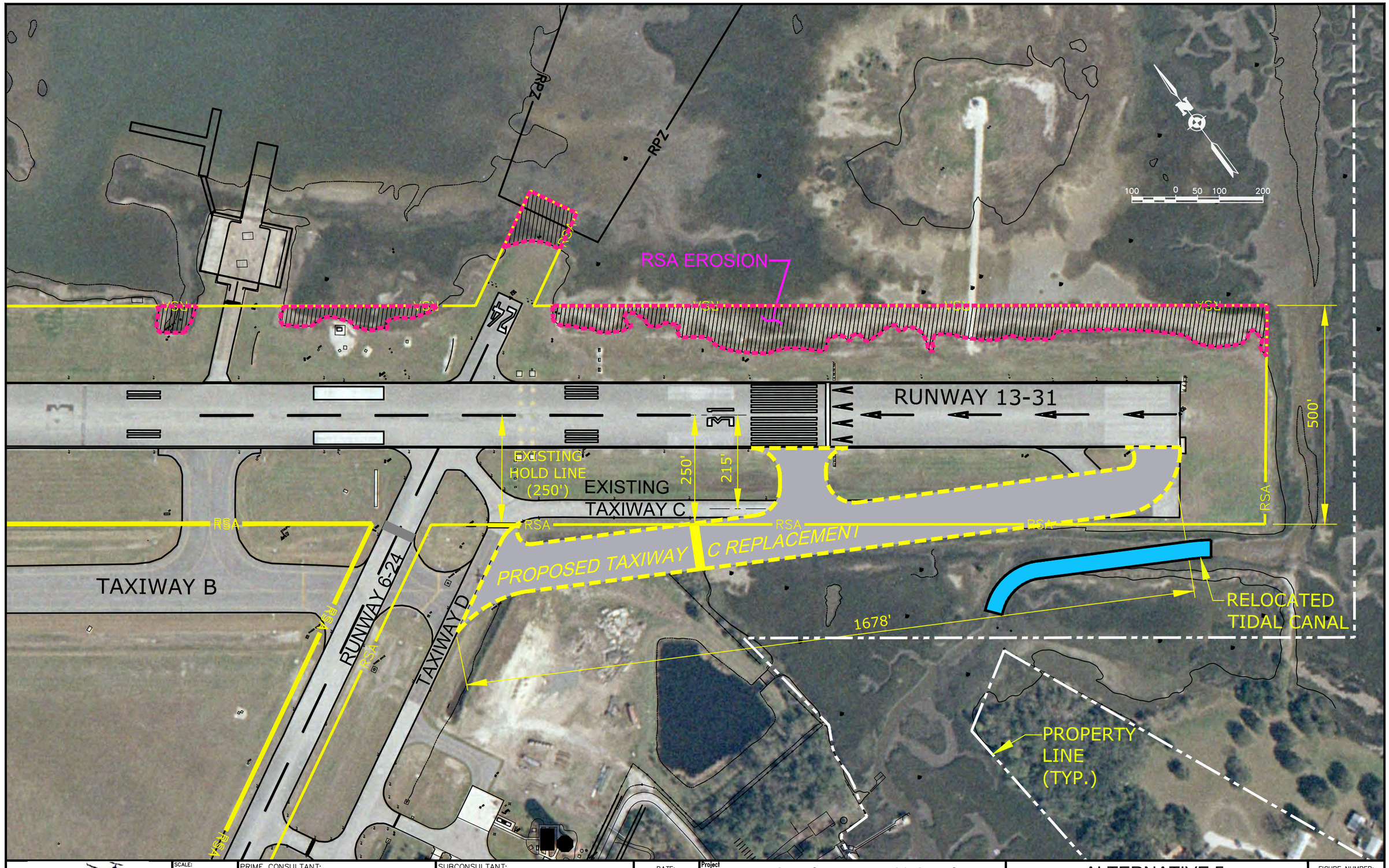
PROJECT NO. 23081.38

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

ALTERNATIVE 4:
Taxiway C - Option 4
(Full Length, 3 Segments: 1,675 Feet)

FIGURE NUMBER: 2.02.4



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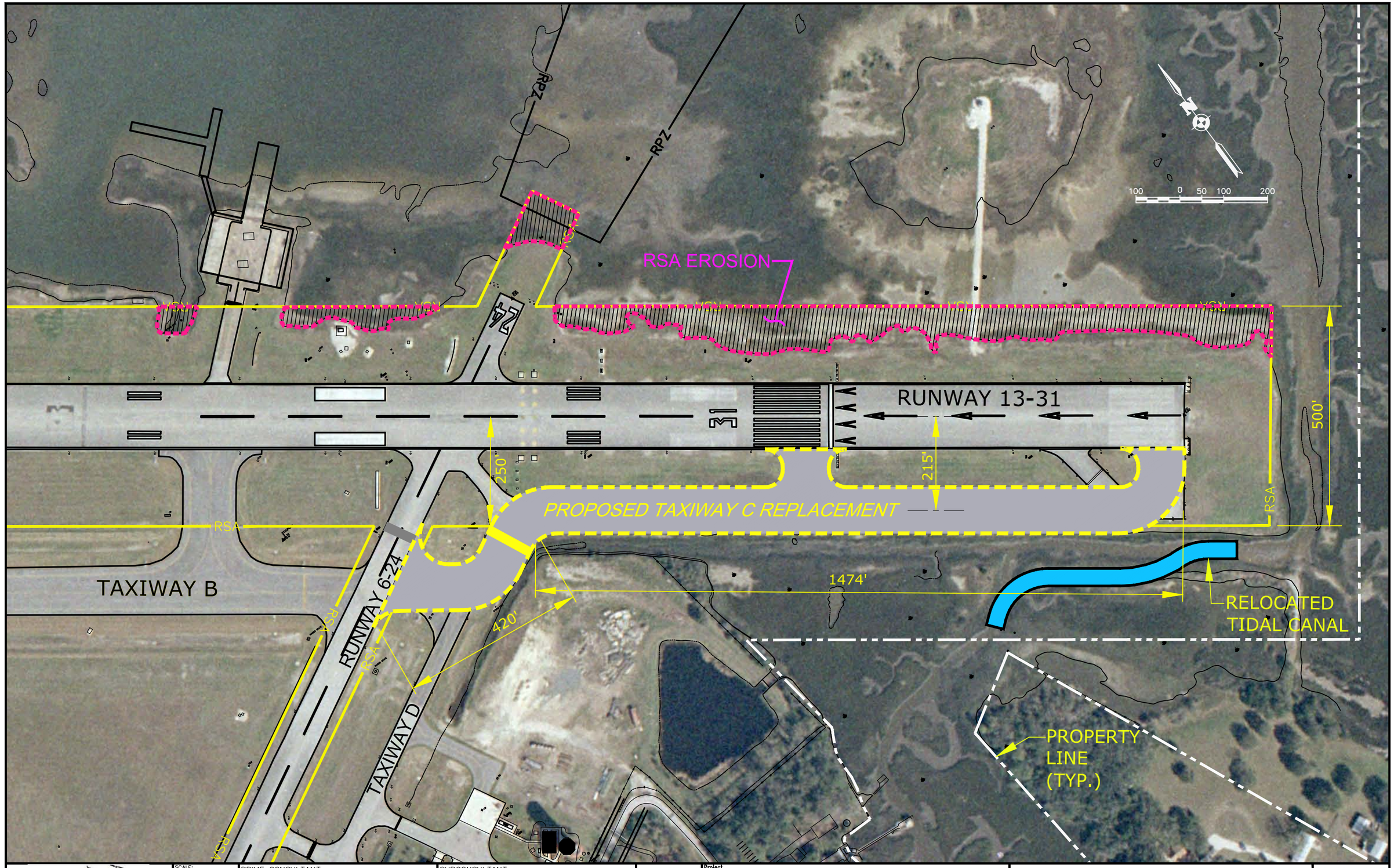
PROJECT NO. 23081.38

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

ALTERNATIVE 5:
Taxiway C - Option 5
(Full Length, Direct: 1,678 Feet)

FIGURE NUMBER: 2.02.5



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SUBCONSULTANT:

DATE: NOV. 2009

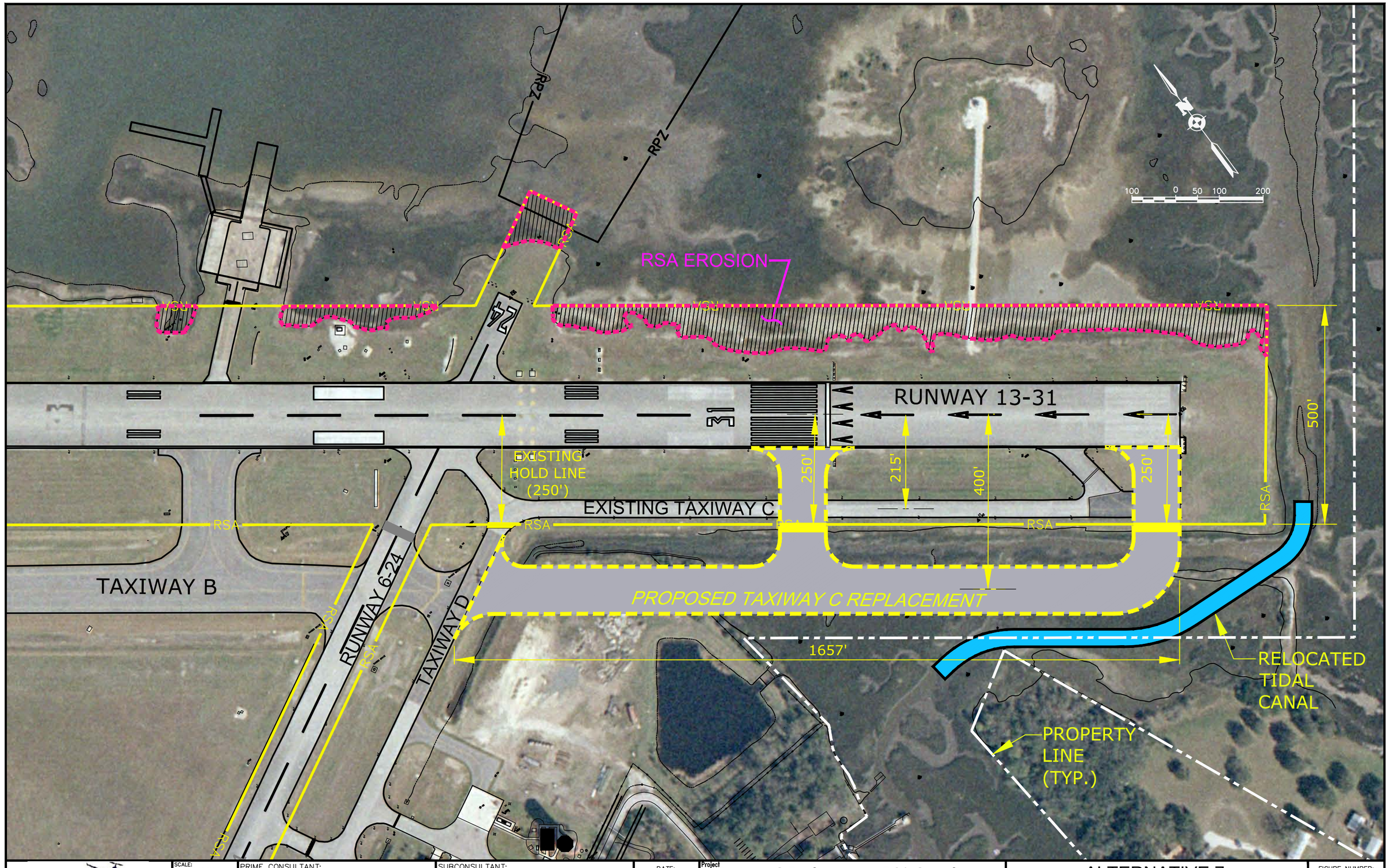
PROJECT NO. 23081.38

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

ALTERNATIVE 6:
Taxiway C - Option 6
(Full Length, 2 Segments: 1,894 Feet)

FIGURE NUMBER: 2.02.6



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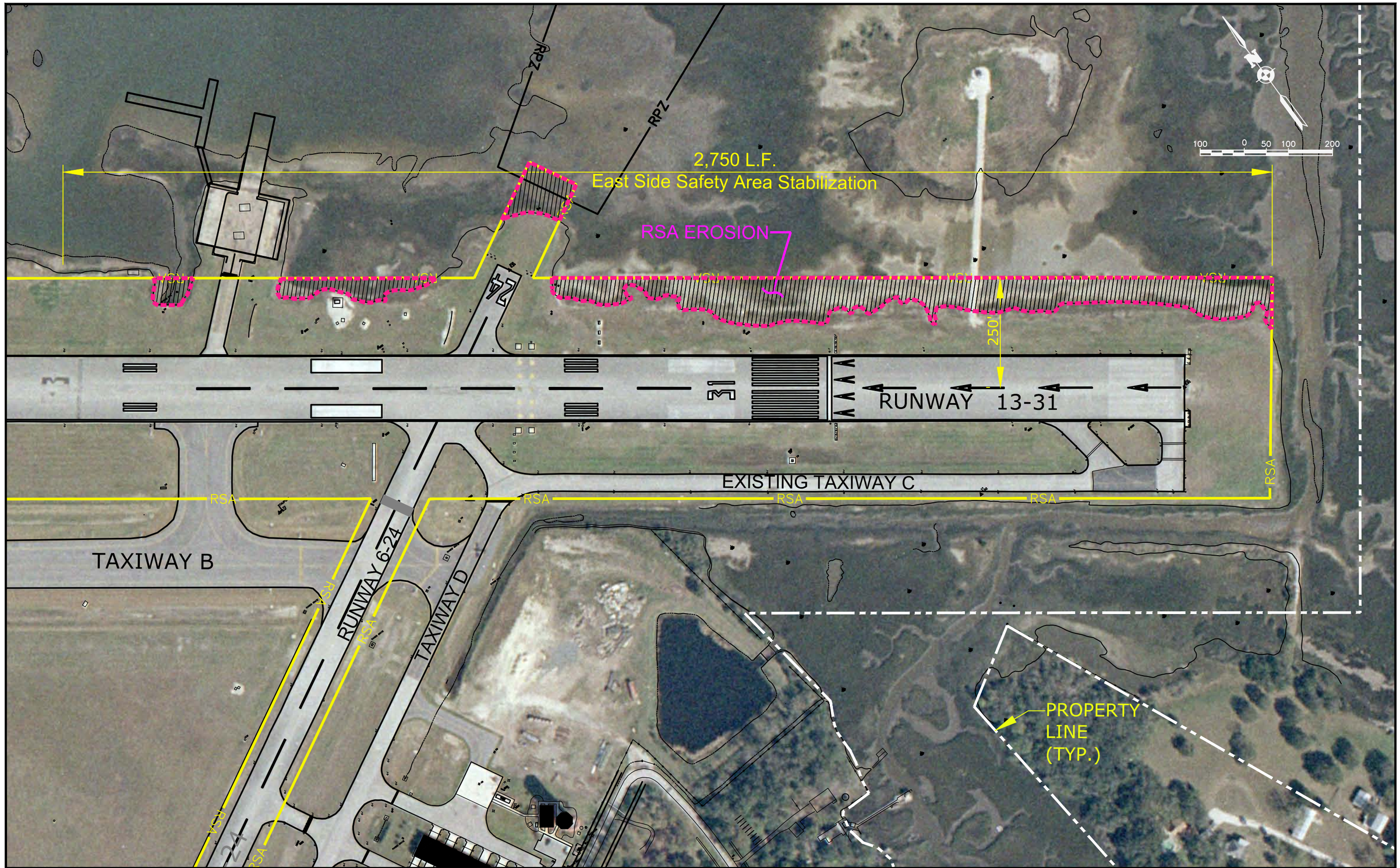
PROJECT NO. 23081.38

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

ALTERNATIVE 7:
Taxiway C - Option 7
(Full Length: 1,657 Feet)

FIGURE NUMBER: 2.02.7



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SUBCONSULTANT:

DATE: NOV. 2009

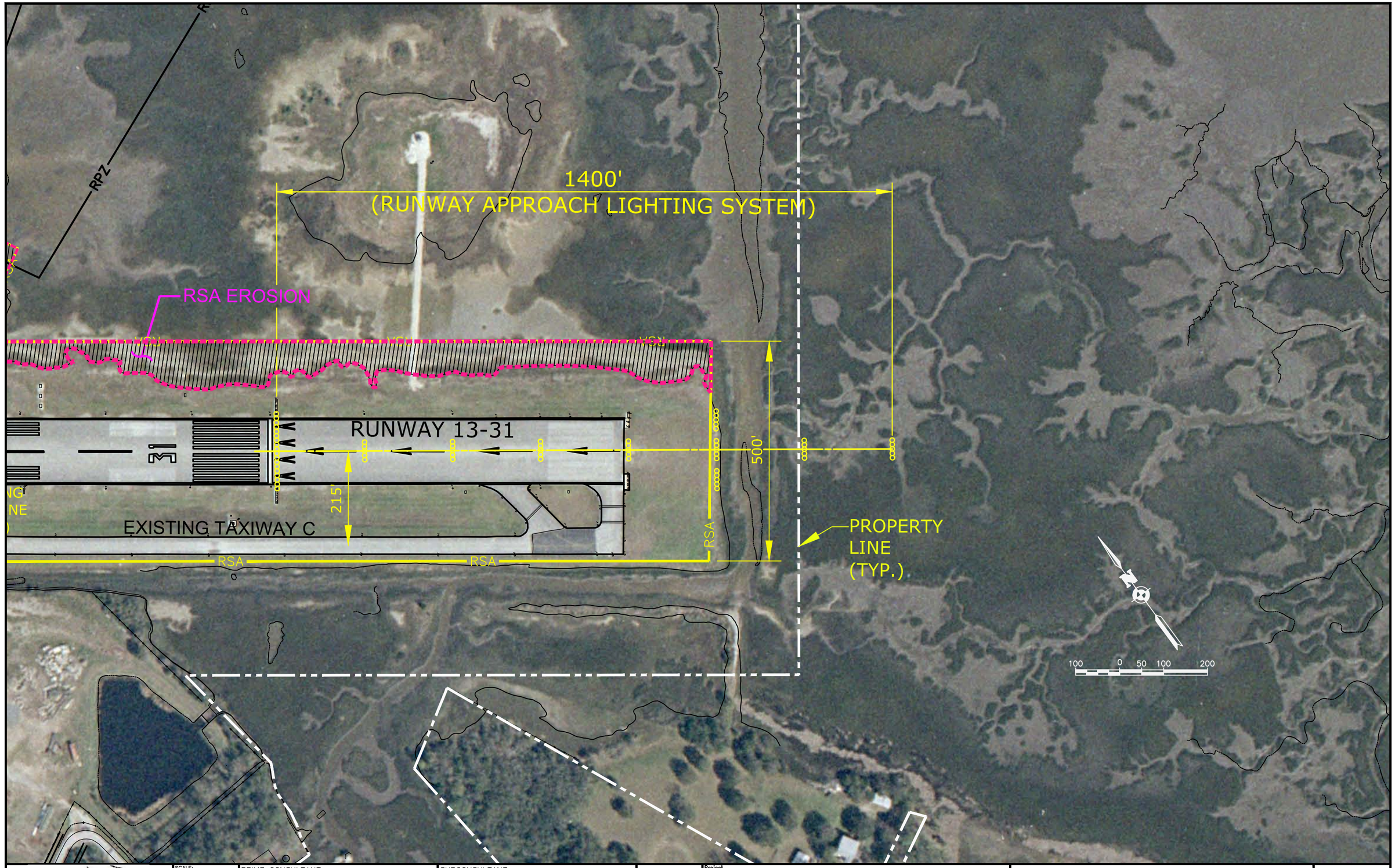
PROJECT NO. 23081.38

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

ALTERNATIVE 8:
Safety Area: East Side

FIGURE NUMBER: 2.02.8



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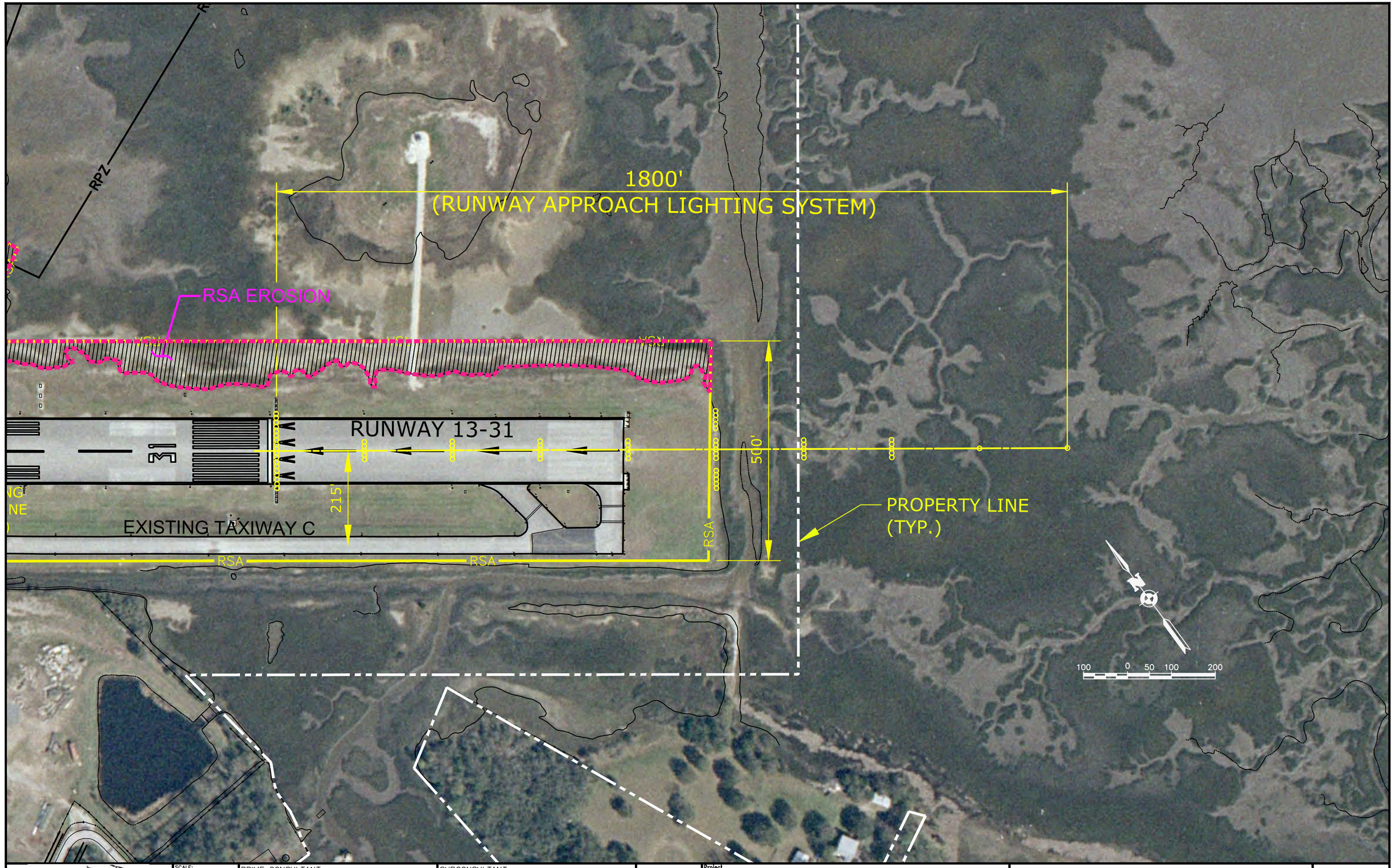

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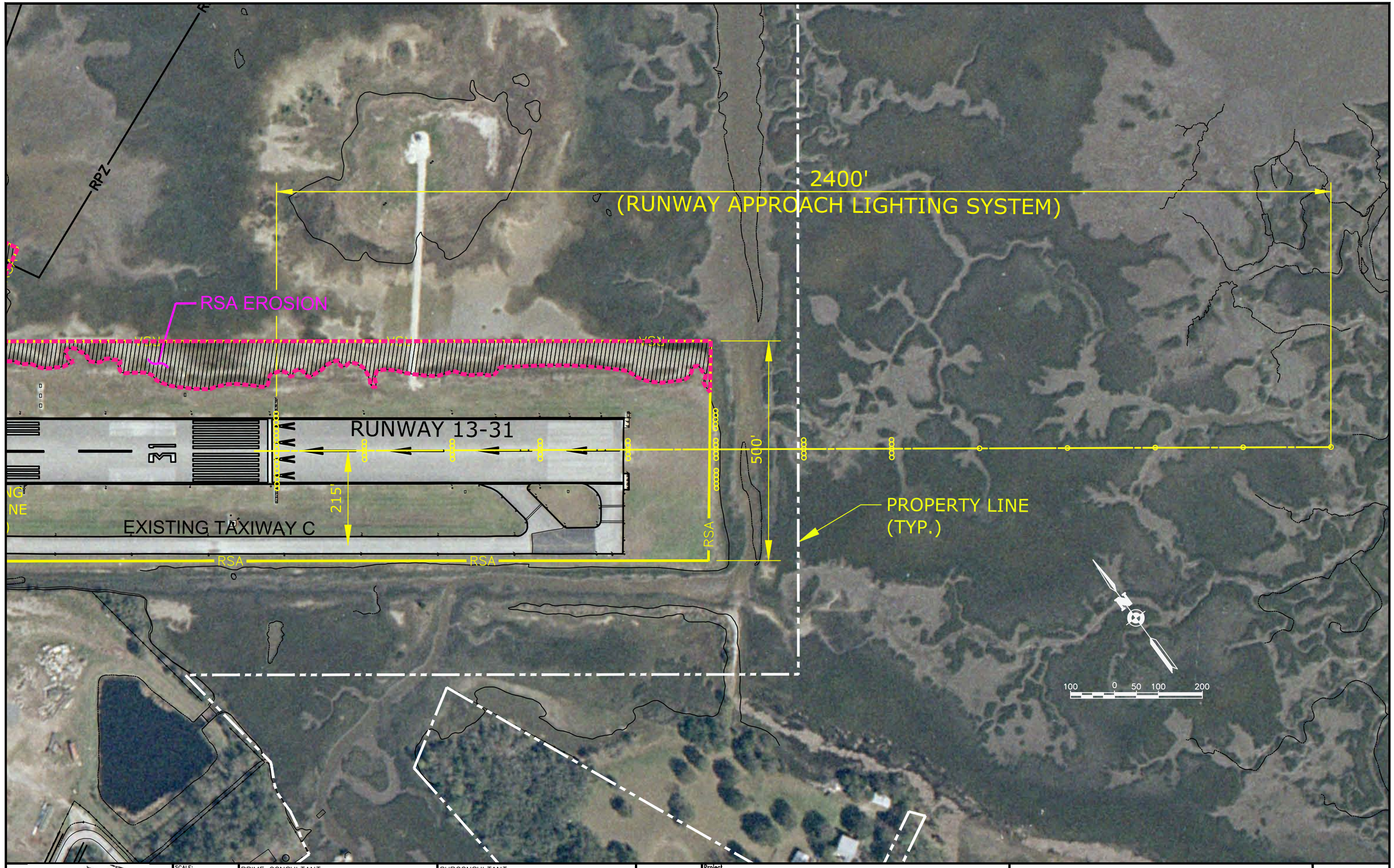

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2.03 ALTERNATIVES SCREENING ANALYSIS

Primary and secondary screening criteria were developed as part of the alternative screening process. Primary screening criteria are based on the purpose and need of each proposed action. The secondary screening criteria are comprised of a range of criteria that include environmental considerations, cost, and site/project location considerations..

2.03.1 Primary Screening Criteria

For the purpose of the EA analysis, the following criteria were used as primary screening criteria (section references from the purpose and need are included):

- FAA Runway and Taxiway Safety Area Design Standards: The RSA alternative (Alternative 8) was screened based on its ability to meet FAA design standards for runway and taxiway safety areas. Refer to FAA Advisory Circular 150/5300-13, section 305, copy provided in **Appendix U**.
- Efficient Aircraft Operations (Minimizing Delay on Taxiway 'C'): Each taxiway alternative (Alternatives 2-7) was screened based on its ability to allow aircraft to efficiently (without delay at aircraft hold lines) use the parallel taxiway system to Runway 31 and access the full pavement length of Runway 31. Refer to FAA Advisory Circular 150/5300-13, section 206, copy provided in **Appendix U**.
- Complete installation of ILS and ALS for a FAR Part 139-Category Airport: Each ALS alternative (Alternative 9-11) was screened based on its ability to allow installation of the complete ILS, including the corresponding approach lighting system that does not exist today. Refer to FAA Aeronautical Information Manual (AIM), sections 1-1-9 and 2-1-1, copy provided in **Appendix U**.
- Consistency with local land use plans and aviation land uses: Each alternative was screened based on its ability to meet on-airport, aviation-related land uses and existing operational demands from airport users.

2.03.2 Secondary Screening Criteria

The following criteria were used in the secondary screening of the alternatives that met the primary screening criteria:

- Construction impact, cost, and feasibility: Each alternative was screened based on its ability to be developed with minimized construction impacts (i.e., impacts resulting from best management practices for project development) and feasible cost for implementation (i.e., costs that can be expected to receive funding from the authority and related grant funding agencies). This criterion will be based on an Acceptable (A) or Not Acceptable (N/A) level.
- Off-airport land use: Each alternative was screened based on its ability to meet off-airport, non-aviation land uses. This criterion will be based on an Acceptable (A) or Not Acceptable (N/A) level.
- Environmental Constraints: Each alternative was screened based on its potential to adversely affect existing environmental resources on and adjacent to the Airport. This criterion was evaluated using the following scale:
    - None - No potential to have an adverse affect; no environmental permits would be required for the development.
    - Low – Low potential to have an adverse affects (i.e., based on expected comments from environmental review agencies, including anticipated permit requirements); impacts would be off-set through best management practices and minimal mitigation efforts; would likely be able to obtain environmental permits on the federal, state, and local levels.

- Medium – Medium potential to have adverse affect (i.e., based on expected comments from environmental review agencies, including anticipated permit requirements); impacts would be off-set through mitigation; would likely be able to obtain federal, state, and local environmental permits.
- High – High potential to have adverse affect (i.e., based on expected comments from environmental review agencies, including anticipated permit requirements); impacts would not likely be able to off-set these impacts through mitigation efforts; would not likely be able to obtain environmental permits on the federal, state, and local levels.

2.03.3 Alternatives Considered but Not Retained

During the primary screening analysis, five alternatives were eliminated from further consideration. Alternatives 2, 4, 5, 6 and 9 were found to be not practicable or feasible and did not warrant additional consideration (see Table 2.03-1).

Alternative 2 was not retained for further consideration because it did not provide a full length replacement to Taxiway 'C', providing efficient aircraft access to the full length of Runway 13-31.

Alternative 4 was not retained for further consideration because the proper separation distance from runway centerline to taxiway centerline was not provided for the full length of the taxiway extension, providing efficient aircraft access to the full length of Runway 13-31.

Alternative 5 was not retained for further consideration because the proper separation distance from runway centerline to taxiway centerline was not provided for the full length of the taxiway extension, providing efficient aircraft access to the full length of Runway 13-31.

Alternative 6 was not retained for further consideration because the proper separation distance from runway centerline to taxiway centerline was not provided for the full length of the taxiway extension, providing efficient aircraft access to the full length of Runway 13-31.

Alternative 9 was not retained for further consideration because the shortened ALS would not provide significant improvement during periods of low visibility to approaching aircraft.

During the secondary screening analysis, two alternatives were eliminated from further consideration. Alternatives 7 and 11 were found to be not practicable or feasible and did not warrant additional consideration (see Table 2.03-1).

- Alternative 7 includes the installation of a full length parallel taxiway, in a single segment (1,657 feet in length). While this alternative meets the design considerations of the Taxiway 'B' extension (primary screening criteria), it extends off of airport property and state-owned land, has an unacceptable construction cost, is not consistent with off-airport land uses, and has a higher impact to natural resources (in comparison to Alternative 3).

- Alternative 11 includes the installation of a full ALS (2,400 feet in length). This alternative meets the design considerations of the ILS and ALS, extends further onto state-owned land (in comparison to Alternative 10), has a higher cost for construction, is not consistent with off-airport land uses, and has a low impact to natural resources.

2.03.4 Alternatives Retained for Environmental Analysis

Following the secondary screening analysis, Alternatives 1, 3, 8, and 10 were retained for detailed environmental analysis.

Alternative 1 is the No Action Alternative. It is retained for further environmental analysis in environmental consequences and baseline comparative purposes to fulfill FAA's responsibility under NEPA and the CEQ Guidelines.

Alternatives 3, 8 and 10 comprise Alternative 12, the Proposed Projects Alternative. These alternatives are discussed in the following section.

2.03.5 Proposed Projects Alternative

The Proposed Projects Alternative is a combination of the Taxiway 'C' alternative (Alternative 3); the RSA alternative (Alternative 8); and, the ALS alternative (Alternative 10). The Proposed Projects Alternative is shown in **Figure 2.02.12**.

Taxiway 'C' Replacement Alternative 3 includes the installation of a full length parallel taxiway, in two segments (800-feet and 820 feet in length). This alternative meets the design considerations of the Taxiway 'C' replacement, remains on airport property and state-owned land, has an acceptable cost for construction, and is consistent with off-airport land uses. Alternative 3 has lower impacts to natural resources compared to Alternative 7. Alternative 3 meets the requirements of FAA Advisory Circular 150/5300-13, section 206.

RSA Alternative 8 includes the rehabilitation and stabilization of the runway safety area on the east side of the runway (2,750 linear feet). This alternative meets the design considerations of the RSA, remains on airport property and state-owned land, has an acceptable cost for construction, and is consistent with off-airport land uses. Alternative 8 has moderate impacts to natural resources, but it is anticipated that these impacts can be mitigated and that the necessary permits are obtainable. Alternative 8 meets the requirements of FAA Advisory Circular 150/5300-13, section 305.

ALS Alternative 10 includes the installation of an intermediate ALS (1,800 feet in length). This alternative meets the design considerations of the ILS and ALS, remains on airport property and state-owned land, has an acceptable cost for construction, is consistent with off-airport land uses, and has a lower impact to natural resources as compared to Alternative 11. Alternative 10 meets the requirements of FAA AIM[3]. The proposed project ALS alternative is shown as **Figure 2.02.12**. The proposed project ALS will require a modification of standard (MOS) request from the FAA to allow the length reduction of the ALS from 2,400 feet to 1,800 feet.

A summary of the screening analysis is provided in Table 2.03-1.

For the remainder of this technical report the Proposed Projects Alternative will be referred to as the Proposed Project.

2.04 Anticipated Development Schedule, Proposed Cost

Based on successful completion, review, and associated results (environmental determination and findings) on the EA, the following project development schedule is proposed by the Authority:

1) May, 2010: FAA issues a determination or finding on the EA.

[3] Federal Aviation Administration Aeronautical Information Manual (AIM), Sections 1-1-9 and 2-1-1, February 14, 2008

2) June, 2010: Authority completes final design and permitting of airport projects (Phase 1, $5,000,000).
3) August – December 2010: Authority completes Phase 1construction ($5,250,000).
4) January – June 2011: Authority completes final design of airport projects (Phase 2, $5,000,000).
5) August – December 2011: Authority completes Phase 2 construction ($5,500,000).

The total project cost for the proposed project (three components) is approximately $10,000,000, broken down into the following component costs:

1) Phase 1 Construction ($5,250,000):
   a. Runway Safety Area Stabilization: $3,500,000
   b. Wetland Mitigation: $1,750,000

2) Phase 2 Construction ($5,500,000):
   a. Taxiway 'C' Replacement (Taxiway B Extension): $4,250,000
   b. Approach Lighting System: $1,250,000

Table 2.03-1 Summary Table of Alternatives Analysis

	Screening Criteria	Alt 1 No Action	Alt 2 T/W B Option 2	Alt 3 T/W B Option 3	Alt 4 T/W B Option 4	Alt 5 T/W B Option 5	Alt 6 T/W B Option 6	Alt 7 T/W B Option 7	Alt 8 RSA Option 1	Alt 9 ALS Option 1	Alt 10 ALS Option 2	Alt 11 ALS Option 3
Primary Screening Criteria	FAA Design Standards (Safety Area, Immediate and Long-Term)	---	---	---	---	---	---	---	X	---	---	---
	Efficient Aircraft Operations (Minimize Holding and Delay, Full Use of Runway 13-31)	---	---	X	---	---	---	X	---	---	---	---
	Complete ILS and ALS	---	---	---	---	---	---	---	---	---	X	X
	Consistent Local Land Use, Aviation-Related Land Use, meet existing operational demands (within Authority or State Ownership)	X	X	X	X	X	X	X	X	X	X	X
Secondary Screening Criteria	Construction Impact Cost and Feasibility (Acceptable-A, Not Acceptable-N/A)	A	---	A	---	---	---	N/A	A	---	A	N/A
	Consistent Off-Airport Land Use (Acceptable-A, Not Acceptable-N/A)	A	---	A	---	---	---	N/A	A	---	A	N/A
	Environmental Constraints – Potential to adversely affect natural resources, etc. (None, Low, Medium, High)	None	---	Medium	---	---	---	High	Low	---	Low	Low

Notes: The "---" denotes areas where screening criteria was not met.
The "X" denotes areas where primary screening criteria was met.
The "A" denotes areas where secondary screening criteria were considered acceptable.
The "N/A" denotes areas where secondary screening criteria were not considered acceptable.
The environmental constraint criteria considered each alternative to have none, low, medium, or high potential impacts.

***Source: Passero Associates, LLC**

1800 L.F.
(Runway Approach Lighting Sytem)

2,750 L.F.
East Side Safety Area Stabilization

RSA EROSION

RPZ

RPZ

100 0 50 100 200

RUNWAY 13-31

250'

500'

EXISTING
HOLD LINE
(250')

400'

250'

215'

EXISTING
TAXIWAY C

RSA

RSA

RSA

TAXIWAY C REPLACEMENT

PROPOSED

RUNWAY 6-24

TAXIWAY D

RSA

RSA

800'

820'

RELOCATED
TIDAL
CANAL

PROPERTY
LINE
(TYP.)

ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY

SCALE: AS SHOWN
DESIGNED BY: P. HONORE
DRAWN BY: W. REID
CHECKED BY: A. HOLESKO

PRIME CONSULTANT:
Passero Associates
Engineering Surveying
Architecture Planning
CERTIFICATE OF AUTHORIZATION #3428

SUBCONSULTANT:

DATE: NOV. 2009

PROJECT NO. 23081.38

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

ALTERNATIVE 12:
Proposed:
Combined Alternatives 3, 8 and 10

FIGURE NUMBER:
2.02.12

CHAPTER 3

AFFECTED ENVIRONMENT

JUNE 2010

PREPARED FOR:
ST. AUGUSTINE – ST. JOHNS COUNTY
AIRPORT AUTHORITY
4796 U.S. 1 NORTH
ST. AUGUSTINE, FL 32095

PREPARED BY:
PASSERO ASSOCIATES, LLC
13453 N. MAIN ST, SUITE 106
JACKSONVILLE, FL 32218

NFRA
Northeast Florida Regional Airport
Fly Smart!

CHAPTER 3 – AFFECTED ENVIRONMENT

3.01 INTRODUCTION

As stated within FAA Order 1050.1E: "this section shall succinctly describe existing environmental conditions of the potentially affected geographic area(s)."[1] This chapter will provide data and supporting documentation for environmental resources that could be affected by the proposed project. This section discusses the following environmental categories for the project site, airport property and surrounding vicinity that may be affected by the no action or proposed project:

- Biotic Resources
- Coastal Zone Management
- Compatible Land Use
- Construction
- Federally – Listed Endangered and Threatened Species
- Energy Supplies, Natural Resources, and Sustainable Design
- Floodplains
- Hazardous Materials
- Light Emissions and Visual Impacts
- Noise
- Social and Socioeconomic
- Solid Waste
- Water Quality
- Wetlands

Section 3.18 of this EA discusses environmental resources that would not be affected by the proposed project. FAA Order 5050.4B states that "for resources not affected, the following statement is sufficient: 'the no action, proposed project, and reasonable alternatives would not affect a specific list of resources that applies to the project and airport'.[2] Following is a list of resources that the No Action and or the Proposed Project would not affect:

- Air Quality
- Coastal Barriers
- DOT Section 4(f) Lands
- Environmental Justice
- Farmland
- Historical, Architectural, and Archeological Resources
- Induced Socioeconomic
- Wild and Scenic Rivers

The following sections of this chapter discuss existing conditions within the airport property and the proposed project area. Chapter 4 addresses the potential environmental impacts of the proposed projects and no action alternative.

[1] FAA Order 1050.1E 405e
[2] FAA Order 5050.4B 706e

3.02 PROJECT LOCATION AND VICINITY

The proposed project area is located within the southeastern portion of the Airport. The airport is located 0.1 mile north of the City of St. Augustine in St. Johns County. The Airport lies within the jurisdictional boundaries of FAA Southern Region, EPA Region Four, FDOT Planning District 2, FDEP Northeast District and the Northeast Florida Regional Planning Council Planning District 4.

As shown in **Figure 3.02.1**, Airport Location Map, St. Johns County is located on the east coast of north Florida bordered by Duval County to the north, Clay and Putnam Counties to the west, and Flagler County to the south. St. Johns County is also located within the boundaries of the Jacksonville Standard Metropolitan Statistical Area (MSA). The City of St. Augustine is located approximately 35 miles south of Jacksonville and 46 miles north of Daytona Beach and serves as the County seat for St. Johns County.

