

Federal Metropolitan Planning (PL) Fund Application Form



NAME OF STUDY: Interstate 95 at Airways Avenue/Pooler Parkway Interchange Study

PHASE: Planning

MPO: CORE MPO

CONTACT (Name, Phone, Email): Mark Wilkes, 912-651-1477, wilkesm@thempc.org

PROJECT START DATE: March 23, 2018 **PROJECT END DATE:** December 31, 2019

IS PROJECT UPWP/TIP APPROVED: No **IF NO, AMENDMENT NEEDED?** Yes, UPWP

PREVIOUS WORK ON PROJECT: An Interchange Operational Analysis Report of the interchange was completed during the preliminary engineering for the I-95/Airways Avenue Interchange Improvements project done by GDOT, SAC, SEDA, and Gulfstream. This analysis used counts and projections for the project. The proposed detailed study will update the traffic counts, evaluate the existing operational analysis of the interchange, project new traffic volumes based on growth and land use data, evaluate the crash history of the interchange, develop alternatives to improve the operation and safety of the interchange, evaluate the alternatives using traffic projections, and provide preliminary environmental screening to facilitate development of a future concept report and Interchange Modification Report (IMR), if required.

DESCRIPTION OF PROJECT BACKGROUND, NEED & GOALS: Working with Consultants, SAC and MPO staff will develop a scope of services and solicit request for proposals for the study utilizing the Quality Based Selection process. The existing conventional diamond interchange at the intersection of I-95 and existing Airways Avenue/Pooler Parkway experiences significantly congestion and delays. Using the referenced counts and projections, a rough analysis was performed to determine if improvements were needed at the interchange. The preliminary analysis showed that an interchange improvement will be needed at the existing interchange. The projected volumes in the area indicate that the interchange will continue to operate over capacity (LOS F) unless either a DDI (Diverging Diamond Interchange), northbound to westbound flyover, or a northbound to westbound loop ramp is constructed.

The proposed scoping phase would allow a more detailed analysis, including updated counts and projections, preliminary environmental screening, crash analysis, and an alternatives analysis to provide direction and timing for the required improvements to SAC, GDOT and CORE MPO staff. The detailed traffic study will provide a preliminary analysis to facilitate a future Interchange Modification Report, if required. Staff anticipates that a preliminary engineering phase could follow depending on the results of the scoping phase.

Consultants: TBD

Product: Final, detailed traffic study of recommended improvements to be utilized to program a project in the CORE MPO's TIP and Total Mobility Plan.

COST DESCRIPTION (contract, staff, purchase data costs, etc.):

Lead Agency and Local Sponsor: Savannah Airport Commission Department of Engineering

PL FUNDS: **\$320,000 (0%)**

LOCAL MATCH (CASH): \$80,000 (0%)

LOCAL MATCH (IN-KIND): None (0%)

TOTAL COST: **\$400,000**

ATTACHMENTS:

RESOLUTION

COASTAL REGION METROPOLITAN PLANNING ORGANIZATION

APPROVAL OF REQUEST FOR FHWA PL FUNDS FOR INTERSTATE 95 AT AIRWAYS AVENUE / POOLER PARKWAY INTERCHANGE STUDY

WHEREAS, the Coastal Region Metropolitan Planning Organization (CORE MPO) has been designated by the Governor of Georgia as the Metropolitan Planning Organization for the Savannah urbanized area; and

WHEREAS, the Coastal Region Metropolitan Planning Organization, in accordance with Federal requirements, and in cooperation with area planning, implementation, and operating transportation agencies, maintains a comprehensive transportation planning program for the Savannah urbanized area; and

WHEREAS, the Interstate 95 at Airways Avenue / Pooler Parkway Interchange serves as the primary access point for the Savannah Hilton Head International Airport, major area employers and regional retail hubs in Pooler; and

WHEREAS, the Interstate 95 at Airways Avenue / Pooler Parkway Interchange is experiencing heavy congestion and delays due to the rapid growth and expansion of the aforementioned facilities; and

WHEREAS, the Savannah Airport Commission has previously commissioned a preliminary study which determined that significant reconstruction of the interchange will be needed in order to attain an acceptable level of service; and

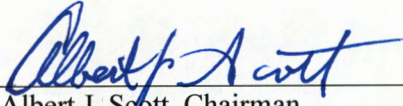
WHEREAS, the Coastal Region Metropolitan Planning Organization has determined that it would be advantageous to conduct an updated, detailed study of the Interstate 95 at Airways Avenue / Pooler Parkway Interchange to develop alternatives to improve the operation and safety of the interchange, evaluate alternatives using traffic projections and provide direction and timing for needed improvements and to facilitate development of a future concept report and Interchange Modification Report (IMR), if required;

