FINAL

Environmental Assessment for Non-Aviation Development

Appendices

Jacksonville Executive at Craig Airport

Jacksonville, Florida

PREPARED FOR

JACKSONVILLE AVIATION AUTHORITY

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

As lead Federal Agency pursuant to the National Environmental Policy Act of 1969

PREPARED BY

Landrum & Brown, Incorporated

September 2023

APPENDIX A

Agency and Public Involvement

Appendix A
Agency and Public Involvement

This appendix includes documentation of the agency and public involvement conducted after the publication of the Draft Environmental Assessment (EA) for the Proposed Non-Aviation Development at the Jacksonville Executive at Craig Airport (CRG). The public comment period was from June 2, 2023 to July 3, 2023. The following agencies and stakeholders, as shown in **Table A-1,** were coordinated with throughout the development of the EA.

TABLE A-1, AGENCY COORDINATION

Federal	
U.S. Army Corps of Engineers Jacksonville District Office 7915 Baymeadows Way, Suite 200, Jacksonville, FL 32256	Ms. Annie Dziergowski U.S. Fish and Wildlife Service Jacksonville Ecological Services Field Office 7915 Baymeadows Way, Suite 200, Jacksonville, FL 32256
Ntale Kajumba NEPA Division Strategic Programs Office U.S. EPA Region 4 61 Forsyth Street, SW Atlanta, Georgia 30303	
State	
Mr. Chris Stahl Florida Department of Environmental Protection, Environmental Review Clearinghouse 3900 Commonwealth Blvd., MS 47 Tallahassee, FL 32399	Mr. Douglas Conkey St. Johns River Water Management District, Jacksonville Service Center 7775 Baymeadows Way, Suite 102, Jacksonville, FL 32256

Comments received by the agencies are provided on the following pages in Section 1, *Comments Received on the Draft EA*. Responses to comment letters received are located in Section 2, *Responses to Comments Received on the Draft EA.* The two Notices of Availability that were published on June 2, 2023 and June 16, 2023 and transmittal letters distributed on June 2, 2023 are included in Section 3, *Notification of Availability*. One agency letter was received and no public comments were received on the Draft EA.

1 Comments Received on the Draft EA

This section includes one comment letter that was received from the U.S. Environmental Protection Agency (USEPA), which included several comments on the Draft EA.

From:	Washington-Newton, Jamilha
To:	Gaby Elizondo
Cc:	Kajumba, Ntale; Buskey, Traci P.; Singh-White, Alya
Subject:	EPA Comments on Non-Aviation Development at CRG Airport Draft EA
Date:	Friday, June 30, 2023 4:15:15 PM

Ms. Gaby Elizondo
Landrum & Brown, Incorporated
4445 Lake Forest Drive, Suite 700
Cincinnati, OH 45242
(gaby.elizondo@landrumbrown.com)

Re: EPA Comments on the Draft Environmental Assessment for Non-Aviation Development at Jacksonville Executive at Craig Airport, Duval County, Florida

Dear Ms. Elizondo:

The U. S. Environmental Protection Agency (EPA) reviewed the Draft Environmental Assessment (EA) for the Non-Aviation Development, in accordance with Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act (NEPA). Landrum & Brown, Incorporated prepared the draft EA to evaluate the environmental impacts associated with the development of vacant land for non-aviation purposes at Jacksonville Executive at Craig Airport (CRG) that will primarily comprise of the construction of an industrial distribution warehouse facility. The purpose of this project is for the Federal Aviation Administration (FAA) to release the Sponsor's federal obligation on vacant land that is no longer needed for aviation purposes so the Sponsor can produce a greater benefit from the release than the retention of the land.

The draft EA examines an Action Alternative and a "No Action" Alternative and are as follows:

- Alternative 1, the "No Action" Alternative – No development implementation on the vacant land located at CRG.
- Alternative 2, the Proposed Action – The development of a distribution warehouse facility, in addition to the construction of stormwater facilities and a new access road which includes paved parking on the south side area of approximately 102 acres of vacant property located at CRG.

The EPA has not identified any significant impacts from the Proposed Action that would require substantive changes to the EA. Based on our review of the draft EA, the EPA has enclosed detailed technical comments for your consideration (See enclosure).

Thank you for the opportunity to review and provide scoping comments on the proposed project. Upon completion of your final EA, please submit an electronic copy of the document to the EPA for review. If you have any questions regarding the EPA's comments, please contact me by phone at 404-562-8693 or via email at WashingtonNewton.Jamilha@epa.gov.

<u>Enclosure</u>

-

EPA Comments on the Non-Aviation Development at Jacksonville Executive at Craig Airport Draft Environmental Assessment, Duval County, Florida

(1) Air Quality: The proposed activity is located in Duval County, Florida which has not been designated as non-attainment or maintenance status for any of the National Ambient Air Quality Standards. CRG used the Airport Construction Emissions Inventory Tool (ACEIT) in addition to the US EPA's Motor Vehicle Emissions Simulator version 3 (MOVES3) to analyze potential impacts from construction and operation of the Proposed Action and determined that the resulting emissions would remain below the significance threshold.

Recommendation: The EPA recommends controlling fugitive dust emissions and implementing measures to reduce diesel emissions, such as switching to cleaner fuels, 1.1
retrofitting current equipment with emission reduction technologies, repowering older equipment with modern engines, replacing older vehicles, and reducing idling through operator training and contracting policies.

(2) Water Resources and Wetlands: The location of the proposed project is on developed land between the St. Johns River and the Atlantic Ocean with onsite wetlands that flow to Mill Cove. Section 4.12 of the draft EA indicates that approximately 2.85 acres of wetlands and 3.9 acres of the 100-year floodplain will be impacted. Additionally, 34 acres of impervious surfaces will be added under proposed improvements. The EPA understands that the developer will purchase 2.00 credits in the St. Marks Pond Mitigation Bank to compensate for the losses of wetlands resulting from the construction of the Proposed Project.

Recommendation: In accordance with Section 404 of the Clean Water Act (CWA), the EPA encourages implementing Best Management Practices (BMPs) during and after construction to minimize stormwater impacts on the streams. The EPA recommends that erosion control and sediment control measures be implemented in accordance with the State's National Pollutant 2.1
Discharge Elimination System (NPDES) construction general permit requirements, and that the measures be addressed during the design and construction phases of the project. The EPA encourages the use of a variety of stormwater management practices often referred to as 2.2
"green infrastructure" or "low impact development" practices to comply with Section 438 of the Energy Independence and Security Act of 2007.

The EPA recommends wetlands be avoided to the maximum extent practicable. If avoidance is not possible, impact should be minimized and mitigated. Flood zone and flood inundation maps should be used to help ensure proposed activities do not take place in floodplains except where alternatives are not practicable. The EPA recommends including a complete mitigation plan for wetland impacts in the final EA.

(3) Hazardous Materials and Containment: Section 4.5 of the draft EA identifies that the Proposed Action will disturb approximately 65 acres of soil through demolition, pavement construction, and possible vegetation clearing during the construction and renovation phase, indicating that there could be short-term, minor to moderate impacts associated with hazardous materials and solid waste.

Recommendation: The EPA recommends conducting a Phase I and possibly a Phase II contamination site assessment to identify any contaminated site features located within the 3.1
proposed project area. BMPs should be implemented to mitigate impacts before and during construction. The EPA also recommends using obstruction reduction techniques that require 3.2
minimal maintenance and land altering activities. For the protection of Waters of the United States (WOTUS), critical habitats, and as required by the CWA, the EPA recommends the use of secondary containment where storage and handling of Petroleum, Oils, and Lubricants 3.3

(POL) will take place, including maintenance bays and storage sites of single wall POL tanks. Where secondary containment is not directly practicable, spill ponds and oil water separators should be constructed downstream of POL related activities. **3.3 *(cont'd)***

(4) Biological Resources: Section 4.2 indicates that there are two federally registered species and four state registered species with the potential to be present at CRG, as identified by the US Fish and Wildlife Service (USFWS) and the Florida Natural Areas Inventory (FNAI). The EPA understands that the CRG is committed to implementing species and habitat conservation measures along with following project and species-specific construction conditions to prevent or reduce future conflicts with sensitive species, including the *Mycteria americana* (Wood Stork), *Drymarchon corais couperi* (Eastern Indigo Snake), *Gopherus polyphemus* (Gopher Tortoise), *Pituophis melanoleucus mugitus* (Florida Pine Snake), *Egretta caerulea* (Little Blue Heron) and the *Egretta tricolor* (Tricolored Heron).

Recommendation: The EPA principally defers to the U.S. Fish and Wildlife Service (USFWS) regarding compliance with the Endangered Species Act. The EPA recommends that any additional conservation measures identified by USFWS during consultation be implemented. **4.1**

(5) Environmental Justice: Data from the EPA's EJScreen (https://www.epa.gov/ejscreen) mapping tool primarily shows consistency between the demographics of resident populations and the much larger Census Block Groups and local municipalities. As a result, it does not appear that statistically significant minority populations, low-income populations, children under age 5, or residents over the age of 64 are present. Section 4.10.2 indicates that an increase in traffic will occur as a result of construction activities and long-term impacts are expected due to the warehouse distribution facility operation. However, due to the implementation of access roads and improved intersections, the maintenance level of roadway accessibility would remain acceptable. CRG has evaluated potential impacts and determined that none of the facility construction and operation would result in any significant environmental justice impacts.

Recommendation: Consistent with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (https://www.epa.gov/laws-regulations/summary-executive-order-12898-federal-actionsaddress-environmental-justice), please ensure protected populations are not disproportionately or adversely impacted by the project. EJ analysis of the Proposed Action should also be completed in accordance with Executive Order 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All*, published April 21, 2023. **5.1**

(6) Energy Efficiency and Recycling: The EPA commends CRG's commitment to recycle all recyclable materials, including the construction and demolition debris that will be produced by the Proposed Action, as identified in Section 3.2.7 of the EA. The EA also identifies energy and water conservation measures that will be incorporated with new construction and renovations. **6.1**

(7) Climate Change: Section 4.3 indicates that the Proposed project's construction and operation will result in long-term greenhouse gas (GHG) emissions. The EPA understands that an estimate of GHG emissions was provided for the Proposed Alternative. CRG used the ACEIT and the MOVES3 to calculate the Annual GHG Emissions Inventory data which was provided in Table 4.2. The draft EA adequately addresses the potential impacts of climate change and emissions within the proposed project area. **7.1**

Kind regards,

Jamilha Washington-Newton. M.S.

Jamilha Washington-Newton
Physical Scientist
NEPA Division
Strategic Programs Office
U.S. EPA Region 4
61 Forsyth Street, SW
Atlanta, Georgia 30303
Email: washingtonnewton.jamilha@epa.gov
Phone: 404-562-8693

2 Responses to Comments Received on the Draft EA

This section responds to comments grouped into seven categories: air quality, water resources, hazardous materials, biological resources, environmental justice, energy efficiency and recycling, and climate change. **Table A-2** identifies the commenter and **Table A-3** presents each comment, the commenter, and the Airport's response.

Table A-2
INDEX OF COMMENTS RECEIVED ON THE DRAFT EA

NAME	ORGANIZATION	DATE	COMMENT NUMBER
Jamilha Washington-Newton	U.S. Environmental Protection Agency (USEPA)	06/30/2023	1.1, 2.1, 2.2, 3.1, 3.2, 3.3, 4.1, 5.1, 6.1, 7.1

Table A-3
RESPONSE TO COMMENTS RECEIVED ON THE DRAFT EA

COMMENT #	COMMENT/SUBJECT	COMMENTER	RESPONSE
1	**Air Quality**		
1.1	The EPA recommends controlling fugitive dust emissions and implementing measures to reduce diesel emissions, such as switching to cleaner fuels, retrofitting current equipment with emission reduction technologies, repowering older equipment with modern engines, replacing older vehicles, and reducing idling through operator training and contracting policies.	USEPA	As stated in Chapter 4, Section 4.1, *Air Quality*, JAA would ensure that all possible measures would be taken to reduce fugitive dust emissions by adhering to guidelines included in FAA Advisory Circular, *Standard Specifications for Construction of Airports*. Measures to reduce diesel emissions, such as those identified by the EPA in the comment, will be considered and utilized, if appropriate. See Chapter 4, Section 4.1, *Air Quality*, for the updated discussion.

COMMENT #	COMMENT/SUBJECT	COMMENTER	RESPONSE
2	**Water Resources**		
2.1	In accordance with Section 404 of the Clean Water Act (CWA), the EPA encourages implementing Best Management Practices (BMPs) during and after construction to minimize stormwater impacts on the streams. The EPA recommends that erosion control and sediment control measures be implemented in accordance with the State's National Pollutant Discharge Elimination System (NPDES) construction general permit requirements, and that the measures be addressed during the design and construction phases of the project.	USEPA	As stated in Chapter 4, Section 4.12, *Water Resources*, BMPs would be implemented during construction. Additionally, erosion control measures would be implemented in accordance with all applicable Federal, state, and local laws and regulations, including FAA guidance contained in AC 150/5370-10H, *Standard Specifications for Construction of Airports,* including Item C-102, *Temporary Air and Water Pollution, Soil Erosion and Siltation Control; AC 150/5320-15A*, *Management of Airport Industrial Waste; and AC 150/5320-5D, Airport Drainage Design*. Implementation of stormwater management programs and adherence to the NPDES program requirements would be ensured. See Chapter 4, Section 4.12, *Water Resources*, for the updated discussion.
2.2	The EPA encourages the use of a variety of stormwater management practices often referred to as "green infrastructure" or "low impact development" practices to comply with Section 438 of the Energy Independence and Security Act of 2007.	USEPA	The use of "green infrastructure" or "low impact development" practices will be considered and utilized, if appropriate, to the extent practical. See Chapter 4, Section 4.12, *Water Resources*, for the updated discussion.

COMMENT #	COMMENT/SUBJECT	COMMENTER	RESPONSE
3	**Hazardous Materials**		
3.1	The EPA recommends conducting a Phase I and possibly a Phase II contamination site assessment to identify any contaminated site features located within the proposed project area. BMPs should be implemented to mitigate impacts before and during construction.	USEPA	As stated in Chapter 4, Section 4.5,*Hazardous Materials, Solid Waste, and Pollution Prevention,* the Proposed Project Site is vacant, has not been disturbed, and does not contain any signs of hazardous materials. While there are no records or evidence of any ground contaminating events at the Proposed Project Site, there is a potential for encountering hazardous substances during construction activities. The contractors would be required to implement site-specific spill prevention, control, and countermeasure (SPCC) plans that reduce the potential for substantial impacts associated with regulated materials. Should construction activities discover underground storage tanks, waste materials, or other sources of environmental contamination, regulatory authorities would be notified, and the necessary site remediation completed.
3.2	The EPA also recommends using obstruction reduction techniques that require minimal maintenance and land altering activities.	USEPA	See Chapter 4, Section 4.5,*Hazardous Materials, Solid Waste, and Pollution Prevention,* for the updated discussion.

COMMENT #	COMMENT/SUBJECT	COMMENTER	RESPONSE
3.3	For the protection of Waters of the United States (WOTUS), critical habitats, and as required by the CWA, the EPA recommends the use of secondary containment where storage and handling of Petroleum, Oils, and Lubricants (POL) will take place, including maintenance bays and storage sites of single wall POL tanks. Where secondary containment is not directly practicable, spill ponds and oil water separators should be constructed downstream of POL related activities.	USEPA	As stated in Chapter 4, Section 4.5,*Hazardous Materials, Solid Waste, and Pollution Prevention,* contractors would be required to implement site-specific spill prevention, control, and countermeasure (SPCC) plans that reduce the potential for substantial impacts associated with regulated materials. The use of secondary containment where storage and handling of Petroleum, Oils, and Lubricants (POL) will take place, including maintenance bays and storage sites of single wall POL tanks, will be implemented as appropriate and required by the CWA. See in Chapter 4, Section 4.5,*Hazardous Materials, Solid Waste, and Pollution Prevention,* for the updated discussion.
4	**Biological Resources**		
4.1	The EPA principally defers to the U.S. Fish and Wildlife Service (USFWS) regarding compliance with the Endangered Species Act. The EPA recommends that any additional conservation measures identified by USFWS during consultation be implemented.	USEPA	Comment noted.
5	**Environmental Justice**		
5.1	Consistent with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (https://www.epa.gov/laws-regulations/summary-executive-order-12898-federalactionsaddress-environmental-justice), please ensure protected populations are not disproportionately or adversely impacted by the project. EJ analysis of the Proposed Action should also be completed in accordance with Executive Order 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All*, published April 21, 2023.	USEPA	Comment noted. As stated in Chapter 4, Section 4.10.2, *Environmental Justice*, the Proposed Project would not result in a disproportionately high and adverse impact on the potential EJ populations.

COMMENT #	COMMENT/SUBJECT	COMMENTER	RESPONSE
6	**Energy Efficiency and Recycling**		
6.1	The EPA commends CRG's commitment to recycle all recyclable materials, including the construction and demolition debris that will be produced by the Proposed Action, as identified in Section 3.2.7 of the EA. The EA also identifies energy and water conservation measures that will be incorporated with new construction and renovations.	USEPA	Comment noted.
7	**Climate Change**		
7.1	The draft EA adequately addresses the potential impacts of climate change and emissions within the proposed project area.	USEPA	Comment noted.

3 Notification of Availability

This section contains the published Notice of Availability, affidavit of publication, and transmittal letters to agencies.

NOTICE OF AVAILABILITY DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR NON-AVIATION DEVELOPMENT AT JACKSONVILLE EXECUTIVE AT CRAIG AIRPORT, DUVAL COUNTY, FLORIDA

Pursuant to Title 49, United States Code, § 47106(c)(1)(A), notice is hereby given that the Jacksonville Aviation Authority (JAA) proposes to lease approximately 102 acres along the southern boundary of the Jacksonville Executive at Craig Airport to a private developer who would develop the site to accommodate an industrial distribution/warehouse facility. The proposed development includes approximately 65 acres of clearing and grading, construction of a 180,825 sq. ft. industrial distribution facility, and a new access road that will connect to Atlantic Boulevard. A Draft Environmental Assessment (EA) has been prepared pursuant to the National Environmental Policy Act (NEPA) to disclose the potential economic, social, and environmental impacts of the Proposed Project.

Pursuant to FAA Order 1050.1F and Executive Order 11990, notice is given that the Proposed Project would affect 2.85 acres of wetlands. Potential wetland impacts and mitigation measures are described in the Draft EA. Additionally, the project would result in temporary impacts to approximately 3.9 acres of a 100-year floodplain located within the Proposed Project Site during the reshaping of an existing ditch. These activities would be temporary and would not result in a high probability of loss of human life, have substantial encroachment-associated costs or damage due to flooding, or cause adverse impacts on natural and beneficial floodplain value. The developer would obtain the required floodplain development permits on the final design of the Proposed Project prior to construction. In addition, the developer would coordinate with the appropriate local jurisdiction to determine if a hydraulic analysis is required on the final design. Therefore, the Proposed Project is not anticipated to result in significant impacts to floodplains. Effects on known or previously recorded historic and archeological sites are not anticipated.

The operation of the warehouse/distribution facility would result in an increase in motor vehicles on Atlantic Boulevard from employee vehicles, delivery vans, and delivery trucks. A Traffic Impact Study (TIS) was prepared and coordinated with the City of Jacksonville and the Florida Department of Transportation. The TIS concluded the Proposed Project, which includes the implementation of access roads and intersection improvements at the new Atlantic Boulevard Intersection, would maintain an acceptable level of service on the surrounding roadways and no mitigation is required.

Copies of the Draft EA are available at the following locations: the JAA Administrative Office, 14201 Pecan Park Road, Jacksonville, FL 32218; Jacksonville Executive at Craig Airport, 855-1 St Johns Bluff Road N, Jacksonville, FL 32225; and the Jacksonville Public Library Regency Square Branch, 9900 Regency Square Boulevard Jacksonville, FL 32225. A digital version of the Draft EA will also be available via the JAA website: https://www.FlyJacksonville.com/Jaxex/content.aspx?id=52

The public review and comment period is 30 days, beginning June 2, 2023 and ending on July 3, 2023. Written comments on the information in the Draft EA may be sent to gaby.elizondo@landrumbrown.com or addressed to: Ms. Gaby Elizondo, Landrum & Brown, 4445 Lake Forest Drive, Suite 700, Cincinnati, OH, 45242 or JAA, Attn. Ms. Lauren Scott, Senior Manager of Aviation Planning, 14201 Pecan Park Road, Jacksonville, FL, 32218. Electronic and hand-delivered comments must be received no later than 5:00 pm Eastern Time on July 3, 2023. Mailed comments must be postmarked no later than July 3, 2023. Be advised that all comments can only be accepted with the full name and address of the individual commenting. Before including your address, phone number, e-mail address, or other personal identifying information (PIP) in your comment, be advised that your entire comment – including your PIP – may be made publicly available at any time. While you can ask in your comment to withhold from public review your PIP, the JAA cannot guarantee that it will be able to do so.

The FAA will afford the public an opportunity to request a Public Hearing. The purpose of the hearing, if one is held, would be to solicit additional comments regarding the Proposed Project. Any person interested will have 15 days from the date of publication of this Notice of Availability to request a Public Hearing. In deciding whether a hearing is appropriate, the FAA shall consider whether there is substantial environmental controversy; substantial interest in holding a hearing; or a request for a hearing by an agency with jurisdiction (supported by reasons why the hearing would be helpful). If a hearing is scheduled, the date and location will be announced in a separate notice.

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PO Box 631244 Cincinnati, OH 45263-1244

PROOF OF PUBLICATION

Gaby Elizondo
Landrum & Brown Inc
4445 Lake Forest DR # 700
Blue Ash OH 45242-3733

STATE OF WISCONSIN, COUNTY OF BROWN

Before the undersigned authority personally appeared, who on oath says that he or she is the Legal Coordinator of The Florida Times-Union, published in Duval and Clay Counties, Florida; that the attached copy of advertisement, being a Public Notices, was published on the publicly accessible website of Duval and Clay Counties, Florida, or in a newspaper by print in the issues of, on:

06/02/2023

Affiant further says that the website or newspaper complies with all legal requirements for publication in chapter 50, Florida Statutes.
Subscribed and sworn to before me, by the legal clerk, who is personally known to me, on 06/02/2023

Legal Clerk

Notary, State of WI, County of Brown

8·25·26

My commision expires

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Notary Public
State of Wisconsin

NOTICE OF AVAILABILITY
DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR NON-AVIATION DEVELOPMENT AT JACKSONVILLE EXECUTIVE AT CRAIG AIRPORT, DUVAL COUNTY, FLORIDA

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https://www.flyJacksonville.com/jaxex/content.aspx?id=52

The public review and comment period is 30 days, beginning June 2, 2023 and ending on July 3, 2023. Written comments on the information in the Draft EA may be sent to gaby.elizondo@landrumbrown.com or addressed to: Ms. Gaby Elizondo, Landrum & Brown, 4445 Lake Forest Drive, Suite 700, Cincinnati, OH, 45242 or JAA, Attn. Ms. Lauren Scott, Senior Manager of Aviation Planning, 14201 Pecan Park Road, Jacksonville, FL, 32218. Electronic and hand-delivered comments must be received no later than 5:00 pm Eastern Time on July 3, 2023. Mailed comments must be postmarked no later than July 3, 2023. Be advised that all comments can only be accepted with the full name and address of the individual commenting. Before including your address, phone number, e-mail address, or other personal identifying information (PIP) in your comment, be advised that your entire comment – including your PIP – may be made publicly available at any time. While you can ask in your comment to withhold from public review your PIP, the JAA cannot guarantee that it will be able to do so.

June 16, 2023

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PO Box 631244 Cincinnati, OH 45263-1244

PROOF OF PUBLICATION

Gaby Elizondo
Landrum & Brown Inc
4445 Lake Forest DR # 700
Blue Ash OH 45242-3733

STATE OF WISCONSIN, COUNTY OF BROWN

Before the undersigned authority personally appeared, who on oath says that he or she is the Legal Coordinator of The Florida Times-Union, published in Duval and Clay Counties, Florida; that the attached copy of advertisement, being a Public Notices, was published on the publicly accessible website of Duval and Clay Counties, Florida, or in a newspaper by print in the issues of, on:

06/16/2023

Affiant further says that the website or newspaper complies with all legal requirements for publication in chapter 50, Florida Statutes.
Subscribed and sworn to before me, by the legal clerk, who is personally known to me, on 06/16/2023

Legal Clerk

Notary, State of WI, County of Brown

8.25.26

My commision expires

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State of Wisconsin

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To:	Gaby Elizondo
Bcc:	annie_dziergowski@fws.gov; militscher.chris@epa.gov; brad.j.carey@usace.army.mil; dconkey@sjrwmd.com; KReed@coj.net; ECavin@coj.net; joyce@coj.net; Michael.DuBose@DOS.MyFlorida.Com
Subject:	Notice of Availability of CRG Draft EA Non-Aviation Development
Date:	Friday, June 2, 2023 10:20:00 AM

To Whom it May Concern:

The DRAFT Environmental Assessment (EA) for Non-Aviation Development at Jacksonville Executive at Craig Airport (CRG) is available online for your review at: https://www.flyjacksonville.com/jaxex/content.aspx?id=52. According to Federal Aviation Administration (FAA) Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions, we are making this document available for public and regulatory agency review and comment. If your organization requires a hard copy of the document to complete its review, please email Gaby.Elizondo@landrumbrown.com.

We request that any comments you may have be returned by July 3, 2023 to Gaby.Elizondo@landrumbrown.com. If you have any questions, please contact me at (513) 530-1205 (voice) or email: Gaby.Elizondo@landrumbrown.com. Thank you in advance for your time and assistance in this matter.

Sincerely,

Gaby Elizondo, AICP
Senior Consultant

Landrum & Brown
Global Aviation Planning & Development

T +1 513 530 1205 M +1 956 357 2778

landrumbrown.com

From:	Gaby Elizondo
To:	"Corpsjaxreg-nj@usace.army.mil"
Subject:	Notice of Availability of CRG Draft EA Non-Aviation Development
Date:	Friday, June 2, 2023 11:23:00 AM
Attachments:	Notice of Availability of CRG Draft EA Non-Aviation Development.pdf

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Sincerely,

Gaby Elizondo, AICP
Senior Consultant

Landrum & Brown
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June 2, 2023

Subject: Jacksonville Executive at Craig Airport
Availability of DRAFT Environmental Assessment Document

To Whom it May Concern,

The *DRAFT Environmental Assessment (EA) for Non-Aviation Development at Jacksonville Executive at Craig Airport (CRG)* is available online for your review at: https://www.flyjacksonville.com/jaxex/content.aspx?id=52. According to Federal Aviation Administration (FAA) Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, we are making this document available for public and regulatory agency review and comment. If your organization requires a hard copy of the document to complete its review, please email Gaby.Elizondo@landrumbrown.com.

We request that any comments you may have be returned by July 3, 2023 to Gaby.Elizondo@landrumbrown.com. If you have any questions, please contact me at (513) 530-1205 (voice) or email: Gaby.Elizondo@landrumbrown.com. Thank you in advance for your time and assistance in this matter.

Sincerely,

Gaby Elizondo
Senior Consultant
Landrum & Brown, Incorporated

From: Gaby Elizondo
To: State.Clearinghouse@FloridaDEP.gov
Cc: Lauren Scott; Sarah Potter
Subject: Notice of Availability of CRG Draft EA Non-Aviation Development
Date: Friday, June 2, 2023 10:20:00 AM
Attachments: Notice of Availability of CRG Draft EA Non-Aviation Development - Clearinghouse.pdf

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Dear Mr. Stahl:

The DRAFT Environmental Assessment (EA) for the Non-Aviation Development at the Jacksonville Executive at Craig Airport (CRG) is available online for your review at: https://www.flyjacksonville.com/jaxex/content.aspx?id=52. According to Federal Aviation Administration (FAA) Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions, we are making this document available for public and regulatory agency review and comment.

We request that any comments you may have be returned by July 3, 2023 to Gaby.Elizondo@landrumbrown.com. If you have any questions, please contact me at (513) 530-1205 (voice) or email: Gaby.Elizondo@landrumbrown.com. Thank you in advance for your time and assistance in this matter.

Sincerely,

Gaby Elizondo, AICP
Senior Consultant

Landrum & Brown
Global Aviation Planning & Development

T +1 513 530 1205   M +1 956 357 2778

landrumbrown.com

4445 Lake Forest Dr
Cincinnati, OH 45242
USA
T +1 513 530 5333
F +1 513 530 1278
landrum-brown.com

June 2, 2023

Mr. Chris Stahl
Florida Department of Environmental Protection, Environmental Review Clearinghouse
3900 Commonwealth Blvd., MS 47
Tallahassee, FL 32399

**Subject: Jacksonville Executive at Craig Airport
Availability of DRAFT Environmental Assessment Document**

Dear Mr. Stahl:

The *DRAFT Environmental Assessment (EA) for the Non-Aviation Development at the Jacksonville Executive at Craig Airport (CRG)* is available online for your review at: https://www.flyjacksonville.com/jaxex/content.aspx?id=52. According to Federal Aviation Administration (FAA) Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, we are making this document available for public and regulatory agency review and comment.

We request that any comments you may have be returned by July 3, 2023 to Gaby.Elizondo@landrumbrown.com. If you have any questions, please contact me at (513) 530-1205 (voice) or email: Gaby.Elizondo@landrumbrown.com. Thank you in advance for your time and assistance in this matter.

Sincerely,

Gaby Elizondo
Senior Consultant
Landrum & Brown, Incorporated

From:	Gaby Elizondo
To:	Reed, Amy M (FAA)
Cc:	Lauren Scott; Sarah Potter
Subject:	Notice of Availability of CRG Draft EA Non-Aviation Development
Date:	Friday, June 2, 2023 10:20:00 AM
Attachments:	Notice of Availability of CRG Draft EA Non-Aviation Development - FAA.pdf

Good Morning Amy,

The Draft Environmental Assessment (EA) for the Non-Aviation Development at the Jacksonville Executive at Craig Airport (CRG) is available online for your review at: https://www.flyjacksonville.com/jaxex/content.aspx?id=52. According to Federal Aviation Administration (FAA) Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions, we are making this document available for public and regulatory agency review and comment through July 3, 2023.

Thank you in advance for your time and assistance in this matter.

Sincerely,

Gaby Elizondo, AICP
Senior Consultant

Landrum & Brown
Global Aviation Planning & Development

T +1 513 530 1205   M +1 956 357 2778

landrumbrown.com

4445 Lake Forest Dr
Cincinnati, OH 45242
USA
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F +1 513 530 1278
landrum-brown.com

June 2, 2023

Ms. Amy Reed
Federal Aviation Administration
Orlando Airports District Office
8427 Southpark Circle, Suite 524
Orlando, FL 32819

Subject: Jacksonville Executive at Craig Airport
Availability of DRAFT Environmental Assessment Document

Dear Ms. Reed:

The *DRAFT Environmental Assessment (EA) for the Non-Aviation Development at the Jacksonville Executive at Craig Airport (CRG)* is available online for your review at: https://www.flyjacksonville.com/jaxex/content.aspx?id=52. According to Federal Aviation Administration (FAA) Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, we are making this document available for public and regulatory agency review and comment through July 3, 2023.

Thank you in advance for your time and assistance in this matter.

Sincerely,

Gaby Elizondo
Senior Consultant
Landrum & Brown, Incorporated

Section 106 Coordination

U.S. Department
of Transportation
**Federal Aviation
Administration**

Orlando Airports District Office
8427 South Park Circle, Suite 524
Orlando, FL 32819
Phone: (407) 487-7220
Fax: (407) 487-7135

February 28, 2023

[Sent via e-mail to: CompliancePermits@dos.myflorida.com]

Timothy A. Parsons, Ph.D.
Director, Division of Historical Resources
& State Historic Preservation Officer
R.A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399

RE: Section 106 Consultation and Area of Potential Effect
Non-Aviation Development
Jacksonville Executive at Craig Airport (Duval County, Florida)

Dear Dr. Parsons,

The Jacksonville Aviation Authority (JAA) has proposed the release of federal obligations on approximately 102 acres of land at Jacksonville Executive at Craig Airport (CRG). Upon release of the land, JAA would lease the land to a private developer who would construct an industrial distribution/warehouse facility (see **Figure 1, *Airport Location*** and **Figure 2, *Project Location***). The Federal Action associated with the project is an "undertaking" subject the National Historic Preservation Act (Section 106) and its implementing regulations at 36 CFR Part 800. This letter is intended to initiate Section 106 consultation.

Proposed Undertaking

The Proposed Project includes the construction and operation of an industrial distribution/warehouse facility as detailed below and shown in **Figure 3, *Proposed Project***.

- Clearing, grading, and tree removal of approximately 65 acres;
- Construction of an industrial distribution building approximately 180,825 square feet;
- Construction of parking lots to accommodate 365 automobiles, 835 delivery vans, and 13 trailers;
- New access road connecting to General Doolittle Drive;
- New access road connecting to Atlantic Boulevard, including associated intersection improvements;
- Construction of stormwater facilities; and
- Relocation of fencing.

Area of Potential Effects (APE)
The proposed undertaking is located on the south side of the Airport property, with access to Atlantic Boulevard. The APE is defined as the boundary of the land to be released and includes the anticipated disturbance area of the project. The APE is located primarily on Airport property and extends onto Atlantic Boulevard, as shown in **Figure 4**. The FAA requests the Florida State Historic Preservation Office's concurrence regarding the location of the APE.

Historic and Archaeological Resources in the APE
NRHP Search: There are no resources listed on the National Register of Historic Places within or adjacent to the APE. According to the National Park Service, the nearest National Register-listed resource is the Timucuan Ecological and Historic Preserve located approximately three miles to the northeast of the APE.

Cultural Resource Assessment Survey (CRAS): A CRAS was completed in December 2021 (attached). A review of the Florida Master Site File (FMSF) and NRHP revealed that one historic resource has been previously recorded within the APE (8DU19043). The Craig Airfield Designed Historic Landscape (8DU19043) was first recorded during *A Cultural Resource Reconnaissance Survey of the Eagle Aviation Hangars at Craig Airport, Duval County, Florida* conducted by Environmental Services, Inc. in 2007. Approximately eight acres of the ca. 1943 naval airfield were documented during this survey. The portion of the resource surveyed in 2007 was not original to the airfield and was comprised of concrete landing pads utilized by the National Guard from 1977 and 2002, rather than during WWII. As such, because the entire airfield was not surveyed, the Craig Airfield (8DU19043) was considered to have insufficient information for determining NRHP eligibility by the SHPO in 2007. In addition, the Sandalwood Community Canal (8DU22593) was previously recorded outside, but within the vicinity of, the APE. The ca. 1955 drainage canal was recorded during the *Technical Memorandum: Cultural Resource Assessment Survey Update for the Interstate 295 (State Road 9A) Ponds from the Dames Point Bridge to State Road 202 (Butler Boulevard), Duval County, Florida* and determined ineligible for listing in the NRHP by the SHPO in 2020.

Given the results of background research and field survey, which included a total of 41 shovel tests, no archaeological sites were discovered. As a result of the historic/architectural field survey, one previously recorded historic resource (8DU19043) was identified and re-evaluated and one historic resource (8DU23022) was newly identified, recorded, and evaluated. Overall, the newly identified historic resource (8DU23022) is a common example of a drainage canal found throughout the region and the State of Florida and it is not a significant embodiment of a type, period, or method of construction. Furthermore, background research did not reveal any historic associations with significant persons and/or events that are directly connected to the drainage canal. As a result, 8DU23022 does not appear eligible for listing in the NRHP, either individually or as part of a historic district. Recording and re-evaluating the entirety of the Craig Airfield Designed Historic Landscape (8DU19043) is beyond the scope of this project and as a result, only the portion contained within the APE has been documented. Based on the overall lack of historic resources associated with the airfield within the APE, there remains insufficient information for determining the NRHP eligibility of the Craig Airfield (8DU19043). Therefore, the proposed project will have no adverse effect on the Craig Airfield Designed Historic Landscape (8DU19043).

Determination of Effect

Based on a review of the proposed project and information available, the FAA has determined the undertaking would not affect historic properties. Because the Proposed Project includes ground disturbance activities, the FAA will require the Authority to implement special conditions regarding unexpected discoveries during construction.

FAA requests your review of the enclosed project information and respond within 30 days of receipt of this letter indicating if you concur with the APE and our determination. Please direct correspondence and questions to me at 407-487-7297 or Amy.M.Reed@faa.gov.

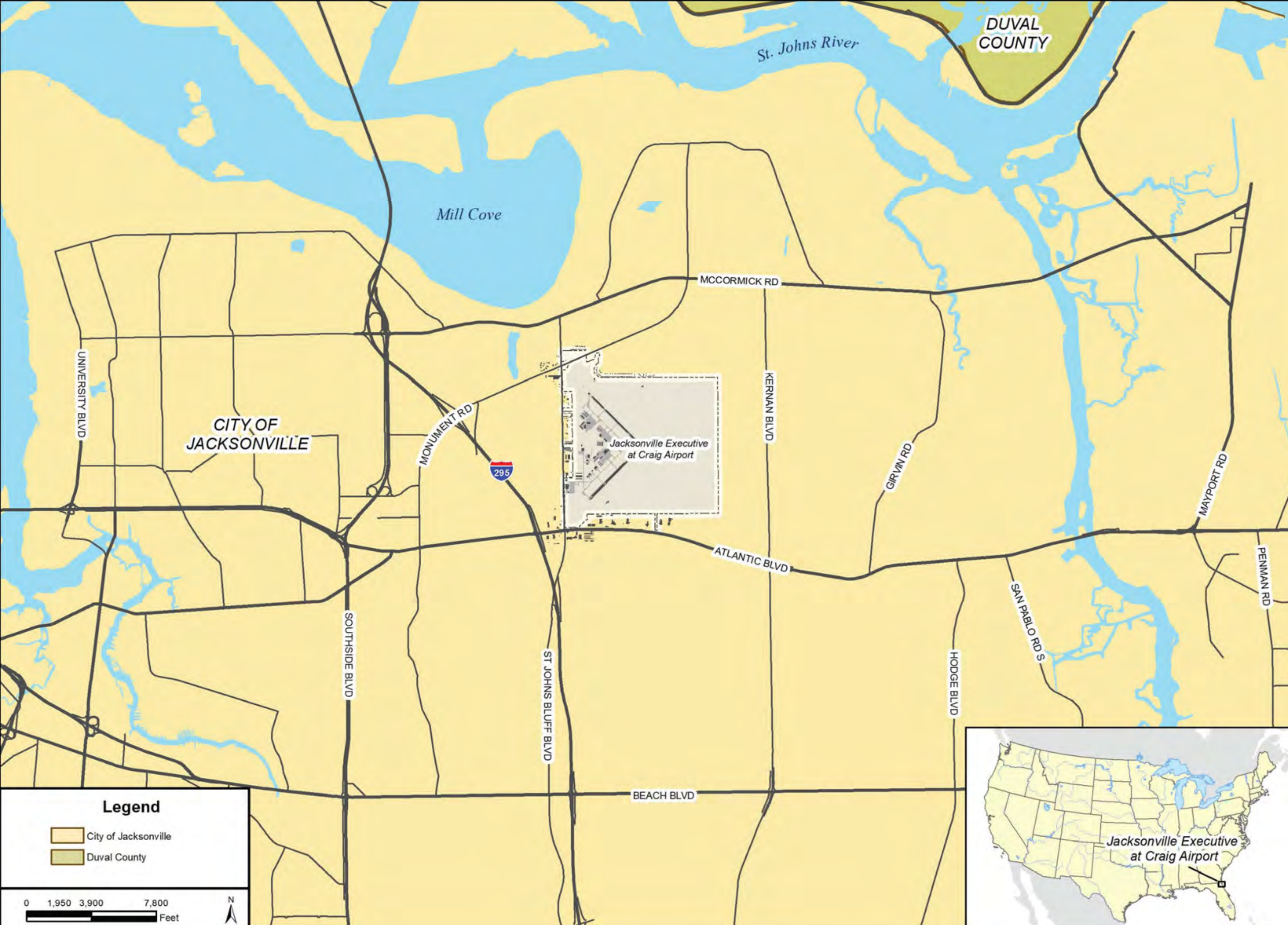
Sincerely,

AMY MARIE REED Digitally signed by AMY MARIE REED
Date: 2023.02.28 13:21:16 -05'00'

Amy M. Reed
Environmental Protection Specialist

Enclosures

Cc: Jacksonville Aviation Authority
Landrum & Brown, Inc.



Non-Aviation Development Environmental Assessment

Jacksonville Executive at Craig Airport

Airport Location

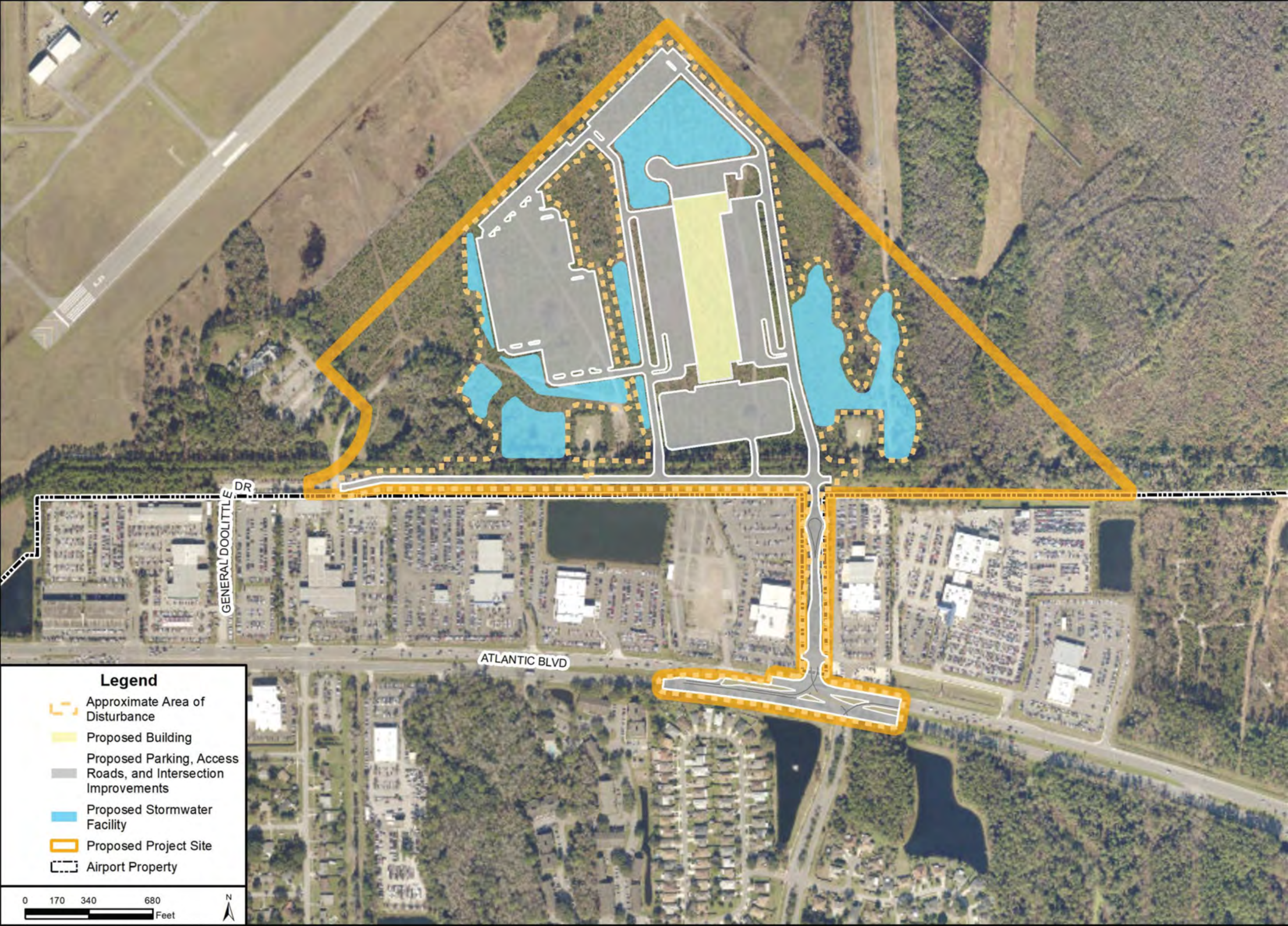
FIGURE 1

Non-Aviation Development Environmental Assessment

Jacksonville Executive at Craig Airport

Project Location

FIGURE **2**

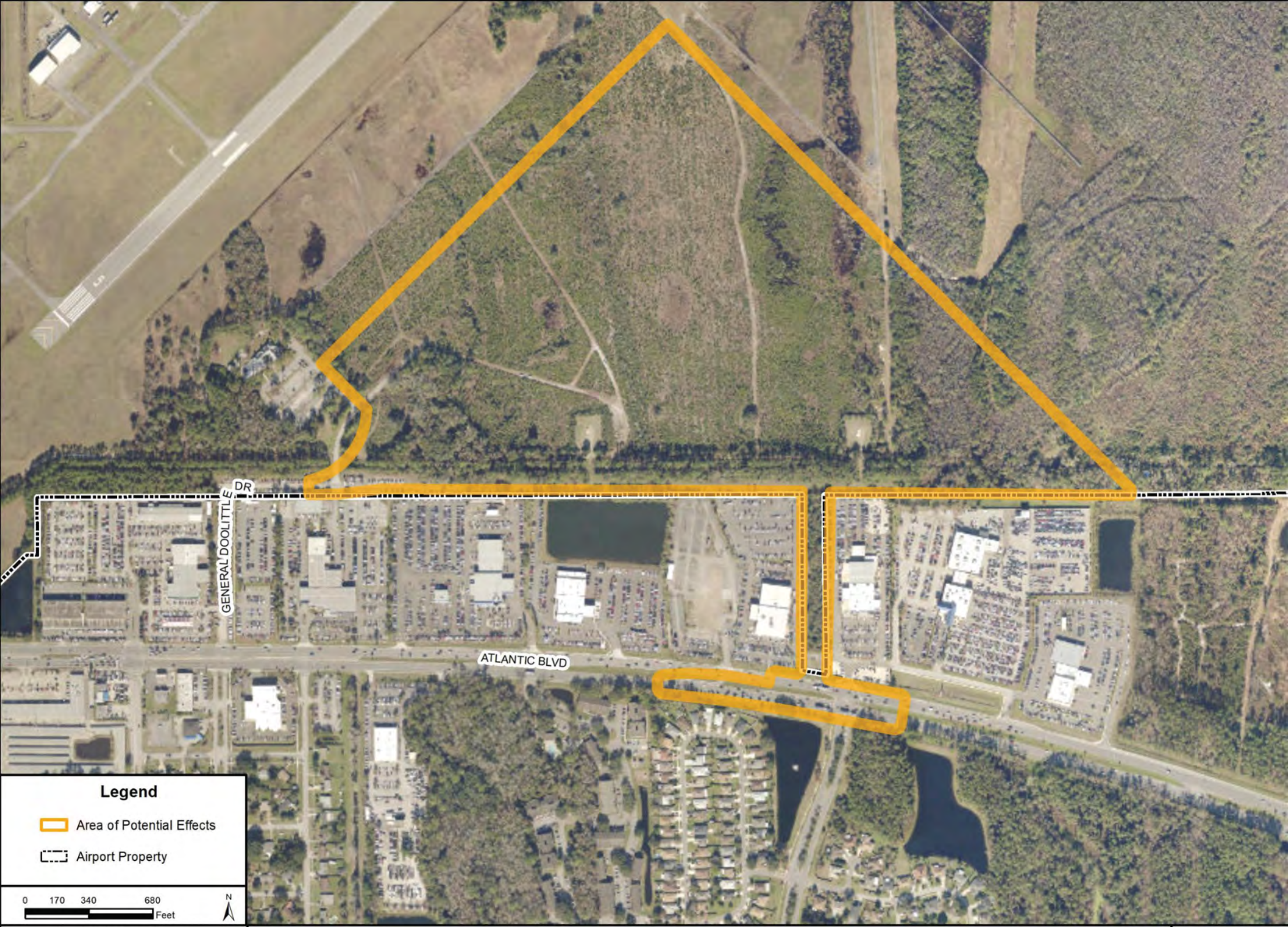


Non-Aviation Development Environmental Assessment

Jacksonville Executive at Craig Airport

Proposed Project

FIGURE 3



Non-Aviation Development Environmental Assessment

Jacksonville Executive at Craig Airport

Area of Potential Effects

FIGURE 4

RON DESANTIS
Governor

CORD BYRD
Secretary of State

Amy Reed, Environmental Protection Specialist
Federal Aviation Administration-FAA
Orlando Airports District Office-ADO
South Park Center
8427 South Park Circle – 5th Floor
Orlando, FL 32819

March 30, 2023

DHR Project File No.: 2023-1183-B Received by DHR: March 1, 2023
Cultural Resource Assessment Survey of the Jacksonville Executive Airport Property, Duval County, Florida

Dear Ms. Reed:

Our office reviewed the referenced project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations in 36 CFR Part 800: Protection of Historic Properties, and Chapters 267.061, Florida Statutes, and implementing state regulations, for possible effects on historic properties listed in, or eligible for, the National Register of Historic Places (NRHP), or otherwise of historical, architectural, or archaeological value. The project is subject to compliance with requirements for the Federal Aviation Administration.

In December 2021, Archaeological Consultants Inc. (ACI) conducted the above referenced Phase I cultural resource assessment survey (CRAS) on behalf of Landrum & Brown, Inc. ACI excavated 41 shovel tests, all of which were negative. Therefore, it is the professional opinion of ACI that the proposed undertaking will have no effect on any archaeological sites. As a result of the historical/architectural field survey, one previously recorded historic resource (8DU19043) was identified and re-evaluated and one historic resource (8DU23022) was newly identified, recorded, and evaluated. ACI determined that 8DU23022 does not appear eligible for listing in the NRHP, either individually or as part of a historic district. Recording and re-evaluating the entirety of the Craig Airfield Designed Historic Landscape (8DU19043) is beyond the scope of this project and as a result, only the portion contained within the APE has been documented. Based on the overall lack of historic resources associated with the airfield within the APE, ACI determined that there remains insufficient information for determining the NRHP eligibility of the Craig Airfield (8DU19043). Therefore, it is the professional opinion of ACI that the proposed project will have no adverse effect on the Craig Airfield Designed Historic Landscape (8DU19043).

Based on the information provided, our office concurs with the presented survey results and recommendations. We concur with the Corps determination of no adverse effect to historic properties listed, or eligible for listing, on the NRHP. Further, we find the submitted report complete and sufficient in accordance with Chapter 1A-46, Florida Administrative Code.

If you have any questions, please contact Michael DuBose, Historic Preservationist, by email at *Michael.DuBose@dos.myflorida.com* or telephone at 850.245.6342.

Sincerely,

Kelly L Chase
For

Alissa Slade Lotane
Director, Division of Historical Resources
& State Historic Preservation Officer

Tribal Coordination

U.S. Department
of Transportation
**Federal Aviation
Administration**

Orlando Airports District Office
8427 South Park Circle, Suite 524
Orlando, FL 32819
Phone: (407) 487-7220
Fax: (407) 487-7135

May 1, 2023

[Sent via e-mail to: Franks.d@sno-nsn.gov]

David Franks
Interim Director/TCNS Coordinator
Historic Preservation Office
Seminole Nation of Oklahoma
PO Box 1498
Wewoka, OK 74884

RE: Notice and Invitation for Consultation
102-acre Non-Aviation Development
Jacksonville Executive at Craig Airport (Duval County, Florida)

Dear Mr. Franks,

The Jacksonville Aviation Authority (JAA) has proposed the release of federal obligations on approximately 102 acres of land at Jacksonville Executive at Craig Airport (CRG). Upon release of the land, JAA would lease the land to a private developer who would construct an industrial distribution/warehouse facility (see **Figure 1, *Airport Location*** and **Figure 2, *Project Location***). The Federal Action associated with the project is an "undertaking" subject the National Historic Preservation Act (Section 106) and its implementing regulations at 36 CFR Part 800. The federal action is also subject to the National Environmental Policy Act (NEPA). This letter is intended to inform you of the project, initiate project-specific Section 106 consultation between the FAA and the Seminole Nation of Oklahoma and solicit any comments you may have on the proposed undertaking.

Proposed Undertaking

The Proposed Project includes the construction and operation of an industrial distribution/warehouse facility as detailed below and shown in **Figure 3, *Proposed Project***.

- Clearing, grading, and tree removal of approximately 65 acres;
- Construction of an industrial distribution building approximately 180,825 square feet;
- Construction of parking lots to accommodate 365 automobiles, 835 delivery vans, and 13 tractor trailers;
- Two (2) new access roads; including intersection improvements at Atlantic Blvd.
- Construction of stormwater facilities; and
- Relocation of fencing.

All project components will occur on airport property. The Proposed Project will not increase annual aircraft operations or aircraft-related noise. No protected species will be impacted, but there will be approximately 2.85 acres of wetland impacts. Any impacts associated with the Proposed Project are presently being evaluated in an Environmental Assessment (EA) that is being prepared for the project.

Area of Potential Effect

The proposed undertaking is located on the south side of the Airport property, with access to Atlantic Boulevard. The APE is defined as the boundary of the land to be released and includes the anticipated disturbance area of the project. The APE is located primarily on Airport property and extends onto Atlantic Boulevard, as shown in **Figure 4**.

Historic and Archaeological Resources in the APE

NRHP Search – There are no resources listed on the National Register of Historic Places within or adjacent to the APE. According to the National Park Service, the nearest National Register-listed resource is the Timucuan Ecological and Historic Preserve located approximately three miles to the northeast of the APE.

Cultural Resource Assessment Survey – A CRAS was completed in December 2021. A copy of the CRAS can be provided upon request. A review of the Florida Master Site File (FMSF) and NRHP revealed that one historic resource has been previously recorded within the APE (8DU19043). The Craig Airfield Designed Historic Landscape (8DU19043) was first recorded during *A Cultural Resource Reconnaissance Survey of the Eagle Aviation Hangars at Craig Airport, Duval County, Florida* conducted by Environmental Services, Inc. in 2007. Approximately eight acres of the ca. 1943 naval airfield were documented during this survey. The portion of the resource surveyed in 2007 was not original to the airfield and was comprised of concrete landing pads utilized by the National Guard from 1977 and 2002, rather than during WWII. As such, because the entire airfield was not surveyed, Craig Airfield (8DU19043) was considered to have insufficient information for determining NRHP eligibility by the State Historic Preservation Officer (SHPO) in 2007. In addition, the Sandalwood Community Canal (8DU22593) was previously recorded outside, but within the vicinity of, the APE. The ca. 1955 drainage canal was recorded during the *Technical Memorandum: Cultural Resource Assessment Survey Update for the Interstate 295 (State Road 9A) Ponds from the Dames Point Bridge to State Road 202 (Butler Boulevard), Duval County, Florida* and determined ineligible for listing in the NRHP by the SHPO in 2020.

Given the results of background research and field survey, which included a total of 41 shovel tests, no archaeological sites were discovered. As a result of the historic/architectural field survey, one previously recorded historic resource (8DU19043) was identified and re-evaluated and one historic resource (8DU23022) was newly identified, recorded, and evaluated. Overall, the newly identified historic resource (8DU23022) is a common example of a drainage canal found throughout the region and the State of Florida and it is not a significant embodiment of a type, period, or method of construction. Furthermore, background research did not reveal any historic associations with significant persons and/or events that are directly connected to the drainage canal. As a result, 8DU23022 does not appear eligible for listing in the NRHP, either individually or as part of a historic district. Based on the overall lack of historic resources

associated with the airfield within the APE, there remains insufficient information for determining the NRHP eligibility of the Craig Airfield (8DU19043). Therefore, the proposed project will have no adverse effect on the Craig Airfield Designed Historic Landscape (8DU19043).

Consultation

Based on previous and current site conditions, a review of the Proposed Project, background research, and the CRAS, the FAA's preliminary determination is the undertaking would not affect historic properties or cultural resources. However, we are interested in knowing if the Seminole Nation of Oklahoma has any concerns or interests related to the Proposed Project and would like to enter into Section 106 consultation.

We welcome your knowledge and opinion on the APE, whether additional study is needed for this undertaking, and the effects of the Proposed Project. For your information, the Florida SHPO has already reviewed the project and concurred with the FAA's determination that the project would have no effect on historic resources (**Attachment 1**). FAA appreciates your review of the enclosed project information and response within 30 days of receipt of this letter. Please direct correspondence and questions to me at (407) 487-7297 or via email (preferred) at amy.m.reed@faa.gov.

Sincerely,

AMY MARIE REED

Digitally signed by AMY MARIE REED
Date: 2023.05.01 11:26:49 -04'00'

Amy Reed, CWB
Environmental Protection Specialist

Attachments

Figure 1: Airport Location
Figure 2: Project Location
Figure 3: Proposed Project
Figure 4: Area of Potential Effect (APE)

Attachment 1: Letter from SHPO

Cc: Gaby Elizondo, Landrum & Brown
Lauren Scott, Airport Planner

U.S. Department
of Transportation
Federal Aviation Administration

Orlando Airports District Office
8427 South Park Circle, Suite 524
Orlando, FL 32819
Phone: (407) 487-7220
Fax: (407) 487-7135

May 1, 2023

[Sent via e-mail to: rosoweka@MuscogeeNation.com]

Mr. Robin Soweka, Jr.
Cultural Resource Specialist
Historic and Cultural Preservation Department
The Muscogee Nation
P.O. Box 580
Okmulgee, OK 74447

RE: Notice and Invitation for Consultation
102-acre Non-Aviation Development
Jacksonville Executive at Craig Airport (Duval County, Florida)

Dear Mr. Soweka,

The Jacksonville Aviation Authority (JAA) has proposed the release of federal obligations on approximately 102 acres of land at Jacksonville Executive at Craig Airport (CRG). Upon release of the land, JAA would lease the land to a private developer who would construct an industrial distribution/warehouse facility (see **Figure 1, *Airport Location*** and **Figure 2, *Project Location***). The Federal Action associated with the project is an "undertaking" subject the National Historic Preservation Act (Section 106) and its implementing regulations at 36 CFR Part 800. The federal action is also subject to the National Environmental Policy Act (NEPA). This letter is intended to inform you of the project, initiate project-specific Section 106 consultation between the FAA and the Muscogee (Creek) Nation and solicit any comments you may have on the proposed undertaking.

Proposed Undertaking

The Proposed Project includes the construction and operation of an industrial distribution/warehouse facility as detailed below and shown in **Figure 3, *Proposed Project***.

- Clearing, grading, and tree removal of approximately 65 acres;
- Construction of an industrial distribution building approximately 180,825 square feet;
- Construction of parking lots to accommodate 365 automobiles, 835 delivery vans, and 13 tractor trailers;
- Two (2) new access roads; including intersection improvements at Atlantic Blvd.
- Construction of stormwater facilities; and
- Relocation of fencing.

All project components will occur on airport property. The Proposed Project will not increase annual aircraft operations or aircraft-related noise. No protected species will be impacted, but there will be approximately 2.85 acres of wetland impacts that will be mitigated in an off-site wetland mitigation bank. Any impacts associated with the Proposed Project are presently being evaluated in an Environmental Assessment (EA) that is being prepared for the project.

Area of Potential Effect

The proposed undertaking is located on the south side of the Airport property, with access to Atlantic Boulevard. The APE is defined as the boundary of the land to be released and includes the anticipated disturbance area of the project. The APE is located primarily on Airport property and extends onto Atlantic Boulevard, as shown in **Figure 4**.

Historic and Archaeological Resources in the APE

NRHP Search – There are no resources listed on the National Register of Historic Places within or adjacent to the APE. According to the National Park Service, the nearest resource listed on the National Register is the Timucuan Ecological and Historic Preserve located approximately three miles to the northeast of the APE.

Cultural Resource Assessment Survey – A CRAS was completed in December 2021. A copy of the CRAS can be provided upon request. A review of the Florida Master Site File (FMSF) and NRHP revealed that one historic resource has been previously recorded within the APE (8DU19043). The Craig Airfield Designed Historic Landscape (8DU19043) was first recorded during *A Cultural Resource Reconnaissance Survey of the Eagle Aviation Hangars at Craig Airport, Duval County, Florida* conducted by Environmental Services, Inc. in 2007. Approximately eight acres of the ca. 1943 naval airfield were documented during this survey. The portion of the resource surveyed in 2007 was not original to the airfield and was comprised of concrete landing pads utilized by the National Guard from 1977 and 2002, rather than during WWII. As such, because the entire airfield was not surveyed, Craig Airfield (8DU19043) was considered to have insufficient information for determining NRHP eligibility by the State Historic Preservation Officer (SHPO) in 2007. In addition, the Sandalwood Community Canal (8DU22593) was previously recorded outside, but within the vicinity of, the APE. The ca. 1955 drainage canal was recorded during the *Technical Memorandum: Cultural Resource Assessment Survey Update for the Interstate 295 (State Road 9A) Ponds from the Dames Point Bridge to State Road 202 (Butler Boulevard), Duval County, Florida* and determined ineligible for listing in the NRHP by the SHPO in 2020.

Given the results of background research and field survey, which included a total of 41 shovel tests, no archaeological sites were discovered. As a result of the historic/architectural field survey, one previously recorded historic resource (8DU19043) was identified and re-evaluated and one historic resource (8DU23022) was newly identified, recorded, and evaluated. Overall, the newly identified historic resource (8DU23022) is a common example of a drainage canal found throughout the region and the State of Florida and it is not a significant embodiment of a type, period, or method of construction. Furthermore, background research did not reveal any historic associations with significant persons and/or events that are directly connected to the drainage canal. As a result, 8DU23022 does not appear eligible for listing in the NRHP, either individually or as part of a historic district. Based on the overall lack of historic resources

associated with the airfield within the APE, there remains insufficient information for determining the NRHP eligibility of the Craig Airfield (8DU19043). Therefore, the proposed project will have no adverse effect on the Craig Airfield Designed Historic Landscape (8DU19043).

Consultation

Based on previous and current site conditions, a review of the Proposed Project, background research, and the CRAS, the FAA's preliminary determination is the undertaking would not affect historic properties or cultural resources. However, we are interested in knowing if the Muscogee (Creek) Nation has any concerns or interests related to the Proposed Project and would like to enter into Section 106 consultation.

We welcome your knowledge and opinion on the APE, whether additional study is needed for this undertaking, and the effects of the Proposed Project. For your information, the Florida SHPO has already reviewed the project and concurred with the FAA's determination that the project would have no effect on historic resources (**Attachment 1**). FAA appreciates your review of the enclosed project information and response within 30 days of receipt of this letter. Please direct correspondence and questions to me at (407) 487-7297 or via email (preferred) at amy.m.reed@faa.gov.

Sincerely,

AMY MARIE REED

Digitally signed by AMY MARIE REED
Date: 2023.04.28 16:32:44 -04'00'

Amy Reed, CWB
Environmental Protection Specialist

Attachments

Figure 1: Airport Location
Figure 2: Project Location
Figure 3: Proposed Project
Figure 4: Area of Potential Effect (APE)

Attachment 1: Letter from SHPO

Cc: Gaby Elizondo, Landrum & Brown
Lauren Scott, Airport Planner

U.S. Department
of Transportation
**Federal Aviation
Administration**

Orlando Airports District Office
8427 South Park Circle, Suite 524
Orlando, FL 32819
Phone: (407) 487-7220
Fax: (407) 487-7135

May 1, 2023

[Sent via e-mail to: kevind@miccosukeetribe.com]

Mr. Kevin Donaldson
Environmental Specialist
Miccosukee Tribe of Indians of Florida
Tamiami Station
P.O. Box 440021
Miami, Florida 33144

RE: Notice and Invitation for Consultation
102-acre Non-Aviation Development
Jacksonville Executive at Craig Airport (Duval County, Florida)

Dear Mr. Donaldson,

The Jacksonville Aviation Authority (JAA) has proposed the release of federal obligations on approximately 102 acres of land at Jacksonville Executive at Craig Airport (CRG). Upon release of the land, JAA would lease the land to a private developer who would construct an industrial distribution/warehouse facility (see **Figure 1, *Airport Location*** and **Figure 2, *Project Location***). The Federal Action associated with the project is an "undertaking" subject the National Historic Preservation Act (Section 106) and its implementing regulations at 36 CFR Part 800. The federal action is also subject to the National Environmental Policy Act (NEPA). This letter is intended to inform you of the project, initiate project-specific Section 106 consultation between the FAA and the Miccosukee Tribe of Indians of Florida and solicit any comments you may have on the proposed undertaking.

Proposed Undertaking

The Proposed Project includes the construction and operation of an industrial distribution/warehouse facility as detailed below and shown in **Figure 3, *Proposed Project***.

- Clearing, grading, and tree removal of approximately 65 acres;
- Construction of an industrial distribution building approximately 180,825 square feet;
- Construction of parking lots to accommodate 365 automobiles, 835 delivery vans, and 13 tractor trailers;
- Two (2) new access roads; including intersection improvements at Atlantic Blvd.
- Construction of stormwater facilities; and
- Relocation of fencing.

All project components will occur on airport property. The Proposed Project will not increase annual aircraft operations or aircraft-related noise. No protected species will be impacted, but there will be approximately 2.85 acres of wetland impacts that will be mitigated in an off-site wetland mitigation bank. Any impacts associated with the Proposed Project are presently being evaluated in an Environmental Assessment (EA) that is being prepared for the project.

Area of Potential Effect

The proposed undertaking is located on the south side of the Airport property, with access to Atlantic Boulevard. The APE is defined as the boundary of the land to be released and includes the anticipated disturbance area of the project. The APE is located primarily on Airport property and extends onto Atlantic Boulevard, as shown in **Figure 4**.

Historic and Archaeological Resources in the APE

NRHP Search – There are no resources listed on the National Register of Historic Places within or adjacent to the APE. According to the National Park Service, the nearest resource listed on the National Register is the Timucuan Ecological and Historic Preserve located approximately three miles to the northeast of the APE.

Cultural Resource Assessment Survey – A CRAS was completed in December 2021. A copy of the CRAS can be provided upon request. A review of the Florida Master Site File (FMSF) and NRHP revealed that one historic resource has been previously recorded within the APE (8DU19043). The Craig Airfield Designed Historic Landscape (8DU19043) was first recorded during *A Cultural Resource Reconnaissance Survey of the Eagle Aviation Hangars at Craig Airport, Duval County, Florida* conducted by Environmental Services, Inc. in 2007. Approximately eight acres of the ca. 1943 naval airfield were documented during this survey. The portion of the resource surveyed in 2007 was not original to the airfield and was comprised of concrete landing pads utilized by the National Guard from 1977 and 2002, rather than during WWII. As such, because the entire airfield was not surveyed, Craig Airfield (8DU19043) was considered to have insufficient information for determining NRHP eligibility by the State Historic Preservation Officer (SHPO) in 2007. In addition, the Sandalwood Community Canal (8DU22593) was previously recorded outside, but within the vicinity of, the APE. The ca. 1955 drainage canal was recorded during the *Technical Memorandum: Cultural Resource Assessment Survey Update for the Interstate 295 (State Road 9A) Ponds from the Dames Point Bridge to State Road 202 (Butler Boulevard), Duval County, Florida* and determined ineligible for listing in the NRHP by the SHPO in 2020.

Given the results of background research and field survey, which included a total of 41 shovel tests, no archaeological sites were discovered. As a result of the historic/architectural field survey, one previously recorded historic resource (8DU19043) was identified and re-evaluated and one historic resource (8DU23022) was newly identified, recorded, and evaluated. Overall, the newly identified historic resource (8DU23022) is a common example of a drainage canal found throughout the region and the State of Florida and it is not a significant embodiment of a type, period, or method of construction. Furthermore, background research did not reveal any historic associations with significant persons and/or events that are directly connected to the drainage canal. As a result, 8DU23022 does not appear eligible for listing in the NRHP, either individually or as part of a historic district. Based on the overall lack of historic resources

associated with the airfield within the APE, there remains insufficient information for determining the NRHP eligibility of the Craig Airfield (8DU19043). Therefore, the proposed project will have no adverse effect on the Craig Airfield Designed Historic Landscape (8DU19043).

Consultation

Based on previous and current site conditions, a review of the Proposed Project, background research, and the CRAS, the FAA's preliminary determination is the undertaking would not affect historic properties or cultural resources. However, we are interested in knowing if the Miccosukee Tribe of Indians of Florida has any concerns or interests related to the Proposed Project and would like to enter into Section 106 consultation.

We welcome your knowledge and opinion on the APE, whether additional study is needed for this undertaking, and the effects of the Proposed Project. For your information, the Florida SHPO has already reviewed the project and concurred with the FAA's determination that the project would have no effect on historic resources (**Attachment 1**). FAA appreciates your review of the enclosed project information and response within 30 days of receipt of this letter. Please direct correspondence and questions to me at (407) 487-7297 or via email (preferred) at amy.m.reed@faa.gov.

Sincerely,

AMY MARIE REED

Digitally signed by AMY MARIE REED
Date: 2023.05.01 11:40:42 -04'00'

Amy Reed, CWB
Environmental Protection Specialist

Attachments

Figure 1: Airport Location
Figure 2: Project Location
Figure 3: Proposed Project
Figure 4: Area of Potential Effect (APE)

Attachment 1: Letter from SHPO

Cc: Gaby Elizondo, Landrum & Brown
Lauren Scott, Airport Planner

U.S. Department
of Transportation
**Federal Aviation
Administration**

Orlando Airports District Office
8427 South Park Circle, Suite 524
Orlando, FL 32819
Phone: (407) 487-7220
Fax: (407) 487-7135

May 1, 2023

[Sent via e-mail to: lhaikey@pci-nsn.gov]

Larry D. Haikey
Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road
Atmore, AL 36502

RE: Notice and Invitation for Consultation
102-acre Non-Aviation Development
Jacksonville Executive at Craig Airport (Duval County, Florida)

Dear Mr. Haikey,

The Jacksonville Aviation Authority (JAA) has proposed the release of federal obligations on approximately 102 acres of land at Jacksonville Executive at Craig Airport (CRG). Upon release of the land, JAA would lease the land to a private developer who would construct an industrial distribution/warehouse facility (see **Figure 1, *Airport Location*** and **Figure 2, *Project Location***). The Federal Action associated with the project is an "undertaking" subject the National Historic Preservation Act (Section 106) and its implementing regulations at 36 CFR Part 800. The federal action is also subject to the National Environmental Policy Act (NEPA). This letter is intended to inform you of the project, initiate project-specific Section 106 consultation between the FAA and the Poarch Band of Creek Indians and solicit any comments you may have on the proposed undertaking.

Proposed Undertaking

The Proposed Project includes the construction and operation of an industrial distribution/warehouse facility as detailed below and shown in **Figure 3, *Proposed Project***.

- Clearing, grading, and tree removal of approximately 65 acres;
- Construction of an industrial distribution building approximately 180,825 square feet;
- Construction of parking lots to accommodate 365 automobiles, 835 delivery vans, and 13 tractor trailers;
- Two (2) new access roads; including intersection improvements at Atlantic Blvd.
- Construction of stormwater facilities; and
- Relocation of fencing.

All project components will occur on airport property. The Proposed Project will not increase annual aircraft operations or aircraft-related noise. No protected species will be impacted, but there will be approximately 2.85 acres of wetland impacts that will be mitigated in an off-site wetland mitigation bank. Any impacts associated with the Proposed Project are presently being evaluated in an Environmental Assessment (EA) that is being prepared for the project.

Area of Potential Effect

The proposed undertaking is located on the south side of the Airport property, with access to Atlantic Boulevard. The APE is defined as the boundary of the land to be released and includes the anticipated disturbance area of the project. The APE is located primarily on Airport property and extends onto Atlantic Boulevard, as shown in **Figure 4**.

Historic and Archaeological Resources in the APE

NRHP Search – There are no resources listed on the National Register of Historic Places within or adjacent to the APE. According to the National Park Service, the nearest resource listed on the National Register is the Timucuan Ecological and Historic Preserve located approximately three miles to the northeast of the APE.

Cultural Resource Assessment Survey – A CRAS was completed in December 2021. A copy of the CRAS can be provided upon request. A review of the Florida Master Site File (FMSF) and NRHP revealed that one historic resource has been previously recorded within the APE (8DU19043). The Craig Airfield Designed Historic Landscape (8DU19043) was first recorded during *A Cultural Resource Reconnaissance Survey of the Eagle Aviation Hangars at Craig Airport, Duval County, Florida* conducted by Environmental Services, Inc. in 2007. Approximately eight acres of the ca. 1943 naval airfield were documented during this survey. The portion of the resource surveyed in 2007 was not original to the airfield and was comprised of concrete landing pads utilized by the National Guard from 1977 and 2002, rather than during WWII. As such, because the entire airfield was not surveyed, Craig Airfield (8DU19043) was considered to have insufficient information for determining NRHP eligibility by the State Historic Preservation Officer (SHPO) in 2007. In addition, the Sandalwood Community Canal (8DU22593) was previously recorded outside, but within the vicinity of, the APE. The ca. 1955 drainage canal was recorded during the *Technical Memorandum: Cultural Resource Assessment Survey Update for the Interstate 295 (State Road 9A) Ponds from the Dames Point Bridge to State Road 202 (Butler Boulevard), Duval County, Florida* and determined ineligible for listing in the NRHP by the SHPO in 2020.

Given the results of background research and field survey, which included a total of 41 shovel tests, no archaeological sites were discovered. As a result of the historic/architectural field survey, one previously recorded historic resource (8DU19043) was identified and re-evaluated and one historic resource (8DU23022) was newly identified, recorded, and evaluated. Overall, the newly identified historic resource (8DU23022) is a common example of a drainage canal found throughout the region and the State of Florida and it is not a significant embodiment of a type, period, or method of construction. Furthermore, background research did not reveal any historic associations with significant persons and/or events that are directly connected to the drainage canal. As a result, 8DU23022 does not appear eligible for listing in the NRHP, either individually or as part of a historic district. Based on the overall lack of historic resources

associated with the airfield within the APE, there remains insufficient information for determining the NRHP eligibility of the Craig Airfield (8DU19043). Therefore, the proposed project will have no adverse effect on the Craig Airfield Designed Historic Landscape (8DU19043).

Consultation

Based on previous and current site conditions, a review of the Proposed Project, background research, and the CRAS, the FAA's preliminary determination is the undertaking would not affect historic properties or cultural resources. However, we are interested in knowing if the Poarch Band of Creek Indians has any concerns or interests related to the Proposed Project and would like to enter into Section 106 consultation.

We welcome your knowledge and opinion on the APE, whether additional study is needed for this undertaking, and the effects of the Proposed Project. For your information, the Florida SHPO has already reviewed the project and concurred with the FAA's determination that the project would have no effect on historic resources (**Attachment 1**). FAA appreciates your review of the enclosed project information and response within 30 days of receipt of this letter. Please direct correspondence and questions to me at (407) 487-7297 or via email (preferred) at amy.m.reed@faa.gov.

Sincerely,

AMY MARIE REED Digitally signed by AMY MARIE REED
Date: 2023.05.01 11:33:52 -04'00'

Amy Reed, CWB
Environmental Protection Specialist

Attachments
- Figure 1: Airport Location
- Figure 2: Project Location
- Figure 3: Proposed Project
- Figure 4: Area of Potential Effect (APE)

Attachment 1: Letter from SHPO

Cc: Gaby Elizondo, Landrum & Brown
Lauren Scott, Airport Planner

U.S. Department
of Transportation
**Federal Aviation
Administration**

Orlando Airports District Office
8427 South Park Circle, Suite 524
Orlando, FL 32819
Phone: (407) 487-7220
Fax: (407) 487-7135

May 1, 2023

[Sent via e-mail to: THPOCompliance@semtribe.com]

Mr. Bradley Mueller
Compliance Review Supervisor
Tribal Historic Preservation Office
Seminole Tribe of Florida
30290 Josie Billie Highway, PMB 1004
Clewiston, FL 33440

RE: Notice and Invitation for Consultation
102-acre Non-Aviation Development
Jacksonville Executive at Craig Airport (Duval County, Florida)

Dear Mr. Mueller,

The Jacksonville Aviation Authority (JAA) has proposed the release of federal obligations on approximately 102 acres of land at Jacksonville Executive at Craig Airport (CRG). Upon release of the land, JAA would lease the land to a private developer who would construct an industrial distribution/warehouse facility (see **Figure 1, *Airport Location*** and **Figure 2, *Project Location***). The Federal Action associated with the project is an “undertaking” subject the National Historic Preservation Act (Section 106) and its implementing regulations at 36 CFR Part 800. The federal action is also subject to the National Environmental Policy Act (NEPA). This letter is intended to inform you of the project, initiate project-specific Section 106 consultation between the FAA and the Seminole Tribe of Florida and solicit any comments you may have on the proposed undertaking.

Proposed Undertaking

The Proposed Project includes the construction and operation of an industrial distribution/warehouse facility as detailed below and shown in **Figure 3, *Proposed Project***.

- Clearing, grading, and tree removal of approximately 65 acres;
- Construction of an industrial distribution building approximately 180,825 square feet;
- Construction of parking lots to accommodate 365 automobiles, 835 delivery vans, and 13 tractor trailers;
- Two (2) new access roads; including intersection improvements at Atlantic Blvd.
- Construction of stormwater facilities; and
- Relocation of fencing.

All project components will occur on airport property. The Proposed Project will not increase annual aircraft operations or aircraft-related noise. No protected species will be impacted, but there will be approximately 2.85 acres of wetland impacts that will be mitigated in an off-site wetland mitigation bank. Any impacts associated with the Proposed Project are presently being evaluated in an Environmental Assessment (EA) that is being prepared for the project.

Area of Potential Effect

The proposed undertaking is located on the south side of the Airport property, with access to Atlantic Boulevard. The APE is defined as the boundary of the land to be released and includes the anticipated disturbance area of the project. The APE is located primarily on Airport property and extends onto Atlantic Boulevard, as shown in **Figure 4**.

Historic and Archaeological Resources in the APE

NRHP Search – There are no resources listed on the National Register of Historic Places within or adjacent to the APE. According to the National Park Service, the nearest resource listed on the National Register is the Timucuan Ecological and Historic Preserve located approximately three miles to the northeast of the APE.

Cultural Resource Assessment Survey – A CRAS was completed in December 2021. A copy of the CRAS can be provided upon request. A review of the Florida Master Site File (FMSF) and NRHP revealed that one historic resource has been previously recorded within the APE (8DU19043). The Craig Airfield Designed Historic Landscape (8DU19043) was first recorded during *A Cultural Resource Reconnaissance Survey of the Eagle Aviation Hangars at Craig Airport, Duval County, Florida* conducted by Environmental Services, Inc. in 2007. Approximately eight acres of the ca. 1943 naval airfield were documented during this survey. The portion of the resource surveyed in 2007 was not original to the airfield and was comprised of concrete landing pads utilized by the National Guard from 1977 and 2002, rather than during WWII. As such, because the entire airfield was not surveyed, Craig Airfield (8DU19043) was considered to have insufficient information for determining NRHP eligibility by the State Historic Preservation Officer (SHPO) in 2007. In addition, the Sandalwood Community Canal (8DU22593) was previously recorded outside, but within the vicinity of, the APE. The ca. 1955 drainage canal was recorded during the *Technical Memorandum: Cultural Resource Assessment Survey Update for the Interstate 295 (State Road 9A) Ponds from the Dames Point Bridge to State Road 202 (Butler Boulevard), Duval County, Florida* and determined ineligible for listing in the NRHP by the SHPO in 2020.

Given the results of background research and field survey, which included a total of 41 shovel tests, no archaeological sites were discovered. As a result of the historic/architectural field survey, one previously recorded historic resource (8DU19043) was identified and re-evaluated and one historic resource (8DU23022) was newly identified, recorded, and evaluated. Overall, the newly identified historic resource (8DU23022) is a common example of a drainage canal found throughout the region and the State of Florida and it is not a significant embodiment of a type, period, or method of construction. Furthermore, background research did not reveal any historic associations with significant persons and/or events that are directly connected to the drainage canal. As a result, 8DU23022 does not appear eligible for listing in the NRHP, either individually or as part of a historic district. Based on the overall lack of historic resources

associated with the airfield within the APE, there remains insufficient information for determining the NRHP eligibility of the Craig Airfield (8DU19043). Therefore, the proposed project will have no adverse effect on the Craig Airfield Designed Historic Landscape (8DU19043).

Consultation

Based on previous and current site conditions, a review of the Proposed Project, background research, and the CRAS, the FAA's preliminary determination is the undertaking would not affect historic properties or cultural resources. However, we are interested in knowing if the Seminole Tribe of Florida has any concerns or interests related to the Proposed Project and would like to enter into Section 106 consultation.

We welcome your knowledge and opinion on the APE, whether additional study is needed for this undertaking, and the effects of the Proposed Project. For your information, the Florida SHPO has already reviewed the project and concurred with the FAA's determination that the project would have no effect on historic resources (**Attachment 1**). FAA appreciates your review of the enclosed project information and response within 30 days of receipt of this letter. Please direct correspondence and questions to me at (407) 487-7297 or via email (preferred) at amy.m.reed@faa.gov.

Sincerely,

AMY MARIE REED

Digitally signed by AMY MARIE REED
Date: 2023.04.28 16:25:02 -04'00'

Amy Reed, CWB
Environmental Protection Specialist

Attachments
Figure 1: Airport Location
Figure 2: Project Location
Figure 3: Proposed Project
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Attachment 1: Letter from SHPO

Cc: Gaby Elizondo, Landrum & Brown
Lauren Scott, Airport Planner

Non-Aviation Development Environmental Assessment

Jacksonville Executive at Craig Airport

Airport Location

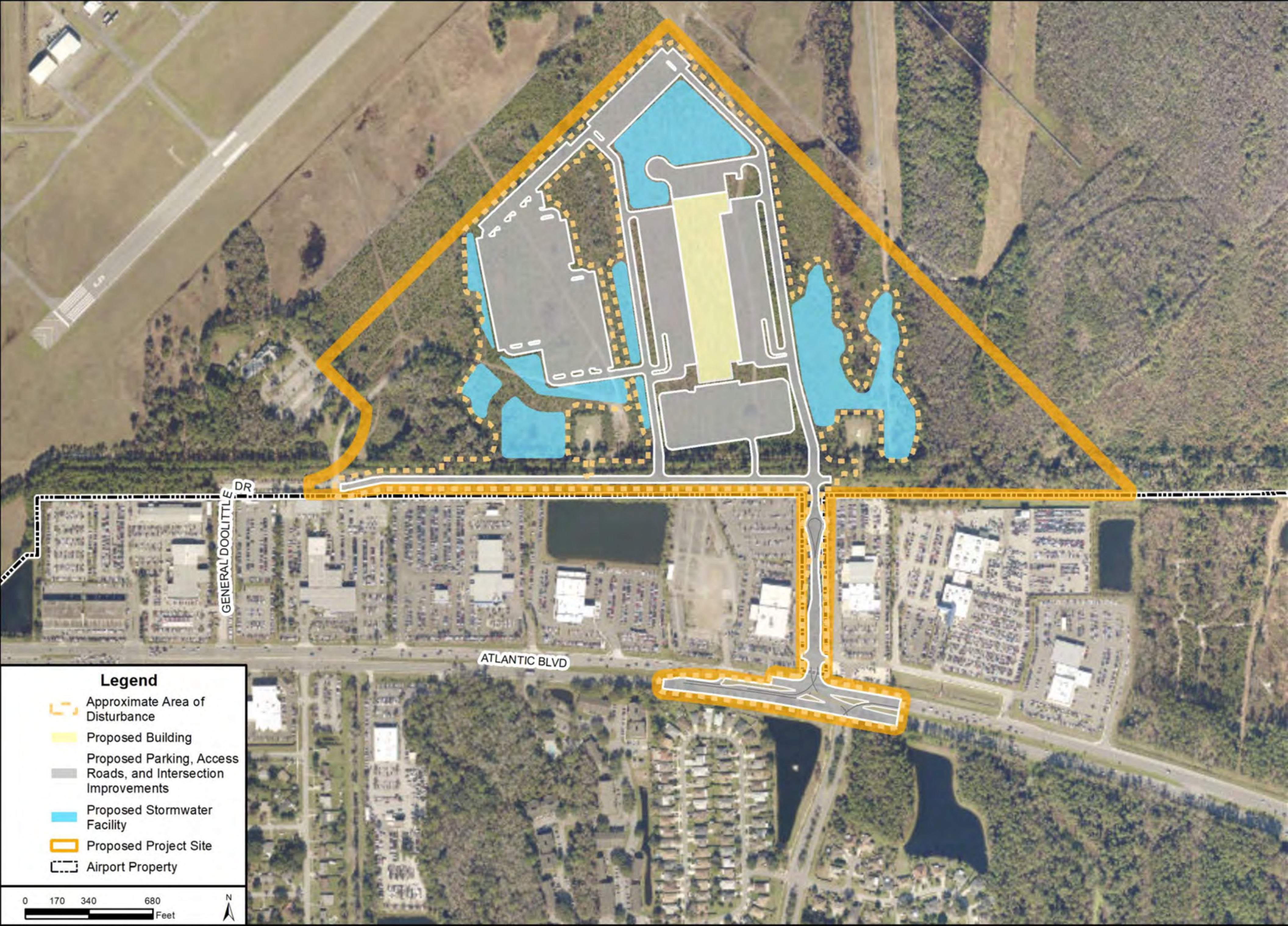
FIGURE 1

Non-Aviation Development Environmental Assessment

Jacksonville Executive at Craig Airport

Project Location

FIGURE 2

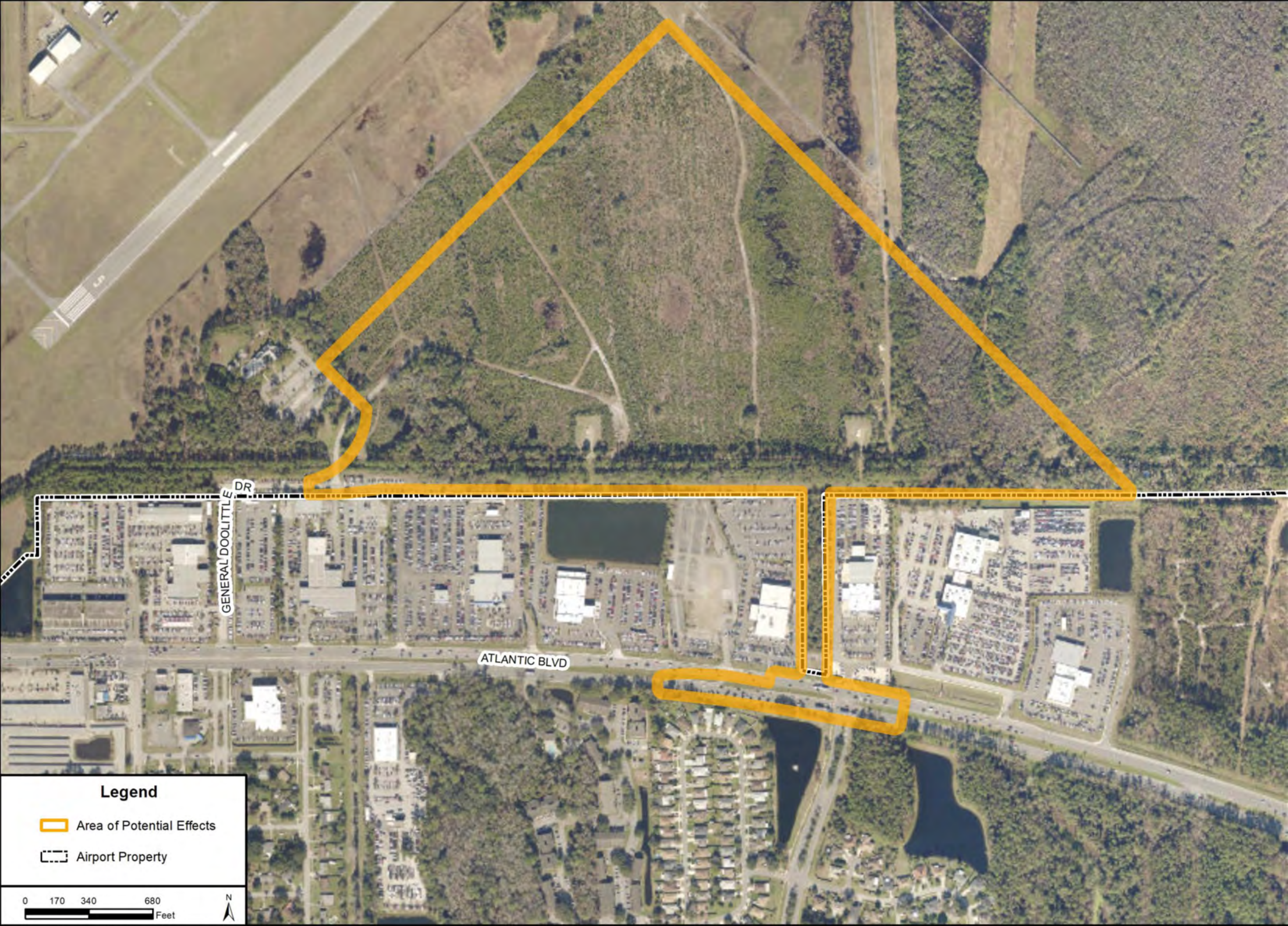


Non-Aviation Development Environmental Assessment

Jacksonville Executive at Craig Airport

Proposed Project

FIGURE 3



Non-Aviation Development Environmental Assessment

Jacksonville Executive at Craig Airport

Area of Potential Effects

FIGURE 4

RON DESANTIS
Governor

CORD BYRD
Secretary of State

March 30, 2023

Amy Reed, Environmental Protection Specialist
Federal Aviation Administration-FAA
Orlando Airports District Office-ADO
South Park Center
8427 South Park Circle – 5th Floor
Orlando, FL 32819

DHR Project File No.: 2023-1183-B Received by DHR: March 1, 2023
Cultural Resource Assessment Survey of the Jacksonville Executive Airport Property, Duval County, Florida

Dear Ms. Reed:

Our office reviewed the referenced project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations in 36 CFR Part 800: Protection of Historic Properties, and Chapters 267.061, Florida Statutes, and implementing state regulations, for possible effects on historic properties listed in, or eligible for, the National Register of Historic Places (NRHP), or otherwise of historical, architectural, or archaeological value. The project is subject to compliance with requirements for the Federal Aviation Administration.

In December 2021, Archaeological Consultants Inc. (ACI) conducted the above referenced Phase I cultural resource assessment survey (CRAS) on behalf of Landrum & Brown, Inc. ACI excavated 41 shovel tests, all of which were negative. Therefore, it is the professional opinion of ACI that the proposed undertaking will have no effect on any archaeological sites. As a result of the historical/architectural field survey, one previously recorded historic resource (8DU19043) was identified and re-evaluated and one historic resource (8DU23022) was newly identified, recorded, and evaluated. ACI determined that 8DU23022 does not appear eligible for listing in the NRHP, either individually or as part of a historic district. Recording and re-evaluating the entirety of the Craig Airfield Designed Historic Landscape (8DU19043) is beyond the scope of this project and as a result, only the portion contained within the APE has been documented. Based on the overall lack of historic resources associated with the airfield within the APE, ACI determined that there remains insufficient information for determining the NRHP eligibility of the Craig Airfield (8DU19043). Therefore, it is the professional opinion of ACI that the proposed project will have no adverse effect on the Craig Airfield Designed Historic Landscape (8DU19043).

Based on the information provided, our office concurs with the presented survey results and recommendations. We concur with the Corps determination of no adverse effect to historic properties listed, or eligible for listing, on the NRHP. Further, we find the submitted report complete and sufficient in accordance with Chapter 1A-46, Florida Administrative Code.

If you have any questions, please contact Michael DuBose, Historic Preservationist, by email at *Michael.DuBose@dos.myflorida.com* or telephone at 850.245.6342.