3.03 BIOTIC RESOURCES

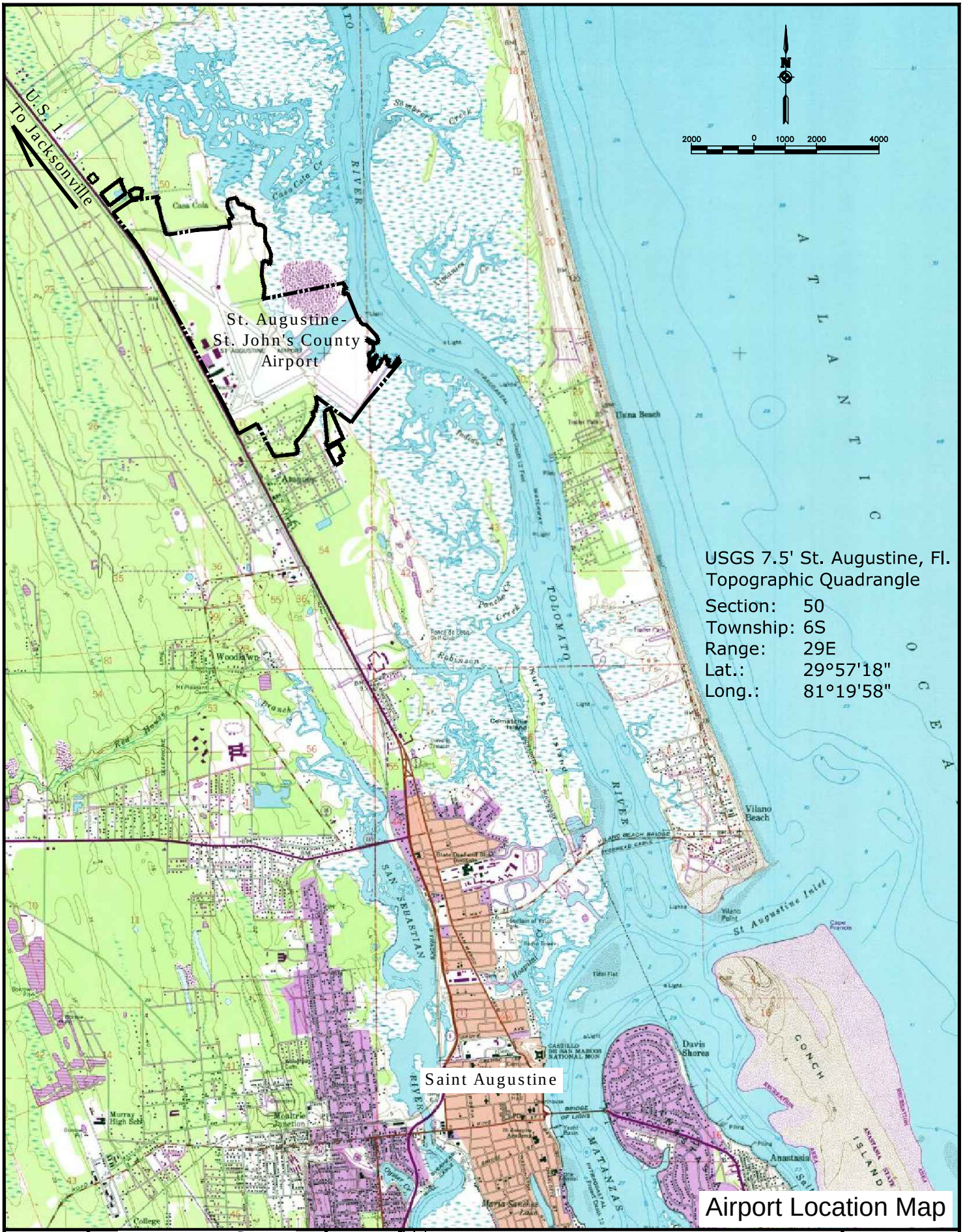
The term "biotic resources" means various types of flora (plants), fauna (animals), and the supporting habitat types in a particular area. The term also refers to rivers, lakes, wetlands, forests, upland communities, and other habitat types supporting flora and fauna. The Biotic Resources section of a NEPA[3] document must address the effects on biotic resources due to a proposed action and its reasonable alternatives. Biotic Resources must also address action-related effects and consequences on the affected area's *state-listed* rare or unique species or their habitats.

The information provided in this section of the EA is a summary of the biotic resources that exist in the vicinity of the airport and may be potentially affected by the proposed projects. For more detailed information about the biotic resources observed or potentially occurring at the airport refer to **Appendix A**, **Appendix B, and Appendix C**.

Existing conditions within the project study area were evaluated using available data and resource maps, information obtained from published sources, and the results of field inspections of the site conducted in April 2009. Vegetative assemblages, Land Use-Land Cover and habitat types were determined based on available data. The presence or potential occurrence of protected species and general wildlife and their habitat were evaluated based on literature and field inspections of Airport property. Resources that were reviewed included: 2004 St. Johns River Water Management District (SJRWMD) Florida Land Use Cover and Forms Classification System (FLUCFCS) mapping, National Wetlands Inventory (NWI) mapping quadrangle USFWS 2008, 2009 Florida Natural Areas Inventory (FNAI) Database, Florida Fish and Wildlife Commission (FWC) 2009 manatee mortality and synoptic survey results, and 2007 FWC seagrass maps. Various federal and state regulations were also reviewed including Chapter 372, Wildlife – 372.072 Florida Endangered and Threatened Species Act; and Chapter 379, Fish and Wildlife Conservation.

The Airport property boundary and the general project study area are shown in **Figure 3.03.1**. The methods and detailed results of the biotic resources field inspections are provided separately in **Appendices A, B, C, D, and E**.

[3] Federal Aviation Administration, Environmental Desk Reference for Airport Actions, 2007



USGS 7.5' St. Augustine, Fl.
Topographic Quadrangle

Section:	50
Township:	6S
Range:	29E
Lat.:	29°57'18"
Long.:	81°19'58"

SCALE:	AS SHOWN
DESIGNED BY:	P. HONORE
DRAWN BY:	W. REID
CHECKED BY:	A. HOLESKO

ST. AUGUSTINE • ST. JOHNS COUNTY
AIRPORT AUTHORITY

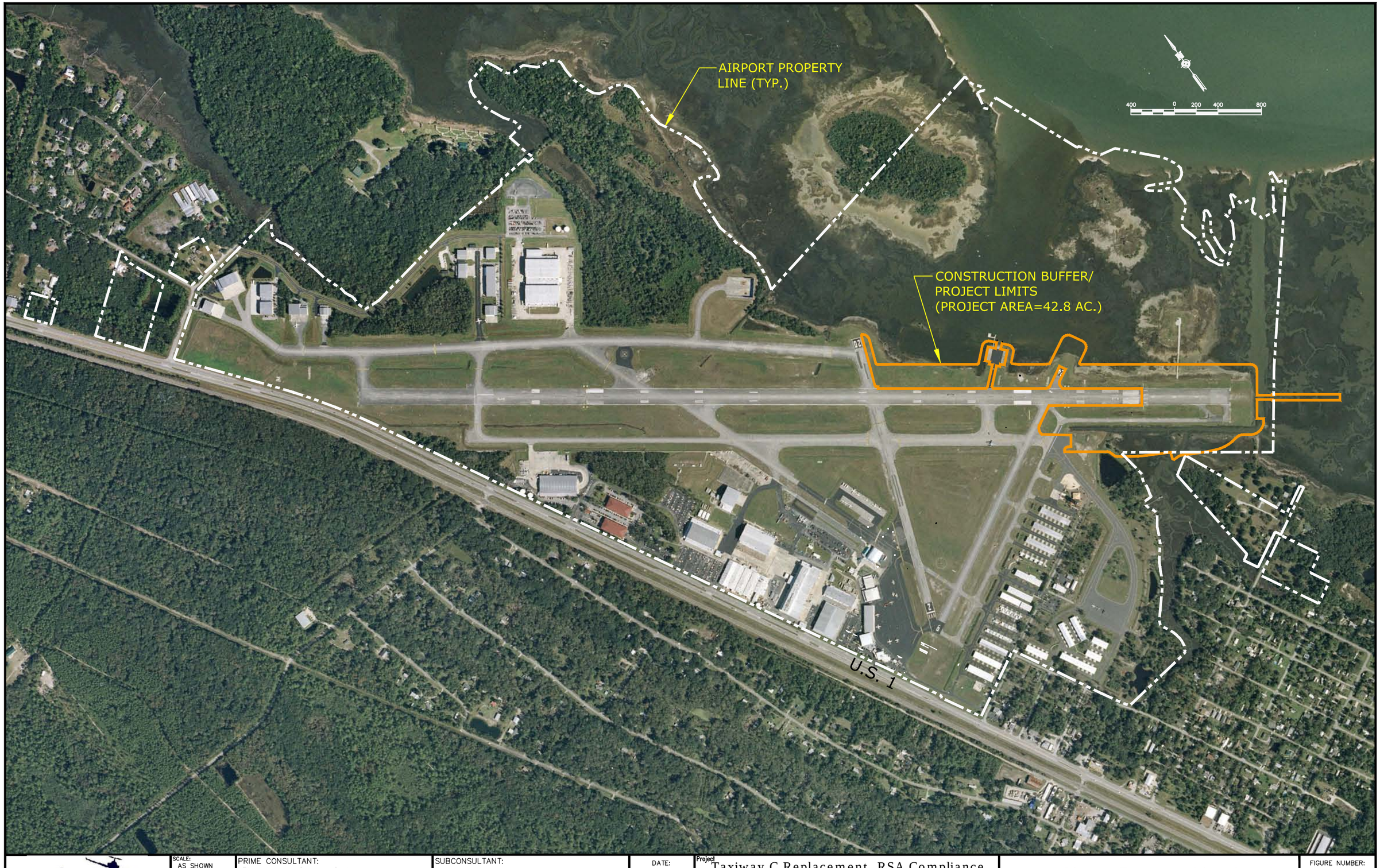
DATE: NOV. 2009

PROJECT NO. 23081.38

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

FIGURE NUMBER: 3.02.1



ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY

SCALE:	AS SHOWN
DESIGNED BY:	P. HONORE
DRAWN BY:	W. REID
CHECKED BY:	A. HOLESKO

PRIME CONSULTANT:
Passero Associates
Engineering Surveying
Architecture Planning
CERTIFICATE OF AUTHORIZATION #3428

SUBCONSULTANT:

DATE: NOV. 2009

PROJECT NO. 23081.38

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

Airport Property Line / Project Limits

FIGURE NUMBER: 3.03.1

3.03.1 Vegetation

The field inspection revealed that the dominant vegetation present at the airport includes maintained grasses (*Cynodon dactylon* and *Paspalum notatum*), spiderwort (*Tradescantia ohiensis*), blackberry (*Rubus* sp.), seashore dropseed (*Sporobolus virginicus*), thistle (*Cirsium* sp.), Indian sweetclover (*Melilotus indicus*), fiddle dock (*Rumex pulcher*), groundcherry (*Physalis arenicola*), and St. John's-wort (*Hypericum* sp.). The vegetation adjacent to the saltmarsh habitats included maintained grasses, saltgrass (*Distichlis spicata*), dollarweed (*Hydrocotyle umbellata*), yaupon holly (*Ilex vomitoria*), gallberry (*Ilex glabra*), and prickly-pear cactus (*Opuntia* sp.). In addition, wrack lines (a line of debris, litter, refuse fragments, etc. deposited along the shore from storm and tidal actions) and debris were present in the areas adjacent to the saltmarsh habitats. For more information regarding the species of vegetation found at the Airport see **Appendix A**.

Vegetation observed during the surveys in the saltmarsh habitat is included in **Table 3.03-1** below.

Table 3.03-1
Dominant Saltmarsh Vegetation Observed Adjacent to the Airport.

Common Name	Species Name	Common Name	Species Name
Saltgrass	*Distichlis spicata*	Largeleaf marsh pennywort	*Hydrocotyle bonariensis*
Black needlerush	*Juncus roemerianus*	Black mangrove	*Avicennia germinans*
Big leaf sumpweed	*Iva frutescens*	Sea purslane	*Sesuvium portulacastrum*
Seashore marshelder	*Iva imbricata*	Crested saltbush	*Atriplex pentandra*
Saltwort	*Batis maritima*	Sea oxeye	*Borrichia frutescens*
Glasswort	*Sarcocornia ambigua*	Seaside goldenrod	*Solidago sempervirens*
Saltmarsh cordgrass	*Spartina alterniflora*	Sea blite	*Suaeda linearis*
Sand cordgrass	*Spartina bakeri*	Saltwater false-willow	*Baccharis angustifolia*
Marshhay cordgrass	*Spartina patens*	Wax myrtle	*Myrica cerifera*

*Source: Field data from Birkitt Environmental Services, Inc.

3.03.2 Land Use – Land Cover

The Florida Land Use, Cover and Forms Classification System (FLUCFCS) and the National Wetlands Inventory (NWI) were used to classify land types and wetland habitats by increasing levels of specificity (**Figure 3.03.2**). Habitat types, including uplands and wetlands, were characterized on the site and adjacent to the airport using published data and observations recorded during the preliminary and detailed site investigations (**Table 3.03-2**).

Habitat types include the maintained airfield, streams and waterways, reservoirs, saltwater marshes, non-vegetated wetland, and residential areas.

More detailed information regarding species composition of FLUCFCS communities is presented in Appendices A, B, and C.

3.03.3 Protected Species and General Wildlife

The potential occurrence of state protected and general wildlife species at the airport was evaluated based on the FNAI report[4], FWC resource maps, and the presence of suitable habitat in the project

[4] Lindsay Horton, Data Services Coordination, Florida Natural Area Inventory. FNAI Database Search Results. Letter communication, May 31, 2009.

ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY

SCALE 1" = 350'

DESIGNED BY David Loy; Melissa Green

DRAWN BY

CHECKED BY

PRIME CONSULTANT:
Passero Associates
Engineering Surveying
Architecture Planning
CERT. OF AUTHORIZATION #3428

SUBCONSULTANT:
BIRKITT ENVIRONMENTAL SERVICES, INC.

DATE 10/22/09

PROJECT NO. 23081.38

Project Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

Existing Conditions - FLUCFCS

FIGURE NUMBER
Figure 3.03.2

Table 3.03-2
Upland and Wetland Habitat Types at the Airport

Land Use	FLUCFCS Code	USFWS Classification (NWI Code)*	Area (acres)
Streams and Waterways	5100	E1UBLx	3.91
Reservoirs	5300	-	0
Airports	8110	-	26.7
Saltwater Marshes	6420†	E2USP	12.2
Residential, Low Density	1100	-	0

*Source: Cowardin et. al, 1979, † Saltwater Marsh habitat also includes salt flats (FLUCFCS 650)
E = Estuarine, 1 = Subtidal, UB = Unconsolidated bottom, L = Subtidal x = Excavated, 2 = Intertidal US = Unconsolidated shore, P = Irregularly Flooded

area. **Table 3.03-3** lists the potential species that could be found in the proposed project area based on the literature research and the habitats occurring on site.

Table 3.03-3
Potentially Occurring Listed Species in the Airport Vicinity*

Common Name	Scientific Name	State Status
Manatee	*Trichechus manatus*	**E**
Atlantic Sturgeon	*Acipenser oxyrinchus oxyrinchus*	**SSC**
Shortnose Sturgeon	*Acipenser brevirostrum*	**E**
American Alligator	*Alligator mississippiensis*	**SSC**
Eastern Indigo Snake	*Drymarchon corais couperi*	**T**
Florida Pine Snake	*Pituophis melanoleucus mugitus*	**SSC**
Gopher Tortoise	*Gopherus polyphemus*	**T**
Little Blue Heron	*Egretta caerulea*	**SSC**
Snowy Egret	*Egretta thula*	**SSC**
Tricolored Heron	*Egretta tricolor*	**SSC**
White Ibis	*Eudocimus albus*	**SSC**
Limpkin	*Aramus guarauna*	**SSC**
Brown Pelican	*Pelecanus occidentalis*	**SSC**
Wood Stork	*Mycteria americana*	**E**
Least Tern	*Sterna antillarum*	**T**

*Source: Based on habitat present and FNAI report
SSC = Species of Special Concern; T = Threatened; E = Endangered

3.03.3.1 General Wildlife

Table 3.03-4 lists the general wildlife species that were observed during the April field inspections at the airport. These species were predominantly observed roosting on the airport sea plane dock or foraging in the open water and salt marsh habitats within and adjacent to the proposed project area.

Table 3.03-4
General Wildlife Species Observed in or Adjacent to Airport – April 2009

Common Name	Species Name	Common Name	Species Name
Birds			
Blackbird, red-winged	*Agelaius phoeniceus*	Martin, purple	*Progne subis*
Coot, American	*Fulica americana*	Merganser, hooded	*Lophodytes cucullatus*
Cormorant, double crested	*Phalacrocorax auritus*	Osprey	*Pandion haliaetus*
Duck, mottled	*Anas fulvigula*	Rail, clapper	*Rallus longirostris*
Egret, cattle	*Bubulcus ibis*	Sparrow	*Ammodramus spp.*
Egret, great	*Ardea alba*	Starling, european	*Sturnus vulgaris*
Grackle, boat-tailed	*Quiscalus major*	Swallow, northern rough winged	*Stelgidopteryx serripennis*
Gull, herring	*Larus argentatus*	Teal	*Anas spp.*
Gull, laughing	*Larus atricilla*	Tern, common	*Sterna hirundo*
Gull, ring-billed	*Larus delawarensis*	Turnstone, ruddy	*Arenaria interpres*
Harrier, northern	*Circus cyaneus*	Vulture, turkey	*Cathartes aura*
Heron, great blue	*Ardea herodias*	Whimbrel	*Numenius phaeopus*
Heron, green	*Butorides virescens*	Willet	*Catoptrophorus semipalmatus*
Killdeer	*Charadrius vociferous*	Yellowlegs, lesser	*Tringa flavipes*
Kingfisher, belted	*Ceryle alcyon*		
Mammals			
Deer, white-tailed	*Odocoileus virginianus*	Raccoon, common	*Procyon lotor*
Reptiles			
Alligator, American	*Alligator mississippiensis*	Water snake, brown	*Nerodia taxispilota*
Snake, rat	*Elaphe obsoleta*		
Invertebrates			
Crab, fiddler	*Uca* spp.	Oyster, eastern	*Crassostrea virginica*
Periwinkle	*Littorina* spp.	Whelk, lightning	*Busycon contrarium*
Quahog	*Mercenaria mercenaria*	Crab, blue	*Callinectes sapidus*
Fish			
Killifish	*Fundulus* spp.	Redfish	*Sciaenops ocellatus*
Mosquitofish	*Gambusia holbrooki*		

*Source: Field data from Birkitt Environmental Services, Inc.

The most frequently observed non-listed species were various species of birds, which were mainly seen flying over the project area or in adjacent areas. Other common wildlife species observed in or adjacent to the Airport included alligators, raccoons, rabbits, snakes, and deer. Additional information on the non-listed species observed and the habitat found in and adjacent to the project area is discussed in **Appendix A**.

3.03.3.2 State Protected Species

Table 3.03-5 lists the species that are classified as threatened, endangered or species of special concern by the State of Florida Fish and Wildlife Commission (FWC), which were observed at the airport during the April 2009 field inspections. The state listed species recorded in the project area

Table 3.03-5
State - Listed and Protected Species Observed in or Adjacent to the Project Area – April 2009

Common Name	Scientific Name	State Status
Bald Eagle	*Haliaeetus leucocephalus*	**P**
Snowy Egret	*Egretta thula*	**SSC**
Tricolored Heron	*Egretta tricolor*	**SSC**
White Ibis	*Eudocimus albus*	**SSC**
Brown Pelican	*Pelecanus occidentalis*	**SSC**
Wood Stork	*Mycteria Americana*	**E**
Piping Plover	*Charadrius melodus*	**T**
Least Tern	*Sterna antillarum*	**T**

*Source: Field data from Birkitt Environmental Services, Inc.
SSC = Species of Special Concern; T = Threatened; E = Endangered

included bird species that were observed either roosting or foraging in areas with suitable habitat for the species. For example, several least terns were observed foraging in the open water areas adjacent to the airport seaplane dock. However, many of the state listed bird species were recorded roosting on poorly suitable habitats such as man-made structures including stormwater drains, the seaplane dock, and the boat ramp.

For a description of the Federally-listed Endangered and Threatened Species, refer to Section 3.07. For additional detailed information regarding State or Federal protected species, refer to **Appendix A**.

3.03.4 Wetlands
Refer to Section 3.16 for details on jurisdictional wetlands located within the project area.

3.03.5 Benthic Habitat
Benthic habitat in and around the project area was evaluated based on review of resource maps (2004 FLUCFCS, 2008 NWI, and 2007 FWC seagrass maps) as well as the FNAI report (**Appendix P**) and site inspections conducted in April 2009 (see **Appendix C, Figure 2**). The benthic resources within the intertidal and subtidal areas potentially affected by the proposed project were assessed in salt marsh habitats adjacent to the airport, the open water areas north of Runway 13-31, and the previously dredged canal and tidal ditch. Benthic sediments were generally unconsolidated. Oysters were observed in beds, patches or individual clumps within the open water areas of the intertidal or subtidal zone at the waterward edge of the saltmarsh. Onsite investigations revealed that there is approximately 0.51 acres of oysters located within the proposed project area (see **Appendix C, Figures 3A and 3B**). The oyster beds and patches present in the intertidal zone on the northeast side of the Airport were observed to be healthy with a viable population of adult and juvenile individuals. The oyster patches and individual clumps located in the previously dredged

tidal ditch and canal on the south/southwest side of the airport were observed to be of moderate health and in some cases poor health. See **Appendix C** for site inspection results. Sea lettuce (*Ulva* spp.), a commonly occurring species of drift algae, was observed amongst the oyster beds and patches within the tidal ditch and canal at the southern side of Runway 13-31. Submerged aquatic vegetation was not observed during the site investigation nor reported in the FNAI report or the FWC seagrass maps. For more information regarding the benthic habitat resources and site inspection results, see **Appendix C**.

3.03.6 Essential Fish Habitat Assessment

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires Federal agencies such as the FAA to consult with the National Marine Fisheries Service (NMFS) regarding any action or proposed action authorized, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH) identified under the Act. At a project meeting in June 2009, NMFS staff George Getsinger discussed the EFH requirements with Virginia Lane, FAA, and agreed to use the EA process under the NEPA to carry out EFH consultation for the proposed project reviewed in this EA. The proposed project is a combination of the Taxiway 'C' alternative (Alternative 3); the RSA alternative (Alternative 8); and, the ALS alternative (Alternative 10). The Proposed Project is shown in **Figure 2.02.12** and is discussed in more detail in Chapters 1 and 2 of this EA. An analysis of individual effects of the proposed project on EFH and managed species is discussed in Section 4.02.1.6 of this EA and **Appendix D**. **Appendix D** also includes a discussion of proposed mitigation. An analysis of cumulative effects on EFH is provided in Section 4.16.5 of this EA. Additionally, **Appendix C** details potential impacts to benthic communities (oysters are EFH) from the proposed project. The FAA requested at the meeting in June 2009 that the NMFS provide Conservation Recommendations as part of its comments on the Draft EA.

The South Atlantic Fishery Management Council (SAFMC) and NMFS classify oyster beds, saltmarsh, shallow coastal waters, and inshore waters along the Atlantic coast as EFH. In addition, both the SAFMC and NMFS manage species that can be found in the proposed project area, which include several shrimp species, members of the Snapper-Grouper Complex, and coastal shark species.

Of the five (5) shrimp species that are managed by the SAFMC (brown, white, pink, rock, and royal red shrimp), brown and white shrimp (*Farfantepenaeus aztecus* and *Litopenaeus setiferus*, respectively) utilize habitats that are found in the proposed project area including saltmarsh and open estuarine waters (GMFMC, 2007[5]). Several members of the Snapper-Grouper Complex could also utilize habitats in the proposed project area; however, the fish primarily utilize saltmarsh and oyster beds during their juvenile life stage (Fishbase, 2009[6] and GMFMC, 2007[7]). Juvenile snapper and grouper inhabit these specific areas for refuge from predators and for foraging. Members of the Snapper-

[5] Gulf of Mexico Fishery Management Council (GMFMC). 2007. Final Amendment 27 to the Reef Fish Fishery Management Plan and Amendment 14 to the Shrimp Fishery Management Plan. Gulf of Mexico Fishery Management Council submitted to National Oceanic and Atmospheric Administration Award No. NA05NMF4410003.

[6] Fishbase. 2009. Fish, Search FishBase, Fish Profiles. Website: http://www.fishbase.org

[7] Gulf of Mexico Fishery Management Council (GMFMC). 2007. Final Amendment 27 to the Reef Fish Fishery Management Plan and Amendment 14 to the Shrimp Fishery Management Plan. Gulf of Mexico Fishery Mangement Council submitted to National Oceanic and Atmospheric Administration Award No. NA05NMF4410003.

Grouper Complex that may be found in the proposed project area include, but are not limited to, gray snapper (*Lutjanus griseus*), sheepshead (*Archosargus probatocephalus*), and Crevalle jack (*Craranx hippos*). Coastal shark species managed by NMFS also could be found within the open estuarine waters of the proposed project area. Bull sharks (*Carcharhinus leucas*), bonnetheads (*Sphyrna tiburo*), Atlantic sharpnose (*Rhizoprionodon terraenovae*), and scalloped hammerheads (*Sphyrna lewini*) are a few of these highly migratory shark species that could utilize habitat in the proposed project area. For a more detailed description on these federally managed species and EFH, refer to **Section 4.02.1.6** and **Appendices C and D**.

3.03.7 Commercially Important Species

The St. Augustine area, because it is a port of entry, can be considered an important area for commercial fishing. One important commercial fishery in the area is the shrimp fishery. The 2008 annual landings of shrimp from St. Johns County were approximately 192,000 pounds (FWC, 2009[8]), which accounts for the second largest landing in the county in 2008. Blue crab (*Callinectes sapidus*) accounted for the largest landing in 2008 with 746,000 pounds of hard and 12,500 pounds of soft crabs caught. Other commercially important species that may be found in the proposed project area could include stone crab (*Menippe mercenaria*), flounder (*Paralichthys* sp.), and mullet (*Mugil* sp.). Oysters are another large commercial fishery in the area, as the 2008 annual landings reported over 49,000 pounds collected in St. Johns County (FWC, 2009[9]). The open water areas adjacent to the proposed project area are classified as Class II waters and shellfish harvesting in the area is permitted through the FWC.

Juvenile shrimp utilize saltmarsh habitats for refuge and forage until they become sub-adults and migrate to offshore habitats (GMFMC, 2007[10]). All life stages of the blue crab can be found in portions of the proposed project area including muddy bottoms, saltmarsh, and oyster beds[11]. Juvenile stone crabs can be found in crevices in and beneath rocks or shells while adult stone crabs live in seagrass beds or rock substrates in higher salinity waters[12].

Seagrass and rocky substrates are not found within the proposed project area but it may be possible that juvenile stone crabs could be found within the oyster habitat in the proposed project area. Adult flounder typically migrate from estuaries to offshore waters to spawn and eggs return to estuaries via passive transport and currents. Thus, all life stages of flounder[13] could be found in the proposed project area utilizing the saltmarsh habitat for refuge and foraging. Larvae, juvenile and adult mullet may be found in the proposed project area. Larvae mullet can be found in extremely shallow water, which provides cover from predators as well as a feeding ground. Adult mullet can form large schools near the surface over sandy or muddy bottoms and dense vegetation. However, spawning adults are found offshore where they form large spawning aggregations[14].

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8 FWC. 2009. FWC Marine Fisheries Information System, 2008 Annual Landings Summary.

9 FWC. 2009. FWC Marine Fisheries Information System, 2008 Annual Landings Summary.

10 Gulf of Mexico Fishery Management Council (GMFMC). 2007. Final Amendment 27 to the Reef Fish Fishery Management Plan and Amendment 14 to the Shrimp Fishery Management Plan. Gulf of Mexico Fishery Mangement Council submitted to National Oceanic and Atmospheric Administration Award No. NA05NMF4410003.

11 Hill, J., Fowler, D.L., and M.J. Van Den Avyle. 1989. Species Profile: Life Histories and Environmental Requirements of Coastal Fisheries and Invertebrates (Mid-Atlantic) – Blue Crab. U.S. Fish and Wildlife Service Biological Report 82(11.100). U.S. Army Corps of Engineers. TR EL-82-4. 18 pp.

12 NMFS. 2009. FishWatch – Gulf and Florida Stone Crabs (*Menippe adina* and *Menippe mercenaria*). http://www.nmfs.noaa.gov/fishwatch/species/stone_crab.htm

13 Smithsonian Marine Station. 2005. Southern Flounder (Paralichthys lethostigma). Smithsonian Marine Station at Fort Pierce. http://www.sms.si.edu/irlSpec/Parali_lethos.htm

14 Florida Museum of Natural History (FMNH). 2009. Ichthyology at the Florida Museum of Natural History Website:

The proposed project area contains habitat for these commercially important fisheries, and a few of these species were observed during the site assessments. Several blue crabs, one juvenile stone crab, and many oysters were observed during the benthic survey conducted in April 2009. Although some of these commercially important species were observed in or near the proposed project area, these species are expected to occur throughout the coastal area surrounding the Airport due to the presence of suitable habitat. These adjacent areas contain higher quality habitats with denser concentrations of suitable cover and forage. For an additional discussion of potential impacts to commercially important species, refer to **Section 4.02.1.7** and **Appendix D**.

3.04 COASTAL ZONE MANAGEMENT

The Coastal Zone Management Act (CZMA), passed in 1972, is administered by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA). The overall objective is to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone". Under the CZMA, a state can be empowered by NOAA through the coastal zone management implementing regulations, 15 CFR 930, to review federal activities within or adjacent to the coastal zone upon approval of a state coastal management program. The Florida Coastal Management Program (FCMP) received approval from NOAA in 1981. The FCMP is housed under the Florida Department of Environmental Protection (FDEP) and administered through the Office of Intergovernmental Programs (OIP) State Clearing House, which coordinates the review of federal activities. The state's FCMP consistency review is limited to federal licenses or permits specified in Section 380.23 (3)(c) F.S and occurs upon review of the EA. The State of Florida final Consistency Review of the CZMP will occur during review of the Environmental Resource Permit Application for the proposed project.

The Airport is located in St. Johns County, which is one of the thirty five coastal counties in the State of Florida. Any projects requiring the issuance of a permit in the State of Florida is subject to CZMP consistency review. Therefore, the airport is within the State of Florida Coastal Zone Managed Area.

3.05 COMPATIBLE LAND USE

This section documents existing land use and describes future land use trends in the vicinity of the Airport. It also addresses St. Johns County's land use controls. The information provided and the data described and illustrated in this section are based on land use data provided in the St. Johns County Year 2015 Evaluation and Appraisal Report (EAR) Based Comprehensive Plan (2015 Comprehensive Plan, adopted May 2000, amended March 25, 2003), the August 2006 AMP, the City of St. Augustine Code of Ordinances, and maps provided by the Florida Department of Transportation (FDOT).

3.05.1 Existing Zoning

An inventory and analysis of the existing land use patterns and characteristics is crucial in determining the impacts of a project on the surrounding environment. Identifying sensitive land uses is instrumental in this process. **Figure 3.05.1** depicts existing zoning in the vicinity of the St. Augustine – St. Johns County Airport District. The following subsections describe the existing zoning in more detail.

Airport District (AD) – The entire Airport property is contained within the Airport District zone.

Biological Profiles. http://www.flmnh.ufl.edu/fish/Education/ bioprofile.htm

Commercial (CG)– There is a block of commercial use along the southernmost border of Airport property just south of Indian Bend Road, adjacent to the northern limits of the City of St. Augustine.

Commercial, Intensive (CI) – The northernmost boundary of the Airport District is adjacent to two zones labeled intensive commercial use along Gun Club Road. West of US Highway 1 there is a parcel of intensive commercial use at the intersection of Big Oak Road and Avenue D. The St. Augustine Speedway is also considered intensive commercial use. The EAR defines Intensive Commercial as "highway commercial or high-intensity commercial uses, along with large office, institutional, and tourist-oriented uses which are generally incompatible with residential uses."[15]

Industrial, Warehousing (IW) – The northwest boundary of the Airport District contains several pockets of industrial, warehousing use. There is also a larger block of this use located within the open/rural land southwest of the Airport District.

Open/Rural (OR) – The majority of the Airport District zone is bordered by open/rural use. The entire eastern Airport boundary is adjacent to open/rural use and the Tolomato River. The southwestern border is also mostly open/rural land with some Airport District use within.

Planned Special Development (PD) – A small block of planned use development is positioned just east of the commercial use along the southern Airport District boundary. The northern limits of the City of St Augustine border this zone to the south.

Residential (RS-3) – Residential land use occurs southwest of the proposed project area south of Indian Bend Road.

3.05.2 Future Land Use

St. Johns County zoning data was overlayed on an FDOT aerial photograph and reviewed to gain an understanding of the future land use plans of St. Johns County in the vicinity of the Airport and determine if land use patterns are compatible with Airport District use. **Figure 3.05.2** depicts future land use in the vicinity of the Airport District. The following subsections describe the existing land uses in more detail.

Airport District (140)– According to the future land use map, the boundary of the Airport District is to be expanded to incorporate much of the open/rural use currently adjacent to the Airport and connect many all of the Airport properties currently separated by other uses. The zoning changes would also move the all of the industrial, warehousing off of the Airport District zone and to the north.

Commercial – The commercial use along the northeast border of the Airport District would be expanded to include some of the open/rural use in the area.

Commercial, Intensive – All intensive commercial development, aside from the block containing the St. Augustine Speedway, is to be eliminated from the vicinity of the Airport District.

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[15] St. Johns County, Florida. (May 2000). *2015 EAR Based Comprehensive Plan Amendment*. Subsection A.1.1 – Provision of efficient, Compact Development, p. A-24, http://www.co.st-johns.fl.us/BCC/growth_mgmt_services/media/Planning/GOPSamended3_25_03.pdf

ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY

SCALE: SCALE
DESIGNED BY: NAME
DRAWN BY: NAME
CHECKED BY: NAME

PRIME CONSULTANT:
Passero Associates
Engineering Surveying
Architecture Planning
CERT. OF AUTHORIZATION #3428

SUB CONSULTANT:
THE LPA GROUP
AVIATION CONSULTANTS

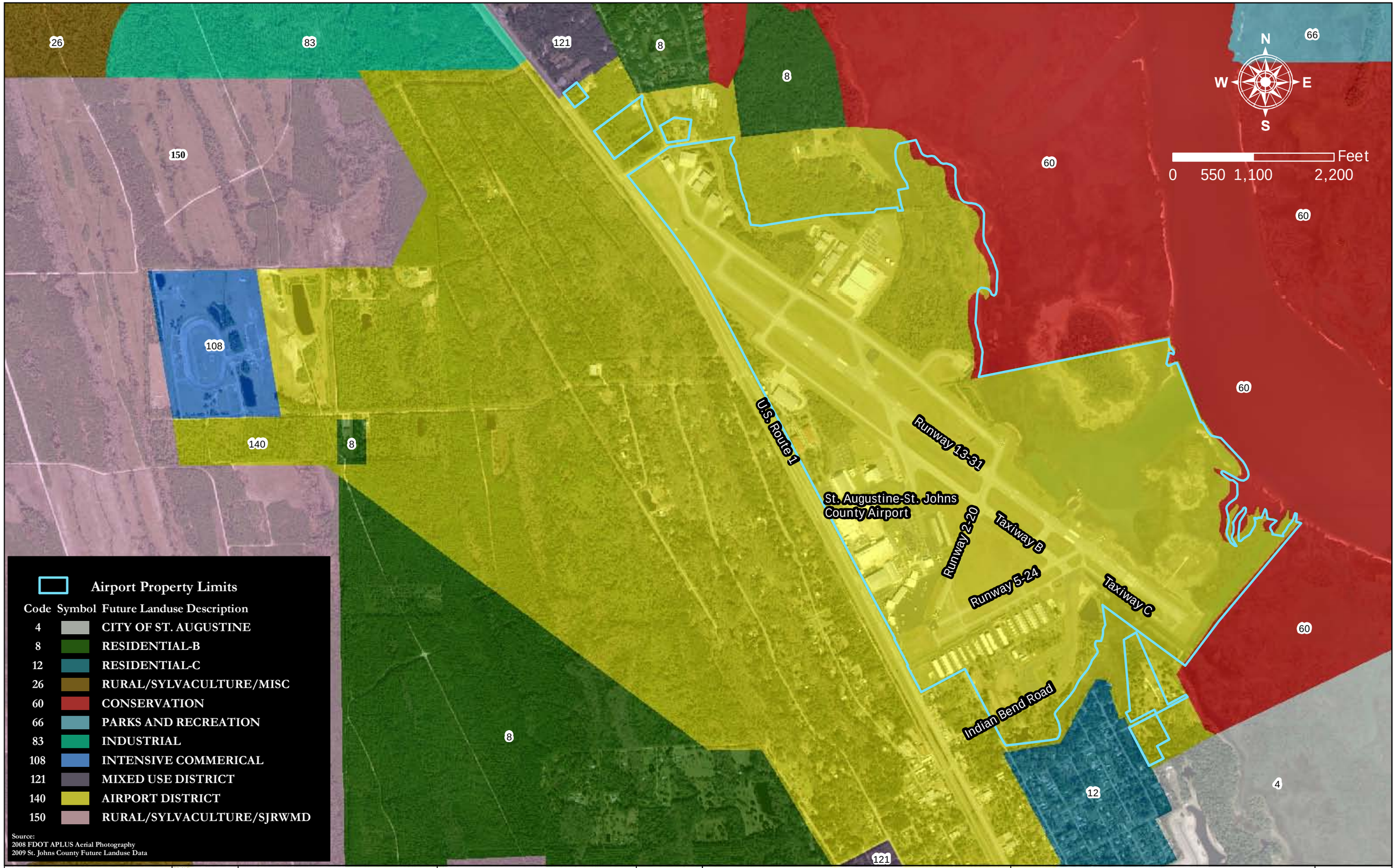
DATE
PROJECT NO.

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

St. Johns County Zoning Map

FIGURE NUMBER
3.05.1



ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY

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CERT. OF AUTHORIZATION #3428

SUB CONSULTANT:
THE LPA GROUP
AVIATION CONSULTANTS

DATE:
PROJECT NO.

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

Future Landuse Map

FIGURE NUMBER: 3.05.2

Industrial, Warehousing – All of the industrial, warehousing use currently located within the Airport District is to be moved north of the Airport District and west of US Highway 1.

Open/Rural – All open/rural land use adjacent to the Airport District is planned for rezoning aside from the zones along the eastern boundary (Tolomato River), which is currently zoned conservation.

Residential – A residential – C development (residential development with density of two units/net acre) is planned for the zone just south of the Airport District boundary along Indian Bend Road. The residential area south of Indian Bend Road will remain.

Rural/Silviculture/SJRWMD – A large tract of land adjacent to the western border of the Airport District is planned for silvicultural use. This tract is managed by the St. Johns River Water Management District (SJRWMD). This zone borders the St. Augustine Speedway to the north, west, and south.

3.05.3 Local Plans and Land Use Patterns

Land use planning and the adoption, administration, and enforcement of zoning regulations are an exclusive authority of Florida's local governments within each of their jurisdictions. This includes the authority for airport compatible land use planning. The FAA does not have the authority to exercise land use control in a local government's jurisdiction. Chapter 333 of the Florida Statutes, *Aviation Zoning*, requires local governments to exercise their land use planning and regulatory authority in order to protect the state's airports from incompatible development and loss of navigable airspace.

3.05.3.1 City of St. Augustine Zoning

The City of St. Augustine's Code of Ordinances, Article XXI, *St. Augustine – St. Johns County Airport Authority* has been deleted as not part of the city's charter.[16] All authority with regards to airport planning and zoning regulations lies with the St. Augustine – St. Johns County Airport Authority and St. Johns County.

3.05.3.2 St. Johns County Comprehensive Plan

The 2015 Comprehensive Plan describes the county's role in managing the aviation system for the area (**Table 3.05-1**). As stated in the 2015 Comprehensive Plan "the St. Augustine Airport will continue to be a reliever airport for Jacksonville International Airport and the County will work within the Continuing Florida Aviation Systems Planning Process (CFASPP) in efforts to site a new regional airport to serve the St. Johns County, Clay County, and southern Duval County area."[17]

Development Regulations of St. Johns County to ensure that future land use changes taking place in the vicinity of the Airport are in compliance with Florida law and the regulations set forth in the 2015 Comprehensive Plan.

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16 City of St. Augustine, Florida. (2009, March 23). *Article XXI. St. Augustine – St. Johns County Airport Authority*. http://www.municode.com/resources/gateway.asp?pid=10951&sid=9

17 St. Johns County, Florida. (May 2000). *2015 EAR Based Comprehensive Plan Amendment*. Subsection B.1.12 – Airport Compatibility, p. B-17, http://www.co.st-johns.fl.us/BCC/growth_mgmt_services/media/Planning/GOPSamended3_25_03.pdf

Table 3.05-1
St. Johns County 2015 Comprehensive Plan – Implementation of Florida Aviation System Plan Recommendations

Policy	
B.1.11.1	Encourage improvements in existing runways and taxiways to assure safety and efficiency of operations, such as strengthening and widening pavements, and upgrading of navigational aids, as specified in the St. Augustine Airport Authority Master Plan.
B.1.11.2	Assist in any feasibility study for another airport to serve the three county area of St. Johns, Clay, and Duval Counties.

*Source: St. Johns County, Florida. (May 2000). 2015 EAR Based Comprehensive Plan Amendment. Subsection B.1.11 – Implementation of Florida Aviation System Plan Recommendations, p. B-17, http://www.co.st-johns.fl.us/BCC/growth_mgmt_services/media/Planning/GOPSamended3_25_03.pdf

3.06 CONSTRUCTION

As stated in Chapter 6 of the FAA Environmental Desk Reference for Airport Actions- "building new airport facilities may cause temporary impacts to wildlife and fisheries habitats, water and air quality, ambient noise levels, historic resources, and local traffic patterns." These impacts may be associated with dust, noise, and stormwater runoff or may be related to sediment or leaked petroleum from heavy equipment and aircraft. To ensure that these impacts do not adversely affect the surrounding environment, all on-site construction activities must be conducted in accordance with FAA AC 150/5370-10, Standards for Specifying Construction of Airports, and by using best management practices (BMPs). Refer to Section 4.05 of the EA for a general description of the impacts expected during construction.

In accordance with 40 CFR, Part 122 and Section 403.0885 Florida Statutes, National Pollutant Discharge Elimination System (NPDES), an NPDES permit is required for storm water discharges due to "construction activity". The proposed project will encompass over 5 acres of land and projects that disturb 5 or more acres of land are categorized as large construction projects. Therefore, an NPDES permit for large construction projects will be required for each of the proposed projects. The NPDES permits would be obtained from the St. Johns River Water Management District by the Airport Sponsor's designated contractor.

The Clean Air Act Section 176(c), 49 USC, Section 7401 et. seq., as amended, includes construction-related air quality emissions when a sponsor proposes an action in a nonattainment or maintenance area. The Airport is located in an attainment area. In addition, the geographic area where the airport is located meets or exceeds the National Ambient Air Quality Standards. Because the airport meets or exceeds the National Ambient Air Quality Standards and is located outside of a nonattainment or maintenance area, a construction emissions analysis is not required for the proposed project.