NOW, THEREFORE BE IT RESOLVED, that the Coastal Region Metropolitan Planning Organization along with the Savannah Airport Commission, proposes to jointly conduct a transportation study – Interstate 95 at Airways Avenue / Pooler Parkway Interchange Study with an estimated project cost of \$400,000 (\$320,000 as 80% from FHWA PL Funds and \$80,000 as 20% local match) and affirms that the required local match is available and that the local match will be provided by the Savannah Airport Commission; and

NOW, THEREFORE BE IT FURTHER RESOLVED, that the CORE MPO hereby approves the Chatham County-Savannah Metropolitan Planning Commission, as CORE MPO staff, to submit an application for FHWA PL Funds to the Federal Highway Administration, Georgia Department of Transportation and the Georgia Association of MPOs for the Interstate 95 at Airways Avenue / Pooler Parkway Interchange Study.

CERTIFICATION

I hereby certify that the above is a true and correct copy of a Resolution adopted by the Coastal Region Metropolitan Planning Organization Board at a meeting held on March 22, 2017.


Albert J. Scott, Chairman
Coastal Region Metropolitan Planning Organization



400 AIRWAYS AVENUE
SAVANNAH, GA 31408

T: 912.964.0514

F: 912.964.0877

March 13, 2017

Mr. Mark Wilkes, P.E.
Coastal Region Metropolitan Planning Organization
110 E. State Street
Savannah, GA 31401

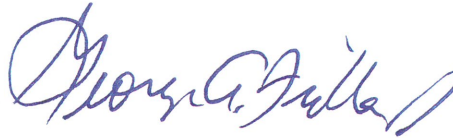
Subject: Interstate 95 at Airways Avenue/Pooler Parkway Interchange Study

Dear Mr. Wilkes:

This letter is written to confirm that Savannah Airport Commission has funds available to provide the required local match for this project.

If you have any questions, please call me at 912-964-0514.

Sincerely,



George A. Fidler, Jr., P.E.
Director of Engineering

GAFjr:djs

Enclosure

SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT

FAST ACT PROJECTS

I-95 SB Offramp Improvements @ Airways Avenue/Pooler Parkway

Diverging Diamond Interchange Airways Avenue/Pooler Parkway @ I-95

I-95 NB Flyover Offramp to Airways Avenue/Pooler Parkway WB

I-95 NB Loop Ramp to Airways Avenue/Pooler Parkway WB

Airways Avenue Widening

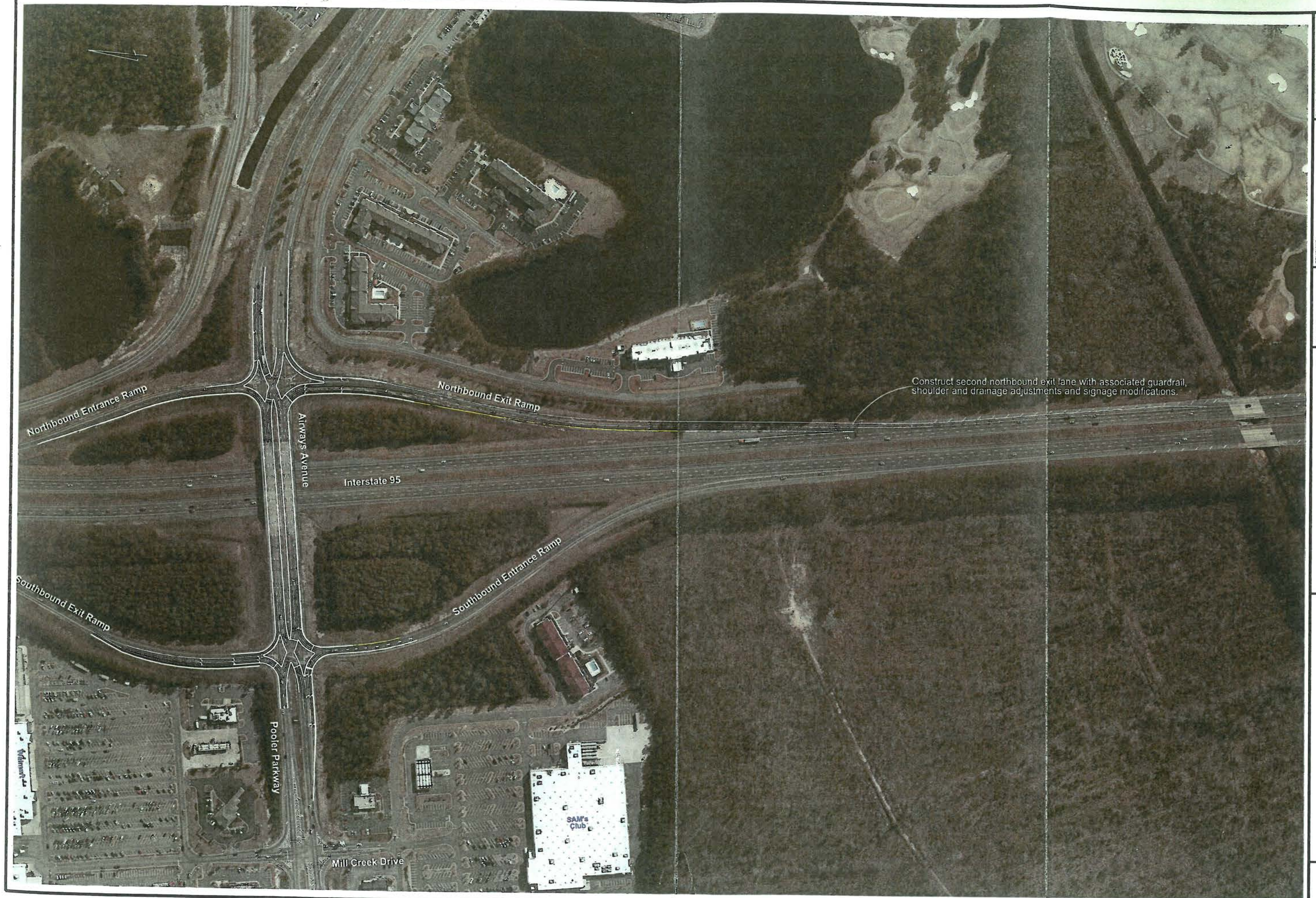
Airways Avenue Flyover to Gulfstream Road