Sincerely,

Kelly L Chase
For

Alissa Slade Lotane
Director, Division of Historical Resources
& State Historic Preservation Officer

From: Bradley Mueller <bradleymueller@semtribe.com>
Sent: Thursday, June 22, 2023 11:21 AM
To: Reed, Amy M (FAA) <amy.m.reed@faa.gov>
Subject: RE: CRG | Jacksonville Executive at Craig Airport Industrial warehouse/distribution facility – Duval County, Florida

SEMINOLE TRIBE OF FLORIDA
TRIBAL HISTORIC PRESERVATION OFFICE

TRIBAL HISTORIC PRESERVATION OFFICE
SEMINOLE TRIBE OF FLORIDA
30290 JOSIE BILLIE HIGHWAY
PMB 1004
CLEWISTON, FL 33440
THPO PHONE: (863) 983-6549
FAX: (863) 902-1117
THPO WEBSITE: WWW.STOFTHPO.COM

June 22, 2023

Ms. Amy Reed
Environmental Protection Specialist
Federal Aviation Administration-FAA
Orlando Airports District Office-ADO
South Park Center
8427 South Park Circle, Suite 524
Orlando, FL 32819
Office: 407-487-7297
Mobile: 813-966-9410
Email: amy.m.reed@faa.gov

Subject: FAA - Jacksonville Executive at Craig Airport Industrial Warehouse/Distribution Facility, Duval County, Florida
THPO Compliance Tracking Number:
0034039

In order to expedite the THPO review process:

1. Please correspond via email and provide documents as attachments (a THPO FTP site is available for large files),
2. Please send all emails to THPOCompliance@semtribe.com,
3. Please reference the THPO Compliance Tracking Number if one has been assigned.

Dear Ms. Reed:

Thank you for contacting the Seminole Tribe of Florida Tribal Historic Preservation Office (STOF THPO) Compliance Section regarding the FAA - Jacksonville Executive at Craig Airport Industrial

Warehouse/Distribution Facility, Duval County, Florida. The STOF appreciates the FAA's assistance in protecting cultural resources the Tribe considers important.

The proposed undertaking does fall within the STOF Area of Interest. We have reviewed the documents that you provided and completed our assessment pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) as amended and its implementing regulations (36 CFR 800). We have no objections at this time however we would like to make the following comments/requests.

- Please update your records to show that Ms. Danielle Simon is now the Compliance Review Supervisor. Her email is: daniellesimon@semtribe.com. My title is now Compliance Specialist.

- Please update your records to show that Ms. Tina Osceola is now the Tribal Historic Preservation Officer and Director or the THPO Office. Her email is: tinaosceola@semtribe.com. And,

- Please continue to send NEPA and NHPA notifications or consultation requests or to: THPOCompliance@semtribe.com. This will help ensure that notifications/requests will reach the appropriate THPO staff in a timely manner.

Thank you again. Please notify our office if any archaeological, historical, and/or burial resources are inadvertently discovered during project implementation and feel free to contact us with any questions or concerns.

Respectfully,

Bradley M. Mueller

Bradley M. Mueller, MA
Compliance Review Specialist
STOF THPO, Compliance Section
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440
Fax: 863-902-1117

From: Reed, Amy M (FAA) <amy.m.reed@faa.gov>
Sent: Monday, May 1, 2023 3:09 PM
To: THPO Compliance <THPOCompliance@semtribe.com>
Cc: Lauren Scott <lauren.scott@flyjacksonville.com>; Gaby Elizondo <Gaby.Elizondo@landrumbrown.com>
Subject: CRG | Jacksonville Executive at Craig Airport Industrial warehouse/distribution facility – Duval County, Florida

Dear Mr. Mueller,

The Jacksonville Aviation Authority (Duval County, Florida) has requested approval from the Federal

Aviation Administration (FAA) to construct an industrial warehouse/distribution facility at the Jacksonville Executive at Craig Airport (CRG). The project will include approximately 65 acres of clearing and grading at the airport. The federal actions associated with the proposed development project require consultation under Section 106 of the National Historic Preservation Act. FAA appreciates your review of the project and letting us know if the Seminole Tribe of Florida has an interest in the project area and would like to participate in the Section 106 consultation process. Please see attachments for additional information.

Respectfully,
Amy Reed

Amy Reed
Environmental Protection Specialist
Federal Aviation Administration-FAA
Orlando Airports District Office-ADO
South Park Center
8427 South Park Circle, Suite 524
Orlando, FL 32819
T 407-487-7297 (Office)
T 813-966-9410 (Cell)
amy.m.reed@faa.gov

APPENDIX B

Air Quality

Jacksonville Aviation Authority

AIR QUALITY AND CLIMATE TECHNICAL REPORT

Jacksonville Executive at Craig Airport

MAY 2023

PREPARED FOR
JACKSONVILLE AVIATION AUTHORITY

PRESENTED BY
LANDRUM & BROWN, INCORPORATED

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1 Background

The Proposed Non-Aviation Development at Jacksonville Executive at Craig Airport (CRG or Airport) includes the lease and development of approximately 102 acres at CRG to a private developer. As part of the Proposed Project, JAA would lease the property at CRG to a private developer who would develop the site to accommodate an industrial distribution/warehouse building with associated parking areas. To support the operation of this development, new roadways would be constructed to connect the Proposed Project Site to Atlantic Boulevard. Construction is scheduled to begin June 2023 and would be completed in approximately 14 months.

The proposed development would consist of:

- Clearing, grading, and tree removal of approximately 65 acres;
- Construction of an industrial distribution building approximately 180,825 square feet;
- Construction of parking lots to accommodate 365 automobiles, 835 delivery vans, and 13 trailers;
- New access road connecting to General Doolittle Drive;
- New access road connecting to Atlantic Boulevard, including associated intersection improvements;
- Construction of stormwater facilities; and
- Relocation of fencing.

2 Regulatory Setting

The NEPA provides for an environmental review process to disclose the potential impacts, including air quality, from a proposed federal action on the human environment. Per the United States Environmental Protection Agency (USEPA), NEPA's basic policy is to assure that all branches of government give proper consideration to the environment prior to undertaking any major federal action that significantly affects the environment. On a federal level, air quality is governed by the Clean Air Act (CAA) administered by the USEPA in coordination with state and local governments.

This air quality assessment was conducted in accordance with the guidelines provided in the most recent version of the FAA's *Aviation Emissions and Air Quality Handbook Version 3 Update 1*[1]; FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*; and FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures.*

2.1 National Ambient Air Quality Standards

The USEPA is the primary Federal agency responsible for regulating air quality. The USEPA implements the provisions of the Federal CAA. The CAA, including the 1990 Amendments, provides the establishment of standards and programs to evaluate, achieve, and maintain acceptable air quality in the United States. Under the CAA, the USEPA established a set of standards, or criteria, for six pollutants determined to be potentially harmful to human health and welfare.[2]

[1] Federal Aviation Administration, Aviation Emissions and Air Quality Handbook, Version 3 Update 1, January 2015.

[2] USEPA, CFR Title 40, Part 50 (40 CFR Part 50) National Primary and Secondary Ambient Air Quality Standards (NAAQS), July 2011.

The USEPA considers the presence of the following six criteria pollutants to be indicators of air quality:

- Carbon monoxide (CO);
- Ozone (O_3);
- Nitrogen dioxide (NO_2);
- Sulfur dioxide (SO_2).
- Particulate matter (PM_{10} and $PM_{2.5}$); and,
- Lead (Pb).

For each of the criteria pollutants, the USEPA established primary standards intended to protect public health, and secondary standards for the protection of public welfare, which captures factors such as preventing materials damage, preventing crop and vegetation damage, and assuring good visibility. The National Ambient Air Quality Standards for the criteria pollutants, known as the NAAQS, are summarized in **Table 1**. Areas of the country where air pollution levels consistently exceed these standards may be designated nonattainment by the USEPA.

A nonattainment area is a homogeneous geographical area (usually referred to as an air quality control region or airshed) that is in violation of one or more NAAQS and has been designated as nonattainment by the USEPA as provided for under the CAA. Each nonattainment area is required to have a State Implementation Plan (SIP), developed by the state that quantifies current conditions, projects future conditions through the date of prescribed attainment, and identifies mitigation measures that are to be used to bring the area back into attainment.

A maintenance area describes the air quality designation of an area previously designated nonattainment by the USEPA and subsequently re-designated attainment after emissions are reduced. Such an area remains designated as maintenance for a period up to 20 years at which time the state can apply for redesignation to attainment, provided that the NAAQS were sufficiently maintained throughout the maintenance period.

The CAA conformity regulations (40 CFR Part 93) apply only to areas designated as nonattainment or maintenance. Under these rules, a Federal agency shall not support, permit, or approve any action, which does not conform to an approved SIP.

2.2 Conformity

2.2.1 General Conformity

The General Conformity Rule under the CAA is conducted in three phases, depending on the extent of the proposed Federal action: (1) applicability, (2) evaluation, and (3) determination. The General Conformity Rule establishes minimum values, referred to as the *de minimis* thresholds, for the criteria and precursor pollutants[3] for the purpose of:

- Identifying Federal actions with project-related emissions that are clearly negligible (*de minimis*);
- Avoiding unreasonable administrative burdens on the sponsoring agency; and,
- Focusing efforts on key actions that would have potential for significant air quality impacts.

[3] Precursor pollutants are pollutants that are involved in the chemical reactions that form the resultant pollutant. Ozone precursor pollutants are NO_x and VOC, whereas $PM_{2.5}$ precursor pollutants include NO_x, VOC, SO_2, and ammonia (NH_3)

The Federal *de minimis* thresholds established under the CAA are given in **Table 2**.

TABLE 1, NATIONAL AMBIENT AIR QUALITY STANDARDS

AVERAGING TIME	LEVEL	FORM
Carbon Monoxide – Primary		
8 hour	9 ppm	Not to be exceeded more than once per year
1 hour	35 ppm	Not to be exceeded more than once per year
Lead – Primary and Secondary		
Rolling 3-month average	0.15 μg/m^3 (1)	Not to be exceeded
Nitrogen Dioxide – Primary		
1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
Nitrogen Dioxide – Primary and Secondary		
1 year	53 ppb (2)	Annual Mean
Ozone – Primary and Secondary		
8 hour	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Fine Particulate Matter - Primary		
1 year	12.0 μg/m^3	Annual mean, averaged over 3 years
Fine Particulate Matter - Secondary		
1 year	15.0 μg/m^3	Annual mean, averaged over 3 years
Fine Particulate Matter – Primary and Secondary		
24 hour	35 μg/m^3	98th percentile, averaged over 3 years
Coarse Particulate Matter – Primary and Secondary		
24 hour	150 μg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide - Primary		
1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
Sulfur Dioxide - Secondary		
3 hour`	0.5 ppm	Not to be exceeded more than once per year

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 μg/m3 as a calendar quarter average) also remain in effect.
(2) The level of the annual NO2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O3 standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked 1-hour (1979) and 8-hour (1997) O3 standards.
(4) The previous SO2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2)any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO2 standards or is not meeting the requirements of a SIP call under the previous SO2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.
Notes: ppm is parts per million; ppb is parts per billion, and µg/m3 is micrograms per cubic meter.
Source: USEPA, https://www.epa.gov/criteria-air-pollutants/naaqs-table Accessed January 2023

TABLE 2, FEDERAL *DE MINIMIS* THRESHOLDS

TYPE AND SEVERITY OF NONATTAINMENT AREA	TONS PER YEAR THRESHOLD
Ozone (VOC or NO_x)[1]	
Serious nonattainment	50
Severe nonattainment	25
Extreme nonattainment	10
Other areas outside an ozone transport region	100
Ozone (NO_x)[1]	
Marginal and moderate nonattainment inside an ozone transport regions[2]	100
Maintenance	100
Ozone (VOC)[1]	
Marginal and moderate nonattainment inside an ozone transport region[2]	50
Maintenance within an ozone transport region[2]	50
Maintenance outside an ozone transport region[2]	100
Carbon monoxide (CO)	
All nonattainment & maintenance	100
Sulfur dioxide (SO_2)	
All nonattainment & maintenance	100
Nitrogen dioxide (NO_2)	
All nonattainment & maintenance	100
Coarse particulate matter (PM_{10})	
Serious nonattainment	70
Moderate nonattainment and maintenance	100
Fine particulate matter ($PM_{2.5}$) (VOC, NO_x, NH_3, and SO_x)[3]	
All nonattainment and maintenance	100
Lead (Pb)	
All nonattainment and maintenance	25

1 The rate of increase of ozone emissions is not evaluated for a project-level environmental review because the formation of ozone occurs on a regional level and is the result of the photochemical reaction of NOx and VOC

in the presence of abundant sunlight and heat. Therefore, USEPA considers the increasing rates of NOx and VOC emissions to reflect the likelihood of ozone formation on a project level.

2 An OTR is a single transport region for ozone, comprised of the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and the Consolidated Metropolitan Statistical Area that includes the District of Columbia.

3 For the purposes of General Conformity applicability, VOCs and NH3 emissions are only considered PM2.5 precursors in nonattainment areas where either a state or USEPA has made a finding that the pollutants significantly contribute to the PM2.5 problem in the area. In addition, NOx emissions are always considered a PM2.5 precursor unless the state and USEPA make a finding that NOx emissions from sources in the state do not significantly contribute to PM2.5 in the area. Refer to 74 FR 17003, April 5, 2006.

Notes: CFR Title 40, Protection of the Environment Part 93.153
USEPA defines de minimis as emissions that are so low as to be considered insignificant and negligible. Volatile organic compounds (VOC); Nitrogen oxides (NOx); Ammonia (NH3); Sulfur oxides (SOx).

Sources: USEPA, 40 CFR Part 93.153(b)(1) & (2).

The *de minimis* rates vary depending on the severity of the nonattainment area and further depend on whether the general Federal action is located inside an ozone transport region.[4] An evaluation relative to the General Conformity Rule (the Rule), published under 40 CFR Part 93,[5] is applicable to general Federal actions that would cause emissions of the criteria or precursor pollutants, and are:

- Federally-funded or Federally-approved;
- Not a highway or transit project;[6]
- Not identified as an exempt project[7] under the CAA;
- Not a project identified on the approving Federal agency's Presumed to Conform list;[8] and,
- Located within a nonattainment or maintenance area.

When an action requires evaluation under the General Conformity regulations, the net total direct and indirect emissions due to the Federal action may not equal or exceed the relevant *de minimis* thresholds unless:

- An analytical demonstration is provided that shows the emissions would not exceed the NAAQS; or
- Net emissions are accounted for in the State Implementation Plan (SIP) planning emissions budget; or

4 The ozone transport region is a single transport region for ozone (within the meaning of Section 176A(a) of the CAA), comprised of the States of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and the Consolidated Metropolitan Statistical Area that includes the District of Columbia, as given at Section 184 of the CAA.

5 USEPA, 40 CFR Part 93, Subpart B, Determining Conformity of General Federal Actions to state or Federal Implementation Plans, July 1, 2006.

6 Highway and transit projects are defined under Title 23 United States Code and the Federal Transit Act.

7 The Proposed Project is not listed as an action exempt from a conformity determination pursuant to 40 CFR § 93.153(c). An exempt project is one that the USEPA has determined would clearly have no impact on air quality at the facility, and any net increase in emissions would be so small as to be considered negligible.

8 The provisions of the CAA allow a Federal agency to submit a list of actions demonstrated to have low emissions that would have no potential to cause an exceedance of the NAAQS and are presumed to conform to the CAA conformity regulations. This list would be referred to as the "Presumed to Conform" list. The FAA Presumed to Conform list was published in the Federal Register on February 12, 2007 (72 FR 6641-6656) and includes airport projects that would not require evaluation under the General Conformity regulations.

- Net emissions are otherwise accounted for by applying a solution prescribed under 40 CFR Part 93.158.

Conformity to the *de minimis* thresholds is relevant only with regard to those pollutants and the precursor pollutants for which the area is nonattainment or maintenance. If the General Conformity evaluation for this air quality assessment were to show that any of the applicable thresholds were equaled or exceeded, further, more detailed analysis to demonstrate conformity would be required, which is referred to as a General Conformity Determination. Conversely, if the General Conformity evaluation were to show that none of the relevant thresholds were equaled or exceeded, the project would be presumed to conform to the applicable State of Florida SIPs and no further analysis would be required under the CAA.

2.2.2 Transportation Conformity

Although airport improvement projects are usually considered under the General Conformity regulations, there can be elements of a Federal action or its alternatives that may require an analysis to demonstrate Transportation Conformity, such as actions relating to transportation plans, programs, projects developed, funded, or approved under Title 23 United States Code (U.S.C.) or the Federal Transit Act (FTA),[9] or involve Federal highways. In such cases, the sponsoring Federal agency would be required to coordinate with the Federal Highway Administration (FHWA), the state Department of Transportation (DOT), and the local metropolitan planning organization (MPO) to assist in completing a Transportation Conformity evaluation. Furthermore, as with General Conformity, Transportation Conformity regulations apply only to Federal actions located within a nonattainment or maintenance area. The Proposed Action under consideration at CRG would not be developed, funded, or approved by the FHWA or FTA. Therefore, the Transportation Conformity regulations would not apply.

2.2.3 Indirect Source Review

Some states require an air quality review when a Federal action has the potential to cause an increase in net emissions from indirect sources. Indirect sources cause emissions that occur later in time or are farther removed from the Federal action. Depending on the state, indirect sources may be identified as motor vehicles on highways, parking at sports and entertainment facilities, or an increase in aircraft operations. The state requirement may be referred to as the indirect source review (ISR) and each state requiring an ISR sets thresholds for increased operation of the indirect sources. When a Federal action has the potential to exceed these thresholds, an air quality review is required to assess the character and impact of the additional emissions and determine whether a permit is required, which is separate from the analyses required under NEPA or the CAA.

2.3 Federal Attainment Status

The Airport is located in Duval County. In the past, Duval County was designated as nonattainment for the 1979 1-hour ozone standard. However, on March 6, 1995, the USEPA determined the area had attained the ozone standard and was redesignated to maintenance. Furthermore, the area was redesignated to attainment on June 15, 2005 when the 1979 1-hour ozone standard was revoked. As such, the area is currently in attainment for all criteria pollutants. Therefore, it can be asserted that no conformity requirements are required.

[9] USEPA, 40 CFR Part 93.153, Applicability, July 1, 2006.

2.4 Air Quality Permits

In order to be in compliance with Federal or state requirements, a proposed project may be required to obtain certain air quality permits before construction or implementation can occur. An air quality permit for the following activities would be obtained prior to construction of any of the alternatives.

- Construction activities which may require material (sand, gravel, etc.) handling
- Coating and/or painting of buildings and pavement

Additionally, the JAA/developer will apply for and receive all necessary permits prior to construction of any regulated emission source as required by the local jurisdiction.

2.5 Air Quality Monitoring in Region

The Florida Department of Environmental Protection's Division of Air Resource Management maintains air quality monitoring sites that measure concentrations of criteria air pollutants.[10] The network is comprised of more than 177 monitors at 90 sites strategically positioned across the state. Eight monitors are located in the Jacksonville area, listed below. These sites measure carbon monoxide, nitrous oxides, ozone, sulfur oxides, fine particulate matter, and coarse particulate matter to assess compliance with the NAAQS. Duval County monitoring data continues to demonstrate compliance with all federal, health-based air quality standards and overall improvement in air quality.

- Kooker Park (ID 12-031-0032)
- Sheffield Elementary (ID 12-031-0077)
- Cedar Bay Rd (ID 12-031-0081)
- Mandarin (ID 12-031-0098)
- Sunny Acres Park (ID 12-031-0099)
- Mayo Clinic (ID 12-031-0100)
- Cisco Drive (ID 12-031-0106)
- Pepsi Place (ID 12-031-0108)

3 Methodology

The impacts to air quality due to the Proposed Project were determined in accordance with the guidelines provided in the Federal Aviation Administration (FAA), *Aviation Emissions and Air Quality Handbook Version 3 Update 1*,[11] and FAA Order 5050.4B,[12] *NEPA Implementing Instructions for Airport Actions*, which together with the guidelines of FAA Order 1050.1F,[13] *Environmental Impacts: Policies and Procedures*, constitute compliance with all the relevant provisions of NEPA and the CAA.

3.1 Construction Activity

Short-term temporary air quality impacts would be caused by construction of the Proposed Project, which is anticipated to begin June 2023 and would be completed in approximately 14 months.

10 Florida Department of Environmental Protection, Division of Air Resource Management, 2021 Annual Ambient Air Monitoring Network Plan, June 2021.
11 FAA, Aviation Emissions and Air Quality Handbook Version 3 Update 1, January 2015.
12 FAA Order 5050.4B, NEPA Implementing Instructions for Airport Actions, April 28, 2006.
13 FAA Order 1050.1F, Environmental Impacts: Policies and Procedures, July 16, 2015.

The construction emissions inventory was developed using the Airport Construction Emissions Inventory Tool (ACEIT) and the USEPA's Motor Vehicle Emissions Simulator version 3 (MOVES3).

The ACEIT was developed by the Transportation Research Board (TRB) to assist airports and other stakeholders in developing airport construction emissions inventories. The ACEIT was used to estimate construction equipment utilization. MOVES was developed by the USEPA and is an emission modeling system that estimates emission factors for construction equipment specific to Duval County. The two tools were used in conjunction to estimate construction emissions.

3.2 Operational Activity

Long-term operational air quality impacts would be caused by implementation of the Proposed Project which would result in an increase in motor vehicle activity. The Proposed Project is anticipated to result in an increase of approximately 1,662 passenger car, 64 truck, and 932 delivery van daily trips per day. Motor vehicle emissions were estimated using MOVES3.

3.3 Emissions Inventory

The estimated construction and operational emissions are presented in **Table 3**.

TABLE 3, ANNUAL CRITERIA POLLUTANT EMISSIONS INVENTORY

EMISSION SOURCES	CO (ST)	VOC (ST)	NO_X (ST)	SO_X (ST)	PM_{10} (ST)	$PM_{2.5}$ (ST)
2023						
Construction	18.4	0.5	5.2	0.0	10.6	0.5
2023 Subtotal	*18.4*	*0.5*	*5.2*	*0.0*	*10.6*	*0.5*
2024						
Construction	6.4	0.5	4.9	0.0	2.9	0.6
Operation	2.2	0.2	0.9	0.0	0.0	0.0
2024 Subtotal	*8.5*	*0.6*	*5.8*	*0.0*	*2.9*	*0.6*
Federal de minimis Threshold	*100*	*100*	*100*	*100*	*100*	*100*

Note: ST: short tons, CO: carbon monoxide, VOC: volatile organic compounds, NO_x: nitrogen oxides, SO_x: sulfur oxides, PM_{10}: particulate matter less than 10 microns in diameter, $PM_{2.5}$: particulate matter less than 2.5 microns in diameter
Total emissions may not sum exactly due to rounding.

Source: Landrum & Brown analysis using the Airport Construction Emissions Inventory Tool (ACEIT) and the USEPA's Motor Vehicle Emissions Simulator version 3 (MOVES3), 2022.

Although Duval County is in attainment for all criteria pollutants, the emissions inventory was compared to the Federal *de minimis* threshold to evaluate if the Proposed Project has the potential to create a new violation of the NAAQS. As presented in Table 3, the Proposed Project would not cause an increase in air emissions above the *de minimis* thresholds. Therefore, it can be asserted that the Proposed Project would conform to the SIP and the CAA and would not have the potential to create any new violation of the NAAQS, delay the attainment of any NAAQS, nor increase the frequency or severity of any existing violations of the NAAQS. As such, no adverse impact on local or regional air quality is anticipated by the construction and operation of the Proposed Project. No further analysis or reporting is required under the CAA or NEPA.

While the construction of the Proposed Project would be expected to contribute to fugitive dust in and around the construction site, JAA/developer would ensure that all possible measures would be taken to reduce fugitive dust emissions by adhering to guidelines included in FAA Advisor Circular 150/5370-10H, *Standard Specifications for Construction of Airports*, including Item C-102, *Temporary Air and Water Pollution, Soil Erosion and Siltation Control*.[14] Methods of controlling dust and other airborne particles will be implemented to the maximum possible extent and may include, but not limited to, the following:

- Exposing the minimum area of erodible earth.
- Applying temporary mulch with or without seeding.
- Using water sprinkler trucks.
- Using covered haul trucks.
- Using dust palliatives or penetration asphalt on haul roads.
- Using plastic sheet coverings.

4 Climate

GHGs are gases that trap heat in the earth's atmosphere. The primary GHGs which will be the focus of this assessment include the following:

- **Carbon dioxide (CO_2)**, which enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), agriculture, irrigation, and deforestation, as well as the manufacturing of cement.
- **Methane (CH_4)**, which is emitted through the production and transportation of coal, natural gas, and oil, as well as from livestock. Other agricultural activities influence methane emissions as well as the decay of waste in landfills.
- **Nitrous oxide (N_2O)**, which is released most often during the burning of fuel at high temperatures. This greenhouse gas is caused mostly by motor vehicles, which also include non-road vehicles, such as those used for agriculture.

Two key ways in which these GHGs differ from each other are their ability to absorb energy and how long they stay in the atmosphere. The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases by converting each gas amount to a carbon dioxide equivalent (CO_2E).[15] GWPs provide a common unit of measure, which allows for one emission estimate of the different GHGs. GWPs based on a 100-year period provided in the FAA's *Aviation Emissions and Air Quality Handbook Version 3 Update 1* and based on the Intergovernmental Panel on Climate Change (IPCC), Fifth Assessment Report (AR5) are used in this evaluation. CO_2 has a GWP of one (1) because it is the gas used as the reference point. Methane does not last as long in the atmosphere as CO_2 however it absorbs much more energy. Therefore, one ton of methane has 28 times more heat capturing potential than one ton of carbon dioxide.[16] The amount of methane emissions would be multiplied by 28 to determine its CO_2E value. Nitrous oxides lasts in the

[14] FAA Advisory Circular 150/5370-10H, Standard Specifications for Construction of Airports, including Item C-102, Temporary Air and Water Pollution, Soil Erosion and Siltation Control, December 21, 2018.

[15] USEPA, 2017, Understanding Global Warming Potentials. https://www.epa.gov/ghgemissions/understanding-global-warming-potentials, Accessed August 2017.

[16] Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5), November 2014. IPCC presents GWPs as 1 for CO_2, 28 for CH_4, and 265 for N_2O.

atmosphere far longer than CO_2. The amount of nitrous oxides emissions would be multiplied by 265 to determine its CO_2E value.[17]

4.1 Climate Environmental Consequences

Although there are no federal standards for aviation-related GHG emissions, it is well established that GHG emissions can affect climate.[18] The Council on Environmental Quality (CEQ) has indicated that climate should be considered in NEPA analyses. The following provides an estimate of GHG emissions for each alternative. This report used the carbon dioxide equivalent (CO_2E) method to show relative impacts on climate change of different chemical species. The resulting CO_2E is provided for information only as no federal NEPA standard for the significance of GHG emissions from individual projects on the environment has been established. **Table 4** provides the net CO_2E emissions inventory for the construction and operational activities previously discussed in this document.

TABLE 4, ANNUAL GHG EMISSIONS INVENTORY

YEAR	CO_2E
2022 (Construction)	*5,712.2*
2023 (Construction and Operation)	*4,074.0*

Note: Numbers may not sum due to rounding.
Source: Landrum & Brown analysis using the Airport Construction Emissions Inventory Tool (ACEIT) and the USEPA's Motor Vehicle Emissions Simulator version 3 (MOVES3), 2022

17 Ibid.
18 See Massachusetts v. E.P.A., 549 U.S. 497, 508-10, 521-23 (2007).

ATTACHMENT 1, DESCRIPTION OF POLLUTANTS

Ozone (O_3) - Ozone is a pollutant which is not directly emitted, rather, ozone is formed in the atmosphere through photochemical reaction with nitrogen oxides (NO_X), volatile organic compounds (VOC), sunlight, and heat. It is the primary constituent of smog and problems can occur many miles away from the pollutant sources.

People with lung disease, children, older adults, and people who are active can be affected when ozone levels are unhealthy. Numerous scientific studies have linked ground-level ozone exposure to a variety of problems, including:

- lung irritation that can cause inflammation much like a sunburn;
- wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities;
- permanent lung damage to those with repeated exposure to ozone pollution; and
- aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis.

Carbon Monoxide (CO) - Carbon monoxide is a colorless, odorless gas primarily associated with the incomplete combustion of fossil fuels in motor vehicles. Carbon monoxide combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High carbon monoxide concentrations can lead to headaches, aggravation of cardiovascular disease, and impairment of central nervous system functions. Carbon monoxide concentrations can vary greatly over comparatively short distances. Relatively high concentrations are typically found near crowded intersections, along heavily used roadways carrying slow moving traffic, and at or near ground level. Even under the most severe meteorological and traffic conditions, high concentrations of carbon monoxide are limited to locations within a relatively short distance of heavily traveled roadways. Overall carbon monoxide emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973.

Volatile Organic Compound (VOC) – Volatile Organic Compounds are gases that are emitted from solids or liquids, such as stored fuel, paint, and cleaning fluids. VOCs include a variety of chemicals, some which can have short and long-term adverse health effects. As previously stated, VOCs are precursor pollutants that react with heat, sunlight and nitrogen oxides (NO_X) to form ozone (O_3). VOC can also mix with other gases to form particulate matter $PM_{2.5}$ as referenced below.

Nitrogen Dioxide (NO_2) - Nitrogen gas, normally relatively inert (unreactive), comprises about 80% of the air. At high temperatures (i.e., in the combustion process) and under certain other conditions it can combine with oxygen, forming several different gaseous compounds collectively called nitrogen oxides (NO_x). Nitric oxide (NO) and nitrogen dioxide (NO_2) are the two most important compounds. Nitric oxide is converted to nitrogen dioxide in the atmosphere. Nitrogen dioxide (NO_2) is a red-brown pungent gas. Motor vehicle emissions are the main source of NO_x in urban areas.

Nitrogen dioxide is toxic to various animals as well as to humans. Its toxicity relates to its ability to form nitric acid with water in the eye, lung, mucus membrane and skin. In animals, long-term exposure to nitrogen oxides increases susceptibility to respiratory infections lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO_2 can suffer lung irritation and potentially, lung damage. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

While the NAAQS only addresses NO_2, NO and the total group of nitrogen oxides is of concern. NO and NO_2 are both precursors in the formation of ozone and secondary particulate matter. Because of this and that NO emissions largely convert to NO_2, NO_x emissions are typically examined when assessing potential air quality impacts.

Sulfur Dioxide (SO_2) - Sulfur oxides (SO_x) constitute a class of compounds of which sulfur dioxide (SO_2) and sulfur trioxide (SO_3) are of greatest importance. SO_2 is commonly expressed as SO_X since it is a larger subset of sulfur dioxides (SO_2). SO_2 is a colorless gas that is typically identified as having a strong odor and is formed when fuel containing sulfur, like coal, oil and jet fuel, is burned. SO_2 combines easily with water vapor, forming aerosols of sulfurous acid (H_2SO_3), a colorless, mildly corrosive liquid. This liquid may then combine with oxygen in the air, forming the even more irritating and corrosive sulfuric acid (H_2SO_4). Peak levels of SO_2 in the air can cause temporary breathing difficulty for people with asthma who are active outdoors. Longer-term exposures to high levels of SO_2 gas and particles cause respiratory illness and aggravate existing heart disease.

Particulate Matter (PM_{10} and $PM_{2.5}$) - Particulate matter includes both aerosols and solid particles of a wide range of size and composition. PM_{10} is considered coarse particles with a diameter of 10 micrometers or less, and $PM_{2.5}$, fine particles with a diameter of 2.5 micrometers or less. Emissions of $PM_{2.5}$ are a subset of emissions of PM_{10}. Particulate matter can be any particle of these sizes, including dust, dirt, and soot. Smaller particulates are of greater concern because they can penetrate deeper into the lungs than large particles.

$PM_{2.5}$ is directly emitted in combustion exhaust and formed from atmospheric reactions between various gaseous pollutants including nitrogen oxides (NO_x) sulfur oxides (SO_x) and volatile organic compounds (VOC). PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or the resuspension of dusts, most typically through construction activities and vehicular movements. $PM_{2.5}$ can remain suspended in the atmosphere for days and weeks and can be transported over long distances. PM_{10} generally settles out of the atmosphere rapidly and is not readily transported over large distances.

The principal health effect of airborne particulate matter is on the respiratory system. Short-term exposures to high $PM_{2.5}$ levels are associated with premature mortality, increased hospital admissions, and emergency room visits. Long-term exposures to high $PM_{2.5}$ levels are associated with premature mortality and development of chronic respiratory disease.

Carbon Dioxide (CO_2) - Carbon dioxide is a colorless, odorless gas produced through the incomplete combustion of fossil fuels. Carbon dioxide is considered to be the most significant GHG that traps heat in the earth's atmosphere.

Carbon Dioxide Equivalent (CO_2E) - The CO_2E method is a way to show relative impacts on climate change of different chemical species, including both naturally occurring and man-made greenhouse gases such as CO_2, water vapor (H_2O), methane (CH_4), and nitrous oxide (N_2O). These different chemical species that are emitted have a different effect on climate known as Global Warming Potential

(GWP). Specifically, it is a measure of how much energy the emission of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of CO_2. The CO_2E method accounts for each GHG's GWP in order to represent the relative impacts on climate change by different chemical species.

Lead (Pb) - Lead is a stable compound, which persists and accumulates both in the environment and in animals. In humans, it affects the blood forming or hematopoletic, the nervous, and the renal systems. In addition, lead has been shown to affect the normal functions of the reproductive, endocrine, hepatic, cardiovascular, immunological, and gastrointestinal systems, although there is significant individual variability in response to lead exposure. Since 1975, lead emissions have been in decline due in part to the introduction of catalyst-equipped vehicles, and decline in production of leaded gasoline. In general, an analysis of lead is limited to projects that emit significant quantities of the pollutant (i.e. lead smelters) and are generally not applied to transportation projects.

APPENDIX C

Biological Resources

Technical Memorandum	
RE: JaxEx Wildlife Assessment Duval County, Florida	ERS Job No.: 21209
To: Ms. Gaby Elizondo, Landrum & Brown	
From: Gabrielle Allerton, Environmental Resource Solutions, A Division of SES Energy Services LLC	Date: 10 March 2022

INTRODUCTION

This technical memorandum presents the results of a wildlife and habitat assessment on the 105-acre± parcel located southeast of Runway 5/23 on Jacksonville Executive at Craig Airport (CRG) property, Duval County, Florida. The purpose of the assessment was to conduct a protected species survey and habitat assessment on the referenced parcel (Exhibit 1, Appendix A).

EXISTING ENVIRONMENTAL CONDITIONS

Soils

Mapped soil types within the project area are depicted on Exhibit 2 (Appendix A) and are summarized below. Soil classifications are taken from *Soil Survey of Duval County, Florida* (USDA-NRCS, 1985).

(22) Evergreen-Wesconnett complex, depressional
(24) Hurricane and Ridgewood soils
(32) Leon fine sand
(69) Urban land
(81) Stockade fine sandy loam ,depressional

Land Use/Cover

All habitats and land uses within the project area were inspected and classified utilizing FDOT's *Florida Land Use, Cover and Forms Classification System* (FLUCFCS, 1999). Land uses mapped within the project area are described below, and their classification and approximate extents are depicted on Exhibit 3 (Appendix A).

Uplands

On-site uplands are dominated by a canopy of planted slash pine (*Pinus elliottii*), live oak (*Quercus virginiana*), myrtle oak (*Quercus myrtifolia*), and red cedar (*Juniperus virginiana*). Subcanopy species include gallberry (*Ilex coriacea*), saw palmetto (*Serenoa repens*), rusty lyonia (*Lyonia ferruginea*), shiny blueberry (*Vaccinium myrsinites*), wax myrtle (*Morella cerifera*), and winged sumac (*Rhus copallinum*). Groundcover is primarily comprised of bracken fern (*Pteridium aquilinum*), dog fennel (*Eupatorium capillifolium*), blackberry (*Rubus pensilvanicus*), and bluestem (*Andropogon virginicus*). There is an existing building and associated parking lot located in the southwest corner of the project area. Various access roads exist throughout the project area that provide airport personnel easy access to this area of CRG.

Wetlands and Surface Waters

Wetlands within the project area were identified and classified using definitions and guidelines contained in the FDOT's FLUCFCS Handbook (1999). The USACE Wetland Delineation Manual (1987) and its regional supplements, the Florida Wetlands Delineation Manual (Gilbert, et al., 1995), and several field guides aided in the identification of project wetlands. The attributes of the three parameters of vegetative composition, hydrologic regime, and soil classification are used to determine the presence and type of wetland system.

Several wetlands can be found throughout the project area, with some continuing off-site, and others encompassed by the project area. These areas are dominated by a canopy of slash pine, cypress (*Taxodium distichum*), tupelo (*Nyssa biflora*), red maple (*Acer rubrum*), sweet gum (*Liquidambar styraciflua*), and loblolly bay (*Gordonia lasianthus*). Subcanopy species include wax myrtle, Chinese tallow (*Triadica sebifera*), and cabbage palm (*Sabal palmetto*). Groundcover primarily consists of royal fern (*Osmunda regalis*), Virginia chain fern (*Woodwardia virginica*), cinnamon fern (*Osmundastrum cinnamomeum*), and pipe stem (*Clematis lasiantha*).

Several ditches occur throughout the project area, the largest of which runs west-east along the southern boundary of the project area and serves to convey stormwater away from airport property and adjacent development. Several smaller ditches run throughout the on-site uplands and wetlands and are utilized to convey stormwater away from the airfield.

WILDLIFE RESOURCES

The project area was evaluated to identify wildlife and habitat resources, including federally and state protected species, in accordance with Section 7 of the Endangered Species Act (ESA, 1973) and Chapter 68A-27 Florida Administrative Code (F.A.C.), as amended. This report contains information pertaining to all federally-listed species, candidates for federal listing, and state-listed species that may occur within the project area. Unless otherwise noted, all are collectively referred to as "listed species" in this report.

Methods

Literature reviews, agency database searches, and field surveys of potential habitat areas were conducted to identify listed species potentially occurring within the project area. The Soil Survey of The City of Jacksonville, Duval County; recent aerial photographs; GIS Land Cover and Land Use data; and field reconnaissance were utilized to determine habitat types occurring within and adjacent to the project area.

The assessment of listed species occurrences began with the identification of suitable habitat. A field investigation was conducted on November 12, 2021. The survey was conducted by a Certified Wildlife Biologist using visual and aural methods. Listed wildlife species were identified by burrows, scat, shed skins, tracks, sightings, and/or their distinctive calls. The probability of occurrence of each species is discussed below.

Survey Results

Literature Search

This report addresses federally-listed species, candidates for federal listing, and state-listed species. Of these three categories, only federally-listed species are afforded protection under the ESA at this time. Other species may be protected by state or local regulations.

Information regarding federally-listed species was derived from the following online sources:

- http://www.fws.gov/endangered/?ref=topbar
- http://www.florida.plantatlas.usf.edu/
- https://www.flrules.org/gateway/ChapterHome.asp?Chapter=5B-40
- http://www.fws.gov/northflorida/gotocty.htm
- https://ecos.fws.gov/ipac/location/index
- https://www.fnai.org/species-communities/tracking-main

Information regarding state-listed species was derived from the following online sources:

- https://www.fnai.org/species-communities/tracking-main
- https://myfwc.com/media/1945/threatend-endangered-species.pdf
- http://www.florida.plantatlas.usf.edu/
- https://www.flrules.org/gateway/ChapterHome.asp?Chapter=5B-40

Information from all above listed sources was compiled to generate an inventory of all listed species that may occur in Duval County.

A total of 86 listed species are known to occur in Duval County. Of these, 14 were determined to have some probability of occurrence within the project area based on the presence of suitable habitat and observations. These 14 species are included in the table below and were assigned a probability of occurrence (low, moderate, high, or observed), defined as follows:

> Low – Species that are known to occur in the county, but for which preferred habitat is limited in the project area.
> Moderate – Species that are known to occur in the county, and whose suitable habitat is well represented within or adjacent to the project area, but no observations or positive indicators exist to verify their presence.
> High – Species that are known to occur in the county and are suspected to occur based on known ranges and existence of sufficient preferred habitat within or immediately adjacent to the project area, or species which have been previously observed or documented within the project area.
> Observed – Species or their sign were seen within the project area.

Table 1 summarizes the potential habitat availability and probability of occurrence within the project area for those listed species that may occur. No federally-listed species were directly encountered during the field inspection. Documented occurrences of wood storks, nesting locations, Core Foraging Areas (CFAs), and wading bird rookeries are depicted on Exhibit 4 (Appendix A). Documented occurrences of protected fauna near/within the project area are depicted on Exhibit 3 and 5.

Table 1: Federally-, State-, and Candidate Listed Species That May Occur Within the Project Area

Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat	Habitat Present Within Project Area	Probability of Occurrence
Plants and Lichens						
Asclepias viridula	Southern Milkweed	N	ST	Wet flatwoods and prairies, seepage slopes, pitcher plant bogs.	Forested wetlands and ditches throughout the project area	Low
Balduina atropurpurea	Purple Honeycomb-head	N	SE	Wet pine flatwoods and savannahs, seepage slopes, bogs, and wet ditches.	Forested wetlands and ditches throughout the project area	Low
Zephyranthes atamasca var. atamasca	Rainlily	N	ST	Swamps, floodplains, wet prairies, and wet roadsides.	Forested wetlands and ditches throughout the project area	Low
Zephyranthes atamasca var. treatiae	Treat's Rainlily	N	ST	Swamps, floodplains, wet prairies and wet roadsides.	Forested wetlands and ditches throughout the project area	Low
Insects						
Danaus plexippus	Monarch Butterfly	C	N	Breeding females lay eggs on *Asclepias* spp. (milkweeds) where the larvae develop; Non-breeding and breeding adults feed on many species of wildflowers, and so may occur in areas with high densities of wildflowers	Milkweeds for breeding were not observed, but grassy areas free of canopy cover may periodically produce wildflowers that could be used by adults for foraging	Moderate
Amphibians						
Ambystoma cingulatum	Frosted Flatwoods Salamander	T	FT	Flatwoods with wiregrass and interspersed wetlands; breeds in small ponds and seasonally flooded wetlands.	Upland and wetland habitat may provide suitable habitat for this species	Low
Reptiles						
*Drymarchon corais couperi**	Eastern Indigo Snake	T	FT	Linked to xeric habitats and gopher tortoise burrows, but also uses other natural habitats such as mesic uplands, swamps, and freshwater marshes as foraging habitat	This species is a commensal to the gopher tortoise, and may periodically utilize on-site burrows	Moderate

Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat	Habitat Present Within Project Area	Probability of Occurrence
*Gopherus polyphemus**	Gopher Tortoise	C	ST	Sandhills, scrub, dry flatwoods, dry ruderal areas	The burrows indicative of this species was directly observed in upland areas	Observed
*Pituophis melanoleucus mugitus***	Florida Pine Snake	N	ST	Sandhill, sand pine scrub and scrubby flatwoods.	This species is a commensal to the gopher tortoise, and if present, may periodically utilize on-site burrows.	Moderate
Birds						
*Egretta caerulea***	Little Blue Heron	N	ST	Forages in a wide variety of freshwater, brackish, and saline wetlands and waterways, including ponds and ditches; Prefers freshwater habitats; Nests in mixed colonies in flooded trees or shrubs or on islands	On-site wetlands and surface waters provide suitable foraging habitat for this species.	Moderate
*Egretta tricolor***	Tricolored Heron	N	ST	Forages in a wide variety of freshwater, brackish, and saline wetlands and waterways, including ponds and ditches; Prefers coastal habitats, Nests in mixed colonies in flooded trees or shrubs or on islands	On-site wetlands and surface waters provide suitable foraging habitat for this species.	Moderate
*Falco sparverius paulus***	Southeastern American Kestrel	N	ST	Upland pinelands (flatwoods, sandhills, pastures, and old fields). Requires open areas for foraging, and nest cavities (dead trees, nest boxes, etc.) for breeding.	This species may perch in forested areas to forage in adjacent mowed and maintained airfield.	Low
Mycteria americana	Wood Stork	T	FT	Forages in a wide variety of freshwater and brackish wetlands and waterways, including ponds and ditches; Prefers waterbodies that have shallow or variable water levels to concentrate fish prey;	On-site wetlands and surface waters provide suitable foraging habitat for this species.	Moderate

Scientific Name	Common Name	Federal Status	State Status	Preferred Habitat	Habitat Present Within Project Area	Probability of Occurrence
				Nests in colonies in flooded trees or on islands		
*Platalea ajaja***	Roseate Spoonbill	N	ST	Forages in a wide variety of freshwater, brackish, and saline wetlands and waterways, including ponds and ditches; Prefers coastal habitats, Nests in mixed colonies in mangroves, willow heads, or spoil islands	On-site wetlands and surface waters provide suitable foraging habitat for this species.	Low

Legal Status and Notes
Federally-listed Species (FWS)
C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.
CH = Critical Habitat has been designated in the county in which the project is located.
E = Endangered: species in danger of extinction throughout all or a significant portion of its range.
T = Threatened: species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
PT = Proposed threatened.
N = Not federally-listed.
* = This species is included in a FWS Recovery Plan.
Recovery plans can be found at: https://www.fws.gov/endangered/species/recovery-plans.html
State-listed Species
SAT = Listed as threatened for similarity of appearance.
SSC = Species of Special Concern.
SE = State endangered.
ST = State threatened: species listed by the state that are likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
FE = Federally endangered: species federally listed as being in danger of extinction throughout all or a significant portion of its range.
FT = Federally threatened: species federally listed as likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
** = FWC has developed a draft or final Permitting Guidelines document for this species. Permitting guidelines can be found at: https://myfwc.com/wildlifehabitats/wildlife/species-guidelines/

Listed Species That May Occur in the Project Area

The following listed species have some probability of occurrence in the project area or have been documented as occurring within the project area from previous permitting or surveying efforts. Only federally-listed species are afforded protection under the ESA at this time. The ESA is administered by the United States Fish and Wildlife Service (USFWS/FWS) and the National Oceanic Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) to provide protection of imperiled species and their habitat. Section 7 of the ESA requires federal agencies to consult with FWS and/or NMFS when a project under their review has the potential to impact a federally-listed species. Other species may be protected by state or local regulations.

Listed Plant Species That May Occur in the Project Area

Based upon the preliminary data analysis and the November 2021 field investigation, a total of four state-listed plant species were determined to have some probability of occurrence in the project area. The southern milkweed, purple honeycomb-head, and two species of rainlily are best located when flowers are present, and they may not have been flowering at the time of the inspection. None of these state-listed plants were observed in the project area during the site inspections, and none have been observed during previous work done in and around the project area.

Listed Wildlife Species That May Occur in the Project Area

AMPHIBIANS

Frosted Flatwoods Salamander (*Ambystoma cingulatum*) – This federally-threatened species is a long black salamander with white spots, that can reach a length of five inches. This species typically resides in fire-maintained slash and longleaf pine flatwoods with wiregrass groundcover and little to no subcanopy that typically include scattered depressional wetlands. This species breeds between October to January in shallow ponds free of predatory fish (Palis,1997). The larva will live in the ponds until they metamorphose into their adult life stage (Palis,1997). The primary threat to this species is loss of habitat due to agriculture and silviculture. These species are highly sensitive to disturbance and habitat quality, and therefore have been given a low probability of occurrence in the project area due to the surrounding development, past and/or present silviculture activities, and infrequent fire maintenance, leading to a dense subcanopy in forested upland areas.

REPTILES

Gopher Tortoise (*Gopherus polyphemus*) – The gopher tortoise is a state-threatened, and candidate for federal listing, species that inhabits xeric and mesic forests, fields, and disturbed areas. The project area was inspected for the presence of gopher tortoises. A total of three potentially occupied gopher tortoise burrows were observed in the project area (Exhibit 3; Appendix A). While only three burrows were identified during the field survey, approximately 38 acres of habitat that may support this species is present on the parcel.

A complete survey of all affected potential gopher tortoise habitat will be conducted within 90 days of construction, and all affected gopher tortoises will be relocated in accordance with Fish and Wildlife Conservation Commission (FWC) regulations.

Eastern Indigo Snake (*Drymarchon corais couperi*) – The eastern indigo snake is a federally-threatened species that is linked to xeric habitats and gopher tortoise burrows, and forages in both uplands and wetlands (Moler,1992). No xeric habitat was identified in the project area; however, three potentially occupied gopher tortoise burrows were observed during the November 2021 field survey. Because of the presence of potentially-occupied gopher tortoise burrows, the eastern indigo snake has been given a moderate probability of occurrence. The project's effect on this species was determined by using the FWS' *Eastern Indigo Snake Programmatic Effect Determination Key* (updated August 2017) as follows:

A. Project is not located in open water or salt marsh……………………………..………….go to B
B. Permit will be conditioned for use of the Service's *Standard Protection Measures For The Eastern Indigo Snake* during site preparation and project construction……………..……go to C
C. The project will impact less than 25 acres of eastern indigo snake habitat (e.g. sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie,

mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandon citrus groves], and coastal dunes)……………………………………..………………………..go to D

D. The project has known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped, and/or injured during project activities…………………………………….………………………………………………go to E

E. Any permit will be conditioned such that all gopher tortoise burrows, active or inactive, will be excavated prior to site manipulation in the vicinity of the burrow. If an eastern indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Any permit will also be conditioned such that holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and, if occupied by an eastern indigo snake, no work will commence until the snake has vacated the vicinity of the proposed work………………….*NLAA*

The implementation of FWS' Standard Protection Measures for the Eastern Indigo Snake during project construction and the excavation of any affected active or inactive gopher tortoise burrows, in accordance with FWC and FWS requirements, leads to a may effect, but not likely to adversely affect determination for this species.

Florida Pine Snake (*Pituophis melanoleucus mugitus*) – Similar to the indigo snake, the state-threatened pine snake is linked to xeric habitats and to gopher tortoise burrows. This species is found throughout Florida, with preferred habitat including longleaf pine woodlands, xerophytic oak woodlands, sand pine scrub, pine flatwoods on well-drained soils, and old fields on former sandhill sites. The pine snake avoids hammocks and forests that have a thick canopy. It burrows through the ground and moves around using paths left by pocket gophers (*Geomys* spp.) and gopher tortoises. Females have a home range of 70 to 75 acres, while males have a home range 2-8 times larger than that of females. Due to the presence of potentially occupied gopher tortoise burrows and well drained habitat, this species has been given a moderate probability of occurrence.

BIRDS

State-listed Wading Birds – The little blue heron (*Egretta caerulea*), tricolored heron (*Egretta tricolor*), and roseate spoonbill (*Platalea ajaja*) are state-listed as threatened species. The little blue heron and tricolored heron have a moderate probability of occurrence, and the roseate spoonbill has a low probability of occurrence in the project area's wetlands and surface waters, where they could utilize the shallow water for foraging. The roseate spoonbill is given a low probability of occurrence due to lack of preferred coastal wetland habitat. These species are unlikely to utilize these areas for nesting due to adjacent development and lack of suitable nesting trees over water. Typically, these species nest in colonies, which are tracked and documented by FWS. The nearest documented wading bird rookery is approximately 8.0 miles northeast of the project area and was last documented as active in the 1980s FWC survey (Exhibit 4; Appendix A). No listed wading birds were observed during the site inspection.

Southeastern American Kestrel (*Falco sparverius paulus*) – This state-listed species is the smallest species of falcon in the United States. This species is known for its unique coloration. The kestrel's habitat includes open woodlands, sandhill, prairie, and pasture, typically nesting along tree lines. Due to the adjacent suitable foraging habitat within the airport property, this species has been given low probability of occurrence in the project area.

Wood Stork (*Mycteria americana*) – The wood stork, federally listed as threatened, is a wetland-dependent wading bird. It lives in areas containing woody vegetation over standing water, preferably in cypress trees or mangroves (Rodgers et al., 1988; FWS, 1996). The wood stork ranges across the state except for the western half of the panhandle (FWS, 1996). It routinely travels 6-25 miles to foraging sites and is known to fly between 60-80 miles to find food (Ogden et al., 1978; Browder, 1984; Ogden, 1996). It feeds in areas of calm and clear water that is between 2-16 inches deep (Kahl, 1964; Ogden, 1996). The wood stork requires areas that have long hydroperiods that allow for its prey to reproduce, and droughts that concentrate its prey into small pools making it easier to catch. FWS designates CFAs for each documented wood stork colony by region. Duval County is within the North Florida region, which defines each CFA as a 13-mile radius surrounding the colony location. All wetlands and waterways within the 13-mile radius may be considered Suitable Foraging Habitat (SFH) for wood storks.

As noted on Exhibit 4, the project area is located in the CFA of an active wood stork colony, Dee Dot Ranch, which lies approximately 8.3 miles southeast of the project area. No wood storks were observed during field investigation; however, this species has been given a moderate probability of occurrence. The wetlands and surface waters in the project area are located within a CFA, and therefore represent suitable habitat for this species and considered SFH. The project's potential effect on wood storks was evaluated using the USACE/FWS *Effect Determination Key for the Wood Stork in Central and North Peninsular Florida (2008)*.

A. Project more than 2,500 feet from a colony site ……………………………………………………….go to B
B. Project impacts SFH ……………………………………………………………………………….go to C
C. Project impacts to SFH are greater than or equal to 0.5 ac……………………………...………..go to D
D. Project impacts to SFH are within the CFA of a colony site, or wood storks have been documented foraging on a project site outside the CFA ……………………………………….…….….……..go to E
E. Project provides SFH compensation within the Service Area of a Service-approved wetland mitigation bank or wood stork conservation bank preferably within the CFA, or consists of SFH compensation within the CFA consisting of enhancement, restoration or creation in a project phased approach that provides an amount of habitat and foraging function equivalent to that of impacted SFH (see Wood Stork Foraging Habitat Assessment Procedure for guidance), is not contrary to the Service's Habitat Management Guidelines For The Wood Stork In The Southeast Region and in accordance with the CWA section 404(b)(1) guidelines……………………............…..…………"*NLAA*"

Should the project impact more than 0.5 acre of SFH, wetland mitigation will be provided to offset the loss of SFH. Therefore, the project may affect, but is not likely to adversely affect, the wood stork.

Non-listed Protected Species and Additional Species That May be of Regulatory Significance

Monarch Butterfly (*Danaus plexippus*) - This species was recently designated as a candidate species for federal listing by FWS (December 2020). Adult individuals of this species may reside in Florida year-round, breed in the state, or pass through while migrating back and forth from breeding grounds in other states or from wintering sites in Mexico. Breeding females require milkweeds (genus *Asclepias*) to lay their eggs on, and the larvae must feed on these milkweeds. Adults, like other species of butterflies, rely on many species of wildflowers as nectar food sources. No milkweeds were observed in the project area; however, on-site open field habitats could support the growth of any *Asclepias* species if left undisturbed. Therefore, only the unmaintained open field areas within the project area may contain potential breeding areas for monarchs, which support a variety of wildflowers upon which wandering (non-breeding) adult monarchs may feed. No monarch butterflies were observed in the project area during the site visit, but due to the potential for seasonal presence of wildflowers, it has been given a moderate probability of occurrence. This species is not offered protection through the ESA or any state legislation at the time of this report.

Bald Eagle (*Haliaeetus leucocephalus*) - While no longer considered a listed species under the ESA, the bald eagle is afforded protection under the Bald and Golden Eagle Protection Act (BGEPA) of 1940 and the Migratory Bird Treaty Act of 1918 (MBTA), as amended. Bald eagles are large raptors that average 14 pounds with a wingspan of approximately 8 feet as adults. They are brown with white head and tail feathers and range across North America utilizing a variety of habitats including coastal areas, rivers, lakes, and other territories in proximity to their preferred food, fish. In Florida, there are over 1,000 documented nesting pairs of bald eagles.

Exhibit 5 depicts the locations of the documented bald eagle nests within 5 miles. Although the bald eagle has been delisted, restrictions regarding work around their nests are still in place. These restrictions vary based on the time of year and distance from the nest. The USFWS Florida Ecological Services Field Offices (FO's) in Jacksonville defines two buffer zones from the central location of a nest that defines activity restrictions based on their distance, the primary and secondary zones. The primary activity zone is 330 feet, and the secondary activity zone is 660 feet from the central location of the nest. Generally, if work is proposed within 660 feet of the nest, restrictions may be applicable. No documented eagle nests occur within 660 feet of the project area. The nearest bald eagle nest is located approximately 3,696-feet southwest of the project area.

PERMITTING IMPLICATIONS

Development of the property will require site planning to ensure adjacent properties are not adversely affected by on-site run-off following construction. Should on-site wetlands and/or surface waters be impacted, it will most likely require an Individual Environmental Resource Permit from St Johns River Water Management District (SJRWMD) and a State 404 Program Permit. Compliance with these permits includes verification that all impacts have been avoided to the greatest extent practicable, that unavoidable impacts have been minimized, and that a compensatory mitigation plan has been provided for unavoidable wetland impacts.

The online Florida Department of Environmental Protection (FDEP) ArcGIS tool showing United States Army Corps of engineers (USACE)-retained wetlands and waters was used to determine the federal permitting agency that would be assigned to the project. Wetlands and surface waters are not within USACE retained waters, therefore, FDEP may be responsible for the permitting of all wetland and surface water impacts within the project area. Final determination of WOTUS permitting responsibilities will be made during the permitting process using the final design, the current boundaries of retained waters, and the most recent regulatory guidance and subsequent addendums.

Regardless of the type of permit issued by state and/or federal agencies, the project is expected to require freshwater wetland mitigation for unavoidable wetland impacts.

FWS will require wetland mitigation to offset the loss of SFH for the wood stork, should wetland impacts be greater than 0.5 acres. Per the USACE/FWS *Effect Determination Key for the Wood Stork in Central and North Peninsular Florida (2008)*, mitigation may be provided through the purchase of mitigation bank credits "within the service area of a service-approved wetland mitigation bank or wood stork conservation bank, preferably within the CFA, or consists of SFH compensation within the CFA consisting of enhancement, restoration or creation in a project phased approach that provides an amount of habitat and foraging function equivalent to that of impacted SFH." Any mitigation provided for unavoidable wetland impacts will very likely satisfy mitigation requirements for the loss of SFH.

FWC will require a 100% survey for the state-listed gopher tortoise within 90 days of construction. Any potentially impacted burrows will be required to be excavated and relocated per FWC rules and regulations. If fewer than 10 burrows are identified during the 100% survey, a permit to for a *10 or Fewer Burrows Permit*. If more than 10 burrows are identified, then, most likely, a *Conservation Permit* will be required from FWC. All excavated tortoises will have to be relocated to an FWC-approved Long Term Protected Recipient Site. JAA owns and operates their own Long-Term Protected Recipient Site at Cecil Airport. There is currently capacity available within this Site to accommodate gopher tortoises excavated from CRG.

Per the FWS' *Eastern Indigo Snake Programmatic Effect Determination Key* (updated August 2017), because the project is expected to impact fewer than 25 acres of xeric habitat and/or 25 gopher tortoise burrows, no further mitigation requirements and/or consultation for this species is expected to be necessary. Any permit will be conditioned such that all identified gopher tortoise burrows and other refugia will be excavated prior to the start of construction within the project area, ensuring the protection of the eastern indigo snake per FWS guidance. Therefore, it is unlikely that further consultation will be required. Should an eastern indigo snake be found on-site, the snake must be allowed to vacate the area before work can resume.

Please feel free to contact me at gallerton@ses-grp.com or 904-285-1397 if you have any questions regarding this report.

Sincerely,

ENVIRONMENTAL RESOURCE SOLUTIONS
A Division of SES Energy Services LLC

Gabrielle Allerton
Environmental Scientist

David Tow
Certified Wildlife Biologist

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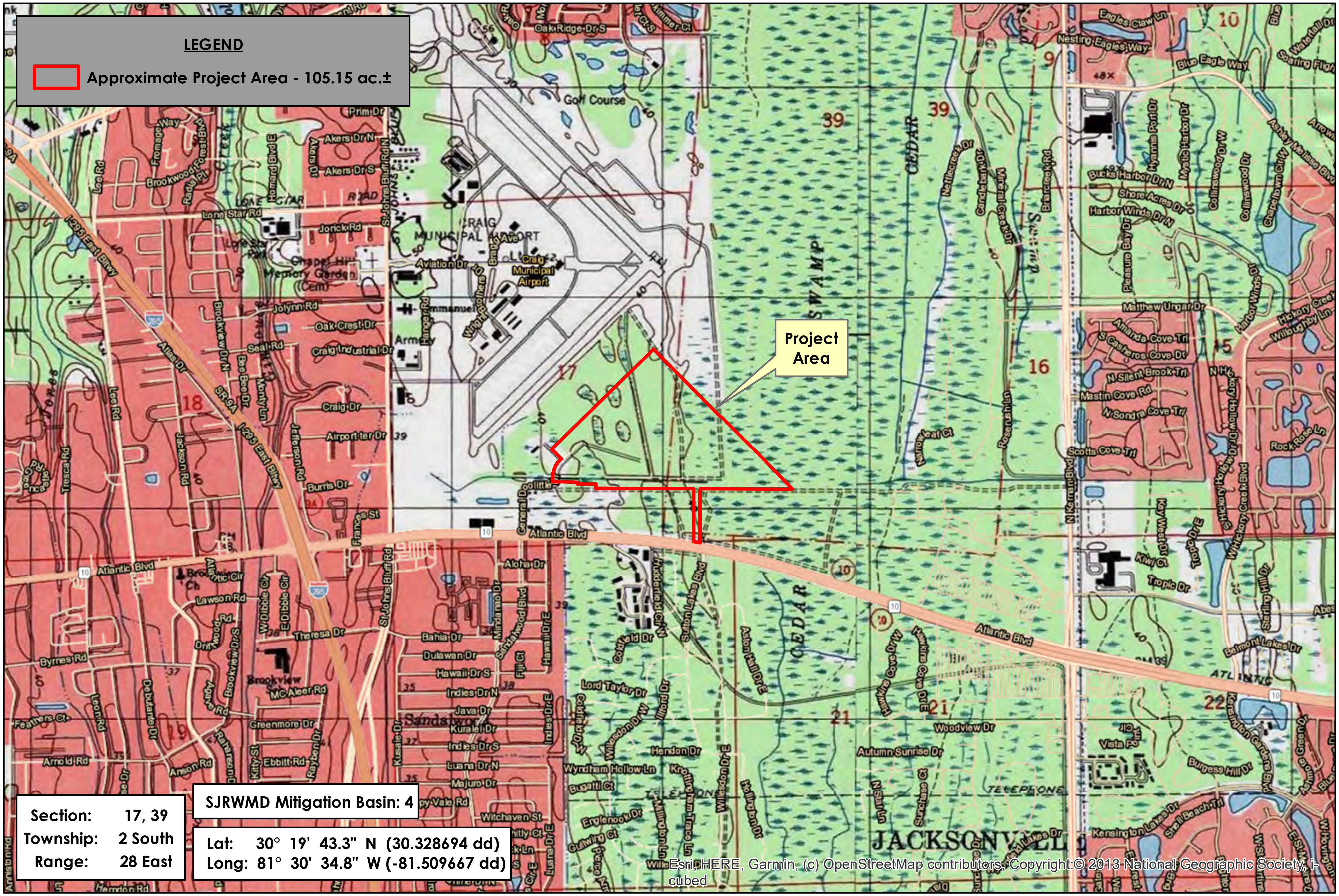
Appendix A



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JaxEx Wildlife Assessment
USGS Topographic Quadrangle Map

Project No.:	21209
Exhibit No.:	1
Date:	11-18-21
Rev. Date:	

Duval County, Florida

By: DF

Source: 7.5' USGS Arlington and Jacksonville Beach, FL Topographic Quadrangles; ArcGIS Online (USA Topo Maps)

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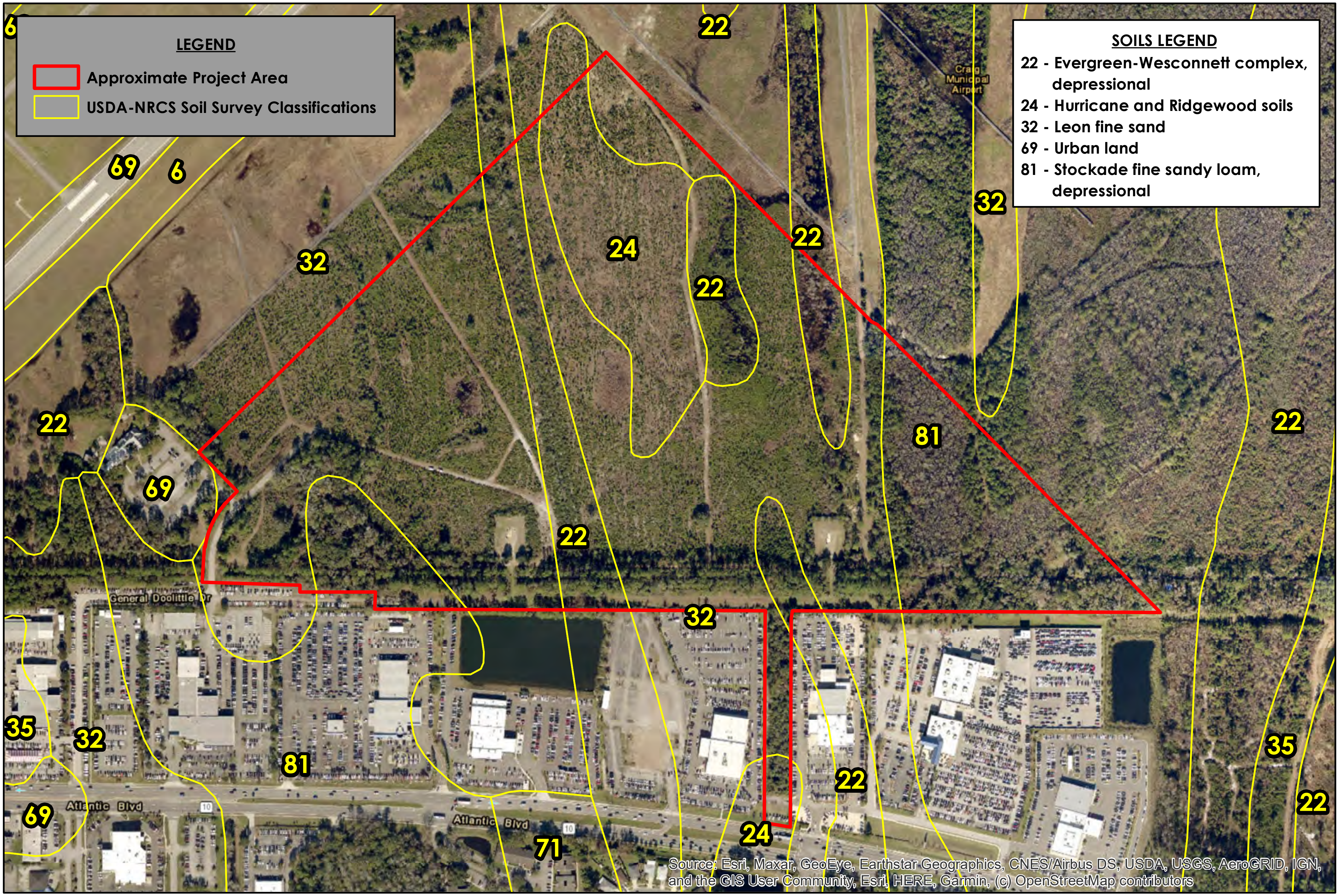

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JaxEx Wildlife Assessment
Soils Map

By: DF

Project No.:	21209
Exhibit No.:	2
Date:	11-18-21
Rev. Date:	

N E S W

Source: ArcGIS Online Imagery; USDA soil survey classifications (data obtained from NCRS)

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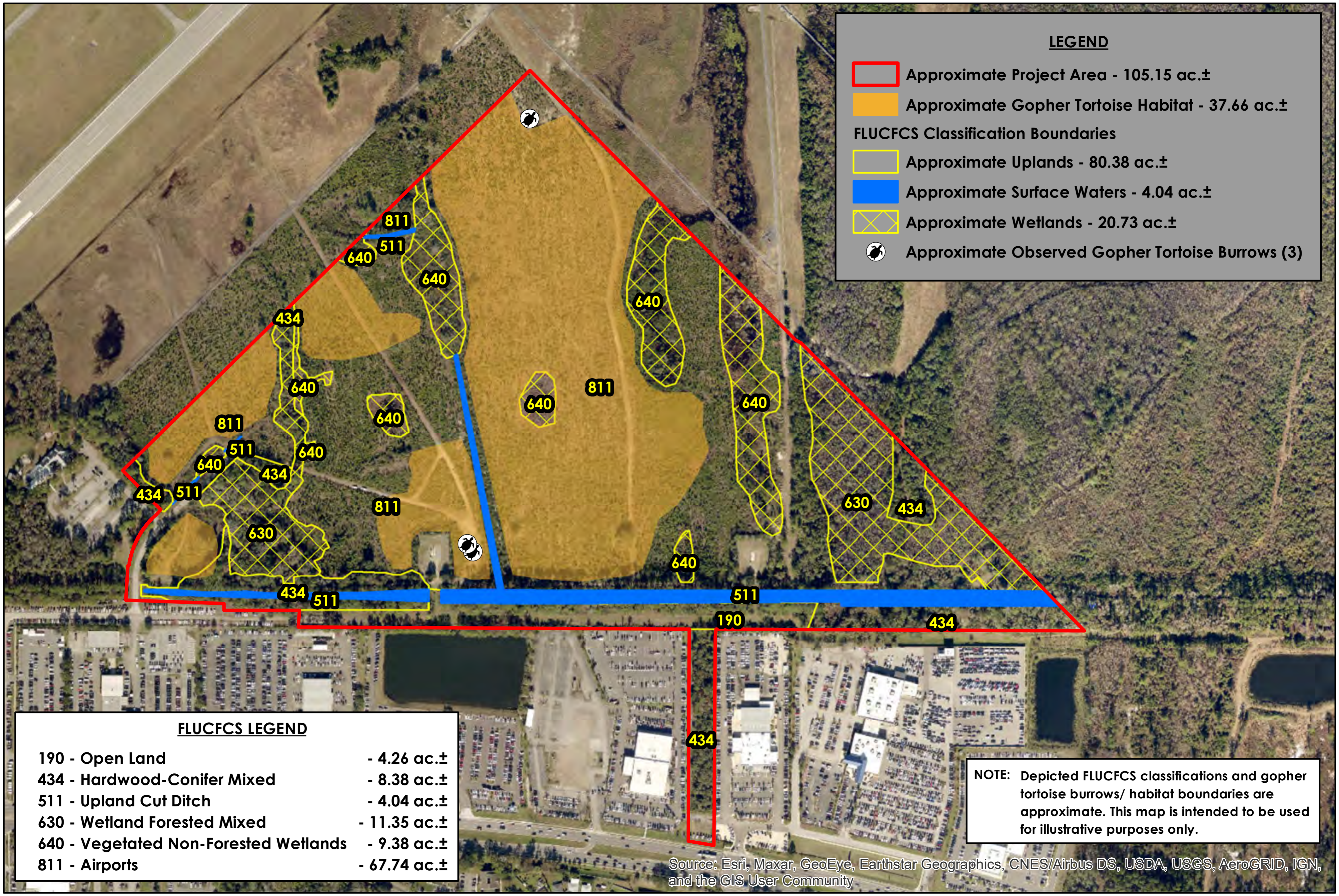

FLUCFCS LEGEND

190 - Open Land	- 4.26 ac.±
434 - Hardwood-Conifer Mixed	- 8.38 ac.±
511 - Upland Cut Ditch	- 4.04 ac.±
630 - Wetland Forested Mixed	- 11.35 ac.±
640 - Vegetated Non-Forested Wetlands	- 9.38 ac.±
811 - Airports	- 67.74 ac.±

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JaxEx Wildlife Assessment
FLUCFCS Map

Project No.:	21209
Exhibit No.:	3
Date:	11-18-21
Rev. Date:	
By: DF	

Source: ArcGIS Online Imagery and World Transportation

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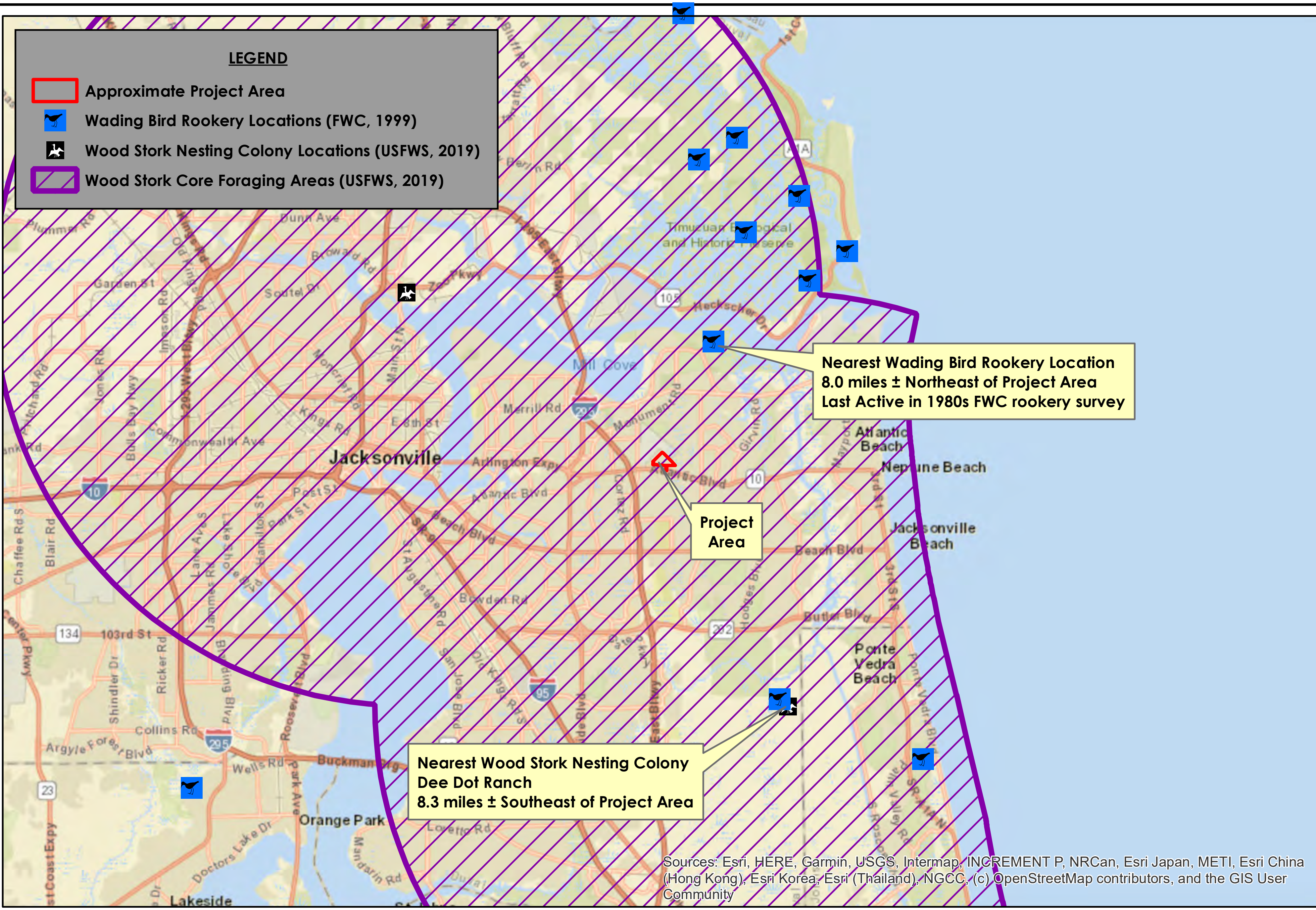

0 4 Miles

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JaxEx Wildlife Assessment
Documented Occurrences
of Wading Bird Rookeries and
Wood Stork Nesting Colonies/CFA's

Project No.:	21209
Exhibit No.:	4
Date:	11-18-21
By: DF	Rev. Date:

N W E S

Source: USFWS, FDEP, FWC, FNAI, USGS, ArcGIS Online Data (World Street Map)

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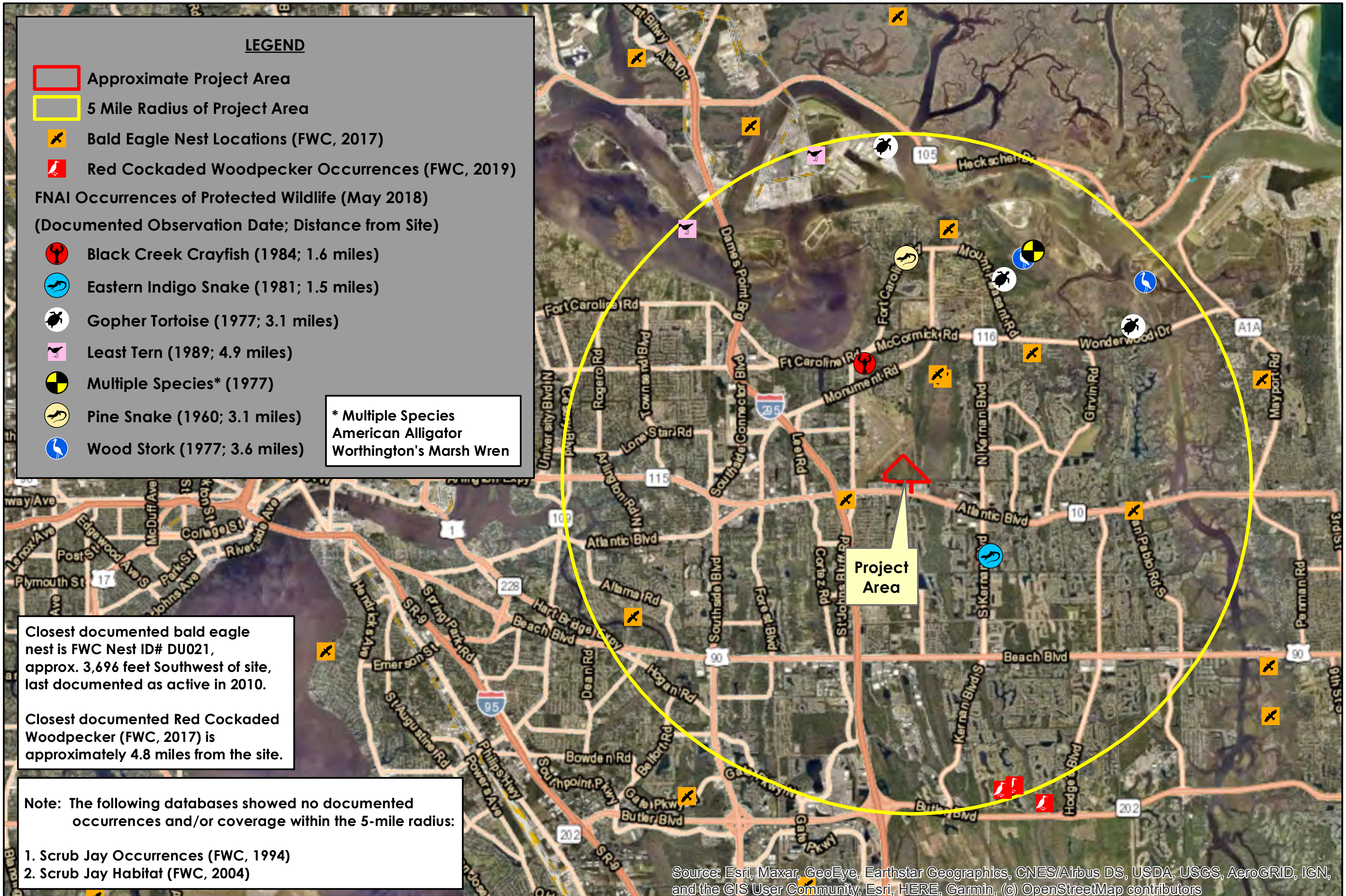

0 2 Miles

Environmental Resource Solutions
A Division of SES Energy Services LLC
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(904) 285-1397 • www.ersenvironmental.com

JaxEx Wildlife Assessment
Documented Occurrences of
Protected Wildlife within 5 Miles

By: DF

Project No.:	21209
Exhibit No.:	5
Date:	11-18-21
Rev. Date:	3-9-22

N W E S

Source: USFWS, FDEP, FWC, FNAI, USGS, ArcGIS Online Imagery

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

August 1, 2017

Donnie Kinard
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Subject: Consultation Key for the Eastern Indigo Snake – Revised

Dear Mr. Kinard:

This letter revises and replaces the January 25, 2010, and August 13, 2013, letters to the U.S. Army Corps of Engineers (Corps) regarding the use of the eastern indigo snake programmatic effect determination key (Key) for projects occurring within the South Florida Ecological Service's Office (SFESO) jurisdiction. This revision supersedes all prior versions of the Key in the SFESO area. The purpose of this revision is to clarify portions of the previous keys based on questions we have been asked, specifically related to habitat and refugia used by eastern indigo snakes (*Drymarchon corais couperi*), in the southern portion of their range and within the jurisdiction of the SFESO. This Key is provided pursuant to the Service's authorities under the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C.1531 *et seq.*). This Key revision has been assigned Service Consultation Code: 41420-2009-I-0467-R001.

The purpose of this Key is to assist the Corps (or other Federal action agency) in making appropriate effects determinations for the eastern indigo snake under section 7 of the Act, and streamline informal consultation with the SFESO for the eastern indigo snake when the proposed action can be walked through the Key. The Key is a tool available to the Corps (or other Federal action agency) for the purposes of expediting section 7 consultations. There is no requirement to use the Key. There will be cases when the use of the Key is not appropriate. These include, but are not limited to: where project specific information is outside of the scope of the Key or instances where there is new biological information about the species. In these cases, we recommend the Corps (or other Federal action agency) initiates traditional consultation pursuant to section 7 of the Act, and identify that consultation is being requested outside of the Key.

This Key uses project size and home ranges of eastern indigo snakes as the basis for making determinations of "may affect, but is not likely to adversely affect" (NLAA) and "may affect, and is likely to adversely affect" (may affect). Suitable habitat for the eastern indigo snake consists of a mosaic of habitats types, most of which occur throughout South Florida. Information on home ranges for individuals is not available in specific habitats in South Florida. Therefore, the SFESO uses the information from a 26-year study conducted by Layne and Steiner (1996) at Archbold Biological Station, Lake Placid, Florida, as the best available information. Layne and Steiner (1996) determined the average home range size for a female eastern indigo snake was 46 acres and 184 acres for a male.

Projects that would remove/destroy less than 25 acres of eastern indigo snake habitat are expected to result in the loss of a portion of an eastern indigo snakes home range that would not impair the ability of the individual to feed, breed, and shelter. Therefore, the Service finds that take would not be reasonably certain to occur due to habitat loss. However, these projects have the potential to injure or kill an eastern indigo snake if the individual is crushed by equipment during site preparation or other project aspects. The Service's *Standard Protection Measures for the Eastern Indigo Snake* (Service 2013 or most current version) and the excavation of underground refugia (where a snake could be buried, trapped and/or injured), when implemented, are designed to avoid these forms of take. Consequently, projects less than 25 acres that include the Service's *Standard Protection Measures for the Eastern Indigo Snake* (Service 2013 or most current version) and a commitment to excavate underground refugia as part of the proposed action would be expected to avoid take and thus, may affect, but are not likely to adversely affect the species.

If a proposed project would impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, the Key should not be used. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range.

Projects that would remove 25 acres or more of eastern indigo snake habitat could remove more than half of a female eastern indigo snakes home range. This loss of habitat within a home range would be expected to significantly impair the ability of that individual to feed, breed, and shelter. Therefore, the Service finds take through habitat loss would be reasonably certain to occur and formal consultation is appropriate. Furthermore, these projects have the potential to injure or kill an eastern indigo snake if the individual is crushed by equipment during site preparation or other project aspects. The Service's *Standard Protection Measures* for the *Eastern Indigo Snake* (Service 2013 or most current version) and the excavation of underground refugia (where a snake could be buried, trapped and/or injured), when implemented, are designed to avoid these forms of take.

Eastern indigo snakes use a variety of habitat and are difficult to detect. Therefore, site specific information on the land use, observations of eastern indigo snakes within the vicinity, as well as other factors, as appropriate, will all be considered by the Service when making a final recommendation on the appropriate effects determination and whether it is appropriate to conclude consultation with the Corps (or other Federal action agency) formally or informally for projects that will impact 25 acres or more of habitat. Accordingly, when the use of the Key results in a determination of "may affect," the Corps (or other Federal action agency) is advised that consultation may be concluded informally or formally, depending on the project specific effects to eastern indigo snakes. Technical assistance from the Service can assist you in making a determination prior to submitting a request for consultation. In circumstances where the Corps (or other Federal action agency) desires to proceed with a consultation request prior to receiving additional technical assistance from the Service, we recommend the agency documents the biological rationale for their determination and proceed with a request accordingly.

If the use of the Key results in a determination of "no effect," no further consultation is necessary with the SFESO. If the use of the Key results in a determination of "NLAA," the SFESO concurs with this determination based on the rationale provide above, and no further consultation is necessary for the effects of the proposed action on the eastern indigo snake. For "no effect" or "NLAA" determinations, the Service recommends that the Corps (or other Federal action agency) documents the pathway used to reach your no effect or NLAA determination in the project record and proceed with other species analysis as warranted.

Eastern Indigo Snake Programmatic Effect Determination Key
Revised July 2017
South Florida Ecological Service Office

Scope of the Key

This Key should be used only in the review of permit applications for effects determinations for the eastern indigo snake (*Drymarchon corais couperi*) within the South Florida Ecological Service's Office (SFESO) area (Broward, Charlotte, Collier, De Soto, Glades, Hardee, Hendry, Highlands, Lee, Indian River, Martin, Miami-Dade, Monroe, Okeechobee, Osceola, Palm Beach, Polk, Sarasota, and St. Lucie Counties). There is no designated critical habitat for the eastern indigo snake.

This Key is subject to revision as the Corps (or other Federal action agency) and Service deem necessary and in particular whenever there is new information on eastern indigo snake biology and effects of proposed projects.

The Key is a tool available to the Corps (or other Federal action agency) for the purposes of expediting section 7 consultations. There is no requirement to use the Key. There will be cases when the use of the Key is not appropriate. These include, but are not limited to: where project specific information is outside of the scope of the Key or instances where there is new biological information about the species. In these cases, we recommend the Corps (or other Federal action agency) initiates traditional consultation pursuant to section 7 of the Act, and identify that consultation is being requested outside of the Key.

Habitat

Habitat use varies seasonally between upland and wetland areas, especially in the more northern parts of the species' range. In southern parts of their range eastern indigo snakes are habitat generalists which use most available habitat types. Movements between habitat types in northern areas of their range may relate to the need for thermal refugia (protection from cold and/or heat).

In northern areas of their range eastern indigo snakes prefer an interspersion of tortoise-inhabited sandhills and wetlands (Landers and Speake 1980). In these northern regions eastern indigo snakes most often use forested areas rich with gopher tortoise burrows, hollowed root channels, hollow logs, or the burrows of rodents, armadillos, or land crabs as thermal refugia during cooler seasons (Lawler 1977; Moler 1985a; Layne and Steiner 1996). The eastern indigo snake in the northern region is typically classified as a longleaf pine savanna specialist because here, in the northern four-fifths of its range, the eastern indigo snake is typically only found in vicinity of xeric longleaf pine–turkey oak sandhills inhabited by the gopher tortoise (Means 2006).

In the milder climates of central and southern Florida, comprising the remaining one fifth of its range, thermal refugia such as those provided by gopher tortoise burrows may not be as critical to survival of indigo snakes. Consequently, eastern indigo snakes in these regions use a more diverse assemblage of habitats such as pine flatwoods, scrubby flatwoods, floodplain edges, sand ridges, dry glades, tropical hammocks, edges of freshwater marshes, muckland fields, coastal dunes, and xeric sandhill communities; with highest population concentrations of eastern indigo snakes occurring in the sandhill and pineland regions of northern and central Florida (Service 1999). Eastern indigo snakes have also been found on agricultural lands with close proximity to wetlands (Zeigler 2006).

In south Florida, agricultural sites (*e.g.*, sugar cane fields and citrus groves) are occupied by eastern indigo snakes. The use of sugarcane fields by eastern indigo snakes was first documented by Layne and Steiner in 1996. In these areas there is typically an abundance of wetland and upland ecotones (due to the presence of many ditches and canals), which support a diverse prey base for foraging. In fact, some speculate agricultural areas may actually have a higher density of eastern indigo snakes than natural communities due to the increased availability of prey. Gopher tortoise burrows are absent at these locations but there is an abundance of both natural and artificial refugia. Enge and Endries (2009) reporting on the status of the eastern indigo snake included sugarcane fields and citrus groves in a Global Information Systems (GIS)-base map of potential eastern indigo snake habitat. Numerous sightings of eastern indigo snakes within sugarcane fields have been reported within south Florida (Florida Fish and Wildlife Conservation Commission Indigo Snake Database [Enge 2017]). A recent study associated with the Comprehensive Everglades Restoration Plan (CERP) (A-1 FEB Project formerly A-1 Reservoir; Service code: 41420-2006-F-0477) documented eastern indigo snakes within sugarcane fields. The snakes used artificial habitats such as piles of limerock, construction debris, and pump stations. Recent studies also associated with the CERP at the C-44 Project (Service code: 41420-2009-FA-0314), and C-43 Project (Service code: 41420-2007-F-0589) documented eastern indigo snakes within citrus groves. The snakes used artificial habitats such as boards, sheets of tin, construction debris, pipes, drain pipes in abandoned buildings and septic tanks.

In extreme south Florida (*i.e.*, the Everglades and Florida Keys), eastern indigo snakes also utilize tropical hardwood hammocks, pine rocklands, freshwater marshes, abandoned agricultural land, coastal prairie, mangrove swamps, and human-altered habitats. Though eastern indigo snakes have been found in all available habitats of south Florida it is thought they prefer hammocks and pine forests since most observations occur there and use of these areas is disproportionate compared to the relatively small total area of these habitats (Steiner *et al.* 1983).

Even though thermal stress may not be a limiting factor throughout the year in south Florida, eastern indigo snakes still seek and use underground refugia. On the sandy central ridge of central Florida, eastern indigo snakes use gopher tortoise burrows more (62 percent) than other underground refugia (Layne and Steiner 1996). Other underground refugia used include armadillo (*Dasypus novemcinctus*) burrows near citrus groves, cotton rat (*Sigmodon hispidus*) burrows, and land crab (*Cardisoma guanhumi*) burrows in coastal areas (Layne and Steiner 1996; Wilson and Porras 1983). Natural ground holes, hollows at the base of trees or shrubs, ground litter, trash piles, and crevices of rock-lined ditch walls are also used (Layne and Steiner 1996). These refugia are used most frequently where tortoise burrows are not available, principally in low-lying areas off the central and coastal ridges.

Minimization Measures

The Service developed protection measures for the eastern indigo snake "Standard Protection Measures for the Eastern Indigo Snake" (Service 2013) located at: https://www.fws.gov/verobeach/ReptilesPDFs/20130812_EIS%20Standard%20Protection%20Measures_final.pdf. These protections measures (or the most updated version) are considered a minimization measure for projects proposed within eastern indigo snake habitat.

Determinations

If the use of this Key results in a determination of "**no effect**," no further consultation is necessary with the SFESO.

If the use of this Key results in a determination of "**NLAA**," the SFESO concurs with this determination and no further consultation is necessary for the effects of the proposed action on the eastern indigo snake.

For no effect or NLAA determinations, the Corps (or other Federal action agency) should make a note in the project file indicating the pathway used to reach your no effect or NLAA determination.

If a proposed project would impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, the subsequent Key should not be used. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range.

If the use of this Key results in a determination of "**may affect**," consultation may be concluded informally or formally depending on project effects to eastern indigo snakes. Technical assistance from the Service can assist you in making a determination prior to submitting a request for consultation. In circumstances where the Corps desires to proceed with a consultation request prior to receiving additional technical assistance from the Service, we recommend the Corps document the biological rationale for their determination and proceed with a request accordingly.

