

TECHNICAL MEMORANDUM

Alternative Corridor Evaluation (ACE) Methodology Memorandum (MM)

**Poinciana Parkway Southport Connector
Project Development and Environment (PD&E) Study
From Pleasant Hill Road to Florida's Turnpike
FPID: 433693-1-22-01
ETDM #: 13961
Osceola County, Florida**

PREPARED BY: Florida Department of Transportation, District Five
DATE: August 12, 2014
SUBJECT: Revised Alternative Corridor Evaluation Report Methodology Memorandum

The purpose of this Methodology Memorandum (MM) is to document the evaluation methodology to be conducted for the Southport Connector Project Development and Environment (PD&E) Study. The memorandum details the goals of the evaluation, the methodology, how coordination with stakeholders will occur, and the basis for decision-making. This MM was revised in response to comments from the Environmental Technical Advisory Team (ETAT) members received July 18, 2014, after a 30-day minimum comment period. The evaluation of the corridors will be detailed in the Alternative Corridor Evaluation Report (ACER). The results in the ACER will identify the reasonable alternatives for National Environmental Policy Act (NEPA) analysis.

1.0 BACKGROUND

1.1 CONTACT PERSONNEL

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1.2 PROJECT INFORMATION

The FDOT, District Five, in cooperation with the Federal Highway Administration (FHWA), initiated the Southport Connector PD&E Study in Osceola County, Florida June 2013. The PD&E Study involves the analysis of a range of alternative corridors to provide for a connection between Pleasant Hill Road and Florida's Turnpike.

The proposed Southport Connector identified in the Osceola County Expressway Authority (OCX) Master Plan to serve Osceola County's urban growth area. OCX initiated a design/build project for a segment of the beltway system referred to as Poinciana Parkway Bridge Segment and Southwest Segment. The Bridge Segment begins at US 17/92 and crosses Reedy Creek to a point just north of the intersection of Marigold Avenue and East Bourne Drive. The Southwest Segment begins at the end of the Bridge Segment and runs south along Rhododendron Avenue to Cypress Parkway. In addition, FDOT is conducting an independent PD&E Study for the I-4 Segment of Poinciana Parkway from I-4 to the Bridge Segment.

1.3 PROJECT DESCRIPTION

The proposed Southport Connector, as envisioned in the OCX Master Plan, would begin in the vicinity of the intersection of Cypress Parkway and Pleasant Hill Road. However, an additional beginning point is being considered at a point on the Poinciana Parkway just north of Marigold Avenue at the terminus of the Poinciana Parkway Bridge Segment. The eastern terminus of the proposed Southport Connector will be at Florida's Turnpike and several termini locations are being considered. The project study area is shown on the project location map in *Exhibit 1*.

The following goals and objectives are contained in OCX's Master Plan:

Goal 3. Promote a high quality of life for Osceola County residents.

Objective 3.1. Reduce delay by providing limited access transportation options.

Objective 3.2. Improve capacity with new lineage and transit options.

Therefore, in conformance with the goals and objectives of the OCX Master Plan, the proposed Southport Connector will be a new limited access facility with transit options.

1.4 PURPOSE AND NEED

The purpose and need of the project was screened in the Programming Screen and accepted by FHWA on December 12, 2013. The purpose of the project is to achieve the following primary goals:

- Improve roadway connection from the community of Poinciana to Florida's Turnpike: The majority of the Poinciana area's residents are employed in Orange County. Therefore, a new connection to the Florida Turnpike will provide an alternative route to jobs and employment centers.
- Enhance mobility: Due to the anticipated population and employment growth in the study area, the proposed facility will play a critical role in accommodating travel demands and improving the movement of goods and people.
- Improve overall traffic operations: The proposed facility would relieve congestion on local roads by separating local and regional traffic.
- Promote regional system linkage: The proposed facility is identified in MetroPlan Orlando's 2030 Long Range Transportation Plan. The proposed Connector is part of a planned limited

access, high-speed toll facility identified in the OCX Master Plan to serve the Osceola County's urban growth area.

Secondary objectives for the project include desirable features that support the purpose of the project. The secondary objectives are to support economic development and enhance emergency response/evacuation.

2.0 GOALS AND OBJECTIVES OF THE OF THE ALTERNATIVE CORRIDOR EVALUATION

The purpose of the ACE is to document and link planning activities for use in the National Environmental Policy Act (NEPA) environmental analysis in accordance with the Planning and Environment Linkages described under Moving Ahead for Progress in the 21st Century (MAP-21). The goals of the ACE are to address Environmental Technical Advisory Team (ETAT) comments and eliminate unreasonable corridors based on factors such as not meeting the purpose and need, travel demand, and disproportionate and/or significant impacts.

2.1 STATUS IN PROJECT DELIVERY

The ETDM Programming Screen was initiated on September 6, 2013 (ETDM#13961 - Poinciana Parkway Southport Connector, <https://etdmpub.fl.a-etat.org>). As shown on *Exhibit 2*, 10 initial corridors were developed for the purpose of the ETDM programming screen. The ETDM programming screen review period was extended to allow for additional agency review and was closed on November 20, 2013. An additional extension was granted for the FHWA. Agency representatives input regarding the initial corridors completed the review in December 2013. Prior to the ETDM screening, a webinar was held on August 21, 2013 to inform the ETAT members of the purpose of and need for the project, initial corridors to be screened and a high-level overview of the social, cultural, natural and physical environments.

The 10 initial corridors entered in the ETDM programming screen were developed using Land Suitability Mapping (LSM). Using the Geographic Information Systems (GIS)-based Environmental Screening Tool (EST), the initial corridors were 1,400-foot wide. The corridors were initially developed at a width of 400-foot and therefore the impacts were quantified in the EST at a minimum of 1,400 feet (400-foot wide corridors with a 500-foot buffer distance on each side of the corridor).

These initial corridors are the starting point for the ACE process. No additional corridors were identified in the ETDM programming screen. The naming of each corridor or alternative will remain consistent throughout ACE and be carried through the PD&E phase.

The purpose and need of the project was screened in the Programming Screen and accepted by FHWA on December 12, 2013. The purpose and need is in the process of being updated to reflect new information regarding traffic analysis and the Poinciana Parkway Design-Build Project including the extension of Rhododendron Avenue.

The draft MM was distributed for ETAT review on June 3, 2014. ETAT members were given until July 18, 2014 to provide comments. The ETAT comments were reviewed, considered and incorporated into this Revised MM and into the ACE process, as feasible. Meetings were held between the Florida Department of Transportation (FDOT) and U.S. Fish and Wildlife Service (USFWS) on June 18, 2014, with the U.S. Army Corps of Engineers (USACE) on Jul 1, 2014, with South Florida Water Management district on July 8, 2014 and with Florida fish and Wildlife Conservation Commission (FWC) on July

18, 2014 to initiate project coordination. Upcoming opportunities for public and agency input include a second Agency Project Advisory Group (APAG) meeting and the second public meeting.

2.2 INTENT OF STUDY

The ACE process, as defined in the Project Development and Environment Manual Part 2, Chapter 6 and Efficient Transportation Decision Making (ETDM) Manual meets the intent of 23 CFR 450 (Planning regulations) and Title 23 USC 168 (Integration of planning and environmental review). The intent of this study is to link planning decisions so they can be directly incorporated into the NEPA process.

2.3 IDENTIFY THE DECISION POINTS/MILESTONES

This Revised MM is included in the republished Preliminary Programming Screen Report. The Revised MM and ACE will be documented in the ACER, which will be referenced in the NEPA document. The results of the ACE will determine which corridors are considered unreasonable and should be eliminated from further study. FHWA, the Lead Federal Agency, adopts the ACER which is approved by FDOT (per 23 USC 168).

Recommendations made are recorded in the EST, and published in the Final Programming Screen Summary Report for use in the NEPA phase. The PD&E study will analyze reasonable alternatives that meet the purpose and need for the project to satisfy federal requirements associated with NEPA.

3.0 ALTERNATIVE CORRIDOR EVALUATION METHODOLOGY

3.1 DATA COLLECTION

The data used to further evaluate the project corridor's social, cultural, natural and physical environmental impacts will be derived from (GIS), literature and field reviews where appropriate. Various GIS datasets within the Florida Geographical Data Library (FGDL), the South Florida Water Management District (SFWMD), the FWC and City and County data sources will be utilized. In addition, field and literature reviews will be performed to verify key project corridor constraints. A preliminary list of GIS data layers which may be used in the assessment of the project study area is provided in Table 1.

Table 1
POTENTIAL GIS LAYERS

| GIS Layer | Source (Year) |
|--------------------------------------|---|
| Social Layers | |
| Airports | Florida Geographic Data Library (FGDL) (2012) |
| Cemeteries | FGDL(2013) |
| Churches | FGDL(2009) |
| DRI's | FGDL(2009); Osceola County; Polk County |
| Fire Stations | FGDL(2013); Osceola County; Polk County |
| Government Buildings | FGDL(2013) |
| High Density Residential | South Florida Water Management District (SFWMD) |
| Hospitals | FGDL(2013); Osceola County; Polk County |
| Law Enforcement | FGDL(2012) |
| Medium Density Residential | SFWMD |
| Planned Unit Developments (PUD) | FGDL(2009); Osceola County; Polk County |
| Schools | FGDL(2012); Osceola County; Polk County |
| Cultural Layers | |
| State Parks | FGDL(2011) |
| FFWCC Managed Lands | FGDL(2010) |
| Greenways | FGDL(2012); Osceola County; Polk County |
| Historical Sites | SFWMD; Osceola County; Polk County |
| Indian Parcels | FGDL(2008) |
| Local Parks | Osceola County; Polk County |
| Managed Lands | Florida Natural Area Inventory (FNAI) |
| Military Lands | FGDL(2010) |
| Parks and Zones | SFWMD |
| SHPO Structures | FGDL(2013) |
| SHPO Bridges | FGDL(2013) |
| SHPO Cemeteries | FGDL(2013) |
| SFWMD Lands | SFWMD |
| Wildlife Management Areas | FGDL(2013) |
| Archaeological or Historic Sites | FGDL (2013) |
| Resource Groups | FGDL (2013) |
| National Register of Historic Places | FGDL (2013) |
| Natural Environment Layers | |
| Aquatic Preserves | FGDL(2011) |
| Bear Nuisance | Florida Fish and Wildlife Conservation Commission (FFWCC) |
| Class 1 Waters | FDEP |
| Eagle Nests | FFWCC |
| FDEP Mitigation Banks | SFWMD (2013) |
| Floodways | FEMA(2013) |
| Native Scrub | FFWCC; SFWMD |
| OFW | FDEP(2011) |
| Protected Species (multiple layers) | FFWCC |