Non-motorized Transportation Plan (Bicycle, Pedestrian)

Intermodal Transfer Facilities (Aircraft / Truck / Rail)



PLANS PREPARED UNDER THE DIRECTION OF:	
REVISIONS:	
ETW NO.	DESIGNED BY:
DRAWN BY:	CHECKED BY:
DATE:	
Enders-Thompson & Miller, Inc. 14775 Old St. Andrews Road Jacksonville, FL 32258 TEL: (904) 642-8899 FAX: (904) 642-8445 Georgia Engineer Firm License No. PE0004782	
ETM VISION • EXPERIENCE • RESULTS	
Southbound Ramp Improvements Interstate 95 & Airways Avenue/Pooler Parkway Interchange Operational Analysis	
FIGURE NUMBER 4 - 1	



Alternate "D" Improvements
Interstate 95 & Airways Avenue/Pooler Parkway
Interchange Operational Analysis

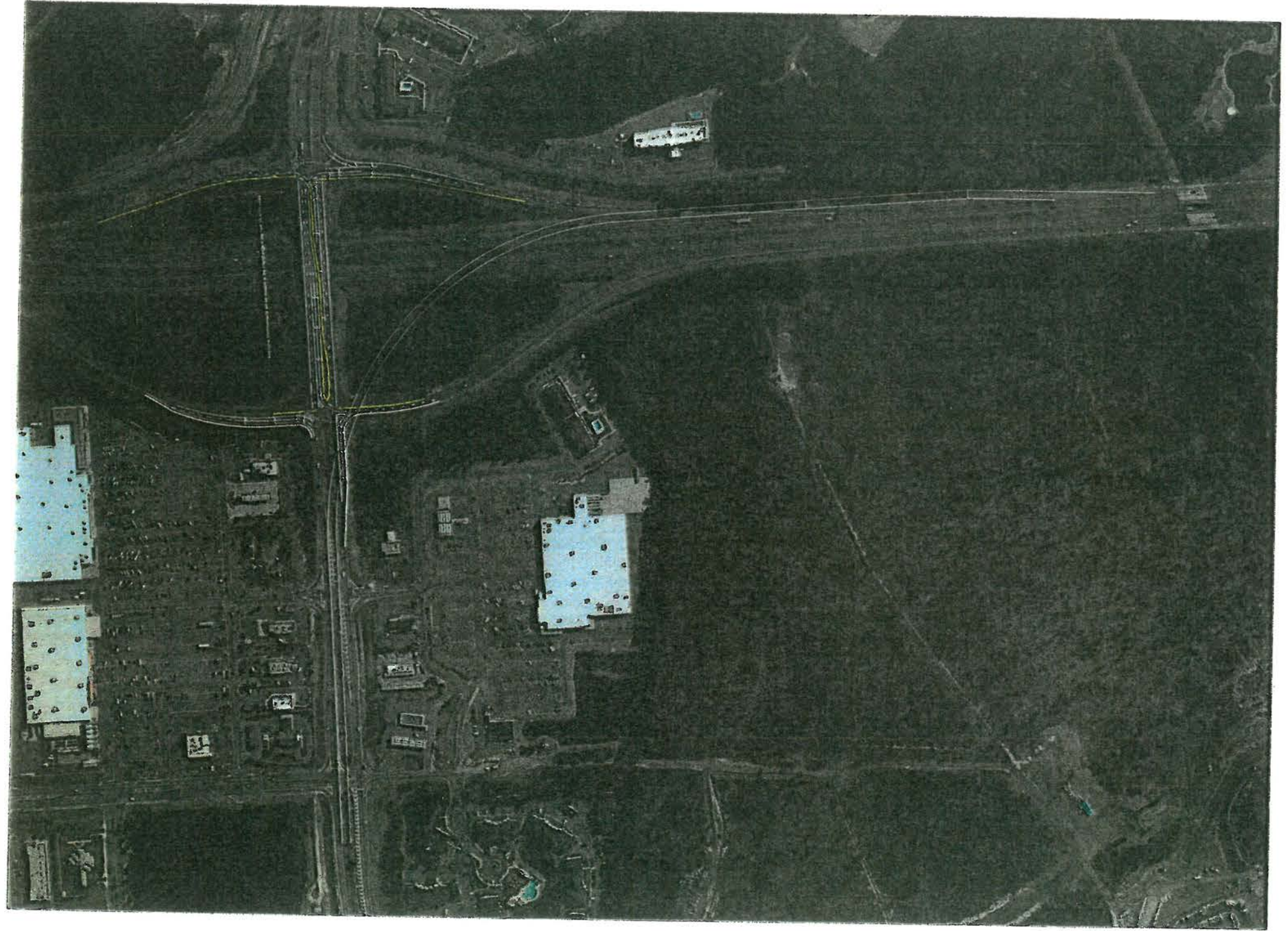


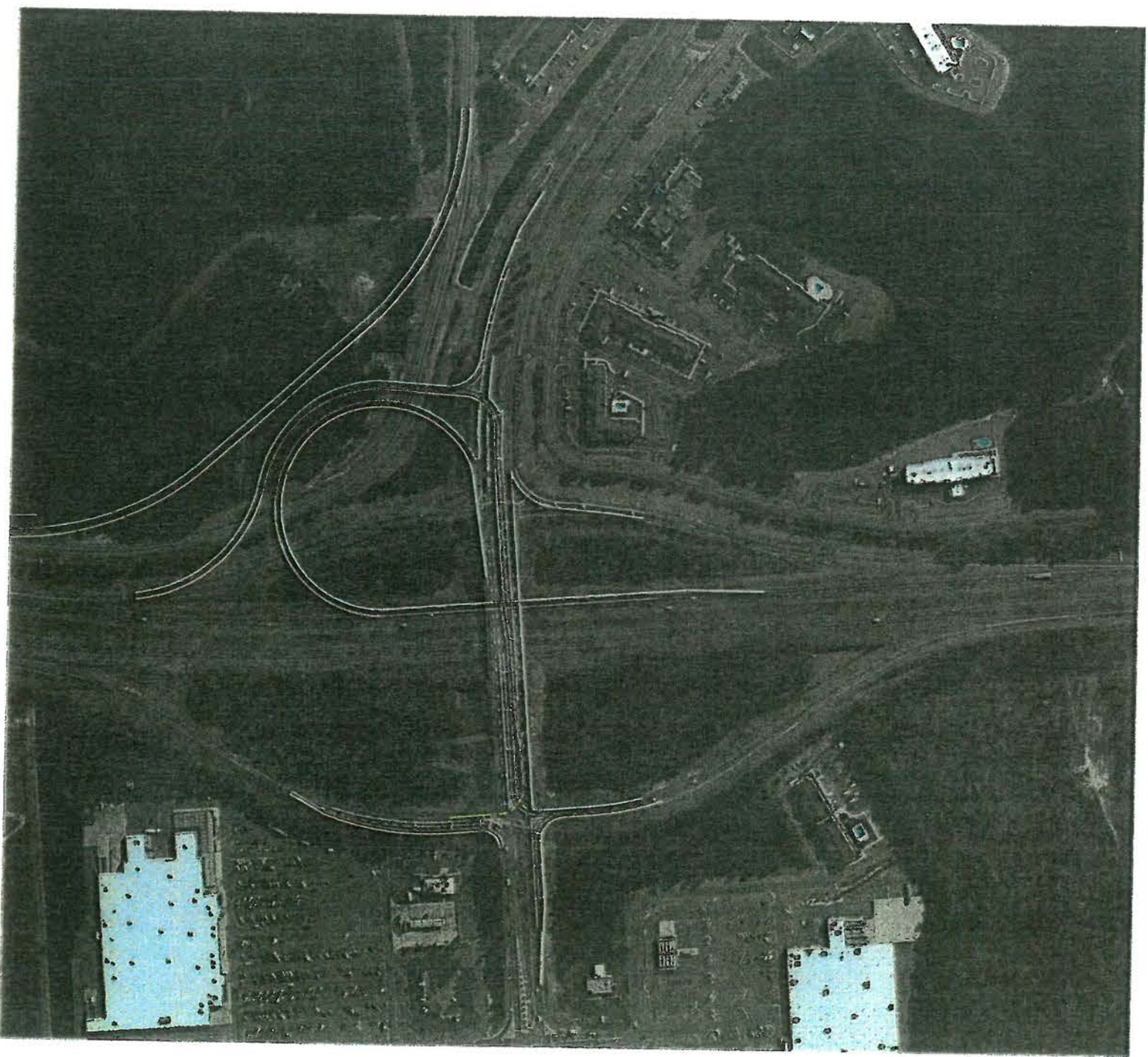
Englund-Thompson & Miller, Inc.
14775 Old St. Augustine Road
Jacksonville, FL 32206
TEL: (904) 642-8890
FAX: (904) 646-9485
Georgia Engineer Firm License No. PE7004782

