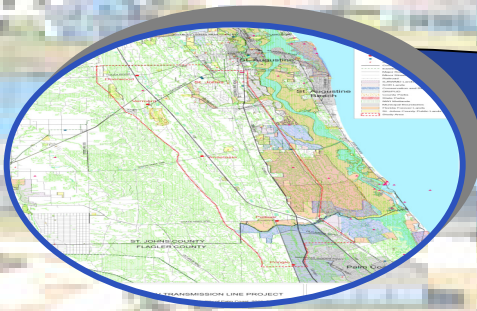




FPL

ST. JOHNS-PELLICER-PRINGLE 230-KV TRANSMISSION LINE PROJECT APPLICATION FOR CORRIDOR CERTIFICATION



Prepared by:

ECT

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LIST OF ACRONYMS AND ABBREVIATIONS

°C	degree Celsius
ACSR	aluminum conductor steel reinforced
ADA	application for development approval
AM	amplitude-modulated
AW	alumoweld core
BMP	best management practice
CAAGR	compound annual average growth rate
CARL	Conservation and Recreation Lands
cm	centimeter
CR	County Road
db	decibel
dBA	A-weighted decibels
DHR	Division of Historical Resources
DO	development order
DRI	development of regional impact
E	endangered
ECT	Environmental Consulting & Technology, Inc.
EIA	environmental impact assessment
EMF	electric and magnetic field
F.A.C.	Florida Administrative Code
F.S.	Florida Statutes
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FEC	Florida East Coast
FWC	Florida Fish and Wildlife Conservation Commission
Florida EMF Rule	Chapter 62-814, F.A.C.
FLUCFCS	Florida Land Use, Cover and Forms Classification System
FLUM	future land use map
FM	frequency-modulated
FNAI	Florida Natural Areas Inventory
FPL	Florida Power & Light Company
FRCC	Florida Reliability Coordinating Council
ft	foot
GIS	geographic information system

LIST OF ACRONYMS AND ABBREVIATIONS
(Continued, Page 2 of 2)

I-95	Interstate 95
IEEE	Institute of Electrical and Electronics Engineers, Inc.
kcil	thousand circular mils
kV	kilovolt
kV/m	kilovolt per meter
MCR	maximum current rating
mG	milliGauss
MVA	megavolt-ampere
NCO	Noise Control Office
NERC	North American Electric Reliability Council
NESC	National Electrical Safety Code
NWI	National Wetlands Inventory
OFW	Outstanding Florida Water
PRD	planned rural development
PSC	Public Service Commission
PUD	planned unit development
RARE	roadless area review and evaluation
SCS	Soil Conservation Service
SJPP	St. Johns-Pellicer-Pringle
SJPP Project	St. Johns-Pellicer-Pringle 230-kV transmission line project
SJRWMD	St. Johns River Water Management District
SOR	Save Our Rivers
SR	State Road
SSC	species of special concern
T	threatened
T(S/A)	threatened due to similarity of appearance to a federally listed species
TLSA	Transmission Line Siting Act
U.S. 1	U.S. Highway 1
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

APPLICANT INFORMATION

Please supply the following information:

Applicant's Official Name Florida Power & Light Company

Address 700 Universe Boulevard, Juno Beach, Florida 33408

Business entity (corporation, partnership, co-operative,
name(s), owner(s), etc. Corporation

Name and Title of Chief Executive Officer(s) Lewis Hay III, Chairman,
President, and CEO, FPL Group, Inc.

Armando J. Olivera, President, Florida Power & Light Company

Name, Title, address and phone numbers of
official representatives responsible for
obtaining certifications Ms. Florette Braun, Principal

Environmental Specialist; Florida Power & Light Company, 700 Universe Boulevard,
Juno Beach, Florida 33408, 561/691-7059

Corridor Location (counties crossed) St. Johns and Flagler Counties

Incorporated Cities within the corridor (names) City of Palm Coast

Termination Points St. Johns Substation (St. Johns County) and Pringle Substation
(Flagler County)

Intermediate Substations Deerwood, Vermont, Anastasia, Pellicer (St. Johns
County)

Voltage 230 kilovolts (kV)

Line Type (AC or DC) AC

Length of line and number of circuits 26.1 miles single-circuit (0.5 mile of
which is double-circuit)

Remarks (if any): _____



1.0 PROJECT OVERVIEW

1.1 PROJECT INTRODUCTION

1.1.1 OVERVIEW OF THE PROJECT

The St. Johns-Pellicer-Pringle (SJPP) 230-kilovolt (kV) transmission line project (SJPP Project) is proposed by Florida Power & Light Company (FPL) for certification under the State of Florida Transmission Line Siting Act (TLSA), Sections 403.52 through 403.5365, Florida Statutes (F.S.). The line will connect the existing St. Johns substation near St. Augustine in St. Johns County to the proposed Pringle substation in the city of Palm Coast in Flagler County (see Figure 1.1-1). The total length of the proposed transmission line corridor to be certified is approximately 26.1 miles (see Figure 1.1-2).

In this application, FPL is seeking certification of a corridor of variable width between the St. Johns and Pringle substations. The new transmission line will be located on a right-of-way somewhere within this corridor. The preferred corridor ranges in width from approximately 100 to 2,000 feet (ft) in areas where a new right-of-way will be required for the SJPP Project. In some areas of the corridor, the SJPP Project may be constructed along existing transmission line rights-of-way.

The width of the new right-of-way to be located within the corridor will typically range from 15 to 60 ft. As provided in Section 403.522(10), F.S., once FPL acquires the property interests required for the SJPP Project right-of-way, the boundaries of the certified corridor will narrow to only that land within the right-of-way. At that point, the remainder of the corridor will have no further legal significance related to this certification.

FPL is also proposing four intermediate substations that will be connected to this project. The four substations are all located in St. Johns County:

- Deerwood—To be located east of Interstate 95 (I-95) on the south side of Toco Road.
- Vermont—To be constructed within an industrial park west of I-95 and north of State Road (SR) 207.

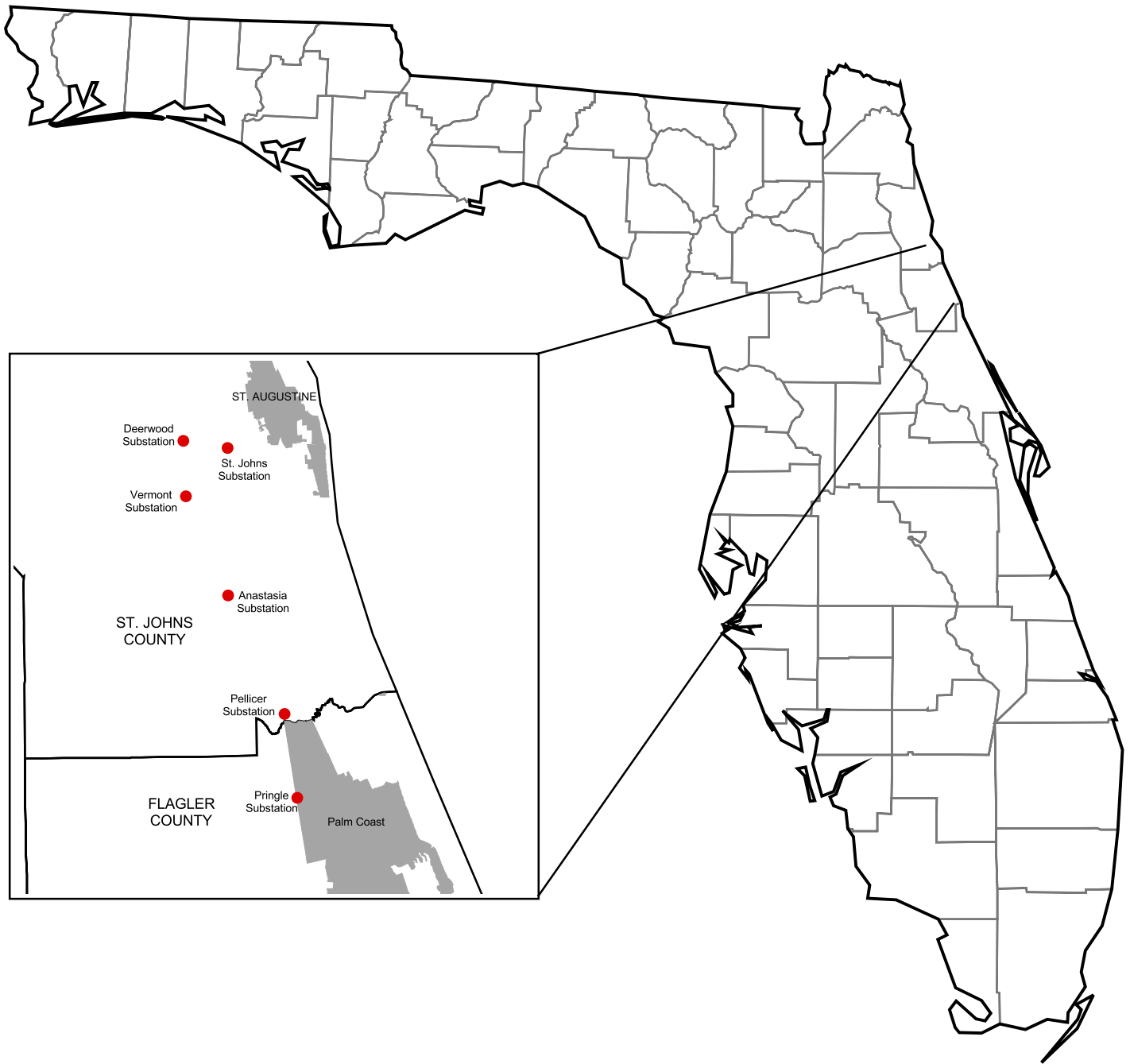


FIGURE 1.1-1.
LOCATION OF PROJECT AREA

Sources: FPL, 2005; ECT, 2005.



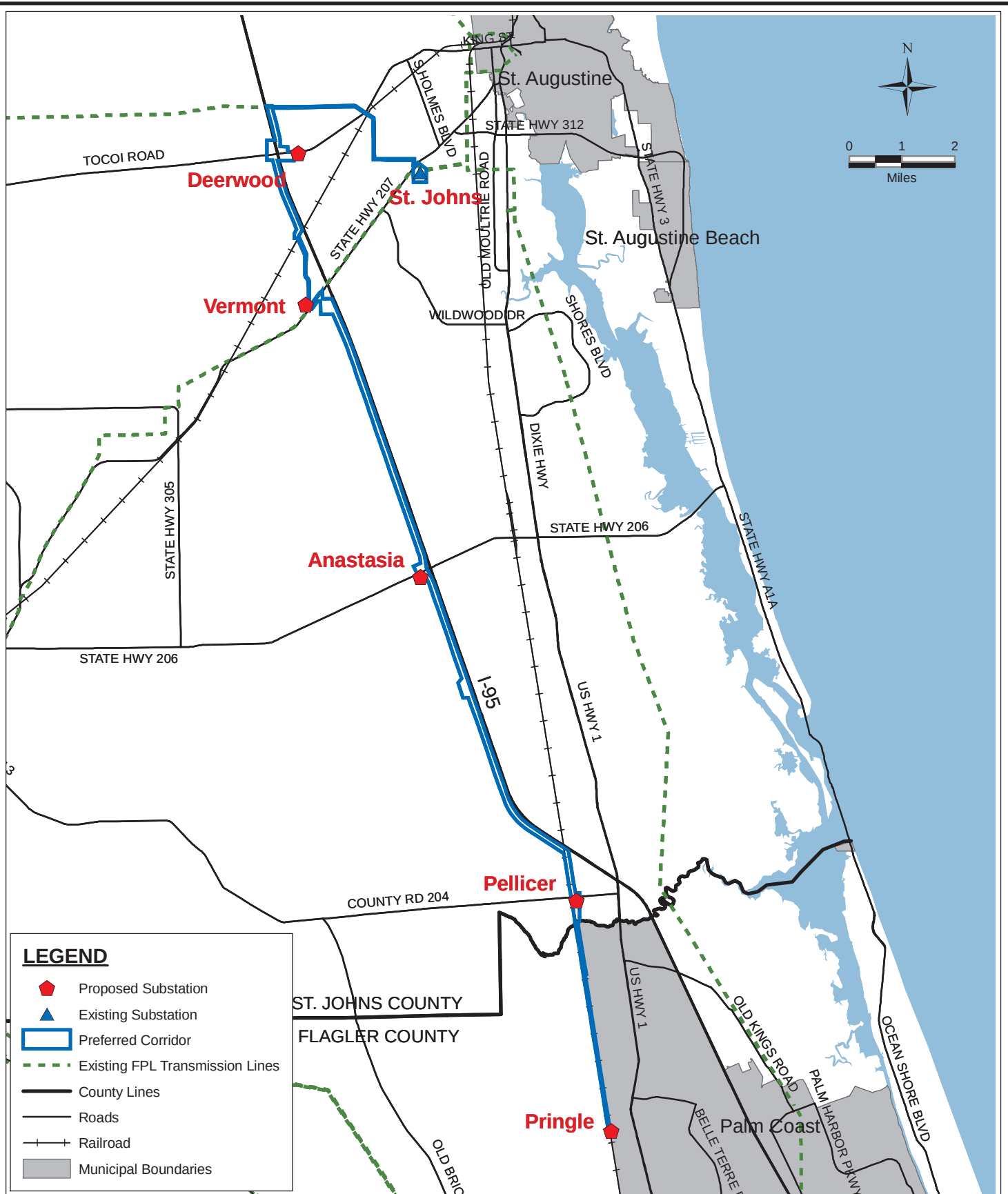


FIGURE 1.1-2.
ST. JOHNS-PELLICER-PRINGLE 230-kV TRANSMISSION
LINE PROJECT - PREFERRED CORRIDOR ALIGNMENT

Sources: FPL, 2005; St. Johns County, FL, 2005; SJRWMD, 2005; ECT, 2005.





- Anastasia—To be constructed west of the interchange of I-95 and SR 206.
- Pellicer—To be constructed east of the Florida East Coast (FEC) Railroad and south of County Road (CR) 204.

These four intermediate substations, as well as the Pringle substation, are all currently in the acquisition or permitting phases.¹ All will be permitted separately from the TLSA process through local government and regulatory agency permitting. They are referenced here as necessary nodes to the preferred corridor and are depicted on Figure 1.1-2.

The scheduled in-service date for the SJPP Project is December 2008.

1.1.2 OVERVIEW OF THE NEED FOR THE SJPP PROJECT

The proposed 230-kV electrical transmission line connecting the existing St. Johns and proposed Pellicer and Pringle substations is needed to meet the increased energy needs of FPL's customers and provide safe, reliable, and low-cost electrical service.

Over the past 5 years (2000 through 2004), the load in the North Region² of FPL has grown by a compound annual average growth rate (CAAGR) of 3.7 percent. FPL is forecasting the North Region to continue to grow at a CAAGR of 3.2 percent over the next 5 years (2005 through 2009). Transmission assessment studies conducted by FPL during 2004 have identified regional transmission system limitations in Flagler and St. Johns Counties. These studies show that by 2008, the existing 115-kV transmission network, which closely parallels the coast between the Bunnell and St. Johns Substations, will not have sufficient capacity to provide reliable service to existing and proposed substations. Additionally, the new load that will be served by the proposed substations will be located further west of the existing 115-kV coastal network.

To meet the increase in customer demand, FPL has recently added electric generation at its Fort Myers, Sanford, Manatee, and Martin power plants, and additional generation is

¹ Until each substation site is acquired and permitted, the exact location is subject to change.

² FPL's North Region extends north to Nassau County and south to Indian River County on Florida's east coast.



currently under construction at the Turkey Point power plant. These power plants supply electricity to the FPL service territory through the transmission network. Figure 1.1-3 presents FPL's current transmission network, including the location of generating plants, transmission substations, and major transmission lines.

FPL's analyses indicate that, without the SJPP Project, under six separate contingency scenarios, overloads of thermal megavolt-amperes (MVA) facility ratings would occur, requiring interruption of service of 1,000 to 8,300 customers, depending on the specific outage.

Specifically, the need for the SJPP Project is based on the following factors:

- The need to serve the increasing load and customer base in the area south of St. Johns and north of Pringle substations in a reliable manner consistent with the North American Electric Reliability Council (NERC), Florida Reliability Coordinating Council (FRCC), and other applicable standards.
- The need to provide additional transmission reinforcement to the existing 115-kV transmission line between Bunnell and St. Johns substations.
- The opportunity, subject to final corridor siting certification under the TLSA, to efficiently and effectively integrate and serve new distribution substations that are needed to serve projected load growth within Flagler and St. Johns Counties.

Appendix A, which is attached to this application, contains a copy of the order entered by the Florida Public Service Commission (PSC) approving the need for the SJPP Project pursuant to Section 403.537, F.S.

1.2 CORRIDOR LOCATION AND LAYOUT

Figure 1.2-1 illustrates the route for the preferred corridor for the FPL SJPP Project at a scale of 1:126,720, or 1 inch equals 2 miles. The preferred corridor is depicted on Florida Department of Transportation (FDOT) highway maps, which also show major geographic features and roads. Also shown in Figure 1.2-1 are existing electric transmission lines of 115 kV or greater located within 5 miles of the preferred corridor, including the proposed

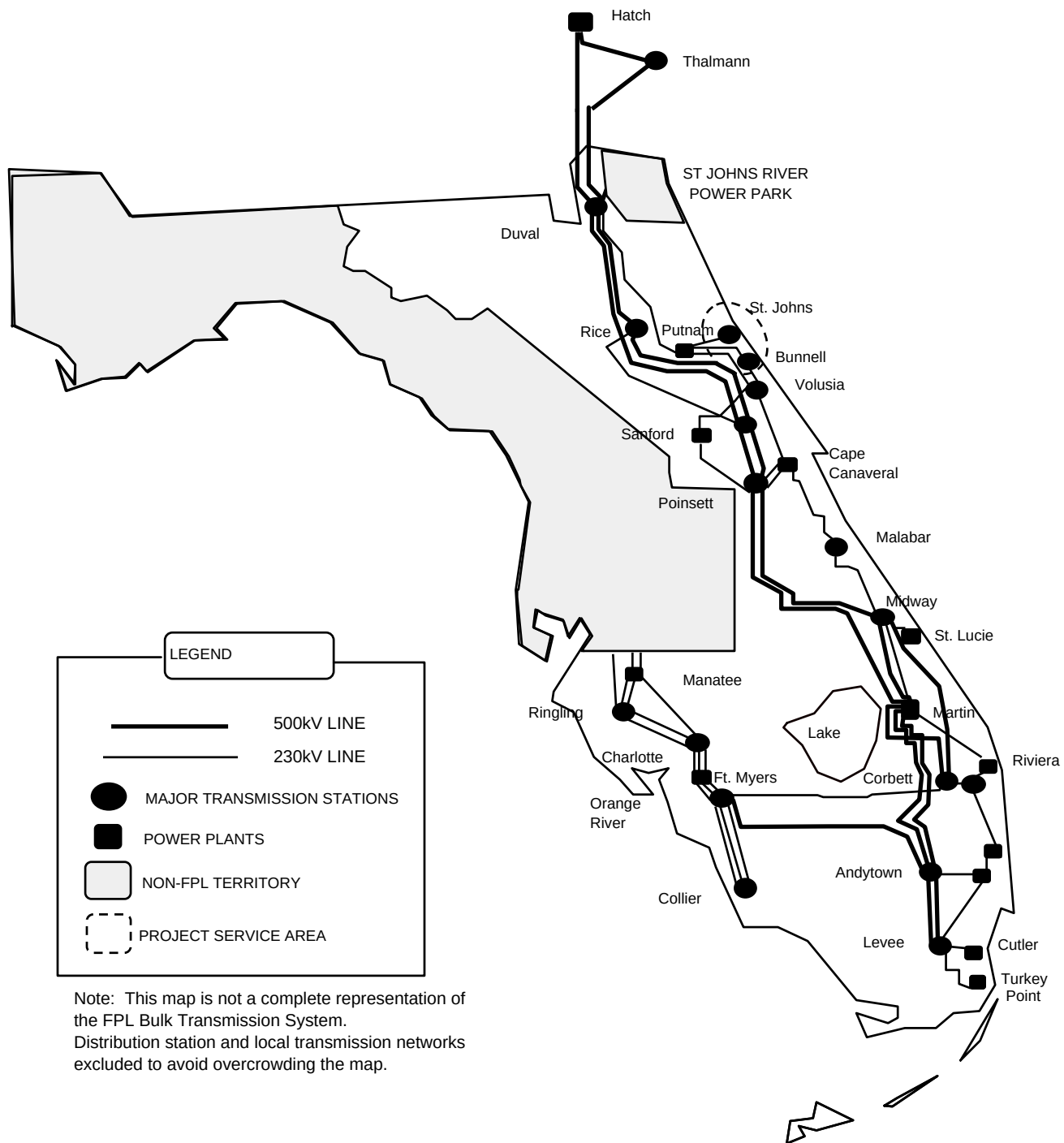


FIGURE 1.1-3.

FPL SUBSTATION AND TRANSMISSION SYSTEM CONFIGURATION

Source: FPL, 2005.



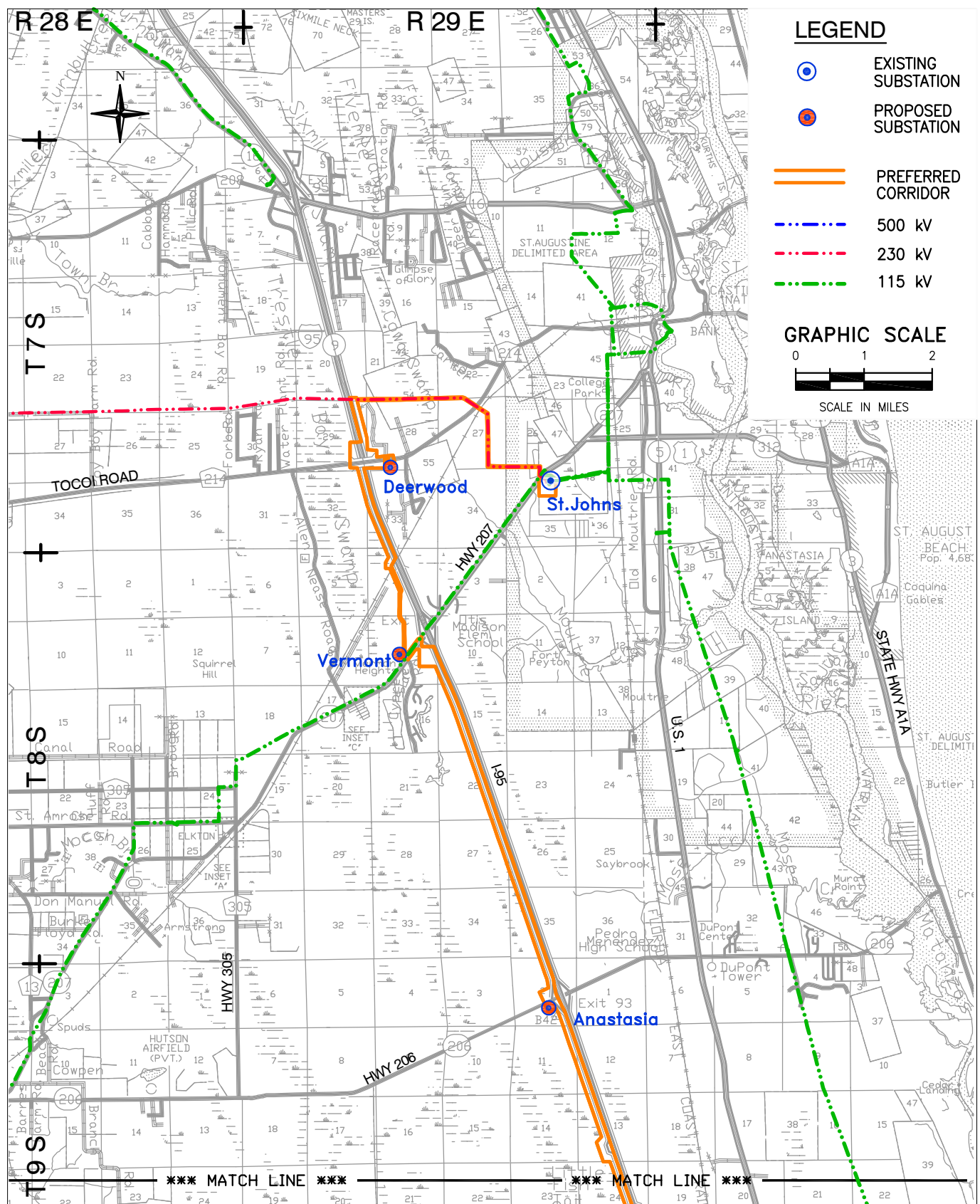
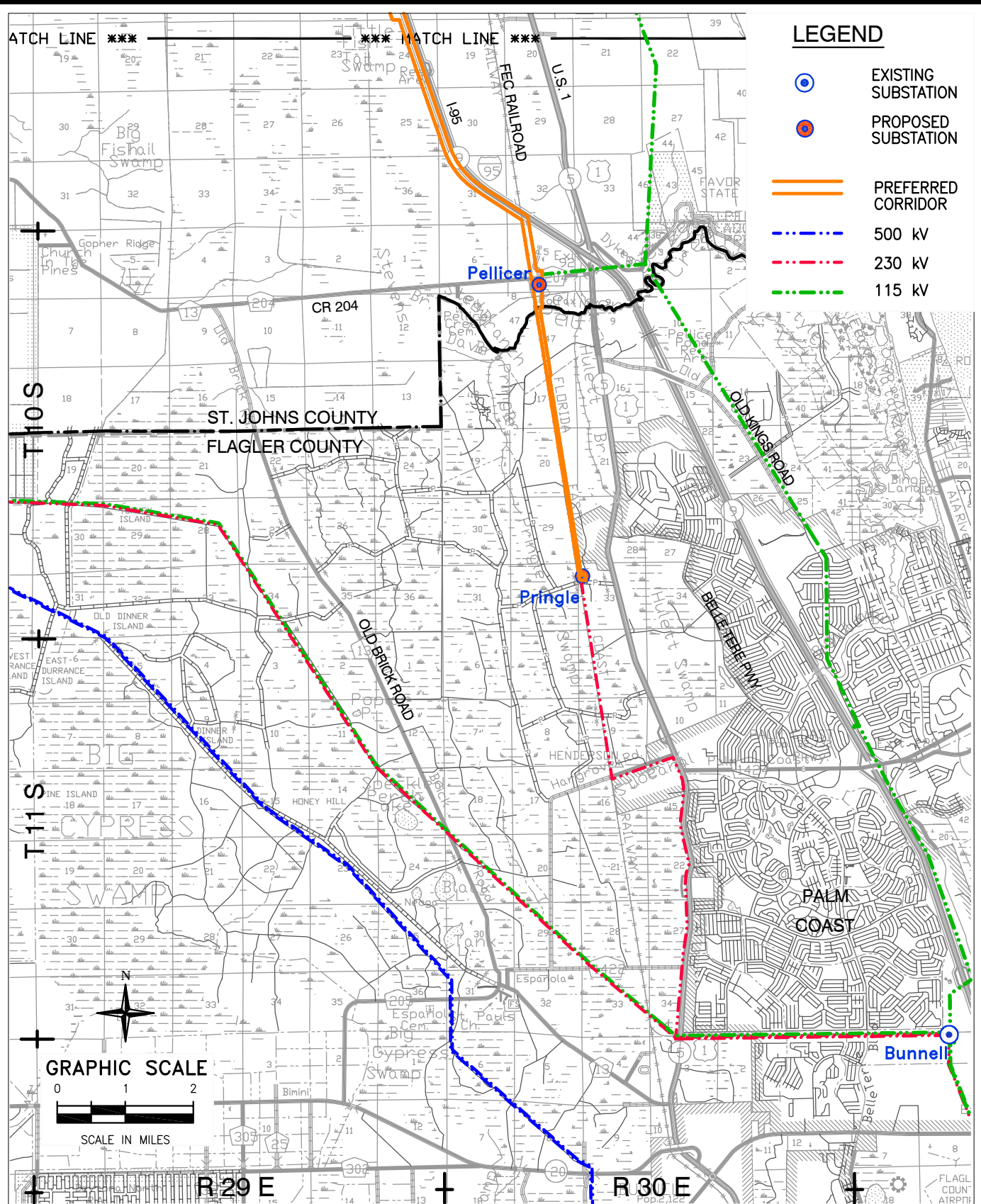


FIGURE 1.2-1 (1 OF 2)
PREFERRED CORRIDOR LOCATION AND
EXISTING TRANSMISSION LINES GREATER THAN 115-kV
LOCATED WITHIN 5 MILES OF THE CORRIDOR
 Source: FPL, 2005; DOT Flagler (2003) and St. Johns (2001); ECT, 2005.







Bunnell-Pringle 230-kV transmission line, which is scheduled to be placed in service in January 2007; and the proposed double circuit extension of the Bunnell-Matanzas 115-kV transmission line, which is scheduled to be placed in service in December 2008.

1.3 TRANSMISSION LINE AND ROAD DESIGN CHARACTERISTICS

The proposed transmission line is to be constructed typically using single-circuit, un-guyed concrete poles directly embedded into the ground. Figures 1.3-1 and 1.3-2 illustrate typical structures anticipated for use on the SJPP Project. Special structures and conductor configurations may be required at specific locations, such as the crossings of major highway intersections, interchanges, or railroads, to accommodate specific engineering considerations. At several locations, a double-circuit configuration may be used such as along FPL's St. Johns-Tocoi transmission line right-of-way and along Tocoi Road. Figures 1.3-3 and 1.3-4 illustrate typical double-circuit configurations with and without distribution underbuild, respectively. Where the transmission line turns large angles or crosses other major linear facilities, the single-pole structure may require guys and anchors.

The three conductors of the proposed transmission line will typically be framed in a vertical configuration, as shown on Figures 1.3-1 through 1.3-4. Each conductor is anticipated to be one 1,431-thousand-circular-mil (kcmil), aluminum conductor, steel reinforced alumoweld core (ACSR/AW). The maximum current rating (MCR) for the line will be 1,905 amperes. The MCR is the nominal value that would be expected to cause the conductor to reach its design temperature limit of 100 degrees Celsius (°C).

In some cases, the transmission line may also provide for other attachments such as electric distribution lines, communication facilities, or other utility equipment. Span lengths between structures will typically vary between 250 and 750 ft, depending on site-specific right-of-way widths and other design considerations. Figures 1.3-5 and 1.3-6 depict typical span profiles for the SJPP Project.

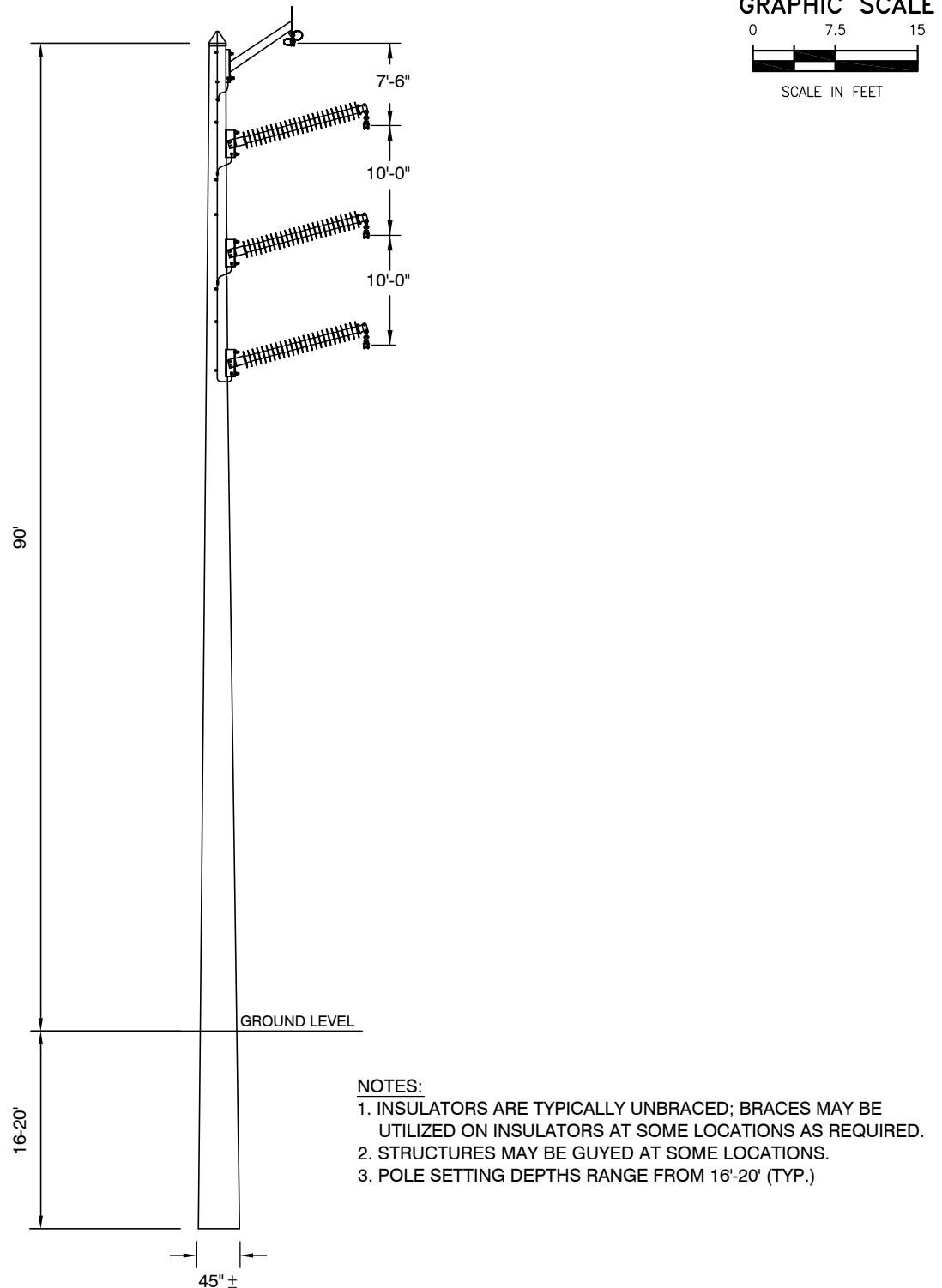


FIGURE 1.3-1.

TYPICAL 90' TANGENT STRUCTURE VERTICAL
CONFIGURATION WITHOUT DISTRIBUTION UNDERBUILD

Source: FPL, 2005; ECT, 2005.



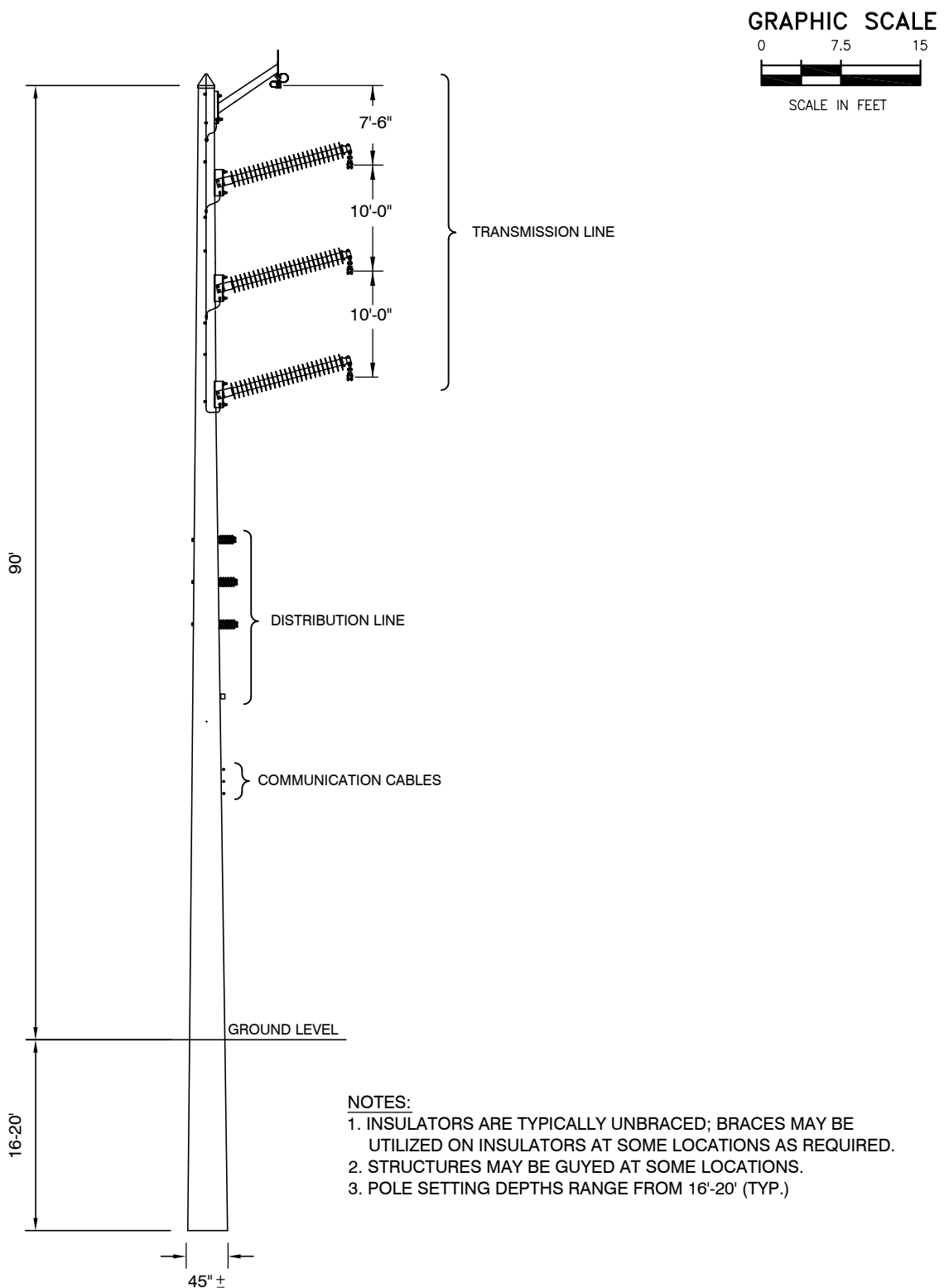


FIGURE 1.3-2.
TYPICAL 90' TANGENT STRUCTURE VERTICAL
CONFIGURATION WITH DISTRIBUTION / COMMUNICATION
UNDERBUILD

Source: FPL, 2005; ECT, 2005.



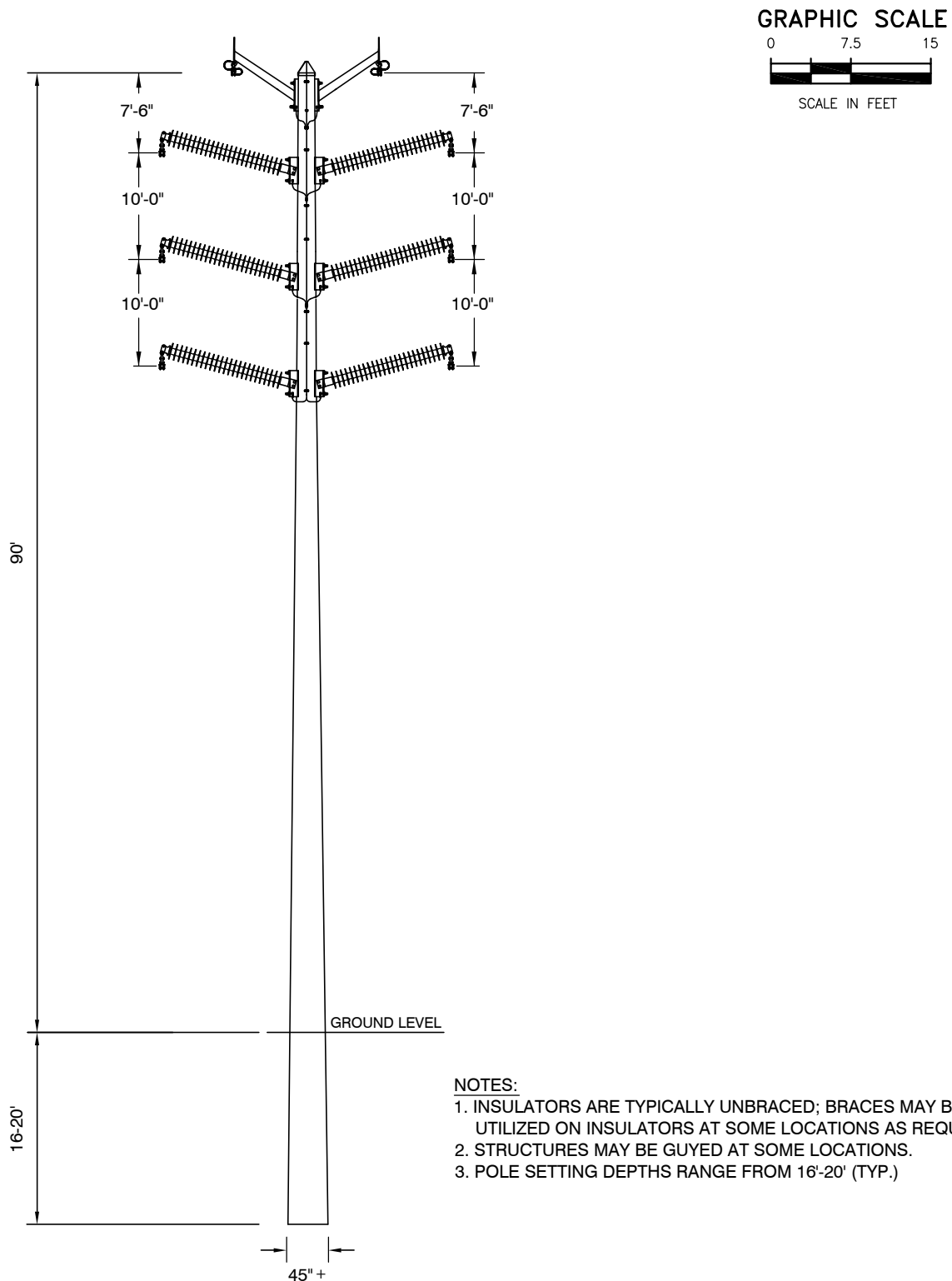


FIGURE 1.3-3.
TYPICAL 90' DOUBLE CIRCUIT TANGENT STRUCTURE
VERTICAL CONFIGURATION WITHOUT DISTRIBUTION
UNDERBUILD

Source: FPL, 2005; ECT, 2005.



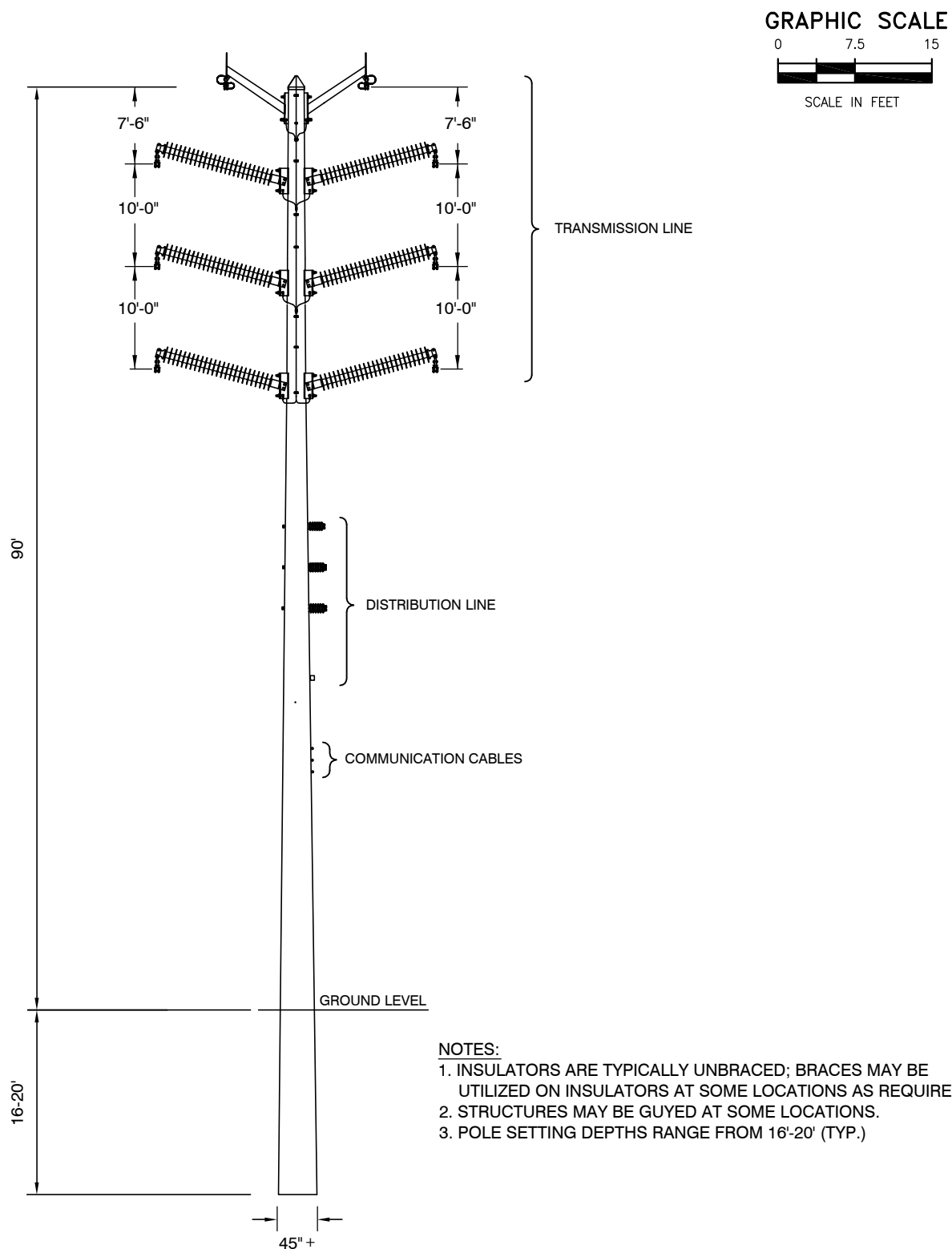
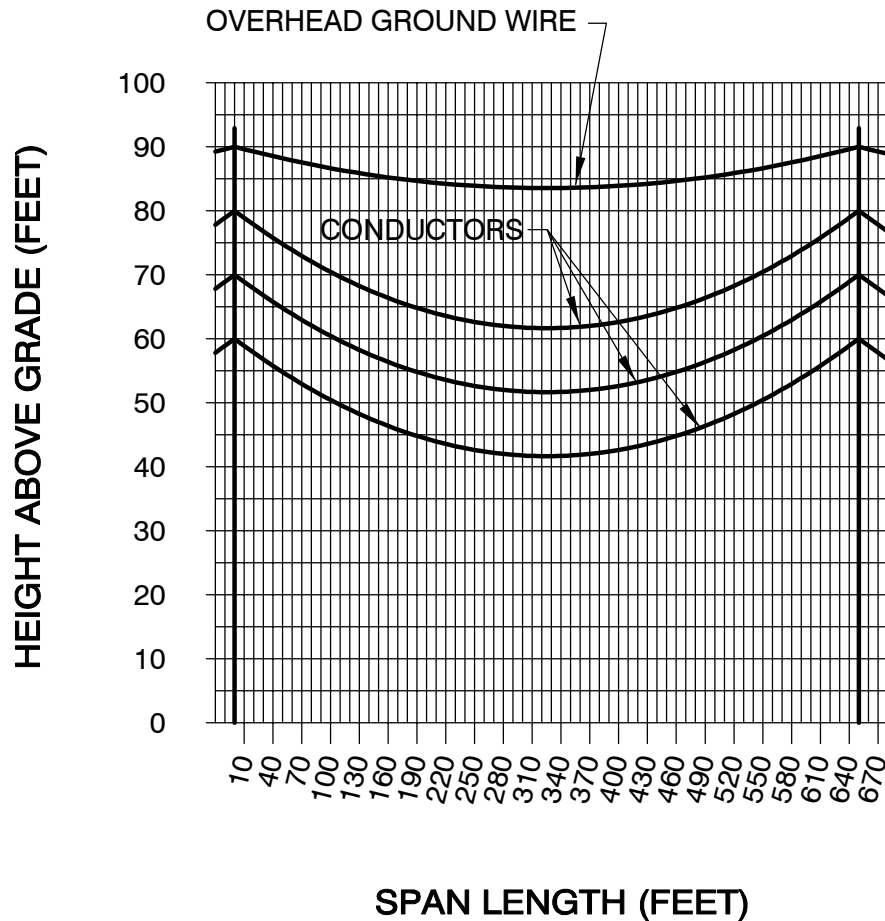


FIGURE 1.3-4.
TYPICAL 90' DOUBLE CIRCUIT TANGENT STRUCTURE
VERTICAL CONFIGURATION WITH DISTRIBUTION
/ COMMUNICATION UNDERBUILD

Source: FPL, 2005; ECT, 2005.



**NOTE:**

THIS PROFILE ASSUMES A SPAN LENGTH OF 650' AND POLE HEIGHTS 90' ABOVE GRADE. MIDSPAN CLEARANCES ALONG THE LINE WILL VARY DEPENDING ON POLE HEIGHTS AND SPAN LENGTHS BETWEEN STRUCTURES.

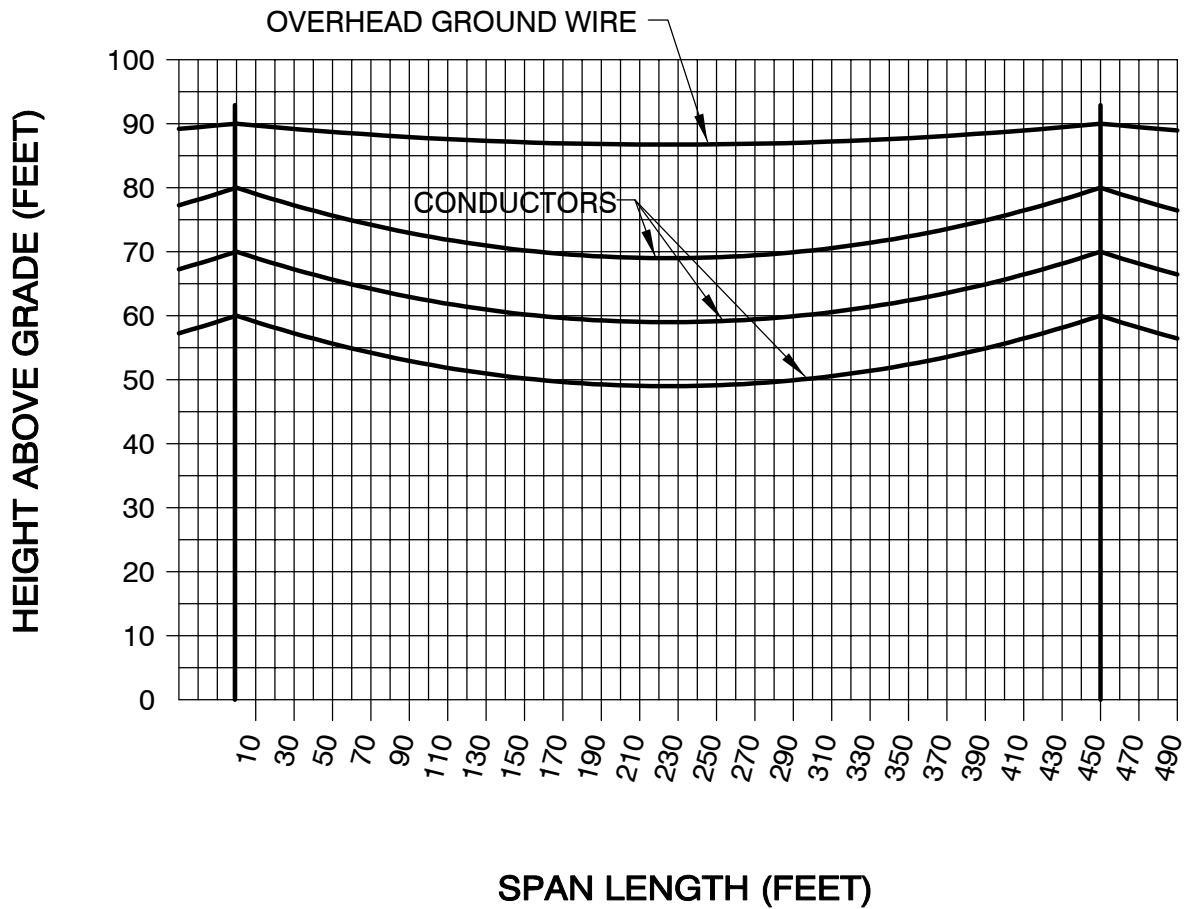
SCALE

1" = 200' HORIZONTAL
1" = 30' VERTICAL

FIGURE 1.3-5.
CONDUCTOR PROFILE FOR TYPICAL 650' SPAN
90' TANGENT STRUCTURE VERTICAL CONFIGURATION

Source: FPL, 2005; ECT, 2005.