A. Project is not located in open water or salt marsh..go to B

Project is located solely in open water or salt marsh.......................................**no effect**

B. Permit will be conditioned for use of the Service's most current guidance for Standard Protection Measures For The Eastern Indigo Snake (currently 2013) during site preparation and project construction...go to C

Permit will not be conditioned as above for the eastern indigo snake, or it is not known whether an applicant intends to use these measures and consultation with the Service is requested...**may affect**

C. The project will impact less than 25 acres of eastern indigo snake habitat (*e.g.*, sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandoned citrus groves], and coastal dunes)...go to D

The project will impact 25 acres or more of eastern indigo snake habitat (*e.g.*, sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandoned citrus groves], and coastal dunes)..**may affect**

D. The project has no known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and/or injured during project activities..**NLAA**

The project has known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and /or injured...go to E

E. Any permit will be conditioned such that all gopher tortoise burrows, active or inactive, will be excavated prior to site manipulation in the vicinity of the burrow[1]. If an eastern indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Any permit will also be conditioned such that holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and, if occupied by an eastern indigo snake, no work will commence until the snake has vacated the vicinity of proposed work...**NLAA**[2]

Permit will not be conditioned as outlined above...**may affect**

End Key

[1] If excavating potentially occupied burrows, active or inactive, individuals must first obtain state authorization via a Florida Fish and Wildlife Conservation Commission Authorized Gopher Tortoise Agent permit. The excavation method selected should also minimize the potential for injury of an indigo snake. Applicants should follow the excavation guidance provided within the most current Gopher Tortoise Permitting Guidelines found at http://myfwc.com/gophertortoise.

[2] Please note, if the proposed project will impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, NLAA is not the appropriate conclusion. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range

Working with the Fish and Wildlife Foundation of Florida, the Service has established a fund to support conservation and recovery for the eastern indigo snake. Any project that has the potential to affect the eastern indigo snake and/or its habitat is encouraged to make a voluntary contribution to this fund. If you would like additional information about how to make a contribution and how these monies are used to support eastern indigo snake recovery please contact Ashleigh Blackford, Connie Cassler, or José Rivera at 772-562-3559.

This revised Key is effective immediately upon receipt by the Corps. Should circumstances change or new information become available regarding the eastern indigo snake and/or implementation of the Key, the determinations herein may be reconsidered and this Key further revised or amended.

Thank you for your continued cooperation in the effort to conserve fish and wildlife resources. If you have any questions or comments regarding this Key, please contact the SFESO at 772-562-3909.

Sincerely,

Roxanna Hinzman
Field Supervisor
South Florida Ecological Services

Cc:
Corps, Jacksonville, Florida (Dale Beter, Muriel Blaisdell, Ingrid Gilbert, Angela Ryan, Irene Sadowski, Victoria White, Alisa Zarbo)
Service, Athens, Georgia (Michelle Elmore)
Service, Jacksonville, Florida (Annie Dziergowski)
Service, Panama City, Florida (Sean Blomquist)

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THE CORPS OF ENGINEERS, JACKSONVILLE DISTRICT, U. S. FISH AND WILDLIFE SERVICE, JACKSONVILLE ECOLOGICAL SERVICES FIELD OFFICE AND STATE OF FLORIDA EFFECT DETERMINATION KEY FOR THE WOOD STORK IN CENTRAL AND NORTH PENINSULAR FLORIDA
September 2008

Purpose and Background

The purpose of this document is to provide a tool to improve the timing and consistency of review of Federal and State permit applications and Federal civil works projects, for potential effects of these projects on the endangered wood stork (*Mycteria americana*) within the Jacksonville Ecological Services Field Office (JAFL) geographic area of responsibility (GAR see below). The key is designed primarily for Corps Project Managers in the Regulatory and Planning Divisions and the Florida Department of Environmental Protection or its authorized designee, or Water Management Districts. The tool consists of the following dichotomous key and reference material. The key is intended to be used to evaluate permit applications and Corps' civil works projects for impacts potentially affecting wood storks or their wetland habitats. At certain steps in the key, the user is referred to graphics depicting known wood stork nesting colonies and their core foraging areas (CFA), footnotes, and other support documents. The graphics and supporting documents may be downloaded from the Corps' web page at http://www.saj.usace.army.mil/permit or at the JAFL web site at http://www.fws.gov/northflorida/WoodStorks. We intend to utilize the most recent information for both the graphics and supporting information; so should this information be updated, we will modify it accordingly. **Note: This information is provided as an aid to project review and analysis, and is not intended to substitute for a comprehensive biological assessment of potential project impacts. Such assessments are site-specific and usually generated by the project applicant or, in the case of civil works projects, by the Corps or project co-sponsor.**

Explanatory footnotes provided in the key must be closely followed whenever encountered.

Scope of the key

This key should only be used in the review of permit applications for effects determinations on wood storks within the JAFL GAR, and not for other listed species. Counties within the JAFL GAR include Alachua, Baker, Bradford, Brevard, Citrus, Clay, Columbia, Dixie, Duval, Flagler, Gilchrist, Hamilton, Hernando, Hillsborough, Lafayette, Lake, Levy, Madison, Manatee, Marion, Nassau, Orange, Pasco, Pinellas, Putnam, St. Johns, Seminole, Sumter, Suwannee, Taylor, Union, and Volusia.

The final effect determination will be based on project location and description, the potential effects to wood storks, and any measures (for example project components, special permit conditions) that avoid or minimize direct, indirect, and/or cumulative impacts to wood storks and/or suitable wood stork foraging habitat. Projects that key to a "no effect" determination do not require additional consultation or coordination with the JAFL. Projects that key to "NLAA" also do not need further consultation; however, the JAFL staff will assist the Corps if requested, to answer questions regarding the appropriateness of mitigation options. Projects that key to a "may affect" determination equate to "likely to adversely affect" situations, and those projects should not be processed under the SPGP or any other programmatic general permit. For all "may affect" determinations, Corps Project Managers should request the JAFL to initiate formal consultation on the Wood stork.

Summary of General Wood Stork Nesting and Foraging Habitat Information

The wood stork is primarily associated with freshwater and estuarine habitats that are used for nesting, roosting, and foraging. Wood storks typically nest colonially in medium to tall trees that occur in stands located either in swamps or on islands surrounded by relatively broad expanses of open water (Ogden 1991; Rodgers et al. 1996). Successful breeding sites are those that have limited human disturbance and low exposure to land based predators. Nesting sites protected from land-based predators are characterized as those surrounded by large expanses of open water or where the nest trees are inundated at the onset of nesting and remain inundated throughout most of the breeding cycle. These colonies have water depths between 0.9 and 1.5 meters (3 and 5 feet) during the breeding season.

In addition to limited human disturbance and land-based predation, successful nesting depends on the availability of suitable foraging habitat. Such habitat generally results from a combination of average or above-average rainfall during the summer rainy season, and an absence of unusually rainy or cold weather during the winter-spring breeding season (Kahl 1964; Rodgers et al. 1987). This pattern produces widespread and prolonged flooding of summer marshes that tends to maximize production of freshwater fishes, followed by steady drying that concentrate fish during the season when storks nest (Kahl 1964). Successful nesting colonies are those that have a large number of foraging sites. To maintain a wide range of foraging opportunities, a variety of wetland habitats exhibiting short and long hydroperiods should be present. In terms of wood stork foraging, the Service (1999) describes a short hydroperiod as one where a wetland fluctuates between wet and dry in 1 to 5-month cycles, and a long hydroperiod where the wet period is greater than five consecutive months. Wood storks during the wet season generally feed in the shallow water of short-hydroperiod wetlands and in coastal habitats during low tide. During the dry season, foraging shifts to longer hydroperiod interior wetlands as they progressively dry down (though usually retaining some surface water throughout the dry season).

Because of their specialized feeding behavior, wood storks forage most effectively in shallow-water areas with highly concentrated prey. Typical foraging sites for the wood stork include freshwater marshes, depressions in cypress heads, swamp sloughs, managed impoundments, stock ponds, shallow-seasonally flooded roadside or agricultural ditches, and narrow tidal creeks or shallow tidal pools. Good foraging conditions are characterized by water that is relatively calm, open, and having water depths between 5 and 15 inches (5 and 38 cm). Preferred foraging habitat includes wetlands exhibiting a mosaic of submerged and/or emergent aquatic vegetation, and shallow, open-water areas subject to hydrologic regimes ranging from dry to wet. The vegetative component provides nursery habitat for small fish, frogs, and other aquatic prey, and the shallow, open-water areas provide sites for concentration of the prey during daily or seasonal low water periods.

WOOD STORK KEY

Although designed primarily for use by Corps Project Managers in the Regulatory and Planning Divisions, and State Regulatory agencies or their designees, project permit applicants and co-sponsors of civil works projects may find this key and its supporting documents useful in identifying potential project impacts to wood storks, and planning how best to avoid, minimize, or compensate for any identified adverse effects.

A. Project within 2,500 feet of an active colony site[1]………………………*May affect*

Project more than 2,500 feet from a colony site……………………………go to B

B. Project does not affect suitable foraging habitat[2] (SFH)………………….*no effect*

Project impacts SFH[2]……………………………………………………go to C

C. Project impacts to SFH are less than or equal to 0.5 acre[3]……….................*NLAA*[4]

Project impacts to SFH are greater than or equal to 0.5 acre..……………..go to D

D. Project impacts to SFH not within a Core Foraging Area[5] (see attached map) of a colony site, and no wood storks have been documented foraging on site……………………………………………………………..............NLAA[4]

Project impacts to SFH are within the CFA of a colony site, or wood storks have been documented foraging on a project site outside the CFA …………..….go to E

E. Project provides SFH compensation within the Service Area of a Service-approved wetland mitigation bank or wood stork conservation bank preferably within the CFA, or consists of SFH compensation within the CFA consisting of enhancement, restoration or creation in a project phased approach that provides an amount of habitat and foraging function equivalent to that of impacted SFH (see *Wood Stork Foraging Habitat Assessment Procedure*[6] for guidance), is not contrary to the Service's *Habitat Management Guidelines For The Wood Stork In The Southeast Region* and in accordance with the CWA section 404(b)(1) guidelines……*NLAA*[4]

Project does not satisfy these elements.……………………...………..*May affect*

[1] An active nesting site is defined as a site currently supporting breeding pairs of wood storks, or has supported breeding wood storks at least once during the preceding 10-year period.

[2] Suitable foraging habitat (SFH) is described as any area containing patches of relatively open (< 25% aquatic vegetation), calm water, and having a permanent or seasonal water depth between 2 and 15 inches (5 to 38 cm). SFH supports and concentrates, or is capable of supporting and concentrating small fish, frogs, and other aquatic prey. Examples of SFH include, but are not limited to, freshwater marshes and stock ponds, shallow, seasonally flooded roadside or agricultural ditches, narrow tidal creeks or shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs. See above *Summary of General Wood Stork Nesting and Foraging Habitat Information*.

[3] On an individual basis, projects that impact less than 0.5 acre of SFH generally will not have a measurable effect on wood storks, although we request the Corps to require mitigation for these losses when appropriate. Wood Storks are a wide ranging species, and individually, habitat change from impacts to less than 0.5 acre of SFH is not likely to adversely affect wood storks. However, collectively they may have an effect and therefore regular monitoring and reporting of these effects are important.

[4] Upon Corps receipt of a general concurrence issued by the JAFL through the Programmatic Concurrence on this key, "NLAA" determinations for projects made pursuant to this key require no further consultation with the JAFL.

[5] The U.S. Fish and Wildlife Service (Service) has identified core foraging area (CFA) around all known wood stork nesting colonies that is important for reproductive success. In Central Florida, CFAs include suitable foraging habitat (SFH) within a 15-mile radius of the nest colony; CFAs in North Florida include SFH within a 13-mile radius of a colony. The referenced map provides locations of known colonies and their CFAs throughout Florida documented as active within the last 10 years. The Service believes loss of suitable foraging wetlands within these CFAs may reduce foraging opportunities for the wood stork.

[6]This draft document, *Wood Stork Foraging Habitat Assessment Procedure*, by Passarella and Associates, Incorporated, may serve as further guidance in ascertaining wetland foraging value to wood storks and compensating for impacts to wood stork foraging habitat.

Monitoring and Reporting Effects

For the Service to monitor cumulative effects, it is important for the Corps to monitor the number of permits and provide information to the Service regarding the number of permits issued that were determined "may affect, not likely to adversely affect." It is requested that information on date, Corps identification number, project acreage, project wetland acreage, and latitude and longitude in decimal degrees be sent to the Service quarterly.

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APPENDIX D

Historic, Architectural, Archeological, and Cultural Resources

CULTURAL RESOURCE ASSESSMENT SURVEY OF THE JACKSONVILLE INTERNATIONAL AIRPORT NON-AVIATION DEVELOPMENT PROPERTY, DUVAL COUNTY, FLORIDA

Prepared for:

Landrum & Brown
4445 Lake Forest Drive
Cincinnati, Ohio 45242

Prepared by:

Florida's First Choice in Cultural Resource Management

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May 2022

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Katherine Baar – Archaeologist

May 2022

EXECUTIVE SUMMARY

Archaeological Consultants, Inc. (ACI) conducted a Cultural Resource Assessment Survey (CRAS) of the 141.18-acre Jacksonville International Airport Non-Aviation Development property in Duval County for Landrum & Brown. The project will involve construction of a non-aviation development. The Area of Potential Effects (APE) is located at the southwest quadrant of Pecan Park Road and Terrell Road. This project, completed in May 2022, was conducted as due diligence in anticipation of permitting requirements.

The purpose of this investigation was to locate and identify any cultural resources within the APE and to assess their significance in terms of eligibility for listing in the National Register of Historic Places (NRHP). As defined in 36 CFR Part § 800.16(d), the APE is the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." Based on the scale and nature of the activities, the project has a limited potential for any indirect (visual or audible) or cumulative effects outside the immediate footprint of construction. Therefore, because of the project type and location of the proposed work, the archaeological and historical APE are limited to the footprint of the property. All work was carried out in accordance with Section 106 of the *National Historic Preservation Act* of 1966 (Public Law 89-655, as amended), as implemented by 36 CFR 800 (*Protection of Historic Properties*, effective August 2004), as well as Chapters 267 and 373, *Florida Statutes (FS)*, Chapter 1A-46, *Florida Administrative Code,* and Florida's Coastal Management Program. All work was performed in accordance the standards and guidelines contained in the Florida Division of Historical Resources' (FDHR) *Cultural Resource Management Standards and Operational Manual*: *Module 3* (FDHR 2003). The Principal Investigators meet the *Secretary of the Interior's Professional Qualification Standards* (48 FR 44716) for archaeology, history, architecture, architectural history, or historic architecture.

Background research and a review of the Florida Master Site File (FMSF) and the NRHP indicated that no previously recorded archaeological sites are within the project area; two are located within one mile. There was a moderate potential for the occurrence of aboriginal archaeological sites based on the environmental setting and a moderate potential for the presence of historic archaeological sites. No cultural resources were discovered during these investigations, which included the excavation of 80 shovel tests.

A review of the FMSF and the NRHP indicated that no historic resources have been recorded within or adjacent to the APE. A review of the Duval County property appraiser's data, United States Department of Agriculture (USDA) historic aerial photos, and U.S. Geological Survey (USGS) quadrangle maps suggested no potential for historic resources within the APE (Holland 2022; USDA 1943, 1960, 1971; USGS 1965). Although numerous structures had been within the APE, they are no longer extant. This was confirmed by the field investigations.

Given the results of background research and field survey, which included a total of 80 shovel tests, no archaeological sites or historic resources were discovered. Thus, there are no cultural resources that are listed, eligible for listing, or that appear potentially eligible for listing in the NRHP within the APE. Therefore, it is the professional opinion of ACI that the proposed undertaking will result in no historic properties affected.

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1.0 INTRODUCTION

Archaeological Consultants, Inc. (ACI) conducted a Cultural Resource Assessment Survey (CRAS) of the 141.18-acre Jacksonville International Airport (JAX) Non-Aviation Development property in Duval County for Landrum & Brown. The project will involve construction of a non-aviation commercial development. The Area of Potential Effects (APE) is located at the southwest quadrant of Pecan Park Road and Terrell Road (**Figure 1.1**). This project, completed in May 2022, was conducted as due diligence in anticipation of permitting requirements.

The purpose of this investigation was to locate and identify any cultural resources within the APE and to assess their significance in terms of eligibility for listing in the National Register of Historic Places (NRHP). As defined in *36 CFR Part § 800.16(d)*, the APE is the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." Based on the scale and nature of the activities, the project has a limited potential for any indirect (visual or audible) or cumulative effects outside the immediate footprint of construction. Therefore, because of the project type and location of the proposed work, the archaeological and historical APE are limited to the footprint of the property. All work was carried out in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-655, as amended), as implemented by *36 CFR 800* (Protection of Historic Properties, effective August 2004), as well as Chapters 267 and 373, *Florida Statutes* (*FS*), Chapter 1A-46, *Florida Administrative Code*, and Florida's *Coastal Management Program*. All work was performed in accordance the standards and guidelines contained in the Florida Division of Historical Resources' (FDHR) *Cultural Resource Management Standards and Operational Manual: Module 3* (FDHR 2003). The Principal Investigators meet the *Secretary of the Interior's Professional Qualification Standards (48 FR 44716)* for archaeology, history, architecture, architectural history, or historic architecture.

The field investigations were preceded by background research. Such work provided both an informed set of expectations concerning the kinds of cultural resources that might be anticipated to occur within the project area, as well as a basis for evaluating any new sites discovered.

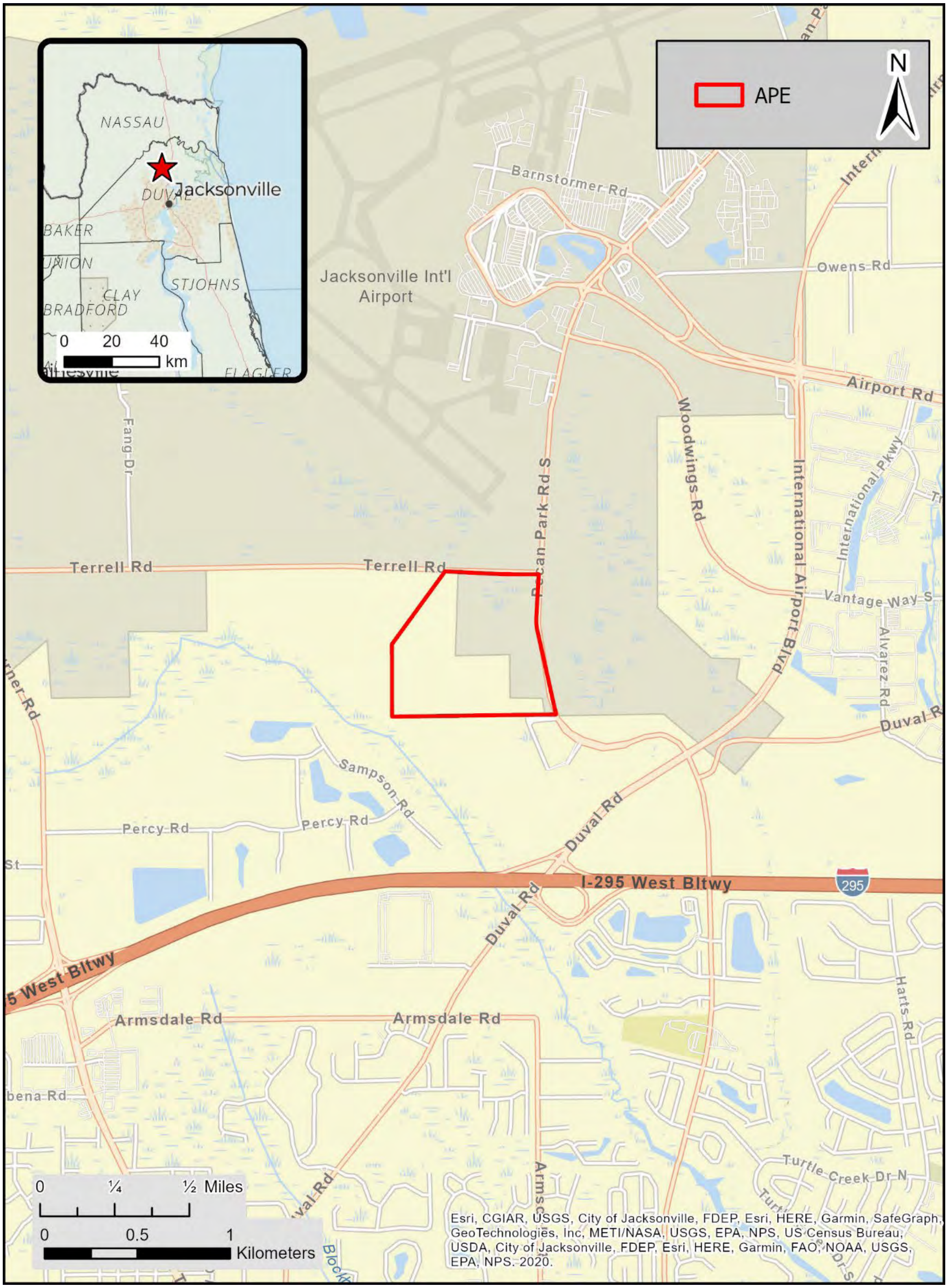

Figure 1.1. Location of the JAX Non-Aviation Development APE, Duval County.

2.0 ENVIRONMENTAL SETTING

Environmental factors such as geology, topography, relative elevation, soils, vegetation, and water resources are important in determining where pre-colonial and historic period archaeological sites are likely to be located. These variables influenced what types of resources were available for utilization in a given area. This, in turn, influenced decisions regarding settlement location and land-use patterns. Because of the influence of the local environmental factors upon the pre-colonial period populations, a discussion of the effective environment is included.

2.1 Location and Setting

The APE is located in Sections 26-27 and 34-35 of Township 1 North, Range 26 East (United States [U.S.] Geological Survey [USGS] Trout River 2013) (**Figure 2.1**). The 141.18-acre tract is located south of Terrell and west of Pecan Park Road in western Duval County. It is east of Cedar Creek and south of a tributary. The APE is dominated by planted pine of various ages. Disturbance from pine cultivation (row scars, push/vegetation debris piles) was noted throughout the APE. Maple was common amidst the pine. Water oak, bay, magnolia, and other vegetation was also noted. The understory ranged from ferns and grasses to dense gallberry, palmetto, and vines (dense undergrowth was typical in the wetter areas). A small area of the APE situated in the northeast corner includes maintained grass and weeds. A wetland slough supporting hardwoods, willow, and other water-tolerant plants traverses the APE, with some areas of standing water noted. The natural drainage has been modified by ditching within and adjacent the APE (**Photos 2.1-2.4**).

Photo 2.1. Planted pine in the western portion of the APE, facing south.

2.2 Physiography and Geology

The project area is within the northern or Proximal geomorphic zone, which is characterized by continuous high ground forming a broad upland which extends eastward to the Eastern Valley, and westward continuously into the western highlands of Florida (White 1970). More specifically, the project area is situated on the St. Marys Meander Plain (White 1970).

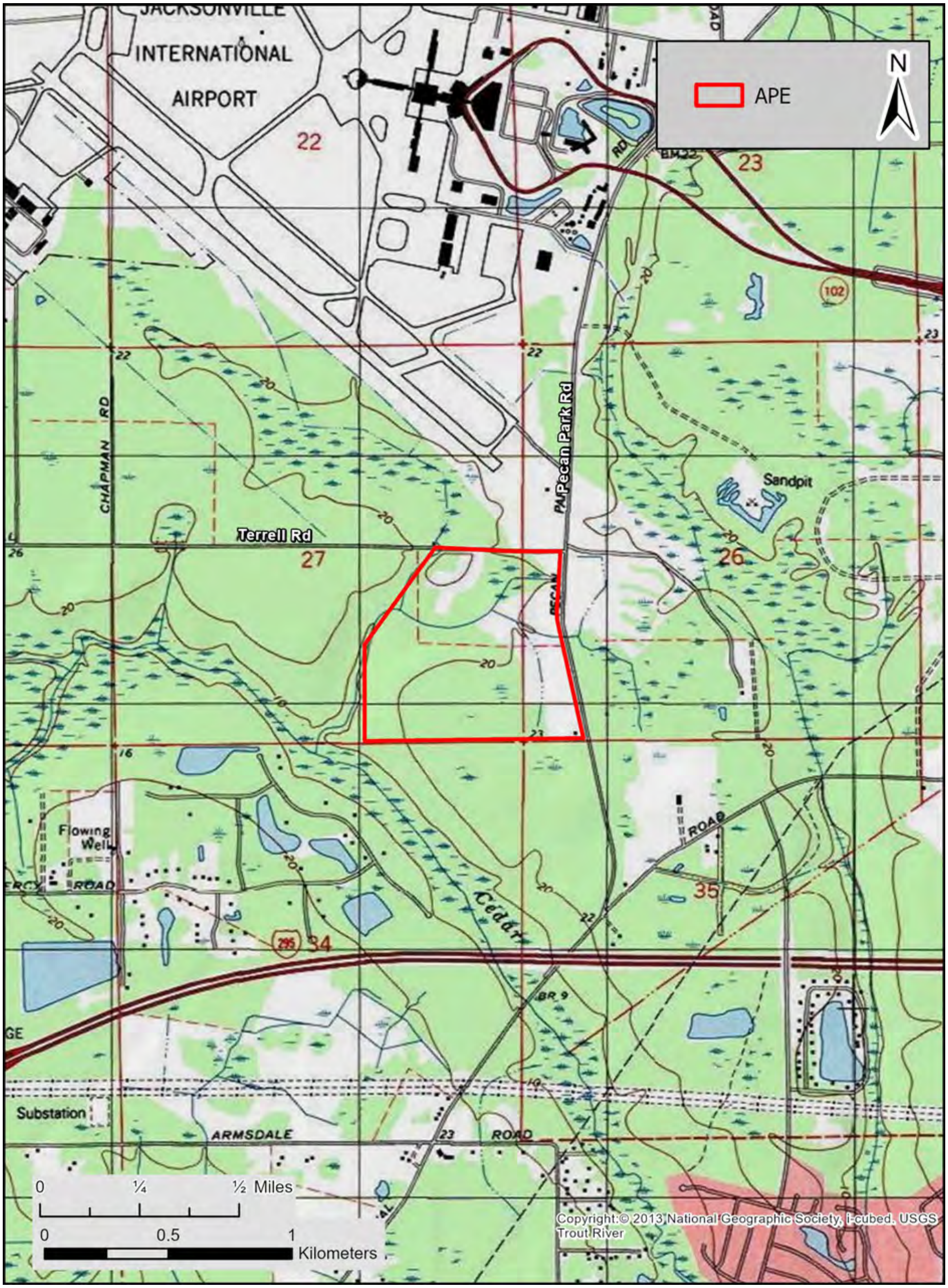

Figure 2.1. Environmental setting of the APE.

Photo 2.2. Swamp in the northwest portion of the APE, facing west.

Photo 2.3. Bay and maple in the southeast portion of the APE.

Photo 2.4. Cleared are in the northeast corner of the APE.

The area's surface lithology consists of undifferentiated sediments of the Pleistocene and Holocene, which are surficially evidenced by shell sand and clay (Knapp 1978; Scott 2001; Scott et al. 2001). Elevation of the APE extends from 10 to 25 feet (ft) above mean sea level (amsl).

2.3 Soils and Vegetation

U.S. Department of Agriculture (USDA) Duval County soil survey indicates that the APE lies within the Pelham-Mascote/Surrency-Sapelo soil association (Watts 1998). These nearly level, poorly drained and very poorly drained soils occur in flatwoods that are interspersed with flats, depressions, and flood plains. The poorly drained Mascotte and Sapelo soils occur in the flatwoods and the Pelham soils occur on nearly level flats. The very poorly drained Surrency soils occur in nearly level depressions and on flood plains a. The natural vegetation in the flatwoods consists of mixed longleaf and slash pine with an understory of saw palmetto, gallberry, pineland threeawn, and bluestem (Watts 1998). The depressional soils support cypress, pond pine, red maple, ferns, and sweetgum with an understory of wax myrtle, water-tolerant ferns, and grasses. The specific soil types are presented in **Table 2.1** and their locations are depicted on **Figure 2.2 (**USDA 2018**)**.

Table 2.1. Soil types within the APE.

Soil Type/slope	Drainage	Environmental setting
Mascotte fine sand, 0-2%	Poor	Flatwoods
Pelham fine sand, 0-2%	Poor	Flats
Sapelo fine sand, 0-2%	Poor	Flatwoods
Surrency loamy fine sand, depressional, 0-2%	Very poor	Flood plains
Yulee clay, 0-2%, frequently flooded	Very poor	Flood plains

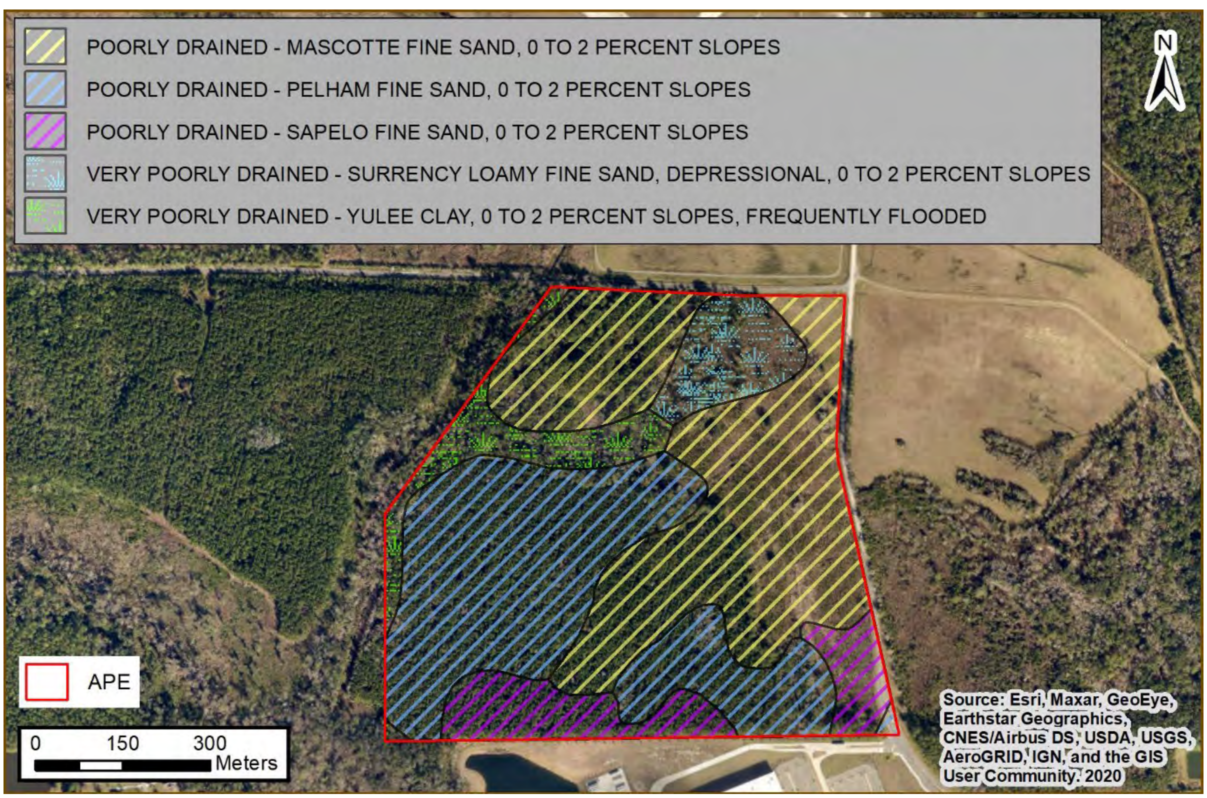

Figure 2.2. Soil type distribution within the APE.

Soils support different vegetative regimes, which in turn provide habitats for the local animal population, and thus providing essential food resources. They have variable suitability for openland, woodland, and wetland habitats (good, fair, poor, very poor). The habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses, and legumes, and wild herbaceous plants. The wildlife attracted to these areas include bobwhite quail, dove, meadowlark, field sparrow, cottontail, and red fox. Mascotte, Pelham, Sapelo, and Yulee soils are rated fair for openland wildlife habitat. Woodland wildlife habitat includes area of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include turkey, thrushes, woodpeckers, squirrels, gray fox, raccoon, and deer. Mascotte, Pelham, and Sapelo sands are rated fair for this type of habitat; Yulee clay is well suited to woodlands. The habitat for wetland wildlife includes areas of open, marshy, or swampy, shallow water areas. Wildlife in these areas include ducks, geese, herons, shorebirds, mink, and otter. Pelham, Sapelo, and Surrency soils are rated fair for wetland habitats; Yulee clay is well suited to wetlands (Watts 1998: Table 10). Soils not mentioned above are rated poor or very poor.

2.4 Paleoenvironmental Considerations

The early environment of the region was different from that seen today. Sea levels were lower, the climate was arid, and fresh water was scarce. An understanding of human ecology during the earliest periods of human occupation in Florida cannot be based on observations of the modern environment because of changes in water availability, botanical communities, and faunal resources. Aboriginal inhabitants would have developed cultural adaptations in response to the environmental changes taking place, which were then reflected in settlement patterns, site types, artifact forms, and subsistence economies.

Due to arid conditions between 16,500 and 12,500 years ago, the perched water aquifer and potable water supplies were absent. Palynological studies conducted in Florida and Georgia suggest that between 13,000 and 5000 years ago, this area was covered with an upland vegetation community of scrub oak and prairie (Watts 1969, 1971, 1975). However, the environment was not static. Evidence recovered from the inundated Page-Ladson Site in north Florida has clearly demonstrated that there were two periods of low water tables and dry climatic conditions and two episodes of elevated water tables and wet conditions (Dunbar 2006c).

By 5000 years ago, a climatic event marking a brief return to Pleistocene climatic conditions induced a change toward more open vegetation. Southern pine forests replaced the oak savannahs. Extensive marshes and swamps developed along the coasts and subtropical hardwood forests became established along the southern tip of Florida (Delcourt and Delcourt 1981). Northern Florida saw an increase in oak species, grasses, and sedges (Carbone 1983). At Lake Annie, in south central Florida, pollen cores were dominated by wax myrtle and pine. The assemblage suggests that by this time, a forest dominated by longleaf pine along with cypress swamps and bayheads existed in the area (Watts 1971, 1975). About 5000 years ago, surface water was plentiful in karst terrains and the level of the Floridan aquifer rose to five feet above present levels. With the establishment of warmer winters and cooler summers than in the preceding early Holocene, the fire-adapted pine communities prevailed. These depend on the high summer precipitation caused by the thunderstorms and the accompanying lightning strikes to spark the fires (Watts et al. 1996; Watts and Hansen 1994). The increased precipitation also resulted in the formation of the large swamp systems such as the Okefenokee and Everglades (Gleason and Stone 1994). After this time, modern floral, climatic, and environmental conditions began to be established.

3.0 CULTURAL CHRONOLOGY

A discussion of the regional prehistory is included in cultural resource assessment reports to provide a framework within which to examine the local archaeological record. Archaeological sites are not individual entities but were once part of dynamic cultural systems. As such, individual sites cannot be adequately examined or interpreted without reference to other sites and resources in the region. In general, archaeologists summarize the prehistory of a given area (i.e., the archaeological region) by outlining the sequence of archaeological cultures through time. Archaeological cultures are defined largely in geographical terms, but also reflect shared environmental and cultural factors. The project area is within the East and Central Lakes archaeological region, as defined by Milanich and Fairbanks (1980) and Milanich (1994) (**Figure 3.1**). The spatial boundaries of the region are somewhat arbitrary, and it is after 500 BCE (Before Common Era) that characteristic regional differences become more evident in the archaeological record. The Paleoindian, Archaic, Formative, and Mississippian stages have been defined based on material culture traits such as stone tools and ceramics, as well as subsistence, settlement, and burial patterns.

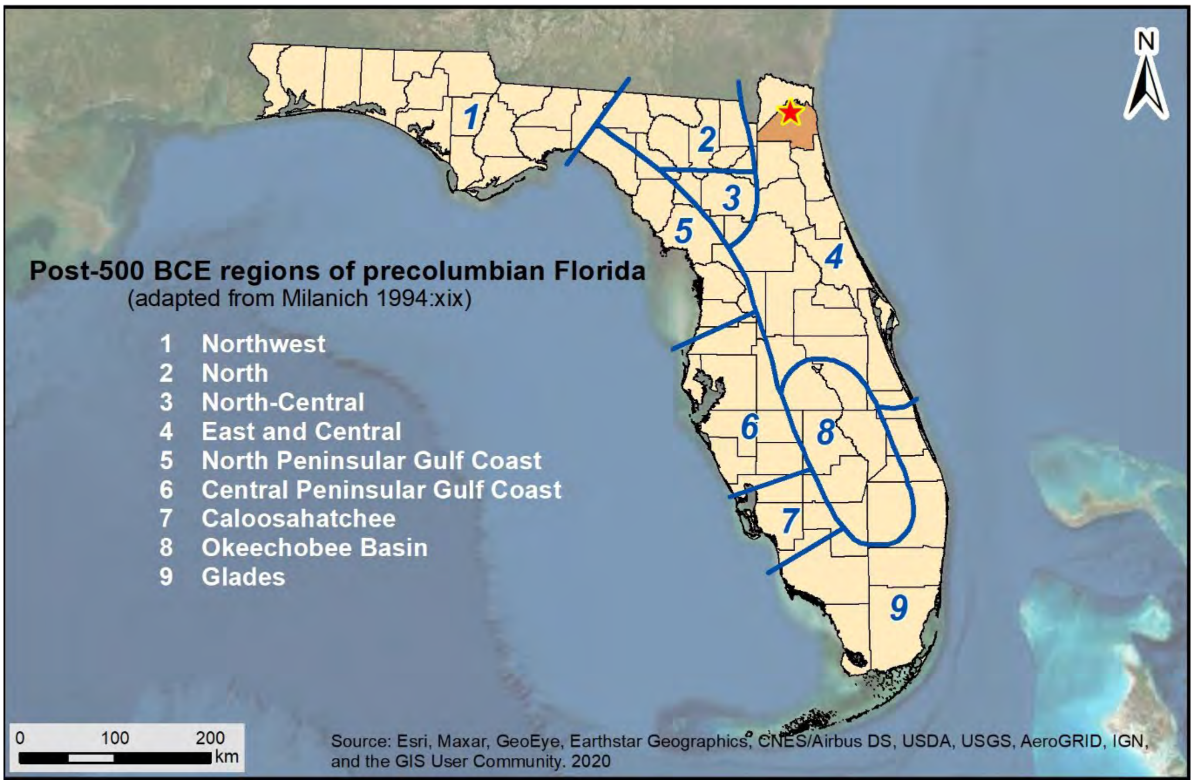

Figure 3.1. Florida Archaeological Regions.

The local history of the region is divided into four broad periods based initially upon the major governmental powers. The first period, Colonialism, occurred during the exploration and control of Florida by the Spanish and British from around 1513 until 1821. At that time, Florida became a territory of the U.S. and 21 years later became a State (Territorial and Statehood). The Civil War and Aftermath (1861-1899) period deals with the Civil War, the period of Reconstruction following the war, and the late 1800s, when the transportation systems were dramatically increased and development throughout the state expanded. The Twentieth Century period includes subperiods defined by important historic events such as the World Wars, the Boom of the 1920s, and the Depression. Each of these periods evidenced differential development and utilization of the region, thus effecting the historic site distribution.

3.1 Paleoindian

The Paleoindian stage is the earliest known cultural manifestation in Florida, dating from roughly 12,000 to 7500 BCE [Before Common Era] (Milanich 1994). Archaeological evidence for Paleoindians consists primarily of scattered finds of diagnostic lanceolate-shaped projectile points. The Florida peninsula at that time was quite different than today. In general, the climate was cooler and drier with vegetation typified by xerophytic species with scrub oak, pine, open grassy prairies, and savannas (Milanich 1994:40). When human populations were arriving in Florida, the sea levels were still as much as 130 to 200 ft below present levels and coastal regions of Florida extended miles beyond present-day shorelines (Faught 2004). Thus, many of these sites have been inundated (cf., Faught and Donoghue 1997).

The Paleoindian period has been sub-divided into three horizons based upon characteristic stone tool forms (Austin 2001). Traditionally, it is believed that the Clovis Horizon (10,500-9000 BCE) represents the initial occupation of Florida and is defined by the presence of the fluted Clovis points. These are more common in north Florida. However, recent work may indicate that Suwannee and Simpson points are contemporary with or predate Clovis (Dunbar 2006a; Stanford 1991).

The Suwannee Horizon (9000-8500 BCE) is the best known of the three Paleoindian horizons. The lanceolate-shaped, unfluted Simpson and Suwannee projectile points are diagnostic of this time (Bullen 1975; Daniel and Wisenbaker 1987; Purdy 1981). The Suwannee tool kit includes a variety of scrapers, adzes, spokeshaves, unifacially retouched flakes, and blade-like flakes as well as bone and ivory foreshafts, pins, awls, daggers, anvils, and abraders (Austin 2001:23).

Following the Suwannee Horizon is the Late Paleoindian Horizon (8500-8000 BCE). The smaller Tallahassee, Santa Fe, and Beaver Lake points have traditionally been attributed to this horizon (Milanich 1994). Many of these points have been recovered stratigraphically from late Archaic and early Woodland period components and thus, may not date to this period at all (Austin 2001; Farr 2006). Florida notched or pseudo-notched points, including the Union, Greenbriar, and Hardaway-like points, may represent late Paleoindian types, but these types have not been recovered from datable contexts, and their temporal placement remains uncertain (Dunbar 2006a:410).

Archaeologists hypothesize that Paleoindians lived in migratory bands and subsisted by gathering and hunting, including the now-extinct Pleistocene megafauna. It is likely that these nomadic hunters traveled between permanent and semi-permanent sources of water, such as artesian springs, exploiting the available resources. These watering holes would have attracted the animals, thus providing food and drink. In addition to being tied to water sources, most of the Paleoindian sites are close to good quality lithic resources. The settlement pattern consisted of the establishment of semi-permanent habitation areas and the movement of the resources from their sources of procurement to the residential locale by specialized task groups (Austin 2001:25).

Although the Paleoindian period is generally considered to have been cooler and drier, there were major variations in the inland water tables resulting from large-scale environmental fluctuations. There are two major theories as to why most Paleoindian materials have been recovered from inundated sites. The Oasis theory posits that due to low water tables and scarcity of potable water, the Paleoindians, and the game animals upon which they depended, clustered around the few available water holes that were associated with sinkholes (Neill 1964). Whereas others believe that the Paleoindians gathered around river-crossings to ambush the large Pleistocene animals as they crossed the rivers (Waller 1970). This implies periods of elevated water levels. Based on the research along the Aucilla and Wacissa Rivers, it appears that both theories are correct, depending upon what the local environmental conditions were at that time (Dunbar 2006b). During the wetter periods, populations became more dispersed because the water resources were abundant and the animals that they relied on could roam over a wider range.

Some of the information about this period has been derived from the underwater excavations at two inland spring sites in Sarasota County: Little Salt Spring and Warm Mineral Springs (Clausen et al. 1979). Excavation at the Harney Flats Site in Hillsborough County has provided a rich body of data concerning Paleoindian life ways. Analysis indicates that this site was used as a quarry-related base camp with special use activity areas (Daniel and Wisenbaker 1987). It has been suggested that Paleoindian settlement may not have been related as much to seasonal changes as generally postulated for the succeeding Archaic period, but instead movement was perhaps related to the scheduling of tool-kit replacement, social needs, and the availability of water, among other factors (Daniel and Wisenbaker 1987:175). Investigations along the Aucilla and Wacissa Rivers, as well as other sites within the north Florida rivers, have provided important information on the Paleoindian period and how the aboriginals adapted to their environmental setting (Webb 2006). Studies of the Pleistocene faunal remains from these sites clearly demonstrate the importance of these animals not for food alone, but as the raw material for their bone tool industry (Dunbar and Webb 1996).

3.2 Archaic

Climatic changes occurred, resulting in the disappearance of the Pleistocene megafauna and the demise of the Paleoindian culture. The disappearance of the mammoths and mastodons resulted in a reduction of open grazing lands, and thus, the subsequent disappearance of grazers such as horse, bison, and camels. With the reduction of open habitat, the herd animals were replaced by the more solitary, woodland browser: the white-tailed deer (Dunbar 2006a:426). The intertwined data of megafauna' extinction and cultural change suggests a rapid and significant disruption in both the faunal and floral assemblages. The Bolen people represent the first culture adapted to the Holocene environment (Carter and Dunbar 2006). Theirs included a more specialized toolkit and the introduction of chipped-stone woodworking implements.

Due to a lack of controlled excavations and the poor preservation of organic materials in the upland sites, our knowledge of the Early Archaic artifact assemblage is limited (Carter and Dunbar 2006; Milanich 1994). Discoveries at several sites indicate that bone and wood tools were used (Clausen et al. 1979; Doran 2002; Webb 2006). The archaeological record suggests a diffuse, yet well-scheduled, pattern of exploiting both coastal and interior resources. Since water sources were more numerous and larger than previously, the Early Archaic could sustain larger populations, occupy sites for longer periods, and perform activities that required longer occupation at a specific locale (Milanich 1994:67).

During the Middle Archaic, wetter conditions prevailed, sea levels began to rise, and pine forests and swamps began to emerge (Watts et al. 1996). The climate was changed to one of more pronounced seasonality with warmer summers and colder winters and by 4000 BCE, the climate became essentially the same as that of today (Watts et al. 1996:29). Miller (1998:68) suggests that when sea levels reached their current positions, the St. Johns River changed its riverine characteristics to become similar to a lake in the upper reaches and estuarine in the lower reaches. This allowed for the development of a wide resource base. Settlement became focused within coastal and riverine locales (Milanich 1994:64). The Mount Taylor period has been identified for the period 5000-2000 BCE (Milanich 1994). Subsistence was based on hunting, fishing, shellfish collecting, and plant gathering. Sites are generally located along the Atlantic coast, the upper reaches of the St. Johns River, and the Ocklawaha and Wekiva Rivers (Ste. Claire 1990; Weisman 1993; Wheeler et al. 2000). The theory that Archaic populations practiced a seasonal migration pattern between the interior and the coast has been called into question as investigations have confirmed year-round occupation of some sites (Russo 1992, 1996b; Russo et al. 1993; Russo and Ste. Claire 1992; Ste. Claire 1990).

The archaeobotanical research at the Groves' Orange Midden and the Lake Monroe Outlet Midden confirms an environment similar to today (ACI/Janus Research 2001; Newsom 1994; Purdy 1994b). Most of the botanical remains were from wetland species common along the lake margin, river swamp, and backwaters. Upland species were also utilized. Middens of mystery snail, apple snail, and mussel provide evidence of occupation and resource exploitation along the rivers of east and central Florida (Cumbaa 1976; Ellis et al. 1994; Fryman et al. 1978).

Mount Taylor sites include large base camps, smaller special-use campsites, burial areas, and extensive shell middens. The artifact inventory of the Mt. Taylor people includes stone projectile points, tools, and microliths, as well as tools and decorative items of shell, bone, and wood (ACI/Janus Research 2001; Purdy 1994a; Wheeler and McGee 1994a, 1994b). The large, stemmed projectile points, especially the Newnan type, are diagnostic of this time. Other common point types include Hillsborough, Levy, Putnam, Alachua, and Marion (Bullen 1975). Silicified coral was more prevalent as a raw material (Milanich 1994) and thermal alteration of the stone became common (Ste. Claire 1987). Numerous shell and bone items indicate contact with coast.

One of the most interesting aspects of the Mount Taylor culture is evidence for mass burial interments in specially prepared areas within shell middens (Milanich and Fairbanks 1980). Such burials were found at Tick Island along the St. Johns River (Aten 1999; Bullen 1962; Jahn and Bullen 1978). Milanich (1994:81) suggests that Early and Middle Archaic peoples used aquatic environments for burial. The Early Archaic Windover Site contained primary and flexed burials within a peat pond. These were held in place with wooden stakes and the interments included grave goods such as textiles and worked bone, shell, and wood (Doran 2002). The Gauthier cemetery, situated on a palm island within a slough between a pond and Lake Poinsett, contained primary and flexed burials (Carr and Jones 1981; Sigler-Eisenberg 1984b).

Interior sites (away from the major rivers and/or coast) include the smaller lithic and ceramic scatter campsites that were most likely used for hunting or served as special use extractive sites for such activities as gathering nuts or other botanical materials (Ste. Claire 1989, 1990). The Tomoka Site is a complex of nine mounds and a surrounding village midden located near the confluence of the Tomoka and Halifax River. Occupants utilized estuarine and coastal resources as evidenced by the midden of coquina and oysters. No ceramics have been recovered from this site (Douglass 1882; Piatek 1992, 1994). The burial mound is one of the earliest in Florida (Piatek 1994). Russo (1996a:284) suggests that Florida's Archaic burial mounds were not the precursors to the extensive burial mound use seen in the more recent past, rather, they were short-lived, dead-end traditions.

Evidence from the Groves' Orange Midden indicates contact, either physically or through trade, with the Tampa Bay and possibly the Suwannee River valley areas (Purdy 1994a). The occupants of the Lake Monroe Outlet Midden obtained most of their chert from Ocala limestone (ACI/Janus Research 2001). More specifically, the materials were attributed to the Gainesville, Ocala, Lake Panasoffkee East, and Lake Panasoffkee West quarry clusters (Endonino 2007). Other evidence of trade can be seen in the use of soapstone, which was imported from north central Georgia, South Carolina, and Virginia (Yates 2000). Soapstone transportation most likely occurred via canoe, and evidence for canoe usage is well-documented (Newsom and Purdy 1990; Purdy 1988; Wheeler et al. 2003).

By about 2000 BCE, fired clay pottery was introduced in Florida. The first ceramic types, tempered with fiber (Spanish moss or palmetto), are referred to as the Orange series. It was originally believed that the ceramics lacked decoration until about 1650 BCE when they were decorated with geometric designs and punctations. Recent research, however, has called the entire Orange chronology into question (Sassaman 2003). Based on a series of Accelerator Mass Spectrometry dates on soot from Orange Incised sherds from the middle St. Johns Valley and from radiocarbon dates on oyster and charcoal in association with Orange ceramics near the mouth of the river, all the Orange ceramic types occur within a time span from 2150 to 1650 BCE. The incidence of incising is also a function of site type as well as time; incising occurs more frequently at shell ring sites that were used for feasting (Saunders and Wrenn 2014). Cordell (2004) has documented the presence of sponge spicules in the Orange ceramic paste (the diagnostic trait of St. Johns wares), which suggest that the St. Johns ceramic tradition extends back to the beginning of ceramic use in the region (Sassaman 2003:11). The projectile point assemblage remained the same, with the addition of the Clay, Culbreath, and Lafayette point types (Bullen 1975).

There is little difference between Middle/Late Archaic and Orange populations except that there are more Orange sites, and the density of sites is higher. Orange settlements were primarily located near wetland locales. The abundance of resources located in and near the wetlands permitted larger settlements. The adaptation to this environment allowed for a wider variety of resources to be exploited and greater variability in settlement patterns. Shellfish, fish, and other food sources were now available from coastal and freshwater wetlands resulting in an increase in population size.

The transformation of the Archaic stage into the Formative stage (1200 to 500 BCE) is marked by increased regionalism, population growth, and socio-cultural complexity (Bullen 1959, 1970). The diffusion of culture traits, resulting from the movements of small groups of people, led to the spread of several ceramic and tool traditions (Bullen 1959). The major changes in post-Transitional cultures cannot be attributed to environmental changes but rather the result of social, political, religious, and technological innovations introduced from elsewhere in the eastern U.S. (Miller 1998:76).

3.3 Formative

The period from about 500 BCE until 750 CE (Common Era) in this area is referred to as St. Johns I, which has been divided into three sub-periods: St. Johns I (500 BCE – 100 CE), St. Johns Ia (100–500 CE), and St. Johns Ib (500–750 CE) based on characteristic ceramic types (Milanich 1994:247). There are regional variants of this tradition: the St. Marys to the north and the Indian River to the south. The St. Marys Region is located at the mouth of the St. Johns and extends northward into Georgia (Russo 1992). Sites in this area contain a mixture of Georgia ceramics as well as St. Johns ceramics. At the southern end is the Indian River Region, which was defined by Rouse (1951). There is a higher prevalence of sand-tempered wares in this region. Malabar I is coeval with St. Johns I. Malabar II occurs at the same time as St. Johns.

Settlement patterns during this time were virtually the same as that seen for the earlier periods, i.e., along the coastal estuaries and larger rivers. The Twin Mounds Site faunal analysis suggests that there was a slight decrease in the dependence on freshwater shellfish during the St. Johns periods as opposed to the preceding Orange period (Weisman 1993). Based on that analysis, there was increased use of reptilian resources. There was also a tremendous increase in the number of archaeological sites during this time. An apparent trend from St. Johns I through Ib times was a population shift into the northern part of the St. Johns River valley, possibly due to the need for more arable land (Milanich and Fairbanks 1980:158).

Village wares were almost all St. Johns Plain. St. Johns Incised is associated with the Early St. Johns I period. Deptford and Swift Creek pottery or copies are occasionally present in St. Johns I and Ia periods. St. Johns Cordmarked ceramics are associated with the St. Johns Ia period while Dunns

Creek Red is associated with the St. Johns Ia and Ib periods. In her analysis of the ceramics from Edgewater Landing, Cordell notes that through time, St. Johns Plain ceramics become sandier due to increased use of quartz sand as an aplastic agent (Russo et al. 1989:68).

Evidence of the continuous use burial mounds begins at that time. Many of the burials were found in large central pits, probably the result of secondary interments. Some changes in the burial practices include the possible use of log tombs during the St. Johns Ia period as well as inclusion of Hopewellian-Yent complex exotic trade items (Milanich 1994:261). Much of the information on St. Johns I period burial practices has been obtained from the Ross Hammock Site in Volusia County (Bullen et al. 1967). This site complex consists of two large burial mounds and an extensive village midden located on the west shore of Mosquito Lagoon (Bullen et al. 1967:16). The Benton Mound dates to the St. Johns Ia period (Miller 1994). Other ceremonial activities associated with these sites include the "killing" of ceramic pots.

Year-round occupation of the coast and along the rivers occurred with special use-activity sites located in other locales and short-term campsites on the coast as well. Excavations at the Sligh and Lake Jessup South sites suggest that they served as villages or long-term encampments (Dickinson and Wayne 1996; Wayne and Dickinson 1993). The wide variety of tools and abundance of ceramics suggests a relatively sedentary group. Hunting, food preparation, and tool making were common site activities. The site pattern consists of small, probably individual household midden deposits with structural evidence limited to arcs of shallow postholes, often shell-filled, and fire pits (Dickinson and Wayne 1996:108). The Hontoon Island Site has provided a wealth of data due to the preservation of many classes of artifacts within the inundated midden deposits. Evidence of an extensive woodworking tradition is noted by the numerous carved items recovered from the river as well as the debitage remaining from the carving activities (Purdy 1987). The faunal and botanical analyses suggested that the site was occupied on a year-round basis and that most of the resources were collected within 5-10 km (3-6 mi) of the site (Newsom 1987; Wing and McKean 1987).

The survey of the Edgewater Landing tract recorded several shell middens that date to this period (Johnson and Ste. Claire 1988). Excavations conducted at two of the sites indicated occupation during the St. Johns Ia and St. Johns Ib periods. Both sites were characterized as short-term camps established to harvest oysters and hardshell clams. The sites were occupied irregularly throughout the year but were utilized during all seasons of the year (Russo et al. 1989). The Seminole Rest site is a large quahog clam-processing center located along Mosquito Lagoon (Horvath 1995). The faunal analysis indicated that the site was used throughout the year but did not appear to be occupied on a year-round basis (Quitmyer 1995). Although located along the lagoon's shore, fish made up only a small portion of the diet, less than 15%, and mammals even less (Kozuch 1995).

3.4 Mississippian

The St. Johns II period has been divided into three sub-periods: St. Johns IIa (750 – 1050 CE), St. Johns IIb (1050 – 1513 CE), and St. Johns IIc (1513 – 1565 CE). The presence of St. Johns Check Stamped pottery marks these periods. St. Johns II carried on the tradition, being marked only by the introduction of check-stamped pottery (Goggin 1952:70). Occupation of riverine and coastal shell middens continued, although Miller (1998:80) notes that there is a relative increase in the number of non-riverine and non-coastal sites, perhaps as the result of locating sites in more agriculturally suited locales. Such sites are quite numerous, suggesting an increase in population.

Hunting and gathering remained important but the dependence upon cultivated crops such as maize, squash, and gourds increased in some areas. The use of gourds as domesticates is still being studied, as there is no evidence for cultivation even though gourds and squashes have been around for thousands of years prior to this period (Newsom et al. 1993). In the upper St. Johns basin, the practice of horticulture was not adopted because the wetland ecology and subsistence strategies were different (Russo 1984; Sigler-Eisenberg 1984a; Sigler-Eisenberg et al. 1985). At the Gauthier Site, fish and aquatic turtles were the primary subsistence items, with relatively little reliance upon terrestrial game or freshwater shellfish (Sigler-Eisenberg 1984b).

There was an increase in the number and size of villages during the St. Johns IIa period suggesting population expansion. A ranked society may have evolved as evidenced by the differential burial customs. No longer were all people interred in burial mounds. Deagan (1978:109) notes that around 1000 CE a population shift from the more southern and southwestern areas into the northern areas is evidenced by changes in relative frequencies of burial mounds in the area over time. Excavations of several burial mounds revealed a new pattern in that the burials were placed on their backs with their heads or feet pointing toward the mound center (Jennings et al. 1957; Willey 1954).

The St. Johns IIb period (ca. 900-1250/1300 CE) is characterized by the adoption of some Mississippian traits into the ceremonial system as well as the presence of St. Johns Simple Stamped ceramics. The Mississippian lifestyle, however, never became dominant, possibly because the soils were not suitable for full agricultural pursuits. A more complex socio-political organization is suggested by the presence of platform mounds at the ceremonial centers: Mill Cove Complex near the mouth of the St. Johns River and Mt. Royal just north of Lake George (Ashley 2012). Copper beads and ornaments, as well as greenstone celts, have been recovered from several sites, indicating contact with the Mississippian world. Mt. Royal has been considered a center of dispersal in the marine shell trade due to the tremendous quality of unmodified whelk shells recovered from the mound (Ashley 2005). By around 1300 CE, influence from the Mississippian world waned, probably due to the fall and abandonment of the Macon Plateau to the north and the disruption of the existing interaction networks. At that time, the major sites were apparently abandoned, and the St. Johns II people moved further south, up the St. Johns River. However, within two centuries, the introduction of corn farming and the shift from long-distance trading to territorial raiding created the volatile landscape that was encountered by the Europeans when they first arrived (Ashley 2012:125).

The St. Johns IIc period is marked by the introduction of European artifacts in some of the mounds. Four Native American ethnic groups were known to inhabit east central Florida at the time of Spanish contact: the Ais, the Mayaca, the Jororo, and the Timucua. The Ais lived along the Atlantic Coast and were closely involved with the Spanish. They inhabited the coastal strand and Indian River areas, apparently mixing their indigenous hunting/gathering/fishing economy with the salvaging of Spanish shipwrecks (Milanich 1995:64-65). The Timucua, in the north/northeast part of the state, shared a common language but cannot be considered as a specific cultural group because the range of the Timucuan speakers was crosscut by dialect, techno-environmental, ceremonial, political and geographical differences (Deagan 1978:89). The Mayaca occupied eastern Lake, western Volusia, and Seminole counties. The Jororo occupied the area of Orange and Seminole Counties, extending southward into Polk and Highlands Counties (Milanich 1995:63). They pursued a hunting-gathering-fishing economy (Newsom 1987). Although these Indians apparently continued the St. Johns tradition, they did not share the same Timucuan language as the St. Johns people further north (Milanich 1995).

3.5 Colonialism

The cultural traditions of the native Floridians ended with the advent of European expeditions to the New World. The initial events, authorized by the Spanish crown in the 1500s, ushered in devastating European contact. After Ponce de Leon’s landing near St. Augustine in 1513, Spanish explorations were largely confined to the West Coast of Florida (Narvaez in 1528; DeSoto in 1539). To contest the Spanish presence, French explorer, Jean Ribault, landed at the mouth of the St. John's River and named it Reviere de la Mai on May l, 1562. Two years later, René Laudonnière established a French Huguenot colony known as Fort Caroline approximately four miles up the river on a high bluff (Laudonniere 2001). In 1565, the Spanish destroyed to fort to protect their treasure galleons and Spanish interests in the New World. As the Spanish Admiral, Pedro Menéndez was taking Fort Caroline, a hurricane destroyed the French fleet, pushing it down to the coast north of Cape Canaveral (McGrath 2002). The few Huguenots who did not surrender withdrew to the vicinity of the wrecked fleet near Cape Canaveral. Indians, friendly to the Spanish, related this information to Menendez, who captured all but one French captain and a few soldiers who decided to risk their fortunes with the Indians rather than the Spanish Catholics. Their campsite is believed to be located within what now is the Canaveral National Seashore (Brewer and Horvath 2004).

In the early 1570s, Phillip II of Spain issued three laws for increasing and controlling Spain's American empire. These were the Ordinances of Pacification, Patronage, and Laying Out of Towns. This, in effect, brought about the beginning of the mission chain across north Florida. Expansion of the missions into the Florida hinterland did not really begin until the early 1600s. In 1623, Franciscan friars began working among the Yustaga, located between the Suwannee and Aucilla Rivers. These missions were no longer extant by 1675 (Bushnell 1996).

By the early 1700s, the native populations were largely wiped out - ravaged by conquest, disease, and the typical effects of European contact. In 1740, the Spanish built Fort St. Nicholas along the St. Johns River in the area that later developed into Jacksonville. The fort was constructed to guard a crossing of the river that the Spanish called the Ferry of St. Nicholas. It was formerly known as Wacca Pilatka (cows crossing over) by the Native Americans. The area that now constitutes the State of Florida was ceded to Britain in 1763. The British called the crossing and the settlement around it Cowford. Taking advantage of the ford, England constructed the King's Road in 1765 to connect St. Augustine to the British communities in Georgia by crossing the river at Cowford. Britain governed Florida until 1783 when the Treaty of Paris returned Florida to Spain; however, Spanish influence was nominal during this second period of ownership. The occupants of Cowford organized against Spanish rule. Between 1812 and 1816, area residents formed the "Republic of Florida" with boundaries of the St. Mary's River on the north and the St. John's River on the south. The Republic had its own president and an army of disgruntled planters who burned Fort St. Nicholas in 1812 to protest Spanish rule. The rebellion ended when the Spanish agreed to more representative rule within the Republic's boundaries. Nearby, Lewis Zachariah Hogans built a log cabin in 1816 on his Spanish land grant overlooking the St. Johns River in what is now downtown Jacksonville. By 1818, John Brady operated a rowboat ferry at the ford (Federal Writers' Project [FWP] 1939: 188-189).

Prior to the American colonial settlement of Florida, portions of the Creek Nation and remnants of other Indian groups from Alabama, Georgia, and South Carolina moved into Florida to repopulate the vacuum created by the dissemination of the aboriginal inhabitants. With a society based upon the cultivation of crops and raising horses and cattle, the Seminoles, as these migrating groups of Indians became known, formed at various times loose confederacies for mutual protection. Not only did the Seminoles welcome escaped slaves, but they also conducted raids into Georgia and Alabama. This resulted in General Andrew Jackson's invasion of Spanish Florida in 1818, now known as the First Seminole War (Tebeau 1980).

3.6 Territorial and Statehood

With the signing of the Adams-Onis Treaty between the U.S. and Spain in 1819, Florida became a U.S. Territory in 1821. Andrew Jackson, named provisional governor, divided the territory into St. Johns and Escambia Counties. At that time, St. Johns County encompassed all of Florida lying east of the Suwannee River, and Escambia County included the land lying to the west. In 1822, the territorial government carved Duval County from St. Johns County. During the same year, Isaiah D. Hart, his brother Daniel, and Zachariah Hogans platted a portion of Cowford on the north bank of the St. Johns River. They renamed the community Jacksonville after Andrew Jackson but despite the platting and naming of streets, eight years passed before the community could claim 300 residents (FWP 1939:187). The city was incorporated in 1832. In the first territorial census in 1825, some 5,077 persons had reportedly lived east of the Suwannee River; by 1830 that number had risen to 8,956 (Tebeau 1980:134).

Even though the First Seminole War was fought in north Florida, the Treaty of Moultrie Creek in 1823, at the end of the War, was to affect the settlement of all of Florida. The Seminoles relinquished their claim to the whole peninsula in return for occupancy of an approximately four-million-acre reservation south of Ocala and north of Charlotte Harbor (Mahon 1985). The treaty never satisfied the Seminoles nor the settlers. The inadequacy of the reservation and the desperate situation of the Seminoles living there, plus the mounting demand of the settlers for their removal, soon produced another conflict. By 1835, the Second Seminole War was underway. The war lasted until 1842 when the federal government decided to end the conflict by withdrawing troops from Florida. Some of the battle-weary Seminoles were persuaded to migrate west where the federal government had set aside land for their occupation. However, those who were adamant about remaining were allowed to do so but were pushed further south into the Everglades and Big Cypress Swamp. This area became the last stronghold for the Seminoles (Mahon 1985).

The surveys and maps of the Florida peninsula and the improvements, such as trails and forts, resulting from the Seminole wars provided invaluable assistance in the settlement of Florida. During this period, the U. S. Government initiated land surveys in the project area. Township 1 North, Range 26 South were surveyed between 1825 and 1850 by C.C. Stone, Ralph W. Norris, Marcellus A. Williams, D.F. McNeil, David H. Burr, and Paul McCormick (Burr 1849; McCormick 1831; McNeil 1826; Norris 1850b, 1850a; Stone 1825; Williams 1849). There were no historic features depicted on the plat or mentioned in the fieldnotes within the APE (**Figure 3.2**) (McCormick et al. 1850). McCormick described the section lines crossing the APE as 1st, 2nd, and 3rd rate pine with 1st and 2nd rate hammock; he noted an old field south of the APE (McCormick 1831:188, 202). Almost 20 years later, Norris described the same area as primarily 3rd rate pine and 2nd rate hammock (Norris 1850a:142, 147-149)

The population of Jacksonville and north Florida continued to grow during the antebellum period. Jacksonville incorporated in 1832 and received its first newspaper, the *Courier,* in 1835. A freeze in 1835 killed citrus trees in the surrounding area and combined with the Seminole War caused a recession. Despite the disasters and the lack of a railroad, the city developed into a market for cotton, naval stores, and lumber, especially with the introduction of the steam sawmill. Although nearly a million acres were sold to settlers in north Florida during the antebellum period, most of the growth occurred around Tallahassee and Jacksonville. In 1836, the Bellamy Road opened following the old mission trail between St. Augustine and Tallahassee (Boyd 1935, 1936). During the territorial period, cotton, indigo, rice, naval stores, and cattle provided the major cash crops for Florida (FWP 1939; Tebeau 1980).

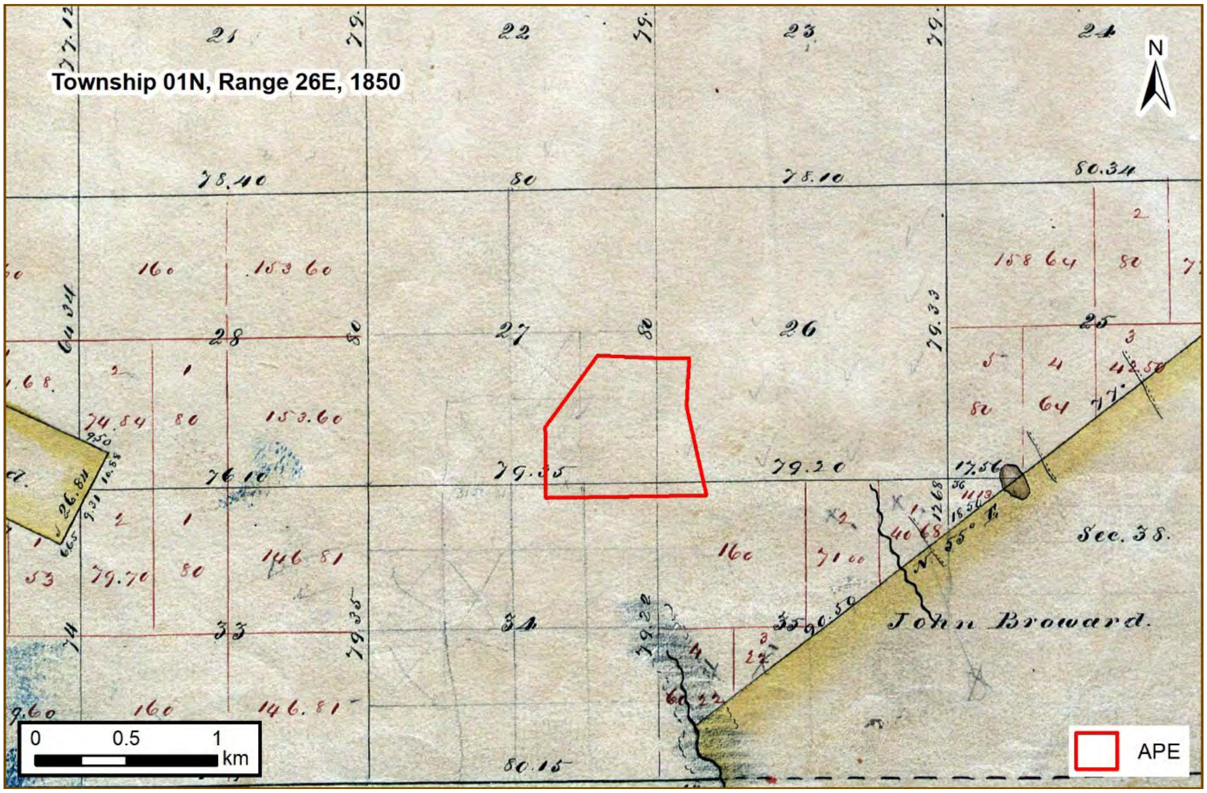

Figure 3.2. 1850 plat showing the APE.

Encouraged by the passage of the Armed Occupation Act in 1842, which was designed to promote settlement and protect the Florida frontier, settlers moved south through Florida. The Act made available 200,000 acres outside the already developed regions south of Gainesville to the Peace River, barring coastal lands and those within a two-mile radius of a fort. It stipulated that any family or single man over 18 years of age able to bear arms could earn title to 160 acres by erecting a habitable dwelling, cultivating at least five acres of land, and living on it for five years. During the nine-month period the law was in effect, 1184 permits were issued totaling some 189,440 acres (Covington 1961; Dunn 1989). Prosperity ensued for Jacksonville and surrounding areas. Entrepreneurs initiated steamships service between Enterprise (south of Jacksonville on the St. Johns River), Jacksonville, Savannah, and Charleston.

Although water transportation flourished along the St. Johns, land transportation developed slowly. In 1851, the Florida legislature authorized the construction of a plank toll road between Jacksonville and Alligator (now Lake City). Travel to Tallahassee from Jacksonville meant a four-day journey by stage (FWP 1939).

The increased number of residents prompted the Union to admit the State of Florida with Tallahassee as the state capital in 1845. However, the additional residents also placed an increasing amount of pressure to remove the Seminoles from Florida. The war originated in present-day Collier County when Seminole Chief Billy Bowlegs and 30 warriors launched a retaliatory attack upon an army camp, killing four soldiers and wounding four others. This hostile action renewed state and federal interest in the final removal of the Seminoles from Florida (Covington 1982; Tebeau 1966).

Military action was not decisive during the war; therefore, in 1858 the U.S. Government resorted to monetary persuasion to induce the remnant of Seminoles to migrate west. Chief Billy

Bowlegs accepted $5000 for himself, $2500 for his lost cattle, each warrior received $500, and $100 was given to each woman and child. On May 4, 1858, the ship *Grey Cloud* set sail from Fort Myers with 123 Seminoles. Stopping at Egmont Key, 41 captives and a Seminole woman guide were added to the group. On May 8, 1858, the Third Seminole War was declared over (Covington 1982:78-80).

By act of Congress in 1850, the federal government turned over to the states for drainage and reclamation all "swamp and overflow land." Florida received approximately 10 million acres. To manage that land and the 500,000 acres the state had received on entering the Union, the state legislature in 1851 created the Internal Improvement Board. In 1854, the Board reported on the need for a system of railroads to connect major cities in the state and recommended that the state lands be used to assist private corporations to construct the needed internal improvements. In 1855, the legislature set up the Internal Improvement Fund, which would provide state assistance, including right-of-way through state lands, to railroad and canal projects that met the approval of the trustees. Trustees could also authorize bonds for the purchase of rails and rolling stock and the construction of brides and trestles, which created a lien on the railroads and their equipment. If the railroad companies failed to pay the principal and interest, the state lands were pledged in promise of payment. One of the members of the Internal Improvement Board was Dr. Abel Seymour Baldwin, president of the Florida Atlantic and Gulf Central Railroad. In 1851, the General Assembly of Florida had chartered the Florida, Atlantic, and Gulf Central Railroad to construct a line between Jacksonville and Alligator (later named Lake City). Construction was underway by 1857, and the line between Jacksonville and Lake City opened in June 1860 (Pettengill 1952). Due to his efforts to construct the railroad and open the area to development, the community of Baldwin is named after Dr. Abel Seymour Baldwin, president of the Florida Atlantic and Gulf Central Railroad (FWP 1939:430; Tebeau 1980).

Another member of the Internal Improvement Board, David L. Yulee, was responsible for the construction of the Florida Railroad, which stretched between Fernandina on the east coast and Cedar Key on the west coast, passing through Baldwin. The General Assembly chartered the railroad in 1853. Yulee, who was elected to the United States Senate in 1854, initiated construction of the line in 1855 with the first train reaching Cedar Key on March 1, 1861 (Mohlman and Linville 2007). The line crossed the Atlantic and Gulf Central Railroad in Baldwin, making it a very important station (Turner 2003). In Florida, developers intended for the railway system to develop the interior of the state and service the coastal cities, not provide connections to the north. As a result, Florida remained isolated from the rest of the Confederacy at the approach of the Civil War (Tebeau 1980:192). It was during this time (1854-1855) that David Turner, Robert Turner, and Luther H. Tison obtained title to some of the lands within the APE (State of Florida n.d.:68, 70).

3.7 Civil War and Aftermath

In 1861, Florida followed South Carolina's lead and seceded from the Union in a prelude to the American Civil War. Florida had much at stake in this war as evidenced in a report released from Tallahassee in June of 1861. It listed the value of land in Florida as $35,127,721 and the value of the slaves at $29,024,513 (Dunn 1989:59). At the start of the war, Jacksonville was a prosperous seaport, which blockade-runners later used as a base of operations during the war. The sympathies of Jacksonville residents rested primarily with the South and accordingly supplied troops to the Confederacy. As a result, federal troops occupied the city many times and, in 1863, burned it upon their withdrawal (Johns 1963). In March of 1862, Jacksonville agreed to surrender to Federal forces and all installations would be abandoned and soldiers were withdrawn (Davis 1925). A disorganized band of Confederate soldiers set up camp in the vicinity of Baldwin. By April, the Union forces abandoned the city, and the Confederate forces erected batteries along the bluffs overlooking the St. Johns River. The outposts were abandoned in October as the Union soldiers drew near; the Union occupation only lasted four days (Davis 1925:126-127).

Even though the coast experienced a naval blockade during the war and the occupation of several major cities, the interior of the state saw very little military action. One of the major contributions of the state to the war effort was in the supplying of salt and beef to the Confederacy. The Confederate government estimated that three-fourths of the cattle that Florida supplied to the Confederacy originated from Brevard and Manatee counties (Shofner 1995:72). In 1863, the Confederate Army constructed Camp Milton (originally known as Camp Cooper or Pickett's Station), west of the community of Whitehouse on McGirt's Creek. In February 1864, the Union troops pushed west of Jacksonville along the line of the Florida Atlantic and Gulf Central Railroad in an attempt to cut off the supply of cattle and salt to the Confederacy (Davis 1925; Gold 1929). The Battle of Olustee, which occurred approximately ten miles east of Lake City, resulted in the defeat of the Union army during the six-hour battle. The Union army retreated, leaving behind boxcars of food and supplies, five cannon, 1600 small arms, 400 accouterments sets, and 130,00 rounds of small arms ammunition (FWP 1939:429; Johns 1963:199). The Florida Atlantic and Gulf Central Railroad and the Florida Railroad were heavily damaged by the Union army. The war finally ended in 1865.

Immediately following the war, the South underwent as period of "Reconstruction" to prepare the Confederate States for readmission to the Union. The program was administered by the U.S. Congress, and on July 25, 1868, Florida returned to the Union (Tebeau 1980:251). The war stimulated growth in Florida in two ways. First, many Southerners sought new homes to escape the unrest in the neighboring ex-Confederate states, and second, the war brought prosperity to a large number of Northerners who sought vacation homes in warmer climates. The Homestead Acts of 1866 and 1876 provided additional incentives for settlers to come to the area. The Act of 1866 gave Union-loyal African Americans and southerners the opportunity to receive 80-acre tracts in Florida and the other four public land states. Former Confederates, however, were ineligible to receive homesteads until the Act of 1876 (Tebeau 1980:266, 294). In 1868, John R. Geiger obtained title to the land in Section 35 within which the APE lies (State of Florida n.d.:70).

After the war, Jacksonville served as the major shipping point for produce and naval stores, and as the center of tourism in Florida resulting in the construction of hotels, a theater, and other tourism facilities. By 1870, 6912 people resided in Jacksonville, an increase of 300 per cent over 1860. Continued improvements to the city drew more residents and visitors. In the early 1880s, the port of Jacksonville was improved by deepening the channel and building jetties at the mouth of the river. By 1885, more than 74 vessels were in port service. This accounted for an annual business of $2 million with the peak value of bottoms and cargoes estimated in excess of $38 million. In 1883, Jacksonville received electric service with the first electric lights in the state installed in the St. James Hotel, a hotel constructed in 1869 to meet the demand of tourists (FWP 1939:188).

The Civil War inhibited continued expansion of railroad lines throughout the state. Many of the early railroads established during the 1840s and 1850s were either abandoned in place or demolished to use the materials elsewhere. Because of the War, the Internal Improvement Fund was mired in debt, and, under state law, no land could be sold until the debt was cleared. Florida's financial crisis led Governor William Bloxham to search for a buyer for an immense amount of state lands in order to raise adequate capital in one sale to free from litigation the remainder of state lands for desperately needed revenue. By 1881, Hamilton Disston, a member of a prominent Pennsylvania saw manufacturing family and friend of Bloxham, had entered into agreement with the State of Florida to purchase four million acres of swamp and overflowed land for one million dollars. In exchange for this, he promised to drain and improve the land. This transaction, which became known as the Disston Purchase, enabled the distribution of large land subsidies to railroad companies, inducing them to begin extensive construction programs for new lines throughout the state. Disston and the railroad companies in turn sold smaller parcels of land to developers and private investors (Tebeau and Carson 1965:252).

After the Florida Atlantic and Gulf Central Railroad defaulted on the state-endorsed bonds, the State sold the line for $110,000 in the late 1860s, which was then reorganized as the Florida Central and slowly rebuilt. During the war, the terminal facilities of the Florida Railroad at both Fernandina and Cedar Key had been destroyed, the track between Fernandina and Baldwin had been confiscated by the Confederate army, and many bridges, trestles, and crossties needed to be replaced. By 1881, functional lines to Lake City, Fernandina, Jacksonville, and Cedar Key connected in Baldwin. In 1888, both the Florida Atlantic and Gulf Central Railroad and the Florida Railroad reorganized into the Florida Central & Peninsular Railway. The line, which merged with the Seaboard Air Line Railroad in 1899, continued to pass through Baldwin on its way west to Tallahassee and south to Cedar Key, Tampa, and Orlando (Mann 1983; Tebeau 1980). The remainder of the APE was deeded to the Fernandina and Jacksonville Railroad in 1882 (State of Florida n.d.:70).

In 1881, the Jacksonville, St. Augustine & Halifax River Railway incorporated and, by 1883, stretched between Jacksonville and St. Augustine. When Henry M. Flagler, a partner with John D. Rockefeller in Standard Oil, visited Florida in 1878, and decided to build a hotel in St. Augustine, he used the Jacksonville, St. Augustine & Halifax River Railway to transport goods and passengers. He grew irate with the railroad's handling of freight and passengers and purchased the property in order to take corrective measures. Flagler continued south constructing hotels and acquiring existing and building new railroads. By 1892, Flagler' s railroad, rechristened the Jacksonville, St. Augustine & Indian River Railway, stretched from Jacksonville to Daytona and extended south to Fort Pierce by 1894. In 1895, Flagler renamed his line The Florida East Coast Railway, which arrived in Miami in 1896 and eventually, Key West in 1912. The development of the east coast of Florida of Florida unexpectedly meant an end to Jacksonville's development as the center of tourism in Florida. Tourists now bypassed Jacksonville for Flagler's hotels south of the city (Mann 1983).

The promise of the new century prompted an optimism and an excitement overgrowth and development. The Spanish-American War also provided excitement to Florida residents with several cities accommodating troops. Prior to the Spanish-American War, Jacksonville served as a refuge for Cuban exiles with vessels eluding the U.S. Revenue cutters and Spanish cruisers to smuggle arms and men into Cuba. With the declaration of war, 40,000 American troops camped near Jacksonville, and the military mined the river as a precaution against raids by enemy gunboats. By the late 1890s, Jacksonville was Florida's largest city with hotels, businesses, churches, an opera house, and a new city hall and market.

3.8 Twentieth Century

On May 3, 1901, fire swept 148 blocks of downtown Jacksonville in less than eight hours. The disaster destroyed 2,368 buildings and left over 9,000 people homeless. Efforts to rebuild the city brought architects and builders from around the country. Within a decade, public as well as private interests spent over $25 million to rebuild downtown Jacksonville. One of the most well-respected architects to arrive in the city was Henry John Klutho of New York City. Heavily influenced by Louis Sullivan, Frank Lloyd Wright, and the Prairie style, he designed so many buildings that no other city outside of the Midwest boasted as many in the Prairie style as Jacksonville (Reeves 1989). Jacksonville capitalized on the new downtown by portraying an image of a very modern city. Combined with the excellent rail transportation and climate, Jacksonville was the center of the film industry prior to the 1920s, when Hollywood usurped the city's position (Reeves 1989:71).

The expanding road system, mild winters, new hotels, and propaganda that advertised the state as a tropical paradise, prompted the Florida Land Boom of the 1920s, spurring widespread development of towns, railroad lines, and highways, especially along the east coast. The 1920s saw the construction of massive new rail yards at Baldwin to support the expansion of the Seaboard Air Line Railroad (Mann 1983:128). The 1923 soil map of the county shows a couple of dirt roads running through the APE (Taylor and Dunnewald 1923) (**Figure 3.3**).

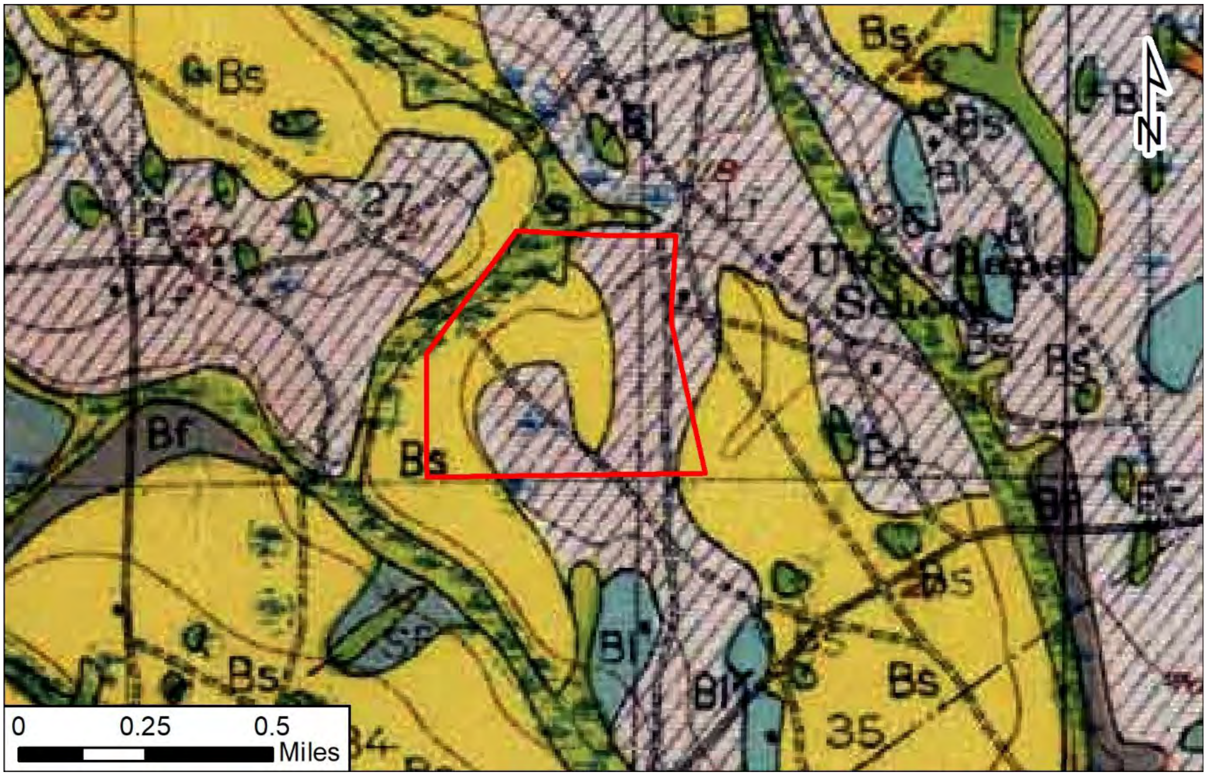

Figure 3.3. 1923 Soil Survey of Duval County.

The Dixie Highway network of roads, completed at this time, connected Florida to the rest of the nation. Tourists, driving the Dixie Highway (now U.S. 1), could now travel by automobile from Michigan to Miami, passing through Jacksonville. Accordingly, most of the development resulting from the boom occurred south of Jacksonville, in areas promoting the tourist trade and new residential subdivisions. Jacksonville, due to its manufacturing and banking history, prospered during the boom but suffered little when the bottom fell out of the Florida real estate market in 1926-27.

The 1926 real estate economy in Florida was based upon such wild land speculations that banks could not keep track of loans or property values. By October, rumors were rampant in northern newspapers concerning fraudulent practices in the real estate market in south Florida. Confidence in the Florida real estate market quickly diminished, investors could not sell lots, and the Great Depression hit Florida earlier than the rest of the nation. To make the situation even worse two hurricanes hit south Florida in 1926 and 1928, which destroyed confidence in Florida as a tropical paradise and created a flood of refugees fleeing northward. Soon after, the October 1929 stock market crash and the onset of the Great Depression left most of Florida and the nation in a state of stagnation.

By the mid-1930s, the New Deal programs implemented by the Franklin D. Roosevelt administration started employing large numbers of workers, helping to revive the economy of the state. The programs, aimed at pulling the nation out of the Depression, were instrumental in the construction of roads, bridges, parks, and public buildings. One project, The Federal Writers' Project of the Work Projects Administration, recorded descriptions of U.S. 90, Jacksonville, Whitehouse, and Baldwin. Jacksonville, with a population of l29,459, was Florida's largest city and the leading manufacturing center of Florida. It was described as follows:

> *Jacksonville has more than 450 industries producing as many different commodities. The city has the largest naval-stores yard and the largest wholesale lumber market on the Atlantic coast. It stands second on the South Atlantic seaboard as a distribution port for petroleum products. Having eh world's largest cigar factory under one roof, it supplies a tenth of all cigars consumed in America. Jacksonville also has the only dry-ice plant and the only glass factory in Florida ... Its docks, terminals, cotton compress, naval stores Warehouses, and water and light plant are municipally owned, making it possible to give the city the lowest tax rate of any community of its size in the United States ... Jacksonville is a focal point of land, water, and air transportation in the South ... Twice each year - in early winter when the sun-trek South begins, and in early spring when the tourist exodus is under way - Jacksonville plays overnight host to more than half a million visitors* (FWP 1939:185-186).

Jacksonville boasted excellent transportation service during this period. A hundred passenger trains passed through the city daily during the winter. Twenty regularly scheduled commercial planes landed and an average of five vessels docked at the river piers every day. US 90 is one of three federal highways converging at Jacksonville. The stretch of US 90, "Florida's longest and most heavily traveled east and west highway," between Jacksonville and Lake City was described as:

> *This section of the route, which becomes the main street of many small communities, is bordered with roadside refreshment stands, filling stations, tourist camps, and a multitude of signboards. For nearly 50 miles the highway runs in an almost straight line on fills across numerous swamps, and cuts through extensive pine flatwoods, dotted with turpentine camps. Between Jacksonville and Baldwin the road is used by trucks and trailers transporting citrus fruit and garden truck from central Florida to Jacksonville terminals and warehouses, returning with general merchandise* (FWP 1939:428-429).

World War II brought the revival of the economy throughout the nation. The Jacksonville area, like many cities throughout Florida, benefited from training stations for military personnel. Whitehouse Field, as developed during WW II as an auxiliary of the Naval Air Stations (NAS) at Cecil Field and Jacksonville. The taxiway was built in 1944 and expanded on 1959. The Navy acquired the Yellow Water Housing Area prior to 1942 as a Federal Reservation and was developed as the Aviation Free Gunnery School. It was under the command of the U.S. Naval Air Technical Training Center, NAS Jacksonville. Few structures were built in that area due to restrictions of explosive safety quantity distances (Rosenzweig and Shmookler 1995).

Largely, the post-World War II development of Duval County is similar to that of the rest of America: increasing numbers of automobiles and asphalt, an interstate highway system, suburban sprawl, and strip development along major state highways. The county, like most of Florida, experienced a population boom in the 1950s. Florida's population increased from 1,897,414 to 2,771,305 from 1940 to 1950 (Forstall 1995). After the war, car ownership increased not only making the American public more mobile but also making vacations more inexpensive and easier. Many who had served at Florida's military bases during World War II returned with their families to live. As veterans returned, the trend in new housing focused on the development of small tract homes in new subdivisions.

In 1968, the City of Jacksonville consolidated with Duval County. With 776 square miles, Jacksonville is the largest land area in the U.S. under a single city government (Reeves 1989:72). This same year, the Jacksonville International Airport opened to replace the Imeson Airport (The Coastal 2020). By 2019, the U.S. Census Bureau (USCB) estimated the population at 957,755 residents (USCB 2021). Although most people are employed in the services and retail sectors, Jacksonville is also a major insurance, banking, and shipping center as well as the site of a naval air station and many other state offices. The major imports are automobiles and coffee, with the major exports being phosphate, pulp, and paper (Fernald and Purdum 1996). The main employment areas within the county are office/administration 16.4%, sales 10.8%, management 9.65%, transportation/moving 7.02% and food preparation 6.49% (Enterprise Florida 2016).

3.9 Project Area Specifics

A review of the aerial photos available from the Publication of Archival and Museum Materials (PALMM) revealed that the property had been partially cleared for farms along Pecan Park and Terrell Roads as of 1943, but the western portion of the APE remained pine flatwoods and swamp (**Figure 3.4**). By 1960, more land had been cleared and a pond had been excavated in the northwest portion of the APE. The 1971 aerial shows that most of the building had been removed and none of the structures are extant today (USDA 1943, 1960, 1971).

Figure 3.4. 1943 and 1971 aerials showing the APE.

4.0 RESEARCH CONSIDERATIONS AND METHODS

4.1 Background Research and Literature Review

A review of archaeological and historical literature, records and other documents and data pertaining to the project area was conducted. The focus of this research was to ascertain the types of cultural resources known in the project area and vicinity, their temporal/cultural affiliations, site location information, and other relevant data. This included a review of sites listed in the NRHP, the FMSF, cultural resource survey reports, published books and articles, unpublished manuscripts, maps, and interviews. The FMSF information in this report was obtained April 2022, which is the most recent edition. However, according to FMSF staff, input may be a month or more behind receipt of reports and site files.

4.2 Archaeological Considerations

Background research revealed that only two archaeological sites have been recorded within one mile of the APE (**Figure 4.1**). 8DU08031B is an historic artifact scatter and a well dating from the 20th century. It was recorded during the survey of Powell Duval Road tract and has been determined ineligible for listing in the NRHP by the State Historic Preservation Office (SHPO) (Johnson 2011). 8DU19072 is also a 20th century structural remains associated with collapsed barn. It was recorded during the reconnaissance survey of the Duval Place property (Hendryx and Sipe 2008). The site and a 1967 tractor were removed during the follow-up survey of the Armsdale Road parcel (Bland 2010). The site had been determined ineligible for listing in the NRHP. **Table 4.1** provides a list of the CRAS projects conducted proximate to the APE and their results.