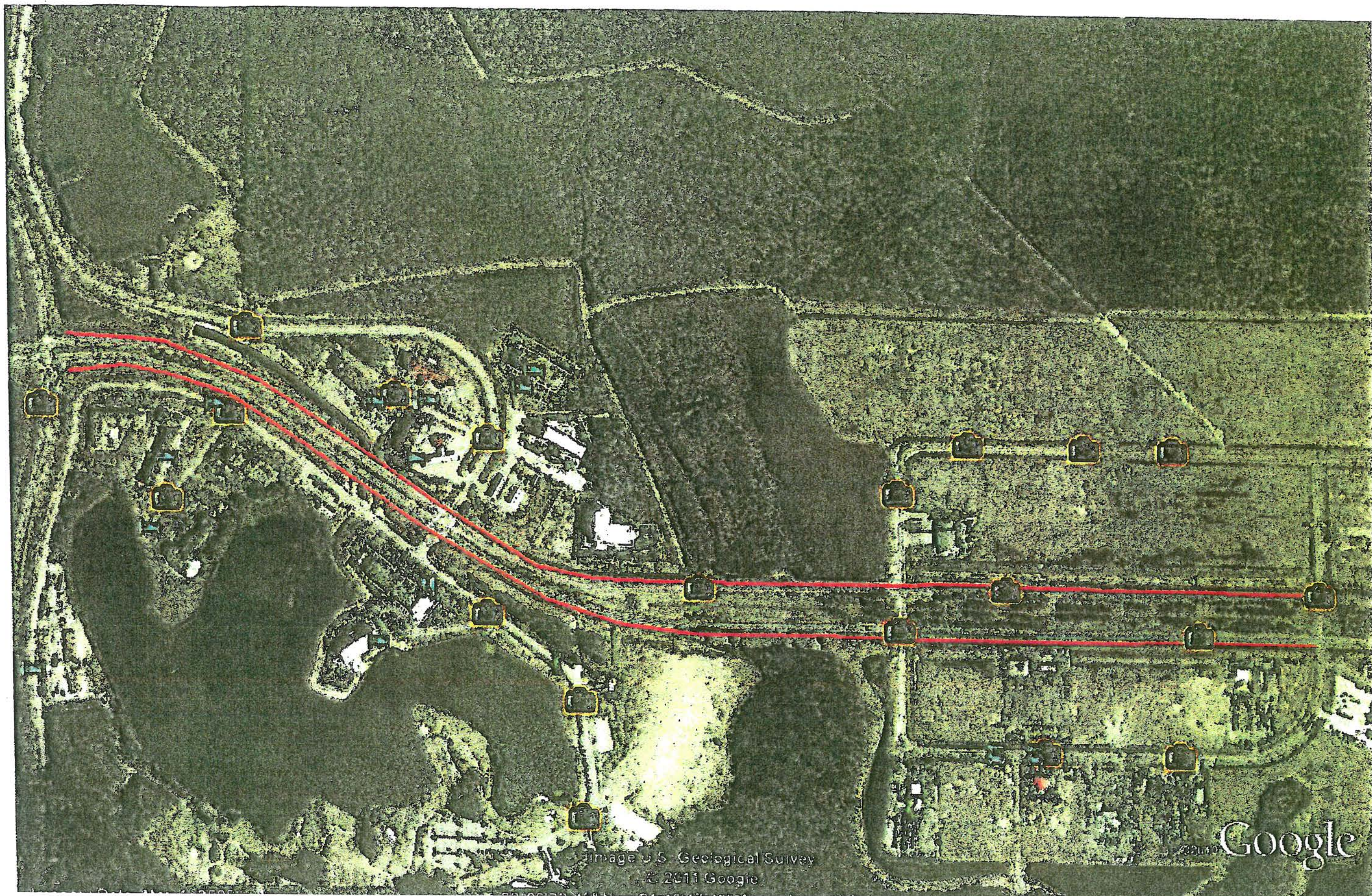
ETM NO.	
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DESIGNED BY:	
CHECKED BY:	
DATE:	