| GIS Layer | Source (Year) |
|--|--|
| Rookeries | FFWCC |
| Water Features | SFWMD |
| Wetlands | SFWMD |
| Physical Environment Layers | |
| Brownfields (EPA/FDEP) | FGDL(2013) |
| Electrical Power Facilities | SFWMD; FDEP(2011) |
| EPA Pollutant Sites (air, water, RCRA) | FGDL(2011) |
| Hazardous Materials Sites | FDEP(2013) |
| Industrial Sites | SFWMD |
| Landfills | FGDL(2013) |
| Nuclear Sites | FDEP(2011) |
| Oil and Gas Storage | SFWMD |
| Petroleum Contaminated Sites | FGDL(2013); FDEP(2013) |
| Power Plants | Osceola County; Polk County |
| Sewer Treatment Plants | FDEP(2013); SFWMD; Osceola County; Polk County |
| Sinkholes | FDEP(2004) |
| Solid Waste Facilities | FGDL(2013) |
| Superfund Sites | FGDL(2012) |
| TECO People's Gas | Polk County |
| Water Treatment Plants | FGDL |
| Well Field Protection Zones | Osceola County; Polk County |
| Wellhead Protection Zones | Osceola County; Polk County |

3.1 IDENTIFY CORRIDOR CONSTRAINTS

The GIS data will be used to identify those corridors that avoid and minimize impacts to sensitive environmental features to the extent possible. The attached series of maps (Exhibits 3, 4, 5 and 6) feature specific database categories showing social, cultural, natural, and physical data. Based on ETAT commentary the following features were identified as important considerations. This includes, but is not limited to, potential land use changes from agriculture/prime farm lands to high density residential, well field impacts, environmental justice, 4(f) impacts (Reedy Creek Conservation area, Upper Lakes Basin Watershed, Poinciana Scrub Conservation Area, Lake Hatchineha Watershed, Florida Forever BOT Project area, Vance Harmon Park on Cypress Parkway, the planned Mac Overstreet Regional Park, Southport Canal, Southport Park, potential historic/archaeological sites and recreational areas associated with Lake Tohopekaliga), wetlands, water quality, floodplains, wildlife and habitat (including Everglade snail kite, , wood stork, sandhill crane, bald eagle, Florida grasshopper sparrow, Audubon's crested caracara, eastern indigo snake, gopher tortoise, and Sherman's fox squirrel), and navigable waters.

3.2 IDENTIFY POTENTIAL CORRIDORS

Potential corridors were developed that provide for a 425-foot width shown in **Exhibit 2**, based on:

- The OCX Master Plan limited access expressway with adjacent corridors for transit and a potential multi-use trail.
- Conforming to geometric design criteria and minimize impacts to the identified social,

cultural, natural and physical features.

- Preliminary considerations for the anticipated typical section, which will provide for a more accurate representation of potential impacts (social, cultural, natural and physical).
- Avoidance of publicly owned conservation lands or mitigation banks.

The 425-foot wide corridor includes an additional 26 feet to allow for flexibility in developing proposed alignments. The corridor width will increase near interchange locations due to the design envelope necessary to develop ramps and fly-overs. *The typical* section of the corridor is shown on *Exhibit 7*.

3.3 CORRIDOR ANALYSIS AND EVALUATION CRITERIA

Corridors will be assessed using project specific criteria developed as a result of ETAT comments and public input received during ETDM Screening and the initial scoping activities. The evaluation criteria allows for the comparative assessment of the corridor alternatives. The corridors will be evaluated based on consideration of meeting the project purpose and need, avoidance and minimization of potential impacts to environmental resources, engineering feasibility, a narrative assessment of the corridors, and agency/public input. The analysis and assessment for each of these factors are described below.

3.4.1 Purpose and Need Evaluation

The purpose and need evaluation assesses how well each corridor satisfies the project purpose and need. For a corridor to meet the purpose and need of the project, it would need to provide an enhanced connection as compared to the No Build (or No Action) Alternative. The need for enhancement is related to unsatisfactory future operating conditions to be determined in the traffic analysis. In addition, each corridor will be evaluated for regional connectivity, emergency evacuation, and support of economic development. **Table 2** below provides the screening criteria related to purpose and need. Enhanced mobility, improved traffic operations, promoting regional system linkage, support of economic development and enhancement of emergency evacuation will also be evaluated.

**Table 2
PURPOSE AND NEED SCREENING CRITERIA**

| Corridor | Segments | Primary Objectives | | | | Secondary Objectives | |
|----------|-------------|--|---|---------------------------------|-------------------------------------|----------------------------------|-----------------------------------|
| | | Improved Connection from Poinciana to Turnpike [1] | Enhance Mobility of People and Goods[2] | Improved Traffic Operations [3] | Promote Regional System Linkage [4] | Support Economic Development [5] | Enhance Emergency/ Evacuation [6] |
| 1 | A-B-C-D | | | | | | |
| 2 | E-F-G-D | | | | | | |
| 3 | E-F-H-I | | | | | | |
| 4 | E-F-J-K-L-I | | | | | | |
| 5 | E-F-J-K-M-N | | | | | | |
| 6 | E-F-J-O-T-N | | | | | | |
| 7 | E-P-Q-R | | | | | | |
| 8 | E-P-Q-S-T-N | | | | | | |
| 9 | E-P-U-R | | | | | | |
| 10 | E-P-U-S-T-N | | | | | | |

Notes: Yes=Highest Benefit; Moderate=Neutral Benefit; No=Unsatisfactory

1. Based on time of travel estimates derived from the project traffic model and corridor length
2. Based on typical section design speed, high speed facility, SIS criteria
3. Based on project traffic model
4. Based on planning consistency and intermodal connectivity
5. Maximum satisfaction occurs with improved connectivity to Florida's turnpike in conformance with OCX Master Plan.
6. Based on access, safety and design measures

3.4.2 Environmental Evaluation

The potential direct, indirect, and cumulative effects on the environment will be considered for each corridor. **Table 3** provides a matrix evaluation table that will be populated with data using the GIS layers identified in **Table 1** and the corridor shapes for the corridors shown in **Exhibit 2**. Quantifiable values for social, cultural natural, and physical environment will be shown in the matrix evaluation table. Non-quantifiable factors will be given a likelihood of impact rating.

**Table 3
ENVIRONMENTAL EVALUATION CRITERIA**

| Category | Evaluation Criteria | Unit of Measure | Potential Corridors | | | | | | | | | | | |
|---------------|-------------------------------------|-----------------|---------------------|---------|---------|-------------|-------------|-------------|---------|-------------|---------|-------------|--|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| | | | A-B-C-D | E-F-G-D | E-F-H-I | E-F-J-K-L-I | E-F-J-K-M-N | E-F-J-O-T-N | E-P-Q-R | E-P-Q-S-T-N | E-P-U-R | E-P-U-S-T-N | | |
| Social | Potential Residential Displacements | Number | | | | | | | | | | | | |

| Category | Evaluation Criteria | Unit of Measure | Potential Corridors | | | | | | | | | | | |
|-----------------|--|--|---------------------|-----|-------|-------------|-------------|-------------|---------|-------------|---------|-------------|--|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| | | | A-D | E-G | E-H-I | E-F-J-K-L-I | E-F-J-K-M-N | E-F-J-O-T-N | E-P-Q-R | E-P-Q-S-T-N | E-P-U-R | E-P-U-S-T-N | | |
| | Potential Non-residential Displacements | Number | | | | | | | | | | | | |
| | Community Facilities | Number | | | | | | | | | | | | |
| | Neighborhoods | Number | | | | | | | | | | | | |
| | Community Cohesion | Effects to residential connectivity and social interaction | | | | | | | | | | | | |
| | Socioeconomic Impact to Special Populations | Potential for disproportionate impacts | | | | | | | | | | | | |
| Cultural | Potential Section 106 Resources | No. of affected historic and archeological resources | | | | | | | | | | | | |
| | Potential 4(f) Resources | Number | | | | | | | | | | | | |
| | Approved Mitigation Banks/Conservation Lands | Acres | | | | | | | | | | | | |
| Natural | Snail Kite Involvement | Degree | | | | | | | | | | | | |
| | FL Grasshopper Sparrow Involvement | Degree | | | | | | | | | | | | |
| | Bald Eagle Involvement | Degree | | | | | | | | | | | | |
| | Audubon's Crested Caracara Involvement | Degree | | | | | | | | | | | | |
| | Non-forested Wetlands | Acres | | | | | | | | | | | | |
| | Forested Wetlands | Acres | | | | | | | | | | | | |
| | Water Features | Acres | | | | | | | | | | | | |
| Physical | Potential Contamination Sites | Number | | | | | | | | | | | | |

| Category | Evaluation Criteria | Unit of Measure | Potential Corridors | | | | | | | | | | | |
|----------|---------------------|-----------------|---------------------|---------|---------|-------------|-------------|-------------|---------|-------------|---------|-------------|--|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| | | | A-B-C-D | E-F-G-D | E-F-H-I | E-F-J-K-L-I | E-F-J-K-M-N | E-F-J-O-T-N | E-P-Q-R | E-P-Q-S-T-N | E-P-U-R | E-P-U-S-T-N | | |
| | Floodplain Impacts | Acres | | | | | | | | | | | | |
| | Floodway Impacts | Acres | | | | | | | | | | | | |
| | Noise | Receptors | | | | | | | | | | | | |

Potential impacts nesting and foraging habitat for the Audubon’s crested caracara, Everglade snail kite, bald eagle, and Florida grasshopper sparrow are of particular importance for the Southport Connector project. For the comparative analysis, a methodology for evaluating and ranking the impacts to species has been developed and is contained in **Appendix A**.