Based on these data, combined with more regional archaeological syntheses (Bland et al. 2004; Collins et al. 2012; Deagan 1981; Handley et al. 2012; HSAPB 1987; Madry et al. 2002; Madry et al. 2001; Nidy 1980; Sassaman et al. 2000; Smith et al. 2001; Smith and Bond 1984), the project area and surrounding lands have been the scene of human activity for more than 8000 years. As archaeologists have long realized, aboriginal populations did not select their habitation sites and special use activity areas in a random fashion. Rather, many environmental factors had a direct influence upon site location selection. Among these variables are soil drainage, distance to freshwater, relative topography, environmental diversity, and proximity to food and other resources. In general, comparative site location data indicate a pattern of site distribution favoring the relatively better-drained, elevated soils near a permanent or semi-permanent source of potable water including rivers, creeks, and freshwater marshes. Upland sites well removed from potable water are rare. In the pine flatwoods, sites tend to be situated on the better-drained ridges and knolls near a freshwater source. The settlement patterns noted above cannot be applied to sites of the Paleoindian and Early Archaic periods, which precede the onset of modern environmental conditions. The site location model for Duval County depicts the areas along the creek as having a high archaeological the remainder of the area has a low archaeological potential (Madry et al. 2002).

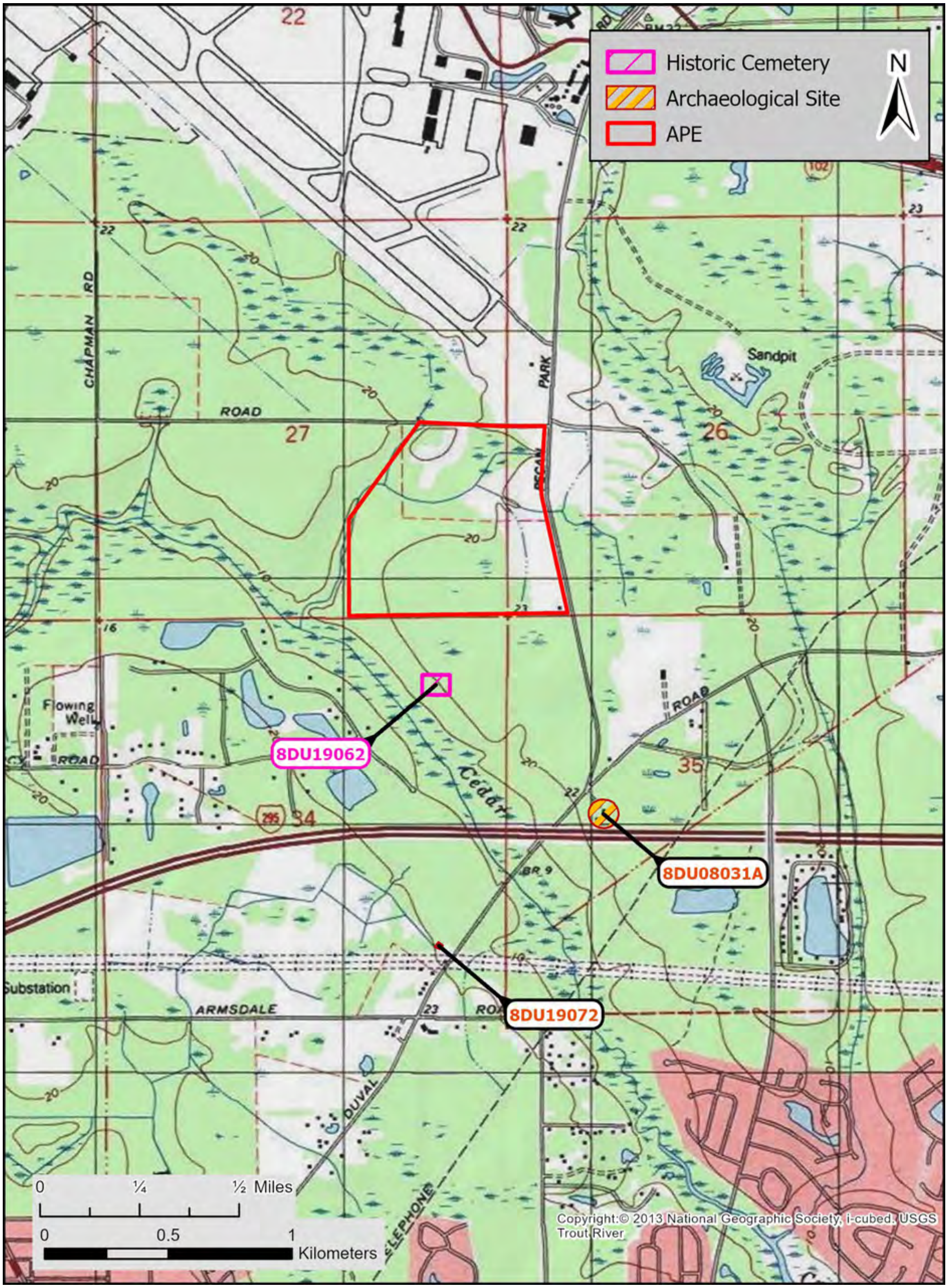

Figure 4.1. Location of the previously recorded cultural resources near the APE.

Table 4.1. CRAS project conducted near the APE.

FMSF Manuscript # / Reference	Title	# of newly recorded resources	# of previously recorded resources
1043 / (Dickinson and Goin 1984)	An Archaeological Survey of the St. Johns River Power Park Associated Transmission Lines	2	0
1406 / (Dickinson and Wayne 1987)	Cultural Resource Assessment: Jacksonville International Airport, Jacksonville, Duval County, Florida	0	0
1441 / (Browning 1987)	Proposed Improvements to Interstate 295, from I-95 South to I-95 North, in Duval County, Florida	0	0
3235 / (Fuhrmeister et al. 1992)	A Cultural Resource Assessment Survey of the Proposed Duval Road/I-295 Interchange Rights-of-Way, Duval County, Florida	2	0
5181 / (Johnson 1997)	A Cultural Resources Assessment Survey of the Proposed JIA/I-295 South Connector Road Project, Duval County, Florida	0	0
6311 / (Dickinson and Wayne 2000)	Cultural Resources Survey Conifer Ridge Project, Duval County, Florida	0	0
9507 / (Stokes 2003)	Cultural Resource Assessment Survey of I-295 (SR-9A) Northwest Quadrant from I-10 to I-95, Duval County	0	0
13937 / (Bland 2007)	A Cultural Resource Reconnaissance Survey of the Cedar Creek Parcel, Duval County, Florida	0	0
14638 / (Bland and Johnston 2007)	An Intensive Cultural Resource Assessment Survey of the Broward Property, Duval County, Florida	1	0
14896 / (Hendryx and Sipe 2008)	A Cultural Resource Reconnaissance Survey of the Duval Place Property, Duval County, Florida	1	0
17823 / (Marks 2010)	A Cultural Resource Assessment Survey of the Proposed Tower at North I-295, Duval County, Florida New Tower ("NT") Submission Packet FCC Form 620	0	0
18068 / (Bland 2010)	An Intensive Cultural Resource Assessment Survey of the Armsdale Road Parcel, Duval County, Florida	0	1
19067 / (Johnson 2012)	A Cultural Resource Reconnaissance Survey of the TECO Peoples Gas Main Extension Project, Duval and Nassau Counties, Florida	0	0
20398 / (Nowick et al. 2011)	Cultural Resources Survey and Evaluation Report of the Jacksonville Air National Guard Base, Florida Air National Guard, Jacksonville, Florida	0	0
21843 / (Dye et al. 2015)	Cultural Resource Assessment Survey for the I-95/I-295 North Interchange Reconfiguration Duval County, Florida	11	4
23701 / (DuBois and Bazzil 2016)	Proposed 130-Foot Overall Height Monopole Telecommunications Structure NXFL-155 (Biscayne) 12963 Duval Road, Jacksonville, Duval County, Florida	0	0
25686 / (Johnson 2011)	A Cultural Resource Assessment Survey of the Powell Duval Road Tract, Duval County, Florida	0	1

4.3 Historical Considerations

A review of the FMSF and the NRHP indicated that no historic resources have been recorded within or adjacent to the APE. A review of the Duval County property appraiser's data, historic aerial photos, and the USGS quadrangle maps suggested no potential for historic resources within the APE (Holland 2022; USDA 1943, 1960, 1971; USGS 1965). The Geiger Cemetery (8DU19062) is located south of the APE, but all interments were removed (Bland and Johnston 2007). It will not be affected by the proposed undertaking.

4.4 Field Methodology

The FDHR's Module Three, *Guidelines for Use by Historic Professionals*, indicates that the first stage of archaeological field survey is a reconnaissance of the project area to "ground truth," or ascertain the validity of the predictive model (FDHR 2003). During this part of the survey, the researcher assesses whether the initial predictive model needs adjustment based on disturbance or conditions such as constructed features (i.e., parking lots, buildings, etc.), underground utilities, landscape alterations (i.e., ditches and swales, mined land, dredged and filled land, agricultural fields), or other constraints that may affect the archaeological potential. Additionally, these guidelines indicate that non-systematic "judgmental" testing may be appropriate in urbanized environments where pavement, utilities, and constructed features make systematic testing unfeasible; in geographically restricted areas such as proposed pond sites; or within project areas that have limited high and moderate probability zones, but where a larger subsurface testing sample may be desired. While predictive models are useful in determining preliminary testing strategies in a broad context, it is understood that testing intervals may be altered due to conditions encountered by the field crew at the time of survey. A reasonable and good faith effort was made to identify the historic properties within the APE (cf., Advisory Council on Historic Preservation n.d.).

Archaeological field survey methods consisted of surface reconnaissance combined with systematic subsurface testing. Tests were placed at 50 m intervals along the drainages and wetlands as well as the knoll on the northwest corner of the APE. Shovel tests were placed at off-set 100m intervals throughout the remainder of the APE. Shovel tests were circular and measured approximately 50 centimeters (cm) in diameter by at least one meter in depth unless precluded by natural impediments such as groundwater intrusion or impenetrable subsoil. All soil removed from the shovel tests was screened through a 0.64 cm mesh hardware cloth to maximize the recovery of artifacts. The location of all tests was recorded using the data collection application by ESRI, Collector, with a Trimble R2 with sub-meter module GNSS receiver. Following the recording of relevant data such as stratigraphic profile and artifact finds, all shovel tests were refilled.

Historical field methodology consisted of a reconnaissance of the area to determine the location of any historic properties believed to be 50 years of age or older, and to ascertain if any resources could be eligible for listing in the NRHP. In addition, those structures that would become 50 years old within the probable period of the project would also have been recorded. This would have been followed by an in-depth study of each identified historic resource. Photographs would have been taken and information needed for the completion of FMSF forms gathered. In addition to architectural descriptions, each historic property would have been reviewed to assess style, historic context, and potential NRHP eligibility. In addition, residents or other knowledgeable persons would have been interviewed to obtain information concerning site-specific building construction dates and/or possible association with individuals or events significant to local or regional history.

4.5 Inadvertent/Unexpected Discovery of Cultural Materials

Occasionally, archaeological deposits, subsurface features or unmarked human remains are encountered during development, even though the project area may have previously received a thorough and professionally adequate cultural resources assessment. Such events are rare, but they do occur. If human burial sites such as Indian mounds, lost historic and aboriginal cemeteries, or other unmarked burials or associated artifacts are found, then the provisions and guidelines set forth in Chapter 872.05, *FS* (Florida's Unmarked Burial Law) are to be followed.

In the event such discoveries are made during the development process, all activities in the immediate vicinity of the discovery will be suspended, and a professional archaeologist will be contacted to evaluate the importance of the discovery. The area will be examined by the archaeologist, who, in consultation with the staff of the Florida SHPO, will determine if the discovery is significant or potentially significant.

In the event the discovery is found to be not significant, the work may immediately resume. If, on the other hand, the discovery is found to be significant or potentially significant, then development activities in the immediate vicinity of the discovery will continue to be suspended until a mitigation plan, acceptable to the SHPO, is developed and implemented. Development activities may then resume within the discovery area, but only when conducted in accordance with the guidelines and conditions of the approved mitigation plan.

4.6 Laboratory Methods and Curation

No artifacts were recovered; thus, no laboratory methods were utilized. The project-related records will be maintained at the ACI office in Sarasota (P21139B) unless the client requests otherwise.

5.0 RESULTS AND CONCLUSIONS

5.1 Archaeological

The archaeological investigations consisted of surface reconnaissance combined with subsurface testing. A total of 80 shovel tests were excavated within the APE (**Figure 5.1**). Tests were placed at 50 m intervals along the drainages and wetlands as well as the knoll on the northwest corner of the APE. Shovel tests were placed at off-set 100m intervals throughout the remainder of the APE. One shovel test was judgmentally placed in an area of slightly higher elevation next to the slough. No cultural materials were recovered from the shovel tests or discovered on the surface. As such, no archaeological sites were discovered within the APE. A reasonable and good faith effort was made to identify the historic properties within the APE (cf., Advisory Council on Historic Preservation n.d.).

There were four basic soil profile encountered:

- 0-30 cm dark gray sand; 30-55 cm light gray sand; 55-80 cm dark brown sand; 80-100 cm light brown clayey sand (**Photo 5.1**)
- 0-20cm dark gray sand; 20-60 cm light gray sand, 60-80 cm dark gray loamy sand; impenetrable hardpan at 80 cm (**Photo 5.2**)
- 0-30cm dark gray-brown mottled sand; 30-60 cm light gray-brown mottled sand; 60-80 cm mottled gray/orange/brown sandy clay, compact at 80cm
- 0-30 cm brown wet sand, water at 10

Photo 5.1. Stratigraphic profile in the northern portion of the APE near the slough.

Photo 5.2. Stratigraphy in the southwest portion of the APE.

5.2 Historical

A review of the FMSF and the NRHP indicated that no historic resources have been recorded within or adjacent to the APE. A review of the Duval County property appraiser’s data, historic aerial photos, and USGS quadrangle maps suggested no potential for historic resources within the APE (Holland 2022; USDA 1943, 1960, 1971; USGS 1965). Although numerous structures had been within the APE, they are no longer extant. This was confirmed by the field investigations.

Figure 5.1. Location of the shovel tests within the APE.

5.3 Conclusions

Given the results of background research and field survey, which included a total of 80 shovel tests, no archaeological sites or historic resources were discovered. Thus, there are no cultural resources that are listed, eligible for listing, or that appear potentially eligible for listing in the NRHP within the APE. Therefore, it is the professional opinion of ACI that the proposed undertaking will result in no historic properties affected.

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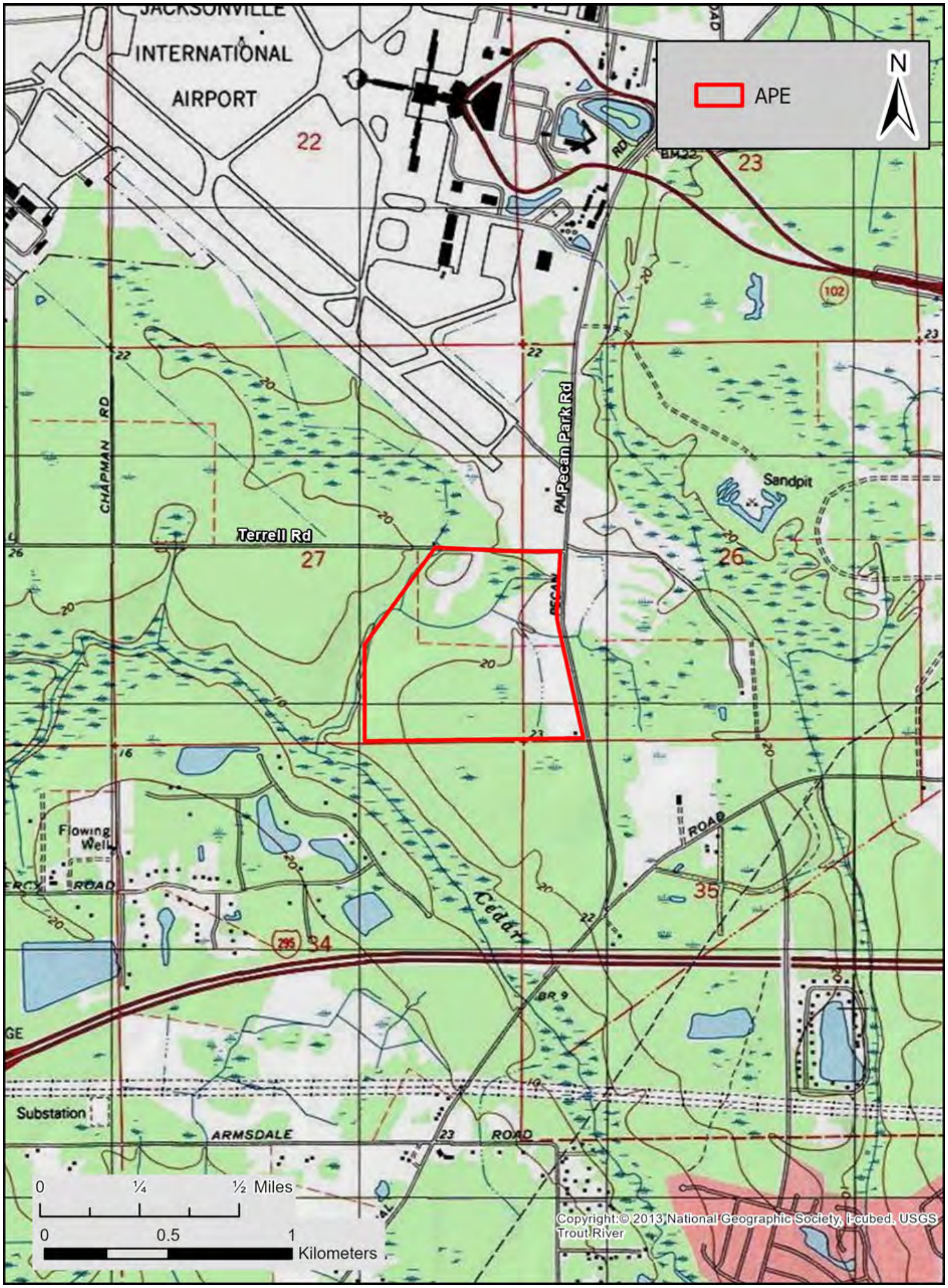
APPENDIX

Survey log



JAX Property

Township 01 North, Range 26 East, Sections 26-27, 34-35

USGS Trout River

Duval County, Florida

Ent D (FMSF only) ____________

Survey Log Sheet

Florida Master Site File
Version 5.0 3/19

Survey # (FMSF only) ____________

Consult *Guide to the Survey Log Sheet* for detailed instructions.

Manuscript Information

Survey Project (name and project phase)

CRAS JAX Non-Aviation Development, DU Co. - Phase I

Report Title (exactly as on title page)

Cultural Resource Assessment Survey of the Jacksonville International Airport Non-Aviation Development Property, Duval County, Florida

Report Authors (as on title page) 1. ACI 2. ____ 3. ____ 4. ____

Publication Year 2022 **Number of Pages in Report** (do not include site forms) 49

Publication Information (Give series, number in series, publisher and city. For article or chapter, cite page numbers. Use the style of *American Antiquity*.)

ACI (2022) Cultural Resource Assessment Survey of the Jacksonville International Airport Non-Aviation Development Property, Duval County, Florida. Conducted for Landrum & Brown, Cincinnati by ACI, Sarasota. P21139B

Supervisors of Fieldwork (even if same as author) Names Horvath, Elizabeth A.

Affiliation of Fieldworkers: Organization Archaeological Consultants Inc City Sarasota

Key Words/Phrases (Don't use county name, or common words like *archaeology*, *structure*, *survey, architecture, etc.*)

1. ____ 2. ____ 3. ____ 4. ____ 5. ____ 6. ____ 7. ____ 8. ____

Survey Sponsors (corporation, government unit, organization, or person funding fieldwork)

Name Landrum & Brown Organization ____

Address/Phone/E-mail 4445 Lake Forest Dr, Cincinnati, OH 45242

Recorder of Log Sheet Horvath, Elizabeth A. **Date Log Sheet Completed** 5-16-2022

Is this survey or project a continuation of a previous project? ☒ No ☐ Yes: Previous survey #s (FMSF only) ____

Project Area Mapping

Counties (select every county in which field survey was done; attach additional sheet if necessary)

1. Duval 2. ____ 3. ____ 4. ____ 5. ____ 6. ____

USGS 1:24,000 Map Names/Year of Latest Revision (attach additional sheet if necessary)

1. Name TROUT RIVER Year 2013
2. Name ____ Year ____
3. Name ____ Year ____
4. Name ____ Year ____
5. Name ____ Year ____
6. Name ____ Year ____

Field Dates and Project Area Description

Fieldwork Dates: Start 5-9-2022 End 5-13-2022 **Total Area Surveyed** (fill in one) ____ hectares 141.18 acres

Number of Distinct Tracts or Areas Surveyed 1

If Corridor (fill in one for each) **Width:** ____ meters ____ feet **Length:** ____ kilometers ____ miles

Survey Log Sheet

Survey #___________

Research and Field Methods

Types of Survey (select all that apply): ☒archaeological ☒architectural ☒historical/archival ☐underwater ☐damage assessment ☐monitoring report ☐other(describe): ____________

Scope/Intensity/Procedures

background research, surface reconnaissance; systematic and judgmental subsurface testing (50,100 m) N=80, all negative; 50 cm diameter, 1 m deep, 1/4" screen; historic resources reconnaissance

Preliminary Methods (select as many as apply to the project as a whole)

☐Florida Archives (Gray Building) ☐library research- *local public* ☒local property or tax records ☒other historic maps ☐LIDAR
☐Florida Photo Archives (Gray Building) ☐library-special collection ☐newspaper files ☒soils maps or data ☐other remote sensing
☒Site File property search ☒Public Lands Survey (maps at DEP) ☒literature search ☒windshield survey
☒Site File survey search ☐local informant(s) ☐Sanborn Insurance maps ☒aerial photography
☐other (describe): ____________

Archaeological Methods (select as many as apply to the project as a whole)

☐Check here if **NO** archaeological methods were used.

☐surface collection, controlled ☐shovel test-other screen size ☐block excavation (at least 2x2 m) ☐metal detector
☒surface collection, <u>un</u>controlled ☐water screen ☐soil resistivity ☐other remote sensing
☒shovel test-1/4"screen ☐posthole tests ☐magnetometer ☒pedestrian survey
☐shovel test-1/8" screen ☐auger tests ☐side scan sonar ☐unknown
☐shovel test 1/16"screen ☐coring ☐ground penetrating radar (GPR)
☐shovel test-unscreened ☐test excavation (at least 1x2 m) ☐LIDAR
☐other (describe): ____________

Historical/Architectural Methods (select as many as apply to the project as a whole)

☐Check here if **NO** historical/architectural methods were used.

☐building permits ☐demolition permits ☐neighbor interview ☐subdivision maps
☐commercial permits ☒windshield survey ☐occupant interview ☐tax records
☐interior documentation ☒local property records ☐occupation permits ☐unknown
☐other (describe): ____________

Survey Results

Resource Significance Evaluated? ☐Yes ☐No

Count of Previously Recorded Resources 0 **Count of Newly Recorded Resources** 0

List Previously Recorded Site ID#s with Site File Forms Completed (attach additional pages if necessary)

NA

List Newly Recorded Site ID#s (attach additional pages if necessary)

NA

Site Forms Used: ☐Site File Paper Forms ☐Site File PDF Forms

REQUIRED: Attach Map of Survey or Project Area Boundary

SHPO USE ONLY **SHPO USE ONLY** **SHPO USE ONLY**

Origin of Report: ☐872 ☐Public Lands ☐UW ☐1A32 # ____________ ☐Academic ☐Contract ☐Avocational
☐Grant Project # ____________ ☐Compliance Review: CRAT # ____________

Type of Document: ☐Archaeological Survey ☐Historical/Architectural Survey ☐Marine Survey ☐Cell Tower CRAS ☐Monitoring Report
☐Overview ☐Excavation Report ☐Multi-Site Excavation Report ☐Structure Detailed Report ☐Library, Hist. or Archival Doc
☐Desktop Analysis ☐MPS ☐MRA ☐TG ☐Other: ____________

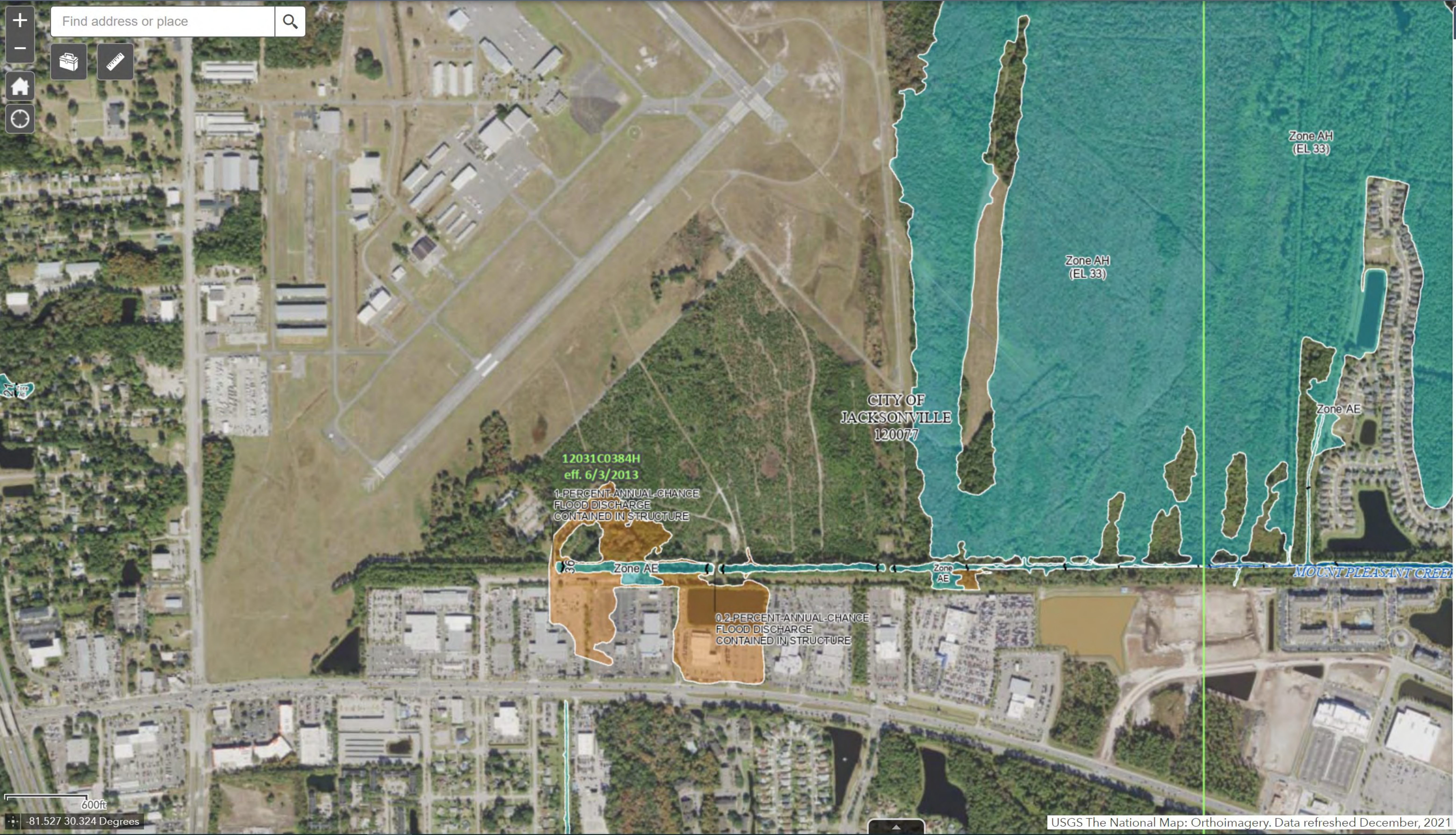
Document Destination: Plottable Projects **Plotability:** ____________

Florida Master Site File / Div. of Historical Resources / R.A. Gray Bldg / 500 S Bronough St., Tallahassee, Florida 32399-0250
Phone 850.245.6440, Fax 850.245.6439, Email: SiteFile@dos.myflorida.com

APPENDIX E

Water Resources

FEMA's National Flood Hazard Layer (NFHL) Viewer with Web AppBuilder for ArcGIS



Legend

Coastal Transects

Transect Baselines

General Structures
- Flood Structure
- Bridge
- Dam, Weir, Jetty
- Other Structures

River Mile Markers

Limit of Moderate Wave Action

Flood Hazard Boundaries
- Limit Lines
- SFHA / Flood Zone Boundary
- Flowage Easement Boundary

Flood Hazard Zones
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Area with Risk Due to Levee

Primary Frontal Dunes

Coastal Barrier Resources System Area (US FWS)

CBRS Prohibitions
- Otherwise Protected Area
- System Unit

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memorandum

Client: Jacksonville Aviation Authority
Project: Jacksonville Executive at Craig Airport
Non-Aviation Development Environmental Assessment
To: Lauren Scott
From: Gaby Elizondo
CC: Sarah Potter
Date: September 22, 2023

Subject: Wetlands and Streams Technical Memo

The Jacksonville Aviation Authority (JAA) has proposed the release of federal obligations on approximately 80 acres of land at Jacksonville Executive at Craig Airport (CRG). The property was conveyed to the City of Jacksonville by the War Assets Administration (Surplus Property Act) on May 1, 1947. Upon release of the land, JAA intends to lease the land to a private developer who would construct an industrial distribution/warehouse facility. As a result of the proposed project, an Environmental Assessment (EA) is being completed as required by the National Environmental Policy Act of 1969 (NEPA), as amended (40 Code of Federal Regulations [CFR] 1500-1508) and prepared in accordance with Federal Aviation Administration (FAA) Orders 1050.1F, *Environmental Impacts: Policies and Procedures* and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions.*

Proposed Project

The Proposed Project is shown on **Exhibit 1, *Proposed Project*** and includes:

- Clearing, grading, and tree removal of approximately 65 acres;
- Construction of an industrial distribution building approximately 180,825 square feet;
- Construction of parking lots to accommodate 365 automobiles, 835 delivery vans, and 13 trailers;
- New access road connecting to General Doolittle Drive;
- New access road connecting to Atlantic Boulevard, including associated intersection improvements;
- Construction of stormwater facilities; and
- Relocation of fencing.

Existing Conditions

Wetland delineations occurred within the Proposed Project Site in March 2021. Both the St. Johns River Water Management District (SJRWMD) and the Florida Department of Environmental Protection (FDEP) have been on-site to field verify the delineation and have since verified the delineation. The delineation identified approximately 26.15 total acres of wetlands within the Proposed Project Site, as presented in **Table 1**. Additionally, approximately 7,136 linear feet of ditch/artificial intermittent stream were identified. See **Exhibit 2, *Wetlands and Streams***.

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TABLE 1, WETLANDS LOCATED WITHIN THE PROJECT SITE

WETLANDS			
	FLUCFCS	**Linear Feet**	**Acreage**
Freshwater Non-Forested Wetlands	2100	NA	1.66
Baygall	2231	NA	2.46
Mixed Wetland Hardwoods	2233	NA	2.34
Mixed Hardwood-Coniferous Swamps	2240	NA	3.69
Gum Pond	221312	NA	16.00
	Total	**NA**	**26.15**

Note: FLUCCS = Florida Department of Transportation, Florida Land Use Cover and Forms Classification System
Source: Landrum & Brown, 2022; LG² Environmental Solutions, Inc., 2021; Kimley-Horn, 2021.

See below for detailed information about the vegetative quality of the on-site wetlands and the ditch/artificial intermittent stream.

Wetlands Freshwater Non-Forested Wetlands (FLUCCS 2100) – This vegetative community consisted primarily of small pond cypress (Taxodium ascendens) and broomsedge (Andropogon glomeratus).

Baygall (FLUCCS 2231) – This vegetative community consisted primarily of loblolly bay (Gordonia lasianthus), sweetbay magnolia (Magnolia virginiana), red maple (Acer rubrum), Virginia chain fern (Woodwardia virginica), soft rush (Juncus effusus), and lizard's tail (Saururus cernuus).

Mixed Wetland Hardwoods (FLUCCS 2233) – This vegetative community consisted primarily of bald cypress (Taxodium distichum), laurel oak, sweetbay magnolia, black gum (Nyssa biflora), and netted chain fern (Woodwardia areolate).

Mixed Hardwood – Coniferous Swamps (FLUCCS 2240) – This vegetative community consisted primarily of blackgum, red maple, loblolly bay, loblolly pine (Pinus taedaa), water oak (Quercus nigra), wax myrtle, fetterbush (Lyonia lucida), and cinnamon fern (Osmundastrum cinnamomeum).

Gum Pond (FLUCCS 221312) – This vegetative community consisted primarily of black gum sweetbay magnolia, cabbage palm, red maple, fetterbush, and cinnamon fern.

Ditch/Artificial Intermittent Stream (FLUCCS 4220) – This vegetative community consisted of a manmade ditch surrounded by various types of vegetation as described by FLUCCS codes 1124, 1400, 2240, and 2233.

Proposed Project Impact

The Proposed Project is anticipated to result in permanent impacts to approximately 2.85 acres of wetlands, as detailed in **Table 2** and shown in **Exhibit 3, *Wetland and Stream Impacts***.

TABLE 2, PERMANENT IMPACTS

WETLANDS		
	FLUCFCS	**Acreage**
Freshwater Non-Forested Wetlands	2100	1.55
Baygall	2231	1.20
Mixed Hardwood-Coniferous Swamps	2240	0.10
	Total	**2.85**

Note: FLUCCS = Florida Department of Transportation, Florida Land Use Cover and Forms Classification System
Source: Landrum & Brown, 2022; LG² Environmental Solutions, Inc., 2021; Kimley-Horn, 2021.

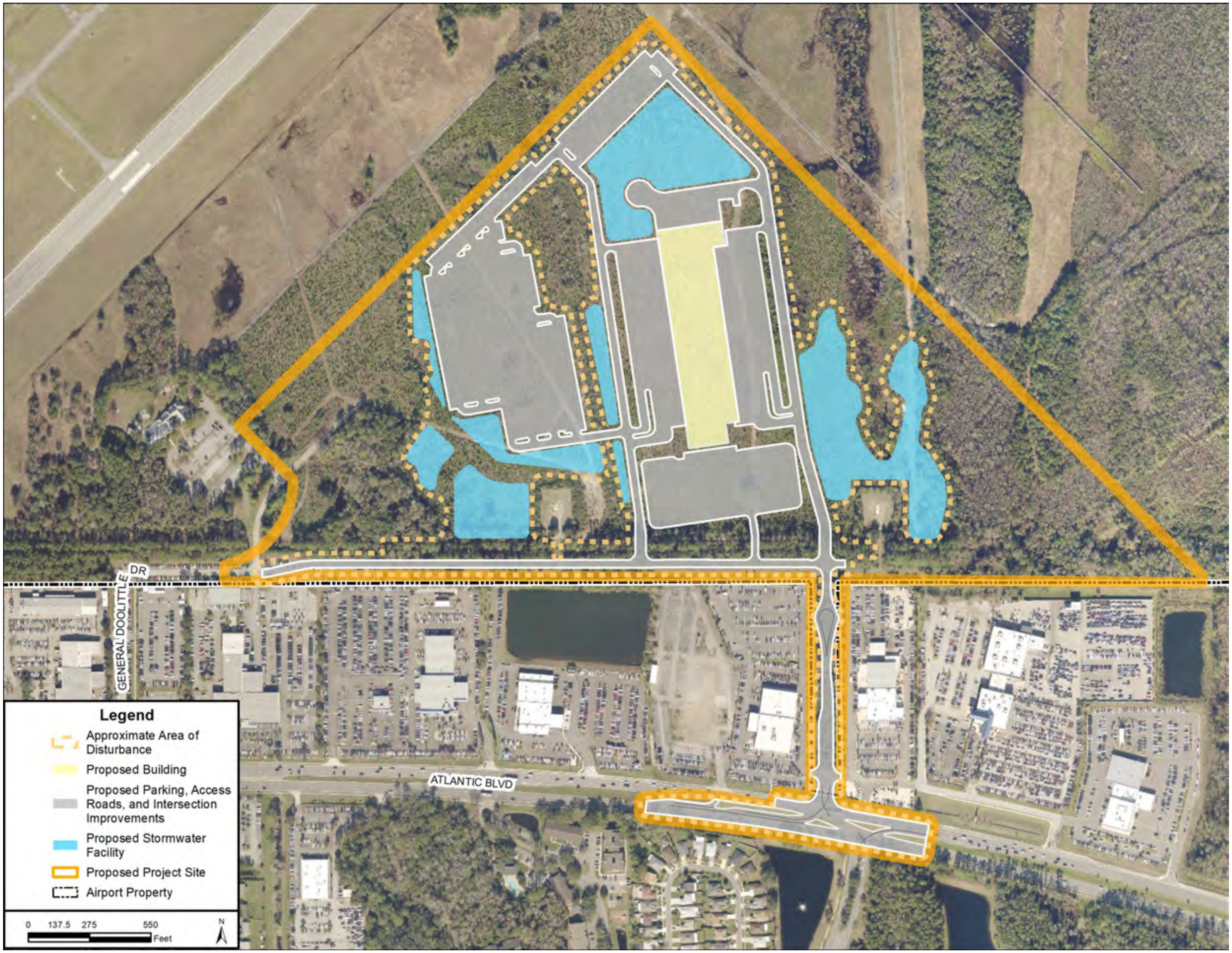
Construction of the proposed parking and access roads includes the culverting of approximately 450 linear feet and the reshaping of 2,320 linear feet of the existing ditch/artificial intermittent stream. However, these impacts and the implementation of new drainage infrastructure would maintain water flow on the site. Additionally, the Proposed Project includes an increase of approximately 34 acres of impervious surfaces. To account for the increase in impervious surface, up to eight stormwater facilities spanning a total of approximate 17 total acres would be provided throughout the site (see Exhibit 1-3 and 4-2 for the proposed stormwater facilities). The stormwater facilities proposed for the site are referred to as “wet ponds,” which are constructed basins that have a permanent pool of water throughout the year. Stormwater from the project would be collected in these wet ponds which will provide treatment before the runoff exits the site. As previously stated, the developer has conducted a stormwater management plan for the final design of the Proposed Project which included a water quality analysis and floodplain analysis that confirmed the appropriate drainage would be maintained on the site. This stormwater management plan has been coordinated with the St. Johns River Water Management District and all appropriate permits will be obtained. Therefore, it is not anticipated that water quality standards would be exceeded with the implementation of the Proposed Project.

Coordination between the private developer and the St. Johns River Water Management District (SJRWMD) regarding the final wetland delineation has been completed and the SJRWMD has issued a permit for this project on July 13, 2023. Additionally, the FDEP has issued a State 404 Program Permit for the project on July 21, 2023. Compliance with these permits ensures all impacts have been avoided to the greatest extent practicable, unavoidable impacts have been minimized, and a mitigation plan has been provided for unavoidable wetland impacts. Pending further coordination, it is anticipated the developer will purchase 2.00 credits in the St. Marks Pond Mitigation Bank. With implementation of a mitigation plan to compensate for the losses of wetlands resulting from the construction of the Proposed Project, the environmental impact would not be significant.

memorandum

Landrum & Brown, Incorporated
4445 Lake Forest Dr., Suite 700
Cincinnati, Ohio 45242
513.530.5333

EXHIBIT 1, PROPOSED PROJECT

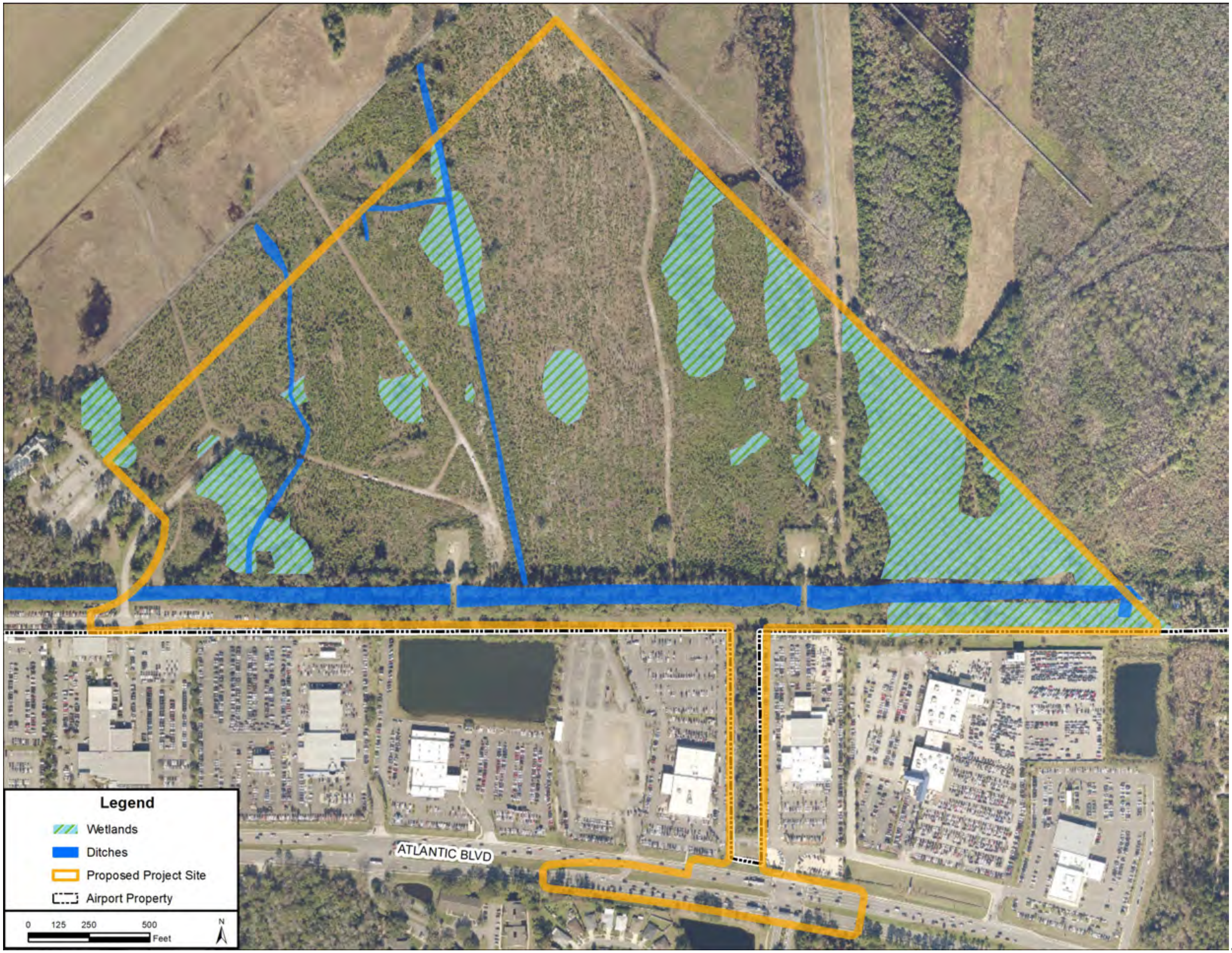


Source: Landrum & Brown, 2022.

memorandum

Landrum & Brown, Incorporated
4445 Lake Forest Dr., Suite 700
Cincinnati, Ohio 45242
513.530.5333

EXHIBIT 2, WETLANDS AND STREAMS

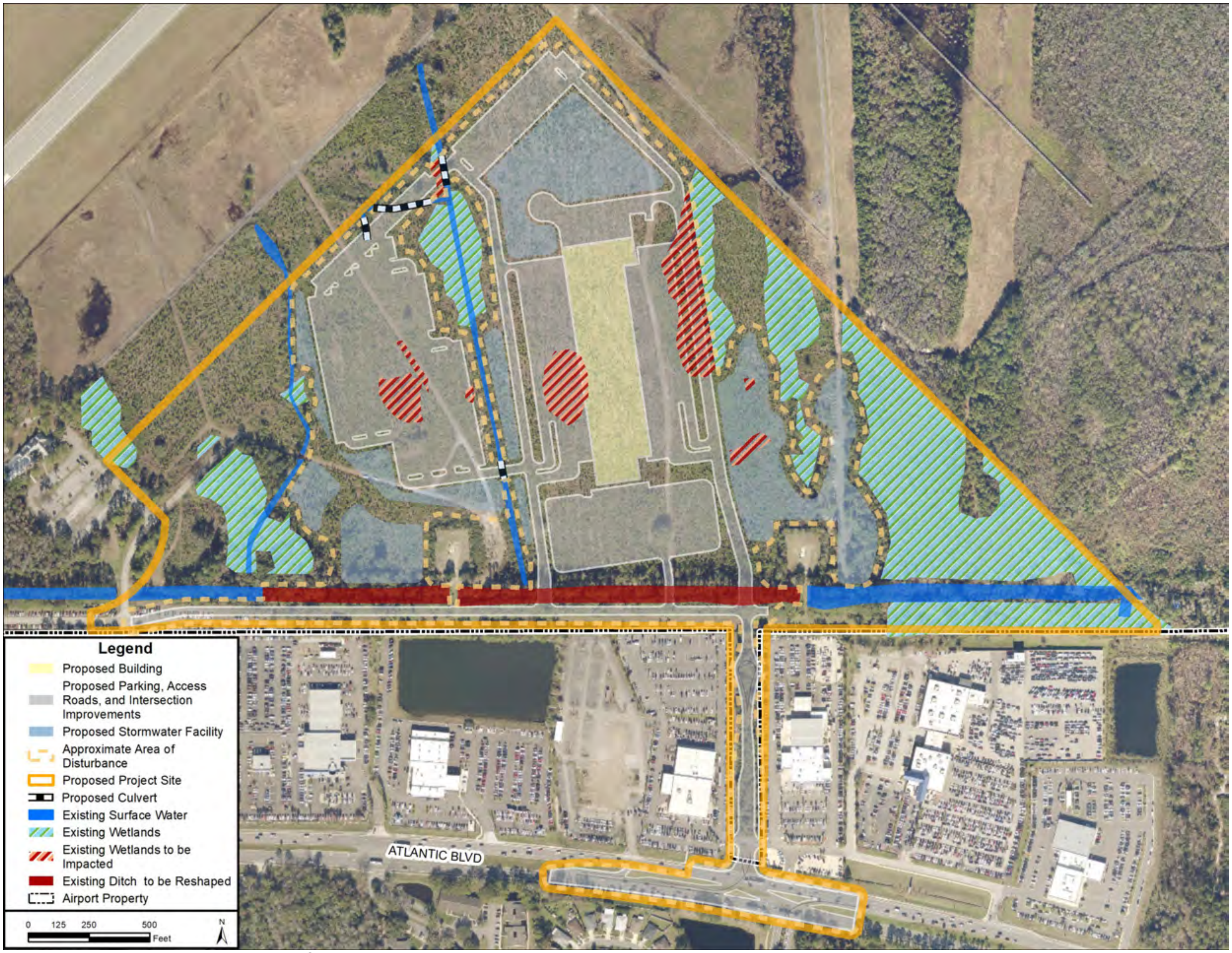


Source: Landrum & Brown, 2022; LG2 Environmental Solutions, Inc., 2021; Kimley-Horn, 2022.

memorandum

Landrum & Brown, Incorporated
4445 Lake Forest Dr., Suite 700
Cincinnati, Ohio 45242
513.530.5333

EXHIBIT 3, WETLAND AND STREAM IMPACTS



Source: Landrum & Brown, 2022; LG[2] Environmental Solutions, Inc., 2021; Kimley-Horn, 2022.

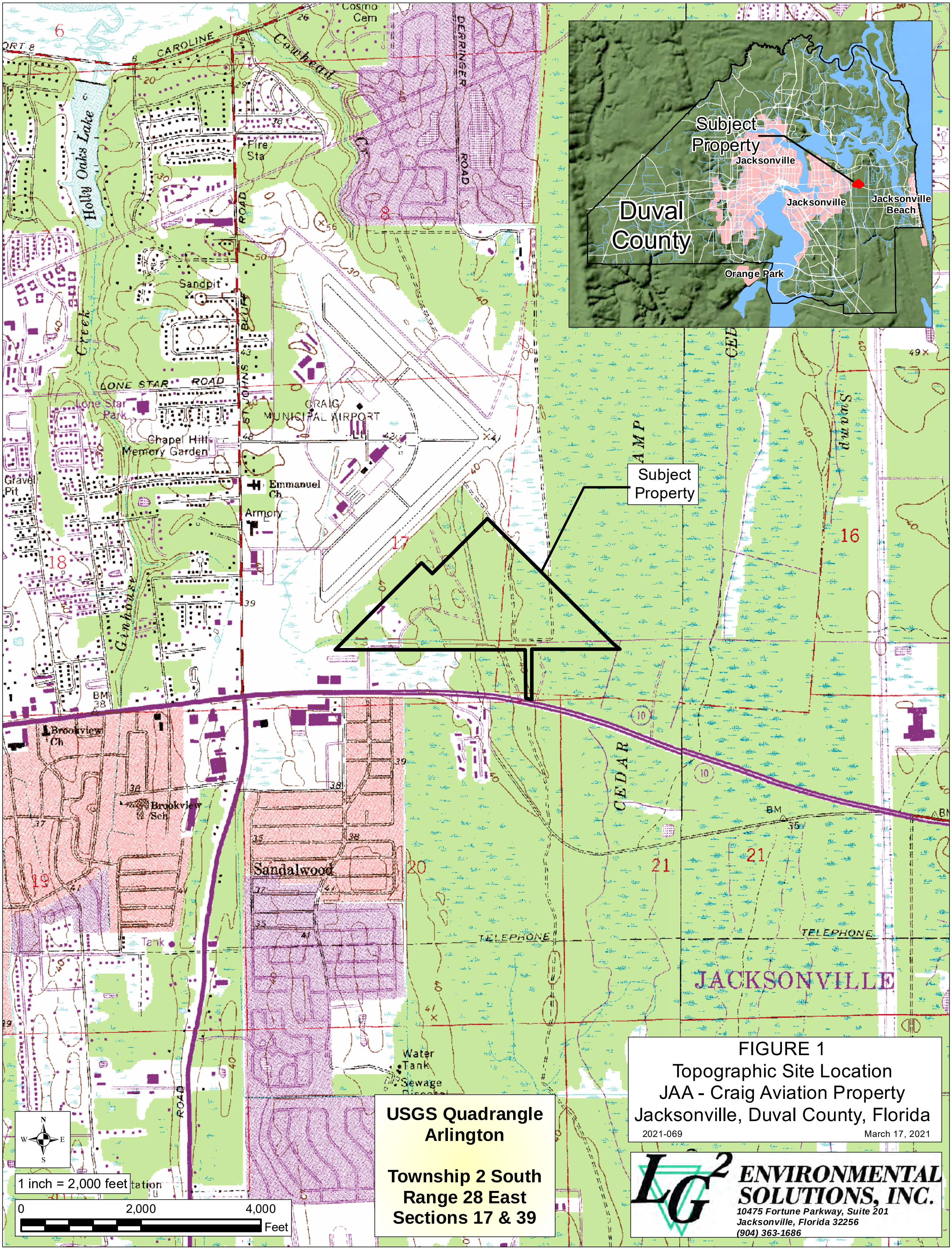
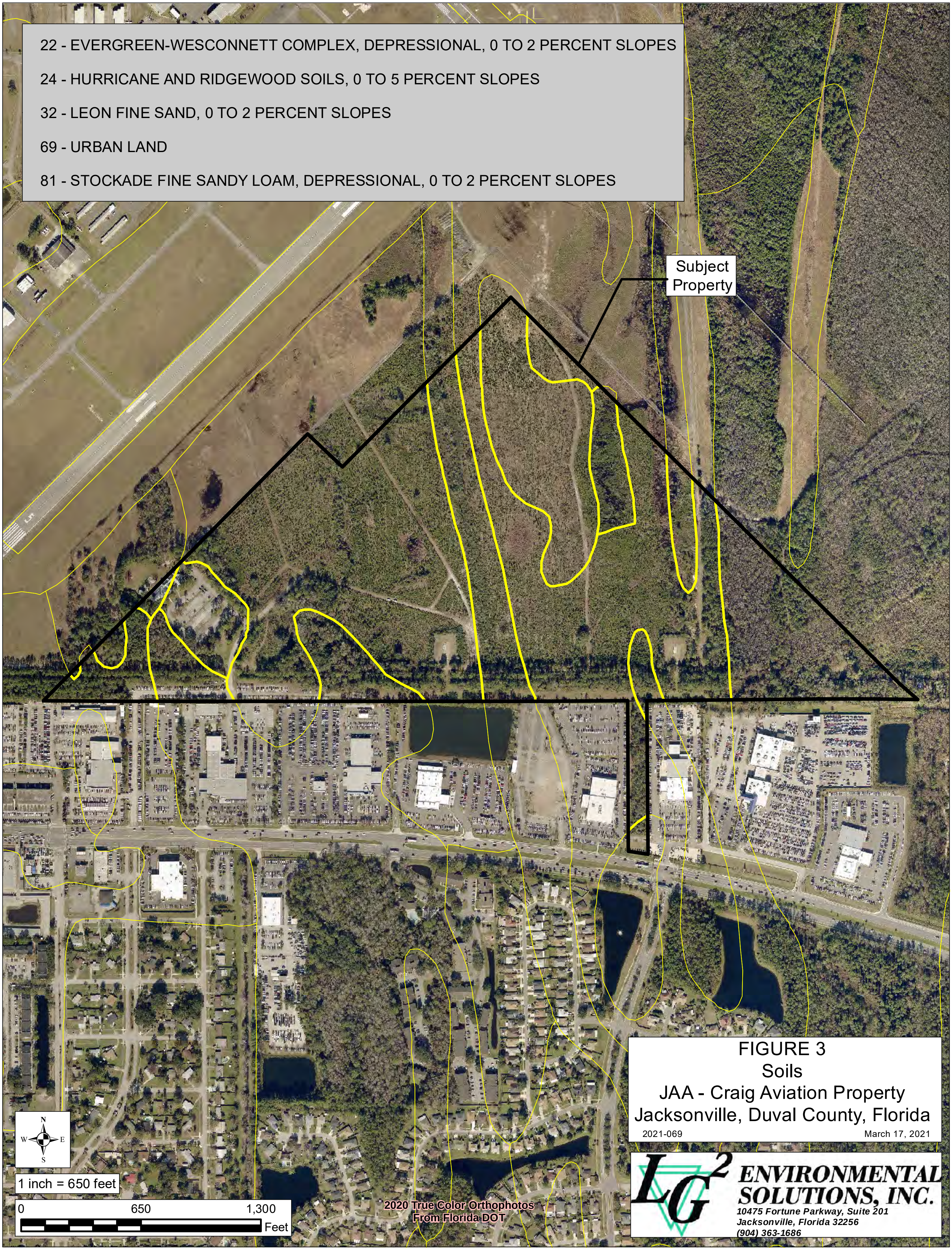


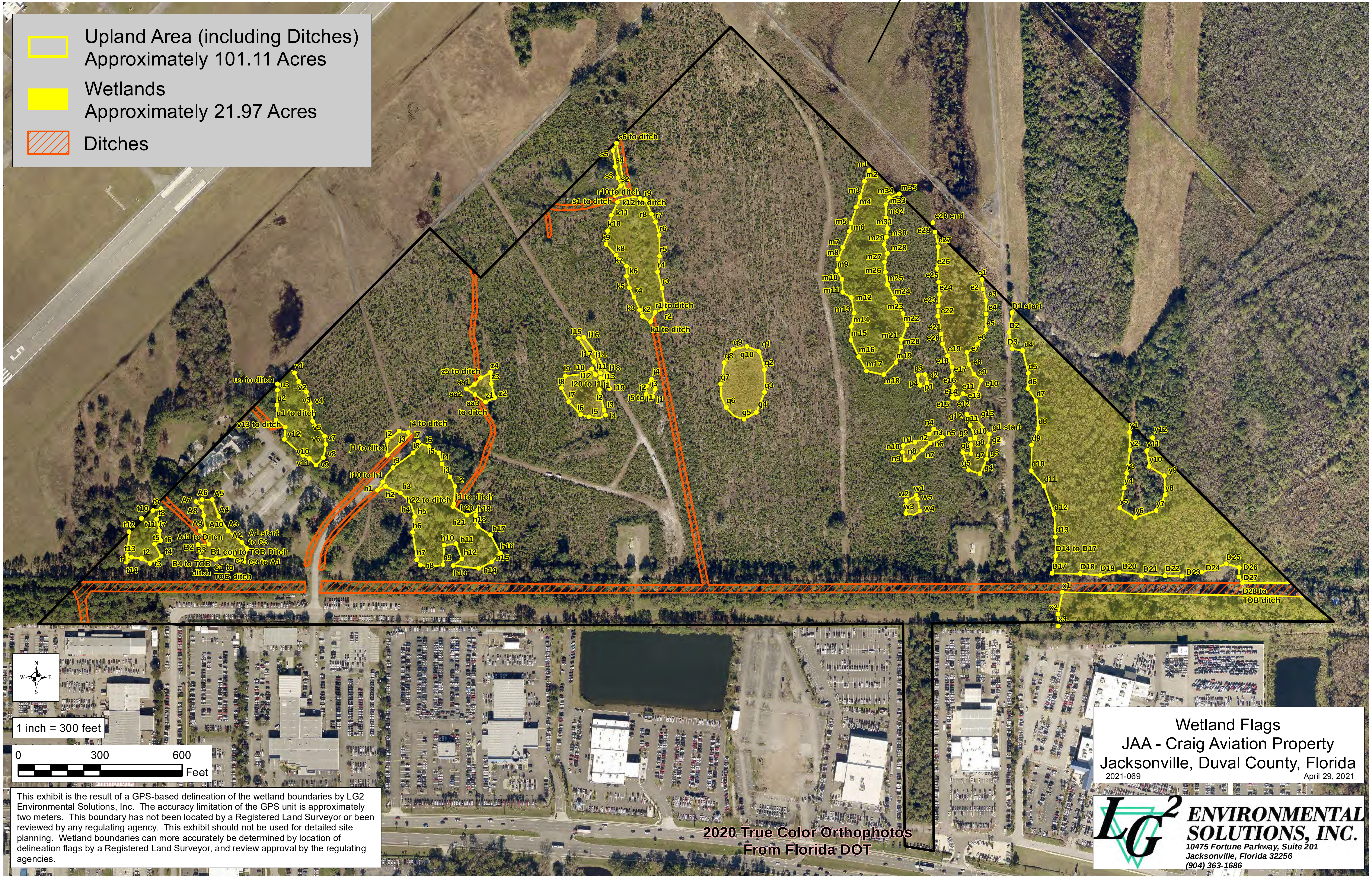
FIGURE 1
Topographic Site Location
JAA - Craig Aviation Property
Jacksonville, Duval County, Florida
2021-069
March 17, 2021
USGS Quadrangle
Arlington
Township 2 South
Range 28 East
Sections 17 & 39
Subject Property
Duval County
Jacksonville
Jacksonville Beach
Orange Park
1 inch = 2,000 feet
0
2,000
4,000
Feet
N
S
E
W
LG2 ENVIRONMENTAL SOLUTIONS, INC.
10475 Fortune Parkway, Suite 201
Jacksonville, Florida 32256
(904) 363-1686
CRAIG MUNICIPAL AIRPORT
Holly Oaks Lake
LONE STAR ROAD
ST JOHNS BLUFF ROAD
DERRINGER ROAD
CAROLINE
Cowhead
Sandalwood
Brookview Sch
Brookview Ch
Lone Star Park
Chapel Hill Memory Garden
Emmanuel Ch
Armory
Sandpit
Fire Sta
Gravel Pit
Cosmo Cem
Water Tank
Sewage Disposal
TELEPHONE
CEDAR SWAMP
Swamp
Ginhouse Creek
JACKSONVILLE

FIGURE 2
Aerial Photograph
JAA - Craig Aviation Property
Jacksonville, Duval County, Florida

2021-069 March 17, 2021

LG² ENVIRONMENTAL SOLUTIONS, INC.
10475 Fortune Parkway, Suite 201
Jacksonville, Florida 32256
(904) 363-1686


22 - EVERGREEN-WESCONNETT COMPLEX, DEPRESSIONAL, 0 TO 2 PERCENT SLOPES
24 - HURRICANE AND RIDGEWOOD SOILS, 0 TO 5 PERCENT SLOPES
32 - LEON FINE SAND, 0 TO 2 PERCENT SLOPES
69 - URBAN LAND
81 - STOCKADE FINE SANDY LOAM, DEPRESSIONAL, 0 TO 2 PERCENT SLOPES
Subject Property
N
W
E
S
1 inch = 650 feet
0
650
1,300
Feet
2020 True Color Orthophotos From Florida DOT
FIGURE 3
Soils
JAA - Craig Aviation Property
Jacksonville, Duval County, Florida
2021-069
March 17, 2021
LG2
ENVIRONMENTAL SOLUTIONS, INC.
10475 Fortune Parkway, Suite 201
Jacksonville, Florida 32256
(904) 363-1686



Upland Area (including Ditches)
Approximately 101.11 Acres
Wetlands
Approximately 21.97 Acres
Ditches
1 inch = 300 feet
0 300 600
Feet
This exhibit is the result of a GPS-based delineation of the wetland boundaries by LG2 Environmental Solutions, Inc. The accuracy limitation of the GPS unit is approximately two meters. This boundary has not been located by a Registered Land Surveyor or been reviewed by any regulating agency. This exhibit should not be used for detailed site planning. Wetland boundaries can more accurately be determined by location of delineation flags by a Registered Land Surveyor, and review approval by the regulating agencies.
2020 True Color Orthophotos
From Florida DOT
Wetland Flags
JAA - Craig Aviation Property
Jacksonville, Duval County, Florida
2021-069
April 29, 2021
LG2 ENVIRONMENTAL SOLUTIONS, INC.
10475 Fortune Parkway, Suite 201
Jacksonville, Florida 32256
(904) 363-1686

July 13, 2023

Mark VanLoh
Jacksonville Aviation Authority
14201 Pecan Park Rd
Jacksonville, FL 32218-9411

SUBJECT: 89972-3
Jacksonville Delivery Station

Dear Sir/Madam:

Enclosed is your individual permit issued by the St. Johns River Water Management District on July 13, 2023. This permit is a legal document and should be kept with your other important documents. Permit issuance does not relieve you from the responsibility of obtaining any necessary permits from any federal, state, or local agencies for your project.

Technical Staff Report:
If you wish to review a copy of the Technical Staff Report (TSR) that provides the District's staff analysis of your permit application, you may view the TSR by going to the Permitting section of the District's website at www.sjrwmd.com/permitting. Using the "search applications and permits" feature, you can use your permit number or project name to find information about the permit. When you see the results of your search, click on the permit number and then on the TSR folder.

Noticing Your Permit:
For noticing instructions, please refer to the noticing materials in this package regarding closing the point of entry for someone to challenge the issuance of your permit. Please note that if a timely petition for administrative hearing is filed, your permit will become non-final and any activities that you choose to undertake pursuant to your permit will be at your own risk. Please refer to the attached Notice of Rights to determine any legal rights you may have concerning the District's agency action.

Compliance with Permit Conditions:
To submit your required permit compliance information, go to the District's website at www.sjrwmd.com/permitting. Under the "Apply for a permit or submit compliance data" section, click to sign-in to your existing account or to create a new account. Select the "Compliance Submittal" tab, enter your permit number, and select "No Specific Date" for the Compliance Due Date Range. You will then be able to view all the compliance submittal requirements for your project. Select the compliance item that you are ready to submit and then attach the appropriate information or form. The forms to comply with your permit conditions are available at www.sjrwmd.com/permitting under the section "Handbooks, forms, fees, final orders". Click on forms to view all permit compliance forms, then scroll to the ERP application forms section and

select the applicable compliance forms. Alternatively, if you have difficulty finding forms or need copies of the appropriate forms, please contact the Bureau of Regulatory Support at (386) 329-4570.

Transferring Your Permit:
Your permit requires you to notify the District within 30 days of any change in ownership or control of the project or activity covered by the permit, or within 30 days of any change in ownership or control of the real property on which the permitted project or activity is located or occurs. You will need to provide the District with the information specified in rule 62-330.340, Florida Administrative Code (F.A.C.). Generally, this will require you to complete and submit Form 62-330.340(1), "Request to Transfer Permit," available at http://www.sjrwmd.com/permitting/permitforms.html.

Please note that a permittee is liable for compliance with the permit before the permit is transferred. The District, therefore, recommends that you request a permit transfer in advance in accordance with the applicable rules. You are encouraged to contact District staff for assistance with this process.

Thank you and please let us know if you have additional questions. For general questions contact e-permit@sjrwmd.com or (386) 329-4570.

Sincerely,

Michelle Reiber

Michelle Reiber, Bureau Chief
Division of Regulatory Services
St. Johns River Water Management District
525 Community College Parkway, S.E.
Palm Bay, FL 32909
(321) 409-2129

Enclosures: Permit
Notice of Rights
List of Newspapers for Publication

cc: District Permit File

Tiffany J Allen
DEP

Mark VanLoh
Jacksonville Aviation Authority
14201 Pecan Park Rd
Jacksonville, FL 32218-9411

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
Post Office Box 1429
Palatka, Florida 32178-1429

PERMIT NO: 89972-3 **DATE ISSUED:** July 13, 2023

PROJECT NAME: Jacksonville Delivery Station

A PERMIT AUTHORIZING:
Construction and operation of a Stormwater Management System for a 77.53-acre project known as Jacksonville Delivery Station as per plans received by the District on July 13, 2023.

LOCATION:
Section(s): 17, 39 Township(s): 2S Range(s): 28E
Duval County

Receiving Water Body:

Name	Class
Tiger Pond Creek	III Fresh

ISSUED TO:
Jacksonville Aviation Authority
14201 Pecan Park Rd
Jacksonville, FL 32218-9411

The permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to the permittee any property rights nor any rights or privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes.

PERMIT IS CONDITIONED UPON:
See conditions on attached “Exhibit A”, dated July 13, 2023

AUTHORIZED BY: St. Johns River Water Management District
Division of Regulatory Services

By:

Craig McCammon
Supervising Regulatory Scientist

"EXHIBIT A"
CONDITIONS FOR ISSUANCE OF PERMIT NUMBER 89972-3
Jacksonville Delivery Station
DATED July 13, 2023

1. All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with Rule 62-330.315, F.A.C. Any deviations that are not so authorized may subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.

2. A complete copy of this permit shall be kept at the work site of the permitted activity during the construction phase, and shall be available for review at the work site upon request by the District staff. The permittee shall require the contractor to review the complete permit prior to beginning construction.

3. Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be installed immediately prior to, and be maintained during and after construction as needed, to prevent adverse impacts to the water resources and adjacent lands. Such practices shall be in accordance with the State of Florida Erosion and Sediment Control Designer and Reviewer Manual (Florida Department of Environmental Protection and Florida Department of Transportation June 2007), and the Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008), which are both incorporated by reference in subparagraph 62-330.050(9)(b)5, F.A.C., unless a project-specific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.

4. At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the District a fully executed Form 62-330.350(1), "Construction Commencement Notice," (October 1, 2013) (http://www.flrules.org/Gateway/reference.asp?No=Ref-02505), incorporated by reference herein, indicating the expected start and completion dates. A copy of this form may be obtained from the District, as described in subsection 62-330.010(5), F.A.C., and shall be submitted electronically or by mail to the Agency. However, for activities involving more than one acre of construction that also require a NPDES stormwater construction general permit, submittal of the Notice of Intent to Use Generic Permit for Stormwater Discharge from Large and Small Construction Activities, DEP Form 62-621.300(4)(b), shall also serve as notice of commencement of construction under this chapter and, in such a case, submittal of Form 62-330.350(1) is not required.

5. Unless the permit is transferred under Rule 62-330.340, F.A.C., or transferred to an operating entity under Rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms and conditions of the permit for the life of the project or activity.

6. Within 30 days after completing construction of the entire project, or any independent portion of the project, the permittee shall provide the following to the Agency, as applicable:

   a. For an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex — "Construction Completion and Inspection Certification for Activities Associated with a Private Single-Family Dwelling Unit" [Form 62-330.310(3)]; or

   b. For all other activities — "As-Built Certification and Request for Conversion to

Operation Phase" [Form 62-330.310(1)].

c. If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.

7. If the final operation and maintenance entity is a third party:

   a. Prior to sales of any lot or unit served by the activity and within one year of permit issuance, or within 30 days of as-built certification, whichever comes first, the permittee shall submit, as applicable, a copy of the operation and maintenance documents (see sections 12.3 thru 12.3.4 of Volume I) as filed with the Florida Department of State, Division of Corporations and a copy of any easement, plat, or deed restriction needed to operate or maintain the project, as recorded with the Clerk of the Court in the County in which the activity is located.

   b. Within 30 days of submittal of the as- built certification, the permittee shall submit "Request for Transfer of Environmental Resource Permit to the Perpetual Operation and Maintenance Entity" [Form 62-330.310(2)] to transfer the permit to the operation and maintenance entity, along with the documentation requested in the form. If available, an Agency website that fulfills this transfer requirement may be used in lieu of the form.

8. The permittee shall notify the District in writing of changes required by any other regulatory District that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.

9. This permit does not:

   a. Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified herein or in Chapter 62-330, F.A.C.;

   b. Convey to the permittee or create in the permittee any interest in real property;

   c. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or

   d. Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee.

10. Prior to conducting any activities on state-owned submerged lands or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.

11. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any project authorized by the permit.

12. The permittee shall notify the District in writing:

    a. Immediately if any previously submitted information is discovered to be inaccurate; and

b. Within 30 days of any conveyance or division of ownership or control of the property or the system, other than conveyance via a long-term lease, and the new owner shall request transfer of the permit in accordance with Rule 62-330.340, F.A.C. This does not apply to the sale of lots or units in residential or commercial subdivisions or condominiums where the stormwater management system has been completed and converted to the operation phase.

13. Upon reasonable notice to the permittee, District staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.

14. If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, stone tools, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section (DHR), at (850) 245-6333, as well as the appropriate permitting agency office. Project activities shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, F.S. For project activities subject to prior consultation with the DHR and as an alternative to the above requirements, the permittee may follow procedures for unanticipated discoveries as set forth within a cultural resources assessment survey determined complete and sufficient by DHR and included as a specific permit condition herein.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Rule 62-330.201, F.A.C., provides otherwise.

16. The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.

17. This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the District will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.

18. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with Rule 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.

19. This permit for construction will expire five years from the date of issuance.

20. At a minimum, all retention and detention storage areas must be excavated to rough grade prior to building construction or placement of impervious surface within the area to be served by those facilities. To prevent reduction in storage volume and percolation rates, all accumulated sediment must be removed from the storage area prior to final grading and stabilization.

21. All wetland areas or water bodies that are outside the specific limits of construction authorized by this permit must be protected from erosion, siltation, scouring or excess turbidity, and dewatering.

22. The operation and maintenance entity shall inspect the stormwater or surface water management system once within two years after the completion of construction and every two years thereafter to determine if the system is functioning as designed and permitted. The operation and maintenance entity must maintain a record of each required inspection, including the date of the inspection, the name and contact information of the inspector, and whether the system was functioning as designed and permitted, and make such record available for inspection upon request by the District during normal business hours. If at any time the system is not functioning as designed and permitted, then within 30 days the entity shall submit a report electronically or in writing to the District using Form 62-330.311(1), “Operation and Maintenance Inspection Certification,” describing the remedial actions taken to resolve the failure or deviation.

23. This permit does not authorize the permittee to cause any adverse impact to or “take” of state listed species and other regulated species of fish and wildlife. Compliance with state laws regulating the take of fish and wildlife is the responsibility of the owner or applicant associated with this project. Please refer to Chapter 68A-27 of the Florida Administrative Code for definitions of “take” and a list of fish and wildlife species. If listed species are observed onsite, FWC staff are available to provide decision support information or assist in obtaining the appropriate FWC permits. Most marine endangered and threatened species are statutorily protected and a “take” permit cannot be issued. Requests for further information or review can be sent to FWCConservationPlanningServices@MyFWC.com.

24. The Surface Water Management System shall be constructed and operated per the plans received by the District on July 13, 2023.

25. The proposed wetland impacts must be performed as indicated on the plans received by the District on July 13, 2023

26. The mitigation plan, which includes the purchase of 1.85 forested, freshwater UMAM credits from St. Marks Pond Mitigation Bank (Basin 6) per the letter of allocation received by the District on May 31, 2023, is incorporated as a condition of this permit.

27. This permit authorizes the utilization of 1.85 of the 2.00 forested freshwater UMAM credits purchased by the applicant from St. Marks Pond Mitigation Bank (Basin 6). In the event the applicant wishes to utilize the additional 0.15 credits, a modification to this permit will be required and the mitigation bank ledger must be updated to reflect the change in credits allotted to this permit application.

Notice Of Rights

1. A person whose substantial interests are or may be affected has the right to request an administrative hearing by filing a written petition with the St. Johns River Water Management District (District). Pursuant to Chapter 28-106 and Rule 40C-1.1007, Florida Administrative Code, the petition must be filed (received) either by delivery at the office of the District Clerk at District Headquarters, P. O. Box 1429, Palatka Florida 32178-1429 (4049 Reid St., Palatka, FL 32177) or by e-mail with the District Clerk at Clerk@sjrwmd.com, within twenty-six (26) days of the District depositing the notice of District decision in the mail (for those persons to whom the District mails actual notice), within twenty-one (21) days of the District emailing the notice of District decision (for those persons to whom the District emails actual notice), or within twenty-one (21) days of newspaper publication of the notice of District decision (for those persons to whom the District does not mail or email actual notice). A petition must comply with Sections 120.54(5)(b)4. and 120.569(2)(c), Florida Statutes, and Chapter 28-106, Florida Administrative Code. The District will not accept a petition sent by facsimile (fax), as explained in paragraph no. 4 below.

2. Please be advised that if you wish to dispute this District decision, mediation may be available and that choosing mediation does not affect your right to an administrative hearing. If you wish to request mediation, you must do so in a timely-filed petition. If all parties, including the District, agree to the details of the mediation procedure, in writing, within 10 days after the time period stated in the announcement for election of an administrative remedy under Sections 120.569 and 120.57, Florida Statutes, the time limitations imposed by Sections 120.569 and 120.57, Florida Statutes, shall be tolled to allow mediation of the disputed District decision. The mediation must be concluded within 60 days of the date of the parties' written agreement, or such other timeframe agreed to by the parties in writing. Any mediation agreement must include provisions for selecting a mediator, a statement that each party shall be responsible for paying its pro-rata share of the costs and fees associated with mediation, and the mediating parties' understanding regarding the confidentiality of discussions and documents introduced during mediation. If mediation results in settlement of the administrative dispute, the District will enter a final order consistent with the settlement agreement. If mediation terminates without settlement of the dispute, the District will notify all the parties in writing that the administrative hearing process under Sections 120.569 and 120.57, Florida Statutes, is resumed. Even if a party chooses not to engage in formal mediation, or if formal mediation does not result in a settlement agreement, the District will remain willing to engage in informal settlement discussions.

3. A person whose substantial interests are or may be affected has the right to an informal administrative hearing pursuant to Sections 120.569 and 120.57(2), Florida Statutes, where no material facts are in dispute. A petition for an informal hearing must also comply with the requirements set forth in Rule 28-106.301, Florida Administrative Code.

Notice Of Rights

4. A petition for an administrative hearing is deemed filed upon receipt of the complete petition by the District Clerk at the District Headquarters in Palatka, Florida during the District's regular business hours. The District's regular business hours are 8:00 a.m. – 5:00 p.m., excluding weekends and District holidays. Petitions received by the District Clerk after the District's regular business hours shall be deemed filed as of 8:00 a.m. on the District's next regular business day. The District's acceptance of petitions filed by e-mail is subject to certain conditions set forth in the District's Statement of Agency Organization and Operation (issued pursuant to Rule 28-101.001, Florida Administrative Code), which is available for viewing at *sjrwmd.com*. These conditions include, but are not limited to, the petition being in the form of a PDF or TIFF file and being capable of being stored and printed by the District. Further, pursuant to the District's Statement of Agency Organization and Operation, attempting to file a petition by facsimile is prohibited and shall not constitute filing.

5. Failure to file a petition for an administrative hearing within the requisite timeframe shall constitute a waiver of the right to an administrative hearing. (Rule 28-106.111, Florida Administrative Code).

6. The right to an administrative hearing and the relevant procedures to be followed are governed by Chapter 120, Florida Statutes, Chapter 28-106, Florida Administrative Code, and Rule 40C-1.1007, Florida Administrative Code. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means the District's final action may be different from the position taken by it in this notice. A person whose substantial interests are or may be affected by the District's final action has the right to become a party to the proceeding, in accordance with the requirements set forth above.

7. Pursuant to Section 120.68, Florida Statutes, a party to the proceeding before the District who is adversely affected by final District action may seek review of the action in the District Court of Appeal by filing a notice of appeal pursuant to Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, within 30 days of the rendering of the final District action.

8. A District action is considered rendered, as referred to in paragraph no. 7 above, after it is signed on behalf of the District and filed by the District Clerk.

9. Failure to observe the relevant timeframes for filing a petition for judicial review as described in paragraph no. 7 above will result in waiver of that right to review.

NOR.Decision.DOC.001
Revised 12.7.11

NOTICING INFORMATION

Please be advised that the St. Johns River Water Management District will not publish a notice in the newspaper advising the public that it has issued a permit for this project.

Newspaper publication, using the District's notice form, notifies members of the public of their right to challenge the issuance of the permit. If proper notice is given by newspaper publication, then there is a 21-day time limit for someone to file a petition for an administrative hearing to challenge the issuance of the permit.

To close the point of entry for filing a petition, you may publish (at your own expense) a one-time notice of the District's decision in a newspaper of general circulation within the affected area as defined in Section 50.011 of the Florida Statutes. If you do not publish a newspaper notice to close the point of entry, the time to challenge the issuance of your permit will not expire and someone could file a petition even after your project is constructed.

A copy of the notice form and a partial list of newspapers of general circulation are attached for your convenience. However, you are not limited to those listed newspapers. If you choose to close the point of entry and the notice is published, the newspaper will return to you an affidavit of publication. In that event, it is important that you either submit a scanned copy of the affidavit by emailing it to *compliancesupport@sjrwmd.com* (preferred method) **or** send a copy of the original affidavit to:

Office of Records and Regulatory Support
4049 Reid Street
Palatka, FL 32177

If you have any questions, please contact the Office of Records and Regulatory Support at (386) 329-4570.

NOTICE OF AGENCY ACTION TAKEN BY THE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Notice is given that the following permit was issued on ____________________:

(Name and address of applicant) ______________________________________
permit#____________________. The project is located in _____________County, Section ________, Township ________ South, Range ________ East. The permit authorizes a surface water management system on ________ acres for ____ known as ____________________. The receiving water body is ________________.

A person whose substantial interests are or may be affected has the right to request an administrative hearing by filing a written petition with the St. Johns River Water Management District (District). Pursuant to Chapter 28-106 and Rule 40C-1.1007, Florida Administrative Code (F.A.C.), the petition must be filed (received) either by delivery at the office of the District Clerk at District Headquarters, P.O. Box 1429, Palatka FL 32178-1429 (4049 Reid St, Palatka, FL 32177) or by e-mail with the District Clerk at Clerk@sjrwmd.com, within twenty-one (21) days of newspaper publication of the notice of District decision (for those persons to whom the District does not mail or email actual notice). A petition must comply with Sections 120.54(5)(b)4. and 120.569(2)(c), Florida Statutes (F.S.), and Chapter 28-106, F.A.C. The District will not accept a petition sent by facsimile (fax). Mediation pursuant to Section 120.573, F.S., may be available and choosing mediation does not affect your right to an administrative hearing.

A petition for an administrative hearing is deemed filed upon receipt of the complete petition by the District Clerk at the District Headquarters in Palatka, Florida during the District's regular business hours. The District's regular business hours are 8 a.m. – 5 p.m., excluding weekends and District holidays. Petitions received by the District Clerk after the District's regular business hours shall be deemed filed as of 8 a.m. on the District's next regular business day. The District's acceptance of petitions filed by e-mail is subject to certain conditions set forth in the District's Statement of Agency Organization and Operation (issued pursuant to Rule 28-101.001, Florida Administrative Code), which is available for viewing at www.sjrwmd.com. These conditions include, but are not limited to, the petition being in the form of a PDF or TIFF file and being capable of being stored and printed by the District. Further, pursuant to the District's Statement of Agency Organization and Operation, attempting to file a petition by facsimile (fax) is prohibited and shall not constitute filing.

The right to an administrative hearing and the relevant procedures to be followed are governed by Chapter 120, Florida Statutes, Chapter 28-106, Florida Administrative Code, and Rule 40C-1.1007, Florida Administrative Code. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means the District's final action may be different from the position taken by it in this notice. **Failure to file a petition for an administrative hearing within the requisite time frame shall constitute a waiver of the right to an administrative hearing. (Rule 28-106.111, F.A.C.).**

If you wish to do so, please visit http://www.sjrwmd.com/nor_dec/ to read the complete Notice of Rights to determine any legal rights you may have concerning the District's decision(s) on the permit application(s) described above. You can also request the Notice of Rights by contacting the Director of Office of Records and Regulatory Support, 4049 Reid St., Palatka, FL 32177-2529, tele. no. (386)329-4570.

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STORMWATER MANAGEMENT PLAN
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
PROJECT BUCKLEY

JULY 2023
Project No: 046265023

Kimley»Horn

Stormwater Management Plan

FOR

Project Buckley

Prepared for:

St. Johns River Water Management District
7775 Baymeadows Way, Suite 102
Jacksonville, FL 32256

JULY 2023
Project No. 046265023
Prepared By:

© Kimley-Horn and Associates, Inc.
116 South Kentucky Avenue
Lakeland, FL 33801
(863) 701-8702

.

Engineer's Certification

This Is to Certify That the Enclosed Engineering Calculations

Were Performed by Me or Under My Direct Supervision.

Christopher D. Hartman,
Professional Engineer, State of
Florida, License No. 92366
This item has been digitally
signed and sealed by
Christopher D. Hartman, PE,
on 07/12/2023.
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Christopher D. Hartman P.E. #92366

Kimley-Horn and Associates, Inc.

116 South Kentucky Avenue

Lakeland, Florida 33801

Date 07/12/2023

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1 SUMMARY

This report is in support of the stormwater management design for the construction of a single story, 131,512 s.f. warehouse distribution center along with the associated parking, utility, stormwater infrastructure. The proposed delivery station will be developed on ±77.53-acres, in the south east corner, of an undeveloped portion of the JAA Craig Airport in Jacksonville, Florida.

2 PRE-DEVELOPMENT CONDITIONS

The project is in the SE corner of the JAA Craig Airport and is undeveloped. The site generally slopes north to south via two main ditches that run through the subject site before discharging into a mapped canal with a FEMA AE Flood Zone determination.

2.1 SOILS

Existing soils were determined by the U.S. Department of Agriculture – National Resources Conservation Service. The predominant soil type on site is Leon fine sand, 0 to 2 percent slopes; a Natural Resources Conservation Service (NRCS) Soils Map has been provided **(See Appendix A)**.

Terracon performed a Geotechnical Engineering report for the project site. Please see **Appendix D** for the Geotechnical Report.

2.2 PRE-DEVELOPMENT BASINS

The majority of the site discharges to the existing channel on the south side of the site. The runoff from the site reaches the channel via two ditches. Node MP20064 was assumed to be the boundary condition for the site as it is downstream from the proposed development. A second boundary, Wetland C1 was identified as a second discharge point of the site. Please see **Appendix B** for the Pre-Development Basin Map.

2.3 CURVE NUMBER CALCULATION

The Pre-Development CN values have been calculated utilizing the TR-55 method. Refer to **Appendix B** for CN values used for this model.

2.4 TIME OF CONCENTRATION

The time of concentrations for the Pre-Development Drainage Basins were calculated using the NRCS TR-55 method: “Chapter 3 - Time of Concentration and Travel Time”. The minimum allowed Tc is 10 minutes. Refer to **Appendix B** for Time of Concentration Calculations.

2.5 PRE-DEVELOPMENT DISCHARGE RATES

The stormwater runoff from the pre-development basins was determined using ICPR 4 by Streamline Technologies, Inc. The 25-year/24-hour and mean annual storms were analyzed at the downstream node of MP20064 and the Wetland C1 node for peak discharge rates of the site. Refer to **Appendix B** for the ICPR nodal diagram, input report, and model results.

2.6 EXISTING FLOODPLAIN

Per the FEMA, the majority of the site is located within Flood Zone X. The south side of the site, within the limits of the existing channel, are listed as AE, while the wetlands to the east of the site are listed as AH.

3 POST DEVELOPMENT CONDITIONS

The proposed delivery station is a single story, 131,512 sf warehouse with associated parking, utility, stormwater infrastructure. The project's stormwater is collected in three (3) ponds.

Pond 100 and 200 have been designed to serve most of the delivery station and the entire offsite proposed roadway. The system has been designed to be a cascading system with Pond 200 flowing into Pond 100 through a bleed down orifice and overflow weir. The permanent pool and orifice for Pond 100 has been sized to treat the entire Post Basin 100, 150, and 200. The permanent pool and orifice for Pond 200 has been sized to treat Post Basin 200. The permanent pool and orifice for Pond 300 has been sized to treat Post Basin 300. Pond 300 will mainly serve the parking areas that are on the west side of the project. All ponds are proposed wet ponds and will provide treatment of the site by use of a permanent pool to allow pollutants to settle out into the pond, while an orifice within each pond will provide the necessary drawdown recovery.

3.1 CURVE NUMBER CALCULATIONS

The Post-Development CN values have been calculated utilizing the TR-55 method. Refer to **Appendix B** for CN values used for this model.

3.2 TIME OF CONCENTRATION

The time of concentration for the Post Development Drainage Basins is the minimum value of 10 minutes.

3.3 GROUNDWATER ELEVATION

The control water level for the ponds was set at the estimated groundwater level. This was estimated from the encountered groundwater levels at the time of borings per the geotechnical report completed by Terracon, as well as comparing the adjacent wetland line to the existing grade elevation. It was with these assumptions and review of geotechnical data that a control elevation of 36.0 was assumed for Pond 100, 37.0 for Pond 200 and 36.5 for Pond 300. A supplemental memo regarding the groundwater elevation of the proposed development can be found in **Appendix D**, along with the geotechnical report provided by Terracon.

3.4 TAILWATER CONDITIONS

The tailwater conditions within the channel were developed from the data received from the SJRWMD model of said channel.

3.5 POST DEVELOPMENT RUNOFF

ICPR4 was used to determine the proposed discharge rates and pond stages for the proposed overall development. Please refer to **Appendix B** for the nodal diagram, input report, and detailed model results. Please refer to **Table 1** below for a summary of the peak discharge rate and stage elevations for the overall development for the 25-year/24-hour storm event and mean-annual event.

Table 1: Post-Development Runoff Rate (cfs)

PRE-POST RUNOFF RATES AT BOUNDARY NODES				
NODE	Storm Event	PRE	POST	DIF
MP20064	WMD25yr-24hr	147.43	144.92	-2.51
WETLAND C1	WMD25yr-24hr	75.50	67.30	-8.20
MP20064	WMD-MA	29.72	28.90	-0.82
WETLAND C1	WMD-MA	29.69	20.78	-8.91

3.6 FEMA FLOOD PLAIN IMPACTS

In order to access the site, the existing channel will have to be crossed along multiple points. To convey water under these crossings, four (4) 48-inch pipes are proposed at the two western crossings, while the crossing at the east side will be four (4) 42-inch pipes. In order to show that there will be no significant impacts from these crossings the ICPR 4 model for the site was expanded to extend just past the project limits within the channel. **Table 2** below compares the max stage at each of the nodes within channel adjacent to our site in both the pre and post development condition. As shown in the table, there are some minor increases within the channel, however these increases occur within our property and begin to lower going towards the boundaries.