**NOTE:**

THIS PROFILE ASSUMES A SPAN LENGTH OF 450' AND POLE HEIGHTS 90' ABOVE GRADE. MIDSPAN CLEARANCES ALONG THE LINE WILL VARY DEPENDING ON POLE HEIGHTS AND SPAN LENGTHS BETWEEN STRUCTURES.

SCALE

1" = 100' HORIZONTAL

1" = 30' VERTICAL

FIGURE 1.3-6.
CONDUCTOR PROFILE FOR TYPICAL 450' SPAN
90' TANGENT STRUCTURE VERTICAL CONFIGURATION

Source: FPL, 2005; ECT, 2005.





Transmission line conductor vertical clearances will vary along the length of the line; however, in all instances, the clearances will comply with the National Electrical Safety Code (NESC) (Institute of Electrical and Electronics Engineers, Inc. [IEEE], 2002), as required by Section 366.04, F.S., and Florida PSC regulations. Clearances will also provide for operational requirements of regulatory agencies (U.S. Army Corps of Engineers [USACE], St. Johns River Water Management District [SJRWMD], etc.).

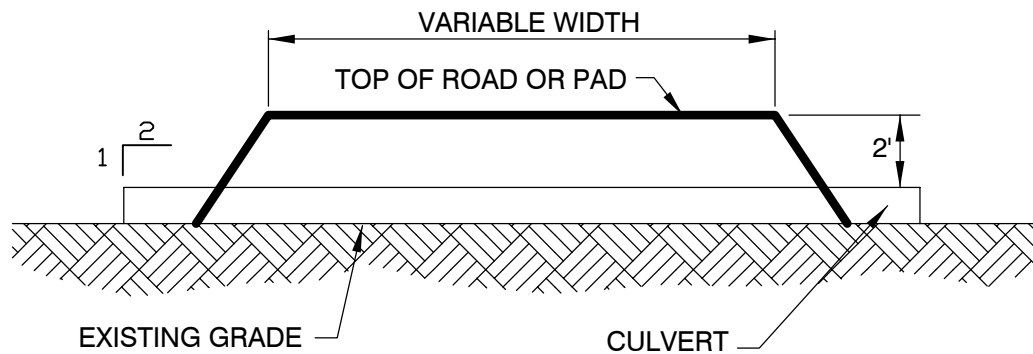
Where available, existing roads and pads will be used for access and construction to the greatest extent practical. Improvements may be made to the existing roads or pads, depending on the existing conditions of these facilities. Where new access roads are constructed, they will be unpaved, constructed to approximately 6 inches above expected seasonal high water levels, 14 ft in top width, and constructed so as to efficiently provide access to the pole locations while minimizing environmental impacts. Figure 1.3-7 shows a typical access road and structure pad cross-section.

1.4 PROPOSED INTERMEDIATE SUBSTATIONS

No new intermediate substations are proposed for certification specifically as part of the SJPP Project. However, the preferred corridor for the SJPP Project is aligned to allow FPL to connect the proposed transmission line to the following proposed substations located between the St. Johns and Pringle substations:

- Deerwood—Located just east of the intersection of I-95 and CR 214 (Tocoi Road), St. Johns County.
- Vermont—Located within the St. Augustine Industrial Park just west of I-95 and north of SR 207, St. Johns County.
- Anastasia—Located just west of the I-95/SR 206 interchange, St. Johns County.
- Pellicer—Located west of U.S. Highway 1 (U.S. 1) at the intersection of CR 204 and the FEC Railroad, St. Johns County.

The general locations for these proposed intermediate substations have been identified to serve projected future load centers and, for the Pellicer substation, provide an appropriate



NOTES:

1. HEIGHT OF ROAD/PAD VARIES, MINIMUM 6" OVER MEAN OR SEASONAL HIGH WATER.
2. SPACING, DIAMETER AND LENGTH OF CULVERTS AS REQUIRED TO MAINTAIN FLOW. A MINIMUM OF 2' OF COVER IS REQUIRED OVER THE CULVERT.
3. ACCESS ROADS/PADS TO BE BUILT ONLY WHERE EXISTING ACCESS IS UNAVAILABLE.
4. TYPICAL ROAD IS 14 FT. TOP-WIDTH. FOR TYPICAL STRUCTURE PAD DIMENSIONS, SEE FIGURES 3.1-1 THROUGH 3.1-3.

NOT TO SCALE

FIGURE 1.3-7.
TYPICAL ACCESS ROAD AND STRUCTURE PAD
CROSS-SECTION

Source: FPL, 2005; ECT, 2005.





injection point to the existing Bunnell-St. Johns 115-kV transmission line. At the date of the filing of this application for corridor certification, FPL either owns these substation sites outright or is engaged in negotiations for their purchase. These substations will be approved for construction through appropriate local zoning and developmental approvals and regulatory permitting processes independent of the TLSA.

1.5 COST PROJECTIONS

The exact location of the transmission line and the number and types of structures necessary to complete the transmission line project will be determined following corridor certification. The approximate costs are projections based on comparable lines of similar voltage elsewhere in the FPL system. The actual cost of the line may vary from these generalized average costs depending on the ultimate locations of structures, cost of right-of-way, and other site-specific conditions.

Estimated per-mile cost for transmission line construction, including right-of-way acquisition, right-of-way clearing, access road construction, mitigation, and line construction, is approximately \$590,000 per mile, or a total construction cost of approximately \$15.4 million. Additional costs of approximately \$7.6 million will be required at the St. Johns and Pellicer substations. The estimated total project costs (2005 dollars) are estimated to be approximately \$23 to 25 million.

2.0 BACKGROUND FEATURES OF THE PROPOSED CORRIDOR

2.1 CORRIDOR SELECTION

The preferred corridor for the FPL SJPP Project was selected by a multidisciplinary team consisting of experts in land use, engineering, and the environment from the following entities:

- The consulting firm of Environmental Consulting & Technology, Inc. (ECT), and their subcontractors, Consensus Builders, Inc., and McNeal Consulting Services, Inc.
- Representatives from FPL, including Environmental Services, Transmission Projects, Transmission Operations and Planning, External Affairs, Real Estate, Regulatory Affairs, and Corporate Communications, among others.
- FPL environmental and land use legal counsel, Hopping Green & Sams, PA.

The objective of the corridor selection study was to select a certifiable corridor that balances land use/socioeconomic, environmental, engineering, and cost considerations. Corridor selection methods were designed to be:

- Integrative of multidisciplinary siting criteria.
- Rational and objective in decision-making.
- Sensitive to social and environmental conditions.
- Responsive to regulatory requirements.
- Reflective of community concerns and issues.
- Capable of accurate documentation and verification.

The corridor selection process consisted of three major tasks: (1) project and study area definition, (2) resource mapping and alternative route delineation, and (3) evaluation of alternative routes and selection of the preferred corridor. A summary description of each of these major tasks is presented in the following subsections. The licensing team was assisted throughout this process by members of the public who participated in a public outreach program developed specifically for this project. This program is summarized in Section 2.1.4.

2.1.1 PROJECT AND STUDY AREA DEFINITION

Chapter 1.0 of this application defined the SJPP Project and addressed the need for this new line in northeast Florida. FPL determined that a single-circuit, 230-kV transmission line on a single-pole structure is the best option to meet this need. The SJPP Project must provide an additional electrical connection between FPL's existing St. Johns substation west of St. Augustine, St. Johns County, to FPL's proposed Pringle substation, in Palm Coast, Flagler County. Another important consideration for the SJPP Project was that the new corridor should connect four proposed intermediate substations in St. Johns County to the St. Johns and Pringle substations. The locations for these four proposed intermediate substations were chosen to serve distribution load centers as development in these areas moves westward.

The locations for these four proposed intermediate substations were identified to serve projected future load centers and, for the Pellicer substation, provide an appropriate injection point to the existing Bunnell-Matanzas 115-kV transmission line. The sites that have been acquired or are under negotiation at this time for these substations were chosen in consideration of existing and planned future land uses in the area as well as the electrical system needs for serving future load. Any movement away from the substation locations depicted in this application could result in less optimal electric system operation.

Therefore, the proposed study area for this project was delineated to meet these needs while providing FPL flexibility in identifying alternative routes. The study area (Figure 2.1-1) was delineated as described in the following paragraphs.

On the north, the boundary was delineated to include the existing FPL St. Johns-Tocoi 230-kV transmission line right-of-way to allow flexibility in following that right-of-way and/or possible ingress/egress to the proposed Deerwood substation and existing St. Johns substation.

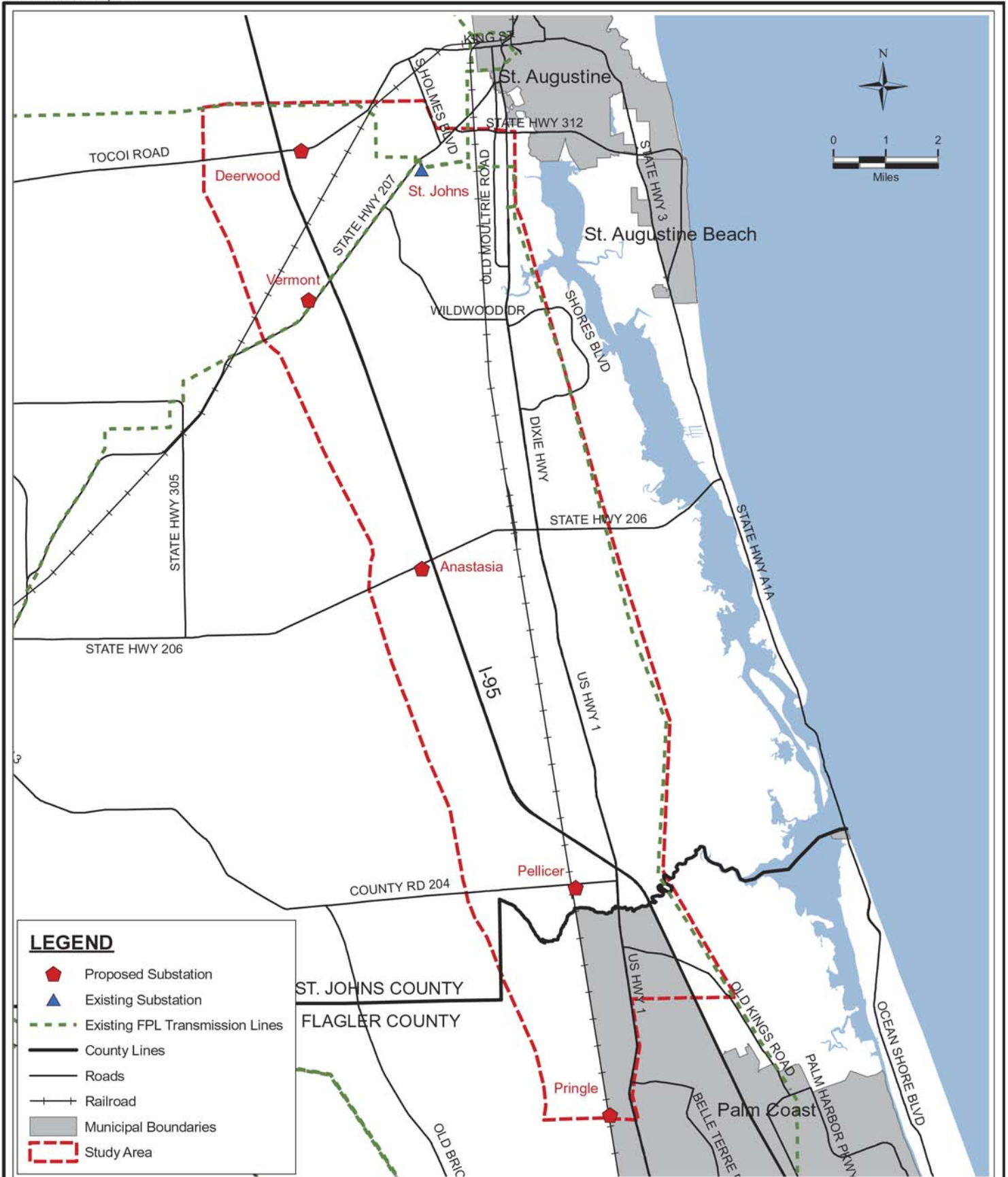


FIGURE 2.1-1.
ST. JOHNS-PELLICER-PRINGLE 230-kV TRANSMISSION
LINE PROJECT - STUDY AREA

Sources: FPL, 2005; St. Johns County, FL, 2005; SJRWMD, 2005; ECT, 2005.





On the east, the boundary generally includes the existing Bunnell-Matanzas-St. Johns 115-kV transmission line, which minimizes inclusion of developed areas further to the east around St. Augustine and Florida's eastern coastline.

On the south, the boundary was drawn to exclude the heaviest developed portions of the city of Palm Coast, while including U.S. 1 and the existing FEC Railroad and allowing flexibility for ingress and egress to the Pringle substation site.

On the west, the boundary was generally delineated approximately 1 to 2 miles west of I-95 to include existing secondary roads and logging roads as possible siting opportunities.

2.1.2 RESOURCE MAPPING AND ALTERNATIVE ROUTE DELINEATION

The objective of resource mapping was to identify various siting constraints and siting opportunities within the study area. Resource mapping information was obtained from available information sources, including local, state, and federal agency data files and personal interviews of agency personnel to obtain recent updates. The FPL licensing team used a technique of overlay mapping through the use of computer mapping software programs such as AutoCAD® and ArcView®. Use of computer mapping allowed the team flexibility in adding new information as it became available and modifying coverages to analyze certain opportunities or constraints. Table 2.1-1 presents a listing of the types of resources mapped. Once these resources were mapped, the team developed guidelines for identification of alternative routes. Table 2.1-2 presents these guidelines. Figure 2.1-2 presents the regional screening map and alternative routes chosen.

Table 2.1-1. Study Area Resources Mapped

Category	Resource
Base map information	• Highways, roads, streets • County boundaries • City boundaries • Railroads, airports • Existing and proposed FPL substations • Existing FPL transmission lines • Water bodies, rivers, streams, canals
Land use information	• Existing and proposed development • Planned unit developments (PUDs) and developments of regional impact (DRIs) • Property boundaries • Existing school properties • National parks, wildlife refuges, estuarine sanctuaries, landmarks, or historical sites • State parks, preserves, Areas of Critical State Concern, Conservation and Recreation Lands (CARL), Save Our Rivers (SOR) lands, aquatic preserves • SJRWMD-owned lands • St. Johns County lands, parks, and recreation areas, mitigation lands • Flagler County lands, parks, and recreation areas, mitigation lands • City of Palm Coast lands, parks, and recreation areas, mitigation lands • Private designated wetland mitigation areas • Privately owned environmental preserves/sanctuaries
Environmental information	• Listed federal and state species and unique habitats, U.S. Fish and Wildlife Service (USFWS)-designated critical habitats • Wetlands as delineated on USFWS National Wetlands Inventory (NWI) maps

Source: ECT, 2005.

Table 2.1-2. Alternative Route Identification Guidelines

• Maximize collocation with other linear features (roads, canals, railroads, FPL transmission lines, other utility rights-of-way, etc.) • Follow property lines where practicable • Minimize crossing of constraints identified as a result of regional screening (e.g., environmentally sensitive lands and planned or existing development) • Avoid known airports and private airstrips consistent with Federal Aviation Administration (FAA) and other applicable regulations • Follow disturbed alignments (ditches, roads) through wetlands, where practicable • Minimize crossing of existing transmission lines
--

Source: ECT, 2005.

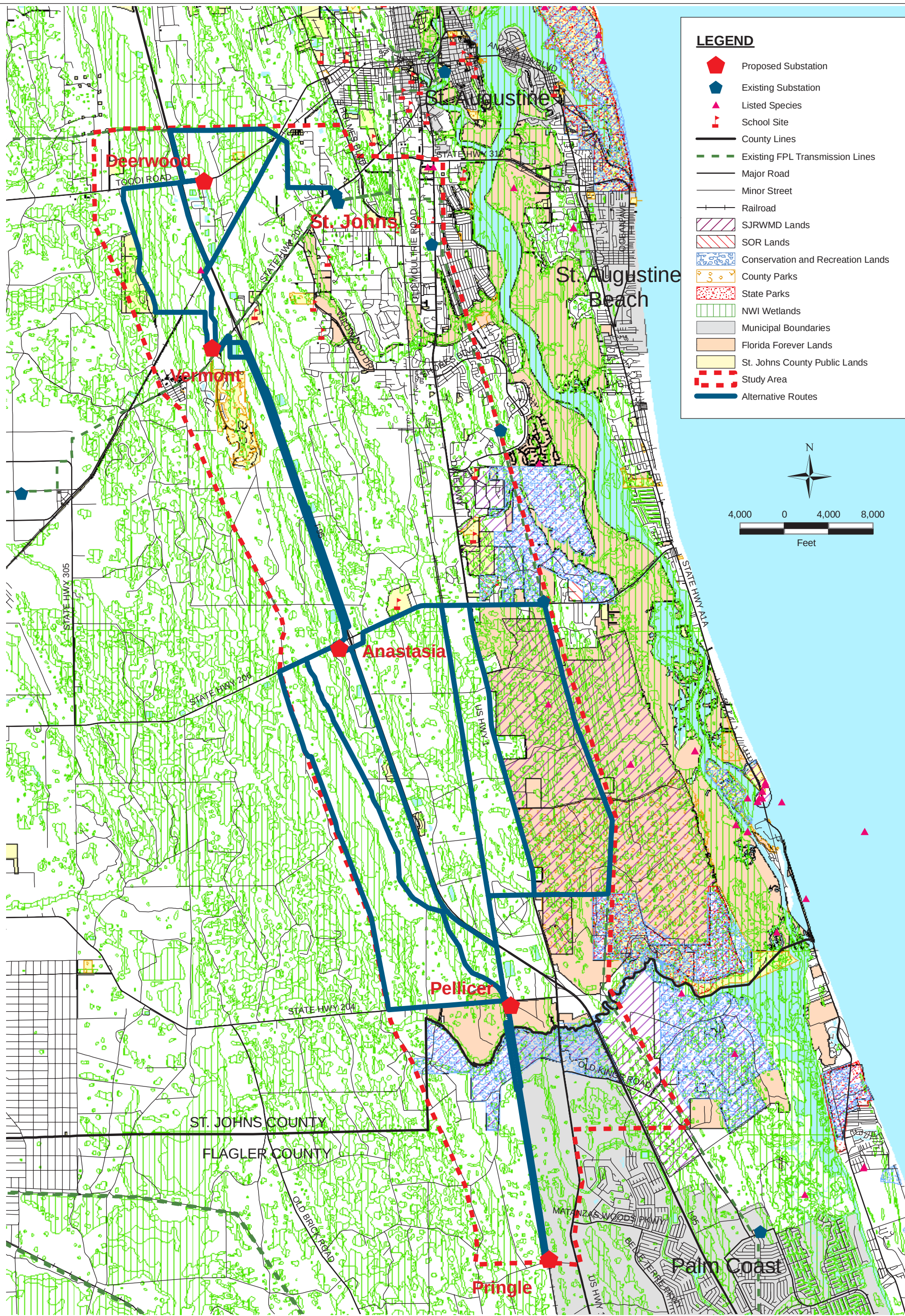


FIGURE 2.1-2.
ST. JOHNS-PELLICER-PRINGLE 230-KV TRANSMISSION LINE PROJECT
REGIONAL SCREENING AND ALTERNATIVE ROUTES

Sources: FGDL, 2003; FPL, 2005; St. Johns County, FL, 2005; SJRWMD, 2005; City of Palm Coast, 2005; ECT, 2005.



Based on the results of the alternative route identification, 45 route segments were identified, comprising 630 potential alternative route alignments between the St. Johns substation and the proposed Pringle substation. Each of these routes was then evaluated as described in Section 2.1.3.

2.1.3 ALTERNATIVE ROUTE EVALUATION AND PREFERRED CORRIDOR SELECTION

The objective of this task was to evaluate, in detail, the routes identified and ultimately select a preferred corridor.

2.1.3.1 Alternative Route Evaluation

This step involved a systematic, quantifiable evaluation of each route segment using environmental, land use, and cost/engineering criteria. Table 2.1-3 presents the criteria used in this evaluation. These criteria are based on application of accepted transmission line siting factors utilized on projects across Florida.

Table 2.1-3. Alternative Route Evaluation Criteria

-
- Number of homes within 100 ft of the centerline.
 - Length of forested wetlands potentially impacted (cleared/filled).
 - Length of herbaceous wetlands potentially impacted (filled).
 - Length of natural forested upland habitats potentially impacted (cleared).
 - Length of line through parks, recreation areas, or other designated conservation lands.
 - Number of school properties within 100 ft of the centerline.
 - Length of line within existing FPL right-of-way available for placement of the transmission line.
 - Length of line following other existing right-of-way or parallel linear features available for placement or collocation of the transmission line.
 - Number of parcels/lots crossed.
 - Number of eagle nests or wading bird rookeries within 0.5 mile of the centerline.
 - Cost.
-

Source: ECT, 2005.

Data used to apply these criteria came from the regional screening map data, recent digital aerial photography for the study area, input from agencies and local governments,

ground surveys of routes, and input from the extensive community outreach program. Each segment was then analyzed for each of the criteria listed in Table 2.1-3, and the value for each criterion was recorded by segment.

The relative weight (importance) of each criterion to be used in the alternative route evaluation was then established by a multidisciplinary team.

The routes were ranked according to their weighted composite score on all criteria with the lowest score being the best. This score therefore represented the potential for impacting a combination of all the relevant resources (Table 2.1-3) found in the vicinity of the route.

The licensing team then further evaluated the top-ranked alternatives with a qualitative assessment of site-specific conditions. This evaluation included analyses of site-specific siting issues and opportunities, development of preferred corridor widths, and feedback and comments received at agency meetings, the community open house, and meetings with area residents.

Qualitative criteria used to evaluate routes included:

- Ability to collocate with existing road or transmission/distribution line rights-of-way.
- Setbacks from homes.
- Crossing of roads or other transmission lines.
- Flexibility for accomplishing ingress and egress from substations.
- Agency and public feedback.

Figure 2.1-3 presents a map showing the routes evaluated for the SJPP Project. After evaluation of the identified routes in this area and significant public input, a preferred route for certification was selected (see Figure 2.1-3).

Finally, the corridor was widened in certain areas to give FPL an appropriate amount of flexibility in accommodating site-specific constraints or taking advantage of certain



Sources: FDOT County Maps: St. Johns, 2001 and Flagler, 2003; FPL, 2005; ECT, 2005.





opportunities. The preferred corridor is shown on recent (2004) aerial photographs at a scale of 1:24,000 in Attachment 2-1 at the end of this chapter. Through ground truthing, the project team verified that data contained on the aerial photographs are representative of the route area and current within 12 months of filing.

2.1.3.2 Preferred Corridor Description

Almost the entire length of the preferred corridor allows the opportunity to follow existing linear features, including transmission lines, roads, or railroads.

The design of the proposed transmission line will allow construction adjacent to existing roadways. Sharing of existing road or transmission line rights-of-way reduces land requirements of the SJPP Project, minimizes the need for new access roads, follows existing linear features in the landscape, and thereby minimizes environmental, land use, and engineering cost impacts. Where sharing of rights-of-way cannot occur, placement of the SJPP immediately adjacent to other linear features still reduces potential environmental and land use impacts.

The following describes the preferred corridor starting at the St. Johns substation and proceeding south to the Pringle substation.

St. Johns Substation to Deerwood Substation

Exiting the existing St. Johns substation, FPL's preferred corridor will utilize the existing 110-ft-wide St. Johns-Tocoi 230-kV right-of-way. The existing easement is slightly wider at the turns to allow possible guying of transmission structures, if necessary. The preferred corridor will be collocated within this existing right-of-way north and west until the intersection with I-95. Along this portion of the existing 230-kV line, it is FPL's intent to use a double-circuit configuration for both the St. Johns-Tocoi and new SJPP circuits.

At I-95, the preferred corridor will follow the eastern right-of-way line of the highway south to the intersection with Tocoi Road. The corridor in this stretch is 500 ft wide.



At the I-95/Tocoi Road intersection, the preferred corridor is expanded in all four quadrants following property lines to allow FPL flexibility in traversing the short distance to Deerwood substation and crossing I-95 to proceed south from Deerwood.

To enter and exit the Deerwood substation, the preferred corridor follows Tocoi Road, encompassing 100 ft or less in width on both the north and south sides of the road. It is FPL's intention here for this 0.4-mile stretch to again use a double-circuit configuration to accommodate the new circuit as it enters and exits the Deerwood substation. In other words, both the entering and exiting circuits will be built on one set of transmission structures along either the south or north side of the road. An FPL distribution line currently exists on the south side of Tocoi Road.

Deerwood Substation to Vermont Substation

The double-circuit line configuration will end as the transmission line leaves Tocoi Road at the I-95 intersection. Here the corridor has an expanded variable width to give FPL maximum flexibility in crossing the interstate.

The preferred corridor then follows the western right-of-way edge of I-95 south to the FEC Railroad, where the corridor turns to the southwest for a short distance. This section of the corridor is 500 ft wide.

At the north end of the St. Augustine Industrial Park, the corridor follows property lines to the access road (Deerpark Boulevard) into the industrial park. The corridor is 200 ft wide in this section. From the north end of the access road, the preferred corridor follows the east edge of the road south to the Vermont substation site. The preferred corridor width is 100 ft wide here and includes an existing FPL distribution line.

Vermont Substation to Anastasia Substation

The preferred corridor exits the Vermont substation heading generally toward I-95 again. In this area, the preferred corridor will be of variable width and will include both sides of SR 207. An existing 115-kV FPL transmission line already occupies the north side of



SR 207, and a distribution line is located on the south side. An existing FPL distribution line traverses north-south in this area and is also included in the corridor.

A wider corridor is necessary in this area to allow flexibility in accommodating a number of land use and engineering considerations. The crossing of SR 207, the existing transmission line, the distribution lines, existing residential development south of SR 207, existing commercial development north of SR 207, and a large borrow pond west of I-95 all present siting challenges.

When the preferred corridor again reaches I-95 south of SR 207, the corridor follows the interstate's western boundary southward. The corridor is 500 ft wide all the way to SR 206.

At SR 206 and I-95, the corridor is again widened variably to include the properties on the northwest and southwest quadrants of the interchange. This is to provide FPL flexibility in finalizing the substation plans and providing ingress and egress.

Anastasia Substation to Pellicer Substation

The preferred corridor exits Anastasia and again follows the western boundary of I-95 southward. The preferred corridor is 500 ft wide along this stretch with the exception of where a rest area is located on the west side of I-95. The corridor is of variable width around the rest area, but generally 1,000 ft wide to give FPL flexibility in traversing either the front or rear of the rest area.

Where I-95 intersects the FEC Railroad north of CR 204, the preferred corridor turns and follows the railroad southward. The corridor is located along the east side of the railroad and is 500 ft wide. North of CR 204, the corridor is expanded along the road to allow ingress to the substation site located south of CR 204 and east of the railroad.

Pellicer Substation to Pringle Substation

The Pellicer site is already owned by FPL, so the preferred corridor includes that entire property along the east side of the FEC Railroad south to Pellicer Creek.



From the creek south to Pringle substation, the corridor follows the east side of the railroad bed. The corridor is variable in width in this stretch but is usually 150 to 300 ft wide.

At the Pringle substation site, already owned by FPL, the corridor includes the entire substation site. The preferred corridor for much of the stretch south of Pellicer Creek falls in the Palm Coast Park DRI within the city of Palm Coast's jurisdiction.

2.1.4 COMMUNITY OUTREACH PROGRAM

FPL expended considerable effort to inform and involve the public during the corridor selection process. FPL used direct mail; a survey; an open house public meeting; newspaper advertisements; an SJPP Project Web page; meetings with agencies, property owners, and homeowner groups; and a toll-free telephone number to share information and provide an opportunity for interested persons to learn more about the SJPP Project and express their views.

Initially, using county property appraisers' and FPL customer databases, more than 15,000 letters were sent to FPL customers and property owners throughout the SJPP Project study area. Enclosed with the letter were a fact sheet, map of the study area, survey, and postage-paid envelope for returning the survey. More than 700 people completed and returned the survey. Through those responses, FPL's Project team was able to learn which of the route selection criteria the respondents thought were more important. The survey also generated information on respondents' concerns and ways FPL might address their concerns.

An open house was held in the project area to provide local residents with the opportunity to learn more about the project and provide their input to the project team. The open house was advertised in local newspapers and held southwest of St. Augustine in St. Johns County. More than 60 people attended the open house. During the open house, visitors were able to talk directly with FPL project team members, learn about the SJPP Project and the routes that were being considered, view maps and aerial photographs of the routes being evaluated, ask questions, review information provided about the SJPP



Project and FPL on display boards and in brochures, and express their views. A total of 24 people filled out comment forms at the open house. FPL staff also made notes of their conversations with visitors so comments, information, and suggestions as well as questions could be recorded and shared with all SJPP Project team members. Input received at the open house was reviewed and considered during the corridor selection process.

FPL representatives also met with several community groups, homeowner associations, and property owners upon request to discuss the SJPP Project routing analysis.

Local, state, and federal agency contacts were made throughout the corridor selection process to not only collect relevant data and maps, but also to seek input on route selection issues. Appendix B provides a list of agency contacts for the SJPP Project.

The FPL project team incorporated what they learned through the community outreach program into the corridor selection decision. Members of the public who participated through the various components of the program were able to suggest the following to the FPL project team:

- Places to consider or avoid in routing.
- Other linear facilities to consider for collocation with the transmission line.
- Which evaluation criteria should be treated as more important.
- Specific routes to evaluate.
- Unique or important features or characteristics of the study area, consideration of which should be given in route selection.
- Ways to effectively communicate with the public regarding the SJPP Project.

2.2 SOCIO-POLITICAL ENVIRONMENT OF THE CORRIDOR AREA

2.2.1 GOVERNMENTAL JURISDICTIONS

The preferred corridor is located in St. Johns County and the city of Palm Coast jurisdictions. Figure 2.2-1 shows the preferred corridor at a scale of 1:126,720, or 1 inch equals 2 miles, in relation to other governmental jurisdictions within 0.5 mile of the edge of the preferred corridor.

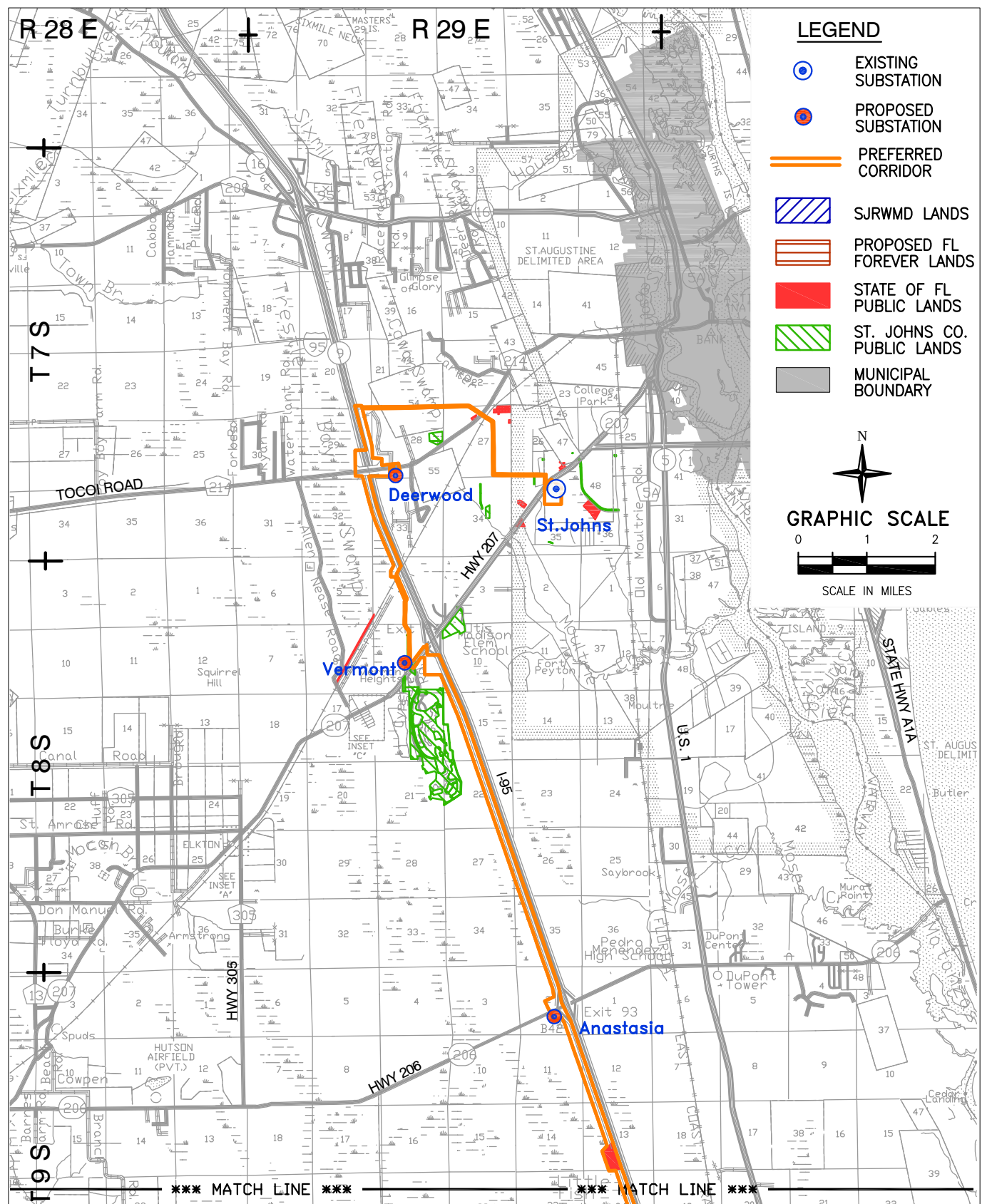
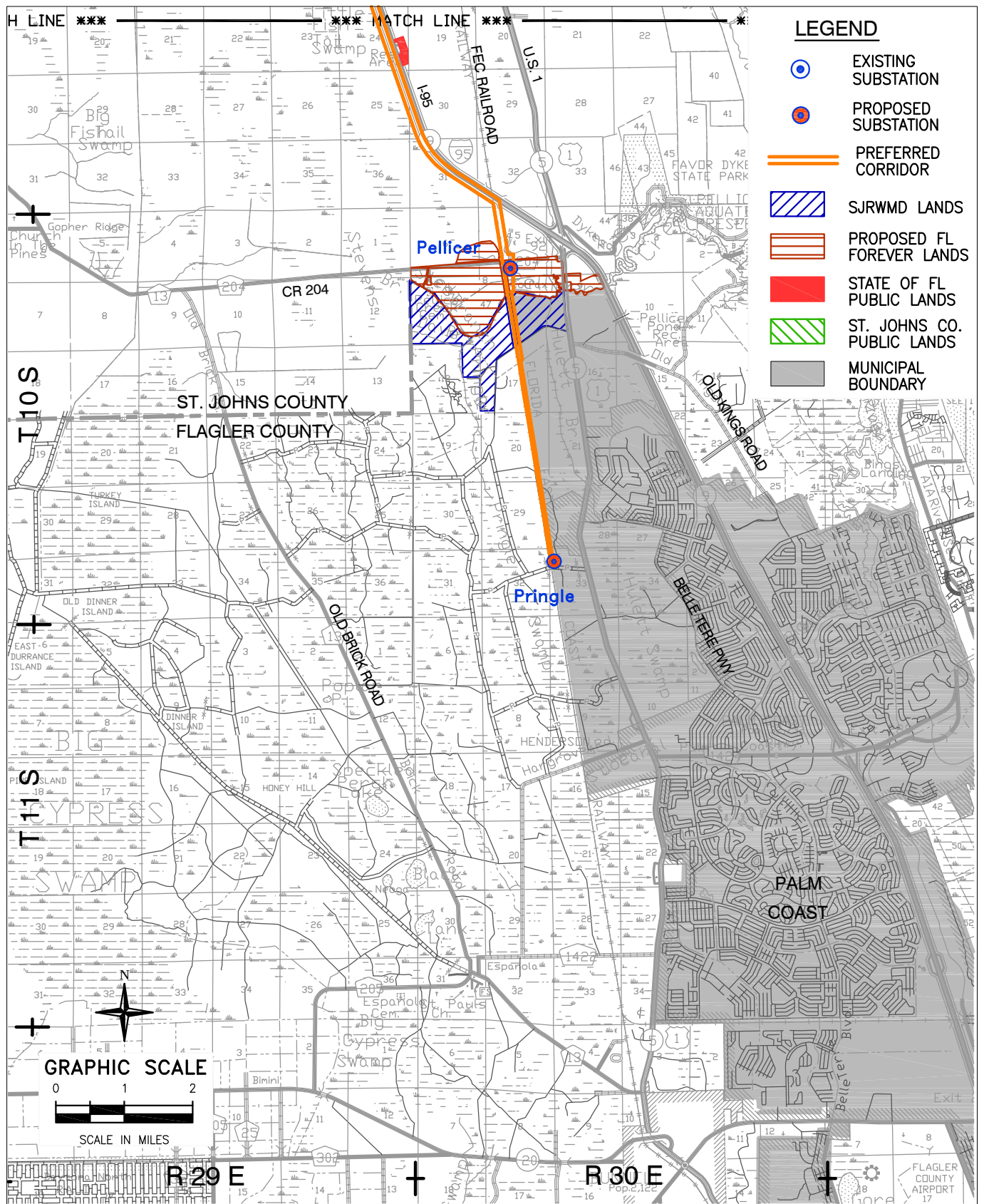


FIGURE 2.2-1 (1 OF 2)
GOVERNMENTAL JURISDICTIONS

Source: FPL, 2005; SJRWMD, 2004; ECT, 2005.





From the St. Johns substation south to the Vermont substation, no natural resource, conservation, or other environmental jurisdictions occur within the preferred corridor. Some parcels of land, under ownership of the state of Florida or St. Johns County, do occur within 0.5 mile of the preferred corridor. These parcels include a school property and various FDOT and St. Johns County Public Works holdings.

South of the Vermont substation, a portion of the St. Johns County Golf Course does occur within 0.5 mile of the western border of the preferred corridor. South of the Anastasia substation site, the preferred corridor includes the I-95 rest area, which is property owned by the state. No other special jurisdictions occur within the corridor until the area around Pellicer substation.

At the Pellicer substation site, the north side of Pellicer Creek is identified as a proposed Florida Forever Lands potential acquisition as part of the Northeast Blueways Project (Phase II). These lands are identified as potential acquisition projects to protect valuable waterways. Currently, none of the properties surrounding the Pellicer substation site has been acquired under this program. On the south side of Pellicer Creek, the preferred corridor crosses lands currently in fee ownership of SJRWMD as part of the Pellicer Creek Conservation Area.

The following federal, state, and local jurisdictional areas were researched, and none were found to occur within 0.5 mile of the edge of the preferred corridor:

- National parks.
- National forests.
- National wilderness areas.
- National memorials.
- National monuments.
- Properties in the National Register of Historic Places.
- Natural landmarks.
- Marine sanctuaries.
- Roadless area review and evaluation (RARE) areas.
- State parks.
- State forests.
- Areas of critical concern.
- State archaeological landmarks.
- State aquatic preserves.
- Indian reservations.
- Military installations.

2.2.2 ZONING AND LAND USE PLANS

2.2.2.1 Land Use Plans

The preferred corridor crosses parts of the unincorporated areas of St. Johns County and the city of Palm Coast. The Local Government Comprehensive Planning and Land Development Regulation Act of 1985 (Chapter 163, F.S.) requires all counties and municipalities within the state to prepare comprehensive plans. Attachment 2-2 at the end of this chapter shows the location of the preferred corridor in relation to the adopted land use plans of the two local governments affected. Appendix C contains reproductions of the future land use maps of St. Johns County and the city of Palm Coast.

For an accurate understanding of the location of the preferred corridor in relation to existing physical features, refer to the aerial photographs in Attachment 2-1 and the preferred corridor description in Section 2.1.3.2.

The following lists the future land use categories crossed by the preferred corridor:

- | | |
|---|---|
| <ul style="list-style-type: none">• <u>St. Johns County:</u><ul style="list-style-type: none">○ Rural Silviculture (R/S).○ Industrial (I).○ Residential Density Zone B (B).○ Residential Density Zone C (C).○ Mixed Use District (Md). | <ul style="list-style-type: none">• <u>City of Palm Coast:</u><ul style="list-style-type: none">○ Conservation.○ DRI—Mixed Use. |
|---|---|

Descriptions of the future land use categories crossed by the corridor in the two jurisdictions are provided in the following paragraphs:

St. Johns County

- Rural Silviculture—This land use designation is intended for agriculture, silviculture, and other uses typical of rural areas. Permitted uses shall include as defined and controlled by the county land development regulations: Agricultural, Cultural/Institutional; Mining and Extraction; Outdoor/Passive; Neighborhood Public Service; Solid Waste and Correctional Facilities; Public Elementary, Middle, and High Schools; Residential; Ancillary Uses to

agriculture or silviculture; and Family Farms and Lots, as defined in the comprehensive plan, and Planned Rural Developments (PRDs). Unless determined as an Exempt Parcel, the minimum lot size for residential development is 100 acres. PRDs shall be consistent with the development regulations listed in the comprehensive plan, Land Use Element Goal A.1.6.1-7.

- Industrial—This land use category may be used for light and heavy industrial uses that are complimentary or compatible to industrial activities. Permitted uses shall include the following as defined and controlled by the land development regulations: Light Industrial, Heavy Industrial, Mining and Extraction, Neighborhood Public Service, General Public Service, Solid Waste and Correctional Facilities, and Residential as may be allowed as an Accessory Use within the county land development regulations.
- Residential—This land use shall mean single-family or multifamily dwelling units appropriate to the residential densities as designated in the future land use map (FLUM) along with uses supportive or complimentary to residential. Permitted uses shall include the following as defined and controlled by the county land development regulations: Residential uses at the applicable density established by density zone as depicted on the FLUM and further defined in the comprehensive plan; Cultural/Industrial; Outdoor/Passive; Neighborhood Public Service; Public or Private Elementary, Middle, or High Schools; Neighborhood Commercial as defined in the comprehensive plan; Hotels, Motels, and Club Facilities, together with ancillary commercial uses in the Density Zone D when not incompatible with the surrounding residential uses; and Agriculture uses and agricultural support services and facilities, when not incompatible with surrounding residential uses:
 - Residential Density Zone B—Minimum base density per net acre³ shall be 1.0 dwelling unit in the mainland area of the county with no additional density granted for PUDs or utilizing central water or central sewer. In the coastal area, the minimum base density per net acre³

³Net acreage is defined as the total acreage of the site proposed for development less SJRWMD or FDEP jurisdictional wetlands, or lands designated Conservation contained within the site. Optional density factors shall be provided to encourage the protection of natural resources as defined in the comprehensive plan under the Future Land Use Element A.1.11 (h) (7).

shall be 0.4 dwelling unit with an additional 0.6 dwelling unit granted if central water is utilized. The maximum base density (base + variable) for the coastal area is 1.0 dwelling unit per net acre.

- Residential Density Zone C—Minimum base density per net acre³ shall be 2.0 dwelling units in the mainland area of the county with no additional density granted for PUDs or utilization of central water or central sewer. In the coastal area, the minimum base density per net acre³ shall be 2.0 dwelling units, with central water and central sewer being required for development approval.
- Mixed Use District—This land use designation was intended to encourage large concentrated areas of commercial, office, light industrial, residential, recreational, and cultural facilities at a scale capable of serving large segments of the county and region. All land uses provided for in the comprehensive plan and the county land use regulations may be included within Mixed Use Districts, except as provided in Policy A.1.9.10. Commercial, light industrial, office, and medium- to high-density residential development are allowed if supported by central water and sewer. Residential densities are permitted up to 13 units per net acre³ plus applicable optional density bonuses. The intent is to promote diversity of uses with decreasing intensity projecting outward toward adjacent land uses. To encourage this, mixed use goals are established for the total developable area as follows:
 - Commercial—45 percent.
 - Residential—20 percent.
 - Industrial—25 percent.
 - Recreation/open space—10 percent.

New development equal to or greater than 10 acres in size must apply for development approval under the Planned Development land development regulations.

³Net acreage is defined as the total acreage of the site proposed for development less SJRWMD or FDEP jurisdictional wetlands, or lands designated Conservation contained within the site. Optional density factors shall be provided to encourage the protection of natural resources as defined in the comprehensive plan under the Future Land Use Element A.1.11 (h) (7).

City of Palm Coast

- Conservation—This future land use category provides for the preservation of large, interconnected wetland systems and other environmentally sensitive areas. Conservation areas are generally a minimum of 10 acres in size, with most being substantially larger. Other areas that may be classified as conservation include natural water bodies and lakes, estuaries, oak hammocks, and other large areas consisting of native vegetation areas, wildlife corridors, and aquifer recharge zones. This future land use category only allows for minimum development to provide public accessibility and basic services. Unlike most of the other land use designations that follow property lines, the boundaries of most areas assigned to this land use designation have been drawn to encompass the environmentally sensitive area using best available aerial mapping and will require field verification to determine boundaries with precision.
- DRIs—This land use designation is intended to identify existing and future DRIs defined in state law as, “...any development that, because of its character, magnitude, or location, would have a substantial effect upon health, safety, or welfare of citizens of more than one county.” Specific development threshold levels based on a county’s population determine whether a project qualifies as a DRI. If a proposed project meets these thresholds, state law is very explicit in dictating all procedural and substantive aspects of a DRI. The DRI process, which involves extensive review and coordination of several state agencies and surrounding local jurisdictions, begins with the initial application referred to as an application for development approval (ADA) and culminates with a DRI development order (DO) if approved. The DO, which is a legal document between the local governing body and the developer, provides a land use map, quantifiable approvals for the proposed land uses and addresses all related matters pertaining to the project’s impacts on the environment, public infrastructure, and other public facilities.
 - DRI (Mixed Use)—It is common for DRIs to include a mixture of land uses such as industrial, commercial, office, and residential uses over a large area. A project classified as a DRI (Mixed Use) shall be evalu-

ated based on the permissible densities and intensities with other areas of the city having Mixed Use FLUM designation.

The preferred corridor is located in the Palm Coast Park DRI. This DRI received a DO on December 7, 2004. The preferred corridor is consistent with page 30 of the DO, Section 4(e), Water Supply, which references the shared easement:

“Palm Coast Park, DRI Development Order, Part III SPECIFIC CONDITIONS TO THIS DEVELOPMENT ORDER, 4. Water Supply.(e) Within 1 year from the effective date of this Development Order, a linear easement shall be established that parallels the boundary of the DRI Property abutting the Florida East Coast railroad right-of-way. The easement shall be 65 feet in width, a portion of which shall also be subject to an easement in favor of Florida Power & Light for an electric transmission line. This easement shall provide ingress/egress to access well sites and provide full eastern access along the rail system for emergency vehicles should train derailment occur. The easement shall be in a form approved by the City.”

2.2.2.2 Zoning and Land Use Restrictions

Zoning within the preferred corridor is shown at a scale of 1:24,000 in Attachment 2-3 at the end of this chapter. The preferred corridor crosses the following zoning districts:

- St. Johns County Zoning Districts:
 - CHT Commercial, Highway, and Tourist.
 - CI Commercial, Intensive.
 - IW Industrial, Warehousing.
 - OR Open Rural.
 - PRD Planned Rural Development.
 - PSD Public Service District.
 - PUD Planned Unit Development.
 - RMH Residential, Manufactured/Mobile Home.
 - RMH (S) Residential, Manufactured/Mobile Home or Single-Family.
 - RS-2 Residential Single-Family.
 - RS-3 Residential Single-Family.
- City of Palm Coast Zoning Districts:
 - AC Agricultural.
 - I Industrial.

Provisions of each local government's land development regulations applicable to the lands crossed by the preferred corridor are discussed in the following subsections.

St. Johns County—Land Development Code

Under Article IV, *Natural Resources*, Section 4.01.02, *Natural Resources Permitting*, of the Land Development Code, Item C, *Exceptions to the Requirement of Permit*, “No Permit under this Section is required for:

....

7. Land Alteration activities within approved utility Rights-of-Way or Easements necessary to supply gas, water, sewer, telephone, cable television or electrical service, provided those activities do not adversely impact an Environmentally Sensitive Area; however any Land Alteration activity within a new electrical transmission corridor greater than one hundred (100) feet in width does not qualify for this exemption.”

Land Alteration is defined as “any activity which removes vegetation or changes topography of the land by grubbing, tree removal, clearing, grading, filling, or excavating, except for activities undertaken to existing grounds.”

Environmentally Sensitive Areas are defined by the Land Development Code to “...mean lands, waters, or areas within the County which meet any of the following criteria:

- A. Are Wetlands determined to be jurisdictional, and which are regulated by the FDEP and SJRWMD;
- B. Are Estuaries, or estuarine systems;
- C. Are Outstanding Florida Waters and Natural Water Bodies;
- D. Are Areas designated pursuant to the Federal Coastal Barrier Resource Act (PL 97-348), and those beach and dune areas seaward of the Coastal Construction Control Line;
- E. Are areas designated as Conservation or Preservation;
- F. Are Essential Habitat to Listed Species as determined by approved methodologies of the Florida Fish and Wildlife Conservation Commission, the Department of Agriculture and Consumer Services, and the U.S. Fish & Wildlife Service;
- G. Are areas which, because of their unique ecological or environmental nature, or their diversity of significant potential for conservation and preservation due to ownership patterns, Development status, or other factors, are designated as Environmentally Sensitive Areas by action of the Board of County Commissioners.”

ST. JOHNS COUNTY CODE OF ORDINANCES

In St. Johns County's Code of Ordinances, Ordinance No. 88-37, Ordinance Book 9, Page 001, *Rules and regulations for the control of sound*, is established and later amended through additional ordinances. In Ordinance No 96-57, Ordinance Book 18 Page 423, Section 3, *Maximum permissible sound levels by use occupancy category*, has been amended to say "[u]nless otherwise provided in this ordinance, no person shall operate or cause to be operated any source of sound from any land or property in such a manner as to create a sound level which exceeds the limits set forth for the type of land use receiving the sound as described in" Table 2.2-1 "when measured at the property boundary of the lands or property lawfully occupied by the person filing the complaint."

Table 2.2-1. Sound Level by Land Use, St. Johns County

Land Use	Time	Sound Level Limit (dBA)
Residential or public space	7 a.m. to 11 p.m.	60
	11 p.m. to 7 a.m.	50
Commercial or business	7 a.m. to 10 p.m.	65
	10 p.m. to 7 a.m.	60
Manufacturing, industrial or agricultural	7 a.m. to 10 p.m.	65
	10 p.m. to 7 a.m.	60
Multifamily	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
Noise sensitive zone*	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50

Note: dBA = A-weighted decibel.

*Noise-sensitive zones are those zones created from time to time by resolutions of the St. Johns County Board of County Commissioners upon finding that the subject area contains a land use sensitive to or subject to adverse reactions from noise.

Source: St. Johns County Code of Ordinances, No. 96-57.

Notwithstanding these sound level limits, noise received from certain designated uses, activities or operations may not be permitted at any specific level, or may be exempt from regulation by this ordinance as otherwise specifically stated in this ordinance.