3.07 FEDERALLY – LISTED ENDANGERED and THREATENED SPECIES

In order to satisfy the Endangered Species Act of 1973, Title 16 USC Sections 1531-1544, the FAA must determine if a proposed action would affect a federally listed species or habitat critical to that species (critical habitat). Section 7(a)(2) of the Act, (16 USC Section 1536(a)(2)), requires federal agencies to consult with either the Secretary of the Interior or the Secretary of Commerce, as appropriate, through their respective authorized designees[18] if the project has the potential to affect federally listed species.

[18] Federal Aviation Administration, Environmental Desk Reference for Airport Actions, 2007

An endangered species[19] is defined as any species that either the USFWS or NMFS designates to be in danger of extinction throughout all or a portion of the species' range. A threatened species[20] is defined as any species that either USFWS or NMFS states is likely to become an endangered species within the foreseeable future throughout all or a significant portion of the species' range. The federally listed species found or potentially found in the proposed project area are discussed below. State listed species are discussed separately, in Section 3.03, Biotic Resources.

The proposed project area was evaluated using existing data sources and information obtained from published sources including, but not limited to, the FNAI database search (**Appendix P**), 50 Code of Federal Regulations (CFR) 17 (for animals) and 50 CFR 23 (for plants) as administered by the USFWS. In addition, field inspections of the site in April 2009 were conducted to identify and assess the potential for federally listed threatened and endangered species to occur on the site.

Based on existing data, the USFWS endangered species[21], the FNAI database search results, and on-site field surveys, it was determined that the project area could potentially support certain federally listed species. The federally listed species that may occur on or adjacent to Airport property are depicted below in **Table 3.07-1**.

Table 3.07-1
Potentially Occurring Federally Listed Species in the Airport Vicinity*

Common Name	Scientific Name	Federal Status
West Indian Manatee	*Trichechus manatus*	**E**
Atlantic Sturgeon	*Acipenser oxyrinchus oxyrinchus*	**C**
Shortnose Sturgeon	*Acipenser brevirostrum*	**E**
American Alligator	*Alligator mississippiensis*	**SAT**
Eastern Indigo Snake	*Drymarchon corais couperi*	**T**
Wood Stork	*Mycteria americana*	**E**

*Source: Based on habitat present and FNAI report

SAT = Threatened due to similarity of appearance to a listed species; C = Candidate Species; SSC = Species of Special Concern; T = Threatened; E = Endangered

Desktop research on the manatee and sturgeon species did not reveal any known or previous occurrences of these species in or near the proposed project area (details provided in **Appendix A**). However, the FNAI report (**Appendix P**) stated that the West Indian manatee and the Atlantic sturgeon have the potential to be found in the proposed project area. The FNAI report did not document any previous occurrences of indigo snakes at or near the Airport. It is not likely that the eastern indigo snake occurs in the proposed project area as no gopher tortoise burrows are present, and the majority of the upland habitat in the proposed project area is in active use as an airport.

The field surveys reported two federally listed species occurrences at the Airport (**Table 3.07-2**). Wood storks were observed foraging in the open water canal to the south of Runway 13-31 and a piping plover was seen along the northern bank of Airport shoreline. In addition, Core Foraging

19 16 USC Section 1532(6)
20 16 USC Section 1532(20)
21 USFWS. 2009. USFWS Endangered Species Program, Species Information Website. Website accessed in May 2009. http://www.fws.gov/endangered/wildlife.html

Table 3.07-2
Federally Listed Species Observed in the Airport Vicinity – April 2009

Common Name	Scientific Name	Federal Status
Wood Stork	*Mycteria americana*	**E**
Piping Plover	*Charadrius melodus*	**T**

*Source: Field data by Birkitt Environmental Services, Inc.
T = Threatened; E = Endangered

Habitat for the wood stork exists within the proposed project area. However, the majority of the habitat that satisfies the criteria of the wood stork Core Foraging Habitat consists of a previously dredged canal and ditch, which are not optimal habitat.

It is important to note that higher quality habitat exists in areas adjacent to the proposed project area and it is more likely that listed species will be located in more optimal habitats. The six potentially occurring federally listed species (identified in Table 3.07-1), their legislative history, and specific habitat requirements are discussed in detail in **Appendix A**.

3.08 ENERGY SUPPLY, NATURAL RESOURCES, AND SUSTAINABLE DESIGN

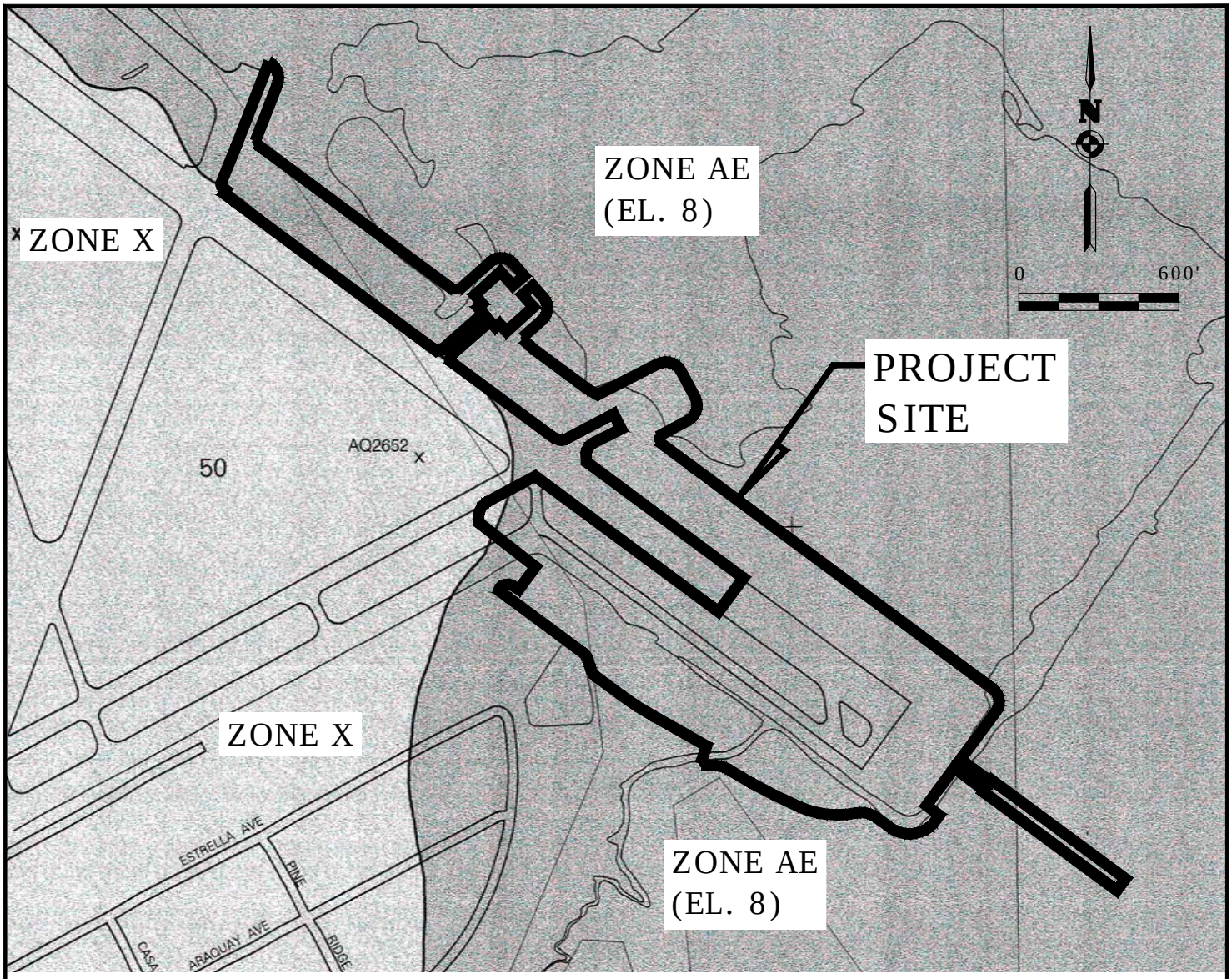
When a federal action has the potential to affect energy requirements or use consumable natural resources, 40 CFR 1502.16(e) and (f) requires the assessment of the proposed project's energy requirements, energy conservation and the use of natural resources. Executive Order 13123, *Greening the Government through Efficient Energy Management* (64 Federal Register 30851, dated June 8, 1999) encourages the use of renewable energy for proposed projects.

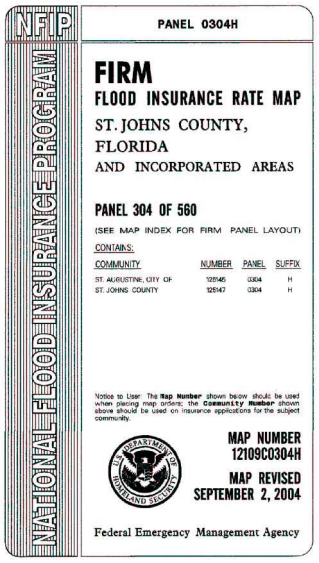
Energy supply for the Airport is currently provided by the Florida Power and Light, the local utility company and is dictated by the Airport's airfield lighting, hangar and building lighting, and heating demands. Fuel consumption at the Airport is currently influenced by aircraft operations and fleet mix. Aircraft requiring full pavement take – off from Runway 31 are required to back taxi causing ATC to put aircraft waiting to take off and land on Runway 31 into a holding pattern. Subsequently this impacts fuel consumption and causes delays on aircraft operations at the airport.

3.09 FLOODPLAINS

The project is situated in Federal Emergency Management Agency (FEMA) Special Flood Hazard Area (SFHA) Zone AE (EL 8). This corresponds to the floodplain associated with the Tolomato River, which has a 1% annual chance Base Flood Elevation (BFE) of 8.1 feet NGVD29, as shown in the FEMA *Flood Insurance Study* for St. Johns County, dated September 2, 2004. The Zone AE area has an estimated 1% or greater chance of being flooded during any given year. The Tolomato River is part of the Intracoastal Waterway and is a coastal flooding area, with Base Flood Elevations that decrease as distance increases from the ultimate flooding source, the Atlantic Ocean. **Figure 3.09.1** shows the project vicinity located on the FEMA Flood Insurance Rate Map.

The primary purpose of the SFHA is to provide guidance for the purchase of flood insurance through the National Flood Insurance Program (NFIP) for insurable structures such as residential and commercial buildings. The SFHA also provides information for local floodplain management and enforcement, which is performed by St. Johns County. Aside from publishing the *Flood*




NFIP

PANEL 0304H

FIRM
FLOOD INSURANCE RATE MAP
ST. JOHNS COUNTY, FLORIDA
AND INCORPORATED AREAS

PANEL 304 OF 560
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ST. AUGUSTINE, CITY OF	125145	0304	H
ST. JOHNS COUNTY	125147	0304	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
12109C0304H
MAP REVISED
SEPTEMBER 2, 2004

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

FEMA Map

SCALE: AS SHOWN DESIGNED BY: P. HONORE DRAWN BY: W. REID CHECKED BY: A. HOLESKO	ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY	DATE: NOV. 2009 PROJECT NO. 23081.38	Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System Owner: St. Augustine-St. Johns County Airport Authority 4796 US 1 North, St. Augustine, Florida 32095	FIGURE NUMBER: 3.09.1

Insurance Study and Flood Insurance Rate Maps, FEMA reviews requests for Letter of Map Change determinations. None of the components of this project are insurable structures under the NFIP, so none of the standard building elevation requirements, such as first floor elevations, apply to the project. Because there are no insurable structures associated with this project, and because the project does not change Base Flood Elevations, no Letter of Map Change requests need to be submitted to FEMA.

The project is not located within a regulatory floodway on the Flood Insurance Rate Map, and there is no floodway associated with the Tolomato River. A floodway is a high-velocity zone around the channel of a stream or river which conveys floodwaters downstream and cannot be restricted without increasing upstream Base Flood Elevations by more than one foot. Because Zone AE coastal flooding SFHAs represent low-velocity floodwaters, and coastal Base Flood Elevations decrease as distance increases from the coastal flooding source, there is no coastal regulatory zone analogous to a riverine floodway.

Relevant floodplain management regulations include Section 65.12 of the NFIP regulations, which dictate that a project may not result in more than a one foot increase in Base Flood Elevation, and St. Johns County Land Development Code Section 3.03.02, which limits increases to Base Flood Elevations to 0.1 feet without requiring compensating storage.

3.10 HAZARDOUS MATERIALS

3.10.1 Federal Regulations

Hazardous materials are regulated by a number of federal laws and regulations. The *Resource Conservation and Recovery Act* (RCRA) provides a general guideline for the generation, transportation, treatment, storage, and disposal of hazardous waste.[22] The focus of RCRA is only on active and future sites; it does not the address abandoned or historical sites. *The Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) created a tax on the chemical and petroleum industries and provided federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.[23] Hazardous materials are defined by CERCLA, as amended by the *Superfund Amendments and Reauthorization Act*, and the *Toxic Substances Control Act*.[24] In general, the hazardous materials definition includes substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare, or to the environment, when released or otherwise improperly managed.

3.10.2 State Regulations

The Florida Department of Environmental Protection (FDEP) is also involved in the administration and enforcement of the federal hazardous materials regulations. On February 12, 1985, Florida received authorization from the U.S. Environmental Protection Agency (USEPA) to administer its own hazardous waste management and regulatory program under RCRA and received final authorization on November 17, 2000, to implement the Hazardous and Solid Waste Amendments

[22]USEPA, Resource Conservation and Recovery Act, November 1980.

[23]USEPA, Comprehensive Environmental Response, Compensation, and Liability Act, December 11, 1980.

[24]USEPA, Superfund Amendments and Reauthorization Act, October 17, 1986.

of 1984.[25] FDEP's Hazardous Waste Regulation Section (HWRS) is responsible for implementing the hazardous waste regulatory portion of RCRA. FDEP reviews and issues permits and coordinates compliance monitoring and enforcement activities at hazardous waste generators, transporters, and treatment, storage and disposal (TSD) facilities at its district offices.

On June 1, 2009, a Phase I Environmental Site Assessment (ESA) was conducted for the proposed project area (**Appendix G**). According to the Phase I ESA, there are no hazardous materials located within the area where the proposed project would be constructed (see **Figure 3.02.1**). However, there were hazardous materials sites located outside of the proposed project area and airport property limits. According to the Phase 1 ESA, the identified potential hazardous material sites (due to type, distance, direction to, remedial status and file review) pose a low threat to the project. For more information regarding hazardous materials, see **Appendix F**, which contains a more detailed description of hazardous materials in the vicinity of the project, and **Appendix G**.

3.10.3 Federal Stormwater Pollution Prevention Regulations

In 1972, Congress passed the *Federal Water Pollution Control Act* (FWPCA), also known as the *Clean Water Act* (CWA), to restore and maintain the quality of the nation's waterways. The ultimate goal was to ensure that rivers and streams were fishable, swimmable, and drinkable. In 1987, the *Water Quality Act* (WQA) added provisions to the CWA that allowed the USEPA to govern stormwater discharges from industrial activities. The USEPA developed the federal National Pollutant Discharge Elimination System (NPDES) stormwater permitting program in two phases. Phase I was promulgated in 1990 and it addressed the large and medium municipal separate storm sewer systems (MS4s) and eleven industrial categories. Phase II was promulgated in 1999 and it addressed MS4s not regulated under Phase I and small construction activities. The USEPA published the final notice for Phase I of the Multi-Sector General Stormwater Permit program (Federal Register Volume 60 No. 189, September 20, 1995, page 50804), which included provisions for the development of a Stormwater Pollution Prevention Plan (SWPPP) by each industrial facility discharging stormwater, including airports.

In 1973, the Federal Aviation Administration (FAA) published Advisory Circular (AC) 150/5320-10, *Environmental Enhancement at Airports - Industrial Waste Treatment*, to address industrial waste management at airports. In 1991 and 1997, the AC was updated and 150/5320-15, *Management of Airport Industrial Waste*, was issued. On September 9, 2008, the FAA updated AC 150-5320-15 and released AC 150/5320-15A, the goal of AC 150/5320-15A was to provide additional guidance for waste management at airports and to develop a SWPPP that focused on best management practices to eliminate, prevent, or reduce pollutants in storm water runoff associated with airport activities.

3.10.4 State Stormwater Pollution Prevention Regulations

In October 2000, USEPA authorized FDEP to implement the NPDES stormwater permitting program in the State of Florida, except on Native American County Lands. The FDEP's authority to administer the NPDES program is set forth in Section 403.0885 of the Florida statutes. Leased areas of the Airport property that engage in industrial activities are required to be permitted under the industrial NPDES program. NPDES stormwater permitting requires that the Airport has an active SWPPP in place. The Airport currently has an up to data SWPPP and follows the Best Management Practices that are listed in the plan.

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[25] FDEP Hazardous Waste Regulation Section, http://www.dep.state.fl.us/waste/categories/hwRegulation/default.htm (August 5 ,2009).

3.10.5 Spill Prevention Control and Countermeasures

The USEPA implemented the Spill Prevention, Control, and Countermeasures (SPCC) Rule under 40 CFR Part 112, Oil Pollution Prevention. The SPCC Rule includes requirements for oil prevention, preparedness, and response to prevent oil discharges to navigable water and adjoining shores, especially for facilities that store more than 1,320 gallons of oil or petroleum products. The Airport has two fuel farms that store over 20,000 gallons each and has an active SPCC Plan in place.

3.11 LIGHT EMISSIONS AND VISUAL IMPACTS

No federal statutory or regulatory guidelines dictate requirements concerning airport related light emissions or visual impacts, but it is the FAA's policy to consider potential light emissions and effects and visual effects to properties and people's use of properties covered by Section 4(f) of the U.S. Department of Transportation Act, Section 6(f) of the Land and Water Conservation Fund Act and Section 106 of the National Historic Preservation Act in association with new airport development.

3.11.1 Existing Conditions

Several light systems/sources are associated with the approach end of Runway 31, the approach end of Runway 24, the approach end of Runway 20, and existing Taxiway 'C' in the project study area. These light sources include the following:

- High Intensity Runway Light (HIRL) system that marks the edge of Runway 13-31;
- Threshold lighting that marks the end of Runway 13-31 and the displaced threshold for the Runway 31 approach;
- Precision Approach Path Indicator (PAPI) on the left side of the Runway 31 approach;
- Medium Intensity Taxiway Lighting (MITL) that marks the edge of Taxiway 'C';
- Medium Intensity Runway Light (MIRL) system that marks the edge of Runway 6-24;
- Threshold lighting that marks the end of the Runway 24 approach;
- MIRL system that marks the edge of Runway 2-20;
- Threshold lighting that marks the end of the Runway 20 approach; and,
- Lighting from approaching and departing aircraft.

Most of the lighting associated with the proposed project area is omni-directional except for the PAPI system and some of the lighting mounted on aircraft. The PAPI aims away from the Airport, along the Runway 31 approach. The lighting mounted on aircraft includes various navigational lights, landing lights, and strobe lights some of which are omni-directional and others of which are uni-directional. The lighting emitted from aircraft is minor in comparison to other light sources around the Airport. Aircraft on approach to Runways 31, 24, and 20 within the proposed project area do not fly at low enough altitudes on approach that landing lights or other aircraft lights are a nuisance to surrounding property owners. Much of the approach for each of these runways is over open water or saltmarsh.

According to Airport personnel,[26] other than complaints concerning light emissions from Airport's beacon that were received in 2002, there have been no other recent complaints from the public concerning light emissions from the Airport. The relocation of the beacon to its current location atop the Air Traffic Control Tower has resulted in reduced annoyance for the residents living near the Airport.

[26] Bryan Cooper, Assistant Airport Manager, St. Augustine-St. John's County Airport. Personal communication, June 1, 2009.

Additional details concerning existing light emissions within the proposed project area are provided in **Appendix H**.

3.12 NOISE

The proposed project would not result in any change to the airport runway configurations, aircraft operations, aircraft types using the airport, or aircraft flight characteristics; therefore, noise analysis is not required. For reference purposes, previous noise analysis prepared as part of the 2005 Airport Master Plan (AMP) is presented in this section because it is a useful description of the existing noise environment.

Noise contours were prepared as part of the 2005 AMP update using FAA Integrated Noise Modeling (INM) software. This program is a tool used to analyze noise levels generated by aircraft operations at airports. The FAA typically requires airport noise to be calculated using the Day-Night Average Noise Level (DNL) metric. DNL is a 24-hour logarithmic average of noise levels in A-weighted decibels averaged over one year. As sound occurring during nighttime hours is usually perceived to be more annoying due to sleep disruption, the DNL metric requires a 10-decibel (dB) penalty (twice as loud) to nighttime operations between the hours of 10:00 p.m. and 7:00 a.m. DNL noise metric was originally developed by the EPA and is used by the FAA, the Department of Housing and Urban Development, and other federal agencies concerned with airport noise compatibility. The INM is useful for comparison of noise impacts between airfield development alternatives and can provide a reasonable basis for performing airport noise compatibility planning within the vicinity of the airport.

Airport noise contours are developed in INM by identifying equivalent values of DNL around the runways. DNL contours are normally generated for 65, 70, and 75 DNL to describe existing and ultimate noise exposure estimates. Noise levels less than 65 DNL are not recognized by the FAA as being incompatible with airport operations. The DNL contours generated do not depict a strict demarcation of where the noise levels end or begin; however, their purpose is to describe the generally expected noise exposure over an average 24-hour period. As a result, noise exposure on any one day may be greater or less than the average day.

It must be recognized that although the INM is the current state-of-the-art aircraft noise modeling software, input variables to the INM require several simplifying assumptions to be made. The 2005 AMP noise contours reflect conditions at the airport in 2002, which was the base year of operations data in that study. These noise contours were incorporated in the Land Use drawing of the current Airport Plans set on file with the FAA. The INM input variables characterized in the AMP and are described as follows:

- Aircraft Operations – The annual operations for the base year, 2002, are 105,800, or approximately 290 daily operations.
- Aircraft Fleet Mix – The operational aircraft fleet mix consists of 74% single engine; 11% multi-engine; 12% jet; and 3% helicopter.
- Runway Utilization – The runway utilization depends primarily on prevailing wind conditions. Secondarily, runway use is influenced by available runway length and aircraft departure or arrival into terminal airspace. Runway 31 is the primary runway end for all aircraft, as it is equipped with ILS approach, and Runway 13 is the second-most utilized, and Runways 2-20 and 6-24 are used infrequently.

- Approach and Departure Profiles – Approach and departure profiles illustrate an aircraft's changing altitude along its flight path. The INM aircraft database contains standard profiles for all aircraft included in this analysis.
- Flight Tracks – A flight track is a projection of an aircraft's in-flight path, as if shown on the ground. Due to meteorological conditions, aircraft type, stage length, air traffic separation, and pilot judgment, flight tracks can be unique to each operation. Flight tracks for SGJ runways consist of straight-in approaches and departures for all runways.

According to the FAA Terminal Area Forecast (TAF), the Airport recorded a total of 100,733 annual operations in 2008, approximately 5% less than those of 2002. The Airport has had no major reconfiguration and all other conditions are the same or similar to those in 2002, therefore the 2002 noise contours prepared in the AMP reflect a conservative estimate of existing noise conditions.

Figure 3.12.1 depicts the airport noise contours generated for the Airport overlaid onto the St. Johns County 2015 Comprehensive Plan. The comprehensive plan reflects planned land use with the vicinity of the Airport. Within the DNL noise contours, certain land uses may be incompatible with airport operations according to FAA guidelines. The FAA offers general guidelines for land use compatibility in Appendix 1 of FAA AC No.150/5020-1, *Noise Control and Compatibility Planning for Airports*. Per the FAA's guidelines, residential land uses, hospitals, schools, nursing homes, churches and auditoriums are discouraged within the 65 DNL and greater; however, in some cases, these uses may be compatible if proper noise level reduction measures are incorporated into the design of the structure. Generally, commercial and manufacturing uses are compatible with sound levels below 80 DNL if certain sound level reduction practices are employed. For reference, **Table 3.12-1** presents a complete description of FAA guidelines for land uses normally compatible with various airport noise levels.

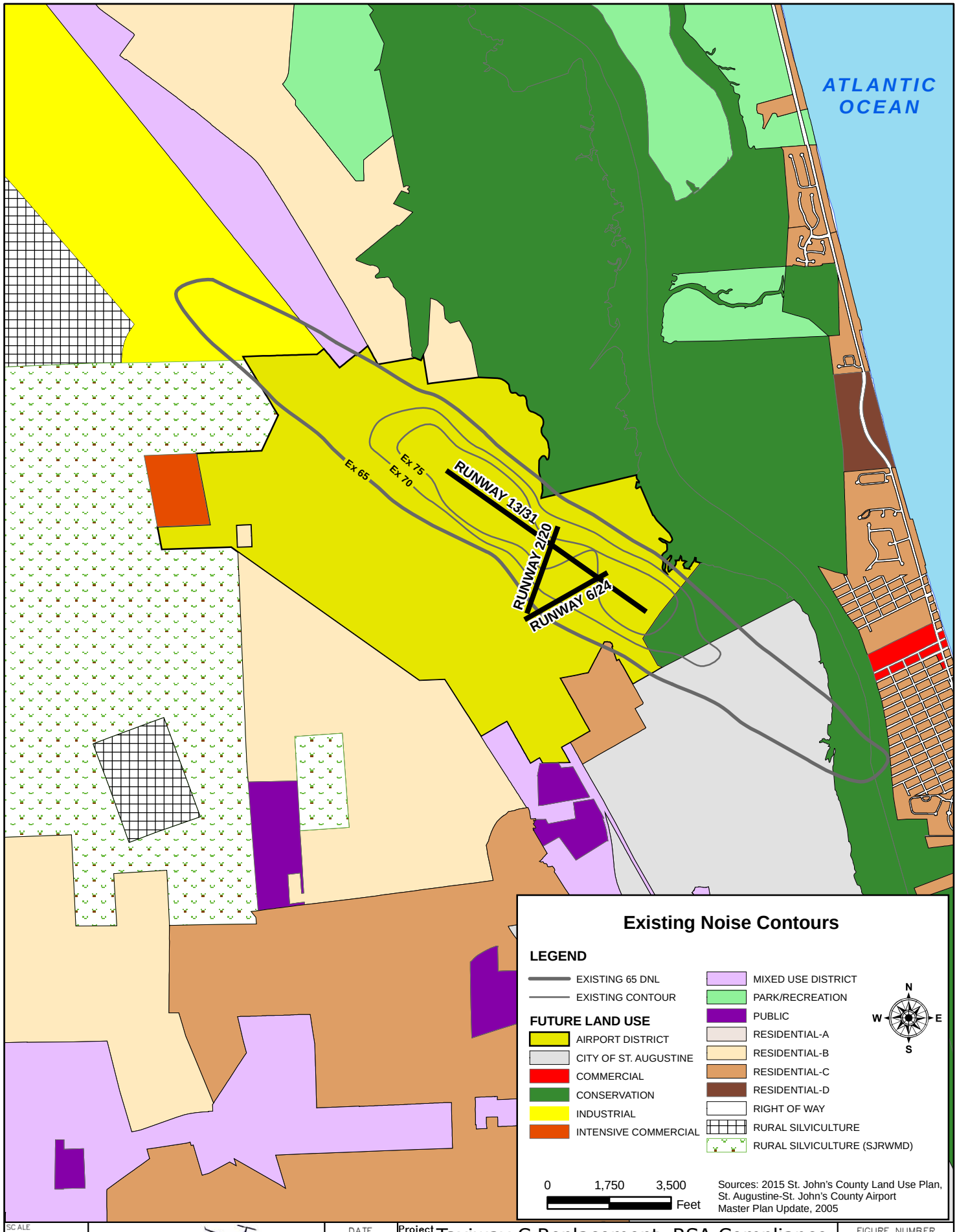
As noted on **Figure 3.12.1,** total acreage of land exposed to 65 DNL or greater is 1,310 acres. One acre of residential land use located on the southern airport boundary is found within the 65 DNL and may be incompatible with airport noise depending on construction standards applied to the structures. Based on a review of aerial photography this area contains one residence. No other incompatible land uses were noted in the airport noise contours. No mitigation is proposed at this time for the effects of existing Airport noise on this residence.

3.13 SOCIAL and SOCIOECONOMIC SETTING

3.13.1 Population

Data from the U.S. Census Bureau and the Bureau of Economic and Business Research (BEBR) were used to present historic and projected population levels in St. Johns County. **Table 3.13-1** shows the historical population levels for the County.

Since 1940, St. Johns County's population has increased by approximately 726 percent (20,012 in 1940 to 165,291 in 2006) and an increase of just over 447 percent has occurred since 1970. The data shows three decades of substantial growth occurring in the County from 1970 to 2000 and another large period of growth between 2000 and 2005. However, population growth slowed dramatically from 2005 to 2006. Since 2000, the County's population has rise from 123,135 to 165,292 in 2006. Population trends and contributing factors are not subjected to detailed analysis and discussion in



SCALE 1 in = 3,500 ft DESIGNED BY DG DRAWN BY DG CHECKED BY JG	ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY	DATE 10/21/2009 PROJECT NO. #	Project Taxiway C Replacement, RSA Compliance, and Approach Lighting System Owner St. Augustine-St. Johns County Airport Authority 4796 US 1 North, St. Augustine, Florida 32095	FIGURE NUMBER 3.12.1

Table 3.12-1
Land Uses Normally Compatible with Various Noise Levels

Land Use	Yearly day−night average sound level, DNL in decibels					
	Below 65	65−69	70−74	75−79	80−85	Over 85
Residential Use						
Residential, other than mobile and transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
Public Use						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums and concert halls	Y	25	30	N	N	N
Government services	Y	Y	25	30 N(3)	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)		Y(4)	N
Commercial Use						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale & retail − building materials, hardware, & farm equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade − general	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing (general)	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

SLUCM - Standard Land Use Coding Manual

Y - (Yes) Land Use and related structures compatible without restrictions.

N - (No) Land Use and related structures are not compatible and should be prohibited.

NLR - Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

25, 30 or 35 - Land use and related structures generally compatible; measures to achieve NLR or 25, 30, or 35 must be incorporated into design and construction of structure.

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal construction can be expected to provide an NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.

(2) Measures to achieve NLR to 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(3) Measures to achieve NLR to 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(4) Measures to achieve NLR to 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(5) Land uses compatible, provided special sound reinforcement systems are installed.

(6) Residential buildings require an NLR of 25.

(7) Residential buildings require an NLR of 30.

(8) Residential buildings not permitted.

Source: 14 CFR Part 150.

TABLE 3.13-1
ST. JOHNS COUNTY, FLORIDA HISTORICAL POPULATION

Year	Population	Percent Change
1940	20,012	--
1950	24,998	24.9
1960	30,034	20.1
1970	31,035	3.3
1980	51,303	65.3
1990	83,829	63.3
2000	123,135	46.9
2005	157,278	27.7
2006	165,291	5.1

Source: U.S. Bureau of the Census and BEBR 2007[27]

this EA; however, several factors could contribute to the consistent growth occurring in St. Johns County. Factors may include the diverse and primarily tourism-related economic base[28] and the over 42 miles of scenic beaches. According to Visit Florida research, approximately 886,464 people visited St. Johns County during the first quarter of 2006 meaning that the functional population of the County is nearly 5 times greater than the number of permanent residents. Functional population includes permanent residents and the peak number of seasonal residents and visitors.

Table 3.13-2 provides projected population levels for St. Johns County. The population projections, generated by the U.S. Bureau of the Census, anticipate more of the same in terms of population growth. The projections show an average annual compound growth rate of 3.46 percent between 2007 and 2030.

TABLE 3.13-2
POPULATION PROJECTIONS 2007 – 2030

Year	Population
2007	173,000
2010	193,400
2015	226,100
2020	256,800
2025	284,500
2030	310,500

Source: U.S. Bureau of the Census and BEBR[29]

3.13.2 Racial Composition and Ethnic Groups

The estimated population by race for St. Johns County is provided in **Table 3.13-3**. According to the U.S. Census, the majority of County residents are White (89.7 percent). The next largest segment

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[27] St. Johns County BCC. *2007 Evaluation and Appraisal Report*. Chapter 1 – Background Information. P. 10 Accessed via the web on 5/14/2009. http://www.co.st-johns.fl.us/BCC/growth_mgmt_services/planning/Evaluation_and_Appraisal_Report_(EAR)/media/EAR0409/Map_3.pdf

[28] St. Johns County BCC. *County Quick Facts*. Accessed via the web on 5/14/2009. http://www.co.st-johns.fl.us/County_Information+QuickFacts.aspx.

[29] *Ibid.* p. 10 – 11.

of the population is Black (5.7 percent), while people of Asian or Pacific Islander descent constitute approximately 2.1 percent of the County's population. American Indian, other races, and two or more races combined make up approximately 3.5 percent of the population. Persons of Hispanic origin do not comprise a large portion of St. Johns County's population, as only 4.2 percent of the County is Hispanic or Latino. In comparison, for Florida's population on a statewide basis, 14.6 percent is Black, 1.7 percent is of Asian or Pacific Islander decent, and the combination of American Indian, other races, and two or more races combined makes up 5.7 percent of the population. No minority groups live within the zoned residential land use that is within the 65 decibel noise level countour at the Airport just southwest of the proposed project area.

TABLE 3.13-3
2008 POPULATION ESTIMATE – BY RACE FOR ST. JOHNS COUNTY, FLORIDA

Race/Ethnicity	Estimated Population	Percent of Total Population
White	165,380	89.7
Black	10,545	5.7
American Indian and Alaskan Native	667	0.4
Asian or Pacific Islander	3,936	2.1
Some other race	1,327	0.7
Two or more races	2,484	1.4
Hispanic Ethnicity	7,794	4.2
Not Hispanic or Latino	176,545	95.8

Source: St. Johns County Chamber of Commerce, 2008. Demographic Detail Summary Report[30]

3.13.3 Economic and Income Indices

Several indices from the U.S. Census Bureau were reviewed to describe the general economic characteristics of St. Johns County. The indices reviewed were median household income, per capita income, and percentage of population below the poverty level. **Table 3.13-4** provides economic and income data for St. Johns County. In 2007, the median household income for St. Johns County was approximately 33 percent higher than that for the state of Florida. The per capita income for the county in 1999 was also around 33 percent higher than that for the state of Florida.

TABLE 3.13-4
ECONOMIC AND INCOME DATA FOR ST. JOHNS COUNTY AND THE STATE OF FLORIDA

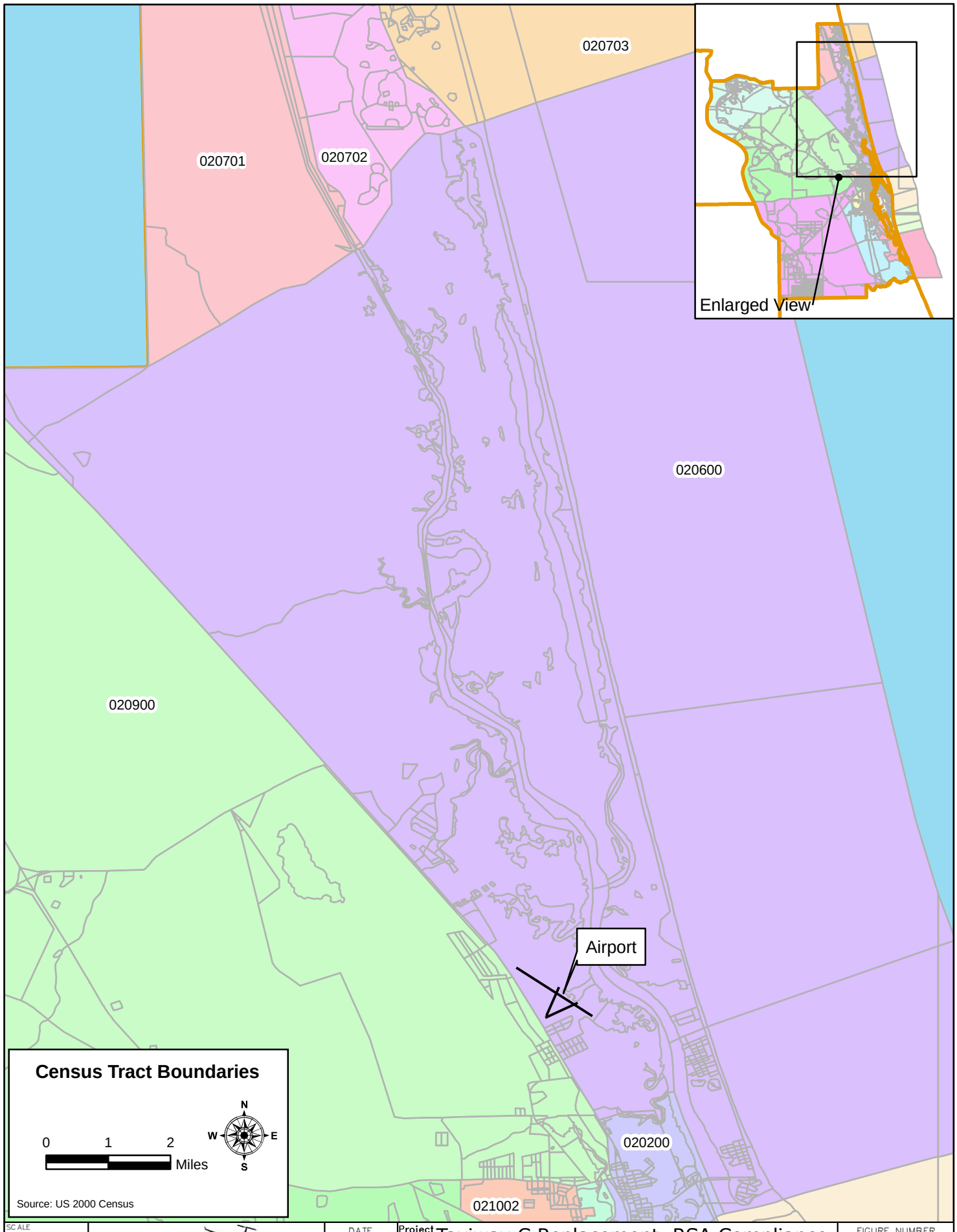
	St. Johns County	State of Florida
Median Household Income (2007)	$63,728	$47,804
Per Capita Income (1999)	$28,674	$21,557
Persons Below Poverty Level (2007)	6.7%	12.1%

Source: U.S. Census Bureau, 2009

These numbers suggest that the economy of the county is somewhat stronger than that of the state, and also supports the possible growth factors mentioned in the population section regarding the strong overall economic condition of St. Johns County.

Census data was reviewed to determine the number of households with income below poverty level (1999 dollars) for seven census tracts that encompass the Airport and adjacent areas (**Figure 3.13.1**). This provides information for subsequent consideration of potential environmental justice impacts.

[30] St. Johns County Chamber of Commerce, Economic Development Council. (2008, Dec. 2). *St. Johns County Demographics.* http://www.stjohnscountychamber.com/index.php?submenu=DataCenter&src=directory&view=Resources



SCALE 1 in = 2 mi DESIGNED BY DG DRAWN BY DG CHECKED BY JG	ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY	DATE 10/21/2009 PROJECT NO. #	Project Taxiway C Replacement, RSA Compliance, and Approach Lighting System Owner St. Augustine-St. Johns County Airport Authority 4796 US 1 North, St. Augustine, Florida 32095	FIGURE NUMBER 3.13.1

As shown in **Table 3.13-5**, the percentage of households living below poverty within Census Tract 020600 (the tract containing the Airport) was 8.5 percent. The percentage of households living below poverty level was lower than that of the state of Florida (9.0 percent) for all of the adjacent census tracts with the exception of Census Tract 020200 (15.2 percent). The percentage was significantly lower for the adjacent tracts to the north: 5.1 percent for 020701, 3.3 percent for 020702, and 2.3 percent for 020703. The data also show that the percentage of households living below poverty level in the combined Census Tracts in the vicinity of the Airport was 5.9 percent.

TABLE 3.13-5
ECONOMIC AND INCOME DATA FOR CENSUS TRACTS IN THE VICINITY OF ST. AUGUSTINE-ST. JOHNS COUNTY AIRPORT

Census Tract	Total Number of Households	Family Households Below Poverty Level	Non-Family Households Below Poverty Level	Total Households Below Poverty Level	Percentage of Households Below Poverty Level
020200	1,069	77	85	162	15.2
020600	3,145	98	170	268	8.5
020701	3,466	56	120	176	5.1
020702	4,772	81	77	158	3.3
020703	3,228	14	59	73	2.3
020900	2,640	62	94	156	5.9
021401	3,737	62	245	307	8.2
Census Tracts Combined	**22,057**	**450**	**850**	**1300**	**5.9**

Source: U.S. Bureau of the Census, 2000

This percentage is nearly equal to that of St. Johns County which has 5.1 percent of households living below poverty level.[31] No low income groups live within the zoned residential land use that is within the 65 decibel noise level contour at the Airport just southwest of the proposed project area.

3.13.4 Tourism

The State of Florida is the top travel destination in the world attracting over 76.8 million visitors in 2004 and having an estimated economic impact of $57 billion.[32] St. Johns County and the City of St. Augustine is no different when it comes to the tourism industry and its role in the economy of the region.

According to research conducted by Visit Florida.com, 85 percent of Florida's visitors travel to the northeastern region of the state. During the first quarter of 2006 (January – March), approximately 886,464 tourists visited St. Johns County while estimates for the second quarter increased approximately 12 percent to 996,115.[33] In addition, the St. Johns Chamber of Commerce estimates that approximately 6.5 million people visit the City of St. Augustine, alone.

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31 U.S. Census Bureau. (2000). Accessed via the web at 889,474http://factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=01000US&_geoContext=01000US%7C04000US12&_street=&_county=St.+Johns&_cityTown=St.+Johns&_state=04000US12&_zip=&_lang=en&_sse=on&ActiveGeoDi=geoSelect&_useEV=&pctxt=fph&pgsl=010&_submenuId=factsheet_1&ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=

32 State of Florida.com (2009). *Florida Quick Facts. http://www.stateoffllorida.com/Portal/DesktopDefault.aspx?tabid=95*

33 St. Johns County BCC. *St. Johns County Transit Development Plan, Chapter 1.* P. 1-21. Accessed via the web on 5/15/2009. http://www.co.st-johns.fl.us/BCC/growth_mgmt_services/media/Transportation/TDP/Chapter%201%20Final.pdf

The data provided in **Table 3.13-6** illustrates the important role tourism plays in the economy of St. Johns County. Visitors to St. Johns County represent ≥ 80 percent of total taxable revenues generated in 5 different categories of tourism related expenditures: restaurant, taverns, lodging, admissions, and vending admissions. Tourists represent ≥ 25 percent of taxable revenues in all expenditure categories.