Table 2: WMD100yr-24hr Max Stage in Channel (ft)

100-YEAR PRE-POST CHANNEL STAGES				
NODE	Storm Event	PRE	POST	DIF
MP20064	WMD100yr-024hr	30.50	30.50	0.00
MP20065	WMD100yr-024hr	33.30	33.14	-0.16
MP20066S	WMD100yr-024hr	33.55	33.35	-0.20
MP20066.5	WMD100yr-024hr	34.62	34.70	0.08
MP20067	WMD100yr-024hr	34.74	34.82	0.08
MP20068S	WMD100yr-024hr	34.93	35.00	0.07
MP20068.5	WMD100yr-024hr	35.39	35.41	0.02
MP20069	WMD100yr-024hr	35.60	35.60	0.00

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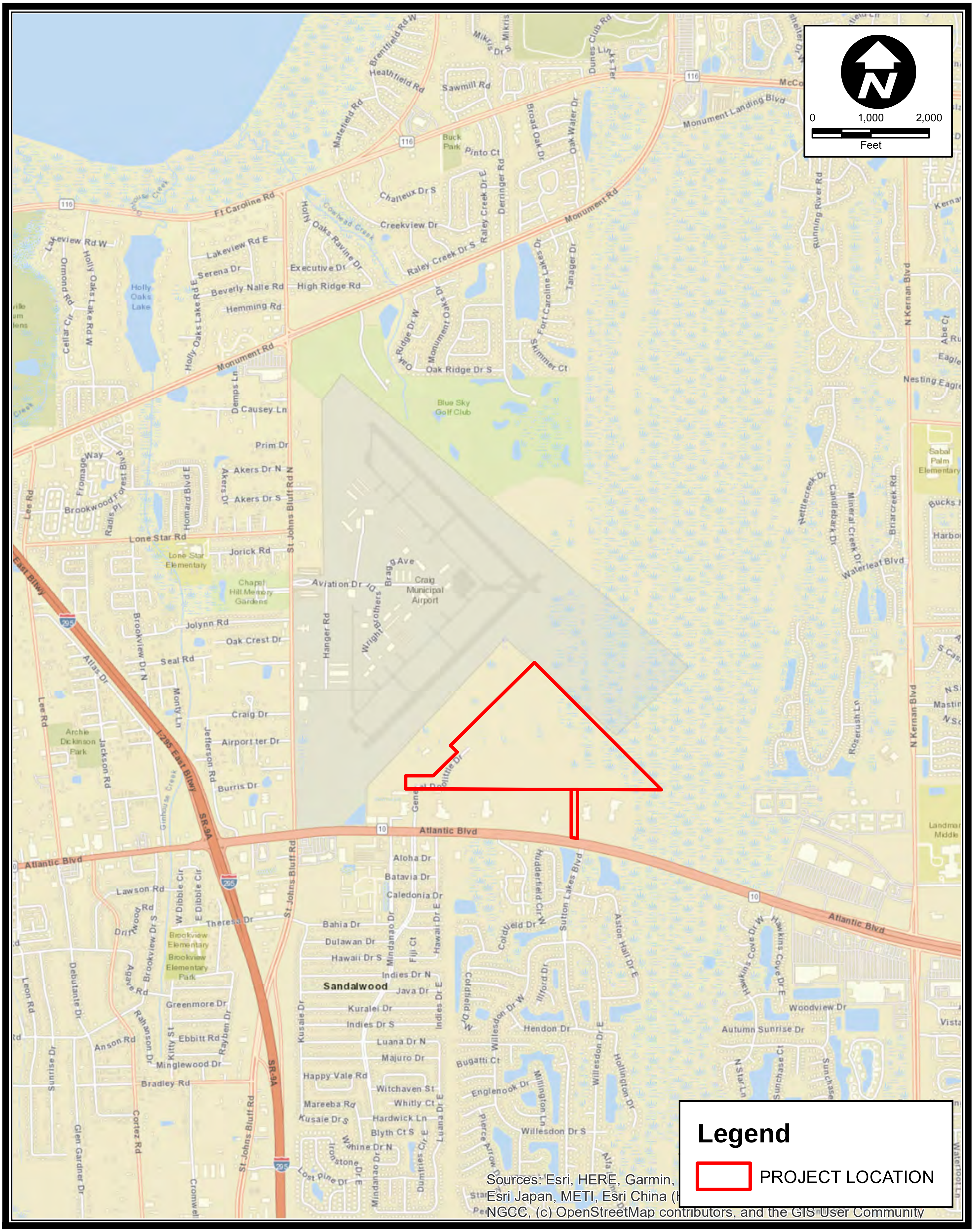
APPENDIX A
GIS EXHIBITS



LOCATION MAP

JAA CRAIG AIRPORT DELIVERY STATION

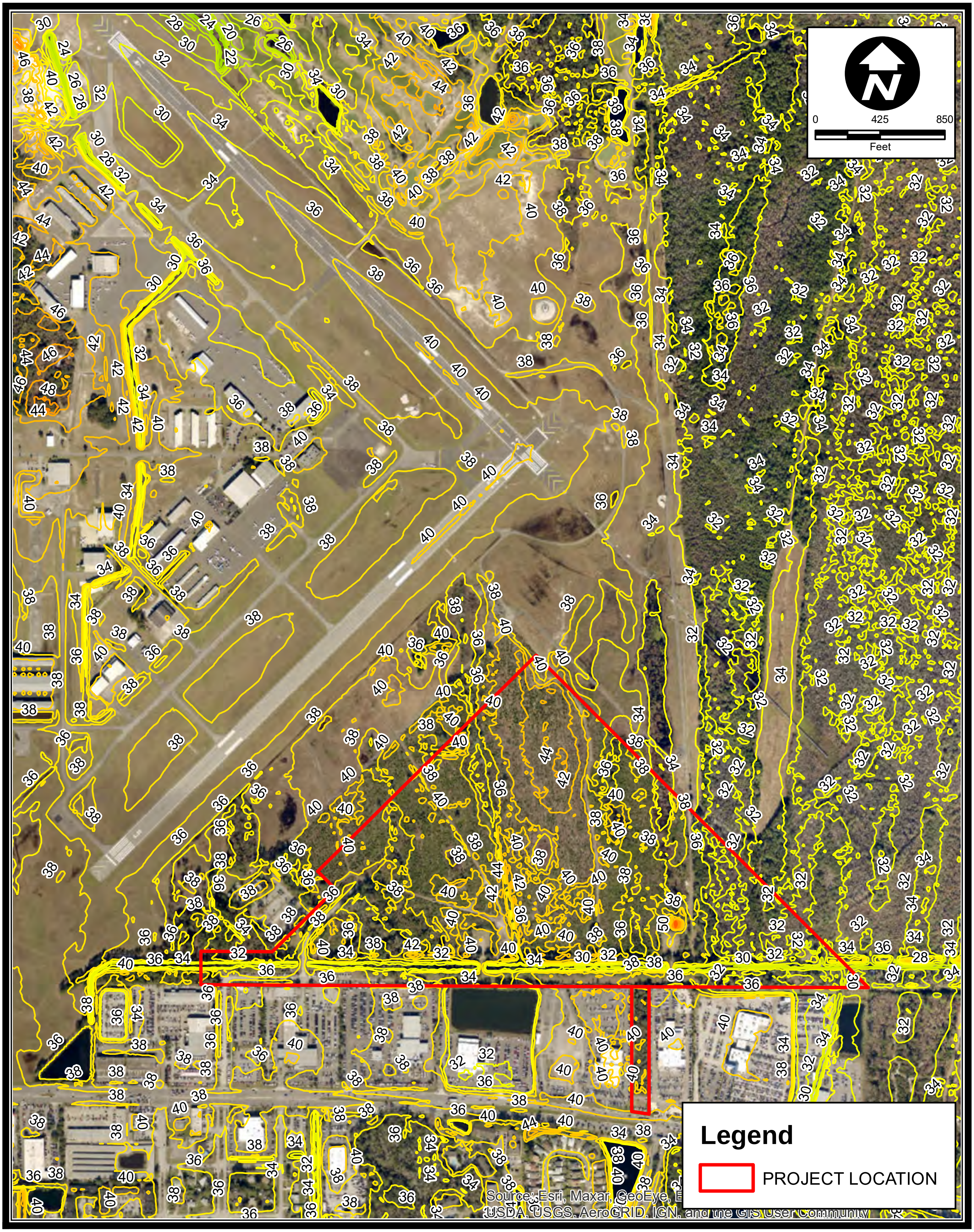
OCT,2022

CITY OF JACKSONVILLE

109 South Kentucky Avenue, Lakeland, FL 33801
Phone: 863 701 8702
www.kimley-horn.com CA 00000696

Kimley»Horn

E-1



TOPOGRAPHIC MAP

JAA CRAIG AIRPORT DELIVERY STATION

OCT,2022

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AERIAL MAP

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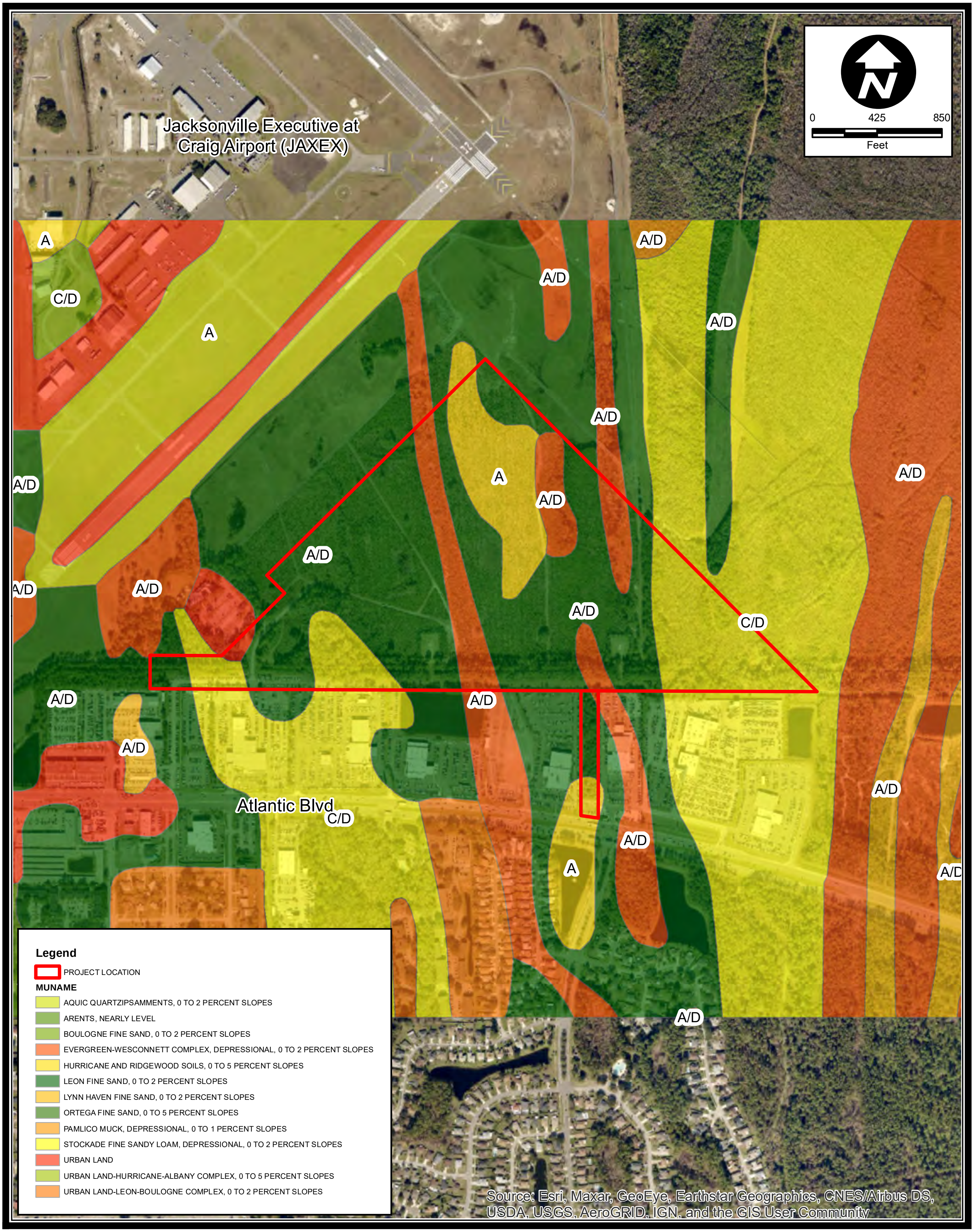

SOIL MAP

JAA CRAIG AIRPORT DELIVERY STATION

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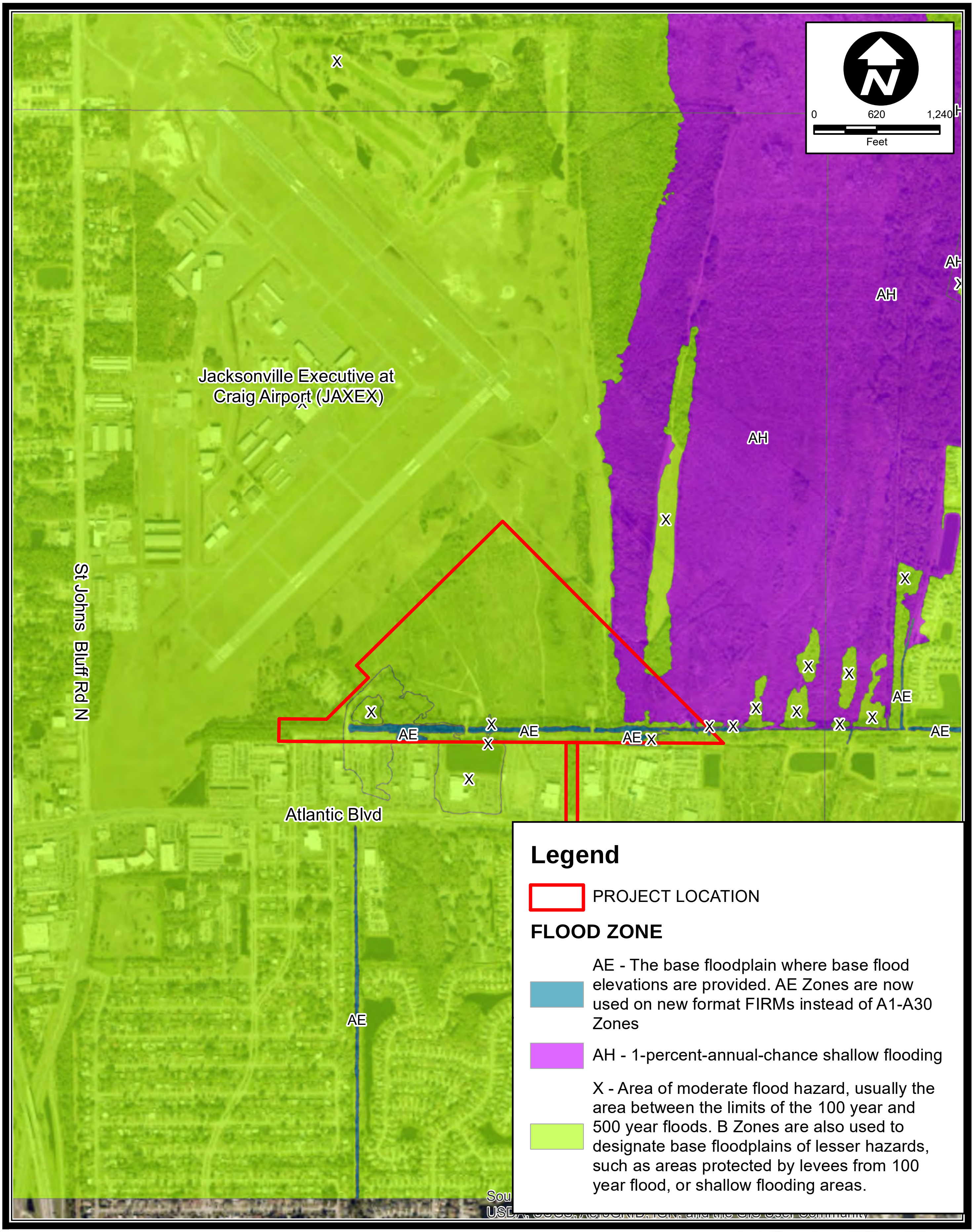

FEMA MAP

JAA CRAIG AIRPORT DELIVERY STATION

OCT,2022

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APPENDIX F

Traffic

Traffic Impact Analysis

Jacksonville Delivery Station DJX4

Jacksonville, Florida

Prepared for:

Seefried Properties, Inc.

Prepared by:

Kimley-Horn and Associates, Inc.
12740 Gran Bay Parkway West, Suite 2350
Jacksonville, Florida 32258
FBPE No. CA 00000696

June 2022

Traffic Impact Analysis

Jacksonville Delivery Station DJX4

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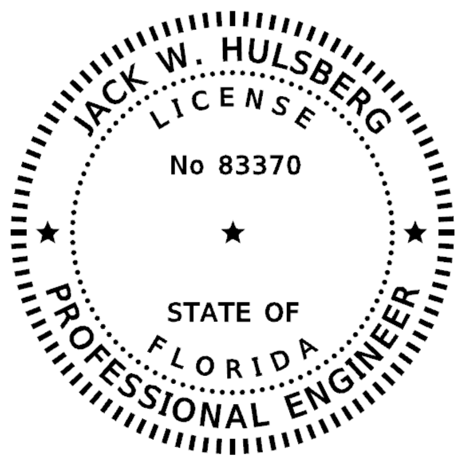
June 2022



This item has been digitally signed and sealed by:

on the date adjacent to the signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

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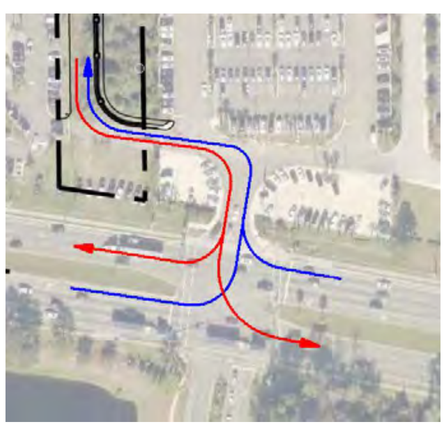
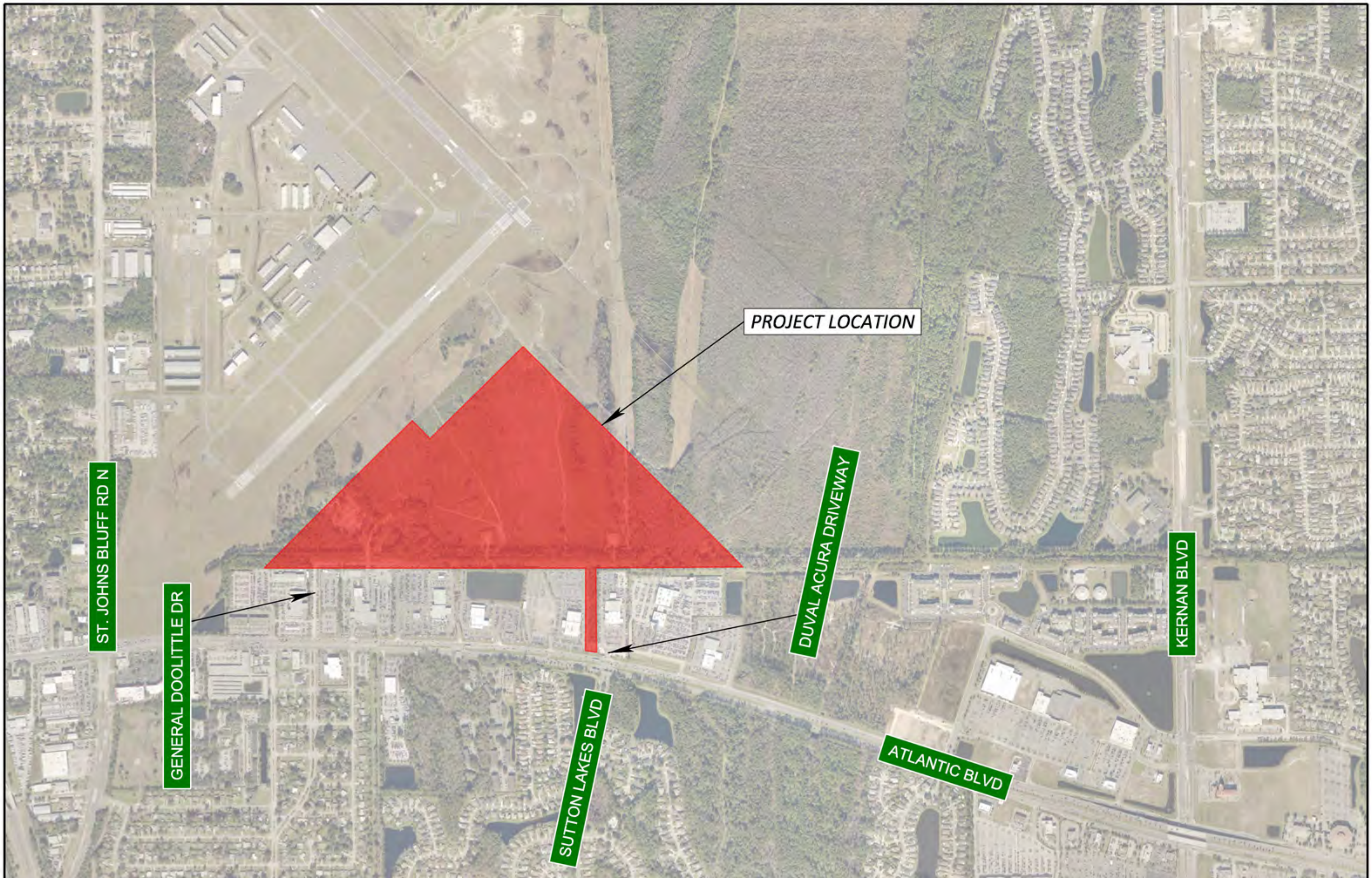
Introduction

Seefried Properties, Inc. (Applicant) is currently working on the development of a delivery station proposed to be located north of Atlantic Boulevard, just east of the existing Jacksonville Executive at Craig Airport in Jacksonville, Florida. The site is currently undeveloped. The project location is illustrated in **Figure 1**. A conceptual site plan for the project is provided in **Appendix A**. As shown in the site plan, the project proposes to construct a new north-south roadway just west of the existing Duval Acura car dealership for access to the proposed facility. This new north-south roadway is proposed to connect to the existing east-west internal roadway that runs south of the Duval Acura dealership. The project also proposes to construct a new east-west roadway from the existing east-west portion of General Doolittle Drive to the project's new north-south roadway adjacent to Duval Acura. There is an existing traffic signal on Atlantic Boulevard at the Duval Acura driveway, and General Doolittle Drive intersects with Atlantic Boulevard as a right-in/right-out only connection. These two connections (Duval Acura driveway and General Doolittle Drive) would serve as the project's access connections to Atlantic Boulevard. Based on coordination with FDOT, this traffic analysis considers multiple access scenarios for the proposed delivery station.

In access scenario 1, the existing traffic signals on Atlantic Boulevard are assumed to remain in their current locations. Because General Doolittle Drive is limited to right-in/right-out at Atlantic Boulevard, all project left-turning traffic to and from Atlantic Boulevard would need to use the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard signalized intersection, the internal intersection just north of the signal, and the proposed north-south roadway just west of Duval Acura for access, as shown in the following image. Right-turning project traffic to and from Atlantic Boulevard would use either the Atlantic Boulevard / General Doolittle Drive intersection or the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard signalized intersection.

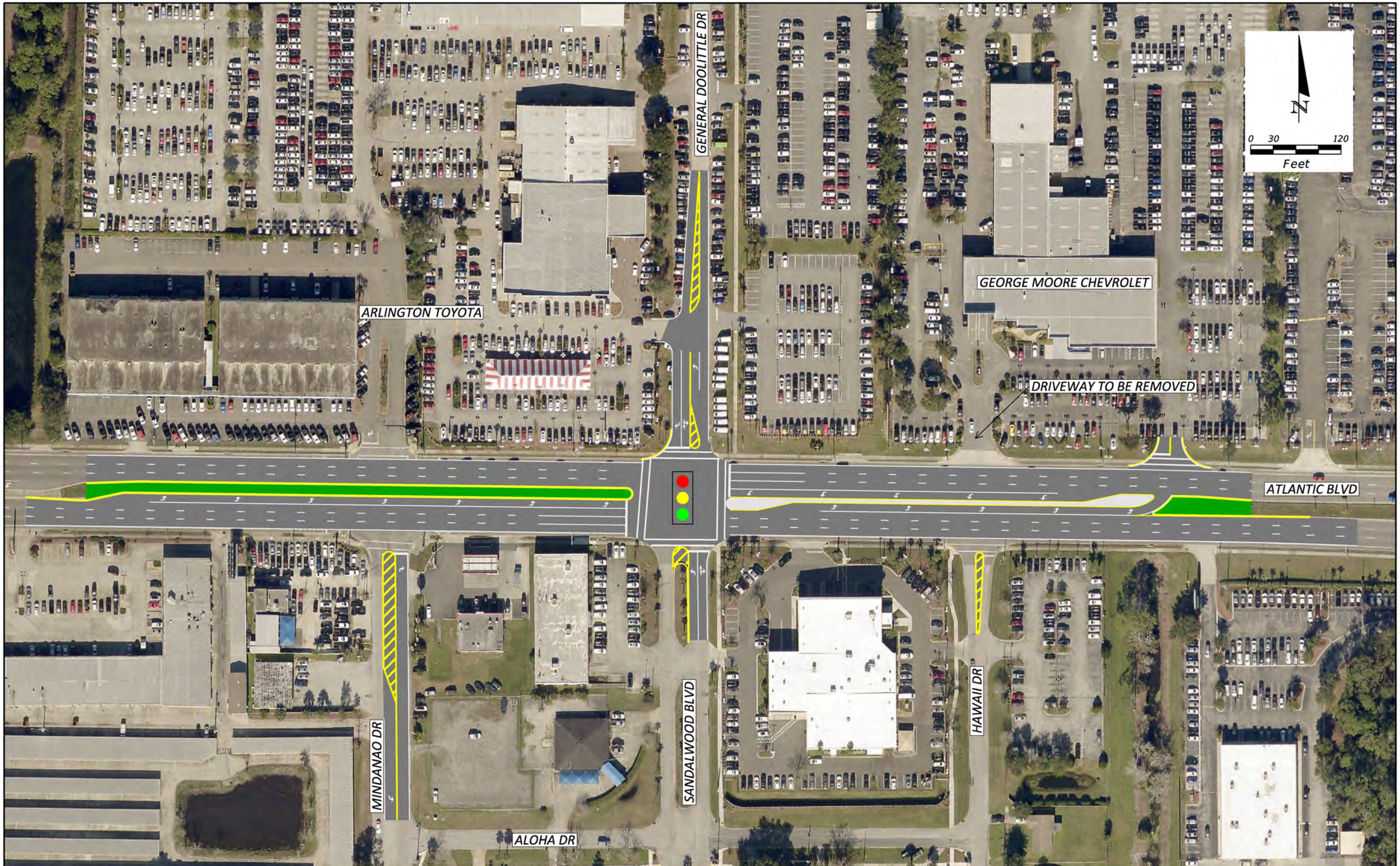




JACKSONVILLE DELIVERY STATION TRAFFIC IMPACT ANALYSIS	PROJECT LOCATION MAP	FIGURE 1

Based on coordination with FDOT, a second access scenario was considered. In access scenario 2, the existing traffic signal at the Atlantic Boulevard / Arlington Toyota driveway / Mindanao Drive intersection was considered to be removed, and this intersection was treated as right-in/right-out. A new traffic signal was assumed at the Atlantic Boulevard / General Doolittle Drive / Sandalwood Boulevard intersection. With the new traffic signal, the existing full median opening at the Atlantic Boulevard / George Moore Chevrolet driveway / Hawaii Drive intersection would be closed. Hawaii Drive would be limited to right-in/right-out, and the George Moore Chevrolet driveway would be relocated to the east. A new directional median opening would be constructed at the new George Moore Chevrolet driveway. A Conceptual Access Modification Exhibit for access scenario 2 is provided in **Figure 2**.

A third access scenario was also evaluated based on coordination with FDOT. For access scenario 3, the new north-south roadway just west of the Duval Acura dealership would intersect with Atlantic Boulevard. The existing Duval Acura driveway to Atlantic Boulevard would be converted to right-in/right-out, and the Atlantic Boulevard / new north-south road / Sutton Lakes Boulevard offset intersection would operate as a single signalized intersection. This intersection geometry allows for two eastbound left-turn lanes to be constructed at the intersection to serve inbound project traffic as well as inbound Duval Acura traffic. The internal east-west road that runs south of Duval Acura would have right-in/right-out access from both sides of the proposed north-south road. A teardrop roundabout would serve vehicles exiting the Duval Acura dealership wishing to make a left turn onto Atlantic Boulevard. A Conceptual Access Modification Exhibit for access scenario 3 was prepared by FDOT and is provided in **Figure 3**.



DJX4 TRAFFIC IMPACT ANALYSIS	CONCEPTUAL ACCESS MODIFICATION EXHIBIT: ACCESS SCENARIO 2	FIGURE 2

Figure 3 (From FDOT): Conceptual Access Modification
Exhibit: Access Scenario 3

Traffic Data Collection

Turning movement count data was collected on Tuesday, February 8, 2022 from 7:00 AM to 6:00 PM at the following intersections:

- Atlantic Boulevard / Arlington Toyota driveway / Mindanao Drive
- Atlantic Boulevard / General Doolittle Drive / Sandalwood Boulevard
- Atlantic Boulevard / George Moore Chevrolet driveway / Hawaii Drive
- Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard
- General Doolittle Drive at Arlington Toyota dealership driveway (just north of Atlantic Boulevard)

Turning movement counts were also conducted on Thursday, April 8, 2021 from 4:00 PM to 6:00 PM at the internal intersection just north of the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard intersection. **Appendix B** contains the raw traffic count data.

Existing Traffic Conditions Analysis

Raw turning movement volumes were adjusted using the FDOT peak season conversion factor to reflect peak season conditions. The existing 2022 AM and PM peak hour peak season volumes are shown in **Figure 4** and **Figure 5**, respectively. The volumes at the internal intersection just north of the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard intersection were calculated using the approach and departure volumes from the signalized intersection and the split of traffic distributed to/from the north and east from the 2021 turning movement count at the internal intersection.

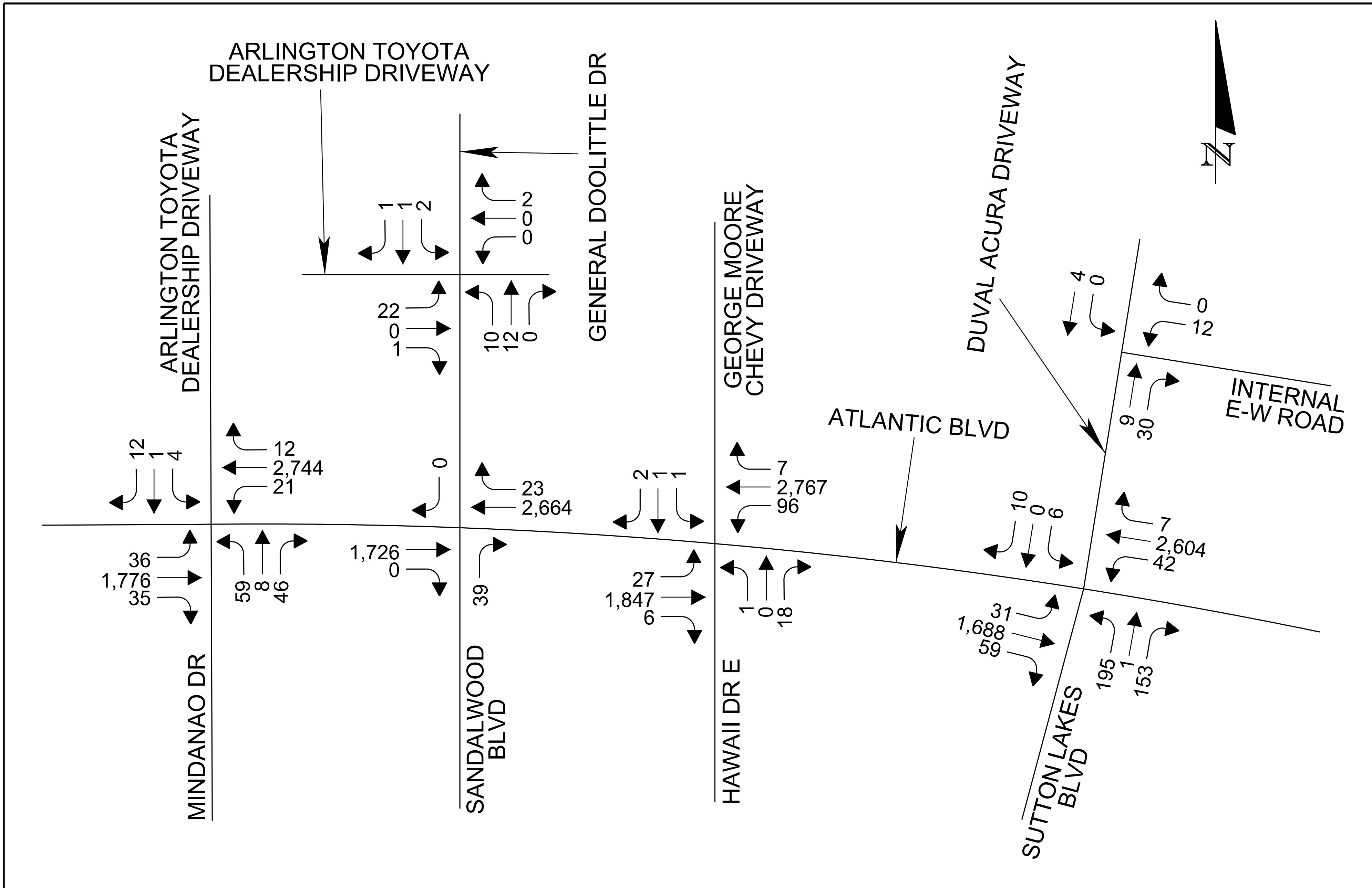
The signalized Atlantic Boulevard / Arlington Toyota driveway / Mindanao Drive intersection and the signalized Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard intersection were analyzed for existing AM and PM peak hour conditions. Existing signal timings were obtained from City of Jacksonville staff. According to the signal timings obtained, the two signalized intersections operate on a coordinated cycle length of 190 seconds during the AM peak hour and 200 seconds during the PM peak hour. **Table 1** summarizes the levels of service (LOS) and delays reported by *Synchro* for the signalized study intersections for existing peak season conditions. As shown in Table 1, both signalized intersections operate at an overall LOS C or better during both peak hours. The side street approaches at both intersections operate at LOS

E or F during both peak hours, but the reason is because of the long cycle length. With such a long cycle length, even very small volumes of side street traffic will operate at poor levels of service. For example, during the AM peak hour, there were only 17 total southbound vehicles counted at the Atlantic Boulevard / Arlington Toyota driveway / Mindanao Drive intersection and only 16 total southbound vehicles counted at the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard intersection, but these approaches are reported to operate at LOS E or F. When evaluating signals with long cycle lengths, volume to capacity ratios are a more determinant factor of the intersection's ability to serve the traffic demand. All movement volume capacity ratios are reported by Synchro as well under 1.0, except for the westbound left-turn movement at the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard intersection, which is reported to operate with a volume to capacity ratio greater than 1.0 during the PM peak hour.

FDOT peak season conversion factors are included in **Appendix C**, signal timings are included in **Appendix D**, and *Synchro* intersection analysis sheets for existing conditions are included in **Appendix E**.

Table 1: Existing Intersection Levels of Service

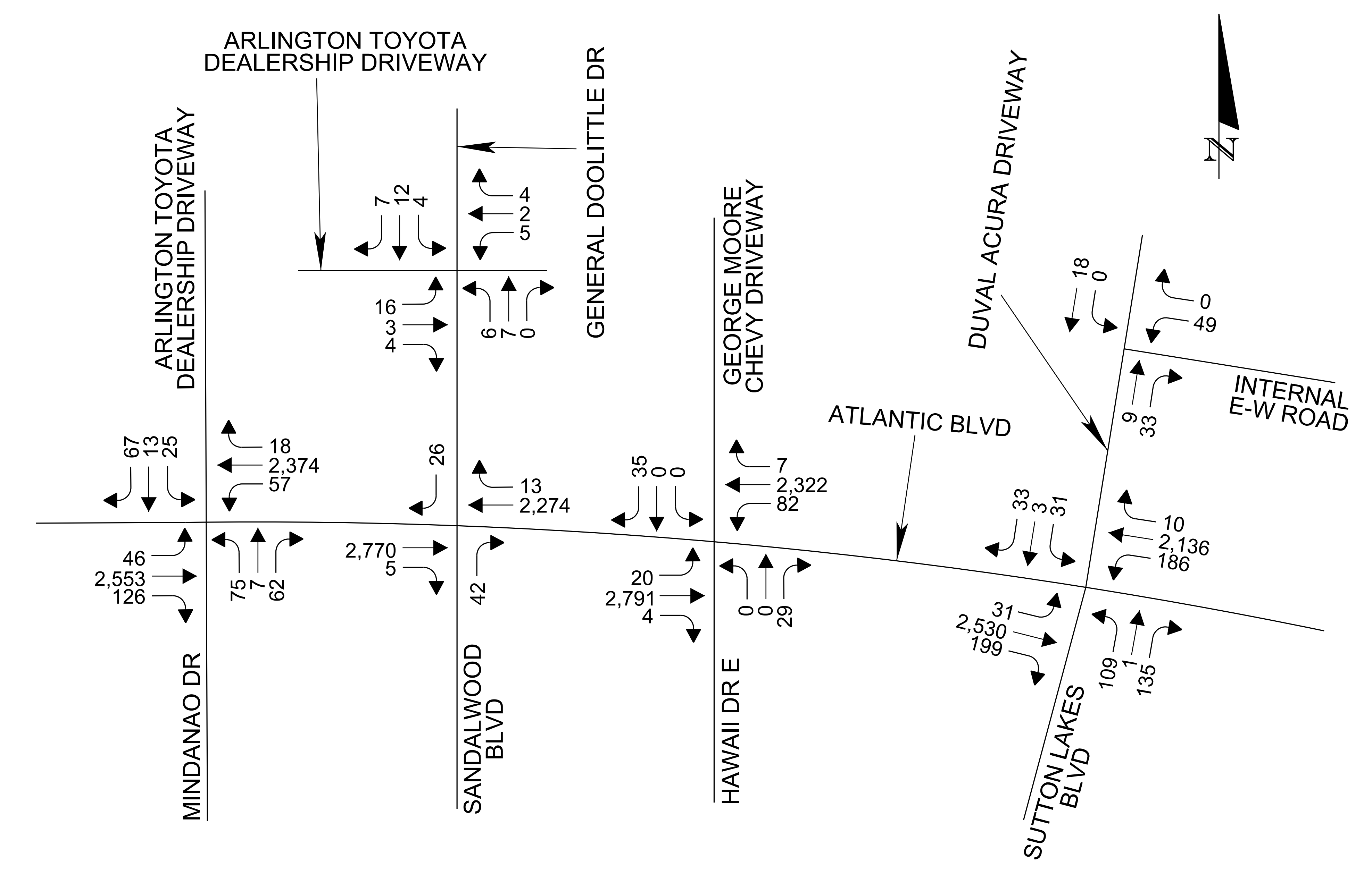
Intersection	Peak Hour	Existing Level of Service and Delay (s)				
		EB	WB	NB	SB	Overall
Atlantic Boulevard / Arlington Toyota Driveway / Mindanao Drive	AM	A	B	F	F	**B**
		7.4	11.2	91.3	85.1	**11.8**
	PM	B	B	F	F	**C**
		17.7	16.4	89.1	88.3	**20.3**
Atlantic Boulevard / Duval Acura Driveway / Sutton Lakes Boulevard	AM	B	C	F	E	**C**
		16.8	22.5	82.5	66.8	**24.7**
	PM	C	C	F	F	**C**
		25.6	29.5	94.5	82.0	**31.0**



DJX4
TRAFFIC IMPACT ANALYSIS

EXISTING 2022 PEAK SEASON VOLUMES:
AM PEAK HOUR

FIGURE 4



DJX4 *TRAFFIC IMPACT ANALYSIS*	*EXISTING 2022 PEAK SEASON VOLUMES:* *PM PEAK HOUR*	*FIGURE 5*

Proposed Development Trip Generation

Typically, the trip generation potential for a proposed land use is calculated using data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual, 11th Edition*. However, due to the uniqueness of the proposed development compared to available ITE land uses, the end user has prepared the anticipated project trips by hour of the day based on the employee and delivery schedules. The anticipated trips for each hour of the day are shown in **Table 2** and are explained below.

The delivery station will operate 24/7 to support delivery of packages to customer locations between approximately 10:00 AM and 9:00 PM. Approximately 32 line haul trucks will deliver packages to the delivery station each day. As shown in the trucks columns of Table 2, project truck trips will be spread throughout the day, without a significant truck peak hour.

Employees that work inside the proposed facility are anticipated to arrive and depart in five separate shifts:

- 143 employees will work from 2:00 AM to 12:30 PM
- 43 employees will work from 6:00 AM to 2:30 PM
- 43 employees will work from 1:30 PM to 10:00 PM
- 38 employees will work from 2:00 PM to 6:00 PM
- 8 employees will work between 12:00 PM and 10:30 PM.

Employees that drive delivery vans are anticipated to arrive at the delivery station in their personal vehicles or public transport between 9:00 AM and 11:00 AM. For the proposed project, 466 van drivers are anticipated. These 466 vans will all depart the site to begin delivery routes between 10:00 AM and 11:30 AM. Approximately 9-11 hours after dispatch, delivery routes are completed, and the vans return to the station between 7:00 PM and 9:30 PM. The van drivers park the delivery van onsite and leave using their personal vehicle or public transport.

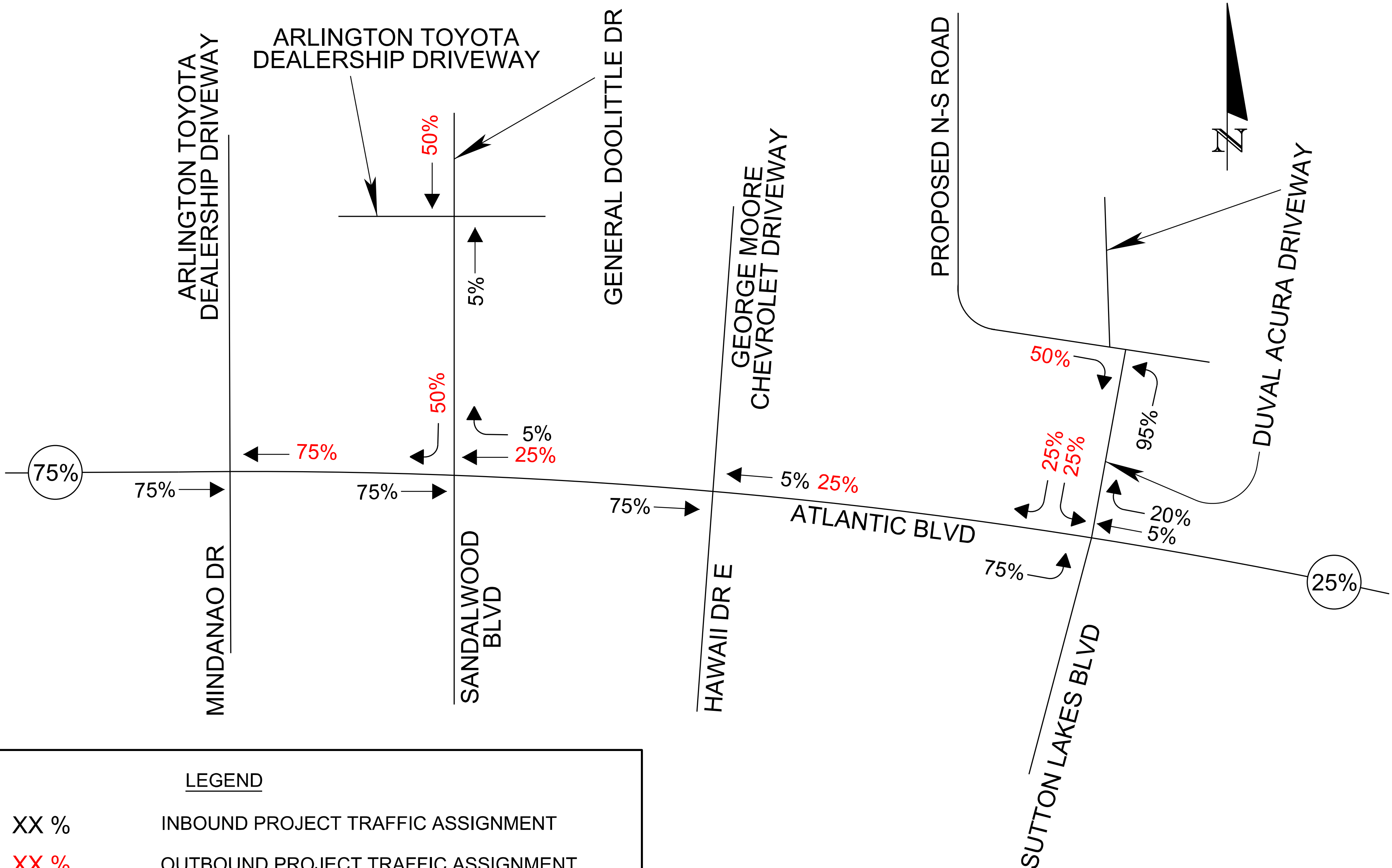
Approximately 90 employees will use their personal vehicles to deliver packages from this location. These employees are anticipated to arrive in the 4:00 PM to 5:00 PM hour and depart between 4:30 PM and 5:30 PM.

Table 2: Trip Generation

Time		Associates			Trucks			DSP Drivers			DSP Vans			Flex			Total		
From	To	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
00:00	00:30	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
00:30	01:00	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
01:00	01:30	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
01:30	02:00	143	0	143	1	1	2	0	0	0	0	0	0	0	0	0	144	1	145
02:00	02:30	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
02:30	03:00	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
03:00	03:30	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
03:30	04:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
04:00	04:30	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
04:30	05:00	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
05:00	05:30	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
05:30	06:00	43	0	43	1	1	2	0	0	0	0	0	0	0	0	0	44	1	45
06:00	06:30	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
06:30	07:00	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
07:00	07:30	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
07:30	08:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
08:00	08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	09:00	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
09:00	09:30	0	0	0	1	1	2	40	0	40	0	0	0	0	0	0	41	1	42
09:30	10:00	0	0	0	1	1	2	160	0	160	0	0	0	0	0	0	161	1	162
10:00	10:30	0	0	0	0	1	1	195	0	195	0	120	120	0	0	0	195	121	316
10:30	11:00	0	0	0	0	0	0	71	0	71	0	240	240	0	0	0	71	240	311
11:00	11:30	0	0	0	1	0	1	0	0	0	0	106	106	0	0	0	1	106	107
11:30	12:00	8	0	8	0	1	1	0	0	0	0	0	0	0	0	0	8	1	9
12:00	12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	13:00	0	143	143	0	0	0	0	0	0	0	0	0	0	0	0	0	143	143
13:00	13:30	43	0	43	0	0	0	0	0	0	0	0	0	0	0	0	43	0	43
13:30	14:00	38	0	38	0	0	0	0	0	0	0	0	0	0	0	0	38	0	38
14:00	14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	15:00	0	43	43	0	0	0	0	0	0	0	0	0	0	0	0	0	43	43
15:00	15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	16:30	0	0	0	0	0	0	0	0	0	0	0	0	90	0	90	90	0	90
16:30	17:00	0	0	0	1	0	1	0	0	0	0	0	0	0	45	45	1	45	46
17:00	17:30	0	0	0	1	1	2	0	0	0	0	0	0	0	45	45	1	46	47
17:30	18:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
18:00	18:30	0	38	38	1	0	1	0	0	0	0	0	0	0	0	0	1	38	39
18:30	19:00	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
19:00	19:30	0	0	0	1	1	2	0	30	30	30	0	30	0	0	0	31	31	62
19:30	20:00	0	0	0	1	1	2	0	60	60	150	0	150	0	0	0	151	61	212
20:00	20:30	0	0	0	1	1	2	0	207	207	117	0	117	0	0	0	118	208	326
20:30	21:00	0	0	0	1	1	2	0	87	87	144	0	144	0	0	0	145	88	233
21:00	21:30	0	0	0	1	1	2	0	82	82	25	0	25	0	0	0	26	83	109
21:30	22:00	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
22:00	22:30	0	43	43	1	1	2	0	0	0	0	0	0	0	0	0	1	44	45
22:30	23:00	0	8	8	1	1	2	0	0	0	0	0	0	0	0	0	1	9	10
23:00	23:30	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
23:30	00:00	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
Total		**275**	**275**	**550**	**32**	**32**	**64**	**466**	**466**	**932**	**466**	**466**	**932**	**90**	**90**	**179**	**1,329**	**1,329**	**2,657**

Trip Distribution

The trip distribution for the proposed project was determined using the Northeast Regional Planning Model – Activity Based (NERPM-ABv3). The Transportation Planning Organization's (TPO's) 2020 network data and 2022 zonal data were used as the basis for the modeling. The model predicts a distribution on Atlantic Boulevard of approximately 76 percent west and 24 percent east. For the purposes of this analysis, a distribution of 75 percent to/from the west and 25 percent to/from the east will be used. Engineering judgement was used to predict the project trip assignment to the project driveways. Access scenario 1 and scenario 2 include different assignments to the project driveways. The project traffic assignments for scenarios 1 and 2 are illustrated in **Figures 6** and **Figure 7**, respectively. The assignment of project traffic for access scenario 3 was assumed to follow the access scenario 1 assignment but under the modified geometry. The NERPM model output is included in **Appendix F**.

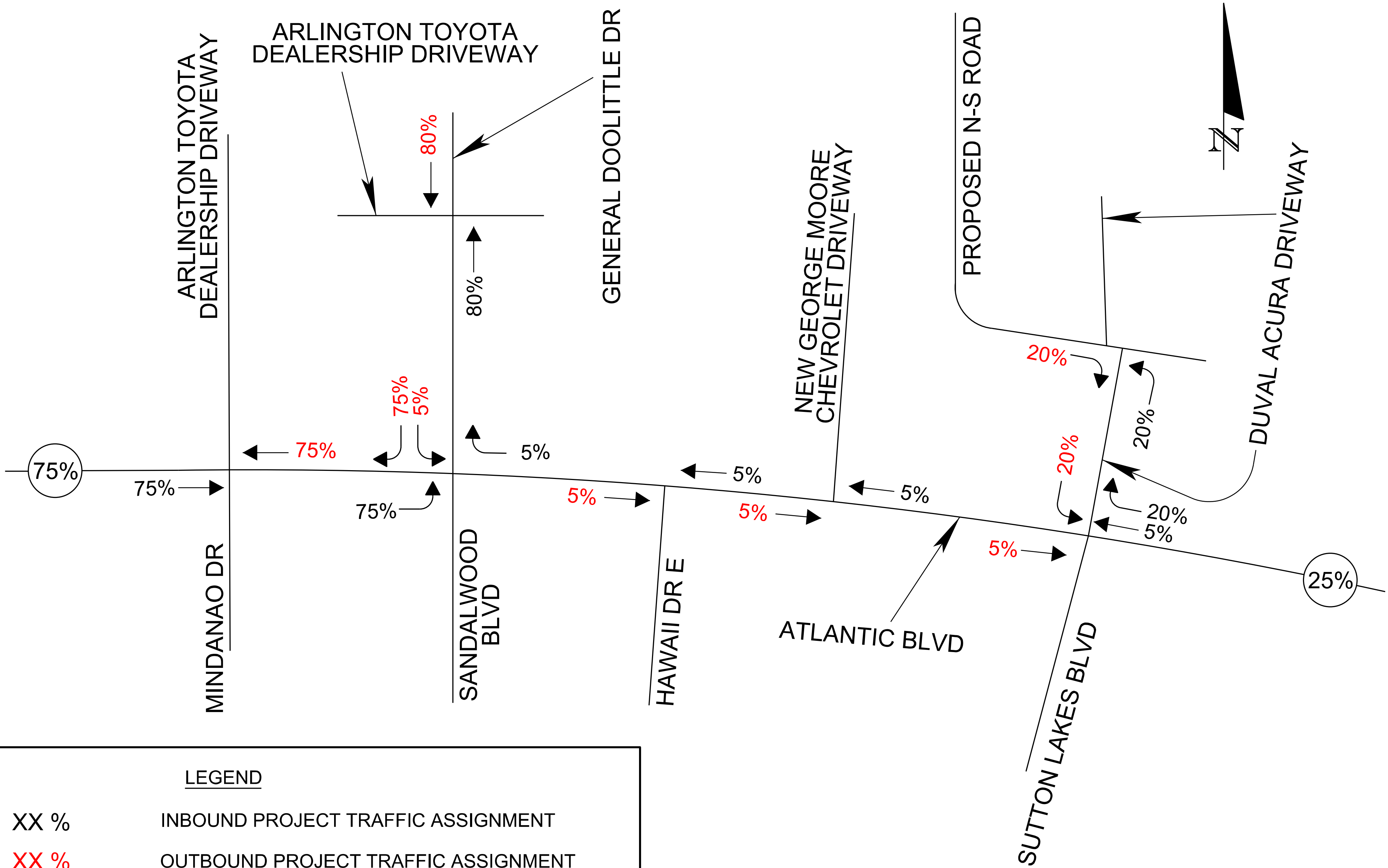


<u>LEGEND</u>

XX % INBOUND PROJECT TRAFFIC ASSIGNMENT

XX % OUTBOUND PROJECT TRAFFIC ASSIGNMENT

DJX4 *TRAFFIC IMPACT ANALYSIS*	*PROJECT TRAFFIC ASSIGNMENT:* *SCENARIO 1*	*FIGURE 6*



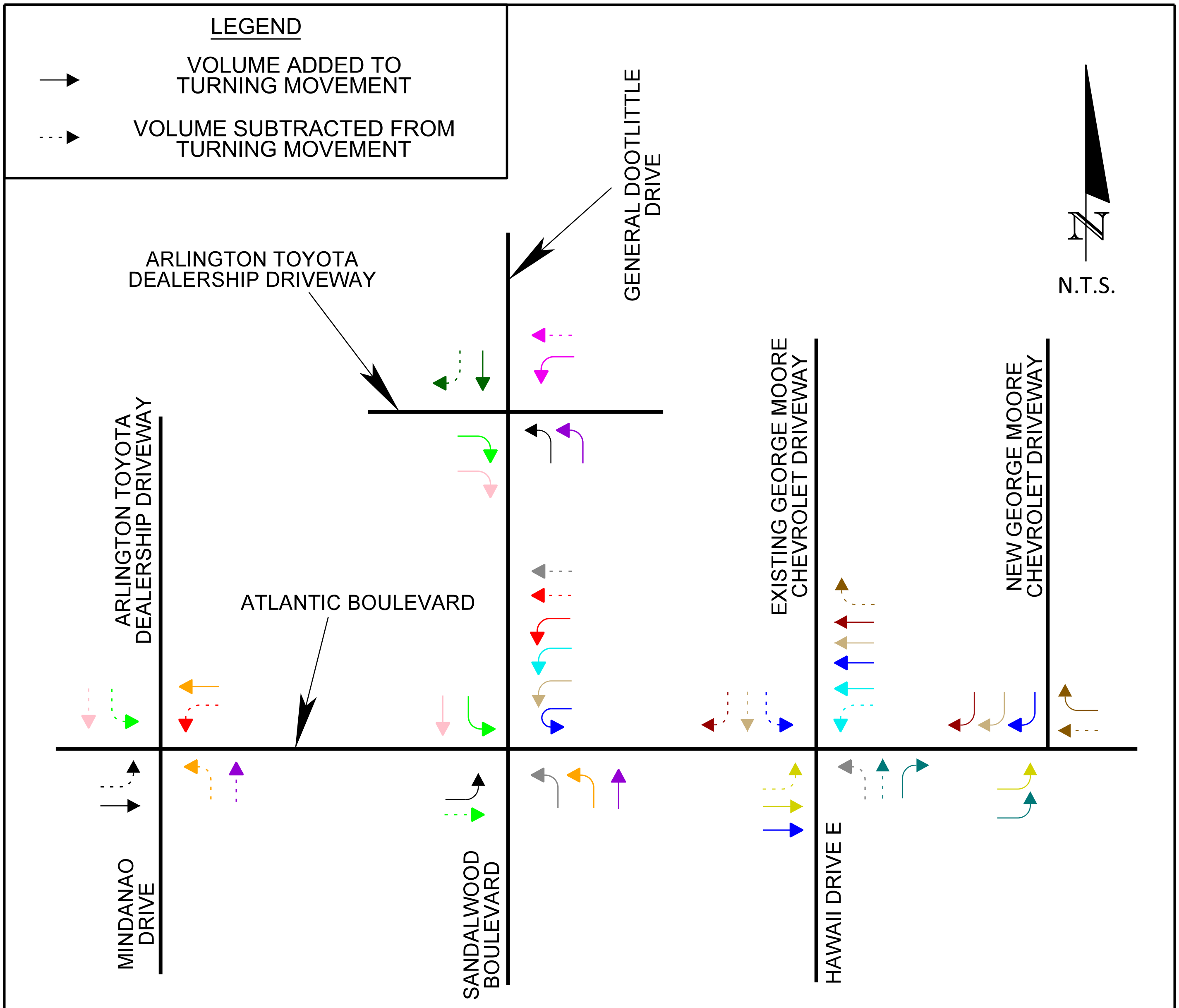
<u>LEGEND</u>

XX %	INBOUND PROJECT TRAFFIC ASSIGNMENT
XX %	OUTBOUND PROJECT TRAFFIC ASSIGNMENT

DJX4 *TRAFFIC IMPACT ANALYSIS*	*PROJECT TRAFFIC ASSIGNMENT:* *SCENARIO 2*	*FIGURE 7*

Future Volume Development

Background traffic growth was estimated using the FDOT Level of Service Report. The Level of Service Report for Atlantic Boulevard between St. Johns Bluff Road and Girvin Road was examined. The growth rate between the 2020 and 2030 peak hour volumes contained in this report is approximately 3.80 percent per year. Future background traffic conditions were projected to buildout year 2025 using the calculated growth rate. For access scenario 2, background 2025 volumes were reassigned to reflect the signal relocation on Atlantic Boulevard and geometric changes to the existing intersections and driveways. **Figure 8** depicts the reassignment of background turning movements for access scenario 2. Background traffic was combined with project traffic to determine the total future 2025 volumes expected at the study intersections at buildout of the project. The future volume development calculations are shown in **Table 3** through **Table 8** for access scenario 1. The future volume development calculations are shown in **Table 9** through **Table 15** for access scenario 2. The FDOT Level of Service Report is provided in **Appendix G**.



DIVERSIONS

- WBT @ TOYOTA DEALERSHIP/GENERAL DOOLITTLE DR (ASSUMED 75% WOULD TURN LEFT TO ACCESS NEW SIGNAL)
- SBR @ TOYOTA DEALERSHIP/GENERAL DOOLITTLE DR (ASSUMED 75% WOULD GO THROUGH TO ACCESS NEW SIGNAL)
- SBL @ TOYOTA DEALERSHIP/ATLANTIC BLVD
- NBT @ TOYOTA DEALERSHIP/ATLANTIC BLVD
- EBL @ TOYOTA DEALERSHIP/ATLANTIC BLVD
- SBT @ TOYOTA DEALERSHIP/ATLANTIC BLVD
- WBL @ TOYOTA DEALERSHIP/ATLANTIC BLVD
- NBL @ TOYOTA DEALERSHIP/ATLANTIC BLVD
- NBL @ ATLANTIC BLVD/EXISTING GEORGE MOORE CHEVROLET DRIVEWAY
- SBT @ ATLANTIC BLVD/EXISTING GEORGE MOORE CHEVROLET DRIVEWAY
- SBL @ ATLANTIC BLVD/EXISTING GEORGE MOORE CHEVROLET DRIVEWAY
- EBL @ ATLANTIC BLVD/EXISTING GEORGE MOORE CHEVROLET DRIVEWAY
- SBR @ ATLANTIC BLVD/EXISTING GEORGE MOORE CHEVROLET DRIVEWAY
- WBR @ ATLANTIC BLVD/EXISTING GEORGE MOORE CHEVROLET DRIVEWAY
- NBT @ ATLANTIC BLVD/EXISTING GEORGE MOORE CHEVROLET DRIVEWAY
- WBL @ ATLANTIC BLVD/EXISTING GEORGE MOORE CHEVROLET DRIVEWAY

DJX4 *TRAFFIC IMPACT ANALYSIS*	*TRAFFIC REASSIGNMENT FOR ACCESS SCENARIO 2*	*FIGURE 8*

Table 3: Access Scenario 1 Volume Development: Atlantic Boulevard / Arlington Toyota Driveway / Mindanao Drive

	Atlantic Boulevard			Atlantic Boulevard			Mindanao Drive			Arlington Toyota Driveway		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Existing Traffic												
7 AM - 8 AM	35	1724	34	20	2664	12	57	8	45	4	1	12
8 AM - 9 AM	51	1880	42	26	2126	13	51	15	69	9	2	22
9 AM - 10 AM	45	1421	34	21	1843	15	41	8	41	22	4	38
9:30 AM - 10:30 AM	48	1418	43	25	1718	15	37	5	38	24	5	44
10 AM - 11 AM	31	1397	48	20	1533	7	38	5	33	15	3	42
11 AM - 12 PM	38	1415	49	18	1581	14	47	6	29	30	4	38
12 PM - 1 PM	39	1702	75	17	1595	7	50	3	43	28	4	35
1 PM - 2 PM	57	1588	73	44	1650	18	48	11	41	18	3	37
2 PM - 3 PM	38	2033	64	31	1882	15	70	7	54	30	6	50
3 PM - 4 PM	46	2501	90	51	2149	10	49	6	66	30	3	46
4 PM - 5 PM	45	2479	122	55	2305	17	73	7	60	24	13	65
5 PM - 6 PM	38	2555	98	49	2094	9	59	5	64	35	5	75
PSCF	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***
2022 Peak Season Traffic												
7 AM - 8 AM	36	1,776	35	21	2,744	12	59	8	46	4	1	12
8 AM - 9 AM	53	1,936	43	27	2,190	13	53	15	71	9	2	23
9 AM - 10 AM	46	1,464	35	22	1,898	15	42	8	42	23	4	39
9:30 AM - 10:30 AM	49	1,461	44	26	1,770	15	38	5	39	25	5	45
10 AM - 11 AM	32	1,439	49	21	1,579	7	39	5	34	15	3	43
11 AM - 12 PM	39	1,457	50	19	1,628	14	48	6	30	31	4	39
12 PM - 1 PM	40	1,753	77	18	1,643	7	52	3	44	29	4	36
1 PM - 2 PM	59	1,636	75	45	1,700	19	49	11	42	19	3	38
2 PM - 3 PM	39	2,094	66	32	1,938	15	72	7	56	31	6	52
3 PM - 4 PM	47	2,576	93	53	2,213	10	50	6	68	31	3	47
4 PM - 5 PM	46	2,553	126	57	2,374	18	75	7	62	25	13	67
5 PM - 6 PM	39	2,632	101	50	2,157	9	61	5	66	36	5	77
Annual growth rate		3.80%			3.80%							
Background Growth (2022 to 2025)												
7 AM - 8 AM	0	202	0	0	313	0	0	0	0	0	0	0
8 AM - 9 AM	0	221	0	0	250	0	0	0	0	0	0	0
9 AM - 10 AM	0	167	0	0	216	0	0	0	0	0	0	0
9:30 AM - 10:30 AM	0	167	0	0	202	0	0	0	0	0	0	0
10 AM - 11 AM	0	164	0	0	180	0	0	0	0	0	0	0
11 AM - 12 PM	0	166	0	0	186	0	0	0	0	0	0	0
12 PM - 1 PM	0	200	0	0	187	0	0	0	0	0	0	0
1 PM - 2 PM	0	187	0	0	194	0	0	0	0	0	0	0
2 PM - 3 PM	0	239	0	0	221	0	0	0	0	0	0	0
3 PM - 4 PM	0	294	0	0	252	0	0	0	0	0	0	0
4 PM - 5 PM	0	291	0	0	271	0	0	0	0	0	0	0
5 PM - 6 PM	0	300	0	0	246	0	0	0	0	0	0	0
2025 Background Traffic												
7 AM - 8 AM	36	1,978	35	21	3,057	12	59	8	46	4	1	12
8 AM - 9 AM	53	2,157	43	27	2,440	13	53	15	71	9	2	23
9 AM - 10 AM	46	1,631	35	22	2,114	15	42	8	42	23	4	39
9:30 AM - 10:30 AM	49	1,628	44	26	1,972	15	38	5	39	25	5	45
10 AM - 11 AM	32	1,603	49	21	1,759	7	39	5	34	15	3	43
11 AM - 12 PM	39	1,623	50	19	1,814	14	48	6	30	31	4	39
12 PM - 1 PM	40	1,953	77	18	1,830	7	52	3	44	29	4	36
1 PM - 2 PM	59	1,823	75	45	1,894	19	49	11	42	19	3	38
2 PM - 3 PM	39	2,333	66	32	2,159	15	72	7	56	31	6	52
3 PM - 4 PM	47	2,870	93	53	2,465	10	50	6	68	31	3	47
4 PM - 5 PM	46	2,844	126	57	2,645	18	75	7	62	25	13	67
5 PM - 6 PM	39	2,932	101	50	2,403	9	61	5	66	36	5	77

Project Traffic Volumes						
		Inbound Assignment	75%			
		Outbound Assignment		75%		
	Total Project Trips		Project Turning Movement Volumes Per Hour (= Assignment X Total Project Trips)			
	Inbound	Outbound				
7 AM - 8 AM	1	2	1	2		
8 AM - 9 AM	1	0	1	0		
9 AM - 10 AM	202	2	152	2		
9:30 AM - 10:30 AM	356	122	267	92		
10 AM - 11 AM	266	361	200	271		
11 AM - 12 PM	9	107	7	80		
12 PM - 1 PM	0	143	0	107		
1 PM - 2 PM	81	0	61	0		
2 PM - 3 PM	0	43	0	32		
3 PM - 4 PM	0	0	0	0		
4 PM - 5 PM	91	45	68	34		
5 PM - 6 PM	1	47	1	35		

2025 Total Volume	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7 AM - 8 AM	36	1,979	35	21	3,059	12	59	8	46	4	1	12
8 AM - 9 AM	53	2,158	43	27	2,440	13	53	15	71	9	2	23
9 AM - 10 AM	46	1,783	35	22	2,116	15	42	8	42	23	4	39
9:30 AM - 10:30 AM	49	1,895	44	26	2,064	15	38	5	39	25	5	45
10 AM - 11 AM	32	1,803	49	21	2,030	7	39	5	34	15	3	43
11 AM - 12 PM	39	1,630	50	19	1,894	14	48	6	30	31	4	39
12 PM - 1 PM	40	1,953	77	18	1,937	7	52	3	44	29	4	36
1 PM - 2 PM	59	1,884	75	45	1,894	19	49	11	42	19	3	38
2 PM - 3 PM	39	2,333	66	32	2,191	15	72	7	56	31	6	52
3 PM - 4 PM	47	2,870	93	53	2,465	10	50	6	68	31	3	47
4 PM - 5 PM	46	2,912	126	57	2,679	18	75	7	62	25	13	67
5 PM - 6 PM	39	2,933	101	50	2,438	9	61	5	66	36	5	77

Table 4: Access Scenario 1 Volume Development: Atlantic Boulevard / General Doolittle Drive /Sandalwood Boulevard

	Atlantic Boulevard			Atlantic Boulevard			Sandalwood Boulevard			General Doolittle Drive		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Existing Traffic												
7 AM - 8 AM	0	1676	0	0	2586	22	0	0	38	0	0	0
8 AM - 9 AM	0	1965	6	0	2137	31	0	0	50	0	0	4
9 AM - 10 AM	0	1474	5	0	1825	27	0	0	31	0	0	8
9:30 AM - 10:30 AM	0	1482	1	0	1721	34	0	0	24	0	0	11
10 AM - 11 AM	0	1441	3	0	1540	32	0	0	21	0	0	10
11 AM - 12 PM	0	1470	5	0	1576	23	0	0	27	0	0	12
12 PM - 1 PM	0	1770	4	0	1585	29	0	0	29	0	0	20
1 PM - 2 PM	0	1658	3	0	1677	30	0	0	37	0	0	19
2 PM - 3 PM	0	2063	7	0	1888	30	0	0	37	0	0	14
3 PM - 4 PM	0	2618	6	0	2080	26	0	0	40	0	0	28
4 PM - 5 PM	0	2689	5	0	2208	13	0	0	41	0	0	25
5 PM - 6 PM	0	2662	7	0	2071	25	0	0	44	0	0	31
PSCF	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***
2022 Peak Season Traffic												
7 AM - 8 AM	0	1,726	0	0	2,664	23	0	0	39	0	0	0
8 AM - 9 AM	0	2,024	6	0	2,201	32	0	0	52	0	0	4
9 AM - 10 AM	0	1,518	5	0	1,880	28	0	0	32	0	0	8
9:30 AM - 10:30 AM	0	1,526	1	0	1,773	35	0	0	25	0	0	11
10 AM - 11 AM	0	1,484	3	0	1,586	33	0	0	22	0	0	10
11 AM - 12 PM	0	1,514	5	0	1,623	24	0	0	28	0	0	12
12 PM - 1 PM	0	1,823	4	0	1,633	30	0	0	30	0	0	21
1 PM - 2 PM	0	1,708	3	0	1,727	31	0	0	38	0	0	20
2 PM - 3 PM	0	2,125	7	0	1,945	31	0	0	38	0	0	14
3 PM - 4 PM	0	2,697	6	0	2,142	27	0	0	41	0	0	29
4 PM - 5 PM	0	2,770	5	0	2,274	13	0	0	42	0	0	26
5 PM - 6 PM	0	2,742	7	0	2,133	26	0	0	45	0	0	32
Annual growth rate		3.80%			3.80%							
Background Growth (2022 to 2025)												
7 AM - 8 AM	0	197	0	0	304	0	0	0	0	0	0	0
8 AM - 9 AM	0	231	0	0	251	0	0	0	0	0	0	0
9 AM - 10 AM	0	173	0	0	214	0	0	0	0	0	0	0
9:30 AM - 10:30 AM	0	174	0	0	202	0	0	0	0	0	0	0
10 AM - 11 AM	0	169	0	0	181	0	0	0	0	0	0	0
11 AM - 12 PM	0	173	0	0	185	0	0	0	0	0	0	0
12 PM - 1 PM	0	208	0	0	186	0	0	0	0	0	0	0
1 PM - 2 PM	0	195	0	0	197	0	0	0	0	0	0	0
2 PM - 3 PM	0	242	0	0	222	0	0	0	0	0	0	0
3 PM - 4 PM	0	307	0	0	244	0	0	0	0	0	0	0
4 PM - 5 PM	0	316	0	0	259	0	0	0	0	0	0	0
5 PM - 6 PM	0	313	0	0	243	0	0	0	0	0	0	0
2025 Background Traffic												
7 AM - 8 AM	0	1,923	0	0	2,968	23	0	0	39	0	0	0
8 AM - 9 AM	0	2,255	6	0	2,452	32	0	0	52	0	0	4
9 AM - 10 AM	0	1,691	5	0	2,094	28	0	0	32	0	0	8
9:30 AM - 10:30 AM	0	1,700	1	0	1,975	35	0	0	25	0	0	11
10 AM - 11 AM	0	1,653	3	0	1,767	33	0	0	22	0	0	10
11 AM - 12 PM	0	1,687	5	0	1,808	24	0	0	28	0	0	12
12 PM - 1 PM	0	2,031	4	0	1,819	30	0	0	30	0	0	21
1 PM - 2 PM	0	1,903	3	0	1,924	31	0	0	38	0	0	20
2 PM - 3 PM	0	2,367	7	0	2,167	31	0	0	38	0	0	14
3 PM - 4 PM	0	3,004	6	0	2,386	27	0	0	41	0	0	29
4 PM - 5 PM	0	3,086	5	0	2,533	13	0	0	42	0	0	26
5 PM - 6 PM	0	3,055	7	0	2,376	26	0	0	45	0	0	32

Project Traffic Volumes			EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	NB Left	NB Through	NB Right	SB Left	SB Through	SB Right
Inbound Assignment				75%				5%						
Outbound Assignment							25%							50%
	Total Project Trips		Project Turning Movement Volumes Per Hour (= Assignment X Total Project Trips)											
	Inbound	Outbound												
7 AM - 8 AM	1	2		1			1	0						1
8 AM - 9 AM	1	0		1			0	0						0
9 AM - 10 AM	202	2		152			1	10						1
9:30 AM - 10:30 AM	356	122		267			31	18						61
10 AM - 11 AM	266	361		200			90	13						181
11 AM - 12 PM	9	107		7			27	0						54
12 PM - 1 PM	0	143		0			36	0		0				72
1 PM - 2 PM	81	0		61			0	4						0
2 PM - 3 PM	0	43		0			11	0						22
3 PM - 4 PM	0	0		0			0	0						0
4 PM - 5 PM	91	45		68			11	5						23
5 PM - 6 PM	1	47		1			12	0						24

Description	EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	NB Left	NB Through	NB Right	SB Left	SB Through	SB Right
2025 Total Volume												
7 AM - 8 AM	0	1,924	0	0	2,969	23	0	0	39	0	0	1
8 AM - 9 AM	0	2,256	6	0	2,452	32	0	0	52	0	0	4
9 AM - 10 AM	0	1,843	5	0	2,095	38	0	0	32	0	0	9
9:30 AM - 10:30 AM	0	1,967	1	0	2,006	53	0	0	25	0	0	72
10 AM - 11 AM	0	1,853	3	0	1,857	46	0	0	22	0	0	191
11 AM - 12 PM	0	1,694	5	0	1,835	24	0	0	28	0	0	66
12 PM - 1 PM	0	2,031	4	0	1,855	30	0	0	30	0	0	93
1 PM - 2 PM	0	1,964	3	0	1,924	35	0	0	38	0	0	20
2 PM - 3 PM	0	2,367	7	0	2,178	31	0	0	38	0	0	36
3 PM - 4 PM	0	3,004	6	0	2,386	27	0	0	41	0	0	29
4 PM - 5 PM	0	3,154	5	0	2,544	18	0	0	42	0	0	49
5 PM - 6 PM	0	3,056	7	0	2,388	26	0	0	45	0	0	56

Table 5: Access Scenario 1 Volume Development: General Doolittle Drive / Arlington Toyota Driveways

	Toyota Dealership Driveway			Toyota Lot Driveway			General Doolittle Drive			General Doolittle Drive		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Existing Traffic												
7 AM - 8 AM	21	0	1	0	0	2	10	12	0	2	1	1
8 AM - 9 AM	15	4	2	0	4	0	10	23	1	0	4	3
9 AM - 10 AM	17	3	2	0	2	1	12	15	1	1	7	3
9:30 AM - 10:30 AM	18	2	2	0	0	1	9	24	1	4	11	3
10 AM - 11 AM	13	2	2	0	1	2	11	21	1	3	11	1
11 AM - 12 PM	10	4	3	2	7	5	5	12	2	5	9	9
12 PM - 1 PM	17	5	1	2	7	3	6	21	2	6	15	13
1 PM - 2 PM	22	4	7	1	4	4	17	18	1	4	11	13
2 PM - 3 PM	19	2	2	3	3	0	12	15	0	7	8	9
3 PM - 4 PM	17	3	5	1	2	2	11	15	0	9	16	14
4 PM - 5 PM	16	3	4	5	2	4	6	7	0	4	12	7
5 PM - 6 PM	11	6	8	6	3	1	14	8	1	1	19	18
PSCF	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***
2022 Peak Season Traffic												
7 AM - 8 AM	22	0	1	0	0	2	10	12	0	2	1	1
8 AM - 9 AM	15	4	2	0	4	0	10	24	1	0	4	3
9 AM - 10 AM	18	3	2	0	2	1	12	15	1	1	7	3
9:30 AM - 10:30 AM	19	2	2	0	0	1	9	25	1	4	11	3
10 AM - 11 AM	13	2	2	0	1	2	11	22	1	3	11	1
11 AM - 12 PM	10	4	3	2	7	5	5	12	2	5	9	9
12 PM - 1 PM	18	5	1	2	7	3	6	22	2	6	15	13
1 PM - 2 PM	23	4	7	1	4	4	18	19	1	4	11	13
2 PM - 3 PM	20	2	2	3	3	0	12	15	0	7	8	9
3 PM - 4 PM	18	3	5	1	2	2	11	15	0	9	16	14
4 PM - 5 PM	16	3	4	5	2	4	6	7	0	4	12	7
5 PM - 6 PM	11	6	8	6	3	1	14	8	1	1	20	19
Annual growth rate												
Background Growth (2022 to 2025)												
7 AM - 8 AM	0	0	0	0	0	0	0	0	0	0	0	0
8 AM - 9 AM	0	0	0	0	0	0	0	0	0	0	0	0
9 AM - 10 AM	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM - 10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
10 AM - 11 AM	0	0	0	0	0	0	0	0	0	0	0	0
11 AM - 12 PM	0	0	0	0	0	0	0	0	0	0	0	0
12 PM - 1 PM	0	0	0	0	0	0	0	0	0	0	0	0
1 PM - 2 PM	0	0	0	0	0	0	0	0	0	0	0	0
2 PM - 3 PM	0	0	0	0	0	0	0	0	0	0	0	0
3 PM - 4 PM	0	0	0	0	0	0	0	0	0	0	0	0
4 PM - 5 PM	0	0	0	0	0	0	0	0	0	0	0	0
5 PM - 6 PM	0	0	0	0	0	0	0	0	0	0	0	0
2025 Background Traffic												
7 AM - 8 AM	22	0	1	0	0	2	10	12	0	2	1	1
8 AM - 9 AM	15	4	2	0	4	0	10	24	1	0	4	3
9 AM - 10 AM	18	3	2	0	2	1	12	15	1	1	7	3
9:30 AM - 10:30 AM	19	2	2	0	0	1	9	25	1	4	11	3
10 AM - 11 AM	13	2	2	0	1	2	11	22	1	3	11	1
11 AM - 12 PM	10	4	3	2	7	5	5	12	2	5	9	9
12 PM - 1 PM	18	5	1	2	7	3	6	22	2	6	15	13
1 PM - 2 PM	23	4	7	1	4	4	18	19	1	4	11	13
2 PM - 3 PM	20	2	2	3	3	0	12	15	0	7	8	9
3 PM - 4 PM	18	3	5	1	2	2	11	15	0	9	16	14
4 PM - 5 PM	16	3	4	5	2	4	6	7	0	4	12	7
5 PM - 6 PM	11	6	8	6	3	1	14	8	1	1	20	19

Project Traffic Volumes			Eastbound	Westbound	Northbound	Southbound
Inbound Assignment					5%	
Outbound Assignment						50%
	Total Project Trips		Project Turning Movement Volumes Per Hour (= Assignment X Total Project Trips)			
	Inbound	Outbound				
7 AM - 8 AM	1	2			0	1
8 AM - 9 AM	1	0			0	0
9 AM - 10 AM	202	2			10	1
9:30 AM - 10:30 AM	356	122			18	61
10 AM - 11 AM	266	361			13	181
11 AM - 12 PM	9	107			0	54
12 PM - 1 PM	0	143			0	72
1 PM - 2 PM	81	0			4	0
2 PM - 3 PM	0	43			0	22
3 PM - 4 PM	0	0			0	0
4 PM - 5 PM	91	45			5	23
5 PM - 6 PM	1	47			0	24

2025 Total Volume	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
7 AM - 8 AM	22	0	1	0	0	2	10	12	0	2	2	1
8 AM - 9 AM	15	4	2	0	4	0	10	24	1	0	4	3
9 AM - 10 AM	18	3	2	0	2	1	12	25	1	1	8	3
9:30 AM - 10:30 AM	19	2	2	0	0	1	9	43	1	4	72	3
10 AM - 11 AM	13	2	2	0	1	2	11	35	1	3	192	1
11 AM - 12 PM	10	4	3	2	7	5	5	12	2	5	63	9
12 PM - 1 PM	18	5	1	2	7	3	6	22	2	6	87	13
1 PM - 2 PM	23	4	7	1	4	4	18	23	1	4	11	13
2 PM - 3 PM	20	2	2	3	3	0	12	15	0	7	30	9
3 PM - 4 PM	18	3	5	1	2	2	11	15	0	9	16	14
4 PM - 5 PM	16	3	4	5	2	4	6	12	0	4	35	7
5 PM - 6 PM	11	6	8	6	3	1	14	8	1	1	44	19

Table 6: Access Scenario 1 Volume Development: Atlantic Boulevard / George Moore Chevrolet Driveway / Hawaii Drive

	Atlantic Boulevard			Atlantic Boulevard			Hawaii Drive East			George Moore Chevy Driveway		
		Eastbound			**Westbound**			**Northbound**			**Southbound**	
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Existing Traffic												
7 AM - 8 AM	26	1793	6	93	2686	7	1	0	17	1	1	2
8 AM - 9 AM	41	1973	6	65	2194	10	1	0	22	2	0	8
9 AM - 10 AM	32	1472	2	64	1878	13	0	0	12	4	1	7
9:30 AM - 10:30 AM	38	1464	2	50	1767	9	0	0	9	6	1	12
10 AM - 11 AM	40	1416	3	48	1572	6	1	0	8	7	1	19
11 AM - 12 PM	25	1499	5	63	1602	8	1	0	18	4	0	19
12 PM - 1 PM	39	1772	4	56	1617	8	3	0	9	6	0	19
1 PM - 2 PM	35	1654	7	74	1700	13	0	0	26	6	1	15
2 PM - 3 PM	24	2135	6	73	1937	7	0	0	18	1	0	13
3 PM - 4 PM	22	2633	6	91	2148	4	1	1	18	5	0	17
4 PM - 5 PM	19	2710	4	80	2254	7	0	0	28	0	0	34
5 PM - 6 PM	19	2689	7	89	2133	7	0	0	21	2	0	26
PSCF	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***
2022 Peak Season Traffic												
7 AM - 8 AM	27	1,847	6	96	2,767	7	1	0	18	1	1	2
8 AM - 9 AM	42	2,032	6	67	2,260	10	1	0	23	2	0	8
9 AM - 10 AM	33	1,516	2	66	1,934	13	0	0	12	4	1	7
9:30 AM - 10:30 AM	39	1,508	2	52	1,820	9	0	0	9	6	1	12
10 AM - 11 AM	41	1,458	3	49	1,619	6	1	0	8	7	1	20
11 AM - 12 PM	26	1,544	5	65	1,650	8	1	0	19	4	0	20
12 PM - 1 PM	40	1,825	4	58	1,666	8	3	0	9	6	0	20
1 PM - 2 PM	36	1,704	7	76	1,751	13	0	0	27	6	1	15
2 PM - 3 PM	25	2,199	6	75	1,995	7	0	0	19	1	0	13
3 PM - 4 PM	23	2,712	6	94	2,212	4	1	1	19	5	0	18
4 PM - 5 PM	20	2,791	4	82	2,322	7	0	0	29	0	0	35
5 PM - 6 PM	20	2,770	7	92	2,197	7	0	0	22	2	0	27
Annual growth rate		3.80%			3.80%							
Background Growth (2022 to 2025)												
7 AM - 8 AM	0	211	0	0	315	0	0	0	0	0	0	0
8 AM - 9 AM	0	232	0	0	258	0	0	0	0	0	0	0
9 AM - 10 AM	0	173	0	0	220	0	0	0	0	0	0	0
9:30 AM - 10:30 AM	0	172	0	0	207	0	0	0	0	0	0	0
10 AM - 11 AM	0	166	0	0	185	0	0	0	0	0	0	0
11 AM - 12 PM	0	176	0	0	188	0	0	0	0	0	0	0
12 PM - 1 PM	0	208	0	0	190	0	0	0	0	0	0	0
1 PM - 2 PM	0	194	0	0	200	0	0	0	0	0	0	0
2 PM - 3 PM	0	251	0	0	227	0	0	0	0	0	0	0
3 PM - 4 PM	0	309	0	0	252	0	0	0	0	0	0	0
4 PM - 5 PM	0	318	0	0	265	0	0	0	0	0	0	0
5 PM - 6 PM	0	316	0	0	250	0	0	0	0	0	0	0
2025 Background Traffic												
7 AM - 8 AM	27	2,058	6	96	3,082	7	1	0	18	1	1	2
8 AM - 9 AM	42	2,264	6	67	2,518	10	1	0	23	2	0	8
9 AM - 10 AM	33	1,689	2	66	2,154	13	0	0	12	4	1	7
9:30 AM - 10:30 AM	39	1,680	2	52	2,027	9	0	0	9	6	1	12
10 AM - 11 AM	41	1,624	3	49	1,804	6	1	0	8	7	1	20
11 AM - 12 PM	26	1,720	5	65	1,838	8	1	0	19	4	0	20
12 PM - 1 PM	40	2,033	4	58	1,856	8	3	0	9	6	0	20
1 PM - 2 PM	36	1,898	7	76	1,951	13	0	0	27	6	1	15
2 PM - 3 PM	25	2,450	6	75	2,222	7	0	0	19	1	0	13
3 PM - 4 PM	23	3,021	6	94	2,464	4	1	1	19	5	0	18
4 PM - 5 PM	20	3,109	4	82	2,587	7	0	0	29	0	0	35
5 PM - 6 PM	20	3,086	7	92	2,447	7	0	0	22	2	0	27

Project Traffic Volumes

	Total Project Trips		Project Turning Movement Volumes Per Hour (= Assignment X Total Project Trips)			
	Inbound	Outbound	Atlantic Boulevard Eastbound	Atlantic Boulevard Westbound	Hawaii Drive East Northbound	George Moore Chevy Driveway Southbound
Inbound Assignment			75%	5%		
Outbound Assignment				25%		
7 AM - 8 AM	1	2	1	1		
8 AM - 9 AM	1	0	1	0		
9 AM - 10 AM	202	2	152	11		
9:30 AM - 10:30 AM	356	122	267	48		
10 AM - 11 AM	266	361	200	104		
11 AM - 12 PM	9	107	7	27		
12 PM - 1 PM	0	143	0	36		
1 PM - 2 PM	81	0	61	4		
2 PM - 3 PM	0	43	0	11		
3 PM - 4 PM	0	0	0	0		
4 PM - 5 PM	91	45	68	16		
5 PM - 6 PM	1	47	1	12		

2025 Total Volume	EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	NB Left	NB Through	NB Right	SB Left	SB Through	SB Right
7 AM - 8 AM	27	2,059	6	96	3,083	7	1	0	18	1	1	2
8 AM - 9 AM	42	2,265	6	67	2,518	10	1	0	23	2	0	8
9 AM - 10 AM	33	1,841	2	66	2,165	13	0	0	12	4	1	7
9:30 AM - 10:30 AM	39	1,947	2	52	2,075	9	0	0	9	6	1	12
10 AM - 11 AM	41	1,824	3	49	1,908	6	1	0	8	7	1	20
11 AM - 12 PM	26	1,727	5	65	1,865	8	1	0	19	4	0	20
12 PM - 1 PM	40	2,033	4	58	1,892	8	3	0	9	6	0	20
1 PM - 2 PM	36	1,959	7	76	1,955	13	0	0	27	6	1	15
2 PM - 3 PM	25	2,450	6	75	2,233	7	0	0	19	1	0	13
3 PM - 4 PM	23	3,021	6	94	2,464	4	1	1	19	5	0	18
4 PM - 5 PM	20	3,177	4	82	2,603	7	0	0	29	0	0	35
5 PM - 6 PM	20	3,087	7	92	2,459	7	0	0	22	2	0	27

Table 7: Access Scenario 1 Volume Development: Atlantic Boulevard / Duval Acura Driveway / Sutton Lakes Boulevard

	Atlantic Boulevard			Atlantic Boulevard			Sutton Lakes Boulevard			Duval Acura Driveway		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Existing Traffic												
7 AM - 8 AM	30	1639	57	41	2528	7	189	1	149	6	0	10
8 AM - 9 AM	47	1782	89	90	2068	3	127	1	150	11	1	20
9 AM - 10 AM	52	1312	52	71	1769	7	122	11	97	24	0	22
9:30 AM - 10:30 AM	57	1329	48	54	1641	6	94	11	77	14	0	32
10 AM - 11 AM	52	1295	45	61	1408	11	69	1	79	17	0	38
11 AM - 12 PM	35	1380	61	92	1463	8	71	0	84	18	2	37
12 PM - 1 PM	32	1608	76	104	1425	10	92	1	99	29	0	41
1 PM - 2 PM	48	1509	93	103	1628	10	68	1	97	25	1	38
2 PM - 3 PM	62	1839	110	116	1727	12	107	1	141	39	1	71
3 PM - 4 PM	30	2396	160	128	1989	6	81	1	135	25	2	40
4 PM - 5 PM	30	2456	193	181	2074	10	106	1	131	30	3	32
5 PM - 6 PM	33	2531	188	173	1959	4	99	0	148	26	1	49
PSCF	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***
2022 Peak Season Traffic												
7 AM - 8 AM	31	1,688	59	42	2,604	7	195	1	153	6	0	10
8 AM - 9 AM	48	1,835	92	93	2,130	3	131	1	155	11	1	21
9 AM - 10 AM	54	1,351	54	73	1,822	7	126	11	100	25	0	23
9:30 AM - 10:30 AM	59	1,369	49	56	1,690	6	97	11	79	14	0	33
10 AM - 11 AM	54	1,334	46	63	1,450	11	71	1	81	18	0	39
11 AM - 12 PM	36	1,421	63	95	1,507	8	73	0	87	19	2	38
12 PM - 1 PM	33	1,656	78	107	1,468	10	95	1	102	30	0	42
1 PM - 2 PM	49	1,554	96	106	1,677	10	70	1	100	26	1	39
2 PM - 3 PM	64	1,894	113	119	1,779	12	110	1	145	40	1	73
3 PM - 4 PM	31	2,468	165	132	2,049	6	83	1	139	26	2	41
4 PM - 5 PM	31	2,530	199	186	2,136	10	109	1	135	31	3	33
5 PM - 6 PM	34	2,607	194	178	2,018	4	102	0	152	27	1	50
Annual growth rate		3.80%			3.80%							
Background Growth (2022 to 2025)												
7 AM - 8 AM	0	192	0	0	297	0	0	0	0	0	0	0
8 AM - 9 AM	0	209	0	0	243	0	0	0	0	0	0	0
9 AM - 10 AM	0	154	0	0	208	0	0	0	0	0	0	0
9:30 AM - 10:30 AM	0	156	0	0	193	0	0	0	0	0	0	0
10 AM - 11 AM	0	152	0	0	165	0	0	0	0	0	0	0
11 AM - 12 PM	0	162	0	0	172	0	0	0	0	0	0	0
12 PM - 1 PM	0	189	0	0	167	0	0	0	0	0	0	0
1 PM - 2 PM	0	177	0	0	191	0	0	0	0	0	0	0
2 PM - 3 PM	0	216	0	0	203	0	0	0	0	0	0	0
3 PM - 4 PM	0	281	0	0	234	0	0	0	0	0	0	0
4 PM - 5 PM	0	288	0	0	244	0	0	0	0	0	0	0
5 PM - 6 PM	0	297	0	0	230	0	0	0	0	0	0	0
2025 Background Traffic												
7 AM - 8 AM	31	1,880	59	42	2,901	7	195	1	153	6	0	10
8 AM - 9 AM	48	2,044	92	93	2,373	3	131	1	155	11	1	21
9 AM - 10 AM	54	1,505	54	73	2,030	7	126	11	100	25	0	23
9:30 AM - 10:30 AM	59	1,525	49	56	1,883	6	97	11	79	14	0	33
10 AM - 11 AM	54	1,486	46	63	1,615	11	71	1	81	18	0	39
11 AM - 12 PM	36	1,583	63	95	1,679	8	73	0	87	19	2	38
12 PM - 1 PM	33	1,845	78	107	1,635	10	95	1	102	30	0	42
1 PM - 2 PM	49	1,731	96	106	1,868	10	70	1	100	26	1	39
2 PM - 3 PM	64	2,110	113	119	1,982	12	110	1	145	40	1	73
3 PM - 4 PM	31	2,749	165	132	2,283	6	83	1	139	26	2	41
4 PM - 5 PM	31	2,818	199	186	2,380	10	109	1	135	31	3	33
5 PM - 6 PM	34	2,904	194	178	2,248	4	102	0	152	27	1	50

Project Traffic Volumes

Description	Total Project Trips Inbound	Total Project Trips Outbound	EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	NB Left	NB Through	NB Right	SB Left	SB Through	SB Right
Inbound Assignment			75%				5%	20%						
Outbound Assignment												25%		25%
			Project Turning Movement Volumes Per Hour (= Assignment X Total Project Trips)											
7 AM - 8 AM	1	2	1				0	0				1		1
8 AM - 9 AM	1	0	1				0	0				0		0
9 AM - 10 AM	202	2	152				10	40				1		1
9:30 AM - 10:30 AM	356	122	267				18	71				31		31
10 AM - 11 AM	266	361	200				13	53				90		90
11 AM - 12 PM	9	107	7				0	2				27		27
12 PM - 1 PM	0	143	0				0	0				36		36
1 PM - 2 PM	81	0	61				4	16				0		0
2 PM - 3 PM	0	43	0				0	0				11		11
3 PM - 4 PM	0	0	0				0	0				0		0
4 PM - 5 PM	91	45	68				5	18				11		11
5 PM - 6 PM	1	47	1				0	0				12		12

2025 Total Volume	EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	NB Left	NB Through	NB Right	SB Left	SB Through	SB Right
7 AM - 8 AM	32	1,880	59	42	2,901	7	195	1	153	7	0	11
8 AM - 9 AM	49	2,044	92	93	2,373	3	131	1	155	11	1	21
9 AM - 10 AM	206	1,505	54	73	2,040	47	126	11	100	26	0	24
9:30 AM - 10:30 AM	326	1,525	49	56	1,901	77	97	11	79	45	0	64
10 AM - 11 AM	254	1,486	46	63	1,628	64	71	1	81	108	0	129
11 AM - 12 PM	43	1,583	63	95	1,679	10	73	0	87	46	2	65
12 PM - 1 PM	33	1,845	78	107	1,635	10	95	1	102	66	0	78
1 PM - 2 PM	110	1,731	96	106	1,872	26	70	1	100	26	1	39
2 PM - 3 PM	64	2,110	113	119	1,982	12	110	1	145	51	1	84
3 PM - 4 PM	31	2,749	165	132	2,283	6	83	1	139	26	2	41
4 PM - 5 PM	99	2,818	199	186	2,385	28	109	1	135	42	3	44
5 PM - 6 PM	35	2,904	194	178	2,248	4	102	0	152	39	1	62