3.4.3 Engineering Considerations

The engineering considerations used to screen corridors are listed in **Table 4**. Engineering factors such as utility conflicts, right-of-way, and interchange spacing on the Turnpike. Drainage issues may not be able to be measured; for instance, a corridor may either be located in an area with flooding issues or it may not. Those corridors with technical feasibility concerns are likely to have high construction costs.

Table 4
ENGINEERING SCREENING CRITERIA

| Corridor | Segments | Major Utility Conflicts | Right-of-way Needs | Drainage Issues | Interchange Spacing |
|----------|-------------|-------------------------|--------------------|-----------------|---------------------|
| 1 | A-B-C-D | | | | |
| 2 | E-F-G-D | | | | |
| 3 | E-F-H-I | | | | |
| 4 | E-F-J-K-L-I | | | | |
| 5 | E-F-J-K-M-N | | | | |
| 6 | E-F-J-O-T-N | | | | |
| 7 | E-P-Q-R | | | | |
| 8 | E-P-Q-S-T-N | | | | |
| 9 | E-P-U-R | | | | |
| 10 | E-P-U-S-T-N | | | | |

The estimated construction, wetland mitigation, and right-of-way costs will be listed in **Table 5** below. Construction costs will be based on general FDOT long range estimates for roadway and structures using the length of the project and the four-lane typical section shown in **Exhibit 7**.

Roadway and structures cost estimates will provide provisions for the transit and trail components. Structures costs over Lake Tohopekaliga will include an additional cost component for piping to convey stormwater off of the bridge to pond locations. Right-of-way costs will be estimated based on general costs of land and buildings in the study area by land use type and unit right-of-way costs obtained from FDOT District 5. Wetland mitigation costs will be based on in-basin mitigation bank credit costs.

Table 5
PROJECT COST CRITERIA

| Corridor | Segments | Construction Costs | Wetland Mitigation Costs | Right-of-Way Costs | Total Costs |
|----------|-------------|--------------------|--------------------------|--------------------|-------------|
| 1 | A-B-C-D | | | | |
| 2 | E-F-G-D | | | | |
| 3 | E-F-H-I | | | | |
| 4 | E-F-J-K-L-I | | | | |
| 5 | E-F-J-K-M-N | | | | |
| 6 | E-F-J-O-T-N | | | | |
| 7 | E-P-Q-R | | | | |
| 8 | E-P-Q-S-T-N | | | | |
| 9 | E-P-U-R | | | | |
| 10 | E-P-U-S-T-N | | | | |

3.4.4 Narrative of Assessment

Based on the corridor evaluations described above, a narrative discussion and assessment of each of the corridors will be prepared in compliance with elements and issues contained in 23 USC 168(c). This narrative will provide a discussion of the affected environment, advantages and limitations of each corridor and highlight any specific factors that may result in an unreasonable corridor. Public and agency input (consideration of input received from the ETAT, Agency Project Advisory Group (APAG), project stakeholders and the general public) will be summarized in the narrative.

3.4.5 Public and Agency Considerations

Public, agency and ETAT members input received during the Screening process will be used to refine the purpose and need, corridor constraints and evaluation criteria in order to evaluate the corridors. A complete description of the opportunities for public input into the corridor evaluation process is in Section 4. The results documented in the ACER will be made available to the stakeholders through the EST for a 30 calendar day period. Notification of the public meetings will be distributed to all the individuals on the project mailing list including local officials, agencies including appropriate Native American tribes, stakeholders, special interest groups and property owners within the affected study area. If meetings are needed to explain the results of the ACER, they will be scheduled as necessary.

3.5 APPROACH TO ELIMINATING UNREASONABLE ALTERNATIVES

Any corridor that does not meet the purpose and need for the project is considered unreasonable and will be eliminated from further consideration upon FHWA approval. The corridors considered reasonable for detailed study as a result of the Purpose and Need Evaluation will be compared using the evaluation criteria described in Section 3.4. The corridor evaluation involves both quantitative and qualitative comparisons of the evaluation criteria. The comparative analysis will include rating the following:

- Environmental Impacts and Construction Cost Estimates (Quantitative)
- Engineering factors (technical feasibility) (Qualitative)
- Narrative assessment (advantages and limitations) (Qualitative)

This rating process is discussed further in Sections 3.5.1 and 3.5.2. Upon completion of this assessment and FHWA approval, remaining reasonable corridors will be carried forward in the PD&E Study.

The PD&E study project documentation will be prepared in accordance with the PD&E Manual and shall, therefore, be in compliance with all applicable state and federal laws, executive orders, and regulations. In compliance with the ETDM Master Agreement, agency involvement regarding project needs, issues, evaluation criteria, avoidance, minimization, decisions, and preliminary mitigation concepts will be a continuous effort throughout the ETDM and ACE processes. The evaluation criteria and units of measure used to evaluate and compare alternatives will include resources issues that are consistent and acceptable to each respective resource agency. The ACE process ensures that all alternatives are evaluated consistently.

3.5.1 Environmental Impacts and Cost Estimates (Rating of Quantitative Data)

The evaluation process includes the development of an evaluation matrix to facilitate comparison of corridors. The evaluation matrix will identify the buffer width used, quantify potential impacts, and list the source of the data. The potential impacts for each criterion will be provided for the entire corridor and summarized in a matrix similar to **Table 6**. For each evaluation criteria, a comparison will be made using a standard deviation method to compare Corridors 1 through 10. Red will be assigned to potential impacts greater than one standard deviation above the mean, yellow will be assigned to evaluation criteria within one standard deviation of the mean, and green will be assigned to evaluation criteria with zero or greater than one standard deviation below the mean. For each of the evaluation criteria, the corridors will be rated based on a score of 1 to 3 where 1 represents the least potential impact (green) and 3 represents the highest potential impact (red). Potential impacts of each corridor will be assigned a color code and number based on the standard deviation for the evaluation criteria results. Red indicates that the potential impacts are substantially higher than average when compared to the other alternatives. Green indicates that the potential impacts are substantially lower than average when compared to the other alternatives.

**Table 6
EXAMPLE OF SUMMARY COMPARATIVE MATRIX FOR ENVIRONMENTAL IMPACTS
AND COSTS**

| Evaluation Criteria | Buffer Width (CL) | Measurement Within the Screening Buffer | Source | ALTERNATIVES | | | | | | | | | | | | | |
|-----------------------------------|-------------------|---|--|--------------|---|---|---|---|---|---|---|---|---|----|--|--|--|
| | | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | |
| <i>Recreational Lands (Parks)</i> | 200 | Number of Parks | UF GEOPLAN/ Parcel Derived Parks | | | | | | | | | | | | | | |

For each evaluation category, the total score is based on summing the individual criteria rankings. The total costs for each of the corridor alternatives will be shown in **Table 7**.

3.5.2 Summary Corridor Ratings

The evaluation factors shall be summarized in a format similar to **Table 7** including the ratings from the environmental impact/cost rating summary (quantitative data) and ratings from the engineering, public and agency input (qualitative data).

**Table 7
CORRIDOR EVALUATION SUMMARY**

| Corridor | Segments | Purpose and Need Satisfaction | Evaluation Criteria | | | Recommended for Further Consideration |
|----------|-------------|-------------------------------|-----------------------|---------------------|-------|---------------------------------------|
| | | | Environmental Impacts | Engineering Factors | Costs | |
| 1 | A-B-C-D | | | | | |
| 2 | E-F-G-D | | | | | |
| 3 | E-F-H-I | | | | | |
| 4 | E-F-J-K-L-I | | | | | |
| 5 | E-F-J-K-M-N | | | | | |
| 6 | E-F-J-O-T-N | | | | | |
| 7 | E-P-Q-R | | | | | |
| 8 | E-P-Q-S-T-N | | | | | |
| 9 | E-P-U-R | | | | | |
| 10 | E-P-U-S-T-N | | | | | |

3.6 ALTERNATIVE CORRIDOR EVALUATION REPORT

The results of the analysis described above will be summarized in a Final ACER. This report will be submitted to the ETAT and interested stakeholders through the EST for 30 calendar day period. Once comments are addressed, a corridor public workshop will be held to allow the public to provide input.

The appropriate decision making matrices (i.e., the evaluation matrices similar to Tables 2, 3, and 4, and a corridor evaluation summary similar to Table 6) will be included in the ACER to substantiate findings and the reasons for eliminating corridors and identifying corridors that will be carried forward into the PD&E phase. The ACER will be included in the republished Preliminary Programming Screen Report. The NEPA class of action determination (i.e. Environmental Assessment or Environmental Impact Statement), degree of effect, summary of public comments, and dispute resolution issues will be addressed in the Preliminary Programming Screen Report.

4.0 OPPORTUNITY FOR AGENCY/PUBLIC INPUT

Continuous Public outreach during the initial stages of the project has and will be used to engage stakeholders to identify community values and concerns that may affect the development and evaluation of corridors. *Table 8* lists the public and agency events that have been conducted to date; *Table 9* summarizes ETAT comments and *Table 10* summarizes near-term outreach that will occur in conjunction with, and following the MM/ACER process.

