BOBWHITE-MANATEE 230-KV TRANSMISSION LINE PROJECT

APPLICATION FOR CORRIDOR CERTIFICATION

FPL®

PREPARED BY:

ECT

Environmental Consulting & Technology, Inc.

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ECT NO. 060502-0200

JANUARY 2007

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LIST OF ACRONYMS AND ABBREVIATIONS

°C	degree Celsius
ADA	application for development approval
AM	amplitude-modulated
ANSI	American National Standards Institute
BMP	best management practice
BWM	Bobwhite-Manatee
BWM Project	Bobwhite-Manatee 230-kilovolt transmission line project
CAAGR	compound annual average growth rate
CAP	community advisory panel
cm	centimeter
CR	County Road
db	decibel
dBA	A-weighted decibel
dBC	C-weighted decibel
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 fields
F.A.C.	Florida Administrative Code
FCC	Federal Communications Commission
F.S.	Florida Statutes
FAA	Federal Aviation Administration
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
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
ft	foot
GIS	geographic information system

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

I-75	Interstate 75
kV	kilovolt
kV/m	kilovolt per meter
MCR	maximum current rating
MEC	Major Employment Center
mG	milliGauss
NCO	Noise Control Office
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
RMA	Resource Management Area
SCS	Soil Conservation Service
SR	State Road
SSC	species of special concern
SWFWMD	Southwest Florida Water Management District
T	threatened
T(S/A)	threatened due to similarity of appearance to a federally listed species
TIITF	Board of Trustees of the Internal Improvement Trust Fund
TLSA	Transmission Line Siting Act
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, Environmental Licensing Manager; Florida Power & Light Company, 700 Universe Boulevard, Juno Beach, Florida 33408, 561/691-7059**

Corridor Location (counties crossed) **Manatee and Sarasota Counties**

Incorporated Cities within the corridor (names) **None**

Termination Points **Manatee Substation (Manatee County) and Proposed Bobwhite Substation (Sarasota County)**

Intermediate Substations **None**

Voltage **230 kilovolts (kV)**

Line Type (AC or DC) **AC**

Length of line and number of circuits **25.5 miles (1 circuit)**

Remarks (if any):

1.0 PROJECT OVERVIEW

1.1 PROJECT INTRODUCTION

1.1.1 OVERVIEW OF THE PROJECT

The Bobwhite-Manatee (BWM) 230-kilovolt (kV) transmission line project (BWM 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 Manatee Energy Center Switchyard (Manatee substation) near Parrish in Manatee County to the proposed Bobwhite substation east of Interstate 75 (I-75) and approximately 0.25 mile north of Fruitville Road in Sarasota County (see Figure 1.1-1), where the new substation will be looped into the existing Laurelwood-Ringling 230-kV line. The total length of the proposed transmission line corridor to be certified is approximately 25.5 miles (see Figure 1.1-2).

In this application, FPL is seeking certification of a corridor of variable width between the Manatee and Bobwhite 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 200 feet (ft) along road rights-of-way to 4,500 ft in areas where a new cross-country transmission line right-of-way will be required. In some areas of the corridor, the BWM Project may be constructed along or within existing road rights-of-way.

The width of the new right-of-way to be located within the corridor will typically range from 15 to 75 ft. As provided in Section 403.522(10), F.S., once FPL acquires the property interests required for the BWM 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 proposing no intermediate substations for this project.

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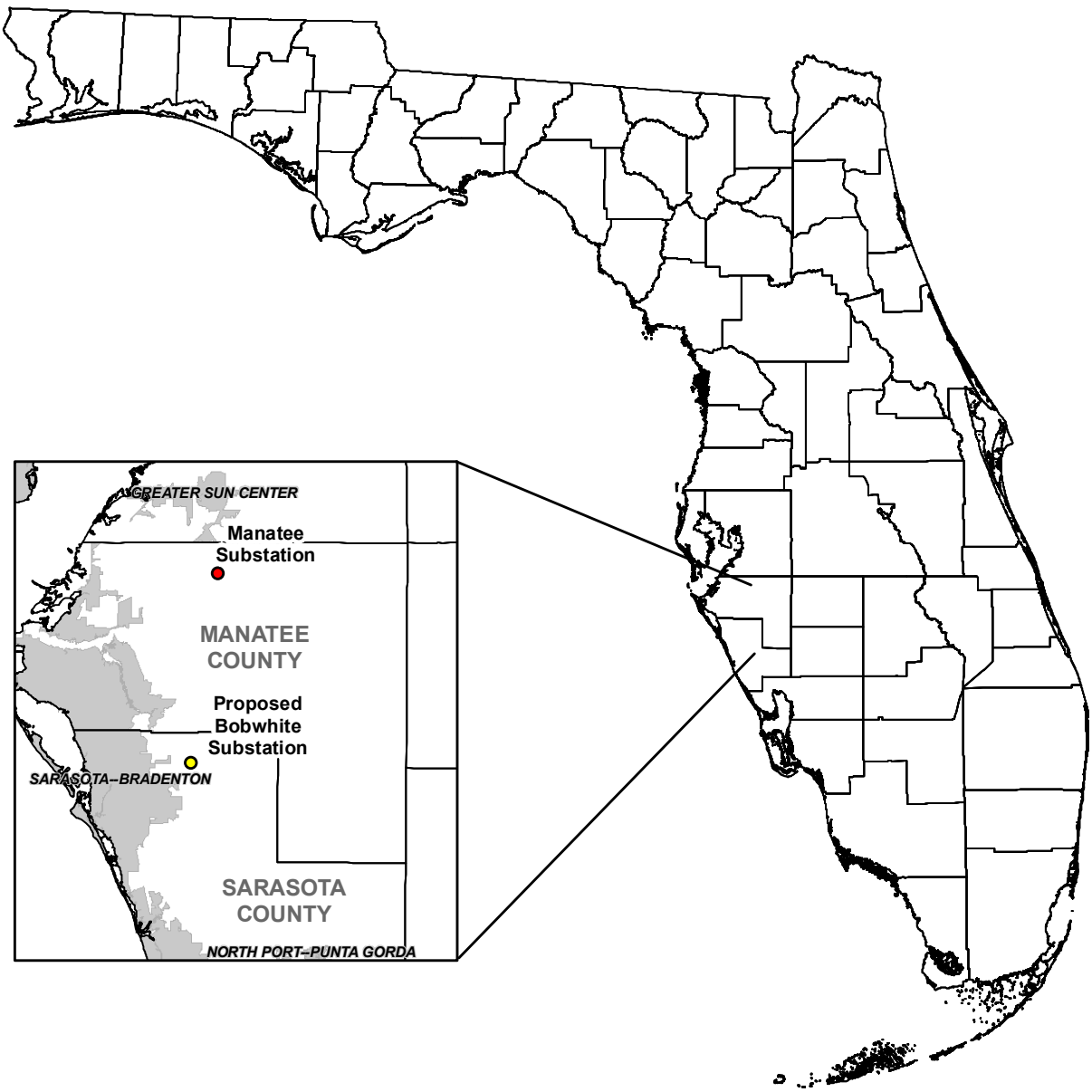

FIGURE 1.1-1.

LOCATION OF PROJECT AREA

Sources: FPL, 2006; ECT, 2006.

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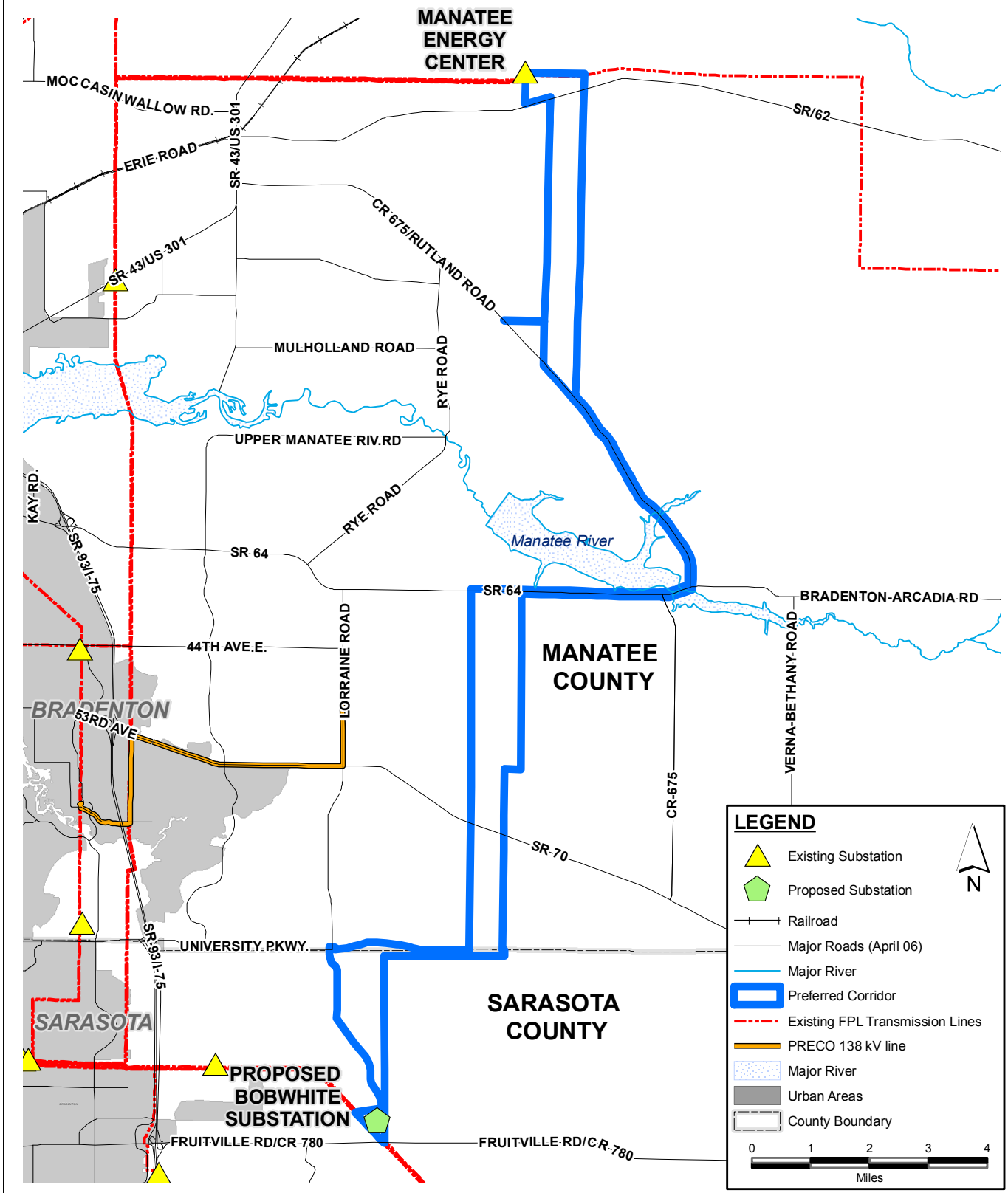


FIGURE 1.1-2.

PREFERRED CORRIDOR ALIGNMENT

Sources: FPL, 2006; Manatee County, Florida, 2006; Sarasota County, Florida, 2006; SWFWMD, 2006; ECT, 2006.

The proposed Bobwhite substation is currently in the acquisition and permitting phases. It will be permitted separately from the TLSA process through local government and regulatory agency permitting.

The scheduled in-service date for the BWM Project is December 2011.

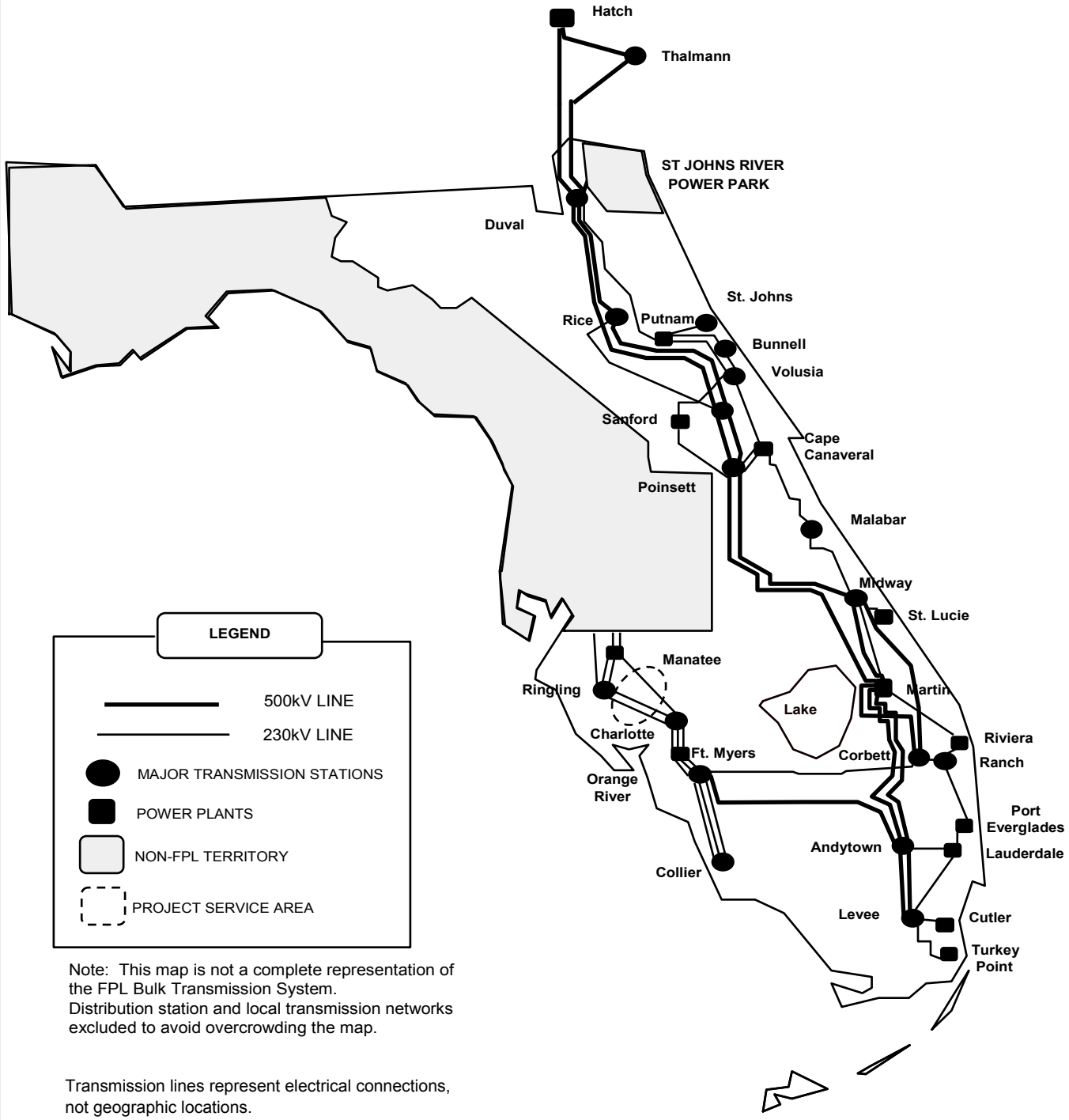
1.1.2 OVERVIEW OF THE NEED FOR THE BWM PROJECT

The proposed 230-kV electrical transmission line connecting the existing Manatee substation and the proposed Bobwhite substation is needed to meet the increasing power needs of the future and provide safe, reliable, and low-cost electrical service.

Over the past 5 years (2001 to 2005), the load in the West Region[1] of FPL has grown by a compound annual average growth rate (CAAGR) of 3.8 percent. FPL is forecasting the load growth in its West Region to continue at a CAAGR of 3.4 percent over the next 5 years (2007 to 2011). Transmission assessment studies conducted by FPL during 2006 have identified regional transmission system limitations in Manatee and Sarasota Counties. These studies show that by 2011, the existing 230-kV transmission network that closely parallels the coast between Manatee and Ringling substations will not have sufficient capacity to provide reliable service to existing and proposed substations. Additionally, some of the projected load to be served by the proposed future distribution substations will be located further east of the existing 230-kV transmission network.

To meet the increase in customer demand, FPL has added electric generation at its Manatee, Fort Myers, and Sanford power plants. Additional generation was recently added at the existing Martin plant, and yet more generation is presently being built at the Turkey Point power plant. These power plants and others supply electricity to the FPL service territory through the transmission network. Figure 1.1-3 depicts FPL's current transmission network, including the location of generating plants, transmission substations, and major transmission lines.

[1]FPL's West Region includes Manatee, Sarasota, Desoto, Charlotte, Glades, Lee, Hendry, and Collier Counties.



Note: This map is not a complete representation of the FPL Bulk Transmission System.
Distribution station and local transmission networks excluded to avoid overcrowding the map.

Transmission lines represent electrical connections, not geographic locations.

FIGURE 1.1-3.

FPL SUBSTATION AND TRANSMISSION SYSTEM CONFIGURATION

Source: FPL, 2006.

FPL's analyses indicate that, without the BWM Project, under 11 separate contingency scenarios, overloads of thermal megavolt-amperes facility ratings and low substation voltages would occur, requiring interruption of service to between 800 and 52,000 customers, depending on the specific outage.

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

- The need to provide additional transmission reinforcement to the existing 230-kV transmission network between Manatee and Ringling substations in a reliable manner consistent with North American Electric Reliability Council, Florida Reliability Coordinating Council, and other applicable standards.
- The need to serve the increasing load and customer base in the area south of Manatee and north of Ringling Substations.
- The need for another electrical feed from the Manatee Energy Center south to the Ringling area via a separate right-of-way path, thereby reducing the impact of loss of existing transmission facilities on a common right-of-way.

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

1.2 CORRIDOR LOCATION AND LAYOUT

Figure 1.2-1 illustrates the route for the preferred corridor for the FPL BWM 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.

1.3 TRANSMISSION LINE AND ROAD DESIGN CHARACTERISTICS

The proposed transmission line is to be constructed typically using single-circuit, unguyed concrete poles directly embedded into the ground. Figures 1.3-1 and 1.3-2 illustrate typical structures anticipated for use on the BWM Project. In some areas, where warranted, a triangular framing configuration may be used. Figures 1.3-3 and 1.3-4

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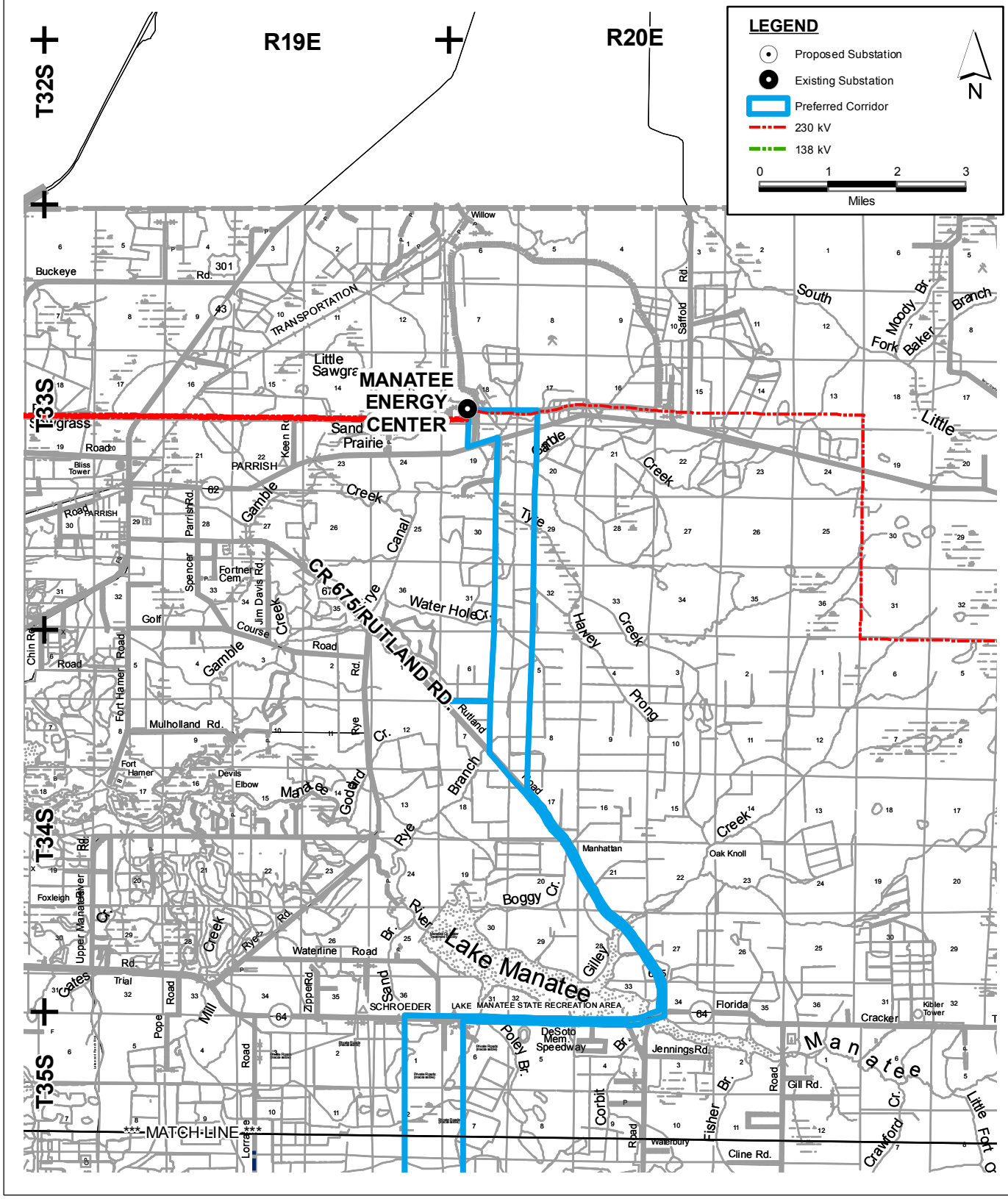

FIGURE 1.2-1 (1 OF 2)
PREFERRED CORRIDOR LOCATION AND
EXISTING TRANSMISSION LINES GREATER
THAN 115 kV LOCATED WITHIN 5 MILES OF THE CORRIDOR

Sources: FPL, 2006; FLDOT.

FPL

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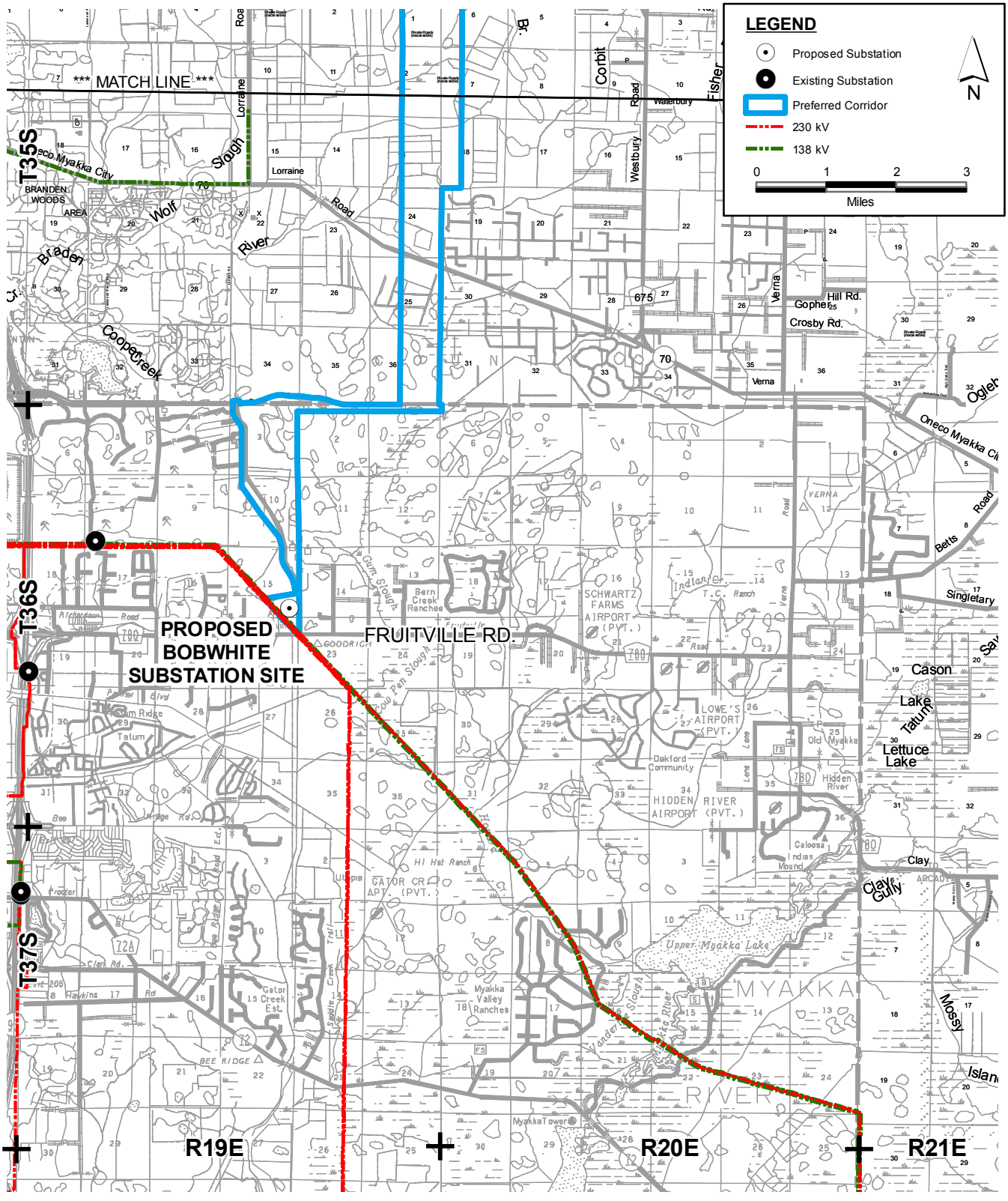

FIGURE 1.2-1 (2 OF 2)
PREFERRED CORRIDOR LOCATION AND
EXISTING TRANSMISSION LINES GREATER
THAN 115 kV LOCATED WITHIN 5 MILES OF THE CORRIDOR
Sources: FPL, 2006; FLDOT.

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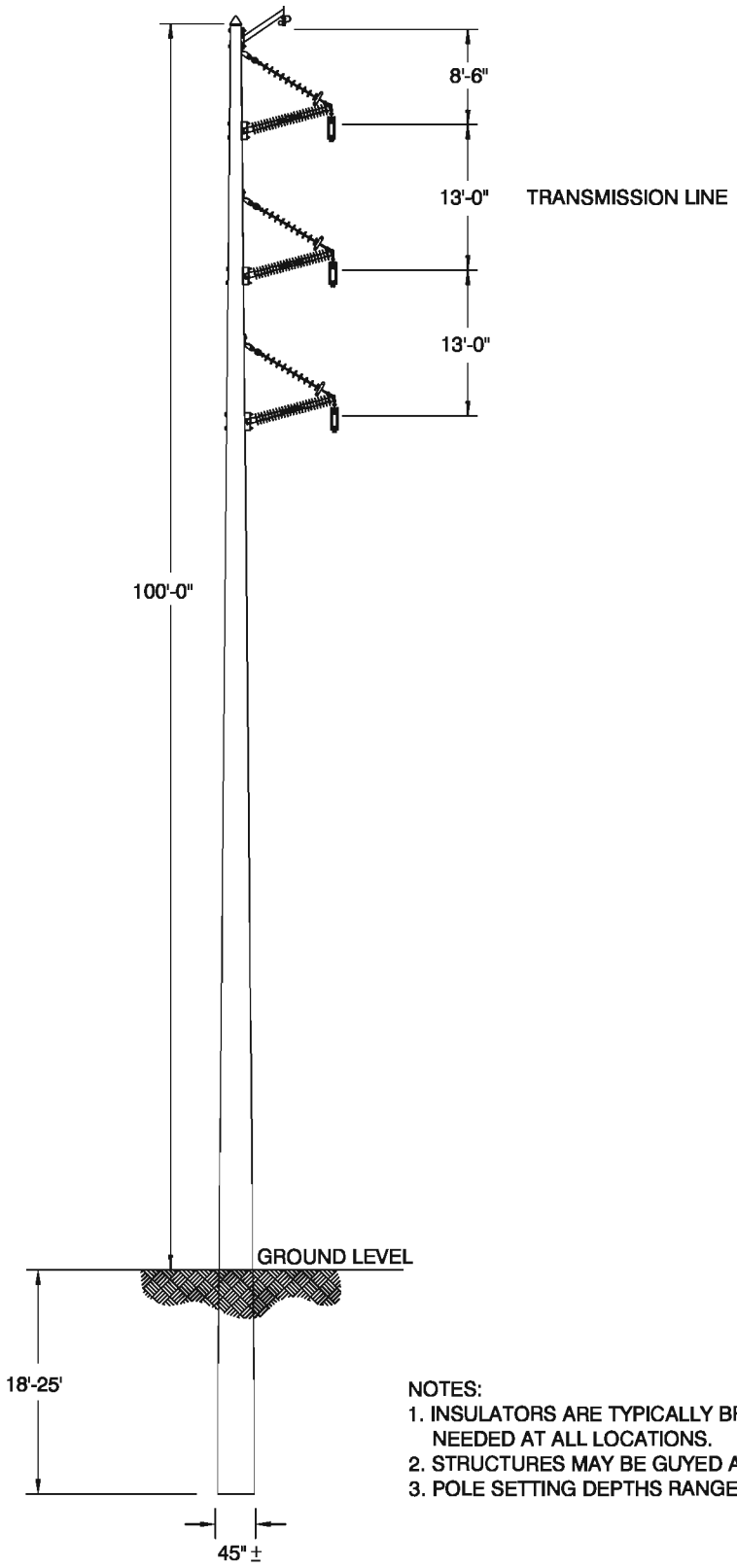

GRAPHIC SCALE
0 7.5 15
SCALE IN FEET

NOTES:
1. INSULATORS ARE TYPICALLY BRACED; BRACES MAY NOT BE NEEDED AT ALL LOCATIONS.
2. STRUCTURES MAY BE GUYED AT SOME LOCATIONS.
3. POLE SETTING DEPTHS RANGE FROM 18'-25' (TYP.)

FIGURE 1.3-1.
TYPICAL 100' TANGENT STRUCTURE VERTICAL CONFIGURATION WITHOUT DISTRIBUTION / COMMUNICATION UNDERBUILD
Source: FPL, 2006; ECT, 2006.