Table 8: Access Scenario 1 Volume Development: Internal Duval Acura Intersection

	Internal E-W Road			Internal E-W Road			Duval Acura Driveway			Duval Acura Driveway		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Existing Traffic												
7 AM - 8 AM	0	0	0	12	0	0	0	9	29	0	4	0
8 AM - 9 AM	0	0	0	24	0	0	0	12	39	0	8	0
9 AM - 10 AM	0	0	0	34	0	0	0	16	54	0	12	0
9:30 AM - 10:30 AM	0	0	0	34	0	0	0	17	57	0	12	0
10 AM - 11 AM	0	0	0	41	0	0	0	15	49	0	14	0
11 AM - 12 PM	0	0	0	42	0	0	0	10	33	0	15	0
12 PM - 1 PM	0	0	0	52	0	0	0	10	33	0	18	0
1 PM - 2 PM	0	0	0	47	0	0	0	14	45	0	17	0
2 PM - 3 PM	0	0	0	82	0	0	0	17	58	0	29	0
3 PM - 4 PM	0	0	0	50	0	0	0	9	28	0	17	0
4 PM - 5 PM	0	0	0	48	0	0	0	9	32	0	17	0
5 PM - 6 PM	0	0	0	56	0	0	0	9	28	0	20	0
PSCF	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***
2022 Peak Season Traffic												
7 AM - 8 AM	0	0	0	12	0	0	0	9	30	0	4	0
8 AM - 9 AM	0	0	0	25	0	0	0	12	40	0	8	0
9 AM - 10 AM	0	0	0	35	0	0	0	16	56	0	12	0
9:30 AM - 10:30 AM	0	0	0	35	0	0	0	18	59	0	12	0
10 AM - 11 AM	0	0	0	42	0	0	0	15	50	0	14	0
11 AM - 12 PM	0	0	0	43	0	0	0	10	34	0	15	0
12 PM - 1 PM	0	0	0	54	0	0	0	10	34	0	19	0
1 PM - 2 PM	0	0	0	48	0	0	0	14	46	0	18	0
2 PM - 3 PM	0	0	0	84	0	0	0	18	60	0	30	0
3 PM - 4 PM	0	0	0	52	0	0	0	9	29	0	18	0
4 PM - 5 PM	0	0	0	49	0	0	0	9	33	0	18	0
5 PM - 6 PM	0	0	0	58	0	0	0	9	29	0	21	0
Annual growth rate												
Background Growth (2022 to 2025)												
7 AM - 8 AM	0	0	0	0	0	0	0	0	0	0	0	0
8 AM - 9 AM	0	0	0	0	0	0	0	0	0	0	0	0
9 AM - 10 AM	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM - 10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
10 AM - 11 AM	0	0	0	0	0	0	0	0	0	0	0	0
11 AM - 12 PM	0	0	0	0	0	0	0	0	0	0	0	0
12 PM - 1 PM	0	0	0	0	0	0	0	0	0	0	0	0
1 PM - 2 PM	0	0	0	0	0	0	0	0	0	0	0	0
2 PM - 3 PM	0	0	0	0	0	0	0	0	0	0	0	0
3 PM - 4 PM	0	0	0	0	0	0	0	0	0	0	0	0
4 PM - 5 PM	0	0	0	0	0	0	0	0	0	0	0	0
5 PM - 6 PM	0	0	0	0	0	0	0	0	0	0	0	0
2025 Background Traffic												
7 AM - 8 AM	0	0	0	12	0	0	0	9	30	0	4	0
8 AM - 9 AM	0	0	0	25	0	0	0	12	40	0	8	0
9 AM - 10 AM	0	0	0	35	0	0	0	16	56	0	12	0
9:30 AM - 10:30 AM	0	0	0	35	0	0	0	18	59	0	12	0
10 AM - 11 AM	0	0	0	42	0	0	0	15	50	0	14	0
11 AM - 12 PM	0	0	0	43	0	0	0	10	34	0	15	0
12 PM - 1 PM	0	0	0	54	0	0	0	10	34	0	19	0
1 PM - 2 PM	0	0	0	48	0	0	0	14	46	0	18	0
2 PM - 3 PM	0	0	0	84	0	0	0	18	60	0	30	0
3 PM - 4 PM	0	0	0	52	0	0	0	9	29	0	18	0
4 PM - 5 PM	0	0	0	49	0	0	0	9	33	0	18	0
5 PM - 6 PM	0	0	0	58	0	0	0	9	29	0	21	0

Project Traffic Volumes

	Total Project Trips		Eastbound			Westbound			Northbound			Southbound		
	Inbound	Outbound	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Inbound Assignment									95%					
Outbound Assignment					50%									
			Project Turning Movement Volumes Per Hour (= Assignment X Total Project Trips)											
7 AM - 8 AM	1	2			1				1					
8 AM - 9 AM	1	0			0				1					
9 AM - 10 AM	202	2			1				192					
9:30 AM - 10:30 AM	356	122			61				338					
10 AM - 11 AM	266	361			181				253					
11 AM - 12 PM	9	107			54				9					
12 PM - 1 PM	0	143			72				0					
1 PM - 2 PM	81	0			0				77					
2 PM - 3 PM	0	43			22				0					
3 PM - 4 PM	0	0			0				0					
4 PM - 5 PM	91	45			23				86					
5 PM - 6 PM	1	47			24				1					

2025 Total Volume	EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	NB Left	NB Through	NB Right	SB Left	SB Through	SB Right
7 AM - 8 AM	0	0	1	12	0	0	1	9	30	0	4	0
8 AM - 9 AM	0	0	0	25	0	0	1	12	40	0	8	0
9 AM - 10 AM	0	0	1	35	0	0	192	16	56	0	12	0
9:30 AM - 10:30 AM	0	0	61	35	0	0	338	18	59	0	12	0
10 AM - 11 AM	0	0	181	42	0	0	253	15	50	0	14	0
11 AM - 12 PM	0	0	54	43	0	0	9	10	34	0	15	0
12 PM - 1 PM	0	0	72	54	0	0	0	10	34	0	19	0
1 PM - 2 PM	0	0	0	48	0	0	77	14	46	0	18	0
2 PM - 3 PM	0	0	22	84	0	0	0	18	60	0	30	0
3 PM - 4 PM	0	0	0	52	0	0	0	9	29	0	18	0
4 PM - 5 PM	0	0	23	49	0	0	86	9	33	0	18	0
5 PM - 6 PM	0	0	24	58	0	0	1	9	29	0	21	0

Table 9: Access Scenario 2 Volume Development: Atlantic Boulevard / Arlington Toyota Driveway / Mindanao Drive

Description	Atlantic Boulevard Eastbound			Atlantic Boulevard Westbound			Mindanao Drive Northbound			Arlington Toyota Driveway Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Existing Traffic												
7 AM - 8 AM	35	1724	34	20	2664	12	57	8	45	4	1	12
8 AM - 9 AM	51	1880	42	26	2126	13	51	15	69	9	2	22
9 AM - 10 AM	45	1421	34	21	1843	15	41	8	41	22	4	38
9:30 AM - 10:30 AM	48	1418	43	25	1718	15	37	5	38	24	5	44
10 AM - 11 AM	31	1397	48	20	1533	7	38	5	33	15	3	42
11 AM - 12 PM	38	1415	49	18	1581	14	47	6	29	30	4	38
12 PM - 1 PM	39	1702	75	17	1595	7	50	3	43	28	4	35
1 PM - 2 PM	57	1588	73	44	1650	18	48	11	41	18	3	37
2 PM - 3 PM	38	2033	64	31	1882	15	70	7	54	30	6	50
3 PM - 4 PM	46	2501	90	51	2149	10	49	6	66	30	3	46
4 PM - 5 PM	45	2479	122	55	2305	17	73	7	60	24	13	65
5 PM - 6 PM	38	2555	98	49	2094	9	59	5	64	35	5	75
PSCF	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***
2022 Peak Season Traffic												
7 AM - 8 AM	36	1,776	35	21	2,744	12	59	8	46	4	1	12
8 AM - 9 AM	53	1,936	43	27	2,190	13	53	15	71	9	2	23
9 AM - 10 AM	46	1,464	35	22	1,898	15	42	8	42	23	4	39
9:30 AM - 10:30 AM	49	1,461	44	26	1,770	15	38	5	39	25	5	45
10 AM - 11 AM	32	1,439	49	21	1,579	7	39	5	34	15	3	43
11 AM - 12 PM	39	1,457	50	19	1,628	14	48	6	30	31	4	39
12 PM - 1 PM	40	1,753	77	18	1,643	7	52	3	44	29	4	36
1 PM - 2 PM	59	1,636	75	45	1,700	19	49	11	42	19	3	38
2 PM - 3 PM	39	2,094	66	32	1,938	15	72	7	56	31	6	52
3 PM - 4 PM	47	2,576	93	53	2,213	10	50	6	68	31	3	47
4 PM - 5 PM	46	2,553	126	57	2,374	18	75	7	62	25	13	67
5 PM - 6 PM	39	2,632	101	50	2,157	9	61	5	66	36	5	77
Annual growth rate		3.80%			3.80%							
Background Growth (2022 to 2025)												
7 AM - 8 AM	0	202	0	0	313	0	0	0	0	0	0	0
8 AM - 9 AM	0	221	0	0	250	0	0	0	0	0	0	0
9 AM - 10 AM	0	167	0	0	216	0	0	0	0	0	0	0
9:30 AM - 10:30 AM	0	167	0	0	202	0	0	0	0	0	0	0
10 AM - 11 AM	0	164	0	0	180	0	0	0	0	0	0	0
11 AM - 12 PM	0	166	0	0	186	0	0	0	0	0	0	0
12 PM - 1 PM	0	200	0	0	187	0	0	0	0	0	0	0
1 PM - 2 PM	0	187	0	0	194	0	0	0	0	0	0	0
2 PM - 3 PM	0	239	0	0	221	0	0	0	0	0	0	0
3 PM - 4 PM	0	294	0	0	252	0	0	0	0	0	0	0
4 PM - 5 PM	0	291	0	0	271	0	0	0	0	0	0	0
5 PM - 6 PM	0	300	0	0	246	0	0	0	0	0	0	0
2025 Background Traffic												
7 AM - 8 AM	36	1,978	35	21	3,057	12	59	8	46	4	1	12
8 AM - 9 AM	53	2,157	43	27	2,440	13	53	15	71	9	2	23
9 AM - 10 AM	46	1,631	35	22	2,114	15	42	8	42	23	4	39
9:30 AM - 10:30 AM	49	1,628	44	26	1,972	15	38	5	39	25	5	45
10 AM - 11 AM	32	1,603	49	21	1,759	7	39	5	34	15	3	43
11 AM - 12 PM	39	1,623	50	19	1,814	14	48	6	30	31	4	39
12 PM - 1 PM	40	1,953	77	18	1,830	7	52	3	44	29	4	36
1 PM - 2 PM	59	1,823	75	45	1,894	19	49	11	42	19	3	38
2 PM - 3 PM	39	2,333	66	32	2,159	15	72	7	56	31	6	52
3 PM - 4 PM	47	2,870	93	53	2,465	10	50	6	68	31	3	47
4 PM - 5 PM	46	2,844	126	57	2,645	18	75	7	62	25	13	67
5 PM - 6 PM	39	2,932	101	50	2,403	9	61	5	66	36	5	77
Traffic Reassignment												
7 AM - 8 AM	-36	36	0	-21	59	0	-59	-8	0	-4	-1	0
8 AM - 9 AM	-53	53	0	-27	53	0	-53	-15	0	-9	-2	0
9 AM - 10 AM	-46	46	0	-22	42	0	-42	-8	0	-23	-4	0
9:30 AM - 10:30 AM	-49	49	0	-26	38	0	-38	-5	0	-25	-5	0
10 AM - 11 AM	-32	32	0	-21	38	0	-39	-5	0	-15	-3	0
11 AM - 12 PM	-39	39	0	-19	39	0	-48	-6	0	-31	-4	0
12 PM - 1 PM	-40	40	0	-18	48	0	-52	-3	0	-29	-4	0
1 PM - 2 PM	-59	59	0	-45	52	0	-49	-11	0	-19	-3	0
2 PM - 3 PM	-39	39	0	-32	49	0	-72	-7	0	-31	-6	0
3 PM - 4 PM	-47	47	0	-53	72	0	-50	-6	0	-31	-3	0
4 PM - 5 PM	-46	46	0	-57	50	0	-75	-7	0	-25	-13	0
5 PM - 6 PM	-39	39	0	-50	75	0	-61	-5	0	-36	-5	0

Project Traffic Volumes

Description	Total Project Trips Inbound	Total Project Trips Outbound	Atlantic Boulevard Eastbound	Atlantic Boulevard Westbound	Mindanao Drive Northbound	Arlington Toyota Driveway Southbound
Inbound Assignment			75%			
Outbound Assignment				75%		
			Project Turning Movement Volumes Per Hour (= Assignment X Total Project Trips)			
7 AM - 8 AM	1	2	1	2		
8 AM - 9 AM	1	0	1	0		
9 AM - 10 AM	202	2	152	2		
9:30 AM - 10:30 AM	356	122	267	92		
10 AM - 11 AM	266	361	200	271		
11 AM - 12 PM	9	107	7	80		
12 PM - 1 PM	0	143	0	107		
1 PM - 2 PM	81	0	61	0		
2 PM - 3 PM	0	43	0	32		
3 PM - 4 PM	0	0	0	0		
4 PM - 5 PM	91	45	68	34		
5 PM - 6 PM	1	47	1	35		

Description	Atlantic Boulevard Eastbound			Atlantic Boulevard Westbound			Mindanao Drive Northbound			Arlington Toyota Driveway Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2025 Total Volume												
7 AM - 8 AM	0	2,015	35	0	3,118	12	0	0	46	0	0	12
8 AM - 9 AM	0	2,211	43	0	2,493	13	0	0	71	0	0	23
9 AM - 10 AM	0	1,829	35	0	2,158	15	0	0	42	0	0	39
9:30 AM - 10:30 AM	0	1,944	44	0	2,102	15	0	0	39	0	0	45
10 AM - 11 AM	0	1,835	49	0	2,068	7	0	0	34	0	0	43
11 AM - 12 PM	0	1,669	50	0	1,933	14	0	0	30	0	0	39
12 PM - 1 PM	0	1,993	77	0	1,985	7	0	0	44	0	0	36
1 PM - 2 PM	0	1,943	75	0	1,946	19	0	0	42	0	0	38
2 PM - 3 PM	0	2,372	66	0	2,240	15	0	0	56	0	0	52
3 PM - 4 PM	0	2,917	93	0	2,537	10	0	0	68	0	0	47
4 PM - 5 PM	0	2,958	126	0	2,729	18	0	0	62	0	0	67
5 PM - 6 PM	0	2,972	101	0	2,513	9	0	0	66	0	0	77

Table 10: Access Scenario 2 Volume Development: Atlantic Boulevard / General Doolittle Drive /Sandalwood Boulevard

Description	Atlantic Boulevard **Eastbound** Left	Through	Right	Atlantic Boulevard **Westbound** Left	Through	Right	Sandalwood Boulevard **Northbound** Left	Through	Right	General Doolittle Drive **Southbound** Left	Through	Right
2022 Existing Traffic												
7 AM - 8 AM	0	1676	0	0	2586	22	0	0	38	0	0	0
8 AM - 9 AM	0	1965	6	0	2137	31	0	0	50	0	0	4
9 AM - 10 AM	0	1474	5	0	1825	27	0	0	31	0	0	8
9:30 AM - 10:30 AM	0	1482	1	0	1721	34	0	0	24	0	0	11
10 AM - 11 AM	0	1441	3	0	1540	32	0	0	21	0	0	10
11 AM - 12 PM	0	1470	5	0	1576	23	0	0	27	0	0	12
12 PM - 1 PM	0	1770	4	0	1585	29	0	0	29	0	0	20
1 PM - 2 PM	0	1658	3	0	1677	30	0	0	37	0	0	19
2 PM - 3 PM	0	2063	7	0	1888	30	0	0	37	0	0	14
3 PM - 4 PM	0	2618	6	0	2080	26	0	0	40	0	0	28
4 PM - 5 PM	0	2689	5	0	2208	13	0	0	41	0	0	25
5 PM - 6 PM	0	2662	7	0	2071	25	0	0	44	0	0	31
PSCF	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***
2022 Peak Season Traffic												
7 AM - 8 AM	0	1,726	0	0	2,664	23	0	0	39	0	0	0
8 AM - 9 AM	0	2,024	6	0	2,201	32	0	0	52	0	0	4
9 AM - 10 AM	0	1,518	5	0	1,880	28	0	0	32	0	0	8
9:30 AM - 10:30 AM	0	1,526	1	0	1,773	35	0	0	25	0	0	11
10 AM - 11 AM	0	1,484	3	0	1,586	33	0	0	22	0	0	10
11 AM - 12 PM	0	1,514	5	0	1,623	24	0	0	28	0	0	12
12 PM - 1 PM	0	1,823	4	0	1,633	30	0	0	30	0	0	21
1 PM - 2 PM	0	1,708	3	0	1,727	31	0	0	38	0	0	20
2 PM - 3 PM	0	2,125	7	0	1,945	31	0	0	38	0	0	14
3 PM - 4 PM	0	2,697	6	0	2,142	27	0	0	41	0	0	29
4 PM - 5 PM	0	2,770	5	0	2,274	13	0	0	42	0	0	26
5 PM - 6 PM	0	2,742	7	0	2,133	26	0	0	45	0	0	32
Annual growth rate		3.80%			3.80%							
Background Growth (2022 to 2025)												
7 AM - 8 AM	0	197	0	0	304	0	0	0	0	0	0	0
8 AM - 9 AM	0	231	0	0	251	0	0	0	0	0	0	0
9 AM - 10 AM	0	173	0	0	214	0	0	0	0	0	0	0
9:30 AM - 10:30 AM	0	174	0	0	202	0	0	0	0	0	0	0
10 AM - 11 AM	0	169	0	0	181	0	0	0	0	0	0	0
11 AM - 12 PM	0	173	0	0	185	0	0	0	0	0	0	0
12 PM - 1 PM	0	208	0	0	186	0	0	0	0	0	0	0
1 PM - 2 PM	0	195	0	0	197	0	0	0	0	0	0	0
2 PM - 3 PM	0	242	0	0	222	0	0	0	0	0	0	0
3 PM - 4 PM	0	307	0	0	244	0	0	0	0	0	0	0
4 PM - 5 PM	0	316	0	0	259	0	0	0	0	0	0	0
5 PM - 6 PM	0	313	0	0	243	0	0	0	0	0	0	0
2025 Background Traffic												
7 AM - 8 AM	0	1,923	0	0	2,968	23	0	0	39	0	0	0
8 AM - 9 AM	0	2,255	6	0	2,452	32	0	0	52	0	0	4
9 AM - 10 AM	0	1,691	5	0	2,094	28	0	0	32	0	0	8
9:30 AM - 10:30 AM	0	1,700	1	0	1,975	35	0	0	25	0	0	11
10 AM - 11 AM	0	1,653	3	0	1,767	33	0	0	22	0	0	10
11 AM - 12 PM	0	1,687	5	0	1,808	24	0	0	28	0	0	12
12 PM - 1 PM	0	2,031	4	0	1,819	30	0	0	30	0	0	21
1 PM - 2 PM	0	1,903	3	0	1,924	31	0	0	38	0	0	20
2 PM - 3 PM	0	2,367	7	0	2,167	31	0	0	38	0	0	14
3 PM - 4 PM	0	3,004	6	0	2,386	27	0	0	41	0	0	29
4 PM - 5 PM	0	3,086	5	0	2,533	13	0	0	42	0	0	26
5 PM - 6 PM	0	3,055	7	0	2,376	26	0	0	45	0	0	32
Traffic Reassignment												
7 AM - 8 AM	36	-4	0	119	-22	0	60	8	0	4	1	0
8 AM - 9 AM	53	-9	0	96	-28	0	54	15	0	9	2	0
9 AM - 10 AM	46	-23	0	93	-22	0	42	8	0	23	4	0
9:30 AM - 10:30 AM	49	-25	0	85	-26	0	38	5	0	25	5	0
10 AM - 11 AM	32	-15	0	78	-22	0	40	5	0	15	3	0
11 AM - 12 PM	39	-31	0	88	-20	0	49	6	0	31	4	0
12 PM - 1 PM	40	-29	0	82	-21	0	55	3	0	29	4	0
1 PM - 2 PM	59	-19	0	128	-45	0	49	11	0	19	3	0
2 PM - 3 PM	39	-31	0	108	-32	0	72	7	0	31	6	0
3 PM - 4 PM	47	-31	0	152	-54	0	51	6	0	31	3	0
4 PM - 5 PM	46	-25	0	139	-57	0	75	7	0	25	13	0
5 PM - 6 PM	39	-36	0	144	-50	0	61	5	0	36	5	0

Project Traffic Volumes

	Total Project Trips Inbound	Total Project Trips Outbound	EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	NB Left	NB Through	NB Right	SB Left	SB Through	SB Right
Inbound Assignment			75%	0%				5%						
Outbound Assignment												5%		75%
			Project Turning Movement Volumes Per Hour (= Assignment X Total Project Trips)											
7 AM - 8 AM	1	2	1	0				0				0		2
8 AM - 9 AM	1	0	1	0				0				0		0
9 AM - 10 AM	202	2	152	0				10				0		2
9:30 AM - 10:30 AM	356	122	267	0				18				6		92
10 AM - 11 AM	266	361	200	0				13				18		271
11 AM - 12 PM	9	107	7	0				0				5		80
12 PM - 1 PM	0	143	0	0				0				7		107
1 PM - 2 PM	81	0	61	0				4				0		0
2 PM - 3 PM	0	43	0	0				0				2		32
3 PM - 4 PM	0	0	0	0				0				0		0
4 PM - 5 PM	91	45	68	0				5				2		34
5 PM - 6 PM	1	47	1	0				0				2		35

2025 Total Volume

	EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	NB Left	NB Through	NB Right	SB Left	SB Through	SB Right
7 AM - 8 AM	37	1,919	0	119	2,946	23	60	8	39	4	1	2
8 AM - 9 AM	54	2,246	6	96	2,424	32	54	15	52	9	2	4
9 AM - 10 AM	198	1,668	5	93	2,072	38	42	8	32	23	4	10
9:30 AM - 10:30 AM	316	1,675	1	85	1,949	53	38	5	25	31	5	103
10 AM - 11 AM	232	1,638	3	78	1,745	46	40	5	22	33	3	281
11 AM - 12 PM	46	1,656	5	88	1,788	24	49	6	28	36	4	92
12 PM - 1 PM	40	2,002	4	82	1,798	30	55	3	30	36	4	128
1 PM - 2 PM	120	1,884	3	128	1,879	35	49	11	38	19	3	20
2 PM - 3 PM	39	2,336	7	108	2,135	31	72	7	38	33	6	46
3 PM - 4 PM	47	2,973	6	152	2,332	27	51	6	41	31	3	29
4 PM - 5 PM	114	3,061	5	139	2,476	18	75	7	42	27	13	60
5 PM - 6 PM	40	3,019	7	144	2,326	26	61	5	45	38	5	67

Table 11: Access Scenario 2 Volume Development: General Doolittle Drive / Arlington Toyota Driveways

	Toyota Dealership Driveway			Toyota Lot Driveway			General Doolittle Drive			General Doolittle Drive		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Existing Traffic												
7 AM - 8 AM	21	0	1	0	0	2	10	12	0	2	1	1
8 AM - 9 AM	15	4	2	0	4	0	10	23	1	0	4	3
9 AM - 10 AM	17	3	2	0	2	1	12	15	1	1	7	3
9:30 AM - 10:30 AM	18	2	2	0	0	1	9	24	1	4	11	3
10 AM - 11 AM	13	2	2	0	1	2	11	21	1	3	11	1
11 AM - 12 PM	10	4	3	2	7	5	5	12	2	5	9	9
12 PM - 1 PM	17	5	1	2	7	3	6	21	2	6	15	13
1 PM - 2 PM	22	4	7	1	4	4	17	18	1	4	11	13
2 PM - 3 PM	19	2	2	3	3	0	12	15	0	7	8	9
3 PM - 4 PM	17	3	5	1	2	2	11	15	0	9	16	14
4 PM - 5 PM	16	3	4	5	2	4	6	7	0	4	12	7
5 PM - 6 PM	11	6	8	6	3	1	14	8	1	1	19	18
PSCF	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***
2022 Peak Season Traffic												
7 AM - 8 AM	22	0	1	0	0	2	10	12	0	2	1	1
8 AM - 9 AM	15	4	2	0	4	0	10	24	1	0	4	3
9 AM - 10 AM	18	3	2	0	2	1	12	15	1	1	7	3
9:30 AM - 10:30 AM	19	2	2	0	0	1	9	25	1	4	11	3
10 AM - 11 AM	13	2	2	0	1	2	11	22	1	3	11	1
11 AM - 12 PM	10	4	3	2	7	5	5	12	2	5	9	9
12 PM - 1 PM	18	5	1	2	7	3	6	22	2	6	15	13
1 PM - 2 PM	23	4	7	1	4	4	18	19	1	4	11	13
2 PM - 3 PM	20	2	2	3	3	0	12	15	0	7	8	9
3 PM - 4 PM	18	3	5	1	2	2	11	15	0	9	16	14
4 PM - 5 PM	16	3	4	5	2	4	6	7	0	4	12	7
5 PM - 6 PM	11	6	8	6	3	1	14	8	1	1	20	19
Annual growth rate												
Background Growth (2022 to 2025)												
7 AM - 8 AM	0	0	0	0	0	0	0	0	0	0	0	0
8 AM - 9 AM	0	0	0	0	0	0	0	0	0	0	0	0
9 AM - 10 AM	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM - 10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
10 AM - 11 AM	0	0	0	0	0	0	0	0	0	0	0	0
11 AM - 12 PM	0	0	0	0	0	0	0	0	0	0	0	0
12 PM - 1 PM	0	0	0	0	0	0	0	0	0	0	0	0
1 PM - 2 PM	0	0	0	0	0	0	0	0	0	0	0	0
2 PM - 3 PM	0	0	0	0	0	0	0	0	0	0	0	0
3 PM - 4 PM	0	0	0	0	0	0	0	0	0	0	0	0
4 PM - 5 PM	0	0	0	0	0	0	0	0	0	0	0	0
5 PM - 6 PM	0	0	0	0	0	0	0	0	0	0	0	0
2025 Background Traffic												
7 AM - 8 AM	22	0	1	0	0	2	10	12	0	2	1	1
8 AM - 9 AM	15	4	2	0	4	0	10	24	1	0	4	3
9 AM - 10 AM	18	3	2	0	2	1	12	15	1	1	7	3
9:30 AM - 10:30 AM	19	2	2	0	0	1	9	25	1	4	11	3
10 AM - 11 AM	13	2	2	0	1	2	11	22	1	3	11	1
11 AM - 12 PM	10	4	3	2	7	5	5	12	2	5	9	9
12 PM - 1 PM	18	5	1	2	7	3	6	22	2	6	15	13
1 PM - 2 PM	23	4	7	1	4	4	18	19	1	4	11	13
2 PM - 3 PM	20	2	2	3	3	0	12	15	0	7	8	9
3 PM - 4 PM	18	3	5	1	2	2	11	15	0	9	16	14
4 PM - 5 PM	16	3	4	5	2	4	6	7	0	4	12	7
5 PM - 6 PM	11	6	8	6	3	1	14	8	1	1	20	19
Traffic Reassignment												
7 AM - 8 AM	0	0	5	0	0	0	44	0	0	0	1	-1
8 AM - 9 AM	0	0	11	3	-3	0	68	0	0	0	2	-2
9 AM - 10 AM	0	0	27	2	-2	0	54	0	0	0	2	-2
9:30 AM - 10:30 AM	0	0	30	0	0	0	54	0	0	0	2	-2
10 AM - 11 AM	0	0	18	1	-1	0	37	0	0	0	1	-1
11 AM - 12 PM	0	0	35	5	-5	0	45	0	0	0	7	-7
12 PM - 1 PM	0	0	33	5	-5	0	43	0	0	0	10	-10
1 PM - 2 PM	0	0	22	3	-3	0	70	0	0	0	10	-10
2 PM - 3 PM	0	0	37	2	-2	0	46	0	0	0	7	-7
3 PM - 4 PM	0	0	34	2	-2	0	53	0	0	0	11	-11
4 PM - 5 PM	0	0	38	2	-2	0	53	0	0	0	5	-5
5 PM - 6 PM	0	0	41	2	-2	0	44	0	0	0	14	-14

Project Traffic Volumes

	Total Project Trips		Project Turning Movement Volumes Per Hour (= Assignment X Total Project Trips)	
			General Doolittle Drive Northbound Through	General Doolittle Drive Southbound Through
Inbound Assignment			80%	
Outbound Assignment				80%
	Inbound	Outbound		
7 AM - 8 AM	1	2	1	2
8 AM - 9 AM	1	0	1	0
9 AM - 10 AM	202	2	162	2
9:30 AM - 10:30 AM	356	122	285	98
10 AM - 11 AM	266	361	213	289
11 AM - 12 PM	9	107	7	86
12 PM - 1 PM	0	143	0	114
1 PM - 2 PM	81	0	65	0
2 PM - 3 PM	0	43	0	34
3 PM - 4 PM	0	0	0	0
4 PM - 5 PM	91	45	73	36
5 PM - 6 PM	1	47	1	38

	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
2025 Total Volume												
7 AM - 8 AM	22	0	6	0	0	2	54	13	0	2	4	0
8 AM - 9 AM	15	4	13	3	1	0	78	25	1	0	6	1
9 AM - 10 AM	18	3	29	2	0	1	66	177	1	1	11	1
9:30 AM - 10:30 AM	19	2	32	0	0	1	63	310	1	4	111	1
10 AM - 11 AM	13	2	20	1	0	2	48	235	1	3	301	0
11 AM - 12 PM	10	4	38	7	2	5	50	19	2	5	102	2
12 PM - 1 PM	18	5	34	7	2	3	49	22	2	6	139	3
1 PM - 2 PM	23	4	29	4	1	4	88	84	1	4	21	3
2 PM - 3 PM	20	2	39	5	1	0	58	15	0	7	49	2
3 PM - 4 PM	18	3	39	3	0	2	64	15	0	9	27	3
4 PM - 5 PM	16	3	42	7	0	4	59	80	0	4	53	2
5 PM - 6 PM	11	6	49	8	1	1	58	9	1	1	72	5

Table 12: Access Scenario 2 Volume Development: Atlantic Boulevard / Existing George Moore Driveway / Hawaii Drive

	Atlantic Boulevard	Eastbound		Atlantic Boulevard	Westbound		Hawaii Drive East	Northbound		Existing George Moore Chevy	Southbound	
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Existing Traffic												
7 AM - 8 AM	26	1793	6	93	2686	7	1	0	17	1	1	2
8 AM - 9 AM	41	1973	6	65	2194	10	1	0	22	2	0	8
9 AM - 10 AM	32	1472	2	64	1878	13	0	0	12	4	1	7
9:30 AM - 10:30 AM	38	1464	2	50	1767	9	0	0	9	6	1	12
10 AM - 11 AM	40	1416	3	48	1572	6	1	0	8	7	1	19
11 AM - 12 PM	25	1499	5	63	1602	8	1	0	18	4	0	19
12 PM - 1 PM	39	1772	4	56	1617	8	3	0	9	6	0	19
1 PM - 2 PM	35	1654	7	74	1700	13	0	0	26	6	1	15
2 PM - 3 PM	24	2135	6	73	1937	7	0	0	18	1	0	13
3 PM - 4 PM	22	2633	6	91	2148	4	1	1	18	5	0	17
4 PM - 5 PM	19	2710	4	80	2254	7	0	0	28	0	0	34
5 PM - 6 PM	19	2689	7	89	2133	7	0	0	21	2	0	26
PSCF	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***
2022 Peak Season Traffic												
7 AM - 8 AM	27	1,847	6	96	2,767	7	1	0	18	1	1	2
8 AM - 9 AM	42	2,032	6	67	2,260	10	1	0	23	2	0	8
9 AM - 10 AM	33	1,516	2	66	1,934	13	0	0	12	4	1	7
9:30 AM - 10:30 AM	39	1,508	2	52	1,820	9	0	0	9	6	1	12
10 AM - 11 AM	41	1,458	3	49	1,619	6	1	0	8	7	1	20
11 AM - 12 PM	26	1,544	5	65	1,650	8	1	0	19	4	0	20
12 PM - 1 PM	40	1,825	4	58	1,666	8	3	0	9	6	0	20
1 PM - 2 PM	36	1,704	7	76	1,751	13	0	0	27	6	1	15
2 PM - 3 PM	25	2,199	6	75	1,995	7	0	0	19	1	0	13
3 PM - 4 PM	23	2,712	6	94	2,212	4	1	1	19	5	0	18
4 PM - 5 PM	20	2,791	4	82	2,322	7	0	0	29	0	0	35
5 PM - 6 PM	20	2,770	7	92	2,197	7	0	0	22	2	0	27
Annual growth rate		3.80%			3.80%							
Background Growth (2022 to 2025)												
7 AM - 8 AM	0	211	0	0	315	0	0	0	0	0	0	0
8 AM - 9 AM	0	232	0	0	258	0	0	0	0	0	0	0
9 AM - 10 AM	0	173	0	0	220	0	0	0	0	0	0	0
9:30 AM - 10:30 AM	0	172	0	0	207	0	0	0	0	0	0	0
10 AM - 11 AM	0	166	0	0	185	0	0	0	0	0	0	0
11 AM - 12 PM	0	176	0	0	188	0	0	0	0	0	0	0
12 PM - 1 PM	0	208	0	0	190	0	0	0	0	0	0	0
1 PM - 2 PM	0	194	0	0	200	0	0	0	0	0	0	0
2 PM - 3 PM	0	251	0	0	227	0	0	0	0	0	0	0
3 PM - 4 PM	0	309	0	0	252	0	0	0	0	0	0	0
4 PM - 5 PM	0	318	0	0	265	0	0	0	0	0	0	0
5 PM - 6 PM	0	316	0	0	250	0	0	0	0	0	0	0
2025 Background Traffic												
7 AM - 8 AM	27	2,058	6	96	3,082	7	1	0	18	1	1	2
8 AM - 9 AM	42	2,264	6	67	2,518	10	1	0	23	2	0	8
9 AM - 10 AM	33	1,689	2	66	2,154	13	0	0	12	4	1	7
9:30 AM - 10:30 AM	39	1,680	2	52	2,027	9	0	0	9	6	1	12
10 AM - 11 AM	41	1,624	3	49	1,804	6	1	0	8	7	1	20
11 AM - 12 PM	26	1,720	5	65	1,838	8	1	0	19	4	0	20
12 PM - 1 PM	40	2,033	4	58	1,856	8	3	0	9	6	0	20
1 PM - 2 PM	36	1,898	7	76	1,951	13	0	0	27	6	1	15
2 PM - 3 PM	25	2,450	6	75	2,222	7	0	0	19	1	0	13
3 PM - 4 PM	23	3,021	6	94	2,464	4	1	1	19	5	0	18
4 PM - 5 PM	20	3,109	4	82	2,587	7	0	0	29	0	0	35
5 PM - 6 PM	20	3,086	7	92	2,447	7	0	0	22	2	0	27
Traffic Reassignment												
7 AM - 8 AM	-27	97	0	-96	100	-7	-1	0	0	-1	-1	-2
8 AM - 9 AM	-42	69	0	-67	77	-10	-1	0	0	-2	0	-8
9 AM - 10 AM	-33	70	0	-66	78	-13	0	0	0	-4	-1	-7
9:30 AM - 10:30 AM	-39	58	0	-52	71	-9	0	0	0	-6	-1	-12
10 AM - 11 AM	-41	56	0	-49	77	-6	-1	0	0	-7	-1	-20
11 AM - 12 PM	-26	69	0	-65	89	-8	-1	0	0	-4	0	-20
12 PM - 1 PM	-40	64	0	-58	84	-8	-3	0	0	-6	0	-20
1 PM - 2 PM	-36	82	0	-76	98	-13	0	0	0	-6	-1	-15
2 PM - 3 PM	-25	76	0	-75	89	-7	0	0	0	-1	0	-13
3 PM - 4 PM	-23	99	0	-94	117	-4	-1	-1	1	-5	0	-18
4 PM - 5 PM	-20	82	0	-82	117	-7	0	0	0	0	0	-35
5 PM - 6 PM	-20	94	0	-92	121	-7	0	0	0	-2	0	-27

Project Traffic Volumes

	Inbound	Outbound	Atlantic Boulevard Eastbound	Atlantic Boulevard Westbound	Hawaii Drive East Northbound	Existing George Moore Chevy Southbound
Inbound Assignment				5%		
Outbound Assignment			5%			
	Total Project Trips		Project Turning Movement Volumes Per Hour (= Assignment X Total Project Trips)			
7 AM - 8 AM	1	2	0	0		
8 AM - 9 AM	1	0	0	0		
9 AM - 10 AM	202	2	0	10		
9:30 AM - 10:30 AM	356	122	6	18		
10 AM - 11 AM	266	361	18	13		
11 AM - 12 PM	9	107	5	0		
12 PM - 1 PM	0	143	7	0		
1 PM - 2 PM	81	0	0	4		
2 PM - 3 PM	0	43	2	0		
3 PM - 4 PM	0	0	0	0		
4 PM - 5 PM	91	45	2	5		
5 PM - 6 PM	1	47	2	0		

2025 Total Volume	EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	NB Left	NB Through	NB Right	SB Left	SB Through	SB Right
7 AM - 8 AM	0	2,155	6	0	3,182	0	0	0	18	0	0	0
8 AM - 9 AM	0	2,333	6	0	2,595	0	0	0	23	0	0	0
9 AM - 10 AM	0	1,759	2	0	2,242	0	0	0	12	0	0	0
9:30 AM - 10:30 AM	0	1,744	2	0	2,116	0	0	0	9	0	0	0
10 AM - 11 AM	0	1,698	3	0	1,894	0	0	0	8	0	0	0
11 AM - 12 PM	0	1,794	5	0	1,927	0	0	0	19	0	0	0
12 PM - 1 PM	0	2,104	4	0	1,940	0	0	0	9	0	0	0
1 PM - 2 PM	0	1,980	7	0	2,053	0	0	0	27	0	0	0
2 PM - 3 PM	0	2,528	6	0	2,311	0	0	0	19	0	0	0
3 PM - 4 PM	0	3,120	6	0	2,581	0	0	0	20	0	0	0
4 PM - 5 PM	0	3,193	4	0	2,709	0	0	0	29	0	0	0
5 PM - 6 PM	0	3,182	7	0	2,568	0	0	0	22	0	0	0

Table 13: Access Scenario 2 Volume Development: Atlantic Boulevard / New George Moore Chevrolet Driveway

	Atlantic Boulevard			Atlantic Boulevard						New George Moore Chevy		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Existing Traffic												
7 AM - 8 AM	0	1811	0	0	2786	0				0	0	0
8 AM - 9 AM	0	1997	0	0	2269	0				0	0	0
9 AM - 10 AM	0	1488	0	0	1955	0				0	0	0
9:30 AM - 10:30 AM	0	1479	0	0	1826	0				0	0	0
10 AM - 11 AM	0	1431	0	0	1626	0				0	0	0
11 AM - 12 PM	0	1521	0	0	1673	0				0	0	0
12 PM - 1 PM	0	1787	0	0	1681	0				0	0	0
1 PM - 2 PM	0	1686	0	0	1787	0				0	0	0
2 PM - 3 PM	0	2154	0	0	2017	0				0	0	0
3 PM - 4 PM	0	2656	0	0	2243	0				0	0	0
4 PM - 5 PM	0	2738	0	0	2341	0				0	0	0
5 PM - 6 PM	0	2712	0	0	2229	0				0	0	0
PSCF	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***				***1.03***	***1.03***	***1.03***
2022 Peak Season Traffic												
7 AM - 8 AM	0	1,865	0	0	2,870	0				0	0	0
8 AM - 9 AM	0	2,057	0	0	2,337	0				0	0	0
9 AM - 10 AM	0	1,533	0	0	2,014	0				0	0	0
9:30 AM - 10:30 AM	0	1,523	0	0	1,881	0				0	0	0
10 AM - 11 AM	0	1,474	0	0	1,675	0				0	0	0
11 AM - 12 PM	0	1,567	0	0	1,723	0				0	0	0
12 PM - 1 PM	0	1,841	0	0	1,731	0				0	0	0
1 PM - 2 PM	0	1,737	0	0	1,841	0				0	0	0
2 PM - 3 PM	0	2,219	0	0	2,078	0				0	0	0
3 PM - 4 PM	0	2,736	0	0	2,310	0				0	0	0
4 PM - 5 PM	0	2,820	0	0	2,411	0				0	0	0
5 PM - 6 PM	0	2,793	0	0	2,296	0				0	0	0
Annual growth rate		3.80%			3.80%							
Background Growth (2022 to 2025)												
7 AM - 8 AM	0	213	0	0	327	0				0	0	0
8 AM - 9 AM	0	234	0	0	266	0				0	0	0
9 AM - 10 AM	0	175	0	0	230	0				0	0	0
9:30 AM - 10:30 AM	0	174	0	0	214	0				0	0	0
10 AM - 11 AM	0	168	0	0	191	0				0	0	0
11 AM - 12 PM	0	179	0	0	196	0				0	0	0
12 PM - 1 PM	0	210	0	0	197	0				0	0	0
1 PM - 2 PM	0	198	0	0	210	0				0	0	0
2 PM - 3 PM	0	253	0	0	237	0				0	0	0
3 PM - 4 PM	0	312	0	0	263	0				0	0	0
4 PM - 5 PM	0	321	0	0	275	0				0	0	0
5 PM - 6 PM	0	318	0	0	262	0				0	0	0
2025 Background Traffic												
7 AM - 8 AM	0	2,078	0	0	3,197	0				0	0	0
8 AM - 9 AM	0	2,291	0	0	2,603	0				0	0	0
9 AM - 10 AM	0	1,708	0	0	2,244	0				0	0	0
9:30 AM - 10:30 AM	0	1,697	0	0	2,095	0				0	0	0
10 AM - 11 AM	0	1,642	0	0	1,866	0				0	0	0
11 AM - 12 PM	0	1,746	0	0	1,919	0				0	0	0
12 PM - 1 PM	0	2,051	0	0	1,928	0				0	0	0
1 PM - 2 PM	0	1,935	0	0	2,051	0				0	0	0
2 PM - 3 PM	0	2,472	0	0	2,315	0				0	0	0
3 PM - 4 PM	0	3,048	0	0	2,573	0				0	0	0
4 PM - 5 PM	0	3,141	0	0	2,686	0				0	0	0
5 PM - 6 PM	0	3,111	0	0	2,558	0				0	0	0
Traffic Reassignment												
7 AM - 8 AM	27	0	0	0	-7	7				0	0	4
8 AM - 9 AM	42	0	0	0	-10	10				0	0	10
9 AM - 10 AM	33	0	0	0	-13	13				0	0	12
9:30 AM - 10:30 AM	39	0	0	0	-9	9				0	0	19
10 AM - 11 AM	41	0	0	0	-6	6				0	0	28
11 AM - 12 PM	26	0	0	0	-8	8				0	0	24
12 PM - 1 PM	40	0	0	0	-8	8				0	0	26
1 PM - 2 PM	36	0	0	0	-13	13				0	0	22
2 PM - 3 PM	25	0	0	0	-7	7				0	0	14
3 PM - 4 PM	24	0	0	0	-4	4				0	0	23
4 PM - 5 PM	20	0	0	0	-7	7				0	0	35
5 PM - 6 PM	20	0	0	0	-7	7				0	0	29

Project Traffic Volumes			Eastbound	Westbound	Northbound	Southbound
Inbound Assignment				5%		
Outbound Assignment			5%			
	Total Project Trips		Project Turning Movement Volumes Per Hour (= Assignment X Total Project Trips)			
	Inbound	Outbound				
7 AM - 8 AM	1	2	0	0		
8 AM - 9 AM	1	0	0	0		
9 AM - 10 AM	202	2	0	10		
9:30 AM - 10:30 AM	356	122	6	18		
10 AM - 11 AM	266	361	18	13		
11 AM - 12 PM	9	107	5	0		
12 PM - 1 PM	0	143	7	0		
1 PM - 2 PM	81	0	0	4		
2 PM - 3 PM	0	43	2	0		
3 PM - 4 PM	0	0	0	0		
4 PM - 5 PM	91	45	2	5		
5 PM - 6 PM	1	47	2	0		

2025 Total Volume	EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	NB Left	NB Through	NB Right	SB Left	SB Through	SB Right
7 AM - 8 AM	27	2,078	0	0	3,190	7				0	0	4
8 AM - 9 AM	42	2,291	0	0	2,593	10				0	0	10
9 AM - 10 AM	33	1,708	0	0	2,241	13				0	0	12
9:30 AM - 10:30 AM	39	1,703	0	0	2,104	9				0	0	19
10 AM - 11 AM	41	1,660	0	0	1,873	6				0	0	28
11 AM - 12 PM	26	1,751	0	0	1,911	8				0	0	24
12 PM - 1 PM	40	2,058	0	0	1,920	8				0	0	26
1 PM - 2 PM	36	1,935	0	0	2,042	13				0	0	22
2 PM - 3 PM	25	2,474	0	0	2,308	7				0	0	14
3 PM - 4 PM	24	3,048	0	0	2,569	4				0	0	23
4 PM - 5 PM	20	3,143	0	0	2,684	7				0	0	35
5 PM - 6 PM	20	3,113	0	0	2,551	7				0	0	29

Table 14: Access Scenario 2 Volume Development: Atlantic Boulevard / Duval Acura Driveway / Sutton Lakes Boulevard

	Atlantic Boulevard			Atlantic Boulevard			Sutton Lakes Boulevard			Duval Acura Driveway		
		Eastbound			**Westbound**			**Northbound**			**Southbound**	
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Existing Traffic												
7 AM - 8 AM	30	1639	57	41	2528	7	189	1	149	6	0	10
8 AM - 9 AM	47	1782	89	90	2068	3	127	1	150	11	1	20
9 AM - 10 AM	52	1312	52	71	1769	7	122	11	97	24	0	22
9:30 AM - 10:30 AM	57	1329	48	54	1641	6	94	11	77	14	0	32
10 AM - 11 AM	52	1295	45	61	1408	11	69	1	79	17	0	38
11 AM - 12 PM	35	1380	61	92	1463	8	71	0	84	18	2	37
12 PM - 1 PM	32	1608	76	104	1425	10	92	1	99	29	0	41
1 PM - 2 PM	48	1509	93	103	1628	10	68	1	97	25	1	38
2 PM - 3 PM	62	1839	110	116	1727	12	107	1	141	39	1	71
3 PM - 4 PM	30	2396	160	128	1989	6	81	1	135	25	2	40
4 PM - 5 PM	30	2456	193	181	2074	10	106	1	131	30	3	32
5 PM - 6 PM	33	2531	188	173	1959	4	99	0	148	26	1	49
PSCF	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***
2022 Peak Season Traffic												
7 AM - 8 AM	31	1,688	59	42	2,604	7	195	1	153	6	0	10
8 AM - 9 AM	48	1,835	92	93	2,130	3	131	1	155	11	1	21
9 AM - 10 AM	54	1,351	54	73	1,822	7	126	11	100	25	0	23
9:30 AM - 10:30 AM	59	1,369	49	56	1,690	6	97	11	79	14	0	33
10 AM - 11 AM	54	1,334	46	63	1,450	11	71	1	81	18	0	39
11 AM - 12 PM	36	1,421	63	95	1,507	8	73	0	87	19	2	38
12 PM - 1 PM	33	1,656	78	107	1,468	10	95	1	102	30	0	42
1 PM - 2 PM	49	1,554	96	106	1,677	10	70	1	100	26	1	39
2 PM - 3 PM	64	1,894	113	119	1,779	12	110	1	145	40	1	73
3 PM - 4 PM	31	2,468	165	132	2,049	6	83	1	139	26	2	41
4 PM - 5 PM	31	2,530	199	186	2,136	10	109	1	135	31	3	33
5 PM - 6 PM	34	2,607	194	178	2,018	4	102	0	152	27	1	50
Annual growth rate		3.80%			3.80%							
Background Growth (2022 to 2025)												
7 AM - 8 AM	0	192	0	0	297	0	0	0	0	0	0	0
8 AM - 9 AM	0	209	0	0	243	0	0	0	0	0	0	0
9 AM - 10 AM	0	154	0	0	208	0	0	0	0	0	0	0
9:30 AM - 10:30 AM	0	156	0	0	193	0	0	0	0	0	0	0
10 AM - 11 AM	0	152	0	0	165	0	0	0	0	0	0	0
11 AM - 12 PM	0	162	0	0	172	0	0	0	0	0	0	0
12 PM - 1 PM	0	189	0	0	167	0	0	0	0	0	0	0
1 PM - 2 PM	0	177	0	0	191	0	0	0	0	0	0	0
2 PM - 3 PM	0	216	0	0	203	0	0	0	0	0	0	0
3 PM - 4 PM	0	281	0	0	234	0	0	0	0	0	0	0
4 PM - 5 PM	0	288	0	0	244	0	0	0	0	0	0	0
5 PM - 6 PM	0	297	0	0	230	0	0	0	0	0	0	0
2025 Background Traffic												
7 AM - 8 AM	31	1,880	59	42	2,901	7	195	1	153	6	0	10
8 AM - 9 AM	48	2,044	92	93	2,373	3	131	1	155	11	1	21
9 AM - 10 AM	54	1,505	54	73	2,030	7	126	11	100	25	0	23
9:30 AM - 10:30 AM	59	1,525	49	56	1,883	6	97	11	79	14	0	33
10 AM - 11 AM	54	1,486	46	63	1,615	11	71	1	81	18	0	39
11 AM - 12 PM	36	1,583	63	95	1,679	8	73	0	87	19	2	38
12 PM - 1 PM	33	1,845	78	107	1,635	10	95	1	102	30	0	42
1 PM - 2 PM	49	1,731	96	106	1,868	10	70	1	100	26	1	39
2 PM - 3 PM	64	2,110	113	119	1,982	12	110	1	145	40	1	73
3 PM - 4 PM	31	2,749	165	132	2,283	6	83	1	139	26	2	41
4 PM - 5 PM	31	2,818	199	186	2,380	10	109	1	135	31	3	33
5 PM - 6 PM	34	2,904	194	178	2,248	4	102	0	152	27	1	50
Traffic Reassignment												
7 AM - 8 AM	0	0	0	0	0	0	0	0	0	0	0	0
8 AM - 9 AM	0	0	0	0	0	0	0	0	0	0	0	0
9 AM - 10 AM	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM - 10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
10 AM - 11 AM	0	0	0	0	0	0	0	0	0	0	0	0
11 AM - 12 PM	0	0	0	0	0	0	0	0	0	0	0	0
12 PM - 1 PM	0	0	0	0	0	0	0	0	0	0	0	0
1 PM - 2 PM	0	0	0	0	0	0	0	0	0	0	0	0
2 PM - 3 PM	0	0	0	0	0	0	0	0	0	0	0	0
3 PM - 4 PM	0	0	0	0	0	0	0	0	0	0	0	0
4 PM - 5 PM	0	0	0	0	0	0	0	0	0	0	0	0
5 PM - 6 PM	0	0	0	0	0	0	0	0	0	0	0	0

Project Traffic Volumes			EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	NB Left	NB Through	NB Right	SB Left	SB Through	SB Right
Inbound Assignment			0%				5%	20%						
Outbound Assignment				5%								20%		
	Total Project Trips		Project Turning Movement Volumes Per Hour (= Assignment X Total Project Trips)											
	Inbound	Outbound												
7 AM - 8 AM	1	2	0	0			0	0				0		
8 AM - 9 AM	1	0	0	0			0	0				0		
9 AM - 10 AM	202	2	0	0			10	40				0		
9:30 AM - 10:30 AM	356	122	0	6			18	71				24		
10 AM - 11 AM	266	361	0	18			13	53				72		
11 AM - 12 PM	9	107	0	5			0	2				21		
12 PM - 1 PM	0	143	0	7			0	0				29		
1 PM - 2 PM	81	0	0	0			4	16				0		
2 PM - 3 PM	0	43	0	2			0	0				9		
3 PM - 4 PM	0	0	0	0			0	0				0		
4 PM - 5 PM	91	45	0	2			5	18				9		
5 PM - 6 PM	1	47	0	2			0	0				9		

2025 Total Volume	EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	NB Left	NB Through	NB Right	SB Left	SB Through	SB Right
7 AM - 8 AM	31	1,880	59	42	2,901	7	195	1	153	6	0	10
8 AM - 9 AM	48	2,044	92	93	2,373	3	131	1	155	11	1	21
9 AM - 10 AM	54	1,505	54	73	2,040	47	126	11	100	25	0	23
9:30 AM - 10:30 AM	59	1,531	49	56	1,901	77	97	11	79	38	0	33
10 AM - 11 AM	54	1,504	46	63	1,628	64	71	1	81	90	0	39
11 AM - 12 PM	36	1,588	63	95	1,679	10	73	0	87	40	2	38
12 PM - 1 PM	33	1,852	78	107	1,635	10	95	1	102	59	0	42
1 PM - 2 PM	49	1,731	96	106	1,872	26	70	1	100	26	1	39
2 PM - 3 PM	64	2,112	113	119	1,982	12	110	1	145	49	1	73
3 PM - 4 PM	31	2,749	165	132	2,283	6	83	1	139	26	2	41
4 PM - 5 PM	31	2,820	199	186	2,385	28	109	1	135	40	3	33
5 PM - 6 PM	34	2,906	194	178	2,248	4	102	0	152	36	1	50

Table 15: Access Scenario 2 Volume Development: Internal Duval Acura Intersection

	Internal E-W Road			Internal E-W Road			Duval Acura Driveway			Duval Acura Driveway		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2022 Existing Traffic												
7 AM - 8 AM	0	0	0	12	0	0	0	9	29	0	4	0
8 AM - 9 AM	0	0	0	24	0	0	0	12	39	0	8	0
9 AM - 10 AM	0	0	0	34	0	0	0	16	54	0	12	0
9:30 AM - 10:30 AM	0	0	0	34	0	0	0	17	57	0	12	0
10 AM - 11 AM	0	0	0	41	0	0	0	15	49	0	14	0
11 AM - 12 PM	0	0	0	42	0	0	0	10	33	0	15	0
12 PM - 1 PM	0	0	0	52	0	0	0	10	33	0	18	0
1 PM - 2 PM	0	0	0	47	0	0	0	14	45	0	17	0
2 PM - 3 PM	0	0	0	82	0	0	0	17	58	0	29	0
3 PM - 4 PM	0	0	0	50	0	0	0	9	28	0	17	0
4 PM - 5 PM	0	0	0	48	0	0	0	9	32	0	17	0
5 PM - 6 PM	0	0	0	56	0	0	0	9	28	0	20	0
PSCF	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***	***1.03***
2022 Peak Season Traffic												
7 AM - 8 AM	0	0	0	12	0	0	0	9	30	0	4	0
8 AM - 9 AM	0	0	0	25	0	0	0	12	40	0	8	0
9 AM - 10 AM	0	0	0	35	0	0	0	16	56	0	12	0
9:30 AM - 10:30 AM	0	0	0	35	0	0	0	18	59	0	12	0
10 AM - 11 AM	0	0	0	42	0	0	0	15	50	0	14	0
11 AM - 12 PM	0	0	0	43	0	0	0	10	34	0	15	0
12 PM - 1 PM	0	0	0	54	0	0	0	10	34	0	19	0
1 PM - 2 PM	0	0	0	48	0	0	0	14	46	0	18	0
2 PM - 3 PM	0	0	0	84	0	0	0	18	60	0	30	0
3 PM - 4 PM	0	0	0	52	0	0	0	9	29	0	18	0
4 PM - 5 PM	0	0	0	49	0	0	0	9	33	0	18	0
5 PM - 6 PM	0	0	0	58	0	0	0	9	29	0	21	0
Annual growth rate												
Background Growth (2022 to 2025)												
7 AM - 8 AM	0	0	0	0	0	0	0	0	0	0	0	0
8 AM - 9 AM	0	0	0	0	0	0	0	0	0	0	0	0
9 AM - 10 AM	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM - 10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
10 AM - 11 AM	0	0	0	0	0	0	0	0	0	0	0	0
11 AM - 12 PM	0	0	0	0	0	0	0	0	0	0	0	0
12 PM - 1 PM	0	0	0	0	0	0	0	0	0	0	0	0
1 PM - 2 PM	0	0	0	0	0	0	0	0	0	0	0	0
2 PM - 3 PM	0	0	0	0	0	0	0	0	0	0	0	0
3 PM - 4 PM	0	0	0	0	0	0	0	0	0	0	0	0
4 PM - 5 PM	0	0	0	0	0	0	0	0	0	0	0	0
5 PM - 6 PM	0	0	0	0	0	0	0	0	0	0	0	0
2025 Background Traffic												
7 AM - 8 AM	0	0	0	12	0	0	0	9	30	0	4	0
8 AM - 9 AM	0	0	0	25	0	0	0	12	40	0	8	0
9 AM - 10 AM	0	0	0	35	0	0	0	16	56	0	12	0
9:30 AM - 10:30 AM	0	0	0	35	0	0	0	18	59	0	12	0
10 AM - 11 AM	0	0	0	42	0	0	0	15	50	0	14	0
11 AM - 12 PM	0	0	0	43	0	0	0	10	34	0	15	0
12 PM - 1 PM	0	0	0	54	0	0	0	10	34	0	19	0
1 PM - 2 PM	0	0	0	48	0	0	0	14	46	0	18	0
2 PM - 3 PM	0	0	0	84	0	0	0	18	60	0	30	0
3 PM - 4 PM	0	0	0	52	0	0	0	9	29	0	18	0
4 PM - 5 PM	0	0	0	49	0	0	0	9	33	0	18	0
5 PM - 6 PM	0	0	0	58	0	0	0	9	29	0	21	0
Traffic Reassignment												
7 AM - 8 AM	0	0	0	0	0	0	0	0	0	0	0	0
8 AM - 9 AM	0	0	0	0	0	0	0	0	0	0	0	0
9 AM - 10 AM	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM - 10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
10 AM - 11 AM	0	0	0	0	0	0	0	0	0	0	0	0
11 AM - 12 PM	0	0	0	0	0	0	0	0	0	0	0	0
12 PM - 1 PM	0	0	0	0	0	0	0	0	0	0	0	0
1 PM - 2 PM	0	0	0	0	0	0	0	0	0	0	0	0
2 PM - 3 PM	0	0	0	0	0	0	0	0	0	0	0	0
3 PM - 4 PM	0	0	0	0	0	0	0	0	0	0	0	0
4 PM - 5 PM	0	0	0	0	0	0	0	0	0	0	0	0
5 PM - 6 PM	0	0	0	0	0	0	0	0	0	0	0	0

Project Traffic Volumes

Project Turning Movement Volumes Per Hour (= Assignment X Total Project Trips)

	Total Project Trips		EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	NB Left	NB Through	NB Right	SB Left	SB Through	SB Right
	Inbound	Outbound												
Inbound Assignment									20%					
Outbound Assignment					20%									
7 AM - 8 AM	1	2			0				0				0	
8 AM - 9 AM	1	0			0				0				0	
9 AM - 10 AM	202	2			0				40				0	
9:30 AM - 10:30 AM	356	122			24				71				0	
10 AM - 11 AM	266	361			72				53				0	
11 AM - 12 PM	9	107			21				2				0	
12 PM - 1 PM	0	143			29				0				0	
1 PM - 2 PM	81	0			0				16				0	
2 PM - 3 PM	0	43			9				0				0	
3 PM - 4 PM	0	0			0				0				0	
4 PM - 5 PM	91	45			9				18				0	
5 PM - 6 PM	1	47			9				0				0	

2025 Total Volume	EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	NB Left	NB Through	NB Right	SB Left	SB Through	SB Right
7 AM - 8 AM	0	0	0	12	0	0	0	9	30	0	4	0
8 AM - 9 AM	0	0	0	25	0	0	0	12	40	0	8	0
9 AM - 10 AM	0	0	0	35	0	0	40	16	56	0	12	0
9:30 AM - 10:30 AM	0	0	24	35	0	0	71	18	59	0	12	0
10 AM - 11 AM	0	0	72	42	0	0	53	15	50	0	14	0
11 AM - 12 PM	0	0	21	43	0	0	2	10	34	0	15	0
12 PM - 1 PM	0	0	29	54	0	0	0	10	34	0	19	0
1 PM - 2 PM	0	0	0	48	0	0	16	14	46	0	18	0
2 PM - 3 PM	0	0	9	84	0	0	0	18	60	0	30	0
3 PM - 4 PM	0	0	0	52	0	0	0	9	29	0	18	0
4 PM - 5 PM	0	0	9	49	0	0	18	9	33	0	18	0
5 PM - 6 PM	0	0	9	58	0	0	0	9	29	0	21	0

Future Conditions Analysis

The study intersections were then analyzed using *Synchro 11* and *SimTraffic* for projected 2025 volumes including project traffic for access scenarios 1, 2 and 3. Signal timings were optimized while maintaining the existing overall cycle lengths. Synchro outputs are included in **Appendix H**. For scenarios 1 and 2, the eastbound left-turn lane at the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard intersection was modeled as extended from its existing length. With the available room in the existing median, the turn lane could be extended to a total length of approximately 460 feet, including 410 feet of full width storage and a 50-foot taper. The following time periods were analyzed for future conditions:

- 7:00 AM to 8:00 AM (AM peak hour along Atlantic Boulevard)
- 9:30 AM to 10:30 AM (peak hour of inbound project traffic)
- 10:00 AM to 11:00 AM (peak hour of outbound project traffic)
- 4:00 PM to 5:00 PM (PM peak hour along Atlantic Boulevard)

During the peak hour of inbound project traffic (9:30 AM to 10:30 AM) under access scenario 1, even with 20 seconds added to the eastbound left-turn phase at the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard intersection (removed 10 seconds from side street phase and 10 seconds from westbound through phase), the eastbound left-turn movement is still anticipated to operate with a volume to capacity ratio greater than 1.0, and the 95th percentile queue length in eastbound left-turn lane is anticipated to exceed the available storage length. During the peak hour of inbound project traffic (9:30 AM to 10:30 AM) under access scenario 2, with 20 seconds added to the eastbound left-turn phase at the Atlantic Boulevard / General Doolittle Drive / Sandalwood Boulevard intersection (compared to the existing eastbound left-turn split time at the Atlantic Boulevard / Arlington Toyota Driveway / Mindanao Drive intersection), the eastbound left-turn movement is anticipated to operate with a volume to capacity ratio of less than 1.0 and a 95th percentile queue length well under the available storage length. During the peak hour of inbound project traffic (9:30 AM to 10:30 AM) under access scenario 3, the eastbound left-turn movement was evaluated at the Atlantic Boulevard / proposed north-south road / Sutton Lakes Boulevard intersection, and with the dual turn lanes, the left-turn movement is anticipated to operate with a volume to capacity ratio well under 1.0 and a 95th percentile queue length well under the proposed storage length. The eastbound left-turn lane analysis for the peak hour of inbound traffic is summarized in **Table 16**.

Table 16: Anticipated Queueing and V/C Ratios During Peak of Inbound Traffic

Access Scenario	Intersection	Time Period	Movement	Turn Lane Length	95th Percentile Queue Length	V/C Ratio
1	Atlantic Boulevard / Duval Acura / Sutton Lakes Boulevard	9:30 AM to 10:30 AM	EBL	410' *	532'	1.04
2	Atlantic Boulevard / General Doolittle Drive / Sandalwood Boulevard			665' **	445'	0.95
3	Atlantic Boulevard / Proposed North-South Road / Sutton Lakes Boulevard			290' ***	206'	0.76

*Maximum approximate full width length possible with turn lane extension

**Approximate full width turn lane length from Figure 2

***Approximate full width turn lane length from Figure 3

During the peak hour of outbound project traffic (10:00 AM to 11:00 AM), all scenarios are anticipated to accommodate outbound queueing without any additional side street green time compared to existing. The southbound approaches to the Atlantic Boulevard / General Doolittle Drive / Sandalwood Boulevard intersection and the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard intersection are anticipated to operate at volume to capacity ratios less than 1.0 for all scenarios. For access scenarios 1 and 2, the SimTraffic animation shows the southbound queue at the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard intersection extending past the internal Duval Acura intersection, located just to the north. However, the SimTraffic animation also shows the southbound queue at the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard intersection clearing on green each cycle for both access scenarios during the peak hour of outbound project traffic. Because some vehicles will be required to traverse both the internal Duval Acura stop-controlled intersection and the signalized Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard during a single southbound green phase, the City should consider increasing the southbound vehicle detection extension time at the signalized intersection to account for the possibility of larger than normal gaps between southbound queued vehicles at the intersection.

Table 17 summarizes the LOS and delays for projected 2025 conditions with project traffic for access scenario 1. This table shows the projected HCM levels of service and delays at the studied intersections. As shown in Table 17, the signalized Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard intersection is projected to operate at an overall LOS D during the PM peak hour and overall LOS C during the other three hours analyzed. As noted previously, the eastbound left-turn movement volume to capacity ratio is reported as over 1.0 during the peak hour of inbound project traffic, and this approach is shown in red in the table. The signalized Atlantic Boulevard / Arlington Toyota Driveway / Mindanao Drive intersection is projected to operate at an overall LOS C during the PM peak hour and overall LOS B during the other three hours analyzed, and all movement volume to capacity ratios are reported as less than 1.0 at this intersection. The southbound approach at the Atlantic Boulevard / General Doolittle Drive / Sandalwood Boulevard intersection is anticipated to operate at LOS C or better during each peak hour under the project traffic assignment assumed.

Table 17: Scenario 1 Future LOS and Delay

Intersection	Peak Hour	Projected 2025 Level of Service and Delay (s)				
		EB	WB	NB	SB	Overall
Atlantic Boulevard / Arlington Toyota Driveway / Mindanao Drive	7:00-8:00 AM	A	B	F	F	**B**
		8.2	13.4	91.4	85.3	**13.2**
	9:30-10:30 AM	B	B	E	E	**B**
		10.0	11.0	70.9	73.8	**12.6**
	10:00-11:00 AM	A	A	E	E	**B**
		8.2	8.8	73.1	74.5	**10.6**
	4:00-5:00 PM	C	B	F	F	**C**
		23.2	18.5	89.2	88.4	**23.6**
Atlantic Boulevard / General Doolittle Drive / Sandalwood Boulevard	7:00-8:00 AM	-	-	B	C	**-**
		-	-	13.5	21.5	**-**
	9:30-10:30 AM	-	-	B	B	**-**
		-	-	13.3	14.9	**-**
	10:00-11:00 AM	-	-	B	C	**-**
		-	-	12.6	18.5	**-**
	4:00-5:00 PM	-	-	D	C	**-**
		-	-	32.5	19.0	**-**
Atlantic Boulevard / Duval Acura Driveway / Sutton Lakes Boulevard	7:00-8:00 AM	B	C	F	E	**C**
		17.8	27.0	82.4	66.9	**27.2**
	9:30-10:30 AM	C	C	E	E	**C**
		29.0	28.1	74.8	69.7	**31.5**
	10:00-11:00 AM	C	C	E	E	**C**
		23.5	22.4	71.5	77.2	**27.8**
	4:00-5:00 PM	D	C	F	F	**D**
		40.4	26.1	94.6	83.0	**36.9**

Table 18 summarizes the LOS and delays for projected 2025 conditions with project traffic for access scenario 2. As shown in Table 18, the signalized Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard intersection is projected to operate at an overall LOS C or B during all hours analyzed. The signalized Atlantic Boulevard / General Doolittle Drive / Sandalwood Boulevard intersection is projected to operate at an overall LOS D during the PM peak hour and overall LOS B during the other three hours analyzed. All movement volume to capacity ratios are reported as less than 1.0 at both signalized intersections.

Table 18: Scenario 2 Future LOS and Delay

Intersection	Peak Hour	Projected 2025 Level of Service and Delay (s)				
		EB	WB	NB	SB	Overall
Atlantic Boulevard / General Doolittle Drive / Sandalwood Boulevard	7:00-8:00 AM	B	B	F	E	**B**
		14.1	18.7	88.5	78.7	**18.4**
	9:30-10:30 AM	C	A	E	D	**B**
		23.1	6.2	74.1	51.2	**16.5**
	10:00-11:00 AM	C	A	E	D	**B**
		26.0	5.7	61.7	48.2	**18.9**
	4:00-5:00 PM	D	D	F	E	**D**
		37.6	46.2	90.0	73.9	**43.0**
Atlantic Boulevard / Duval Acura Driveway / Sutton Lakes Boulevard	7:00-8:00 AM	B	C	F	E	**C**
		17.7	26.9	82.4	66.8	**27.1**
	9:30-10:30 AM	B	B	E	E	**B**
		12.2	13.3	74.4	67.9	**16.5**
	10:00-11:00 AM	B	B	E	E	**B**
		10.9	11.1	77.6	74.9	**15.8**
	4:00-5:00 PM	D	C	F	F	**C**
		37.8	21.8	94.6	82.6	**33.5**

Table 19 summarizes the LOS and delays for projected 2025 conditions with project traffic for access scenario 3. Because the Atlantic Boulevard / Arlington Toyota driveway / Mindanao Drive intersection and the Atlantic Boulevard / General Doolittle Drive / Sandalwood Boulevard intersection include the same traffic volume in scenario 3 and they do scenario 1, Table 19 only shows the operating conditions for the Atlantic Boulevard / proposed north-south road / Sutton Lakes Boulevard intersection. Also, because HCM does not support the alternative intersection configuration proposed in scenario 3, the results shown in Table 19 are Synchro delay and LOS results. As shown in Table 19, this intersection is projected to operate at an overall LOS D during

the PM peak hour and overall LOS C during the other three hours analyzed. All movement volume to capacity ratios are reported as less than 1.0.

Table 19: Scenario 3 Future LOS and Delay

Intersection	Peak Hour	Projected 2025 Level of Service and Delay (s)				
		EB	WB	NB	SB	Overall
Atlantic Boulevard / Proposed North-South Road / Sutton Lakes Boulevard	7:00-8:00 AM	B	C	E	E	**C**
		19.2	26.4	65.4	62.1	**26.3**
	9:30-10:30 AM	C	C	D	D	**C**
		25.6	22.6	52.5	42.0	**25.6**
	10:00-11:00 AM	C	B	D	D	**C**
		25.8	18.6	45.0	53.8	**24.7**
	4:00-5:00 PM	D	C	D	E	**D**
		54.5	22.3	53.8	68.3	**40.6**

Conclusion

The Applicant is currently working on the development of a delivery station proposed to be located north of Atlantic Boulevard, just east of the existing Jacksonville Executive at Craig Airport in Jacksonville, Florida. The project proposes to construct a new north-south roadway just west of the existing Duval Acura car dealership for access to the proposed facility. This new north-south roadway is proposed to connect to the existing east-west internal roadway that runs south of the Duval Acura dealership. The project also proposes to construct a new east-west roadway from the existing east-west portion of General Doolittle Drive to the project’s new north-south roadway adjacent to Duval Acura. There is an existing traffic signal on Atlantic Boulevard at the Duval Acura driveway, and General Doolittle intersects with Atlantic Boulevard as a right-in/right-out only connection. These two connections (Duval Acura driveway and General Doolittle Drive) would serve as the project’s access connections to Atlantic Boulevard. Based on coordination with FDOT, this traffic analysis considered multiple access scenarios for the proposed delivery station.

In access scenario 1, the existing traffic signals on Atlantic Boulevard are assumed to remain in their current locations. Because General Doolittle Drive is limited to right-in/right-out at Atlantic Boulevard, all project left-turning traffic to and from Atlantic Boulevard was assigned to use the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard signalized intersection and the proposed north-south roadway just west of Duval Acura for access. Right-turning project traffic to and from Atlantic Boulevard was assigned to use either the Atlantic Boulevard / General Doolittle Drive intersection or the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard signalized intersection.

Based on coordination with FDOT, a second access scenario was considered. In access scenario 2, the existing traffic signal at the Atlantic Boulevard / Arlington Toyota driveway / Mindanao Drive intersection was considered to be removed, and this intersection was treated as right-in/right-out. A new traffic signal was assumed at the Atlantic Boulevard / General Doolittle Drive / Sandalwood Boulevard intersection. With the new traffic signal, the existing full median opening at the Atlantic Boulevard / George Moore Chevrolet driveway / Hawaii Drive intersection would be closed. Hawaii Drive would be limited to right-in/right-out, and the George Moore Chevrolet driveway would be relocated to the east. A new directional median opening would be constructed at the new George Moore Chevrolet driveway.

A third access scenario was also evaluated based on coordination with FDOT. For access scenario 3, the new north-south roadway just west of the Duval Acura dealership would intersect with Atlantic Boulevard. The existing Duval Acura driveway to Atlantic Boulevard would be converted to right-in/right-out, and the Atlantic Boulevard / new north-south road / Sutton Lakes Boulevard offset intersection would operate as a single signalized intersection. This intersection geometry allows for two eastbound left-turn lanes to be constructed at the intersection to serve inbound project traffic as well as inbound Duval Acura traffic. The internal east-west road that runs south of Duval Acura would have right-in/right-out access from both sides of the proposed north-south road. A teardrop roundabout would serve vehicles exiting the Duval Acura dealership wishing to make a left turn onto Atlantic Boulevard.

Kimley-Horn analyzed the project's access intersections for all three access scenarios. Traffic count data was collected from 7:00 AM to 6:00 PM to capture the existing peak volumes along Atlantic Boulevard, the existing side street peak volumes, and the existing volumes during the peaks of inbound and outbound project traffic. The analysis for access scenario 2 included the reassignment of existing volumes based on the new geometry considered. For all three access scenarios, it is recommended to extend the existing eastbound left-turn lane at the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard from its existing length. For access scenarios 1 and 2, with the available room in the existing median, the turn lane could be extended to a total length of approximately 460 feet, including 410 feet of full width storage and a 50-foot taper. Scenario 3 includes and additional eastbound left-turn lane at the reconfigured Atlantic Boulevard / proposed north-south road / Sutton Lakes Boulevard.

During the peak hour of inbound project traffic for access scenario 1, it was determined that even with signal timing modifications and the extended turn lane, the eastbound left-turn movement at the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard intersection is anticipated to operate with a volume to capacity ratio greater than 1.0, and the 95th percentile queue for this movement is anticipated to exceed the available turn lane storage length and extend into the through lanes on Atlantic Boulevard. For access scenario 2, the project inbound left turns from Atlantic Boulevard would use the new traffic signal at the Atlantic Boulevard / General Doolittle Drive / Sandalwood Boulevard intersection. During the peak hour of inbound project traffic for access scenario 2, the eastbound left-turn movement at new signalized intersection is anticipated to operate with a volume to capacity ratio of less than 1.0 and a 95th percentile queue length well under the available storage length. During the peak hour of inbound project traffic for access scenario 3, the eastbound left-turn movement at the Atlantic Boulevard / proposed north-south road / Sutton Lakes Boulevard intersection is anticipated to operate with a volume to capacity ratio well under 1.0 and a 95th percentile queue length well under the proposed storage length.

The project proposes to construct an east-west roadway, parallel to Atlantic Boulevard, that will provide rear access driveways to each of the existing car dealerships between General Doolittle Drive and the Duval Acura dealership. The intent of the rear connections to the east-west roadway is to give the heavy vehicles destined for the car dealerships an alternate route besides Atlantic Boulevard and potentially reduce truck traffic on this stretch of Atlantic Boulevard. Under access scenarios 2 and 3, more trucks destined to or originated from for the existing car dealerships would be expected to use the rear access road than under access scenario 1.

The existing four-legged internal intersection just north of the Atlantic Boulevard / Duval Acura driveway / Sutton Lakes Boulevard intersection operates under three-way stop control and includes a significant offset on the two legs of the intersection that run north-south. The Applicant wishes to minimize the traffic added to this offset intersection that is located very close to Atlantic Boulevard. Under access scenario 2, the project traffic added to this intersection is far less than that the project traffic added to this intersection under access scenario 1. Under access scenario 3, the project would reduce the traffic volume at this intersection compared to existing.

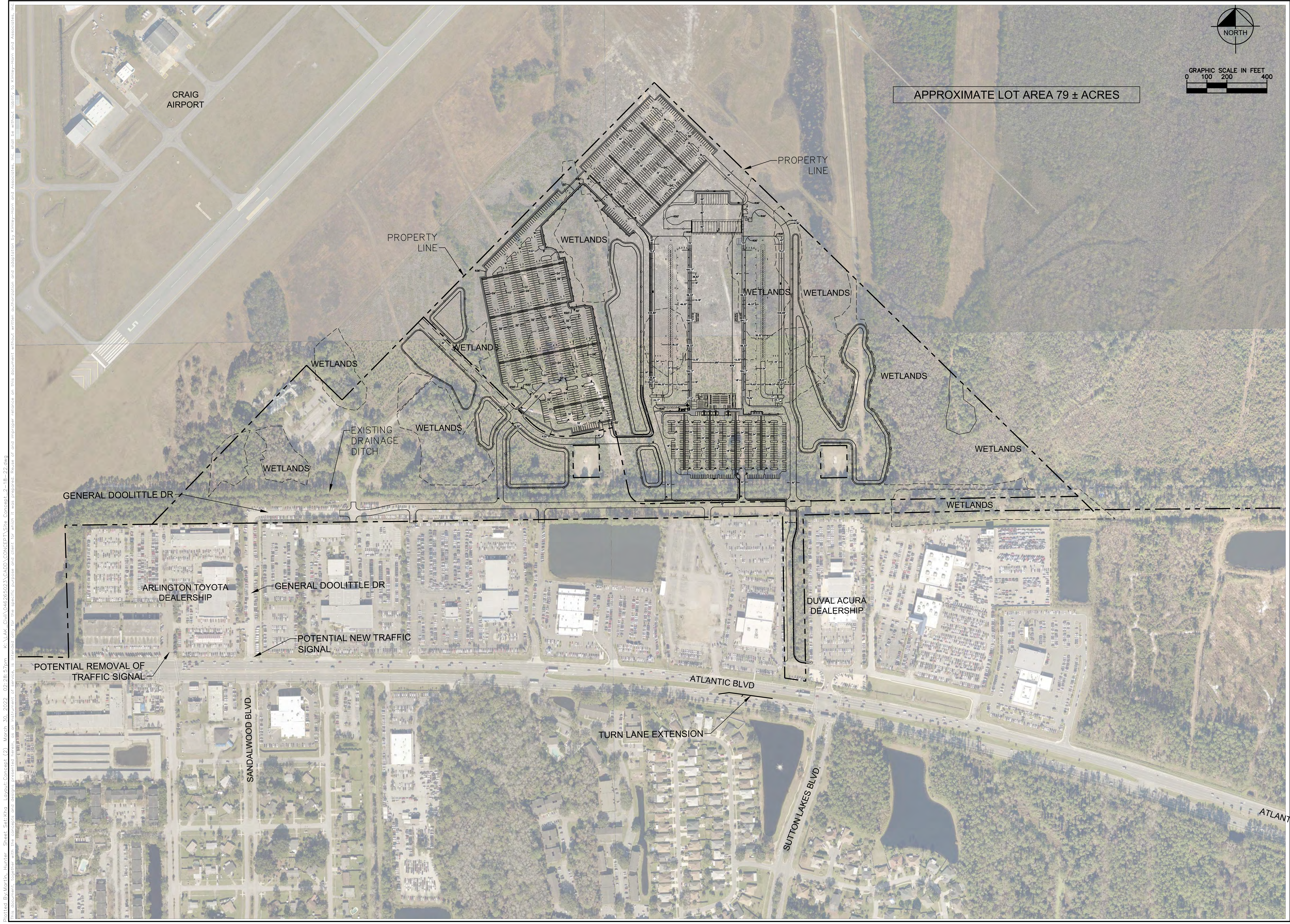
Based on these findings, access scenarios 2 or 3 are recommended over access scenario 1. The Applicant understands that the changes in access required for scenarios 2 or 3 are subject to a public hearing process, as access to several existing businesses and residences would be affected. Because access scenario 3 results in less impacts to existing businesses and residences than access scenario 2 does, access scenario 3 is the recommended alternative.

The Applicant has also considered the possibility of another access scenario in which a new north-south road is constructed in between the Coggin Honda dealership and the Jenkins Hyundai dealership. The Applicant has received positive feedback from Coggin Honda and Jenkins Hyundai regarding this access scenario, as long as it would include a new traffic signal at the intersection of the new north-south road with Atlantic Boulevard and the Cypress Cove apartment community driveway. However, Atlantic Boulevard is designated by FDOT as Access Class 3 at this intersection, which includes a standard traffic signal spacing of 2,640 feet. FDOT has stated that because of the Access Class 3 designation and the spacing of adjacent traffic signals, a new full access traffic signal would likely not be allowed at this intersection. It should be noted that the Access Class on Atlantic Boulevard transitions from Class 6 to Class 3 at General Doolittle Drive (Class 6 to the west, Class 3 to the east). Therefore, if the Class 6 designation could be extended slightly further east, or if the signal spacing for the considered intersection were to be treated under Access Class 5/6 spacing criteria, then the considered signal location would meet spacing standards.

The applicant intends to continue to work with FDOT and the City of Jacksonville to refine the project's proposed access to and from the State and City roadway networks.