Section 4, *Specific prohibitions against different types of noises*, states that the following is prohibited: “(f) [c]onstruction and demolition: [o]perating or causing the operation of any tools and equipment used in construction, drilling, repair, alteration, or demolition work between the hours of 7 p.m. to 7 a.m. on weekdays, or between 6 p.m. to 10 a.m. on weekends or holidays in or within 50 yards of any residential area or noise sensitive zone, except for emergency work by public service utilities or by special permit issued by the Noise Control Office (NCO) or the county.”

Exemptions from Section 1 (all sound originating in the unincorporated areas of the County), Section 3, *Maximum permissible sound levels by use occupancy category*, and Section 4, *Specific prohibitions against different types of noises*, include the following:

- (c) “Construction operations for which building permits have been issued or construction operations not requiring permits due to ownership of the project by an agency of government; providing all equipment is operated in accord with the manufacturers’ specifications and with all standard equipment, manufacturers’ mufflers and noise reducing equipment in use and in proper operating condition. Such construction shall not begin prior to 7 a.m. and shall cease by 7 p.m. unless a special permit has been granted by the NCO or the county.
- (d) Noises of safety signals, warning devices, emergency pressure relief valves, and bells and chimes of churches.
- (e) Noises resulting from any authorized emergency vehicles when responding to an emergency call or acting in time of emergency.
- (f) Any other noise resulting from activities of a temporary duration permitted by the law and for which a license or permit therefor[e] has been granted by the NCO or the county in accordance with this ordinance. Regulation of noises emanating from operations under permit shall be according to the conditions and limits stated on the permit and in the section or subsections of this ordinance authorizing the issuance of the permit.”

City of Palm Coast Land Development Code

The City of Palm Coast defines *Public Utility* in their Land Development Code, Ordinance No. 2001-07, EXHIBIT “A” DEFINITIONS, as “[a]n enterprise providing an es-

sential service authorized and regulated by state or federal public utility commissions, or services owned, franchised, or permitted by Palm Coast. Included are facilities necessary to provide the service such as water towers, well houses, utility poles, transmission towers, substations, sewerage, communication equipment, street lighting and other similar equipment.” Likewise, they define the term *utilities* to include, “...but not limited to, water systems, electrical power, sanitary sewer systems, gas distribution systems, storm drainage systems, telephone systems, and cable television systems.”

ARTICLE VI RESOURCE PROTECTION STANDARDS, 6.01.00 *Trees*, allows for the following:

“6.01.07 Exceptions and exemptions.

A. An applicant may, on proper showing and county authorization, remove an index tree outside a building area on the following conditions:

....

3. The tree impedes utility operations.”

ARTICLE VI. RESOURCE PROTECTION STANDARDS, 6.02.01 WETLANDS, states that “[i]t is the purpose and intent of this regulation to provide for the protection, maintenance, and enhancement of wetlands within Flagler County [Palm Coast] recognizing the rights of individual property owners to use their lands in an economically reasonable manner as well as the rights of all citizens to the protection of the waters of Flagler County [Palm Coast] and their associated wetlands ecosystems. It is further the purpose and intent of this section to ensure that there is no net loss of wetlands.”

Activities that are exempted from this section of this article include:

“6.02.03 Exempted activities

....

(7) Utility crossings, easements, or rights-of-way that are related to transmission or conveyance of the utility’s service to its customers.”

SEC. 35-53. SOUND LEVEL LIMITS

- (a) “No person shall operate, or cause to be operated, any source of sound from any occupancy in such a manner as to create a sound level that exceeds the limits set forth for the use occupancy category in” Table 2.2-2, “more than 10 percent of any measurement period. The measurement period shall not be less than 10 minutes when

measured at or beyond the property boundary of the land use from which the sound emanates.”

Table 2.2-2. Maximum Permissible Sound Levels, City of Palm Coast

Use Occupancy Category	Time	Sound Level Limit (dBA)
Residential	7 a.m. to 10 p.m.	60
	After 10 p.m. to before 7 a.m.	55
Commercial or tourist	7 a.m. to 10 p.m.	65
	After 10 p.m. to before 7 a.m.	60
Manufacturing	At all times	75
Agricultural	At all times	75

Source: City of Palm Coast Code of Ordinances, No. 99-15, § 1, 12-29-99.

2.2.3 EASEMENTS, TITLE, AGENCY WORKS

Easements will be necessary for the transmission line to cross lands under the jurisdiction of the Board of Trustees of the Internal Improvement Trust Fund, or, more likely, SJRWMD lands included within the corridor. Approvals may also be required by the administering local government. Lands owned or under the jurisdiction of SJRWMD or various water control districts will also require easements or crossing approvals.

Approvals for crossing or use of federal or state road rights-of-way must be granted pursuant to the U.S. Department of Transportation (USDOT) or FDOT regulations. Approvals of crossings or use of county-maintained road rights-of-way must be granted pursuant to the requirements of the two respective counties. This is particularly noteworthy since so much of the preferred corridor assumes following or crossing road rights-of-way. All crossings of state roads will conform to specifications contained in FDOT’s Utility Accommodation Manual (1999).

Permits are also normally required to cross or collocate with canals or other facilities of various water control districts or works of the district under the jurisdiction of SJRWMD.



Such works may include structures, impoundments, wells, streams, canals, or other watercourses officially adopted by SJRWMD's governing board. Other than the Pellicer Creek conservation area, no other lands or facilities owned by SJRWMD have been identified within the preferred corridor.

Additionally, FPL may require approvals from FEC Railroad for crossing or collocation with their existing railroad right-of-way.

Table 2.2-5 presents a list of potential lands, roads, canals, or works of the district for which crossing approvals would normally be required.

Table 2.2-5. Possible Easements, Titles, Crossing Approvals Expected to Be Required for Transmission Line Construction in the Preferred Corridor

Facility/Lands	Agency	Approval
<u>Roads</u>		
I-95	FDOT/USDOT	Crossing permit
SR 207	FDOT	Right-of-way use and/or crossing permit
SR 206	FDOT	Right-of-way use and/or crossing permit
CR 204	St. Johns County Public Works	Right-of-way use and/or crossing permit
CR 214 (Tocoi Road)	St. Johns County Public Works	Right-of-way use and/or crossing permit
<u>Water Bodies</u>		
Pellicer Creek	SJRWMD FDEP	Use and/or crossing permit Sovereign submerged lands easement/crossing approval
<u>Conservation Lands</u>		
SJRWMD-owned, CARL lands	Owning agency	Easement or permit
<u>Other</u>		
FEC Railroad	FEC Railroad	Longitudinal use license or crossing permit

Source: ECT, 2005.

2.2.4 ARCHAEOLOGICAL AND HISTORIC SITES

The Florida Department of State, Division of Historical Resources (DHR), was contacted to determine whether any known archaeological or historic sites occurred along the preferred corridor. They were sent a list of all sections, townships, and ranges crossed by the preferred corridor. A request was made for them to determine if the corridor contained any sites listed or eligible for listing in the National Register of Historic Places or any sites of historic or archaeological significance found in their master site file.

DHR found several historic/archaeological sites/structures within 1 mile of the preferred corridor; however, only one is within the preferred corridor:

- St. Johns County, Section 28, Township 7 South, Range 29 East—Historic scatter (old home site) within the preferred corridor south of Toco Road.

The remainder of the sites are primarily associated with Old Kings Road, which runs longitudinally through the study area.

DHR qualifies its search by the fact that many areas along the preferred corridor may not have yet been searched for such sites.

DHR will review the preferred corridor and make an assessment as to potential impacts on these known or other potential sites. They may also request a cultural resources assessment be performed along certain areas of the proposed right-of-way once selected and acquired. The DHR requests that distribution of information/maps on locations of known sites be limited due to potential vandalism. Therefore, this application does not depict the precise location of those resources discussed.

Appendix D contains a copy of DHR's responses to the requested master site file search.

2.3 BIO-PHYSICAL ENVIRONMENT OF THE CORRIDOR AREA

2.3.1 LAND USE/VEGETATION

The existing land use and vegetation cover types were identified for the preferred corridor and 0.5 mile adjacent to either side of the preferred corridor. These land use/cover

classes were characterized according to the Florida Land Use, Cover and Forms Classification System (FLUCFCS) (FDOT, 1999) Categories II and III and were identified using recent aerial photography, FLUCFCS land use/cover mapping acquired from the SJRWMD current geographic information system (GIS) database (2005), NWI maps, and U.S. Geological Survey (USGS) quadrangle maps. The various land use/vegetation types along the preferred corridor are shown in Attachments 2-1 (aerial photographs) and 2-4 (land use/vegetation) at the end of this chapter, and descriptions of the major land use and vegetation cover classes along the corridor are provided in the following subsections. Although the data provided by SJRWMD was generated in 2000, the vegetation/land use covers depicted are representative of the current resources.

2.3.1.1 Land Use

Land use classes along the route mostly consist of residential, commercial, agricultural, open and disturbed lands, transportation, and utilities. According to the FLUCFCS, these categories include (110) low-density residential, (120) medium-density residential, (129) medium-density under construction, (140) commercial and services, (192) inactive land with street patterns but no structures, (211) improved pastures, (212) unimproved pastures, (740) disturbed land, (741) rural land in transition without positive indicators of an intended use, (814) roads and highways, (820) communications, (831) electrical power facilities, and (832) electrical power transmission lines.

The improved and unimproved pasture land uses are typically used for cattle grazing and have a dominant cover of pasture grasses such as bahia grass (*Paspalum notatum*), Bermuda grass (*Cynodon dactylon*), and carpet grass (*Axonopus furcatus*), among others. Depending on the degree of improvement, old field species such as dog fennel (*Eupatorium capillifolium*), goldenrods (*Solidago* spp.), dollarweed (*Hydrocotyle umbellata*), and blackberry (*Rubus* spp.), as well as occasional shrubs of saw palmetto (*Serenoa repens*) and wax myrtle (*Myrica cerifera*), often inhabit these communities.

Residential and commercial developments make up a relatively small portion of the corridor, as do inactive lands with street patterns but no structures, disturbed lands, rural land in transition without positive indicators of an intended use, communication facilities,

electrical power facilities, and transmission lines. Finally, several long segments of the preferred corridor follow within or adjacent to existing road rights-of-way, so this land use type is also prevalent.

2.3.1.2 Vegetation

The preferred corridor, for most of its route, will be located within or adjacent to existing rights-of-way. These rights-of-way are in various stages of vegetative successional growth depending on the degree of maintenance. In addition to developed/mowed rights-of-way, a variety of natural communities will be traversed or are located within 0.5 mile of the preferred corridor. These vegetation cover classes within the preferred corridor include (310) herbaceous upland nonforested, (320) shrub and brushland, (330) mixed upland nonforested, (411) pine flatwoods, (420) upland hardwood forests, (434) upland mixed coniferous/hardwood, (441) coniferous pine, (443) forest regeneration, (611) bay swamp, (617) mixed wetland hardwoods, (621) cypress, (625) hydric pine flatwoods, (641) freshwater marshes, (643) wet prairies, and (646) mixed scrub-shrub wetland. Although not technically a vegetation cover type, (530) reservoirs are also included and described in the section on wetland communities. The dominant vegetation types are described in the following subsections.

Upland Communities

There are eight dominant upland communities within the preferred corridor. These communities consist of both natural and altered states of forest and rangeland.

Herbaceous Upland Nonforested (310)

Herbaceous upland nonforested, which is also sometimes called dry prairie or herbaceous rangeland, occurs in a couple of locations within the preferred corridor. It is dominated by upland grasses such as bahia grass, crab grasses (*Digitaria* spp.), finger grasses (*Eustachys* spp.), broomsedges (*Andropogon* spp.), and love grasses (*Eragrostis* spp.), as well as other old-field herbaceous species like dog fennel, goldenrods, blackberry, and goat weed (*Scoparia dulcis*). Herbaceous rangelands generally lack any significant canopy cover, but may have scattered shrubs or small trees of species such as wax myrtle, salt bush (*Baccharis halimifolia*), saw palmetto, and upland oaks (*Quercus* spp.).

Shrub and Brushland (320)

Shrub and brush rangeland occurs in a few places within the preferred corridor. This community is dominated by shrub cover, often has a distinct ground stratum similar to the herbaceous dry prairie, and lacks a predominance of tree canopy cover. Typical shrub species include saw palmetto, wax myrtle, and salt bush. Small pine (*Pinus* spp.), oak, or cabbage palm (*Sabal palmetto*) trees may be scattered throughout this community.

Mixed Upland Nonforested (330)

When more than one-third intermixture of either grassland or shrub-brushland range species occurs, the classification is changed to mixed upland nonforested or mixed rangeland. Mixed rangeland may have occasional pines in the overstory. The understory layers consist of a moderately dense shrub layer and an open ground layer.

Pine Flatwoods (411)

The upland pine flatwoods community is characterized by a prevalence of pine trees that may vary in age. The dominant pine tree is slash pine (*Pinus elliottii*). Occasional stands or individuals of longleaf pine (*Pinus palustris*) may also be present as well. In addition to the pines, cabbage palm, saw palmetto, wax myrtle, gallberry (*Ilex glabra*), fetterbushes (*Lyonia* spp.), and a variety of flatwoods grasses are also present.

Upland Hardwood Forests (420)

This upland forest classification has a crown canopy of at least 66-percent dominance by hardwood tree species. This class of forest is typically associated with naturally generated stands of mixed hardwoods and pines. Canopy associates can typically include live oak (*Quercus virginiana*), laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*), sand post oak (*Quercus margaretta*), southern red oak (*Quercus falcata*), sand live oak (*Quercus geminata*), bluejack oak (*Quercus incana*), slash pine, black cherry (*Prunus serotina*), cabbage palm, and sweetgum (*Liquidambar styraciflora*). Understory species could also include saw palmetto, wax myrtle, prickly pear cactus (*Opuntia humifusa*), gopher apple (*Licania michauxii*), winged sumac (*Rhus copallinum*), and green eyes (*Berlandiera subacaulis*).

Upland Mixed Coniferous/Hardwood (434)

This forest community comprises several tracts of various sizes along the preferred corridor. It is not dominated by either pines or hardwoods (i.e., both comprise a significant component of the canopy). The hardwood component of the canopy is primarily live oak, water oak, and/or laurel oak. Cabbage palm, red maple (*Acer rubrum*), and common persimmon (*Diospyros virginiana*) also may occur here. Slash pine and/or longleaf pine are intermixed. Shrubs typically consist of saw palmetto or wax myrtle.

Coniferous Pine (441)

Coniferous pine or pine plantations are prevalent throughout the preferred corridor. This classification is used to describe pine forests artificially generated by planting seedling stock or seeds. These stands are characterized by high numbers of trees per acre and a uniform appearance (i.e., typically planted in rows).

Forest Regeneration (443)

Forest regeneration is the most prevalent community type along the preferred corridor. Forest regeneration is defined as areas in which it is clearly evident that harvested stands of pines will be reforested rather than being allocated for another land use or abandoned.

Wetland Communities

Numerous wetlands are present within or adjacent to the preferred corridor. However, since the preferred corridor follows mainly along existing linear facilities, a portion of the wetlands along the route have been previously cleared, ditched/drained, and some are maintained on a routine basis. Wetland communities found within the preferred corridor are described in the following paragraphs.

Reservoirs (530)

This category typically includes pits, retention ponds, and dams along the preferred corridor. Many of these surface water features along the route will contain vegetation species similar to freshwater marshes. Typical species within reservoir areas include cattails (*Typha* spp.), spatterdock (*Nuphar lutea*), willow (*Salix caroliniana*), arrowheads (*Sagittaria*

spp.), and pickerelweed (*Pontedaria cordata*), among others. In the case of the preferred corridor, most of these features are borrow ponds, presumably created during I-95 construction. Although not mapped, roadside ditches are also another minor surface water feature along the preferred corridor.

Bay Swamp (611)

This category is composed of dominant trees such as loblolly bay (*Gordonia lasianthus*), swamp red bay (*Persea palustris*) and/or sweet bay magnolia (*Magnolia virginiana*) with slash pine as an associated component. Common shrub species include large gallberry (*Ilex coriacea*), fetterbush (*Lyonia lucida*), and wax myrtle. A variety of sedges, rushes, and ferns are also important components of this swamp type.

Mixed Wetland Hardwoods (617)

This wetland category is associated with wetland hardwood communities, which are composed of a large variety of hardwood species tolerant of hydric conditions; however, the mixture of species is not readily apparent. The more dominant wetland hardwood species associated with the community type include red maple, popash (*Fraxinus carolinianus*), black gum (*Nyssa sylvatica*), willow, American elm (*Ulmus americana*), laurel oak, and cabbage palm.

Cypress (621)

Cypress-dominated wetlands are one of the most prevalent wetland types along the preferred corridor. They occur in circular (domes) or linear (strands) depressions in the landscape. These wetlands usually are seasonally to semi-permanently flooded. However, many of them are ditched and have an altered hydrologic regime. Typical vegetation species include bald cypress (*Taxodium distichum*), pond cypress (*Taxodium ascendens*), black gum, slash pine, cabbage palm, swamp red bay, red maple, dahoon holly (*Ilex cassine*), willow, cat briers (*Smilax* spp.), swamp fern (*Blechnum serrulatum*), and fire flag (*Thalia geniculata*), among others.

Hydric Pine Flatwoods (625)

Hydric pine flatwoods can be characterized as open forests with a sparse to moderate canopy of slash pine and understory of grasses, wiregrass (*Aristida stricta* var. *beyrichiana*), forbes, and at times sparse saw palmetto. These areas are typically flooded for a portion of the year and also support wetland plants throughout.

Freshwater Marshes (641)

Freshwater marsh wetlands also occur along the preferred corridor. These marshes typically exhibit a distinct vegetation zonation pattern based largely on the depth and duration of flooding. Typical species along the upper rim of the wetland include sand cordgrass (*Spartina bakeri*), soft rush (*Juncus effusus*), spike rushes (*Eleocharis* spp.), maidencane (*Panicum hemitomon*), torpedo grass (*Panicum repens*), and various sedges, among others. In the center of the wetland, where water is deeper and present for a longer duration, vegetation species such as sawgrass (*Cladium jamaicense*), fire flag, pickerelweed, bladderworts (*Utricularia* spp.), and arrowheads dominate. Occasional shrubs of willow and wax myrtle can sometimes be found in and around these wetlands.

Wet Prairies (643)

This classification of nonforested wetland can be characterized by a predominance of grassy vegetation on sandy hydric soils. It is usually distinguished from freshwater marshes by having less water and shorter herbage. Emergent plants typically associated with wet prairies include sawgrass, sand cordgrass, maidencane, spike rushes, beak rushes (*Rhynchospora* spp.), St. John's-worts (*Hypericum* spp.), and sedges (*Cyperus* spp.).

Mixed Scrub-Shrub Wetland (646)

Under the current version of FLUCFCS (FDOT, 1999), this category is typically associated with treeless wet savannas dominated by wiregrass. However, it has also come to be associated with mixed shrub swamps. Mixed scrub-shrub wetlands are treeless wetlands with a dominant shrubby overstory. Shrubs typically associated with this wetland type include willow, buttonbush (*Cephalanthus occidentalis*), elderberry (*Sambucus nigra*), and wax myrtle.

2.3.2 AFFECTED WATERS AND WETLANDS

The preferred corridor occurs within the SJRWMD area. SJRWMD's management area is large and contains ten surface water basins. The preferred corridor falls primarily in the northern coastal basin, which includes eastern Flagler and St. Johns Counties and the city of St. Augustine.

The physiography is characterized by marine terraces paralleling the coast. These terraces are separated by bluffs. Topography is gently rolling to nearly flat with elevations increasing further inland.

Climate within the study area is generally moist throughout the year with distinct seasonal temperature changes. Rainfall over the SJRWMD averages 52 inches per year but varies from 50 to 60 inches per year over the districts' large area. Tropical storms and hurricanes produce high-intensity rainfall events as do summer afternoon thunderstorms.

Surface water bodies and wetlands crossed by the preferred corridor were identified using 1:24,000 USGS topographic maps, NWI maps, SJRWMD land cover maps, and recent aerial photographs (2004).

Pursuant to the provisions of Section 62-302.400, Florida Administrative Code (F.A.C.), the majority of surface waters and wetlands crossed by the corridor would be classified as Class III waters, Recreation, Propagation, and Maintenance of Healthy, Well-Balanced Population of Fish and Wildlife. Pellicer Creek, just east of U.S. 1 and the preferred corridor, is designated as an Outstanding Florida Water (OFW) since it falls within an aquatic preserve designation.

Pellicer Creek is the dividing line between St. Johns and Flagler Counties. SJRWMD owns the land on the south side of the creek where the corridor crosses this waterway. The preserve and the creek are managed for preservation of the natural resources and for recreation.



Water Bodies

Table 2.3-1 provides a list of the major water bodies found within the preferred corridor. As noted, Pellicer Creek is the most significant water body crossed by the preferred corridor. The remainder of waters/wetlands crossed by the preferred corridor include roadside ditches in addition to natural and manmade ponds, wet prairies, and sloughs. Small roadside ditches/swales are not listed in Table 2.3-1.

Table 2.3-1. Surface Water Bodies within the Preferred Corridor

Water Body	Receiving Water	Comments
<u>St. Johns Substation to Deerwood Substation</u>		
Borrow pond	—	West side of I-95
Borrow pond	—	South side of Tocoil Road east of I-95
<u>Deerwood Substation to Vermont Substation</u>		
Borrow pond	—	West edge of corridor west of I-95
<u>Vermont Substation to Anastasia Substation</u>		
Borrow pond	—	Within corridor southwest of SR 207/I-95 interchange
Borrow pond	—	West of I-95 north of SR 206 interchange
Borrow pond	—	Within corridor north of SR 206
<u>Anastasia Substation to Pellicer Substation</u>		
Borrow pond	—	West of I-95 partially within corridor
Schoolhouse Branch	Pellicer Creek	Small portion within corridor north of CR 204
<u>Pellicer Substation to Pringle Substation</u>		
Pellicer Creek	Matanzas River	Corridor crosses the creek along the east side of FEC Railroad; Pellicer Creek, east of U.S. 1, is a designated OFW
Unnamed tributary	Hulett Branch	Corridor follows FEC Railroad which also crosses this tributary
Unnamed tributary	Hulett Branch	Corridor follows FEC Railroad which also crosses this tributary
Unnamed borrow canal	Pellicer Creek	Canal located along portions of east side of FEC Railroad

Source: ECT, 2005.

Many of the ditches and roadside swales crossed or within the corridor (such as along I-95) are intermittent, carrying water only during the rainy summer season. These intermittent ditches are neither navigable nor generally used for recreational purposes.

There are no water bodies located within the preferred corridor that cannot be spanned or avoided; therefore, no structures will be located within water bodies of the state.

Drainage all along the preferred corridor is generally to the south and east through sheet-flow in wetland systems and small drainages/tributaries. In the northern portion of the study area, the major drainages are Moultrie Creek and Moses Creek to the east of I-95. Both drain to the Matanzas River.

In the southern portion of the study area, Pellicer Creek is the predominant drainage. Draining into it are Hulett, Pringle, Stevens, Dave, and Schoolhouse Branches. The preferred corridor lies just east of Schoolhouse Branch and crosses Pellicer Creek. Pellicer Creek drains into the Matanzas River as well. The corridor also crosses two unnamed tributaries to Hulett Branch, south of Pellicer Creek.

Wetlands

Given the flat topography and hydric soil conditions, there are wetlands within or adjacent to the preferred corridor. As described in Section 2.3.1, these wetland types include bay swamp, mixed wetland hardwoods, cypress, hydric pine flatwoods, freshwater marshes, wet prairies, and mixed scrub-shrub wetlands. The hydrologic regime of these wetlands varies from semipermanently flooded to seasonally flooded, depending on their landscape position and the extent of drainage improvements within the immediate area. Development in the eastern portion of the study area and silvicultural operations in the western portion, along with I-95 through the center, have altered the natural hydrologic regime of many of the wetlands. Also, since the preferred corridor follows within or adjacent to existing linear facilities, most of these wetlands have been previously disturbed by vegetation clearing, ditching and culverting practices, and construction.

Isolated and connected fresh water marshes, hydric flatwoods, cypress strands or domes, and mixed wetland hardwoods dot the corridor for its entire length. However, the larger undisturbed wetlands found within the study area are found west of the preferred corridor, for the most part. The mixed hardwood swamp associated with the crossing of Pellicer Creek is perhaps the most significant wetland crossed. The preferred corridor will parallel the existing FEC Railroad right-of-way within this wetland, however.

Since the preferred corridor follows primarily along existing linear facilities, many of the wetlands and other water bodies that will be crossed have already been impacted by previous development such as filling and culverting at the proposed point of crossing. This will minimize disturbance associated with construction since the area has already been impacted. Limited construction for the placement of poles, pads, and access roads may be required in jurisdictional wetlands, however. Detailed design information will be provided to the appropriate regulatory agencies through the post-certification monitoring review process authorized by Rule 62-17.665(1)(b), F.A.C., to demonstrate that drainage patterns and characteristics are not further altered from the predevelopment condition.

2.3.3 ECOLOGY

An area including the preferred corridor and 1,500 ft beyond either edge of the corridor was evaluated for the potential presence of listed plant or wildlife species. Listed species include those with a designation of endangered, threatened, species of special concern, or commercially exploited that are regulated by USFWS, the Florida Department of Agriculture and Consumer Services (FDACS), or the Florida Fish and Wildlife Conservation Commission (FWC). Attachment 2-4 located at the end of this chapter shows the known listed species observations on and along the preferred corridor.

Species were included for discussion in this application based on their known or expected occurrence in the preferred corridor study area as residents, migrants, or transients based on previous identifications in St. Johns or Flagler Counties and the presence of suitable habitat within the preferred corridor. The lists of plant and animal species identified as potentially occurring within or adjacent to the preferred corridor are presented in the following subsections.

The probability of occurrence of these species was based on known locations for such species, recent and historical reports of occurrence in the scientific literature, and the presence of suitable habitat as shown on land use and land cover maps, NWI maps, and recent aerial photographs. Since the specific locations of many plant species are not known or mapped and most vertebrates, particularly birds, have extensive ranges and show significant daily and/or seasonal movement and distribution patterns, the ecology section addresses their probability of occurrence in the preferred corridor primarily based on suitable habitat and range. This represents a more conservative approach resulting in more diverse species inventories than solely depending on field observations and inclusion of species that may not occur within the confines of the preferred corridor.

In addition to the probability for occurrence, the potential for impacts due to right-of-way clearing, construction, and maintenance or other concerns such as the presence of ecologically unique or valuable habitats were evaluated for the species identified as potentially occurring in or adjacent to the preferred corridor. Individual discussions of the species are presented in the following subsections.

2.3.3.1 Plant Species

Approximately 44 regulated plant species are known to occur in Flagler and St. Johns Counties within habitats similar to those found within the study area. These species are listed in Table 2.3-2. All of the plant species on Table 2.3-2 are only listed by FDACS (i.e., none of the plants are federally listed by USFWS). Of the 44 state-listed species listed by FDACS, 17 are listed as endangered, 23 are listed as threatened, and 4 are listed as commercially exploited. Given the known range of these species and the presence of potential habitat in or adjacent to the preferred corridor, there is a possibility that some or all of these species could occur in or near the corridor. Brief descriptions of these species are provided in the following paragraphs.

Table 2.3-2. Protected Plant Species Known to Occur in Flagler and St. Johns Counties and with the Potential for Occurrence in the Project Area

Common Name	Scientific Name	Designated Status		Preferred Habitat
		USFWS	FDACS	
Southern milkweed	<i>Asclepias viridula</i>	—	T	Wet pinelands and flatwoods
Manyflowered grasspink	<i>Calopogon multiflorus</i>	—	E	Damp pinelands and meadows (fire maintained)
Bartram's ixia	<i>Calydorea caelestina</i>	—	E	Wet flatwoods and wet prairies
Chapman's sedge	<i>Carex chapmanii</i>	—	E	Hammocks and woodlands
Fringeleaf tickseed	<i>Coreopsis integrifolia</i>	—	E	Floodplains and river banks
Florida toothachegrass	<i>Ctenium floridanum</i>	—	E	Pinelands
Caribbean crabgrass	<i>Digitaria filiformis</i> var. <i>dolichophylla</i>	—	T	Pinelands
Coastal vervain	<i>Glandularia maritima</i>	—	E	Coastal dunes and strand and pine rocklands
Snowy orchid	<i>Habenaria nivea</i>	—	T	Bogs, wet pine savannas, and flatwoods, and wet prairies
Lakeside sunflower	<i>Helianthus carnosus</i>	—	E	Wet sandy soil in flatwoods
Spiked crested coralroot	<i>Hexalectris spicata</i>	—	E	Pine-hickory woods, secondary woods, and calcareous hammocks
Nodding pinweed	<i>Lechea cernua</i>	—	T	Openings in fire maintained sand scrubs
Catesby's lily	<i>Lilium catesbaei</i>	—	T	Wet flatwoods and bogs, usually with grasses
Pondspice	<i>Litsea aestivalis</i>	—	E	Margins of ponds, bayheads, hammocks in cypress swamps, and peaty soils
Cardinal flower	<i>Lobelia cardinalis</i>	—	T	River banks, springs, and coastal hammocks
Nodding clubmoss	<i>Lycopodiella cernua</i>	—	CE	Wetland flatwoods, pond margins, bogs, and hammocks
Curtiss' loosestrife	<i>Lythrum curtissii</i>	—	E	Swampy woods and seepages along calcareous rivers
Angularfruit milkvine	<i>Matelea gonocarpus</i>	—	T	Bluffs and floodplains
Pigmy pipes	<i>Monotropsis odorata</i>	—	E	Grows on <i>Cornus florida</i> roots
Twinberry	<i>Myrcianthes fragrans</i>	—	T	Hammocks
Fallflowering ixia	<i>Nemastylis floridana</i>	—	E	Clearing in swamps, marshes, and wet pine flatwoods
Florida beargrass	<i>Nolina atopocarpa</i>	—	T	Grassy areas of flatwoods, bordering savannas, and shell middens
Erect pricklypear	<i>Opuntia stricta</i>	—	T	Shell mounds and coastal areas
Cinnamon fern	<i>Osmunda cinnamomea</i>	—	CE	Swamps, bogs, and marshes
Royal fern	<i>Osmunda regalis</i>	—	CE	Swamps, bogs, and marshes
Plume polypody	<i>Peculuma plumula</i>	—	E	Hammocks
Blueflower butterwort	<i>Pinguicula caerulea</i>	—	T	Sandy to peaty soils of pine flatwoods, ditches, and roadsides

Table 2.3-2. Protected Plant Species Known to Occur in Flagler and St. Johns Counties and with the Potential for Occurrence in the Project Area (Continued, Page 2 of 2)

Common Name	Scientific Name	Designated Status		Preferred Habitat
		USFWS	FDACS	
Yellowflower butterwort	<i>Pinguicula lutea</i>	—	T	Sandy-peaty soils, pine flatwoods, seepage bogs, ditches, and roadsides
Yellow fringed orchid	<i>Platanthera ciliaris</i>	—	T	Bogs, swamps, marshes, pine savannas, flatwoods, floodplain forests, and forest slopes
Crested yellow orchid	<i>Platanthera cristata</i>	—	T	Sphagnum and sedge bogs, meadows, pine savannas, flatwoods, wet prairies, edges of swamps, and seepage slopes
White fringed orchid	<i>Platanthera blephariglottis</i> var. <i>conspicua</i>	—	T	Marshes, meadows, depressions, and bogs in pine savannas
Rose pogonia	<i>Pogonia ophioglossoides</i>	—	T	Sphagnum bogs, meadows, swamps, pine savannas, pine flatwoods, and prairies
Florida mountainmint	<i>Pycnanthemum floridanum</i>	—	T	Sandhills, pinelands, hammocks, and wet pinelands
St. John's black-eyed susan	<i>Rudbeckia nitida</i>	—	E	Moist flatwoods, prairies, and roadside ditches
Night flowering wild petunia	<i>Ruellia noctiflora</i>	—	E	Wet flatwoods and seepage slopes
Leafless beaked ladiestresses	<i>Sacola lanceolata</i>	—	T	Open pastures, roadsides, wet pine flatwoods, and sandhills
Hooded pitcher plant	<i>Sarracenia minor</i>	—	T	Flatwoods, bogs, and ditches
Florida ladiestresses	<i>Spiranthes floridana</i>	—	E	Pine flatwoods
Lacelip ladiestresses	<i>Spiranthes laciniata</i>	—	T	Shores, swamps, marshes, flatwoods, and wet sandy soil
Longlip ladiestresses	<i>Spiranthes longilabris</i>	—	T	Prairies, flatwoods, marshes, and sandy bogs
Giant airplant	<i>Tillandsia utriculata</i>	—	E	Hammocks, cypress swamps, and pinelands
Coontie	<i>Zamia pumila</i>	—	CE	Oak hammocks, pinelands, pastures, and shell middens
Atamasco lily	<i>Zephyranthes atamasco</i>	—	T	Low ground, rich, moist woods, wet pasture and meadows, and limestone out-crops in woods
Treat's Zephyrlily	<i>Zephyranthes atamasco</i> var. <i>treatiae</i>	—	T	Wet pine flatwoods, fire maintained, adjacent and roadsides

Note: E = endangered.
T = threatened.
CE = commercially exploited.

Sources: FDACS, 1998; Bureau of Entomology, Nematology and Plant Pathology – Botany Section, Contribution No. 38, 2nd Edition, Notes on Florida's Endangered and Threatened Plants; FNAI, 2005; Atlas of Florida Vascular Plants, 2005; and ECT, 2005.

Ferns and Fern Allies

Two species of true ferns, cinnamon fern (*Osmunda cinnamomea*) and royal fern (*Osmunda regalis*), and one fern ally, nodding club-moss (*Lycopodiella cernua*), were identified as potentially occurring within the study area. All three are classified as commercially exploited by FDACS.

The listed fern/fernlike species are fairly common throughout Florida, occur in a variety of wetland habitats, and are expected along the preferred corridor. Given their range in habitat, these species would be expected to persist in the corridor following the construction of the transmission line.

Grasses and Sedges

FDACS lists one sedge and three grass species that have the potential to occur within the study corridor. Chapman's sedge (*Carex chapmanii*) is listed as an endangered species by FDACS. It is a foot-tall herb with a terminal spike and yellowish-brown scales. It occurs in hammocks and other woodlands. Florida toothachegrass (*Ctenium floridanum*) is a state endangered grass species, which has a solitary curved one-sided spike that resembles a toothbrush. It occurs in pinelands. Caribbean crabgrass (*Digitaria filiformis* var. *dolicophylla*) is a state threatened grass species, which also primarily inhabits pinelands. It grows up to 1 meter in height with leaves that are rolled inward and two to four flowering branches. FDACS lists Florida beargrass (*Nolina atopocarpa*) as threatened. This fire-tolerant grass occurs in grassy areas of flatwoods, bordering savannas, and shell middens. This perennial grass has short stems with long and slender leaves and small, whitish flowers. A Florida Natural Areas Inventory (FNAI) record for Florida beargrass occurs in proximity to the preferred corridor, although it is found beyond the 1,500-ft buffer required to be mapped for the corridor. Listed species of grasses and sedges that may occur along the proposed alignment should persist after construction of the new transmission line.

Irises/Ixias

Two listed species of iris or ixia potentially occur along the transmission line corridor area. FDACS lists Bartram's ixia (*Calydorea caelestina*) as an endangered species. It oc-

curs in wet flatwoods and prairies. This perennial iris has bulb-like corms, one to three basal leaves, and one or two stem leaves. It has one or two blue to violet flowers with a white eye.

Fall flowering ixia (*Nemastylis floridana*) is also listed by FDACS as endangered. This plant occurs in clearings in swamps, marshes, and wet pine flatwoods. Fall flowering ixia is an herb with a bulb and narrow, overlapping leaves with an erect, violet or blue flower with a white eye. Both species of ixia would be able to coexist within the transmission line right-of-way.

Amaryllis/Lily

Two rain lilies, which are both in the Amaryllis family (a close relative to true lilies), are listed as threatened by FDACS—Atamasco lily and Treat's zephyrlily (*Zephyranthes atamasco* and *Z. atamasco* var. *treatiae*, respectively). They have long leaves and white to pinkish flowers. They may be found growing in wet flatwoods, wet pastures, and roadsides along the route. It is possible for rain lilies to coexist with the transmission line, once built, in wet areas with periodically maintained herbaceous cover, similar to wet pasture. The pine or Catesby's lily (*Lilium catesbaei*), a true lily, is also listed as threatened by FDACS. Catesby's lily is a perennial herb with alternate leaves and orange-pink flowers with darker freckles. This lily grows in wet flatwoods and bogs. Catesby's lily could potentially persist in the transmission line easement in areas where native shrub layers are not disturbed.

Orchids

There are 11 species of listed orchids that occur within Flagler and/or St. Johns Counties. Four species of ladiestresses could potentially occur in the study area. FDACS lists two species of ladiestresses as threatened. These orchids, lacelip ladiestresses (*Spiranthes laciniata*) and longlip ladiestresses (*Spiranthes longilabris*), are typically found within pine flatwoods, marshes, and other open, wet sandy areas. Lacelip ladiestresses is a terrestrial herb up to 24 inches tall with up to 50 white flowers spiraled in a single row on the inflorescence. The flowers have a yellowish lip that is lace-like at the tip. Longlip ladiestresses is also a terrestrial herb up to 24 inches in height with up to 30 whitish flowers

slightly spiraled with yellowish lips fringed at the tip. The third species of ladiestresses, Florida ladiestresses (*Spiranthes floridana*), is listed as endangered by FDACS. This species is mostly associated with pine flatwoods. It is also a terrestrial orchid growing up to 16 inches tall with up to 35 creamy-yellowish flowers in a spiraled, single rank on the inflorescence. The flowers have a lip with a yellowish center. Finally, the fourth species of ladiestresses, leafless beaked ladiestresses (*Sacoila lanceolata*), is also listed as threatened by FDACS. This terrestrial orchid can grow up to 24 inches tall from fleshy, thickened roots. The four to six basal leaves may disappear at flowering. The inflorescences can have up to 30 reddish or deep crimson flowers on a long stalk. These orchids grow in open pastures, roadsides, oak hammocks, wet pine flatwoods, and sandhills throughout most of Florida.

The other terrestrial orchids under review also typically inhabit flatwoods habitats. Many-flowered grasspink (*Calopogon multiflorus*) is a terrestrial orchid listed as an endangered species by FDACS. This orchid grows up to 24 inches tall and has up to 15 deep-rose flowers. Rose pogonia (*Pogonia ophioglossoides*) is often found growing with many-flowered grasspink. This terrestrial orchid is listed as threatened by FDACS. It grows up to 14 inches tall and has one to three pink to whitish flowers.

Four other closely related orchid species are listed as threatened by FDACS, namely, yellow-fringed orchid (*Platanthera ciliaris*), crested yellow orchid (*Platanthera cristata*), white-fringed orchid (*Platanthera blephariglottis* var. *conspicua*), and snowy orchid (*Habenaria nivea*). Yellow-fringed orchid is a terrestrial herb that can grow up to 1 meter tall. It can have 30 to 60 orange flowers with a fringed lip (2 centimeters [cm] long) and a spur (3.5 cm long), which is larger than the ovary. Crested yellow orchid is similar to yellow fringed orchid, but the spur is half as long as the ovary, and the raceme is narrower with smaller flowers. Unlike the previous two orchid species, white-fringed orchid has white flowers. It can grow up to 1 meter in height and has 30 to 50 flowers with a fringed lip (2 cm long) and spur (3 to 4 cm long). Snowy orchid can grow up to 24 inches tall and has intensely white flowers with a spur two times longer than the ovary.

If present along the corridor, these orchids could potentially coexist in the transmission line right-of-way where shrubs do not overshadow the understory.

Finally, FDACS lists spike crested coralroot (*Hexalectris spicata*) as endangered. This terrestrial orchid has flowers that are golden brown with purple veins with three-lobed, red-violet lips and no leaves at flowering. This orchid species typically grows in woods and would not be expected to persist after clearing of the right-of-way.

Milkweeds

Two species of listed milkweeds could potentially occur along the preferred corridor. FDACS lists angularfruit (*Matelea gonocarpus*) as a threatened species. This milkweed species is a twining vine with milky sap, simple opposite heart-shaped leaves, and clusters of five-petaled yellow or greenish-brown flowers that produce smooth, angled follicles or pods. It occurs along bluffs and floodplains. FDACS lists southern milkweed (*Asclepias viridula*) as threatened. This herbaceous perennial has opposite leaves and several clusters of greenish flowers. It occurs in wet flatwoods. Southern milkweed could potentially persist within the transmission line right-of-way, if present. However, angularfruit typically occurs within wooded areas that would be cleared for construction of the transmission line right-of-way.

Composites

Three species of listed composites could potentially occur within the study area. Fringe-leaf tickseed (*Coreopsis integrifolia*) is a state-listed endangered species. This composite grows in floodplains and along riverbanks. It is an herbaceous perennial that can grow up to 1 meter tall. It has simple, opposite leaves and yellow ray and disc flowers. Lakeside sunflower (*Helianthus carnosus*) is another state-listed endangered composite, which occurs in wet sandy soils in flatwoods. It can also grow to 1 meter tall and has a basal rosette from one side of a bulbous base and a main stem from the other. It has a solitary head of yellow disc flowers. St. John's black-eyed Susan (*Rudbeckia nitida*) is another state-listed endangered composite, which occurs in moist flatwoods, prairies, and roadside ditches. It grows up to 1.3 meters tall and has light reddish-brown disc flowers and

yellow, drooping ray flowers. These composites could coexist along the transmission line right-of-way.

Insectivorous Plants

Listed species of insectivorous plants such as butterworts and pitcher plants potentially occur along the preferred corridor. There are two butterwort species that could potentially occur in pine flatwoods, ditches, and along roadsides on the preferred corridor. FDACS lists blueflower butterwort (*Pinguicula caerulea*) as threatened. It is a terrestrial, insectivorous plant with a basal rosette of yellowish-green leaves and deep to pale violet flowers. Yellowflower butterwort (*Pinguicula lutea*) is also listed as threatened by FDACS. This insectivorous plant is similar to blueflower butterwort but produces yellow flowers. Hooded pitcherplant (*Sarracenia minor*) is a perennial herb with erect leaves up to 1 meter tall. It has a green pitcher, which turns reddish in the sun and is marked with white spots. The pitcher also has a broad arching hood over the mouth. The flowers are yellow and odorless. It occurs in flatwoods, bogs, and ditches. These insectivorous species could potentially persist along the new transmission line right-of-way.

Other Plant Species

Coastal vervain (*Glandularia maritima*) is a state-listed endangered species of coastal dunes and strands and pine rocklands. It is a perennial herb that has creeping stems, rose-purplish flowers, and deeply toothed leaves. Although coastal vervain typically inhabits more coastal locales, there is a low likelihood that it could potentially occur along the preferred corridor. If present, coastal vervain would be expected to persist after construction of the transmission line.

Nodding pinweed (*Lechea cernua*) is listed by FDACS as a threatened species. It occurs in openings within fire-maintained scrub habitats. This perennial herb is branched near the base and has small basal and stem leaves and numerous small flowers. No shrub habitats have been identified along the preferred corridor; therefore, nodding pinweed is unlikely to be affected by this project.

Pondspice (*Litsea aestivalis*) is listed as endangered by FDACS. This shrub grows up to 3 meters tall and has zig-zag branches and deciduous, alternate leaves with acute tips. The yellow flowers form clusters and produce bright red dupes. It occurs in peaty soils along margins of ponds, bayheads, and hammocks in cypress swamps. If present, this species could be compatible with the location of the transmission line right-of-way.

Cardinal flower (*Lobelia cardinalis*) is listed as threatened by FDACS. This perennial herb can grow up to 1.5 meters tall and has bright red flowers. It occurs along riverbanks, springs, and coastal hammocks. If present, cardinal flowers should persist after the transmission line is constructed.

Pigmy pipes (*Monotropsis odorata*) is listed by FDACS as an endangered species. It grows on flowering dogwood (*Cornus florida*) roots. This herb has no chlorophyll and is dirty white to brownish-purple in color. It produces several nodding flowers. Although not expected within the preferred corridor, if present, pigmy pipes would likely be impacted if flowering dogwoods were removed during construction of the transmission line.

Twinberry (*Myrcianthes fragrans*) is listed as a threatened species by FDACS. It primarily occurs in hammocks. Twinberry is a tree that grows up to 20 meters in height. It has pale reddish-brown to tan bark, opposite leaves with a fragrance like nutmeg, three to seven flowers with white petals, and red fruits. Typically, twinberry occurs in coastal hammocks and is not likely to be affected by the preferred corridor.

Erect pricklypear (*Opuntia stricta*) is a cactus that primarily occurs on shell mounds and coastal areas. It is listed by FDACS as a threatened species. Erect pricklypear is a much-branched cactus that can grow up to 2 meters tall. It has bright yellow flowers and fleshy red fruits or pears. Typically, it is an inhabitant of more coastal locales. However, if present, erect pricklypear should persist after construction of the transmission line.

Plume polypody (*Peccluma plumula*) is a fern with short-creeping stems that grows on rocks or is epiphytic. It is listed by FDACS as an endangered fern. It primarily grows in

hammocks. Plume polypody would be expected to persist along the edge of the right-of-way where shaded by adjacent overstory.

Florida mountainmint (*Pycnanthemum floridanum*) is a threatened mint that occurs in sandhills, hammocks, and wet pinelands. It is a perennial herb much-branched above the middle with green, glabrous opposite leaves and a terminal, cyme inflorescence. It would be expected to coexist within the transmission line after construction.

Night-flowering wild petunia (*Ruellia noctiflora*) is listed as an endangered species by FDACS. It grows in moist flatwoods and on seepage slopes. It is an herb up to 30 cm tall with blue or white flowers. This wild petunia could potentially persist after construction of the transmission line.

Curtiss' loosestrife (*Lythrum curtissii*) is listed as endangered by FDACS. It is a small herb with alternate to opposite (lower ones) leaves in branches and on the main stem (leaves in branches abruptly smaller than those of the main stem). It produces deep purple flowers in the axils of the leaves. It grows in swampy woods and seepages along calcareous rivers. It is possible that this species could occur within or adjacent to the preferred corridor. Since this species does sometimes occur along open habitats, it is possible that Curtiss' loosestrife could coexist with the new transmission line.

Giant wild pine (*Tillandsia utriculata*) is the largest *Tillandsia* species in the state of Florida with rosettes of leaves up to more than 6 ft tall. It produces zig-zagging tall flower stalks. This bromeliad species could occur in cypress swamps, hammocks, and pineland within the study corridor. FDACS lists the giant wild pine as endangered, although it is quite common. The endangered status of the species is mostly due to the Mexican bromeliad weevil, whose larvae tunnel through the plant base. Weevils, in addition to habitat destruction and over-harvesting, threaten bromeliad species in Florida. It is unlikely this epiphytic bromeliad species would inhabit the cleared and maintained transmission line given they grow attached to tree trunks. However, they could persist adjacent to the transmission line where suitable habitat is available.

Coontie (*Zamia pumila*) is a cycad or primitive palm and is listed as commercially exploited by FDACS. It is a low-growing, fernlike shrub with dark shiny green leaves that are pinnately compound and arching. It has distinctive large reddish-brown cones borne at ground level. Coontie occurs in a variety of well-drained sites including oak hammocks, pinelands, pastures, and shell middens. It is possible that coontie could coexist in drier portions of the new transmission line right-of-way where shrub development occurs.

2.3.3.2 Wildlife Species

The presence or potential for occurrence of wildlife species within a given area is primarily related to the presence of suitable habitat for cover, feeding, and reproduction. In general, the type and quality of wildlife habitats vary with vegetation type and structure, surrounding land use, and hydrology. For this reason, wildlife habitat types can frequently be equated with vegetation community types.

To determine the vegetation community (i.e., habitat) types intersected by the preferred corridor, land use and land cover classification maps were obtained from SJRWMD. These maps identified natural community systems as well as developed lands in various stages of disturbance. Using the SJRWMD classification (see Section 2.3.1), community systems identified in the corridor that serve as the principal wildlife habitat types include pine and wet prairies, pine flatwoods, forested uplands, and wetlands such as cypress domes and mixed hardwood swamp. Habitats such as improved pasture, silvicultural lands (pine plantations), transportation rights-of-way, landscaped residential development, and commercial/industrial development are of relatively lower value to wildlife due to the limited diversity of niches, which is reflected in the lower wildlife species diversities in such habitats.

Developed areas such as residential, commercial, and industrial areas offer little habitat value to native vegetation and wildlife. Such areas occur primarily in the northern section (St. Augustine area near the St. Johns, Deerwood, and Vermont substations). In contrast, the undeveloped habitats in and along the preferred corridor include a variety of upland and wetland communities representing a wide range of habitat values for specific plant and wildlife species. Areas of relatively high habitat value within the preferred corridor

area include: (1) the pine flatwoods, swamp, and wet prairie communities dominating the majority of the corridor west of I-95; and (2) the mixed hardwood swamp associations along the Pellicer Creek crossing.

The status and potential for occurrence of species recommended for study (i.e., species listed as endangered, threatened, or of special concern) in the SJPP study area were determined by a habitat analysis, literature survey, agency contacts, and ground surveys. A total of 20 vertebrate species, including 5 reptiles and amphibians, 12 birds, and 3 mammals, was identified as species occurring or possibly occurring in the study area. The status and potential for occurrence of these vertebrate species in and along the preferred corridor are summarized in Table 2.3-3 and discussed in the following paragraphs.

Amphibians

Gopher Frog (*Rana capito*)

The gopher frog is a species of special state concern as identified by FWC. This amphibian is typically considered a commensal species to the gopher tortoise. Therefore, habitat requirements tend to be xeric upland habitats that support gopher tortoise populations. Therefore, along the preferred corridor wherever xeric habitats are found, there is a moderate likelihood this species may be present.

Reptiles

American Alligator (*Alligator mississippiensis*)

The alligator is listed as threatened due to similarity of appearance by USFWS and a species of special concern by FWC. This reptile would almost certainly be present in wetlands and water bodies along the preferred corridor.

Eastern Indigo Snake (*Drymarchon corais couperi*)

This distinctive large, black snake can occur in suitable habitats throughout Florida. It has a wide range of habitat preferences and prey species. Often considered as a gopher tortoise commensal, it can be found in xeric habitats, but also uses more mesic habitats as well. There is a moderate likelihood it would be found along the preferred corridor. Both USFWS and FWC list the indigo as a threatened species.