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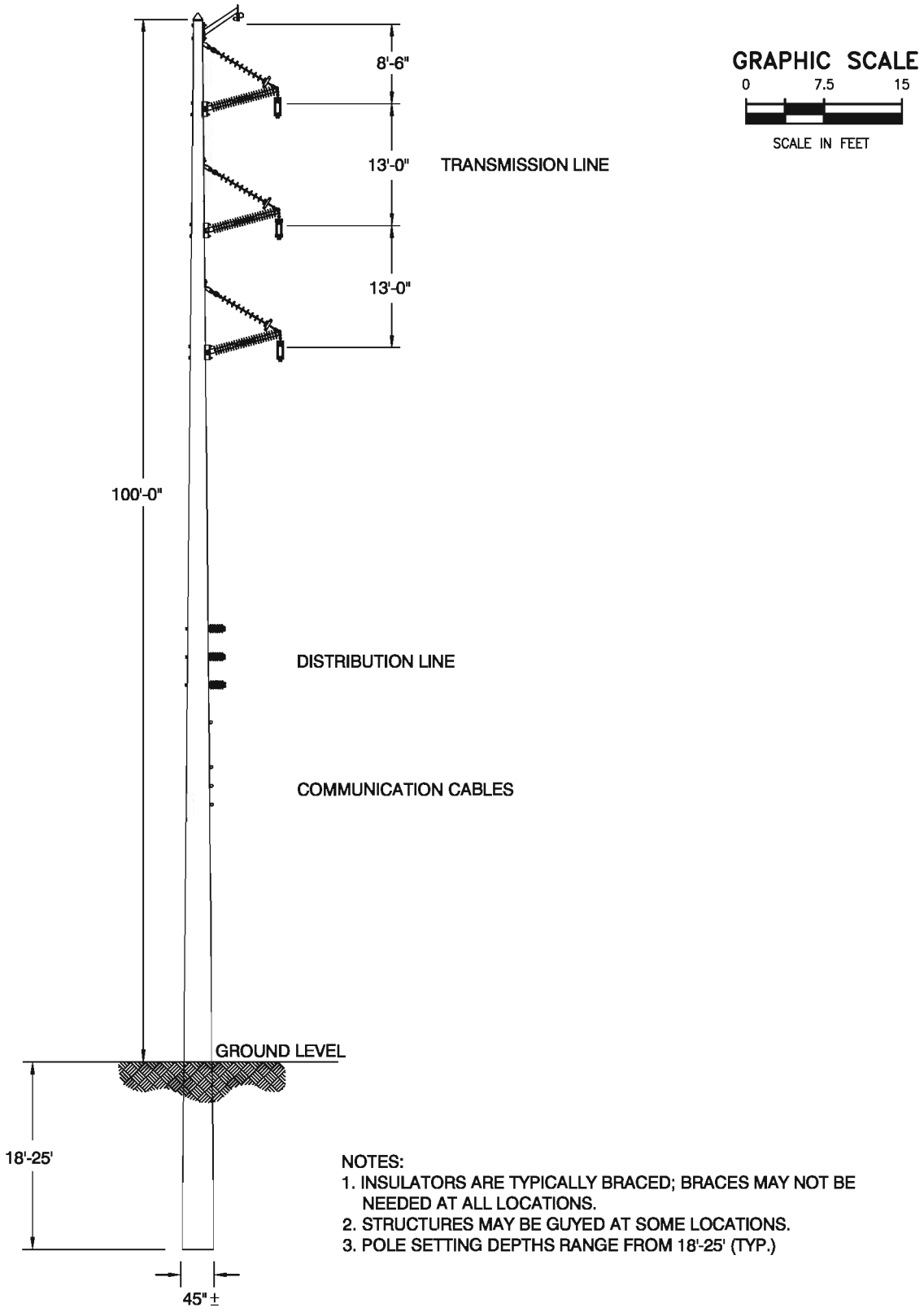

FIGURE 1.3-2.
TYPICAL 100' TANGENT STRUCTURE VERTICAL CONFIGURATION WITH DISTRIBUTION / COMMUNICATION UNDERBUILD
Source: FPL, 2006; ECT, 2006.

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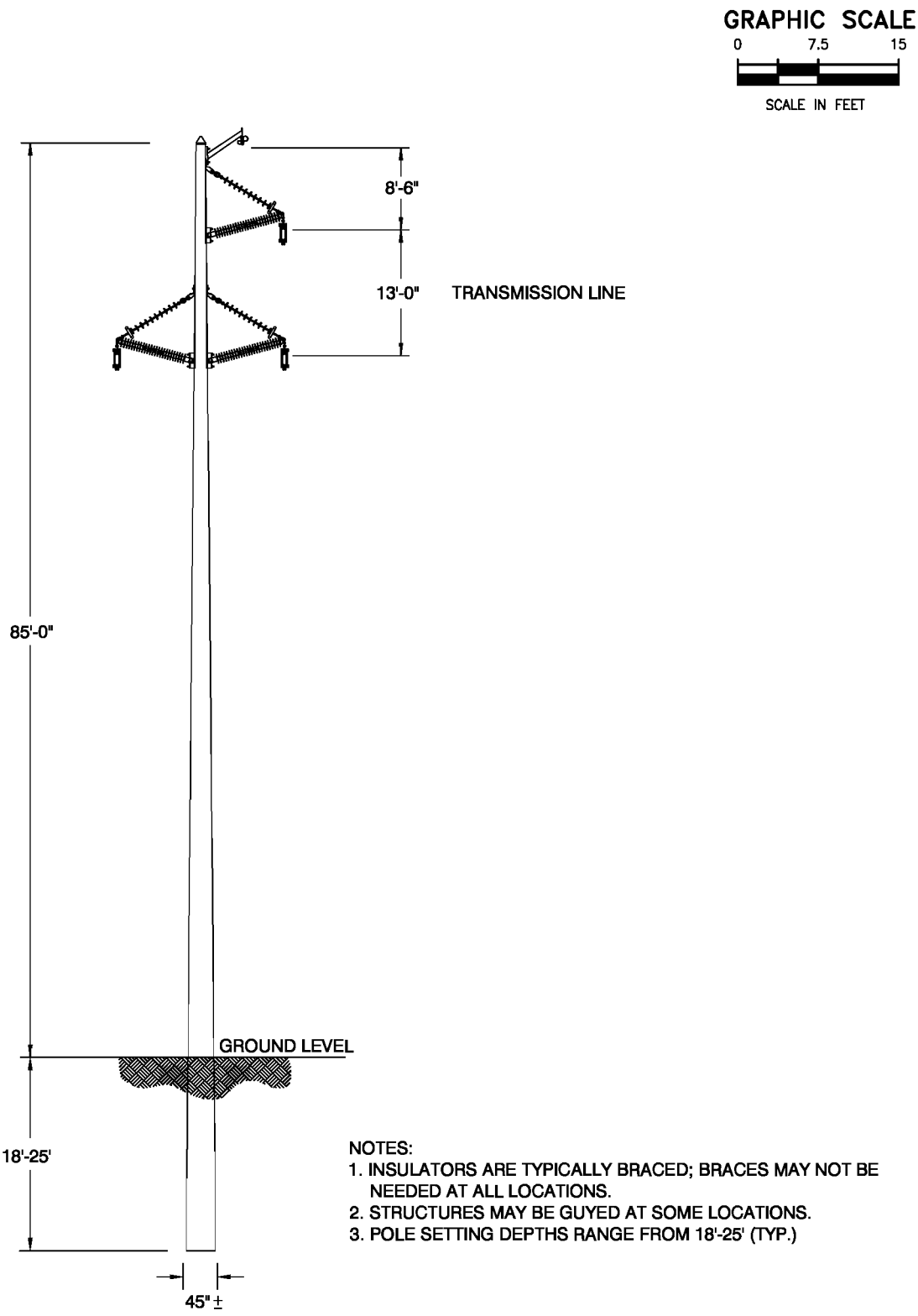

FIGURE 1.3-3.
TYPICAL 85' TANGENT STRUCTURE TRIANGULAR CONFIGURATION WITHOUT DISTRIBUTION / COMMUNICATION UNDERBUILD
Source: FPL, 2006; ECT, 2006.

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GRAPHIC SCALE
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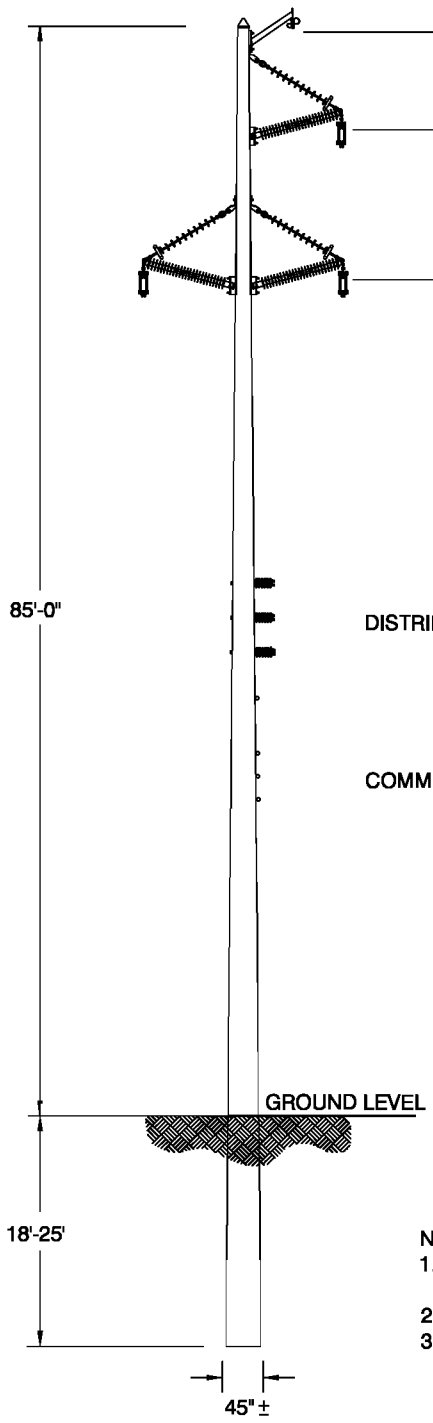
SCALE IN FEET



NOTES:
1. INSULATORS ARE TYPICALLY BRACED; BRACES MAY NOT BE NEEDED AT ALL LOCATIONS.
2. STRUCTURES MAY BE GUYED AT SOME LOCATIONS.
3. POLE SETTING DEPTHS RANGE FROM 18'-25' (TYP.)

FIGURE 1.3-4.
TYPICAL 85' TANGENT STRUCTURE TRIANGULAR CONFIGURATION WITH DISTRIBUTION / COMMUNICATION UNDERBUILD
Source: FPL, 2006; ECT, 2006.

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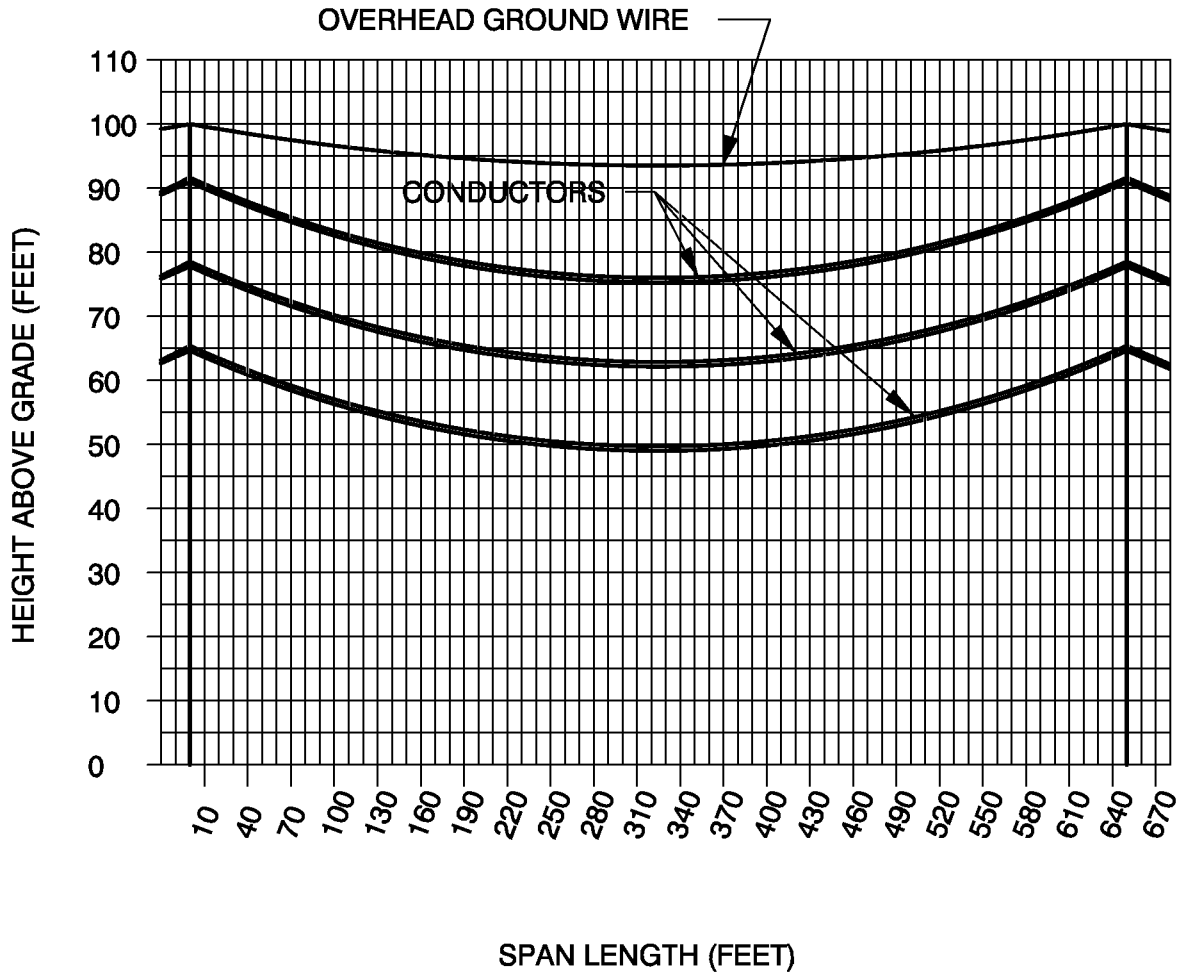
illustrate typical triangular configurations. Special structures and conductor configurations may be required at specific locations, such as the crossings of major road intersections, rivers, and streams, or to accommodate specific engineering considerations. Where the transmission line turns large angles or crosses other major linear facilities, the single-pole structure may require guys and anchors.

The six conductors of the proposed transmission line will typically be framed in a vertical configuration, as shown on Figures 1.3-1 and 1.3-2. Each conductor is anticipated to be one 954-thousand-circular-mil, aluminum conductor, steel reinforced alumoweld core. The maximum current rating (MCR) for the line will be 2,990 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 BWM Project using the typical vertical and triangular configurations, respectively.

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., 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], Southwest Florida Water Management District [SWFWMD], etc.).

Where available, existing roads 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

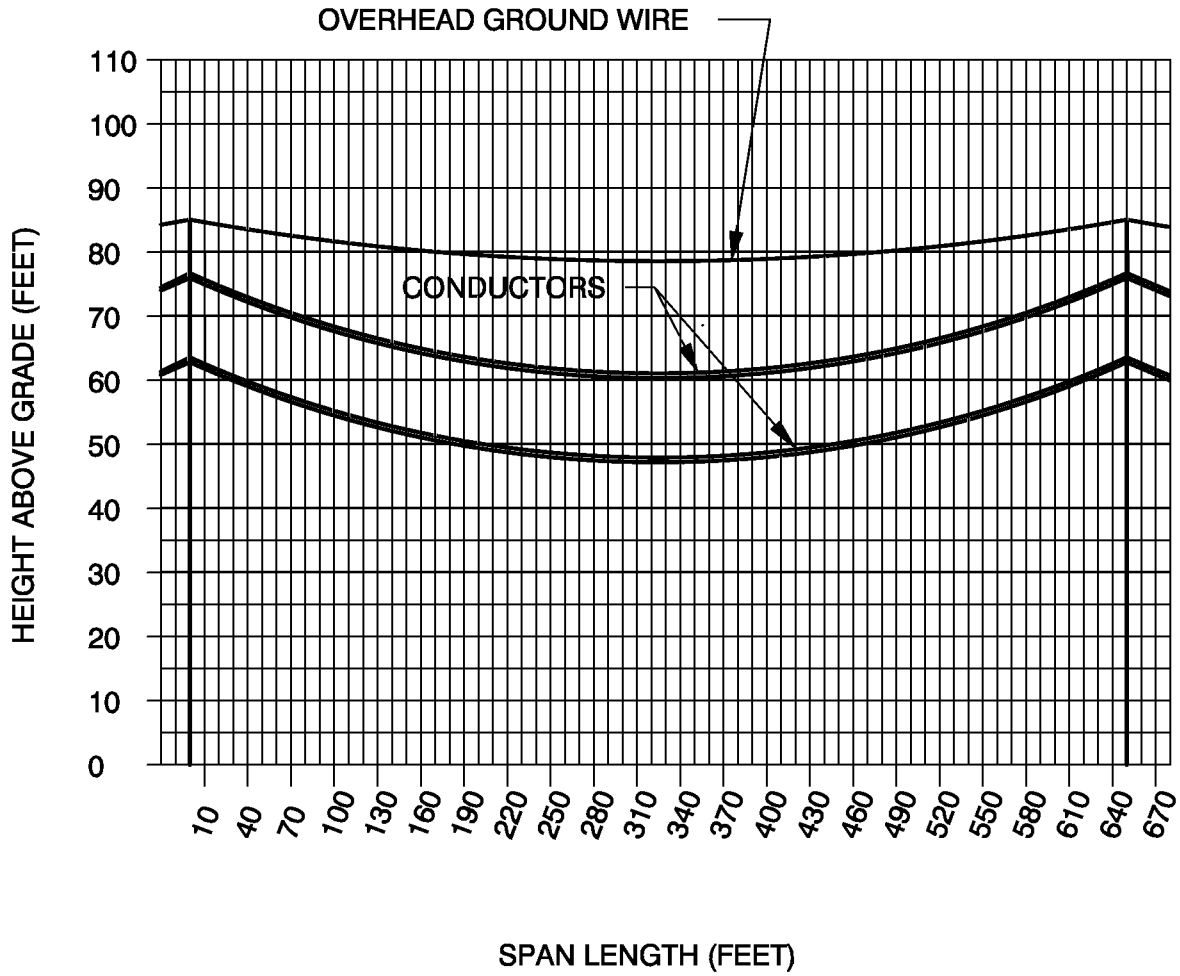


NOTE:

THIS PROFILE ASSUMES A SPAN LENGTH OF 650' AND POLE HEIGHTS 100' ABOVE GRADE. MIDSPAN CLEARANCES ALONG THE LINE WILL VARY DEPENDING ON POLE HEIGHTS AND SPAN LENGTHS BETWEEN STRUCTURES.

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

Source: FPL, 2006; ECT, 2006.



NOTE:

THIS PROFILE ASSUMES A SPAN LENGTH OF 650' AND POLE HEIGHTS 85' ABOVE GRADE. MIDSPAN CLEARANCES ALONG THE LINE WILL VARY DEPENDING ON POLE HEIGHTS AND SPAN LENGTHS BETWEEN STRUCTURES.

FIGURE 1.3-6.
CONDUCTOR PROFILE FOR TYPICAL 650' SPAN
85' TANGENT STRUCTURE TRIANGULAR CONFIGURATION

Source: FPL, 2005; ECT, 2005.

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pole locations while minimizing environmental impacts. Figure 1.3-7 shows a typical access road and structure pad cross-section.

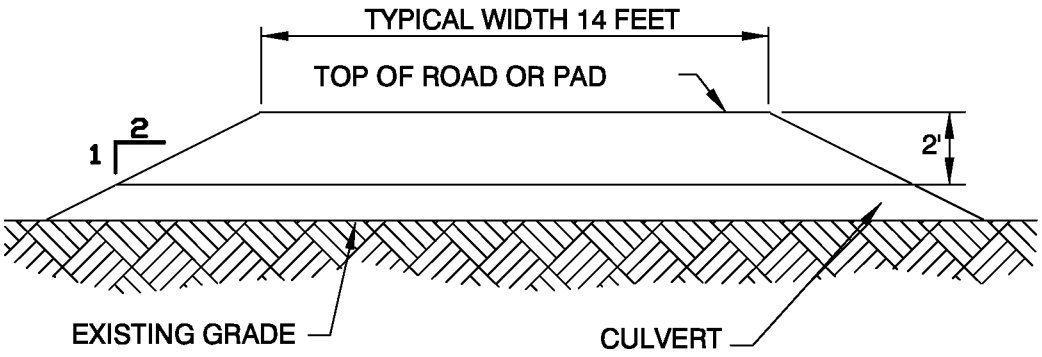
1.4 PROPOSED INTERMEDIATE SUBSTATIONS

No new intermediate substations are proposed at this time for the BWM Project.

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. Changes in line length due to conditions imposed on line routing through the certification process may also result in cost variation.

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 $1.1 million per mile, or a total construction cost of approximately $28.2 million. Additional costs of approximately $2.3 million will be required at the Manatee substation and to loop the existing Laurelwood-Ringling 230-kV lines into Bobwhite. The Bobwhite substation cost is $12.1 million. The estimated total project costs (2006 dollars) are estimated to be approximately $42.6 million.



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, 2006; ECT, 2006.

FPL®

2.0 BACKGROUND FEATURES OF THE PROPOSED CORRIDOR

2.1 CORRIDOR SELECTION

The preferred corridor for the FPL BWM 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.

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 BWM Project and addressed the need for this new line. FPL determined that a single-circuit, 230-kV transmission line on a single-pole structure is the best option to meet this need. The BWM Project must provide an additional electrical connection between FPL's existing Manatee substation east of Parrish, Manatee County, to FPL's proposed Bobwhite substation east of Sarasota, Sarasota County.

Therefore, the proposed study area for this project was delineated to accommodate a project that would 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 study area was delineated to include the FPL Manatee Energy Center, as well as the existing Keentown-Manatee 230-kV transmission line, which extends east from the Manatee Energy Center and north of and parallel to State Road (SR) 62. This delineation allowed ingress and egress to the Manatee Energy Center and provides the opportunity to follow existing linear features (existing 230-kV line or SR 62).

The eastern boundary was delineated approximately 1 mile east of the point where the existing 230-kV transmission line turns south. This eastern boundary extended south through Manatee and Sarasota Counties.

The western boundary of the study area was delineated roughly 1 mile east of the existing 230-kV transmission right-of-way just east of I-75. As mentioned in Section 1.2, for reliability purposes, FPL requires separation from this major transmission right-of-way that contains multiple circuits.

The southern boundary was delineated approximately 2 miles south of Fruitville Road (County Road [CR] 780) in Sarasota County. This was to provide FPL flexibility in accessing the proposed Bobwhite substation located just north of Fruitville Road.

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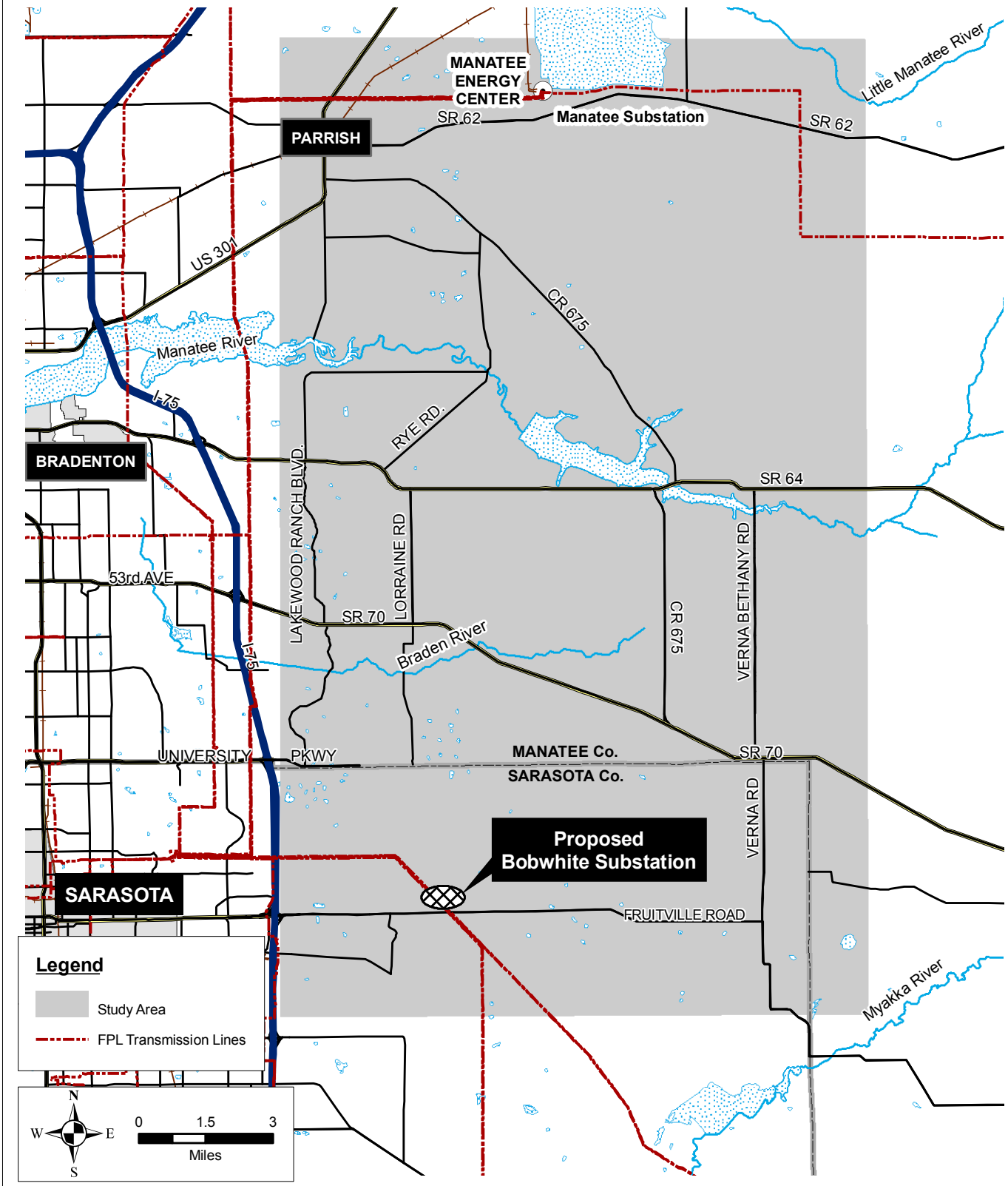

FIGURE 2.1-1.
BOBWHITE-MANATEE 230-kV TRANSMISSION LINE PROJECT--STUDY AREA

Sources: FGDL, 2004; ECT, 2006.

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 with 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 flexibility in adding new information as it became available and modifying coverages to analyze certain opportunities or constraints. Table 2.1-1 provides 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 route alignments identified.

Based on the results of the alternative route identification, 62 route segments were identified, comprising 1,275 potential alternative route alignments between the Manatee substation and the proposed Bobwhite 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 alternative routes identified and select a preferred corridor.

2.1.3.1 Alternative Route Evaluation

This step involved a systematic, quantitative evaluation of each alternative route 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.

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.

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 for which local approvals are pending • Planned unit developments (PUDs) and developments of regional impact (DRIs) • Property boundaries • Existing and proposed school properties • National parks, wildlife refuges, estuarine sanctuaries, landmarks, or historical sites • State parks, preserves, Florida Forever Lands (proposed and existing), Areas of Critical State Concern, Conservation and Recreation Lands, Save Our Rivers lands, aquatic preserves • SWFWMD-owned lands • Manatee County lands, parks, recreation areas, and mitigation lands • Sarasota County lands, parks, recreation areas, and mitigation lands • Private designated wetland mitigation areas • Privately owned environmental preserves/sanctuaries and conservation easements
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, 2006.

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, existing development, and proposed development for which local approvals are pending)
- 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
- As much as practicable, maintain at least a 1-mile separation from the Manatee-Ringling transmission corridor

Source: ECT, 2006.

Table 2.1-3. Alternative Route Evaluation Criteria

- Number of homes within 200 ft of the route centerline
- Length of forested wetlands crossed
- Length of herbaceous wetlands crossed
- Length of natural forested upland habitats crossed
- Length of line through existing parks, recreation areas, or other designated conservation lands
- Number of school properties within 200 ft of the route centerline
- Length of line where no existing utility or public right-of-way is 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 route centerline
- Cost

Source: ECT, 2006.