Table 8
PUBLIC / AGENCY COORDINATION CONDUCTED TO DATE

| Item | Description | Date |
|---|--|----------------------------------|
| A webinar with members of the ETAT | The webinar was held to introduce the project and provide an opportunity for input into the project's purpose and need and on the initial corridors. | August 21, 2013 |
| Advanced Notification Package | The package was sent to the State Clearing House (Florida Department of Environmental Protection), participating agencies, non-participating agencies and organizations and special interest groups electronically and via hard copies to agencies as requested. The AN Package is also on the ETDM public access site (https://etdmpub.fl.a-etat.org). | September 5, 2012 |
| Project Website (www.SouthportConnector.com) | The website includes meeting information, report summaries which will be available for viewing and downloading, and provide opportunity for public comment. The website is being updated monthly and on an as need basis. | August 29, 2013 |
| First APAG Meeting | The APAG consists of representatives from The Nature Conservancy (TNC), Audubon Society, Sierra Club, Reedy Creek Improvement District (RCID), ETAT members, FDOT District One and Five, Osceola County Expressway Authority (OCX), Osceola County, Walt Disney World, Florida's Turnpike Enterprise, water management districts, community groups and others. The members of the APAG are anticipated to meet bi-annually and will receive monthly status e-mail updates. | August 27, 2013 |
| ETDM comments | The most significant degrees of effect for each issue category, the ETAT organization that provided that comment, and draft responses are summarized in <i>Table 9</i> . | From September to November 2013. |
| Public Meetings | Two public meetings were held, one at the Providence Golf Club in Davenport and one at the Association of Poinciana Villages Community Center in Poinciana. These meetings were scheduled to inform local officials and the general public of the potential corridors being brought to the area | September 10 and 12, 2013 |

Table 9

SUMMARY OF ETAT COMMENTS

| Issue | Degree of Effect | Organization | FDOT Responses to ETAT Comments |
|-----------------------------------|--------------------------------|---|--|
| Land Use Changes | Moderate to Substantial | FHWA | Direct and indirect effects of the project on land use will be evaluated. Direct and indirect effects of the project on the City of St. Cloud well field will be evaluated. Planning consistency will be coordinated and documented during the PD&E study including coordination with Osceola County. |
| Social | Substantial | FHWA | A sociocultural effect evaluation will be prepared during the PD&E study. |
| Farmlands | Substantial | Natural Resources Conservation Service, FHWA | Direct and indirect effects of the project on prime and unique farmlands and listed species, which will utilize farmlands, will be evaluated. |
| Economic | None | FDEO, FHWA | Effects of the project alternatives on the area's economy will be evaluated in a sociocultural effects study as part of the PD&E Study. |
| Section 4(f) Potential | Substantial | FHWA | Section 4(f) applicability will be evaluated during the study. Impacts to Section 4(f) resources will be minimized and avoided to the greatest extent practicable. An evaluation will be performed to analyze any direct or constructive use of these resources. |
| Historic and Archaeological Sites | Substantial | FHWA | Impacts to historic and archaeological resources, including underwater resources, will be evaluated during the study, and a Cultural Resource Assessment will be performed. Impacts to cultural resources will be minimized and avoided to the greatest extent practicable. An evaluation will be performed to analyze any direct or constructive use of resources protected under Section 4(f). |
| Recreation Areas | Substantial | FHWA, NPS, FDEP | Section 4(f) and Section 6(f) applicability will be evaluated during the study. Impacts to Section 4(f) and Section 6(f) resources will be minimized and avoided to the greatest extent practicable. An evaluation will be performed to analyze any direct or constructive use of these resources. Should an alternative be selected that involves impacts to a Section 6(f) resource, coordination with NPS and FDEP will be initiated. |
| Wetlands | Moderate to Substantial | South Florida Water Management District (SFWMD), US Army Corps of Engineers; US Fish and Wildlife Service | Wetlands within the project area will be delineated and functional analyses will be performed for viable alternatives that meet the purpose and need of the project. Wetland impacts will be avoided and minimized to the greatest extent practicable. Based on the ACE and ETAT input, unreasonable alternatives may be eliminated from further consideration. |
| Water Quality and Quantity | Moderate to Substantial | SFWMD, FHWA, FDEP | Impacts to water quality and quantity will be avoided through pollutant treatment of proposed and existing roadways within the impacted basins. Wetland impacts will be avoided and minimized to the greatest extent practicable. |
| Floodplains | Moderate to Substantial | SFWMD, FHWA | Floodplain impacts will be avoided and minimized to the greatest extent practicable. Compensation will be provided for unavoidable loss of floodplain volume and conveyance structures will be sized to prevent an increase in flood elevations. |
| Wildlife and Habitat | Moderate to Dispute Resolution | SFWMD, FHWA, USFWS, FWC | Wildlife surveys for the Biological Assessment will be completed during the upcoming study will evaluate the presence of listed species and their habitats and evaluate potential, secondary, and cumulative impacts. Impacts to listed species and their habitats will be avoided and minimized to the greatest extent practicable. |

| Issue | Degree of Effect | Organization | FDOT Responses to ETAT Comments |
|----------------------|-------------------------|--------------|---|
| Coastal and Marine | None | FHWA, NMFS | There is no involvement with coastal or marine resources. |
| Air Quality | Minimal | FHWA, USEPA | The proposed project is expected to have minimal impact on air quality. The project is located in an attainment area; therefore, an Air Quality Screening Analysis will likely not be necessary. |
| Contamination | Moderate | FHWA, FDEP | A Contamination Screening Evaluation Report will be prepared during the PD&E study. |
| Infrastructure | Moderate to Substantial | FHWA | Any public land corner or bench mark within the limits of construction is to be protected. The SFWMD's Data Collection Bureau will be informed of potential impacts during the design phase. We will coordinate with SFWMD regarding any proposed crossings of Reedy Creek or C-35. |
| Navigation | Substantial | USCG | A waterway study will be performed to determine the characteristics of vessels using the waterways and identify navigational needs. Also, the bridge questionnaire will be used to determine if USCG permit(s) are necessary. |
| Special Designations | Substantial | FHWA | Direct and indirect effects of the project on the City of St. Cloud well field will be evaluated. An evaluation of Prime Farmland, Save Our Rivers Lands, and Sole Source Aquifers will be included in the PD&E study. |

Table 10
FUTURE PUBLIC / AGENCY COORDINATION

| Item | Description | Date |
|---------------------|---|------------------------------|
| MM Process | The MM will be used as a tool during the Dispute Resolution process and to inform the ETAT and other stakeholders of the revised impacts based on the ACE | Draft submitted June 2, 2014 |
| Dispute Resolution | Meetings will be conducted with agencies as part of the Dispute Resolution process but also as requested to discuss the results of methodology | Ongoing |
| Second APAG Meeting | This meeting will be held to discuss the results and recommendations for eliminating unreasonable alternatives. | To be determined |

5.0 CONCLUSION

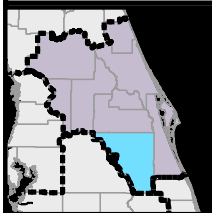
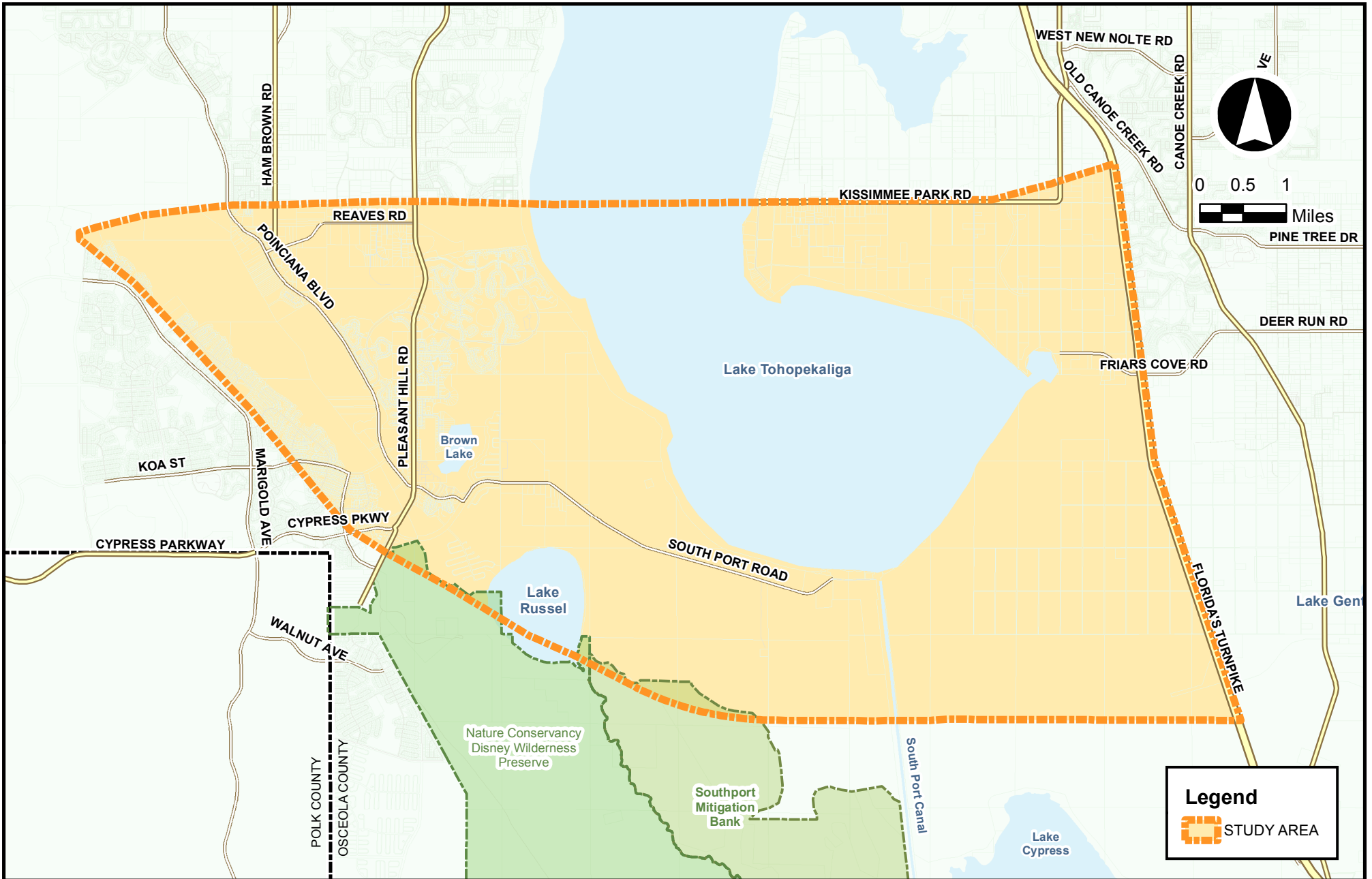
In conclusion, the purpose of this MM is to document the ACE methodology to be conducted for the Southport Connector PD&E Study. The memorandum details the goals of the evaluation, the methodology, how coordination with stakeholders will occur, and the basis for decision-making. The evaluation of the corridors will be detailed in the Alternative Corridor Evaluation Report. The results will identify the reasonable alternatives for NEPA analysis.