Table 2.3-3. State or Federally Listed Wildlife Species Potentially Occurring within the Study Area

Common Name	Scientific Name	Designated Status*		Likelihood of Occurrence within Preferred Corridor
		USFWS	FWC	
<u>Amphibians</u>				
Gopher frog	<i>Rana capito</i>	—	SSC	Moderate—would likely be found only in xeric habitats where gopher tortoise burrows are located
<u>Reptiles</u>				
American alligator	<i>Alligator mississippiensis</i>	T(S/A)	SSC	High—likely found in all water bodies, wetlands crossed by the preferred corridor
Eastern indigo snake	<i>Drymarchon corais couperi</i>	T	T	Moderate—would likely be found in a variety of xeric/mesic habitats usually associated with gopher tortoises
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>	—	SSC	Moderate—likely to be found in xeric habitats usually associated with gopher tortoises
Gopher tortoise	<i>Gopherus polyphemus</i>	—	SSC	Moderate—likely found in more xeric portions of preferred corridor
<u>Birds</u>				
Limpkin	<i>Aramus guarauna</i>	—	SSC	Low—likely only in riverine habitats, possibly along Pellicer Creek
Little blue heron	<i>Egretta caerulea</i>	—	SSC	Moderate in wetlands and water bodies; no known nesting colonies near preferred corridor
Snowy egret	<i>Egretta thula</i>	—	SSC	Moderate in wetlands and water bodies; no known nesting colonies near preferred corridor
Tricolored heron	<i>Egretta tricolor</i>	—	SSC	Moderate in wetlands and water bodies; no known nesting colonies near preferred corridor
White ibis	<i>Eudocimus albus</i>	—	SSC	High—common in wetlands, wet pastures; no known nesting colonies near preferred corridor
Wood stork	<i>Mycteria americana</i>	E	E	Moderate in wetlands, ditches within preferred corridor; closest known nesting colony is approximately 3 miles east of preferred corridor (Matanzas Marsh)
Least tern	<i>Sterna antillarum</i>	—	T	Low—usually along sandy habitats of Florida’s east coast; however, can be found in open or sandy habitats inland
Peregrine falcon	<i>Falco peregrinus</i>	—	E	Low—winters in Florida along open areas near large water bodies or over coastline; such habitats are generally lacking in preferred corridor

Table 2.3-3. State or Federally Listed Wildlife Species Potentially Occurring within the Study Area (Continued, Page 2 of 2)

Common Name	Scientific Name	Designated Status*		Likelihood of Occurrence within Preferred Corridor
		USFWS	FWC	
Southeastern American kestrel	<i>Falco sparverius paulus</i>	—	T	Moderate—likes open habitats along pine flatwoods, pastures, roadsides
Bald eagle	<i>Haliaeetus l. leucocephalus</i>	T	T	High—eagles are located throughout northeast Florida, and due to large foraging ranges, would be expected to occur along preferred corridor; closest known nest to preferred corridor is in St. Johns County (SJ018) and is approximately 1,700 ft west of corridor
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	SSC	Low—no known clans exist within study area according to FWC
Florida scrub jay	<i>Aphelocoma coerulescens</i>	T	T	Low—no known records from study area according to FWC
<u>Mammals</u>				
Florida mouse	<i>Peromyscus floridanus</i>	—	SSC	Low—associated with xeric habitats and gopher tortoise burrows; records for the two counties generally are for the coastal habitats east of the preferred corridor
Sherman's fox squirrel	<i>Sciurus niger shermani</i>	—	SSC	High—associated with pine flatwoods, xeric oak, sandhill communities found along preferred corridor
Florida black bear	<i>Ursus americanus floridanus</i>	—	T	Low—associated with large wooded systems and swamps, probably more to the west of the study area

* E = endangered.

T = threatened.

T(S/A) = threatened due to similarity in appearance to a federally listed species.

SSC = species of special concern.

Sources: FWC, 2004.

ECT, 2005.

Florida Pine Snake (*Pituophis melanoleucus mugitus*)

The Florida pine snake inhabits all of northern Florida in a variety of xeric habitats, such as longleaf pine/xeric oak woods, sand pine scrub, and sandhill sites. They are fossorial and, therefore, often found associated with gopher tortoise burrows.

To the extent these habitat types are crossed by the preferred corridor, there is a moderate likelihood of occurrence for this animal along the preferred corridor.

Gopher Tortoise (*Gopherus polyphemus*)

The gopher tortoise's range in Florida includes all of the study area. It is likely to be found in xeric habitats along the preferred corridor. Since it prefers burrows in sunny locations, xeric habitats along existing road or transmission line rights-of-way may be particularly suited to this species. FWC currently lists the gopher tortoise as a species of special concern.

Birds**Limpkin (*Aramus guarauna*)**

FWC lists the limpkin as a species of special concern. Its range is primarily north-central Florida, and it is found in slow-moving waterways inhabited by the apple snail. This bird's likelihood of occurrence in the preferred corridor is considered low since Pellicer Creek is the only likely habitat along the preferred corridor.

Little Blue Heron (*Egretta caerulea*)

This wading bird is listed as a species of special concern by FWC and is found in suitable wetlands throughout Florida. They prefer freshwater habitats for foraging. This heron may be found foraging in suitable habitats along the preferred corridor.

Snowy Egret (*Egretta thula*)

FWC lists snowy egrets, like the other wading birds, as a species of special concern. This bird is widely distributed in Florida in both fresh and saltwater systems. It may occur in wetlands along the preferred corridor.

Tricolored Heron (*Egretta tricolor*)

The tricolored heron (formerly called Louisiana heron) is a species of special concern as listed by FWC. It likes estuarine habitats but can be found foraging in almost any wetland system. It may occur along the preferred corridor.

White Ibis (*Eudocimus albus*)

The white ibis is actually one of the most common wading birds in Florida, but FWC lists it as a species of special concern. Large flocks of this bird are often seen foraging in shallow marshes or wet pastures. The white ibis is likely to occur along the preferred corridor.

Wood Stork (*Mycteria americana*)

The wood stork is an endangered species according to both USFWS and FWC. This large bird prefers nesting in cypress swamps. The closest known nesting colony is found in Matanzas Marsh approximately 3 miles east of the preferred corridor. The corridor selection process ensured that known wood stork colonies were avoided. However, individuals of the species almost certainly would be found foraging in marshes and ditches along the preferred corridor.

Least Tern (*Sterna albifrons*)

FWC lists this small bird as threatened. It is typically a coastal species, nesting on gravel or sandy areas such as beaches, roads, or parking lots. While colonies have been reported inland in Florida, the likelihood of its occurrence along the preferred corridor is considered low.

Peregrine Falcon (*Falco peregrinus*)

This state-listed endangered bird winters in Florida. It is often seen near coastlines or over open marshes or water bodies where it hunts waterfowl and shorebirds. Due to such habitats being absent from the preferred corridor, its likelihood of occurrence is considered low.

Southeastern American Kestrel (*Falco sparverius paulus*)

This subspecies of the American kestrel is a common resident of open land habitats throughout Florida. The more northern subspecies migrates here in the winter months, but the southeastern kestrel breeds here in summer. Since it prefers open habitats for foraging, it is commonly seen alongside road and transmission line rights-of-way. FWC lists it as threatened, and it could possibly be found along the preferred corridor.

Bald Eagle (*Haliaeetus leucocephalus*)

Both USFWS and FWC currently list the bald eagle as threatened. The eagle is making a comeback in population numbers in the United States, and, in Florida, eagle nests are becoming more common. According to FWC records, one eagle nest is known to occur within 0.5 mile of the preferred corridor. This nest was found approximately 1,700 ft west of the preferred corridor in St. Johns County. The nest tree falls outside the recommended primary and secondary protection zones set by St. Johns County's Code of Ordinances of 750 ft and 1,500 ft, respectively, and the primary zone of 750 ft prescribed by USFWS's Habitat Management Guidelines. This location is depicted in Attachment 2-4 at the end of this chapter.

Red-Cockaded Woodpecker (*Picoides borealis*)

This small woodpecker is listed as endangered by USFWS and threatened by FWC. It has very specific habitat requirements—old age pine (usually longleaf or slash) that is infected with red-heart disease. Due to the active silvicultural operations throughout the corridor vicinity, no known clans of the bird are known. Therefore, its potential for occurrence is low.

Florida Scrub Jay (*Aphelocoma c. coerulescens*)

Florida scrub jays are a bluish-grey bird with specific habitat requirements. They like open oak scrub habitats with minimal canopy cover. Both USFWS and FWC currently list this bird as threatened. Due to the limited potential for oak scrub habitat along the preferred corridor, the likelihood of occurrence for this species is low.

Mammals**Florida Mouse (*Peromyscus floridanus*)**

The Florida mouse is also recognized as a commensal to the gopher tortoise, commonly found residing in tortoise burrows. FWC lists the species as a species of special concern. Its range in north Florida is along the Atlantic coast and further inland from the preferred corridor. Although gopher tortoises may exist within the preferred corridor, the Florida mouse's likelihood of occurrence is low.

Sherman's Fox Squirrel (*Sciurus niger shermani*)

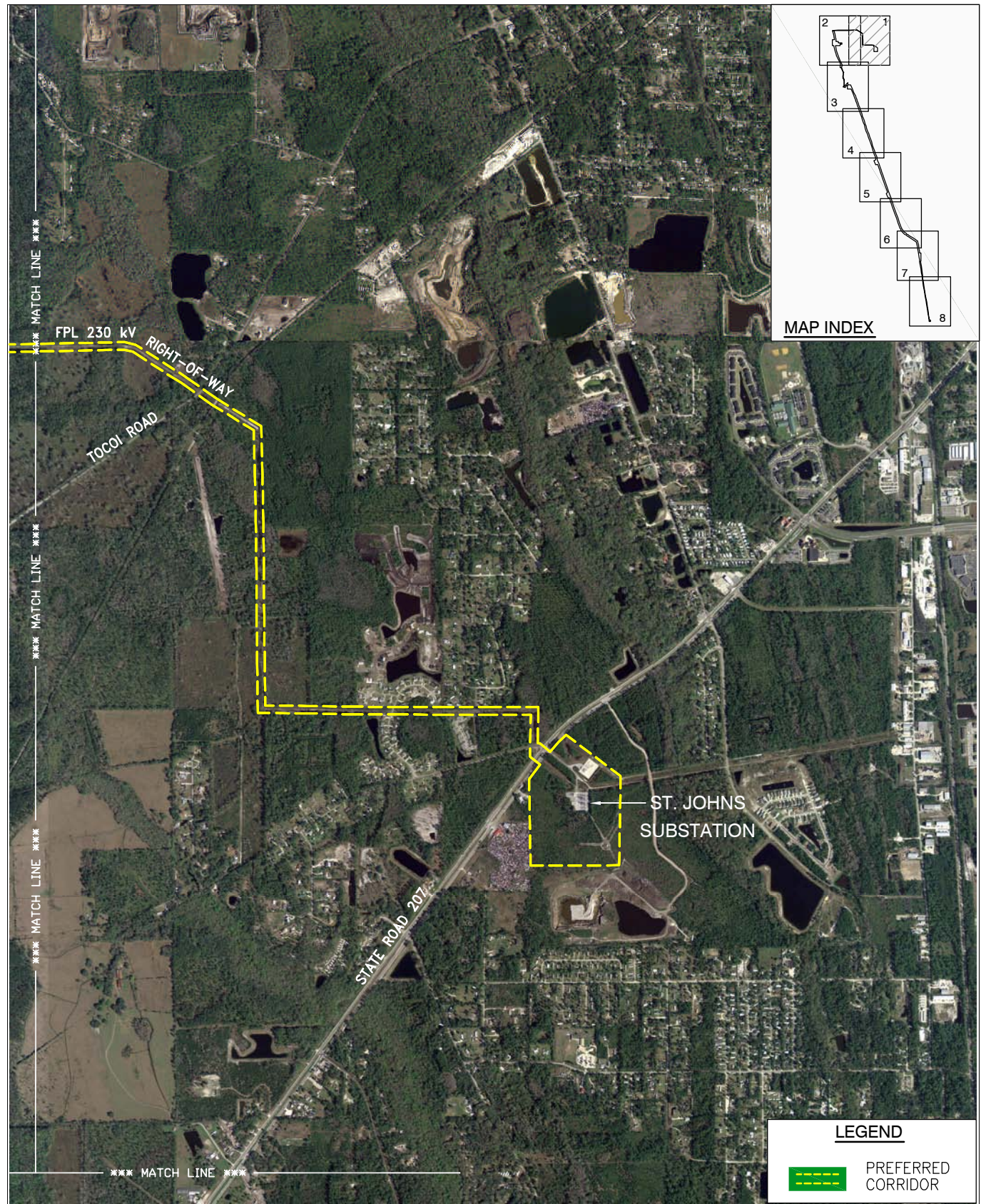
This squirrel is likely to occur in the study area and along the preferred corridor. FWC lists the species as a species of special concern. It would be expected to be found in the drier pine flatwoods, xeric oak, or sandhill communities along the preferred corridor.

Florida Black Bear (*Ursus americanus floridanus*)

FWC currently lists the Florida black bear as threatened. This large mammal is known to occur west of the study area and prefers large swamps and dense thickets. There would be a low likelihood of occurrence of the animal along the preferred corridor in appropriate habitats. The fact the preferred corridor follows existing linear facilities, such as I-95, would minimize impacts to the bear's habitat.

2.3.4 OTHER ENVIRONMENTAL FEATURES

The preceding subsections present relevant environmental information regarding the biological and water resources within and near the SJPP Project transmission line preferred corridor. No additional information has been determined necessary to describe environmental characteristics of this corridor.



ATTACHMENT 2-1.

AERIAL PHOTOGRAPH : MAP 1 OF 8

Source: SJRWMD, 2004; ECT, 2005.



GRAPHIC SCALE

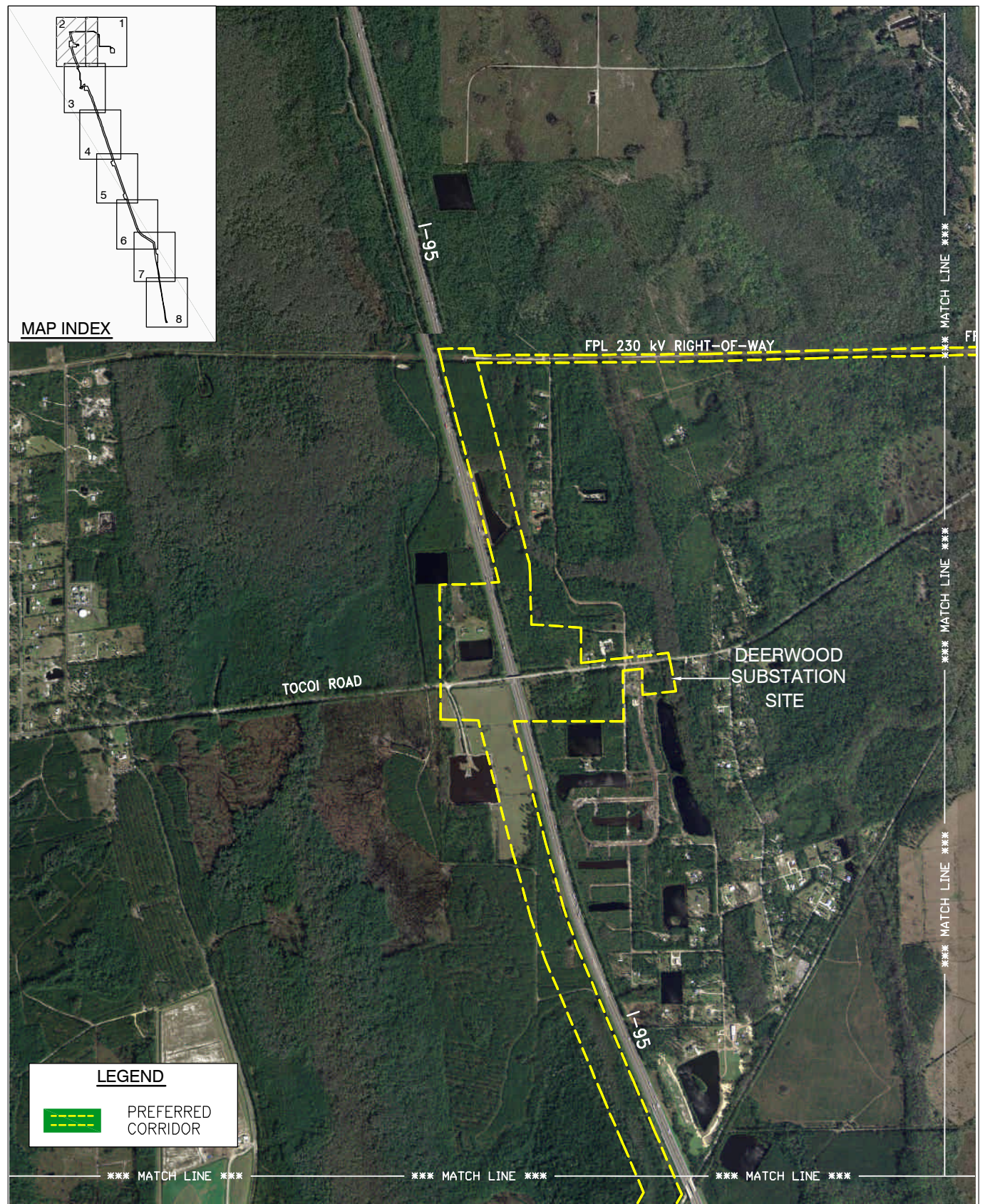
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SCALE IN FEET



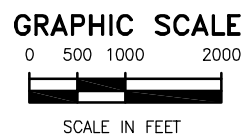
FPL

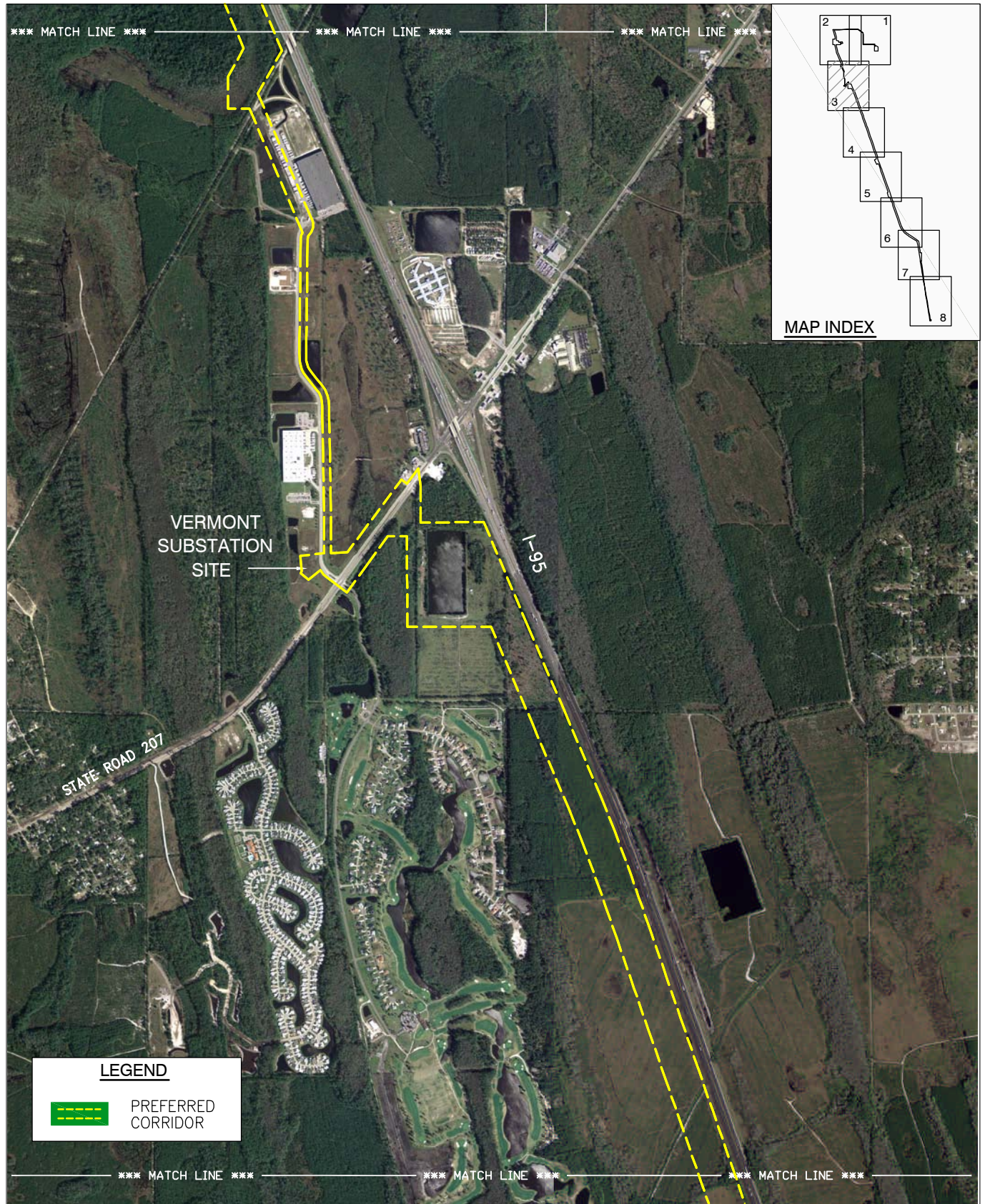


ATTACHMENT 2-1.

AERIAL PHOTOGRAPH : MAP 2 OF 8

Source: SJRWMD, 2004; ECT, 2005.





ATTACHMENT 2-1.

AERIAL PHOTOGRAPH : MAP 3 OF 8

Source: SJRWMD, 2004; ECT, 2005.



GRAPHIC SCALE

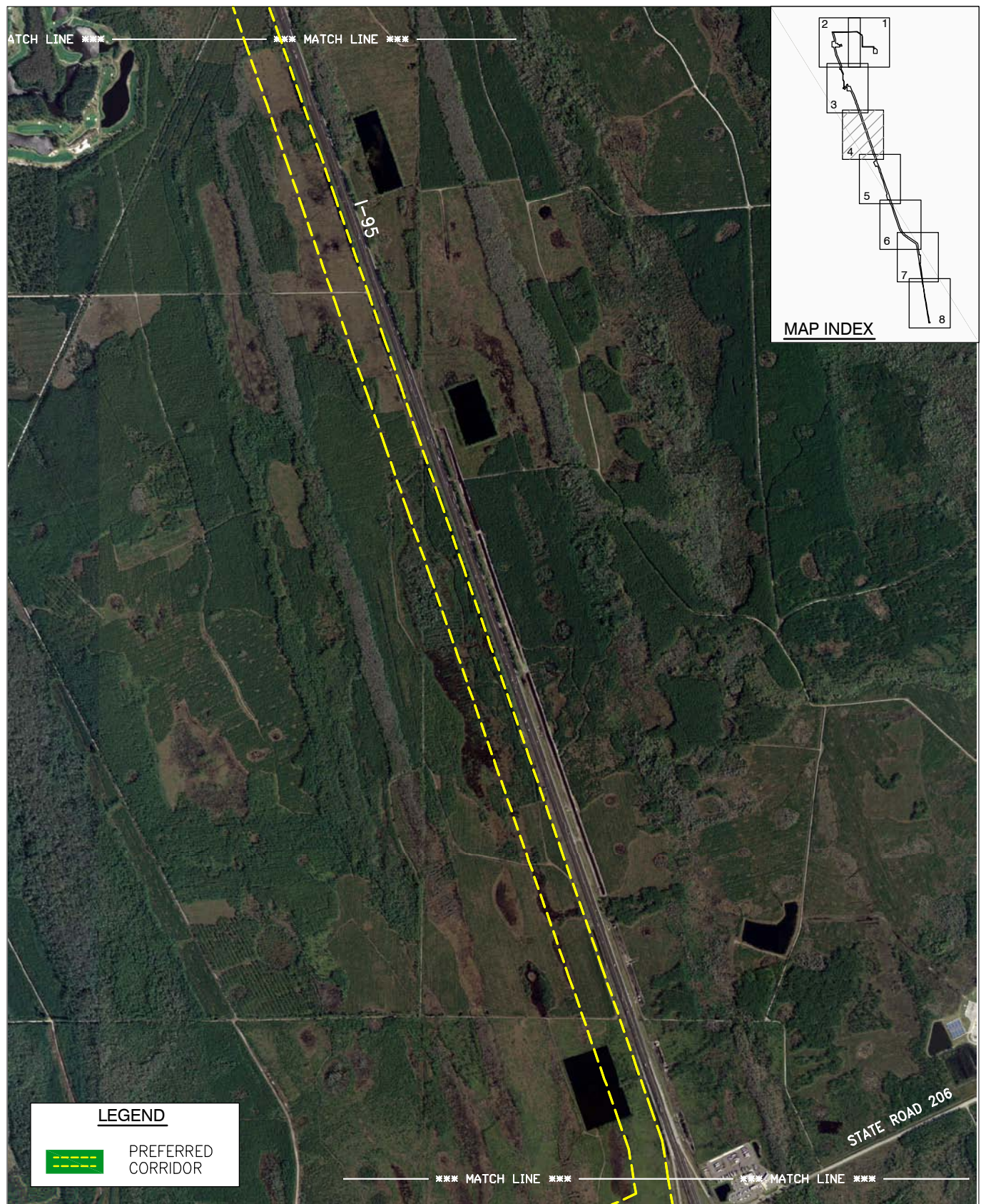
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SCALE IN FEET



FPL



ATTACHMENT 2-1.

AERIAL PHOTOGRAPH : MAP 4 OF 8

Source: SJRWMD, 2004; ECT, 2005.



GRAPHIC SCALE

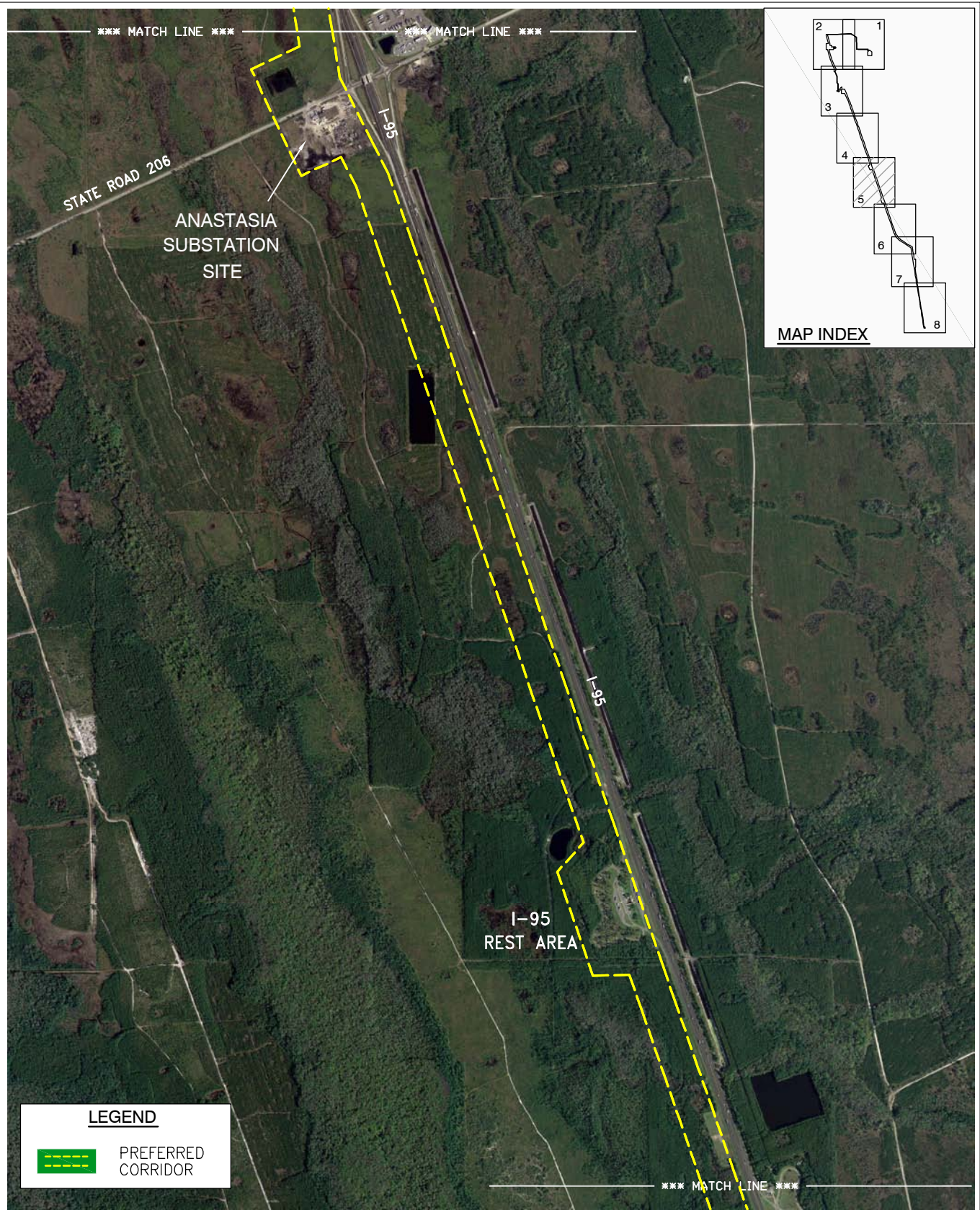
0 500 1000 2000



SCALE IN FEET



FPL



ATTACHMENT 2-1.

AERIAL PHOTOGRAPH : MAP 5 OF 8

Source: SJRWMD, 2004; ECT, 2005.



GRAPHIC SCALE

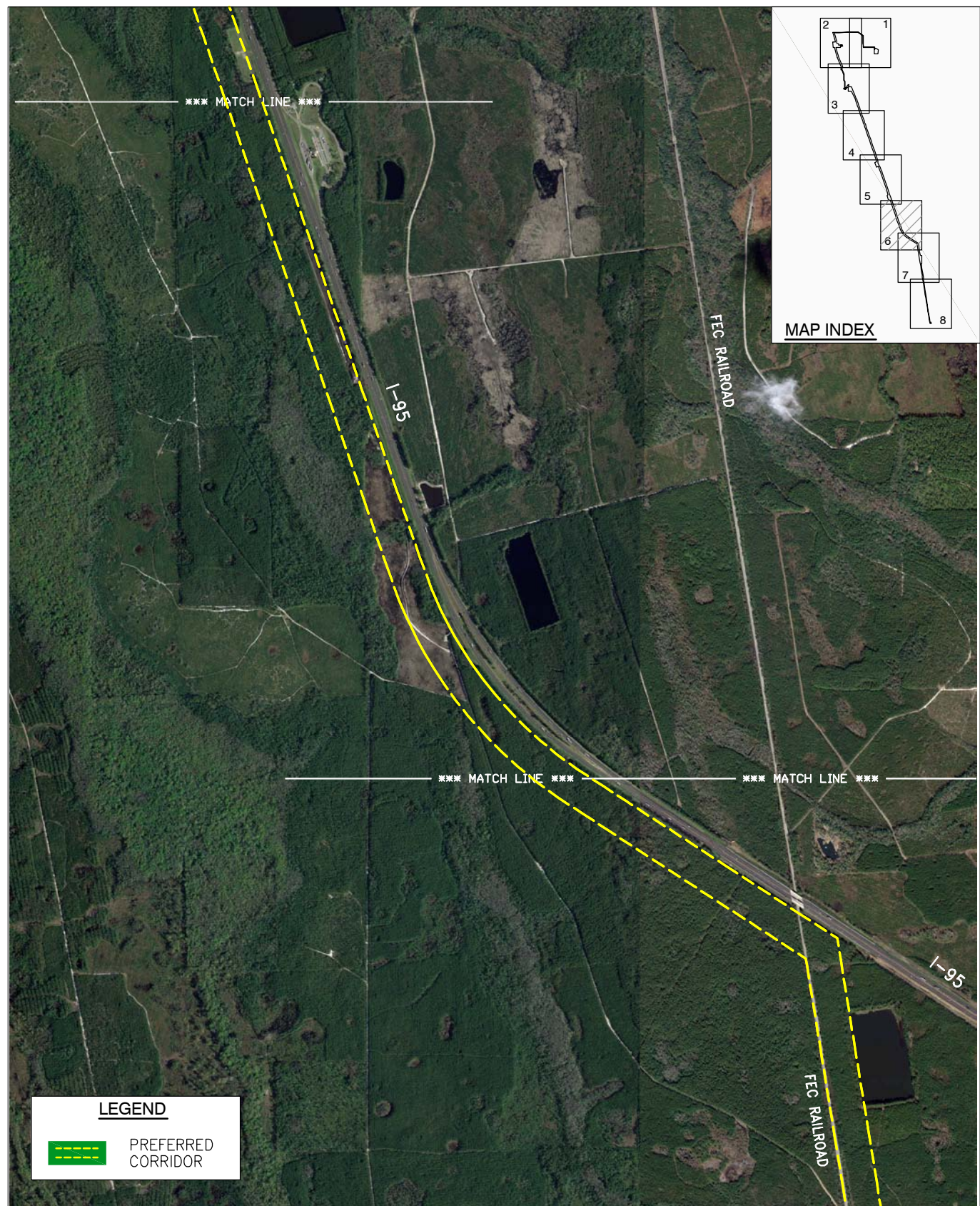
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SCALE IN FEET



FPL



ATTACHMENT 2-1.

AERIAL PHOTOGRAPH : MAP 6 OF 8

Source: SJRWMD, 2004; ECT, 2005.



GRAPHIC SCALE

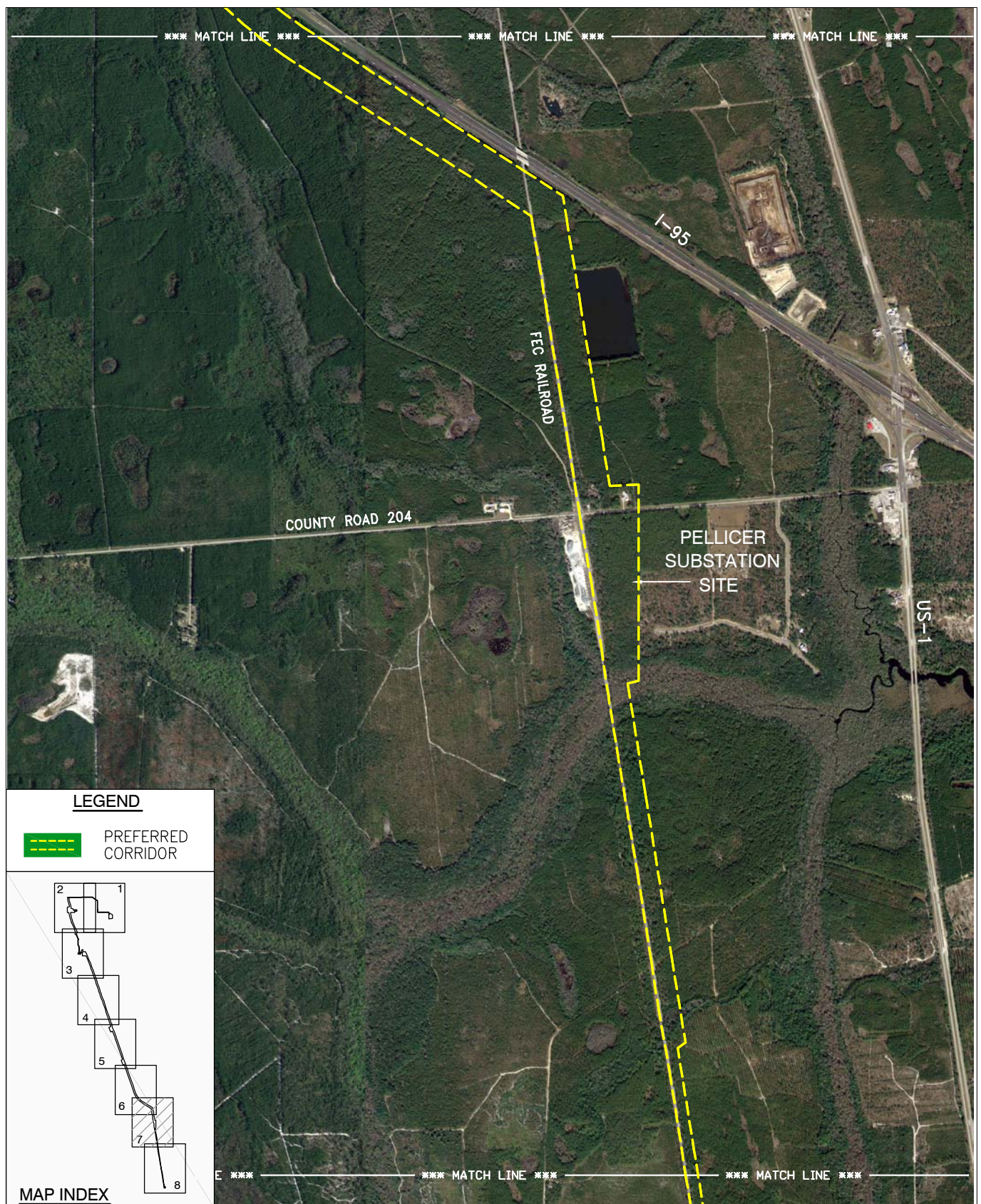
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SCALE IN FEET

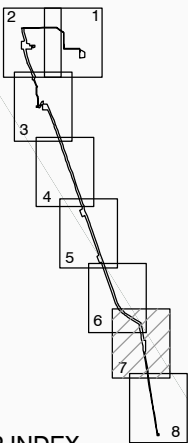


FPL



LEGEND

 PREFERRED CORRIDOR



MAP INDEX

ATTACHMENT 2-1.

AERIAL PHOTOGRAPH : MAP 7 OF 8

Source: SJRWMD, 2004; ECT, 2005.



GRAPHIC SCALE

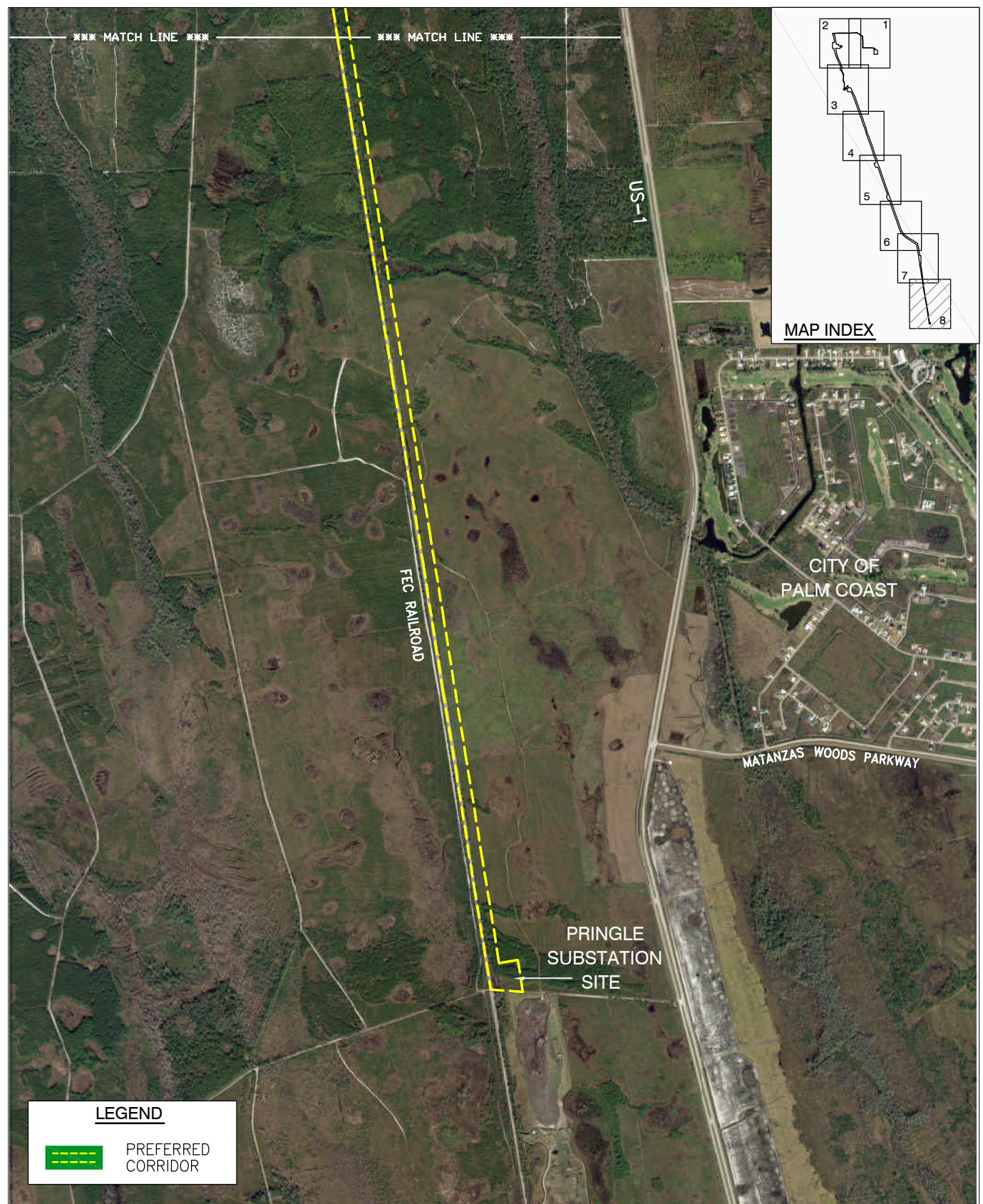
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SCALE IN FEET



FPL



ATTACHMENT 2-1.

AERIAL PHOTOGRAPH : MAP 8 OF 8

Source: SJRWMD, 2004; ECT, 2005.



GRAPHIC SCALE

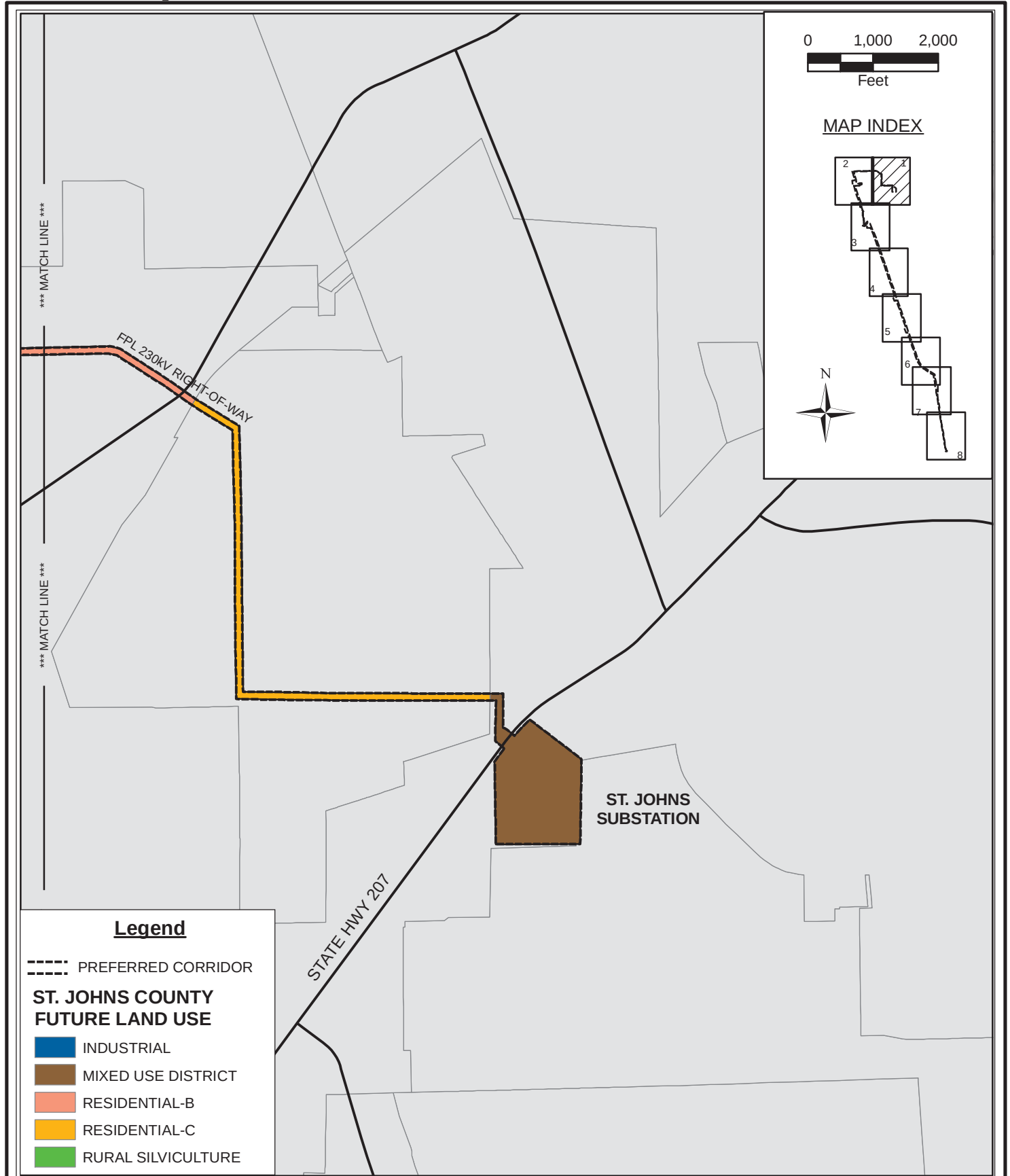
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SCALE IN FEET



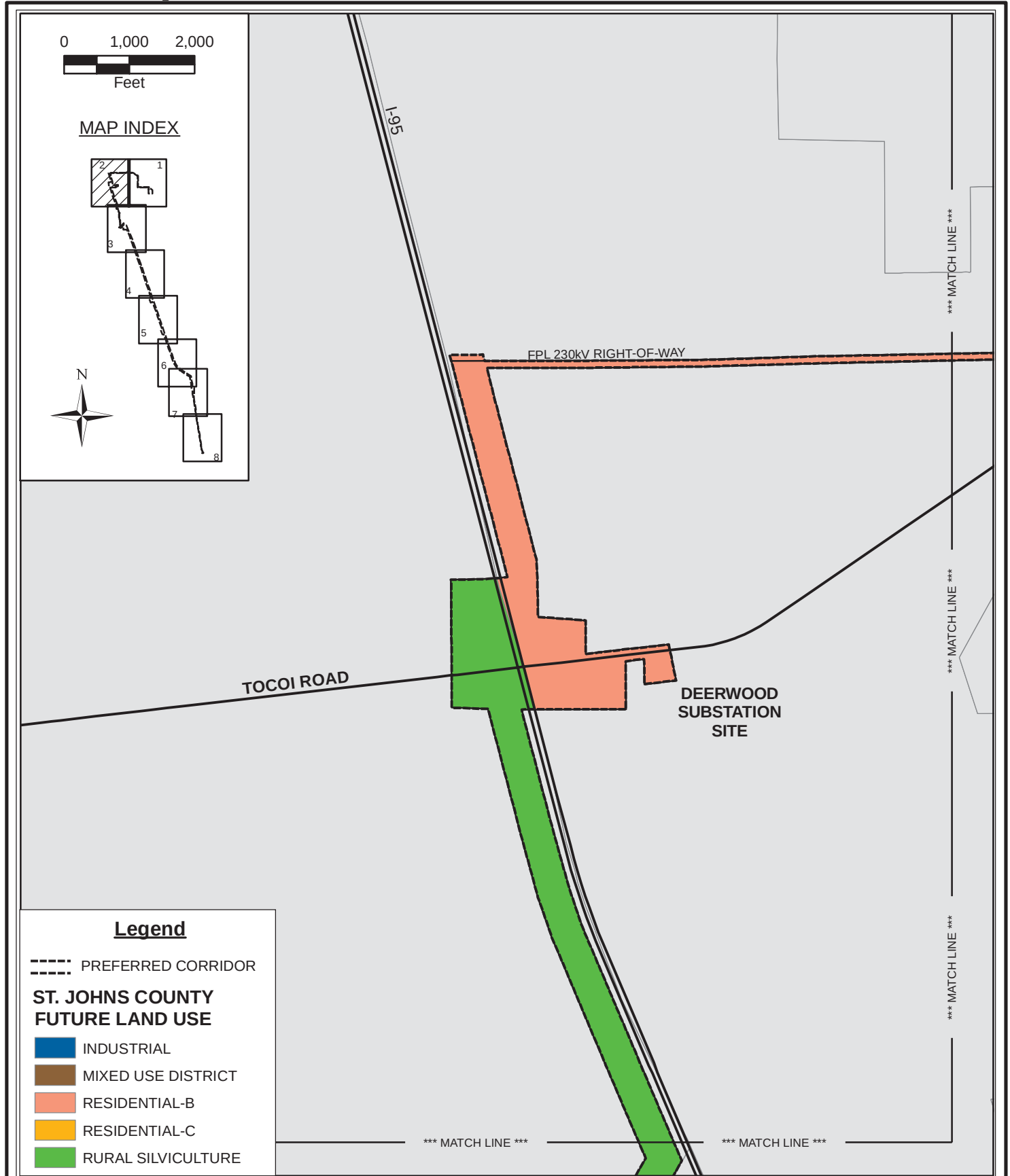
FPL



ATTACHMENT 2-2.
FUTURE LAND USE: MAP 1 OF 8

Sources: St. Johns County, 2005; ECT, 2005.

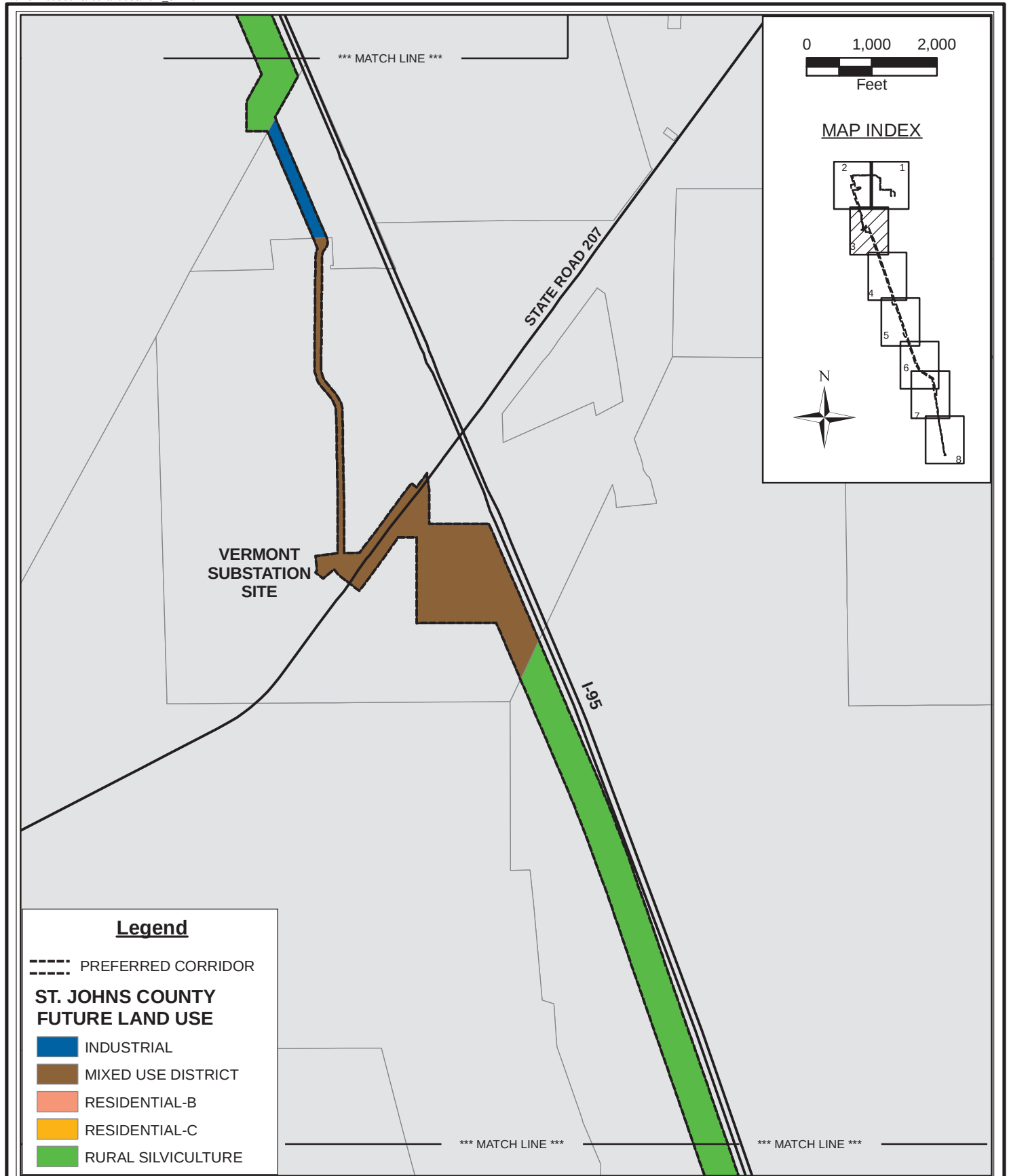




ATTACHMENT 2-2.
FUTURE LAND USE: MAP 2 OF 8

Sources: St. Johns County, 2005; ECT, 2005.