TABLE 3.13-6
ST. JOHNS COUNTY TOURISM RELATED EXPENDITURES FOR 2003
COUNTY (SALES TAX) REVENUE DATA

Category	Percent Tourists Related	Visitor Related Expenditures Per Category
Restaurant & Lunchrooms	80%	239,761,016
Taverns/Nightclubs	85%	28,074,159
Filling & Service Stations	25%	31,608,296
Lodging: Hotels/Condos	100%	204,802,788
Gift, Card & Novelty Shops	75%	31,327,468
Admissions	95%	73,121,280
Vending Admissions	80%	3,266,036
Parking lots, boat docking	25%	1,981,580
Flea Market Vendors	50%	889,474
Total		**525,268,826**

Source: St. Augustine, Ponte Vedra & The Beaches, Florida. Visitors and Convention Bureau

3.14 SOLID WASTE

This section provides an overview of St. Johns County's solid waste collection and disposal program and current solid waste collection and disposal at the Airport.

3.14.1 Solid Waste Collection and Disposal

St. Johns County Solid Waste Management Department is responsible for the disposal of residential and commercial waste, sludge generated by wastewater treatment plants, household hazardous waste, appliances, and tires. Implemented in 1995, the Solid Waste Management Department supervises the certified waste haulers for St. Johns County.[34] The certified waste hauler for the Airport is Waste Services Incorporated (WSI). There are two transfer stations that accept municipal solid waste in St. Johns County, the Tillman Ridge Solid Waste Transfer Station and 250 North Stratton Road Transfer Station. At the two transfer stations, the municipal solid waste is prepared to be transferred to out-of-state landfills in Georgia. Commercial and Demolition (C&D) debris, however, are accepted and disposed locally at the Nine Mile C&D Landfill in St. Johns County.

3.15 WATER QUALITY

The *Federal Water Pollution Control Act*, as amended by the *Clean Water Act* (CWA, 33 United States Code 1251), provides the authority to establish water control standards, control discharges into surface waters and subsurface waters, develop waste treatment management plans and practices, and issue permits for discharges and for dredging and or filling in surface waters. Additional state regulations, standards, and programs designed to protect water quality are discussed in **Appendix J**.

3.15.1 Surface Waters

[34] St. Johns County, Florida, http://www.co.st-johns.fl.us/BCC/Solid_Waste/index.aspx (August 5, 2009).

The primary named surface waterbody closest to the project study area is the Tolomato River. This river is located east of the Airport property, with a small segment of the river abutting Airport property. Surface water runoff from the proposed project area drains to ditches, salt marsh, and or tidal creeks that are connected to the Tolomato River. The State of Florida categorizes the Tolomato River as Class II water, which classifies the river as supporting the propagation and harvesting of shellfish.[35] In addition, the segment of the Tolomato River located adjacent to the proposed project area is just south of a portion of the river listed as an *aquatic preserve*.[36] An aquatic preserve is defined in Florida Statute 258.37 as "an exceptional area of submerged lands and its associated waters set aside for being maintained essentially in its natural or existing condition. As required by state regulations, a variance issued by the SJRWMD will be required for impacts to Class II waters and a water quality protection plan would be developed for the proposed project (see **Appendix K**).[37] Further information is provided in Chapter 4 Section 4.14.

The project study area is located within Water Body (WBID) 23631 (**Figure 3.15.1**). WBID 23631 is the Tolomato River segment, which was listed on the 303(d) report as impaired due to levels of arsenic, coliform bacteria (shellfish harvesting downgrade), copper, iron, mercury (in fish tissue), and nickel that exceed the established standard.[38] The state is in the process of developing Total Maximum Daily Loads (TMDLs) that specify the amounts of specific pollutants that can be discharged to listed waters by an NPDES permitted facility. **Table 3.15-1** provides the priority level for TMDL development for each impairment factor and the year in which the FDEP plans on having TMDLs developed for WBID 23631: FDEP's delist document, which was updated on December 7, 2007, recommended that WBID 23631 be delisted for coliforms.[39]

Table 3.15-1
Priority Level for TMDL Development

Pollutant	Priority Level	Implementation Year
Arsenic	Medium	2012
Coliform	Low	2017
Copper	Medium	2012
Iron	Medium	2012
Mercury	Low	2011
Nickel	Medium	2012

*Source: FDEP

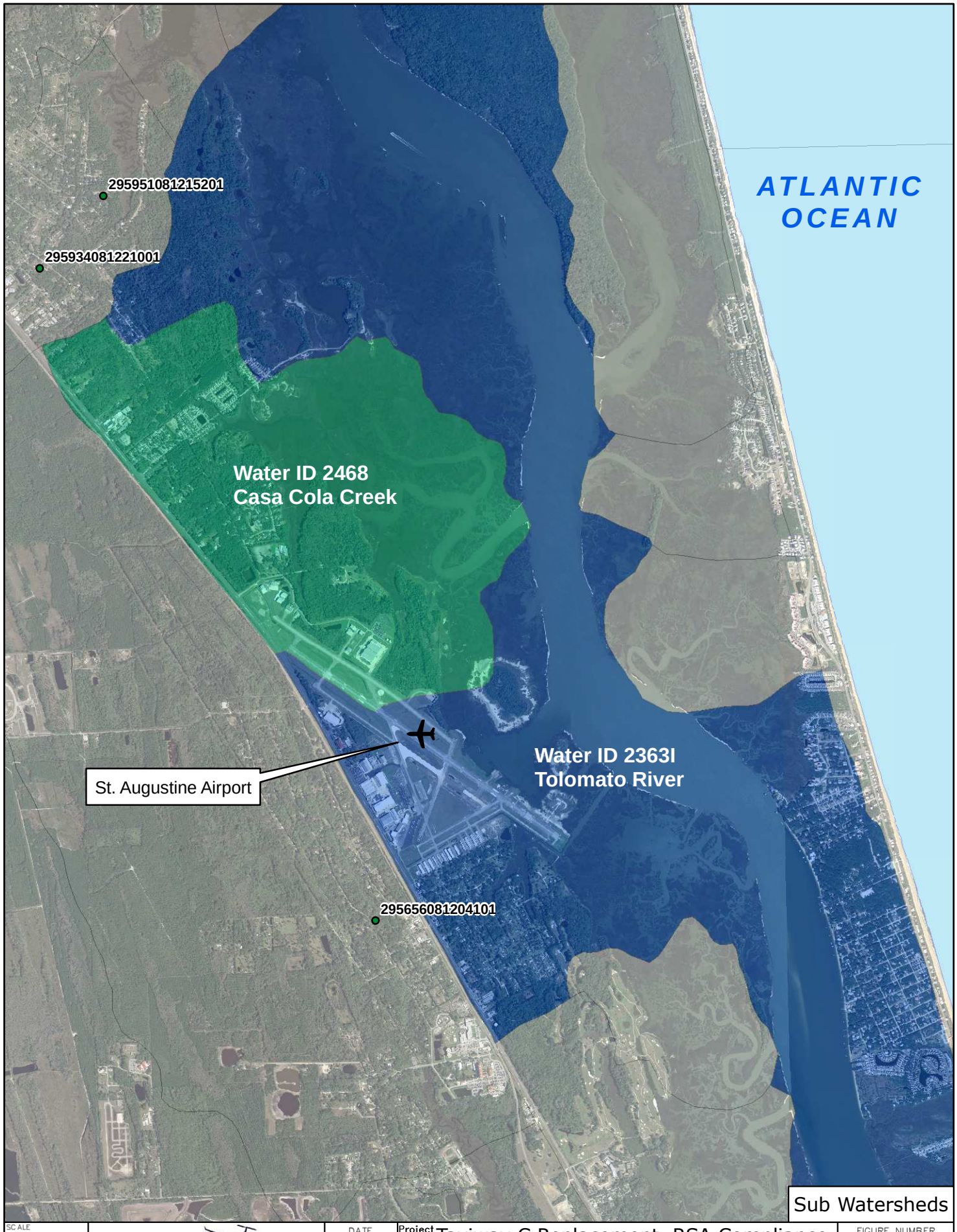
35 Florida Department of Environmental Protection. (2008, April 2). Surface Water Quality Standards. Chapters 62-302 , p. 9. http://www.dep.state.fl.us/legal/Rules/shared/62-302/62-302.pdf

36 Florida Department of Environmental Protection – Division of Water Resource Management. (2005*). Water Quality Status Report Upper East Coast*, pp. 26, 29. ftp://ftp.dep.state.fl.us/pub/water/basin411/uppereast/status/UEC.pdf

37 *The 2008 Florida Statutes*. (2008). Retrieved April 29, 2009, from Online Sunshine http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&Search_String=&URL=Ch0258/SEC37.HTM&Title=->2008->Ch0258->Section%2037#0258.37

38 Florida Department of Environmental Protection – Division of Water Resource Management. (2007, December 7). *Upper East Coast Group 5 Basin/Northeast District – Verified List,* p. 5. http://www.dep.state.fl.us/WATER/TMDL/docs/303d/group5/adopted/ueastcoastverifiedlist.pdf

39 Florida Department of Environmental Protection – Division of Water Resource Management. (2007, December 7). *Upper East Coast Group 5 Basin/Northeast District – Delist List*, p. 1. http://www.dep.state.fl.us/water/tmdl/docs/303d/group5/adopted/ueastcoastdelistlist.pdf



Sub Watersheds

SCALE: 1 in = 3,000 ft DESIGNED BY: DG DRAWN BY: DG CHECKED BY: JG	ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY	DATE: 10/21/2009 PROJECT NO.: #	Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System Owner: St. Augustine-St. Johns County Airport Authority 4796 US 1 North, St. Augustine, Florida 32095	FIGURE NUMBER: 3.15.1

3.15.2 Ground Water

The water supply source for almost all water used in St. Johns County is groundwater. Groundwater in the County occurs in three aquifer systems; the surficial aquifer, the intermediate aquifer, and the Floridan aquifer. Of these, Floridan aquifer is the main water supply.[40] Based on a review of the 2005 Floridan aquifer recharge area map obtained from the SJRWMD, the project study area is not located within a recharge area for the Floridan aquifer. It is instead located in an aquifer discharge area.[41] Therefore activities at the Airport are unlikely to affect groundwater that is used for public water supply. Additional information concerning groundwater resources can be found in **Appendix J**.

The Airport SWPPP and SPCC Plan are discussed Sections 3.10.4 and 3.10.5.

3.16 WETLANDS

Activities in waters of the United States, including wetlands, are regulated by federal, state, and local regulations and or laws. Executive Order 11990, Protection of Wetlands, mandates that each federal agency take action to minimize the destruction, loss, or degradation of wetlands, and preserve and enhance their natural values. The U.S. Army Corps of Engineers (USACE) has authority to regulate activities in waters of the U.S. under the *Clean Water Act* and the *Marine Protection, Research, and Sanctuaries Act* of 1972, as amended. The USACE is a cooperating agency with the FAA on this EA. The legal framework for the regulation of activities in the State of Florida is provided, in part, by Chapter 373 of the Florida Statutes.

Specifics concerning permit requirements are codified in Chapter 40, parts A through E, of the Florida Administrative Code. Additional information concerning wetland regulations is provided in **Appendix B**. The uniform mitigation assessment methodology (UMAM) sheets are provided in **Appendix L**.

3.16.1 Wetland Descriptions

A wetland delineation was conducted in April 2009 to assess the potential presence of wetlands and surface waters within the proposed project area. The methodology employed during the delineation is described in **Appendix B**. The project study area consists of approximately 42.8 acres, and based on the results of the delineation, jurisdictional wetlands and surface waters occupy 16.1 acres of the proposed project area. For descriptive purposes, the contiguous wetlands and surface waters within the proposed project area were separated into three sections, East, South, and West. **Figure 3.16.1** depicts the location of each of these sections, and the following paragraphs describe the vegetative cover types and open water types found within each section. Two classification systems were used to describe the wetlands and surface waters in the study area, the USFWS' Cowardin classification system and the FDOT's FLUCFCS system. Additional information concerning these classification systems can be found in **Appendix B**.

Table 3.16-1 lists the Cowardin classification and the FLUCFCS cover class of each of the various surface waters and wetland types found within the East, South, and West Sections and their associated acreages within each section. The locations of these areas are depicted on **Figure 3.16.1**. The following paragraphs provide brief descriptions of the wetland and surface water types delineated in the proposed project area. Additional descriptions can be found in **Appendix B**.

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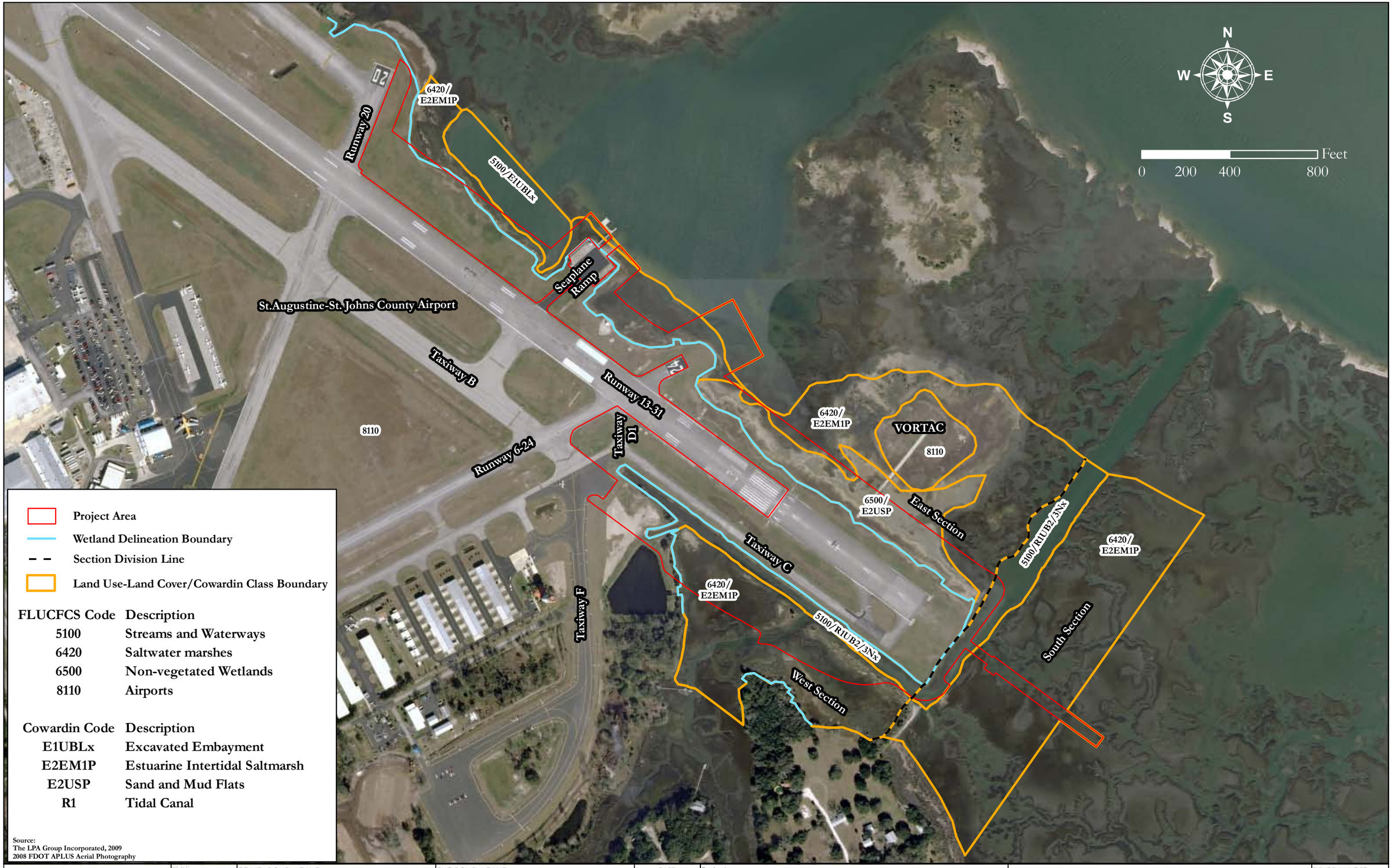
[40] St. Johns County Utility Department Water Quality Reports (2009) http://www.co.st-johns.fl.us/BCC/Utility_Department/Water_Quality_Reports/index.aspx

[41] St. Johns River Water Management District (2005) *Recharge Areas of the Floridan Aquifer in the St Johns River Water Management District.* Available via download from http://sjr.state.fl.us/groundwaterassessment/recharge.html



Project Area

Wetland Delineation Boundary

Section Division Line

Land Use-Land Cover/Cowardin Class Boundary

FLUCFCS Code	Description
5100	Streams and Waterways
6420	Saltwater marshes
6500	Non-vegetated Wetlands
8110	Airports

Cowardin Code	Description
E1UBLx	Excavated Embayment
E2EM1P	Estuarine Intertidal Saltmarsh
E2USP	Sand and Mud Flats
R1	Tidal Canal

Source:
The LPA Group Incorporated, 2009
2008 FDOT APLUS Aerial Photography

ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY

SCALE: SCALE
DESIGNED BY: NAME
DRAWN BY: NAME
CHECKED BY: NAME

PRIME CONSULTANT:
Passero Associates
Engineering Surveying
Architecture Planning
CERT. OF AUTHORIZATION #3428

SUBCONSULTANT:
THE LPA GROUP
AVIATION CONSULTANTS

DATE:
PROJECT NO.:

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System
Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

Jurisdictional Wetlands Map

FIGURE NUMBER: 3.16.1

Table 3.16-1
Wetlands and Surface Waters Within Area A

Section	Cowardin (USFWS) Classification	FLUCFCS Code and Description	Approximate Area (Acres)
East	E1UBLx – Excavated embayment	5100-Streams and Waterway	0.67
	E2EM1P – Estuarine intertidal saltmarsh	6420-Saltwater Marshes	5.38
	E2USP – Sand and mud flats	6500-Non-vegetated Wetlands	1.37
South	R1UB2/3Nx – Tidal canal	5100-Streams and Waterway	0.76
	E2EM1P - Estuarine intertidal saltmarsh	6420-Saltwater Marshes	0.91
West	R1UB2/3Nx - Tidal canal	5100-Streams and Waterway	2.48
	E2EM1P - Estuarine intertidal saltmarsh	6420-Saltwater Marshes	4.53

*Source: Based on project specific application of Cowardin and FLUCFCS classifications from observations during field surveys

South Section
Cowardin Class R1UB2/3Nx – Tidal canal
FLUCFCS Class 5100 – Streams and Waterways
This area is a man made open water canal that is navigable by small vessels at high tide. Vegetation is confined to the edges of the canal. The substrate consists of mud and sand.

Cowardin Class E2EM1P – Estuarine Intertidal Saltmarsh
FLUCFCS Class 6420 – Salt Marshes
The portion of the South Section that lies southeast of the canal consists of saltmarsh. The area is tidally influenced and the dominant vegetation observed was saltmarsh cordgrass and salt meadow cordgrass.

West Section
Cowardin Class R1UB2/3Nx – Tidal canal
FLUCFCS Class 5100 – Streams and Waterways
The canal described within the South Section turns to the northwest within the West Section and extends along the toe of the runway taxiway fill slope approximately 1,800 feet to a stormwater outfall located approximately 80 feet south of Taxiway D1. The canal also connects to a ditch leading from another outfall located east of Taxiway F and connects to a small tidal creek that drains from an area of residential development south of the Airport. Substrate within the canal consists of mud and sand, oyster beds, and scattered clumps of oysters are found throughout the canal.

Cowardin Class E2EM1P – Estuarine Intertidal Saltmarsh
FLUCFCS Class 6420 – Salt Marshes
The portion of the West Section located southwest of the canal is composed of saltmarsh. Dominant vegetation observed included saltmarsh cordgrass and salt meadow cordgrass.

3.17 PAST, PRESENT AND REASONABLY FORESEEABLE ACTIONS

CEQ defines cumulative impacts in 40 CFR Section 1508.7 as:

> "the incremental adding of a proposed action's effects on an environmental resource to impacts on the same resource due to past, present, and reasonably foreseeable actions, regardless of the agency or entity undertaking those actions."

The CEQ's requirement that federal environmental documents address cumulative actions which, when viewed with other proposed actions that have cumulatively significant impacts as stated in 40 CFR Section 1508.25(a)(2)and (3).

This section describes major past, present, and reasonably foreseeable actions for the purpose of considering potential cumulative impacts. For this EA major projects that have been constructed in the past five years and projects that may be at least partially constructed within the next 10 years were included. Sources of data concerning these projects included the following documents and/or government agencies:

1. The Airport's Joint Automated Capital Improvement Program (JACIP)[42], ALP and Master Plan;
2. The City of St. Augustine Planning and Building Department, Planning and Zoning Division;
3. The St. Johns County Growth Management Department, Planning Division;
4. The St. Johns County Public Works Department, Engineering Division;
5. The FDOT State Transportation Improvement Program (STIP);
6. SJRWMD e-permitting website (https://permitting.sjrwmd.com/epermitting/jsp/start.jsp); and,
7. The North Florida Transportation Planning Organization 2035 Long Range Transportation Plan.

The projects described are independent of the implementation of the proposed project detailed in this EA.

The past, present, and reasonably foreseeable actions discussion primarily includes projects within the boundary of the Tolomato Planning Unit of the Upper East Coast Watershed (**Appendix J, Figure J.2**). However, one additional development, Flagler Crossing, was included because it is a large development that is located within one mile of the Airport.

3.17.1 Past Actions

Airport Capital Improvement Projects

Data concerning Airport projects was primarily obtained from the JACIP and from interviews conducted with Airport staff[43] and Airport consultant staff[44]. Project lists are also included in the Capital Development Plan projects list in the Master Plan. But due to the fact that this document is

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[42] Florida Aviation Database (2009) *St. Augustine-St. Johns County Joint Automated Capital Improvement Program* Available via password protected download from http://florida-aviation-database.com/facility/Jacip/, accessed and copy provided by Airport Staff on June 17, 2009.

[43] Bryan Cooper, Assistant Airport Manager, St. Augustine-St. John's County Airport. Personal communication, June 17, 2009 and June 7, 2010.

[44] Andrew Holesko, Vice President, Passero Associates, Personal communication June 7, 2010.

now five years old, the 2009 JACIP provides a more current list of Airport projects. Due to the nature of the JACIP, some of the projects listed are not yet detailed in description. In many of these cases, the listed project is a placeholder that is used in case a need for funding assistance arises, such as a new tenant in need of a corporate or commercial hangar. The placeholder corporate and or commercial hangar may be used on the list, but the demand for the hangar may not materialize and it may not be constructed. In other cases the JACIP is sufficiently descriptive to associate a listed project to a project that was actually constructed, is planned for future design and construction, or is under consideration for future funding. The project list from the June 17, 2009 JACIP is provided as **Table M-1** in **Appendix M.**

South General Aviation Development

This development area is located on the west side of the Proposed Project, south of Estrella Avenue (**Figure 3.17.1**). Projects completed that are generally associated with or in the vicinity of the South General Aviation (GA) development area are listed below.

Project	**Year Constructed**
Pine Ridge Road Parking Area	2005
Taxiways F and G	2007
South GA Transient Parking Apron	2007
South GA Infrastructure (Utilities, etc.)	2007-2009
42 T-Hangar Units (7 Buildings)	2008-2009
U.S. Customs Building	2009
Multiuse Building	2009-2010
Aircraft Wash Rack	2009
Maintenance Hangars (2)	2009-2010

Combined, these projects have introduced over 10 acres of new impervious surface at the Airport. However, runoff from this new impervious surface is being treated as described in the paragraph below. Based on a review of permit documents found on the SJRWMD e-permitting website, no wetlands were impacted by these projects.

It is anticipated that water quality has received a net benefit as a result of the South GA Development projects. In order to construct the development, approximately 50 acres of parcels that were formerly part of a residential development known as Araquay Park were acquired by the Airport. This older development had a storm sewer system that collected stormwater from inlets along the residential streets and discharged directly into Indian Creek without any system of treatment. The new South GA Development utilizes a stormwater treatment system incorporating sheet flow, swales, two wet detention ponds, and a wet retention pond to treat stormwater runoff from the site. Most of the residences in the old development also had septic tank systems. In some cases, the drainfields of these septic systems were located at an elevation below the level of inundation during high spring tide events. During construction of the new development, over 50 septic tanks were removed. The new development connects to the City of St. Augustine's sanitary sewer system.[45]

Other Airport Development 2005 to 2010

Other Airport development projects that were completed between 2005 and 2010 are listed below:

[45] Bryan Cooper, Assistant Airport Manager, St. Augustine-St. Johns County Airport. Personal communication October 26, 2009.

Project	Year Constructed
Seaplane Ramp and New Dock	2007
Hangar 11/Airline Terminal	2007
Airline Terminal Parking Area	2007
Hangars 8, 9, and 10	2006
North Section of Taxiway B (Rehabilitation And Widening)	2009

Of these five past Airport development projects, only the seaplane ramp and dock occurred partially over wetlands. For this project the only new fill in wetlands was the installation of pilings for the dock, and this was determined to be a de minimus impact that did not require mitigation for the SJRWMD or USACE permit. None of the other projects resulted in wetland impacts. The construction of Hangar 11 and the airline terminal parking area were in support of commercial airline service formerly operated at the Airport by Skybus. Skybus ceased operations and filed for bankruptcy in 2008. Hangars 8, 9, and 10 are commercial hangars that are located within the east side development area on the southeast side of the northern end of Taxiway 'A1' (identified as 'A2' on the ALP). The Taxiway 'B' project included widening and resurfacing of Taxiway 'B1', the northern portion of Taxiway 'B2', and the portion of Taxiway B between Taxiways 'B1' and 'B2'.

Private Development within the City Limits of St. Augustine

Two off-Airport, private mixed use development projects, Madeira and Flagler Crossing had some portion of their development initiated between 2005 and 2010. However, perhaps due to the decline in the housing market during 2008 and 2009, development appears to be moving at a relatively slow pace. These developments are discussed in greater detail below in the Present Actions section.

3.17.2 Present Actions

Airport Projects

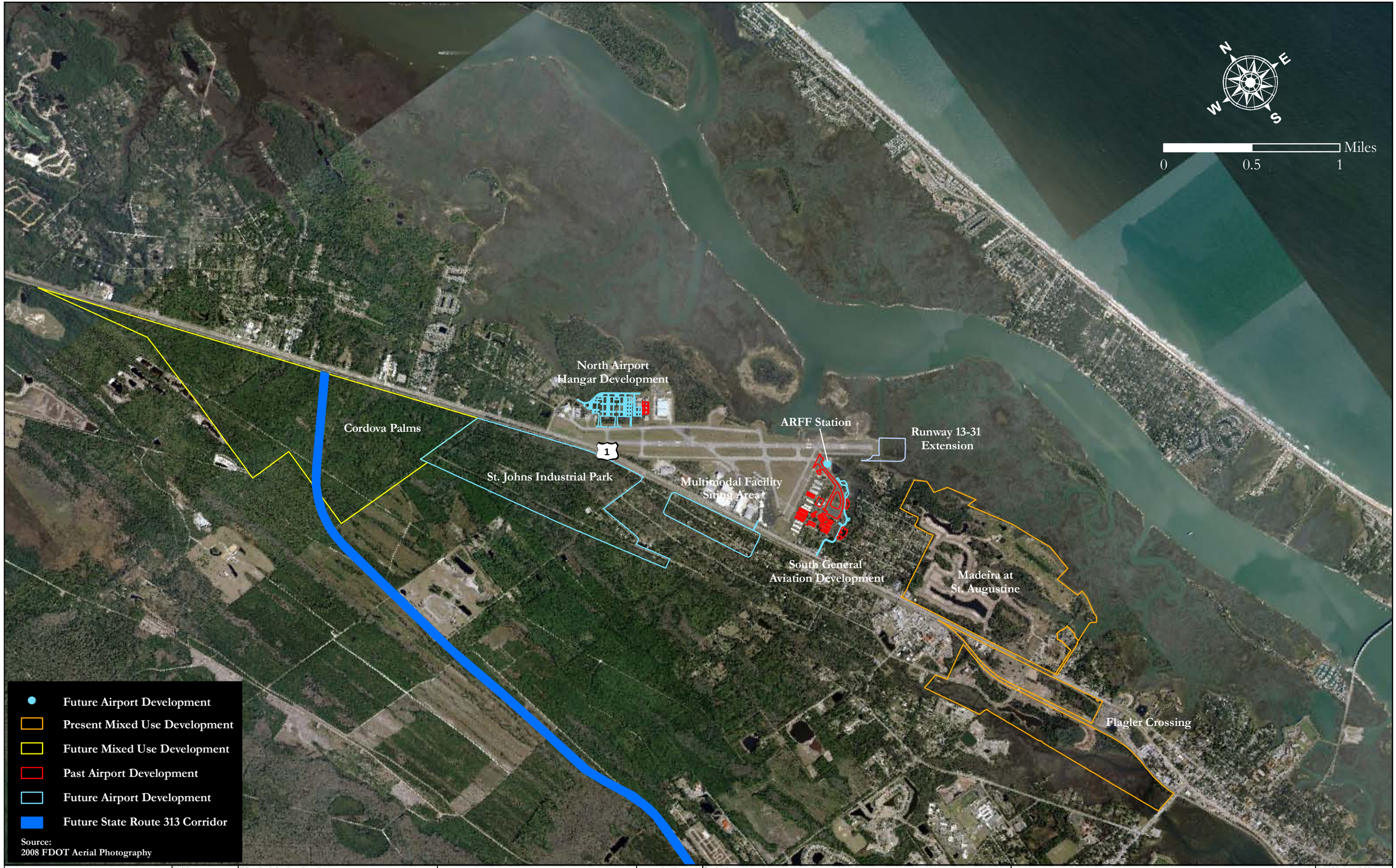
One on-Airport project, the South GA maintenance multi-purpose building and hangars construction, began in 2009 and is ongoing. This project is located adjacent to the south side of the South GA apron beside the new multipurpose building. The project does not impact wetlands, water quality, noise, protected species or air quality.

Private Development within the City Limits of St. Augustine

As stated above in section 3.17.1, development is ongoing at Madeira and Flagler Crossing, two large mixed use developments south of the Airport.

Madeira

The Madeira development is a mixed use development that is located on the property formerly occupied by the Ponce Island Golf Course, at the northern limits of the City of St. Augustine, east of U.S. Route 1, approximately 0.4 mile south of the Airport (**Figure 3.17.1**). The site is 1,006 acres in size. Development is ongoing and is planned to eventually occupy 419 acres of the site. At full build-out, this development will include 749 residential units, including single family, multi-family, and condominium units. The development will also include commercial, office, and retail development. The site was annexed by the City of St. Augustine in 2001. Based on communication with the city's planning department, homebuyers will be required to sign a disclosure agreement saying that they are aware of potential Airport noise as part of the purchase of property within the



ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY

SCALE: SCALE
DESIGNED BY: NAME
DRAWN BY: NAME
CHECKED BY: NAME

PRIME CONSULTANT:
Passero Associates
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CERT. OF AUTHORIZATION #3428

THE LPA GROUP AVIATION CONSULTANTS

DATE:
PROJECT NO.

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
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Past, Present, and Reasonably Foreseeable Actions

FIGURE NUMBER: 3.17.1

development, due to the site's location near the approach to Runway 31.[46] Based on a review of the Master Plan map for the development, an area of approximately 3.9 acres at the extreme northeast end of the property that is planned for residential development would be located within the existing 65 DNL noise contour.

The October 2004, mitigation plan for the Madeira project described impacts to 3.96 acres of wetlands and 6.18 acres of surface waters. These areas proposed for impact included isolated wetlands and wetlands and surface waters associated with Robinson Creek and the Tolomato River. A detailed breakdown of the wetland types proposed for impact is provided in **Table 3.17-1**, below. The original permit was issued on January 10, 2006. Four modifications to the permit were also issued.

Table 3.17-1
Wetland Habitat Types Proposed for Impact at the Madeira Site

FLUCFCS CODE	Description	Impact Size (Acres)
524	Lakes < 10 acres (Littoral Fringe)	0.69
617	Mixed Wetland Hardwoods	0.41
618	Willow and Elderberry	0.57
621	Cypress	0.27
622	Pond Pine	0.039
625	Hydric Pine Flatwoods	0.902
630	Wetland Forested Mixed	1.01
640	Vegetated Non-Forested Wetlands	0.48
641	Freshwater Marsh	0.01
6412	Cattail	0.05
642	Saltwater Marshes	0.17
742	Borrow Areas	0.05

Source: SJRWMD Permit Application No. 4-109-94964-1 RAI Response, September 24, 2004

Wetland impacts are to be mitigated in phases through wetland preservation, wetland restoration, and upland preservation as various phases of the project are constructed. The project also includes the use of pond liners to limit water quality impacts from potential release of fertilizer and pesticide residues from the ponds within the site. These chemicals occur in some of the ponds due to the site's history as a golf course.[47]

Flagler Crossing

Flagler Crossing is another mixed use development that is planned within the limits of the City of St. Augustine. This 126-acre site is located west of U.S. Route 1 at the intersection of Ponce Island Drive and U.S. Route 1, approximately one mile southwest of the Airport. Multi-family residential, single family residential, and commercial uses are planned within the development, including 888

[46] David Birchim, Planning Manager, City of St. Augustine. Personal communication, June 22, 2009.
[47] St. Johns River Water Management District E-Permitting Website, https://permitting.sjrwmd.com. Permit documents for permit number 4-109-94964-1 and subsequent modifications.

units of multi-family housing and 150,000 square feet of retail space. A four-lane boulevard entrance to the development has already been constructed.

The SJRWMD issued a permit for a portion of the project on July 10, 2007. The permit was for a water management system for 93 acres of residential development. According to the SJRWMD technical staff report, the project proposed 5.91 acres of wetland impact. The impacted wetlands are freshwater wetlands (FLUCFCS class 6300 – wetland forested mixed) that are dominated by invasive exotic or other undesirable species. As mitigation, the project proposed to preserve 7.55 acres of wetlands and 8.17 acres of uplands. Additional remediation was also required by FDEP and SJRWMD in order to clean up groundwater contamination at the site that was due to the site's former use as a railroad maintenance yard.

3.17.3 Reasonably Foreseeable Future Actions

For the purposes of this EA, reasonably foreseeable future actions were defined as projects that would be constructed within the next ten years.

Airport Capital Improvement Projects

Several future projects identified in the JACIP for years 2010 to 2019 would not be anticipated to have environmental impacts and may not occur in the year requested. These projects, which would not be anticipated to contribute to cumulative environmental impact, are listed below:

Project	Year Requested
Acquire ARFF Vehicle	2010
Relocate Glideslope	2010
Overlay Runway 6-24	2010
Main Runway 13-31 Pavement Rehabilitation	2010
Acquire Land for Development	2011-2020
Overlay Taxiway D	2012
Southside Infrastructure	2012-2020
Rehab South Half Taxiway B	2013
Install ILS (Runway 13 approach)	2014
Install Approaching Lighting to Runway 13	2014
Land Acquisition (Immediate Airport Area)	2014
Rehab Taxiway A	2019

The following projects are reasonably foreseeable projects that would typically be viewed as having the potential to impact environmental resources because they involve new construction on previously undeveloped sites:

Construction of New Aircraft Rescue and Fire Fighting Facility (Requested 2010)

The construction of the Airport's new Aircraft Rescue and Fire Fighting (ARFF) facility is slated to begin in late 2010 and be completed in 2011. This facility will be located entirely on uplands between Taxiway 'F' and the proposed Taxiway 'B' extension addressed by this document, on the north side of the existing stormwater pond. Treatment of stormwater runoff will be provided by this existing pond. There will be no other impacts associated with the ARFF facility. The acquisition of an ARFF vehicle is also listed as a separate project in the JACIP, as shown above.

Construction of Hangars (Requested 2010, 2011-2019, 2012-2018, 2014)
The Airport's JACIP calls for the future construction of additional corporate hangars, commercial hangars, and T-hangars. This construction is based on demand for additional hangar space. Future hangar developments are depicted on the Airport's ALP in the vicinity of the South GA development area and at the northern end of the Airport in the area of Hawkeye View Lane east of Taxiway 'A' (**Figure 3.17.1**). New hangar development in the northern portion of the Airport would have high potential to impact wetlands. Based on a review of the 2004 SJRWMD FLUCFCS mapping in the vicinity of the north Airport hangar development area (**Appendix M**, Figure M.3), 9.7 acres of mixed wetland hardwoods (FLUCFCS 6170) and 0.1 acres of treeless hydric savanna wetlands (FLUCFCS 6460) occur within the proposed development area depicted on the ALP. New hangar development in the South GA area would not be anticipated to impact wetlands or cause other environmental impacts.

Airport Industrial Park Infrastructure (Requested 2012)
The proposed St. Johns Industrial Park site lies on the west side of U.S. Route 1 and is roughly bordered by Lafayette Avenue to the north, Big Oak Road to the south, and Pine Drive to the west (**Appendix M**, Figure M.3). The projects listed as Airport industrial park infrastructure on the JACIP would likely involve installing water, sewer, and electric utilities within the area of the proposed industrial park to prepare the area for future development. Based on communication with Airport staff,[48] portions of this property have already been put under conservation easement as wetland mitigation for other past Airport projects. Staff has also indicated that, to date, funding for these infrastructure projects has not been approved and, due to the current slow economy and lack of demand, it is questionable that any development will begin in this area within the next ten years. The FLUCFCS mapping was reviewed for the area within the industrial park boundary. Out of a total 287.9 acres at the site, the mapping identifies 38.2 acres of mixed wetland hardwoods (FLUCFCS 6170) and 0.2 acre of Freshwater Marsh (FLUCFCS 6410) wetlands within the boundary of the proposed industrial park. Because the utilities infrastructure would be installed along narrow corridors, it is anticipated that impacts from such infrastructure projects would be minor. However, the preparation of the site for future development would potentially lead to future wetland impacts as the lots in the industrial park were built out if future development is not excluded from the wetland areas within the industrial park.

North Airside Service Road (Requested 2010)
Another project that is listed on the Airport's JACIP is the north airside service road project. The north airside service road would likely connect to the existing service road on the west side of Taxiway 'B' and extend northward around the end of Taxiway B, around the end of Runway 13 and the localizer, and possibly connect to Taxiway 'A' (**Figure 1.02.1**). The road would allow access for servicing aircraft at the north and east portions of the Airport. Based on the aerial photography for this portion of the Airport, this project would have a low potential for wetland impact, but could impact some surface waters that are upland cut ditches.

Multimodal Terminal Facility (Requested 2011)
This facility is a proposed 50,000 square-foot multimodal terminal that would accommodate aviation, rail and all surface vehicle demands into a single facility. The concept is being considered as a means to avoid duplication of infrastructure that would otherwise be required to construct a separate terminal for each transportation mode. The facility would also allow for connectivity between the various transportation modes that would utilize the facility. Amtrak and Greyhound are

[48] Bryan Cooper, Assistant Airport Manager, St. Augustine-St. John's County Airport. Personal communication, June 17, 2009 and June 7, 2010.

other transportation service providers that have been involved in negotiations for this potential future project. A conceptual siting area within which the terminal could be constructed was included in the Airport's Master Plan. This siting area is depicted in **Figure 3.17.1**. Based on the 2004 SJRWMD FLUCFCS mapping (**Appendix M**, Figure M.3), mixed wetland hardwoods (FLUCFCS 6170) occupy approximately three acres of the site.

Extend Runway 31 (Requested 2012-2013)
The Airport's ALP depicts an ultimate 1,000 foot extension of Runway 31 and parallel Taxiway 'B' and the JACIP lists a request for the Runway 31 extension project for year 2012 to 2013 (**Figure 3.17.1**). Based on communication with Airport staff,[49] the FAA currently does not consider this project to be justified. Therefore, it is unlikely that it will be constructed within the 10 year future development timeframe of this cumulative impacts analysis. If constructed, the project, would impact an estimated 11.9 acres of salt marsh wetlands and 1.3 acres of the tidal canal at the end of Runway 31. The project may also result in increased noise impacts for residences around the south end of Runway 31 and the Runway 31 approach.

Construct Taxiway 'B' Bridge (Requested 2013)
The Airport's ALP depicts an ultimate crosswind runway on the west side of U.S. Route 1, west of the Airport. The proposed Taxiway 'B' Bridge would provide a means for taxiing aircraft to access the crosswind runway from the existing portion of the Airport because it would be a taxiway bridge across U.S. Route 1 and the existing rail line on the west side of U.S. Route 1. The crosswind runway does not appear on the JACIP, but the Taxiway B bridge is listed as requested for 2013. Based on communication with Airport staff, the FAA does not see justification for providing funding for either the Taxiway B bridge or the crosswind runway within the near future.[50] It is unlikely that the Taxiway B bridge will be constructed in the 10 year future development timeframe of this cumulative impacts analysis. Although the ALP does not depict the location of the Taxiway B bridge, it is anticipated that, if it were funded, it would be constructed near the northern end of Taxiway 'B', which is the nearest portion of the existing taxiway to the proposed location of the crosswind runway and its parallel taxiway, as they are depicted on the ALP. Based on a review of the FLUCFCS mapping, an area of mixed wetland hardwoods does occur across U.S. Route 1 from the northern end of Taxiway 'B', but without knowing the footprint of the proposed bridge, it is not possible to tell whether the project would result in wetland impacts.

Private Development within Unincorporated Portions of St. Johns County

Cordova Palms
Cordova Palms is a third mixed use development that is planned west of U.S. Route 1, approximately 0.5 mile northwest of the Airport. The site is 580 acres in size, and, according to St. Johns County documentation, the development will ultimately include "600,000 square feet of commercial, retail, and service uses; 100,000 square feet of office space; 200,000 square feet of light industrial space; and 1,700 multifamily residential units."[51]

The Application for Development Approval (ADA) for the project states that the project will result in an estimated 15 acres of wetland impacts. The SJRWMD FLUCFCS mapping (**Appendix M**, Figure M.1) depicts large areas of mixed wetland hardwoods (FLUCFCS 6170, 24.6 acres), hydric

[49] Bryan Cooper, Assistant Airport Manager, St. Augustine-St. John's County Airport. Personal communication, June 17, 2009 and June 7, 2010.
[50] Ibid.
[51] St. Johns County Website, Application for Development Approval for Cordova Palms, http://www.co.st-johns.fl.us/BCC/growth_management/planning/DRI+/CordovaPalms.aspx.

pine flatwoods (FLUCFCS 6250, 26.4 acres), and wetland forested mixed (FLUCFCS 6300, 25.6 acres) within the boundary of the site. Smaller areas of freshwater marsh (FLUCFCS 6410, 6.8 acres), wet prairie (FLUCFCS 6430, 2.2 acres), and treeless hydric savanna (FLUCFCS 6460, 2.8 acres) also occur within the site boundary. Based on a review of the SJRWMD website, no permit has been applied for other than an application to obtain a binding jurisdictional determination for the extent of the wetlands at the site. The preliminary plan for mitigation of wetland impacts alluded to in the ADA includes elements of onsite wetland and upland buffer preservation and wetland restoration and enhancement. Based on a review of the Cordova Palms Master Development Plan, no residential development is planned within the existing 65 DNL noise contour.