Appendix A:

Conceptual Site Plan



No. | REVISIONS | DATE | BY

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LICENSED PROFESSIONAL
FOR INFORMATIONAL PURPOSES ONLY
DATE:

KHA PROJECT
DATE OCTOBER 2021
SCALE AS SHOWN
DESIGNED BY
DRAWN BY
CHECKED BY

CONCEPTUAL LAYOUT

SITE PLAN

CITY OF JACKSONVILLE FLORIDA

SHEET NUMBER
1 OF 1

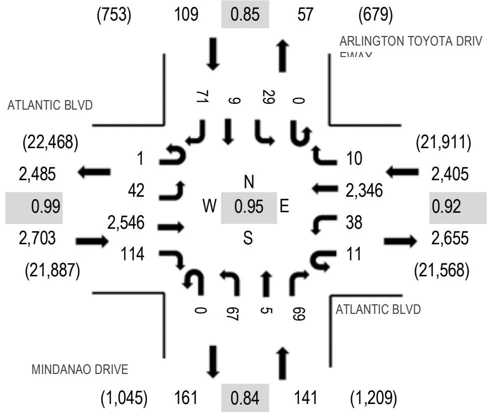
Appendix B:

Data Collection

(303) 216-2439
www.alltrafficdata.net

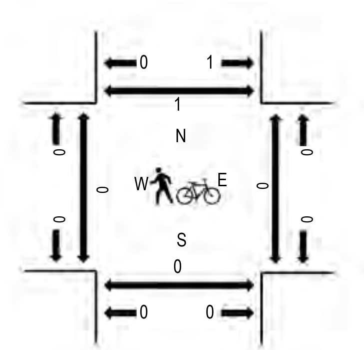
Location: 1 MINDANAO DRIVE & ATLANTIC BLVD AM
Date: Tuesday, February 8, 2022
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	ATLANTIC BLVD Eastbound U-Turn	Left	Thru	Right	ATLANTIC BLVD Westbound U-Turn	Left	Thru	Right	MINDANAO DRIVE Northbound U-Turn	Left	Thru	Right	ARLINGTON TOYOTA DRIVEWAY Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
7:00 AM	0	6	365	4	0	2	624	7	0	13	2	9	0	1	0	2	1,035	4,616	0	0	0	0
7:15 AM	0	7	373	6	0	2	725	2	0	14	1	14	0	1	0	1	1,146	4,699	0	0	0	0
7:30 AM	0	11	496	10	0	5	680	2	0	18	2	10	0	0	0	7	1,241	4,571	0	0	0	0
7:45 AM	0	11	490	14	3	8	635	1	0	12	3	12	0	2	1	2	1,194	4,463	0	0	0	0
8:00 AM	0	8	522	10	0	1	534	1	0	9	7	21	0	1	0	4	1,118	4,306	0	0	0	0
8:15 AM	0	9	399	10	2	9	541	3	0	14	2	19	0	4	1	5	1,018	4,017	0	0	0	0
8:30 AM	0	21	497	13	1	5	560	3	0	12	1	14	0	2	0	4	1,133	3,892	0	1	1	1
8:45 AM	0	13	462	9	3	5	491	6	0	16	5	15	0	2	1	9	1,037	3,682	0	0	0	0
9:00 AM	0	8	350	8	2	5	420	3	0	11	2	8	0	3	1	8	829	3,533	0	0	0	0
9:15 AM	0	10	352	10	0	2	488	1	0	8	4	8	0	3	0	7	893	3,547	0	0	0	0
9:30 AM	0	14	332	9	2	3	506	6	0	14	1	13	0	9	2	12	923	3,420	0	0	0	0
9:45 AM	0	13	387	7	0	7	429	5	0	8	1	12	0	7	1	11	888	3,302	0	0	0	0
10:00 AM	0	14	356	20	3	7	409	3	0	4	3	7	0	5	0	12	843	3,172	0	2	0	0
10:15 AM	0	7	343	7	1	2	374	1	0	11	0	6	0	3	2	9	766	3,111	0	0	0	0
10:30 AM	1	7	352	12	3	2	389	2	0	12	2	7	0	3	0	13	805	3,159	0	0	0	0
10:45 AM	0	2	346	9	0	2	361	1	0	11	0	13	0	4	1	8	758	3,140	0	0	0	0
11:00 AM	0	15	314	13	0	5	387	3	0	16	2	4	0	12	1	10	782	3,269	0	0	0	0
11:15 AM	0	8	343	14	2	3	412	1	0	8	2	6	0	7	0	8	814	3,351	0	0	0	0
11:30 AM	0	6	357	12	2	3	364	6	0	12	2	9	0	3	2	8	786	3,434	0	0	0	0
11:45 AM	0	9	401	10	0	3	418	4	0	11	0	10	0	8	1	12	887	3,572	0	0	0	1
12:00 PM	1	2	403	16	0	6	392	2	0	8	0	7	0	12	0	15	864	3,598	0	3	0	0
12:15 PM	0	11	421	24	1	2	395	3	0	17	0	13	1	3	2	4	897	3,610	1	2	0	0
12:30 PM	0	12	465	12	0	2	394	0	0	16	1	11	0	5	1	5	924	3,608	0	0	1	0
12:45 PM	0	13	413	23	2	4	414	2	0	9	2	12	0	7	1	11	913	3,573	0	0	0	0
1:00 PM	0	13	376	22	2	4	422	2	0	11	1	12	0	5	0	6	876	3,588	0	2	0	0
1:15 PM	0	12	400	11	3	11	408	8	0	15	2	6	0	6	1	12	895	3,745	0	0	0	0
1:30 PM	0	14	384	22	1	10	413	3	0	11	5	13	0	4	1	8	889	3,867	0	0	0	0
1:45 PM	0	18	428	18	4	9	407	5	0	11	3	10	0	3	1	11	928	4,041	0	0	0	0
2:00 PM	0	9	466	13	1	5	480	1	0	14	2	13	0	9	2	18	1,033	4,280	0	0	0	0
2:15 PM	0	12	472	12	3	7	460	1	0	19	2	13	0	5	1	10	1,017	4,338	0	0	0	0
2:30 PM	0	8	518	21	2	8	437	9	0	19	2	18	0	8	1	12	1,063	4,681	0	0	0	0
2:45 PM	0	9	577	18	0	5	505	4	0	18	1	10	0	8	2	10	1,167	4,931	0	0	0	0
3:00 PM	0	9	537	19	3	10	461	2	0	13	2	16	0	5	1	13	1,091	5,047	0	2	0	0
3:15 PM	0	13	652	28	2	9	618	1	0	7	1	15	0	5	1	8	1,360	5,206	0	0	0	0
3:30 PM	0	14	651	26	6	10	545	4	0	15	1	18	0	10	1	12	1,313	5,205	0	0	0	0

3:45 PM	0	10	661	17	4	7	525	3	0	14	2	17	0	10	0	13	1,283	5,297	0	0	0	0
4:00 PM	0	11	643	27	2	9	487	5	0	26	3	13	0	7	3	14	1,250	5,265	0	0	0	0
4:15 PM	0	11	645	29	6	14	600	6	0	11	1	16	0	3	3	14	1,359	5,310	0	0	0	0
4:30 PM	0	12	643	36	4	10	629	4	0	17	3	18	0	9	4	16	1,405	5,358	0	0	0	0
4:45 PM	1	10	548	30	3	7	589	2	0	19	0	13	0	5	3	21	1,251	5,189	0	0	0	1
5:00 PM	0	12	650	26	2	9	524	2	0	22	1	18	0	8	2	19	1,295	5,086	0	0	0	0
5:15 PM	0	8	705	22	2	12	604	2	0	9	1	20	0	7	0	15	1,407		0	0	0	0
5:30 PM	0	11	653	28	2	12	464	2	0	14	3	17	0	13	2	15	1,236		0	0	0	0
5:45 PM	0	7	547	22	5	5	502	3	0	14	0	9	0	7	1	26	1,148		1	0	0	0

Peak Rolling Hour Flow Rates

	Eastbound				Westbound				Northbound				Southbound				
Vehicle Type	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	4	0	0	0	5	0	0	1	0	0	0	0	0	0	10
Lights	1	42	2,532	114	11	37	2,314	10	0	62	5	69	0	29	9	71	5,306
Mediums	0	0	10	0	0	1	27	0	0	4	0	0	0	0	0	0	42
Total	1	42	2,546	114	11	38	2,346	10	0	67	5	69	0	29	9	71	5,358

(303) 216-2439
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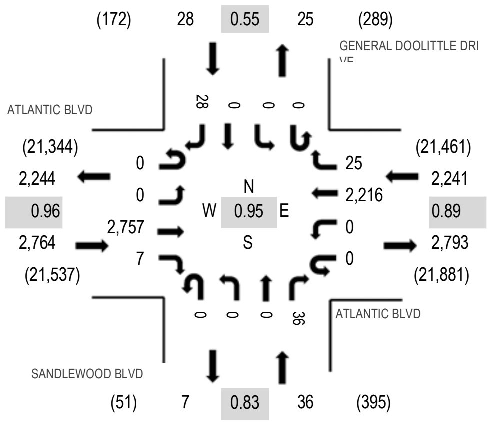
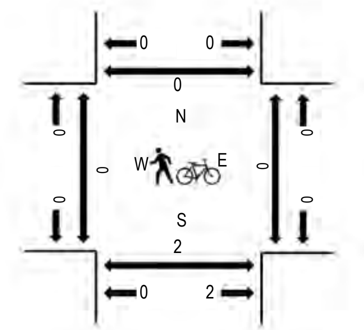
Location: 2 SANDLEWOOD BLVD & ATLANTIC BLVD AM
Date: Tuesday, February 8, 2022
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	ATLANTIC BLVD Eastbound U-Turn	Left	Thru	Right	ATLANTIC BLVD Westbound U-Turn	Left	Thru	Right	SANDLEWOOD BLVD Northbound U-Turn	Left	Thru	Right	GENERAL DOOLITTLE DRIVE Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
7:00 AM	0	0	375	0	0	0	575	5	0	0	0	5	0	0	0	0	960	4,322	0	0	0	0
7:15 AM	0	0	396	0	0	0	726	5	0	0	0	11	0	0	0	0	1,138	4,454	0	0	0	0
7:30 AM	0	0	515	0	0	0	659	4	0	0	0	10	0	0	0	0	1,188	4,315	0	0	0	0
7:45 AM	0	0	390	0	0	0	626	8	0	0	0	12	0	0	0	0	1,036	4,217	0	0	0	0
8:00 AM	0	0	540	1	0	0	528	6	0	0	0	15	0	0	0	2	1,092	4,193	0	0	0	1
8:15 AM	0	0	426	1	0	0	550	6	0	0	0	16	0	0	0	0	999	3,884	0	0	0	0
8:30 AM	0	0	518	1	0	0	553	7	0	0	0	9	0	0	0	2	1,090	3,738	0	0	0	0
8:45 AM	0	0	481	3	0	0	506	12	0	0	0	10	0	0	0	0	1,012	3,525	0	0	0	0
9:00 AM	0	0	356	2	0	0	406	5	0	0	0	11	0	0	0	3	783	3,370	0	0	0	0
9:15 AM	0	0	357	2	0	0	479	6	0	0	0	9	0	0	0	0	853	3,384	0	0	1	0
9:30 AM	0	0	351	0	0	0	512	6	0	0	0	6	0	0	0	2	877	3,273	0	0	0	0
9:45 AM	0	0	410	1	0	0	428	10	0	0	0	5	0	0	0	3	857	3,183	0	0	0	0
10:00 AM	0	0	367	0	0	0	411	9	0	0	0	6	0	0	0	4	797	3,048	0	0	0	0
10:15 AM	0	0	354	0	0	0	370	9	0	0	0	7	0	0	0	2	742	2,970	0	0	0	0
10:30 AM	0	0	367	2	0	0	404	5	0	0	0	4	1	0	0	4	787	3,007	0	0	0	0
10:45 AM	0	0	353	1	0	0	355	9	0	0	0	4	0	0	0	0	722	2,961	0	0	0	0
11:00 AM	0	0	311	2	0	0	395	3	0	0	0	5	0	0	0	3	719	3,113	0	0	0	0
11:15 AM	0	0	361	1	0	0	401	4	0	0	0	8	0	0	0	4	779	3,220	0	0	0	0
11:30 AM	0	0	371	1	0	0	359	2	0	0	0	6	0	0	0	2	741	3,296	0	0	0	0
11:45 AM	0	0	427	1	0	0	421	14	0	0	0	8	0	0	0	3	874	3,452	0	0	0	2
12:00 PM	0	0	420	1	0	0	384	6	0	0	0	9	0	0	0	6	826	3,437	0	0	1	0
12:15 PM	0	0	439	1	0	0	396	10	0	0	0	5	0	0	0	4	855	3,459	0	0	1	0
12:30 PM	0	0	476	2	0	0	400	6	0	0	0	8	0	0	0	5	897	3,450	0	0	2	0
12:45 PM	0	0	435	0	0	0	405	7	0	0	0	7	0	0	0	5	859	3,383	0	0	0	0
1:00 PM	0	0	389	0	0	0	434	10	0	0	0	8	0	0	0	7	848	3,424	0	0	0	0
1:15 PM	0	0	424	2	0	0	400	7	0	0	0	7	0	0	0	6	846	3,560	0	0	0	0
1:30 PM	0	0	394	0	0	0	417	6	0	0	0	8	0	0	0	5	830	3,679	0	0	0	0
1:45 PM	0	0	451	1	0	0	426	7	0	0	0	14	0	0	0	1	900	3,820	0	0	0	0
2:00 PM	0	0	483	1	0	0	478	11	0	0	0	7	0	0	0	4	984	4,039	0	0	0	0
2:15 PM	0	0	497	4	0	0	452	2	0	0	0	8	0	0	0	2	965	4,130	0	0	0	0
2:30 PM	0	0	497	0	0	0	453	7	0	0	0	9	0	0	0	5	971	4,434	0	0	0	0
2:45 PM	0	0	586	2	0	0	505	10	0	0	0	13	0	0	0	3	1,119	4,700	0	0	0	0
3:00 PM	0	0	568	2	0	0	478	8	0	0	0	11	0	0	0	8	1,075	4,798	0	0	0	0
3:15 PM	0	0	663	0	0	0	582	3	0	0	0	11	0	0	0	10	1,269	4,934	0	0	0	0
3:30 PM	0	0	703	2	0	0	504	10	0	0	0	11	0	0	0	7	1,237	4,945	0	0	0	0

3:45 PM	0	0	684	2	0	0	516	5	0	0	0	7	0	0	0	3	1,217	4,965	0	0	0	0
4:00 PM	0	0	676	2	0	0	514	1	0	0	0	14	0	0	0	4	1,211	4,981	0	0	1	0
4:15 PM	0	0	669	0	0	0	593	1	0	0	0	9	0	0	0	8	1,280	5,016	0	0	1	0
4:30 PM	0	0	685	1	0	0	548	4	0	0	0	12	0	0	0	7	1,257	5,069	0	0	0	0
4:45 PM	0	0	659	2	0	0	553	7	0	0	0	6	0	0	0	6	1,233	5,020	0	0	1	0
5:00 PM	0	0	687	3	0	0	535	8	0	0	0	7	0	0	0	6	1,246	4,840	0	0	0	0
5:15 PM	0	0	726	1	0	0	580	6	0	0	0	11	0	0	0	9	1,333		0	0	0	0
5:30 PM	0	0	697	3	0	0	482	8	0	0	0	16	0	0	0	2	1,208		0	0	0	0
5:45 PM	0	0	552	0	0	0	474	3	0	0	0	10	0	0	0	14	1,053		0	0	0	0

Peak Rolling Hour Flow Rates

	Eastbound				Westbound				Northbound				Southbound				
Vehicle Type	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	7
Lights	0	0	2,745	6	0	0	2,184	25	0	0	0	36	0	0	0	27	5,023
Mediums	0	0	8	1	0	0	29	0	0	0	0	0	0	0	0	1	39
Total	0	0	2,757	7	0	0	2,216	25	0	0	0	36	0	0	0	28	5,069

ALL TRAFFIC DATA SERVICES
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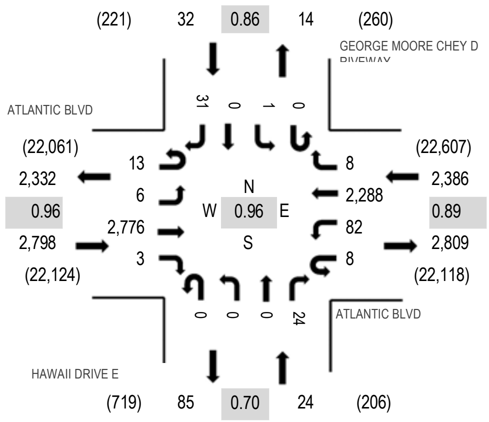
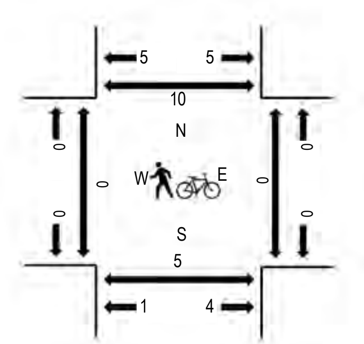
Location: 3 HAWAII DRIVE E & ATLANTIC BLVD AM
Date: Tuesday, February 8, 2022
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	ATLANTIC BLVD Eastbound U-Turn	Left	Thru	Right	ATLANTIC BLVD Westbound U-Turn	Left	Thru	Right	HAWAII DRIVE E Northbound U-Turn	Left	Thru	Right	GEORGE MOORE CHEY DRIVEWAY Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
7:00 AM	3	2	378	1	1	16	592	2	0	0	0	6	0	0	0	0	1,001	4,633	0	0	0	0
7:15 AM	1	8	391	2	6	15	756	2	0	0	0	1	0	0	1	0	1,183	4,763	0	0	0	0
7:30 AM	2	3	528	0	4	16	692	2	0	1	0	3	0	1	0	0	1,252	4,600	0	0	0	0
7:45 AM	2	5	496	3	7	28	646	1	0	0	0	7	0	0	0	2	1,197	4,487	0	0	0	0
8:00 AM	2	10	550	2	5	11	535	2	0	0	0	11	0	1	0	2	1,131	4,322	0	0	0	1
8:15 AM	3	2	426	1	3	13	566	4	0	0	0	2	0	0	0	0	1,020	4,020	0	0	0	0
8:30 AM	5	6	519	2	3	16	575	3	0	1	0	5	0	0	0	4	1,139	3,880	0	0	0	0
8:45 AM	4	9	478	1	2	12	518	1	0	0	0	4	0	1	0	2	1,032	3,656	0	0	0	0
9:00 AM	2	4	361	2	2	17	428	6	0	0	0	1	0	3	0	3	829	3,485	0	0	0	1
9:15 AM	3	3	361	0	1	15	488	2	0	0	0	6	0	0	1	0	880	3,474	0	0	0	0
9:30 AM	4	2	354	0	2	15	530	5	0	0	0	1	0	1	0	1	915	3,358	0	0	0	0
9:45 AM	7	7	396	0	3	9	432	0	0	0	0	4	0	0	0	3	861	3,243	0	0	0	0
10:00 AM	3	4	367	1	1	16	417	2	0	0	0	1	0	2	1	3	818	3,121	0	0	0	5
10:15 AM	3	8	347	1	2	2	388	2	0	0	0	3	0	3	0	5	764	3,071	0	0	0	1
10:30 AM	5	10	357	1	1	13	404	1	0	1	0	2	0	1	0	4	800	3,110	0	0	0	1
10:45 AM	1	6	345	0	4	9	363	1	0	0	0	2	0	1	0	7	739	3,074	0	0	0	7
11:00 AM	6	3	345	0	3	10	382	2	0	0	0	6	0	0	0	11	768	3,244	0	0	0	1
11:15 AM	2	1	365	0	5	12	406	2	0	0	0	4	0	2	0	4	803	3,314	0	0	0	3
11:30 AM	2	2	362	4	7	7	374	2	0	0	0	2	0	2	0	0	764	3,395	0	0	1	0
11:45 AM	8	1	427	1	3	16	440	2	0	1	0	6	0	0	0	4	909	3,557	0	0	0	1
12:00 PM	5	6	415	1	1	17	383	2	0	0	0	3	0	1	0	4	838	3,533	0	0	0	3
12:15 PM	4	7	447	1	4	8	403	1	0	1	0	2	0	1	0	5	884	3,569	0	0	0	3
12:30 PM	3	3	480	1	5	9	415	2	0	0	0	1	0	3	0	4	926	3,552	0	0	0	1
12:45 PM	4	7	430	1	5	7	416	3	0	2	0	3	0	1	0	6	885	3,501	0	0	0	1
1:00 PM	5	4	389	1	4	11	448	1	0	0	0	8	0	3	0	0	874	3,531	0	0	0	1
1:15 PM	3	7	429	3	4	12	398	2	0	0	0	1	0	1	0	7	867	3,670	0	0	0	1
1:30 PM	4	2	397	2	2	20	424	7	0	0	0	11	0	2	0	4	875	3,808	0	0	0	1
1:45 PM	8	2	439	1	5	16	430	3	0	0	0	6	0	0	1	4	915	3,985	0	0	0	3
2:00 PM	2	3	491	1	2	20	484	2	0	0	0	4	0	0	0	4	1,013	4,214	0	0	0	2
2:15 PM	3	1	502	1	2	14	472	1	0	0	0	5	0	1	0	3	1,005	4,320	0	0	1	2
2:30 PM	4	5	545	4	4	13	469	0	0	0	0	5	0	0	0	3	1,052	4,618	0	0	0	3
2:45 PM	3	3	597	0	3	15	512	4	0	0	0	4	0	0	0	3	1,144	4,846	0	0	0	6
3:00 PM	4	2	579	2	2	23	494	0	0	0	0	6	0	2	0	5	1,119	4,946	0	0	0	1
3:15 PM	3	1	666	0	2	24	599	0	0	1	0	4	0	0	0	3	1,303	5,077	0	0	0	0
3:30 PM	6	4	709	1	1	19	528	1	0	0	1	6	0	2	0	2	1,280	5,082	0	0	0	4

3:45 PM	1	1	679	3	7	13	527	3	0	0	0	2	0	1	0	7	1,244	5,111	0	0	0	4
4:00 PM	2	3	693	1	2	11	519	2	0	0	0	10	0	0	0	7	1,250	5,136	0	0	0	1
4:15 PM	2	4	664	1	3	21	597	0	0	0	0	6	0	0	0	10	1,308	5,186	0	0	1	5
4:30 PM	3	2	698	1	2	24	562	1	0	0	0	6	0	0	0	10	1,309	5,240	0	0	0	3
4:45 PM	1	2	655	1	0	17	576	4	0	0	0	6	0	0	0	7	1,269	5,184	0	0	1	6
5:00 PM	3	0	702	0	5	20	550	2	0	0	0	7	0	1	0	10	1,300	4,993	0	0	0	0
5:15 PM	6	2	721	1	1	21	600	1	0	0	0	5	0	0	0	4	1,362		0	0	2	1
5:30 PM	4	1	712	4	3	22	492	3	0	0	0	4	0	0	0	8	1,253		0	0	0	0
5:45 PM	2	1	554	2	3	14	491	1	0	0	0	5	0	1	0	4	1,078		0	0	0	1

Peak Rolling Hour Flow Rates

	Eastbound				Westbound				Northbound				Southbound				
Vehicle Type	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	7
Lights	13	6	2,763	3	8	79	2,258	8	0	0	0	24	0	1	0	31	5,194
Mediums	0	0	9	0	0	3	27	0	0	0	0	0	0	0	0	0	39
Total	13	6	2,776	3	8	82	2,288	8	0	0	0	24	0	1	0	31	5,240

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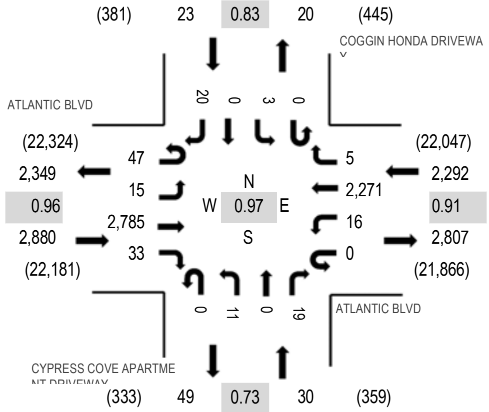
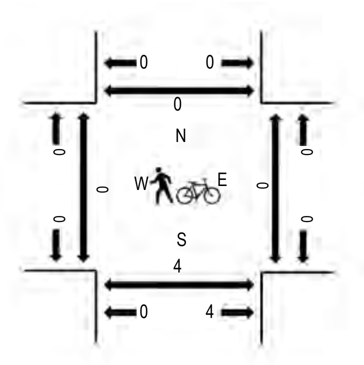
Location: 4 CYPRESS COVE APARTMENT DRIVEWAY & ATLANTIC BLVD AM
Date: Tuesday, February 8, 2022
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	ATLANTIC BLVD Eastbound U-Turn	Left	Thru	Right	ATLANTIC BLVD Westbound U-Turn	Left	Thru	Right	CYPRESS COVE APARTMENT DRIVEWAY Northbound U-Turn	Left	Thru	Right	COGGIN HONDA DRIVEWAY Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
7:00 AM	1	7	368	1	0	1	582	2	0	10	0	9	0	1	0	3	985	4,597	0	0	0	0
7:15 AM	1	2	394	1	1	1	742	3	0	6	0	3	0	1	0	1	1,156	4,719	0	0	0	0
7:30 AM	1	5	508	5	1	4	743	4	0	8	0	12	0	0	0	0	1,291	4,572	0	0	0	0
7:45 AM	2	10	498	1	1	0	639	2	0	4	0	6	0	0	0	2	1,165	4,404	0	0	0	0
8:00 AM	1	7	534	2	3	2	544	6	0	1	0	5	0	1	0	1	1,107	4,265	0	0	0	0
8:15 AM	5	4	425	4	2	3	545	6	0	7	0	4	0	2	0	2	1,009	3,992	0	0	0	0
8:30 AM	8	11	497	4	1	2	576	4	0	5	0	4	0	6	0	5	1,123	3,847	0	0	0	0
8:45 AM	10	12	469	1	4	0	506	9	0	2	0	6	0	1	0	6	1,026	3,647	0	0	0	0
9:00 AM	2	11	351	3	2	1	449	1	0	1	0	4	0	4	0	5	834	3,500	0	0	0	0
9:15 AM	8	6	362	0	3	2	468	6	0	2	0	4	0	1	0	2	864	3,446	0	0	0	0
9:30 AM	2	6	342	3	3	3	546	5	0	2	0	7	0	2	0	2	923	3,358	0	0	0	0
9:45 AM	6	6	389	5	1	2	446	4	0	3	0	8	0	3	0	6	879	3,223	0	0	0	0
10:00 AM	2	4	359	1	1	0	396	5	0	2	0	5	0	2	0	3	780	3,086	0	0	0	0
10:15 AM	4	12	343	2	2	3	393	1	0	2	0	6	0	3	0	5	776	3,054	0	0	0	0
10:30 AM	8	9	343	1	3	2	397	6	0	8	0	1	0	2	0	8	788	3,091	0	0	0	0
10:45 AM	2	5	351	3	1	0	357	5	0	2	0	4	0	4	0	8	742	3,048	0	0	0	0
11:00 AM	5	4	327	5	5	1	378	7	0	2	0	2	0	3	0	9	748	3,230	0	0	0	0
11:15 AM	3	10	355	3	3	4	422	1	0	0	0	2	0	4	0	6	813	3,300	0	0	0	0
11:30 AM	9	9	374	4	2	2	326	1	0	3	0	1	0	4	0	10	745	3,386	0	0	0	0
11:45 AM	3	5	410	6	6	2	472	3	0	4	0	3	0	4	0	6	924	3,582	0	0	0	0
12:00 PM	4	4	419	4	7	1	358	3	0	3	0	3	0	2	0	10	818	3,516	0	0	0	0
12:15 PM	3	5	436	2	9	3	415	5	0	3	0	4	0	6	0	8	899	3,579	0	0	1	0
12:30 PM	6	12	471	4	4	2	421	3	0	4	0	3	0	4	0	7	941	3,534	0	0	1	0
12:45 PM	6	5	424	5	5	2	382	6	0	5	0	2	0	6	0	10	858	3,484	0	0	0	0
1:00 PM	8	5	389	6	3	2	451	2	0	1	0	3	0	5	0	6	881	3,525	0	0	0	0
1:15 PM	4	6	403	5	5	3	414	1	0	2	0	3	0	2	0	6	854	3,627	0	0	0	0
1:30 PM	4	10	403	4	6	3	434	9	0	2	0	6	0	4	0	6	891	3,793	0	0	1	0
1:45 PM	5	10	402	2	3	2	461	2	0	4	0	0	0	3	0	5	899	3,950	0	0	0	0
2:00 PM	0	8	482	5	3	6	453	6	0	0	0	5	0	5	0	10	983	4,177	0	0	0	0
2:15 PM	5	2	498	7	2	4	483	3	0	7	0	3	0	3	0	3	1,020	4,329	0	0	0	0
2:30 PM	3	9	528	5	2	2	481	2	0	2	0	5	0	1	0	8	1,048	4,589	0	0	0	0
2:45 PM	11	4	591	8	3	2	489	4	0	4	0	5	0	1	0	4	1,126	4,863	0	0	0	0
3:00 PM	6	6	562	9	0	2	524	3	0	5	0	6	0	4	0	8	1,135	4,956	0	0	0	0
3:15 PM	0	6	668	7	0	5	574	4	0	3	0	4	0	3	0	6	1,280	5,093	0	0	0	0
3:30 PM	6	9	700	7	0	7	556	4	0	6	0	9	0	4	0	14	1,322	5,102	0	0	0	0

3:45 PM	10	15	675	8	0	3	482	6	0	4	0	3	0	4	0	9	1,219	5,094	0	0	0	0
4:00 PM	7	4	675	10	0	3	546	6	0	4	0	3	0	4	0	10	1,272	5,101	0	0	0	0
4:15 PM	9	5	665	11	0	8	566	0	0	4	0	6	0	6	0	9	1,289	5,166	0	0	0	0
4:30 PM	6	6	685	10	0	5	591	0	0	2	0	6	0	1	0	2	1,314	5,225	0	0	0	0
4:45 PM	13	2	659	7	0	3	534	1	0	2	0	3	0	1	0	1	1,226	5,187	0	0	1	0
5:00 PM	15	4	710	7	0	3	578	2	0	2	0	7	0	0	0	9	1,337	5,015	0	0	0	0
5:15 PM	13	3	731	9	0	5	568	2	0	5	0	3	0	1	0	8	1,348		0	0	1	0
5:30 PM	4	1	710	7	0	5	524	1	0	5	0	10	0	2	0	7	1,276		0	0	0	1
5:45 PM	3	3	558	11	0	2	464	0	0	2	0	6	0	2	0	3	1,054		0	0	0	0

Peak Rolling Hour Flow Rates

	Eastbound				Westbound				Northbound				Southbound				
Vehicle Type	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	6
Lights	47	15	2,774	33	0	16	2,242	5	0	11	0	18	0	3	0	20	5,184
Mediums	0	0	7	0	0	0	27	0	0	0	0	1	0	0	0	0	35
Total	47	15	2,785	33	0	16	2,271	5	0	11	0	19	0	3	0	20	5,225

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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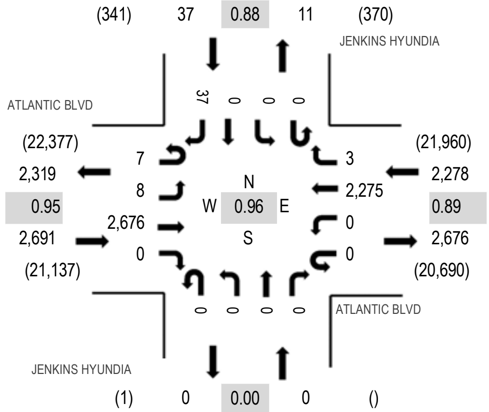
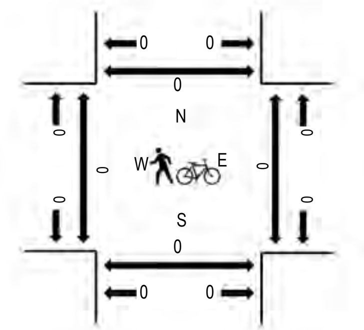
Location: 5 JENKINS HYUNDIA & ATLANTIC BLVD AM
Date: Tuesday, February 8, 2022
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	ATLANTIC BLVD Eastbound				ATLANTIC BLVD Westbound				JENKINS HYUNDIA Northbound				JENKINS HYUNDIA Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	4	6	340	0	0	0	593	1	0	0	0	0	0	0	0	0	944	4,506	0	0	0	0
7:15 AM	3	4	376	0	0	0	778	2	0	0	0	0	0	0	0	2	1,165	4,636	0	0	0	0
7:30 AM	1	7	488	0	0	0	746	3	0	0	0	0	0	0	0	1	1,246	4,513	0	0	0	0
7:45 AM	9	11	478	0	0	0	641	6	0	0	0	0	0	0	0	6	1,151	4,371	0	0	0	0
8:00 AM	5	11	500	0	0	0	553	4	0	0	0	0	0	0	0	1	1,074	4,214	0	0	0	0
8:15 AM	4	6	444	0	0	0	579	2	0	0	0	0	0	0	0	7	1,042	3,957	0	0	0	0
8:30 AM	5	7	495	0	0	0	595	2	0	0	0	0	0	0	0	0	1,104	3,747	0	0	0	0
8:45 AM	6	12	454	0	0	0	514	4	0	0	0	0	0	0	0	4	994	3,594	0	0	0	0
9:00 AM	3	9	341	0	0	0	458	4	0	0	0	0	0	0	0	2	817	3,414	0	0	0	0
9:15 AM	7	12	324	0	0	0	477	2	0	0	0	0	0	0	0	10	832	3,369	0	0	0	0
9:30 AM	3	6	378	0	0	0	555	2	0	0	0	0	0	0	0	7	951	3,285	0	0	0	0
9:45 AM	5	3	354	0	0	0	442	3	0	0	0	0	0	0	0	7	814	3,117	0	0	0	0
10:00 AM	8	7	340	0	0	0	408	4	0	0	0	0	0	0	0	5	772	3,012	0	0	0	0
10:15 AM	5	7	346	0	0	0	376	3	0	0	0	0	0	0	0	11	748	2,973	0	0	0	0
10:30 AM	2	4	364	0	0	0	404	1	0	0	0	0	0	0	0	8	783	2,982	0	0	0	0
10:45 AM	7	9	327	0	0	0	356	0	0	0	0	0	0	0	0	10	709	2,946	0	0	0	0
11:00 AM	8	7	330	0	0	0	379	1	0	0	0	0	0	0	0	8	733	3,117	0	0	0	0
11:15 AM	5	4	326	0	0	0	417	0	0	0	0	0	0	0	0	5	757	3,157	0	0	0	0
11:30 AM	5	7	377	0	0	0	346	2	0	0	0	0	0	0	0	10	747	3,296	0	0	0	0
11:45 AM	5	6	411	0	0	0	447	1	0	0	0	0	0	0	0	10	880	3,432	0	0	0	0
12:00 PM	2	5	377	0	0	0	376	2	0	0	0	0	0	0	0	11	773	3,407	0	0	0	0
12:15 PM	2	8	470	0	0	0	400	1	0	0	0	0	0	0	0	15	896	3,489	0	0	0	0
12:30 PM	4	10	429	0	0	0	418	7	0	0	0	0	0	0	0	15	883	3,382	0	0	0	0
12:45 PM	4	8	434	0	0	0	389	8	0	0	0	0	0	0	0	12	855	3,392	0	0	0	0
1:00 PM	5	6	392	0	0	0	442	3	0	0	0	0	0	0	0	7	855	3,423	0	0	0	0
1:15 PM	2	7	362	0	0	0	403	4	0	0	0	0	0	0	0	11	789	3,514	0	0	0	0
1:30 PM	2	10	424	0	0	0	447	3	0	0	0	0	0	0	0	7	893	3,707	0	0	0	0
1:45 PM	5	5	422	0	0	0	443	1	0	0	0	0	0	0	0	10	886	3,826	0	0	0	0
2:00 PM	3	5	445	0	0	0	478	3	0	0	0	0	0	0	1	11	946	4,033	0	0	0	0
2:15 PM	2	6	482	0	0	0	486	2	0	0	0	0	0	0	0	4	982	4,139	0	0	0	0
2:30 PM	2	5	532	0	0	0	468	0	0	0	0	0	0	0	0	5	1,012	4,383	0	0	0	1
2:45 PM	4	11	551	0	0	0	518	1	0	0	0	0	0	0	0	8	1,093	4,590	0	0	0	0
3:00 PM	3	4	545	0	0	0	494	0	0	0	0	0	0	0	0	6	1,052	4,651	0	0	0	0
3:15 PM	4	5	596	0	0	0	612	1	0	0	0	0	0	0	0	8	1,226	4,747	0	0	0	0
3:30 PM	3	8	657	0	0	0	542	3	0	0	0	0	0	0	0	6	1,219	4,743	0	0	0	0

3:45 PM	5	6	616	0	0	0	517	0	0	0	0	0	0	0	0	10	1,154	4,778	0	0	0	0
4:00 PM	4	4	615	0	0	0	514	1	0	0	0	0	0	0	0	10	1,148	4,830	0	0	0	0
4:15 PM	5	3	615	0	0	0	592	1	0	0	0	0	0	0	0	6	1,222	4,920	0	0	0	0
4:30 PM	1	2	670	0	0	0	573	2	0	0	0	0	0	0	0	6	1,254	5,006	0	0	0	0
4:45 PM	1	4	630	0	0	0	563	1	0	0	0	0	0	0	0	7	1,206	4,997	0	0	0	0
5:00 PM	2	1	677	0	0	0	545	0	0	0	0	0	0	0	0	13	1,238	4,831	0	0	0	0
5:15 PM	3	1	699	0	0	0	594	0	0	0	0	0	0	0	0	11	1,308		0	0	0	0
5:30 PM	0	4	716	0	0	0	504	4	0	0	0	0	0	0	0	17	1,245		0	0	0	1
5:45 PM	4	2	541	0	0	0	483	0	0	0	0	0	0	0	0	10	1,040		0	0	0	0

Peak Rolling Hour Flow Rates

	Eastbound				Westbound				Northbound				Southbound				
Vehicle Type	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	6
Lights	7	8	2,662	0	0	0	2,244	3	0	0	0	0	0	0	0	37	4,961
Mediums	0	0	10	0	0	0	29	0	0	0	0	0	0	0	0	0	39
Total	7	8	2,676	0	0	0	2,275	3	0	0	0	0	0	0	0	37	5,006

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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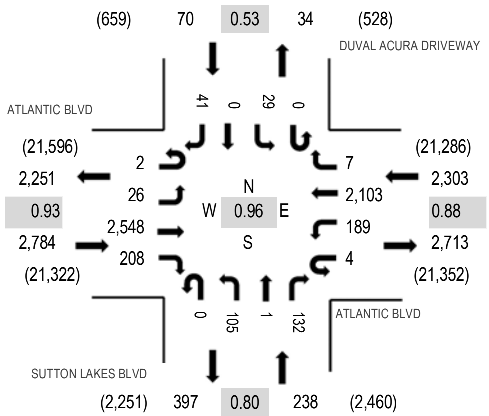
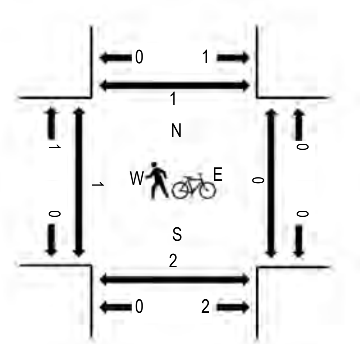
Location: 6 SUTTON LAKES BLVD & ATLANTIC BLVD AM
Date: Tuesday, February 8, 2022
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	ATLANTIC BLVD Eastbound U-Turn	Left	Thru	Right	ATLANTIC BLVD Westbound U-Turn	Left	Thru	Right	SUTTON LAKES BLVD Northbound U-Turn	Left	Thru	Right	DUVAL ACURA DRIVEWAY Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
7:00 AM	0	4	343	5	0	17	527	2	0	49	0	24	0	2	0	2	975	4,657	0	0	2	0
7:15 AM	0	5	362	11	0	3	701	1	0	61	1	47	0	1	0	4	1,197	4,787	0	0	0	0
7:30 AM	1	11	482	17	0	14	719	3	0	38	0	49	0	2	0	1	1,337	4,650	0	0	0	0
7:45 AM	0	9	452	24	0	7	581	1	0	41	0	29	0	1	0	3	1,148	4,480	0	0	1	0
8:00 AM	1	11	460	16	2	16	511	2	0	36	0	45	0	0	0	5	1,105	4,389	0	0	0	0
8:15 AM	1	7	427	25	3	9	517	0	0	31	0	33	0	2	1	4	1,060	4,161	0	0	0	0
8:30 AM	0	12	464	32	0	31	561	1	0	26	0	29	0	4	0	7	1,167	3,947	0	0	0	0
8:45 AM	1	14	431	16	1	28	479	0	0	34	1	43	0	5	0	4	1,057	3,735	0	0	0	0
9:00 AM	0	10	333	11	1	19	427	2	0	30	0	25	0	14	0	5	877	3,539	0	0	0	0
9:15 AM	0	11	298	16	4	20	433	2	0	28	0	28	0	3	0	3	846	3,446	0	0	0	0
9:30 AM	1	14	347	10	0	14	496	2	0	39	0	21	0	3	0	8	955	3,363	0	0	0	0
9:45 AM	2	14	334	15	1	12	413	1	0	25	11	23	0	4	0	6	861	3,225	0	0	0	0
10:00 AM	1	16	317	14	0	17	373	1	0	16	0	18	0	5	0	6	784	3,076	0	0	0	0
10:15 AM	1	8	331	9	0	10	359	2	0	14	0	15	0	2	0	12	763	3,070	0	0	0	0
10:30 AM	1	15	341	13	1	17	365	5	0	20	0	24	0	5	0	10	817	3,107	0	0	0	0
10:45 AM	1	9	306	9	1	15	311	3	0	19	1	22	0	5	0	10	712	3,031	0	0	0	0
11:00 AM	0	8	318	15	1	23	349	2	0	20	0	23	0	6	0	13	778	3,251	0	0	0	0
11:15 AM	0	9	312	12	1	18	399	0	0	19	0	17	0	4	1	8	800	3,266	0	0	0	0
11:30 AM	0	5	358	16	1	23	292	2	0	16	0	16	0	3	0	9	741	3,410	0	0	0	0
11:45 AM	0	13	392	18	2	23	423	4	1	15	0	28	0	5	1	7	932	3,584	0	0	0	0
12:00 PM	0	5	351	17	3	25	317	4	0	20	0	25	0	12	0	14	793	3,517	0	0	0	0
12:15 PM	0	7	460	19	3	17	386	2	0	15	0	19	0	5	0	11	944	3,632	0	0	1	0
12:30 PM	3	5	413	21	1	32	373	2	0	28	0	24	0	6	0	7	915	3,519	0	0	0	0
12:45 PM	0	12	384	19	4	19	349	2	0	29	1	31	0	6	0	9	865	3,534	0	0	0	0
1:00 PM	0	10	382	22	0	19	414	3	0	13	0	29	0	3	0	13	908	3,621	0	0	0	0
1:15 PM	1	17	334	20	1	24	387	3	0	11	1	18	0	6	0	8	831	3,669	0	0	0	0
1:30 PM	0	7	401	21	3	27	415	2	0	17	0	23	0	4	1	9	930	3,920	0	0	0	0
1:45 PM	1	12	392	30	1	28	412	2	0	27	0	27	0	12	0	8	952	4,086	0	0	0	0
2:00 PM	0	11	385	14	0	29	392	7	0	27	1	36	0	21	1	32	956	4,226	0	0	0	0
2:15 PM	0	15	466	35	0	30	454	3	0	18	0	39	0	7	0	15	1,082	4,456	0	0	0	0
2:30 PM	2	12	504	33	2	27	440	0	0	25	0	33	0	6	0	12	1,096	4,613	1	0	1	0
2:45 PM	2	20	484	28	0	28	441	2	0	37	0	33	0	5	0	12	1,092	4,882	0	0	0	0
3:00 PM	0	7	578	35	0	33	468	1	0	16	0	36	0	2	1	9	1,186	4,993	0	0	1	0
3:15 PM	1	8	548	39	1	32	544	1	0	23	0	27	0	5	1	9	1,239	5,098	0	0	0	0
3:30 PM	1	4	699	44	1	28	518	2	0	23	0	32	0	4	0	9	1,365	5,160	0	0	0	0

3:45 PM	0	9	571	42	0	33	459	2	0	19	1	40	0	14	0	13	1,203	5,196	0	0	0	0
4:00 PM	2	7	655	40	0	26	480	4	0	30	0	29	0	6	1	11	1,291	5,247	0	0	0	0
4:15 PM	1	5	584	47	0	46	541	2	0	24	0	34	0	9	2	6	1,301	5,344	0	1	0	0
4:30 PM	0	6	672	41	2	52	554	1	0	26	1	33	0	5	0	8	1,401	5,395	0	0	0	0
4:45 PM	0	9	545	65	0	55	499	3	0	26	0	35	0	10	0	7	1,254	5,360	0	0	0	0
5:00 PM	0	4	683	55	2	30	529	1	0	23	0	34	0	10	0	17	1,388	5,211	0	0	0	0
5:15 PM	2	7	648	47	0	52	521	2	0	30	0	30	0	4	0	9	1,352		1	0	1	1
5:30 PM	2	8	701	48	0	41	483	0	0	23	0	43	0	8	0	9	1,366		0	0	0	0
5:45 PM	1	9	499	38	2	46	426	1	0	23	0	41	0	4	1	14	1,105		0	0	0	0

Peak Rolling Hour Flow Rates

	Eastbound				Westbound				Northbound				Southbound				
Vehicle Type	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	1	3	0	0	0	2	0	0	0	0	0	0	0	0	0	6
Lights	2	25	2,538	207	4	189	2,075	7	0	103	1	132	0	29	0	41	5,353
Mediums	0	0	7	1	0	0	26	0	0	2	0	0	0	0	0	0	36
Total	2	26	2,548	208	4	189	2,103	7	0	105	1	132	0	29	0	41	5,395

(303) 216-2439
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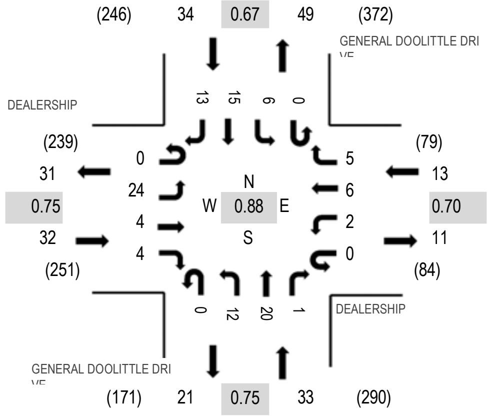
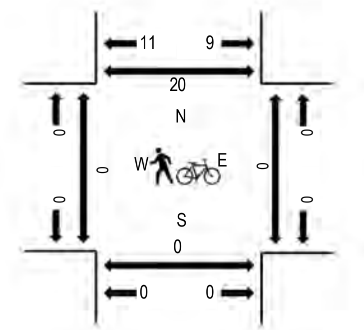
Location: 7 GENERAL DOOLITTLE DRIVE & DEALERSHIP AM
Date: Tuesday, February 8, 2022
Peak Hour: 12:30 PM - 01:30 PM
Peak 15-Minutes: 01:00 PM - 01:15 PM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	DEALERSHIP Eastbound U-Turn	Left	Thru	Right	DEALERSHIP Westbound U-Turn	Left	Thru	Right	GENERAL DOOLITTLE DRIVE Northbound U-Turn	Left	Thru	Right	GENERAL DOOLITTLE DRIVE Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
7:00 AM	0	3	0	0	0	0	0	0	0	1	4	0	0	1	0	0	9	50	0	0	0	2
7:15 AM	0	7	0	1	0	0	0	0	0	3	2	0	0	0	1	1	15	55	0	0	0	0
7:30 AM	0	4	0	0	0	0	0	0	0	3	1	0	0	0	0	0	8	50	0	0	0	0
7:45 AM	0	7	0	0	0	0	0	2	0	3	5	0	0	1	0	0	18	68	0	0	0	2
8:00 AM	0	5	0	0	0	0	0	0	0	2	4	0	0	0	2	1	14	66	0	0	0	3
8:15 AM	0	1	2	0	0	0	0	0	0	1	6	0	0	0	0	0	10	71	0	0	0	1
8:30 AM	0	5	2	2	0	0	4	0	0	4	5	0	0	0	2	2	26	71	0	0	0	1
8:45 AM	0	4	0	0	0	0	0	0	0	3	8	1	0	0	0	0	16	60	0	0	0	4
9:00 AM	0	5	1	2	0	0	2	0	0	4	2	0	0	0	2	1	19	64	0	0	0	2
9:15 AM	0	2	1	0	0	0	0	1	0	3	3	0	0	0	0	0	10	70	0	0	0	0
9:30 AM	0	4	1	0	0	0	0	0	0	2	3	1	0	0	3	1	15	75	0	0	0	5
9:45 AM	0	6	0	0	0	0	0	0	0	3	7	0	1	0	2	1	20	77	0	0	0	1
10:00 AM	0	6	1	1	0	0	0	0	0	2	7	0	1	0	6	1	25	68	0	0	2	3
10:15 AM	0	2	0	1	0	0	0	1	0	2	7	0	1	1	0	0	15	61	0	0	1	6
10:30 AM	0	5	0	0	0	0	1	0	0	2	4	0	0	0	5	0	17	58	0	0	0	1
10:45 AM	0	0	1	0	0	0	0	1	0	5	3	1	0	0	0	0	11	64	0	0	0	1
11:00 AM	0	4	1	1	0	0	1	2	0	2	1	0	0	1	3	2	18	73	0	0	0	1
11:15 AM	0	0	2	0	0	1	2	1	0	1	2	0	0	0	3	0	12	79	0	0	0	5
11:30 AM	0	6	1	2	0	0	4	1	0	1	1	0	0	4	0	3	23	90	0	0	0	2
11:45 AM	0	0	0	0	0	1	0	1	0	1	8	2	0	0	3	4	20	96	0	0	3	3
12:00 PM	0	5	3	0	0	1	2	0	0	1	5	0	0	1	4	2	24	98	0	0	0	3
12:15 PM	0	3	0	0	0	0	2	1	0	1	7	2	0	0	3	4	23	106	0	0	0	5
12:30 PM	0	6	2	1	0	1	2	2	0	0	6	0	0	3	3	3	29	112	0	0	0	10
12:45 PM	0	3	0	0	0	0	1	0	0	4	3	0	0	2	5	4	22	108	0	0	0	4
1:00 PM	0	6	1	2	0	0	2	3	0	5	6	1	0	1	3	2	32	106	0	0	0	5
1:15 PM	0	9	1	1	0	1	1	0	0	3	5	0	0	0	4	4	29	98	0	0	0	1
1:30 PM	0	3	1	3	0	0	1	0	1	3	3	0	0	2	3	5	25	83	0	0	0	4
1:45 PM	0	4	1	1	0	0	0	1	0	5	4	0	0	1	1	2	20	78	0	0	0	4
2:00 PM	0	6	0	0	0	0	2	0	0	5	5	0	0	1	3	2	24	80	0	0	0	5
2:15 PM	0	3	1	0	0	1	0	0	0	1	1	0	0	4	1	2	14	80	0	0	0	2
2:30 PM	0	4	0	2	0	2	1	0	0	1	4	0	0	2	1	3	20	83	0	0	3	5
2:45 PM	0	6	1	0	0	0	0	0	0	5	5	0	0	0	3	2	22	89	0	0	0	4
3:00 PM	0	5	1	0	0	0	1	0	0	2	5	0	0	1	7	2	24	95	0	0	0	4
3:15 PM	0	4	1	1	0	1	0	0	0	0	3	0	0	1	6	0	17	92	0	0	0	0
3:30 PM	0	2	1	4	0	0	1	0	0	6	5	0	0	3	2	2	26	91	0	0	0	3

3:45 PM	0	6	0	0	0	0	0	2	0	3	2	0	0	4	1	10	28	81	0	1	1	1
4:00 PM	0	5	1	0	0	0	1	2	0	1	0	0	0	2	3	6	21	70	0	0	0	1
4:15 PM	0	3	2	3	0	1	1	1	0	1	0	0	0	1	2	1	16	71	0	0	0	1
4:30 PM	0	5	0	0	0	2	0	0	0	1	3	0	0	1	4	0	16	84	0	0	0	2
4:45 PM	0	3	0	1	0	2	0	1	0	3	4	0	0	0	3	0	17	89	0	0	0	4
5:00 PM	0	1	0	1	0	1	0	0	0	4	3	1	0	0	4	7	22	96	0	0	0	0
5:15 PM	0	6	3	3	0	1	1	1	0	4	1	0	0	1	5	3	29		0	0	0	2
5:30 PM	0	2	2	0	0	0	1	0	0	5	3	0	0	0	3	5	21		0	0	0	4
5:45 PM	0	2	1	4	0	4	1	0	0	1	1	0	0	0	7	3	24		0	0	0	3

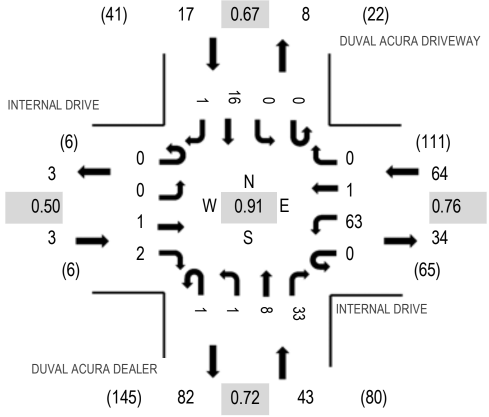
Peak Rolling Hour Flow Rates

	Eastbound				Westbound				Northbound				Southbound				
Vehicle Type	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3
Lights	0	23	4	4	0	2	6	5	0	12	20	1	0	6	13	13	109
Mediums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	24	4	4	0	2	6	5	0	12	20	1	0	6	15	13	112

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

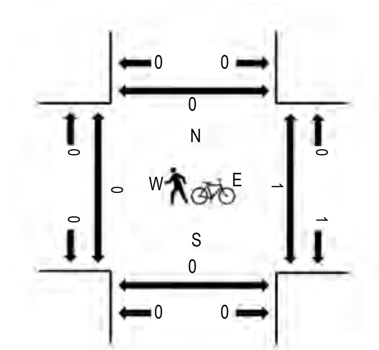
Location: 2 DUVAL ACURA DEALER & INTERNAL DRIVE PM
Date: Thursday, April 8, 2021
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - Motorized Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	INTERNAL DRIVE Eastbound U-Turn	Left	Thru	Right	INTERNAL DRIVE Westbound U-Turn	Left	Thru	Right	DUVAL ACURA DEALER Northbound U-Turn	Left	Thru	Right	DUVAL ACURA DRIVEWAY Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
4:00 PM	0	0	0	0	0	14	0	1	0	0	4	4	0	1	4	0	28	111	0	0	0	0
4:15 PM	0	0	0	1	0	9	0	0	0	1	2	6	0	2	7	0	28	115	1	0	2	0
4:30 PM	0	0	0	0	1	7	0	1	0	0	3	8	0	0	6	0	26	117	0	0	0	0
4:45 PM	0	2	0	0	0	12	2	0	0	0	1	8	0	1	3	0	29	121	1	0	0	0
5:00 PM	0	0	0	1	0	21	0	0	0	0	1	5	0	0	3	1	32	127	0	0	0	0
5:15 PM	0	0	0	1	0	14	0	0	0	0	3	8	0	0	4	0	30		0	0	0	0
5:30 PM	0	0	0	0	0	14	1	0	1	0	2	8	0	0	4	0	30		0	1	0	0
5:45 PM	0	0	1	0	0	14	0	0	0	1	2	12	0	0	5	0	35		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound U-Turn	Left	Thru	Right	Westbound U-Turn	Left	Thru	Right	Northbound U-Turn	Left	Thru	Right	Southbound U-Turn	Left	Thru	Right	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	1	2	0	61	1	0	1	1	8	33	0	0	16	1	125
Mediums	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	1	2	0	63	1	0	1	1	8	33	0	0	16	1	127

Appendix C:

FDOT Peak Season Factors

2019 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 7200 DUVAL COUNTYWIDE

MOCF: 0.98

WEEK	DATES	SF	PSCF
1	01/01/2019 - 01/05/2019	1.03	1.05
2	01/06/2019 - 01/12/2019	1.04	1.06
3	01/13/2019 - 01/19/2019	1.05	1.07
4	01/20/2019 - 01/26/2019	1.04	1.06
5	01/27/2019 - 02/02/2019	1.03	1.05
6	02/03/2019 - 02/09/2019	1.01	1.03
7	02/10/2019 - 02/16/2019	1.00	1.02
8	02/17/2019 - 02/23/2019	1.00	1.02
9	02/24/2019 - 03/02/2019	0.99	1.01
*10	03/03/2019 - 03/09/2019	0.98	1.00
*11	03/10/2019 - 03/16/2019	0.98	1.00
*12	03/17/2019 - 03/23/2019	0.97	0.99
*13	03/24/2019 - 03/30/2019	0.97	0.99
*14	03/31/2019 - 04/06/2019	0.97	0.99
*15	04/07/2019 - 04/13/2019	0.97	0.99
*16	04/14/2019 - 04/20/2019	0.97	0.99
*17	04/21/2019 - 04/27/2019	0.97	0.99
*18	04/28/2019 - 05/04/2019	0.98	1.00
*19	05/05/2019 - 05/11/2019	0.98	1.00
*20	05/12/2019 - 05/18/2019	0.99	1.01
*21	05/19/2019 - 05/25/2019	0.99	1.01
*22	05/26/2019 - 06/01/2019	0.99	1.01
23	06/02/2019 - 06/08/2019	0.99	1.01
24	06/09/2019 - 06/15/2019	0.99	1.01
25	06/16/2019 - 06/22/2019	0.99	1.01
26	06/23/2019 - 06/29/2019	1.00	1.02
27	06/30/2019 - 07/06/2019	1.00	1.02
28	07/07/2019 - 07/13/2019	1.01	1.03
29	07/14/2019 - 07/20/2019	1.01	1.03
30	07/21/2019 - 07/27/2019	1.01	1.03
31	07/28/2019 - 08/03/2019	1.00	1.02
32	08/04/2019 - 08/10/2019	0.99	1.01
33	08/11/2019 - 08/17/2019	0.99	1.01
34	08/18/2019 - 08/24/2019	1.00	1.02
35	08/25/2019 - 08/31/2019	1.02	1.04
36	09/01/2019 - 09/07/2019	1.03	1.05
37	09/08/2019 - 09/14/2019	1.05	1.07
38	09/15/2019 - 09/21/2019	1.06	1.08
39	09/22/2019 - 09/28/2019	1.04	1.06
40	09/29/2019 - 10/05/2019	1.02	1.04
41	10/06/2019 - 10/12/2019	1.00	1.02
42	10/13/2019 - 10/19/2019	0.98	1.00
43	10/20/2019 - 10/26/2019	0.99	1.01
44	10/27/2019 - 11/02/2019	1.00	1.02
45	11/03/2019 - 11/09/2019	1.01	1.03
46	11/10/2019 - 11/16/2019	1.03	1.05
47	11/17/2019 - 11/23/2019	1.03	1.05
48	11/24/2019 - 11/30/2019	1.03	1.05
49	12/01/2019 - 12/07/2019	1.03	1.05
50	12/08/2019 - 12/14/2019	1.03	1.05
51	12/15/2019 - 12/21/2019	1.03	1.05
52	12/22/2019 - 12/28/2019	1.04	1.06
53	12/29/2019 - 12/31/2019	1.05	1.07

* PEAK SEASON

Appendix D:

Signal Timing Data

Traffic Signal Controller Parameters 2/16/2022
Duval County, City of Jacksonville, Florida

Intersection: **Atlantic & Mindanao** **Controller Type: Naztec** Int # 1337

Time of Day Events

Day	Time	Cycle	Offset	Split	Lag LT
M-TH	12:00 AM	FREE			
M-TH	5:30 AM	1	1	1	
M-TH	9:00 AM	2	1	2	
M-TH	2:30 PM	3	1	3	
M-TH	6:30 PM	2	1	2	
M-TH	7:30 PM	4	1	4	
M-TH	10:00 PM	FREE			
SAT	12:00 AM	FREE			
SAT	7:00 AM	4	1	4	
SAT	8:30 AM	5	1	5	
SAT	2:00 PM	6	1	6	
SAT	6:00 PM	2	1	2	
SAT	8:30 PM	4	1	4	
SAT	11:00 PM	FREE	1	2	
SUN	12:00 AM	FREE			
SUN	9:00 AM	4	1	4	
SUN	11:30 AM	5	1	5	
SUN	8:00 PM	4	1	4	
SUN	10:00 PM	FREE			

Phase Allocations

Plan	AM	MD	PM	NT	Sat Pk	Sat OF	N/U	N/U
Pattern	1	2	3	4	5	6	8	
Length	190	160	200	130	190	190		
Offset	52	96	61	53	183	3		
Seq	1	1	1	1	1	1		
Cord Ph	2	2	2	2	2	2		
Seconds Per Cycle								
1	18	20	18	17	23	24		
2	124	92	134	65	119	118		
3	0	0	0	0	0	0		
4	48	48	48	48	48	48		
5	18	19	18	17	20	20		
6	124	93	134	65	122	122		
7	0	0	0	0	0	0		
8	48	48	48	48	48	48		
Max Rcl								

Comm. Settings

Sys ID	59
IP	172.27.16.11
Host	161.243.7.24
Mask	255.255.255.0
Gateway	172.27.16.1
Port	5011

Phase Times

		INT	EXT	AMB	RED	MX1	WLK	DW
WLT	PHASE 1	3	3	4.8	2	20		
EA	PHASE 2	18	2.5	4.8	2	50	7	22
	PHASE 3							
SA	PHASE 4	3	3	3.7	2.9	35	7	34
ELT	PHASE 5	3	3	4.8	2	30		
WA	PHASE 6	18	2.5	4.8	2	50	7	20
	PHASE 7							
NA	PHASE 8	3	3	3.7	2.9	35	7	32

Note:

Sequence

1	2		4
5	6		8

Traffic Signal Controller Parameters Rev 10/2016
Duval County, City of Jacksonville, Florida

Intersection: **Atlantic & Sutton Lakes** **Controller Type: Naztec** Int # 1279

Time of Day Events

Day	Time	Cycle	Offset	Split	Lag LT
M-TH	12:00 AM	FREE			
M-TH	5:30 AM	1	1	1	
M-TH	9:00 AM	2	1	2	
M-TH	2:30 PM	3	1	3	
M-TH	6:30 PM	2	1	2	
M-TH	7:30 PM	4	1	4	
M-TH	10:00 PM	FREE			
SAT	12:00 AM	FREE			
SAT	7:00 AM	4	1	4	
SAT	8:30 AM	5	1	5	
SAT	2:00 PM	6	1	6	
SAT	6:00 PM	2	1	2	
SAT	8:30 PM	4	1	4	
SAT	11:00 PM	FREE	1	2	
SUN	12:00 AM	FREE			
SUN	9:00 AM	4	1	4	
SUN	11:30 AM	5	1	5	
SUN	8:00 PM	4	1	4	
SUN	10:00 PM	FREE			

Phase Allocations

Plan	AM	MD	PM	NT	Sat Pk	Sat OP	N/U	N/U
Pattern	1	2	3	4	5	6	8	
Length	190	160	200	130	190	190		
Offset	167	44	147	122	90	98		
Seq	1	1	1	1	1	1		
Cord Ph	2	2	2	2	2	2		
Seconds Per Cycle								
1	18	18	18	18	19	18		
2	124	90	130	60	119	133		
3	0	0	0	0	0	0		
4	48	52	52	52	52	39		
5	18	23	25	19	26	38		
6	124	85	123	59	112	113		
7	0	0	0	0	0	0		
8	48	52	52	52	52	39		
Max Rcl								

Comm. Settings

Sys ID	58
IP	172.27.16.10
Host	161.243.7.24
Mask	255.255.255.0
Gateway	172.27.16.1
Port	5011

Phase Times

		INT	EXT	AMB	RED	MX1	WLK	DW
WLT	PHASE 1	3	3	4.8	2	20		
EA	PHASE 2	18	3	4.8	2	50	7	26
	PHASE 3							
SA	PHASE 4	4	4	3.7	3.4	35	7	37
ELT	PHASE 5	3	3	4.8	2	30		
WA	PHASE 6	18	3	4.8	2	50	7	31
	PHASE 7							
NA	PHASE 8	4	3	3.7	3.4	35	7	38

Note:

Sequence

1	2		4
5	6		8

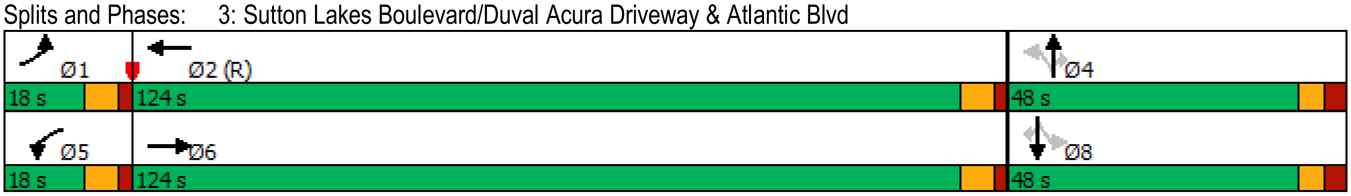
Appendix E:

Intersection Analysis Sheets: Existing Conditions

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	31	1688	42	2604	195	1	153	6	0	10
Future Volume (vph)	31	1688	42	2604	195	1	153	6	0	10
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6	5	2		4			8	
Permitted Phases					4		4	8		8
Detector Phase	1	6	5	2	4	4	4	8	8	8
Switch Phase										
Minimum Initial (s)	3.0	18.0	3.0	18.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.8	44.8	9.8	39.8	51.1	51.1	51.1	52.1	52.1	52.1
Total Split (s)	18.0	124.0	18.0	124.0	48.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	9.5%	65.3%	9.5%	65.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	3.4	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8		7.1	7.1		7.1	7.1
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	None	C-Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 190
Actuated Cycle Length: 190
Offset: 167 (88%), Referenced to phase 2:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 3: Sutton Lakes Boulevard/Duval Acura Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	34	1899	46	2838	213	166	7	11
v/c Ratio	0.41	0.56	0.51	0.82	0.86	0.43	0.05	0.04
Control Delay	93.9	24.3	107.1	27.2	104.5	25.7	61.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.9	24.3	107.1	27.2	104.5	25.7	61.5	0.2
Queue Length 50th (ft)	42	467	57	960	260	58	7	0
Queue Length 95th (ft)	85	767	108	1130	360	134	24	0
Internal Link Dist (ft)		2395		1279	578		127	
Turn Bay Length (ft)	195		355					
Base Capacity (vph)	106	3395	106	3465	292	432	154	337
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.56	0.43	0.82	0.73	0.38	0.05	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1688	59	42	2604	7	195	1	153	6	0	10
Future Volume (veh/h)	31	1688	59	42	2604	7	195	1	153	6	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1826	1900	1885	1693	1885	1900	1885	1900	1900	1604
Adj Flow Rate, veh/h	34	1835	57	46	2830	7	212	1	150	7	0	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	5	0	1	14	1	0	1	0	0	20
Cap, veh/h	44	3532	110	59	3723	9	275	1	262	328	0	223
Arrive On Green	0.02	0.69	0.69	0.03	0.70	0.70	0.16	0.16	0.16	0.16	0.00	0.16
Sat Flow, veh/h	1810	5088	158	1810	5300	13	1442	7	1598	1764	0	1359
Grp Volume(v), veh/h	34	1227	665	46	1831	1006	213	0	150	7	0	10
Grp Sat Flow(s),veh/h/ln	1810	1702	1842	1810	1716	1882	1449	0	1598	1764	0	1359
Q Serve(g_s), s	3.5	32.8	32.8	4.8	64.7	64.9	26.7	0.0	16.5	0.0	0.0	1.2
Cycle Q Clear(g_c), s	3.5	32.8	32.8	4.8	64.7	64.9	27.3	0.0	16.5	0.6	0.0	1.2
Prop In Lane	1.00		0.09	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	44	2363	1278	59	2410	1322	276	0	262	328	0	223
V/C Ratio(X)	0.77	0.52	0.52	0.78	0.76	0.76	0.77	0.00	0.57	0.02	0.00	0.04
Avail Cap(c_a), veh/h	107	2363	1278	107	2410	1322	349	0	344	401	0	293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	92.1	13.9	13.9	91.2	18.0	18.1	77.7	0.0	73.2	66.6	0.0	66.8
Incr Delay (d2), s/veh	23.9	0.8	1.5	19.2	2.3	4.2	9.3	0.0	2.8	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	12.4	13.6	2.6	24.7	27.8	11.0	0.0	7.1	0.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	116.0	14.7	15.4	110.5	20.4	22.2	87.0	0.0	76.0	66.6	0.0	66.9
LnGrp LOS	F	B	B	F	C	C	F	A	E	E	A	E
Approach Vol, veh/h		1926			2883			363			17	
Approach Delay, s/veh		16.8			22.5			82.5			66.8	
Approach LOS		B			C			F			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.4	140.3		38.3	13.0	138.7		38.3				
Change Period (Y+Rc), s	6.8	6.8		* 7.1	6.8	6.8		* 7.1				
Max Green Setting (Gmax), s	11.2	117.2		* 41	11.2	117.2		* 41				
Max Q Clear Time (g_c+I1), s	5.5	66.9		29.3	6.8	34.8		3.2				
Green Ext Time (p_c), s	0.0	38.0		1.9	0.0	22.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			24.7									
HCM 6th LOS			C									

Notes

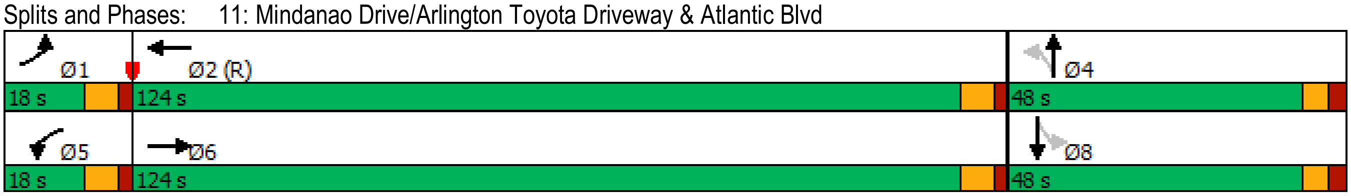
User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	36	1776	21	2744	59	8	4	1
Future Volume (vph)	36	1776	21	2744	59	8	4	1
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	1	6	5	2		4		8
Permitted Phases					4		8	
Detector Phase	1	6	5	2	4	4	8	8
Switch Phase								
Minimum Initial (s)	3.0	18.0	3.0	18.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.8	33.8	9.8	35.8	47.6	47.6	45.6	45.6
Total Split (s)	18.0	124.0	18.0	124.0	48.0	48.0	48.0	48.0
Total Split (%)	9.5%	65.3%	9.5%	65.3%	25.3%	25.3%	25.3%	25.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.6	6.6		6.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	C-Min	Min	Min	Min	Min

Intersection Summary
Cycle Length: 190
Actuated Cycle Length: 190
Offset: 52 (27%), Referenced to phase 2:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 11: Mindanao Drive/Arlington Toyota Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	39	1968	23	2996	64	59	18
v/c Ratio	0.43	0.48	0.32	0.75	0.62	0.36	0.15
Control Delay	101.4	7.4	119.0	5.6	109.5	29.7	42.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.4	7.4	119.0	5.6	109.5	29.7	42.8
Queue Length 50th (ft)	48	295	31	80	79	11	6
Queue Length 95th (ft)	94	395	m38	658	135	62	35
Internal Link Dist (ft)		937		337		441	500
Turn Bay Length (ft)	150				195		
Base Capacity (vph)	110	4083	101	4021	308	394	339
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.48	0.23	0.75	0.21	0.15	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1776	35	21	2744	12	59	8	46	4	1	12
Future Volume (veh/h)	36	1776	35	21	2744	12	59	8	46	4	1	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1826	1885	1781	1900	1900	1870	1530	1900	1900
Adj Flow Rate, veh/h	39	1930	34	23	2983	12	64	9	45	4	1	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	5	1	8	0	0	2	25	0	0
Cap, veh/h	51	4211	74	29	4255	17	120	17	85	34	16	65
Arrive On Green	0.03	0.82	0.82	0.02	0.80	0.80	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	1810	5165	91	1739	5291	21	1423	275	1377	178	263	1058
Grp Volume(v), veh/h	39	1272	692	23	1933	1062	64	0	54	17	0	0
Grp Sat Flow(s),veh/h/ln	1810	1702	1852	1739	1716	1881	1423	0	1652	1498	0	0
Q Serve(g_s), s	4.1	20.9	21.0	2.5	48.0	48.2	3.2	0.0	6.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.1	20.9	21.0	2.5	48.0	48.2	9.2	0.0	6.0	6.0	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.01	1.00		0.83	0.24		0.71
Lane Grp Cap(c), veh/h	51	2776	1510	29	2759	1513	120	0	102	116	0	0
V/C Ratio(X)	0.77	0.46	0.46	0.79	0.70	0.70	0.54	0.00	0.53	0.15	0.00	0.00
Avail Cap(c_a), veh/h	107	2776	1510	103	2759	1513	342	0	360	360	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	91.7	5.2	5.2	93.1	8.3	8.4	88.1	0.0	86.5	84.5	0.0	0.0
Incr Delay (d2), s/veh	21.5	0.1	0.2	36.6	1.5	2.7	3.7	0.0	4.2	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.3	6.9	1.4	15.6	17.7	3.3	0.0	2.7	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	113.2	5.3	5.3	129.7	9.9	11.1	91.8	0.0	90.7	85.1	0.0	0.0
LnGrp LOS	F	A	A	F	A	B	F	A	F	F	A	A
Approach Vol, veh/h		2003			3018			118			17	
Approach Delay, s/veh		7.4			11.2			91.3			85.1	
Approach LOS		A			B			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.1	159.6		18.3	10.0	161.7		18.3				
Change Period (Y+Rc), s	6.8	6.8		* 6.6	6.8	6.8		* 6.6				
Max Green Setting (Gmax), s	11.2	117.2		* 41	11.2	117.2		* 41				
Max Q Clear Time (g_c+I1), s	6.1	50.2		11.2	4.5	23.0		8.0				
Green Ext Time (p_c), s	0.0	42.1		0.5	0.0	17.7		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			11.8
HCM 6th LOS			B

Notes

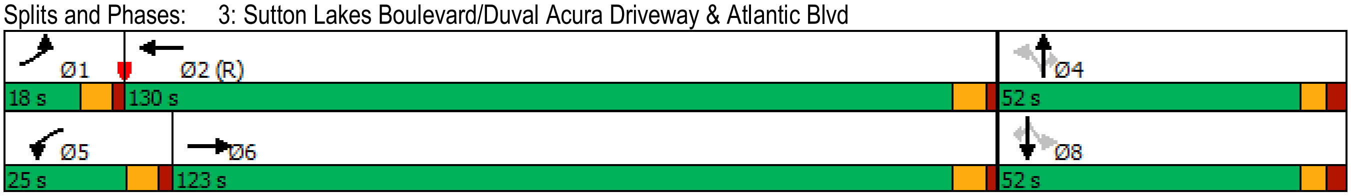
User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	31	2530	186	2136	109	1	135	31	3	33
Future Volume (vph)	31	2530	186	2136	109	1	135	31	3	33
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6	5	2		4			8	
Permitted Phases					4		4	8		8
Detector Phase	1	6	5	2	4	4	4	8	8	8
Switch Phase										
Minimum Initial (s)	3.0	18.0	3.0	18.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.8	44.8	9.8	39.8	51.1	51.1	51.1	52.1	52.1	52.1
Total Split (s)	18.0	123.0	25.0	130.0	52.0	52.0	52.0	52.0	52.0	52.0
Total Split (%)	9.0%	61.5%	12.5%	65.0%	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	3.4	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8		7.1	7.1		7.1	7.1
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	None	C-Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 200
Actuated Cycle Length: 200
Offset: 147 (74%), Referenced to phase 2:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 3: Sutton Lakes Boulevard/Duval Acura Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	34	2966	202	2333	119	147	37	36
v/c Ratio	0.41	0.99	0.63	0.62	0.75	0.52	0.31	0.13
Control Delay	113.5	62.5	85.8	15.0	110.9	33.8	84.0	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	113.5	62.5	85.8	15.0	110.9	33.8	84.0	0.9
Queue Length 50th (ft)	43	1498	252	533	154	58	45	0
Queue Length 95th (ft)	m59	#1556	#384	708	227	136	85	0
Internal Link Dist (ft)		2382		1279	578		127	
Turn Bay Length (ft)	195		355					
Base Capacity (vph)	104	3001	323	3758	290	431	220	436
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.99	0.63	0.62	0.41	0.34	0.17	0.08

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	2530	199	186	2136	10	109	1	135	31	3	33
Future Volume (veh/h)	31	2530	199	186	2136	10	109	1	135	31	3	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1870	1870	1900	1856	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	34	2750	194	202	2322	10	118	1	133	34	3	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	1	1	2	2	0	3	0	1	0	0	0
Cap, veh/h	44	3435	236	162	4019	17	194	1	169	200	16	171
Arrive On Green	0.02	0.70	0.70	0.09	0.77	0.77	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1810	4912	338	1781	5248	23	1487	13	1593	1560	153	1606
Grp Volume(v), veh/h	34	1900	1044	202	1506	826	119	0	133	37	0	33
Grp Sat Flow(s),veh/h/ln	1810	1716	1819	1781	1702	1866	1500	0	1593	1713	0	1606
Q Serve(g_s), s	3.7	74.7	81.0	18.2	37.2	37.2	11.4	0.0	16.3	0.0	0.0	3.8
Cycle Q Clear(g_c), s	3.7	74.7	81.0	18.2	37.2	37.2	15.1	0.0	16.3	3.7	0.0	3.8
Prop In Lane	1.00		0.19	1.00		0.01	0.99		1.00	0.92		1.00
Lane Grp Cap(c), veh/h	44	2399	1272	162	2607	1429	195	0	169	217	0	171
V/C Ratio(X)	0.77	0.79	0.82	1.25	0.58	0.58	0.61	0.00	0.79	0.17	0.00	0.19
Avail Cap(c_a), veh/h	101	2399	1272	162	2607	1429	365	0	358	390	0	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	97.0	20.3	21.2	90.9	9.8	9.8	86.3	0.0	87.1	81.5	0.0	81.5
Incr Delay (d2), s/veh	23.9	2.8	6.0	151.8	0.9	1.7	4.3	0.0	10.8	0.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	28.9	34.4	15.2	13.1	14.7	6.3	0.0	7.3	1.8	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	120.9	23.1	27.3	242.7	10.8	11.6	90.6	0.0	97.9	81.9	0.0	82.1
LnGrp LOS	F	C	C	F	B	B	F	A	F	F	A	F
Approach Vol, veh/h		2978			2534			252			70	
Approach Delay, s/veh		25.6			29.5			94.5			82.0	
Approach LOS		C			C			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.7	160.0		28.4	25.0	146.6		28.4				
Change Period (Y+Rc), s	6.8	6.8		* 7.1	6.8	6.8		* 7.1				
Max Green Setting (Gmax), s	11.2	123.2		* 45	18.2	116.2		* 45				
Max Q Clear Time (g_c+I1), s	5.7	39.2		18.3	20.2	83.0		5.8				
Green Ext Time (p_c), s	0.0	35.8		1.7	0.0	28.3		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			31.0									
HCM 6th LOS			C									

Notes

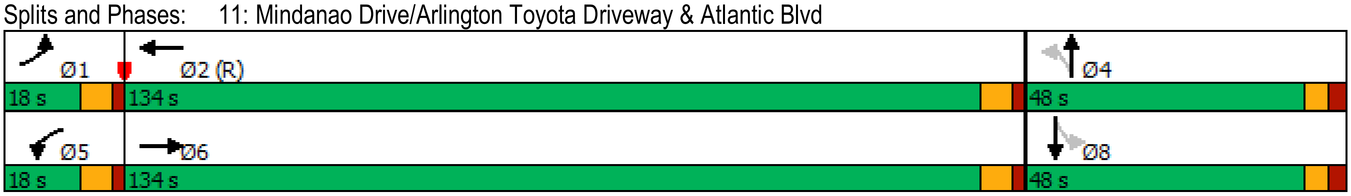
User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	46	2553	57	2374	75	7	25	13
Future Volume (vph)	46	2553	57	2374	75	7	25	13
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	1	6	5	2		4		8
Permitted Phases					4		8	
Detector Phase	1	6	5	2	4	4	8	8
Switch Phase								
Minimum Initial (s)	3.0	18.0	3.0	18.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.8	33.8	9.8	35.8	47.6	47.6	45.6	45.6
Total Split (s)	18.0	134.0	18.0	134.0	48.0	48.0	48.0	48.0
Total Split (%)	9.0%	67.0%	9.0%	67.0%	24.0%	24.0%	24.0%	24.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.6	6.6		6.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	Min	None	C-Min	Min	Min	Min	Min

Intersection Summary
Cycle Length: 200
Actuated Cycle Length: 200
Offset: 61 (31%), Referenced to phase 2:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 11: Mindanao Drive/Arlington Toyota Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	50	2912	62	2600	82	75	114
v/c Ratio	0.51	0.77	0.57	0.67	1.17	0.36	0.69
Control Delay	108.8	18.0	101.1	28.8	232.7	24.1	76.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	108.8	18.0	101.1	28.8	232.7	24.1	76.6
Queue Length 50th (ft)	65	773	75	1063	~127	10	96
Queue Length 95th (ft)	116	1022	m123	1264	#220	67	171
Internal Link Dist (ft)		937		344		441	390
Turn Bay Length (ft)	150				195		
Base Capacity (vph)	110	3804	116	3901	162	387	330
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.77	0.53	0.67	0.51	0.19	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	2553	126	57	2374	18	75	7	62	25	13	67
Future Volume (veh/h)	46	2553	126	57	2374	18	75	7	62	25	13	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1841	1870	1900	1826	1900	1870	1900	1900	1900
Adj Flow Rate, veh/h	50	2775	124	62	2580	18	82	8	60	27	14	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	1	1	4	2	0	5	0	2	0	0	0
Cap, veh/h	64	3757	166	77	3934	27	133	22	162	52	33	99
Arrive On Green	0.04	0.74	0.74	0.04	0.75	0.75	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1810	5053	223	1753	5231	36	1288	193	1447	262	295	882
Grp Volume(v), veh/h	50	1871	1028	62	1678	920	82	0	68	106	0	0
Grp Sat Flow(s),veh/h/ln	1810	1716	1845	1753	1702	1864	1288	0	1640	1438	0	0
Q Serve(g_s), s	5.5	61.5	64.5	7.0	48.2	48.4	4.9	0.0	7.7	7.2	0.0	0.0
Cycle Q Clear(g_c), s	5.5	61.5	64.5	7.0	48.2	48.4	19.8	0.0	7.7	14.9	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.02	1.00		0.88	0.25		0.61
Lane Grp Cap(c), veh/h	64	2551	1372	77	2560	1402	133	0	183	183	0	0
V/C Ratio(X)	0.79	0.73	0.75	0.81	0.66	0.66	0.61	0.00	0.37	0.58	0.00	0.00
Avail Cap(c_a), veh/h	101	2551	1372	98	2560	1402	256	0	339	332	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	95.7	14.5	14.8	94.8	12.1	12.1	89.1	0.0	82.3	85.5	0.0	0.0
Incr Delay (d2), s/veh	18.7	1.1	2.2	30.9	1.3	2.4	4.5	0.0	1.2	2.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	22.3	25.7	3.8	17.4	19.5	4.4	0.0	3.4	5.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	114.4	15.5	17.1	125.7	13.4	14.6	93.6	0.0	83.6	88.3	0.0	0.0
LnGrp LOS	F	B	B	F	B	B	F	A	F	F	A	A
Approach Vol, veh/h		2949			2660			150			106	
Approach Delay, s/veh		17.7			16.4			89.1			88.3	
Approach LOS		B			B			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.8	157.2		29.0	15.5	155.5		29.0				
Change Period (Y+Rc), s	6.8	6.8		* 6.6	6.8	6.8		* 6.6				
Max Green Setting (Gmax), s	11.2	127.2		* 41	11.2	127.2		* 41				
Max Q Clear Time (g_c+I1), s	7.5	50.4		21.8	9.0	66.5		16.9				
Green Ext Time (p_c), s	0.0	33.3		0.6	0.0	37.7		0.6				

Intersection Summary			
HCM 6th Ctrl Delay			20.3
HCM 6th LOS			C

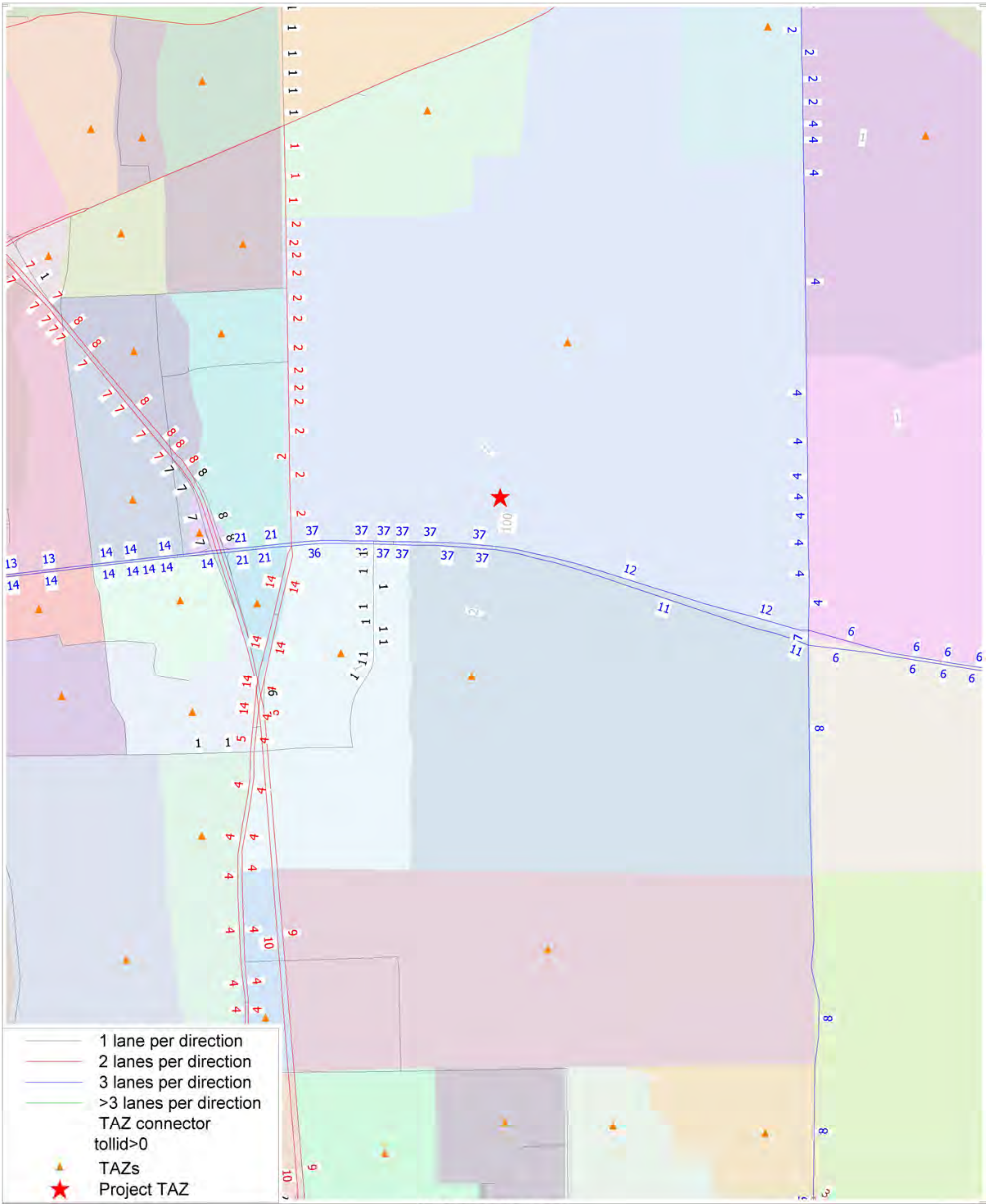
Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix F:

NERPM Output



DJX4 Project Distribution
NEPRMAB1v3 Year 2020 Network
C:\FSUTMS\D2\NERPMAB1v3\Master\Base2010\DJX4\output\LOADED_CombinedPeriods.NET 4/13/2021 8:14 AM

cube

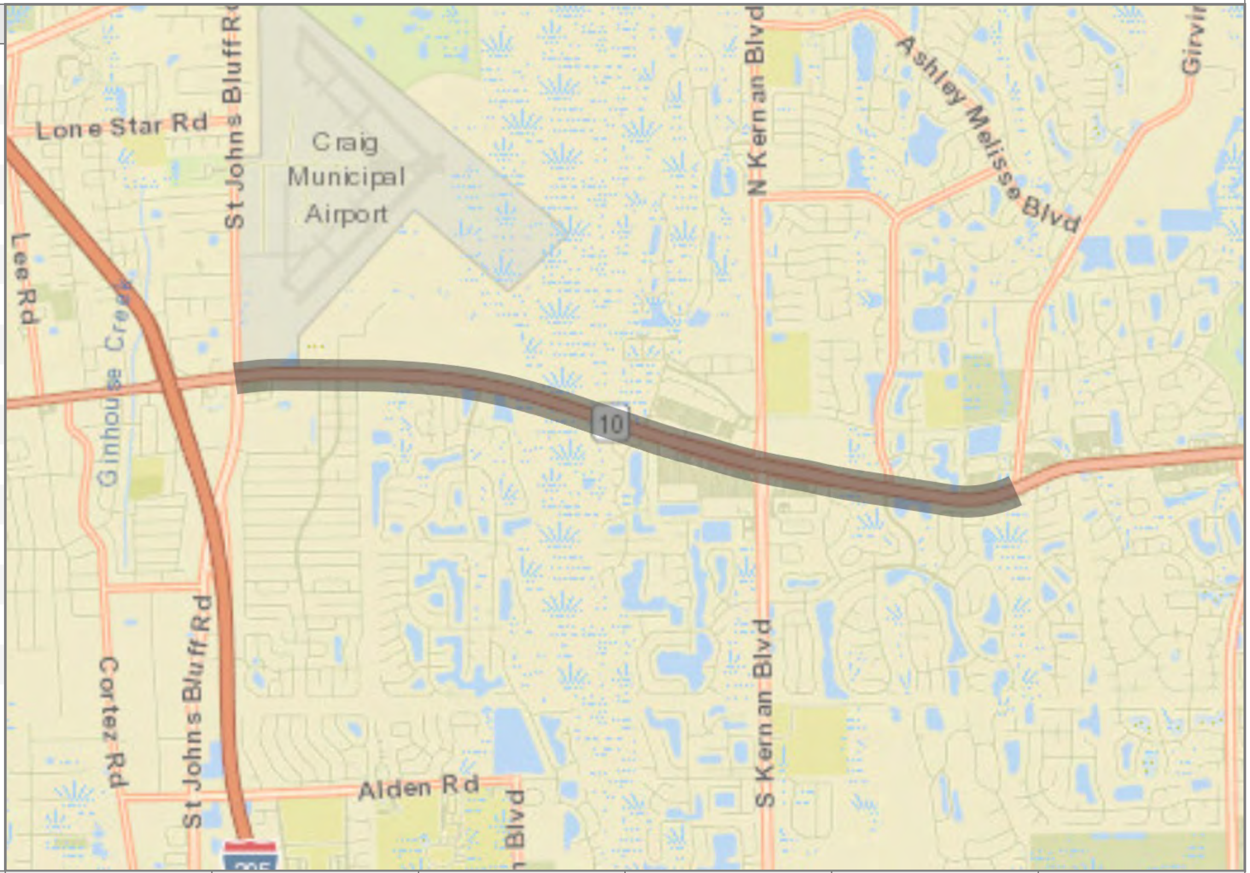
Appendix G:

FDOT LOS Report

US 90A / Atlantic Blvd. from St Johns Bluff Rd to Girvin Rd

Attribute	Value
Segment ID:	376
Segment Length (miles):	3.064 mi
Location:	Jacksonville
County:	Duval
Roadway ID:	72100000
Begin MP:	7.953
End MP:	11.017
SIS:	No
SIS Type:	Non SIS
Median Treatment:	Divided
Directionality:	Two-Way
Posted Speed:	45 mph
Facility Type:	Arterial
Area Type:	Urbanized
Standard K:	9.0%
FDOT LOS Standard:	D
Max. Service Vol. Adj. Factor:	0.00

Data Sources: RCI; TCI; NERPM AB; GUATS; FLSWM
Google Street View:
http://maps.google.com/maps?q=&layer=c&cbll=30.3215982661861,-81.4979967278596



Projected Values	2020	2025	2030	2035	2040	2045
Number of Lanes	6	6	6	6	6	6
AADT	50,252	65,882	69,324	72,765	76,207	79,649
Peak Hour Maximum Service Volume at LOS Standard	5,390	5,390	5,390	5,390	5,390	5,390
Peak Hour Traffic Volume	4,523	5,929	6,239	6,549	6,859	7,168
Peak Hour LOS	C	F	F	F	F	F

Notes:

Appendix H:

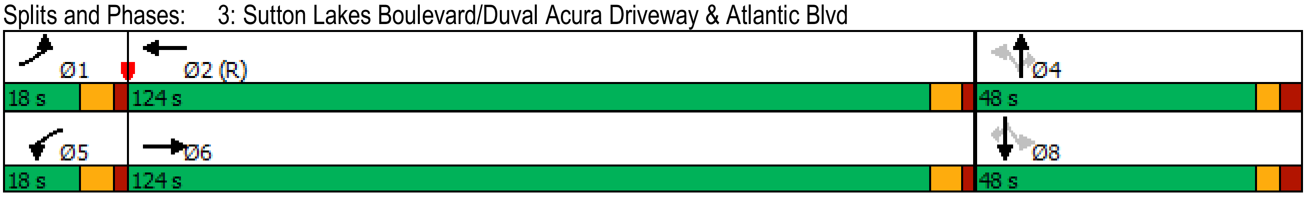
Intersection Analysis Sheets: Future Conditions

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	32	1880	42	2901	195	1	153	7	0	11
Future Volume (vph)	32	1880	42	2901	195	1	153	7	0	11
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6	5	2		4			8	
Permitted Phases					4		4	8		8
Detector Phase	1	6	5	2	4	4	4	8	8	8
Switch Phase										
Minimum Initial (s)	3.0	18.0	3.0	18.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.8	44.8	9.8	39.8	51.1	51.1	51.1	52.1	52.1	52.1
Total Split (s)	18.0	124.0	18.0	124.0	48.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	9.5%	65.3%	9.5%	65.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	3.4	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8		7.1	7.1		7.1	7.1
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	None	C-Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 190
Actuated Cycle Length: 190
Offset: 167 (88%), Referenced to phase 2:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 3: Sutton Lakes Boulevard/Duval Acura Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	35	2107	46	3161	213	166	8	12
v/c Ratio	0.42	0.62	0.51	0.91	0.86	0.44	0.06	0.04
Control Delay	93.4	28.2	107.1	32.9	104.5	27.8	61.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.4	28.2	107.1	32.9	104.5	27.8	61.9	0.3
Queue Length 50th (ft)	44	649	57	1249	260	64	8	0
Queue Length 95th (ft)	m82	875	108	#1537	360	141	26	0
Internal Link Dist (ft)		2382		1279	578		127	
Turn Bay Length (ft)	400		355					
Base Capacity (vph)	106	3395	106	3463	292	427	154	337
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.62	0.43	0.91	0.73	0.39	0.05	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1880	59	42	2901	7	195	1	153	7	0	11
Future Volume (veh/h)	32	1880	59	42	2901	7	195	1	153	7	0	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1826	1900	1885	1693	1885	1900	1885	1900	1900	1604
Adj Flow Rate, veh/h	35	2043	57	46	3153	7	212	1	146	8	0	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	5	0	1	14	1	0	1	0	0	20
Cap, veh/h	45	3545	99	59	3721	8	275	1	262	327	0	223
Arrive On Green	0.03	0.69	0.69	0.03	0.70	0.70	0.16	0.16	0.16	0.16	0.00	0.16
Sat Flow, veh/h	1810	5106	142	1810	5302	12	1443	7	1598	1764	0	1359
Grp Volume(v), veh/h	35	1361	739	46	2039	1121	213	0	146	8	0	11
Grp Sat Flow(s),veh/h/ln	1810	1702	1845	1810	1716	1883	1450	0	1598	1764	0	1359
Q Serve(g_s), s	3.7	38.7	38.8	4.8	83.0	83.3	26.6	0.0	16.0	0.0	0.0	1.3
Cycle Q Clear(g_c), s	3.7	38.7	38.8	4.8	83.0	83.3	27.3	0.0	16.0	0.7	0.0	1.3
Prop In Lane	1.00		0.08	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	45	2363	1281	59	2408	1321	276	0	262	327	0	223
V/C Ratio(X)	0.77	0.58	0.58	0.78	0.85	0.85	0.77	0.00	0.56	0.02	0.00	0.05
Avail Cap(c_a), veh/h	107	2363	1281	107	2408	1321	350	0	344	401	0	293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	92.1	14.8	14.8	91.2	20.8	20.9	77.7	0.0	73.1	66.7	0.0	66.9
Incr Delay (d2), s/veh	23.3	1.0	1.9	19.2	3.9	6.9	9.3	0.0	2.6	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	14.6	16.2	2.6	31.9	36.3	11.0	0.0	6.9	0.3	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	115.4	15.8	16.7	110.5	24.7	27.8	87.1	0.0	75.7	66.7	0.0	67.0
LnGrp LOS	F	B	B	F	C	C	F	A	E	E	A	E
Approach Vol, veh/h		2135			3206			359			19	
Approach Delay, s/veh		17.8			27.0			82.4			66.9	
Approach LOS		B			C			F			E	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	11.6	140.2	38.3	13.0	138.7	38.3
Change Period (Y+Rc), s	6.8	6.8	* 7.1	6.8	6.8	* 7.1
Max Green Setting (Gmax), s	11.2	117.2	* 41	11.2	117.2	* 41
Max Q Clear Time (g_c+I1), s	5.7	85.3	29.3	6.8	40.8	3.3
Green Ext Time (p_c), s	0.0	28.6	1.8	0.0	27.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Notes

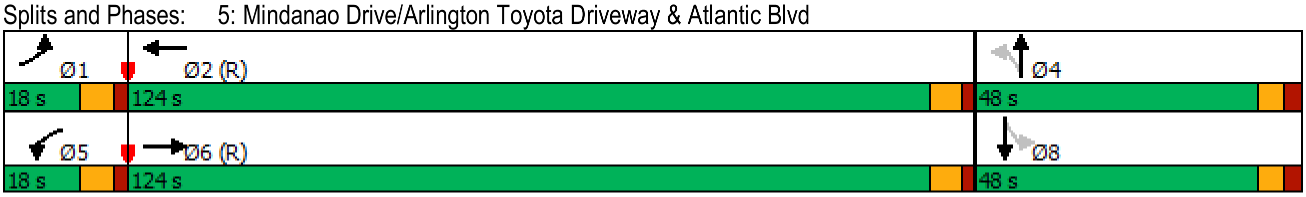
User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	36	1979	21	3059	59	8	4	1
Future Volume (vph)	36	1979	21	3059	59	8	4	1
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	1	6	5	2		4		8
Permitted Phases					4		8	
Detector Phase	1	6	5	2	4	4	8	8
Switch Phase								
Minimum Initial (s)	3.0	18.0	3.0	18.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.8	33.8	9.8	35.8	47.6	47.6	45.6	45.6
Total Split (s)	18.0	124.0	18.0	124.0	48.0	48.0	48.0	48.0
Total Split (%)	9.5%	65.3%	9.5%	65.3%	25.3%	25.3%	25.3%	25.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.6	6.6		6.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Min	None	C-Min	Min	Min	Min	Min

Intersection Summary
Cycle Length: 190
Actuated Cycle Length: 190
Offset: 52 (27%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 5: Mindanao Drive/Arlington Toyota Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	39	2189	23	3338	64	59	18
v/c Ratio	0.43	0.54	0.32	0.83	0.62	0.36	0.15
Control Delay	101.4	8.1	120.2	9.6	108.7	29.6	42.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.4	8.1	120.2	9.6	108.7	29.6	42.7
Queue Length 50th (ft)	48	354	31	861	79	11	6
Queue Length 95th (ft)	94	472	m35	1575	134	62	35
Internal Link Dist (ft)		526		331		358	339
Turn Bay Length (ft)	150				195		
Base Capacity (vph)	110	4080	101	4018	308	394	339
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.54	0.23	0.83	0.21	0.15	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1979	35	21	3059	12	59	8	46	4	1	12
Future Volume (veh/h)	36	1979	35	21	3059	12	59	8	46	4	1	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1826	1885	1781	1900	1900	1870	1530	1900	1900
Adj Flow Rate, veh/h	39	2151	34	23	3325	12	64	9	43	4	1	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	5	1	8	0	0	2	25	0	0
Cap, veh/h	51	4226	67	29	4262	15	119	17	83	34	16	65
Arrive On Green	0.03	0.82	0.82	0.02	0.81	0.81	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	1810	5176	82	1739	5294	19	1423	286	1368	182	266	1075
Grp Volume(v), veh/h	39	1414	771	23	2154	1183	64	0	52	17	0	0
Grp Sat Flow(s),veh/h/ln	1810	1702	1854	1739	1716	1882	1423	0	1654	1523	0	0
Q Serve(g_s), s	4.1	24.8	24.9	2.5	62.4	62.7	3.2	0.0	5.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.1	24.8	24.9	2.5	62.4	62.7	9.1	0.0	5.8	5.8	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.01	1.00		0.83	0.24		0.71
Lane Grp Cap(c), veh/h	51	2779	1513	29	2763	1515	119	0	100	116	0	0
V/C Ratio(X)	0.77	0.51	0.51	0.79	0.78	0.78	0.54	0.00	0.52	0.15	0.00	0.00
Avail Cap(c_a), veh/h	107	2779	1513	103	2763	1515	343	0	360	361	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	91.7	5.5	5.5	93.1	9.7	9.7	88.2	0.0	86.6	84.7	0.0	0.0
Incr Delay (d2), s/veh	21.5	0.7	1.2	36.6	2.3	4.1	3.7	0.0	4.1	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	7.7	8.6	1.4	20.3	23.2	3.3	0.0	2.6	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	113.2	6.1	6.7	129.7	11.9	13.8	91.9	0.0	90.7	85.3	0.0	0.0
LnGrp LOS	F	A	A	F	B	B	F	A	F	F	A	A
Approach Vol, veh/h		2224			3360			116			17	
Approach Delay, s/veh		8.2			13.4			91.4			85.3	
Approach LOS		A			B			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.1	159.8		18.1	10.0	161.9		18.1				
Change Period (Y+Rc), s	6.8	6.8		* 6.6	6.8	6.8		* 6.6				
Max Green Setting (Gmax), s	11.2	117.2		* 41	11.2	117.2		* 41				
Max Q Clear Time (g_c+I1), s	6.1	64.7		11.1	4.5	26.9		7.8				
Green Ext Time (p_c), s	0.0	41.9		0.4	0.0	22.7		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			13.2									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1924	0	0	2969	23	0	0	39	0	0	1
Future Vol, veh/h	0	1924	0	0	2969	23	0	0	39	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	2	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	0	2091	0	0	3227	25	0	0	42	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	1046	-	-	1626
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.1	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.9	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*466	0	0	*219
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			1
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*466	-	-	*219
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	13.5	21.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	466	-	-	-	-	219
HCM Lane V/C Ratio	0.091	-	-	-	-	0.005
HCM Control Delay (s)	13.5	-	-	-	-	21.5
HCM Lane LOS	B	-	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	-	0