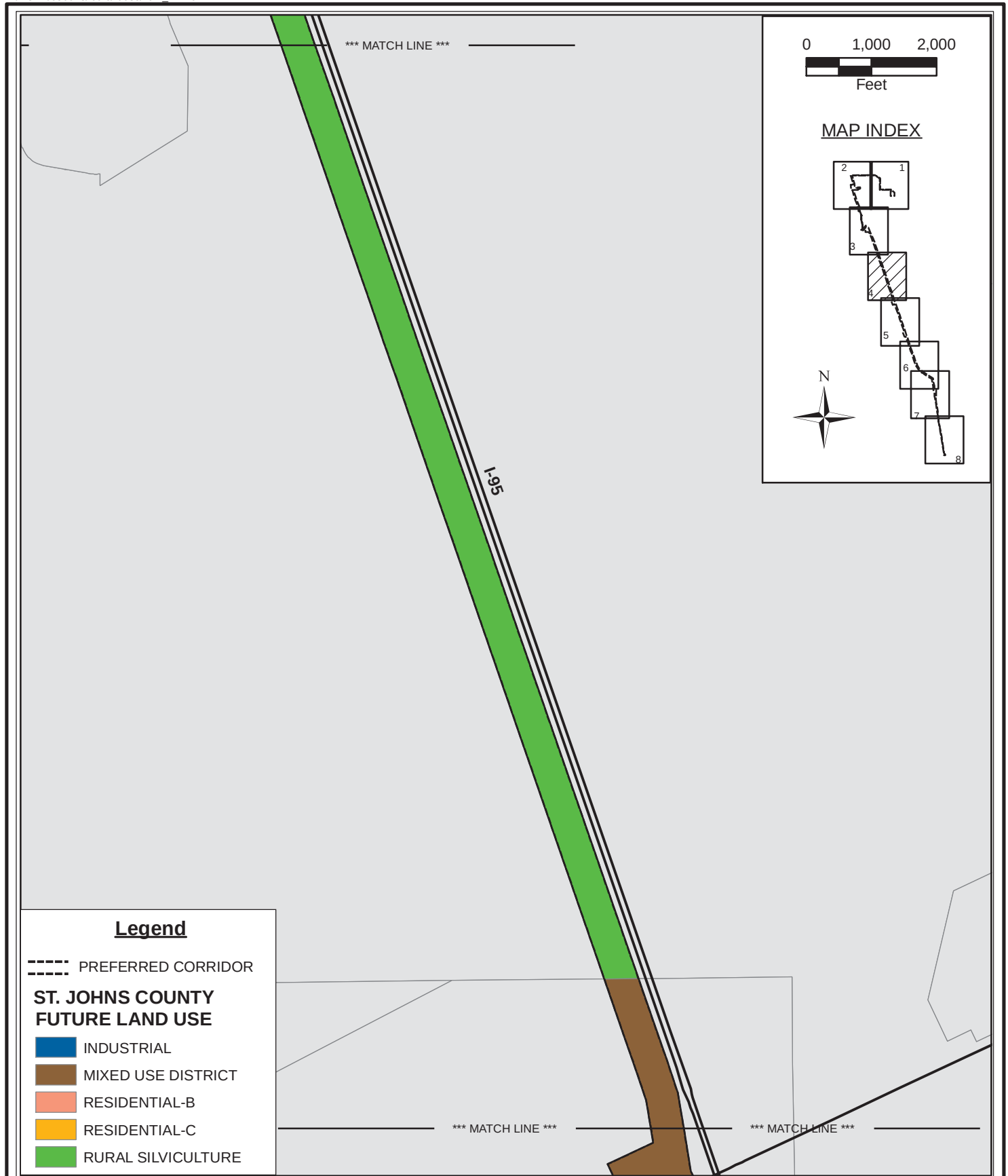




ATTACHMENT 2-2.
FUTURE LAND USE: MAP 3 OF 8

Sources: St. Johns County, 2005; ECT, 2005.

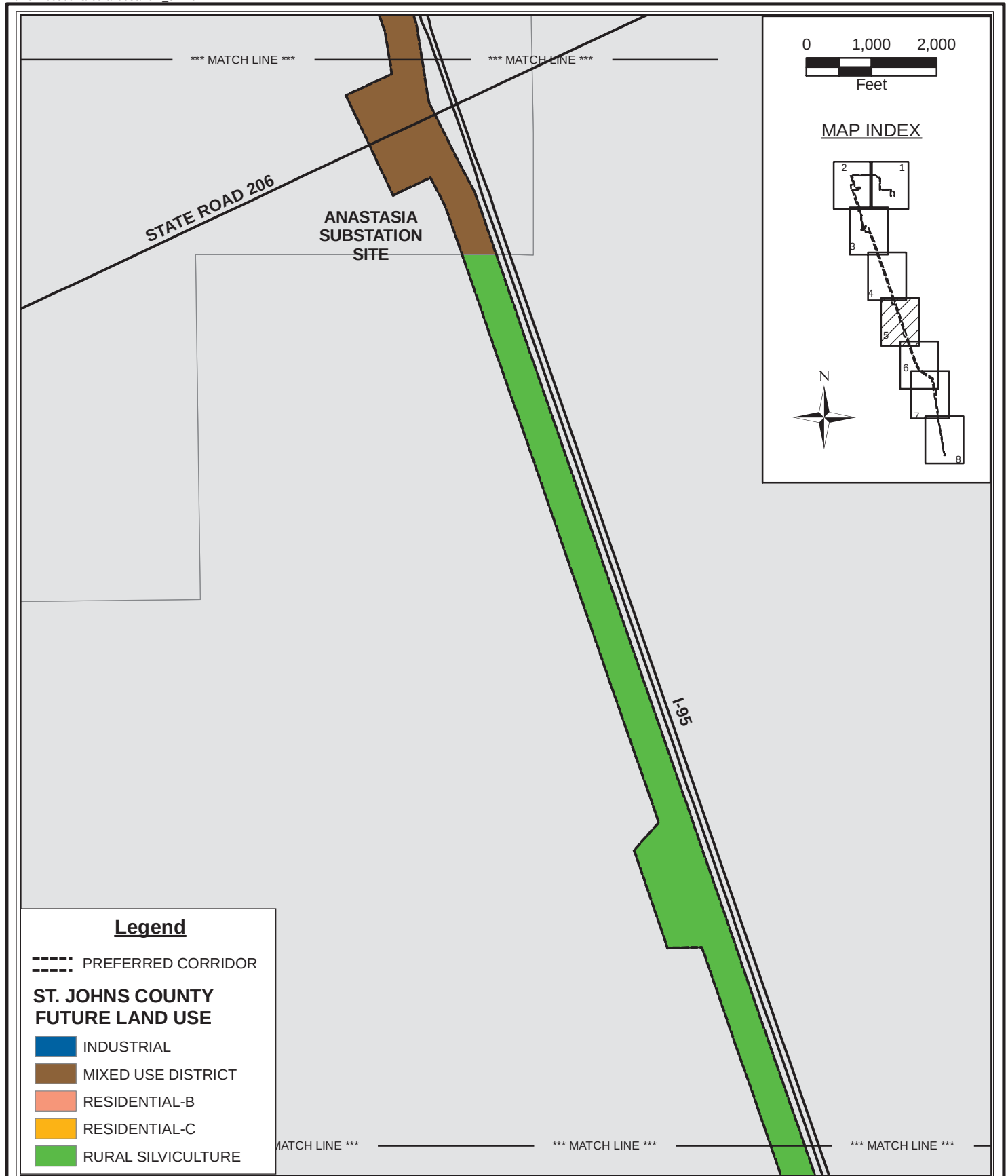




ATTACHMENT 2-2.
FUTURE LAND USE: MAP 4 OF 8

Sources: St. Johns County, 2005; ECT, 2005.

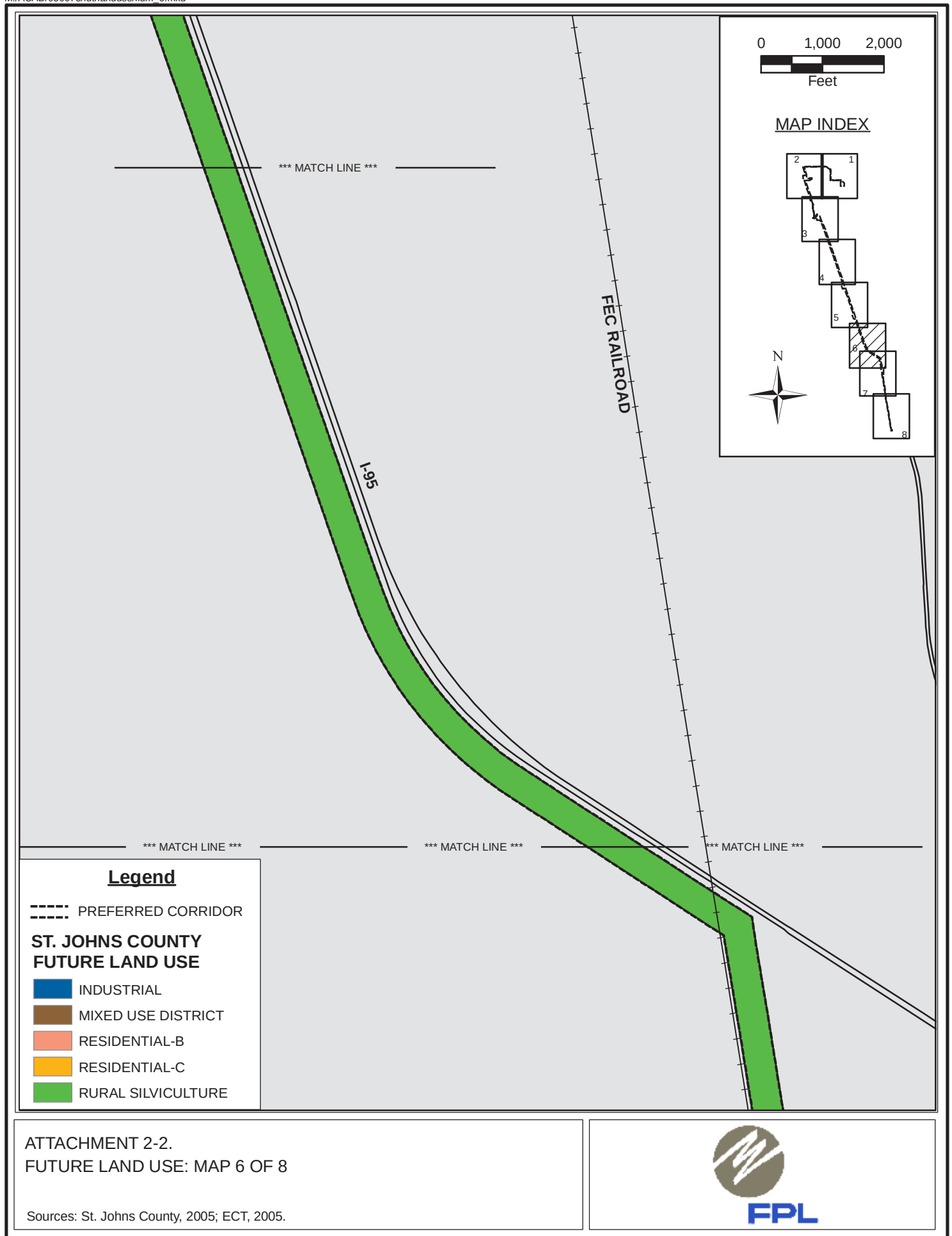


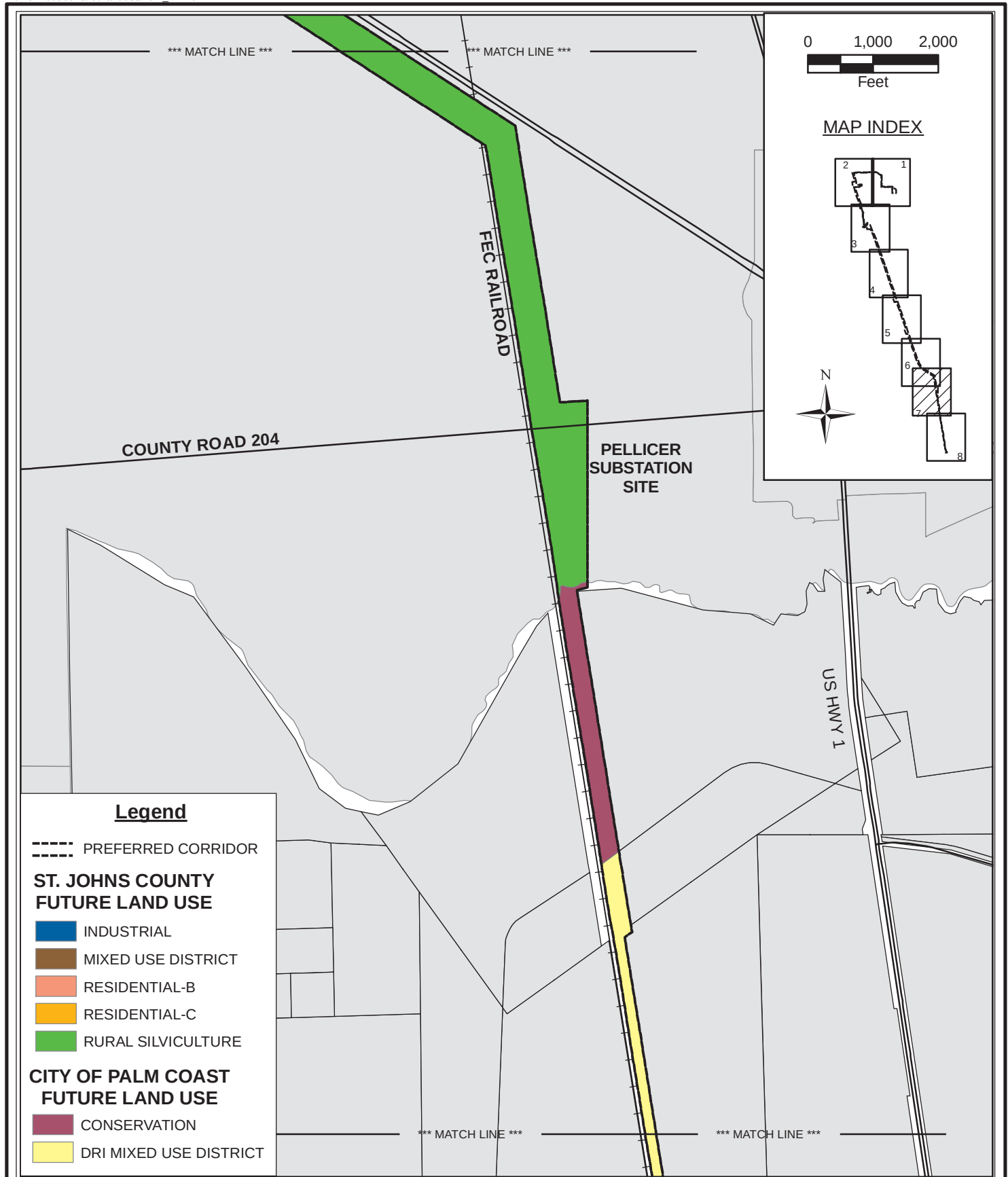


ATTACHMENT 2-2.
FUTURE LAND USE: MAP 5 OF 8

Sources: St. Johns County, 2005; ECT, 2005.



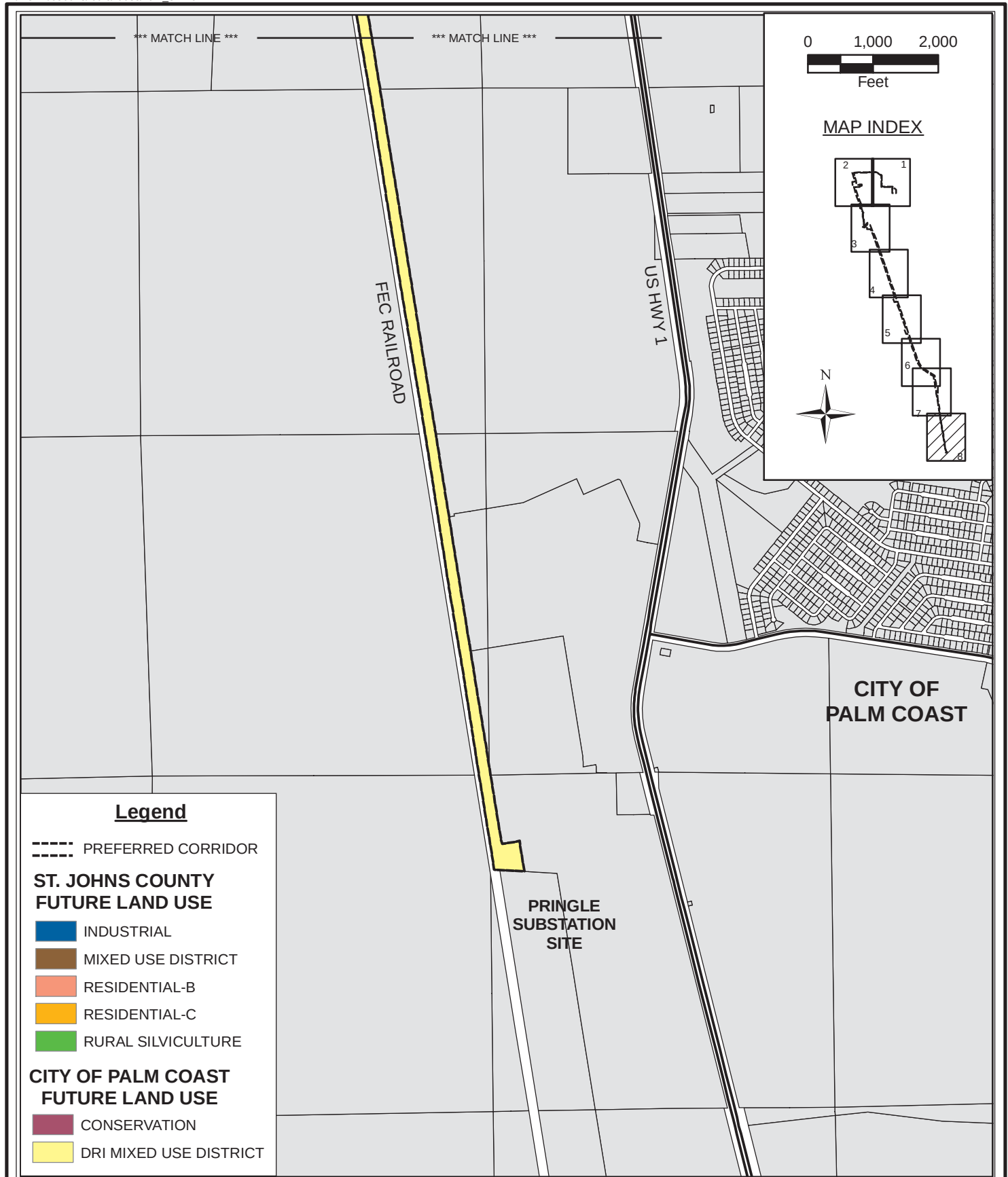




ATTACHMENT 2-2.
FUTURE LAND USE: MAP 7 OF 8

Sources: St. Johns County, 2005; City of Palm Coast, FL, 2005; ECT, 2005.

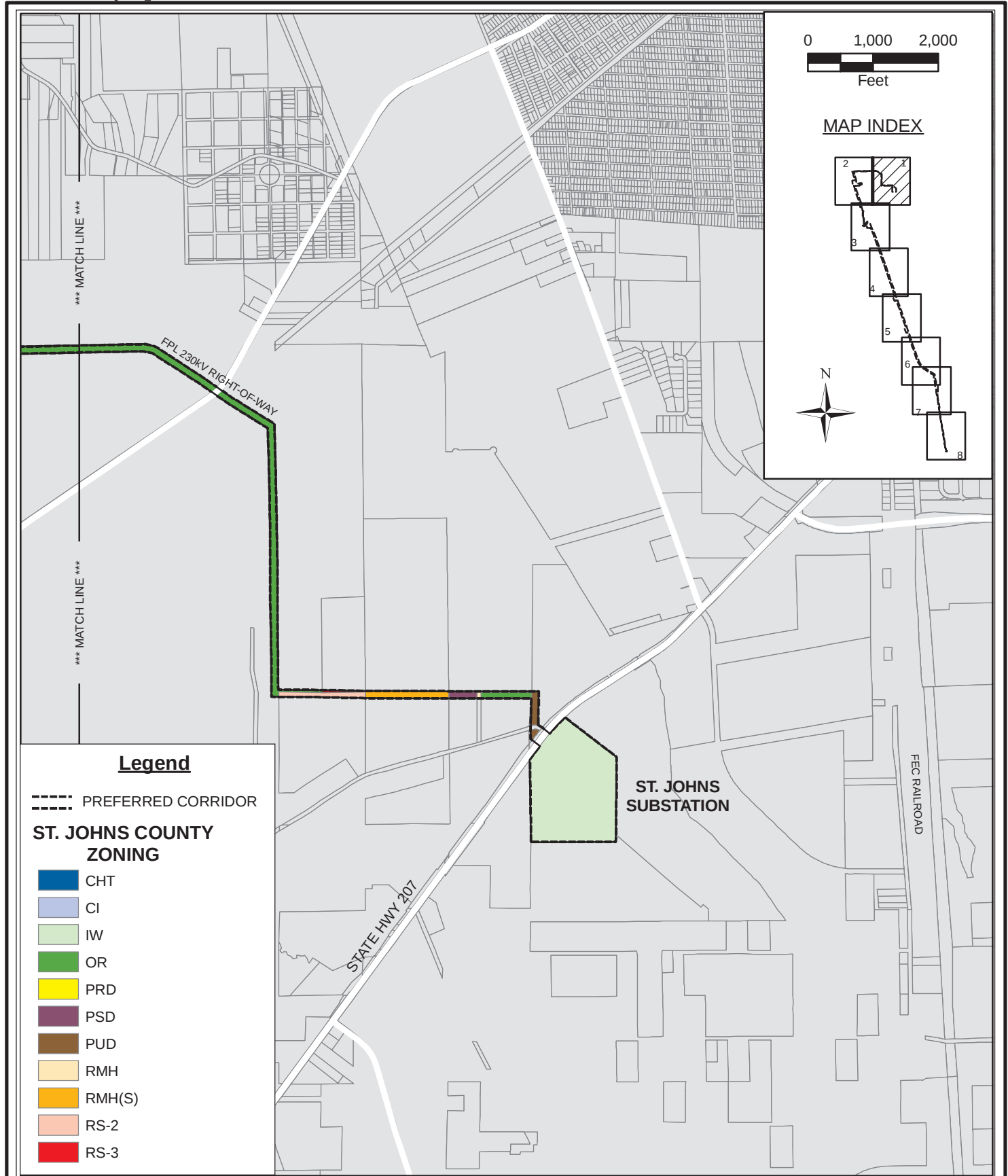




ATTACHMENT 2-2.
FUTURE LAND USE: MAP 8 OF 8

Sources: FPL, 2005; St. Johns County, 2005; City of Palm Coast, FL, 2005; ECT, 2005.

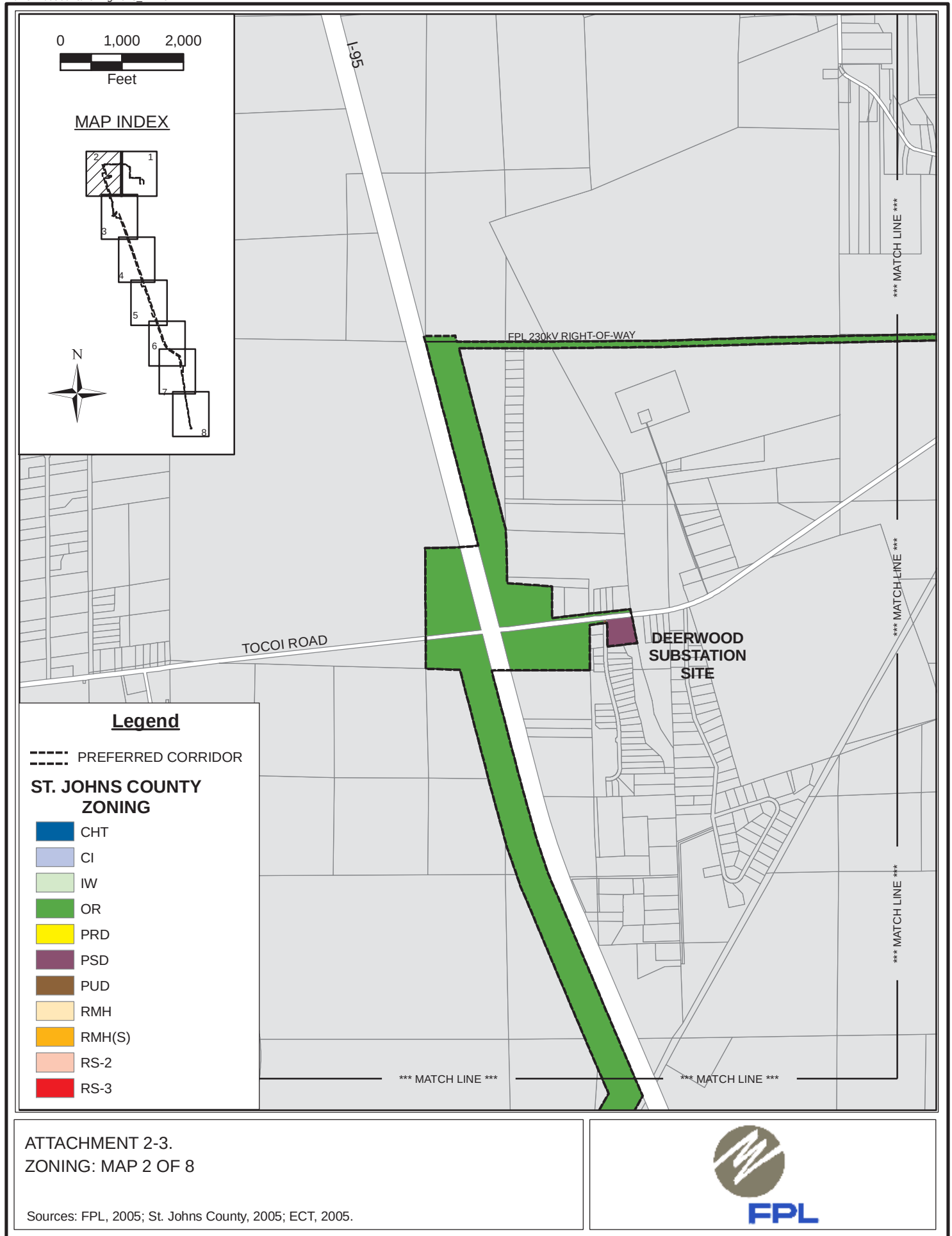


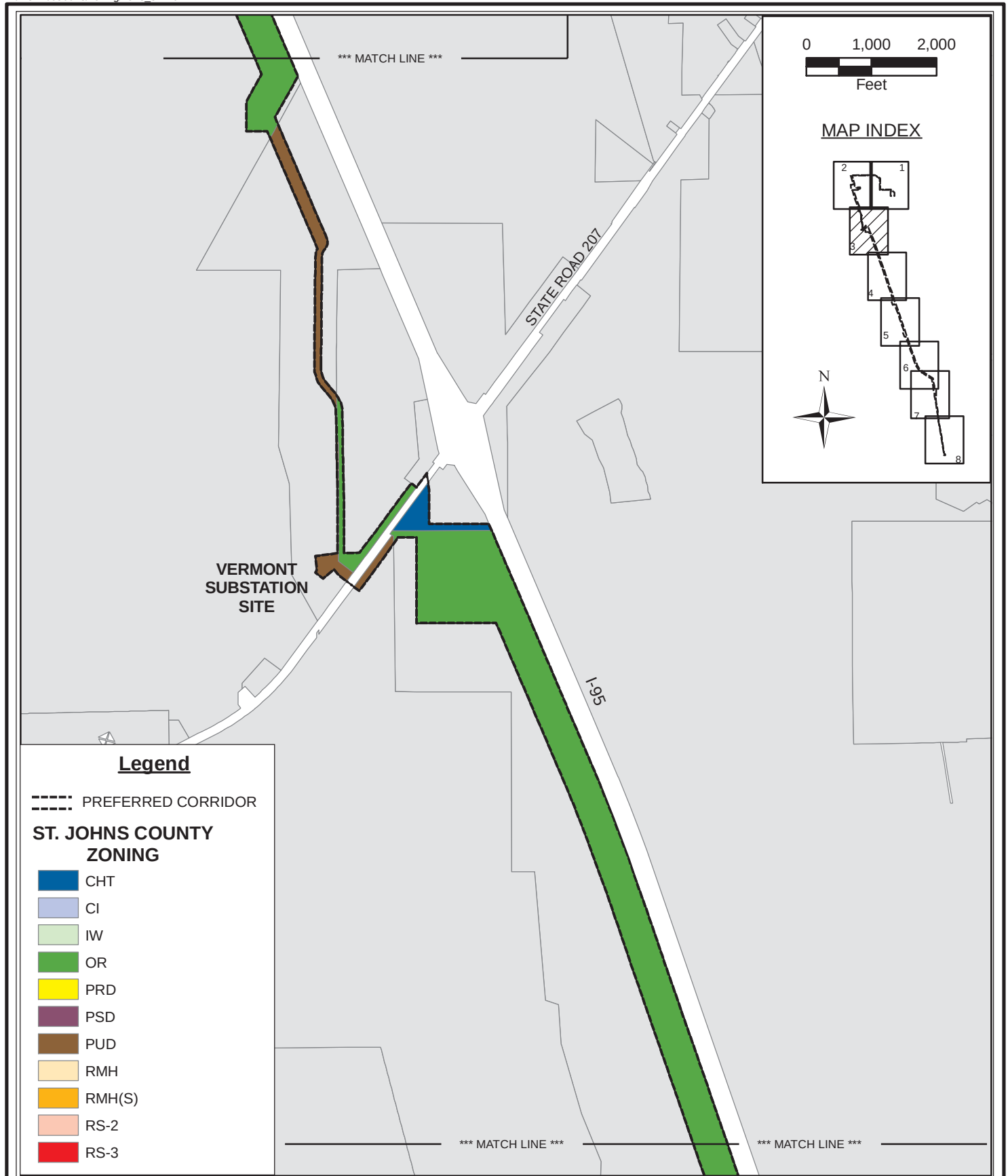


ATTACHMENT 2-3.
ZONING: MAP 1 OF 8

Sources: FPL, 2005; St. Johns County, 2005; ECT, 2005.



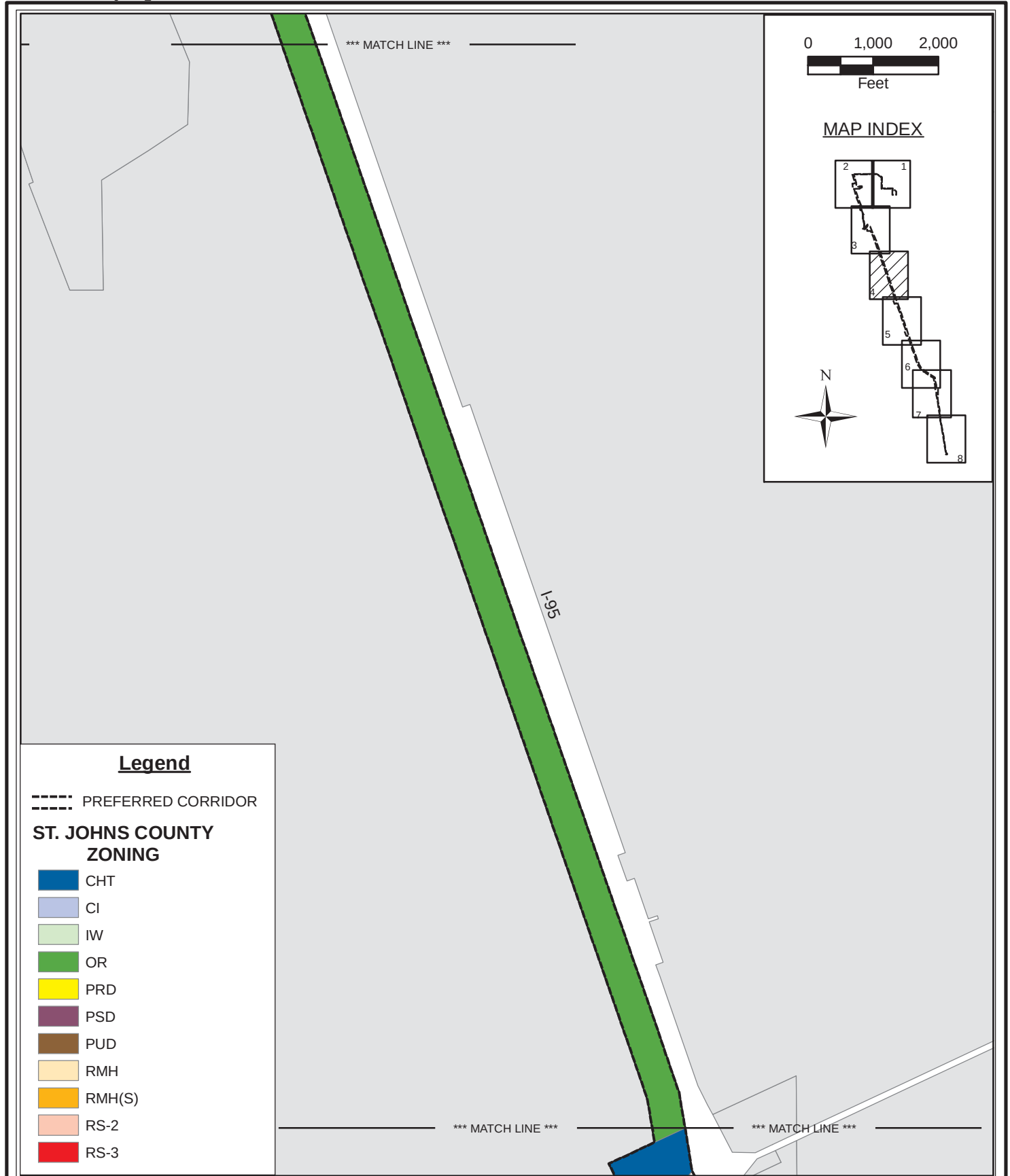




ATTACHMENT 2-3.
ZONING: MAP 3 OF 8

Sources: FPL, 2005; St. Johns County, 2005; ECT, 2005.

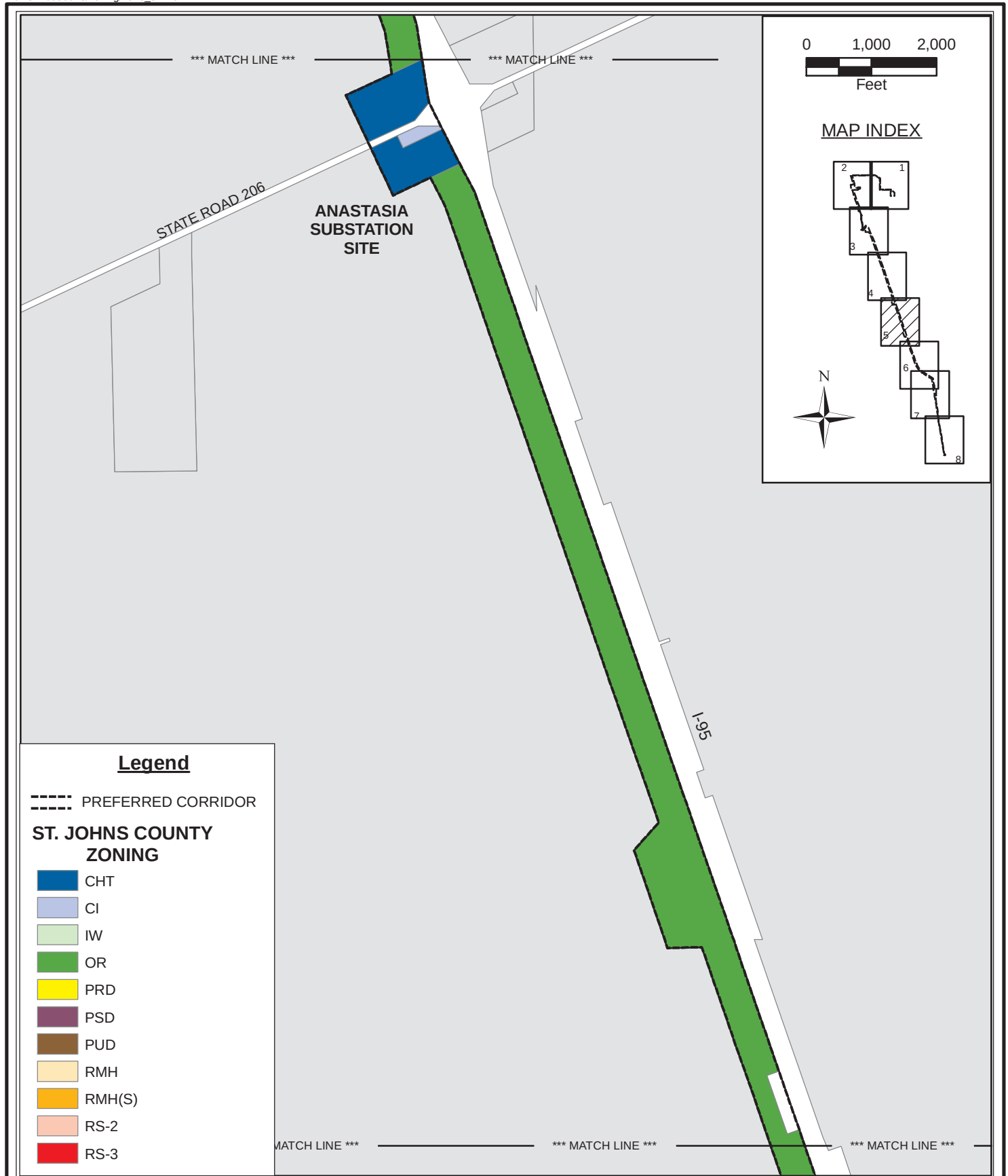




ATTACHMENT 2-3.
ZONING: MAP 4 OF 8

Sources: FPL, 2005; St. Johns County, 2005; ECT, 2005.

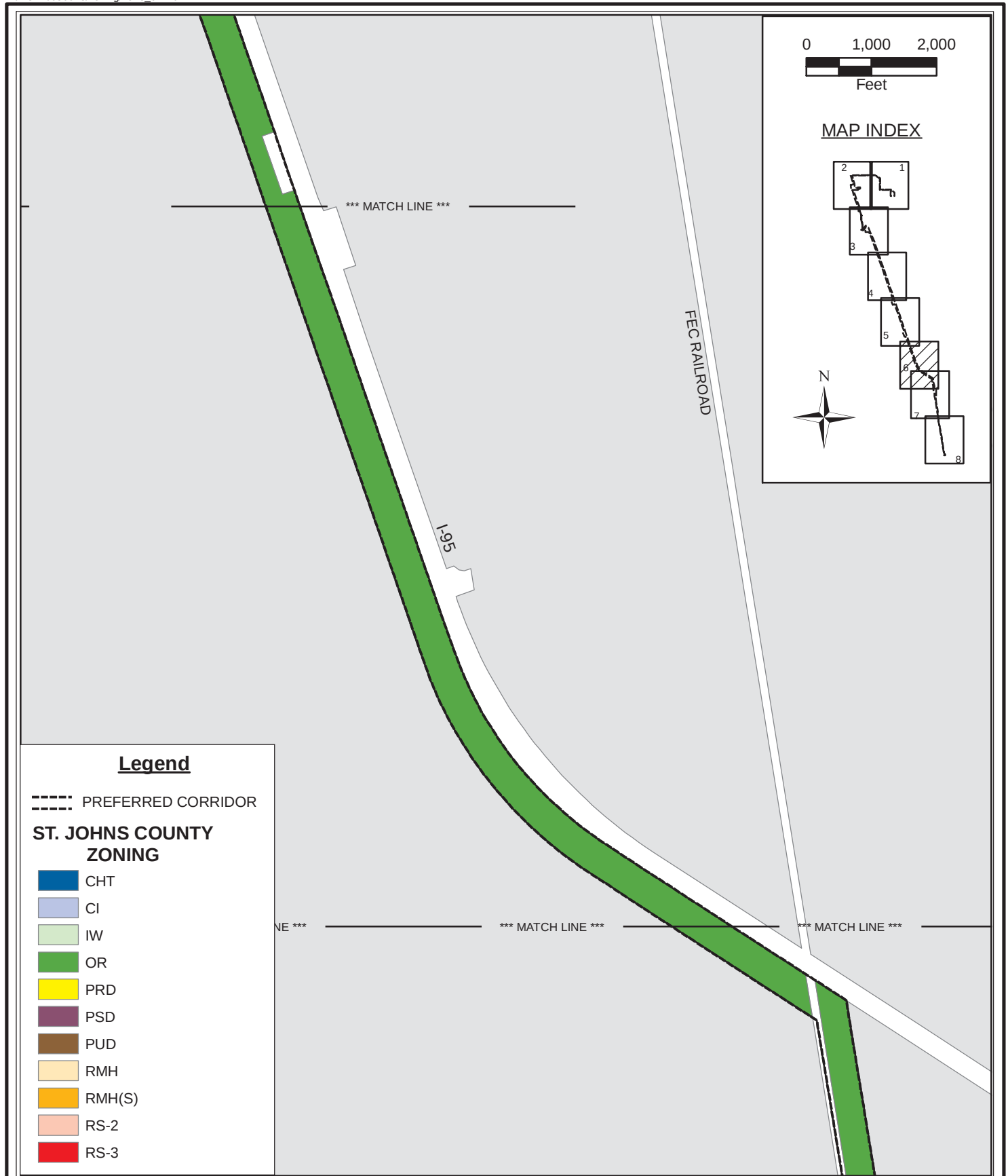




ATTACHMENT 2-3.
ZONING: MAP 5 OF 8

Sources: FPL, 2005; St. Johns County, 2005; ECT, 2005.

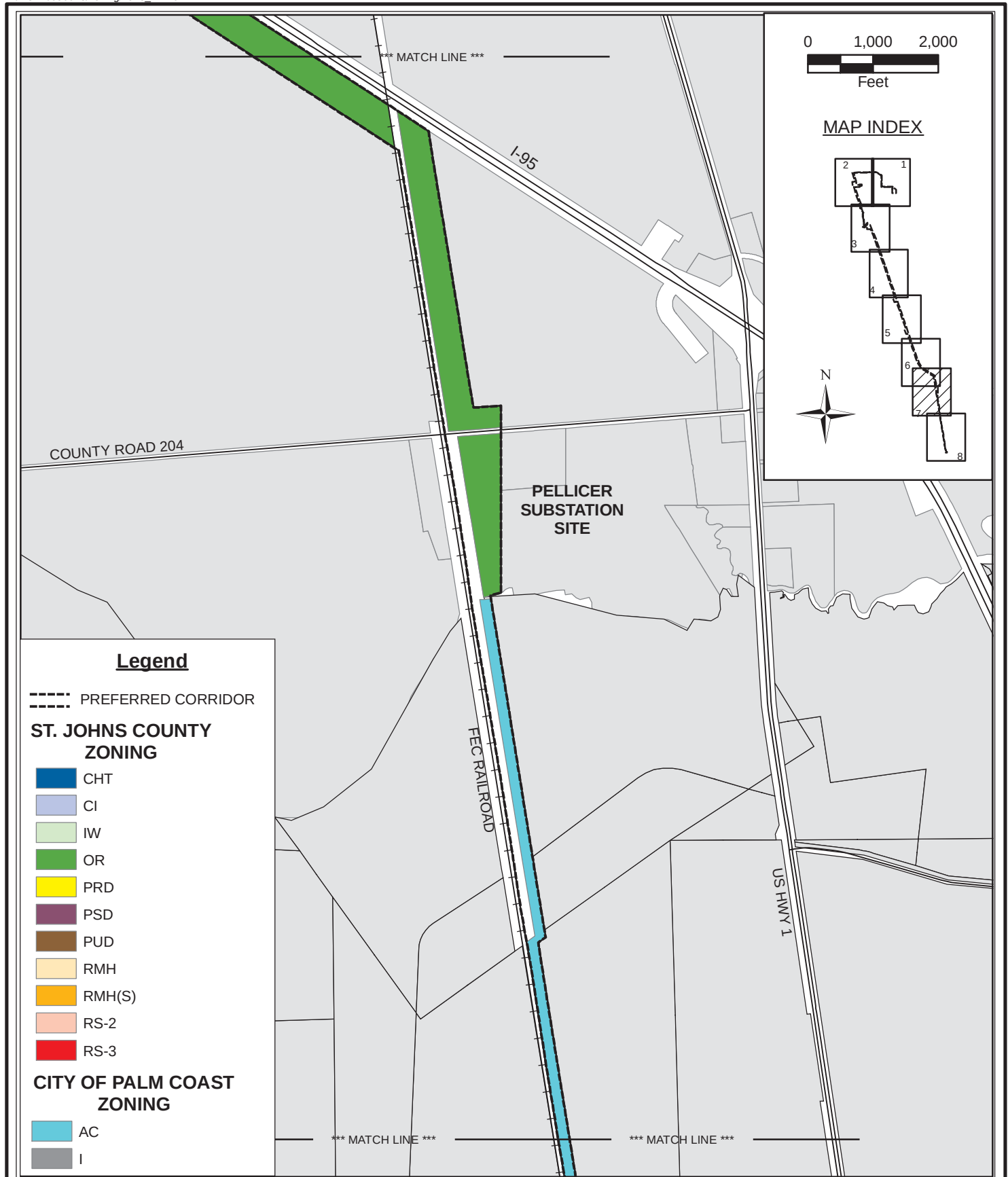




ATTACHMENT 2-3.
ZONING: MAP 6 OF 8

Sources: FPL, 2005; St. Johns County, 2005; ECT, 2005.

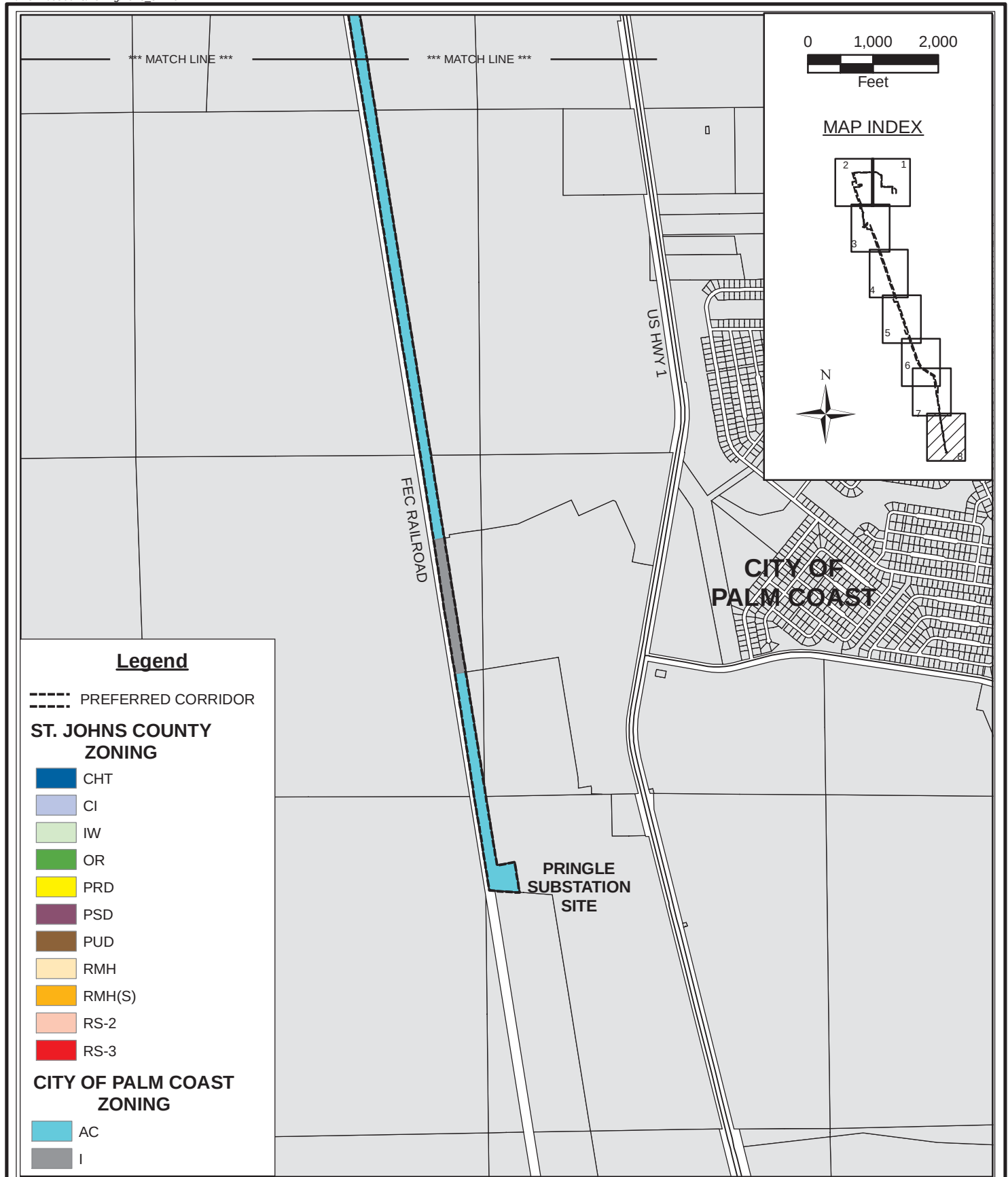




ATTACHMENT 2-3.
ZONING: MAP 7 OF 8

Sources: FPL, 2005; St. Johns County, 2005; City of Palm Coast, FL, 2005; ECT, 2005.

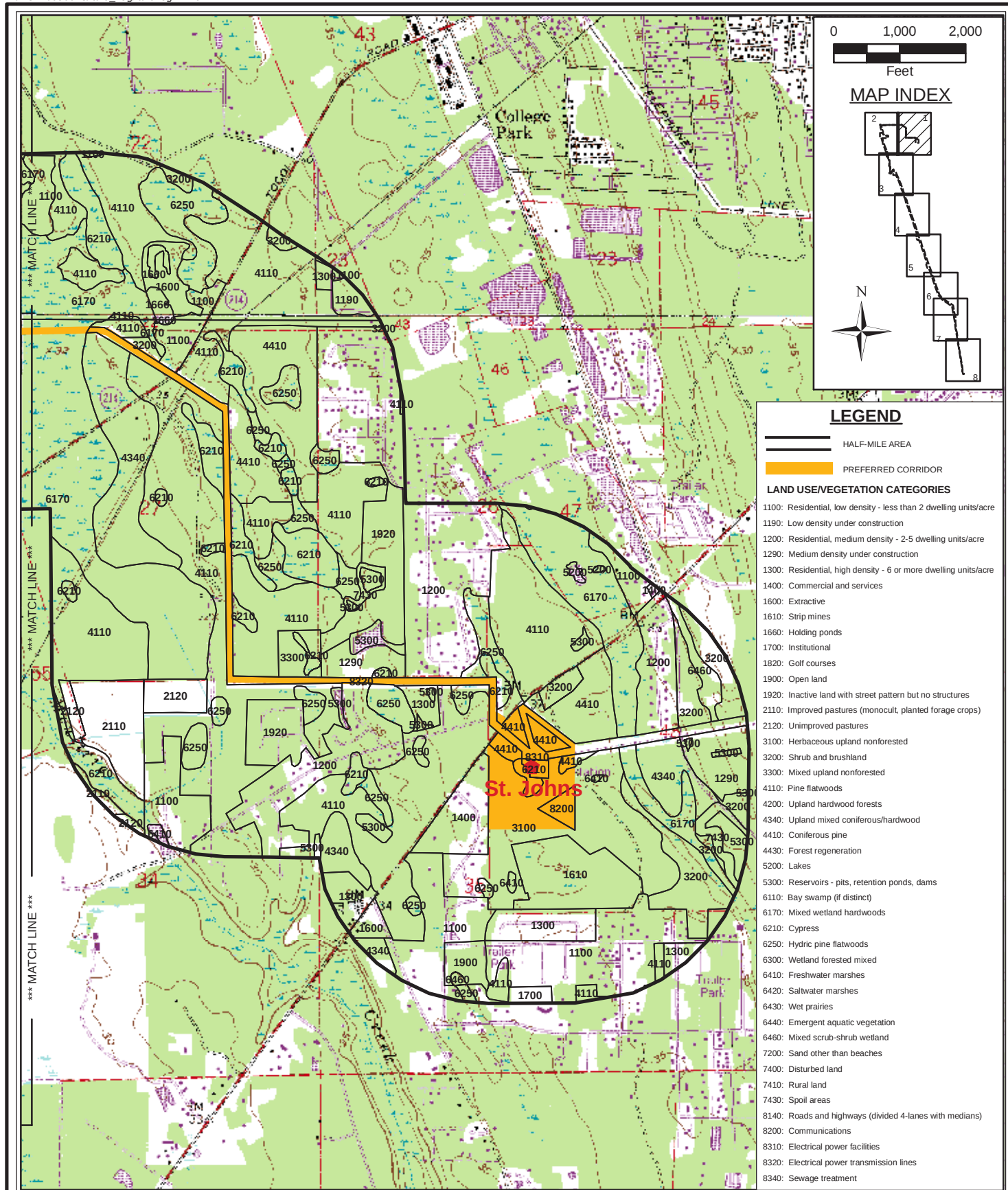




ATTACHMENT 2-3.
ZONING: MAP 8 OF 8

Sources: FPL, 2005; St. Johns County, 2005; City of Palm Coast, FL, 2005; ECT, 2005.