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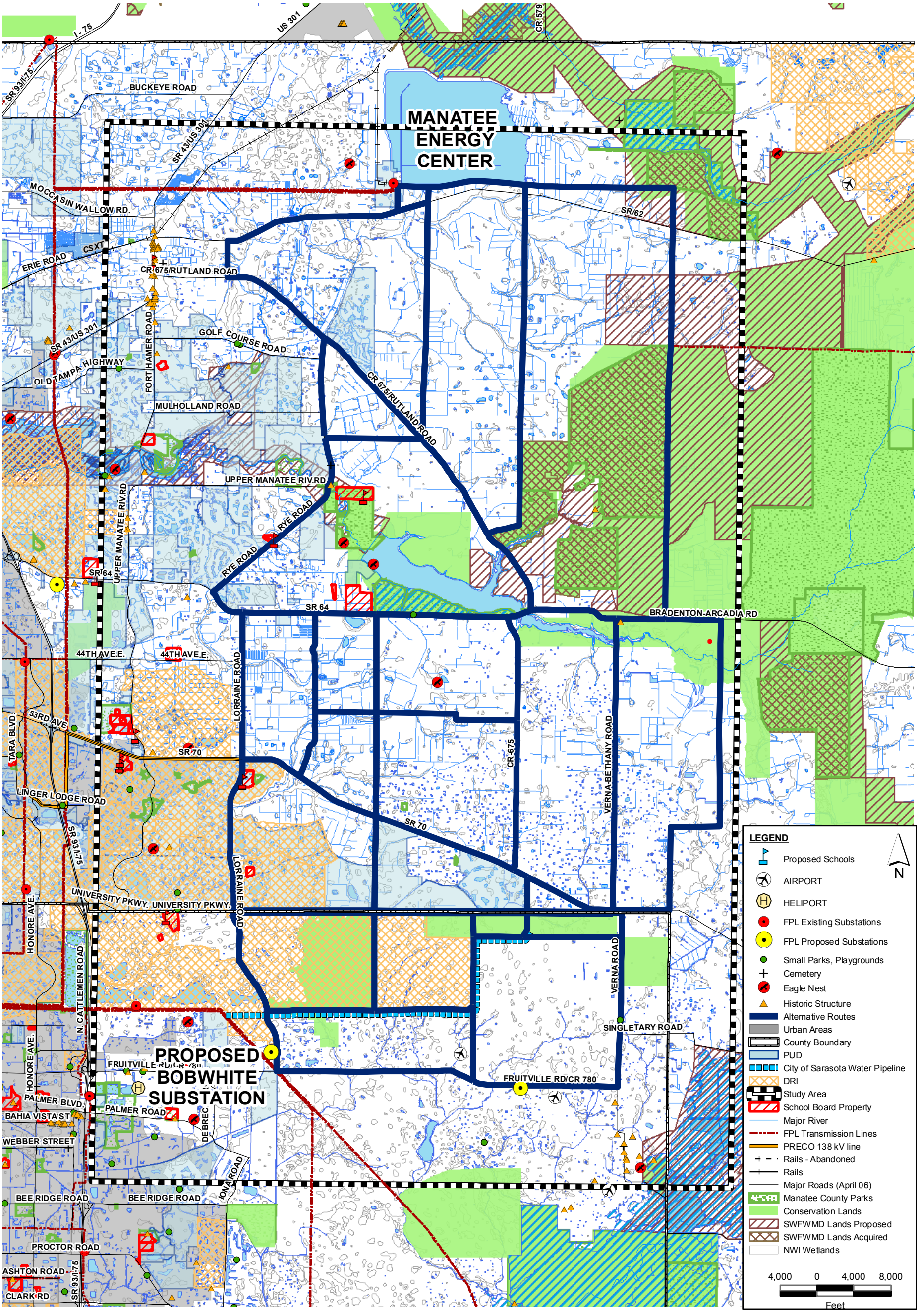

FIGURE 2.1-2.

REGIONAL SCREENING AND ALTERNATIVE ROUTES

Sources: FGDL, 2003; FPL, 2006; Manatee County, 2006; Sarasota County, 2006; SWFWMD, 2006; ECT, 2006.

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. Alternative routes consisted of various combinations of segments, forming a continuous path between the Manatee Energy Center and the Bobwhite substation site. Figure 2.1-3 presents a map showing all the routes evaluated for the BMW Project.

The relative weight (importance) of each criterion to be used in the alternative route evaluation was then established by a multidisciplinary team. These criteria and weights were validated through input from the community obtained as part of the community outreach program.

The routes were ranked according to their weighted composite score on all criteria with the lowest score being the most favorable. This score 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 consideration of qualitative criteria such as opportunities for collocation with other linear facilities (roads and utility rights-of-way), future electric service needs, existing and proposed land use, and the ability to construct the line along that alignment. Quantitative information used in the previous step was refined and considered again at this stage. Feedback and comments received at agency meetings, community open houses, meetings with area residents, and other public channels of communication were also incorporated into the evaluation.

After evaluation of the top-ranked alternative routes in this area and significant public input, a preferred route for certification was selected (see Figure 2.1-3).

Finally, boundaries were placed on the preferred route resulting in a corridor of varied width to give FPL an appropriate amount of flexibility in avoiding or accommodating site-specific constraints or taking advantage of certain opportunities. The preferred corridor is shown on recent (2004) aerial photographs at a scale of 1:24,000 in Attachment 2-1

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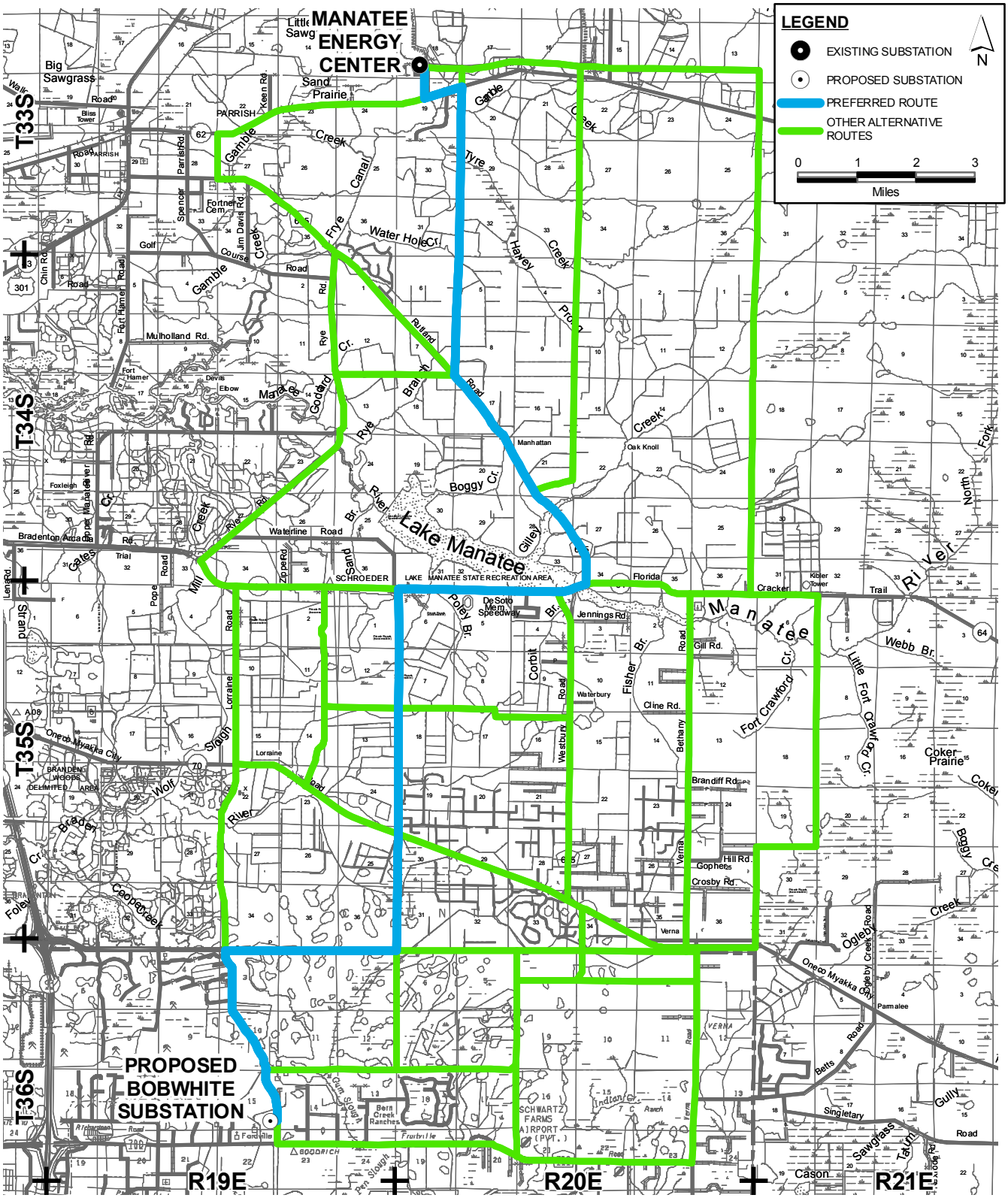

FIGURE 2.1-3.

PREFERRED ROUTE AND ALTERNATIVE ROUTES

Sources: FPL, 2006; FLDOT.

at the end of this chapter. Through ground truthing, the project team verified that data contained on the aerial photographs are reasonably representative of the corridor area. Except for ongoing construction in Lakewood Ranch and The Concession in the southern part of the project study area (included in the planned unit developments [PUDs] shown north of University Parkway on Figure 2.1-2), the aerials are current within 12 months of filing.

2.1.3.2 Preferred Corridor Description

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

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 BWM 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 BWM immediately adjacent to other linear features still reduces potential impacts.

The following describes the preferred corridor starting at the Manatee substation and proceeding south to the Bobwhite substation.

The proposed corridor exits the Manatee substation in Manatee County within FPL property north of SR 62. The corridor extends eastward in this area, allowing FPL use of either the existing Keentown- Manatee 230-kV corridor or SR 62 as existing linear facilities to follow.

Approximately 1 mile east of the Manatee substation, the corridor turns due south along a section line for approximately 5 miles. In this cross-country segment, the corridor is approximately 3,000 ft wide to allow FPL flexibility in working with site-specific features, negotiating with property owners through agricultural operations, and in crossing some small tributaries of Gamble Creek, when selecting the right-of-way.

Along the southern portion of this segment, FPL is proposing to use an existing 50-ft-wide farm road for access. A corridor spur, to accommodate this access opportunity, is centered on the existing farm road, which is encompassed within this 50-ft-wide lateral east-west corridor segment from CR 675 to the 3,000-ft-wide north-south corridor. No transmission facilities are planned for this lateral access road corridor.

The corridor then intersects CR 675 approximately 3 miles north of Gilley Creek. The corridor follows CR 675 all the way to its intersection with SR 64. The corridor all along CR 675 is 400 ft wide and centered on the road.

At the intersection of SR 64, the corridor turns west along the highway for approximately 3 miles to the intersection with Dam Road. The corridor width along SR 64 is 400 ft and centered on the road except for the crossing of Manatee River. Here the corridor is expanded to 500 ft centered on the road to allow flexibility in constructing the line along side the existing bridge.

Where Dam Road intersects SR 64, the preferred corridor turns south along section lines. Here the corridor is approximately 4,500 ft wide, with approximately 3,000 ft located west of the section line and 1,500 ft located to the east. The corridor width in this area is intended to give FPL flexibility in locating a right-of-way compatible with potential development plans and the proposed extension of Dam Road south to University Parkway.

Approximately 3 miles south of SR 64, the corridor shifts to the 3,000-ft strip west of the section line to avoid existing development associated with Panther Ridge. The corridor continues this alignment south across SR 70 and down to University Parkway.

At University Parkway, which generally follows the Manatee-Sarasota County line, the preferred corridor turns west and is located along the south side of University Parkway westward to its intersection with Lorraine Road. Here the corridor is at least 500 ft wide, extending from the centerline of University Parkway to the south. At its western end, this corridor segment widens as University Parkway curves to the north in its alignment.

At the intersection of Lorraine Road, the corridor turns south along Lorraine Road Extension and is of variable width following the road alignment. The corridor in this area is generally 200 ft wide west of Lorraine Road and up to 4,000 ft wide east of the road, narrowing on the east side as the corridor proceeds south. This variable width is designed to give FPL flexibility with future development plans, while being able to make the necessary angle turn at Lorraine Road and University Parkway.

The corridor proceeds south along the Lorraine Road extension to Dog Kennel Road. The corridor narrows as it approaches the proposed Bobwhite substation, where it is eventually limited to the west side of the eastern property line of Dog Kennel Road down to Fruitville Road. Around the substation site, the corridor is expanded into a box to allow ingress to the property and to include the entire easement for the existing FPL Charlotte-Ringling 230-kV, Laurelwood-Ringling 230-kV #1 and 2, and the Charlotte-Ringling 138-kV right-of-way, which occurs along the southwestern portion of the substation property. Attachment 2-1 contains detailed aerial photographs depicting the preferred corridor.

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; two open house public meetings; newspaper advertisements; a BWM 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 BWM Project and express their views.

Initially, using county property appraisers' and FPL customer databases, more than 25,000 letters were sent to FPL customers and property owners throughout the BWM Project study area. Enclosed with the letter were a fact sheet, map of the study area, survey, and a postage-paid envelope for returning the survey. More than 1,900 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.

Two open houses were held: one in Parrish in Manatee County and one in Lakewood Ranch at the southern end of the study area near the Manatee/Sarasota County line. More than 270 people attended the open houses. During the open houses, visitors were able to talk directly with FPL project team members, learn about the BWM 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 BWM Project and FPL on display boards and in brochures, and express their views. A total of 73 people filled out comment forms at the open houses. 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 BWM Project team members.

In addition, FPL formed a community advisory panel (CAP) consisting of 24 citizens from both Manatee and Sarasota Counties to assist in the routing of the proposed new transmission line. Panel members were drawn from a wide range of neighborhood and community groups and institutions. The CAP was asked to share their knowledge of the community and their perspectives to help the FPL team find a preferred route, suggest ideas for appropriately minimizing impacts of the BWM Project, and make recommendations on ways to communicate with the community. They met three times between July and October 2006 to learn about FPL's plans and share their views. Appendix B contains a description of the CAP and a list of CAP members.

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

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

The FPL project team incorporated what they learned through the community outreach program into the preferred corridor selection decision. Members of the public and governmental agencies 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 study area features or characteristics that should be given consideration in route selection.
- Ways to effectively communicate with the public regarding the BWM Project.

2.2 SOCIO-POLITICAL ENVIRONMENT OF THE CORRIDOR AREA

2.2.1 GOVERNMENTAL JURISDICTIONS

The preferred corridor is located in Manatee and Sarasota Counties. Figure 2.2-1 shows the preferred corridor at a scale of 1:126,720, or 1 inch equals 2 miles, in relation to the governmental jurisdictions within 1 mile of the edge of the preferred corridor. The corridor comes within 1 mile of only one state land holding, Lake Manatee State Park. The corridor runs the length of the park, and less than half of the corridor's width is within the park, which is located on the north side of SR 64. This park is owned by the state and managed by the Florida Department of Environmental Protection (FDEP).

The corridor is also either adjacent to or within 1 mile of the following existing conservation lands:

- Lake Manatee Lower Watershed—This area is crossed by the corridor as it follows CR 675 north of the bridge over Gilley Creek. The property is owned by SWFWMD, and its primary purpose is for water recharge.
- Lake Manatee—This reservoir is owned by Manatee County as its drinking water supply. The corridor crosses it at the SR 64 bridge.

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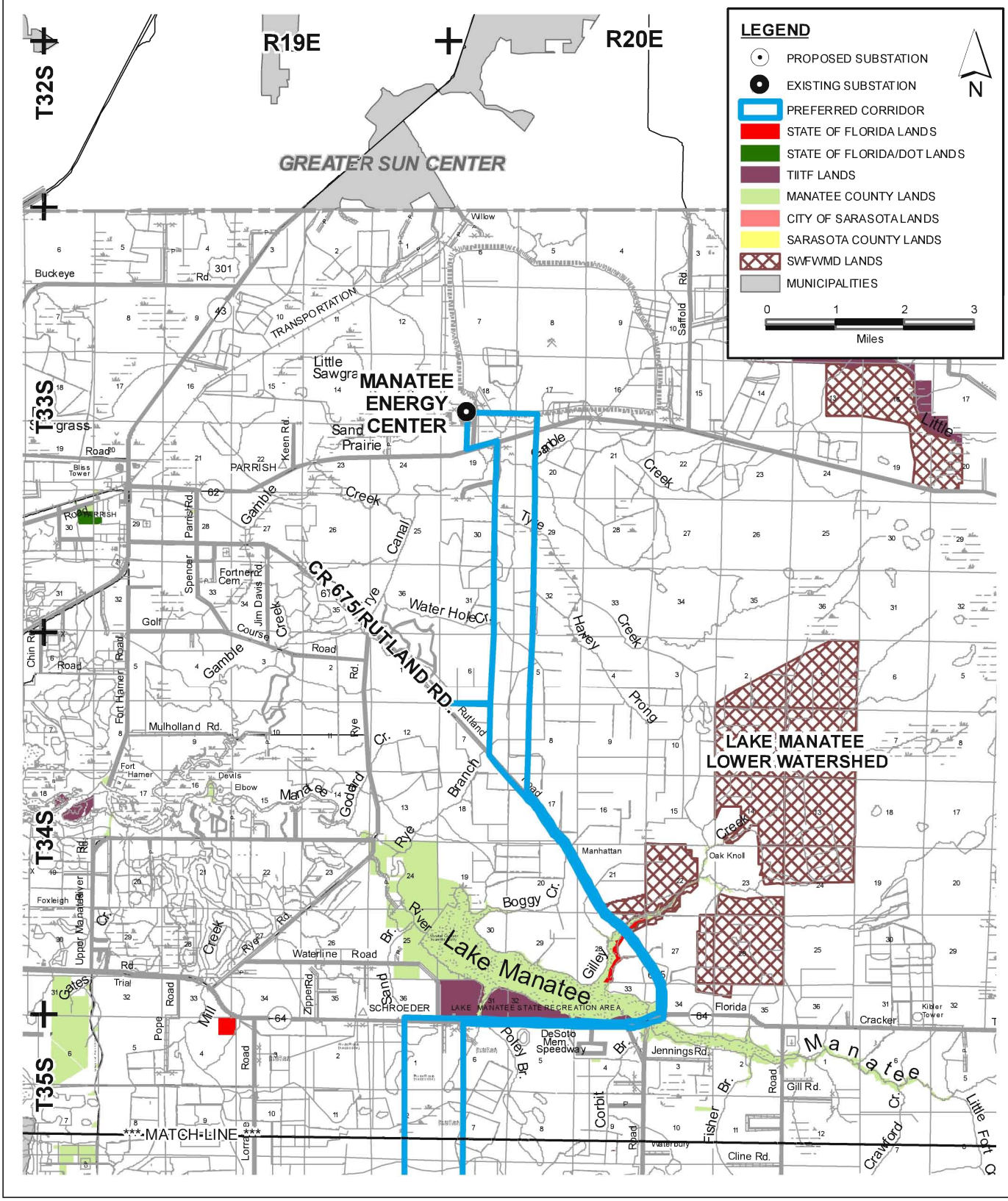

FIGURE 2.2-1 (1 OF 2)

GOVERNMENTAL JURISDICTIONS

Sources: FPL, 2006; Manatee County Property Appraiser, 2006, Sarasota County Property Appraiser, 2006. FLDOT, ECT, 2006.

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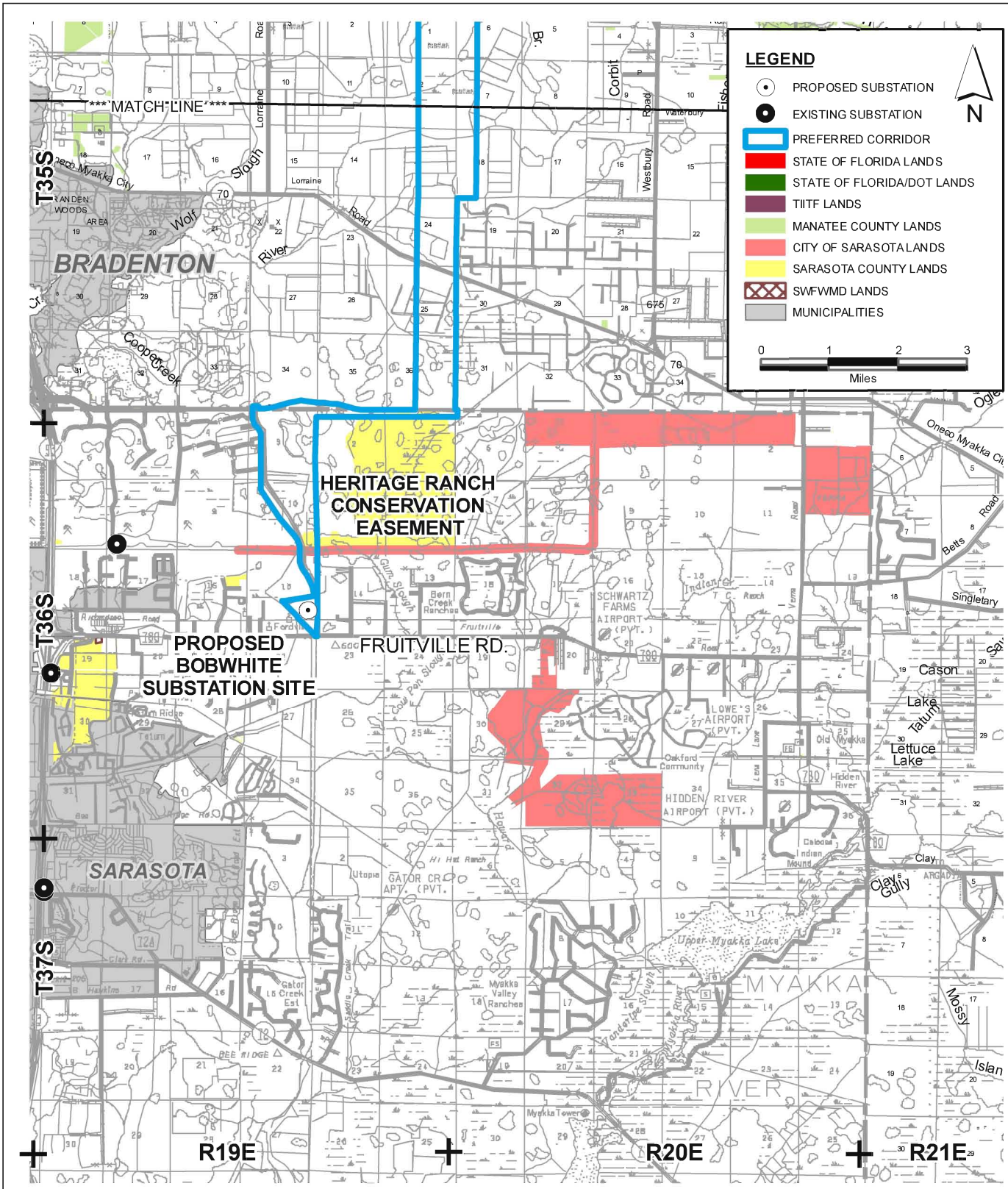

FIGURE 2.2-1 (2 OF 2)

GOVERNMENTAL JURISDICTIONS

Sources: FPL, 2006; Manatee County Property Appraiser, 2006, Sarasota County Property Appraiser, 2006. FLDOT, ECT, 2006.

FPL

- Sarasota Heritage Ranch Conservation Easement—As the corridor runs west along University Parkway, this conservation area is along the south side of the road. This property is privately owned but managed by Sarasota County.

The following federal, state, and local jurisdictional areas were researched, and none were found to occur within 1.0 mile of the edge of the preferred corridor:

- National parks.
- National forests.
- National wildlife refuges.
- National seashores.
- National wilderness areas.
- National memorials.
- National monuments.
- Properties in the national register of historic places.
- Natural landmarks.
- Game Management Areas
- Marine and estuarine sanctuaries.
- State forests.
- Roadless area review and evaluation (RARE) areas.
- Outstanding Florida Rivers
- Areas of critical state concern.
- State archaeological landmarks.
- State aquatic preserves.
- Indian reservations.
- Military installations.
- County Parks

2.2.2 ZONING AND LAND USE PLANS

2.2.2.1 Land Use Plans

The preferred corridor crosses the unincorporated areas of Manatee and Sarasota Counties. 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 D contains reproductions of relevant portions of the two counties' future land use maps (FLUMs).

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

- Manatee County:
  - Agriculture/Rural (AG-R).
  - Major Public/Semi-Public (P/SP-1).

  - Major Recreation/Open Space (R-OS).
  - Residential (RES-1).
  - Urban Fringe (UF-3).
- Sarasota County:
  - Rural (RURAL).

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

Manatee County

- Agriculture/Rural (AG-R)—This category of land designates areas with long-term agricultural or rural residential character, such as areas located east of the Future Development Area Boundary.
  - The uses allowed are farms, ranches, agro-industrial, agricultural service establishments, agriculturally-compatible residential, farm worker housing, rural residential, small retail and office commercial, mining, mining-related, low intensity recreational facilities, rural recreational facilities, public or semipublic, schools, and appropriate water-dependent.
  - Maximum Gross residential density of 0.2 dwelling unit per acre is allowed with one dwelling unit per acre per net residential density. Maximum floor area ratio is 0.23.
- Major Public/Semi-Public (P/SP-1)—This land use category recognizes major and programmed public/quasi-public facilities, primarily those facilities related to public or private utilities, including electrical transmission corridors occupied by transmission lines of 240 kV or more. This designation only applies to the existing Manatee Energy Center.
- Major Recreation/Open Space (R-OS)—This designation recognizes the significant recreation and permanent open space lands, historic sites, and other areas for preservation of cultural and recreational amenities.

- Additional appropriate uses for this designation include state parks, district or regional parks, and public schools when associated with public parks.
- Density and intensity limits do not apply to the category other than for historic sites where they shall be minimal.
- Any recreational area designated as R-OS shall be a major recreational facility, other than a local park, as defined in the Recreation/Open Space Element or an open space that may include special camps and programs designed to meet the public need and which are consistent with appropriate resource protection.

- Residential (RES-1)—Areas in this category are established for a low-density suburban residential environment or a clustered low density urban residential environment where appropriate, and may be utilized for compatible agricultural activities in the short term, while recognizing that residential is the preferred long-term use.
  - In addition to these residential uses, small or medium retail and office commercial uses, short term agricultural and affiliated uses such as farm worker housing, public and semipublic, school, low intensity recreational, and water-dependent/water-related/water-enhanced uses are also allowed.
  - Maximum gross residential density of one dwelling unit per acre is allowed with two dwelling units per acre per net residential density (six dwelling units per net when clustering). Maximum floor area ratio is 0.23 and 0.35 for mini-warehouse uses only.
- Urban Fringe (UF-3)—In this land use category are areas that are developed in a logical expansion of the urban environment, typically growing from the west to the east, consistent with the availability of services. At a minimum, the nature, extent, location of development, and availability of services will be reviewed to ensure the transitioning of these lands is conducted consistently with the intent of the policy.
  - These areas are established for a low-density urban, residential environment, generally developed through the PUD concept. They provide

for a compliment of residential support uses normally utilized during the daily activities of residents of these low- or low-to-moderate-density urban environments.

- The range of potential uses includes suburban or urban density planned residential developments with integrated residential support uses, such as medium retail and office commercial uses, short-term agricultural uses, agriculturally compatible residential uses, farm worker housing, public or semipublic uses, schools, low-intensity recreational uses, and appropriate water-dependent/water-related/water-enhanced uses.
- The range of potential density or intensity is a maximum gross density of three dwelling units per acre; a maximum net residential density of nine dwelling units per acre; and a maximum floor area ratio of 0.23 or 0.35 for mini-warehouse uses only.

Sarasota County

I. Rural—The primary function of the Rural designation is to preserve agricultural lands. Land management activities associated with agricultural uses may be incompatible with other forms of development. The continuation of successful operation on agricultural lands shall take precedence over development, and the development will be evaluated during approvals for such compatibility. Residential development in the rural areas located outside the village and hamlet master plans, as allowed in the Sarasota 2050 Plan, continues to be limited to a maximum density of one dwelling unit per 5 acres.

II. Sarasota 2050 Plan—This document has been designed as a supplement to the future land use plan. It contains maps depicting the countywide overlays of different Resource Management Areas (RMAs) and the associated goals, objectives and policies related to development under the incentive based Sarasota 2050 Plan. While it does not affect the underlying right of property owners to develop their land, it does encourage the use of transfer of development rights to provide clustered development and preservation of open space and rural character.

The corridor crosses the following RMAs:

- Greenway— The Greenway RMA is defined as a resource overlay to designate a network of riverine systems, floodplains, native habitats, storm surge areas, and uplands as priority resources. Sarasota County's objective is to create an overall conservation plan to protect the most significant environmental resources through programs that protect these lands in perpetuity.
    - Uses in these areas shall be restricted to include only uses that are compatible with the ecological value of the property. Compatible uses will be determined on a case-by-case basis.
- Village/Open Space—This designated overlay provides for a new form of development outside the urban service area boundary as an alternative to and prevention against urban sprawl. This concept directs development into compact, mixed-use, pedestrian friendly villages and hamlets within a system of large areas of permanent open space.
    - Villages are a collection of neighborhoods that have been designed so that a majority of the housing units are within a walking distance or 0.25-mile radius of a neighborhood center. Neighborhood centers should serve the daily and weekly retail, office, civic, and governmental use and service needs of village residents. The villages shall be surrounded by large expanses of open space that are designed to protect the character of the rural landscape and provide separation between villages and existing low-density rural development.
        - The minimum size of a village is 1,000 developed acres, not adjacent to the urban services boundary, and a maximum of 3,000 acres of developed area, both with equal minimum open space.
        - Minimum density within the developed area is three dwelling units per gross developable acre, with a target density of six dwelling units per net residential acre.

- Maximum density within the developed area is five dwelling units per developable acre or six dwelling units per gross developable acre, if the additional units are affordable housing.
- The village center has a maximum size of 100 acres with mixed use allocated as follows: Residential (minimum 25 percent, maximum 50 percent); Commercial/Office (minimum 30 percent, maximum 60 percent); Public/Civic (minimum 10 percent, maximum not applicable); and Public Parks (minimum 5 percent, maximum not applicable).

o Hamlets are collections of homes and lots clustered together around a crossroads that may include small-scale commercial, civic buildings, or shared amenities.

- The preferred size of a hamlet is 50 to 150 dwelling units, with a maximum size of 400 dwelling units, and a minimum size determined by the master development plan process.
- Minimum density within the developed area is 0.4 dwelling unit per gross developable acre.
- Maximum density within the developed area is 1 dwelling unit per developable acre.
- Minimum open space outside the developed area shall be equal or greater than 1.5 times acreage of the developed area.
- The commercial/office space shall not exceed 10,000 gross leasable square feet and is limited to nominal small-scale neighborhood uses.
- Each hamlet is required to have a public/civic focal point, such as a public park

o When locating public buildings and facilities within the village/open space RMA, Sarasota County shall be consistent with the village/open space RMA principles (Policy VOS1.4). The collocation of public facilities and services is encouraged.

o Villages may be developed only in the Village land use, and Hamlets may be developed only in the Hamlet land use. This delineation is

based on the concept of a countryside line, defined as the easternmost boundary of Village land use, which supports a community vision to establish a clear transition from urban character west of this delineation to rural character east of this delineation.

- Rural Heritage/Estate—The objective of this area is to protect its existing rural character in areas outside the urban service boundary, as well as its established pattern of large lot estate development, agriculture, and equestrian activities. Existing uses in rural FLUM designations consist of single-family residential with gross densities less than or equal to one dwelling per 5 acres, one dwelling unit per 10 acres, or one dwelling unit per 160 acres.