Attachments

List of Exhibits and Appendices

| <i>Exhibit Number</i> | <i>Title</i> |
|-----------------------|--------------------------------|
| 1 | Project Location Map |
| 2 | Initial Corridors |
| 3 | Social Features |
| 4 | Cultural Features |
| 5 | Natural Features |
| 6 | Physical Features |
| 7 | Draft Corridor Typical Section |
| Appendix A | Species Evaluation Methodology |

Exhibits



Florida Department of Transportation
District 5

**Poinciana Parkway Southport Connector
PD&E Study**

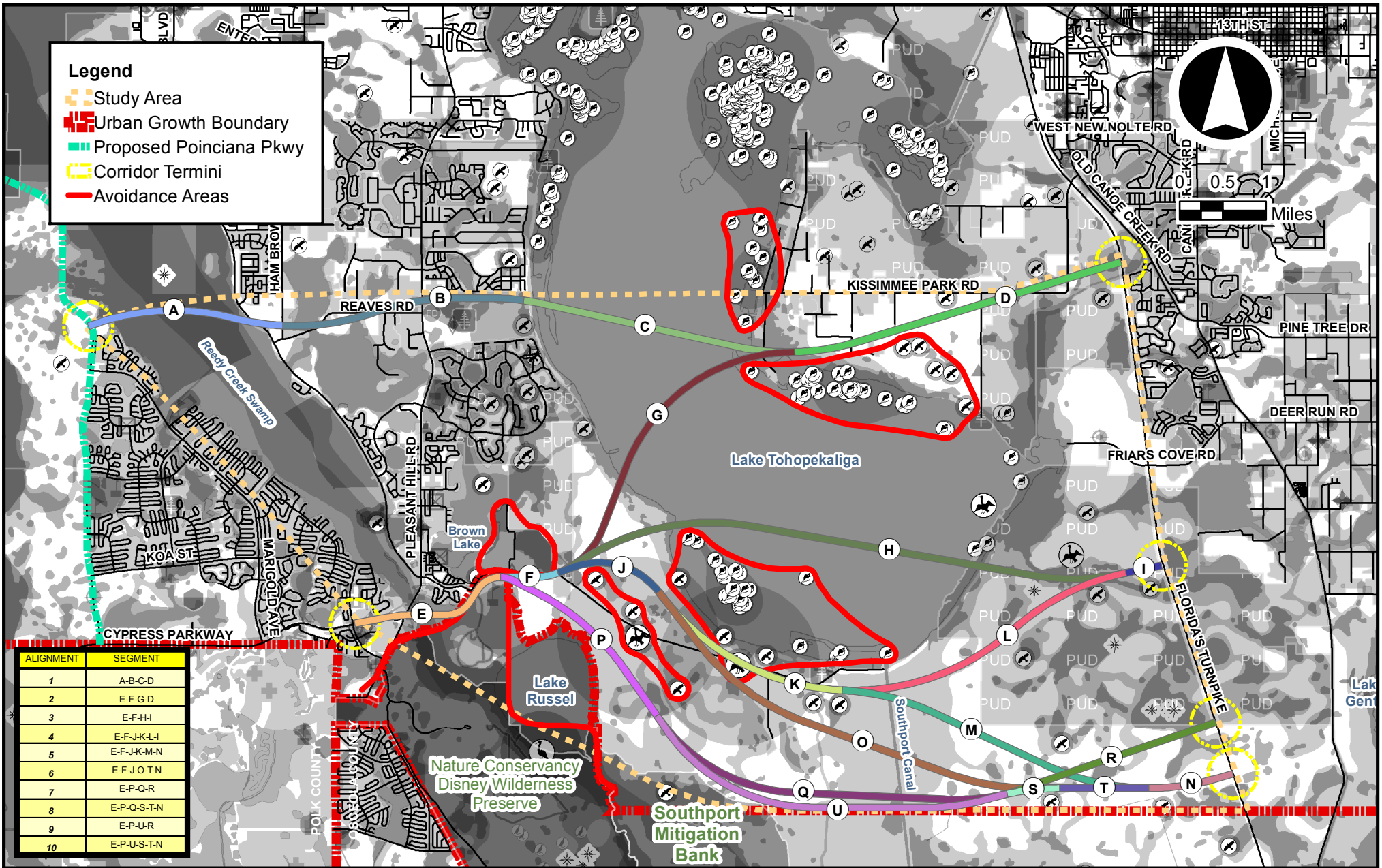
from Pleasant Hill Road
to Florida's Turnpike
Osceola County, Florida

Financial Project No.: 433693-1-22-01
Federal Project No: N/A

PROJECT LOCATION MAP

EXHIBIT

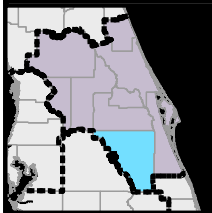
1



Legend

- Study Area
- Urban Growth Boundary
- Proposed Poinciana Pkwy
- Corridor Termini
- Avoidance Areas

| ALIGNMENT | SEGMENT |
|-----------|-------------|
| 1 | A-B-C-D |
| 2 | E-F-G-D |
| 3 | E-F-H-I |
| 4 | E-F-J-K-L-I |
| 5 | E-F-J-K-M-N |
| 6 | E-F-J-O-T-N |
| 7 | E-P-Q-R |
| 8 | E-P-Q-S-T-N |
| 9 | E-P-U-R |
| 10 | E-P-U-S-T-N |

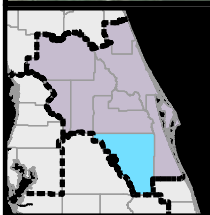
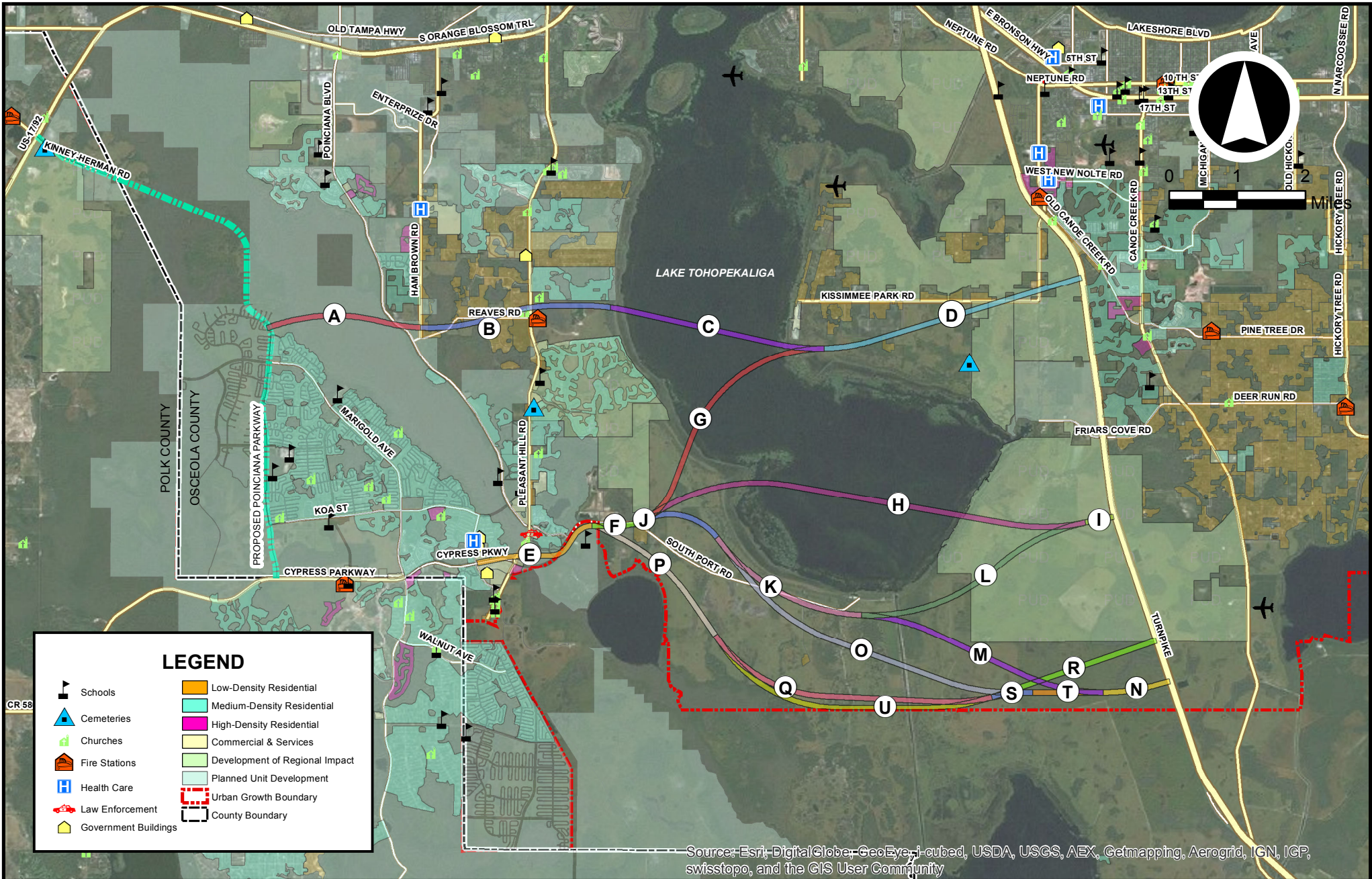