Roadway Projects

SR 313

Information concerning potential future roadway projects was obtained from the FDOT STIP and the St. Johns County Public Works Department, Engineering Division website. Based on a review of the available documentation, only one major roadway project, the SR 313 project (also known as the SR 312 extension and the St. Augustine bypass), is planned for the cumulative impact area that may have some phase of construction initiated within the next five years. This project would be a 9.5 mile long roadway on new alignment that would begin at the existing northern terminus of SR 312 at its intersection with SR 207 and extend generally northward, looping around the City of St. Augustine and eventually terminating at US Route 1, approximately 1.3 miles north of the Airport. The roadway would pass through the Cordova Palms development site. Based on a search of the SJRWMD e-permitting website, no permit documents are available for this project. A review of the SJRWMD FLUCFCS mapping (**Appendix C**, Figure 1) indicated that the project corridor alignment crosses an estimated 24.8 acres of wetlands. All of the wetland types mapped within the corridor are freshwater types with majority of the wetlands being classified as mixed wetland hardwoods (FLUCFCS 6170, 18 acres).

3.18 ENVIRONMENTAL RESOURCES NOT AFFECTED

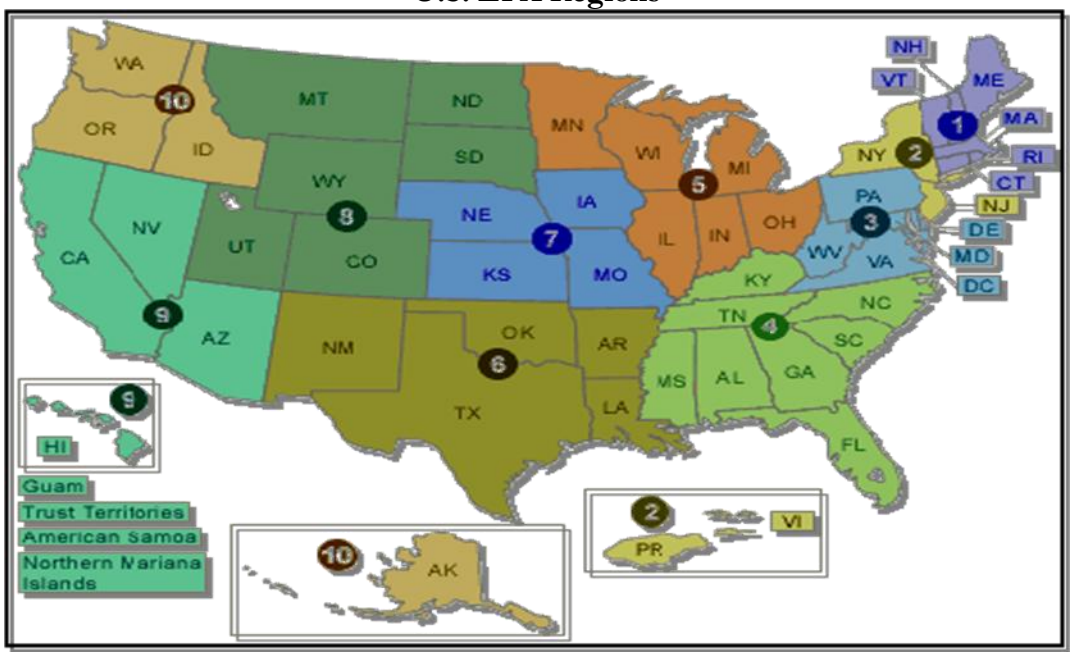
The following environmental resources would not be affected by the proposed project or the no action alternatives:

3.18.1 Air Quality

Section 109(b)(1) of the Clean Air Act, 1990 (as amended), requires EPA to set forth National Ambient Air Quality Standards (NAAQS) and establish levels for specific pollutants that are "requisite to protect the public health." The EPA has identified six criteria pollutants that pose the greatest risk to public health that could lead to environmental and private damage: Ozone, Carbon Monoxide, Lead, Nitrogen Dioxide, Sulfur Dioxide, and Particulate Matter. EPA monitors each region (see **Figure 3.18.1**). Florida is in Region 4. For these criteria pollutants and within those regions EPA has the authority to designate an area as: "attainment," "non – attainment," or "unclassifiable." Per Title 40 CFR part 81, *"Designation of Areas for Air Quality Planning Purposes"* EPA has designated St. Johns County as being in "attainment" for all six criteria pollutants.

Ambient air is defined as the portion of the atmosphere near ground level and external to buildings and other structures; attainment is defined as being in compliance with standards, attainment can also be broken down further to *"maintenance area"*, which is an area previously designated as being in "non-attainment" that has successfully reduced air pollutant concentrations to below the standard, but must maintain some of the non-attainment area plans to stay in compliance with the standards;

Figure 3.18.1
U.S. EPA Regions



Source: Environmental Protection Agency

non-attainment is defined as not in compliance with standards; and unclassifiable is defined as insufficient data available to classify.

FDEP is responsible for monitoring and enforcing ambient air quality for the state of Florida. Florida Statute 403, *Environmental Control*, provides the legal authority for the Air Resource Management program within FDEP to implement and enforce air quality. Section 403.061 states "Authority to establish and administer an air pollution control program; set ambient air quality standards; monitor air quality; adopt rules for the control of air pollution in the state; permit air pollutant emission sources; require reports from air emission sources; take enforcement action against violators of air pollution laws, rules and permits; and exercise the duties, powers, and responsibilities required of the state under the federal Clean Air Act."

FDEP has *State Local Air Monitoring Stations* (SLAMS) set up throughout the state's six districts and Tallahassee to ensure ambient air quality is met; however, air quality monitoring is done independently by ten municipalities, Duval County (City of Jacksonville) is one of those municipalities and their monitoring area includes the counties of Baker, Clay, Nassau and St. Johns. The nearest SLAMS to the Airport is located in Duval County and according data found on the City of Jacksonville's website[52] the area is within attainment according to federal and state statutes.

According to a 2006 report published by FDEP, *Air Monitoring Report*, "All areas of Florida are now attainment areas;" however, Duval County is one of several counties that is classified as being a "Maintenance Area for Ozone. The entire state remains designated not classifiable for PM_{10}".
No further formal analysis will be performed based on several factors: St. Johns County is within *Attainment* according to the latest data from the Environmental Protection Agency (EPA); aircraft

[52]http://www.coj.net/Departments/Environmental+and+Compliance/Environmental+Quality/Ambient+Air+Monitoring+Activity.htm, May 13, 2009

operations at the airport will not change from what they are currently; and FAA *Air Quality Procedures for Civilian Airports and Air Force Bases*, states for "commercial service airports who have more than 1.3 million passengers or more than 180,000 forecasted general aviation operations a NAAQS assessment is not required". FAA's 2009 Terminal Area Forecast (TAF)[53], **Figure 3.18.2**, for the Airport shows the Airport will not meet the threshold of 180,000 general aviation operations by 2025; and the no action, proposed project, and reasonable alternatives would not have a significant impact on air quality and would not cause or contribute to the NAAQS or Florida Air Quality Standards. The proposed project or no action alternatives would not affect air quality.

3.18.2 Coastal Barriers

The Coastal Barrier Resources Act of 1982, as amended by the Coastal Barrier Improvement Act of 1990, 16 USC Sections 3501-3510 bans Federal agencies from providing funding for almost all actions occurring on any unit of the Coastal Barrier Resource System. Barrier islands are geologically unstable formations and cannot support development. Yet, they protect the mainland by buffering storm or hurricane-driven winds or waves. As a result, these islands protect fish, wildlife, human life, and property along coasts and shorelines. The Department of the Interior, through the USFWS and the National Park Service, develops and maintains maps of these islands collectively entitled the "Coastal Barrier Resources System."

Based on a review of Coastal Barrier Resources Act (COBRA) data obtained from the National Oceanic and Atmospheric Administration (NOAA), there are no Coastal Barrier Resources within the proposed project area (NOAA 1998). The proposed project or no action alternatives would not affect COBRA resources.

3.18.3 DOT Section 4(f) Lands

Section 4(f) of the Department of Transportation Act states that, subject to exceptions for *de minimis* impacts, the Secretary of Transportation (Secretary) may approve a transportation program or project requiring the use of publicly-owned land of a park, recreational area, or wildlife and waterfowl refuge of national, state, or local significance or land of a historic site of national, state, or local significance as determined by the official having jurisdiction over those resources only if:

> (1) there is no prudent and feasible alternative that would avoid using those resources, and
>
> (2) the program or project includes all possible planning to minimize harm resulting from the use.

There are no 4(f) properties within the proposed project area. A cultural resources assessment was prepared for the project study area and has been provided to the Florida Department of State Division of Historical Resources (DHR). (**Appendix N**). The proposed project would not use or affect any publicly owned land of a park, recreational area, or wildlife and waterfowl refuge of national, state, or local significance or land of a historic site of national, state, or local significance. This study was submitted to SJCBCC and on June 8, 2010 they issued a letter of concurrence with the findings of the study.

Following completion and submittal of the study, DHR formally requested additional information (RAI). An addendum study (**Appendix N**) was completed in May 2010 addressing DHR's RAI and this included an approximately 36± acre parcel at the Airport. This addendum study concluded

53 http://aspm.faa.gov/wtaf/detail.asp?line=SELECT+*+FROM+WTAF+WHERE+SYSYEAR>^2000+AND+SYSYEAR<^2025+AND+(LOC_ID^~SGJ~)

Figure 3.18.2
FAA Terminal Area Forecast

APO TERMINAL AREA FORECAST DETAIL REPORT
Forecast Issued December 2008

REGION: ASO **STATE**: FL **LOCID**: SGJ **CITY**: ST AUGUSTINE AIRPORT: ST AUGUSTINE

AIRCRAFT OPERATIONS

	ENPLANEMENTS				ITINERANT OPERATIONS					LOCAL OPERATIONS				
Fiscal Year	Air Carrier	Commuter	Total	Air Carrier	Air Taxi & Commuter	GA	Military	Total	Civil	Military	Total Ops	Total Ops	Tracon Ops	Based Aircraft
2000	0	0	0	0	210	32,000	10,000	42,210	95,100	0	95,100	137,310		321
2001	0	0	0	0	300	35,500	10,000	45,800	98,000	0	98,000	143,800		330
2002	0	0	0	0	300	29,000	10,000	39,300	115,000	0	115,000	154,300		321
2003	0	0	0	0	3,287	45,776	2,305	51,368	51,552	2,748	54,300	105,668		325
2004	0	0	0	1	4,775	54,819	2,708	62,303	61,835	3,669	65,504	127,807		323
2005	371	0	371	15	4,878	59,495	2,971	67,359	56,858	5,556	62,414	129,773		323
2006	39	0	39	9	6,880	57,742	2,733	67,364	44,079	3,206	47,285	114,649		323
2007	7,949	0	7,949	157	7,441	53,899	2,799	64,296	36,473	3,848	40,321	104,617		323
2008*	20,961	0	20,961	613	6,063	45,631	2,515	54,822	35,280	3,181	38,461	93,283		326
2009*	0	0	0	50	6,610	48,782	2,740	58,182	39,092	3,459	42,551	100,733		331
2010*	0	0	0	50	6,610	48,295	2,740	57,695	39,713	3,459	43,172	100,867		337
2011*	0	0	0	50	6,610	48,488	2,740	57,888	40,345	3,459	43,804	101,692	-	340
2012*	0	0	0	50	6,610	48,682	2,740	58,082	40,986	3,459	44,445	102,527		346
2013***0**	-	-	0	0	50	6,610	48,876	2,740	58,276	41,638	3,459	45,097	103,373		350
2014*	0	0	0	50	6,610	49,072	2,740	58,472	42,300	3,459	45,759	104,231		355
	0	0	0	50	6,610	49,925	2,740	59,325	42,973	3,459	46,432	105,757		360
2016*	0	0	0	50	6,610	50,793	2,740	60,193	43,656	3,459	47,115	107,308		366
2017*	0	0	0	50	6,610	51,676	2,740	61,076	44,350	3,459	47,809	108,885		370
2018*	0	0	0	50	6,610	52,575	2,740	61,975	45,055	3,459	48,514	110,489		376
2019*	0	0	0	50	6,610	53,489	2,740	62,889	45,772	3,459	49,231	112,120		382
2020*	0	0	0	50	6,610	54,419	2,740	63,819	46,499	3,459	49,958	113,777		386
2021*	0	0	0	50	6,610	55,365	2,740	64,765	47,239	3,459	50,698	115,463		393
2022*	0	0	0	50	6,610	56,322	2,740	65,722	47,990	3,459	51,449	117,171	-	398
2023*	0	0	0	50	6,610	57,302	2,740	66,702	48,753	3,459	52,212	118,914		404
2024*	0	0	0	50	6,610	58,299	2,740	67,699	49,528	3,459	52,987	120,686		**411**
2025*	0	0	0	50	6,610	59,313	2,740	68,713	50,315	3,459	53,774	122,487		418

***Source:** http://aspm.faa.gov/wtaf/detail.asp?line=SELECT+*+FROM+WTAF+WHERE+SYSYEA.. 5/7/2009

there were no historic structures within the project tract. Specifically, no WWI era structures exist at the Airport, although some portions of the underlying runway lay-out may or may not conform to the original pattern of the historic runways from that era. Based upon these results, and in consultation with DHR, the Airport and its runways was generally recorded with Florida Master Site File (FMSF) Resource Group (RG) Form Number 8SJ05465 in order to note its WWII era history.

This addendum study was submitted to SJCBCC and on June 8, 2010 they issued a letter of concurrence with the finding of the addendum study. The addendum study was also submitted to DHR for review. Concurrence from DHR is pending at the time the EA was finalized; however their comments and concurrence will be incorporated into the EA once received. The proposed project or no action alternative would not affect Section 4(f) resources.

3.18.4 Environmental Justice

Environmental justice analysis considers the potential of Federal actions to cause disproportionate and adverse effects on low-income or minority populations[54]. The Any airport development action funded under the Airport Improvement Program (AIP) or any airport action subject to FAA approval may cause environmental justice impacts.[55] The EPA Office of Environmental Justice defines environmental justice as:

> *"The fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental effects resulting from industrial, municipal, and commercial operations or the execution of Federal, State, local, and tribal programs and policies."*

The proposed project will not result in increased aircraft noise impacts, air quality degradation, direct and induced socioeconomic effects, water quality impacts, or effects to cultural or community cohesion, traffic, or historical resources. The proposed project or no action alternatives would not cause disproportionate and adverse effects on low-income or minority populations.

3.18.5 Farmlands

The Farmland Protection Policy Act (FPPA) of 1984 (7 USC Sections 4201-4209) as amended, provides the statutory framework for considering important farmlands in Federal decisions. Any airport development action funded under the Airport Improvement Program (AIP) or subject to FAA approval that would permanently convert an existing designated important farmland to a non-agricultural use is subject to FPPA coordination. Important farmlands include all pasturelands, croplands, and forests (even if zoned for development) considered to be prime, unique, or statewide or locally important lands as defined below:

> (1) Prime farmland. This is land having the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimal use of fuel, fertilizer, pesticides, or products.
> (2) Unique farmland. This is land used for producing high-value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture necessary to produce high quality crops or high yields of them economically.
> (3) Statewide and locally important farmland. This is land that has been designated as "important" by either a state government (State Secretary of Agriculture or higher office) or by county commissioners or an equivalent elected body. The State Conservationist representing the Natural Resource Conservation Service must agree with the designation.

According to United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) maps, there are no lands within the project study area that are rated as Prime,

[54] FAA, Environmental Desk Reference for Airport Actions, 2007, Chapter 10, pp1
[55] FAA, Environmental Desk Reference for Airport Actions, 2007, Chapter 10, pp2

Unique, or Statewide and locally important farmland. Furthermore, no soils[56] within the area of the proposed project have been identified as best suited to food, feed, fiber, forage, and oilseed crops. The area of the proposed project has either already been converted to airport use or is estuarine wetland that is not compatible with agricultural use and is therefore not subject to FPPA coordination. Therefore, the proposed project or no action alternatives would not affect FPPA resources.

3.18.6 Historic and Archeological Resources

CFR Title 36, Part 800, Chapter VIII (as amended) provides the guidelines for fulfilling the provisions of Section 106 of the *National Historic Preservation Act, 1966* (as amended). Section 106 requires agencies to take into account the effects upon historic properties of projects involving federal funding and / or permitting. Florida Statute Chapter 267 mandates the identification and management of cultural resources that might occur within the lands of Florida in order to satisfy Section 106 requirements. Section 3.01.05.B.1 of the St. Johns County rezoning regulations locally implements Florida Statue Chapter 267. In accordance with all federal, state and local regulations a *Historical, Architectural, and Archeological Resource* study was conducted in March 2009 within the 26.08– acre study area to determine the presence or absence of historical, architectural or historical resources by Bland and Associates, Inc. (**Appendix N**). A copy of this study has been provided to the Department of Historic Resources (DHR) and St. Johns County Board of County Commissioners (SJCBCC).

The cultural resource study included a review of the Florida Master Site File (FMSF) to determine the presence of previously recorded archaeological sites within the study area; an examination of soil maps for the area; perusal of aerial photographs to identify anomalies; waterways, vegetation patterns, and greatly disturbed areas; the attainment of familiarity with topographic maps of the proposed project area so that elevation data could be utilized; and an investigation of previous archaeological research pertaining to the region. In addition, data regarding past aboriginal settlement and subsistence patterns within Florida were considered. Field work was conducted in order to locate cultural resources and to isolate areas where additional subsurface testing might encounter archaeological sites.

The study concluded no artifacts, historic structures, or historic structural remnants were present. Based on the absence of cultural material and the lack of evidence for occupation, the no action and the proposed project would not affect historical, architectural, or archeological resources. The no action or proposed project alternatives would not affect Historic and Archeological resources. SJCBCC concurred with this determination regarding historic properties (**Appendix T)**. Concurrence from DHR is pending at the time the EA was finalized; however, their comments and concurrence will be incorporated into this EA once received.

Following completion and submittal of the study, DHR formally requested additional information (RAI). An addendum study was completed in May 2010 addressing DHR's RAI and this included an approximately 36± acre parcel at the Airport. This addendum study concluded there were no historic structures within the project tract. Specifically, no WWI era structures exist at the Airport, although some portions of the underlying runway lay-out may or may not conform to the original pattern of the historic runways from that era. Based upon these results, and in consultation with DHR, the Airport and its runways was generally recorded with Florida Master Site File (FMSF) Resource Group (RG) Form Number 8SJ05465 in order to note its WWII era history.

[56] USDA NRCS Soils Data Version 6, 2009 http://websoilsurvey.nrcs.usda.gov/.

This addendum study was submitted to SJCBCC and on June 8, 2010 they issued a letter of concurrence with the finding of the addendum study. The addendum study was also submitted to DHR for review. Concurrence from DHR is pending at the time the EA was finalized; however, their comments and concurrence will be incorporated into the EA once received.

3.18.7 Induced Socioeconomic

Induced socioeconomic impact analysis focuses on a proposed action's potential to cause shifts in patterns of population movement and growth, public service demands, and changes in business and economic activity to the extent influenced by the airport development[57]. The proposed project will not result in induced socioeconomic impacts because they are actions that are being undertaken to achieve compliance with FAA standards and enhance aviation safety at the airport, and potential impacts will predominantly occur on Airport property. . Refer to Section 3.11 – Social and Socioeconomic for the existing social and socioeconomic conditions within and adjacent to the proposed project area. The proposed project or no action alternatives would not result in detrimental induced socioeconomic impacts.

3.18.8 Wild and Scenic Rivers

According to The Wild and Scenic Rivers Act of 1968, 16 USC 1271-1287 and 36 CFR, Part 297, Subpart A, "Wild and scenic rivers" are those rivers having remarkable scenic, recreational, geologic, fish, wildlife, historic, or cultural values. Federal land management agencies in the Departments of the Interior and Agriculture manage the Wild and Scenic Rivers Act (Act). The National Park Service (NPS) has the primary role in maintaining the National Rivers Inventory. The Wild and Scenic Rivers "program" is more commonly referred to as the "National Wild and Scenic Rivers System" (WSRS). The intent of the program is to preserve these rivers' free-flowing conditions, protect the areas in their immediate vicinity, and strive to balance river development with permanent protection of the country's most outstanding free-flowing rivers. According to 45 FR 59190, dated September 8, 1980, federal agencies must determine if development actions would adversely affect the characteristics of a National Rivers Inventory (NRI) river that would qualify for the WSRS. If so, federal agencies are responsible for studying and developing reasonable alternatives that would avoid or mitigate such impacts.

There are no federally designated Wild and Scenic Rivers (WSR) located in vicinity of the Airport. The closest designated WSR is the Wekiva River, which is over 70 miles away from the Airport. The proposed project or no action alternatives would not affect WSRS resources.

[57] FAA Order 1050.1E, 2006 (as amended), Section 15, pp A-68

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

JUNE 2010

PREPARED FOR:
ST. AUGUSTINE – ST. JOHNS COUNTY
AIRPORT AUTHORITY
4796 U.S. 1 NORTH
ST. AUGUSTINE, FL 32095

PREPARED BY:
PASSERO ASSOCIATES, LLC
13453 N. MAIN ST, SUITE 106
JACKSONVILLE, FL 32218

NFRA
Northeast Florida Regional Airport
Fly Smart!

CHAPTER 4 – ENVIRONMENTAL CONSEQUENCES

4.01 INTRODUCTION

FAA Order 1050.1E, Change 1, *Environmental Impacts: Policies and Procedures*, paragraph 405f, discusses that this chapter address the "foreseeable environmental consequences of the no action and proposed project in comparative form." An evaluation of impacts for specific impact categories were conducted and will be discussed in detail below and in the following appendices as noted for impact areas identified in Chapter 3. Some potential impacts were determined through calculation, measurement, or observation. Other potential impacts were determined through correspondence with appropriate federal, state, or local agencies.

The analyses includes "considerations of whether the action is related to other actions with individually insignificant but cumulatively significant impacts" per CEQ, 40 CFR 1508.27(b)(7), *Regulations for Implementing NEPA*. The analyses include identification and consideration of "direct, indirect, and cumulative impacts of ongoing, proposed, and reasonably foreseeable future actions and their significance."

The area of potential effect includes the geographic area within which direct and indirect impacts could reasonably be expected to occur and cause a change in the existing conditions of the impact category of interest.

4.02 BIOTIC RESOURCES

4.02.1 Potential Impact Overview

Under the No Action Alternative, impacts to biotic resources would not occur. However, the shoreline of the airport would continue to erode, potentially creating additional safety hazards at the airport. The airport will also continue to be out of compliance with FAA design standards for runway safety areas and taxiway separations. The information provided in this section of the Environmental Assessment is a description of the potential impacts to biotic resources that could potentially be affected by the proposed project. For more detailed information on the methods used to determine potential impacts and the potential impacts from the proposed project to the biotic resources observed or potentially occurring at the airport, see **Appendices A, B, C, and D** respectively.

Existing plant and wildlife habitat within the Airport property have previously been disturbed due to historic grading, maintenance operations, and the construction of the current airport infrastructure. The adjacent saltmarsh was dredged for fill, which was utilized for the construction of the south runway extension in 1967. The open water habitat, north of Runway 13-31, was formed at the time of the dredging of the saltmarsh. Historically, the canals located to the east and south of Runway 13-31 were a contiguous saltmarsh that was dredged to maintain navigability to adjacent residences during the construction of the Airport. These canals were constructed to replace a previously existing tidal creek which was partially filled during the construction of the Airport.

Land Use/Vegetative Cover

Construction of the proposed project would be expected to impact various land uses and vegetation within the proposed project area actions (**Figure 4.02.1**). Potential impacts to land use/vegetative cover as a result of the proposed project are listed in **Table 4.02-1**.

Table 4.02-1
Acres of Impact to Land Use/Vegetative Cover Resulting from the Proposed Project

Land Use	FLUCFCS Code	Temporary Impacts (acres)	Permanent Impacts (acres)	Total Impacts (acres)
Streams and Waterways	5100	1.34	2.57	3.91
Airports	8110			26.7
Saltwater Marshes*	6420	4.73	7.46	12.2
TOTALS		**6.07**	**10.03**	**42.8**

***** The Saltwater Marshes acreage includes approximately 1.37 acres of salt flats.

Source: FLUCFCS – FDOT. 1999. Florida Land Use, Cover, and Forms Classification System. Third edition. Tallahassee, Florida. 95 pp.

Airports (FLUCFCS 8110)

Approximately 26.7 acres of the Airport that includes maintained grassland areas and other airport infrastructure are proposed to be impacted from the project. The grassland (FLUCFCS 8110) areas would be temporarily impacted primarily from grading associated with the construction of the Runway Safety Area (RSA) and the replacement of Taxiway C, Alternative 4. The managed grassland areas are poor quality habitat for wildlife. Once construction is complete these areas will re-sodded and would be managed as grassland. The overall impacts from the proposed project alternatives to the plant communities in these would be expected to be negligible.

Saltmarsh (FLUCFCS 6500)

The repair of the eroded RSA and placement of the airport lighting system (ALS) would fill approximately 6.86 acres of saltmarsh. In addition, the dredging of approximately 0.60 acres of saltmarsh is proposed for the relocation of the tidal canal to maintain navigability in the southwest area of the Airport. These permanent saltmarsh impacts, totaling 7.46 acres (6.86 + 0.60 acres) of the 12.2 acres of saltmarsh in the proposed project area include a mosaic of dense vegetation, small open water creeks, and non-vegetated salt flats. In addition, the project is proposed to temporarily impact 4.73 acres of saltmarsh due to construction activities. For additional details on saltmarsh impacts, please see Section 4.16 of the Environmental Consequences. For details on mitigation for saltmarsh impacts, refer to **Appendix Q**.

Streams and Waterways (FLUCFCS 5100)

Streams and Waterways (open water) impacts would also be expected from the proposed project. The open water habitats include areas of tidal flats and oysters, however, a significant portion of the impacts would include filling a previously dredged tidal ditch. The waters are designated as Class II, but are 'conditionally' approved for shellfish harvesting, meaning that they do not always meet Class II water quality standards. In addition, the portion of the Tolomato River adjacent to the airport is not currently meeting the State water quality standards for a Class II waterbody and therefore, is considered impaired. Approximately 1.34 acres of temporary and 2.57 acres of permanent impacts to open water habitats (total of 3.01 acres of impact to streams and waterways) are proposed from

ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY

SCALE 1" = 350'
DESIGNED BY David Loy; Melissa Green
DRAWN BY
CHECKED BY

PRIME CONSULTANT: Passero Associates
Engineering Surveying
Architecture Planning
CERT. OF AUTHORIZATION #3428

SUBCONSULTANT: BIRKITT ENVIRONMENTAL SERVICES, INC.

DATE 10/22/09
PROJECT NO. 23081.38

Project Taxiway C Replacement, RSA Compliance, and Approach Lighting System
Owner St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

FLUCFCS Impact

FIGURE NUMBER Figure 4.02.1

the dredging and filling activities of the project. For details on mitigation for open water impacts, please refer to **Appendix Q**.

4.02.1.2 General Wildlife

A variety of wildlife species have the potential to be present in and adjacent to the proposed project area. However, the majority of wildlife within the proposed project area is expected to be birds because they were the dominant species observed during the wildlife surveys. The habitat present at or near the proposed project area is suitable for foraging and loafing for many bird species. In addition, suitable habitat for other species is present, including but not limited to deer, river otters, raccoons, and weasels. For a list of the species observed during the wildlife surveys, see **Table 3.03-4**.

Impacts to wildlife are expected to be minimal because the shorelines of the proposed project area will be restored with the planting of native saltmarsh vegetation that is similar to what is proposed for impact. In addition, significant areas of suitable habitat are present surrounding the proposed project area. The areas proposed for impact can be considered lower quality as the habitat has been previously altered and contains unvegetated disturbed areas such as rip-rap and culverts. Higher quality habitat is available for wildlife in adjacent areas. It is expected that wildlife present within the proposed project area will relocate to adjacent suitable habitat during construction and will return to the restored area and the remaining areas available after construction is completed. Other wildlife species are anticipated to relocate to adjacent suitable areas.

4.02.1.3 Protected State-Listed Species

The primary impacts to state listed species would mainly be due to habitat loss. As stated previously, the proposed project will impact saltmarsh and open water habitats. These habitats are utilized by state listed species including alligators, manatees, various water birds, and wood storks. Suitable habitat does exist for Atlantic and shortnose sturgeon; however, it is highly unlikely that either species will be present within the proposed project area. The FWC states that it is highly unlikely that a sizable population of shortnose sturgeon exist in the St. John's River[1]. Neither species of sturgeon has been documented in the Tolomato River based on the research that was conducted for this document (refer to **Appendix A**). Therefore, it is expected that the project is "*Not Likely to Adversely Affect*" the Atlantic or shortnose sturgeon. The final effects determination for sturgeon will occur during the USACE permitting process.

The open water habitats could also be utilized by manatees, but the probability of manatees occurring in the proposed project area is very low as the open water areas in the proposed project area are shallow and do not contain seagrass. However, as a precaution, a Manatee Protection Plan including the Standard Manatee Conditions for In-Water Work[2] will be developed during the permitting process and will be implemented by the Airport sponsor during construction activities. Turbidity curtains would also be installed. Because suitable habitat does not exist for manatees within the proposed project area, the project, after construction, would not be expected to impact manatees. Therefore, it is expected that the project is "*Not Likely to Adversely Affect*" the Florida manatee. The final effects determination for the manatee will occur during the USACE permitting process.

FWRI. 2009. Shortnose Sturgeon Population Evaluation in the St. Johns River, Florida. Web article. http://research.myfwc.com/features/view_article.asp?id=24341

[2] USFWS. 2005. USFWS Standard Manatee Conditions for In-Water Work. http://www.fws.gov/northflorida/Manatee/Documents/PermitGuidance/standard-conditions-for-in-water-work-2005_final.pdf

Both saltmarsh and open water habitats are regularly utilized by alligators and state listed water birds such as herons, egrets, wood storks, and terns as well as the protected bald eagle. However, many of the state listed bird species were recorded roosting on poorly suitable habitats such as man-made structures including stormwater drains, the seaplane dock and ramp. No nests or colonies were observed for the protected bird species. Permanent impacts to both alligator and bird habitat would occur from the direct loss of saltmarsh. Although the proposed project would result in a loss of habitat, the proposed mitigation will compensate for this loss and a no net loss of wetland and open water habitat is expected. In addition, significant areas of suitable habitat occur adjacent to the airport, but well outside of the proposed project area. This habitat is of a higher quality than that which is proposed to be impacted as it is a greater distance from the airport, contains higher vegetative species diversity, and is more isolated. It is expected that any of these species present in the proposed project area will move to these adjacent suitable habitats during construction. Additionally, after construction is completed, saltmarsh vegetation will be planted along the new shoreline of the proposed project area. These areas of suitable wetland habitat will remain to support the alligators and various bird species.

Overall, only nominal impacts to wildlife and protected species would be expected. Considering that the impacts would be unavoidable if the Proposed Project were constructed, the public benefit of the project, the previously disturbed quality of habitat to be impacted and the proposed restoration/ mitigation to offset those impacts, the adverse impacts to the listed and protected species should be considered insignificant. The final effects determination for the listed and protected species will occur during the permitting process. For additional details on the potential impacts to state listed and protected species, refer to the **Appendix A**.

4.02.1.4 Wetlands

Refer to Section 4.16 for a discussion on the potential impacts to wetlands from the proposed project. For details on mitigation for wetland impacts, refer to **Appendix Q**.

4.02.1.5 Benthic Habitat

In total, 0.51 acres of oysters were present within the proposed project area (in open water areas east of Runway 13-31, in the southwest corner of the existing tidal channel, and in the previously dredged tidal canal west of Runway 13-31) and approximately 0.17 acres of oysters are proposed for permanent impacts from the project. Permanent impacts would be from the filling of the shoreline of the Airport for restoration of the RSA to FAA design standards. ArmorFlex 30 will also be placed to help prevent future erosion of the RSA. It is important to note that during the permitting phase, the design will be finalized to meet FAA specifications. As a result, both temporary and permanent impacts to natural resources will change during the permitting process as both the design and construction methods are more fully identified. See **Appendices R and T**.

Impacts to oysters will be mitigated in accordance with permit requirements. At this time, mitigation for impacts to the oyster beds is proposed to include relocation of oysters within the proposed impact areas to the toe of slope of the RSA on the east and south sides of the RSA. In addition, extra oyster shells, if needed, will be added to the area for additional substrate for oyster spat attachment. The relocation and placement of oyster shells is anticipated to create a "living shoreline" with the intermixing of oysters and saltmarsh vegetation along the slope of the RSA available to fish and wildlife. It is expected that placement of oyster shell within areas of suitable habitat will increase the regional oyster distribution. Free floating oyster larvae, known as oyster spat, need to attach to a solid surface to begin growing into an adult. The placement of shell is

expected to provide a substrate that will lead to the formation of oyster bars and reefs in proximity to the areas of impact. Therefore, impacts to benthic habitat (oysters) are expected to be minimal. For a detailed description on the methodologies, results, and further discussion on impacts to oysters, refer to **Appendix C**.

4.02.1.6 Essential Fish Habitat

The potential impacts to EFH and federally managed species that occur as a result of this project would be expected to be minor and primarily due to the loss of habitat. Some of the habitats proposed for impact from the project including open water, tidal flats, oyster clumps, and saltmarsh are important to federally managed species as they serve as foraging, nursery, refuge, and loafing grounds. However, impacts to federally managed fish species would be expected to be minimal as the majority of the habitat in the proposed project area cannot support fish. Impacts during construction are also expected to be temporary as construction will be completed as quickly as possible. Higher quality habitats with a more regular hydroperiod can be found in adjacent areas and any fish that may be in the proposed project area would be expected to move to these areas that are more suitable during construction. In addition, a relocated tidal canal will be constructed and will be available to fish upon construction completion. Furthermore, mitigation and Best Management Practices (BMPs) will be utilized throughout the project's construction and mitigation phases to ensure compensation and minimal secondary impacts to the adjacent wetland areas. For more information on impacts to EFH and federally managed species as well as proposed mitigation, please refer to **Chapters 5** and **6,** and **Appendix D**.

4.02.1.7 Commercially Important Species

The proposed project area contains habitat for commercially important fisheries, and a few of these species were observed during the site assessments. Several blue crabs, one juvenile stone crab, and many oysters were observed during the benthic survey conducted in April 2009. It is also expected that other commercially important species such as shrimp and flounder are present in the open water and saltmarsh habitats of the proposed project area. The loss of habitat will be mitigated appropriately such that a no net loss of habitat for commercially important species is expected. Mitigation for the proposed impacts is further discussed in **Appendix Q.**

Although some of these commercially important species were observed in or near the proposed project area, these species are expected to occur throughout the coastal area surrounding the airport due to the presence of suitable habitat. These adjacent areas contain higher quality habitats with denser concentrations of suitable cover and forage and would be available for these species to utilize during and after construction are completed. As a result, impacts to commercially important species, if any, would be expected to be insignificant.

4.02.2 Conclusion

No Action

Under the No Action Alternative, no impacts would occur. However, FAA standards would not be met at the airport and safety and efficiency at the airport would not be enhanced. The airport's shoreline will continue to erode. This erosion could further degrade the adjacent wetlands as it could increase turbidity and sedimentation into the habitat. The No Action Alternative would not eliminate the need for aircraft to back taxi on the runway nor address the centerline distance required by the FAA. In addition, the ILS will not be completed.

Proposed Project (Alternative 12)

This project will re-establish the RSA in accordance with FAA standards and also provide a taxiway and lighting system that will help prevent operational delays, enhance safety, and meet FAA design standards. The Proposed Project was designed through careful planning and site design utilizing the latest technology which would impact the least habitat and through coordination with both state and federal regulatory agencies. It is important to note that during the permitting phase, the design will be finalized to meet FAA specifications. As a result, both temporary and permanent impacts to natural resources will change during the permitting process as both the design and construction methods are more fully identified. Refer to **Appendix T**. The preliminary design of the proposed project has been prepared to minimize unavoidable ecological impacts to the greatest extent practicable and still meet the project's purpose and need. Refer to Section 4.15.4 for a discussion on avoidance and minimization of impacts. The project will result in unavoidable permanent impacts to approximately 7.46 acres[3] of saltmarsh and 2.57 acres of open water habitats. The saltmarsh and open water areas are suitable habitat for wading and shorebirds, federally managed fish, state listed species, shellfish, and commercially important species. However, the project will not impact rare or sensitive habitat as the saltmarsh in the proposed project area is surrounded by Airport infrastructure and residential areas and has been previously disturbed.

The open water areas have been previously dredged, and untreated and treated stormwater runoff flows into some of the open waters via culverts. It is expected that the fish, birds, and other wildlife that currently utilize the habitats within the proposed project area would relocate to adjacent areas, which are further away from the airport activities and are considered higher quality habitats. In addition, after construction, saltmarsh habitat that is similar to what is proposed for impact will be replanted along the shoreline of the proposed project area. These areas will be available to fish, birds, and other wildlife after construction and are anticipated to provide the same functions as the habitat that is proposed for impact. In addition, the Proposed Project and mitigation are designed to consider the guidelines listed in FAA Circular 150/5200-33B Hazardous Wildlife Attractants at or Near Airports. Restoration of the spoil island will remove the potential hazardous wildlife nesting habitat near the Airport through the conversion of the dense forested habitat to saltmarsh. Although no nests or colonies are present on the spoil island, the potential exists that the island could become a rookery for wading birds if it were to remain in its current forested state. Removing the forested habitat eliminates this potential for attracting wading birds that are seeking a forested nesting site. Therefore, there should be no increase in potential wildlife attractants at the airport.

Mitigation

Permanent impacts from the loss of these species' habitat will be compensated in accordance with state and federal regulations (Chapter 68A-27 F.A.C. and 50 CFR 17). The proposed spoil island restoration will provide mitigation within the wood stork core foraging area, Class II waters, and the same watershed as the proposed impacts. The proposed mitigation is briefly described below.

- The entire man-made spoil island will be returned to historic conditions which includes saltmarsh and a tidal creek.
- The spoil island will be scraped down to a general elevation of +1.0 ft NAVD and planted with saltmarsh species similar to those in the surrounding saltmarsh. The elevations will reflect similar elevations to what are present in the adjacent saltmarsh.

[3] The saltmarsh acreage includes approximately 1.37 acres of salt flats.

- A tidal creek will be created to mimic historic conditions.
- Lower elevated areas ("pools") will be created to provide some lower marsh areas that retain water and hopefully recruit oysters.

The proposed mitigation for this project will comply with the definition of mitigation that is provided at 40 CFR 1508.20 of the CEQ Recommendations. See **Appendix R** for the Mitigation Options Analysis which provides additional information on the proposed mitigation.

In addition, BMPs will be utilized throughout the construction of the project and during the mitigation activities. Suitable erosion control and vegetative restoration methods will be utilized. Wetland disturbance is unavoidable with the proposed project; however, all work is anticipated to be performed in previously disturbed wetlands. Construction activities will include techniques (e.g. silt screens and turbidity curtains) that will limit disturbance to the proposed construction areas, control sediment and erosion, and avoid and or minimize turbidity and dispersal of dredged materials into adjacent wetland areas. Therefore, only minimal impacts to biotic resources are expected to occur from the proposed project.

Significant Impact Threshold

Based on input from Federal, state, and local agencies, with proposed mitigation the Proposed Project is not anticipated to significantly impact the population dynamics or the sustainability and reproduction rates of wildlife and biotic resources. The Proposed Project and mitigation is designed to consider the guidelines listed FAA Circular 150/5200-33B Hazardous Wildlife Attractants at or Near Airports. Therefore, the proposed project would not result in significant impacts to biotic resources.

4.03 COASTAL ZONE MANAGEMENT

A preliminary review of the 23 Florida Statutes authorized under the Florida Coastal Management Program (FCMP) was conducted to identify potential regulatory nonconformities for the proposed project. Based on this initial review, the project would be expected to be in compliance with the FCMP and implementation of the proposed project would not be anticipated to have significant effects on coastal resources. The FDEP was provided an "Early Notification and or Pre-Notification Letter through the Florida State Clearinghouse of the FDEP by on May 5, 2009. The FDEP responded stating that the funding award from FAA is consistent with the FCMP. The February 10, 2010 letter from the FDEP (**Appendix T**) states that "… the state has no objections to allocation of federal funds for the subject project and, therefore, the funding award is consistent with the FCMP. To ensure the project's continued consistency with the FCMP, the concerns identified by our reviewing agencies must be addressed prior to project implementation. The state's continued concurrence will be based on the activity's compliance with FCMP authorities, including federal and state monitoring of the activity to ensure its continued conformance, and the adequate resolution of issues identified during this and subsequent reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting process."

The airport sponsor is committed to address the concerns of the state to meet the guidelines of the FCMP. An email was received by FDEP, in regards to FCMP, stating that "with sufficient mitigation and sovereignty submerged authorizations, the project does not conflict with the ERP program statues or rules" (**Appendix T**). The proposed project will provide sufficient mitigation

and the Airport Sponsor will obtain the necessary sovereignty submerged authorizations. Therefore, the project is expected to be consistent with the FCMP.

4.04 COMPATIBLE LAND USE

The existing and planned land use compatibility at or near an airport is typically associated with noise impacts or actions that would affect safe aircraft operations. As discussed in Section 3.05, the zoned land use activities in the vicinity of the Airport are compatible with standard airport operation. Future land use plans for the surrounding area indicate that the future zoning and acquisition of property would be compatible with standard airport operation.

4.04.1 No-Action Alternative

The No-build Alternative would not result in incompatible land use impacts since no construction would occur.

4.04.2 Proposed Project

The proposed project would not impact existing or planned land use since the proposed project will be constructed on airport and state owned property, would not increase aircraft operations or the fleet mix at the Airport, and would not require changes in zoning. The proposed project is consistent with the County's comprehensive plan, zoning and land use plan, and the Airport Master Plan.

4.04.3 Significant Impact Threshold

The compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of an airport's noise impacts. The Proposed Project will not affect the airport's noise environment and would not result in incompatible land use. Impacts to wetland resources will be mitigated to below thresholds of significance. See **Appendix R** for a discussion of wetland mitigation.