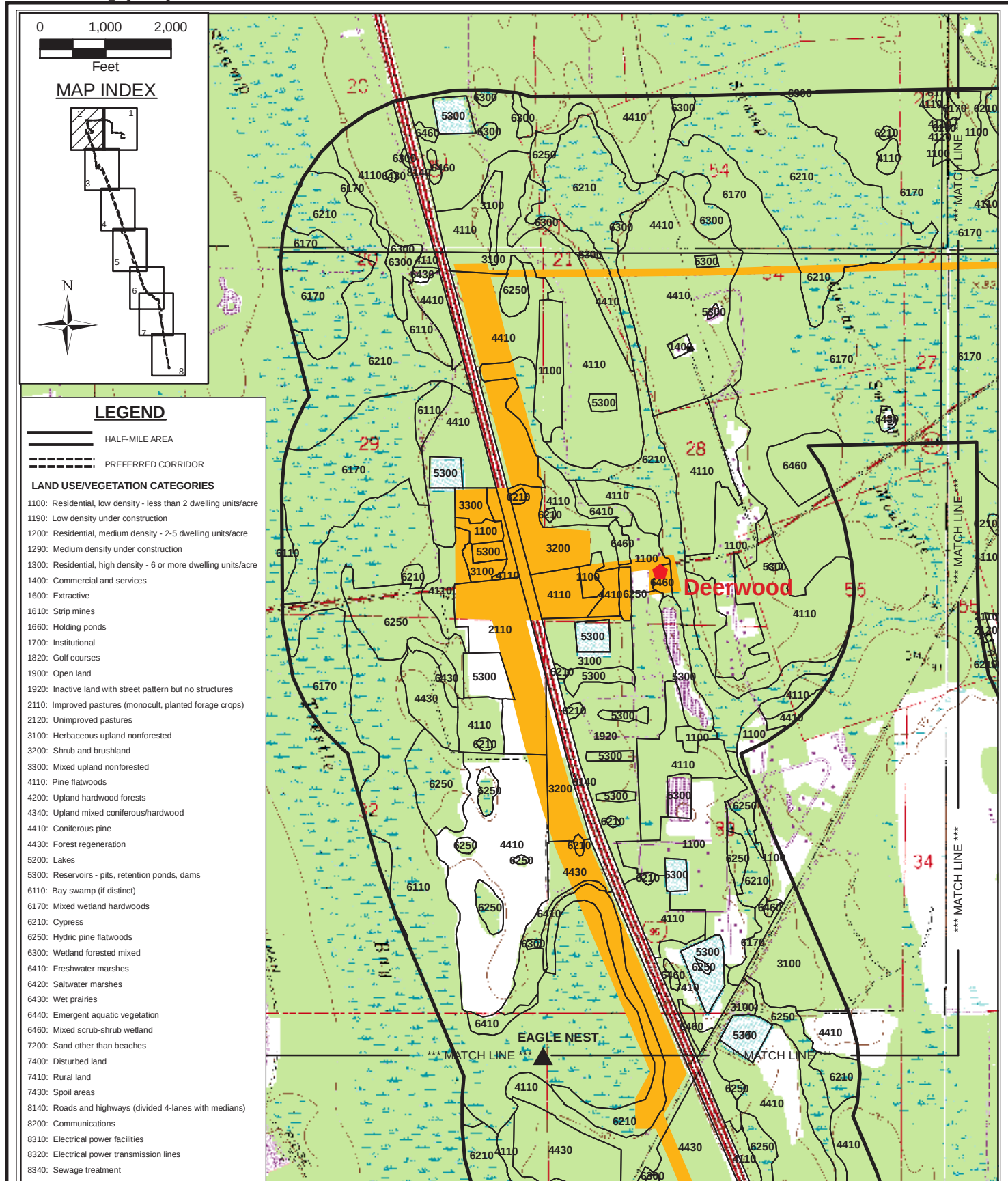




**ATTACHMENT 2-4.
LAND USE/VEGETATION AND LISTED SPECIES: MAP 1 OF 8**

Sources: FPL, 2005; SJRWMD, 2005; ECT, 2005.

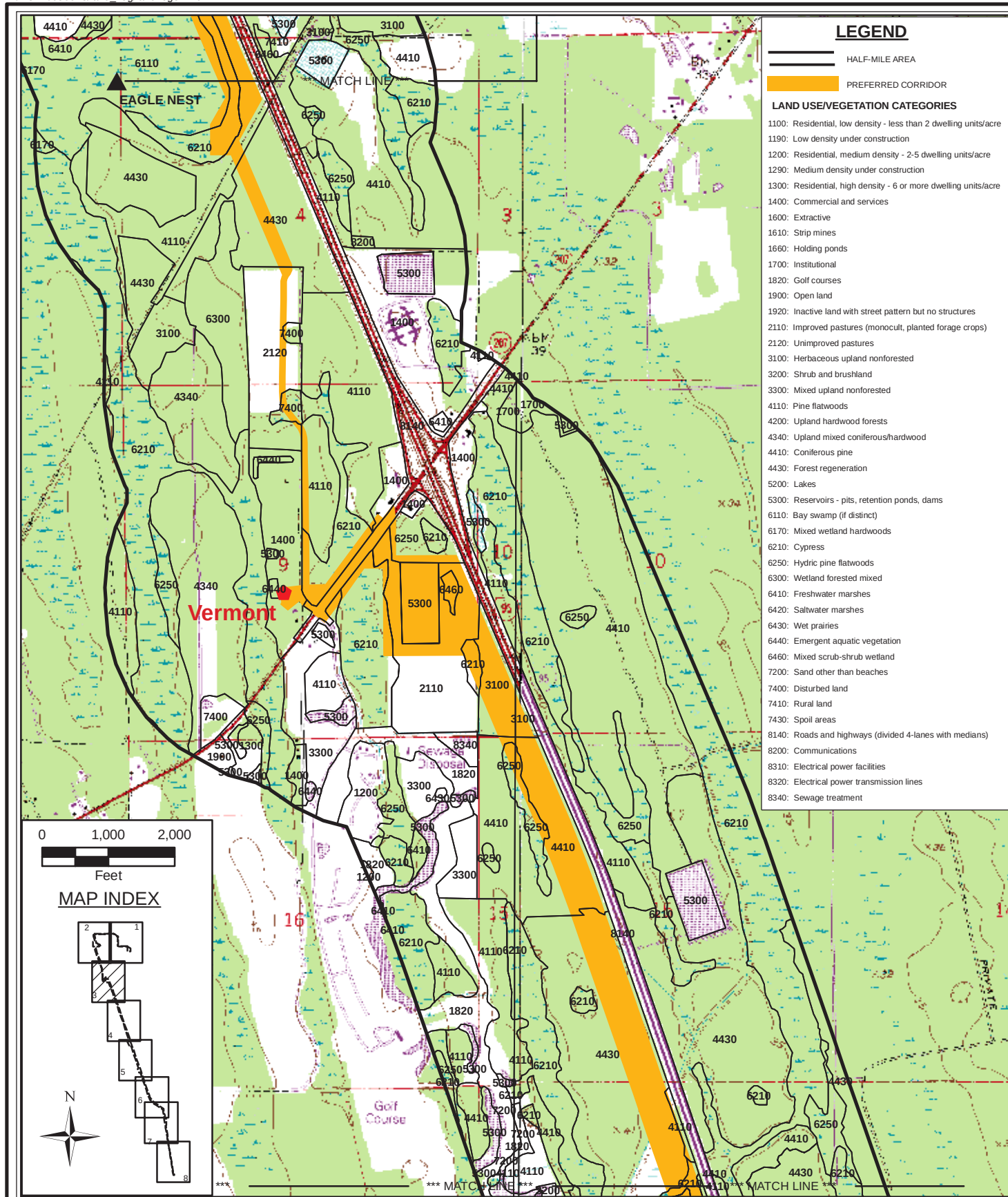




ATTACHMENT 2-4.
LAND USE/VEGETATION AND LISTED SPECIES: MAP 2 OF 8

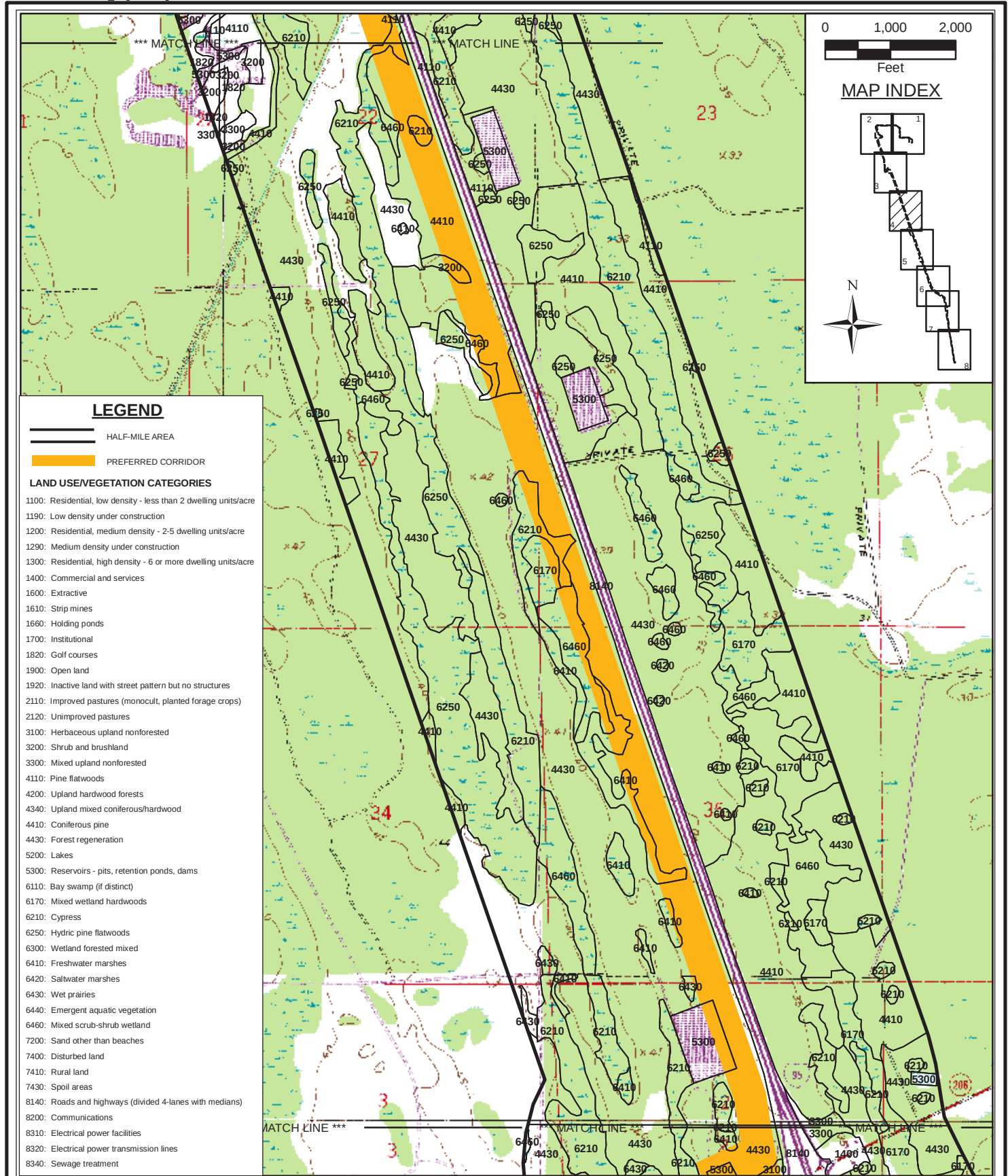
Sources: FPL, 2005; SJRWMD, 2005; ECT, 2005.





Sources: FPL, 2005; SJRWMD, 2005; ECT, 2005.

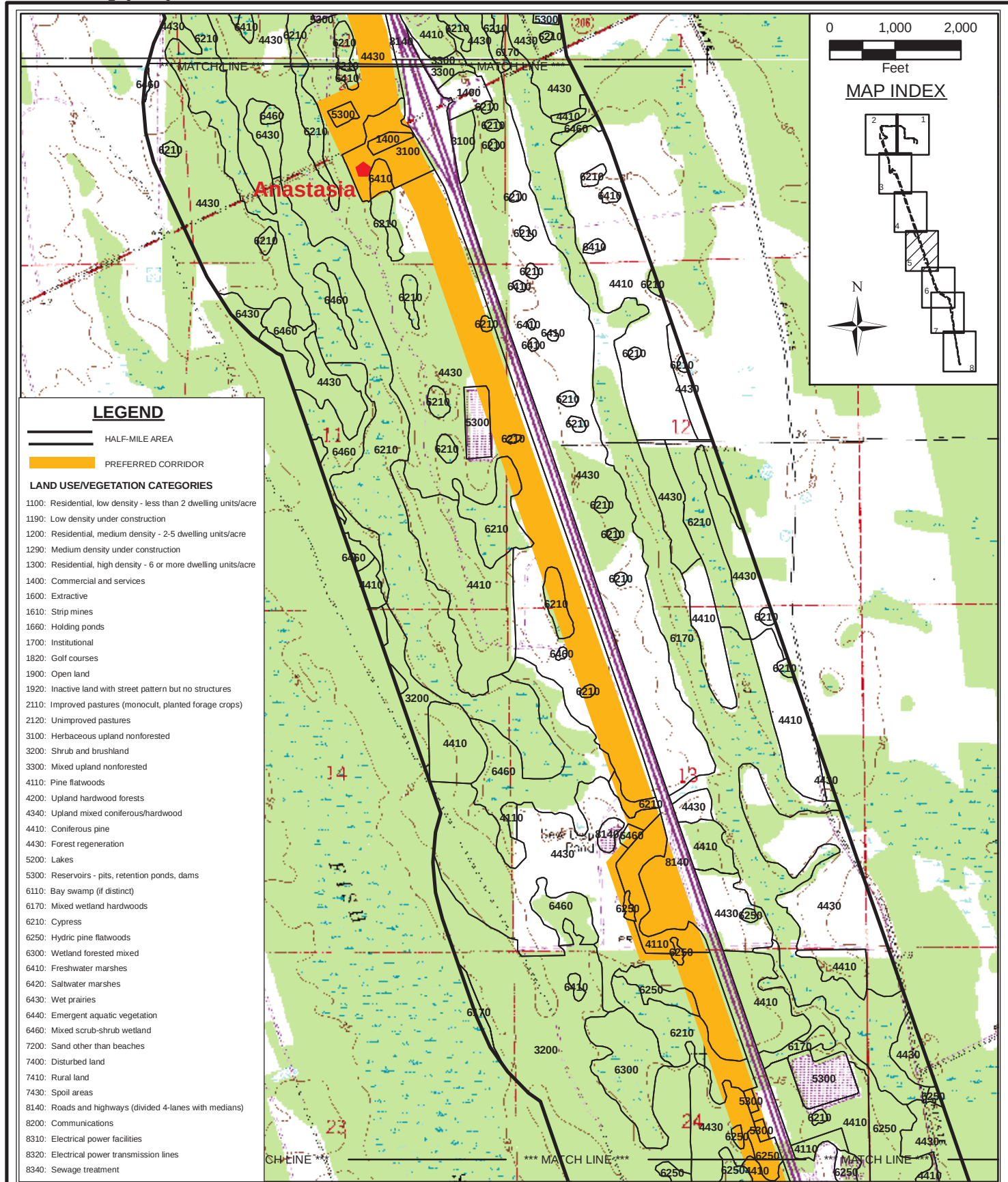




ATTACHMENT 2-4. LAND USE/VEGETATION AND LISTED SPECIES: MAP 4 OF 8

Sources: FPL, 2005; SJRWMD, 2005; ECT, 2005.

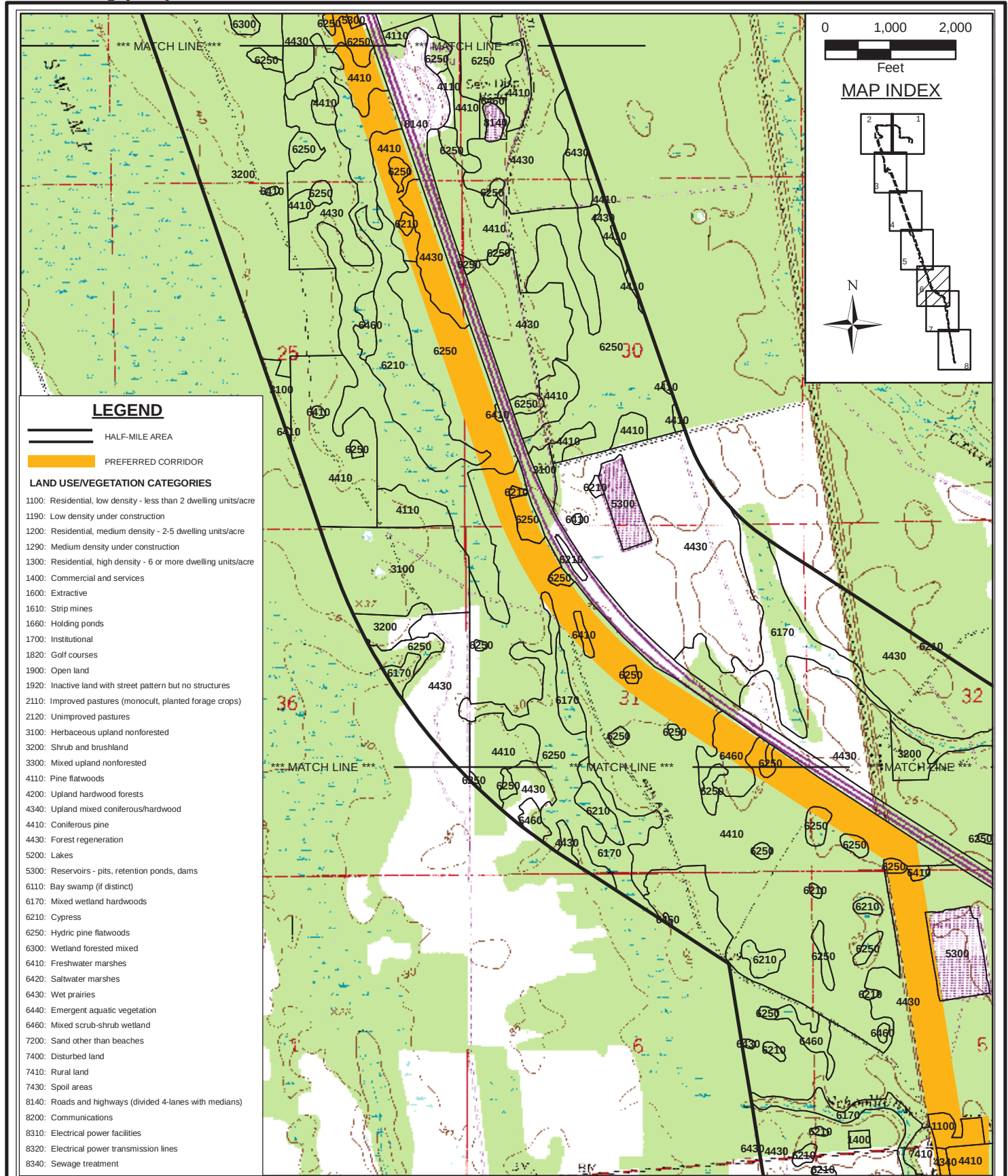




ATTACHMENT 2-4. LAND USE/VEGETATION AND LISTED SPECIES: MAP 5 OF 8

Sources: FPL, 2005; SJRWMD, 2005; ECT, 2005.

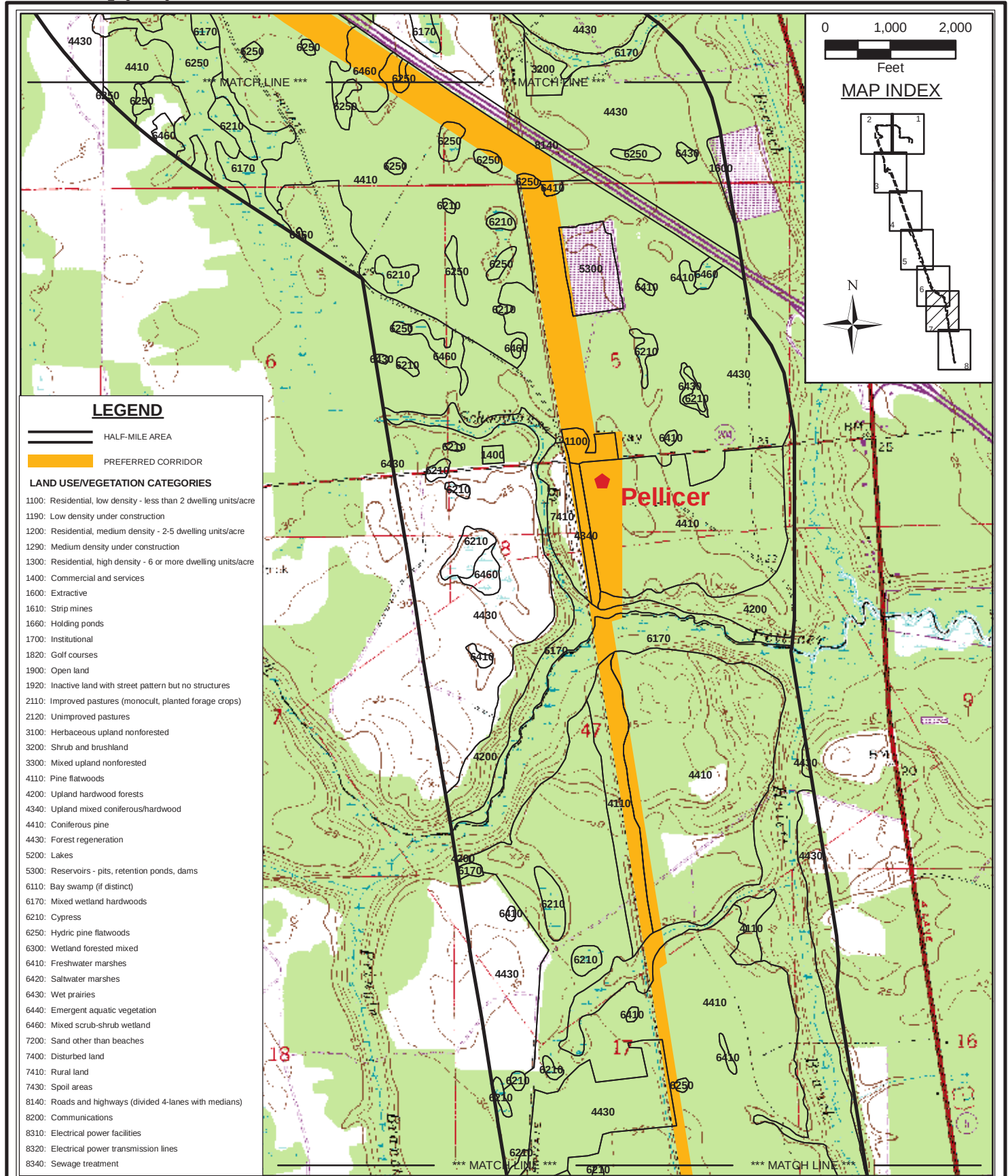


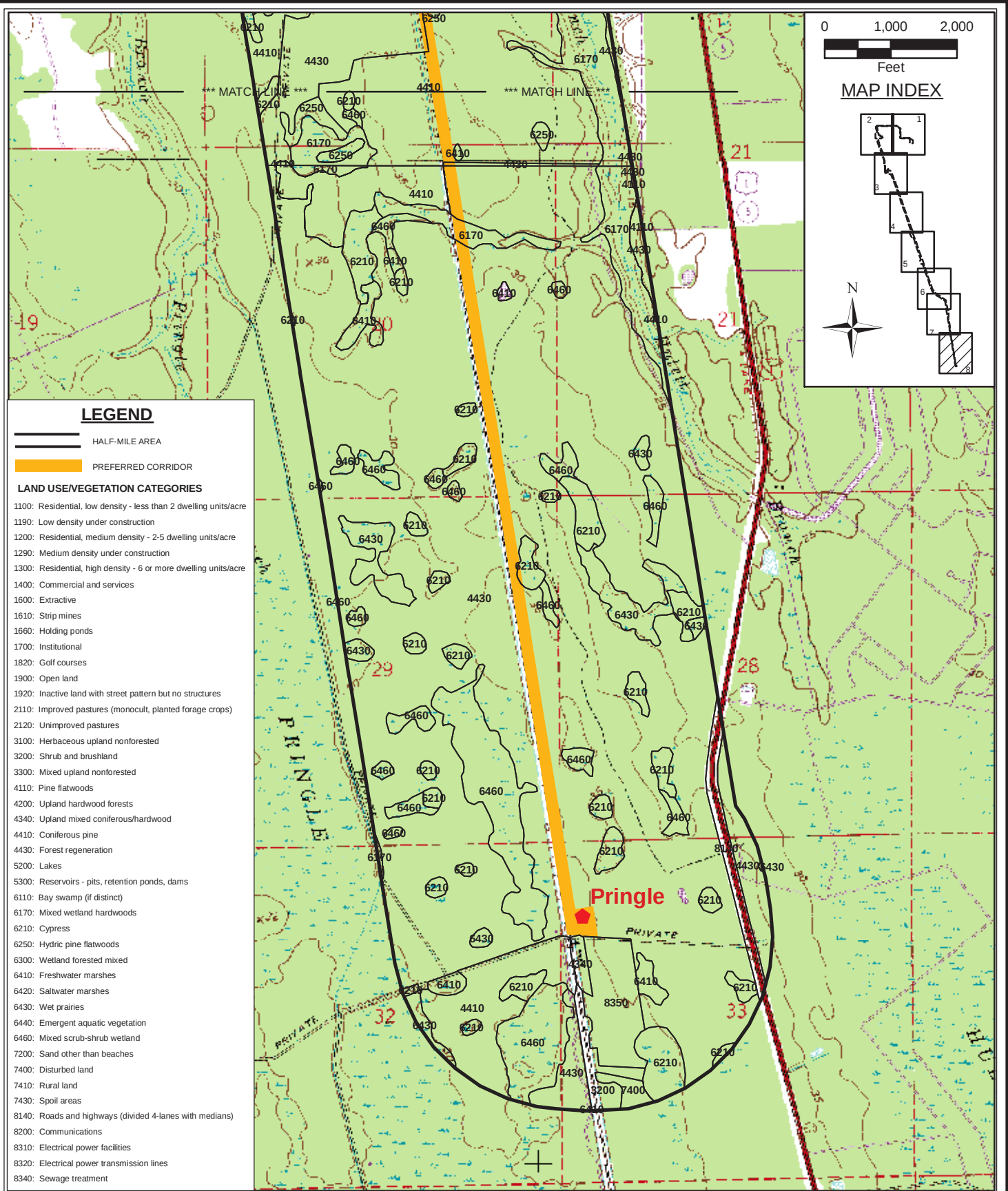


ATTACHMENT 2-4.
LAND USE/VEGETATION AND LISTED SPECIES: MAP 6 OF 8

Sources: FPL, 2005; SJRWMD, 2005; ECT, 2005.







ATTACHMENT 2-4.
LAND USE/VEGETATION AND LISTED SPECIES: MAP 8 OF 8

Sources: FPL, 2005; SJRWMD, 2005; ECT, 2005.



3.0
**EFFECTS OF RIGHT-OF-WAY
PREPARATION AND
TRANSMISSION LINE
CONSTRUCTION**

**3.1 CONSTRUCTION
TECHNIQUES**

Construction phases will consist of right-of-way clearing, access road construction (where necessary), line construction, and right-of-way restoration. Construction phases generally will be performed sequentially along the right-of-way such that activities in any one area will be short-term.

3.1.1 RIGHT-OF-WAY CLEARING AND ROAD CONSTRUCTION

Moderate right-of-way clearing is anticipated being required for this transmission line due to the location of much of the corridor along previously disturbed areas and the expectation of collocation adjacent to other linear facilities. Where clearing is required, it will generally occur in the entire easement area typically expected to be 15 to 60 ft in width. All trees and shrubs whose mature height could exceed 14 ft will be cleared in this area. Depending on the density of trees to be cut and the restrictions on clearing in wetlands, the machinery required for clearing will include bulldozers, shearing machinery, and chainsaws. An additional minimal amount of clearing/mowing may be required for installation of the anchors for guyed structures, and for removal of conflict timber outside the right-of-way that poses a danger of falling into the transmission line conductors.

FPL will ensure the construction of the SJPP Project will have minimal impacts to water resources and wetlands, both individually and cumulatively. This includes the use of turbidity screens and erosion control devices, where there is a potential for erosion, to minimize construction impacts to wetlands and water bodies and ensure that state water quality standards for turbidity are met.

Access roads are needed to provide efficient, safe, and cost-effective ingress and egress to the structures. Access roads will be used for construction, routine maintenance, and to repair any damage to transmission facilities that may occur on rare occasions.



The construction of all access roads will be completed with clean fill from sources outside the transmission line right-of-way. Figure 1.3-5 in Section 1.3 illustrates a typical cross-section of an access road.

New roads will be sited in such a way as to minimize wetland crossings. The access roads will have a top width of 14 ft and will be offset from the centerline of the structures.

Some areas of the preferred corridor already have public or FPL access. Leaving the St. Johns substation, the preferred corridor follows the existing FPL St. Johns-Tocoi 230-kV transmission line easement all the way to its intersection with I-95. There is an existing access road in place along this portion of the preferred corridor.

From I-95 to the Deerwood substation, the preferred corridor includes Tocoi Road (CR 214), which will be used for access in this 0.5-mile-long portion of the preferred corridor.

The preferred corridor also utilizes Deerpark Boulevard to the north and south of the Vermont substation. Also in this locale, a portion of SR 207 will be used to traverse from the Vermont substation back over to I-95.

Although a significant portion of the preferred corridor parallels I-95 and the FEC Railroad, those entities typically allow no right-of-way sharing or longitudinal construction access. This will mean the SJPP transmission line will be built adjacent to their rights-of-way, minimizing additional clearing requirements. Since access will be precluded, a new access road will be proposed where needed. It is estimated approximately 21 miles of the preferred corridor may require some form of new access. However, many areas with no current access are in uplands, thereby possibly negating the need to build a road.

Figures 3.1-1 through 3.1-3 present plan and profile views of access road and structure pad designs reflecting the various access scenarios for the SJPP Project.

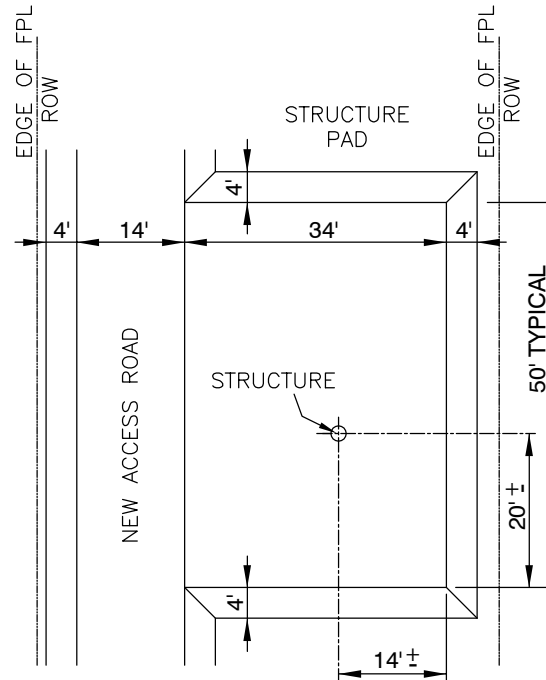
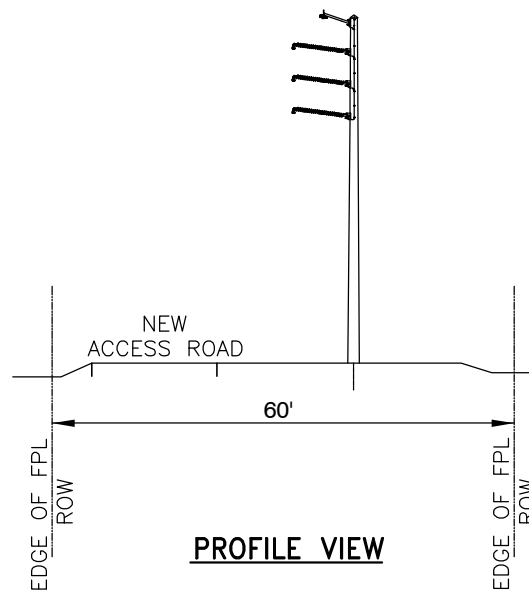
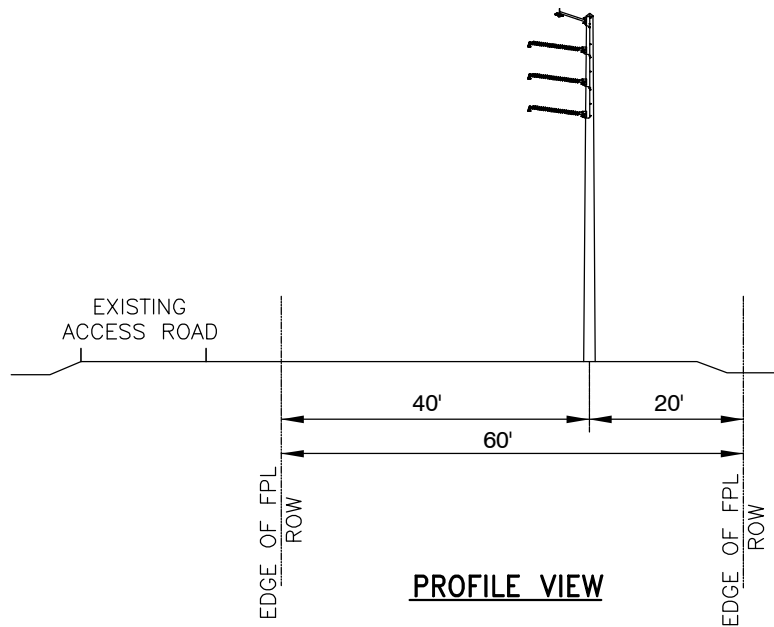
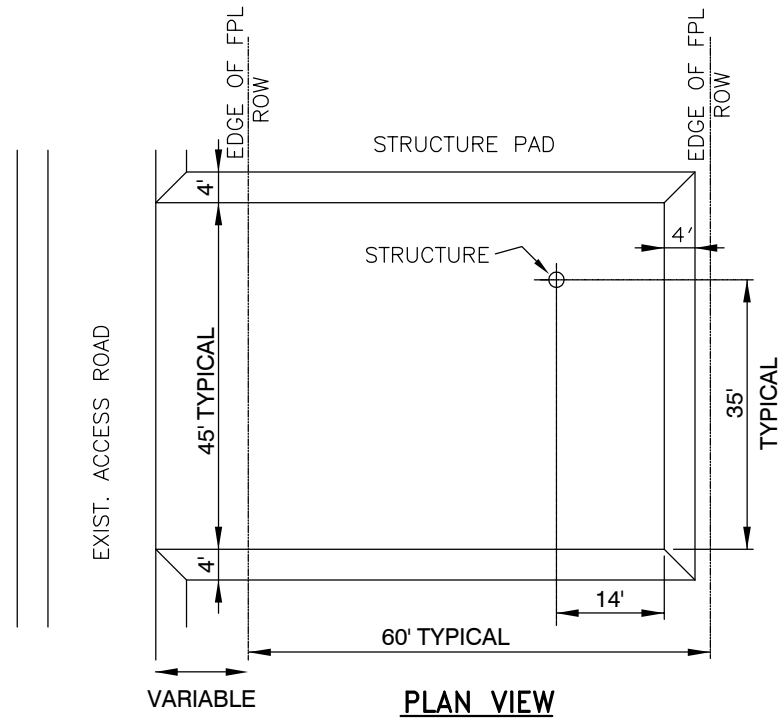
PLAN VIEWPROFILE VIEWNOT TO SCALE

FIGURE 3.1-2.
TYPICAL ACCESS ROAD AND STRUCTURE PAD DESIGN
WITH NO EXISTING ACCESS AVAILABLE

Source: FPL, 2005; ECT, 2005.





NOT TO SCALE

FIGURE 3.1-3.
TYPICAL STRUCTURE PAD DESIGN WITH EXISTING
PRIVATE ACCESS ROAD AVAILABLE

Source: FPL, 2005; ECT, 2005.



3.1.2 LINE CONSTRUCTION

To install the transmission line structures, a digger truck will auger a hole approximately 16 to 20 ft deep, and the single concrete pole will be embedded directly into the hole and backfilled with crushed rock. (Taller poles, site-specific geography, or poor subsurface conditions may require additional setting depths.) FPL will frame and erect the structures using cranes and other support-type vehicles. Once the structures are set, various wire-pulling equipment will be used to install the conductors and overhead ground wire. Support ground vehicles may include bulldozers, trailers, and light trucks.

3.1.3 EROSION

Construction will be performed so as to minimize disturbance to natural ground cover. The use of construction mats and low-pressure rubber-tired or nontracked vehicles, where appropriate, will minimize the potential for erosion. FPL will use turbidity screens and erosion control devices, where there is erosion potential, to minimize impacts to wetlands and water bodies and ensure that state water quality standards for turbidity are met.

With the exception of access roads (where required) and small working areas around the structures (structure pads), low-lying vegetation (shrubs, grasses, ferns, etc.) will be allowed to remain. Past experience shows that disturbed ground cover reestablishes itself quickly, which reduces the erosion potential. The impacts of land clearing will be reduced in forested wetlands by leaving the root mat of most trees in place to minimize potential for erosion and impacts to water quality. Again, FPL's decision to locate the preferred corridor along other existing linear rights-of-way for the SJPP Project will minimize the amount of new clearing required and, therefore, potential erosion during transmission line construction.

3.2 IMPACT ON WATER BODIES AND USES

The new transmission line will cross some wetland areas. Most of these wetlands have been previously impacted by an existing linear facility (primarily I-95 or the FEC Railroad). Impacts to these wetlands will be minimized to the extent possible by limiting construction to an existing cleared right-of-way, using existing access roads where available, or locating the new right-of-way immediately adjacent to the existing clearing, where



possible, so only supplemental clearing is needed. Therefore, it is FPL's intent to only widen existing cleared wetland areas where necessary rather than create new clearings through wetlands. Where a new access road and fill are unavoidable, construction techniques and culverting within these wetlands will comply with FDEP standards.

Water quality along and adjacent to the construction site will be preserved by the implementation of various appropriate best management practices (BMPs) to control the quantity and quality of runoff from the construction site.

Land clearing activities are described in Section 3.1. To the extent possible, native vegetation will be left in place to reduce erosion. However, some vegetation will be disturbed by the construction of the transmission line. The impacts of land clearing will be reduced in forested wetlands by leaving the root mat of most trees in place to minimize potential for erosion and impacts to water quality.

Disturbed areas will be allowed to revegetate as each section of the transmission line is completed. Upon completion of construction, disturbed areas will be seeded and mulched to control erosion on steep slopes (e.g., at canal or ditch crossings).

The construction of the transmission line should require no ground water withdrawal, dewatering, or relocation of any water bodies.

The construction will create no new connections to waters of the state. The Pellicer Creek crossing is believed to be the only navigable waterway crossed by the preferred corridor. Since this crossing is narrow and FPL will span the creek alongside the existing FEC Railroad trestle, no impacts to navigation will occur on this waterway.

As noted in previous sections, the study area has characteristically flat terrain with little topographic relief. The predominant conveyance in this and similarly situated regions is typically via manmade drainage swales, small tributaries, and sheetflow interconnected to natural wetlands and sloughs. These types of systems do not lend themselves to evalua-

tion by gauging stations. As such, Soil Conservation Service (SCS) methods will be used to evaluate runoff characteristics for culvert crossings and access road designs.

Upon delineation of the final right-of-way and determination of the location of roads and structures, FPL will provide required, detailed information related to activities in waters and wetlands. Figure 1.3-7 in Section 1.3 shows a cross-section of a typical access road and structure pad. Figures 3.1-1 through 3.1-3 illustrate plan and profile views of typical access road and structure pad layouts.

Where available, existing public roads and private access roads will be used to limit the need for fill to the maximum extent possible. In these instances, most structure pads will be located and constructed to allow access to the structure from the existing road, thus minimizing the need for new and additional impacts.

Depending on site-specific circumstances, roads in wetland areas may be permanent or temporary. For permanent roads, the construction has been previously described (see Section 3.1.1). Temporary access roads may be used in some wetland areas. Most temporary access roads will be constructed in a manner similar to permanent access roads. Alternatively, the contractor may employ either matting or geotextile fabric covered with temporary fill. Crossings of existing drainage swales, ditches, or canals will require installation of appropriately sized culverts. Culverts used for wetland system and canal/ditch crossings will be sized and located to accommodate up- or downstream flow regimes.

3.3 SOLID WASTES

Solid waste generated from right-of-way preparation and line construction generally consists of cleared vegetation and construction-related debris. It is expected that most solid waste generated by the SJPP Project will be disposed in compliance with local landfill regulations. Any proposed onsite chipping or burning will be performed in compliance with all local and state regulations.

3.4 CHANGES TO VEGETATION, WILDLIFE, AND AQUATIC LIFE

Impacts on terrestrial and aquatic systems and species associated with transmission line right-of-way preparation and construction depend primarily on the location of the selected right-of-way and, to a lesser degree, on clearing and construction techniques.

Through a systematic, environmentally responsive corridor selection process, the crossing of major terrestrial, wetland, and aquatic systems was minimized or avoided to restrict any potential impacts to sensitive habitats and/or endangered and threatened species associated with transmission line construction and maintenance. Approximately 25.5 miles (98 percent) of the preferred corridor include the opportunity to locate within or adjacent to existing road, railroad, and transmission line rights-of-way. Where possible in these areas, the proposed transmission line will share existing rights-of-way. In these already altered areas, it is not anticipated that transmission line construction or maintenance will have any significant impact on vegetation, wildlife, or aquatic life. The remaining areas that could be potentially crossed by the 230-kV transmission line within the preferred corridor include a number of natural and disturbed upland and wetland community types as well as low-density residential developments. An evaluation of potential and expected impacts on vegetation and wildlife components is presented in the following subsections.

3.4.1 VEGETATION

As discussed, 98 percent of the total length of the preferred corridor allows placement of the proposed 230-kV transmission line within or adjacent to existing transmission line or road rights-of-way. Much of the right-of-way will therefore be able to take advantage of existing disturbances (roads, urban development, land impacted by silviculture, and other transmission lines).

Because many of the existing rights-of-way are already cleared and maintained, construction associated with the 230-kV transmission line should not pose any significant additional adverse changes to vegetation in these areas. Limited permanent alterations will be associated with right-of-way clearing, access road and structure pad installation, and additional right-of-way maintenance.

Section 3.1, Construction Techniques, addresses types of impacts to the existing vegetation communities crossed by the preferred corridor associated with construction. A permanent alteration of limited areas of upland and wetland communities will result from right-of-way clearing and access road and structure pad construction. In areas of the corridor where collocation opportunities occur with existing roads or other transmission lines, forested wetlands may have already been impacted. Limited additional clearing of trees directly adjacent to the existing rights-of-way will be required, and these areas of the right-of-way will subsequently be maintained in a low-growing, early successional state. Adjoining tracts of woodlands will remain intact and provide habitat for forest species. In addition, adjacent communities should not be affected by structure pad and road construction since erosion control measures and proper culverting will be used.

Construction practices in wetlands will retain the vegetative root mat in the right-of-way in areas not filled for road or structure pad construction, thereby minimizing impacts to wetlands. Impacts to wetlands will vary depending on the wetland system through which the transmission line is routed. The shift in wetland composition will vary with the type of original overstory and soil alterations resulting from construction activities. Outside of areas where filling may be necessary for roads or structure pads, small freshwater marsh/wet prairie systems crossed by the transmission line will not be affected by construction activities since no clearing will be required, and proper culverting will maintain the existing hydroperiod.

3.4.2 WILDLIFE

Specific impacts to terrestrial and aquatic animals due to transmission line construction vary by species and depend primarily on the extent of habitat alteration and continued availability of such habitat after construction. The preferred corridor crosses no federally designated critical habitat. In addition, no aquatic habitats critical to the continued regional presence of important species will be affected. The collocation with existing road and transmission line rights-of-way will minimize habitat losses and creation of barriers to animals' movements.



Individual small burrowing mammals (e.g., rodents), reptiles, or amphibians may be lost during right-of-way clearing. Such individual losses, however, will not affect local or regional populations. No losses of medium-sized or large mammals, birds, or other mobile species due to direct impacts or habitat alterations are expected because of the mobility of these animals. Therefore, no adverse impacts are expected to local or regional populations of game species, species of special concern or commercial importance, or threatened or endangered species occurring or potentially occurring within the right-of-way area.

No significant impacts to resident birds or migratory species are expected since the preferred corridor does not include major staging, breeding, or wintering areas for social, migratory species (e.g., waterfowl, shorebirds, passerines). Local disturbance or displacement of wildlife due to construction noise will be minor and short-term since construction activities in any one location will be intermittent and are not expected to last more than a few weeks. Also, the location of the preferred corridor along major highways and existing transmission line rights-of-way will further limit the potential for wildlife disturbance since individuals in these areas will already be habituated to traffic noise.

The potential construction impacts on listed species documented for the preferred corridor are discussed in the following paragraphs.

The one active bald eagle nest documented for the corridor vicinity is located approximately 1,700 ft west of the preferred corridor in St. Johns County. This distance is beyond the 750- to 1,500-ft buffer zones recommended by USFWS (USFWS, 1987) and St. Johns County Land Development Code (Article IV, Natural Resources, Section 4.01.10). Given this distance and the fact FPL would propose to construct the SJPP transmission line adjacent to I-95 further increasing the distance from the nest, no impacts to this eagle nest are anticipated.

No wading bird or wood stork colonies are documented for the preferred corridor vicinity. While such species would be expected to forage in wetlands along the preferred corridor, no impacts to nesting or roosting sites are anticipated from project construction.

While other listed species possibly occur in habitats along the preferred corridor, no permanent or long-term impacts from construction are expected. FPL will be required to conduct site-specific listed species surveys along a preferred right-of-way alignment as part of its post-certification conditions. If any such listed species are found inhabiting the proposed right-of-way, specific consultation with the appropriate agencies will be conducted. Mitigation or avoidance methods will be proposed as necessary.

3.4.3 AQUATIC LIFE

Impacts on aquatic systems and species are expected to be minor to nonexistent since the proposed corridor avoids major lakes and rivers. Pellicer Creek is a significant creek crossing; however, FPL is proposing to cross it adjacent to the existing FEC Railroad crossing. Additionally FPL will span the creek and not place any structures or fill within the flow-way.

For any ditches, canals, or wetlands that are crossed, the construction of the transmission line may involve installation of culverts and placement of fill resulting in temporary increases in turbidity and silt deposition. Such impacts will be local and temporary and are not expected to adversely affect aquatic resources. Appropriate control measures such as staked hay bales and silt curtains will minimize or eliminate siltation resulting from stormwater runoff. Transmission line and access road (if necessary) construction in wetland areas will use methods such as proper culverting and erosion control as necessary to minimize any significant disruption to the aquatic ecosystem or resultant changes in species composition.

3.4.4 SUMMARY

In summary, the majority of the proposed 230-kV transmission line will be situated within or adjacent to existing rights-of-way. This alignment significantly minimizes the crossing of natural or undisturbed systems.

Principal impacts from right-of-way clearing and construction of the SJPP Project will be removal of a limited amount of canopy vegetation and tall, woody vegetation along right-

of-way sections crossing mature forested habitats where previously cleared areas will be slightly widened. Because of collocation of major portions of the proposed corridor along existing rights-of-way, this impact is expected to be minimal and will not result in significant population changes in protected species compositions or in the regional status of ecologically unique or valuable habitats. The clearing and subsequent maintenance of right-of-way vegetation in some areas will change the character of the vegetation and provide new habitat for different species of wildlife. Local displacement of wildlife may occur during periods of construction activities. Such displacement is expected to be temporary and will not affect the local or regional status of important species.

3.5 IMPACT ON HUMAN POPULATIONS

Transmission line construction occurs as a series of tasks generally accomplished in sequence by different specialized crews. Tasks include clearing the right-of-way, constructing access roads, preparing foundations (if necessary), assembling and erecting support structures, stringing conductors, and cleanup activities. Construction of the transmission line is expected to take approximately 14 months. Crew sizes vary depending on the task and usually range in size from 6 to 12 members. Although several crews may work simultaneously along the length of a line, the duration of a crew's activities in any one area will be quite short (usually 1 to 2 days, with a few tasks such as wire pulling and setup locations taking 1 to 2 weeks). Inconveniences experienced by residents near the transmission line will be primarily confined to noise from machinery used intermittently at various locations along the right-of-way during construction and minor traffic disruptions due to use of heavy equipment along road rights-of-way. Most of the construction and associated noise-producing activities are intermittent in nature and will take place only during normal daylight working hours.

Population density is very low throughout most of the corridor. The more populated areas crossed by the corridor occur near the northern portion of the preferred corridor. This includes development around the existing St. Johns-Tocoi 230-kV transmission line, Tocoi Road, and SR 207. For the most part, these areas have developed as low-density residential, although some commercial development occurs around the SR 207/I-95 interchange.



Although the southern portion of the preferred corridor falls within a DRI, this project area is currently undeveloped. FPL has coordinated its preferred corridor placement with both the city of Palm Coast staff and the developer.

Impacts to human populations attributable to construction of the SJPP Project will be minimal due to collocation with existing linear facilities and the short duration of construction in any one location.

3.6 IMPACT ON ARCHAEOLOGICAL AND HISTORIC SITES

As discussed in Section 2.2.4, according to DHR's Master Site File, only one known archaeological/historic feature is known to be found in the preferred corridor. Every effort will be made to avoid this site located south of Toco Road. This can be accomplished with alignment of the actual right-of-way and pole and pad placement.

If requested by DHR, an archaeological site assessment survey will be conducted of archaeologically sensitive areas (as determined by DHR and the survey archaeologist retained by FPL) within the eventual right-of-way, and the report of the survey will be submitted to DHR for review. If any sites within the right-of-way are determined to be significant, DHR will be consulted regarding appropriate procedures for either preservation or excavation of the significant site(s).

If unforeseen archaeological finds are discovered during construction, DHR will be notified. Following a determination of the importance of such finds, FPL will work with DHR to assess mitigation measures necessary to minimize adverse impacts.

4.1 MAINTENANCE TECHNIQUES

Safe and reliable operation of the new line will be maintained through regular inspection of the poles, conductors, insulators, access areas, and vegetation in the right-of-way. The inspections will consist of ground patrols (truck) and/or aerial (airplane/helicopter) patrols. Transmission lines normally require minimal maintenance; however, FPL will inspect the line on a regular basis to look for problems caused by weather, vandalism, etc.

FPL will manage vegetation on the right-of-way by a variety of methods, including trimming, mowing, and the use of approved herbicides, targeting species that are incompatible with the safe operation, maintenance, and access to the transmission system. This allows a broad diversity of vegetation growth, which enhances wildlife use potential.