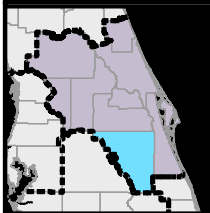
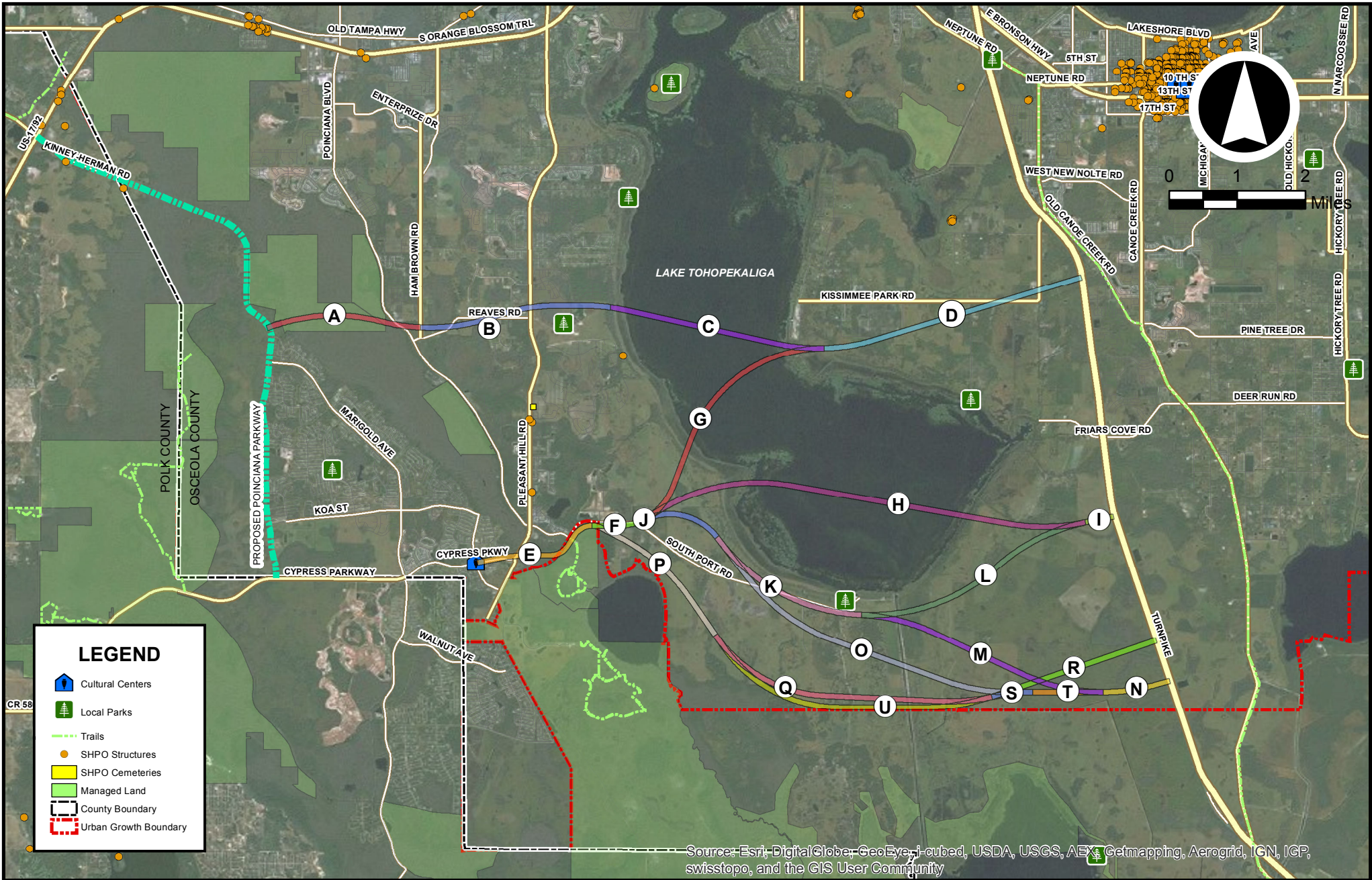
FDOT
 Florida Department of Transportation
 District 5

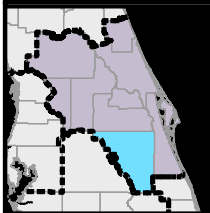
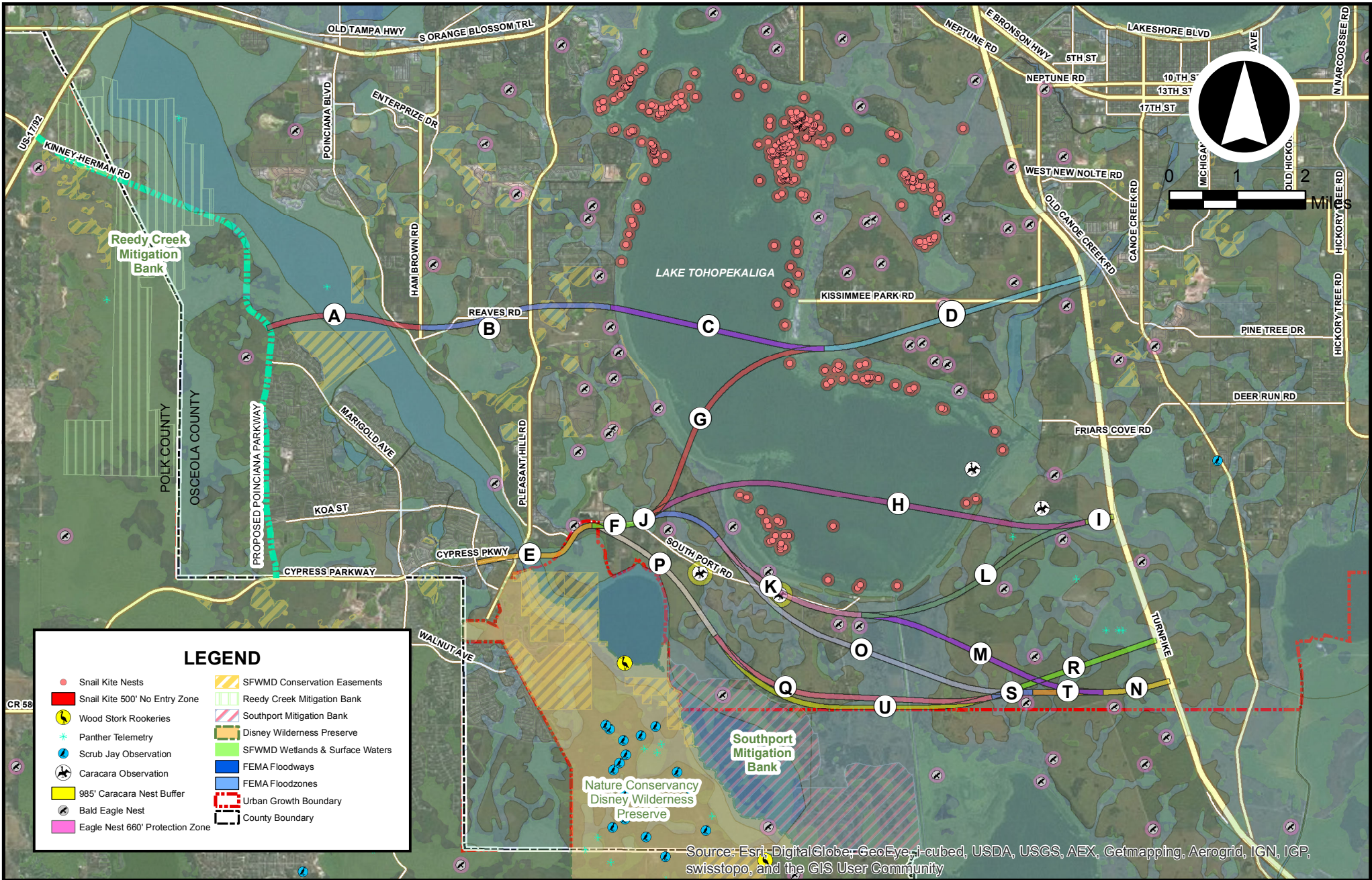
Poinciana Parkway Southport Connector
PD&E Study
 from Pleasant Hill Road to Florida's Turnpike
 Osceola County, Florida
 Financial Project No.: 433693-1-22-01
 Federal Project No: N/A