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:

- Manatee Zoning Districts:
  - A General Agriculture.
  - CON Conservation.
  - PD-C Planned Development Commercial.
  - PD-MU Planned Development Mixed Use.
  - PD-PI Planned Development Public Interest.
  - PD-R Planned Development Residential.
- Sarasota County Zoning Districts:
  - OUA Open Use Agriculture – 1 unit per 160 acres.
  - OUE-1 Open Use Estate – 1 unit per 5 acres.
  - OUR Open Use Rural – 1 unit per 10 acres.

Manatee County—Code of Ordinances

Potentially relevant portions of the Manatee County Code of Ordinances are reproduced in the following.

PART II. Chapter 2-21 MISCELLANEOUS PROVISIONS AND OFFENSES, ARTICLE II. NOISE, Sec. 2-21-31. Terminology; definitions.

"*Noise*—Any sound which annoys or disturbs humans or causes or tends to cause an adverse psychological effect on humans. 'Noise' includes low frequency vibrations, such as caused by amplification of bass instrumental sounds.

Noise disturbance: Sound which (a) is or may be harmful or injurious to the health or welfare of a reasonable person with normal sensitivities, or (b) unreasonably interferes with the enjoyment or normal conduct of life, property or outdoor recreation, or (c) causes noise pollution, defined as follows:

> '*Noise pollution*' shall mean the presence of noise in excessive or unnecessary amount or of such duration, wave frequency or intensity as to be injurious to human or animal life or property; or which unreasonably interferes with the comfortable enjoyment or normal activities of life or property, or other conduct of business."

Sec. 2-21-34. Prohibited acts.

"The occurrence of the conditions, acts, or omissions as described in subsections (1) or (2) of this section shall constitute a violation of this article. Requirements in any one of said subsections stand alone. Measurements described in subsection (2) shall constitute prima facie evidence of violation of this article. However, such measurements are not necessary for enforcement of this article (i.e., neither sound measurements as provided in subsection (2) nor any other type of sound measurement are necessary to prove a violation of subsection (1) of this section).

> (1) *Noise disturbance*. Notwithstanding any other provision of this article, and in addition thereto, it shall be unlawful for any person to make or continue, or cause or permit to be made or continued, any noise disturbance, as defined in section 2-21-31.
>
> a. *Standards*. The standards to be considered in determining whether a violation of subsection (1) of this section exists may include but shall not be limited to the following:
>
> 1. The volume of the noise.

2. The intensity of the noise.
3. Whether the nature of the noise is usual or unusual.
4. The volume and intensity of the background noise, if any.
5. The proximity of the noise to residential sleeping facilities.
6. The nature and zoning of the area from which the noise emanates.
7. The nature and zoning of the receiving land.
8. The time of the day or night the noise occurs.
9. The duration of the noise.
10. Whether the noise is produced by a commercial or noncommercial activity.

(2) *Maximum permissible sound levels*.

a. *Sound*. No person shall operate or cause to be operated, from any source, sound which, when measured at the property line of the property where the sound is being generated, exceeds:

1. 55 A-weighted decibels (dBA) during the hours between 7 a.m. and 10 p.m. at the property line of the noise source.

2. 50 dBA during the hours between 10 p.m. and 7 a.m. at the property line of the noise source."

Sarasota County—Code of Ordinances

Potentially relevant portions of the Sarasota County Code of Ordinances are reproduced in the following.

Chapter 54 ENVIRONMENT AND NATURAL RESOURCES, ARTICLE V. AIR AND SOUND POLLUTION

Sec. 54-118. Sound control.

The provisions and prohibitions hereinafter contained and enacted in this section shall only be applicable within the unincorporated areas of Sarasota County.

(a) *Definitions*. For the purpose of this section the terms, words, or phrases below shall have the following meanings:

(21) *Sound* shall mean an oscillation in pressure, particle displacement, particle velocity, or other physical parameter, in a medium with

internal forces that causes compression and rarefaction of that medium. The description of sound may include any characteristics of such sound, including duration, intensity, and frequency.

(22) *Continuous sound* shall mean any sound that is not an impulse sound.

(b) *Method of measurement*.

(1) For the purpose of measuring the intensity of sound, sound level meters meeting or surpassing the criteria of American National Standards Institute (ANSI) for Type II meters shall be employed. The instrument shall be maintained in calibration and in good working condition in accordance with manufacturer's instructions including any and all applicable ANSI criteria. Measurements recorded shall be taken so as to provide proper representation of the sound source. The microphone used during measurements shall be positioned so as not to create any unnatural enhancement or diminution of the measured sound. A windscreen for the microphone shall be used when required.

(2) Measurements shall be made using the A-weighting (dBA) and the C-weighting (dBC) scales.

(3) Sound level measurements shall be taken at the real property line of the generating property, except for industrial uses which may also be measured at the receiving residential property line of a complainant, at approximately 5 ft above ground. Location and timing of measurements shall be arranged to exclude or minimize background noise, to the greatest extent practicable. A correction factor shall be applied to compensate for background noise when the difference between background and source is less than ten decibels.

(4) Background sound levels shall be determined in accordance with accepted practices at the time of sampling.

(5) The *slow* response setting of the sound level meter shall be used in order to best determine that the sound has not exceeded the standards set forth in subsection (c)(1) of this section.

(6) The *fast* or *impulse* response setting of the sound level meter shall be used to best determine that the sound has not exceeded the standards set forth in subsection (c)(2) of this section.

(c) *Maximum permissible sound levels by generating land use*.

(1) *Continuous sound*. The maximum decibel levels from any activity (unless exempted) shall not exceed, at any point on the generating property's real property line, the sound level limits listed in Table I. It shall be a violation of this article for any person or entity owning or controlling any source of sound to allow the source to exceed these limits.

TABLE I

Generating Land Use Category	Time	Sound Level Limit (dBA)	dBC
Residential	7 a.m. to 10 p.m.	65*	75*
	10 p.m. to 7 a.m.	55*	65*
Commercial/Business	7 a.m. to 11 p.m.	75	85
	11 p.m. to 7 a.m.	70†	80†
Governmental/OPI	7 a.m. to 10 p.m.	65	75
	10 p.m. to 7 a.m.	60	70
Intensive Commercial/Industrial	All times	75	85

*When a residential zone is a receiving property from an industrial use, these decibel levels shall be met.

†These levels may be raised 5 decibels provided the sound source is in a completely enclosed building.

(d) *Exemptions*. Sounds produced by the following shall be exempt from the provisions of this section:

(13) Sounds produced by the following shall be exempt from the provisions of this section between the hours of 7 a.m. and 8 p.m.:

a. Construction and demolition equipment and activities Monday through Saturday only.

ARTICLE VI. NOISE

Sec. 54-153. Prohibited conduct; sworn complaint required.

(a) The making, creation or maintenance of excessive, unnecessary or unusually loud noises is prohibited and a violation of this article.

Sec. 54-156. Exemptions.

(a) The following uses and activities shall be exempt from this article:

(3) Construction and land clearing operations between the hours of 7 a.m. and 8 p.m., for which all required permits have been issued, provided that the equipment involved is operated in accord with the manufacturer's specifications and with all manufacturer's noise reducing equipment in use and in proper operating condition.

ARTICLE XVIII. TREE PROTECTION

Sec. 54-585. Exemptions.

This article shall not apply to:

(7) Tree removal necessary for the construction of public roads, public utilities, public landfills, or public stormwater facilities. This exemption does not apply to any Grand Tree. A Grand Tree is defined as any tree that has been determined by the Administrator to have the characteristics as outlined in Section 54-586 (see the following) or any tree designated a Florida State Champion, United States Champion, or World Champion by the American Forestry Association. This exemption shall not apply within the Myakka River Wild and Scenic Protection Zone. This exemption does not apply within a wetland or watercourse buffer required by county code.

(8) Tree removal necessary for the maintenance of existing roads, utilities, or stormwater facilities within rights-of-way and easements, performed or contracted by a duly constituted communication, water, sewerage, stormwater, electrical, other utility or government entity. This exemption does not apply to any Grand Tree. This exemption shall not apply within the Myakka River Wild and Scenic Protection Zone. This exemption does not apply within a wetland or watercourse buffer required by county code.

Sec. 54-586. Grand Tree Designation.

The tree species and standards set forth in Schedules A and B shall provide the parameters for Grand Tree designation in Sarasota County. Additionally, all Grand Trees shall have a 70-percent or greater Condition Classification.

Schedule A
Species and Minimum Points Needed to be a Grand Tree

TABLE INSET:

American Elm (*Ulmus americana*)	100
Bald Cypress (*Taxodium distichum*)	120
Hickory (*Carya* spp.)	110
Live Oak (*Quercus virginiana*)	110
Pine (*Pinus* spp.)	110
Redbay (*Persea borbonia*)	85
Sand Live Oak (*Quercus geminata*)	70
Southern Magnolia (*Magnolia grandiflora*)	80
Southern Red Cedar (*Juniperus silicicola*)	90
Sugarberry (*Celtis laevigata*)	95
Sweetbay (*Magnolia virginiana*)	90
Sweetgum (*Liquidambar styraciflua*)	100

Schedule B
Measurements

TABLE INSET:

Trunk diameter (diameter at breast-height [DBH])	One point per inch
Height to the nearest foot	One point per foot
Average canopy spread to the nearest foot (measure the longest and shortest diameters of the limb spread or drip line and divide by two)	One point for each 4 ft

(Ord. No. 2002-31, § 3, 10-9-2002; Ord. No. 2003-027, § 2, 11-12-2003)

2.2.3 EASEMENTS, TITLE, AGENCY WORKS

Easements may be necessary for the transmission line to cross lands for which the title is held by the Board of Trustees of the Internal Improvement Trust Fund (TIITF), Manatee County, Sarasota County, or SWFWMD within the preferred corridor.

Approvals for crossing or use of state road rights-of-way must be granted pursuant to 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 much of the preferred corridor follows or includes a crossing of road rights-of-way. All crossings of state roads will conform to specifications contained in FDOT's Utility Accommodation Manual (2004).

Permits are also normally required to cross or collocate with canals or works of the district under the jurisdiction of SWFWMD. Such works may include structures, impoundments, wells, streams, canals, or other watercourses officially adopted by SWFWMD's governing board. Other than the lands east of CR 675 in the Gilley Creek area, no other lands or facilities owned by SWFWMD have been identified within the preferred corridor.

Where the preferred corridor is 400 ft wide and centered along SR 64, it includes a less than 200-ft-wide strip along the southern boundary of the state-owned Lake Manatee State Park. If FPL desires to use any portion of the State Park property, which includes an Outstanding Florida Water, it will require approval and an easement from TIITF. Such use of State Park property will require a demonstration that the use is in the public interest.

The preferred corridor also crosses the city of Sarasota's potable water pipeline easement just north of the Bobwhite substation. An approval from the city of Sarasota would be required for crossing their easement.

Table 2.2-1 presents a list of potential lands, roads, canals, or works of the district for which crossing approvals would normally be required.

Table 2.2-1. Possible Easements, Titles, Crossing Approvals Expected to Be Required for Transmission Line Construction in the Preferred Corridor

Facility/Lands	Agency	Approval
Roads		
SR 62	FDOT	Right-of-way use or crossing permit
SR 64	FDOT	Right-of-way use or crossing permit
SR 70	FDOT	Right-of-way use or crossing permit
CR 675	Manatee County Transportation Department	Right-of-way use or crossing permit
University Parkway	Manatee or Sarasota County Transportation Department	Right-of-way use or crossing permit
Lorraine Road	Sarasota County Transportation Department	Right-of-way use or crossing permit
Water Bodies		
Gilley Creek	SWFWMD	Easement/use and/or crossing permit
	FDEP	Sovereign submerged lands crossing approval
Manatee River	Manatee County	Use/crossing permit
	FDEP	Sovereign submerged lands crossing approval
Conservation Lands		
Lower Manatee River Watershed	SWFWMD	Easement or permit
Heritage Ranch Conservation Easement	Sarasota County	Easement or permit
Lake Manatee State Park	FDEP/TIITF	Easement or permit
Other		
City of Sarasota Water Pipeline Easement	City of Sarasota	Crossing approval

Source: ECT, 2006.

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. FPL submitted a list of all sections, townships, and ranges crossed by the preferred corridor. DHR provided a geographic information system (GIS) database file containing their known records of archaeological/historic sites within each county. Using a preferred corridor overlay, sites within or adjacent to the preferred corridor boundaries were extracted for discussion. Table 2.2-2 provides a description of the sites found within the preferred corridor.

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 it is 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.

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 within and for 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 SWFWMD current GIS database (2006), 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 maps) at the end of this chapter, and descriptions of the major land use and vegetation cover classes along the preferred corridor are provided in the following subsections. Although the data provided by SWFWMD were generated in 2000, the vegetation/land use covers depicted are representative of the current resources.

Table 2.2-2. Known Cultural Resources Located Within the Preferred Corridor

Site ID Number	Name	General Location*	Description/Notes
MA01169	JR 57	On FPL Manatee Energy Center property	Land/terrestrial; prehistoric site lacking pottery
MA00824	Gilley Creek/ CR 675	Along Gilley Creek, CR 675	Single artifact; prehistoric site lacking pottery
MA01434	Rutland Ranch Mound	North of CR 675	Land/terrestrial; prehistoric site
S003196	Lakewood Ranch Canal	North of Bobwhite sub-station	Canal; 20th century

*Maps are not provided to discourage possible vandalism to sites.

Source: DHR, 2006.

2.3.1.1 Land Use

Land use classifications along the route consist of residential, mining, institutional, recreational, agricultural, barren land, transportation, communications, and utilities. According to the FLUCFCS, these categories include (1100) low-density residential, (1200) medium-density residential, (1300) high-density residential, (1600) extractive (mining), (1700) institutional, (1800) recreational, (1820) golf courses, (2100) cropland and pasture land, (2140) row crops, (2200) tree crops, (2400) nurseries and vineyards, (2500) specialty farms, (2600) other open lands (rural), (7400) disturbed land, (8200) communications, and (8300) utilities. Of these land use classifications, the agricultural land uses dominate.

The improved and unimproved pasture land uses are typically used for cattle grazing and have a dominant cover of pasture grasses such as bahiagrass (*Paspalum notatum*), Bermudagrass (*Cynodon dactylon*), and big carpetgrass (*Axonopus furcatus*), among others. Depending on the degree of improvement, old field species such as dog fennel (*Eupatorium capillifolium*), slender goldenrod (*Euthamia caroliniana*), other goldenrods (*Solidago* spp.), manyflower marshpennywort (*Hydrocotyle umbellata*), blackberry (*Rubus* spp.), and other weedy herbaceous species, as well as occasional shrubs of saw palmetto (*Serenoa repens*), wax myrtle (*Myrica cerifera*), Brazilian pepper (*Schinus terebinthifolius*), or netted pawpaw (*Asimina reticulata*) often inhabit these communities. Various types of citrus and row crops of watermelon, tomatoes, cucumbers, and peppers are produced in the area of the preferred corridor. Other categories of agriculture within the preferred corridor area include sod farms, and ornamental and tree nurseries (live oaks, Southern magnolias, queen palms, etc.).

Residential, mining, institutional, recreational, communications, transportation, and utilities make up a relatively small portion of the preferred corridor.

2.3.1.2 Vegetation

The preferred corridor will mostly be located within or adjacent to existing road rights-of-way and across large tracts of agricultural land following section lines where avail-

able. The majority of the rights-of-way are maintained grassy areas. In addition to the mowed rights-of-way, a variety of natural communities will be traversed or are located within 0.5 mile adjacent to the preferred corridor. These vegetation cover classes include (3100) herbaceous rangeland, (3200) shrub and brushland, (3300) mixed rangeland, (4100) upland coniferous forest, (4110) upland pine flatwood forest, (4120) long-leaf/pine-xeric oak forest, (4200) upland hardwood forest, (4340) hardwood conifer mixed forest, (6150) stream and lake swamps (bottomland), (6210) cypress-dominated forested wetland, (6300) wetland forested mixed, (6410) freshwater marsh, (6430) wet prairies, and (6440) emergent aquatic vegetation. Although not technically a vegetation community, (5100) streams and waterways, (5200) lakes, and (5300) reservoirs are also included and described in this section. The dominant vegetation types are described in the following subsections.

Upland Communities

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

Herbaceous Rangeland (3100)

Herbaceous rangeland or dry prairie was mapped in only one location adjacent to the preferred corridor along Corbit Branch, which is south of the SR 64 bridge. Herbaceous rangeland is typically dominated by upland grasses such as bahiagrass, crabgrasses (*Digitaria* spp.), fingergrasses (*Eustachys* spp.), bluestems (*Andropogon* spp.), and lovegrasses (*Eragrostis* spp.), as well as other old-field herbaceous species like dog fennel, goldenrods, blackberry, and sweetbroom (*Scoparia dulcis*). Herbaceous rangelands generally lack any significant canopy cover, but may have scattered shrubs or small trees of species such as wax myrtle, groundsel tree (*Baccharis halimifolia*), Brazilian pepper, saw palmetto, and upland oaks (*Quercus* spp.).

Shrub and Brushland (3200)

Shrub and brushland occurs in several locations throughout 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, groundsel tree, winged sumac (*Rhus copallinum*), and Brazilian pepper. Small pine (*Pinus* spp.), oak, or cabbage palm (*Sabal palmetto*) trees may be scattered throughout this upland community.

Mixed Rangeland (3300)

When more than one-third intermixture of grassland or shrub and brushland range species occurs, the specific classification of mixed rangeland is used. Only one small area of mixed rangeland was mapped within the preferred corridor along the north side of a drainage north of SR 70.

Upland Coniferous Forest (4100)

Any stand of natural woods with a canopy dominated by at least 66 percent by coniferous species is classified as a coniferous forest. Due to the similar morphology of pine species within Florida, identification to a species specific community type may be difficult using aerial photography alone (i.e., a Level III Classification). Therefore, pine-dominated areas of the preferred corridor that cannot be easily distinguished using aerial photographic interpretation are mapped within this Level II category.

Pine Flatwoods (4110)

The upland pine flatwoods community occurs along the preferred corridor. It is characterized by a prevalence of pine trees that may vary in age. The dominant pine tree in Southwest Florida is slash pine (*Pinus elliottii*). Occasional stands or individuals of sand pine (*Pinus clausa*) or longleaf pine (*Pinus palustris*) may also be present, as well. In addition to the pines, cabbage palm, saw palmetto, wax myrtle, gallberry (*Ilex glabra*), staggerbushes (*Lyonia* spp.), netted pawpaw, and a variety of flatwoods grasses are also present. Finally, invasive exotic species, such as Brazilian pepper and melaleuca (*Melaleuca quinquenervia*) have become established within many disturbed pine flatwood areas in South Florida.

Longleaf Pine-Xeric Oak (4120)

This sandhill community type is dominated by longleaf pine in the canopy, but also supports a subcanopy layer dominated by xeric oak species such as turkey oak (*Quercus*

laevis), bluejack oak (*Q. incana*), myrtle oak (*Q. myrtifolia*), and sand live oak (*Q. geminata*). This community type may also support the growth of sand pine in the overstory layer. The shrub layer comprises a mix of shrub and vining species such as slimleaf pawpaw (*Asimina angustifolia*), saw palmetto, gopher apple (*Licania michauxii*), hog plum (*Ximenia americana*), American beautyberry (*Callicarpa americana*), yellow jessamine (*Gelsemium sempervirens*), muscadine grape (*Vitis rotundifolia*), and earleaf greenbrier (*Smilax auriculata*).The sparse ground layer supports such species as narrowleaf silkgrass (*Pityopsis graminifolia*), partridge pea (*Chamaecrista fasciculata*), skyblue lupine (*Lupinus diffusus*), gayfeathers (*Liatris* spp.), dollarleaf (*Rhynchosia reniformis*), beaked panicum (*Panicum anceps*), beggarticks (*Bidens alba*), pricklypear (*Opuntia humifusa*), blackroot (*Pterocaulon pycnostachyum*), wiregrass (*Aristida stricta* var. *beyrichiana*), witchgrasses (*Dichanthelium* sp.), rushfoil (*Croton michauxii*), lovegrasses, Adam's needle (*Yucca filamentosa*), and reindeer moss (*Cladonia* spp.).

Only one area of longleaf pine-xeric oak has been mapped within the preferred corridor (i.e., south of Tyre Creek). However, there are areas within the preferred corridor along CR 675 and SR 64 that have been mapped as pine flatwood habitat (411), which can be more accurately classified as either disturbed or relatively undisturbed sandhill community.

Upland Hardwood Forests (4200)

This natural forest type has a canopy with at least 66 percent dominance by hardwood tree species. Where the dominant canopy hardwood species cannot be identified through aerial photographic interpretation, the Upland Hardwood Forest (420) classification is used. Only one area of 420 was mapped adjacent to the preferred corridor along the eastern side of CR 675 just north of Lake Manatee/Manatee River.

Hardwood Conifer Mixed Forest (4340)

This forest community comprises several small tracts along the preferred corridor. It is not dominated by either pines or hardwoods, rather both comprise a significant component of the canopy. Most temperate hardwood species do not inhabit the forested communities of South Florida, so the hardwood component of the canopy is primarily live

oak, water oak (*Quercus nigra*), and laurel oak (*Q. laurifolia*). Cabbage palm, red maple (*Acer rubrum*), and common persimmon (*Diospyros virginiana*) also may occur here. Slash pine, sand pine, and/or longleaf pine are intermixed. Shrubs typically consist of saw palmetto or wax myrtle.

Wetland Communities

Numerous wetlands are present within or adjacent to the preferred corridor, which is to be expected considering the prevalence of wetlands in South Florida. Six wetland community types and three surface water features have been identified within and/or adjacent to the preferred corridor.

Streams and Waterways (5100)

This surface water category includes rivers, creeks, canals, and other linear water bodies. Where the watercourse is interrupted by a control structure, the impounded water area is classified as a Reservoir (530). The portions of a water body having prominent emergent vegetation or identifiable submerged vegetation are classified as wetlands (600 series). Although there are numerous crossings of linear water bodies along the preferred corridor, only one area of 510 was mapped adjacent to the preferred corridor south of Gamble Creek.

Lakes (5200)

The lakes category includes extensive inland water bodies, excluding reservoirs. The only lake feature mapped within and adjacent to the western side of the preferred corridor occurs north of Fruitville Road/CR 780 in Sections 3 and 4.

Reservoirs (5300)

This water category refers to artificial impoundments of water. Reservoirs are typically used for irrigation, flood control, municipal and rural water supplies, recreation, and hydro-electric power generation. The presence of dams, levees, and other water control structures is usually the most evident feature in identifying reservoirs. Lake Manatee, which is the impounded portion of the Manatee River, is mapped as a reservoir along the preferred corridor near CR 675 and SR 64.

Stream and Lake Swamps (6150)

This bottomland community is dominated by hardwood tree species such as laurel oak, Carolina willow (*Salix caroliniana*), pop ash (*Fraxinus caroliniana*), black gum (*Nyssa sylvatica*), red maple, cabbage palm, swamp bay (*Persea palustris*), sweet bay (*Magnolia virginiana*), common persimmon, and swamp dogwood (*Cornus foemina*), among others. Common shrub species include elder (*Sambucus nigra*), buttonbush (*Cephalanthus occidentalis*), and dahoon holly (*Ilex cassine*). A variety of sedges, rushes, ferns, and epiphytes are also important components of this swamp type. The majority of these forested wetlands occurs along the creek crossings of the preferred corridor.

Cypress (6210)

Only one cypress-dominated wetland was mapped adjacent to the preferred corridor along a drainage in Manatee County. These wetlands typically occur in depressions in the landscape. Dome or pond cypress wetlands occupy circular depressions, and strands form in linear depressions formed from slow water flow. 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 bay, red maple, dahoon holly, Carolina willow, greenbriers (*Smilax* spp.), swamp fern (*Blechnum serrulatum*), fireflag (*Thalia geniculata*), and various bromeliads and orchids, among others. Melaleuca and Brazilian pepper, both invasive exotic species, often invade cypress swamps and displace the native species. Some of these swamps have become completely overrun by the invasive species and are pure stands of melaleuca or Brazilian pepper.

Wetland Forested Mixed (6300)

Mixed wetland forest also occurs along the preferred corridor. This community includes wetlands in which the canopy is not predominantly hardwood or coniferous species. Rather, this community has a relatively equal mix of the two tree categories. Common species in this community include laurel oak, water oak, American elm (*Ulmus americana*), slash pine, cabbage palm, swamp bay, and Carolina willow.

Fresh Water Marsh (6410)

Fresh water marsh wetlands are common 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*), fireflag, pickerelweed (*Pontedaria cordata*), bladderworts (*Utricularia* spp.), and arrowheads (*Sagittaria* spp.) dominate. Occasional shrubs of willow, Brazilian pepper, and wax myrtle can sometimes be found in and around these wetlands.

Wet Prairies (6430)

This nonforested wetland type is composed predominately of grassy vegetation on hydric soils and can be generally distinguished from marshes by being shallower, having a shorter hydroperiod, containing less organics in the upper soil layer and/or supporting a lower percentage of obligate wetland plants. Wet prairies are typically dominated by a mix of emergent wetland plants such as maidencane, blue maidencane (*Amphicarpum muhlenbergianum*), spike rushes, beakrushes (*Rhynchospora* spp.), sand cordgrass, St. Johns-wort (*Hypericum fasciculatum*), yellow-eyed grasses (*Xyris* spp.), flatsedges (*Cyperus* spp.), soft rush, and other rushes (*Juncus* spp.). Wet prairies can either occur as isolated areas or as the transitional edge to deeper water marshes and swamps.

Emergent Aquatic Vegetation (6440)

This wetland category includes deeper water systems within a discernible presence of free-floating, floating-leaved emergent, and/or emergent vegetation either occurring along littoral zones or as floating "islands." This wetland community type occurs within the impounded portion of the Manatee River along and adjacent to the preferred corridor. Typical plant species found in these areas include Carolina willow, Peruvian primrosewillow (*Ludwigia peruviana*), cattail (*Typha* sp.), anglestem primrosewillow (*Ludwigia leptocarpa*), paragrass (*Urochloa mustica*), water lettuce (*Pistia stratiotes*),

water hyacinth (*Eichhornia crassipes*), duckweeds (*Lemna* spp. and *Spirodela* spp.), fragrant white water lily (*Nymphaea odorata*), and spadderdock (*Nuphar lutea*), among others.

2.3.2 AFFECTED WATERS AND WETLANDS

The preferred corridor occurs within the SWFWMD area. SWFWMD's management area is large and contains nine surface water basins. The preferred corridor falls within the Manasota basin, which includes Manatee and Sarasota Counties.

The physiography is characterized by topography that is gently rolling to nearly flat with elevations increasing further inland. Typical elevations along the corridor range from approximately 40 to 80 ft.

Climate within the study area is generally humid and subtropical. Rainfall over the study area averages approximately 48 inches per year. Tropical storms and hurricanes produce high-intensity rainfall events as do summer afternoon thunderstorms, primarily during June through September when 60 percent of the annual rainfall occurs. Temperatures range from the mid-50s in winter to the low 90s in the summer.

Surface water bodies and wetlands crossed by the preferred corridor were identified using 1:24,000 USGS topographic maps, NWI maps, SWFWMD 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. The preferred corridor does not include any Outstanding Florida Waters (OFWs), although Lake Manatee within the Lake Manatee State Park is an OFW. Manatee River and Manatee River tributaries, including Gilley Creek, Craig Branch, Poley Branch, and Boggy Creek, are recognized as Class I waters (drinking water supply).

Water Bodies

Table 2.3-1 provides a list of the major water bodies found within the preferred corridor. As noted, Manatee River and Gilley Creek are the most significant water bodies crossed by the preferred corridor. The remainder of waters/wetlands crossed by the preferred corridor includes minor tributaries and roadside ditches, in addition to natural and manmade ponds, wet prairies, and sloughs. These smaller water bodies are not listed in Table 2.3-1.

Many of the ditches and roadside swales crossed or within the corridor (such as along roads) 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 west through sheetflow in wetland systems and small drainages/tributaries. The major drainages in the study area are the Manatee and Braden Rivers, both of which drain to Tampa Bay.

In the southern portion of the study area south of Fruitville Road, drainage is to the south and west toward the Gulf of Mexico or south and east toward Myakka River.

Wetlands

Given the shallow ground water table in places, flat topography, and varying soil conditions, there are various types of wetlands within or adjacent to the preferred corridor. As described in Section 2.3.1, these wetland types include fresh water marshes, wet prairies, emergent wetlands, bottomland swamps, mixed forested wetlands, and cypress strands or domes. 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. Extensive agricultural and development activities in the northern and central portions of the preferred corridor and urban improvements in the southern portion have severely altered the natural hydrologic regime of many of the wetlands. Also, since the preferred corridor follows within or adjacent to existing roads in

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

Water Body	Receiving Water	Comments
Gamble Creek	Manatee River	Preferred corridor crosses at two potential locations near SR 62
Tyre Creek	Gamble Creek	Corridor crosses south of Gamble Creek
Water Hole Creek	Frye Canal	Corridor crosses south of Tyre Creek
Boggy Creek	Manatee River	Class I water; preferred corridor crosses along CR 675
Gilley Creek	Manatee River	Class I water; preferred corridor crosses along CR 675 bridge
Craig Branch	Manatee River	Class I water; preferred corridor crosses it along CR 675
Poley Branch	Manatee River	Class I water; preferred corridor crosses along SR 64
Manatee River	Tampa Bay	Class I water; preferred corridor crosses along SR 64 bridge
Unnamed tributary	Braden River	Preferred corridor crosses 3 miles south of SR 64
Unnamed tributary	Braden River	Preferred corridor crosses 4 miles south of SR 64

Source: ECT, 2006.

many of these areas, most of these wetlands have been previously disturbed by vegetation clearing, ditching and culverting practices, and construction.

Isolated and connected fresh water marshes and cypress strands or domes sporadically occur in the corridor for most of its length. The corridor avoids a wetland of regional significance, Gum Slough, which is located along the south side of University Parkway in Sarasota County. The corridor includes the very northern edge of the Heritage Ranch Conservation Easement, bordering Gum Slough, along University Parkway.

Since the preferred corridor follows along several road rights-of-way, many of the wetlands and other water bodies that will be crossed have already been impacted by previous development such as filling, bridging, or 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 may be required in jurisdictional wetlands, however. Detailed design information will be provided to the appropriate regulatory agencies as postcertification submittals to facilitate monitoring to ensure 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 the U.S. Fish and Wildlife Service (USFWS), the Florida Department of Agriculture and Consumer Services (FDACS), or the Florida Fish and Wildlife Conservation Commission (FWC).