Fire, as a management tool, may also be used by the underlying fee owner of the transmission line easement in certain conservation, mitigation, or silvicultural areas along the preferred corridor. In these areas, FPL will coordinate with the appropriate management agency/landowner to ensure FPL's maintenance practices do not promote spread of fire and, at the same time, ensure prescribed fires do not jeopardize transmission system operation. FPL vegetation managers will monitor fuel loading and reduce it when it threatens the operation of the line.

The exact manner in which maintenance will be performed will depend on the location, type of terrain, and surrounding environment. Vegetation removal is minimized consistent with safe and reliable operation of the line. For example, fast-growing vegetation species and other vegetation whose mature height could exceed 14 ft in height will be cut or removed from the area between the structures lying within FPL's transmission easement to avoid interference with the conductor clearance. Other species are generally allowed to remain, resulting in a shrubby and herbaceous cover within the right-of-way.

4.0 ENVIRONMENTAL EFFECTS OF TRANSMISSION LINE RIGHT-OF-WAY MAINTENANCE AND POST- CONSTRUCTION IMPACTS



FPL's right-of-way maintenance program is very site-specific, and a maintenance "prescription" is often detailed down to the pole spans. Each area of the right-of-way will be addressed based on site-specific vegetation and habitat. Endangered or threatened species, if present, are considered and accommodated in the maintenance program.

Use of herbicides for vegetation control will be selective, and application will occur primarily around the transmission structure base. Application of these herbicides will meet federal, state, and local regulations. Due to the selective nature of vegetation cutting, the restricted use of herbicides, and the infrequent occurrence of maintenance activities, the potential effects on wildlife and water quality will be minimal. FPL will also control the spread of nuisance plants within the right-of-way through the use of approved herbicides and other removal techniques.

As a result of this maintenance program FPL rights-of-way are generally conducive to use by local wildlife. The open effect is attractive to certain raptors, songbirds, and small mammals, and the lower growing vegetation provides forage for deer and a multitude of other species. Open land- or marsh-dwelling wildlife should be unaffected by the existence of the transmission line and maintained right-of-way.

4.2 MULTIPLE USES

FPL rights-of-way are frequently used for other purposes compatible with the operation and maintenance of power lines. Multiple use of a transmission line right-of-way typically includes grazing, citrus farming, agricultural operations, controlled landscaping, recreational uses such as golf courses and hiking/biking trails, and other compatible activities that do not interfere with FPL's full use of the right-of-way and the function of the transmission line facilities. In most cases, FPL obtains an easement for the construction, maintenance, and operation of its transmission line, as well as the rights of ingress and egress to that line, from another party who retains the fee-simple interest in the property. The easement may provide for acceptable use of the right-of-way by the fee owner for activities that do not interfere with FPL's full use of its easement and the function of the transmission line facilities.

In some cases, FPL may purchase the fee interest in the right-of-way. If FPL owns the right-of-way, all rights to the property will be held by FPL. If a party wishes to use the company-owned property, a license agreement may be negotiated, allowing for activities that do not interfere with FPL's full use of the right-of-way and the function of the transmission line facilities.

4.3 CHANGES IN SPECIES POPULATIONS

Section 2.3.3 discusses the status and potential for occurrence of important species in and along the preferred FPL SJPP Project corridor. The absence of significant impacts to important species is not coincidental as efforts were made during the corridor selection study to avoid potentially sensitive habitats as much as possible. The avoidance of ecologically unique or valuable habitats was achieved primarily through placement on, or collocation with, existing transmission rights-of-way and collocation with transportation rights-of-way.

Changes in local species populations are not expected as a result of the new transmission line's presence and maintenance. Displacement of individuals from the immediate right-of-way area that may occur during construction activities will be temporary. These displaced species are expected to reinhabit the right-of-way areas after construction. Habitat use will decline during actual construction due to noise and human presence. Such avoidance behavior will enable wildlife to escape direct impacts from construction activities, although some losses of individual vertebrates (e.g., rodents, amphibians) may occur during right-of-way clearing. No animal or plant species are expected to be permanently displaced out of the SJPP Project area as a result of this transmission line.

Due to necessary maintenance practices in the right-of-way, a decrease in structural diversity will occur in formerly forested areas (i.e., permanent loss of a tree canopy layer). However, this will be offset by an increase in species diversity as additional shrubs and herbs colonize the right-of-way in response to increased sunlight and decreased competition due to canopy removal. Since most of the preferred corridor is collocated with existing rights-of-way or follows previously disturbed lands, clearing of canopy vegetation will be minimal. In those portions of the preferred corridor where clearing is necessary,

only a relatively narrow strip of canopy will be lost. In these areas, clearing of overstory vegetation and subsequent maintenance requirements will not result in the loss of entire tracts or significant portions of regional wildlife habitat types.

In nonforested systems, such as marshes and shrub swamps, maintenance clearing or alteration may not be necessary. In many instances, these community types can be spanned, thereby eliminating the need to affect structural or functional habitat characteristics and wildlife use.

FPL's route selection process minimized proximity to known wading or waterbird concentrations. Therefore, no change in the local population of wading birds or any avian group is expected to occur because of transmission line presence and maintenance activities. No ecologically unique or sensitive habitat types will be lost in the study area, and, as a result, no significant impacts to protected indigenous species populations are expected.

4.4 EFFECTS OF PUBLIC ACCESS

It is FPL's policy to provide locked gates at the point where the transmission line access road intersects previously fenced property. Since FPL will install locked gates at any location that is currently fenced, no increased vehicle access is anticipated following construction except by FPL personnel performing routine maintenance. Where structures are placed adjacent to an existing roadway, maintenance of the line would have no additional impact on public access to the adjacent properties. No impacts to environmentally sensitive areas or resident wildlife populations from additional public access are expected.

4.5 ELECTRIC AND MAGNETIC FIELD (EMF) EFFECTS

4.5.1 EMF RULE COMPLIANCE

The SJPP Project complies with the Florida EMF regulations specified in Section 62-814, F.A.C. (the Florida EMF Rule). The strength of the magnetic field under a transmission line is primarily a function of the amount of current carried by the line and the height of the conductors above the ground. The electric field is primarily a function of the voltage impressed on the line and conductor height above the ground. Consequently, the electric

field near the transmission line is relatively constant over time, but the magnetic field fluctuates depending on customer demand for power.

The electric and magnetic fields produced by the proposed transmission line were calculated in accordance with the requirements of Section 62-814.460, F.A.C. The fields associated with the new transmission line comply with the standards set forth in the Florida EMF Rule, as demonstrated in Table 4.5-1. Although the current carried by the transmission line will vary throughout the day, the value used in the calculations is the maximum quantity of electric current that can be continuously carried on the conductors, as required by Chapter 62-814, F.A.C. Where the preferred corridor contains other existing transmission lines with which the SJPP Project may be collocated, such as along the existing St. Johns-Tocoi 230-kV line, the fields associated with the existing lines in those locations were included in the calculations, where appropriate.

Table 4.5-1. Maximum EMF Capable of Being Produced by the SJPP Project

Right-of-Way Configuration	Electric Field (kV/m)		Magnetic Field (mG) at MCR* on Edge of Right-of-Way
	On Right- of-Way	Edge of Right- of-Way	
SJPP Project on FPL St. Johns-Tocoi 230-kV, 110-ft right-of-way (double circuit)	3.1	0.2	84.7
SJPP Project on typical 60-ft right-of-way	3.2	0.5	114.3
SJPP Project along Tocoi Road, typical 30-ft right-of-way (assumes double circuit)	1.8	1.1	102.8
SJPP Project on typical 15-ft right-of-way along road easement	3.2	0.8	135.2
SJPP Project along SR 207, 30-ft right-of-way along FPL Putnam-St. Johns 115-kV line (assumes double circuit)	1.4	0.7	76.5
SJPP Project near Anastasia substation, typical 50-ft right-of-way	3.2	0.8	135.2
<i>Florida EMF rule limit for new 230-kV lines</i>	<i>8.0†</i>	<i>2.0†</i>	<i>150†</i>

*The MCR for the SJPP 230-kV line is 1,905 amperes per phase.

†These standard field levels are established in Rule 62-814.450(3), F.A.C.

Note: mG = milliGauss.

The field levels of the proposed transmission line shown in this table are based on the highest fields anticipated for the single- or double-circuit, as appropriate, 230-kV transmission line configuration, even though structural configurations with lower fields may be employed for some portions of the line. The transmission line will generally operate at a level well under the MCR.

Sources: EzEMF software program developed through Florida Electric Power Coordinating Group and accepted by FDEP.
FPL, 2005.

Table 4.5-1 presents the maximum EMF that can be produced by the proposed transmission line under maximum operating conditions. These fields comply with FDEP rule requirements for new 230-kV lines. Appendix E provides data depicting the maximum electric and magnetic fields at maximum operating conditions for each of the typical line configurations, both on the right-of-way and laterally under the transmission line.

In the event additional configurations are required by the detailed design of the transmission line after certification, FPL will submit the EMF compliance demonstrations to FDEP at least 90 days prior to the start of construction.

4.5.2 AUDIBLE NOISE

The audible noise associated with a transmission line is generated by either corona from the conductors or from gap-type discharges. Corona is an ionization process that occurs when there is an irregularity on the surface of the conductor, such as buildup from fog, water droplets, significant particulate matter, etc. Corona activity at the surface of the conductors produces a low-level audible noise that is a slight humming sound. Under wet conditions, higher noise levels are experienced than would occur under dry conditions. However, the background noise from various sources (inclement weather, traffic, construction activity, etc.) has the effect of masking transmission line noise.

During fair weather and under normal operating conditions, the audible noise levels calculated for the proposed transmission line designs will be less than the ambient outdoor noise levels. Table 4.5-2 presents the maximum audible noise levels that could be produced by the proposed transmission line.

Table 4.5-2. Maximum Audible Noise at the Edge of Right-of-Way for the SJPP Project

Right-of-Way Configuration	L50* (dBA)
SJPP Project on FPL St. Johns-Tocoi 230-kV, 110-ft right-of-way (double circuit)	47.0
SJPP Project on typical 60-ft right-of-way	44.7
SJPP Project along Tocoi Road, typical 30-ft right-of-way (assumes double circuit)	44.9
SJPP Project on typical 15-ft right-of-way along road easement	45.1
SJPP Project along SR 207, 30-ft right-of-way along FPL Putnam-St. Johns 115-kV line (assumes double circuit)	42.1
SJPP Project near Anastasia substation, typical 50-ft right-of-way	45.0

*Maximum audible noise occurs during rain or other wet weather conditions. Noise levels will be lower during dry weather conditions.

Sources: Corona and Field Effects Program, Version 3, Bonneville Power Authority.
FPL, 2005.

For a very small portion of time, when the conductors are wet from rainfall or heavy fog, the transmission line noise will increase. During wet conditions, the median (L50) A-weighted sound pressure level of the transmission line noise will range from 42.1 to 47.0 dBA at the edge of the right-of-way, depending on the right-of-way cross-section configuration. The noise level produced by the transmission line will comply with all applicable noise ordinances in St. Johns County and the city of Palm Coast (see Tables 2.2-1 and 2.2-2 for applicable limits).

4.5.3 RADIO AND TELEVISION INTERFERENCE

Electrical noise in the radio frequency range can also be produced by corona, potentially causing interference in some radio signals. No interference is expected to occur for frequency-modulated (FM) radio or facilities using FM communication systems, including business or public service communications. Receipt of signals from most amplitude-modulated (AM) radio broadcasting stations in the area are not expected to experience any interference from the proposed transmission line. The audio portion of a television signal is FM; therefore, no interference with the audio signal should occur as a result of the proposed transmission line.



With television stations meeting the minimum requirements for Grade A service (as defined by the Federal Communications Commission [FCC]), there is a potential for interference with the video portion of the signal out to a distance of up to approximately 35 ft from the edge of the right-of-way during the worst foul weather conditions only. This possible interference is limited to Channels 2, 4, and 5.

Cable television service will be unaffected by the proposed transmission line. Telephone service will also be unaffected by the proposed transmission line.

4.5.4 SAFETY

As required by the Florida PSC in Section 25-6.0345, F.A.C., the proposed transmission line will comply with all requirements of the NESC (2002 edition). The purpose of this code is, among other things, the practical safeguarding of persons during the installation, operation, and maintenance of electric lines and associated equipment.

FPL standards require that fences and gates either crossing or parallel and within transmission line rights-of-way be grounded to mitigate shock hazards. FPL will provide this grounding as part of its construction activities.



5.0
***VARIANCES, EXCEPTIONS,
AND EXEMPTIONS***

The certification, construction, maintenance, and operation of the SJPP 230-kV transmission line project require no known variances, exceptions, or exemptions from applicable state and local standards or local ordinances.

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- Property boundaries
- Future land use map
- Zoning map
- PUD map
- PUD, industrial/commercial
- DRI map

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FDOT. 2003. Flagler County highway map.

Florida Fish & Wildlife Conservation Commission (FWC). 2003. Marisa Visel, Tallahassee; endangered/threatened species data for state, CD version.

Florida Geographic Data Library (FGDL). 2002. Digital files for:

- Wetlands (NWI)
- Canals/streams/rivers/lakes
- Roads/highways
- County boundaries
- City boundaries
- Airports/heliports
- Schools
- Land use/land cover (FLUCFCS III)

Florida Natural Areas Inventory (FNAI). 2005:

- Florida Managed Area (FLMA)—File: Federal, state, local, privately managed lands
- Florida Forever/Board of Trustees (FFBOT) Environmental Lands, 2002—File: FDEP Managed lands
- Element Occurrences (EO) quadrangle—File listed species/high quality habitats by quadrangle

Florida Power & Light Company (FPL). 2005. Digital files for:

- Existing transmission lines
- Existing/proposed substations
- Existing streets

St. Johns County Property Appraiser. 2005. Digital files for:

- Property boundaries
- Zoning map
- Future land use map
- Planned development map

St. Johns River Water Management District (SJRWMD). 2005. Digital files for:

- 2004 digital ortho photo quadrangles
- Hydrography
- Land cover/vegetation
- Federal and state lands
- Endangered/threatened species

U.S. Geological Survey (USGS). Digital 1:24,000 scale quadrangle maps

WEB SITES:

Areas of critical concern	www.dca.state.fl.us/fdcp/dcp/acsc/index.cfm www.fightbackputnam.org/pdf/commplanprogguide.pdf
City of Palm Coast	www.ci.palm-coast.fl.us
Conservation and Recreation Lands (CARL)	www.tfn.net/NatureConserv/stories/manage.html
Estuarine Sanctuaries	www.sanctuaries.nos.noaa.gov/welcome.html
Flagler County	www.flaglercounty.org
Florida Natural Areas Inventory	www.fnai.org
Indian Reservations	www.osec.doc.gov/eda/pdf/15Florida.pdf www.doil.gov/leaders.pdf www.seminoletribe.com www.miccosukee.com/resmap.html
Marine Sanctuaries	www.sanctuaries.nos.noaa.gov/oms/oms.html
Military Installations	www.themilitaryzone.com/military_bases.html
National Forests	www.fs.fed.us/r8/florida/
National Historic Landmarks	tps.cr.nps.gov/nhl/
National Memorials	www.roadtripinfo.com/nmhslist.htm



National Monuments	www.roadtripinfo.com/nmlist.htm
National Natural Landmarks	www.nwi.org/Maps/WildernessData.html#anchor1087485
National Parks	www.roadtripinfo.com/nplist.htm
National Register of Historic Places	www.nationalregisterofhistoricplaces.com/
National Seashores	www.floridasmart.com/sciencenature/naturalflorida/seashores.htm
National Wildlife Refuge	refuges.fws.gov/
National Wilderness Area	www.wilderness.net/index.cfm?fuse=NWPS&sec=stateView&state=fl&map=gasouthflnorth
Orchids	www.orchids.org
Outstanding Florida Waters	www.dep.state.fl.us/water/surfacewater/ofwfs.htm#designation
Pellicer Creek	www.dep.state.fl.us/coastal/sites/gtm/pellicer.htm
Plants	www.plantatlas.usf.edu/
Properties in the National Register of Historic Places	www.cr.nps.gov/nr/about.htm
RARE Areas	roadless.fs.fed.us/states/fl/state3.shtml
State Aquatic Preserves	www.dep.state.fl.us/coastal/programs/aquatic.htm
State Archaeological Landmarks or Landmark Zones	dhr.dos.state.fl.us/archaeology/
State Forests	www.fl-dof.com/state_forests/
State Game Management Areas	wildflorida.org/hunting/
State Parks	www.floridastateparks.org/
St. Johns County	www.co.st-johns.fl.us
St. Johns River Water Management District	sjr.state.fl.us/programs.data/html



APPENDIX A

FINAL ORDER ON NEED DETERMINATION

BEFORE THE PUBLIC SERVICE COMMISSION

In re: Petition for determination of need for St. Johns-Pellicer-Pringle 230 kV transmission line, by Florida Power & Light Company.	DOCKET NO. 050145-EI ORDER NO. PSC-05-0527-FOF-EI ISSUED: May 13, 2005
--	--

The following Commissioners participated in the disposition of this matter:

BRAULIO L. BAEZ, Chairman
J. TERRY DEASON
RUDOLPH "RUDY" BRADLEY
CHARLES M. DAVIDSON
LISA POLAK EDGAR

ORDER DETERMINING THE NEED FOR AN ELECTRICAL TRANSMISSION LINE

APPEARANCES:

KENNETH A. HOFFMAN, ESQUIRE, RUTLEDGE, ECENIA, PURNELL & HOFFMAN, P.A., P.O. Box 551, Tallahassee, FL 32302
On behalf of Florida Power & Light Company.

GARSON R. KNAPP, ESQUIRE, Florida Power & Light Company, 700 Universe Blvd., Juno Beach, FL 33408-0420
On behalf of Florida Power & Light Company.

MARTHA CARTER BROWN, ESQUIRE, Florida Public Service Commission, 2540 Shumard Oak Boulevard, Tallahassee, FL 32399-0850
On behalf of the Florida Public Service Commission.

BY THE COMMISSION:

CASE BACKGROUND

On March 25, 2005, Florida Power & Light Company (FPL) filed a petition for determination of need for a proposed 230 kV transmission line in Flagler and St. John's counties, pursuant to the provisions of Section 403.537, Florida Statutes, and Rules 25-22.075 and 25-22.076, Florida Administrative Code. We held an administrative hearing on FPL's petition on May 9, 2005. Notice of the filing of FPL's petition and of the May 9, 2005, public hearing was done in accordance with applicable statutes and rules. Notice was provided to those persons requesting notice, to counties and regional planning councils in whose jurisdiction the

transmission line could be placed, by publication in the Florida Administrative Weekly, and in newspapers of general circulation no later than twenty (20) days prior to the date of the hearing.

No other parties intervened in the proceeding. At the hearing on May 9, 2005, the testimony and exhibits were stipulated into the hearing record, and stipulated positions proposed to all the issues in the case. We issued a bench decision at the hearing approving the proposed stipulations and thereby determining the need for the transmission line. Our decision, explained in more detail below, determined the need and the beginning and end points for the transmission line. The transmission Line Siting Board will make the final determination concerning the length and route of the line.

DECISION

As provided in section 403.537, Florida Statutes, we are required to take the following into account in determining the need for a proposed transmission line subject to our review under Florida's Transmission Line Siting Act (sections 403.52-403.5365, Florida Statutes):

[T]he need for electric system reliability and integrity; the need for abundant, low-cost electrical energy to assure the economic well-being of the citizens of this state; the appropriate starting and ending point of the line; and other matters within [our] jurisdiction deemed relevant to the determination of need.

Need for Electric System Reliability and Integrity

Over the past five years, the load in FPL's North Region, an area extending north to Nassau County and south to Indian River County on Florida's east coast, has grown by a Compound Annual Average Growth Rate of 3.7%. FPL is forecasting the North Region to continue to grow at a rate of 3.2% over the next five years. Transmission assessment studies conducted by FPL during 2004 have identified regional transmission system limitations in St. Johns and Flagler Counties. The studies show that by 2008, the existing 115kV transmission network, which parallels the coast between the Bunnell and St. Johns Substations, will not have sufficient capacity to provide reliable service to existing and proposed substations. FPL's review of transmission alternatives to address the insufficiency led it to select the St. Johns-Pellicer-Pringle Project as the most cost-effective and efficient means both to provide electrical service to the new load areas and substations west of its existing transmission facilities, and to reinforce the existing 115kV coastal network.

The St. Johns-Pellicer-Pringle Project would be built to alleviate potential overloads and low voltage conditions from a single contingency event. The need for transmission system upgrades is most frequently based on potential overload conditions associated with single contingency events, which occur when a single element such as a generator, transmission circuit or transformer is eliminated from the system. If FPL does not add new transmission capability in its North Region by 2008, overloads ranging from 102 to 130 percent of the thermal line rating

are forecasted under 8 separate single contingencies. Depending on the specific outage or contingency, service interruptions may affect between 1,000 to 8,300 electric customers.

FPL has demonstrated the need for a 230kV line by December 2008 to: (a) serve the increasing load and customer base in the area south of the St. Johns Substation, north of the Pringle Substation and to the west of the existing Bunnell-St. Johns 115kV transmission line in a reliable manner consistent with North American Electric Reliability Council (NERC) and Florida Reliability Coordinating Council (FRCC) Transmission System Standards; (b) provide additional reinforcement to the existing 115kV transmission line between the Bunnell and St. Johns Substations by providing a 230kV injection point from the planned Pellicer Substation into the Forest Grove-Matanzas 115kV line section; and (c) efficiently and effectively integrate and serve new distribution substations that are needed to serve the load growth in the project service area.

For these reasons we find that the proposed St. John's-Pellicer-Pringle project is needed to preserve electric system reliability and integrity.

Need for Abundant, Low-Cost Electrical Energy to Assure the Economic Well-Being of the Citizens of This State

FPL evaluated 2 alternatives to the proposed St. John's-Pellicer-Pringle project. Both alternatives were transmission modifications to the existing 115 kV system. Alternative I consisted of building a new 115 kV transmission line, approximately 25 miles in length, between the Pringle and St. Johns substations. The new line would serve three additional new substations -- Pellicer, Anastasia and Vermont -- at a cost of \$29.5 million in net present value dollars for 2005. Alternative II consisted of building no new transmission lines and serving the existing and proposed new substations from the current 115 kV transmission network. The cost of Alternative II was estimated at \$24 million in net present value dollars for 2005. FPL rejected both alternatives due to economics and concerns with the ability to serve additional future customers west of the I-95/US-1 corridor. FPL determined that the most cost-effective alternative was the St. John's-Pellicer-Pringle project. FPL estimates the cost of that project at \$21.8 million net present value in 2005 dollars. While the final cost of the project is subject to the final routing and conditions of certification required by the Transmission Line Siting Board, we find that the estimate cost of the project is reasonable, and we find that the transmission line will assure the economic well-being of the citizens of the state by serving projected new electric load in the region, and improving the region's electric reliability by minimizing the region's exposure to single contingency events.

Appropriate Starting and Ending Points

We find that FPL's existing St. Johns Substation in St. Johns County and its planned Pringle Substation in Flagler County are the appropriate starting and ending points of the proposed St. Johns-Pellicer-Pringle 230kV electrical transmission line. Both the St. Johns and Pringle substations are adjacent to FPL future load centers. Also, the St. Johns substation is currently connected to the rest of FPL's electric system via FPL's existing 230 kV and 115 kV

transmission lines, and the Pringle substation, which is scheduled for completion in 2006, will be connected by the proposed St. Johns-Pellicer-Pringle 230 kV transmission line in 2008. The Transmission Line Siting Board will make the final determination concerning the exact length and route of the new line.

Conclusion

We approve Florida Power & Light Company's petition for determination of need for the proposed St. Johns-Pellicer-Pringle 230kV electrical transmission line project. FPL has adequately demonstrated the need for the proposed St. Johns-Pellicer-Pringle 230kV electrical transmission line project according to the criteria prescribed in section 403.537, Florida Statutes.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that Florida Power & Light Company's Petition for determination of need for St. Johns-Pellicer-Pringle 230 kV transmission line is granted. It is further

ORDERED that Florida Power & Light Company's St. Johns-Pellicer-Pringle 230 kV transmission line project is needed, taking into account the criteria set forth in section 403.537, Florida Statutes. It is further

ORDERED that this docket shall be closed.

By ORDER of the Florida Public Service Commission this 13th day of May, 2005.

BLANCA S. BAYÓ, Director
Division of the Commission Clerk and
Administrative Services

By: /s/ Kay Flynn
Kay Flynn, Chief
Bureau of Records

This is a facsimile copy. Go to the Commission's Web site,
<http://www.floridapsc.com> or fax a request to 1-850-413-
7118, for a copy of the order with signature.

(S E A L)

MCB

NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.569(1), Florida Statutes, to notify parties of any administrative hearing or judicial review of Commission orders that is available under Sections 120.57 or 120.68, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

Any party adversely affected by the Commission's final action in this matter may request: 1) reconsideration of the decision by filing a motion for reconsideration with the Director, Division of the Commission Clerk and Administrative Services, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, within fifteen (15) days of the issuance of this order in the form prescribed by Rule 25-22.060, Florida Administrative Code; or 2) judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water and/or wastewater utility by filing a notice of appeal with the Director, Division of the Commission Clerk and Administrative Services and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days after the issuance of this order, pursuant to Rule 9.110, Florida Rules of Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.



APPENDIX B

AGENCY CONTACTS



APPENDIX B

AGENCY CONTACTS

Date	Contact Name	Agency	Subject
01/05/05	Mike Campbell	St. Johns County GIS Department	Digital data files for county
01/26/05	Frances Hulbert	City of Palm Coast	Comp plan, FLUM, LDC
01/26/05	Patsy Powers	Flagler County	Comp plan, FLUM, LDC
01/26/05	Dawn	St. Johns County	Comp plan, FLUM, LDC
02/22/05	Drew DeCandis Paul Darst Hamilton "Buck" Owen Russel Price Andrew Sears Jim Maher Jim Smith Walter Fufidio Rick McCann Dennis David Ed Lehman Brian Teeple Robert Christianson Tara Boonstra Lindsay Haga Scott Clem Bruce Ford Teresa Bishop Mark Evans Jane Monaghan Candace Martino	City of Palm Coast DCA FDEP FDEP FDEP FDEP Flagler County Flagler County FWC FWC NEFRPC NEFRPC SJRWMD SJRWMD St. Johns County St. Johns County St. Johns County St. Johns County USACE USFWS USFWS	Correspondence and project introduction; invitation to meeting
02/24/05	Drew DeCandis Lindsay Haga Walter Fufidio	City of Palm Coast St. Johns County Flagler County	Project introduction/status of new developments/regulations
02/24/05	Drew DeCandis	City of Palm Coast	Discussed project in general and asked for help in future on contacts
02/25/05	Lindsay Haga	St. Johns County	Discussed project in general and asked for help in future on contacts
02/25/05	Jim Smith	Flagler County	Discussed project in general and asked for help in future on contacts



Date	Contact Name	Agency	Subject
02/25/05	Walter Fidido	Flagler County	Discussed project in general and asked for help in future on contacts
02/25/05	Lindsay Haga	St. Johns County	Discussed project in general and asked for help in future on contacts
03/01/05	Rick McCann Rusty Price Robert Christianson Drew DeCandis Lindsay Haga	FWC FDEP SJRWMD City of Palm Coast St. Johns County	Project introduction; solicitation of issues and data
03/14/05	David Toner	St. Johns County School District	Asked for proposed school sites; offered map of study area
04/05/05	Mike Campbell	St. Johns County GIS Department	Digital data files for county
04/06/05	Drew DeCandis Russel Price Andrew Sears Jim Maher Jim Smith Rick McCann Dennis David Tim Breen Ed Lehman Brian Teeple Robert Christianson Lindsay Haga Bruce Ford Teresa Bishop Mark Evens Jane Monaghan Candace Martino	City of Palm Coast FDEP FDEP FDEP Flagler County FWC FWC FWC NEFRPC NEFRPC SJRWMD St. Johns County St. Johns County St. Johns County USACE USFWS USFWS	Invitation to open house
04/21/05	Lonnie Groot, Esq.	City of Palm Coast	Project introduction
04/22/05	Michael Hunt, Esq.	St. Johns County	Project introduction
04/22/05	Carl Kern, Esq.	Flagler County	Project introduction



Date	Contact Name	Agency	Subject
04/27/05	Jason Gambone Drew DeCandis Paul Darst Hamilton "Buck" Owen Russel Price Andrew Sears Jim Maher Jim Smith Walter Fufidio Rick McCann Dennis David Ed Lehman Brian Teeple Robert Christianson Tara Boonstra Lindsay Haga Scott Clem Bruce Ford Teresa Bishop Mark Evans Jon Soderberg Jon Griffin Jane Monaghan Candace Martino	City of Palm Coast City of Palm Coast DCA FDEP FDEP FDEP FDEP Flagler County Flagler County FWC FWC NEFRPC NEFRPC SJRWMD SJRWMD St. Johns County St. Johns County St. Johns County St. Johns county USACE USACE USACE USFWS USFWS	Correspondence and solicitation for feed-back on route options
05/03/05	Aaron Smith	FDOT Aviation Office	Information on glide slope for Tocoj Jct. airstrip
05/04/05	Lindsay Haga	St. Johns County	Information on Tocoj Jct. airstrip
05/06/05	Mike Campbell	St. Johns County GIS Department	Zoning and FLUM data
05/09/05	Richard Null	FDOT	Private airstrip regulations
05/10/05	Jane Monaghan	USFWS	Listed species in corridor vicinity
05/11/05	Ray Tyner	Palm Coast	Explained the TLSA and asked about DRI
05/11/05	Mike Campbell	St. Johns GIS Department	Question about FLUM
05/18/05	Lauren Kasak	Division of Historical Resources	Master site file list for preferred corridor
05/26/05	Ray Tyner	City of Palm Coast Planning Department	Proposed city water/wastewater plant and wellfield near Pringle site

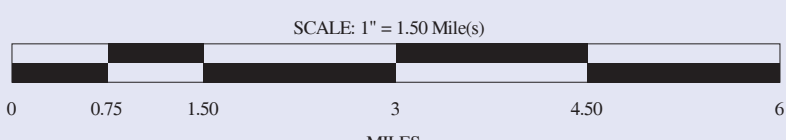
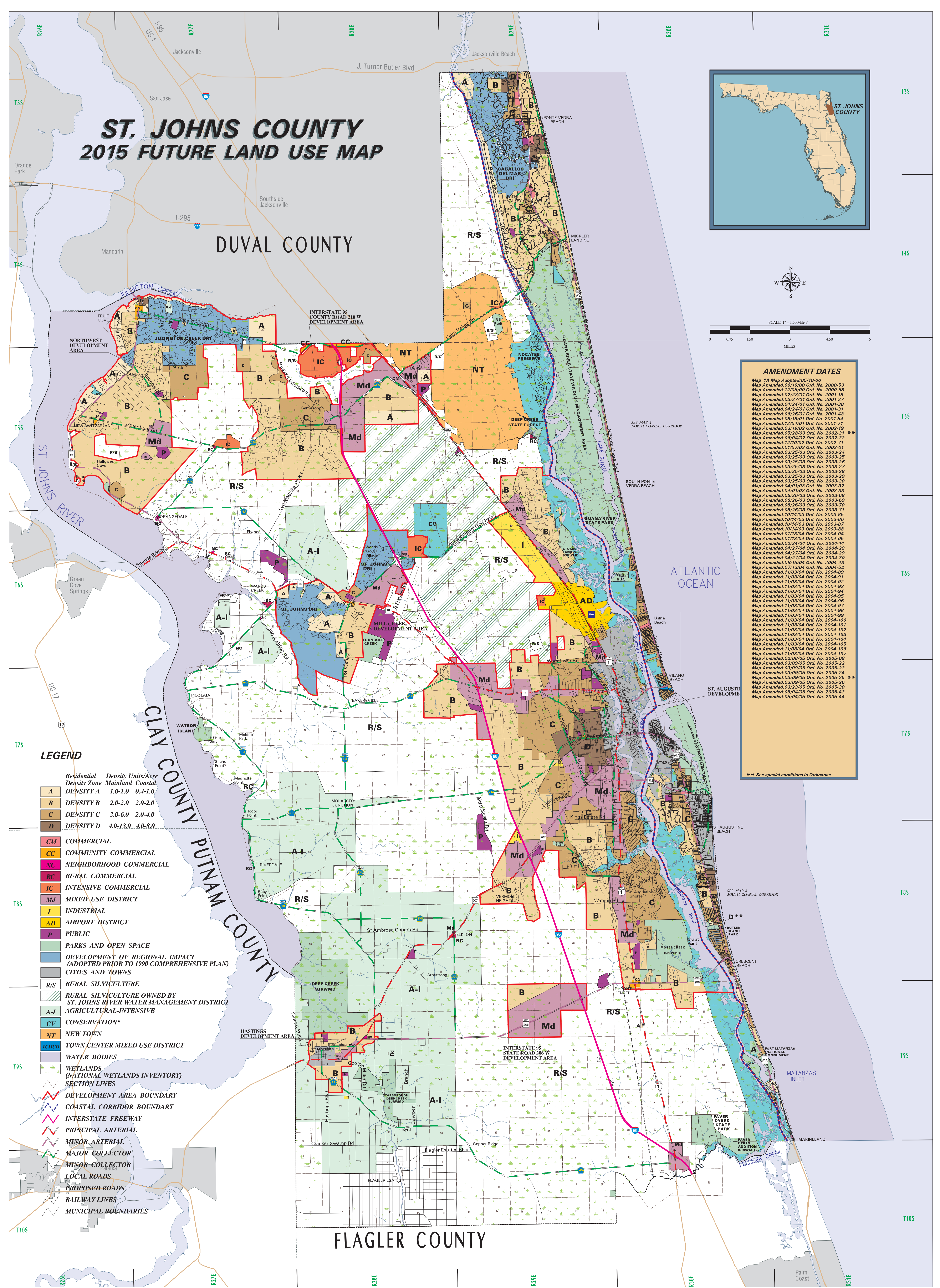


Date	Contact Name	Agency	Subject
06/02/05	Lindsay Haga	St. Johns County	Questions about application sections on tree removal, buffers, and anything new in development



APPENDIX C

FUTURE LAND USE MAPS



AMENDMENT DATES	
Map 1A Map Adopted: 05/10/00	
Map Amended: 09/19/00 Ord. No. 2000-53	
Map Amended: 12/05/00 Ord. No. 2000-68	
Map Amended: 02/23/01 Ord. No. 2001-18	
Map Amended: 03/27/01 Ord. No. 2001-27	
Map Amended: 04/24/01 Ord. No. 2001-30	
Map Amended: 04/24/01 Ord. No. 2001-31	
Map Amended: 06/26/01 Ord. No. 2001-43	
Map Amended: 09/18/01 Ord. No. 2001-54	
Map Amended: 12/04/01 Ord. No. 2001-71	
Map Amended: 05/28/03 Ord. No. 2002-31	
Map Amended: 06/04/02 Ord. No. 2002-32	
Map Amended: 12/10/02 Ord. No. 2002-71	
Map Amended: 01/07/03 Ord. No. 2003-01	
Map Amended: 03/25/03 Ord. No. 2003-24	
Map Amended: 03/25/03 Ord. No. 2003-25	
Map Amended: 03/25/03 Ord. No. 2003-26	
Map Amended: 03/25/03 Ord. No. 2003-27	
Map Amended: 03/25/03 Ord. No. 2003-28	
Map Amended: 03/25/03 Ord. No. 2003-29	
Map Amended: 03/25/03 Ord. No. 2003-30	
Map Amended: 04/01/03 Ord. No. 2003-32	
Map Amended: 04/01/03 Ord. No. 2003-33	
Map Amended: 08/26/03 Ord. No. 2003-68	
Map Amended: 08/26/03 Ord. No. 2003-69	
Map Amended: 08/26/03 Ord. No. 2003-70	
Map Amended: 08/26/03 Ord. No. 2003-71	
Map Amended: 10/14/03 Ord. No. 2003-85	
Map Amended: 10/14/03 Ord. No. 2003-86	
Map Amended: 10/14/03 Ord. No. 2003-87	
Map Amended: 10/14/03 Ord. No. 2003-88	
Map Amended: 01/13/04 Ord. No. 2004-04	
Map Amended: 01/13/04 Ord. No. 2004-05	
Map Amended: 02/24/04 Ord. No. 2004-14	
Map Amended: 04/27/04 Ord. No. 2004-28	
Map Amended: 04/27/04 Ord. No. 2004-29	
Map Amended: 04/27/04 Ord. No. 2004-30	
Map Amended: 06/15/04 Ord. No. 2004-43	
Map Amended: 07/13/04 Ord. No. 2004-52	
Map Amended: 11/03/04 Ord. No. 2004-89	
Map Amended: 11/03/04 Ord. No. 2004-91	
Map Amended: 11/03/04 Ord. No. 2004-92	
Map Amended: 11/03/04 Ord. No. 2004-93	
Map Amended: 11/03/04 Ord. No. 2004-94	
Map Amended: 11/03/04 Ord. No. 2004-95	
Map Amended: 11/03/04 Ord. No. 2004-96	
Map Amended: 11/03/04 Ord. No. 2004-97	
Map Amended: 11/03/04 Ord. No. 2004-98	
Map Amended: 11/03/04 Ord. No. 2004-99	
Map Amended: 11/03/04 Ord. No. 2004-100	
Map Amended: 11/03/04 Ord. No. 2004-101	
Map Amended: 11/03/04 Ord. No. 2004-102	
Map Amended: 11/03/04 Ord. No. 2004-103	
Map Amended: 11/03/04 Ord. No. 2004-104	
Map Amended: 11/03/04 Ord. No. 2004-105	
Map Amended: 11/03/04 Ord. No. 2004-106	
Map Amended: 11/03/04 Ord. No. 2004-107	
Map Amended: 02/08/05 Ord. No. 2005-08	
Map Amended: 03/09/05 Ord. No. 2005-22	
Map Amended: 03/09/05 Ord. No. 2005-23	
Map Amended: 03/09/05 Ord. No. 2005-24	
Map Amended: 03/09/05 Ord. No. 2005-25	
Map Amended: 03/09/05 Ord. No. 2005-26	
Map Amended: 03/23/05 Ord. No. 2005-30	
Map Amended: 05/04/05 Ord. No. 2005-43	
Map Amended: 05/04/05 Ord. No. 2005-44	

LEGEND

- Residential Density Units/Acre
- Density Zone Mainland Coastal
- DENSITY A 1.0-1.0 0.4-1.0
- DENSITY B 2.0-2.0 2.0-2.0
- DENSITY C 2.0-6.0 2.0-4.0
- DENSITY D 4.0-13.0 4.0-8.0
- CM COMMERCIAL
- CC COMMUNITY COMMERCIAL
- NC NEIGHBORHOOD COMMERCIAL
- RC RURAL COMMERCIAL
- IC INTENSIVE COMMERCIAL
- Md MIXED USE DISTRICT
- I INDUSTRIAL
- AD AIRPORT DISTRICT
- P PUBLIC
- PARKS AND OPEN SPACE
- DEVELOPMENT OF REGIONAL IMPACT (ADOPTED PRIOR TO 1990 COMPREHENSIVE PLAN)
- CITIES AND TOWNS
- R/S RURAL SILVICULTURE
- R/S RURAL SILVICULTURE OWNED BY ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
- A-I AGRICULTURAL-INTENSIVE
- CV CONSERVATION*
- NT NEW TOWN
- TCMU TOWN CENTER MIXED USE DISTRICT
- WATER BODIES
- WETLANDS (NATIONAL WETLANDS INVENTORY)
- SECTION LINES
- DEVELOPMENT AREA BOUNDARY
- COASTAL CORRIDOR BOUNDARY
- INTERSTATE FREEWAY
- PRINCIPAL ARTERIAL
- MINOR ARTERIAL
- MAJOR COLLECTOR
- MINOR COLLECTOR
- LOCAL ROADS
- PROPOSED ROADS
- RAILWAY LINES
- MUNICIPAL BOUNDARIES

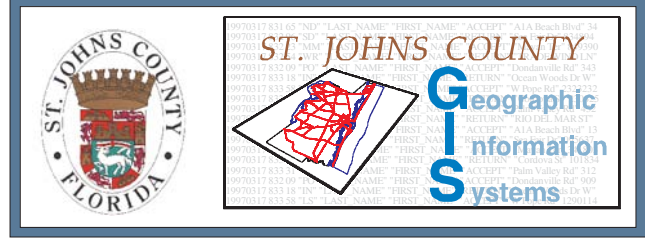
LAND USE NOTES

Conservation
* Areas designated Conservation are approximate in nature and the exact boundaries shall be determined by environmental survey and established pursuant to applicable regulatory requirements.
Development of Regional Impact
Approved Developments of Regional Impact shown on this map, may be developed consistent with their Development Orders and in accordance with applicable law.

2015 COMPREHENSIVE PLAN
ST. JOHNS COUNTY
FUTURE LAND USE MAP

St. Johns County Planning Department
4020 Lewis Speedway
St. Augustine, FL 32095
(904) 209-0575

DISCLAIMER:
This map is for reference only. Data provided are derived from multiple sources with varying levels of accuracy. The St. Johns County GIS Program disclaims all responsibility for the accuracy or completeness of the data shown hereon.

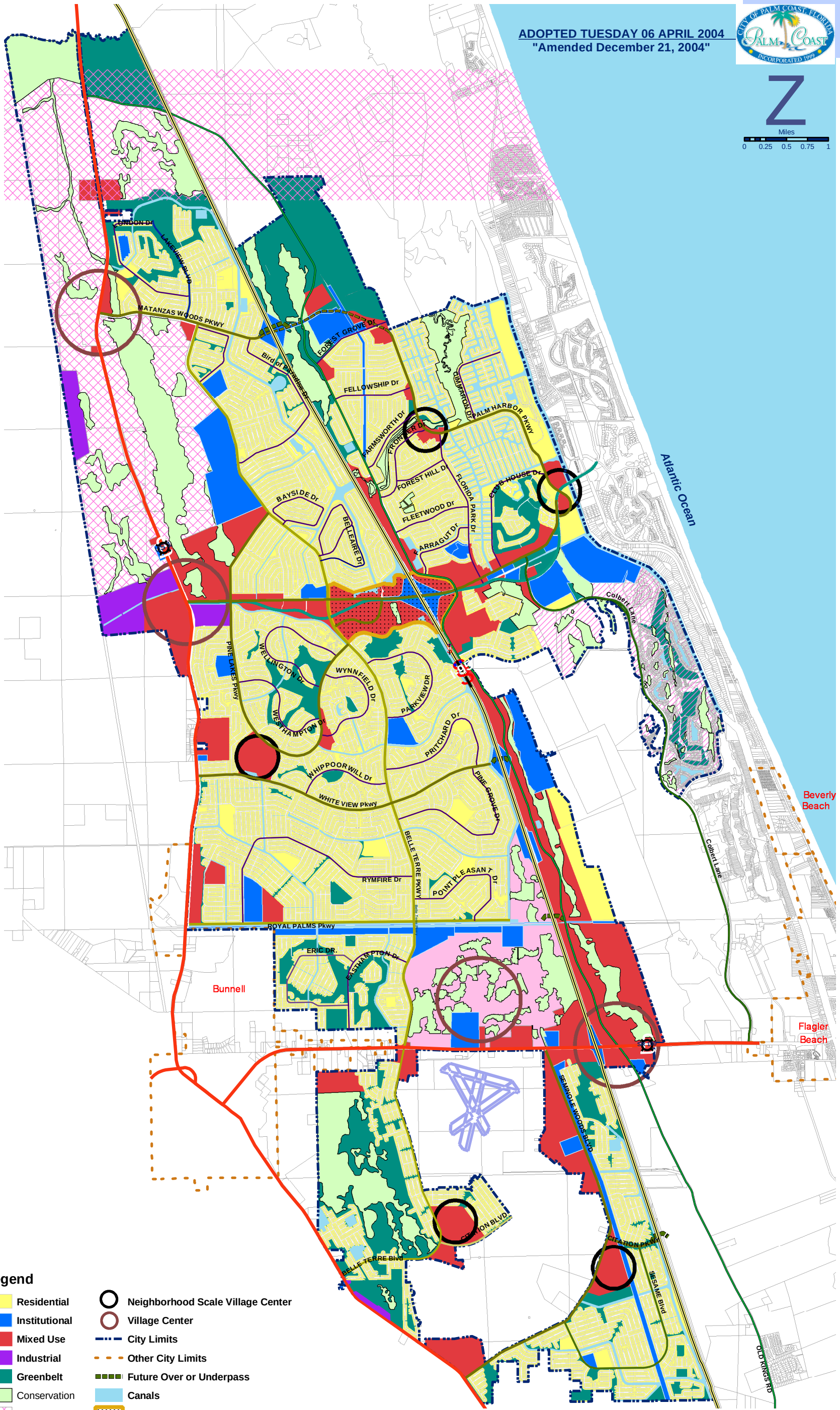


ADOPTED TUESDAY 06 APRIL 2004
"Amended December 21, 2004"



N

Miles
0 0.25 0.5 0.75 1



Legend

- | | |
|-----------------|--------------------------------------|
| Residential | Neighborhood Scale Village Center |
| Institutional | Village Center |
| Mixed Use | City Limits |
| Industrial | Other City Limits |
| Greenbelt | Future Over or Underpass |
| Conservation | Canals |
| DRI-Mixed Use | Transportation Concurrency Exception |
| DRI-Residential | |
| DRI-Urban Core | |

City of Palm Coast Comprehensive Plan
Map CP-1.5
Future Land Use



APPENDIX D

DIVISION OF HISTORICAL RESOURCES LETTERS



FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

May 18, 2005

Philip W. Simpson
ECT, Inc.
3701 NW 98th St.
Gainesville, FL 32606
Fax 352-332-6722

Dear Mr. Simpson:

In response to your inquiry of May 16, 2005, the Florida Master Site File lists four previously recorded archaeological sites, and one historical structure, in the following parcel of the St. Johns:

T7S, R29E, Sections 27-29, 32-35

In interpreting the results of our search, please remember the following points:

- **Areas which have not been completely surveyed, such as yours, may contain unrecorded archaeological sites or historical structures.**
- **While many of our records relate to historically significant properties, the entry of an archaeological site or an historical structure on the Florida Master Site File does not necessarily mean that the structure is significant.**
- **Since vandalism is common at Florida sites, we ask that you limit the distribution of location information on archaeological sites.**
- **As you may know, federal and state laws require formal environmental review for some projects. Record searches by the staff of the Florida Master Site File do not constitute such a review. If your project falls under these laws, you should contact the Compliance Review Section of the Bureau of Historic Preservation at 850-245-6333 or at this address.**

If you have any further questions concerning the Florida Master Site File, please contact us as below.

Sincerely,

Lauren E. Kasak
Archaeological Data Analyst
Division of Historical Resources
R. A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250

Phone: 850-245-6440 Fax: 850-245-6439
Florida Master Site File
SunCom: 205-6440
Email: fmsfile@dos.state.fl.us
Web: <http://www.dos.state.fl.us/dhr/msf/>

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
(850) 245-6300 • FAX: 245-6435

☐ Archaeological Research
(850) 245-6444 • FAX: 245-6436

☐ Historic Preservation
(850) 245-6333 • FAX: 245-6437

☐ Historical Museums
(850) 245-6400 • FAX: 245-6433

☐ Palm Beach Regional Office
(561) 279-1475 • FAX: 279-1476

☐ St. Augustine Regional Office
(904) 825-5045 • FAX: 825-5044

☐ Tampa Regional Office
(813) 272-3843 • FAX: 272-2340

SITEID	FORMNO	T-R-S	CR	SITENAME	NRLIST SURVEY	LOCATION	OTHER
SJ02902	198509	07S/29E/27	SS NN		1515 Map: STAB	SR 214, TOCOI JUNCTION	Uses: RESI Culture: SPN2 Sitetype: HEAR, REFU
SJ03158	198706	07S/29E/35	AR BUSHNELL'S MILL		1515 Map: STAB		Culture: AMER, STPB Sitetype: REFU, TURP
SJ03174	198706	07S/29E/27	AR NEASE TURPENTINE STILL		8212 Map: ELKT		Culture: 20TH Sitetype: HOME, LAND
SJ04765	200211	07S/29E/28	AR HISTORIC SCATTER #1		9397 Map: STAB		Culture: 20TH Sitetype: HOME, LAND
SJ04788	200307	07S/29E/27	AR TOCOI HOUSE				

5 site(s) evaluated; 5 form(s) evaluated.
Print date: 5/16/2005 2:50:09 PM



FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

May 18, 2005

Philip W. Simpson
ECT, Inc.
3701 NW 98th St.
Gainesville, FL 32606
Fax 352-332-6722

Dear Mr. Simpson:

In response to your inquiry of May 16, 2005, the Florida Master Site File lists one previously recorded archaeological site, and two historical structures, in the following parcel of the St. Johns:

T8S, R29E, Sections 4, 9-10, 15, 22, 26-27, 35

In interpreting the results of our search, please remember the following points:

- **Areas which have not been completely surveyed, such as yours, may contain unrecorded archaeological sites or historical structures.**
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- **As you may know, federal and state laws require formal environmental review for some projects. Record searches by the staff of the Florida Master Site File do not constitute such a review. If your project falls under these laws, you should contact the Compliance Review Section of the Bureau of Historic Preservation at 850-245-6333 or at this address.**

If you have any further questions concerning the Florida Master Site File, please contact us as below.

Sincerely,

Lauren E. Kasak
Archaeological Data Analyst
Division of Historical Resources
R. A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250

Phone: 850-245-6440 Fax: 850-245-6439
Florida Master Site File
SunCom: 205-6440
Email: fmsfile@dos.state.fl.us
Web: <http://www.dos.state.fl.us/dhr/msf/>

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
(850) 245-6300 • FAX: 245-6435

☐ Archaeological Research
(850) 245-6444 • FAX: 245-6436

☐ Historic Preservation
(850) 245-6333 • FAX: 245-6437

☐ Historical Museums
(850) 245-6400 • FAX: 245-6433

☐ Palm Beach Regional Office
(561) 279-1475 • FAX: 279-1476

☐ St. Augustine Regional Office
(904) 825-5045 • FAX: 825-5044

☐ Tampa Regional Office
(813) 272-3843 • FAX: 272-2340

SITEID	FORMNO	T-R-S	CR	SITENAME	NRLIST SURVEY	LOCATION	OTHER
SJ02903	199108	08S/29E/9	SS	PINE LAKE RANCH	2040 SR 207, ST AUGUSTINE BEAC	Uses: RESI Built: 1930C	
SJ02904	198509	08S/29E/9	SS	NN	CR 207, VERMONT HEIGHTS GV	Uses: AGRI	
SJ03482	200312	08S/29E/11	AR	OLD KINGS ROAD	10020 Map: STAB	Culture: AMER, BRIT, SPN2 Sitetype: ROAD	

3 site(s) evaluated; 3 form(s) evaluated.
Print date: 5/16/2005 2:50:46 PM



FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

May 18, 2005

Philip W. Simpson
ECT, Inc.
3701 NW 98th St.
Gainesville, FL 32606
Fax 352-332-6722

Dear Mr. Simpson:

In response to your inquiry of May 16, 2005, the Florida Master Site File lists one previously recorded archaeological site, and no historical structures, in the following parcel of the St. Johns:

T9S, R29E, Sections 2, 11-13, 24-25

In interpreting the results of our search, please remember the following points:

- **Areas which have not been completely surveyed, such as yours, may contain unrecorded archaeological sites or historical structures.**
- **While many of our records relate to historically significant properties, the entry of an archaeological site or an historical structure on the Florida Master Site File does not necessarily mean that the structure is significant.**
- **Since vandalism is common at Florida sites, we ask that you limit the distribution of location information on archaeological sites.**
- **As you may know, federal and state laws require formal environmental review for some projects. Record searches by the staff of the Florida Master Site File do not constitute such a review. If your project falls under these laws, you should contact the Compliance Review Section of the Bureau of Historic Preservation at 850-245-6333 or at this address.**

If you have any further questions concerning the Florida Master Site File, please contact us as below.