4.05 CONSTRUCTION IMPACTS

Construction impacts can be associated with impacts to other environmental categories. To avoid repeating information already discussed in those environmental category sections, the FAA recommends preparing an analysis of general types of temporary construction-related impacts and actions to minimize those impacts. The following generally describes the temporary impacts expected during construction and references other sections which contain greater details on the environmental impacts expected from the construction.

4.05.1 Potential Impact Overview

Construction impacts directly and solely result from construction activities and are therefore limited to the construction period. The duration of construction-related activities is expected to occur over the entirety of proposed project—approximately 3 years. It is anticipated that the replacement of the RSA and construction of Taxiway 'C' will start in 2010 and be completed in 2011 - 2012, followed by the placement of the ALS in 2012 - 2013. It is expected that all project activities will be completed by 2013.

Specific effects of construction activities potentially include air and noise impacts as well as soil and water quality impacts from on-site construction equipment operations and material deliveries. The

project also includes in-water work and therefore, turbidity and erosion would be a concern. Construction activities were evaluated in terms of its potential to result in adverse impacts related to:

- Noise and vibration
- Air quality
- Water quality (Turbidity) and Erosion
- Solid waste
- Hazardous materials

The US DOT, FAA Order 1050.1E states, "In an unusual circumstance where a construction impact would create significant consequences that cannot be mitigated, a more thorough discussion is needed…" This discussion is provided below. The significance threshold for those resources affected by construction was used to determine the degree of construction impacts.

It is anticipated that the Proposed Project would involve disturbance through earthwork, the placement of rip-rap, dredging of estuarine habitats, the use of barges for in-water work, as well as the activity of construction crews, which generate debris and dust. Potential impacts from the Proposed Project are discussed below. To the extent necessary, mitigation of construction impacts associated with the Proposed Project would be accomplished by incorporating the provisions of the *FAA Advisory Circular 150/5370-10 Standards for Specifying Construction of Airports* in the specifications for the proposed project (Refer to Section 4.15). Requirements of *FAA Advisory Circular 150/5370-2E Operational Safety on Airport During Construction* would also be enforced where applicable. Also, as a precaution, in accordance with USFWS requirements, a Manatee Protection Plan including the *Standard Manatee Conditions for In-Water Work* would be developed during the wetland permitting processes and will be implemented by the Airport sponsor during construction activities.

4.05.1.1 Noise and Vibration

Construction noise would likely temporarily increase ambient noise levels. Grading, scraping, and rip rap placement can be considered noisy activities, with equipment noise levels as high as 70 to 90 dBA within 50 feet of their operations. Where practicable, construction activities would be conducted during daylight hours and during normal working hours. Temporary noise impacts to residences near the construction site would be minimized by incorporating measures such as work-hour limits, muffler requirements, "elimination of tail gate banging," and reduction of backing up for equipment with alarms into the project plans and specifications. Construction-related noise would be intermittent and temporary. No significant construction noise or vibration impacts are expected to occur. For further details on potential noise impacts from the proposed project, please refer to **Section 4.12**.

4.05.1.2 Air Quality

The potential temporary air quality impacts due to construction of the proposed project were assessed for the applicable National Ambient Air Quality Standards (NAAQS**)** and general conformity, both addressed in the Clean Air Act (CAA**)** and NEPA requirements. Best Management Practices (BMPs) would be utilized to help reduce any potential air quality issues that may be created during construction. Land clearing and grading operations associated with the construction of the proposed airport improvements would be expected to generate air emissions, with particulate matter (i.e. fugitive dust) having the greatest impact. Most of the dust would be re-deposited close to the source, since it is generated low to the ground. It is expected that impacts to the air quality in the

area during construction would be intermittent and temporary. Increases in dust would be managed by utilizing dust control BMPS such as placing mats in area where dust may be a concern. EPA standards dictate that dust (PM_{10}) levels must not exceed 150 micrograms per cubic meter during the construction period. It would be the construction contractor's responsibility, through the enforcement of the plans specifications and contract documents, to ensure that this standard is adhered to.

Air quality impacts associated with the above described sources could vary depending on local weather conditions, construction activity levels, and the nature of the construction operation. Air quality impacts, usually in the form of emissions from diesel-powered equipments and dust from land clearing, embankments, and haul road areas, will be temporary and kept to a minimum. Air pollution associated with the creation of airborne particles will be effectively controlled by constant watering of the disturbed area and, where necessary, by the application of other dust controlled materials in accordance with the FDOT "Standard Specifications for Road and Bridge Constructions." The wet, marsh environment where a good portion of the construction will take place will also help minimize the emission of airborne particulate matter.

4.05.1.3 Water Quality and Erosion

Under Parts 122.26(a)(9) and 122.26(a)(1)(iii) of 40 Code of Federal Regulations (CFR), the EPA requires a National Pollutant Discharge Elimination System (NPDES) Permit which is delegated to the FDEP in Florida. The NPDES permit includes a Notice of Intent (NOI) to be submitted for each project where construction activities would disturb more than one acre. Requirements of the construction stormwater permit include the development and implementation of an erosion and sediment control plan. This plan defines BMPs that would be utilized to reduce and or mitigate construction-related erosion and sediment impacts. Erosion and sedimentation control measures would be implemented in accordance with the proposed project's construction stormwater permit. A SWPPP would also be utilized during construction. In addition, the project SWPPP would be consistent with the Airport's SWPPP which lists BMPs that are implemented during construction activities at the airport. For additional information on the construction SWPPP and other erosion control measures, please refer to the appropriate portion in the Hazardous Material section, Section 4.09.

The State of Florida Environmental Resource Permitting (ERP) Program regulations also require an ERP application be submitted for review to the SJRWMD. At this time, the ERP applications for the proposed actions have been submitted to the SJRWMD for their review. Three separate permit applications for the Proposed Action were submitted as requested by the SJRWMD and are currently under review. Approval of the ERP provides the water quality certification needed to comply with the EPA guidelines of the Clean Water Act.

Construction of the proposed project would require dredge and fill activities. Potential water quality impacts during construction would be minimized through the implementation of a Soil Erosion and Sedimentation Control Plan as required under FAA Standards and Specification Item P-156 and FAA Advisory Circular 150/5370-10. Sediment controls would be utilized during construction to prevent eroded soil particles from leaving the construction site. This would be accomplished by using sheet piling constructed around the project site to a depth of approximately 15 feet below the surface to accommodate de-mucking and back filling. Turbidity curtains would also be established within the open water areas of the project site to contain sediment movement due to tidal influences. Erosion control measures would also be utilized to contain sediment movement from

entering the adjacent saltmarsh habitats during landside construction. For additional information on potential impacts to water quality please see Section 4.15, Environmental Consequences Water Quality section.

4.05.1.4 Solid Waste

The proposed project's construction may temporarily generate solid waste in the form of construction debris that would be disposed of in an appropriate construction or municipal landfill by the contractor(s). Adequate landfill capacity exists at the proposed disposal facility (Nine Mile C&D Landfill in St. Johns County i.e. personal communication with landfill manager). No adverse construction-related solid waste impacts would be expected to occur.

4.05.1.5 Hazardous Materials

Potential hazardous material storage at the proposed project site during the construction phase is directly related to contractor operations. The Airport would require that construction contractors implement mechanisms to store hazardous materials and properly dispose of the hazardous and special wastes including developing and implementing a SPCC. As a result, it is expected that no significant impact from hazardous materials would occur with the implementation of the proposed project. For further details on potential hazardous material impacts from the proposed project, please refer to Section 4.09, Hazardous Materials.

4.05.2 Conclusion

Construction impacts would be temporary in nature and would cease after completion of construction of the proposed improvements. A NPDES Permit application, including an NOI and a SWPPP (containing an Erosion and Sediment Control Plan) would be submitted for construction activities. Additionally, an ERP application would be submitted to the SJRWMD for review. The proposed project is not expected to significantly or permanently impact noise, air quality, hazardous materials, runway operations, or solid wastes. The project is not anticipated to cause unusual circumstances during construction. Both the *Standards for Specifying Construction of Airports* and the *Operational Safety on Airport During Construction* will be enforced during construction. As a result the proposed project is not expected to result in adverse impacts due to construction activities and will not exceed the significant impact thresholds for affected resources.

4.06 FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES

The information provided in this section of the Environmental Assessment (EA) is a description of the potential impacts to federally listed threatened and endangered species that may be affected by the proposed project and no action alternative. Under the No Action Alternative, habitats for federally listed and rare species would not be impacted. For more detailed information on the potential impacts to the listed species observed or potentially occurring at the airport, see **Appendix A**.

The primary impacts to federally listed species as a result of the proposed project would be due to habitat loss. The proposed project would impact saltmarsh and open water habitats. These habitats may be utilized by federally listed species including wood storks, manatees, piping plover, and American alligators. These species life histories and their potential presence at the airport are described further in **Section 3.03.3** and **Appendix A.**

Impacts to eastern indigo snakes are not expected due to the lack of suitable habitat (gopher tortoise burrows) in or near the proposed project area. No indigo snakes were observed in or adjacent to the

proposed project area during the field survey. The State of Florida Effect Determination Key for the Eastern Indigo Snake in Central and North Peninsular Florida[4] states that if "there are no gopher tortoise burrows, holes, cavities, or other refugia where a snake could be buried or trapped and injured during project activities" then the project is "*Not Likely to Adversely Affect*" the species. Therefore, due to the fact that there are no gopher tortoise burrows or suitable habitat on the site, the proposed project would be "*Not Likely to Adversely Affect*" the eastern indigo snake.

Suitable habitat does exist for Atlantic (candidate species) and shortnose sturgeon; however, it is highly unlikely that either species will be present within the proposed project area. The last reported shortnose sturgeon in Northeast Florida was found in 2002 well upstream of estuarine habitat in the St. John's River (south side of Federal Point outside of Palatka). The FWC states that it is highly unlikely that a sizable population of shortnose sturgeon exist in the St. John's River[5]. Reports of either species of sturgeon in the Tolomato River do not exist. Therefore, it is expected that the project would "*Not Likely to Adversely Affect*" the atlantic or shortnose sturgeon.

The open water habitats could also be utilized by manatees, but the probability of manatees occurring in the proposed project area is very low as the open water areas in the proposed project area are shallow and do not contain seagrass. However, as a precaution, a Manatee Protection Plan including the Standard Manatee Conditions for In-Water Work would be developed during the permitting process and enforced during construction activities. Turbidity curtains would also be installed. Therefore, it is expected that the proposed project would be "*Not Likely to Adversely Affect*" the Florida manatee.

Both saltmarsh and open water habitats are regularly utilized by piping plovers and wood storks. It is important to note that only one sighting of a piping plover was observed during the listed species surveys. Suitable nesting habitat for the plover does not exist and due to the fact that the bird was observed loafing on a rock, it was likely the bird was just resting. No foraging activities were observed. Therefore, it is expected that the project would have "*No Effect*" on the piping plover.

Permanent impacts to habitat suitable for federally listed bird species would occur from the direct loss of saltmarsh. Although the Proposed Project would result in a loss of habitat, significant areas of suitable habitat occur adjacent to the Airport but well outside of the proposed project area. This habitat is of a higher quality than the area that is proposed to be impacted, as it is away from the Airport, contains higher vegetative species diversity, and is more isolated. It is expected that any of these species present in the proposed project area would move to these adjacent suitable habitats during construction. After construction, areas of suitable wetland habitat would still remain to support the various federally listed species.

Core Foraging Habitat for the wood stork exists within the proposed project area. However, the majority of the habitat that satisfies the criteria of the wood stork Core Foraging Habitat consists of a previously dredged canal and ditch. Furthermore, adjacent areas, outside of the proposed project area, are available for foraging wood storks that are of suitable, if not higher, quality than those habitats in the proposed project area. It is expected that wood storks would utilize these adjacent

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[4] USFWS. 2008. USFWS Jacksonville Ecological Services Field Office State of Florida Effect Determination Key for the Eastern Indigo Snake in Central and North Peninsular Florida. 3 pp.

[5] FWRI. 2009. Shortnose Sturgeon Population Evaluation in the St. Johns River, Florida. Web article. http://research.myfwc.com/features/view_article.asp?id=24341

suitable habitats during construction and as a result, are not expected to be impacted during construction. After construction, significant amounts of suitable wetland habitat would remain adjacent to the proposed project area to support the wood storks. Therefore, only minimal impacts to wood storks are expected. In addition, the USFWS North Florida Field Office Programmatic Concurrence letter (USFWS, 2008) lists certain criteria that must be met for a project to "*Not Likely to Adversely Affect*" the wood stork (refer to the Wood Stork Foraging Analysis, **Appendix O** for a list of these criteria). The proposed project would meet these criteria as the mitigation proposed will be sufficient to satisfy the Clean Water Act 404(b)(1) guidelines and is not contrary to the Habitat Management Guidelines for the wood stork. Suitable foraging habitat impacts were avoided and minimized to the greatest extent practicable. In addition, the proposed mitigation will replace the foraging habitat being impacted with similar (if not higher quality) habitat type and hydroperiods and will occur within or in proximity to the Core Foraging Area (13 miles from the known nesting colony location). It is anticipated that the proposed mitigation will provide foraging habitat with similar, if not better, prey availability, hydrology, and water quality than what is being impacted.

As a result, the project would be expected to "*Not Likely to Adversely Affect*" the wood stork or its habitat. The final effects determination for the wood stork will occur during the USACE permitting process. For more details on potential impacts to wood stork foraging habitat, refer to **Appendix O**.

Saltmarsh and brackish waters are often utilized by alligators; however it is not the species' preferred habitat. The Proposed Project would result in a loss of both saltmarsh and open water habitats; however, significant areas of wetlands occur adjacent to and in proximity to the airport but well outside of the proposed project area. This habitat is of a higher quality for alligators than that which is proposed to be impacted and it is a greater distance from the airport, is more isolated, and may be of lower salinities. It is expected that any alligators present in the proposed project area will move to these adjacent suitable habitats during and after construction. After construction, areas of wetland habitat will still remain to support the alligators. Therefore, the project is "*Not Likely to Adversely Affect*" the American alligator.

Appropriate mitigation will be provided to compensate for impacts to federally listed species. Mitigation will be provided within the same watershed, in Class II waters, and within or directly adjacent to the wood stork Core Foraging Area (13 miles from the known nesting colony location) to satisfy the criteria such that the project will not adversely affect the species. For additional details on the proposed mitigation, refer to **section 6.03** and **Appendix R**.

As is standard procedure, Section 7 consultation with NMFS and USFWS will be initiated during the permitting process pursuant to Section 7(a) of the Endangered Species Act. Refer to Section 6.04 for details on the Section 7 coordination process.

4.06.1 Conclusion

Overall, only minimal impacts to federally listed species would be expected. Considering the unavoidable nature of impacts with the Proposed Project, the public benefit of the project, the previously disturbed quality of habitat to be impacted, and the proposed restoration and or mitigation to offset those impacts, the adverse impacts to federally listed species would be minimal. Informal consultation for impacts to listed species will be conducted during permitting. For additional details on the potential impacts to federally listed species, refer to **Appendix A**.

4.07 ENERGY SUPPLY, NATURAL RESOURCES, AND SUSTAINABLE DESIGN

This section evaluates the proposed project's potential to impact energy requirements or use of consumable natural resources.

4.07.1 Overview of Impacts

Neither the No Action alternative nor the proposed project would be anticipated to impact energy supply or availability of consumable natural resources.

4.07.2 Methodology

In order to evaluate potential impacts to energy supplies and consumable natural resources that would occur as a result of the proposed project, consideration was given to the following:

- Would construction of the proposed project affect existing or planned utilities in the vicinity of the Airport;
- Would the construction consume scarce or unusual materials; and,
- How would fuel consumption by aircraft using the Airport change as a result of the proposed project?

4.07.3 No Action Alternative

Utility Effects

The No Action alternative would have no effect on existing or planned utilities in the vicinity of the Airport because utility usage would not change.

Materials Consumption

There would be no construction associated with the No Action alternative, so it would not result in the consumption of scarce or unusual materials.

Fuel Consumption

Fuel consumption by aircraft using the Airport would not change as a result of the No Action alternative, but fuel consumption may actually be greater for the No Action alternative in the long term in comparison to the proposed project due to inefficiency resulting from the distance of the hold back line from the south end of Runway 13-31. This inefficiency is discussed in section 2.01.

4.07.4 Proposed Project

Utility Effects

The only anticipated effects to existing or planned utilities in the vicinity of the Airport that would occur as a result of the construction of the proposed project would be a negligible increase in consumption of electricity due to the operation of the proposed new ALS at the Runway 31 approach. This would not affect the availability of electrical power to other users in the same electrical utility network as the Airport.

Materials Consumption

The primary materials that would be used during the construction of the proposed project would be fill material and paving materials. None of these materials are composed of natural materials considered to be scarce or unusual, therefore the construction of the proposed project would not be anticipated to have a significant effect on consumable natural resources.

Fuel Consumption
Fuel consumption would increase in the short term during construction of the project due to the operation of heavy construction equipment. In the long term, relative to the No Action alternative, fuel consumption would be less. By locating the hold back line closer to the south end of Runway 13-31, the taxiing time between the hold back line and the runway end would be reduced. Therefore less fuel would be consumed during peak times when multiple aircraft are in the queue at the hold back line waiting for aircraft ahead of them in the queue to take off. Also, the increased queue length that would result from the construction of the proposed project would decrease the potential for congestion at the intersection of Taxiway C and Taxiway D during peak times. Reduction of such congestion could decrease idle time for taxiing aircraft, resulting in decreased fuel consumption.

4.07.5 Sustainable Design
The proposed project was designed to minimize impacts to natural resources to the maximum extent practicable while meeting the project's purpose and need and FAA Design Guidelines. Construction of the proposed project will utilize BMP's that would avoid and minimize impact to adjacent habitats and water quality. In addition, the Airport is in the process of developing a Sustainable Management Plan that would include measures and initiatives that would be implemented and/or recommended during construction of Airport development projects. These sustainable initiatives include the development and implementation of erosion and sediment control management practices, air quality measures, an SPCC plan, and recycling of construction materials.

4.07.6 Significant Impact Threshold
The proposed project would not create a demand for energy that would exceed supply nor does it require special materials for construction. Therefore, the proposed project would not result in significant impacts related to energy supply and natural resource consumable materials.

4.08 FLOODPLAINS
Refer to **Appendix E** for a floodplain analysis regarding the impacts. Because the coastal flooding hazard is due to a static water surface elevation from the Atlantic Ocean, the volume of fill associated with the project is minor compared to the volume of a coastal flood and only 0.04% of the floodplain volume in the localized reach of the Tolomato River. Therefore, the runway replacement and lighting and RSA erosion control measures do not increase the coastal flooding hazard.

For the pluvial flooding analysis, a comparison of the existing and proposed conditions at offsite locations in the HEC-RAS model was made as shown in **Table 4.08-1**. The two offsite locations are storage node S15 (which corresponds to the portion of the ditch at US highway 1) and at cross section 608.17 (which corresponds to the confluence of Indian Creek with the relocated tidal ditch).

Table 4.08-1
Comparison of Off-site Pluvial Flooding Elevations

	Peak 100-Year Elevations, feet	
Model Location	Existing	Proposed
Storage Area S15	8.3	8.4
Cross Section 608.17	3.3	3.3

*Source: Passero Associates, LLC

In the tidal area, there is no practical increase in the pluvial flooding elevation. At US Highway 1, which is not identified as a SFHA by FEMA, the increase in pluvial flooding elevation is 0.1 feet, which presents a minor increase. The roadway elevation at US 1 is approximately elevation 9.5 feet, which is over a foot higher than the flooding elevation, which further suggests that the pluvial flooding effects will not result in an increased flooding hazard.

For the Proposed Project, flooding impacts from both coastal flooding hazards (those identified per the FEMA Flood *Insurance Study,* which identifies parts of project with Zone AE and Flood Insurance Rate Map) and from localized pluvial flooding were evaluated. While both types of flooding have an equal estimated probability of occurring, coastal flooding is the greater of the two hazards and the source of flooding shown on FEMA's Flood Insurance Rate Map (Map Number 12109C304H). Because the coastal flooding hazard is determined by a static water surface elevation from the Atlantic Ocean and not by floodplain volume, the fill from the proposed projects does not increase the flood hazard and does not require compensating storage per the St. Johns County Land Development Code. The pluvial flooding effects of the project were also studied in detail and determined to have minor and insignificant offsite effects.

4.09 HAZARDOUS MATERIALS

As discussed in Section 3.10 various federal, state, and local rules regulate hazardous materials use, storage, transport, or disposal. Airport improvement projects have the potential to involve or affect hazardous materials. This section details the investigation made to determine if the project would involve or affect hazardous materials and the pollution prevention programs and practices that are currently implemented at the Airport or will be employed during the construction of the Proposed Project.

4.09.1 Methodology

A Phase 1 ESA was conducted (**Appendix G**) in order to determine if implementation of the proposed project would involve or affect hazardous materials. The Phase 1 ESA evaluated the results of the following:

1. Detailed search of federal, state, and local records addressing the use, storage, disposal and discharge of hazardous materials and other regulated substances;
2. On site visual inspection of the proposed project area and its vicinity; and,
3. Review of aerial photographs, maps and other historic documents that would provide information about the previous or historical use of the property.

Additionally, the existing SWPPP and SPCC Plan of the airport were reviewed to identify Best Management Practices that would be required during the design and construction of the proposed project.

4.09.2 Hazardous Materials

According to the Phase I ESA, there are no known hazardous materials or hazardous material storage sites within the proposed project area; therefore no impacts to hazardous materials sites would be anticipated as a result of the replacement of Taxiway 'C'. As detailed in **Appendix F**, there were several potential hazardous material sites listed in the vicinity of the proposed project area but the identified potential hazardous material sites pose a low threat to the construction of the proposed project (due to type, distance, direction to, remedial status and file review). It is

anticipated that during construction of the proposed project, potential impacts to adjacent areas that contain hazardous materials would be avoided.

4.09.3 Stormwater Pollution Prevention and Spill Prevention Control Countermeasures Plans

Construction of each of the proposed projects would require an NPDES for Construction Activities permit that requires a SWPP Plan, which details erosion and sediment control measures that would be implemented prior to the commencement of, during, and after construction activities in order minimize impact to wetlands, the surrounding plant communities, and water quality. The work practices included in the SWPPP would include proper management of petroleum and related substances associated with construction equipment, thereby avoiding or minimizing the risk of causing environmental contamination. In addition to a construction SWPPP, the Airport's SWPPP requires identification of all potential pollutant sources on the Airport and implementation of appropriate Best Management Practices to ensure that incidental discharges are documented, reported, and cleaned up immediately.

4.09.4 Significant Impact Threshold

Based upon the results of the Phase 1 ESA and analyses of the proposed project area, the Proposed Project is not anticipated to have any impacts to known hazardous material sites because the proposed location of the project is not contaminated nor is it listed in the National Priority List and the project would not affect a site known or suspected to be contaminated.

4.10 LIGHT EMISSIONS and VISUAL IMPACTS

Airport related lighting systems and activities could visually affect surrounding communities including residences, parks, or recreational areas in the form of annoyance. Subsequently, airport lighting may have visual impact to the landscape, existing environment, historic and cultural setting, or sensitive land uses at or near t he airport. This section examines the light emissions and visual impacts of the proposed project in and adjacent to the airport.

4.10.1 Overview of Impacts

The No-Action Alternative would not result in light emissions or visual impacts. The proposed project would result in additional lighting on the airfield because of the Taxiway C replacement and the installation of the Approach Lighting System (ALS) at the end of Runway 31. However, the ALS is uni-directional lighting that would limit the area illuminated and the taxiway airfield lighting would run parallel to the existing runway lighting therefore, therefore the potential impact to the light emissions and visual landscape would be minimal.

4.10.2 Methodology

Light emission impacts associated with the No Action Alternative and the proposed project were determined by evaluating the extent to which the current airfield lighting associated with each alternative would change and the potential effect of the change to the communities in the vicinity of the airport. Light emissions from arriving and or departing aircraft were also considered.

4.10.3 Potential Impacts

No Action Alternative

The No Action Alternative does not involve construction associated with the proposed project, and therefore have no light emissions or visual impacts.

Proposed Project

Approach Lighting System

The proposed project proposes airfield lighting system associated with the Taxiway C replacement, the installation of an ALS at the end of Runway 31, and grading associated with the shoreline stabilization of the RSA. As stated in the Purpose and Need (refer to Section 1.01), the ILS at the Airport is rated as Category I Approach with a ¾ mile visibility. However, because of the absence of an ALS, the airport does not provide a ¾ mile visibility. The proposed project proposes the installation of the ALS in the salt marsh at the end of Runway 13-31 (refer to Table 6.16-1regarding potential impacts to wetlands and surface waters). In order to minimize light emissions and wetland impact, an intermediate ALS is being installed 1,800 feet from the end of the RSA instead of the full 2,400 feet. The lights for the ALS are uni-directional and light emissions and visual impacts from the ALS will be nominal. The proposed project ALS will require a modification of standard (MOS) request from the FAA to allow the length reduction of the ALS from 2,400 feet to 1,800 feet.

Airfield Lighting System

Because the edges of the taxiway would be lit during periods of darkness or during restricted visibility conditions, the proposed Taxiway 'C' replacement under the proposed project would increase the amount of light emissions within the proposed project area. Taxiway lights provide safe ground movement and clear visual information to pilots regarding the location of edge of pavement. The proposed lighting would be parallel to existing lighting along the eastern section of Runway 31, located approximately 10 feet from the edge of pavement and elevated approximately one foot above ground level. Because this area of the airport already has existing airfield lighting and the nearest residence is located over 900 feet southeast from the end of Runway 13-31 and over 600 feet from the proposed end of the Taxiway 'C' replacement, light emissions and visual impact is anticipated to be minimal.

Aircraft Lighting

No additional impacts are anticipated from arriving and departing aircraft under the proposed project because the proposed project would not result in an increase in aircraft operations or fleet mix. The air space used by arriving and departing aircraft would be unchanged.

4.10.4 Significant Impact Threshold

The FAA has not established significant thresholds for light emissions and visual impacts (Table 7-1, FAA Order 5050.4B). The proposed project has minimal light emissions and visual impacts and is not anticipated to result in any additional impacts to natural resources or increase lighting effects on residential areas or other light sensitive areas or habitat.

4.11 NOISE

According to Section 14 of *FAA Order 1050.1E*, an action should be evaluated to determine if significant noise impacts would occur with its implementation. The FAA Order defines significant impact as an action that would cause noise sensitive areas such as homes, schools, churches, and hospitals to experience an increase in noise of 1.5 dB day-night average sound level (DNL) in areas exposed to at least 65 DNL.

4.11.1 Potential Impact

The proposed project would not result in any change to the airport runway configurations, aircraft operations, aircraft types using the airport, or aircraft flight characteristics. Noise analysis is not

required. Only a minor change to the taxiway configuration of Taxiway 'C' is proposed and this minor change would not result in any change to the airport noise environment. Construction related noise is anticipated to be intermittent, temporary, limited to daytime hours, and minimized with the implementation of noise BMPs. A more detailed discussion of noise resulting from the construction of the project is contained in **Section 4.05**. Implementation of the proposed project would not result in a significant noise impact when compare to the No Action Alternative.

4.11.2 Significant Impact Threshold

The proposed project would not result in significant noise impacts because the project would not increase noise over the No Action Alternative.

4.12 SOCIAL IMPACTS

This section evaluates the Proposed Project's impact to health and safety risks to children, and socioeconomic impacts related to relocation or disruption of a residential or business community, transportation capability, planned development, or employment of the local community within which the Airport is located.

4.12.1 Overview of Impacts

Neither the No Action Alternative nor the Proposed Project would be anticipated to have direct, indirect or induced socioeconomic impacts because the proposed project would be constructed on Airport property. The Proposed Project would not require the acquisition of new property, have the potential for disturbing sites with hazardous material contaminants, or affect the business community, transportation capability, planned development, or employment.

4.12.2 Socioeconomic Impacts

The proposed project was analyzed for socioeconomic impacts related to:

- Residential Relocations;
- Business Relocations;
- Alteration of Transportation Patterns;
- Disruption of Planned or Established Communities;
- Disruption of Development; and
- Change in Employment.

Impacts typically result from land acquisition or construction of a project. Because the proposed project is being constructed on Airport property, the proposed project would not result in the acquisition new property, residences, or community facilities and would not disrupt established communities. In addition, the proposed project would not increase the number of aircraft operations, change the fleet mix at the Airport, or result in changes to public roadways. Temporary socioeconomic benefits to the local community would be anticipated as a result of the construction of the proposed project. These benefits would include employment opportunities, fuel sales, lodging demands, construction equipment rental, and utilization of other consumables that would generate revenue.

4.12.3 Children's Health and Safety Risks

The proposed project would be constructed on Airport and state owned property and would not be anticipated to result in impacts to children's health or safety. The proposed project would not result

in any significant effects on air quality and would not change the existing noise environment of the community. Furthermore, the proposed project area is not located on property that contains hazardous materials, and the potential for release of contaminants during construction activities would be extremely low.

4.12.4 Significant Impact Thresholds

The proposed project would not result in any significant socioeconomic impacts, environmental justice, or children's environmental health and safety risks. This project would not:

- be located outside of existing Airport property (except for a small portion of state submerged lands);
- impact low income or minority populations;
- pose a risk to children's health;
- create economic hardship;
- disrupt or alter local traffic patterns; or
- result in a substantial loss in community tax base.

4.13 SOLID WASTE

As discussed in **Section 3.15** the SWDA and the RCRA provide guidelines for disposal of solid waste. Airport demolition and construction projects and day to day airport operations have the potential to generate solid waste such as construction debris and refuse and may affect the available capacity of local solid waste disposal facilities.

4.13.1 Solid Waste Collection and Disposal

The No-Action Alternative would not impact solid waste production or disposal because there would be no increase in solid waste generation attributed to this Alternative.

Solid waste, in the form of construction and demolition debris (from the replacement of Taxiway 'C'), would be generated in association with the construction of the proposed project. During construction, all construction and demolition debris would be collected in appropriate containers and removed by a certified waste hauler, then transferred to the Nine Mile Construction and Demolition Landfill in St. Johns County. This landfill accepts approximately 45 tons of construction and demolition debris each day of operation and at this disposal rate, the landfill is not expected to reach capacity until approximately 2025 or 2026.[6] Construction debris that can be re-used would be stored at the Airport's maintenance facility for future use.

4.13.2 Significant Impact Threshold

Available landfill capacity is sufficient to meet the demands of this project and no substantial solid waste permitting or disposal issues are anticipated. There would be no significant solid waste impacts due to the Proposed Project.

[6] Buzz Hendrick, Division Manager, Nine Mile Construction and Demolition Landfill. Personal communication, November 12, 2009.

4.14 WATER QUALITY

4.14.1 Overview of Impacts

The No Action Alternative would not involve new construction. Therefore, no major water quality impacts would occur as a result of this alternative. However, because the RSA shoreline is not protected or armored along the majority of the Airport's perimeter, continued erosion of the existing RSA shoreline would be anticipated to occur during severe weather events. This would lead to sedimentation within wetland areas that are located adjacent to the proposed project area and potentially continued loss of wetlands habitat in eroding areas.

For the Proposed Project, potential water quality impacts could include temporary water quality impacts due to increased turbidity, sedimentation, and erosion during construction and, in the long term, potential increased runoff volume from the additional 2.91 acres (5.16 acres of new pavement to be added, 2.25 acres of existing pavement to be removed, net increase 2.91 acres) of impervious pavement for the replacement of Taxiway 'C'.

To address temporary impacts, individual NPDES permits will be applied for each proposed project for construction activity would have to be obtained from FDEP for the construction phase of each of the proposed projects. As part of the permit conditions, treatment of stormwater runoff would be required to control and minimize turbidity, sedimentation, and erosion during construction. Treatment methods would be detailed in the construction SWPPP.

The drainage design of the project would incorporate stormwater treatment measures that would minimize potential long term water quality impacts once the project is constructed. This design would be based on the findings and recommendations presented in FDOT's *Florida Statewide Airport Stormwater Study Best Management Practices Manual* (2005).

The project would impact waters designated as Class II waters that are conditionally approved for shellfish harvesting by the state. Because it is the state's policy that impacts to Class II approved waters should not be permitted, the SJRWMD would require that a variance to the Class II water regulations be obtained for the project. To obtain the variance, a demonstration must be provided that the project is eligible pursuant to Section 403.201(1)(c), F.A.C which states that a variance should be granted "to relieve or prevent hardship of a kind other than in paragraphs (a) or (b)." A water quality protection plan will be developed to protect the Class II waters and a petition for a variance will be submitted to the SJRWMD. Refer to **Chapter 6.0** for further discussion of the variance requirements.

No induced water quality impacts or water quality impacts due to increased operations are anticipated because the project is not expected to induce activity or growth and because the project would not increase capacity, increase the number of operations, or affect fleet mix at the Airport. No groundwater impacts are anticipated because the project disturbance would primarily consist of fill rather than excavation and because the project is not located within an aquifer recharge area.

4.14.2 Methodology

In evaluating potential water quality impacts associated with the proposed project, a review of state and federal water quality regulations and associated permitting requirements was conducted as described in **Appendix J**. In developing the preliminary design for the proposed project, these regulations were taken into account. Design elements and mitigative measures that would be

required for the applicable permits were included in the project design and in the project's mitigation proposal.

4.14.3 Potential Impacts from the Proposed Project

Surface Water Quality

As stated above, potential water quality impacts to surface waters would include temporary impacts from increased turbidity, sedimentation, and erosion during construction. In the long term, no significant surface water quality impacts would be anticipated. Although the additional 2.91 acres of impervious pavement for the replacement of Taxiway 'C' would generate increased runoff, the stormwater treatment measures that would be incorporated into the design would minimize potential water quality impacts from stormwater runoff. Surface water quality impacts are discussed below.

Permanent impacts from filling and dredging of wetlands and surface waters within the proposed project area are required for the restoration of the RSA and the replacement of Taxiway 'C'. As a result, the primary impact to surface water quality would occur during construction. As a construction project that would disturb more than 5 acres of land, an NPDES permit for a large construction activity would need to be obtained from FDEP. As part of the NPDES permitting requirements, a SWPPP would have to be developed for inclusion in the construction plan set to establish sediment and erosion control measures that would be implemented during the construction phase of the project. These control measures may include the use of synthetic hay bales, turbidity barriers, silt fence, seeding and or sodding, geotextile mats, and other best management practices as set forth in the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual*[7] and FAA AC 150/5370.10B, *Standards for Specifying the Construction of Airports*. The construction plans would also specify the sequence of land disturbing activities and the BMP implementation sequence. Specifying the construction sequence can help to limit the amount of soil disturbance that occurs at any one time during the construction phase of the project, thereby reducing the likelihood of soil erosion. Another important component of the construction SWPPP is the spill prevention component. This component would specify the measures that would be employed to avoid the spilling of hazardous materials, such as fuels, at the construction site, and in the event of a spill, would specify the means of cleaning up the spill. The measures in the construction SWPPP would be consistent with the Airport's operational SWPPP, which is associated with the BMPs recommended in the Airport's NPDES Multi Sector Generic Permit. By implementing the control measures in the construction SWPPP, it is anticipated that increases in turbidity, sedimentation of areas beyond the project's limits, and erosion of soil from disturbed areas would be minimized and disturbance would be contained within the project limits to the maximum extent practicable.

After construction of the project is complete, it is anticipated that further water quality impacts would be negligible. According to the conclusions reached from studies conducted during the development of the FDOT's airport stormwater BMP manual, "Airport airside pavement introduces only a minimal number of elements in concentrations that could be considered pollutants into surface water runoff." [8,9] Other important findings of these studies included the following:

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[7] Florida Department of Transportation and Florida Department of Environmental Protection, *Florida Erosion and Sediment Control Designer and Reviewer Manual*, 2007.

[8] Florida Department of Transportation, *Technical Report for the Florida Statewide Airport Stormwater Study*, revised 2008.

[9] Florida Department of Transportation, *Florida Airports Stormwater Best Management Practices Manual*, 2005.

1. Nutrients are not a major constituent of airside stormwater runoff, their concentrations approach the concentrations documented for natural systems;
2. Petroleum hydrocarbons are typically present at low concentrations in airside stormwater runoff from runways and taxiways. Areas adjacent to aprons were found to have higher concentrations for some samples, but these higher concentrations were associated with minor spill events;
3. The main pollutants introduced to runoff from airside pavements were metals that included copper, lead, cadmium and zinc in declining order of frequency detected; and,
4. Overland flow is an effective method of concentration reduction and load reduction for metals.[10]

The proposed project proposes to utilize this type of overland flow treatment to ensure that state water quality standards are met once the construction is completed. Runoff from the proposed taxiway extension would be treated in grassed areas adjacent to the taxiway. The project would be designed according to SJRWMD standards such that, for the 3-year 24-hour storm event, 100 percent of the runoff would percolate into the soil. Additionally, the soils in the overland flow areas would be aerated to improve infiltration. Runoff from the proposed project area that does not percolate would be collected in inlets within the grassed areas between Runway 13-31 and Taxiway B that would connect to three existing 48-inch diameter reinforced concrete pipes. These pipes currently discharge into the short ditch at the north side of the stormwater pond, east of the control tower. The project proposes that these pipes be extended beneath the fill slope adjacent and parallel to the west side of proposed Taxiway C replacement for a linear distance of approximately 800 feet. At the end of the extended pipes, a new outfall would be constructed that would discharge to the relocated tidal canal.

Operations-Related Water Quality Impacts

The pollutants that are found in airside stormwater runoff from runways and taxiways can be attributed to two sources, the aircraft that are using the runways and taxiways, and the pavement material itself. Because the proposed project is not intended to increase operations or alter the fleet mix at the airport, pollutants originating from aircraft would not be anticipated to increase as a result of the proposed project in comparison to the No Action alternative. No substantial impacts to water quality resulting from operational activities are anticipated.

Groundwater and Water Supply

The project disturbance would primarily consist of fill rather than excavation. Therefore the only impacts to groundwater would be minor disturbance to the surficial aquifer if excavation below the water table is required to install new pipe connecting the drainage system from the area between Runway 13-31 and the proposed Taxiway 'C' replacement to the new proposed outfall on the west side of the taxiway. As stated in Section 3.16**,** because the project is located within an aquifer discharge area, instead of an aquifer recharge area, no impacts to the water quality of groundwater would be anticipated. Finally, because there would be no increase in operations as a result of the project, and because the project is not anticipated to induce growth at the airport, no effect to water supply is anticipated.

4.14.4 Significant Impact Threshold

According to FAA Order 1050.1E, a proposed project's water quality impacts may be considered to be significant for three primary reasons:

[10] FDOT 2008.

1. The project has the potential to exceed water quality standards.
2. Water quality problems cannot be avoided or satisfactorily mitigated.
3. There will be difficulty obtaining a permit or authorization.

Based on a review of the proposed project it is not anticipated that any of these three conditions would be true. Water quality standards will be met during construction by implementing sediment and erosion control measures according to state and FAA guidelines as described in **Section 5.17.3**. Once the project is constructed, water quality would be maintained by using overland flow treatment of runoff to remove pollutants from stormwater. Based on feedback from regulatory agencies at an early coordination meeting that was conducted on June 3, 2009, it is anticipated that; as long as standard permitting and mitigation requirements are met, and the basis for obtaining the Class II waters impact variance is clearly demonstrated; the project will not face significant difficulties in obtaining necessary permits and water quality certification. Additional information is included in Chapter 6.0, Anticipated Permits and Approvals**.**

4.15 WETLANDS IMPACTS

4.15.1 Overview of Impacts

To comply with state and Federal regulations, potential impacts to wetlands and surface waters were quantified and the mitigation of unavoidable impacts was addressed. Construction of the proposed project would result in approximately 10.0 acres of permanent impact to wetland and surface water habitats within the proposed project area. Construction of the proposed project would also result in approximately 6.1 acres of additional temporary construction impact. Compensatory mitigation that would be required for these impacts was calculated using the State of Florida's Uniform Mitigation Assessment Method (UMAM). Based on this preliminary analysis, 6.06 UMAM functional units would be required to mitigate for the permanent impacts that would result from the construction of the Proposed Project. Temporary impacts to saltmarsh would be mitigated by replanting the temporarily impacted areas to return them to their previous conditions. The mitigation calculations and proposal are subject to the review and approval of the SJRWMD and USACE, therefore the total functional units required may change during the permitting phase of the project. Please refer to Appendix X, Agency Communication.

A review of the Airport's ALP and St. Johns County Property Appraisers Office data indicate that a majority of the proposed project area is owned and within the property limits of the Airport. Installation of the ALS will encroach upon State submerged lands. In addition, the north side of the spoil island is owned by the state and therefore, restoration of the on-site spoil island will occur on a portion of sovereign submerged lands. Furthermore, a small area needed for the construction of the new taxiway and the associated relocation tidal canal may fall in state submerged lands.

4.15.2 Methodology

Jurisdictional wetlands and other Waters of the U.S. surface waters of the state within the limits of the proposed project were identified by the methodology outlined in **Appendix B**. The potential impacts to wetlands and surface waters were quantified by overlaying the delineated jurisdictional boundary with the proposed project design. Permanent impacts were determined by quantifying the areas where the limits of fill and excavation encroached upon the jurisdictional boundary. Temporary impacts to wetlands would be anticipated to occur in areas where construction equipment would need to operate to grade fill slopes or excavate to relocate the tidal canal on the west side of the proposed project. These areas would not be permanently re-graded but would be

disturbed during construction. This temporary construction access area was estimated by placing a 40 foot buffer around the grading limits of the project. Temporary impacts were determined by quantifying the areas where this construction access buffer encroached upon the jurisdictional boundary.

4.15.3 Impacts

No Action Alternative

The No-Action Alternative would not impact federal and state jurisdictional wetlands or surface waters, because there is no new construction associated with this alternative.

Proposed Project

The construction of the proposed project would result in impacts to wetlands and surface waters as depicted in **Figure 4.15.1** and as quantified in **Table 4.15-1**. The proposed project would permanently impact approximately 7.5 acres of intertidal saltmarsh wetlands and sand flats (FLUCFCS types 6420 and 6500) and 2.6 acres of surface waters including excavated embayments and tidal canals (FLUCFCS type 5100). Approximately 4.7 acres of temporary impacts to saltmarsh and sand flats and 1.3 acres of temporary impact to surface waters would occur as a result of construction activities. These impacts are based on preliminary design. As the project proceeds through the permitting phase, the impacts included in the design will be further reduced to the extent practicable.