No known listed species observations have been recorded in or within 1,500 ft of the preferred corridor. Species were therefore 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 Manatee and Sarasota 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. The Florida Natural Areas Inventory's (FNAI's) database was also used to identify known occurrences of such species. 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 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 49 regulated plant species are known to occur within Manatee and/or Sarasota Counties within habitats similar to those found within the study area. However, due to the rarity of most species and the disturbed condition of most of the habitats crossed by the preferred corridor, only 19 species are considered to have a reasonable likelihood for occurrence within the preferred corridor. These species are listed on Table 2.3-2. Only two of the species on Table 2.3-2 appear on both state and federal listings. Of the 19 species listed by FDACS, five are listed as endangered, seven are listed as threatened, and seven are listed as commercially exploited by FDACS. Given the known range of these species and the presence of potential habitat on or adjacent to the preferred

Table 2.3-2. Protected Plant Species Known to Occur in Manatee and/or Sarasota Counties and with the Potential for Occurrence in the Project Area

Common Name	Scientific Name	Designated Status		Preferred Habitat
		USFWS	FDACS	
Incised groove-bur	*Agrimonia incisa*	—	E	Sandhills, woods and thickets
Pinewood bluestem	*Andropogon arctatus*	—	T	Flatwoods
Variable-leaved Indian-plantain	*Arnoglossum diversifolium*	—	T	River swamps, woods along streams
Nuttall's rayless goldenrod	*Bigelowia nuttallii*	—	E	Upland pine flatwoods, scrub, sandstone, seepage, and stream banks
Florida bonamia	*Bonamia grandiflora*	T	E	Sandy soil, scrub
Manyflowered grass-pink*	*Calopogon multiflorus*	—	E	Damp pinelands and meadows
Sand butterfly pea	*Centrosema arenicola*	—	E	Open, mixed woodlands, pine or oak-palmetto thickets
Pygmy fringe - tree	*Chionanthes pygmaeus*	—	E	Low nutrient levels; sandy, dry soil of Central Florida scrub
Floridas golden aster	*Chrysopsis floridana*	E	E	Sand pine scrub, on bare sand
Piedmont jointgrass	*Coelorachis tuberculosa*	—	T	Marshes, margins of ponds
Florida butterfly orchid*	*Encyclia tampensis*	—	C	Mangrove, cypress and hardwood swamps and hammocks
Green-fly orchid*	*Epidendron conopseum*	—	C	Cypress and hardwood swamps, moist hammocks
Sanibel lovegrass	*Eragrostis pectinacea var. tracyi*	—	E	Beach dunes, maritime hammocks, coastal strand, coastal grassland, old fields, clearings, and disturbed sites
Godfrey's privet	*Forestiera godfreyi*	—	E	Mesic calcareous woods

Table 2.3-2. Protected Plant Species Known to Occur in Manatee and/or Sarasota Counties and with the Potential for Occurrence in the Project Area (Continued, Page 2 of 4)

Common Name	Scientific Name	Designated Status		Preferred Habitat
		USFWS	FDACS	
Tampa vervain*	*Gladularia tampensis*	—	E	Flatwoods, hammocks, sandy soil, and disturbed sites
Wild cotton	*Gossypium hirsutum*	—	E	Coastal hammocks, shell mounds, and coastal berm
Threadroot orchid	*Harrisella filiformis*	—	T	Old orange groves, strand swamps, hardwood swamps, and hammocks
Nodding pinweed	*Lechea cernua*	—	T	Sand scrub, openings, fire maintained
Spreading pinweed	*Lechea divaricata*	—	E	Dry, sandy soil, scrubby flatwoods
Pine lily*	*Lilium catesbaei*	—	T	Wet flatwoods and bogs, usually with grasses
Carter's large-floweredflax	*Linum carteri var. smallii*	—	E	Mowed pine rockland, road-side, marl prairies
Pondspice	*Litsea aestivalis*	—	E	Margins of ponds, bay-heads, hammocks in cypress swamps, and peaty soils
Nodding club-moss*	*Lycopodiella cernua*	—	C	Wet depressions, ditches, moist areas
Lowland loosestrife*	*Lythrum flagellare*	—	E	Low, open ground, swamps and thickets
Florida spiny-pod	*Matelea floridana*	—	E	Bluffs, pine-oak hickory woods
Celestial lily	*Nemastylis floridana*	—	E	Clearings in swamps, marshes, and wet pine flat-woods
Florida beargrass	*Nolina atopocarpa*	—	T	Grassy areas of flatwoods, bordering savannahs, and shell middens

Table 2.3-2. Protected Plant Species Known to Occur in Manatee and/or Sarasota Counties and with the Potential for Occurrence in the Project Area (Continued, Page 3 of 4)

Common Name	Scientific Name	Designated Status		Preferred Habitat
		USFWS	FDACS	
Sleeping beauty waterlily	*Nymphaea jamesoniana*	—	E	Shallow ponds, ditches, canals, and sloughs
Cinnamon fern*	*Osmunda cinnamomea*	—	C	Swamps, bogs, marshes
Royal fern*	*Osmunda regalis*	—	C	Swamps, bogs, marshes
Cutthroat grass	*Panicum abscissum*	—	E	Wet pinelands, seepage areas
Blueflower butterwort*	*Pinguicula caerulea*	—	T	Pine flatwoods, ditches, and roadsides
Yellow-flowered butterwort*	*Pinguicula lutea*	—	T	Pine flatwoods, seepage bogs, ditches, and roadsides
White-fringed orchid	*Plantanthera blephariglottis var. conspicua*	—	T	Marshes, meadows, depressions, bogs in pine savannahs
Yellow-fringed orchid	*Plantanthera ciliaris*	—	T	Bogs, swamps, marshes, pine savannahs, flatwoods, floodplain forests, forest slopes
Golden-fringed orchid	*Platanthera cristata*	—	T	Sphagnum and sedge bogs, meadows, pine savannahs, flatwoods, wet prairies, edges of swamps, seepage slopes
Giant orchid*	*Pteroglossaspsis ecristata*	—	T	Sand pine, scrub, sandhill, and pine rockland
Florida mountain-mint	*Pycnanthemum floridanum*	—	T	Sandhills, pinelands, hammocks, and wet pinelands
Needle palm*	*Rhapidophyllum hystrix*	—	C	River bluffs, ravine slopes, hammocks, and bottomland
Leafless beaked orchid*	*Sacoila lanceolata*	—	T	Open pastures, roadsides, wet pine flatwoods, and sandhills

Table 2.3-2. Protected Plant Species Known to Occur in Manatee and/or Sarasota Counties and with the Potential for Occurrence in the Project Area (Continued, Page 4 of 4)

Common Name	Scientific Name	Designated Status		Preferred Habitat
		USFWS	FDACS	
Florida willow	*Salix floridana*	—	E	Wet hammocks, dense bottomland forest, stream margins, swamps
Scrub bluestem	*Schizachyrium niveum*	—	E	Rosemary scrub
Chaffseed	*Schwalbea americana*	—	E	Savannahs and pinelands
Silver buckthorn	*Sideroxylon alachuense*	—	E	Hardwood hammocks
Inflated and reflexed wild pine*	*Tillandsia balbisiana*	—	T	Hammocks, cypress swamp, pineland, and scrubs; epiphytic
Cardinal airplant*	*Tillandsia fasciculata var. densispica*	—	E	Hammocks, cypress swamp, and pinelands; epiphytic
Giant wild pine*	*Tillandsia utriculata*	—	E	Hammocks, cypress swamp, and pinelands; epiphytic
Coontie*	*Zamia pumila*	—	C	Oak hammocks, pinelands, and shell middens
Rain lily*	*Zephyranthes simpsonii*	—	T	Wet flatwoods and meadows

*Could potentially occur within the preferred corridor.

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

Sources: FNAI, 2006.
ECT, 2006

corridor, there is a possibility that some or all of these species could occur on or near the corridor. Brief descriptions of these species are provided in the following paragraphs.

Ferns and Fern Allies

Two species of ferns and one fern ally, nodding club-moss, are classified as commercially exploited species by FDACS. The fern/fernlike species are fairly common throughout Florida, occur in a variety of wetland habitats, and are expected along the preferred corridor. However, given their range in habitat, these species would be expected to persist in the corridor following the construction of the transmission line.

Lilies, Orchids, and Bromeliads

A total of 10 of the listed plant species are lilies, orchids, or bromeliads. Of these species, two are lilies, five are orchids, and three are bromeliads. The rain lily is listed as threatened by FDACS and is a large lily that grows solitarily or clumped. It may be found growing in wet flatwoods or unimproved wet pastures along the route. It is possible for the rain lily to coexist with the transmission line, once built, in wet areas with periodically maintained herbaceous cover, similar to wet pasture. The pine lily is also listed as threatened by FDACS. This lily grows in wet flatwoods and bogs. Pine lily could potentially persist in the transmission line easement if native shrub layers are not disturbed during clearing or maintenance.

Both terrestrial and epiphytic orchids could potentially occur within the preferred corridor area. The three terrestrial orchids under review typically inhabit flatwoods habitats. Manyflowered grass-pink is a terrestrial orchid listed as an endangered species by FDACS. Another terrestrial orchid, which is listed as threatened by FDACS, is the giant orchid. The third terrestrial orchid species, which is also listed by FDACS as threatened, is the leafless beaked orchid. The terrestrial orchids could be expected to coexist in the transmission line easement.

There are two epiphytic orchids, which are both listed by FDACS as threatened: Florida butterfly orchid and green-fly orchid. Florida butterfly orchids are epiphytic plants that form clusters along the trunks of hardwoods (mostly live oaks) and cypress trees. The

plant can be found blooming at different seasons throughout the year. It occurs sporadically throughout peninsular Florida. Although somewhat rare throughout the State of Florida, the orchid is typically abundant where found. Green-fly orchids are epiphytic plants, which like butterfly orchids also grow in clusters on the trunks of trees. Since these two orchid species are epiphytic, any tree clearing and maintenance associated with transmission line construction and operation would limit the growth of these orchids to areas outside of the transmission line right-of-way, where suitable habitat is available.

There are three listed bromeliads (epiphytes of the genus *Tillandsia*) that could potentially occur along the route, given the presence of their preferred habitat. Weevils, in addition to habitat destruction and overharvesting, threaten all three bromeliad species. One bromeliad species, inflated and reflexed wild pine, is listed as threatened by FDACS. Although listed as endangered, the last two *Tillandsia* species, namely giant wild pine and cardinal airplant, are more common than the previously referenced bromeliad. Giant wild pine is the largest *Tillandsia* species and can grow up to 8 ft tall. It is unlikely the epiphytic bromeliad species would inhabit the cleared and maintained transmission line right-of-way since they grow attached to tree trunks. However, they could persist adjacent to the transmission line, where suitable habitat is available.

Other Plant Species

Tampa Vervain

Tampa vervain is listed as endangered by FDACS. Since this plant is found in disturbed sites, it is possible that Tampa vervain could coexist with the new transmission line.

Lowland Loosestrife

Lowland loosestrife is listed as endangered by FDACS. It grows on low, open ground, swamps, and thickets. It is possible that this species could occur within or adjacent to the preferred corridor. Since this species does well in open habitats, it is possible that lowland loosestrife could coexist with the new transmission line.

Butterworts

There are two butterworts that could potentially occur along pine flatwoods, ditches, and roadsides on the preferred corridor. Blueflower butterwort is listed as threatened by FDACS. Yellow-flowered butterwort is also listed as threatened by FDACS. Both plants are insectivorous and could potentially coexist within a new transmission line right-of-way.

Needle Palm

This palm is only listed as commercially exploited by FDACS. Since needle palms prefer shady locales, opening up the tree canopy during clearing and maintenance activities associated with the transmission line could impact their long-term growth if these palms were present.

Coontie

Coontie is a cycad or primitive palm and is listed as commercially exploited by FDACS. Coontie occur in a variety of well-drained sites including oak hammocks, pinelands, and shell middens. It is possible that coontie could exist in drier portions of the new transmission line right-of-way where maintenance procedures allow for shrub development.

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 SWFWMD. These maps identified natural community systems as well as developed lands in various stages of disturbance. Using the SWFWMD 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, agricultural operations, 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 central and southern sections. 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 forested areas, swamp, and wet prairie communities found in some of the undisturbed areas of the corridor; and (2) the Gilley Creek and Manatee River crossings.

The status and potential for occurrence of species recommended for study (i.e., species listed as endangered, threatened, or of special concern) in the BWM study area were determined by a habitat analysis, literature survey, agency contacts, and ground surveys. A total of 22 vertebrate species, including 4 reptiles and amphibians, 14 birds, and 4 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 area 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. Along the preferred corridor wherever xeric habitats are found, there is a moderate likelihood this species may be present.

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

Common Name	Scientific Name	Designated Status*		Likelihood of Occurrence within Preferred Corridor
		USFWS	FWC	
Amphibians				
Gopher frog	*Rana capito*	—	SSC	Moderate—would likely be found only in xeric habitats where gopher tortoise burrows are located
Reptiles				
American alligator	*Alligator mississippiensis*	T(S/A)	SSC	High—likely found in all water bodies, wetlands crossed by the preferred corridor
Eastern indigo snake	*Drymarchon corais couperi*	T	T	Moderate—would likely be found in a variety of xeric/mesic habitats usually associated with gopher tortoises; recorded in Lake Manatee State Park (FNAI)
Gopher tortoise	*Gopherus polyphemus*	—	SSC	Moderate—likely found in more xeric portions of preferred corridor; recorded in Lake Manatee State Park (FNAI)
Birds				
Florida scrub jay	*Aphelocoma coerulescens*	T	T	Low—tends to be found east of study area; no known records in corridor vicinity, although recorded in study area (FNAI)
Limpkin	*Aramus guarauna*	—	SSC	Moderate—likely only in riverine habitats, possibly along Gilley Creek, Manatee River
Florida burrowing owl	*Athene cunicularia floridana*	—	SSC	Moderate—could be found in dry pastures
Crested caracara	*Caracara cheriway*	T	T	Low—more likely east of study area in cabbage palm rangelands
Little blue heron	*Egretta caerula*	—	SSC	Moderate in wetlands and water bodies; no known nesting colonies near preferred corridor
Snowy egret	*Egretta thula*	—	SSC	Moderate in wetlands and water bodies; no known nesting colonies near preferred corridor
Tricolored heron	*Egretta tricolor*	—	SSC	Moderate in wetlands and water bodies; no known nesting colonies near preferred corridor
White ibis	*Eudocimus albus*	—	SSC	High—common in wetlands, wet pastures; no known nesting colonies near preferred corridor
Peregrine falcon	*Falco peregrinus*	—	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 Preferred Corridor Area (Continued, Page 2 of 2)

Common Name	Scientific Name	Designated Status*		Likelihood of Occurrence within Preferred Corridor
		USFWS	FWC	
Southeastern American kestrel	*Falco sparverius paulus*	—	T	Moderate—likes open habitats along pine flatwoods, pastures, roadsides
Florida sandhill crane	*Grus canadensis pratensis*	—	T	Moderate—in wet prairies and pastures along preferred corridor; recorded observations in study area by FNAI
Bald eagle	*Haliaeetus l. leucocephalus*	T	T	High—eagles are located throughout Florida, and due to large foraging ranges, would be expected to occur along preferred corridor; closest known nest to preferred corridor is Lake Manatee; no nests known to occur within 1,500 ft of preferred corridor
Wood stork	*Mycteria americana*	E	E	Moderate in wetlands, ditches within preferred corridor; no known nesting colonies in study area
Red-cockaded woodpecker	*Picoides borealis*	E	SSC	Low—no known clans exist within study area according to FWC
Mammals				
Florida mouse	*Podomys floridanus*	—	SSC	Moderate—associated with xeric habitats and gopher tortoise burrows
Floridan panther	*Puma concolor coryi*	E	E	Low—corridor crosses no large forested uplands or wetlands; agriculture/development predominate along corridor
Sherman's fox squirrel	*Sciurus niger shermani*	—	SSC	Low—extreme edge of range; habitats are minimal
Florida black bear	*Ursus americanus floridanus*	—	T	Low—associated with large wooded systems and swamps, probably more to the east 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.
FNAI, 2006.
ECT, 2006.

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. There is a moderate likelihood it would be found along the preferred corridor. It has been recorded in Lake Manatee State Park (FNAI, 2006). Both USFWS and FWC list the indigo snake as a threatened species.

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. It has been recorded in Lake Manatee State Park (FNAI, 2006). 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

Florida Scrub Jay (*Aphelocoma c. coerulescens*)

The scrub jay is a threatened species for both FWC and USFWS. It prefers xeric scrub oak habitats. Although unlikely to be found along the preferred corridor, it is found along the eastern edge of the study area, particularly in Duette Park in Manatee County and east of Verna Road in Sarasota County (FNAI, 2006).

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, possibly occurring along Manatee River or Gilley Creek.

Burrowing Owl (*Athene cunicularia floridana*)

The burrowing owl prefers xeric pastures with low vegetation. Since the preferred corridor does cross some dry pastures and croplands, its likelihood of occurrence is considered moderate. It is currently listed as a species of special concern by FWC.

Crested Caracara (*Caracara cheriway*)

The caracara is an openland bird that forages on carrion. It prefers rangeland with cabbage palms for nesting. This type of habitat is generally lacking along the preferred corridor.

Little Blue Heron (*Egretta caerula*)

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 shal-

low 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. No known nesting colonies are found in the vicinity 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.

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 (other than perhaps, Lake Manatee), 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.

Florida Sandhill Crane (*Grus canadensis pratensis*)

The sandhill crane is listed as threatened by FWC. It prefers marshes for nesting and pastures, wet prairies, or farm fields for foraging. Given the potential habitats along the preferred corridor, its likelihood of occurrence is considered moderate. It has been recorded in the preferred corridor area (FNAI, 2006).

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 be-

coming more common. As such, it has been proposed for delisting. According to FWC records, one eagle nest is known to occur within 1 mile of the preferred corridor. This nest was found approximately 4,500 ft north of the preferred corridor in Manatee County, along the shoreline of Lake Manatee. One other nest is located approximately 1 mile east of the preferred corridor and approximately 2 miles south of SR 64. Neither nest occurs within 1,500 ft of the preferred corridor.

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 lack of old age pine stands throughout the corridor vicinity, no records of the bird are documented. Therefore, its potential for occurrence is low.

Mammals

Florida Mouse (*Podomys 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. Since gopher tortoises may exist within the preferred corridor, the Florida mouse's likelihood of occurrence is considered moderate.

Florida Panther (*Puma concolor coryi*)

The Florida panther is typically found southeast of the study area and, therefore, its likelihood of occurrence along the preferred corridor would be considered extremely low.

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

This squirrel is unlikely 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 drier pine flatwoods, xeric oak, or sandhill communities, which do not commonly occur 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 east 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, since the dominance of agricultural lands or developed lands along the preferred corridor would minimize opportunities for the bear's presence.

2.3.4 OTHER ENVIRONMENTAL FEATURES

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

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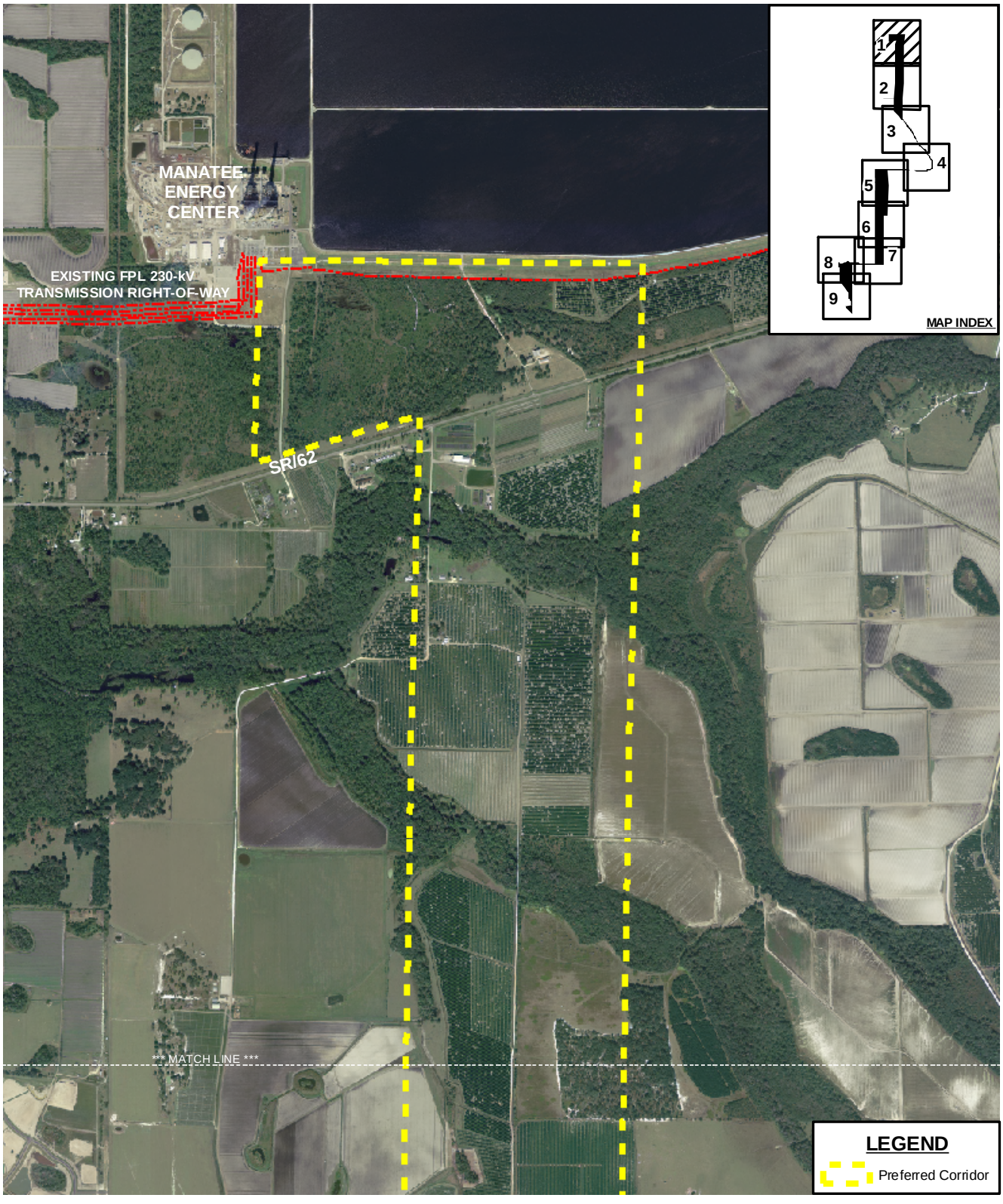

ATTACHMENT 2-1.

AERIAL PHOTOGRAPH: MAP 1 OF 9

Sources: SWFWMD, 2004; FPL, 2006; ECT, 2006.

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GRAPHIC SCALE

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SCALE IN FEET

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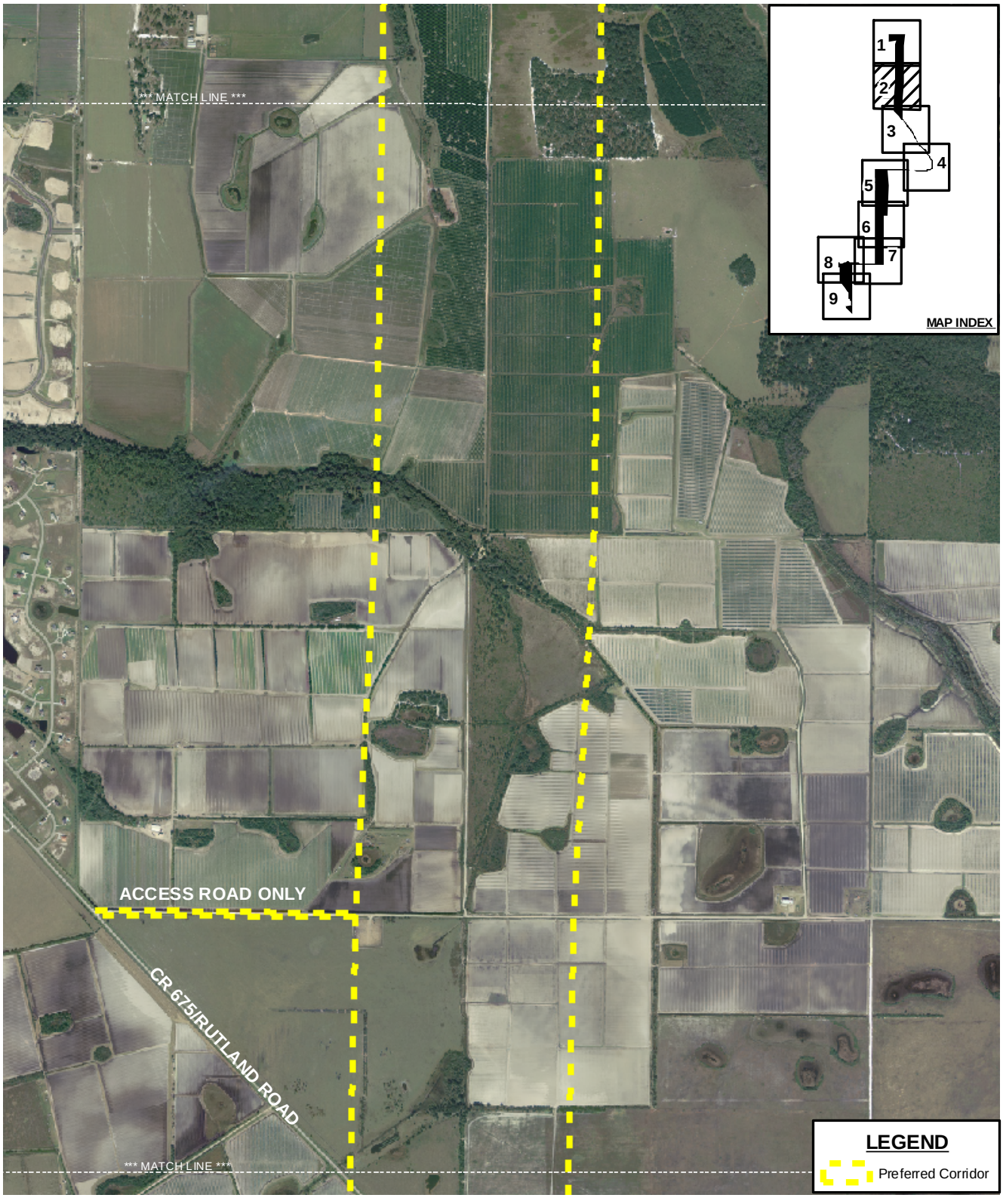

ATTACHMENT 2-1.

AERIAL PHOTOGRAPH: MAP 2 OF 9

Sources: SWFWMD, 2004; ECT, 2006.

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GRAPHIC SCALE

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SCALE IN FEET

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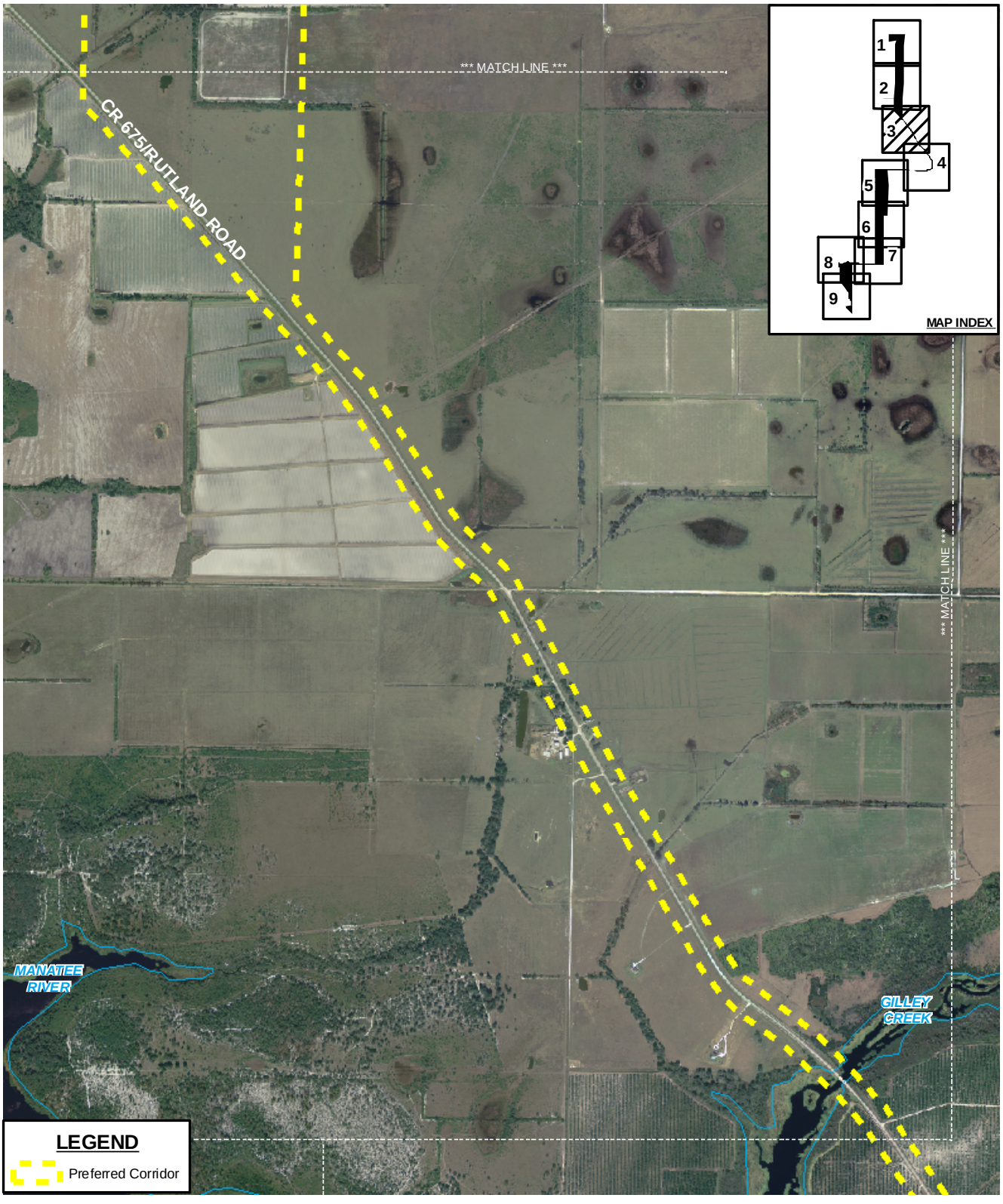

ATTACHMENT 2-1.