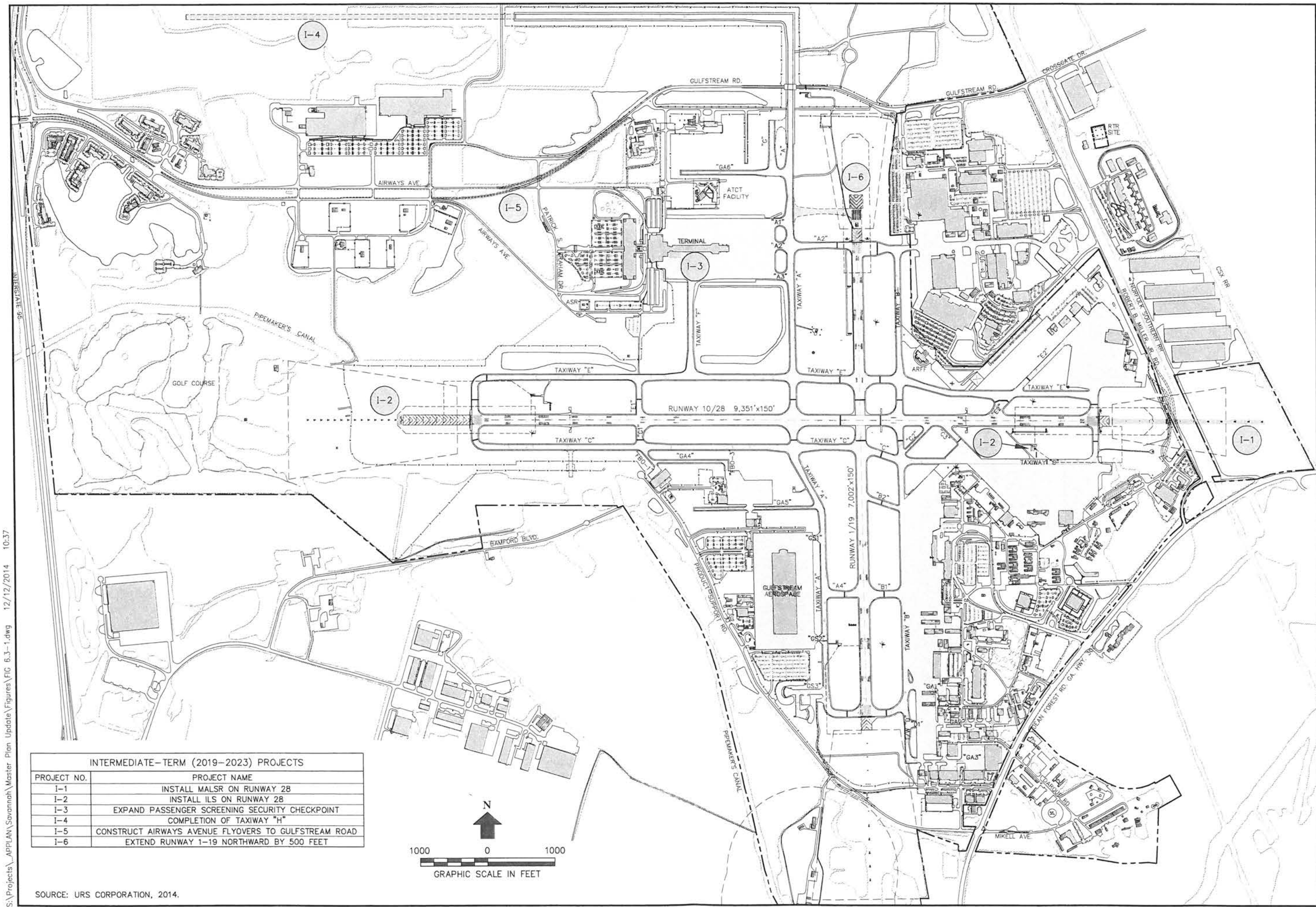
REVISIONS:

PLANS PREPARED UNDER THE
DIRECTION OF:









SOURCE: URS CORPORATION, 2014.