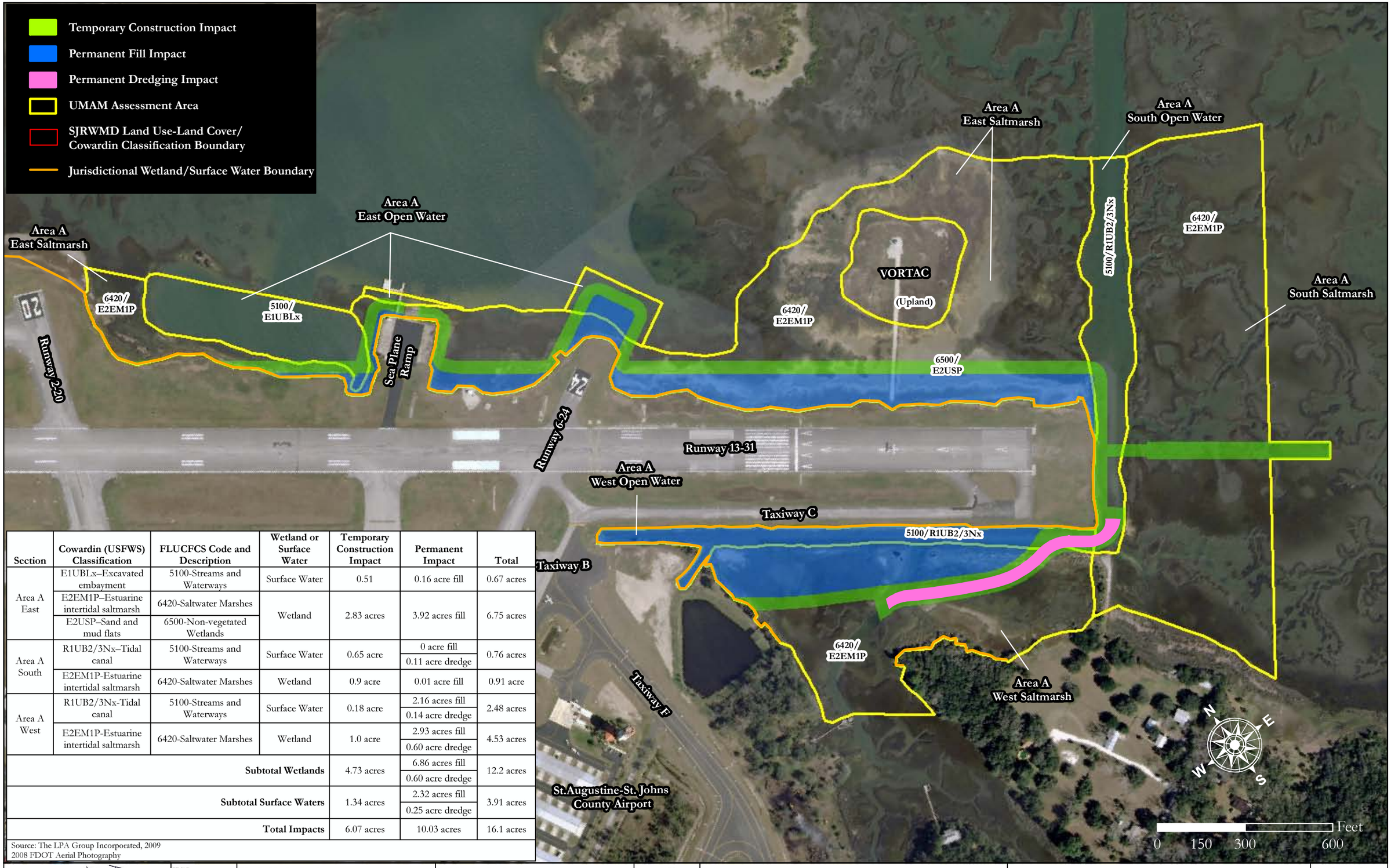
Permitting

These wetland and surface water impacts would fall under the permitting authority of the USACE and the SJRWMD as authorized under Section 404 of the Clean Water Act and Chapter 373 of the Florida Statutes, respectively. As the federal government's lead permitting agency for the wetland and water of the United States (surface water) impacts associated with the project, the USACE will also need to demonstrate that issuance of the permit will not result in significant impacts per the requirements of NEPA. The USACE is a cooperating agency with the FAA on this EA and will be adopting this EA to satisfy their requirements under NEPA. Coordination with the USACE and SJRWMD has been initiated and a formal wetland jurisdictional determination has been received from the USACE (**Appendix T**).

Currently, the Proposed Action has been separated into three projects for the purpose of state permitting and into 2 projects for federal permitting. An ERP application has been submitted to the SJRWMD for all three projects and the applications are under review. A permit for the construction of the ALS has been received from the USACE. A permit application was submitted for the remainder of the projects to the USACE and a Public Notice has currently been distributed by the USACE. Permitting requirements and details for the projects are discussed in greater detail in Chapter 6.0.

4.15.4 Avoidance and Minimization

Wetlands are abundant in the vicinity of the proposed project area; therefore, because of FAA design requirements, total avoidance of wetlands and surface waters would not be possible with any of the build alternatives that were evaluated in the Description of Alternative Plans (**Section 2.03**).



Section	Cowardin (USFWS) Classification	FLUCFCS Code and Description	Wetland or Surface Water	Temporary Construction Impact	Permanent Impact	Total
Area A East	E1UBLx–Excavated embayment	5100-Streams and Waterways	Surface Water	0.51	0.16 acre fill	0.67 acres
	E2EM1P–Estuarine intertidal saltmarsh	6420-Saltwater Marshes	Wetland	2.83 acres	3.92 acres fill	6.75 acres
	E2USP–Sand and mud flats	6500-Non-vegetated Wetlands				
Area A South	R1UB2/3Nx–Tidal canal	5100-Streams and Waterways	Surface Water	0.65 acre	0 acre fill 0.11 acre dredge	0.76 acres
	E2EM1P-Estuarine intertidal saltmarsh	6420-Saltwater Marshes	Wetland	0.9 acre	0.01 acre fill	0.91 acre
Area A West	R1UB2/3Nx-Tidal canal	5100-Streams and Waterways	Surface Water	0.18 acre	2.16 acres fill 0.14 acre dredge	2.48 acres
	E2EM1P-Estuarine intertidal saltmarsh	6420-Saltwater Marshes	Wetland	1.0 acre	2.93 acres fill 0.60 acre dredge	4.53 acres
Subtotal Wetlands				4.73 acres	6.86 acres fill 0.60 acre dredge	12.2 acres
Subtotal Surface Waters				1.34 acres	2.32 acres fill 0.25 acre dredge	3.91 acres
Total Impacts				6.07 acres	10.03 acres	16.1 acres

Source: The LPA Group Incorporated, 2009
2008 FDOT Aerial Photography

ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY

SCALE: SCALE
DESIGNED BY: NAME
DRAWN BY: NAME
CHECKED BY: NAME

PRIME CONSULTANT:
Passero Associates
Engineering Architecture Surveying Planning
CERT. OF AUTHORIZATION #3428

SUBCONSULTANT:
THE LPA GROUP
AVIATION CONSULTANTS

DATE:
PROJECT NO.

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System
Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

Wetland and Surface Water Impacts

FIGURE NUMBER: 4.15.1

Table 4.15-1
Wetland and Surface Water Impacts

Section	Cowardin (USFWS) Classification	FLUCFCS Code and Description	Wetland or Surface Water	Temporary Construction Impact	Permanent Impact	Total
Area A East	E1UBLx – Excavated embayment	5100-Streams and Waterways	Surface Water	0.51	0.16 acre fill	0.67 acres
	E2EM1P – Estuarine intertidal saltmarsh	6420-Saltwater Marshes	Wetland	2.83 acres	3.92 acres fill	6.75 acres
	E2USP – Sand and mud flats	6500-Non-vegetated Wetlands				
Area A South	R1UB2/3Nx – Tidal canal	5100-Streams and Waterways	Surface Water	0.65 acre	0 acre fill 0.11 acre dredge	0.76 acres
	E2EM1P - Estuarine intertidal saltmarsh	6420-Saltwater Marshes	Wetland	0.9 acre	0.01 acre fill	0.91 acre
Area A West	R1UB2/3Nx - Tidal canal	5100-Streams and Waterways	Surface Water	0.18 acre	2.16 acres fill 0.14 acre dredge	2.48 acres
	E2EM1P - Estuarine intertidal saltmarsh	6420-Saltwater Marshes	Wetland	1.0 acre	2.93 acres fill 0.60 acre dredge	4.53 acres
Subtotal Wetlands				4.73 acres	6.86 acres fill 0.60 acre dredge	12.2 acres
Subtotal Surface Waters				1.34 acres	2.32 acres fill 0.25 acre dredge	3.91 acres
Total Impacts				6.07 acres	10.03 acres	16.1 acres

*Source: Birkitt Environmental Services, Inc.

The objectives of meeting FAA standards and enhancing safety and operational efficiency was weighed against the negative impacts to wetlands and surface waters for each of the alternatives. The extent of wetland and surface water impact was a primary consideration that was evaluated in the alternative evaluation process.

Taxiway 'C' Replacement

For the Taxiway 'C' replacement component of the project, six build alternatives were evaluated. Of the six build alternatives that were considered, four had lower wetland and surface water impacts than the proposed project for the Taxiway 'C' component of the project, Alternative 3. However, as described in **Section 2.03,** those alternatives (Alternatives 2, 4, 5, and 6) would not have sufficiently addressed the FAA standards and operational efficiency needs of the Airport. Alternative 7 would have potentially provided improved operational efficiency in comparison to the proposed project, but it would have resulted in greater wetland and surface water impacts than Alternative 3 and greater overall cost. The Proposed Project includes the Taxiway C replacement represented by taxiway Alternative 3. Alternative 3 addresses the stated purpose and need for the project, while at the same time minimizing impacts to wetlands and surface waters relative to the only other alternative that fully addressed the purpose and need, Alternative 7.

An additional design element, per FAA A/C 150/5300-13, was included to minimize impacts was the use of steeper sideslopes along the relocated tidal canal adjacent to the Taxiway 'C' replacement. In this area, three to one sideslopes were used on the east bank of the canal and four to one sideslopes were used on the west bank of the canal. Using these dimensions allows the cross sectional area of the canal to be maintained with a narrower footprint, resulting in reduced wetland impacts to the adjacent saltmarsh than if a shallower, wider canal was constructed.

The original design concept called for using rip rap to armor the taxiway sideslopes and relocated canal bank. The concept was modified so that the sideslopes will be constructed using a prepared surface of Armorflex 30 (or an equivalent product). This type of material is an interlocking mesh of concrete blocks that are connected by cables to form an articulating sheet. The individual blocks of the material have open cells that will be planted with native vegetation on the slope. This technique will provide for slope stabilization and erosion control while allowing for the establishment of native saltmarsh vegetation below the wetland boundary on the newly constructed sideslopes.

Approach Lighting System

The Runway 31 ALS is another component of the project that is intended to enhance safety and efficiency at the Airport. The original concept for the ALS at the Runway 31 approach included a full 2,400 foot lighting system. To decrease impacts to the salt marsh community that occurs south of Runway 13-31 in the area where the ALS would be installed, based on the results of an FAA study on approach lighting systems, the proposed lighting system design was shortened to 1,800 feet. The only wetland impacts from the ALS would be the permanent impact from the footprint of the lighting support pole structures and the temporary impact due to construction when the poles are installed. The proposed project ALS will require a modification of standard (MOS) request from the FAA to allow the length reduction of the ALS from 2,400 feet to 1,800 feet.

Runway Safety Area

The final component of the project that will impact wetlands and surface waters is the restoration of the RSA. Over time, the RSA has been eroded during substantial weather events. To meet FAA safety design standards, the grade of the RSA needs to be restored in the eroded areas, and to minimize the effects of erosion in the future, the side slopes of the RSA need to be stabilized. For the RSA sideslopes at the shoreline on the east side of the proposed project area, six to one

sideslopes were included in the conceptual design. Although four to one sideslopes would have decreased the impact area, this portion of the project is more exposed during severe weather events. Therefore, it was determined that, although it will have an increased initial impact area, the more standard six to one sideslope would provide the stability needed to minimize future erosion and therefore minimize the long term sedimentation effects to the adjacent salt marsh. The majority of the RSA at the end of Runway 31 will remain at existing grade but will be stabilized with Armorflex or an equivalent. For the portion of the RSA that will be regraded at the end of Runway 31, a four to one slope was employed. This portion of the RSA is not as exposed as the east side of the RSA, and given the proximity of the canal to the existing toe of slope of the RSA, it is felt that a four to one slope will provide sufficient shoreline stabilization while minimizing surface water and wetland impacts. This is the steepest sideslope that would be acceptable per FAA design standards.Regraded portions of the RSA sideslopes at the end of Runway 31 will also be constructed using Armorflex or an equivalent. .

Minimization of Impacts During Construction

In addition to design elements that were incorporated to minimize impacts, BMPs would be implemented during construction to minimize potential sedimentation and erosion impacts to wetlands and other surface waters adjacent to the project during the construction phase. These sediment and erosion control measures are discussed in greater detail in Section 5.17, Water Quality.

4.15.5 Compensation for Impacts

UMAM (Chapter 62-345, F.A.C.) is the state of Florida's standardized methodology used to determine the amount of mitigation needed to offset adverse impacts to wetlands and other surface waters. UMAM assessment has also been adopted by the USACE for determining functional loss and mitigation in Florida, although occasionally the USACE may require more or less mitigation than the state because of potential differences in the federal and state jurisdictional boundaries or policies. In assessing wetland function, UMAM considers three primary functional categories: location and landscape support, water environment, and community structure. A UMAM analysis was performed for the anticipated permanent impacts that would result from the construction of the proposed project, to evaluate wetland and surface water functional loss due to the project and to determine the number of UMAM mitigation credits that would be needed to compensate for the project's impacts. The UMAM data sheets are located in **Appendix L**, and the UMAM analysis is summarized below in **Table 4.15-2**. Based on the analysis performed, 6.06 units of permanent wetland functional loss would need to be mitigated.

UMAM analysis was not performed for the temporary construction access impact areas because the Airport is proposing to grade these areas to preconstruction grade (where necessary) following the completion of construction activities and to replant these areas with suitable saltmarsh species to return them to preconstruction conditions. Therefore, for these areas, there would be no permanent loss of wetland function. Compensatory mitigation to be provided for the permanent wetland and surface water impacts is discussed in **Appendix R**, the Conceptual Mitigation Plan.

4.15.6 Significant Impact Threshold

A number of factors identified by the FAA were considered by the Airport in determining impacts to wetlands. These factors were considered in consultation with agencies having jurisdiction or special expertise on wetlands. **Table 4.15-3**, lists these factors and the proposed project's status for each of the criteria**.** With proposed mitigation discussed in Chapters 5 and 6, impacts to wetlands would be mitigated to below levels of significance.

Table 4.15-2
UMAM Analysis of Permanent Impacts

Section	Cowardin (USFWS) Classification	FLUCFCS Code and Description	Permanent Impact (Acres)	UMAM Delta	Functional Unit Loss
East	E1UBLx – Excavated embayment	5100-Streams and Waterway	0.16 fill	0.633	0.10
	E2EM1P – Estuarine intertidal saltmarsh	6420-Saltwater Marshes	3.92 fill	0.700	2.74
	E2USP – Sand and mud flats	6500-Non-vegetated Wetlands			
South	R1UB2/3Nx – Tidal canal	5100-Streams and Waterway	0.11 dredge	0	0
	E2EM1P - Estuarine intertidal saltmarsh	6420-Saltwater Marshes	0.01 fill	0.767	0.01
West	R1UB2/3Nx - Tidal canal	5100-Streams and Waterway	2.16 fill	0.567	1.22
			0.14 dredge	0	0
	E2EM1P - Estuarine intertidal saltmarsh	6420-Saltwater Marshes	2.93 fill	0.667	1.95
			0.6 dredge	0.67	0.04
		Totals	10.03	-	6.06

*Source: Birkitt Environmental Servies, Inc.

4.16 CUMULATIVE IMPACTS

As described in Section 3.17 of this EA, the past, present, and reasonably foreseeable actions that were identified for consideration in conjunction with the impacts from the proposed project for the analysis of cumulative impacts include:

Past actions

South General Aviation Development

Pine Ridge Road Parking Area
Taxiways F and G
South GA Transient Parking Apron
South GA Infrastructure
48 T-Hangar Units
U.S. Customs Building
Multiuse Building
Aircraft Wash Rack
Seaplane Ramp and New Dock
Hangar 11/Airline Terminal
Airline Terminal Parking Area
Hangars 8, 9, and 10
North Section of Taxiway B

Private Development Off Airport

Madeira
Flagler Crossing

Table 4.15-3
Evaluation of Significant Impact Threshold Criteria

Threshold Criterion	Project's Status Relative to Criterion
Would the project adversely affect a wetland's function to protect the quality or quantity of a municipal water supply, including sole source aquifers and a potable water aquifer.	No. The project is not in an aquifer recharge area, it is in an aquifer discharge area. Refer to section 5.17, Water Quality.
Would the project substantially alter the hydrology needed to sustain the affected wetland's values and functions or those of a wetland to which it is connected.	No. The hydrology is controlled by the ebb and flow of the tide to and from the salt marsh from the adjacent Tolomato River. The hydrology of the wetlands adjacent to the project would not be affected by the proposed project.
Would the project substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (cultural, recreational, and scientific public resources or property important to the public).	No. The project is located in an open basin. Floodwater and storm runoff retention of wetlands will not be affected by the project.
Would the project adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands.	No. The wetland impacts of the project would be mitigated for in a way that would compensate for impact to wildlife and fish habitat using the state's UMAM mitigation methodology. Refer to **Section 5.0**, Mitigation. Lost habitat functions would be replaced at the mitigation site. No economically important timber, food, or fiber resources occur in the vicinity of the proposed project area.
Would the project promote development of secondary activities or services that would affect the above functions.	No. The project's primary purpose is to meet FAA standards and to improve safety and operational efficiency at the Airport. No new development of secondary activities or services would be anticipated as a result of the project.
Would the project be inconsistent with applicable state wetland strategies.	The state's UMAM mitigation methodology has been used to ensure that **no net loss of wetland or surface water function** would result from the project. The state's requirement that projects that impact wetlands **not be contrary to the public interest** is met because the project's purpose is, in part, to meet FAA safety standards, which are established for the public good. The state's **water quality standards** will be met through implementation of sediment and erosion control best management practices.

*Source: Birkitt Environmental Services, Inc.

Present actions
South GA maintenance hangars
Madeira
Flagler Crossing

Reasonably foreseeable actions

Airport Capital Improvement Projects
Construction of New Aircraft Rescue and Fire Fighting Facility
Acquire ARFF Vehicle
Relocate Glideslope
Overlay Runway 6-24
Main Runway 13-31 Pavement Rehabilitation
Acquire Land for Development
Overlay Taxiway D
Southside Infrastructure
Rehab South Half Taxiway B
Install ILS (Runway 13 approach)
Install Approaching Lighting to Runway 13
Land Acquisition (Immediate Airport Area)
Rehab Taxiway A
Construction of Hangars
Airport Industrial Park Infrastructure
North Airside Service Road
Multimodal Terminal Facility
Extend Runway 31
Construct Taxiway B Bridge

Private Development Off Airport
Cordova Palms

Roadway Projects
SR 313

According to FAA guidance for preparing NEPA documents, a cumulative impacts analysis is resource specific.[11] The analysis should therefore concentrate on those impact categories that the Proposed Project would affect. As discussed in this chapter of the EA, the categories that are anticipated to be impacted by the Proposed Project primarily include:

- Biotic Resources;
- Federally Protected Species;
- Water Quality; and,
- Wetlands.

Other categories that would not be impacted by the Proposed Project but that would potentially be impacted by other past, present, or reasonably foreseeable projects considered in this cumulative impacts analysis include noise and air quality. Table 4.16-1 summarizes the potential for cumulative impacts in the vicinity of the project.

[11] Federal Aviation Administration, *Environmental Desk Reference for Airport Actions,* October 2007.

Table 4.16-1
Cumulative Impact Analysis

Project Name	Timeframe	Impact	Fully or Partially Mitigated?	Proposed/ Implemented Mitigation	Cumulative Impacts Eliminated?
South General Aviation Development	Past	Water quality	Fully Mitigated	• Temporary sediment and erosion control methods during construction. • Permanent swales and stormwater ponds. • Numerous septic systems were removed. • New development was connected to sanitary sewer line.	Yes
Madeira mixed use development	Past and Present	Biotic Communities (Saltmarsh 0.17 acre)	Fully Mitigated	Compensated for by saltmarsh restoration and wetland enhancement components of wetland mitigation.	Yes
		Wetlands (Saltmarsh 0.17 acre)	Fully Mitigated	Restoration of 0.21 acre of saltmarsh, 22.43 acres of wetland enhancement, 46.21 acres of wetland preservation, and 25.49 acres of upland buffer preservation. Mitigation was provided in basin.	Yes
		Essential Fish Habitat (Estimated 0.17 acre)	Fully Mitigated	Compensated for by saltmarsh restoration component of wetland mitigation.	Yes
		Woodstork Foraging Habitat	Fully Mitigated	Compensated for by saltmarsh restoration and wetland enhancement components of wetland mitigation.	Yes
		Water Quality	Fully Mitigated	Measures for containing sediment and treating stormwater runoff both during and after construction incorporated in design, reviewed and approved during USACE, SJRWD, and FDEP NPDES permitting process.	Yes
Flagler Crossing mixed use development	Past and Present	Wetlands (Freshwater 5.91 acres under SJRWMD jurisdiction only)	Fully Mitigated	• Wetlands and biotic communities that were impacted by the project were not saltmarsh therefore the impact was not overlapping in wetland/community type. • Wetlands impacted were not USACE jurisdictional wetlands. • SJRWMD jurisdictional wetland impacts were mitigated for in basin according to the conditions of the SJRWMD ERP. • The mitigation was the preservation of 7.55 acres of	Yes

Table 4.16-1
Cumulative Impact Analysis

Project Name	Timeframe	Impact	Fully or Partially Mitigated?	Proposed/ Implemented Mitigation	Cumulative Impacts Eliminated?
				wetlands and 8.17 acres of uplands.	
Flagler Crossing mixed use development	Past and Present	Water Quality	Fully Mitigated	Measures for containing sediment and treating stormwater runoff both during and after construction incorporated in design, reviewed and approved during SJRWD and FDEP NPDES permitting process.	Yes
North Airside Hangar Development	Future	Wetlands (Freshwater up to 9.8 acres potential impact)	Fully Mitigated	• Wetlands and biotic communities that would be impacted by the project are not saltmarsh therefore the impact would not be overlapping in wetland/community type. • Impacts would be mitigated for in basin according to the conditions of the USACE 404 permit and SJRWMD ERP.	Anticipate that cumulative impacts would be eliminated.
		Water Quality	Fully Mitigated	Measures for containing sediment and treating stormwater runoff both during and after construction would be incorporated in design, reviewed and approved during USACE, SJRWD, and FDEP NPDES permitting process.	
Airport Industrial Park Infrastructure	Future	Wetlands (Freshwater, acreage undetermined)	Fully Mitigated	• Wetlands and biotic communities that would be impacted by the project are not saltmarsh therefore the impact would not be overlapping in wetland/community type. • Impacts would be mitigated for in basin according to the conditions of the USACE 404 permit and SJRWMD ERP.	Anticipate that cumulative impacts would be eliminated.
		Water Quality	Fully Mitigated	Measures for containing sediment and treating stormwater runoff both during and after construction would be incorporated in design, reviewed and approved during USACE, SJRWD, and FDEP NPDES permitting process.	
Multimodal Terminal Facility	Future	Wetlands (Freshwater up to 3 acres potential impact)	Fully Mitigated	• Wetlands and biotic communities that would be impacted by the project are not saltmarsh therefore the impact would not be overlapping in	Anticipate that cumulative impacts would be eliminated.

Table 4.16-1
Cumulative Impact Analysis

Project Name	Timeframe	Impact	Fully or Partially Mitigated?	Proposed/ Implemented Mitigation	Cumulative Impacts Eliminated?
				wetland/community type. • Impacts would be mitigated for in basin according to the conditions of the USACE 404 permit and SJRWMD ERP.	
Multimodal Terminal Facility	Future	Water Quality	Fully Mitigated	Measures for containing sediment and treating stormwater runoff both during and after construction would be incorporated in design, reviewed and approved during USACE, SJRWD, and FDEP NPDES permitting process.	Anticipate that cumulative impacts would be eliminated.
		Air Quality	None anticipated to be necessary, refer to 4.16.5	• Potential for air quality impacts would need to be evaluated as part of the NEPA compliance process for the Multimodal Terminal Facility • It is unlikely that the project would increase pollutants to the extent that it would affect the attainment status of St. Johns County, which is currently classified 'in attainment.'	
Extension of Runway 31	Future	Biotic Communities (Saltmarsh 11.9 acres tidal canal 1.3 acres)	Fully Mitigated	In kind wetland mitigation would be required for the USACE and SJRWMD permits. Mitigation would need to replace lost habitat functions.	Anticipate that cumulative impacts would be eliminated.
		Wetlands (Saltmarsh 11.9 acres tidal canal 1.3 acres)	Fully Mitigated	Impacts would be mitigated for in basin according to the conditions of the USACE 404 permit and SJRWMD ERP.	
		Essential Fish Habitat	Fully Mitigated	Mitigation for EFH impacts would be coordinated with NOAA fisheries and implemented as a condition of the USACE permit.	
		Woodstork Foraging Habitat	Fully Mitigated	Mitigation for woodstork core foraging habitat impacts would be coordinated with USFWS and implemented as a condition of the USACE permit.	
		Water Quality	Fully Mitigated	Measures for containing sediment and treating stormwater runoff both during and after construction would be incorporated in design, reviewed and approved during USACE, SJRWD, and FDEP NPDES	

Table 4.16-1
Cumulative Impact Analysis

Project Name	Timeframe	Impact	Fully or Partially Mitigated?	Proposed/ Implemented Mitigation	Cumulative Impacts Eliminated?
				permitting process.	
		Noise	Fully Mitigated, If necessary	It is likely that a new noise analysis would be required as part of the NEPA documentation for the runway extension project. If an analysis determined that impacts to sensitive noise receptors would result from the project, mitigation would likely be provided.	
Taxiway B Bridge	Future	Wetlands (Freshwater, acreage undetermined)	Fully Mitigated, If necessary	• Wetland impact acreages are unknown at this time because the location of the bridge has not been finalized. • Wetlands and biotic communities that could potentially be impacted by the project are not saltmarsh therefore the impact would not be overlapping in wetland/community type. • Impacts would be mitigated for in basin according to the conditions of the USACE 404 permit and SJRWMD ERP.	Anticipate that cumulative impacts would be eliminated.
		Water Quality	Fully Mitigated	Measures for containing sediment and treating stormwater runoff both during and after construction would be incorporated in design, reviewed and approved during USACE (if necessary), SJRWD, and FDEP NPDES permitting process.	
Cordova Palms	Future	Wetlands (Freshwater up to 15 acres potential impact)	Fully Mitigated	• Wetlands and biotic communities that would be impacted by the project are not saltmarsh therefore the impact would not be overlapping in wetland/community type. • Impacts would be mitigated for in basin according to the conditions of the USACE 404 permit and SJRWMD ERP.	Anticipate that cumulative impacts would be eliminated.
		Water Quality	Fully Mitigated	Measures for containing sediment and treating stormwater runoff both during and after construction would be incorporated in design, reviewed and approved during USACE, SJRWD, and FDEP NPDES	

Table 4.16-1
Cumulative Impact Analysis

Project Name	Timeframe	Impact	Fully or Partially Mitigated?	Proposed/ Implemented Mitigation	Cumulative Impacts Eliminated?
				permitting process.	
SR 313	Future	Wetlands (Freshwater, acreage undetermined)	Fully Mitigated	• Wetland impact acreages are unknown at this time because the design has not been developed. • Wetlands and biotic communities that could potentially be impacted by the project are not saltmarsh therefore the impact would not be overlapping in wetland/community type. • Impacts would be mitigated for in basin according to the conditions of the USACE 404 permit and SJRWMD ERP	Anticipate that cumulative impacts would be eliminated.
		Water Quality	Fully Mitigated	Measures for containing sediment and treating stormwater runoff both during and after construction would be incorporated in design, reviewed and approved during USACE, SJRWD, and FDEP NPDES permitting process.	
Proposed Projects: **Taxiway 'C' Replacement, RSA Compliance, and Approach Lighting System**	Future	Biotic Communities (7.46 acres of saltmarsh and 2.57 acres of open water)	Fully Mitigated	Habitat function impacts will be addressed by the wetland mitigation proposed for the project.	Yes
		Wetlands (7.46 acres of saltmarsh and 2.57 acres of open water)	Fully Mitigated	Proposed mitigation will result in no net loss of wetlands and open water habitat functions	
		Essential Fish Habitat (7.46 acres of saltmarsh with oyster beds and 2.57 acres of open water)	Fully Mitigated	Proposed wetland mitigation and relocation of oysters will compensate for EFH impacts.	

Table 4.16-1
Cumulative Impact Analysis

Project Name	Timeframe	Impact	Fully or Partially Mitigated?	Proposed/ Implemented Mitigation	Cumulative Impacts Eliminated?
		Protected species habitat (7.46 acres of saltmarsh and 2.57 acres of open water)	Fully Mitigated	Woodstork foraging habitat function impacts will be addressed by the wetland mitigation proposed for the project.	
		Water quality	Fully Mitigated	Measures for containing sediment and treating stormwater runoff both during and after construction have been incorporated into the design. These measures will be reviewed during the USACE, SJRWD, and FDEP NPDES permitting process. Agency comments and recommendations will be incorporated into the plans as needed in order to obtain the necessary permits.	
		Air quality	Not required	The Proposed Projects that are the subject of the current NEPA analysis would not result in air quality impacts.	
		Noise	Not required	The Proposed Projects that are the subject of the current NEPA analysis would not result in noise impacts.	

4.16.1 Biotic Resources

Biotic Communities

In evaluating cumulative impacts to biotic communities, the primary tools that were utilized were the 2004 SJRWMD FLUCFCS mapping and 2008 FDOT aerial photography. Based on a review of this data, it was concluded that although some of the projects would have impacts to natural and naturalized communities, the majority of the habitat types that would be impacted by the past, present, and reasonably foreseeable actions, are different habitat types than those that would be impacted by the Proposed Project. The natural habitat types that would be impacted by the proposed project include saltmarsh, salt flats, and streams and waterways that are within intertidal zones. These habitat types are entirely absent from most of the other project sites identified for the cumulative impact discussion. The Flagler Crossing tract does contain areas of saltmarsh habitat, but these areas are not proposed for impact. The Madeira site development does include a small amount of saltmarsh impact (0.17 acre). However, the Madeira project has also proposed 0.21 acre of saltmarsh restoration as partial mitigation for the project's impacts. The proposed 1,000 foot extension of Runway 31 would result in an estimated 11.9 acres of salt marsh impacts and 1.3 acres of impact to the tidal canal at the south end of Runway 31. This impact would have to be mitigated for appropriately in order for the project to obtain the necessary permits that would be required. Compensating for impacts to wildlife habitat functions should be taken into consideration during the process of evaluating the mitigation proposed for the project. Currently, the FAA does not

consider this runway extension to be justified, and it is unlikely that the project will be constructed within the 10 year cumulative impact timeframe.

As documented in previous sections of this EA, the impacts to saltmarsh communities as a result of the proposed projects would be mitigated, and the system for determining mitigation requirements, UMAM, incorporates the replacement of lost habitat functions. One of the goals of the SJRWMD and USACE is that there be no net loss of wetland function. This goal was taken into account during the development of the mitigation plan for the Proposed Project, and would be an important aspect of the SJRWMD's and the USACE's review of the permit application for the project. The saltmarsh restoration that is incorporated into the mitigation plan for the Proposed Project and the saltmarsh restoration incorporated into the Madeira development's mitigation plan would compensate for the biotic communities impacts to saltmarsh habitats that would occur as a result of these projects. Similarly, the mitigation plan for the proposed extension of Runway 31 would have to compensate for impacts to habitat functions. Please see **Section 6.03** of this document for additional details concerning the mitigation plan for the Proposed Project.

Wildlife

General wildlife species and state protected species that utilize saltmarsh habitats would be displaced from the cumulative impact areas; however, the restoration of saltmarsh for the mitigation for the projects would provide for new saltmarsh habitats which would eventually become occupied by wildlife that would move into the restoration areas. Once the mitigation sites become established it is anticipated that there would be no net loss of habitat for general wildlife species and state protected species that utilize saltmarsh habitats.

EFH

EFH impacts would occur in conjunction with the Proposed Project, the Madeira development, and with the proposed extension of Runway 31. EFH types that would be impacted by the Proposed Project include saltmarsh, oyster beds, tidal flats, and estuarine water column. The EFH mitigation for the Proposed Project addresses impacts to saltmarsh and oyster beds that are found in the proposed project area through saltmarsh restoration and placement of oyster shells in benthic habitats to provide suitable substrate for oyster larvae attachment to encourage establishment of new oyster beds. The permitting documents for the Madeira project describe 0.17 acre of salt marsh habitat impact that would be mitigated, in part, by providing for 0.21 acre of saltmarsh restoration. If constructed, the Runway 31 project would impact saltmarsh, oyster beds, and estuarine water column (the tidal canal). Due to the mitigation measures that are being provided or that would have to be provided for the EFH impacts of these projects as a result of the state and federal wetland permitting processes, no significant cumulative impacts to EFH are anticipated. Additional details specific to the Proposed Project are provided in Section 6.03 and **Appendix D**.

4.16.2 Federally Protected Species

As discussed in **Section 4.06**, the Proposed Project would impact habitats that may occasionally be occupied for brief periods of time by transient individuals of protected species such as the shortnose sturgeon and the piping plover. However, the habitats that would be impacted are not habitats that are crucial for the continued existence of these species and do not provide suitable nursery habitat or nesting habitat for these species.

Wood stork foraging habitat would potentially be impacted by the Proposed Project, and several of the projects included in the cumulative impact analysis because wood storks forage in open, shallow, inundated areas in freshwater and saltwater habitats. The mitigation that would be provided for the

Proposed Project is expected to prevent the project from contributing to cumulative impacts to Core Foraging Habitat for this species.

4.16.3 Water Quality

Significant cumulative water quality impacts would be prevented by meeting permitting requirements of the USACE, the SJRWMD, and the FDEP. As discussed in **Chapter 6.0**, several permits would have to be obtained prior to construction of the proposed project including:

- a Standard 404 Permit from the USACE for the proposed wetland impacts;
- an Individual Environmental Resource Permit from the SJRWMD for the proposed surface water management system modifications and for the proposed wetland impacts;
- an NPDES permit from FDEP for a large construction site; and,
- Section 401 Water Quality Certification from FDEP

Similar permitting requirements would apply to each of the projects involving disturbance of more than an acre (or less than an acre if part of a larger plan of development) that are being considered for the cumulative impacts analysis.

Although the USACE permit is required for the proposed wetland impacts, the USACE is also bound by general regulatory policies stated in 33 CFR Part 320 Section 320.3. Under these policies, an applicant receiving a dredge and fill permit under Section 404 of the Clean Water Act from the USACE must also obtain certification from the state that the project meets the applicable water quality standards and effluent limitations pursuant to Section 401 of the Clean Water Act prior to construction or operation of the proposed facility. Additionally, as stated in 33 CFR Part 320, Section 320.4, *General policies for evaluating permit applications, "*applications for permits for activities which may adversely affect the quality of waters of the United States will be evaluated for compliance with applicable effluent limitations and water quality standards, during the construction and subsequent operation of the proposed activity. The evaluation should include the consideration of both point and non-point sources of pollution."

For the SJRWMD permit, as stated in section 10.7.2 of the SJRWMD's *Applicant's Handbook: Management and Storage of Surface Waters*, the SJRWMD cannot by permit authorize degradation of water quality below the standards set forth in chapters 62-302 F.A.C., which contains the State of Florida's surface water standards. In section 12.2.4, the *Applicant's Handbook* lists considerations such as construction BMPs, designing to avoid long term erosion and/or siltation, evaluation of potential discharges during construction and later during operation of the system; that can help to provide short and long term assurance that water quality standards would be met. SJRWMD reviews permit applications with these considerations in mind and typically will make water quality protection measures a requirement for issuance of the permit.

Minimization of water quality impacts is also assured through the NPDES stormwater permitting program. To secure issuance of an NPDES permit, an applicant must demonstrate that appropriate pollution prevention measures will be incorporated so that erosion and sedimentation associated with stormwater runoff are eliminated. These pollution prevention measures are detailed in a project's SWPPP.

These same permitting requirements apply to each of the projects included in the cumulative impacts analysis. Each project has incorporated, is incorporating, or will incorporate stormwater pollution prevention measures to minimize impacts due to sedimentation, erosion, and potential pollutant discharge during construction according to permitting requirements. Each of the projects has also been designed or will be designed in such a way as to limit long term water quality impact

risk after construction is complete. Therefore, as a result of each project's compliance with the conditions of its USACE permit, SJRWMD permit, and NPDES permit, no significant cumulative water quality impacts are anticipated.

4.16.4 Wetlands

As documented in Section 3.18 of this EA, the following projects either have resulted or will potentially result in impacts to wetlands if constructed:

Madeira
Flagler Crossing
North Airside Hangar Development
Construction of Industrial Park Infrastructure
Multimodal Terminal Facility
Extension of Runway 31
Taxiway B Bridge
Cordova Palms
SR 313

For each of these projects that have resulted or will result in wetland impacts, mitigation has been or will be required by the USACE and or the SJRWMD as a condition of the issuance of their respective permits.

Of the projects identified that have already been permitted, Madeira and Flagler Crossing have the most wetland impacts. The Madeira project will impact 3.96 acres of SJRWMD-jurisdictional wetlands and surface waters and 0.76 acre of USACE-jurisdictional wetlands and other waters of the U.S. The USACE-approved mitigation for the project includes 0.21 acre of saltmarsh wetland restoration, 22.43 acres of wetland enhancement, 46.21 acres of wetland preservation, and 25.49 acres of upland buffer preservation. The Flagler Crossing project will impact 5.91 acres of SJRWMD-jurisdictional wetlands. The wetlands are isolated wetlands that do not fall under the regulatory jurisdiction of the USACE, therefore no USACE permitting has been required. According to the SJRWMD Technical Staff Report, the mitigation provided is the preservation of 7.55 acres of wetlands and 8.17 acres of uplands. The mitigation plans for these projects provide for wetland restoration, enhancement, and or preservation to mitigate for wetland function that is lost in the impacted areas.

Some of the foreseeable Airport Capital Improvement Projects could also result in wetland impacts. Based on the footprint of the North GA Development area shown on the ALP, additional hangar development in this area could impact up to 9.7 acres of mixed hardwood wetlands and 0.1 acres of treeless hydric savanna. The location of the north airside service road is not depicted on the ALP, but it is anticipated that, based on the verbal description of where this road would potentially be located that was provided by Airport staff,[12] it is unlikely that this project would impact wetlands. This project would likely impact surface waters on the north end of the Airport that consist of upland cut ditches. Mitigation would not typically be required for this type of impact.

Other projects listed on the JACIP for within next 10 years could result in wetland impacts if they were constructed, but based on communication with Airport staff, these projects are unlikely to be funded within the next 10 years either due to the FAA's position that the projects are not currently

[12] Bryan Cooper, Assistant Airport Manager, St. Augustine-St. John's County Airport. Personal communication, June 17, 2009 and June 7, 2010.

justifiable or because sources of funding are not available in the current economic climate.[13] Construction of infrastructure for the Airport's future industrial park probably would not impact much wetland acreage directly but would prepare the area for ultimate build out, which could impact up to 38.2 acres of mixed hardwood wetlands and 0.2 acres of freshwater marsh if wetlands were not avoided. If the extension of Runway 31 were constructed, it would result in an estimated 11.9 acres of saltmarsh impact and 1.3 acres of impact to the tidal canal. If the tidal canal were relocated instead of being conveyed beneath the extended runway via a culvert, the impacts would be more extensive. Construction of the multimodal terminal facility could impact up to three acres of mixed wetland hardwoods based on the footprint of this development that is shown on the ALP. The construction of the Taxiway B Bridge also would have the potential to impact wetlands; however, without knowing the footprint of the proposed bridge, it is not possible to make a definite determination of whether the project would result in wetland impacts at this time.

Foreseeable off Airport projects that could potentially impact wetlands would include the Cordova Palms development and the construction of SR 313. The Application for Development Approval (ADA) for Cordova Palms that was submitted to St. Johns County identified an estimated 15 acres of wetland impact associated with the development. Although the type of wetlands to be impacted was not specified, based on the 2004 SJRWMD FLUCFCS mapping, all of the wetlands at the site are freshwater wetlands with the majority comprised of hydric pine flatwoods and mixed forested wetland community types. As stated in Chapter 3, the SR 313 project has not been permitted, but all of the wetlands crossed by the corridor are freshwater wetlands, with mixed wetland hardwoods being the most common type depicted along the corridor on the FLUCFCS mapping.

Potential impacts and required mitigation for the foreseeable projects discussed above has not been finalized, but implementation of USACE and SJRWMD regulatory policy will ensure that each project that has wetland impact will require mitigation to compensate for wetland functions that are impacted.

Of the projects considered in the cumulative impact analysis, only the Madeira project and the Runway 31 extension would impact wetland community types that will also be impacted by the Proposed Project. The Madeira project will result in 0.18 acre of impact to USACE-jurisdictional saltmarsh; however, as described above, that project will provide for 0.21 acre of saltmarsh restoration. The runway 31 extension would impact an estimated 11.9 acres of saltmarsh and 1.3 acres of tidal canal. As stated in Section 4.15, the Proposed Project will permanently impact 7.46 acres of saltmarsh and sand flats. The Proposed Project will also impact 2.57 acres of USACE-jurisdictional waters of the U.S. consisting of 0.16 acre of excavated embayment and 2.41 acres of tidal canals. As presented in Section 5.02, Mitigation, 1.66 acres of saltmarsh restoration is proposed as mitigation along the shoreline of the RSA and, at a minimum, 7.1 acres of saltmarsh restoration is proposed for mitigation in the area of the spoil island northeast of Runway 20. While this proposed mitigation for the impacts of the Proposed Project is subject to permitting approval and could change pending the review and implementation of other mitigation options, regardless of the details of the finalized mitigation plan, the mitigation to be provided will be based on functional replacement per UMAM analysis and will appropriately mitigate the functional loss due to the project. Similar mitigation would have to be provided for the impacts from the Runway 31 extension if it were to be constructed. Therefore, because mitigation will be provided for the Madeira project and the Proposed Project, and because mitigation would be required for the Runway 31 project were it to be permitted and constructed, no significant cumulative impact to saltmarsh wetlands, tidal canals, or excavated embayments is anticipated. Ultimately, the final determination of the amount of mitigation required for the Proposed Project will be made by the

[13] Ibid.