AERIAL PHOTOGRAPH: MAP 3 OF 9

Sources: SWFWMD, 2004; ECT, 2006.

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GRAPHIC SCALE

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SCALE IN FEET

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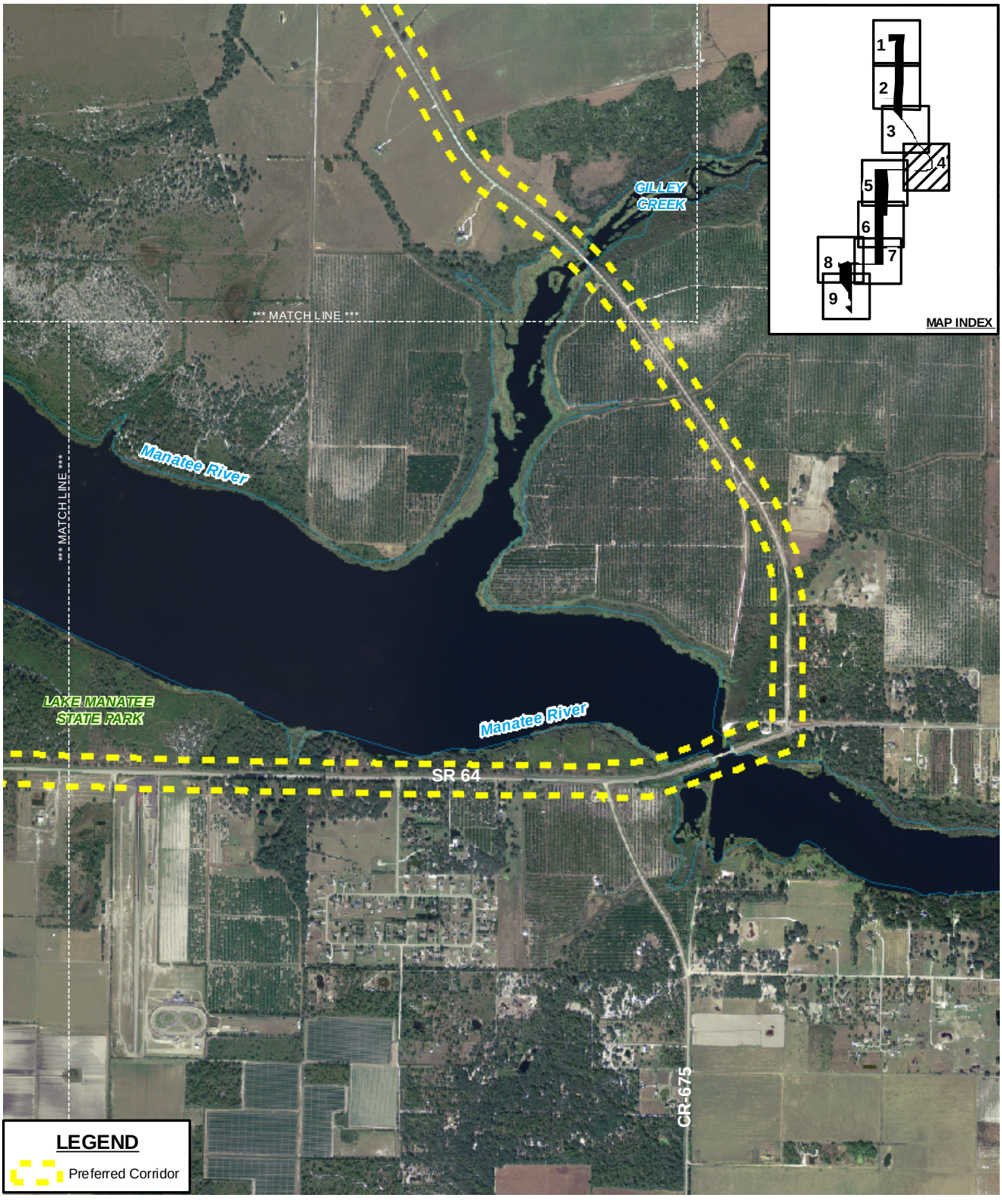

ATTACHMENT 2-1.

AERIAL PHOTOGRAPH: MAP 4 OF 9

Sources: SWFWMD, 2004; ECT, 2006.

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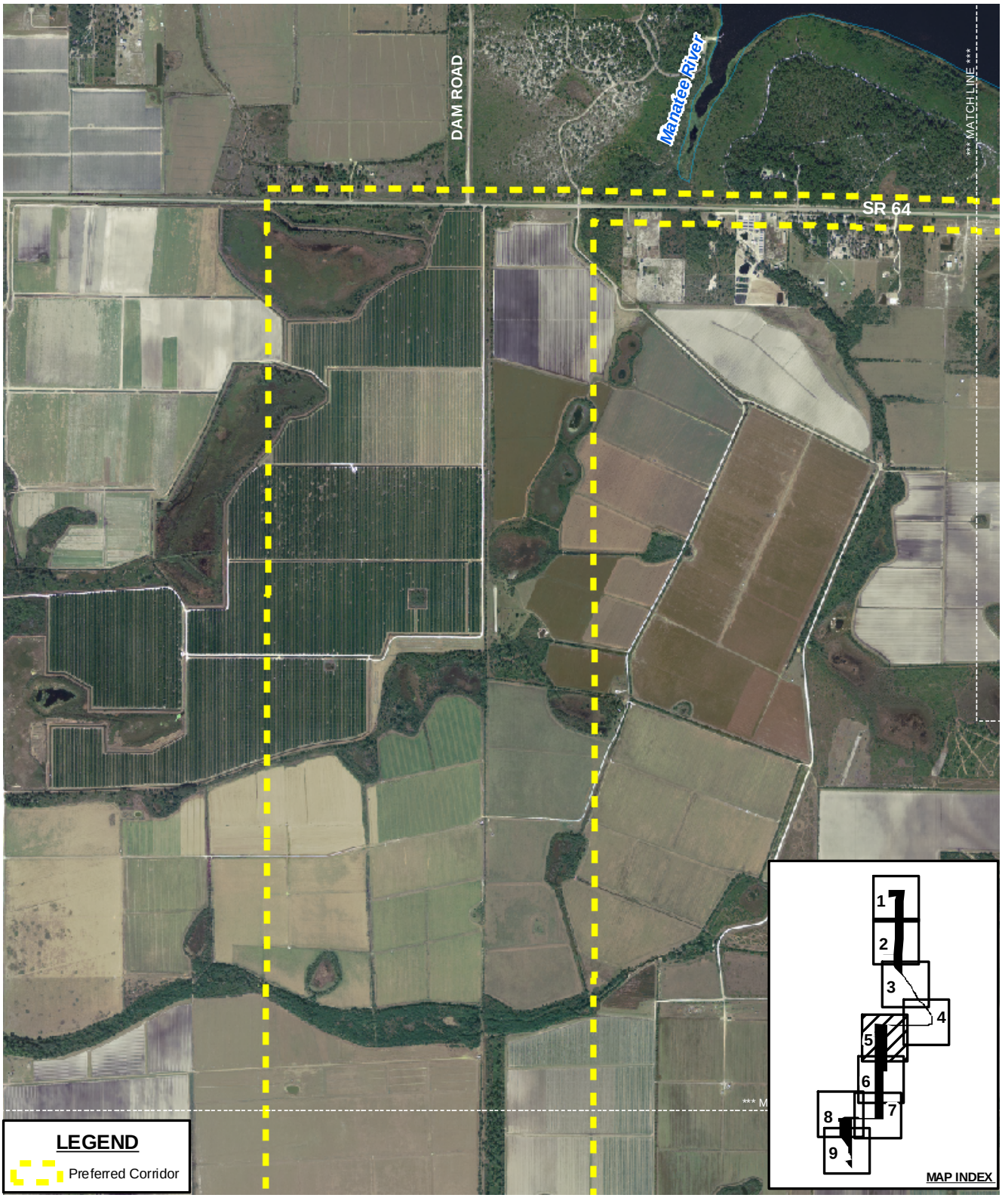

ATTACHMENT 2-1.

AERIAL PHOTOGRAPH: MAP 5 OF 9

Sources: SWFWMD, 2004; ECT, 2006.

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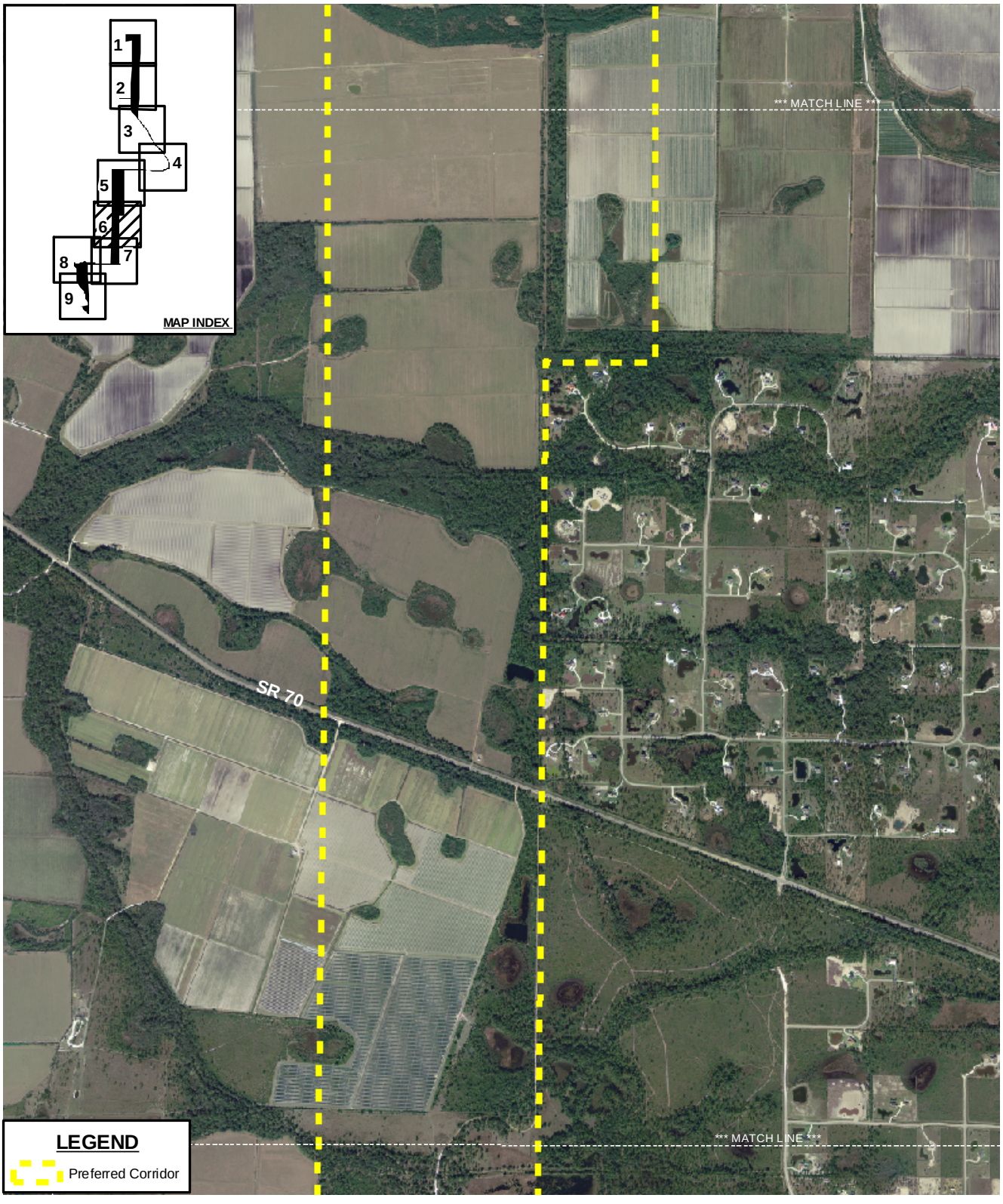

ATTACHMENT 2-1.

AERIAL PHOTOGRAPH: MAP 6 OF 9

Sources: SWFWMD, 2004; ECT, 2006.

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SCALE IN FEET

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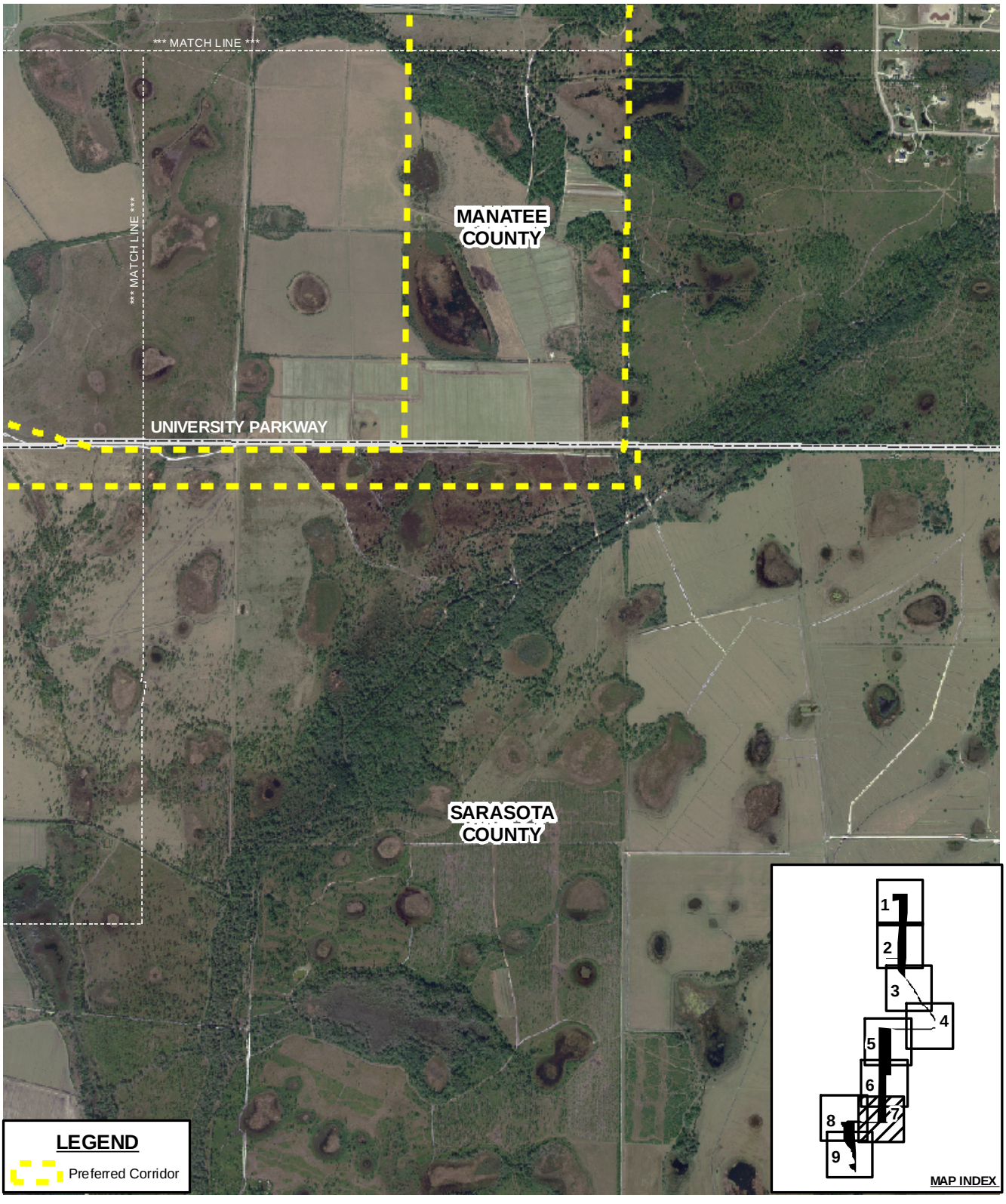

ATTACHMENT 2-1.

AERIAL PHOTOGRAPH: MAP 7 OF 9

Sources: SWFWMD, 2004; ECT, 2006.

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SCALE IN FEET

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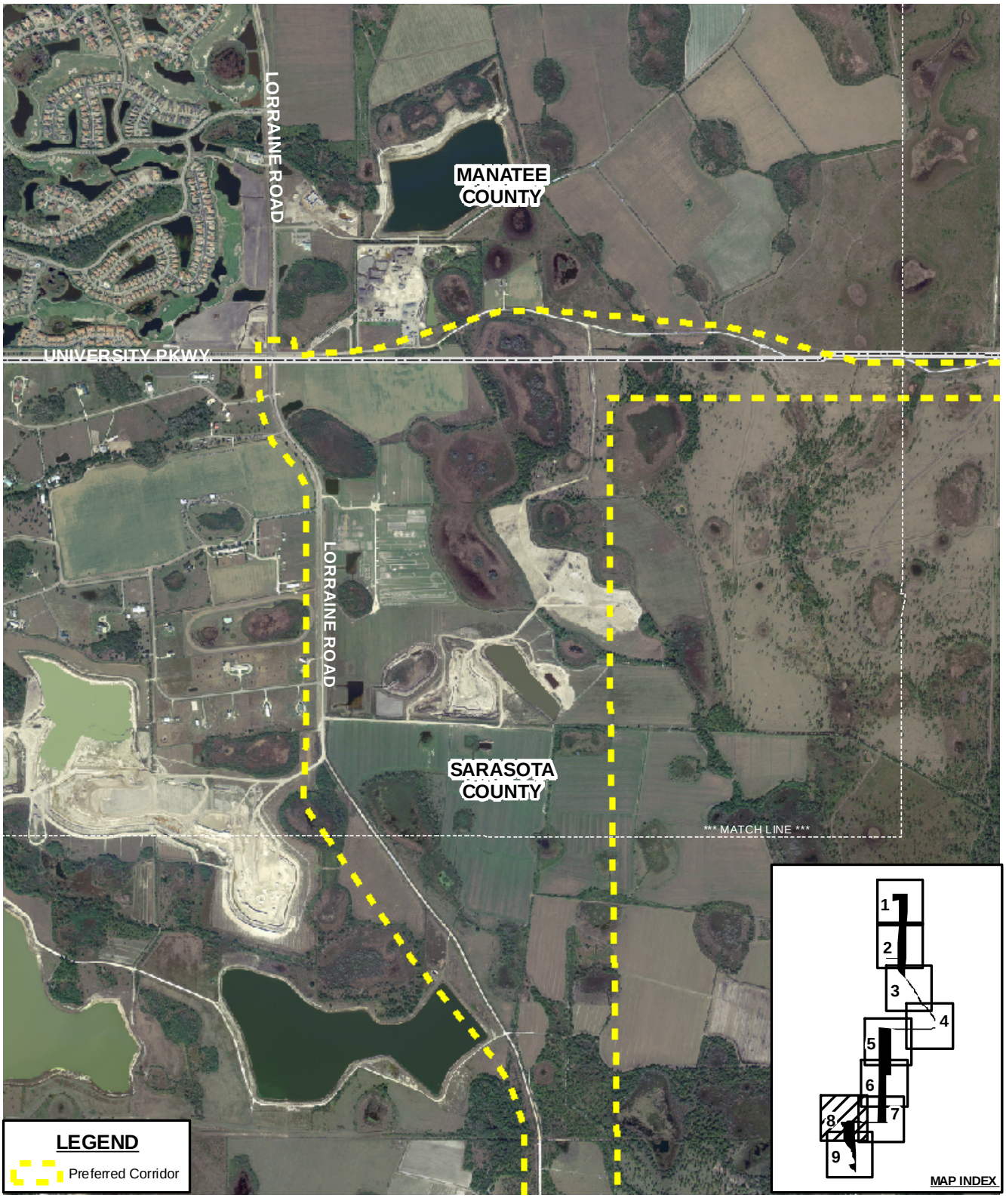

ATTACHMENT 2-1.

AERIAL PHOTOGRAPH: MAP 8 OF 9

Sources: SWFWMD, 2004; ECT, 2006.

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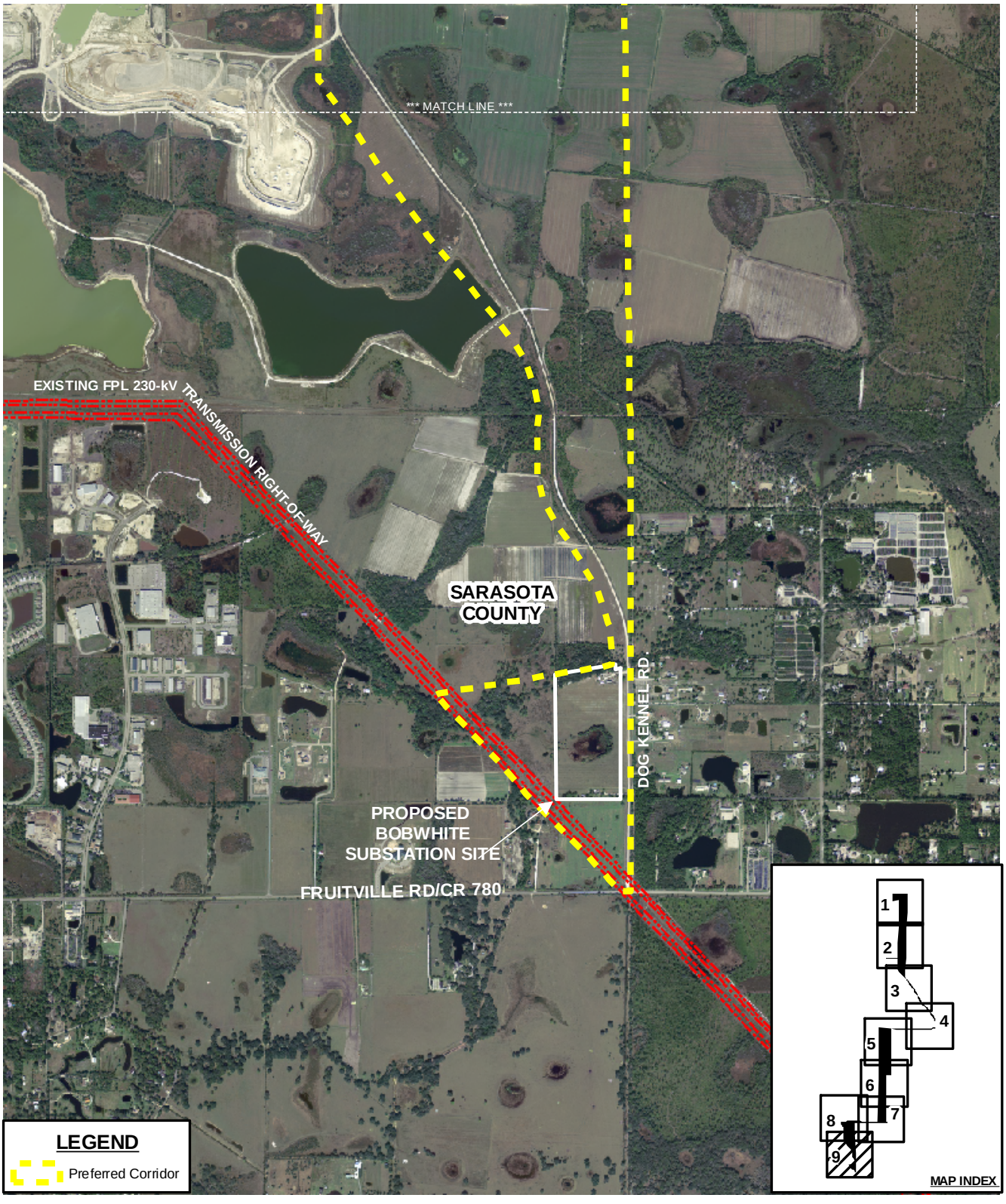

ATTACHMENT 2-1.

AERIAL PHOTOGRAPH: MAP 9 OF 9

Sources: SWFWMD, 2004; ECT, 2006.

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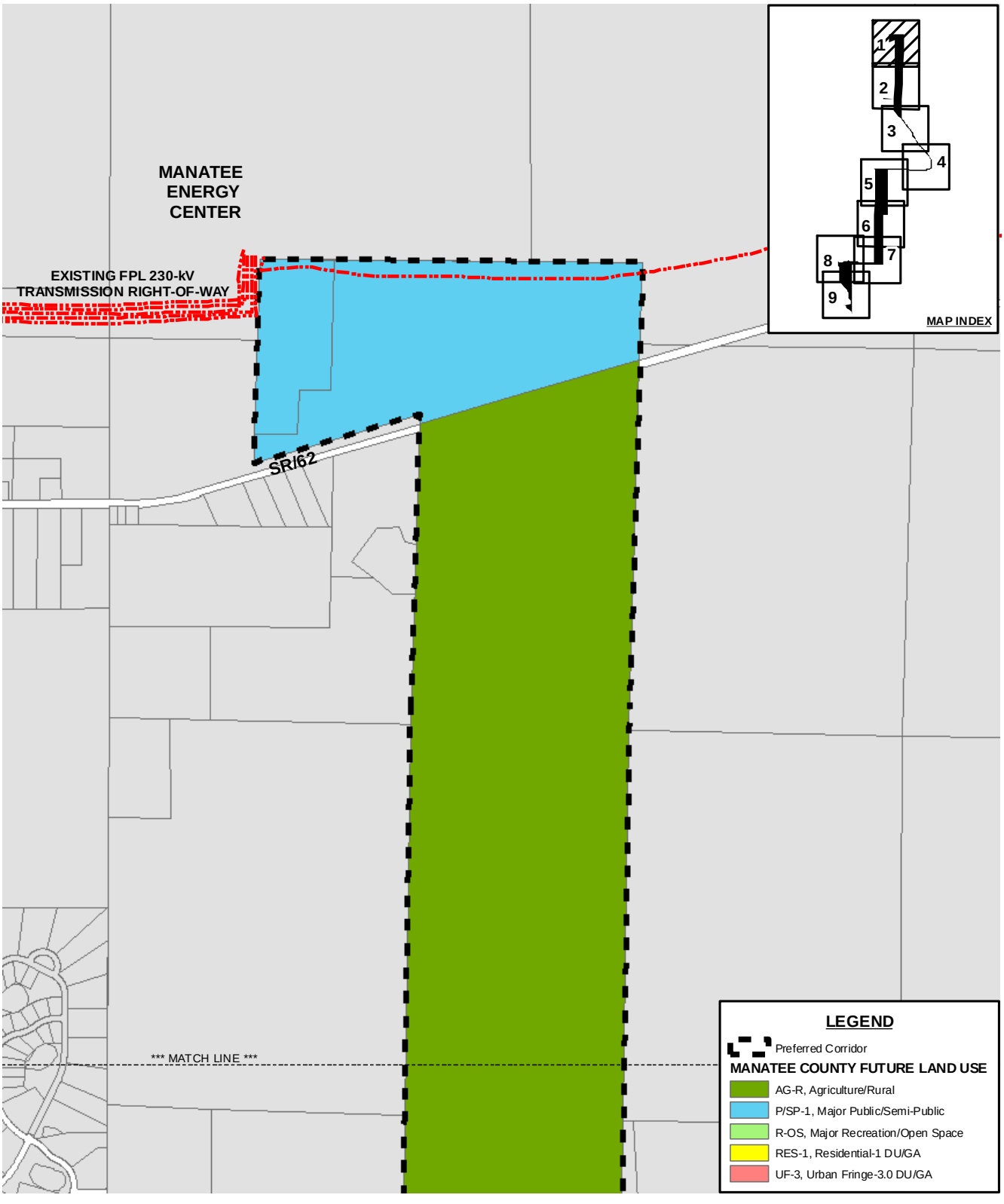

ATTACHMENT 2-2.

FUTURE LAND USE: MAP 1 OF 9

Sources: Manatee County, 2006; ECT, 2006.

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GRAPHIC SCALE

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SCALE IN FEET

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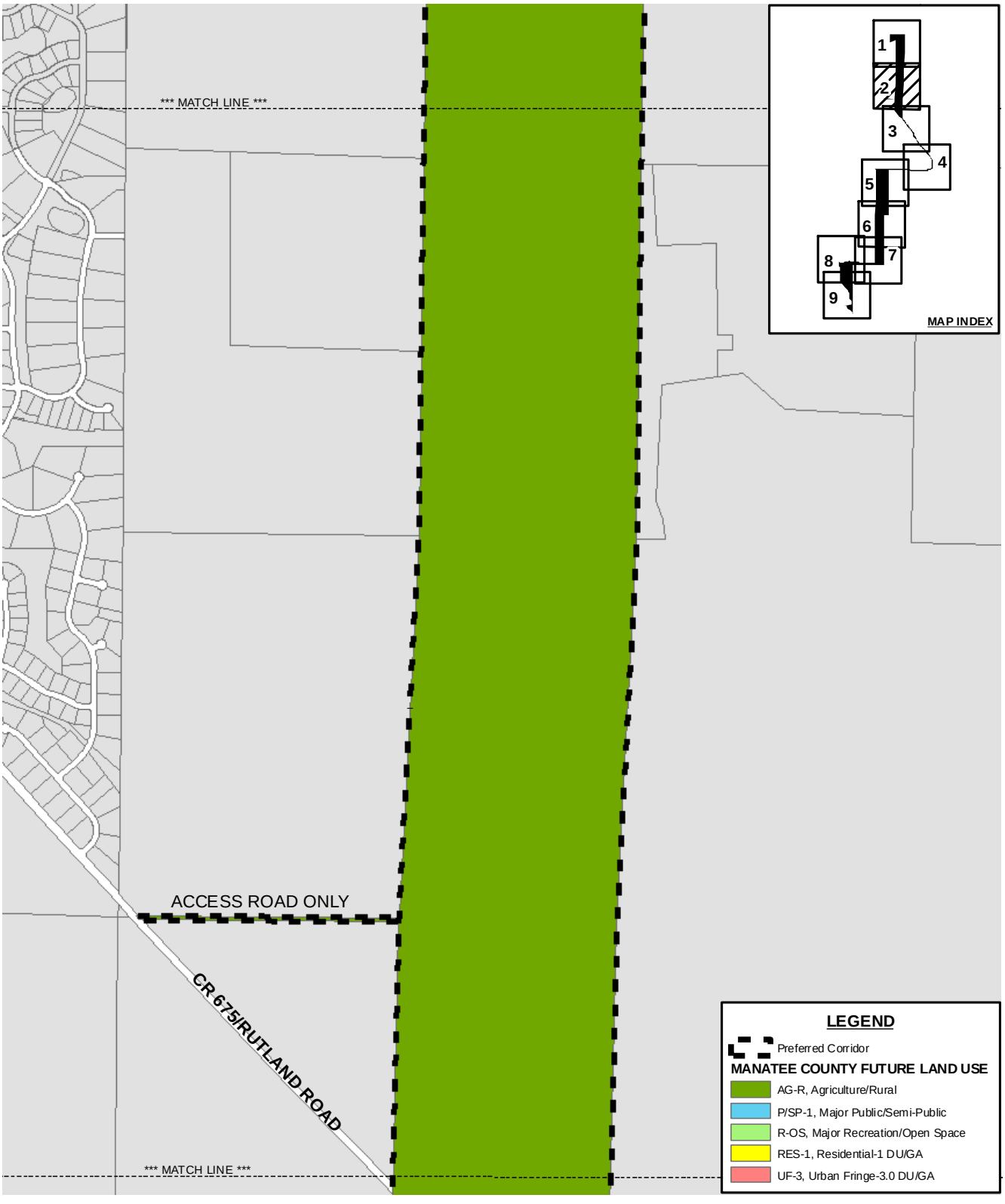

ATTACHMENT 2-2.