Table Of Contents

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CORE MPO (DRAFT) Non-motorized Transportation Plan (bicycle, pedestrian) Savannah / Hilton Head International Airport area

A vision serving multiple destinations
(Gulfstream, Terminal, hotels & restaurants)

Bicycle lane, each side,
by widening shoulder
eventually.

Although the currently
diagrammed routes were
chosen due to public ROW,
other connections could be
added specifically for
Gulfstream employees, if
desired by Airport Commission

The bicycle lanes would
have to merge into shared
lanes briefly to pass through
tunnel, which was constructed
with curb and sidewalk.

Provide bicycle parking
somewhere near entrance

Bicycle lane, each side,
by widening shoulder
eventually.

Crosswalks, for
transition between
edges and median

Path would cross roads via
crosswalks at intersections

Shared use paths on
each side of Airways Ave.

2-way shared use path
(10 feet wide) in the wide median
(some re-grading would be needed)

Provide bicycle parking
somewhere near entrance

SCANNED

MAY 28 2013

Interchange Operational Analysis Report
I-95 & Airways Avenue/Pooler Parkway Interchange
Pooler, Georgia

Prepared For:

The City of Pooler
Savannah-Hilton Head Regional Airport Authority
Gulfstream &
Ben Carter Enterprises, LLC

Prepared By:

England, Thims & Miller, Inc.
14775 Old Saint Augustine Road
Jacksonville, Florida

May 2013


5-24-2013

EXECUTIVE SUMMARY

This report documents the analysis of the traffic operations of the interchange of I-95 with Airways Avenue and Pooler Parkway. The interchange is located west of Savannah-Hilton Head Regional Airport. Figure 1 illustrates the location of the interchange. The analysis included review of the I-95 mainline, the merge and diverge operations along with the signalized intersections at the ramps and Airways Avenue/Pooler Parkway

Traffic estimates for interchange were developed for the morning and afternoon peak periods for the years 2015, 2025 and 2035 to evaluate the operation of the interchange and one signalized intersection east and west of the ramp intersections along Airways Avenue and Pooler Parkway. These traffic forecasts were developed based on existing and historical traffic volumes, the C.O.R.E. 2005-2035 travel demand model files from the Coastal Region MPO. A large commercial development is proposed for the southwest quadrant of the interchange which was not included in the socio-economic data files of the model. The traffic associated with this proposed development was estimated based on the 9th edition of the Institute of Transportation Engineer's *Trip Generation Manual* and incorporated into the final traffic estimates.

An analysis of the operation of the interchange was conducted using procedures from Highway Capacity Manual and the CORSIM and Synchro operational analysis software. The operational analysis indicates that the northbound ramp's intersection with Airways Avenue/Benton Boulevard is operating at an unacceptable level of service based on current volumes. The Georgia Department of Transportation (GDOT) has a project to be let to construction this summer which will add an additional northbound left turn lane at the intersection. This improvement will allow the intersection to function acceptably for the next ten to fifteen years. After that, both the northbound and southbound ramp intersections with Airways Avenue/Pooler Parkway will begin to experience significant delays.

Several improvement plans were developed to allow the interchange to operate acceptably. These range from adding additional turn lanes on the ramps and cross-street, reconfiguring Airways Avenue/Pooler Parkway as a diverging diamond, to constructing a northbound to west bound flyover ramp. Table 4-1 provides a generalized comparison of the various alternatives. The comparison provides a subjective ranking of each alternative in the areas of overall operation, driver familiarity, additional rights of way requirements and estimated construction costs.

1.0 INTRODUCTION

1.1 Background

The purpose of this report is to document the operational analysis of the interchange of I-95 and Airways Avenue/Pooler Parkway. The analysis was conducted to determine what improvements are necessary for the interchange to operate acceptably over the next twenty years and the timing of these improvements. Traffic forecasts were made for the morning and afternoon peak periods for three future years. These years are 2015 (Base Year), 2025 (Base + 10) and 2035 (Design Year) to evaluate the short term and long term improvements necessary for the interchange to operate acceptably.