USACE and the SJRWMD during the wetland permitting process.

4.16.5 Air Quality

The multimodal facility listed in the JACIP was identified as a project that could potentially affect air quality. This project would incorporate rail and surface vehicles, such as rental cars, taxis, hotel shuttles, and buses, into one facility. The concept would be considered as a means to connect various transportation modes at the Airport, as well as avoid costly duplication of infrastructure that would be required if separate facilities were constructed for each mode of transportation. By having a multimodal facility, those traveling to and within the St. Augustine area would have options to use other modes of transportation rather than just personal and or rental vehicles to and from their local or regional destinations.

Since the project area is currently in attainment for National Ambient Air Quality Standards (NAAQS), and the Airport is not anticipated to reach 180,000 operations by 2030,[14] an air quality analysis was not warranted for the proposed project.[15] While there would be additional vehicles at the multimodal facility if it was constructed, overall, the amount of vehicles on the regional traffic network, and thus the amount of vehicle miles traveled (VMT), should decrease as other mass transit options are available. The addition of the multimodal facility is not likely to increase NAAQS pollutants to the point that the area would be in non-attainment. If a multimodal facility were constructed, a traffic study would be conducted to determine the levels of traffic service at the Airport due to the addition of the facility. If the level of service was poor (levels D, E, or F) and had congestion, a special intersection analysis and carbon monoxide dispersion modeling could be conducted when the multimodal facility was being designed.[16]

The amount of Mobile Source Air Toxics (MSATs) from the proposed multimodal facility would be proportional to the VMT.[17] Since the VMT would likely decrease due to the mass transit options available, the amount of MSATs are likely to decrease. The future MSAT emissions would also be lower than current MSAT emissions due to the United States Environmental Protection Agency's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020.[18]

The USEPA has put many standards in place to curb emissions from aircraft, rail, and surface vehicles. The USEPA issued standards for aircraft emission standards for new aircraft being built after 2005 to reduce the amount of nitrogen dioxides released into the air,[19] and is currently studying the potential emissions of lead from aircraft.[20] The USEPA also issued new standards in 2008 targeting passenger rail, which are expected to reduce the amount of nitrogen dioxides and particulate matter being released into the environment as old locomotives are taken out of service or remanufactured, and new locomotives are being put into service.[21] In addition, emission fuel

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[14] FAA, *2009 Terminal Area Forecast: St. Augustine Airport (SGJ).*
[15] FAA, *Air Quality Procedures for Civilian Airports and Air Force Bases*, April 1997, p. 9.
[16] Ibid., p. 21.
[17] FHWA, *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents,* HEPN-10, September 30, 2009, p. 10, http://www.fhwa.dot.gov/environment/airtoxic/100109guidmem.pdf (April 27, 2010).
[18] *Ibid.*
[19] USEPA, "Transportation and Air Quality: Regulatory Announcement: New Emission Standards for New Commercial Aircraft Engines," http://www.epa.gov/otaq/regs/nonroad/aviation/420f05015.htm (June 7, 2010).
[20] USEPA, "Transportation and Air Quality: Advance Notice of Proposed Rulemaking on Lead Emissions from Piston-Engine Aircraft Using Leaded Aviation Gasoline: Regulatory Announcement," http://www.epa.gov/otaq/regs/nonroad/aviation/420f10013.htm (June 7, 2010).
[21] USEPA, "Transportation and Air Quality: Locomotives," http://www.epa.gov/otaq/locomotives.htm (June 7, 2010).

economy standards for both light-duty and heavy-duty vehicles are undergoing study, which would also reduce the amount of air pollutant emissions in the future.[22]

Therefore, while a multimodal facility has the potential to increase air emissions, due to the reduction of personal and or rental vehicles on the roadway and corresponding reduction in VMT, as well as the strict standards by the USEPA, it is not likely to cumulatively impact air quality in the area if it were constructed.

4.16.6 Noise

One of the projects listed in this cumulative impact analysis, the 1,000 foot extension of Runway 31, would have the potential to result in additional noise impacts to receptors along the Runway 31 approach, such as the lots proposed for build out near the northern end of the Madeira development. Noise for the Runway 31 extension alone has not been modeled to date. The noise analysis for the Ultimate condition, which included the Runway 31 extension, was modeled for the 2005 AMP and was depicted in the future land use figure in the ALP, but the Ultimate scenario also included the future proposed crosswind runway. Utilization of the crosswind runway would be anticipated to decrease traffic to some extent on Runway 13-31, therefore the noise contours depicted for the Ultimate condition do not reflect the noise environment that would be present were the Runway 31 extension constructed in the absence of the crosswind runway. In general terms, as Stage 2 aircraft are gradually phased out and replaced with quieter Stage 4 aircraft, an increase in numbers of operations does not necessarily result in more expansive noise contours. Therefore, at some point in the future, if the Runway 31 extension is constructed, the noise contours may or may not be expanded beyond the current noise contours. However, there are numerous inputs that affect noise and the modeling of noise contours; therefore, it is likely that a new noise study would be required prior to the approval and construction of the proposed Runway 31 extension.

The proposed project addressed by this document would not result in any change to the Airport runway configurations, aircraft operations, aircraft types using the Airport, or aircraft flight characteristics. Therefore, the proposed project would not be anticipated to result in a change to the 65 DNL noise contour and would not contribute to cumulative noise impacts.

4.17 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

The following table (**Table 4.17-1**) summarizes environmental consequences of the No Action and Preferred Action Alternatives.

[22] USEPA, "Transportation and Climate: Regulations and Standards," http://www.epa.gov/otaq/climate/regulations.htm#prez (June 7, 2010).

Table 4.17-1
Summary of Environmental Impacts for the No Action and Proposed Project Alternatives

Category	Environmental Impacts of the Proposed Project	Anticipated Permits and Approval Required for the Proposed Project	Environmental Impacts of the No Action Alternative	Mitigation for the Proposed Project
Biotic Resources	Permanent impacts to 7.46 acres of saltmarsh and 2.57 acres of open water habitat impacts; habitat loss for state listed species	USACE will review as part of Standard Permit and coordinate with NMFS, USFWS, and EPA	No impact	Proposed mitigation including the restoration of 0.2 acres of open water along the shoreline of the proposed project area; restoration of a spoil island (with creation of a tidal creek) will result in no net loss of wetlands and open water
Coastal Zone Management	Consistent with the CZMP	Consistency determination in ERP from SJRWMD	Consistent with CZMP	Proposed mitigation will result in no net loss to coastal wetlands and estuarine waters
Compatible Land Use	No impact	None	No impact	N/A
Construction Impacts	No significant permanent impacts; temporary impacts	• NPDES Generic Permit for Stormwater Discharge from Large Construction • ERP as required by SJRWMD	No impact	No mitigation is required; However, BMPs and other environmental measures will be utilized during construction to reduce potential impacts
Federally Listed Threatened and Endangered Species	Permanent impacts to 7.5 acres of wetlands and 2.6 acres of open water; Habitat loss for Federally listed species including Wood Stork foraging habitat	USACE will review during the 404(b)/Section 10 permitting process for consistency with Section 7 of the Endangered Species Act of 1973	No impact	Proposed mitigation will result in no net loss of wetlands and open water habitats

*Source: Passero Associates, LLC

Table 4.17-1, Continued
Summary of Environmental Impacts for the No Action and Proposed Project Alternatives

Category	Environmental Impacts of the Proposed Project	Anticipated Permits and Approval Required for the Proposed Project	Environmental Impacts of the No Action Alternative	Mitigation for the Proposed Project
Energy Supply, Natural Resources, and Sustainability	No impact	None	No impact	N/A
Floodplains	No impact	None	No impact	N/A
Hazardous Materials	No impact	• None. • NPDES Generic Permit for Stormwater Discharge from Large Construction • Construction SWPPP	No impact	None required. Spill prevention containment and countermeasures BMPs would be incorporated into the construction SWPPP.
Light Emissions and Visual Impacts	No significant impact	None	No impact	N/A
Noise	No significant impact	None	No impact	N/A
Socioeconomic Impacts	No impact	None	No impact	N/A
Solid Waste	No significant impact	None	No impact	N/A

*Source: Passero Associates, LLC

Table 4.17-1, Continued
Summary of Environmental Impacts for the No Action and Proposed Project Alternatives

Category	Environmental Impacts of the Proposed Project	Anticipated Permits and Approval Required for the Proposed Project	Environmental Impacts of the No Action Alternative	Mitigation for the Proposed Project
Water Quality	Temporary Impacts during construction	• Standard permit from the USACE for wetland impacts • Class II water variance • ERP from SJRWMD • NPDES Generic Permit for Stormwater Discharge from Large Construction Section 401 Water Quality Certification from DEP	No impact	None Required. BMPs such as use of hay bales, turbidity barriers, silt fence, seeding/sodding, and geotextile mats would be implemented during construction. Treatment of stormwater runoff from the taxiway would be provided by overland flow across grassed areas adjacent to the taxiway.
Wetland Impacts	Permanent impact to approximately 7.5 acres of intertidal saltmarsh wetlands and sand flats; and 2.6 acres of surface waters	• ERP from SJRWMD • Standard permit from the USACE for wetland impacts	No impact	Proposed mitigation will result in no net loss of wetlands and open water habitats
Cumulative Impacts	None	None	None	Proposed mitigation will result in no cumulative impacts to biotic resources, federally protected species, wetlands, and water quality,

*Source: Passero Associates, LLC

CHAPTER 5

MITIGATION

JUNE 2010

PREPARED FOR:
ST. AUGUSTINE – ST. JOHNS COUNTY
AIRPORT AUTHORITY
4796 U.S. 1 NORTH
ST. AUGUSTINE, FL 32095

PREPARED BY:
PASSERO ASSOCIATES, LLC
13453 N. MAIN ST, SUITE 106
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NFRA
Northeast Florida Regional Airport
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CHAPTER 5 – MITIGATION

5.01 Introduction

The proposed project will result in unavoidable impacts to wetlands, surface waters, biotic communities, wildlife, and water quality. The mitigation section of the EA will, pursuant to FAA Order 5050.4B (Chapter 7**,** § 706 g), describe the mitigation options pursued, the viable mitigation options available, and the conceptual measures proposed to compensate for the identified environmental impacts from the proposed project. The conceptual measures are preliminary and qualitative explanations of each mitigation measure were developed in consultation with the federal and state agencies that have jurisdiction over these natural features. These agencies were contacted to initiate coordination and solicit comment and guidance on potential mitigation options. Jurisdictional agencies consulted with included the USACE, SJRWMD, NMFS, USEPA, USFWS, and FWC.

The proposed mitigation measures are anticipated to compensate for unavoidable impacts to wetlands, biotic communities, wildlife, and water quality. The following sections detail information regarding the proposed mitigation plan. Final mitigation plans and regulatory requirements and conditions will be determined during the permit application process.

5.02 Mitigation

In 1977 President Jimmy Carter issued Executive Order 11990, which instructed federal agencies to

> "take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; and (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities."

The EPA first adopted a policy goal of "no net loss" of wetlands in 1989 during the George H.W. Bush presidential administration. The idea behind this policy was that, although wetland impact avoidance and minimization should continue to be the implemented, in cases where wetland impact is unavoidable, new wetlands should be created or degraded wetlands should be restored in order to maintain a consistent total of wetland acreage. The "no net loss" goal has evolved into a goal of no net loss of wetland function per the USACE and EPA Final Rule on compensatory mitigation.[1] The policy is implemented by the USACE by the requirement of mitigation for projects with unavoidable wetland impacts. Similarly, the State of Florida has a policy of no net loss of wetland function, and to implement this policy the state's regulatory agencies also require mitigation for unavoidable wetland impacts.

In Florida, wetland mitigation requirements are determined for individual projects by assessing the wetland functional loss due to the impact using the state's UMAM system of wetland functional

[1] 73 FR 19594 (April 10, 2008).

assessment. UMAM is also utilized to assess the functional gain provided by proposed mitigation. By balancing the functional loss from the impact with the functional gain from the proposed mitigation, the state's regulatory agencies seek to achieve the no net loss policy goal. The UMAM system has been adopted by both the SJRWMD and the USACE, and therefore is the methodology that was applied to determine wetland mitigation requirements and to develop the proposed mitigation for the Proposed Project.

5.02.1 Mitigation Options Assessment

Appendix R describes in detail the mitigation options identified for compensating for wetlands, open water, wildlife, EFH, oyster, and water quality impacts associated with the proposed project. Mitigation opportunities were identified from various sources including, but not limited to:

1. Coordination with various regulatory and resource agency staff including NMFS, SJRWMD, USACE,USFWS, St. Johns County, GTMNERR (See **Appendix S**)
2. Christine Wentzel of SJRWMD, and
3. A local board member of the Guana Tolomato Matanzas National Estuary Research Reserve (GTMNERR).

Mitigation options evaluated included land acquisition, restoration/creation, and other opportunities. On-site and off-site options were considered. See **Appendix R** for a detailed description of the potential mitigation sites reviewed. Some options were found to be viable options but cannot provide sufficient mitigation alone. It was found that the best and most viable alternative at this time is restoration of an on-site spoil island that is owned by the Airport on the south side and by the state on the north side (**Appendix R)**. Other options that may become available include: a small shoreline restoration at the Guana Tolomato Matanzas Research Reserve (GTMNERR), restoration of a privately owned spoil island, or utilization of the FDOT Mitigation Program. If these options become available at a later date, they will be investigated further. However, the proposed restoration of the entire on-site spoil island provides sufficient in kind mitigation within the same hydrologic basin and Class II waters as the proposed impacts and therefore is the currently proposed mitigation plan for this project. The Conceptual Mitigation Plan for the spoil island is summarized below and detailed in **Appendix R**.

5.02.2 Conceptual Mitigation Plan

The Airport is working with the FAA and appropriate agencies to determine the most viable option to mitigate for the proposed impacts. It is expected that the restoration and improvement of wetlands along the shoreline of the RSA and at the Airport's spoil island will provide the appropriate mitigation in order to meet the no net loss requirements and fully satisfy the requirements to compensate for the impacts to wetlands, surface waters, biotic communities, wildlife, and water quality.

Restoration of an historic saltmarsh habitat on Airport property that has been converted to a spoil island property is currently proposed to offset the functional loss of unavoidable impacts from the Proposed Project. The island is approximately 18.3 acres in size. The southern portion (approximately two-thirds) of the spoil island is owned by the Airport Authority and approximately 7 acres along the northern portion is owned by the state. According to the UMAM analysis restoration of the spoil island will provide enough functional gain to offset the functional loss from

the proposed project. It is important to note that during the permitting phase, the design will be finalized to meet FAA specifications. As a result, both temporary and permanent impacts to natural resources may change during the permitting process as both the design and construction methods are more fully identified. Therefore, the calculated UMAM functional loss from the proposed action will also change. See **Appendices M and T**.

See **Figure 5.02.1** for the conceptual mitigation design of the spoil island. Restoration activities at the spoil island will allow for in-kind mitigation in proximity to the impact area. Following restoration completion, monitoring and maintenance of the spoil island will occur semi-annually for a minimum of three years or until SJRWMD and USACE success criteria have been met. The success criteria will be determined during the permitting process by both SJRWMD and USACE. The monitoring and maintenance will help ensure the successful establishment of saltmarsh habitat that is similar to the surrounding areas.

Additionally, oysters will be either relocated from the proposed project area or new oyster shells will be placed at the toe of slope of the RSA to create a "living shoreline." Details on the Conceptual Mitigation Plan are provided in **Appendix R**.

The Airport is committed to protect listed species and compensate for potential impacts to Federally and state protected species. For example, a Manatee Protection Plan including the *Standard Manatee Conditions for In-Water Work*[2] will be developed during the permitting process and will be implemented by the Airport Sponsor during construction. In addition, the proposed mitigation will replace the wood stork foraging habitat being impacted with similar (if not higher quality) habitat type and hydroperiods within the Core Foraging Area (13 miles from the known nesting colony location). It is anticipated that the proposed mitigation will provide foraging habitat with similar, if not better, prey availability, hydrology, and water quality than what is being impacted. Furthermore, to ensure the proposed mitigation will not create a wildlife hazard and to comply with the Part 139 Certification requirements of the airport, a preliminary wildlife hazard assessment of the proposed mitigation area (spoil island restoration) was conducted in November 2009. A copy of the Preliminary Wildlife Hazard Assessment memo on the restoration of the spoil island is contained in **Appendix R**.

[2] USFWS. 2005. USFWS Standard Manatee Conditions for In-Water Work. http://www.fws.gov/northflorida/Manatee/Documents/PermitGuidance/standard-conditions-for-in-water-work-2005_final.pdf

ST. AUGUSTINE • ST. JOHNS COUNTY AIRPORT AUTHORITY

SCALE 1" = 350'

DESIGNED BY David Loy; Melissa Green

DRAWN BY

CHECKED BY

PRIME CONSULTANT: Passero Associates
Engineering Surveying
Architecture Planning
CERT. OF AUTHORIZATION #3428

SUBCONSULTANT: BIRKITT ENVIRONMENTAL SERVICES, INC.

DATE 11/11/09

PROJECT NO. 23081.38

Project: Taxiway C Replacement, RSA Compliance, and Approach Lighting System

Owner: St. Augustine-St. Johns County Airport Authority
4796 US 1 North, St. Augustine, Florida 32095

Conceptual Mitigation Design
On-Site Spoil Island Restoration

FIGURE NUMBER
Figure 5.02.1

CHAPTER 6

ANTICIPATED APPROVALS AND PERMITS

JUNE 2010

PREPARED FOR:
ST. AUGUSTINE – ST. JOHNS COUNTY
AIRPORT AUTHORITY
4796 U.S. 1 NORTH
ST. AUGUSTINE, FL 32095

PREPARED BY:
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CHAPTER 6 – ANTICIPATED APPROVALS AND PERMITS

6.01 SJRWMD ERP Permit

The USACE, the FDEP, and the Water Management Districts (WMDs) have jurisdiction over and regulate activities that alter the landscape and disrupt water flow to wetland areas and surface waters in the State of Florida.

According to Florida Administrative Code (F.A.C.) Chapter 40C-4, Environmental Resource Permits for Surface Water Management Systems, the proposed development would require a SJRWMD ERP in order to meet stormwater runoff treatment, water quality, and wetland impact and mitigation regulatory requirements. Under the program, the SJRWMD receives ERP applications and coordinates with other state agencies including the FFWCC and the Division of Historic Resources (DHR).

Currently, the Proposed Action has been separated into three projects for the purpose of state permitting. An ERP application has been submitted to the SJRWMD for all three projects and the applications are under review. It is important to note that during the permitting phase, the design will be finalized to meet FAA specifications. As a result, both temporary and permanent impacts to natural resources will change during the permitting process as both the design and construction methods are more fully identified. See **Appendix T**.

As part of the permitting process, compensatory mitigation for unavoidable wetland impacts will be required. Mitigation must meet the permitting requirements based on the UMAM or must be provided utilizing the agency approved methodology established for mitigation banks that predate the UMAM wetland mitigation methodology.

6.02 USACE 404/Section 10 Permit

The USACE regulates impacts to waters of the U.S. under the authority of Section 404 of the Clean Water Act and impacts to navigable waters of the United States pursuant to Section 10, of the Rivers and Harbors Act. Impacts to wetlands and open waters associated with the proposed Project Area will require a Standard Permit from the USACE. The ERP application form also serves as the application form for the USACE Dredge and Fill (Section 404 and Section 10) permits. Standard permits usually take from 60 to 120 days to process, but may take longer to resolve if some level of controversy is involved with the issuance of the permit. A 30 day public noticing and comment period also applies to this type of permit. The USACE coordinates with the USFWS, the EPA, and the NMFS in the review of permit applications. At this time, the permit applications for the projects have been received by the USACE. The USACE issued the permit for the ALS on March 11, 2010. A Public Notice has currently been distributed by the USACE for the remaining projects.

Prior to the submittal of permit applications, the USACE encourages consultation between the applicant, the USACE, and other permitting and commenting agencies to discuss the pros and cons of this proposed project. For this Proposed Project, meetings were held on June 3, and October 20, 2009, to discuss the project with the USACE, SJRWMD, and other commenting agencies. During the October 20, 2009, meeting, the USACE indicated that it recognized that the purpose and need for the project was valid and that the proposed project was a reasonable approach to addressing the purpose and need.

Prior to conducting the June 3, 2009, meeting, the extent of the wetlands and other waters of the United States within the proposed project area were delineated. After the meeting was concluded, representatives of the USACE and SJRWMD met with the Airport and its representatives in the field to review the delineated wetland boundary. At that time, the USACE representative informally indicated that the delineated boundary was a reasonable depiction of the jurisdictional limits within the proposed project area. Following this field review, a request for a formal jurisdictional determination was submitted to the USACE. The USACE formal determination was received on December 11, 2009 and the USACE accepted the wetland line as delineated. The USACE's formal determination serves as the basis for calculating final impacts due to the project for the submittal of the permit applications.

6.03 Class II Waters Variance

The state of Florida classifies surface waters based on designated use and establishes water quality standards to protect the designated uses. Designation does not necessarily mean that state water quality standards are met for a particular water body. Chapter 62-302.400 F.A.C. defines Class II waters as those water bodies designated for potential shellfish harvesting. However, to be authorized for shellfish harvesting, a water body must meet designated water quality standards and be approved by the state for shellfish harvesting. The waters adjacent to the Airport are designated Class II, but are conditionally approved for shellfish harvesting, meaning that they do not always meet Class II water quality standards. Additionally, most of the submerged lands are owned directly by the Authority and are not under state ownership. Thus, shellfish harvesting cannot be authorized by the state in these areas.

The Class II waters adjacent to airport are characterized by scattered oyster (*Crassostrea virginica*) beds and emergent salt marsh habitat. A benthic habitat survey of the Class II waters was conducted from April 21 through 24, 2009, by Birkitt Environmental Services, Inc. and LPA Group, Inc. scientists. Oyster clumps, patches, and individuals were observed in the open water surrounding the airport (**Appendix C**, **Figures 3A and 3B**). Oysters are present in the proposed project area in sparse numbers. In total, approximately 0.51 acres of oysters are present within the proposed project area. Oysters north of Runway 13/31, form a 'fringing' area that consists of a long linear scattered zone of oysters, approximately 3 to 6 feet in width, within the intertidal zone parallel to the landward edge of the shoreline. South of the seaplane dock, larger patches of oysters are present and consist of large circular-shaped beds that occur within mudflats. Along the previously dredged tidal canal and ditch, some oyster clusters, clumps, and individuals are present.

In total, the proposed project would result in the filling of approximately 2.32 acres of Class II waters. These impacts were avoided and minimized to the greatest extent possible while still meeting the purpose and need of the project (Refer to Section 4.15.4 for details on the avoidance and minimization of Class II waters impacts). Additional Class II open water impacts will occur from deepening existing tidal canals and temporary impacts from construction activities. These impacts are not expected to cause significant issues in Class II waters. BMPs and a Class II water protection plan (**Appendix K**) will be implemented during construction. Furthermore, the previously dredged ditch will be relocated to maintain navigability to the adjacent residential areas by dredging 0.60 acres of saltmarsh and deepening 0.25 acres of already established open water habitat. The dredging will create new Class II open waters and reduce the total impacts to Class II waters to approximately 1.72 acres. Additionally, the shoreline of the proposed project area will be re-planted with saltmarsh vegetation. The creation of a saltmarsh in place of open water is expected to create a higher quality habitat which will have a benefit to the adjacent waters. It is important to note that during the permitting phase, the design will be finalized to meet FAA specifications. As a result,

both temporary and permanent impacts to natural resources will change during the permitting process as both the design and construction methods are more fully identified. Please refer to Appendix X, Agency Communication.

To construct the proposed project, the St. Augustine Airport Authority will need to obtain a variance from 40C-42, F.A.C.; 12.2.5 as administered by SJRWMD. This citation states that SJRWMD shall deny a permit for a regulated activity that is directly in Class II or Class III waters, which are classified as approved, restricted, conditionally approved or conditionally restricted for shellfish harvesting. The St. Augustine Airport will request a variance pursuant to Section 40C-1.1002, F.A.C. in accordance with variance provisions in Section 403.201, Florida Statutes (F.S.) and the Applicant's Handbook, Chapter 12.2.5. Section 403.201(1)(c) states that a variance should be granted "to relieve or prevent hardship of a kind other than in paragraphs (a) or (b)". Therefore, a demonstration of hardship that is not self imposed will be shown for the proposed project.

The unavoidable impacts will be compensated appropriately. Mitigation for the impacts to Class II waters and oysters will be provided in Class II waters. Compensation for impacts to oysters will consist of placing oyster shells within areas of suitable habitat. Shell placement is expected to provide substrate that will lead to the formation of oyster bars and reefs in proximity to the areas of impacts. For additional details on oyster mitigation, please refer to the Conceptual Mitigation Plan located in **Appendix Q.**

According to permitting records provided by the SJRWMD for projects within the District (**Table 6.03-1**), it appears that 22 applications were received for variances from the prohibition on construction in Class II waters during the period of October 2000 to the present. Of these applications, all but two (2) have been either approved or are pending. These records indicate that variances are routinely approved by the District and since the project will show that it is preventing a "hardship", a variance should be made available for the proposed project. In fact, the airport previously received a Class II waters variance for the Sea Plane Basin (see **Table 6.03-1**) in 2007. The variance was awarded to the Authority on February 14, 2007, from Rule 40C-4.302(1)(c), F.A.C. and Sections 10.0.0(c), 12.1.1(d) and 12.2.5, Applicants Handbook, Management and Storage of Surface Water (December 6, 2006), [40C-1.1002(3)(b), F.A.C].During the permitting of the project, the Airport will work with the FDEP and Water Management District to obtain the required variance.

Considering the unavoidable nature of the impacts, the public benefit of the project, the previously disturbed quality of habitat to be impacted and the proposed restoration and or mitigation to offset those impacts, it is expected that impacts to Class II waters will be temporary and minimal. The proposed project will demonstrate a hardship that is not self imposed and that the variance will meet the general intent and purpose of Chapter 40C-1.1002. In addition, with the planned mitigation to offset the unavoidable impacts, the proposed project will not have significant impacts on wetland and water quality processes in the proposed project area. Therefore, a Class II waters variance is expected to meet the requirements for issuance.

6.04 Section 7 Consultation

Section 7 of the Endangered Species Act, 16 U.S.C. Section 1536(a)(2), requires all federal agencies to consult with the National Marine Fisheries Service (NMFS) for marine and anadromous federally-listed species, or the United States Fish and Wildlife Services (FWS) for federally-listed fresh-water fish and wildlife, if they are proposing an "action" that may affect listed species or their designated habitat. *Action* is defined broadly to include funding, permitting and other regulatory actions.

Each federal action agency is to insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. This is done through informal or formal consultation. During informal consultation, the action agency sends a letter to the USFWS or NMFS requesting their concurrence on the action agency's effect determinations. This is typically completed during an EA process when an effect determination of "*May Affect, Not Likely to Adversely Affect*" is made. During formal consultation, a biological assessment (BA) must be conducted for the purpose of analyzing the potential effects of the project on listed species and critical habitat in order to establish and justify an "effect determination" (assistance and coordination may be available from the state, especially with transportation projects). The USFWS or NMFS reviews the BA and, if it concludes that the project may adversely affect a listed species or their habitat, it prepares a "biological opinion." The biological opinion may recommend "reasonable and prudent alternatives" (RPAs) to the proposed project to avoid jeopardizing or adversely modifying habitat.

Coordination with the appropriate federal agencies for federally listed species has been conducted during the EA process. USFWS staff has attended meetings and discussions on the wood stork, Florida manatee, and piping plover (refer **Appendix T**). The NMFS representatives have also attended meetings and discussions on EFH and listed species (refer **Appendix T**). Neither of these agencies has indicated that formal consultation is required.

Informal Section 7 Consultation will be conducted during the federal permitting process as federally-listed species or their habitat may be present in or adjacent to the proposed project area. The proposed project will not directly impact federally listed species. Only indirect habitat loss is expected from the proposed project and the habitat types are not providing a unique habitat for federally listed species. A no net loss of wetland habitat and open water habitat is expected from the proposed mitigation. As a result, insignificant impacts are expected and the effect determination for the applicable federally listed species that may be found at the airport is anticipated to be "*Not Likely to Adversely Affect*" or "*No Effect*".

6.05 EFH Consultation and Review

Typically, potential EFH impacts are reviewed during the USACE 404/Section 10 permitting process. However, at a project meeting on June 3, 2009, NMFS staff George Getsinger discussed the EFH requirements with Virginia Lane of the FAA, and agreed to use the EA process under the National Environmental Policy Act (NEPA) to carry out EFH consultation for the proposed project in this EA. The FAA requested at the meeting in June 2009 that the NMFS provide Conservation Recommendations on EFH as part of its comments on the Draft EA.

6.06 NPDES Construction Permit

Permitting requirements for construction that exceeds one acre are specified by NPDES regulations that are administered by the FDEP. According to the FDEP Generic Permit Stormwater Discharge for Large and Small Construction Activities, the proposed project would be considered a large construction activity (which is defined as a construction activity that results in the disturbance of five or more acres of total land area) and therefore would require a generic permit [Rule 62-621.300(4) F.A.C.] prior to the commencement of construction activities.[1] Typically, the contractor applies for and acquires this permit.

[1] http://www.dep.state.fl.us/WATER/stormwater/npdes/construction1.htm

Table 6.03-1 Class II Water Variances in SJRWMD Region

FILE OF RECORD #	APPLICATION #	APPLICANT	PROJECT NAME	DATE APPLICATION RECEIVED	DATE VARIANCE PETITION RECEIVED	AMENDED VARIANCE RECEIVED	CURRENT STATUS	DATE ISSUED/ RESOLVED
1998-1802	4-107-21164-2 & 3	Internal Improvement Trust Fund (FDEP)	Ocklawaha River Restoration Project	27-Nov-1997	25-Nov-1997	N/A	Waiver received June 7, 2005 2004(differed to 7/1/2006)	Pending
2001-04	4-109-51901-2	Venture Realty of North Florida	Bella Mar Condominimum	11-Dec-2000	16-Jan-2001	N/A	NPR	20-Feb-2001
2001-10	4-127-29771-7	Light House Cove Recreation Center	Light House Cove Development	2-Aug-2000	5-Mar-2001	N/A	Issued	12-Jun-2001
2001-114	4-009-79889-1	Sabal Chase Home Owners Association	Sabal Chase Community Observation Pier	8-Aug-2001	10-Aug-2001	N/A	Issued	11-Dec-2001
2001-53	4-009-56337-1	Cape Canaveral Hospital	Cape Canaveral Hospital	30-Mar-1995	1-Aug-2001	10-Sep-2001	Sent to DOAH	In Abeyance
2002-41	4-061-18758-3	Windsor Properties	Windsor	25-Apr-1996	3-Jun-2002	N/A	Issued	8-Oct-2002
2002-46	4-009-84196-1	NASA	Shiloh Impoundment Restoration	18-Jun-2002	29-Jul-2002	12-Aug-2002 24-Sep-2202	Issued	8-Oct-2002
2002-87	4-109-56730-19	Marshall Creek Development District	Boardwalks	23-Apr-2002	5-Dec-2002	N/A	Issued	9-Jun-2003
2003-114	4-109-85910-2	Ms Karen I Miles	Devils Elbow Fish Camp	26-Sep-2003	17-Dec-2003	N/A	Issued	13-Jul-2004
2003-21	4-009-84822-1	Brevard County Parks & Recreation	Parrish Park	31-Jul-2002	10-Feb-2003	N/A	Issued	8-Apr-2003
2003-54	4-109-56595-2	Channel Marker 71 Barrier Island Bed & Breakfast	Barrier Island Bed & Breakfast	17-Jan-2003	23-Apr-2003	N/A	Denied	Denied
2004-52	4-061-63126-4	Pelican Island NWR	Pelican Island Restoration Phs III	2-Apr-2004	12-May-2004	N/A	Issued	13-Jul-2004
2004-66	4-109-94964-1	Ponce Associates LLC	Madeira at St Augustine	3-Aug-2004	3-Aug-2004	N/A	Issued	Jan-06
2004-99	4-061-75850-2	State of Florida Department of Environmental Protection	Sebastian Inlet State Park Recreation Area	13-Jul-2004	15-Nov-2004	N/A	Issued	12-Jan-2005

*Source: Birkitt Environmental Services, Inc.

Table 6.03-1 Continued

FILE OF RECORD #	APPLICATION #	APPLICANT	PROJECT NAME	DATE APPLICATION RECEIVED	DATE VARIANCE PETITION RECEIVED	AMENDED VARIANCE RECEIVED	CURRENT STATUS	DATE ISSUED/ RESOLVED
2005-10	4-009-89095-1	Pulte Homes	Harbour Island	30-May-2003	26-Jan-2005	N/A	Issued	Sep-05
2005-41	4-009-95312-2	Brevard County Board of County Commissioners	Magnolia Bay-Offsite Brevard County Park	13-Jan-2005	22-Jul-2005	27-Feb-07	Issued	9-Sep-08
2005-44	4-109-85170-4	National Estuarine Research Center	GTMNERR Dock & Shoreline Restoration	22-Apr-2005	2-Aug-2005	N/A	Issued	Dec-05
2006-113	4-109-28307-25	St. Augustine - St. Johns County Airport Authority	St. Augustine Seaplane Dock & Boat Ramp Maintenance	28-Nov-2006	22-Dec-2006	N/A	Issued	13-Feb-2007
2006-76	4-009-89906-2	Laguna Estates, LLC	Laguna Estates LLC Multi-Family Residential Docking Facility	3-Aug-2004	20-Jul-2006	N/A	Issued	23-May-2007
2007-	4-127-23000-9	Edgewater Harbor, LLC	Edgewater Harbor Waterfront Improvements	20-Sep-2007	21-Apr-2008	N/A	Pending	Pending
2007-	4-009-106121-1	Fred D Boozer, Jr.	Multifamily pier for Serenity Cove Condominiums	28-Aug-2007	5-Nov-2007	N/A	Approved	8-Apr-2008
2008-	40-009-103222-3	Honda R & D Americas, Inc.	Honda R & D Dock & Boat Ramp	24-Mar-2008	30-Sep-2008	13-Oct-08	Pending	Pending

*Source: Birkitt Environmental Services, Inc.

6.07 St. Johns County Notification

On June 3, 2009 Jan Brewer, Environmental Division Director, St. Johns County attended an agency coordination meeting held at the Airport (**Appendix T**). The Authority provided a copy of the Draft EA to St. Johns County (Jan Brewer) for review and no comments were received. The Authority will also provide a copy of the final EA with FAA's determination.

CHAPTER 7

AGENCY COORDINATION AND PUBLIC INVOLVEMENT

JUNE 2010

PREPARED FOR:
ST. AUGUSTINE – ST. JOHNS COUNTY
AIRPORT AUTHORITY
4796 U.S. 1 NORTH
ST. AUGUSTINE, FL 32095

PREPARED BY:
PASSERO ASSOCIATES, LLC
13453 N. MAIN ST, SUITE 106
JACKSONVILLE, FL 32218

NFRA
Northeast Florida Regional Airport
Fly Smart!

CHAPTER 7 – AGENCY COORDINATION AND PUBLIC INVOLVEMENT

7.01 EARLY AGENCY NOTIFICATION

On May 5, 2009 the Airport notified agencies of the Authority's intent to conduct an Environmental Assessment by sending a Pre-Notification letter, (**Appendix T**) summarizing the purpose and need for the EA. The notification also included an invitation to an Agency Coordination meeting on June 3, 2009.

7.02 AGENCY RESPONSE TO ADVANCED NOTIFICATION

The USACE acknowledged receipt of the Pre-Notification letter sent on May 5, 2009 and assigned the project an internal number SAJ-2009-1716 (**Appendix T**). The USACE has agreed to be a cooperating agency with the FAA on this EA (**Appendix T**). All agencies in receipt of the Pre-Notification letter were asked to participate in an Agency Coordination Meeting, June 3, 2009 (**Appendix T**) acknowledging receipt of the letter.

7.03 OTHER AGENCY RESPONSE

Refer **Appendix T**.

7.04 AGENCY COORDINATION MEETINGS

The first meeting was held with FAA, Airport staff, and the EA team on January 22, 2009 at the FAA Orlando Airport District office. Discussions regarding the scope, and purpose and need for the EA were conducted.

The first agency coordination meeting was held at the Airport June 3, 2009 to discuss the proposed project followed by a site visit. Following the meeting airport personnel and the EA team escorted SJRWMD, USACE, and USFWS to the proposed project site. Agency representatives for SJRWMD and USACE discussed UMAM numbers with members of the EA team. USFWS indicated at that time a wood stork foraging analysis would need to be completed. Other agency representatives declined the site visit at that time.

On August 25, 2009 members of the EA team met with SJRWMD to discuss mitigation options for the proposed project. On October 20, 2009 the EA team also held a meeting with invited agencies to discuss mitigation options and UMAM methodology.

The Airport and EA team held a second agency coordination meeting on October 20, 2009 to discuss UMAM numbers and mitigation. An overview of alternatives and proposed action was provided. The site visit included a field review of UMAM numbers with SJRWMD and USACE.

For meeting summaries and a list of attendees see **Appendix T**.

7.05 PUBLIC INVOLVEMENT

On December 11, 2009 the Draft EA was publicized in the St. Augustine Record for 30 days to allow public review and comment. The Draft EA was also placed on the airport's website

December 11, 2009 and remained there until March 23, 2010. Proof of publication in the St. Augustine Record can be found in **Appendix S**.

7.06 AGENCY AND PUBLIC COMMENT

On December 11, 2010 FAA and eighteen agencies's, including Native American and Tribal Nations received a copy of the Draft EA for review and comment. A comprehensive list of agencies who received a copy of the Draft EA can be found in **Appendix T**.

On January 11, 2010 the Airport held a public information workshop followed immediately by a public hearing. Public comments were received until February 19, 2010. Transcripts of the public hearing can be found in **Appendix S**.

7.07 RESPONSE TO COMMENTS

Written comments received by the airport and FAA, and responses to all public comments can be found in **Appendix S**. All agency comments received can be found in **Appendix T**.

CHAPTER 8

LIST OF PREPARERS

JUNE 2010

PREPARED FOR:
ST. AUGUSTINE – ST. JOHNS COUNTY
AIRPORT AUTHORITY
4796 U.S. 1 NORTH
ST. AUGUSTINE, FL 32095

PREPARED BY:
PASSERO ASSOCIATES, LLC
13453 N. MAIN ST, SUITE 106
JACKSONVILLE, FL 32218

NFRA
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CHAPTER 8 – LIST OF PREPARERS

8.01 List of Preparers and Qualifications

The names and qualifications of the principal persons that contributed information to this EA are identified below, in accordance with FAA Order 5050.4B and Section 1502.6 of the CEQ regulations. A team of experts and professionals the following fields included airport planning, wetland ecology, archeology, civil engineering, water quality, biology, botany, wildlife studies, and other disciplines worked in concert to develop the EA.

AIRPORT SPONSOR
Ed Wuellner, AAE, Executive Director, St. Augustine-St. Johns County Airport

Table 8.01-1
PASSESRO ASSOCIATES, LLC – PRIME CONSULTANT

Name	Project Function	Degree	Experience	Responsibilities
Andrew Holesko, C.M.	Senior Airport Planner	B.S. Aviation Bus. Administration M.B.A. Transportation	21	Project director. Alternatives Analysis. Technical writing.
Sara Massey	Airport Planner	B.S. Professional Aeronautics	8	Project manager. Technical writing, editing and research.
Patrick Honore, P.E.	Project Engineer	M.E. Civil Engineering	12	Conceptual Design.
Michael Churchill	Senior Project Manager	B.S. Civil Engineering	27	Conceptual design.
Victor Calvert, P.E.	Drainage Engineer	M.E.	22	Floodplains Analysis.
William Reid	CAD Specialist	B.S. Geology	25	CAD Designer.
Shanon Bretz	CAD Specialist	High School Diploma	10	CAD Designer.
Heidi Stiens	Executive Assistant	A.S. General Studies and Science	15	General writing. Editorial review.

Table 8.01-2
THE LPA GROUP INCORPORATED – SUBCONSULTANT

Name	Project Function	Degree	Experience	Responsibilities
Mariben Andersen	Sr. Environmental Scientist	B.S. Biology	24 years	Project manager. Technical writing.
Jay Gable	Sr. Environmental Scientist	B.S. Biology	17 years	Technical writing and editing.
Gordon Murphy	Sr. Environmental Scientist	B.S. Biology	36 years	Technical editor.
Jim Duguay	Aviation Planning Manager	B. S. Aviation Management	15 years	Noise and noise impacts.
Mark Kistler, P.E.	Senior Engineer	M.S. Civil Engineering	18 years	Mitigation Construction Estimate.
Paul Condit	Environmental Planner II	B.S. Wildlife Science & Masters of Public Administration	7 years	Water Quality, Land Use Compatibility, & Socioeconomic Impacts.
Charles Smith, III	Environmental Scientist	B.A. Biology	7 years	Wetland Delineation, Technical Writing, and GIS.
David Grigg	GIS Specialist	M.S. Earth Science and Environmental Resource Management	9 years	Exhibits and Figures.
Laura Stevens	Environmental Planner II	B.S. Marine Biology & Master of Environmental and Earth Resources Management	17 years	Editorial review.

Table 8.01-3
BIRKITT ENVIRONMENTAL SERVICES, INC. – SUBCONSULTANT

Name	Project Function	Degree	Experience	Responsibilities
Beverly Birkitt	Principal Ecologist; Project Director	M.S. Ecology	30+ years	Project manager; Mitigation design; Editing
Melissa Green	Project Manager; Project Scientist	M.S. Marine Biology	7 years	Project Coordination; Technical writing and editing; Wetland Delineation; Wildlife Surveys.
Noah Silverman	Project Manager; Project Scientist	M.S. Marine Science	10 years	Project Coordination; Technical writing and editing; Benthic Habitat Survey.
Abbey Naylor	Technical Services Manager	B.S. Marine Biology	9 years	Technical writing and editing; Mitigation design.
David Loy	GIS Specialist; Project Scientist	B.S. Marine Biology	8 years	Benthic Habitat Survey; GIS; Technical writing.
Rob Toth	Environmental Scientist II	B.S. Biology	5 years	Benthic Habitat Survey; GIS; Technical writing.
Lynn Proenza	Environmental Scientist II	B.S. Environmental Science	6 years	Technical writing; Background research.