FUTURE LAND USE: MAP 2 OF 9

Sources: Manatee County, 2006; ECT, 2006.

N

GRAPHIC SCALE

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SCALE IN FEET

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ATTACHMENT 2-2.

FUTURE LAND USE: MAP 3 OF 9

Sources: Manatee County, 2006; ECT, 2006.

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SCALE IN FEET

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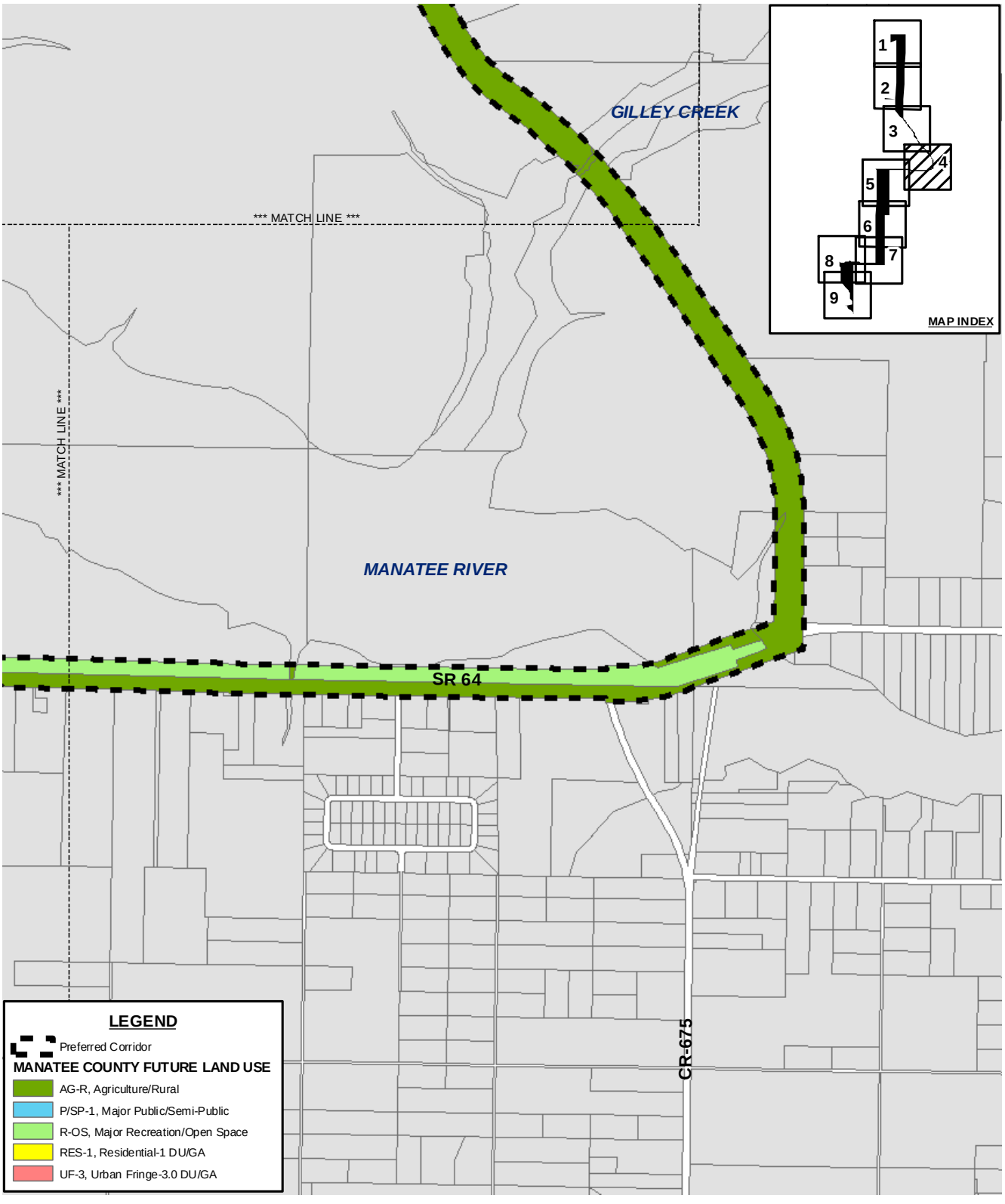

ATTACHMENT 2-2.

FUTURE LAND USE: MAP 4 OF 9

Sources: Manatee County, 2006; ECT, 2006.

N

GRAPHIC SCALE

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SCALE IN FEET

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ATTACHMENT 2-2.

FUTURE LAND USE: MAP 5 OF 9

Sources: Manatee County, 2006; ECT, 2006.

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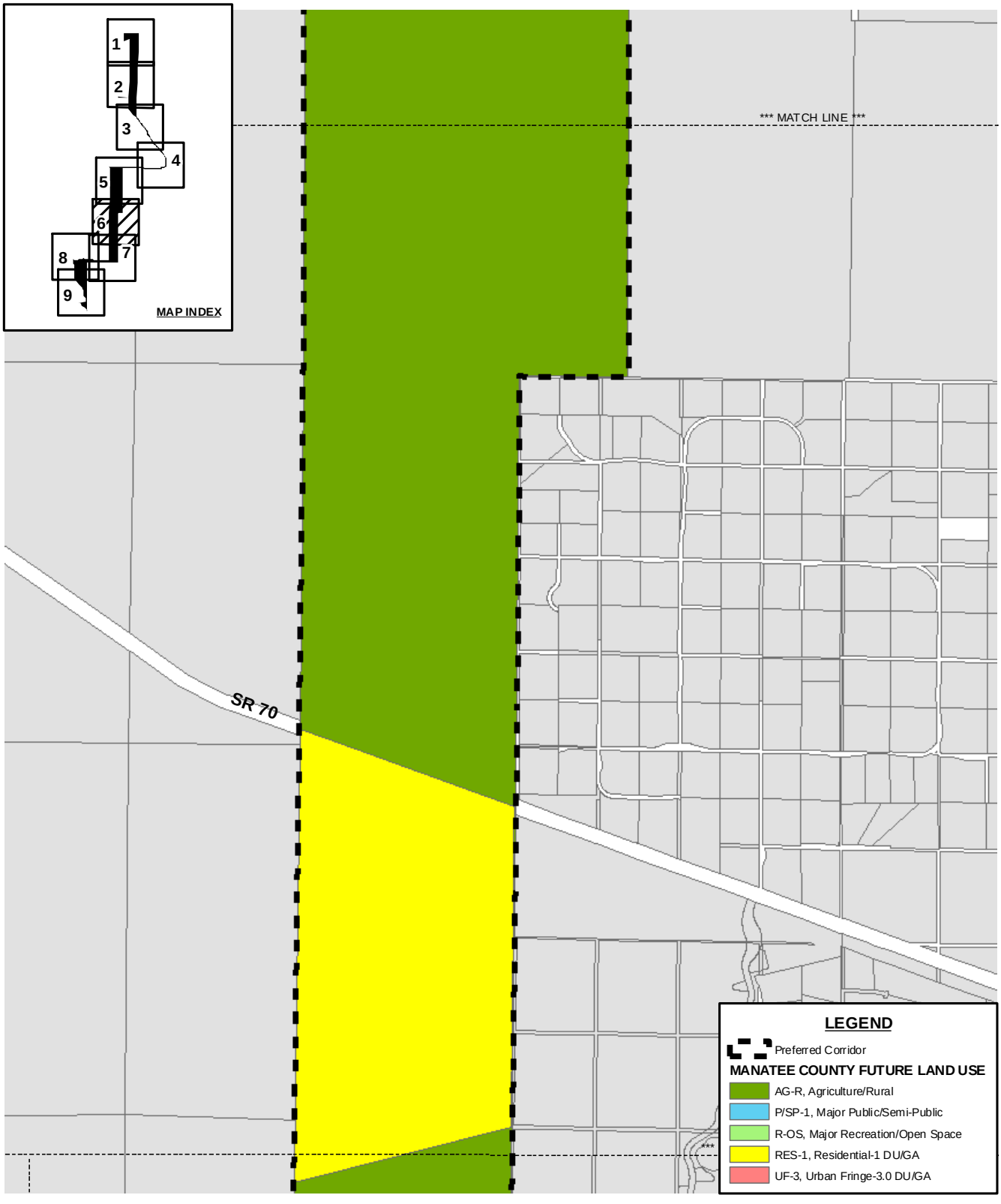

ATTACHMENT 2-2.

FUTURE LAND USE: MAP 6 OF 9

Sources: Manatee County, 2006; ECT, 2006.

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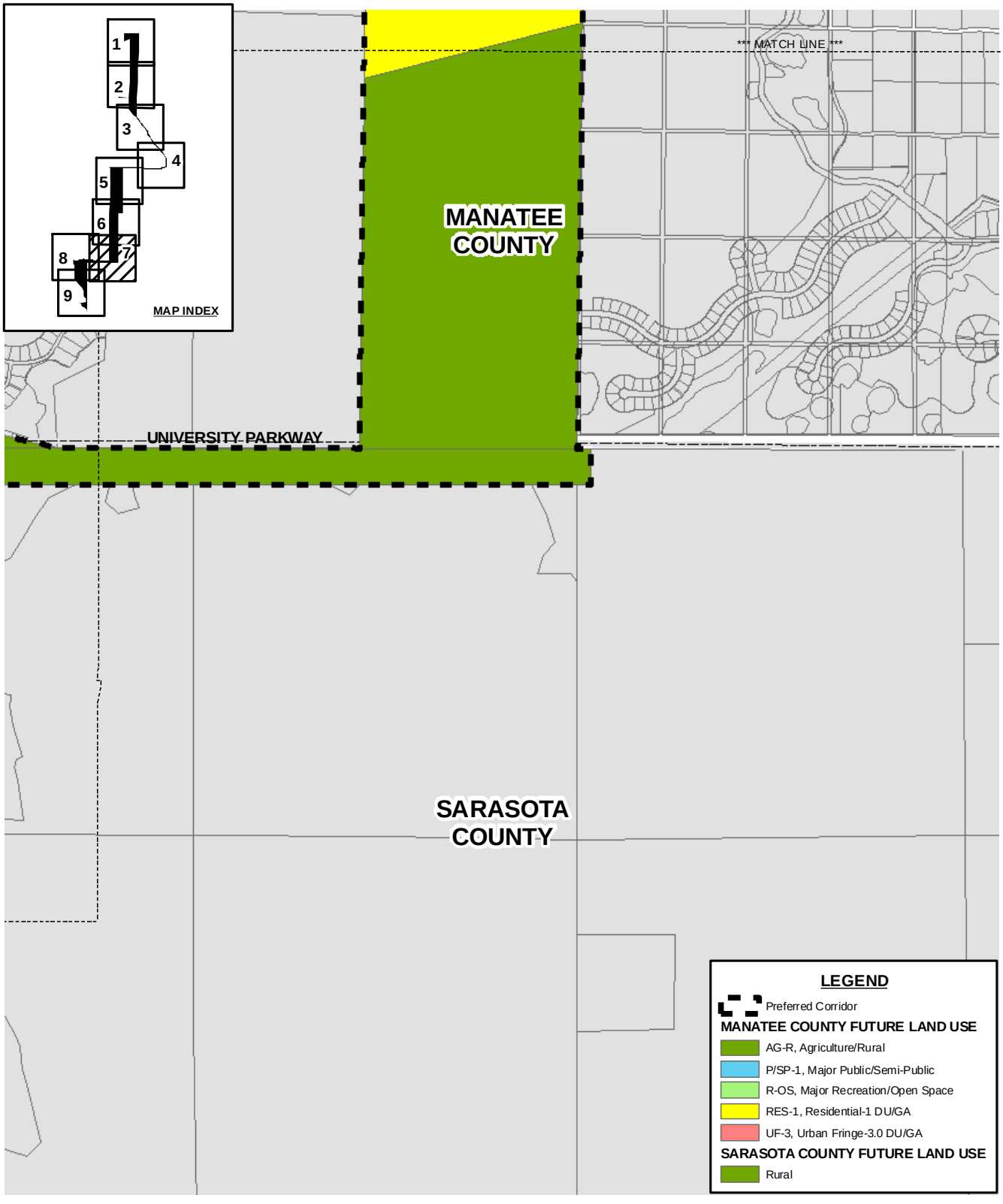

ATTACHMENT 2-2.

FUTURE LAND USE: MAP 7 OF 9

Sources: Manatee County, 2006; ECT, 2006.

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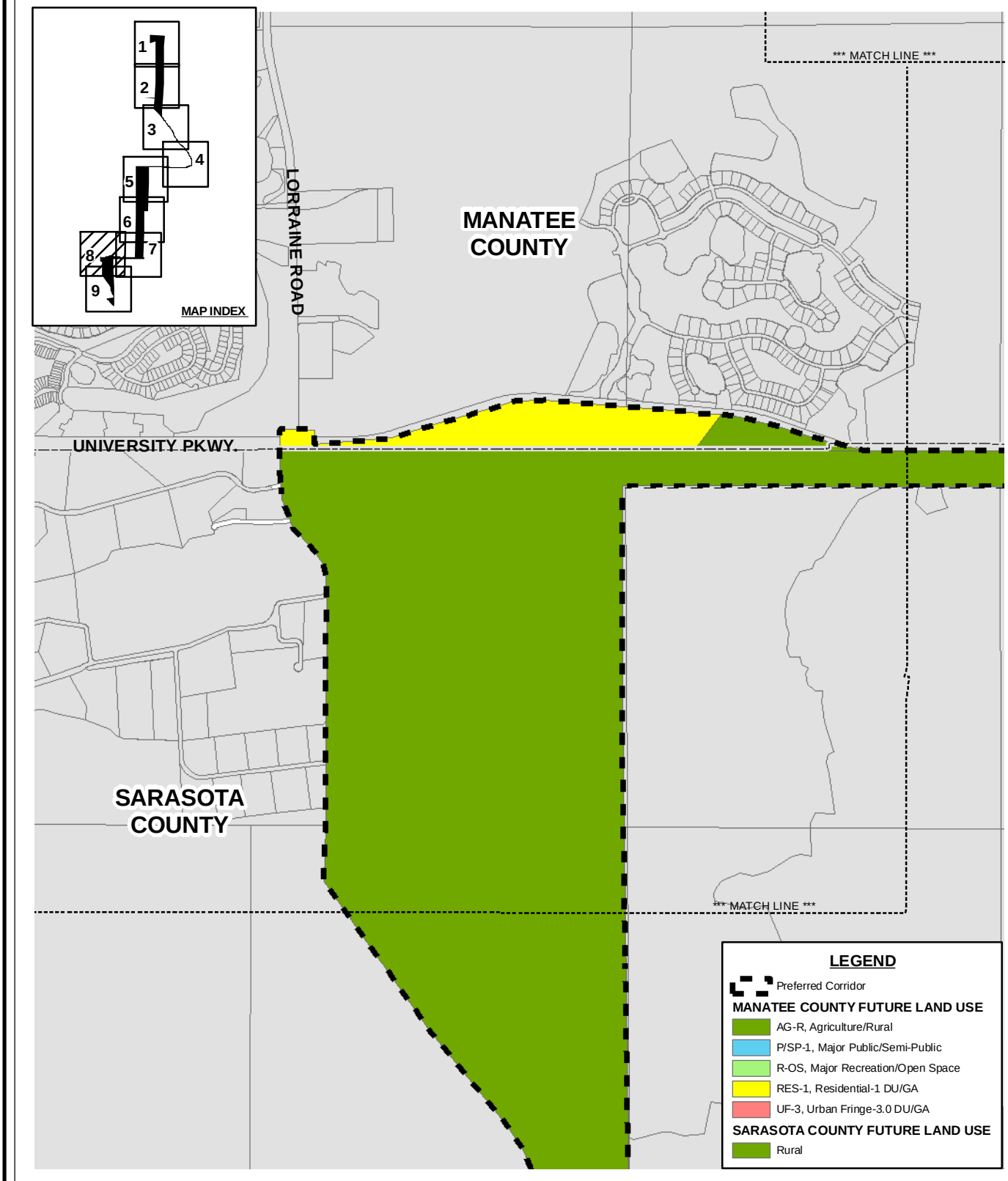

ATTACHMENT 2-2.

FUTURE LAND USE: MAP 8 OF 9

Sources: Manatee County, 2006; Sarasota County, 2006; ECT, 2006.

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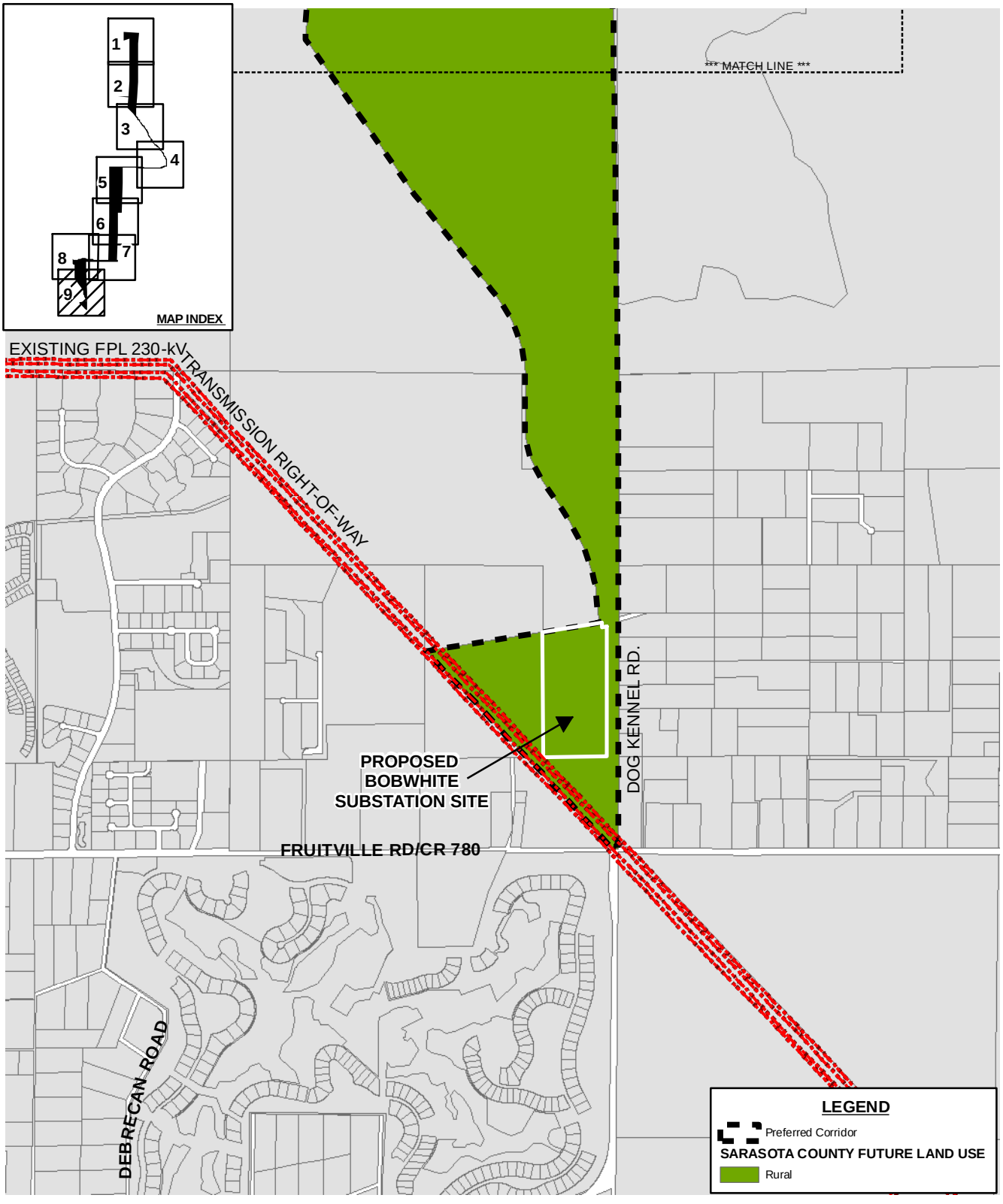

ATTACHMENT 2-2.

FUTURE LAND USE: MAP 9 OF 9

Sources: Sarasota County, 2006; ECT, 2006.

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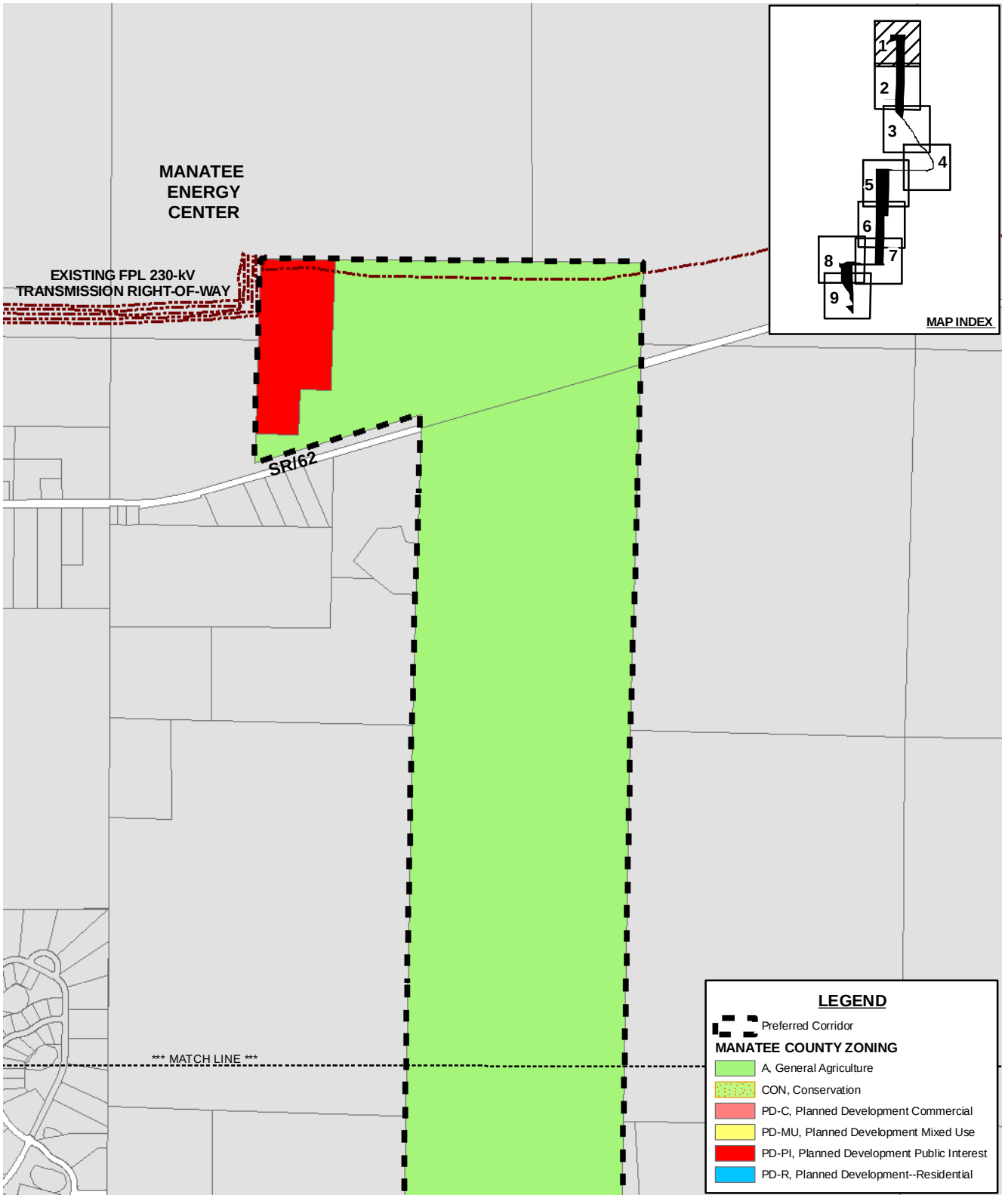

ATTACHMENT 2-3.

ZONING: MAP 1 OF 9

Sources: Manatee County, 2006; ECT, 2006.

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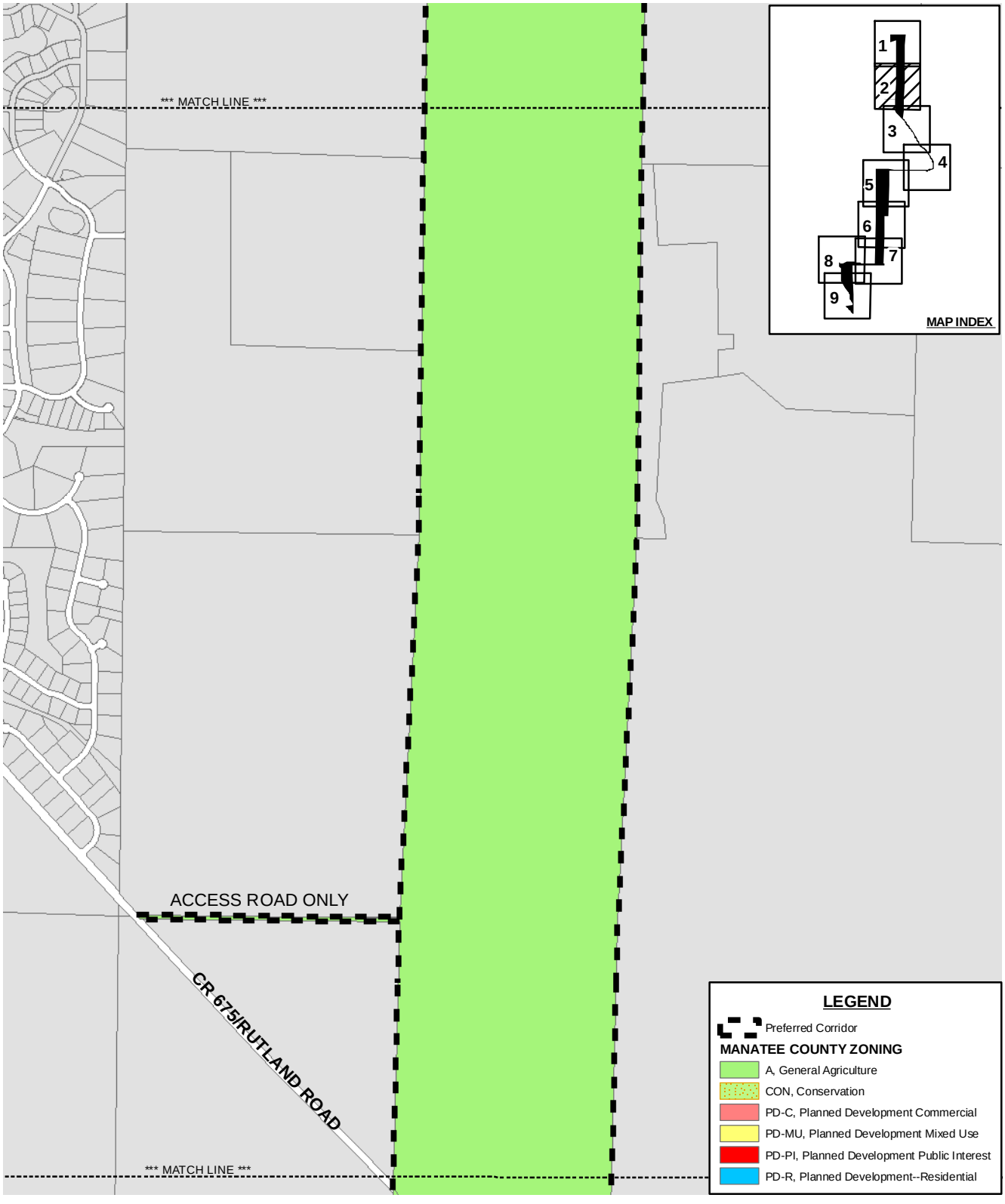

ATTACHMENT 2-3.

ZONING: MAP 2 OF 9

Sources: Manatee County, 2006; ECT, 2006.