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	326	1525	56	1901	97	11	79	45	0	64
Future Volume (vph)	326	1525	56	1901	97	11	79	45	0	64
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6	5	2		4			8	
Permitted Phases					4		4	8		8
Detector Phase	1	6	5	2	4	4	4	8	8	8
Switch Phase										
Minimum Initial (s)	3.0	18.0	3.0	18.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.8	44.8	9.8	39.8	51.1	51.1	51.1	52.1	52.1	52.1
Total Split (s)	38.0	95.0	23.0	80.0	42.0	42.0	42.0	42.0	42.0	42.0
Total Split (%)	23.8%	59.4%	14.4%	50.0%	26.3%	26.3%	26.3%	26.3%	26.3%	26.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	3.4	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8		7.1	7.1		7.1	7.1
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	None	C-Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 160

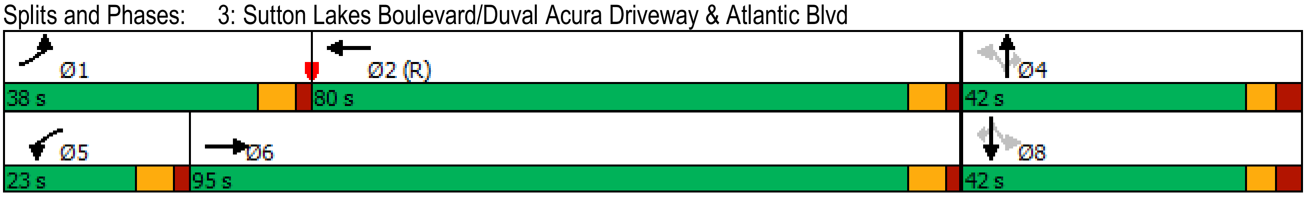
Actuated Cycle Length: 160

Offset: 44 (28%), Referenced to phase 2:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Splits and Phases: 3: Sutton Lakes Boulevard/Duval Acura Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	354	1711	61	2150	117	86	49	70
v/c Ratio	0.78	0.49	0.50	0.89	0.69	0.28	0.35	0.23
Control Delay	61.1	18.8	85.7	44.0	86.5	5.3	68.8	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.1	18.8	85.7	44.0	86.5	5.3	68.8	2.0
Queue Length 50th (ft)	344	296	63	744	119	0	48	0
Queue Length 95th (ft)	#532	660	113	845	183	21	90	3
Internal Link Dist (ft)		2412		1279	578		127	
Turn Bay Length (ft)	400		355					
Base Capacity (vph)	456	3519	182	2407	295	445	245	445
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.49	0.34	0.89	0.40	0.19	0.20	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	326	1525	49	56	1901	77	97	11	79	45	0	64
Future Volume (veh/h)	326	1525	49	56	1901	77	97	11	79	45	0	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1900	1900	1856	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	354	1658	48	61	2066	75	105	12	76	49	0	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	2	0	0	3	0	0	0	0	0	0	0
Cap, veh/h	339	3754	109	78	2932	106	172	15	147	195	0	147
Arrive On Green	0.19	0.74	0.74	0.04	0.58	0.58	0.09	0.09	0.09	0.09	0.00	0.09
Sat Flow, veh/h	1739	5100	148	1810	5018	182	1415	162	1610	1645	0	1610
Grp Volume(v), veh/h	354	1106	600	61	1389	752	117	0	76	49	0	61
Grp Sat Flow(s),veh/h/ln	1739	1702	1844	1810	1689	1823	1577	0	1610	1645	0	1610
Q Serve(g_s), s	31.2	20.3	20.3	5.3	46.5	46.8	7.1	0.0	7.2	0.0	0.0	5.7
Cycle Q Clear(g_c), s	31.2	20.3	20.3	5.3	46.5	46.8	11.4	0.0	7.2	4.3	0.0	5.7
Prop In Lane	1.00		0.08	1.00		0.10	0.90		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	339	2506	1357	78	1973	1065	187	0	147	195	0	147
V/C Ratio(X)	1.04	0.44	0.44	0.78	0.70	0.71	0.63	0.00	0.52	0.25	0.00	0.41
Avail Cap(c_a), veh/h	339	2506	1357	183	1973	1065	374	0	351	376	0	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	64.4	8.3	8.3	75.8	23.5	23.5	71.0	0.0	69.3	68.0	0.0	68.6
Incr Delay (d2), s/veh	60.8	0.6	1.0	15.3	2.1	4.0	4.8	0.0	4.0	0.7	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.3	6.9	7.7	2.8	18.2	20.3	5.0	0.0	3.2	1.9	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.2	8.8	9.3	91.1	25.6	27.5	75.8	0.0	73.3	68.7	0.0	70.5
LnGrp LOS	F	A	A	F	C	C	E	A	E	E	A	E
Approach Vol, veh/h		2060			2202			193			110	
Approach Delay, s/veh		29.0			28.1			74.8			69.7	
Approach LOS		C			C			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	38.0	100.3		21.7	13.7	124.6		21.7				
Change Period (Y+Rc), s	6.8	6.8		* 7.1	6.8	6.8		* 7.1				
Max Green Setting (Gmax), s	31.2	73.2		* 35	16.2	88.2		* 35				
Max Q Clear Time (g_c+I1), s	33.2	48.8		13.4	7.3	22.3		7.7				
Green Ext Time (p_c), s	0.0	16.4		1.2	0.1	17.5		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	31.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	49	1895	26	2064	38	5	25	5
Future Volume (vph)	49	1895	26	2064	38	5	25	5
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	1	6	5	2		4		8
Permitted Phases					4		8	
Detector Phase	1	6	5	2	4	4	8	8
Switch Phase								
Minimum Initial (s)	3.0	18.0	3.0	18.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.8	33.8	9.8	35.8	47.6	47.6	45.6	45.6
Total Split (s)	20.0	93.0	19.0	92.0	48.0	48.0	48.0	48.0
Total Split (%)	12.5%	58.1%	11.9%	57.5%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.6	6.6		6.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Min	None	C-Min	Min	Min	Min	Min

Intersection Summary

Cycle Length: 160

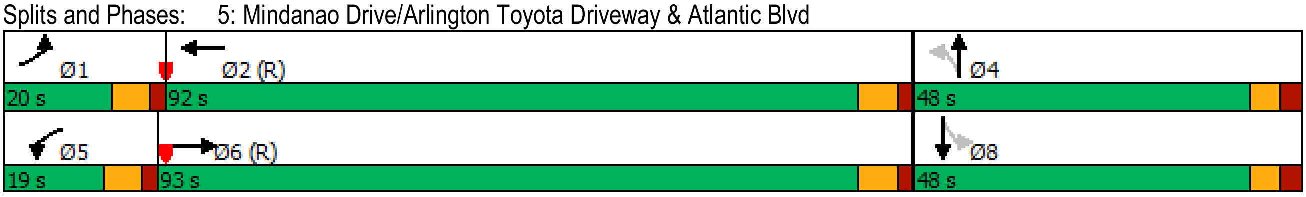
Actuated Cycle Length: 160

Offset: 96 (60%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 5: Mindanao Drive/Arlington Toyota Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	53	2108	28	2259	41	47	81
v/c Ratio	0.48	0.52	0.31	0.59	0.58	0.33	0.58
Control Delay	85.6	7.6	69.2	4.6	101.6	27.5	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.6	7.6	69.2	4.6	101.6	27.5	50.2
Queue Length 50th (ft)	55	297	30	159	42	5	36
Queue Length 95th (ft)	102	398	m39	71	86	48	93
Internal Link Dist (ft)		526		331		358	339
Turn Bay Length (ft)	150				195		
Base Capacity (vph)	145	4016	137	3833	288	451	426
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.52	0.20	0.59	0.14	0.10	0.19

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
5: Mindanao Drive/Arlington Toyota Driveway & Atlantic Blvd

06/28/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	1895	44	26	2064	15	38	5	39	25	5	45
Future Volume (veh/h)	49	1895	44	26	2064	15	38	5	39	25	5	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1870	1900	1900	1856	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	53	2060	44	28	2243	15	41	5	37	27	5	44
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	2	0	0	3	0	0	0	0	0	0	0
Cap, veh/h	68	3971	85	36	3910	26	141	16	118	62	19	70
Arrive On Green	0.04	0.77	0.77	0.02	0.75	0.75	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1753	5145	110	1810	5192	35	1371	194	1435	382	236	849
Grp Volume(v), veh/h	53	1362	742	28	1459	799	41	0	42	76	0	0
Grp Sat Flow(s),veh/h/ln	1753	1702	1851	1810	1689	1849	1371	0	1629	1466	0	0
Q Serve(g_s), s	4.8	24.3	24.4	2.5	30.0	30.1	0.0	0.0	3.9	4.4	0.0	0.0
Cycle Q Clear(g_c), s	4.8	24.3	24.4	2.5	30.0	30.1	5.9	0.0	3.9	8.2	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.02	1.00		0.88	0.36		0.58
Lane Grp Cap(c), veh/h	68	2628	1428	36	2544	1393	141	0	133	151	0	0
V/C Ratio(X)	0.78	0.52	0.52	0.78	0.57	0.57	0.29	0.00	0.31	0.50	0.00	0.00
Avail Cap(c_a), veh/h	145	2628	1428	138	2544	1393	384	0	422	421	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	76.2	6.9	6.9	78.1	8.6	8.6	70.1	0.0	69.2	71.2	0.0	0.0
Incr Delay (d2), s/veh	17.5	0.7	1.4	29.0	0.9	1.7	1.1	0.0	1.3	2.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	7.7	8.7	1.4	9.8	11.1	1.7	0.0	1.7	3.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.7	7.7	8.3	107.1	9.5	10.3	71.3	0.0	70.5	73.8	0.0	0.0
LnGrp LOS	F	A	A	F	A	B	E	A	E	E	A	A
Approach Vol, veh/h		2157			2286			83			76	
Approach Delay, s/veh		10.0			11.0			70.9			73.8	
Approach LOS		B			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	127.3		19.7	10.0	130.3		19.7
Change Period (Y+Rc), s	6.8	6.8		* 6.6	6.8	6.8		* 6.6
Max Green Setting (Gmax), s	13.2	85.2		* 41	12.2	86.2		* 41
Max Q Clear Time (g_c+I1), s	6.8	32.1		7.9	4.5	26.4		10.2
Green Ext Time (p_c), s	0.0	21.8		0.3	0.0	19.5		0.4

Intersection Summary			
HCM 6th Ctrl Delay			12.6
HCM 6th LOS			B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1967	1	0	2006	53	0	0	25	0	0	72
Future Vol, veh/h	0	1967	1	0	2006	53	0	0	25	0	0	72
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	2	0	0	3	0	0	0	0	0	0	18
Mvmt Flow	0	2138	1	0	2180	58	0	0	27	0	0	78

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	1070	-	-	1119
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.1	-	-	7.46
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.9	-	-	4.08
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*462	0	0	*442
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			1
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*462	-	-	*442
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	13.3	14.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	462	-	-	-	-	442
HCM Lane V/C Ratio	0.059	-	-	-	-	0.177
HCM Control Delay (s)	13.3	-	-	-	-	14.9
HCM Lane LOS	B	-	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.6

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

3: Sutton Lakes Boulevard/Duval Acura Driveway & Atlantic Blvd

06/28/2022

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	254	1486	63	1628	71	1	81	108	0	129
Future Volume (vph)	254	1486	63	1628	71	1	81	108	0	129
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6	5	2		4			8	
Permitted Phases					4		4	8		8
Detector Phase	1	6	5	2	4	4	4	8	8	8
Switch Phase										
Minimum Initial (s)	3.0	18.0	3.0	18.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.8	44.8	9.8	39.8	51.1	51.1	51.1	52.1	52.1	52.1
Total Split (s)	33.0	85.0	23.0	75.0	52.0	52.0	52.0	52.0	52.0	52.0
Total Split (%)	20.6%	53.1%	14.4%	46.9%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	3.4	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8		7.1	7.1		7.1	7.1
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	None	C-Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 160

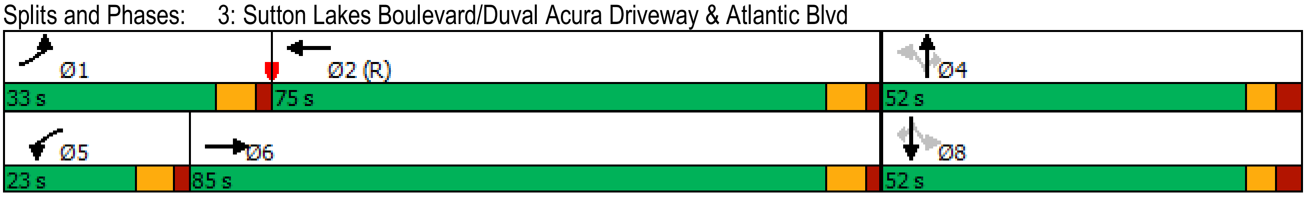
Actuated Cycle Length: 160

Offset: 44 (28%), Referenced to phase 2:WBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Splits and Phases: 3: Sutton Lakes Boulevard/Duval Acura Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	276	1665	68	1840	78	88	117	140
v/c Ratio	0.76	0.48	0.53	0.67	0.61	0.29	0.72	0.44
Control Delay	65.1	18.4	86.0	29.5	85.4	5.8	90.9	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.1	18.4	86.0	29.5	85.4	5.8	90.9	12.8
Queue Length 50th (ft)	273	284	70	499	79	0	120	0
Queue Length 95th (ft)	373	619	122	652	133	23	184	63
Internal Link Dist (ft)		2398		1279	578		127	
Turn Bay Length (ft)	400		355					
Base Capacity (vph)	364	3469	182	2732	296	538	376	553
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.48	0.37	0.67	0.26	0.16	0.31	0.25

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	254	1486	46	63	1628	64	71	1	81	108	0	129
Future Volume (veh/h)	254	1486	46	63	1628	64	71	1	81	108	0	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1900	1900	1870	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	276	1615	45	68	1770	63	77	1	77	117	0	122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	1	0	0	2	0	0	0	0	0	0	0
Cap, veh/h	287	3753	105	86	3104	110	203	2	151	195	0	151
Arrive On Green	0.16	0.73	0.73	0.05	0.61	0.61	0.09	0.09	0.09	0.09	0.00	0.09
Sat Flow, veh/h	1753	5147	143	1810	5062	180	1691	22	1610	1600	0	1610
Grp Volume(v), veh/h	276	1076	584	68	1190	643	78	0	77	117	0	122
Grp Sat Flow(s),veh/h/ln	1753	1716	1859	1810	1702	1838	1713	0	1610	1600	0	1610
Q Serve(g_s), s	25.0	19.8	19.8	5.9	33.3	33.3	0.0	0.0	7.3	4.5	0.0	11.9
Cycle Q Clear(g_c), s	25.0	19.8	19.8	5.9	33.3	33.3	6.5	0.0	7.3	11.0	0.0	11.9
Prop In Lane	1.00		0.08	1.00		0.10	0.99		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	287	2502	1356	86	2087	1127	205	0	151	195	0	151
V/C Ratio(X)	0.96	0.43	0.43	0.79	0.57	0.57	0.38	0.00	0.51	0.60	0.00	0.81
Avail Cap(c_a), veh/h	287	2502	1356	183	2087	1127	475	0	452	464	0	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	66.4	8.5	8.5	75.4	18.4	18.4	68.7	0.0	69.0	70.4	0.0	71.1
Incr Delay (d2), s/veh	42.6	0.5	1.0	14.6	1.1	2.1	1.6	0.0	3.8	2.9	0.0	9.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	6.8	7.6	3.1	12.8	14.1	3.1	0.0	3.2	4.9	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	109.0	9.1	9.5	90.0	19.5	20.5	70.3	0.0	72.8	73.3	0.0	80.9
LnGrp LOS	F	A	A	F	B	C	E	A	E	E	A	F
Approach Vol, veh/h		1936			1901			155			239	
Approach Delay, s/veh		23.5			22.4			71.5			77.2	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	33.0	104.9		22.1	14.4	123.5		22.1
Change Period (Y+Rc), s	6.8	6.8		* 7.1	6.8	6.8		* 7.1
Max Green Setting (Gmax), s	26.2	68.2		* 45	16.2	78.2		* 45
Max Q Clear Time (g_c+I1), s	27.0	35.3		9.3	7.9	21.8		13.9
Green Ext Time (p_c), s	0.0	16.0		1.0	0.1	16.2		1.1

Intersection Summary	
HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	32	1803	21	2030	39	5	15	3
Future Volume (vph)	32	1803	21	2030	39	5	15	3
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	1	6	5	2		4		8
Permitted Phases					4		8	
Detector Phase	1	6	5	2	4	4	8	8
Switch Phase								
Minimum Initial (s)	3.0	18.0	3.0	18.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.8	33.8	9.8	35.8	47.6	47.6	45.6	45.6
Total Split (s)	20.0	93.0	19.0	92.0	48.0	48.0	48.0	48.0
Total Split (%)	12.5%	58.1%	11.9%	57.5%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.6	6.6		6.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Min	None	C-Min	Min	Min	Min	Min

Intersection Summary

Cycle Length: 160

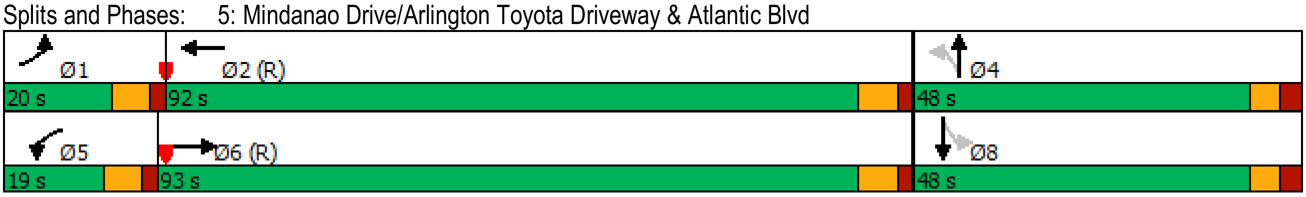
Actuated Cycle Length: 160

Offset: 96 (60%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 5: Mindanao Drive/Arlington Toyota Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	35	2013	23	2215	42	42	66
v/c Ratio	0.37	0.50	0.27	0.57	0.53	0.30	0.46
Control Delay	83.3	7.2	77.1	4.3	94.0	28.4	37.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.3	7.2	77.1	4.3	94.0	28.4	37.0
Queue Length 50th (ft)	36	270	24	146	43	5	19
Queue Length 95th (ft)	75	362	m44	108	87	47	70
Internal Link Dist (ft)		526		331		358	339
Turn Bay Length (ft)	150				195		
Base Capacity (vph)	144	4026	137	3920	327	448	436
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.50	0.17	0.57	0.13	0.09	0.15

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1803	49	21	2030	7	39	5	34	15	3	43
Future Volume (veh/h)	32	1803	49	21	2030	7	39	5	34	15	3	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1900	1900	1870	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	35	1960	48	23	2207	7	42	5	33	16	3	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	2	0	0	2	0	0	0	0	0	0	0
Cap, veh/h	45	4047	99	29	4099	13	134	15	97	47	15	74
Arrive On Green	0.03	0.79	0.79	0.02	0.78	0.78	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	1767	5126	125	1810	5255	17	1374	215	1416	273	217	1083
Grp Volume(v), veh/h	35	1301	707	23	1429	785	42	0	38	61	0	0
Grp Sat Flow(s),veh/h/ln	1767	1702	1848	1810	1702	1867	1374	0	1630	1572	0	0
Q Serve(g_s), s	3.2	20.8	20.9	2.0	25.5	25.5	0.0	0.0	3.6	2.4	0.0	0.0
Cycle Q Clear(g_c), s	3.2	20.8	20.9	2.0	25.5	25.5	5.2	0.0	3.6	5.9	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.01	1.00		0.87	0.26		0.69
Lane Grp Cap(c), veh/h	45	2687	1459	29	2655	1457	134	0	111	136	0	0
V/C Ratio(X)	0.78	0.48	0.48	0.79	0.54	0.54	0.31	0.00	0.34	0.45	0.00	0.00
Avail Cap(c_a), veh/h	146	2687	1459	138	2655	1457	396	0	422	430	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	77.5	5.7	5.7	78.4	6.7	6.7	71.9	0.0	71.1	72.2	0.0	0.0
Incr Delay (d2), s/veh	24.2	0.6	1.2	35.7	0.8	1.4	1.3	0.0	1.8	2.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	6.3	7.1	1.2	7.9	9.0	1.7	0.0	1.6	2.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	101.7	6.4	6.9	114.2	7.5	8.1	73.2	0.0	72.9	74.5	0.0	0.0
LnGrp LOS	F	A	A	F	A	A	E	A	E	E	A	A
Approach Vol, veh/h		2043			2237			80			61	
Approach Delay, s/veh		8.2			8.8			73.1			74.5	
Approach LOS		A			A			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	131.6		17.5	9.4	133.1		17.5				
Change Period (Y+Rc), s	6.8	6.8		* 6.6	6.8	6.8		* 6.6				
Max Green Setting (Gmax), s	13.2	85.2		* 41	12.2	86.2		* 41				
Max Q Clear Time (g_c+I1), s	5.2	27.5		7.2	4.0	22.9		7.9				
Green Ext Time (p_c), s	0.0	21.4		0.3	0.0	17.9		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			10.6									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1853	3	0	1857	46	0	0	22	0	0	191
Future Vol, veh/h	0	1853	3	0	1857	46	0	0	22	0	0	191
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	0	0	2	3	0	0	0	0	0	20
Mvmt Flow	0	2014	3	0	2018	50	0	0	24	0	0	208

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	1009	-	-	1034
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.1	-	-	7.5
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.9	-	-	4.1
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*495	0	0	*471
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			1
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*495	-	-	*471
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12.6	18.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	495	-	-	-	-	471
HCM Lane V/C Ratio	0.048	-	-	-	-	0.441
HCM Control Delay (s)	12.6	-	-	-	-	18.5
HCM Lane LOS	B	-	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	-	2.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	99	2818	186	2385	109	1	135	42	3	44
Future Volume (vph)	99	2818	186	2385	109	1	135	42	3	44
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6	5	2		4			8	
Permitted Phases					4		4	8		8
Detector Phase	1	6	5	2	4	4	4	8	8	8
Switch Phase										
Minimum Initial (s)	3.0	18.0	3.0	18.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.8	44.8	9.8	39.8	51.1	51.1	51.1	52.1	52.1	52.1
Total Split (s)	20.0	118.0	30.0	128.0	52.0	52.0	52.0	52.0	52.0	52.0
Total Split (%)	10.0%	59.0%	15.0%	64.0%	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	3.4	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8		7.1	7.1		7.1	7.1
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	None	C-Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 200

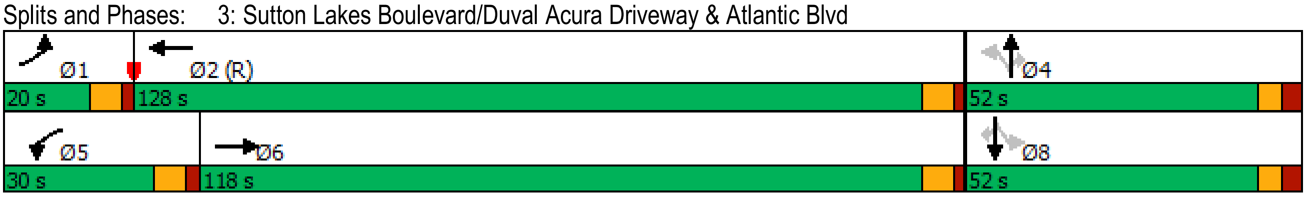
Actuated Cycle Length: 200

Offset: 147 (74%), Referenced to phase 2:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Splits and Phases: 3: Sutton Lakes Boulevard/Duval Acura Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	108	3279	202	2622	119	147	49	48
v/c Ratio	0.63	1.05	0.73	0.76	0.75	0.46	0.40	0.17
Control Delay	109.5	70.4	96.6	24.9	110.8	15.8	88.5	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	109.5	70.4	96.6	24.9	110.8	15.8	88.5	1.3
Queue Length 50th (ft)	134	~1745	257	814	154	7	61	0
Queue Length 95th (ft)	m152	#1926	356	1043	227	80	107	0
Internal Link Dist (ft)		2398		1279	578		127	
Turn Bay Length (ft)	400		355					
Base Capacity (vph)	171	3134	275	3437	286	463	219	436
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	1.05	0.73	0.76	0.42	0.32	0.22	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	2818	199	186	2385	28	109	1	135	42	3	44
Future Volume (veh/h)	99	2818	199	186	2385	28	109	1	135	42	3	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1870	1870	1900	1856	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	108	3063	194	202	2592	27	118	1	130	46	3	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	1	1	2	2	0	3	0	1	0	0	0
Cap, veh/h	119	3346	207	207	3783	39	194	1	166	201	12	168
Arrive On Green	0.07	0.68	0.68	0.12	0.73	0.73	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1810	4950	307	1781	5211	54	1511	13	1593	1593	116	1606
Grp Volume(v), veh/h	108	2102	1155	202	1691	928	119	0	130	49	0	41
Grp Sat Flow(s),veh/h/ln	1810	1716	1825	1781	1702	1861	1524	0	1593	1709	0	1606
Q Serve(g_s), s	11.9	102.5	111.6	22.6	54.1	54.5	9.8	0.0	15.9	0.0	0.0	4.7
Cycle Q Clear(g_c), s	11.9	102.5	111.6	22.6	54.1	54.5	14.8	0.0	15.9	5.0	0.0	4.7
Prop In Lane	1.00		0.17	1.00		0.03	0.99		1.00	0.94		1.00
Lane Grp Cap(c), veh/h	119	2319	1234	207	2471	1351	195	0	166	213	0	168
V/C Ratio(X)	0.90	0.91	0.94	0.98	0.68	0.69	0.61	0.00	0.78	0.23	0.00	0.24
Avail Cap(c_a), veh/h	119	2319	1234	207	2471	1351	367	0	358	388	0	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	92.8	27.1	28.6	88.1	14.9	15.0	86.4	0.0	87.3	82.4	0.0	82.3
Incr Delay (d2), s/veh	53.8	6.5	14.3	56.0	1.6	2.9	4.3	0.0	10.7	0.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	41.3	50.3	13.6	20.2	22.7	6.3	0.0	7.2	2.4	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	146.6	33.6	42.8	144.1	16.5	17.8	90.8	0.0	98.0	83.0	0.0	83.0
LnGrp LOS	F	C	D	F	B	B	F	A	F	F	A	F
Approach Vol, veh/h		3365			2821			249			90	
Approach Delay, s/veh		40.4			26.1			94.6			83.0	
Approach LOS		D			C			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	152.0		28.0	30.0	142.0		28.0				
Change Period (Y+Rc), s	6.8	6.8		* 7.1	6.8	6.8		* 7.1				
Max Green Setting (Gmax), s	13.2	121.2		* 45	23.2	111.2		* 45				
Max Q Clear Time (g_c+I1), s	13.9	56.5		17.9	24.6	113.6		7.0				
Green Ext Time (p_c), s	0.0	40.1		1.6	0.0	0.0		0.4				

Intersection Summary			
HCM 6th Ctrl Delay			36.9
HCM 6th LOS			D

Notes

User approved pedestrian interval to be less than phase max green.

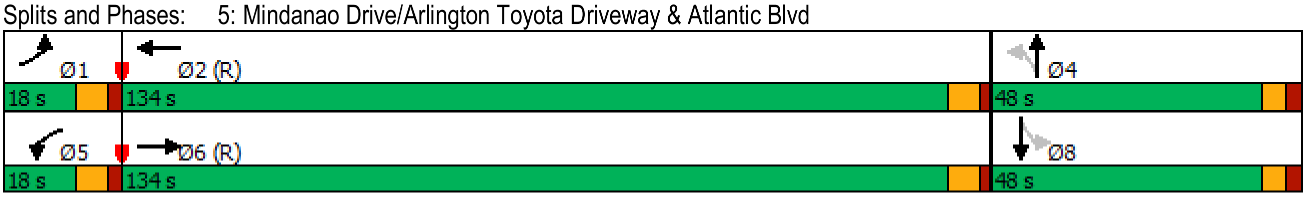
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	46	2912	57	2679	75	7	25	13
Future Volume (vph)	46	2912	57	2679	75	7	25	13
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	1	6	5	2		4		8
Permitted Phases					4		8	
Detector Phase	1	6	5	2	4	4	8	8
Switch Phase								
Minimum Initial (s)	3.0	18.0	3.0	18.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.8	33.8	9.8	35.8	47.6	47.6	45.6	45.6
Total Split (s)	18.0	134.0	18.0	134.0	48.0	48.0	48.0	48.0
Total Split (%)	9.0%	67.0%	9.0%	67.0%	24.0%	24.0%	24.0%	24.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.6	6.6		6.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Min	None	C-Min	Min	Min	Min	Min

Intersection Summary

Cycle Length: 200
Actuated Cycle Length: 200
Offset: 61 (31%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 5: Mindanao Drive/Arlington Toyota Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	50	3302	62	2932	82	75	114
v/c Ratio	0.51	0.88	0.57	0.76	0.95	0.33	0.62
Control Delay	108.8	25.0	104.5	38.8	173.8	22.5	68.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	108.8	25.0	104.5	38.8	173.8	22.5	68.6
Queue Length 50th (ft)	65	1120	78	1355	110	10	95
Queue Length 95th (ft)	116	1480	m106	1483	#188	65	166
Internal Link Dist (ft)		526		331		358	339
Turn Bay Length (ft)	150				195		
Base Capacity (vph)	110	3749	116	3842	175	387	336
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.88	0.53	0.76	0.47	0.19	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	2912	126	57	2679	18	75	7	62	25	13	67
Future Volume (veh/h)	46	2912	126	57	2679	18	75	7	62	25	13	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1841	1870	1900	1826	1900	1870	1900	1900	1900
Adj Flow Rate, veh/h	50	3165	123	62	2912	18	82	8	59	27	14	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	1	1	4	2	0	5	0	2	0	0	0
Cap, veh/h	64	3786	145	77	3943	24	133	22	160	52	33	97
Arrive On Green	0.04	0.74	0.74	0.04	0.75	0.75	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1810	5086	195	1753	5236	32	1290	196	1444	265	298	878
Grp Volume(v), veh/h	50	2122	1166	62	1891	1039	82	0	67	105	0	0
Grp Sat Flow(s),veh/h/ln	1810	1716	1850	1753	1702	1865	1290	0	1640	1441	0	0
Q Serve(g_s), s	5.5	82.9	87.1	7.0	61.8	62.2	4.9	0.0	7.6	7.1	0.0	0.0
Cycle Q Clear(g_c), s	5.5	82.9	87.1	7.0	61.8	62.2	19.6	0.0	7.6	14.7	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.02	1.00		0.88	0.26		0.61
Lane Grp Cap(c), veh/h	64	2554	1377	77	2563	1404	133	0	182	182	0	0
V/C Ratio(X)	0.79	0.83	0.85	0.81	0.74	0.74	0.61	0.00	0.37	0.58	0.00	0.00
Avail Cap(c_a), veh/h	101	2554	1377	98	2563	1404	257	0	339	333	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	95.7	17.1	17.7	94.8	13.7	13.8	89.2	0.0	82.4	85.6	0.0	0.0
Incr Delay (d2), s/veh	18.7	3.3	6.6	30.9	1.9	3.5	4.5	0.0	1.2	2.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	30.8	36.1	3.8	22.4	25.3	4.4	0.0	3.3	5.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	114.4	20.4	24.3	125.7	15.7	17.3	93.7	0.0	83.7	88.4	0.0	0.0
LnGrp LOS	F	C	C	F	B	B	F	A	F	F	A	A
Approach Vol, veh/h		3338			2992			149			105	
Approach Delay, s/veh		23.2			18.5			89.2			88.4	
Approach LOS		C			B			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.8	157.4		28.8	15.5	155.7		28.8				
Change Period (Y+Rc), s	6.8	6.8		* 6.6	6.8	6.8		* 6.6				
Max Green Setting (Gmax), s	11.2	127.2		* 41	11.2	127.2		* 41				
Max Q Clear Time (g_c+I1), s	7.5	64.2		21.6	9.0	89.1		16.7				
Green Ext Time (p_c), s	0.0	39.1		0.6	0.0	31.8		0.5				

Intersection Summary			
HCM 6th Ctrl Delay			23.6
HCM 6th LOS			C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	3154	5	0	2544	18	0	0	42	0	0	49
Future Vol, veh/h	0	3154	5	0	2544	18	0	0	42	0	0	49
Conflicting Peds, #/hr	0	0	3	3	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	40	0	2	0	0	0	0	0	0	12
Mvmt Flow	0	3428	5	0	2765	20	0	0	46	0	0	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	1720	-	-	1393
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.1	-	-	7.34
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.9	-	-	4.02
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	*176	0	0	*310
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-			1			1
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	*176	-	-	*310
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	32.5	19
HCM LOS			D	C

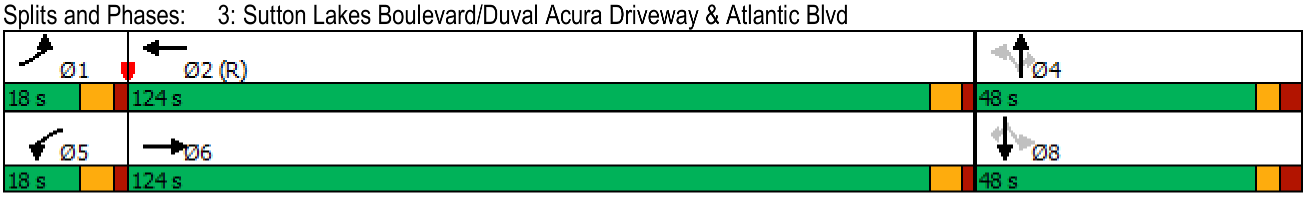
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	176	-	-	-	-	310
HCM Lane V/C Ratio	0.259	-	-	-	-	0.172
HCM Control Delay (s)	32.5	-	-	-	-	19
HCM Lane LOS	D	-	-	-	-	C
HCM 95th %tile Q(veh)	1	-	-	-	-	0.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	31	1880	42	2901	195	1	153	6	0	10
Future Volume (vph)	31	1880	42	2901	195	1	153	6	0	10
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6	5	2		4			8	
Permitted Phases					4		4	8		8
Detector Phase	1	6	5	2	4	4	4	8	8	8
Switch Phase										
Minimum Initial (s)	3.0	18.0	3.0	18.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.8	44.8	9.8	39.8	51.1	51.1	51.1	52.1	52.1	52.1
Total Split (s)	18.0	124.0	18.0	124.0	48.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	9.5%	65.3%	9.5%	65.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	3.4	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8		7.1	7.1		7.1	7.1
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	None	C-Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 190
Actuated Cycle Length: 190
Offset: 167 (88%), Referenced to phase 2:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 3: Sutton Lakes Boulevard/Duval Acura Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	34	2107	46	3161	213	166	7	11
v/c Ratio	0.41	0.62	0.51	0.91	0.86	0.44	0.05	0.04
Control Delay	86.3	36.5	107.1	32.8	104.5	27.8	61.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.3	36.5	107.1	32.8	104.5	27.8	61.5	0.2
Queue Length 50th (ft)	42	778	57	1245	260	64	7	0
Queue Length 95th (ft)	m74	971	108	#1537	360	141	24	0
Internal Link Dist (ft)		2133		1279	578		127	
Turn Bay Length (ft)	400		355					
Base Capacity (vph)	106	3395	106	3466	292	427	154	337
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.62	0.43	0.91	0.73	0.39	0.05	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1880	59	42	2901	7	195	1	153	6	0	10
Future Volume (veh/h)	31	1880	59	42	2901	7	195	1	153	6	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1826	1900	1885	1693	1885	1900	1885	1900	1900	1604
Adj Flow Rate, veh/h	34	2043	57	46	3153	7	212	1	146	7	0	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	5	0	1	14	1	0	1	0	0	20
Cap, veh/h	44	3545	99	59	3725	8	275	1	262	327	0	223
Arrive On Green	0.02	0.69	0.69	0.03	0.70	0.70	0.16	0.16	0.16	0.16	0.00	0.16
Sat Flow, veh/h	1810	5106	142	1810	5302	12	1442	7	1598	1764	0	1359
Grp Volume(v), veh/h	34	1361	739	46	2039	1121	213	0	146	7	0	10
Grp Sat Flow(s),veh/h/ln	1810	1702	1845	1810	1716	1883	1449	0	1598	1764	0	1359
Q Serve(g_s), s	3.5	38.7	38.9	4.8	82.8	83.1	26.7	0.0	16.0	0.0	0.0	1.2
Cycle Q Clear(g_c), s	3.5	38.7	38.9	4.8	82.8	83.1	27.3	0.0	16.0	0.6	0.0	1.2
Prop In Lane	1.00		0.08	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	44	2363	1280	59	2410	1323	276	0	262	327	0	223
V/C Ratio(X)	0.77	0.58	0.58	0.78	0.85	0.85	0.77	0.00	0.56	0.02	0.00	0.04
Avail Cap(c_a), veh/h	107	2363	1280	107	2410	1323	349	0	344	401	0	293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	92.1	14.8	14.8	91.2	20.7	20.8	77.7	0.0	73.0	66.6	0.0	66.9
Incr Delay (d2), s/veh	23.9	1.0	1.9	19.2	3.9	6.9	9.4	0.0	2.6	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	14.6	16.2	2.6	31.8	36.2	11.0	0.0	6.9	0.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	116.0	15.8	16.7	110.5	24.6	27.6	87.1	0.0	75.7	66.7	0.0	66.9
LnGrp LOS	F	B	B	F	C	C	F	A	E	E	A	E
Approach Vol, veh/h		2134			3206			359			17	
Approach Delay, s/veh		17.7			26.9			82.4			66.8	
Approach LOS		B			C			F			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.4	140.3		38.3	13.0	138.7		38.3				
Change Period (Y+Rc), s	6.8	6.8		* 7.1	6.8	6.8		* 7.1				
Max Green Setting (Gmax), s	11.2	117.2		* 41	11.2	117.2		* 41				
Max Q Clear Time (g_c+I1), s	5.5	85.1		29.3	6.8	40.9		3.2				
Green Ext Time (p_c), s	0.0	28.7		1.8	0.0	27.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			27.1									
HCM 6th LOS			C									

Notes

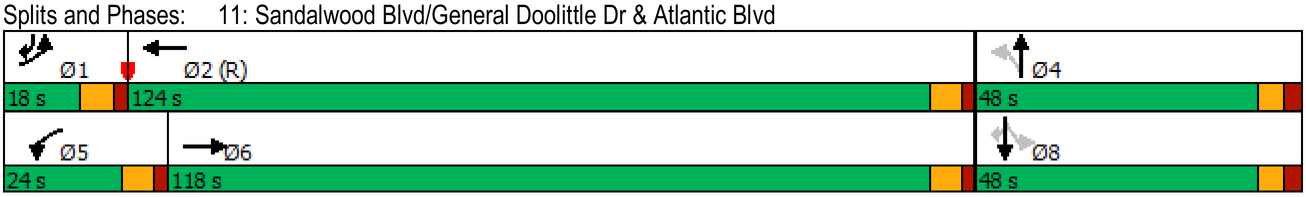
User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	37	1919	119	2946	60	8	4	1	2
Future Volume (vph)	37	1919	119	2946	60	8	4	1	2
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	pm+ov
Protected Phases	1	6	5	2		4		8	1
Permitted Phases					4		8		8
Detector Phase	1	6	5	2	4	4	8	8	1
Switch Phase									
Minimum Initial (s)	3.0	18.0	3.0	18.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.8	33.8	9.8	35.8	47.6	47.6	45.6	45.6	9.8
Total Split (s)	18.0	118.0	24.0	124.0	48.0	48.0	48.0	48.0	18.0
Total Split (%)	9.5%	62.1%	12.6%	65.3%	25.3%	25.3%	25.3%	25.3%	9.5%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	4.8
All-Red Time (s)	2.0	2.0	2.0	2.0	2.9	2.9	2.9	2.9	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.6	6.6		6.6	6.8
Lead/Lag	Lead	Lag	Lead	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes
Recall Mode	None	Min	None	C-Min	Min	Min	Min	Min	None

Intersection Summary
Cycle Length: 190
Actuated Cycle Length: 190
Offset: 52 (27%), Referenced to phase 2:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sandalwood Blvd/General Doolittle Dr & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	40	2086	129	3227	65	51	5	2
v/c Ratio	0.44	0.58	0.70	0.80	0.62	0.32	0.05	0.01
Control Delay	101.7	15.0	111.6	11.3	108.6	31.1	79.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.7	15.0	111.6	11.3	108.6	31.1	79.8	0.0
Queue Length 50th (ft)	50	441	151	1328	80	11	6	0
Queue Length 95th (ft)	95	583	m164	1515	137	59	22	0
Internal Link Dist (ft)		333		285		351	165	
Turn Bay Length (ft)								
Base Capacity (vph)	110	3621	190	4015	312	389	276	292
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.58	0.68	0.80	0.21	0.13	0.02	0.01

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1919	0	119	2946	23	60	8	39	4	1	2
Future Volume (veh/h)	37	1919	0	119	2946	23	60	8	39	4	1	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1826	1885	1781	1900	1900	1870	1530	1900	1900
Adj Flow Rate, veh/h	40	2086	0	129	3202	23	65	9	37	4	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	5	1	8	0	0	2	25	0	0
Cap, veh/h	52	3708	0	146	4120	30	121	27	111	101	22	181
Arrive On Green	0.03	0.73	0.00	0.08	0.78	0.78	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1810	5274	0	1739	5272	38	1436	325	1335	806	261	1610
Grp Volume(v), veh/h	40	2086	0	129	2081	1144	65	0	46	5	0	2
Grp Sat Flow(s),veh/h/ln	1810	1702	0	1739	1716	1878	1436	0	1660	1067	0	1610
Q Serve(g_s), s	4.2	35.9	0.0	13.9	64.0	64.6	8.5	0.0	5.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	4.2	35.9	0.0	13.9	64.0	64.6	13.4	0.0	5.0	4.9	0.0	0.2
Prop In Lane	1.00		0.00	1.00		0.02	1.00		0.80	0.80		1.00
Lane Grp Cap(c), veh/h	52	3708	0	146	2681	1468	121	0	139	123	0	181
V/C Ratio(X)	0.77	0.56	0.00	0.88	0.78	0.78	0.54	0.00	0.33	0.04	0.00	0.01
Avail Cap(c_a), veh/h	107	3708	0	157	2681	1468	314	0	362	320	0	397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	91.7	12.0	0.0	86.1	11.5	11.6	88.4	0.0	82.1	80.1	0.0	75.0
Incr Delay (d2), s/veh	21.1	0.2	0.0	38.5	2.3	4.1	3.7	0.0	1.4	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	12.9	0.0	7.8	22.0	25.1	3.3	0.0	2.2	0.2	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	112.7	12.2	0.0	124.6	13.8	15.7	92.1	0.0	83.5	80.2	0.0	75.0
LnGrp LOS	F	B	A	F	B	B	F	A	F	F	A	E
Approach Vol, veh/h		2126			3354			111			7	
Approach Delay, s/veh		14.1			18.7			88.5			78.7	
Approach LOS		B			B			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.2	155.3		22.4	22.8	144.8		22.4				
Change Period (Y+Rc), s	6.8	6.8		* 6.6	6.8	6.8		* 6.6				
Max Green Setting (Gmax), s	11.2	117.2		* 41	17.2	111.2		* 41				
Max Q Clear Time (g_c+I1), s	6.2	66.6		15.4	15.9	37.9		6.9				
Green Ext Time (p_c), s	0.0	39.0		0.4	0.0	22.4		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			18.4
HCM 6th LOS			B

Notes
User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	59	1531	56	1901	97	11	79	38	0	33
Future Volume (vph)	59	1531	56	1901	97	11	79	38	0	33
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6	5	2		4			8	
Permitted Phases					4		4	8		8
Detector Phase	1	6	5	2	4	4	4	8	8	8
Switch Phase										
Minimum Initial (s)	3.0	18.0	3.0	18.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.8	44.8	9.8	39.8	51.1	51.1	51.1	52.1	52.1	52.1
Total Split (s)	18.0	85.0	23.0	90.0	52.0	52.0	52.0	52.0	52.0	52.0
Total Split (%)	11.3%	53.1%	14.4%	56.3%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	3.4	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8		7.1	7.1		7.1	7.1
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	None	C-Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 160

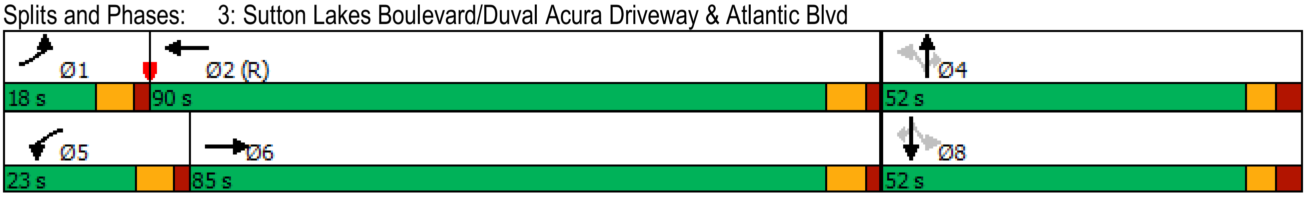
Actuated Cycle Length: 160

Offset: 44 (28%), Referenced to phase 2:WBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 3: Sutton Lakes Boulevard/Duval Acura Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	64	1717	61	2150	117	86	41	36
v/c Ratio	0.53	0.49	0.50	0.62	0.69	0.31	0.29	0.14
Control Delay	75.4	16.0	85.7	16.1	86.1	13.5	66.6	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.4	16.0	85.7	16.1	86.1	13.5	66.6	1.1
Queue Length 50th (ft)	66	291	63	440	119	0	40	0
Queue Length 95th (ft)	118	500	113	609	183	51	78	3
Internal Link Dist (ft)		2139		1279	578		127	
Turn Bay Length (ft)	400		355					
Base Capacity (vph)	134	3519	182	3467	382	515	316	505
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.49	0.34	0.62	0.31	0.17	0.13	0.07

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	1531	49	56	1901	77	97	11	79	38	0	33
Future Volume (veh/h)	59	1531	49	56	1901	77	97	11	79	38	0	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1900	1900	1856	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	64	1664	48	61	2066	75	105	12	76	41	0	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	2	0	0	3	0	0	0	0	0	0	0
Cap, veh/h	80	3745	108	78	3669	133	173	15	150	198	0	150
Arrive On Green	0.05	0.73	0.73	0.04	0.73	0.73	0.09	0.09	0.09	0.09	0.00	0.09
Sat Flow, veh/h	1739	5101	147	1810	5018	182	1399	160	1610	1643	0	1610
Grp Volume(v), veh/h	64	1110	602	61	1389	752	117	0	76	41	0	32
Grp Sat Flow(s),veh/h/ln	1739	1702	1844	1810	1689	1823	1558	0	1610	1643	0	1610
Q Serve(g_s), s	5.8	20.6	20.6	5.3	30.0	30.2	8.0	0.0	7.2	0.0	0.0	2.9
Cycle Q Clear(g_c), s	5.8	20.6	20.6	5.3	30.0	30.2	11.6	0.0	7.2	3.6	0.0	2.9
Prop In Lane	1.00		0.08	1.00		0.10	0.90		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	2499	1354	78	2469	1333	188	0	150	198	0	150
V/C Ratio(X)	0.80	0.44	0.44	0.78	0.56	0.56	0.62	0.00	0.51	0.21	0.00	0.21
Avail Cap(c_a), veh/h	122	2499	1354	183	2469	1333	465	0	452	465	0	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	75.6	8.4	8.4	75.8	9.8	9.9	70.8	0.0	69.0	67.4	0.0	67.1
Incr Delay (d2), s/veh	18.6	0.6	1.1	15.3	0.9	1.7	4.7	0.0	3.7	0.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	7.0	7.8	2.8	10.2	11.4	5.0	0.0	3.2	1.6	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.1	9.0	9.5	91.1	10.8	11.6	75.5	0.0	72.7	67.9	0.0	67.8
LnGrp LOS	F	A	A	F	B	B	E	A	E	E	A	E
Approach Vol, veh/h		1776			2202			193			73	
Approach Delay, s/veh		12.2			13.3			74.4			67.9	
Approach LOS		B			B			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.2	123.8		22.0	13.7	124.3		22.0				
Change Period (Y+Rc), s	6.8	6.8		* 7.1	6.8	6.8		* 7.1				
Max Green Setting (Gmax), s	11.2	83.2		* 45	16.2	78.2		* 45				
Max Q Clear Time (g_c+I1), s	7.8	32.2		13.6	7.3	22.6		5.6				
Green Ext Time (p_c), s	0.0	25.0		1.3	0.1	17.1		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		16.5
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.

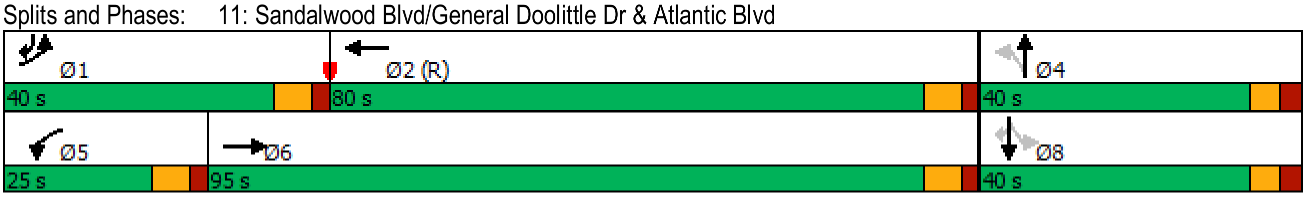
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	316	1675	85	1949	38	5	31	5	103
Future Volume (vph)	316	1675	85	1949	38	5	31	5	103
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	pm+ov
Protected Phases	1	6	5	2		4		8	1
Permitted Phases					4		8		8
Detector Phase	1	6	5	2	4	4	8	8	1
Switch Phase									
Minimum Initial (s)	3.0	18.0	3.0	18.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.8	33.8	9.8	35.8	47.6	47.6	45.6	45.6	9.8
Total Split (s)	40.0	95.0	25.0	80.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	25.0%	59.4%	15.6%	50.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	4.8
All-Red Time (s)	2.0	2.0	2.0	2.0	2.9	2.9	2.9	2.9	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.6	6.6		6.6	6.8
Lead/Lag	Lead	Lag	Lead	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes
Recall Mode	None	Min	None	C-Min	Min	Min	Min	Min	None

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 96 (60%), Referenced to phase 2:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sandalwood Blvd/General Doolittle Dr & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	343	1822	92	2176	41	32	39	112
v/c Ratio	0.81	0.49	0.61	0.77	0.47	0.25	0.45	0.19
Control Delay	72.0	10.5	98.7	18.6	88.3	31.1	86.8	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.0	10.5	98.7	18.6	88.3	31.1	86.8	26.7
Queue Length 50th (ft)	339	273	101	646	42	5	40	62
Queue Length 95th (ft)	445	377	m163	798	84	41	81	101
Internal Link Dist (ft)		316		295		351	165	
Turn Bay Length (ft)								
Base Capacity (vph)	428	3692	206	2843	290	367	289	583
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.49	0.45	0.77	0.14	0.09	0.13	0.19

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	316	1675	1	85	1949	53	38	5	25	31	5	103
Future Volume (veh/h)	316	1675	1	85	1949	53	38	5	25	31	5	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1870	1900	1900	1856	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	343	1821	1	92	2118	53	41	5	24	34	5	101
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	2	0	0	3	0	0	0	0	0	0	0
Cap, veh/h	361	3836	2	112	2966	74	104	24	115	128	16	467
Arrive On Green	0.21	0.73	0.73	0.12	1.00	1.00	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1753	5271	3	1810	5083	127	1308	285	1369	1022	192	1610
Grp Volume(v), veh/h	343	1176	646	92	1406	765	41	0	29	39	0	101
Grp Sat Flow(s),veh/h/ln	1753	1702	1870	1810	1689	1833	1308	0	1654	1214	0	1610
Q Serve(g_s), s	30.9	23.0	23.0	7.9	0.0	0.0	4.9	0.0	2.6	3.7	0.0	7.6
Cycle Q Clear(g_c), s	30.9	23.0	23.0	7.9	0.0	0.0	11.2	0.0	2.6	6.3	0.0	7.6
Prop In Lane	1.00		0.00	1.00		0.07	1.00		0.83	0.87		1.00
Lane Grp Cap(c), veh/h	361	2477	1361	112	1971	1069	104	0	139	144	0	467
V/C Ratio(X)	0.95	0.47	0.47	0.82	0.71	0.72	0.40	0.00	0.21	0.27	0.00	0.22
Avail Cap(c_a), veh/h	364	2477	1361	206	1971	1069	267	0	345	325	0	668
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	62.7	9.1	9.1	69.3	0.0	0.0	75.3	0.0	68.3	70.8	0.0	43.0
Incr Delay (d2), s/veh	34.3	0.1	0.2	13.9	2.2	4.1	2.4	0.0	0.7	1.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.0	7.7	8.5	3.9	0.6	1.2	1.7	0.0	1.1	1.6	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.0	9.2	9.3	83.1	2.2	4.1	77.8	0.0	69.0	71.8	0.0	43.2
LnGrp LOS	F	A	A	F	A	A	E	A	E	E	A	D
Approach Vol, veh/h		2165			2263			70			140	
Approach Delay, s/veh		23.1			6.2			74.1			51.2	
Approach LOS		C			A			E			D	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	39.7	100.2	20.1	16.7	123.3	20.1
Change Period (Y+Rc), s	6.8	6.8	* 6.6	6.8	6.8	* 6.6
Max Green Setting (Gmax), s	33.2	73.2	* 33	18.2	88.2	* 33
Max Q Clear Time (g_c+I1), s	32.9	2.0	13.2	9.9	25.0	9.6
Green Ext Time (p_c), s	0.0	21.7	0.2	0.1	14.6	0.5

Intersection Summary	
HCM 6th Ctrl Delay	16.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	54	1504	63	1628	71	1	81	90	0	39
Future Volume (vph)	54	1504	63	1628	71	1	81	90	0	39
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6	5	2		4			8	
Permitted Phases					4		4	8		8
Detector Phase	1	6	5	2	4	4	4	8	8	8
Switch Phase										
Minimum Initial (s)	3.0	18.0	3.0	18.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.8	44.8	9.8	39.8	51.1	51.1	51.1	52.1	52.1	52.1
Total Split (s)	18.0	85.0	23.0	90.0	52.0	52.0	52.0	52.0	52.0	52.0
Total Split (%)	11.3%	53.1%	14.4%	56.3%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	3.4	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8		7.1	7.1		7.1	7.1
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	None	C-Max	None	None	None	None	None	None

Intersection Summary

Cycle Length: 160

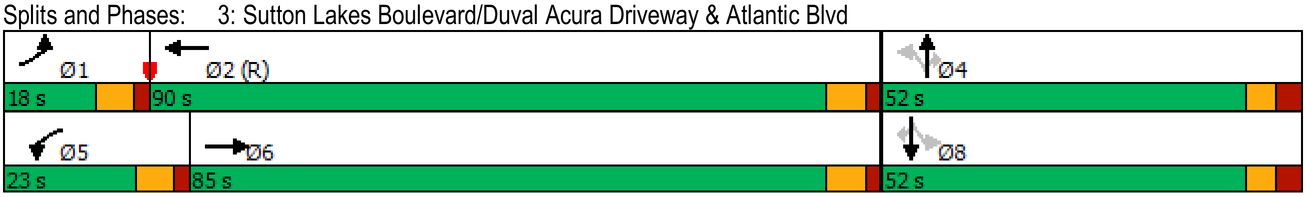
Actuated Cycle Length: 160

Offset: 44 (28%), Referenced to phase 2:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Splits and Phases: 3: Sutton Lakes Boulevard/Duval Acura Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	59	1685	68	1840	78	88	98	42
v/c Ratio	0.51	0.48	0.53	0.51	0.63	0.35	0.69	0.18
Control Delay	75.9	14.7	86.0	12.4	88.9	14.8	91.4	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.9	14.7	86.0	12.4	88.9	14.8	91.4	4.1
Queue Length 50th (ft)	62	267	70	312	80	0	100	0
Queue Length 95th (ft)	111	479	122	437	134	53	161	11
Internal Link Dist (ft)		2140		1279	578		127	
Turn Bay Length (ft)	400		355					
Base Capacity (vph)	132	3546	182	3608	327	516	376	505
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.48	0.37	0.51	0.24	0.17	0.26	0.08

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	1504	46	63	1628	64	71	1	81	90	0	39
Future Volume (veh/h)	54	1504	46	63	1628	64	71	1	81	90	0	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1900	1900	1870	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	59	1635	45	68	1770	63	77	1	77	98	0	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	1	0	0	2	0	0	0	0	0	0	0
Cap, veh/h	75	3862	106	86	3822	136	169	2	118	165	0	118
Arrive On Green	0.04	0.75	0.75	0.05	0.75	0.75	0.07	0.07	0.07	0.07	0.00	0.07
Sat Flow, veh/h	1753	5149	142	1810	5062	180	1704	22	1610	1651	0	1610
Grp Volume(v), veh/h	59	1089	591	68	1190	643	78	0	77	98	0	37
Grp Sat Flow(s),veh/h/ln	1753	1716	1860	1810	1702	1838	1727	0	1610	1651	0	1610
Q Serve(g_s), s	5.3	18.6	18.6	5.9	21.1	21.1	0.0	0.0	7.4	2.3	0.0	3.5
Cycle Q Clear(g_c), s	5.3	18.6	18.6	5.9	21.1	21.1	6.7	0.0	7.4	9.0	0.0	3.5
Prop In Lane	1.00		0.08	1.00		0.10	0.99		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	75	2573	1395	86	2570	1388	171	0	118	165	0	118
V/C Ratio(X)	0.79	0.42	0.42	0.79	0.46	0.46	0.46	0.00	0.66	0.59	0.00	0.31
Avail Cap(c_a), veh/h	123	2573	1395	183	2570	1388	471	0	452	464	0	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	75.9	7.3	7.3	75.4	7.4	7.4	71.8	0.0	72.2	72.7	0.0	70.4
Incr Delay (d2), s/veh	16.5	0.5	0.9	14.6	0.6	1.1	2.7	0.0	8.5	3.4	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.2	6.9	3.1	6.9	7.7	3.3	0.0	3.4	4.2	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.4	7.8	8.3	90.0	8.0	8.5	74.5	0.0	80.7	76.1	0.0	71.9
LnGrp LOS	F	A	A	F	A	A	E	A	F	E	A	E
Approach Vol, veh/h		1739			1901			155			135	
Approach Delay, s/veh		10.9			11.1			77.6			74.9	
Approach LOS		B			B			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	127.6		18.8	14.4	126.8		18.8				
Change Period (Y+Rc), s	6.8	6.8		* 7.1	6.8	6.8		* 7.1				
Max Green Setting (Gmax), s	11.2	83.2		* 45	16.2	78.2		* 45				
Max Q Clear Time (g_c+I1), s	7.3	23.1		9.4	7.9	20.6		11.0				
Green Ext Time (p_c), s	0.0	19.8		1.0	0.1	16.6		0.7				
Intersection Summary												
HCM 6th Ctrl Delay			15.8									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	232	1638	78	1745	40	5	33	3	281
Future Volume (vph)	232	1638	78	1745	40	5	33	3	281
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	pm+ov
Protected Phases	1	6	5	2		4		8	1
Permitted Phases					4		8		8
Detector Phase	1	6	5	2	4	4	8	8	1
Switch Phase									
Minimum Initial (s)	3.0	18.0	3.0	18.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.8	33.8	9.8	35.8	47.6	47.6	45.6	45.6	9.8
Total Split (s)	31.0	89.0	23.0	81.0	48.0	48.0	48.0	48.0	31.0
Total Split (%)	19.4%	55.6%	14.4%	50.6%	30.0%	30.0%	30.0%	30.0%	19.4%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	4.8
All-Red Time (s)	2.0	2.0	2.0	2.0	2.9	2.9	2.9	2.9	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.6	6.6		6.6	6.8
Lead/Lag	Lead	Lag	Lead	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes
Recall Mode	None	Min	None	C-Min	Min	Min	Min	Min	None

Intersection Summary

Cycle Length: 160

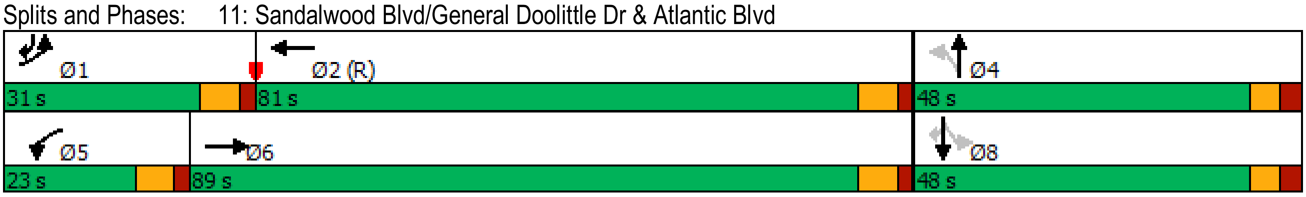
Actuated Cycle Length: 160

Offset: 96 (60%), Referenced to phase 2:WBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Splits and Phases: 11: Sandalwood Blvd/General Doolittle Dr & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	252	1783	85	1947	43	29	39	305
v/c Ratio	0.75	0.48	0.59	0.62	0.48	0.22	0.44	0.61
Control Delay	74.6	10.2	95.8	12.5	88.6	31.8	86.3	48.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.6	10.2	95.8	12.5	88.6	31.8	86.3	48.3
Queue Length 50th (ft)	251	261	91	194	44	5	40	251
Queue Length 95th (ft)	341	361	156	598	88	40	81	326
Internal Link Dist (ft)		325		295		351	165	
Turn Bay Length (ft)								
Base Capacity (vph)	337	3706	185	3125	359	448	354	500
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.48	0.46	0.62	0.12	0.06	0.11	0.61

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	1638	3	78	1745	46	40	5	22	33	3	281
Future Volume (veh/h)	232	1638	3	78	1745	46	40	5	22	33	3	281
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1900	1900	1870	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	252	1780	3	85	1897	45	43	5	21	36	3	275
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	2	0	0	2	0	0	0	0	0	0	0
Cap, veh/h	267	3451	6	104	2883	68	185	51	215	238	18	502
Arrive On Green	0.15	0.66	0.66	0.12	1.00	1.00	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1767	5264	9	1810	5131	122	1119	319	1340	1215	114	1610
Grp Volume(v), veh/h	252	1151	632	85	1258	684	43	0	26	39	0	275
Grp Sat Flow(s),veh/h/ln	1767	1702	1869	1810	1702	1848	1119	0	1659	1328	0	1610
Q Serve(g_s), s	22.6	28.2	28.2	7.3	0.0	0.0	5.6	0.0	2.1	3.6	0.0	22.7
Cycle Q Clear(g_c), s	22.6	28.2	28.2	7.3	0.0	0.0	11.3	0.0	2.1	5.7	0.0	22.7
Prop In Lane	1.00		0.00	1.00		0.07	1.00		0.81	0.92		1.00
Lane Grp Cap(c), veh/h	267	2231	1225	104	1912	1039	185	0	267	257	0	502
V/C Ratio(X)	0.94	0.52	0.52	0.82	0.66	0.66	0.23	0.00	0.10	0.15	0.00	0.55
Avail Cap(c_a), veh/h	267	2231	1225	183	1912	1039	294	0	429	397	0	660
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	67.2	14.3	14.3	70.0	0.0	0.0	63.7	0.0	57.3	59.5	0.0	45.7
Incr Delay (d2), s/veh	39.7	0.2	0.3	14.2	1.8	3.3	0.6	0.0	0.2	0.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	10.3	11.3	3.6	0.5	0.9	1.6	0.0	0.9	1.4	0.0	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	106.9	14.5	14.6	84.2	1.8	3.3	64.3	0.0	57.4	59.8	0.0	46.6
LnGrp LOS	F	B	B	F	A	A	E	A	E	E	A	D
Approach Vol, veh/h		2035			2027			69			314	
Approach Delay, s/veh		26.0			5.7			61.7			48.2	
Approach LOS		C			A			E			D	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	31.0	96.7	32.3	16.0	111.7	32.3
Change Period (Y+Rc), s	6.8	6.8	* 6.6	6.8	6.8	* 6.6
Max Green Setting (Gmax), s	24.2	74.2	* 41	16.2	82.2	* 41
Max Q Clear Time (g_c+I1), s	24.6	2.0	13.3	9.3	30.2	24.7
Green Ext Time (p_c), s	0.0	17.0	0.3	0.1	13.7	1.0

Intersection Summary	
HCM 6th Ctrl Delay	18.9
HCM 6th LOS	B

Notes

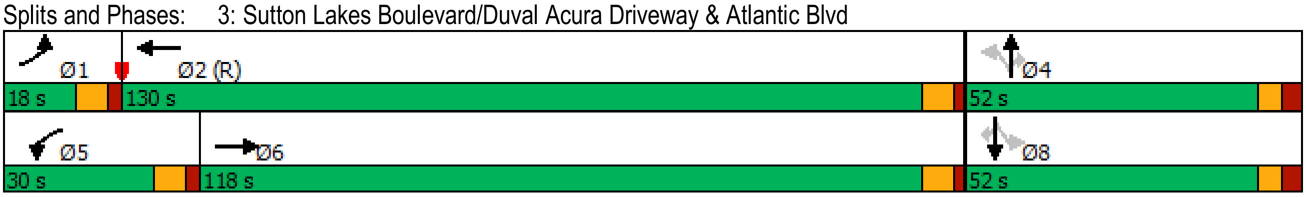
User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	31	2820	186	2385	109	1	135	40	3	33
Future Volume (vph)	31	2820	186	2385	109	1	135	40	3	33
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6	5	2		4			8	
Permitted Phases					4		4	8		8
Detector Phase	1	6	5	2	4	4	4	8	8	8
Switch Phase										
Minimum Initial (s)	3.0	18.0	3.0	18.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.8	44.8	9.8	39.8	51.1	51.1	51.1	52.1	52.1	52.1
Total Split (s)	18.0	118.0	30.0	130.0	52.0	52.0	52.0	52.0	52.0	52.0
Total Split (%)	9.0%	59.0%	15.0%	65.0%	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	2.0	2.0	2.0	2.0	3.4	3.4	3.4	3.4	3.4	3.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8		7.1	7.1		7.1	7.1
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	Max	None	C-Max	None	None	None	None	None	None

Intersection Summary
Cycle Length: 200
Actuated Cycle Length: 200
Offset: 147 (74%), Referenced to phase 2:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 3: Sutton Lakes Boulevard/Duval Acura Driveway & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	34	3281	202	2622	119	147	46	36
v/c Ratio	0.41	1.05	0.73	0.70	0.75	0.46	0.38	0.13
Control Delay	119.5	73.8	96.5	17.2	110.8	15.8	87.2	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.5	73.8	96.5	17.2	110.8	15.8	87.2	0.9
Queue Length 50th (ft)	42	~1748	257	673	154	7	57	0
Queue Length 95th (ft)	m46	#1929	355	886	227	80	102	0
Internal Link Dist (ft)		2139		1279	578		127	
Turn Bay Length (ft)	400		355					
Base Capacity (vph)	104	3135	275	3750	287	463	220	436
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	1.05	0.73	0.70	0.41	0.32	0.21	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	2820	199	186	2385	28	109	1	135	40	3	33
Future Volume (veh/h)	31	2820	199	186	2385	28	109	1	135	40	3	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1870	1870	1900	1856	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	34	3065	194	202	2592	27	118	1	130	43	3	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	1	1	2	2	0	3	0	1	0	0	0
Cap, veh/h	44	3346	207	207	4000	42	193	1	166	201	13	168
Arrive On Green	0.02	0.68	0.68	0.12	0.77	0.77	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1810	4950	306	1781	5211	54	1505	13	1593	1588	123	1606
Grp Volume(v), veh/h	34	2103	1156	202	1691	928	119	0	130	46	0	32
Grp Sat Flow(s),veh/h/ln	1810	1716	1826	1781	1702	1861	1518	0	1593	1711	0	1606
Q Serve(g_s), s	3.7	102.7	111.8	22.6	45.9	46.2	10.2	0.0	15.9	0.0	0.0	3.6
Cycle Q Clear(g_c), s	3.7	102.7	111.8	22.6	45.9	46.2	14.9	0.0	15.9	4.7	0.0	3.6
Prop In Lane	1.00		0.17	1.00		0.03	0.99		1.00	0.93		1.00
Lane Grp Cap(c), veh/h	44	2319	1234	207	2613	1428	194	0	166	214	0	168
V/C Ratio(X)	0.77	0.91	0.94	0.98	0.65	0.65	0.61	0.00	0.78	0.22	0.00	0.19
Avail Cap(c_a), veh/h	101	2319	1234	207	2613	1428	367	0	358	389	0	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	97.0	27.1	28.6	88.1	10.7	10.8	86.5	0.0	87.3	82.3	0.0	81.8
Incr Delay (d2), s/veh	23.9	6.5	14.3	56.0	1.3	2.3	4.4	0.0	10.7	0.5	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	41.4	50.4	13.6	16.1	18.2	6.3	0.0	7.2	2.3	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	120.9	33.7	42.9	144.1	12.0	13.1	90.9	0.0	98.0	82.8	0.0	82.4
LnGrp LOS	F	C	D	F	B	B	F	A	F	F	A	F
Approach Vol, veh/h		3293			2821			249			78	
Approach Delay, s/veh		37.8			21.8			94.6			82.6	
Approach LOS		D			C			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.7	160.3		28.0	30.0	142.0		28.0				
Change Period (Y+Rc), s	6.8	6.8		* 7.1	6.8	6.8		* 7.1				
Max Green Setting (Gmax), s	11.2	123.2		* 45	23.2	111.2		* 45				
Max Q Clear Time (g_c+I1), s	5.7	48.2		17.9	24.6	113.8		6.7				
Green Ext Time (p_c), s	0.0	43.6		1.6	0.0	0.0		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			33.5									
HCM 6th LOS			C									

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings
11: Sandalwood Blvd/General Doolittle Dr & Atlantic Blvd

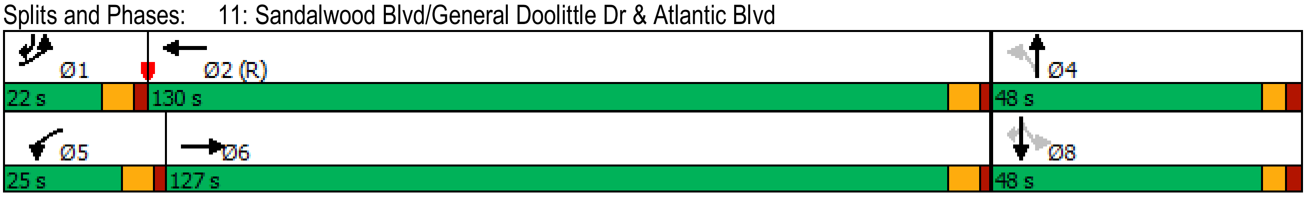
03/29/2022

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	114	3061	139	2476	75	7	27	13	60
Future Volume (vph)	114	3061	139	2476	75	7	27	13	60
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA	pm+ov
Protected Phases	1	6	5	2		4		8	1
Permitted Phases					4		8		8
Detector Phase	1	6	5	2	4	4	8	8	1
Switch Phase									
Minimum Initial (s)	3.0	18.0	3.0	18.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.8	33.8	9.8	35.8	47.6	47.6	45.6	45.6	9.8
Total Split (s)	22.0	127.0	25.0	130.0	48.0	48.0	48.0	48.0	22.0
Total Split (%)	11.0%	63.5%	12.5%	65.0%	24.0%	24.0%	24.0%	24.0%	11.0%
Yellow Time (s)	4.8	4.8	4.8	4.8	3.7	3.7	3.7	3.7	4.8
All-Red Time (s)	2.0	2.0	2.0	2.0	2.9	2.9	2.9	2.9	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8	6.8	6.6	6.6		6.6	6.8
Lead/Lag	Lead	Lag	Lead	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes
Recall Mode	None	Min	None	C-Min	Min	Min	Min	Min	None

Intersection Summary

Cycle Length: 200
Actuated Cycle Length: 200
Offset: 61 (31%), Referenced to phase 2:WBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 11: Sandalwood Blvd/General Doolittle Dr & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	124	3332	151	2711	82	54	43	65
v/c Ratio	0.67	0.95	0.69	0.76	0.70	0.29	0.33	0.17
Control Delay	103.1	36.4	84.8	38.8	117.0	27.6	90.5	40.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.1	36.4	84.8	38.8	117.0	27.6	90.5	40.1
Queue Length 50th (ft)	160	1394	193	1110	107	10	54	47
Queue Length 95th (ft)	237	#1756	263	1352	171	59	99	89
Internal Link Dist (ft)		322		305		351	165	
Turn Bay Length (ft)								
Base Capacity (vph)	187	3508	219	3590	273	373	300	380
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.95	0.69	0.76	0.30	0.14	0.14	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	3061	5	139	2476	18	75	7	42	27	13	60
Future Volume (veh/h)	114	3061	5	139	2476	18	75	7	42	27	13	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1841	1870	1900	1826	1900	1870	1900	1900	1900
Adj Flow Rate, veh/h	124	3327	5	151	2691	18	82	8	41	29	14	57
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	1	1	4	2	0	5	0	2	0	0	0
Cap, veh/h	138	3643	5	160	3670	25	133	33	168	127	56	318
Arrive On Green	0.08	0.69	0.69	0.06	0.47	0.47	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1810	5307	8	1753	5233	35	1298	270	1382	797	460	1610
Grp Volume(v), veh/h	124	2150	1182	151	1749	960	82	0	49	43	0	57
Grp Sat Flow(s),veh/h/ln	1810	1716	1884	1753	1702	1864	1298	0	1651	1257	0	1610
Q Serve(g_s), s	13.6	105.3	105.5	17.2	83.1	83.4	12.5	0.0	5.4	4.0	0.0	5.9
Cycle Q Clear(g_c), s	13.6	105.3	105.5	17.2	83.1	83.4	21.8	0.0	5.4	9.4	0.0	5.9
Prop In Lane	1.00		0.00	1.00		0.02	1.00		0.84	0.67		1.00
Lane Grp Cap(c), veh/h	138	2355	1293	160	2388	1307	133	0	201	183	0	318
V/C Ratio(X)	0.90	0.91	0.91	0.95	0.73	0.73	0.62	0.00	0.24	0.23	0.00	0.18
Avail Cap(c_a), veh/h	138	2355	1293	160	2388	1307	244	0	342	312	0	456
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	91.7	26.3	26.4	93.4	37.8	37.9	91.4	0.0	79.5	82.3	0.0	66.7
Incr Delay (d2), s/veh	48.5	6.0	10.0	55.4	2.0	3.7	4.6	0.0	0.6	0.7	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	41.9	47.6	10.4	36.8	41.1	4.4	0.0	2.4	2.1	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	140.1	32.3	36.4	148.8	39.9	41.6	95.9	0.0	80.1	82.9	0.0	67.0
LnGrp LOS	F	C	D	F	D	D	F	A	F	F	A	E
Approach Vol, veh/h		3456			2860			131			100	
Approach Delay, s/veh		37.6			46.2			90.0			73.9	
Approach LOS		D			D			F			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.0	147.1		30.9	25.0	144.1		30.9				
Change Period (Y+Rc), s	6.8	6.8		* 6.6	6.8	6.8		* 6.6				
Max Green Setting (Gmax), s	15.2	123.2		* 41	18.2	120.2		* 41				
Max Q Clear Time (g_c+I1), s	15.6	85.4		23.8	19.2	107.5		11.4				
Green Ext Time (p_c), s	0.0	25.1		0.4	0.0	11.8		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			43.0									
HCM 6th LOS			D									

Notes

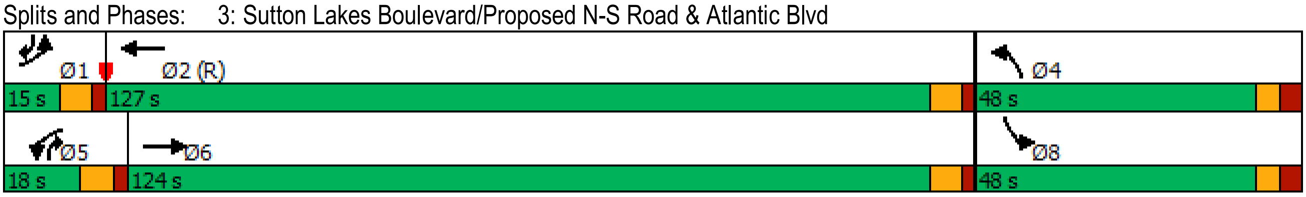
User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	1880	59	42	2911	0	195	0	154	7	0	1
Future Volume (vph)	32	1880	59	42	2911	0	195	0	154	7	0	1
Satd. Flow (prot)	3400	5104	0	1805	5136	0	1787	0	1599	1583	0	808
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3400	5104	0	1805	5136	0	1787	0	1599	1583	0	808
Satd. Flow (RTOR)		4							167			63
Lane Group Flow (vph)	35	2107	0	46	3164	0	212	0	167	8	0	1
Turn Type	Prot	NA		Prot	NA		Prot		Over	Prot		Over
Protected Phases	1	6		5	2		4		5	8		1
Permitted Phases												
Detector Phase	1	6		5	2		4		5	8		1
Switch Phase												
Minimum Initial (s)	3.0	18.0		3.0	18.0		4.0		3.0	4.0		3.0
Minimum Split (s)	9.8	44.8		9.8	39.8		51.1		9.8	52.1		9.8
Total Split (s)	15.0	124.0		18.0	127.0		48.0		18.0	48.0		15.0
Total Split (%)	7.9%	65.3%		9.5%	66.8%		25.3%		9.5%	25.3%		7.9%
Yellow Time (s)	4.8	4.8		4.8	4.8		3.7		4.8	3.7		4.8
All-Red Time (s)	2.0	2.0		2.0	2.0		3.4		2.0	3.4		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.1		6.8	7.1		6.8
Lead/Lag	Lead	Lag		Lead	Lag				Lead			Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			Yes
Recall Mode	None	Max		None	C-Max		None		None	None		None
Act Effct Green (s)	7.4	130.2		10.4	135.7		28.7		10.4	17.4		7.4
Actuated g/C Ratio	0.04	0.69		0.05	0.71		0.15		0.05	0.09		0.04
v/c Ratio	0.27	0.60		0.47	0.86		0.79		0.68	0.06		0.01
Control Delay	85.3	18.1		101.6	25.3		97.4		24.8	69.9		0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Delay	85.3	18.1		101.6	25.3		97.4		24.8	69.9		0.0
LOS	F	B		F	C		F		C	E		A
Approach Delay		19.2			26.4			65.4			62.1	
Approach LOS		B			C			E			E	

Intersection Summary	
Cycle Length: 190	
Actuated Cycle Length: 190	
Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 26.3	Intersection LOS: C
Intersection Capacity Utilization 85.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Sutton Lakes Boulevard/Proposed N-S Road & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	35	2107	46	3164	212	167	8	1
v/c Ratio	0.27	0.60	0.47	0.86	0.79	0.68	0.06	0.01
Control Delay	85.3	18.1	101.6	25.3	97.4	24.8	69.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.3	18.1	101.6	25.3	97.4	24.8	69.9	0.0
Queue Length 50th (ft)	22	486	57	1065	259	0	10	0
Queue Length 95th (ft)	m41	593	106	1329	344	84	26	0
Internal Link Dist (ft)		2339		1279				
Turn Bay Length (ft)	375		355					
Base Capacity (vph)	150	3500	114	3668	384	257	340	96
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.60	0.40	0.86	0.55	0.65	0.02	0.01

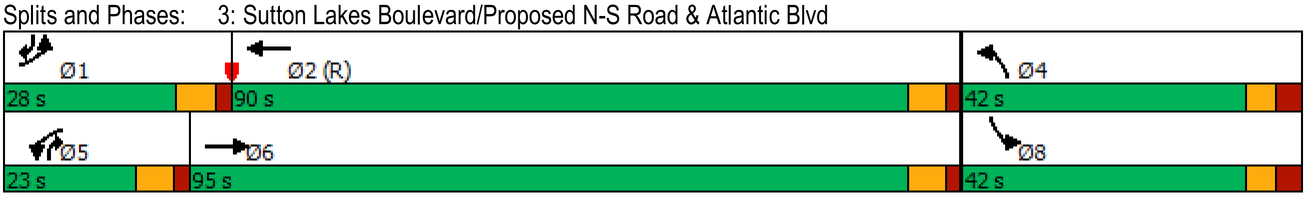
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	326	1525	49	56	1934	71	97	0	90	45	0	31
Future Volume (vph)	326	1525	49	56	1934	71	97	0	90	45	0	31
Satd. Flow (prot)	3467	5112	0	1805	5016	0	1805	0	1615	1770	0	1568
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3467	5112	0	1805	5016	0	1805	0	1615	1770	0	1568
Satd. Flow (RTOR)		5			5				98			74
Lane Group Flow (vph)	354	1711	0	61	2179	0	105	0	98	49	0	34
Turn Type	Prot	NA		Prot	NA		Prot		Over	Prot		Over
Protected Phases	1	6		5	2		4		5	8		1
Permitted Phases												
Detector Phase	1	6		5	2		4		5	8		1
Switch Phase												
Minimum Initial (s)	3.0	18.0		3.0	18.0		4.0		3.0	4.0		3.0
Minimum Split (s)	9.8	44.8		9.8	39.8		51.1		9.8	52.1		9.8
Total Split (s)	28.0	95.0		23.0	90.0		42.0		23.0	42.0		28.0
Total Split (%)	17.5%	59.4%		14.4%	56.3%		26.3%		14.4%	26.3%		17.5%
Yellow Time (s)	4.8	4.8		4.8	4.8		3.7		4.8	3.7		4.8
All-Red Time (s)	2.0	2.0		2.0	2.0		3.4		2.0	3.4		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.1		6.8	7.1		6.8
Lead/Lag	Lead	Lag		Lead	Lag				Lead			Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			Yes
Recall Mode	None	Max		None	C-Max		None		None	None		None
Act Effct Green (s)	21.5	112.9		10.8	102.2		15.6		10.8	14.8		21.5
Actuated g/C Ratio	0.13	0.71		0.07	0.64		0.10		0.07	0.09		0.13
v/c Ratio	0.76	0.47		0.50	0.68		0.60		0.49	0.30		0.12
Control Delay	70.7	16.3		85.7	20.8		82.6		20.3	70.4		0.9
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Delay	70.7	16.3		85.7	20.8		82.6		20.3	70.4		0.9
LOS	E	B		F	C		F		C	E		A
Approach Delay		25.6			22.6			52.5			42.0	
Approach LOS		C			C			D			D	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 25.6	Intersection LOS: C
Intersection Capacity Utilization 70.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Sutton Lakes Boulevard/Proposed N-S Road & Atlantic Blvd



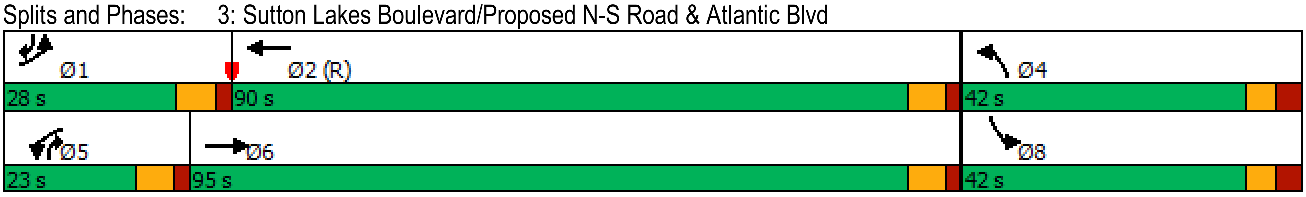
Lane Group	EBL	EBT	WBL	WBT	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	354	1711	61	2179	105	98	49	34
v/c Ratio	0.76	0.47	0.50	0.68	0.60	0.49	0.30	0.12
Control Delay	70.7	16.3	85.7	20.8	82.6	20.3	70.4	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.7	16.3	85.7	20.8	82.6	20.3	70.4	0.9
Queue Length 50th (ft)	187	462	63	507	107	0	48	0
Queue Length 95th (ft)	206	483	113	664	170	60	92	0
Internal Link Dist (ft)		2379		1267				
Turn Bay Length (ft)	375		355					
Base Capacity (vph)	495	3609	182	3204	393	251	386	287
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.47	0.34	0.68	0.27	0.39	0.13	0.12

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	254	1486	46	63	1667	53	71	0	82	108	0	90
Future Volume (vph)	254	1486	46	63	1667	53	71	0	82	108	0	90
Satd. Flow (prot)	3467	5111	0	1805	5112	0	1805	0	1615	1805	0	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3467	5111	0	1805	5112	0	1805	0	1615	1805	0	1615
Satd. Flow (RTOR)		4			4				89			98
Lane Group Flow (vph)	276	1665	0	68	1870	0	77	0	89	117	0	98
Turn Type	Prot	NA		Prot	NA		Prot		Over	Prot		Over
Protected Phases	1	6		5	2		4		5	8		1
Permitted Phases												
Detector Phase	1	6		5	2		4		5	8		1
Switch Phase												
Minimum Initial (s)	3.0	18.0		3.0	18.0		4.0		3.0	4.0		3.0
Minimum Split (s)	9.8	44.8		9.8	39.8		51.1		9.8	52.1		9.8
Total Split (s)	28.0	95.0		23.0	90.0		42.0		23.0	42.0		28.0
Total Split (%)	17.5%	59.4%		14.4%	56.3%		26.3%		14.4%	26.3%		17.5%
Yellow Time (s)	4.8	4.8		4.8	4.8		3.7		4.8	3.7		4.8
All-Red Time (s)	2.0	2.0		2.0	2.0		3.4		2.0	3.4		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.1		6.8	7.1		6.8
Lead/Lag	Lead	Lag		Lead	Lag				Lead			Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			Yes
Recall Mode	None	Max		None	C-Max		None		None	None		None
Act Effct Green (s)	18.0	112.2		11.4	105.6		15.7		11.4	15.7		18.0
Actuated g/C Ratio	0.11	0.70		0.07	0.66		0.10		0.07	0.10		0.11
v/c Ratio	0.71	0.46		0.53	0.55		0.44		0.45	0.66		0.37
Control Delay	70.8	18.4		86.0	16.1		74.5		19.5	86.6		14.5
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Delay	70.8	18.4		86.0	16.1		74.5		19.5	86.6		14.5
LOS	E	B		F	B		E		B	F		B
Approach Delay		25.8			18.6			45.0			53.8	
Approach LOS		C			B			D			D	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 24.7	Intersection LOS: C
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Sutton Lakes Boulevard/Proposed N-S Road & Atlantic Blvd



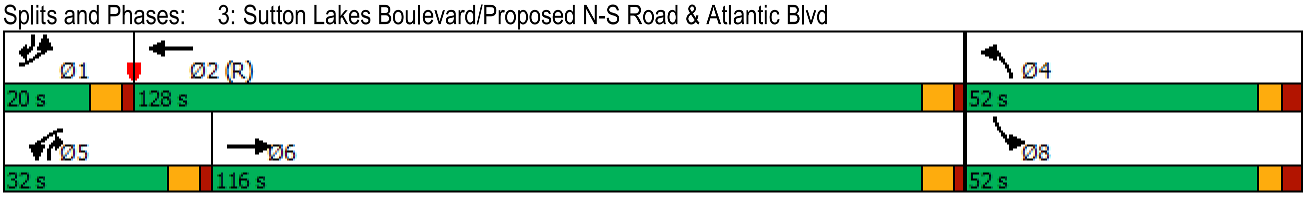
Lane Group	EBL	EBT	WBL	WBT	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	276	1665	68	1870	77	89	117	98
v/c Ratio	0.71	0.46	0.53	0.55	0.44	0.45	0.66	0.37
Control Delay	70.8	18.4	86.0	16.1	74.5	19.5	86.6	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.8	18.4	86.0	16.1	74.5	19.5	86.6	14.5
Queue Length 50th (ft)	145	403	70	362	77	0	120	0
Queue Length 95th (ft)	171	523	122	484	130	58	185	57
Internal Link Dist (ft)		2365		1268				
Turn Bay Length (ft)	375		355					
Base Capacity (vph)	465	3586	182	3376	393	243	393	301
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.46	0.37	0.55	0.20	0.37	0.30	0.33

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	2818	202	186	2421	18	109	0	136	42	0	11
Future Volume (vph)	99	2818	202	186	2421	18	109	0	136	42	0	11
Satd. Flow (prot)	3467	5084	0	1770	5081	0	1752	0	1599	1805	0	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3467	5084	0	1770	5081	0	1752	0	1599	1805	0	1615
Satd. Flow (RTOR)		9			1				148			97
Lane Group Flow (vph)	108	3283	0	202	2652	0	118	0	148	46	0	12
Turn Type	Prot	NA		Prot	NA		Prot		Over	Prot		Over
Protected Phases	1	6		5	2		4		5	8		1
Permitted Phases												
Detector Phase	1	6		5	2		4		5	8		1
Switch Phase												
Minimum Initial (s)	3.0	18.0		3.0	18.0		4.0		3.0	4.0		3.0
Minimum Split (s)	9.8	44.8		9.8	39.8		51.1		9.8	52.1		9.8
Total Split (s)	20.0	116.0		32.0	128.0		52.0		32.0	52.0		20.0
Total Split (%)	10.0%	58.0%		16.0%	64.0%		26.0%		16.0%	26.0%		10.0%
Yellow Time (s)	4.8	4.8		4.8	4.8		3.7		4.8	3.7		4.8
All-Red Time (s)	2.0	2.0		2.0	2.0		3.4		2.0	3.4		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.1		6.8	7.1		6.8
Lead/Lag	Lead	Lag		Lead	Lag				Lead			Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			Yes
Recall Mode	None	Max		None	C-Max		None		None	None		None
Act Effct Green (s)	11.6	129.8		29.7	147.9		19.8		29.7	18.5		11.6
Actuated g/C Ratio	0.06	0.65		0.15	0.74		0.10		0.15	0.09		0.06
v/c Ratio	0.54	0.99		0.77	0.71		0.68		0.41	0.28		0.07
Control Delay	115.8	52.5		100.7	16.3		105.9		12.2	86.0		0.6
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Delay	115.8	52.5		100.7	16.3		105.9		12.2	86.0		0.6
LOS	F	D		F	B		F		B	F		A
Approach Delay		54.5			22.3			53.8			68.3	
Approach LOS		D			C			D			E	

Intersection Summary	
Cycle Length: 200	
Actuated Cycle Length: 200	
Offset: 147 (74%), Referenced to phase 2:WBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 40.6	Intersection LOS: D
Intersection Capacity Utilization 92.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Sutton Lakes Boulevard/Proposed N-S Road & Atlantic Blvd



Lane Group	EBL	EBT	WBL	WBT	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	108	3283	202	2652	118	148	46	12
v/c Ratio	0.54	0.99	0.77	0.71	0.68	0.41	0.28	0.07
Control Delay	115.8	52.5	100.7	16.3	105.9	12.2	86.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	115.8	52.5	100.7	16.3	105.9	12.2	86.0	0.6
Queue Length 50th (ft)	70	~1664	259	650	153	0	57	0
Queue Length 95th (ft)	m80	#1857	351	827	226	71	102	0
Internal Link Dist (ft)		2325		1307				
Turn Bay Length (ft)	375		355					
Base Capacity (vph)	234	3303	268	3758	393	367	405	199
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.99	0.75	0.71	0.30	0.40	0.11	0.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.