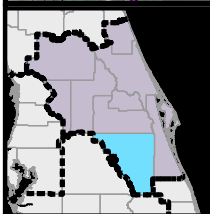
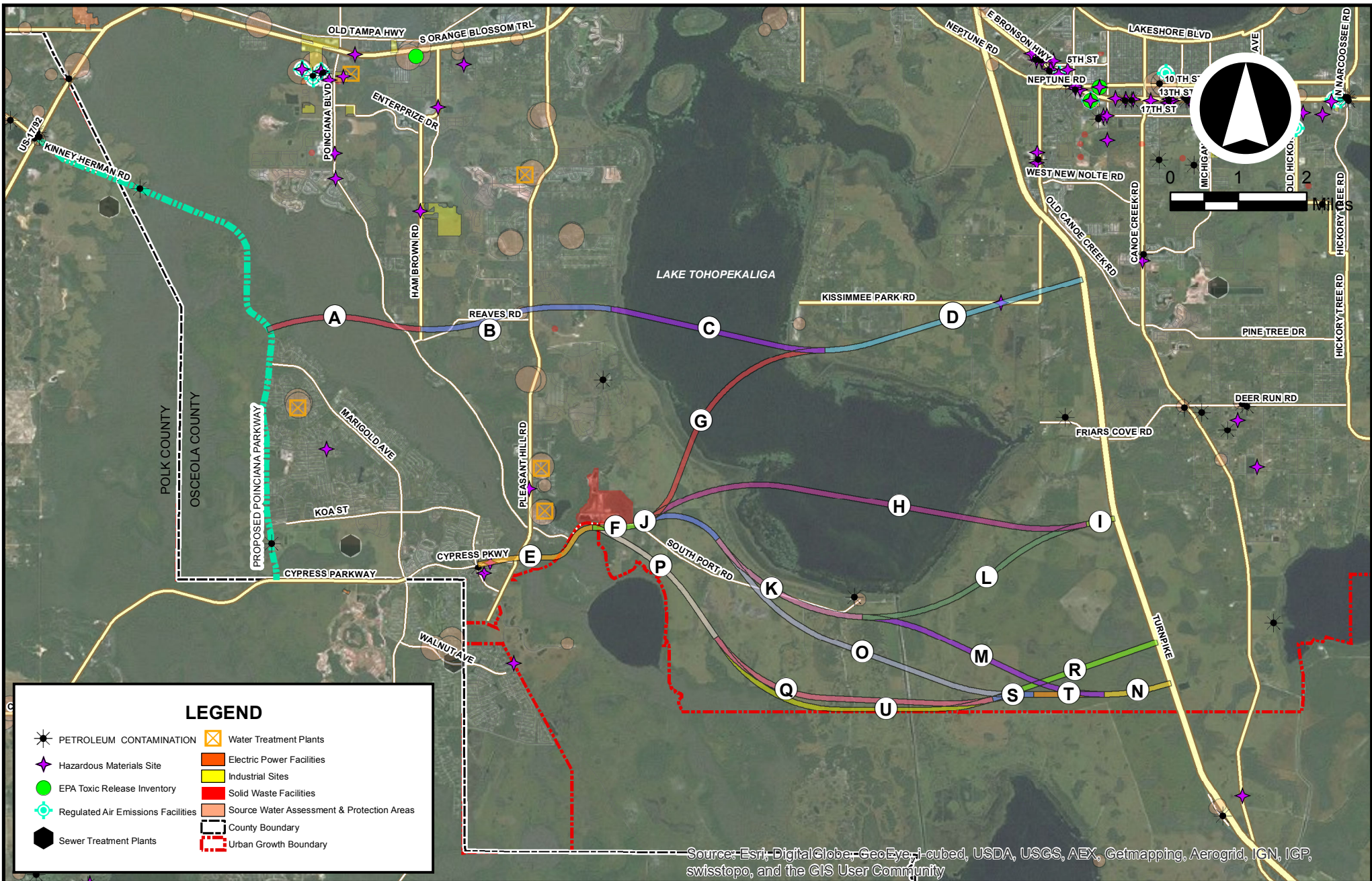
INITIAL CORRIDORS MAP

EXHIBIT
2









Appendix A

Listed Species Evaluation Methodology

INTRODUCTION

The following summarizes the methodology for evaluating the impacts of the alternative corridors on key listed species. To date, no surveys for state and/or federally-listed wildlife species have been completed, so the preliminary listed species evaluations utilized a combination of preliminary field reviews and habitat assessments, available GIS data (Soil, FLUCFCS, habitat, and occurrence shape files), and literature regarding the distribution, habitat requirements, and life histories of listed species with the potential to occur within the various alignments.

Based on the preliminary desktop review, the likelihood of occurrence of each state and federally-listed species was given a relative rating of “high,” “medium,” or “low.” Following this initial evaluation, it was determined that some species (i.e., the sand skink [*Neoseps reynoldsi*] and bluetail mole skink [*Eumeces egregius lividus*]) were unlikely to occur in any alignment, due to a lack of available habitat, as defined by U.S. Fish and Wildlife Service (USFWS) guidelines (USFWS 2012). Other species (i.e., gopher tortoise [*Gopherus polyphemus*], Sherman’s fox squirrel [*Sciurus niger shermani*], eastern indigo snake [*Drymarchon corais couperi*], wood stork [*Mycteria americana*]) are habitat generalists, or have habitat requirements that are satisfied by areas that occur within all alignments. Without formal survey data, it was determined that these species could not be utilized to effectively rank/score the various alignments.

It was determined that the preliminary listed species analysis could most effectively compare each alignment based on four (4) species, that are either known to occur within the vicinity of the alignments, or whose presence within the project could substantially affect one alignment alternative over another. The species utilized to score/rank the various alignments include the Audubon’s crested caracara (*Polyborus plancus audubonii*), bald eagle (*Haliaeetus leucocephalus*), everglade snail kite (*Rostrhamus sociabilis plumbeus*), and Florida grasshopper sparrow (*Ammodramus savannarum floridanus*). Details regarding the assessment for each of the above species is further detailed below.

AUDUBON’S CRESTED CARACARA

No current occurrence data for this species is available within the various project corridors. However, Inwood biologists have identified caracara within areas associated with all alignment alternatives. Based on the presence of suitable habitat, and the observed occurrence of caracara during several, brief field reviews, it was determined that the likelihood of occurrence of this federally threatened species was high within all alignments. Furthermore, it was assumed that the probability of nesting caracara was the same across all areas of suitable habitat. Based on the average nesting territory size of 750-acres (approximately 0.6-mile radius from the nest tree), potential nesting territories were delineated within suitable nesting habitats in the study area to provide an estimate of the potential number of nesting territories that could occur. In addition, suitable caracara habitat (as defined in Morrison 2001) was mapped within each project corridor.

Two criteria will be utilized to provide a relative ranking of the potential impacts to caracara: (1) acres of suitable habitat within each alignment, and (2) potential number of nesting territories encountered by each alignment. The acreage of suitable habitats within each alignment will then adjusted to a 10-point

rating scale that depicts the relative impact of each alignment on suitable caracara habitat. The results of the analysis will be depicted in Table 1.

Table 1. Caracara Analysis

| Caracara Analysis | | | | | | |
|-------------------|------------------------|--|-------------------------------|---|----------------|---|
| Alignment | Acres Suitable Habitat | Potential Number of Territories (based on 0.6-mile average radius) | Rating Based on Acres Habitat | Rating Based on Potential # Territories | Sum of Ratings | Overall Rating (Adjusted to 10-point Scale) |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
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BALD EAGLE

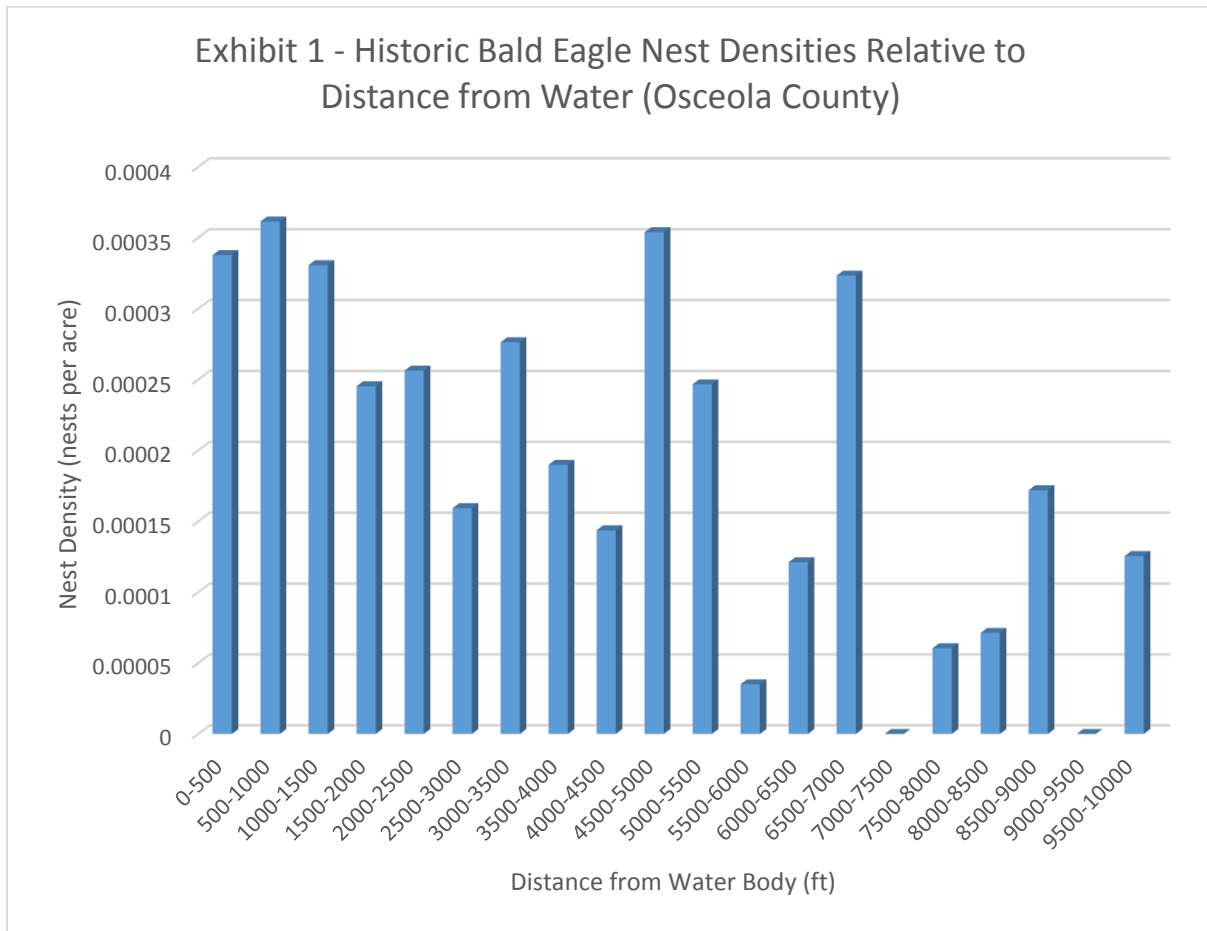
Although the bald eagle was removed from the federal and state endangered species list in 2007 and 2008, respectively, it is still afforded protection under the federal Bald and Golden Eagle Protection Act (1940) and the Migratory Bird Treaty Act (1918). These federal protections prohibit the take of eagles, their nests, or trees containing their nests.

The FFWCC completes nesting season surveys for Osceola County on an annual basis, and up-to-date nesting data for the Osceola County population is readily available. As such, potential impacts to this species and their nests could be accurately assessed based on the available nesting data. Several criteria were developed to determine the relative potential of each alignment to impact bald eagle nests, and/or nesting habitat, and are described below.