1.2 Project Location

The interchange is located northwest of Savannah and serves as the north access to the Savannah/Hilton Head Regional Airport. Figure 1-1 illustrates the general location of the proposed development within the region. Figure 1-2 provides an aerial view of the existing interchange.

1.3 Existing Conditions

Manual and machine traffic counts were taken on I-95, the interchange ramps and at the intersection of the ramps with Airways Avenue/Pooler Parkway. In addition, turning movement counts were taken at one signalized intersection east and west of the interchange during the morning and afternoon peak periods. Figure 1-3 illustrates the 2013 Annual Average Daily Traffic on each of the roadway segments along with AM and PM peak hour volumes for the intersections. In addition, Figure 1-3 illustrates the existing lane arrangement and Level of Service (LOS) for the intersections and ramp merge/diverge area. As shown, the existing interchange and adjacent intersections are functioning at an acceptable level of service both in the morning and afternoon peak periods, except for the intersection of the northbound exit ramp with Airways Avenue/Pooler Parkway. Traffic using this intersection is currently experiencing significant delays. The Georgia Department of Transportation (GDOT) is developing a project to add an additional left turn lane to the northbound exit ramp. The addition of this lane will improve flow through the intersection and allow the interchange to operate at an acceptable level of service.

4.0 POTENTIAL IMPROVEMENTS

The analysis of future traffic volumes indicates that during the afternoon peak period both the north bound diverge and the intersections of both the northbound and southbound ramp intersections with Airways Avenue/Pooler Parkway will fail in 2025. The operation of the southbound ramp intersection can be improved by the addition of an additional southbound to westbound right turn lane and a second eastbound to southbound right turn lane. Figure 4.1 illustrates the improvements at this intersection. These improvements will allow the intersection of the southbound ramps with Airways Avenue/Pooler Parkway to operate at an acceptable level of service.

The failure of the northbound exit ramp diverge is an indication of the need for a dual lane exit. This can be accomplished by adding an additional lane to the existing ramp or separating the northbound to eastbound and the northbound to westbound movements. This separation can be accomplished using a loop ramp or flyover. The separation of the movements also eliminates the operational issues at the intersection of the northbound exit ramp with Airways Avenue/Pooler Parkway by removing the northbound to westbound movement from the intersection.

A conceptual layout of the flyover was developed and due to the close proximity of the Mill Creek Drive and Benton Boulevard intersections and using a maximum grade of five percent, the ramp will not be able to touch down east of Benton Boulevard. This significantly increases the costs of this alternative. In addition, this would prevent the elimination of the northbound left turn from the existing ramp due to the need to serve the commercial centers between Benton Boulevard and Interstate-95.

The next alternative reviewed was the addition of a loop ramp in the northeast quadrant of the interchange. The addition of this ramp will require the relocation of approximately 1500 feet of the northbound entrance ramp, about 25200 feet of Crossroads Avenue and the filling/relocation of approximately 4 acres of the existing pond. The relocation of the northbound entrance ramp and Crossroads Avenue will require significant additional rights of way.

The final alternative investigated was a diverging diamond configuration. This type of interchange reverses the direction of flow between the interchange ramps to eliminate the left turns crossing the opposing traffic flow. The diverging diamond simplifies the phasing of the traffic signals thereby increasing the efficiency of the intersections. An example of the diverging diamond interchange can be found at the intersection of Ashford Dunwoody Drive NE and Interstate-285 in Atlanta and several more are scheduled to begin construction later this summer in North Carolina.

A generalized comparison of the various alternatives and is presented in Table 4-1.

Table 4-1 Alternative Comparison

Interchange Improvement Alternative	Cost	Additional R/W	Wetland Impacts	MOT	Driver Familiarity
Additional Northbound Left	\$	Minimal	Minimal	Standard	Good
Northbound to Westbound Flyover	\$\$\$	Significant	Minimal	Moderate	Good
Northbound to Westbound Loop	\$\$\$	Significant	Significant	Extensive	Good
Diverging Diamond	\$	Minimal	Minimal	Moderate	Poor

5.0 RECOMMENDATIONS

Based on the comparison in the previous section, it is recommended that both the first and last alternative be included in the analysis for the interchange modification report submitted to the Federal Highway Administration. Figure 5.1 illustrates the improvements associated with the first alternative and Figure 5.2 depicts the diverging diamond configuration for this location. Both configurations will operate at an acceptable level of service while minimizing the disruption to the traveling public, right of way requirements and costs.