Sincerely,

Lauren E. Kasak
Archaeological Data Analyst
Division of Historical Resources
R. A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250

Phone: 850-245-6440 Fax: 850-245-6439
Florida Master Site File
SunCom: 205-6440
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☐ Tampa Regional Office
(813) 272-3843 • FAX: 272-2340

SITEID	FORMNO	T-R-S	CR	SITENAME	NRLIST SURVEY	LOCATION	OTHER
SJ03482	200312 08S/29E/11	AR	OLD KINGS ROAD		10020 Map: STAB		Culture: AMER, BRIT, SPN2 Sitetype: ROAD

1 site(s) evaluated; 1 form(s) evaluated.

Print date: 5/16/2005 2:51:20 PM



FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

May 18, 2005

Philip W. Simpson
ECT, Inc.
3701 NW 98th St.
Gainesville, FL 32606
Fax 352-332-6722

Dear Mr. Simpson:

In response to your inquiry of May 16, 2005, the Florida Master Site File lists one previously recorded archaeological site, and no historical structures, in the following parcel of the St. Johns:

T9S, R30E, Sections 30-32

In interpreting the results of our search, please remember the following points:

- **Areas which have not been completely surveyed, such as yours, may contain unrecorded archaeological sites or historical structures.**
- **While many of our records relate to historically significant properties, the entry of an archaeological site or an historical structure on the Florida Master Site File does not necessarily mean that the structure is significant.**
- **Since vandalism is common at Florida sites, we ask that you limit the distribution of location information on archaeological sites.**
- **As you may know, federal and state laws require formal environmental review for some projects. Record searches by the staff of the Florida Master Site File do not constitute such a review. If your project falls under these laws, you should contact the Compliance Review Section of the Bureau of Historic Preservation at 850-245-6333 or at this address.**

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Division of Historical Resources
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(813) 272-3843 • FAX: 272-2340

SITEID	FORMNO	T-R-S	CR	SITENAME	NRLIST SURVEY	LOCATION	OTHER
SJ03482	200312	08S/29E/11	AR	OLD KINGS ROAD	10020 Map: STAB	Culture: AMER, BRIT, SPN2 Sitetype: ROAD	

1 site(s) evaluated; 1 form(s) evaluated.
Print date: 5/16/2005 2:51:47 PM



FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

May 18, 2005

Philip W. Simpson
ECT, Inc.
3701 NW 98th St.
Gainesville, FL 32606
Fax 352-332-6722

Dear Mr. Simpson:

In response to your inquiry of May 16, 2005, the Florida Master Site File lists one previously recorded archaeological site, and no historical structures, in the following parcel of the St. Johns/Flagler:

T10S, R30E, Sections 5, 8, 17, 20, 28-29, 33

In interpreting the results of our search, please remember the following points:

- **Areas which have not been completely surveyed, such as yours, may contain unrecorded archaeological sites or historical structures.**
- **While many of our records relate to historically significant properties, the entry of an archaeological site or an historical structure on the Florida Master Site File does not necessarily mean that the structure is significant.**
- **Since vandalism is common at Florida sites, we ask that you limit the distribution of location information on archaeological sites.**
- **As you may know, federal and state laws require formal environmental review for some projects. Record searches by the staff of the Florida Master Site File do not constitute such a review. If your project falls under these laws, you should contact the Compliance Review Section of the Bureau of Historic Preservation at 850-245-6333 or at this address.**

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(904) 825-5045 • FAX: 825-5044

☐ Tampa Regional Office
(813) 272-3843 • FAX: 272-2340

SITEID	FORMNO	T-R-S	CR	SITENAME	NRLIST SURVEY	LOCATION	OTHER
SJ03482	200312	08S/29E/11	AR	OLD KINGS ROAD	10020 Map: STAB		Culture: AMER, BRIT, SPN2 Sitetype: ROAD

1 site(s) evaluated; 1 form(s) evaluated.
Print date: 5/16/2005 2:52:23 PM



APPENDIX E

EMF CALCULATIONS

Florida Department of Environmental Protection

Twin Tower Office Bldg * 2600 Blair Stone Road * Tallahassee, Florida 32399-2400

Report on Compliance with Electric and Magnetic Field (EMF) Standards

Agent/Facility Information

ST JOHNS-PELLICER-PRINGLE 230KV

Name of Transmission Line/InterestPoint

Florida Power and Light Co.

PO Box 14000, Juno Beach, FL 33408-0420

Name and Address of Facility (Utility) Owner

Phillip Givens, PE

PO Box 14000, Juno Beach, FL 33408-0420

Name and Address of Authorized Agent

October 01, 2007

Date of Proposed Construction

Phillip Givens, PE

PO Box 14000, Juno Beach, FL 33408-0420

Name and Address of Professional Engineer

Signature of Authorized Agent

Signature and Seal of Professional Engineer

Date

Date

Field Strength Information

Transmission Lines

Cross Section	Right-of-Way (ROW) Width (ft)	Maximum Calculated Fields and Distance From ROW Left					
		Electric				Magnetic	
		Within ROW		At Edge of ROW		At Edge of ROW	
		(kV/m)	(ft)	(kV/m)	(ft)	(mG)	(ft)
X-SECTION 2	60	3.2	30				
X-SECTION 3	80			1.1	0		
X-SECT 4	65	3.2	40				
X-SECTION 6	50	3.2	25			135.2	50

Substations

None

Florida Department of Environmental Protection

Twin Tower Office Bldg * 2600 Blair Stone Road * Tallahassee, Florida 32399-2400

Details for CrossSection: **X-SECT 1- SJ-P-P, COLLO. WITH FPL SJ-TC 230 KV, 110' RW**

NEW 1431

Circuit Name

230 kV

Rated Voltage

NEW CIRCUIT

New/Existing

Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
				# of	Diameter (in)	Spacing (in)			
1A1	65.00	10.00	55.00	1	1.43	0.00	246.0	0	1905
1B1	65.00	10.00	45.00	1	1.43	0.00	246.0	120	1905
1C1	65.00	10.00	35.00	1	1.43	0.00	246.0	240	1905
1G1	58.00	3.00	63.00	1	0.38	0.00	0.0	0	0

STJN-TOCOI

Circuit Name

230 kV

Rated Voltage

Existing Circuit

New/Existing

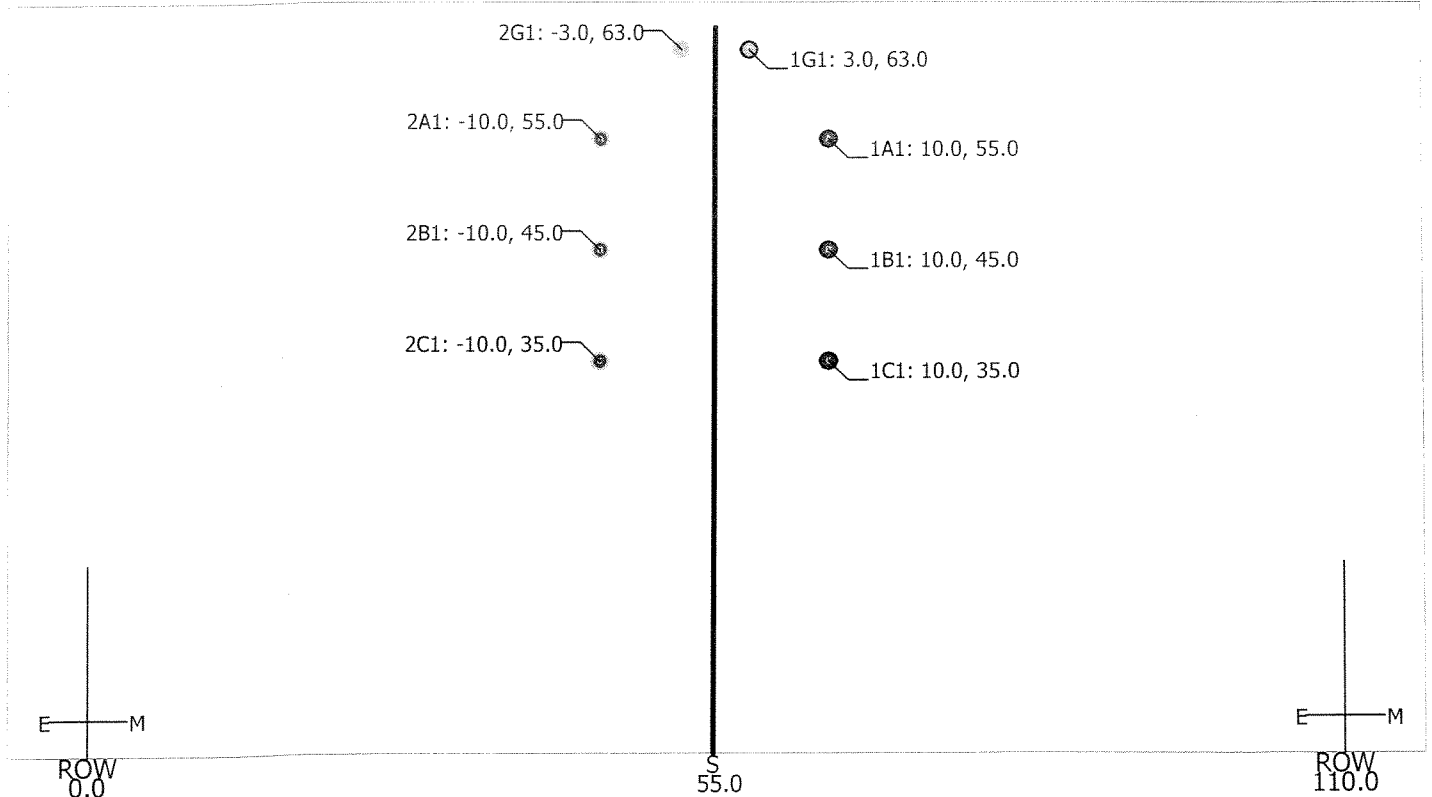
Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
				# of	Diameter (in)	Spacing (in)			
2A1	45.00	-10.00	55.00	1	1.20	0.00	246.0	0	1495
2B1	45.00	-10.00	45.00	1	1.20	0.00	246.0	120	1495
2C1	45.00	-10.00	35.00	1	1.20	0.00	246.0	240	1495
2G1	52.00	-3.00	63.00	1	0.60	0.00	0.0	0	0

Points of Interest

None

Phase Configuration

All Measurements in Feet



Electric and Magnetic Field Effects

ST JOHNS-PELLICER-PRINGLE 230KV

Units: **English** Physical System: **8** Conductors (**6** Energized Phases)
 E-Field Transducer Height **3.28** ft B-Field Transducer Height **3.28** ft

CrossSection: **X-SECT 1- SJ-P-P, COLLO. WITH FPL SJ-TC 230 KV, 110' RW**

Circuit Name	Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
					# of	Diameter (in)	Spacing (in)			
NEW 1431	1A1	65.00	10.00	55.00	1	1.43	0.00	246.0	0	1905
NEW 1431	1B1	65.00	10.00	45.00	1	1.43	0.00	246.0	120	1905
NEW 1431	1C1	65.00	10.00	35.00	1	1.43	0.00	246.0	240	1905
NEW 1431	1G1	58.00	3.00	63.00	1	0.38	0.00	0.0	0	0
STJN-TOCOI	2A1	45.00	-10.00	55.00	1	1.20	0.00	246.0	0	1495
STJN-TOCOI	2B1	45.00	-10.00	45.00	1	1.20	0.00	246.0	120	1495
STJN-TOCOI	2C1	45.00	-10.00	35.00	1	1.20	0.00	246.0	240	1495
STJN-TOCOI	2G1	52.00	-3.00	63.00	1	0.60	0.00	0.0	0	0

Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)	Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)	Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)	Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)
0.00	0.21	79.98	24.00	1.26	137.26	54.00	3.06	195.12	84.00	1.43	152.02
110.00	0.21	84.65	25.00	1.33	140.09	55.00	3.07	195.56	85.00	1.35	149.05
-4.00	0.13	73.10	26.00	1.40	142.91	56.00	3.07	195.90	86.00	1.28	146.06
-3.00	0.15	74.75	27.00	1.48	145.74	57.00	3.06	196.13	87.00	1.21	143.08
-2.00	0.17	76.45	28.00	1.56	148.55	58.00	3.05	196.26	88.00	1.14	140.10
-1.00	0.19	78.19	29.00	1.63	151.34	59.00	3.03	196.26	89.00	1.07	137.14
0.00	0.21	79.98	30.00	1.71	154.10	60.00	3.01	196.15	90.00	1.01	134.19
1.00	0.23	81.81	31.00	1.79	156.82	61.00	2.98	195.90	91.00	0.95	131.28
2.00	0.25	83.70	32.00	1.88	159.49	62.00	2.95	195.52	92.00	0.89	128.39
3.00	0.28	85.63	33.00	1.96	162.11	63.00	2.91	195.00	93.00	0.83	125.54
4.00	0.30	87.62	34.00	2.04	164.67	64.00	2.87	194.33	94.00	0.78	122.73
5.00	0.33	89.65	35.00	2.12	167.15	65.00	2.82	193.50	95.00	0.73	119.96
6.00	0.36	91.74	36.00	2.20	169.55	66.00	2.77	192.52	96.00	0.68	117.24
7.00	0.39	93.88	37.00	2.27	171.87	67.00	2.71	191.38	97.00	0.63	114.56
8.00	0.42	96.07	38.00	2.35	174.09	68.00	2.65	190.08	98.00	0.59	111.94
9.00	0.46	98.30	39.00	2.42	176.22	69.00	2.59	188.62	99.00	0.55	109.37
10.00	0.50	100.60	40.00	2.49	178.23	70.00	2.52	187.00	100.00	0.51	106.85
11.00	0.54	102.94	41.00	2.56	180.15	71.00	2.45	185.23	101.00	0.47	104.38
12.00	0.58	105.33	42.00	2.63	181.95	72.00	2.38	183.31	102.00	0.43	101.97
13.00	0.62	107.77	43.00	2.69	183.63	73.00	2.30	181.25	103.00	0.40	99.61
14.00	0.67	110.26	44.00	2.75	185.21	74.00	2.23	179.06	104.00	0.37	97.31
15.00	0.72	112.79	45.00	2.80	186.67	75.00	2.15	176.74	105.00	0.34	95.07
16.00	0.77	115.37	46.00	2.85	188.03	76.00	2.07	174.31	106.00	0.31	92.88
17.00	0.82	117.99	47.00	2.89	189.27	77.00	1.98	171.77	107.00	0.28	90.74
18.00	0.87	120.66	48.00	2.93	190.41	78.00	1.90	169.14	108.00	0.26	88.66
19.00	0.93	123.36	49.00	2.97	191.44	79.00	1.82	166.43	109.00	0.23	86.63
20.00	0.99	126.09	50.00	3.00	192.38	80.00	1.74	163.64	110.00	0.21	84.65
21.00	1.06	128.85	51.00	3.02	193.21	81.00	1.66	160.80	111.00	0.19	82.72
22.00	1.12	131.63	52.00	3.04	193.94	82.00	1.58	157.91	112.00	0.17	80.85
23.00	1.19	134.44	53.00	3.05	194.58	83.00	1.50	154.98	113.00	0.15	79.02

Electric and Magnetic Field Effects

ST JOHNS-PELLICER-PRINGLE 230KV

Units: **English** Physical System: **8** Conductors (**6** Energized Phases)
E-Field Transducer Height **3.28** ft B-Field Transducer Height **3.28** ft

CrossSection: **X-SECT 1- SJ-P-P, COLLO. WITH FPL SJ-TC 230 KV, 110' RW**

Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)
114.00	0.14	77.25
115.00	0.12	75.52

Florida Department of Environmental Protection

Twin Tower Office Bldg * 2600 Blair Stone Road * Tallahassee, Florida 32399-2400

Details for CrossSection: **X-SECTION 2- SJ-P-P PROJECT 230 KV, TYPICAL 60' RW**

NEW 1431

Circuit Name

230 kV

Rated Voltage

NEW CIRCUIT

New/Existing

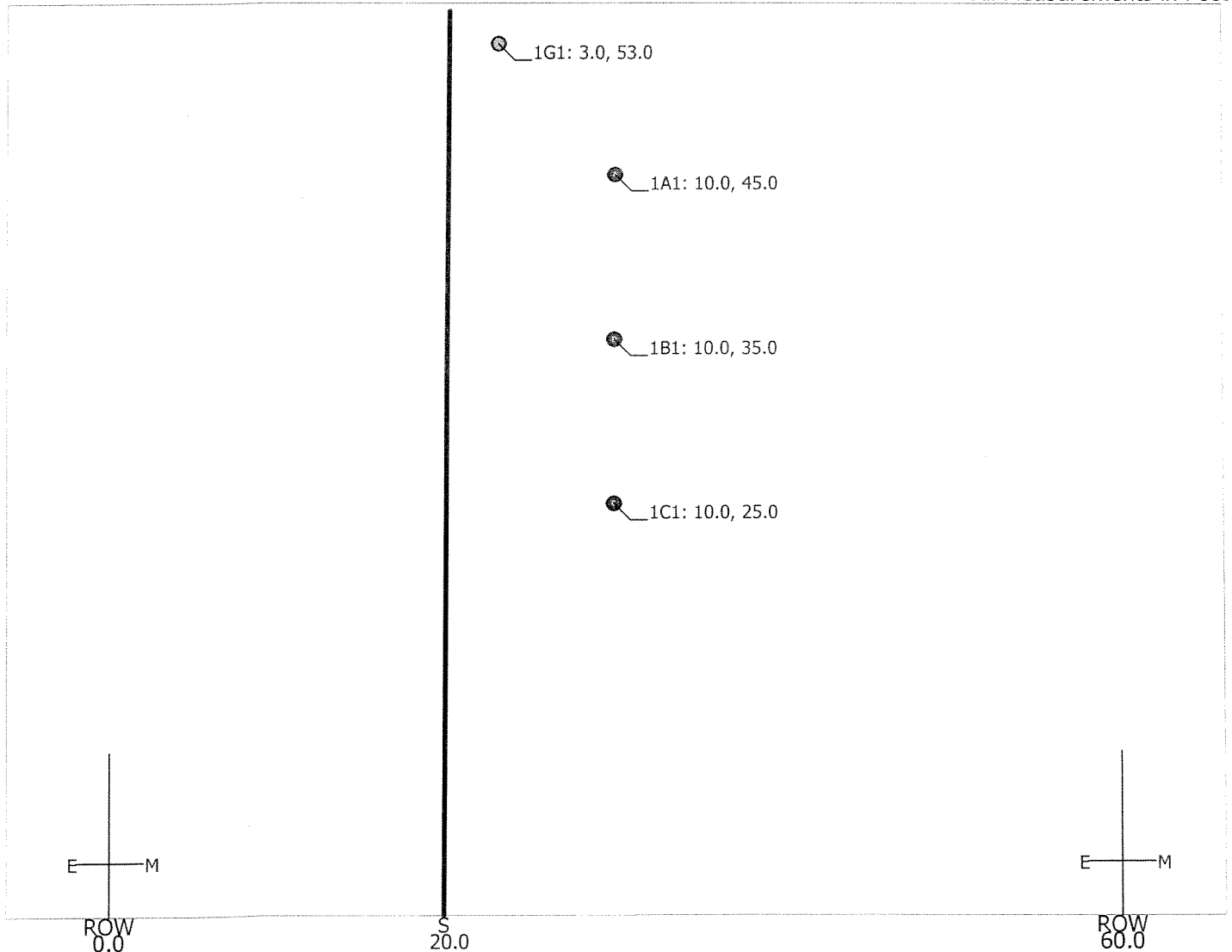
Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
				# of	Diameter (in)	Spacing (in)			
1A1	30.00	10.00	45.00	1	1.43	0.00	246.0	0	1905
1B1	30.00	10.00	35.00	1	1.43	0.00	246.0	120	1905
1C1	30.00	10.00	25.00	1	1.43	0.00	246.0	240	1905
1G1	23.00	3.00	53.00	1	0.38	0.00	0.0	0	0

Points of Interest

None

Phase Configuration

All Measurements in Feet



Electric and Magnetic Field Effects

ST JOHNS-PELLICER-PRINGLE 230KV

Units: **English** Physical System: **4** Conductors (**3** Energized Phases)
 E-Field Transducer Height **3.28** ft B-Field Transducer Height **3.28** ft

CrossSection: **X-SECTION 2- SJ-P-P PROJECT 230 KV, TYPICAL 60' RW**

Circuit Name	Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
					# of	Diameter (in)	Spacing (in)			
NEW 1431	1A1	30.00	10.00	45.00	1	1.43	0.00	246.0	0	1905
NEW 1431	1B1	30.00	10.00	35.00	1	1.43	0.00	246.0	120	1905
NEW 1431	1C1	30.00	10.00	25.00	1	1.43	0.00	246.0	240	1905
NEW 1431	1G1	23.00	3.00	53.00	1	0.38	0.00	0.0	0	0

Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)	Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)	Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)
0.00	0.51	114.26	28.00	3.15	241.46	62.00	0.36	106.88
60.00	0.46	114.26	29.00	3.18	242.46	63.00	0.31	103.39
-4.00	0.33	100.04	30.00	3.19	242.79	64.00	0.27	100.04
-3.00	0.37	103.39	31.00	3.18	242.46			
-2.00	0.41	106.88	32.00	3.15	241.46			
-1.00	0.46	110.50	33.00	3.10	239.82			
0.00	0.51	114.26	34.00	3.04	237.57			
1.00	0.57	118.16	35.00	2.97	234.74			
2.00	0.63	122.21	36.00	2.88	231.39			
3.00	0.69	126.40	37.00	2.78	227.57			
4.00	0.76	130.74	38.00	2.67	223.34			
5.00	0.83	135.23	39.00	2.56	218.76			
6.00	0.91	139.87	40.00	2.44	213.88			
7.00	0.99	144.65	41.00	2.31	208.76			
8.00	1.08	149.57	42.00	2.18	203.47			
9.00	1.18	154.62	43.00	2.05	198.05			
10.00	1.28	159.80	44.00	1.93	192.55			
11.00	1.38	165.09	45.00	1.80	187.00			
12.00	1.49	170.47	46.00	1.68	181.46			
13.00	1.60	175.94	47.00	1.56	175.94			
14.00	1.72	181.46	48.00	1.44	170.47			
15.00	1.84	187.00	49.00	1.33	165.09			
16.00	1.96	192.55	50.00	1.23	159.80			
17.00	2.09	198.05	51.00	1.13	154.62			
18.00	2.22	203.47	52.00	1.03	149.57			
19.00	2.34	208.76	53.00	0.94	144.65			
20.00	2.46	213.88	54.00	0.86	139.87			
21.00	2.58	218.76	55.00	0.78	135.23			
22.00	2.70	223.34	56.00	0.71	130.74			
23.00	2.80	227.57	57.00	0.64	126.40			
24.00	2.90	231.39	58.00	0.57	122.21			
25.00	2.98	234.74	59.00	0.51	118.16			
26.00	3.06	237.57	60.00	0.46	114.26			
27.00	3.11	239.82	61.00	0.41	110.50			

Florida Department of Environmental Protection

Twin Tower Office Bldg * 2600 Blair Stone Road * Tallahassee, Florida 32399-2400

Details for CrossSection: **X-SECTION 3- SJ-P-P, TYP 30' RW, I-95 TO PROP DEERWOOD SUB**

1X1431 IN

Circuit Name

230 kV

Rated Voltage

NEW CIRCUIT

New/Existing

Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
				# of	Diameter (in)	Spacing (in)			
1A1	20.00	-10.00	70.00	1	1.43	0.00	246.0	0	1905
1B1	20.00	-10.00	60.00	1	1.43	0.00	246.0	120	1905
1C1	20.00	-10.00	50.00	1	1.43	0.00	246.0	240	1905
1G1	27.00	-3.00	78.00	1	0.38	0.00	0.0	0	0

1X1431 OUT

Circuit Name

230 kV

Rated Voltage

NEW CIRCUIT

New/Existing

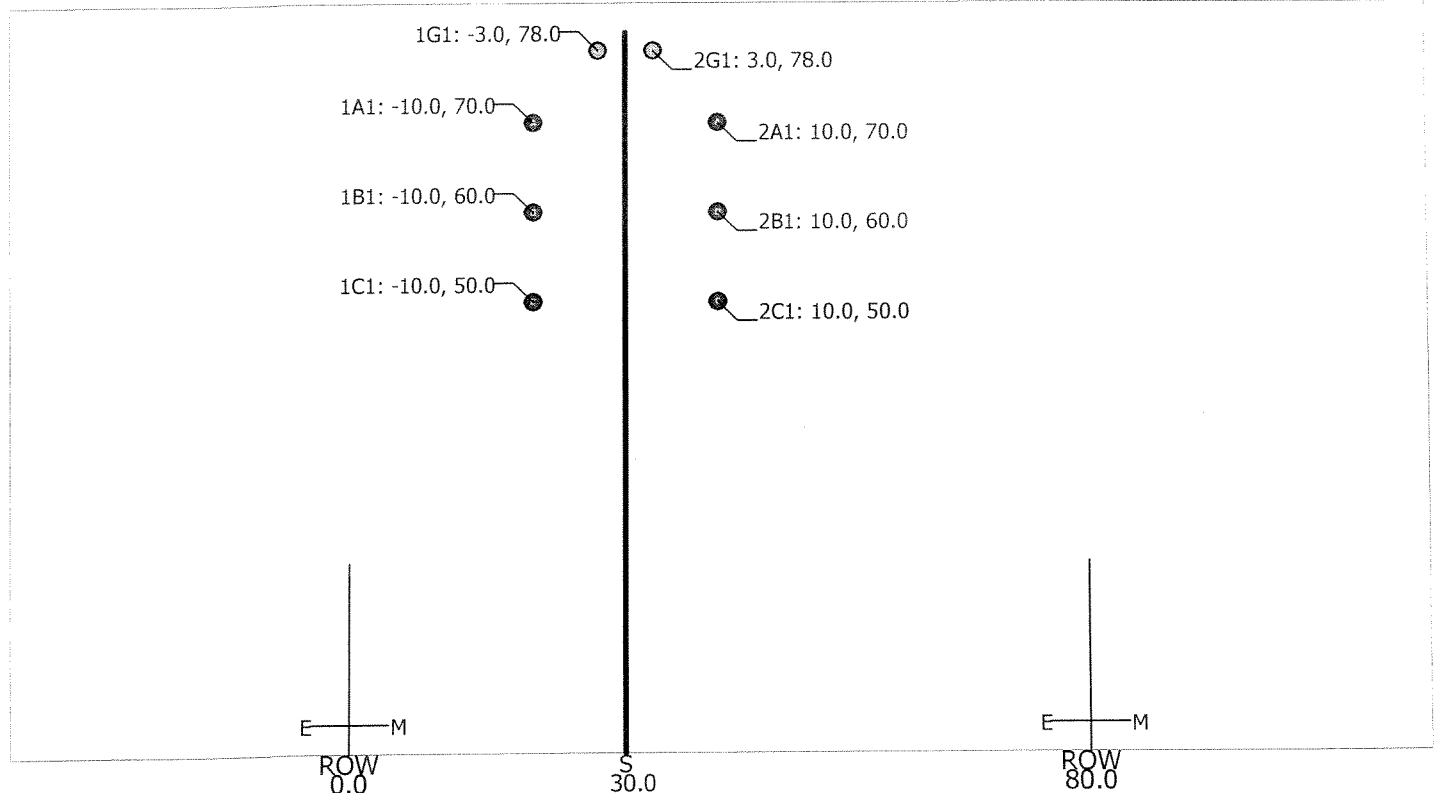
Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
				# of	Diameter (in)	Spacing (in)			
2A1	40.00	10.00	70.00	1	1.43	0.00	246.0	0	1905
2B1	40.00	10.00	60.00	1	1.43	0.00	246.0	120	1905
2C1	40.00	10.00	50.00	1	1.43	0.00	246.0	240	1905
2G1	33.00	3.00	78.00	1	0.38	0.00	0.0	0	0

Points of Interest

None

Phase Configuration

All Measurements in Feet



Electric and Magnetic Field Effects

ST JOHNS-PELLICER-PRINGLE 230KV

Units: **English** Physical System: **8** Conductors (**6** Energized Phases)
 E-Field Transducer Height **3.28** ft B-Field Transducer Height **3.28** ft

CrossSection: **X-SECTION 3- SJ-P-P, TYP 30' RW, I-95 TO PROP DEERWOOD SUB**

Circuit Name	Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
					# of	Diameter (in)	Spacing (in)			
1X1431 IN	1A1	20.00	-10.00	70.00	1	1.43	0.00	246.0	0	1905
1X1431 IN	1B1	20.00	-10.00	60.00	1	1.43	0.00	246.0	120	1905
1X1431 IN	1C1	20.00	-10.00	50.00	1	1.43	0.00	246.0	240	1905
1X1431 IN	1G1	27.00	-3.00	78.00	1	0.38	0.00	0.0	0	0
1X1431 OUT	2A1	40.00	10.00	70.00	1	1.43	0.00	246.0	0	1905
1X1431 OUT	2B1	40.00	10.00	60.00	1	1.43	0.00	246.0	120	1905
1X1431 OUT	2C1	40.00	10.00	50.00	1	1.43	0.00	246.0	240	1905
1X1431 OUT	2G1	33.00	3.00	78.00	1	0.38	0.00	0.0	0	0

Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)	Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)	Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)	Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)
0.00	1.09	102.77	24.00	1.78	125.18	54.00	1.31	110.42	84.00	0.39	70.69
80.00	0.48	75.66	25.00	1.80	125.50	55.00	1.27	109.20			
-4.00	0.95	97.33	26.00	1.81	125.77	56.00	1.24	107.96			
-3.00	0.98	98.70	27.00	1.81	125.97	57.00	1.20	106.69			
-2.00	1.02	100.07	28.00	1.82	126.12	58.00	1.16	105.40			
-1.00	1.06	101.42	29.00	1.82	126.21	59.00	1.13	104.09			
0.00	1.09	102.77	30.00	1.82	126.24	60.00	1.09	102.77			
1.00	1.13	104.09	31.00	1.82	126.21	61.00	1.06	101.42			
2.00	1.16	105.40	32.00	1.82	126.12	62.00	1.02	100.07			
3.00	1.20	106.69	33.00	1.81	125.97	63.00	0.98	98.70			
4.00	1.24	107.96	34.00	1.81	125.77	64.00	0.95	97.33			
5.00	1.27	109.20	35.00	1.80	125.50	65.00	0.92	95.95			
6.00	1.31	110.42	36.00	1.78	125.18	66.00	0.88	94.56			
7.00	1.34	111.60	37.00	1.77	124.79	67.00	0.85	93.17			
8.00	1.38	112.75	38.00	1.76	124.35	68.00	0.82	91.79			
9.00	1.41	113.87	39.00	1.74	123.86	69.00	0.78	90.40			
10.00	1.44	114.95	40.00	1.72	123.30	70.00	0.75	89.02			
11.00	1.48	116.00	41.00	1.70	122.69	71.00	0.72	87.64			
12.00	1.51	117.00	42.00	1.68	122.03	72.00	0.69	86.27			
13.00	1.54	117.95	43.00	1.65	121.32	73.00	0.66	84.90			
14.00	1.57	118.87	44.00	1.63	120.55	74.00	0.63	83.55			
15.00	1.60	119.73	45.00	1.60	119.73	75.00	0.61	82.20			
16.00	1.63	120.55	46.00	1.57	118.87	76.00	0.58	80.86			
17.00	1.65	121.32	47.00	1.54	117.95	77.00	0.55	79.54			
18.00	1.68	122.03	48.00	1.51	117.00	78.00	0.53	78.23			
19.00	1.70	122.69	49.00	1.48	116.00	79.00	0.50	76.94			
20.00	1.72	123.30	50.00	1.44	114.95	80.00	0.48	75.66			
21.00	1.74	123.86	51.00	1.41	113.87	81.00	0.46	74.39			
22.00	1.76	124.35	52.00	1.38	112.75	82.00	0.44	73.14			
23.00	1.77	124.79	53.00	1.34	111.60	83.00	0.42	71.91			

Florida Department of Environmental Protection

Twin Tower Office Bldg * 2600 Blair Stone Road * Tallahassee, Florida 32399-2400

Details for CrossSection: **X-SECT 4- SJ-P-P- 15' ESMT ADJ TO RD RW, NEAR VERMONT SUB**

1X1431

Circuit Name

230 kV

Rated Voltage

NEW CIRCUIT

New/Existing

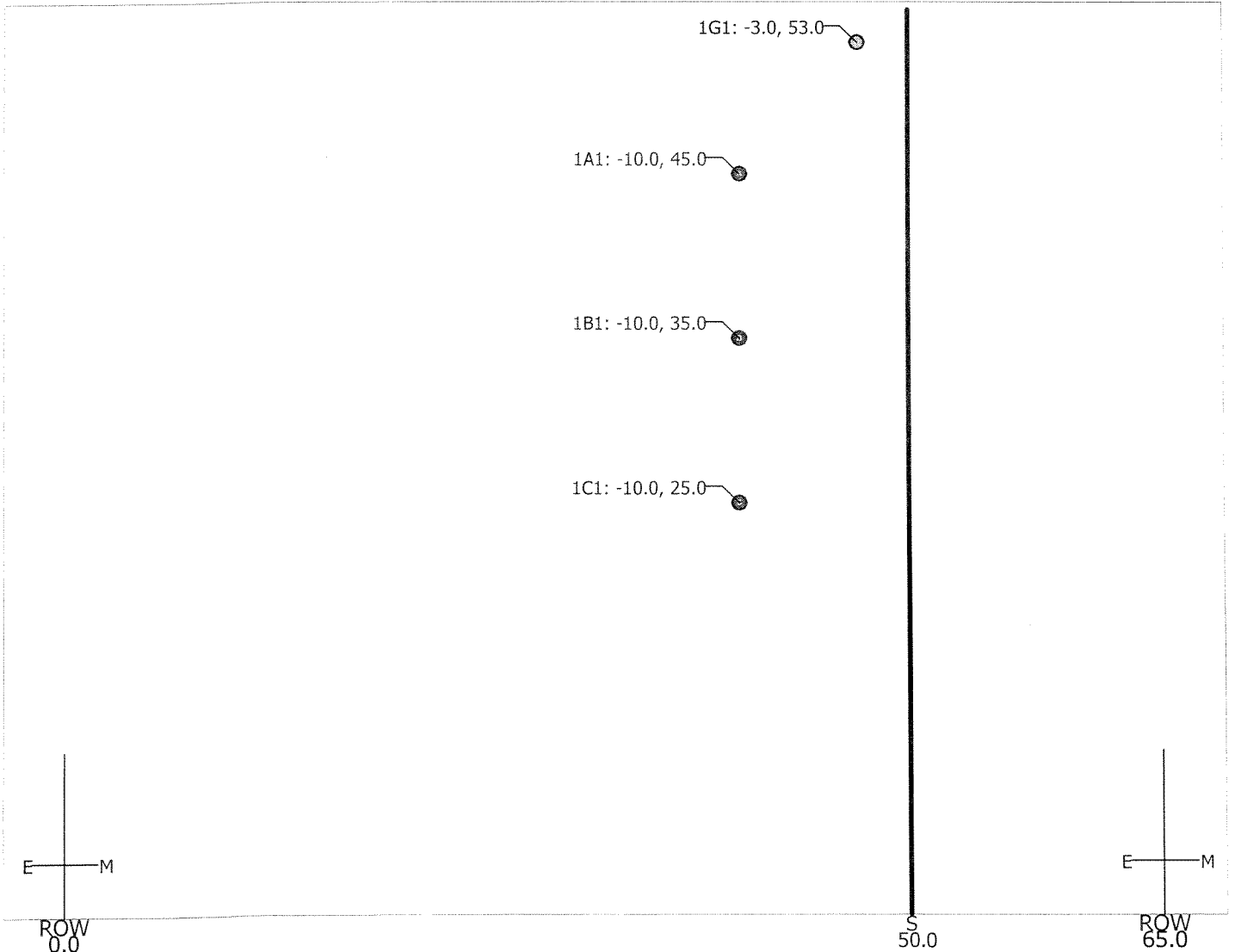
Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
				# of	Diameter (in)	Spacing (in)			
1A1	40.00	-10.00	45.00	1	1.43	0.00	246.0	0	1905
1B1	40.00	-10.00	35.00	1	1.43	0.00	246.0	120	1905
1C1	40.00	-10.00	25.00	1	1.43	0.00	246.0	240	1905
1G1	47.00	-3.00	53.00	1	0.38	0.00	0.0	0	0

Points of Interest

None

Phase Configuration

All Measurements in Feet



Electric and Magnetic Field Effects

ST JOHNS-PELLICER-PRINGLE 230KV

Units: **English** Physical System: **4** Conductors (**3** Energized Phases)
 E-Field Transducer Height **3.28** ft B-Field Transducer Height **3.28** ft

CrossSection: **X-SECT 4- SJ-P-P- 15' ESMT ADJ TO RD RW, NEAR VERMONT SUB**

Circuit Name	Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
					# of	Diameter (in)	Spacing (in)			
1X1431	1A1	40.00	-10.00	45.00	1	1.43	0.00	246.0	0	1905
1X1431	1B1	40.00	-10.00	35.00	1	1.43	0.00	246.0	120	1905
1X1431	1C1	40.00	-10.00	25.00	1	1.43	0.00	246.0	240	1905
1X1431	1G1	47.00	-3.00	53.00	1	0.38	0.00	0.0	0	0

Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)	Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)	Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)
0.00	0.10	82.48	28.00	2.18	203.47	62.00	1.08	149.57
65.00	0.83	135.23	29.00	2.31	208.76	63.00	0.99	144.65
-4.00	0.05	72.89	30.00	2.44	213.88	64.00	0.91	139.87
-3.00	0.06	75.15	31.00	2.56	218.76	65.00	0.83	135.23
-2.00	0.07	77.50	32.00	2.67	223.34	66.00	0.76	130.74
-1.00	0.08	79.94	33.00	2.78	227.57	67.00	0.69	126.40
0.00	0.10	82.48	34.00	2.88	231.39	68.00	0.63	122.21
1.00	0.12	85.13	35.00	2.97	234.74	69.00	0.57	118.16
2.00	0.15	87.88	36.00	3.04	237.57			
3.00	0.17	90.74	37.00	3.10	239.82			
4.00	0.20	93.72	38.00	3.15	241.46			
5.00	0.24	96.82	39.00	3.18	242.46			
6.00	0.27	100.04	40.00	3.19	242.79			
7.00	0.31	103.39	41.00	3.18	242.46			
8.00	0.36	106.88	42.00	3.15	241.46			
9.00	0.41	110.50	43.00	3.11	239.82			
10.00	0.46	114.26	44.00	3.06	237.57			
11.00	0.51	118.16	45.00	2.98	234.74			
12.00	0.57	122.21	46.00	2.90	231.39			
13.00	0.64	126.40	47.00	2.80	227.57			
14.00	0.71	130.74	48.00	2.70	223.34			
15.00	0.78	135.23	49.00	2.58	218.76			
16.00	0.86	139.87	50.00	2.46	213.88			
17.00	0.94	144.65	51.00	2.34	208.76			
18.00	1.03	149.57	52.00	2.22	203.47			
19.00	1.13	154.62	53.00	2.09	198.05			
20.00	1.23	159.80	54.00	1.96	192.55			
21.00	1.33	165.09	55.00	1.84	187.00			
22.00	1.44	170.47	56.00	1.72	181.46			
23.00	1.56	175.94	57.00	1.60	175.94			
24.00	1.68	181.46	58.00	1.49	170.47			
25.00	1.80	187.00	59.00	1.38	165.09			
26.00	1.93	192.55	60.00	1.28	159.80			
27.00	2.05	198.05	61.00	1.18	154.62			

Electric and Magnetic Field Effects

ST JOHNS-PELLICER-PRINGLE 230KV

Units: **English** Physical System: **8** Conductors (**6** Energized Phases)
 E-Field Transducer Height **3.28** ft B-Field Transducer Height **3.28** ft

CrossSection: **X-SECT 5- SJ-P-P, SR207, 30' ESMT,W/ PUTNAM-SJ 115KV**

Circuit Name	Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
					# of	Diameter (in)	Spacing (in)			
NEW 1X1431	1A1	40.00	-10.00	70.00	1	1.43	0.00	246.0	0	1905
NEW 1X1431	1B1	40.00	-10.00	60.00	1	1.43	0.00	246.0	120	1905
NEW 1X1431	1C1	40.00	-10.00	50.00	1	1.43	0.00	246.0	240	1905
NEW 1X1431	1G1	47.00	-3.00	78.00	1	0.38	0.00	0.0	0	0
PUT-STJOHN	2A1	60.00	10.00	70.00	1	0.93	0.00	123.0	0	1060
PUT-STJOHN	2B1	60.00	10.00	60.00	1	0.93	0.00	123.0	120	1060
PUT-STJOHN	2C1	60.00	10.00	50.00	1	0.93	0.00	123.0	240	1060
PUT-STJOHN	2G1	53.00	3.00	78.00	1	0.36	0.00	0.0	0	0

Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)	Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)	Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)	Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)
0.00	0.41	62.03	24.00	1.02	87.92	54.00	1.30	97.60	84.00	0.60	72.28
80.00	0.69	76.54	25.00	1.04	88.86	55.00	1.28	97.18			
-4.00	0.34	57.95	26.00	1.07	89.78	56.00	1.27	96.73			
-3.00	0.36	58.95	27.00	1.10	90.66	57.00	1.25	96.23			
-2.00	0.38	59.96	28.00	1.12	91.51	58.00	1.23	95.69			
-1.00	0.39	60.99	29.00	1.15	92.32	59.00	1.21	95.11			
0.00	0.41	62.03	30.00	1.17	93.10	60.00	1.19	94.50			
1.00	0.43	63.08	31.00	1.19	93.83	61.00	1.17	93.84			
2.00	0.45	64.15	32.00	1.21	94.53	62.00	1.15	93.16			
3.00	0.47	65.22	33.00	1.23	95.18	63.00	1.13	92.44			
4.00	0.50	66.30	34.00	1.25	95.79	64.00	1.10	91.69			
5.00	0.52	67.39	35.00	1.27	96.35	65.00	1.08	90.90			
6.00	0.54	68.49	36.00	1.28	96.87	66.00	1.06	90.09			
7.00	0.56	69.60	37.00	1.30	97.33	67.00	1.03	89.25			
8.00	0.59	70.71	38.00	1.31	97.75	68.00	1.01	88.39			
9.00	0.61	71.82	39.00	1.32	98.12	69.00	0.98	87.50			
10.00	0.64	72.94	40.00	1.33	98.44	70.00	0.95	86.58			
11.00	0.66	74.06	41.00	1.34	98.70	71.00	0.93	85.65			
12.00	0.69	75.18	42.00	1.35	98.92	72.00	0.90	84.69			
13.00	0.72	76.29	43.00	1.35	99.08	73.00	0.88	83.72			
14.00	0.74	77.41	44.00	1.36	99.20	74.00	0.85	82.73			
15.00	0.77	78.52	45.00	1.36	99.26	75.00	0.82	81.73			
16.00	0.80	79.62	46.00	1.36	99.27	76.00	0.80	80.71			
17.00	0.83	80.71	47.00	1.35	99.23	77.00	0.77	79.68			
18.00	0.85	81.79	48.00	1.35	99.14	78.00	0.74	78.64			
19.00	0.88	82.86	49.00	1.35	99.00	79.00	0.72	77.59			
20.00	0.91	83.91	50.00	1.34	98.81	80.00	0.69	76.54			
21.00	0.94	84.94	51.00	1.33	98.58	81.00	0.67	75.48			
22.00	0.96	85.96	52.00	1.32	98.30	82.00	0.65	74.41			
23.00	0.99	86.95	53.00	1.31	97.97	83.00	0.62	73.35			

Florida Department of Environmental Protection

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Details for CrossSection: **X-SECT 5- SJ-P-P, SR207, 30' ESMT,W/ PUTNAM-SJ 115KV**

NEW 1X1431

Circuit Name

230 kV

Rated Voltage

NEW CIRCUIT

New/Existing

Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
				# of	Diameter (in)	Spacing (in)			
1A1	40.00	-10.00	70.00	1	1.43	0.00	246.0	0	1905
1B1	40.00	-10.00	60.00	1	1.43	0.00	246.0	120	1905
1C1	40.00	-10.00	50.00	1	1.43	0.00	246.0	240	1905
1G1	47.00	-3.00	78.00	1	0.38	0.00	0.0	0	0

PUT-STJOHN

Circuit Name

115 kV

Rated Voltage

Existing Circuit

New/Existing

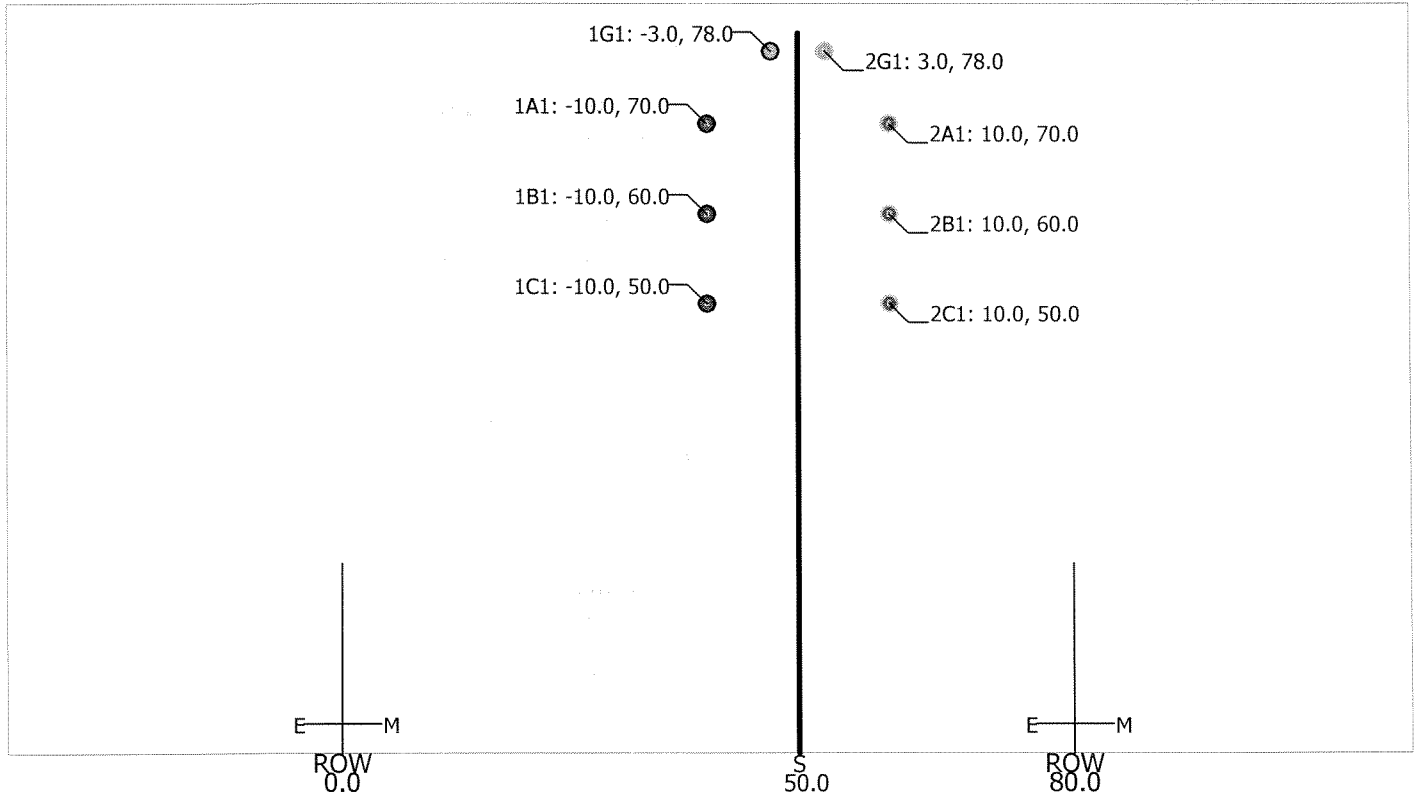
Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
				# of	Diameter (in)	Spacing (in)			
2A1	60.00	10.00	70.00	1	0.93	0.00	123.0	0	1060
2B1	60.00	10.00	60.00	1	0.93	0.00	123.0	120	1060
2C1	60.00	10.00	50.00	1	0.93	0.00	123.0	240	1060
2G1	53.00	3.00	78.00	1	0.36	0.00	0.0	0	0

Points of Interest

None

Phase Configuration

All Measurements in Feet



Electric and Magnetic Field Effects

ST JOHNS-PELLICER-PRINGLE 230KV

Units: **English** Physical System: **4** Conductors (**3** Energized Phases)
 E-Field Transducer Height **3.28** ft B-Field Transducer Height **3.28** ft

CrossSection: **X-SECTION 6- SJ-P-P, TYP 50' ESMT NEAR PROP ANASTASIA SUB**

Circuit Name	Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
					# of	Diameter (in)	Spacing (in)			
NEW 1X1431	1A1	25.00	10.00	45.00	1	1.43	0.00	246.0	0	1905
NEW 1X1431	1B1	25.00	10.00	35.00	1	1.43	0.00	246.0	120	1905
NEW 1X1431	1C1	25.00	10.00	25.00	1	1.43	0.00	246.0	240	1905
NEW 1X1431	1G1	18.00	3.00	53.00	1	0.38	0.00	0.0	0	0

Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)	Dist From RowLeft (ft)	Electric Field (kV/m)	Magnetic Field (mG)
0.00	0.83	135.23	28.00	3.10	239.82
50.00	0.78	135.23	29.00	3.04	237.57
-4.00	0.57	118.16	30.00	2.97	234.74
-3.00	0.63	122.21	31.00	2.88	231.39
-2.00	0.69	126.40	32.00	2.78	227.57
-1.00	0.76	130.74	33.00	2.67	223.34
0.00	0.83	135.23	34.00	2.56	218.76
1.00	0.91	139.87	35.00	2.44	213.88
2.00	0.99	144.65	36.00	2.31	208.76
3.00	1.08	149.57	37.00	2.18	203.47
4.00	1.18	154.62	38.00	2.05	198.05
5.00	1.28	159.80	39.00	1.93	192.55
6.00	1.38	165.09	40.00	1.80	187.00
7.00	1.49	170.47	41.00	1.68	181.46
8.00	1.60	175.94	42.00	1.56	175.94
9.00	1.72	181.46	43.00	1.44	170.47
10.00	1.84	187.00	44.00	1.33	165.09
11.00	1.96	192.55	45.00	1.23	159.80
12.00	2.09	198.05	46.00	1.13	154.62
13.00	2.22	203.47	47.00	1.03	149.57
14.00	2.34	208.76	48.00	0.94	144.65
15.00	2.46	213.88	49.00	0.86	139.87
16.00	2.58	218.76	50.00	0.78	135.23
17.00	2.70	223.34	51.00	0.71	130.74
18.00	2.80	227.57	52.00	0.64	126.40
19.00	2.90	231.39	53.00	0.57	122.21
20.00	2.98	234.74	54.00	0.51	118.16
21.00	3.06	237.57			
22.00	3.11	239.82			
23.00	3.15	241.46			
24.00	3.18	242.46			
25.00	3.19	242.79			
26.00	3.18	242.46			
27.00	3.15	241.46			

Florida Department of Environmental Protection

Twin Tower Office Bldg * 2600 Blair Stone Road * Tallahassee, Florida 32399-2400

Details for CrossSection: **X-SECTION 6- SJ-P-P, TYP 50' ESMT NEAR PROP ANASTASIA SUB**

NEW 1X1431

Circuit Name

230 kV

Rated Voltage

NEW CIRCUIT

New/Existing

Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors			Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
				# of	Diameter (in)	Spacing (in)			
1A1	25.00	10.00	45.00	1	1.43	0.00	246.0	0	1905
1B1	25.00	10.00	35.00	1	1.43	0.00	246.0	120	1905
1C1	25.00	10.00	25.00	1	1.43	0.00	246.0	240	1905
1G1	18.00	3.00	53.00	1	0.38	0.00	0.0	0	0

Points of Interest

None

Phase Configuration

All Measurements in Feet