The FFWCC defines two (2) protection zones that surround active, and alternate bald eagle nests (FFWCC, 2008). The primary zone extends 330’ from the nest, and the secondary zone extends 660’ from the nest. Both 330’ and 660’ protection zones will be generated in GIS utilizing the FFWCC bald eagle nest data. Each alignment will be given a relative rating based on the number of primary and secondary zone encroachments.

The second factor that will be utilized in the bald eagle rating analysis is proximity to water. The bald eagle is a piscivorous raptor that is dependent on water for its primary food. Information provided by

FFWCC states that nearly all bald eagle nests in Florida occur within 1.8 miles of water. Based on this relationship between nesting eagles and water, a GIS-based analysis will be conducted to determine the likelihood of encountering nesting eagles based on the proximity of each alignment to water. Information utilized in this analysis will include the FFWCC bald eagle nest data for Osceola County (1981-2012), and St. Johns River Water Management District (SJRWMD) and South Florida Water Management District (SFWMD) Land Use GIS layers. Bald eagle nest densities were calculated in 500' increments, from 0-10,000' from the edge of all water bodies (FLUCFCS category 5000). The following Figure 1 depicts the results of the density calculations.



The acreage of suitable nesting habitat within each alignment will then be quantified and categorized based on the distance from water. The water bodies themselves will not be included in the acreage calculations, as they are not considered suitable nesting habitat. The results of this analysis will outline the relative probability of each alignment to encounter bald eagle nests, based on their proximity to water bodies.

The final factor that will be included in the overall analysis of potential bald eagle impacts is the acreage of nesting habitat within each alignment. As long as suitable nesting trees are present, bald eagles will nest in a variety of habitat types, including both forested, and non-forested uplands and wetlands, as well as agricultural and residential land uses. For the purposes of this analysis, only the water bodies themselves will be excluded from those areas considered to be suitable nesting habitat. The ten alignments will then be rated based on the overall impacts to suitable bald eagle nesting habitat.

The values obtained in each of the three scoring categories will then be adjusted relative to each of the 10 alignments. The result will be a relative rating of each alignment for each of the three categories. The overall rating for each alignment will then be made by combining the ratings from the three scoring categories, above and rating them on a 10 point scale. The results of the Bald Eagle Analysis will be summarized in the following Table 2.

Table 2. Bald Eagle Analysis

| Bald Eagle Analysis | | | | | | | | |
|---------------------|---------------------------------|-------------------------|---------------------------|--|--|--|----------------|---|
| Alignment | Acres Potential Nesting Habitat | Number of Primary Zones | Number of Secondary Zones | Rating Based on Number of Protection Zones | Rating Based on Acres Suitable Nesting Habitat | Rating Based on Alignment Proximity to Water | Sum of Ratings | Overall Rating (Adjusted to 10-Point Scale) |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |

EVERGLADE SNAIL KITE

The Everglade snail kite is a federally-listed, endangered raptor whose nesting habitat is restricted to lakeshore emergent vegetation (USFWS 1999). Within the project corridor, snail kite nesting is limited to the Lake Tohopekaliga (Toho) shoreline, and the presence of this species has been confirmed through visual observation by Inwood biologists. Historic snail kite nesting location data for Lake Toho from 1991-2013 was obtained from the USFWS. This data contains point locations for yearly snail kite nests and is collected by USFWS and the Florida Fish and Wildlife Conservation Commission (FFWCC). The USFWS defines two areas surrounding snail kite nests that are important to consider when determining potential impacts (USFWS 2006). An inner protective zone of 500 ft is recommended to reduce disturbance to nesting birds. This is based on known flushing distances that have been observed for this species. The second protective zone is a 1,640 ft area that should be protected from habitat disturbances such as anthropogenic water level changes and vegetative alternations during the breeding season, which occurs from January to May. This additional zone of protection is intended to protect foraging habitat for nesting birds, who typically have a restricted foraging range when compared to non-nesting individuals such as juveniles.

The alignments will be rated based on the number of snail kite nests and the number of “no entry” (425’) buffer zones that are impacted by each alignment, as well as the acreage of potential nesting habitat (i.e., lakeshore wetlands with emergent vegetation) that is impacted. Additionally, weight will be given to the likelihood of each alignment impacting snail kites due to their proximity to known nests and/or nesting habitat. The results of the Everglade snail kite analysis will be summarized in Table 3, below.

Table 3. Everglade Snail Kite Analysis

| Everglade Snail Kite Habitat Analysis | | | | | | |
|---------------------------------------|---------------------------------|---|----------------------------------|--|----------------|---|
| Alignment | Acres Potential Nesting Habitat | Number of Nests & Buffer Zones Impacted | Rating Based on Acres of Habitat | Rating Based on Number of Nests/Buffer Zones | Sum of Ratings | Overall Rating (Adjusted to 10-Point Scale) |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |

FLORIDA GRASSHOPPER SPARROW

The Florida grasshopper sparrow (FGS) is a federally-listed, endangered passerine species whose nesting habitat is restricted to dry prairie that is relatively open and low, and has a history of frequent fires (USFWS 2004). According to the SLOPES, suitable habitat for FGS is dry prairie including improved pasture, palmetto prairie, and unimproved pasture. Additional habitat characteristics include:

- Open, dry habitats within less than 1 tree per acre
- Minimum of 20% cover of bare ground
- Large, contiguous areas of suitable habitat (240-1348 ha)

Much of the project corridor has been converted over time from dry prairie to pasture used for cattle grazing, which usually results in the decline or extirpation of breeding populations (USFWS 2004). There are currently six known populations for Florida grasshopper sparrows. Three populations exist on Avon Park Air Force Range, one on Kissimmee Prairie State Preserve, one on Three Lakes Wildlife Management Area, and one on private property (USFWS 2004).

Known populations of FGS are located approximately 12 miles south-southeast of the project corridor. However, suitable habitat, based on the *Species Conservation Guidelines for the Florida Grasshopper Sparrow* (USFWS 2004), has been identified by Inwood Biologists north of Lake Cypress Road and south of Friar’s Cove Road just outside the project corridor with potential to support FGS. Due to their high site

fidelity, FGS surveys should include all potential habitat and include a 100-meter (328-ft) buffer surrounding it (USFWS 2004). As no available occurrence data is available within the various alignment corridors, a GIS-based analysis of potential FGS habitats will be completed. The following land uses and cover types will be included in the analysis:

- Improved Pastures (FLUCFCS #1100)
- Unimproved Pastures (FLUCFCS #1120)
- Herbaceous (Dry Prairie) (FLUCFCS #3100)

The acreages of each of these habitat types will be calculated using GIS, and the alignments will be rated (on a 10-point scale) based on the relative occurrence of the above habitat types. It should be noted that this analysis will focus only on the type of habitat, as defined by FLUCFCS and the SLOPES, and will not take into account specific features like tree density, frequency of fire, grazing practices, and percent bare ground. These characteristics are crucial when determining habitat suitability for grasshopper sparrows, but are beyond the scope of the desktop analysis. Table 4, below, will summarize the results and ratings of the Florida grasshopper sparrow habitat analysis.

Table 4. Results of Florida Grasshopper Sparrow Analysis

| Florida Grasshopper Sparrow Habitat Analysis | | |
|---|--------------------------------|--|
| Alignment | Acres Potential Habitat | Rating (adjusted to 10-Point Scale) |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |

ADDITIONAL SCORING CONSIDERATIONS

Upon completion of the quantitative analyses for each of the above species, additional criteria will be considered to rate each alignment’s overall impact to listed species. Whereas the above analyses will allow for the alignments to be rated relative to a single species, the overall goal is to develop a system that rates each alignment relative to all of the above assessed species. As an example, based on preliminary feedback from the USFWS, and recent recovery efforts specifically directed at grasshopper sparrows (i.e., captive breeding program), it is anticipated that avoidance of impacts to occupied habitat will be the only option available for addressing the presence of grasshopper sparrows. In contrast,

although a “take” of bald eagle nests will not be considered viable, there are established conservation guidelines and a permitting program in-place that will allow construction activities to occur within the designated protection zones (REF). As such, greater weight will be given to potential impacts to grasshopper sparrows, than bald eagles. This weighting of one species relative to another will be based on several factors, including but not limited to:

- Whether permitting protocols exist;
- Availability of avoidance, minimization, and mitigation measures;
- Sensitivity of species to habitat alteration;
- Effect of proposed activity to ongoing species recovery efforts;

The result of the overall listed species analysis will be to provide a recommended alternative that both minimizes adverse environmental impacts, and is also technically feasible and permissible.

References

Florida Fish and Wildlife Conservation Commission (FFWCC). 2008. Bald Eagle Management Plan, *Haliaeetus leucocephalus*. FWC, Tallahassee, Florida. Available from: http://myfwc.com/media/427567/Eagle_Plan_April_2008.pdf

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U.S. Fish and Wildlife Service (USFWS). 2004. Draft Species Conservation Guidelines South Florida: Florida Grasshopper Sparrow. South Florida Ecological Services Office, Vero Beach, Florida. Available From: <http://www.fws.gov/verobeach/BirdsPDFs/FloridaGrasshopperSparrowConservationGuidelines.pdf>

U.S. Fish and Wildlife Service (USFWS). 2012. Peninsular Florida Species Conservation and Consultation Guide: Sand Skink and Blue-tailed (Bluetail) Mole Skink. South Florida Ecological Services Office, Vero Beach, Florida. Available From: http://www.fws.gov/verobeach/ReptilesPDFs/20120206_Skink%20CCG_Final.pdf

U.S. Fish and Wildlife Service (USFWS). 2006. Draft Snail Kite Management Guidelines. South Florida Ecological Services Office, Vero Beach, Florida. Available from: <http://www.fws.gov/verobeach/BirdsPDFs/20060221SnailKiteManagementGuidelines2.pdf>

U.S. Fish and Wildlife Service (USFWS). 1999. South Florida Multi-Species Recovery Plan: Everglade Snail Kite (*Rostrhamus sociabilis plumbeus*). South Florida Ecological Services Office, Vero Beach, Florida. Available from: <http://www.fws.gov/verobeach/MSRPPDFs/EvergladeSnailKite.pdf>