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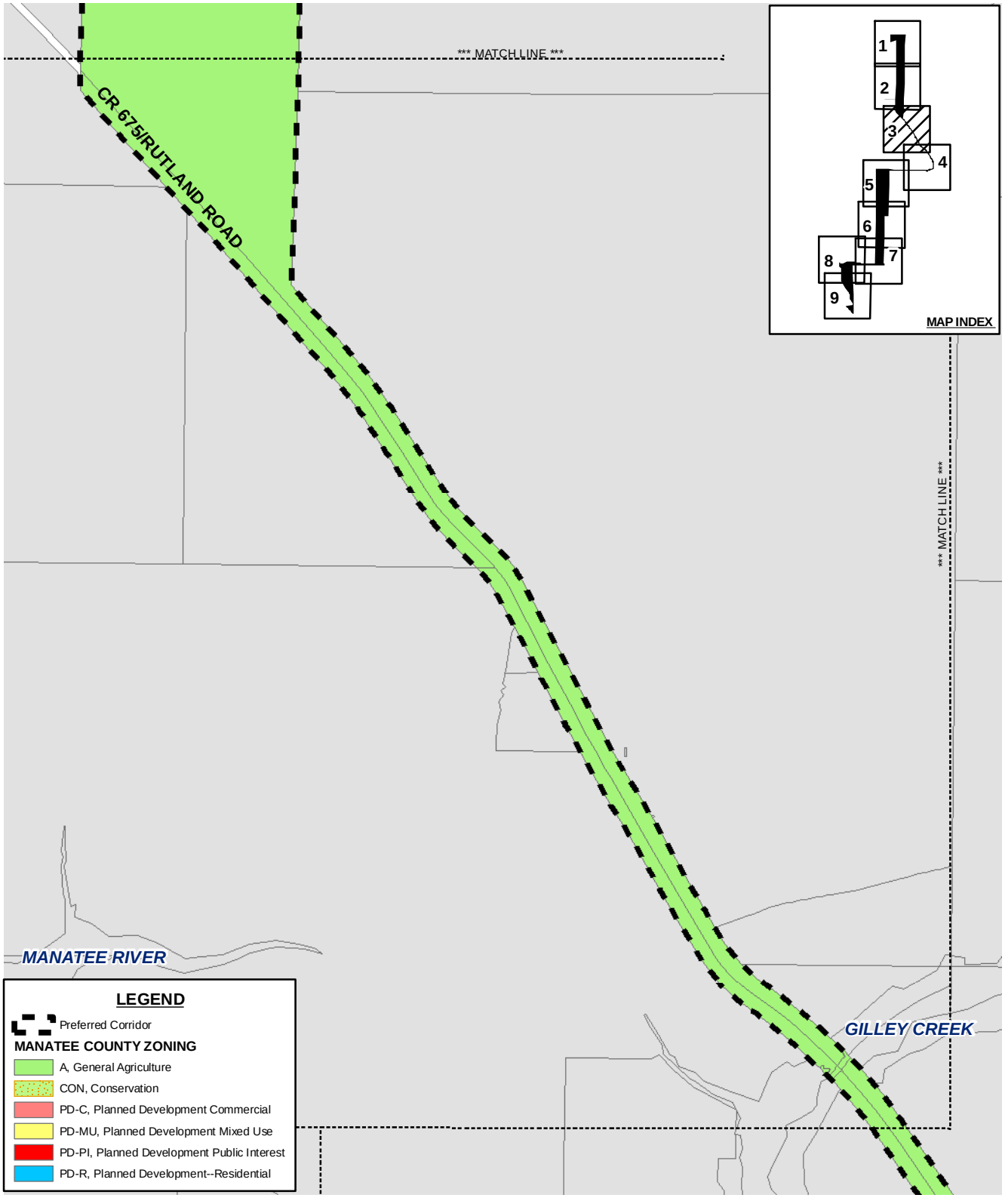

ATTACHMENT 2-3.

ZONING: MAP 3 OF 9

Sources: Manatee County, 2006; ECT, 2006.

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SCALE IN FEET

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ATTACHMENT 2-3.

ZONING: MAP 4 OF 9

Sources: Manatee County, 2006; ECT, 2006.

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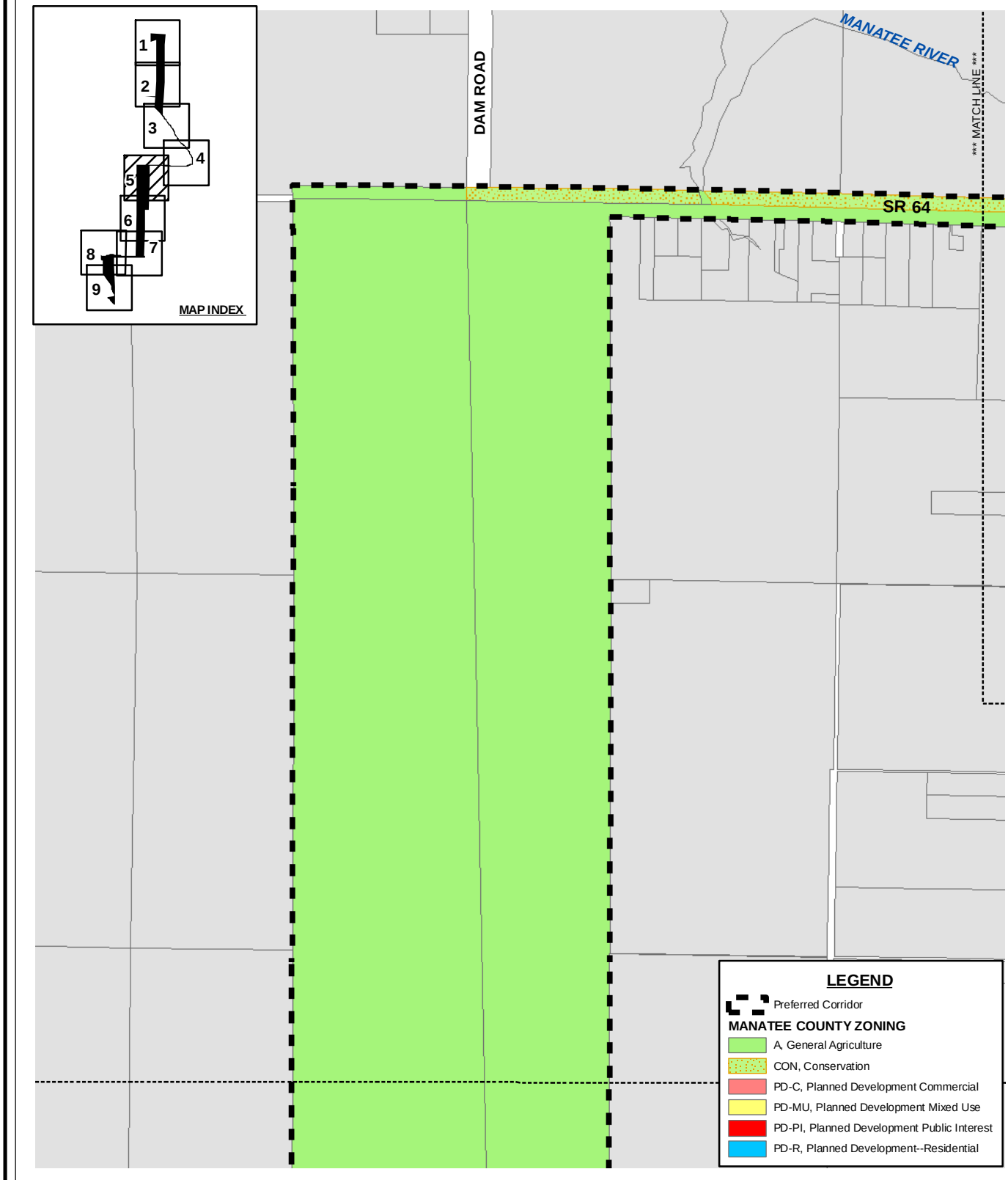

ATTACHMENT 2-3.

ZONING: MAP 5 OF 9

Sources: Manatee County, 2006; ECT, 2006.

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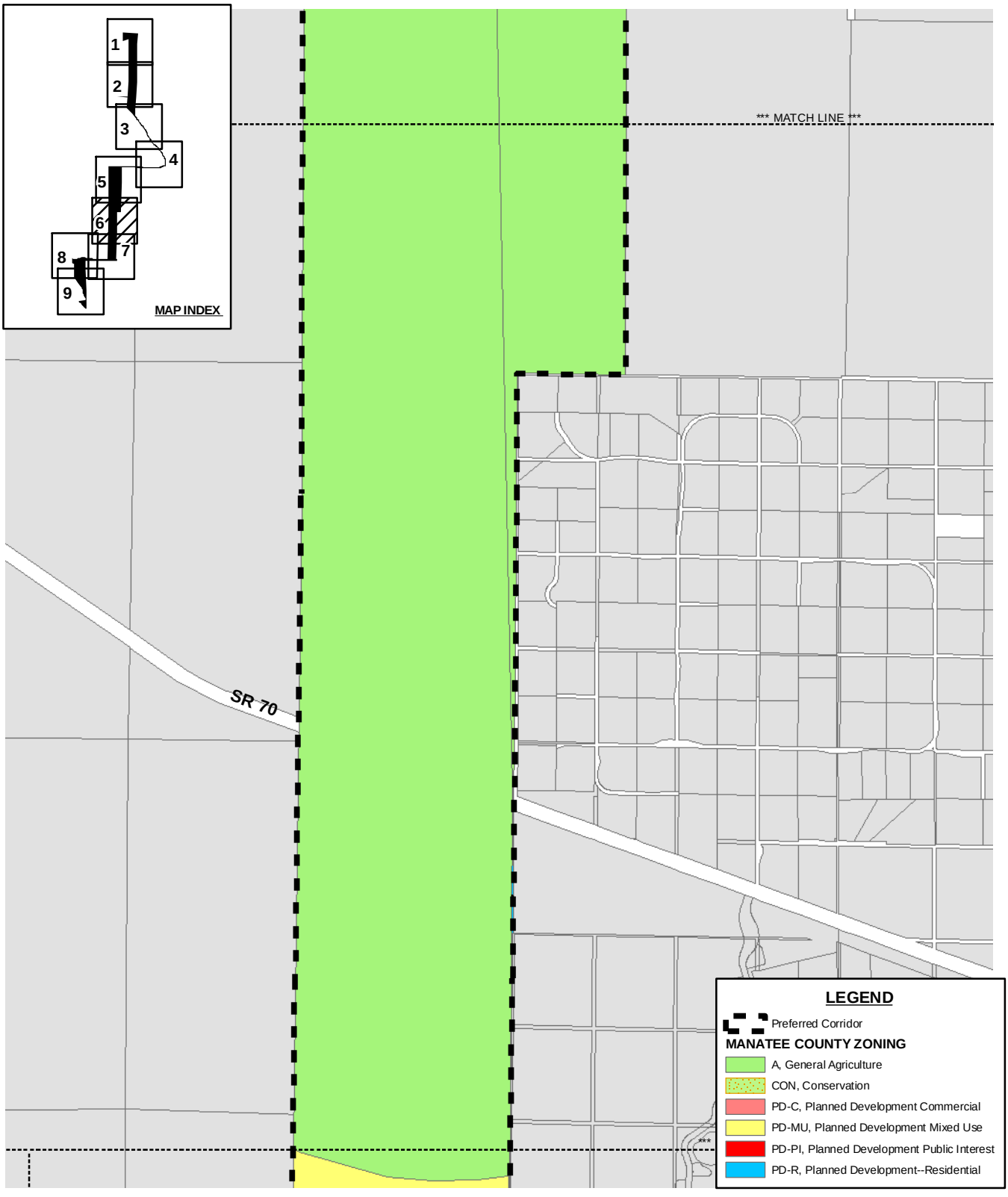

ATTACHMENT 2-3.

ZONING: MAP 6 OF 9

Sources: Manatee County, 2006; ECT, 2006.

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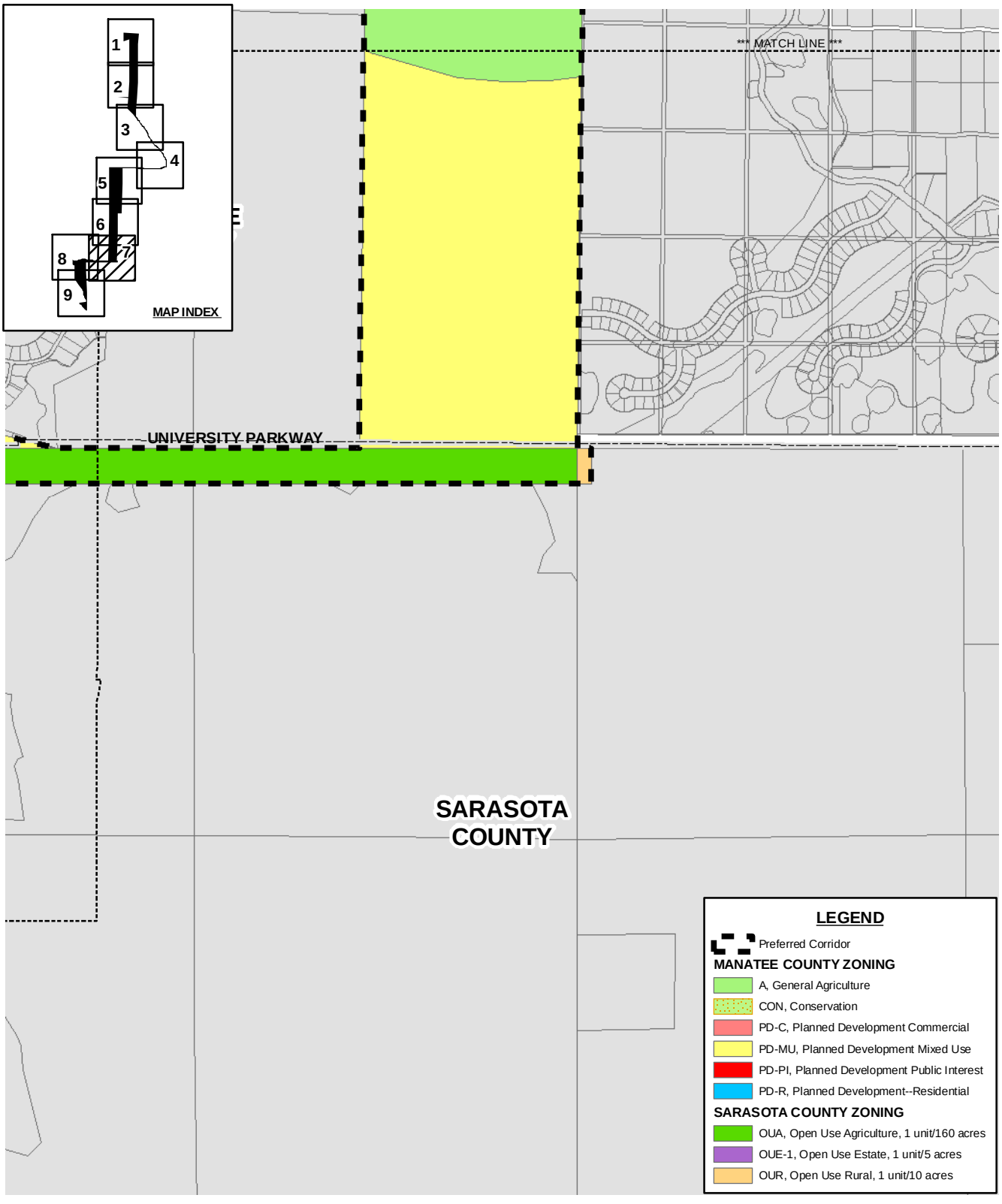

ATTACHMENT 2-3.

ZONING: MAP 7 OF 9

Sources: Manatee County, 2006; ECT, 2006.

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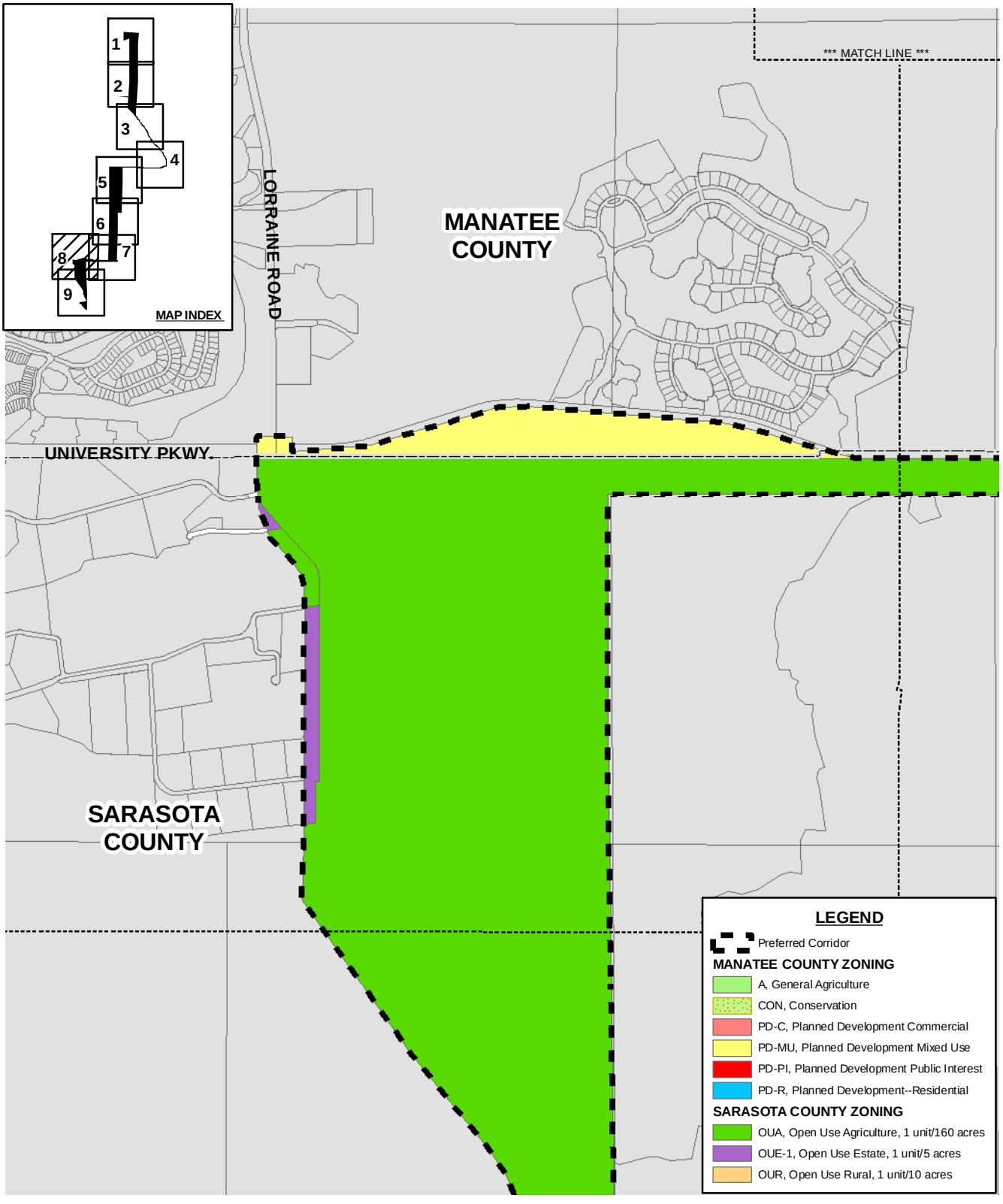

ATTACHMENT 2-3.

ZONING: MAP 8 OF 9

Sources: Manatee County, 2006; Sarasota County, 2006; ECT, 2006.

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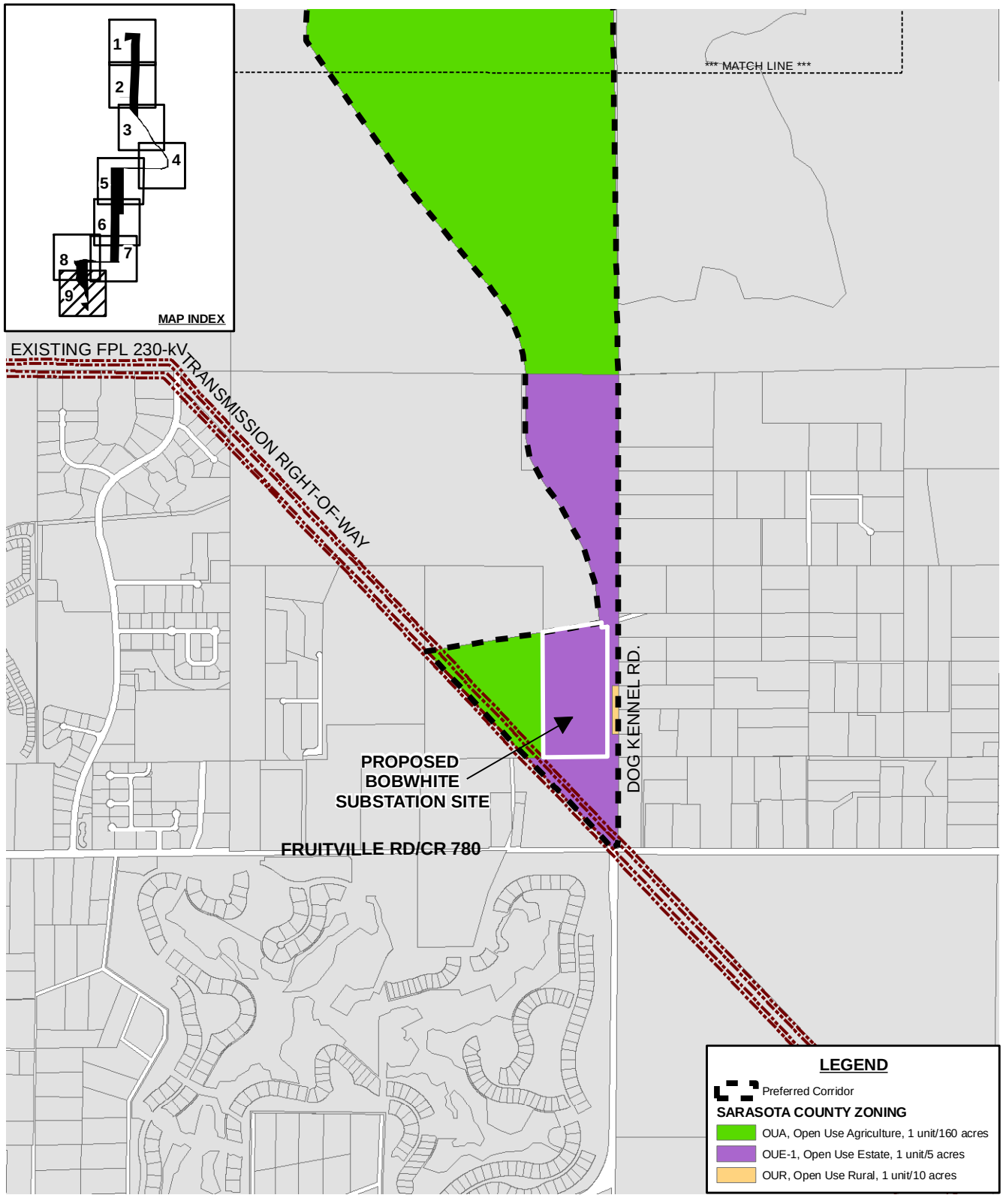

ATTACHMENT 2-3.

ZONING: MAP 9 OF 9

Sources: Sarasota County, 2006; ECT, 2006.

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GRAPHIC SCALE

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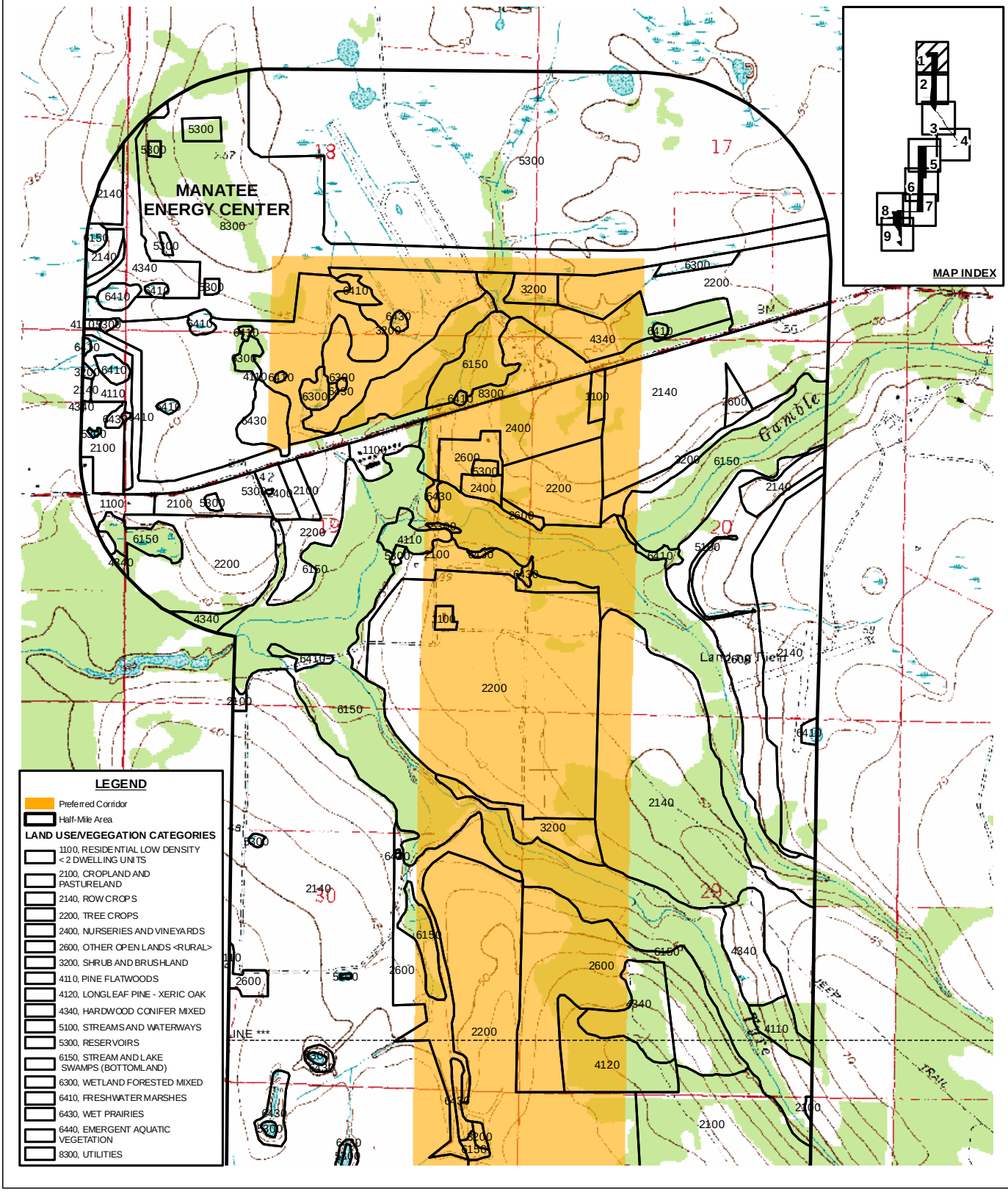

ATTACHMENT 2-4.

LAND USE/VEGETATION: MAP 1 OF 9

Sources: SWFWMD, 2004; Manatee County, 2006; ECT, 2006.

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GRAPHIC SCALE

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SCALE IN FEET

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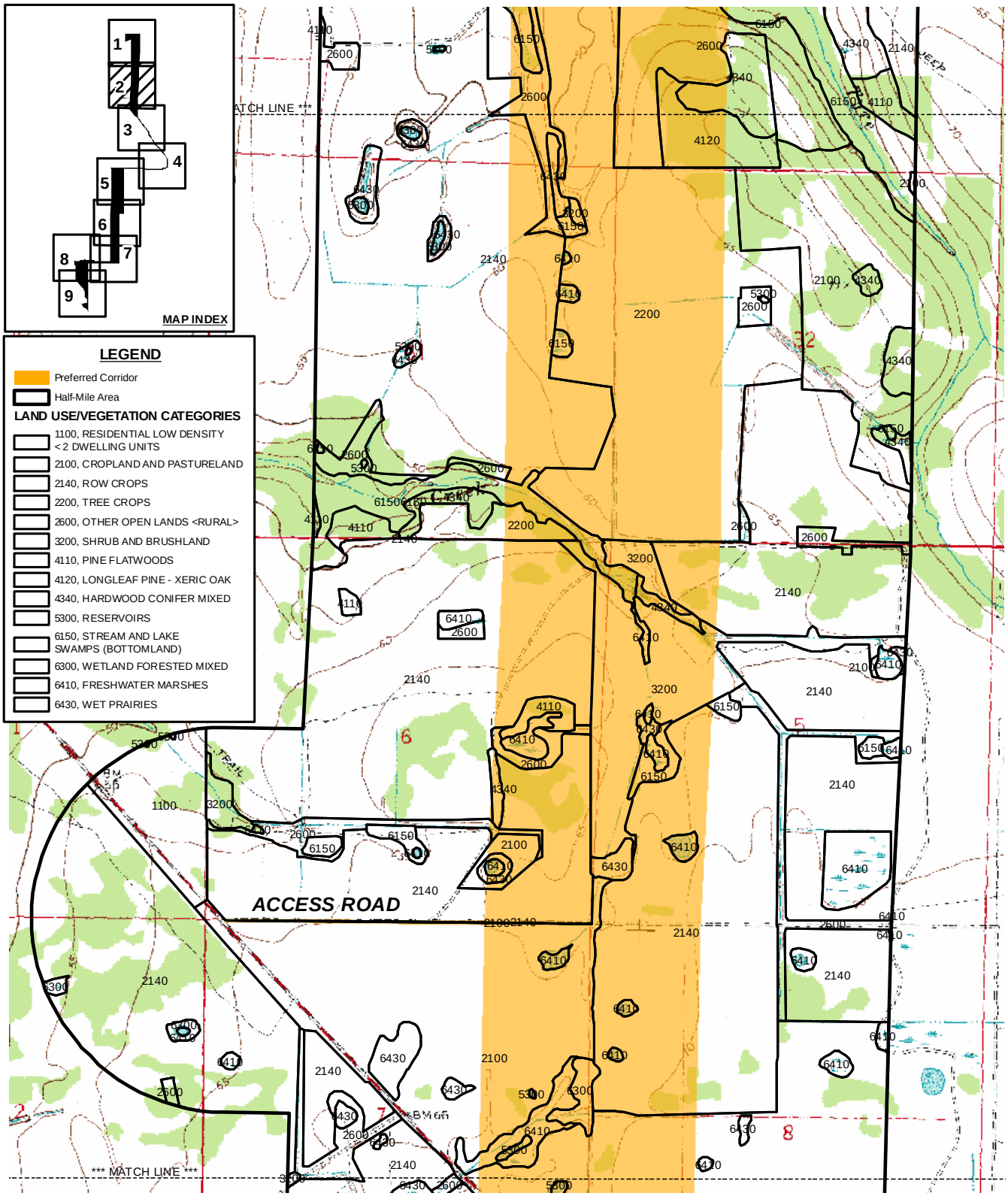

ATTACHMENT 2-4.

LAND USE/VEGETATION: MAP 2 OF 9

Sources: SWFWMD, 2004; Manatee County, 2006; ECT, 2006.

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GRAPHIC SCALE

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SCALE IN FEET

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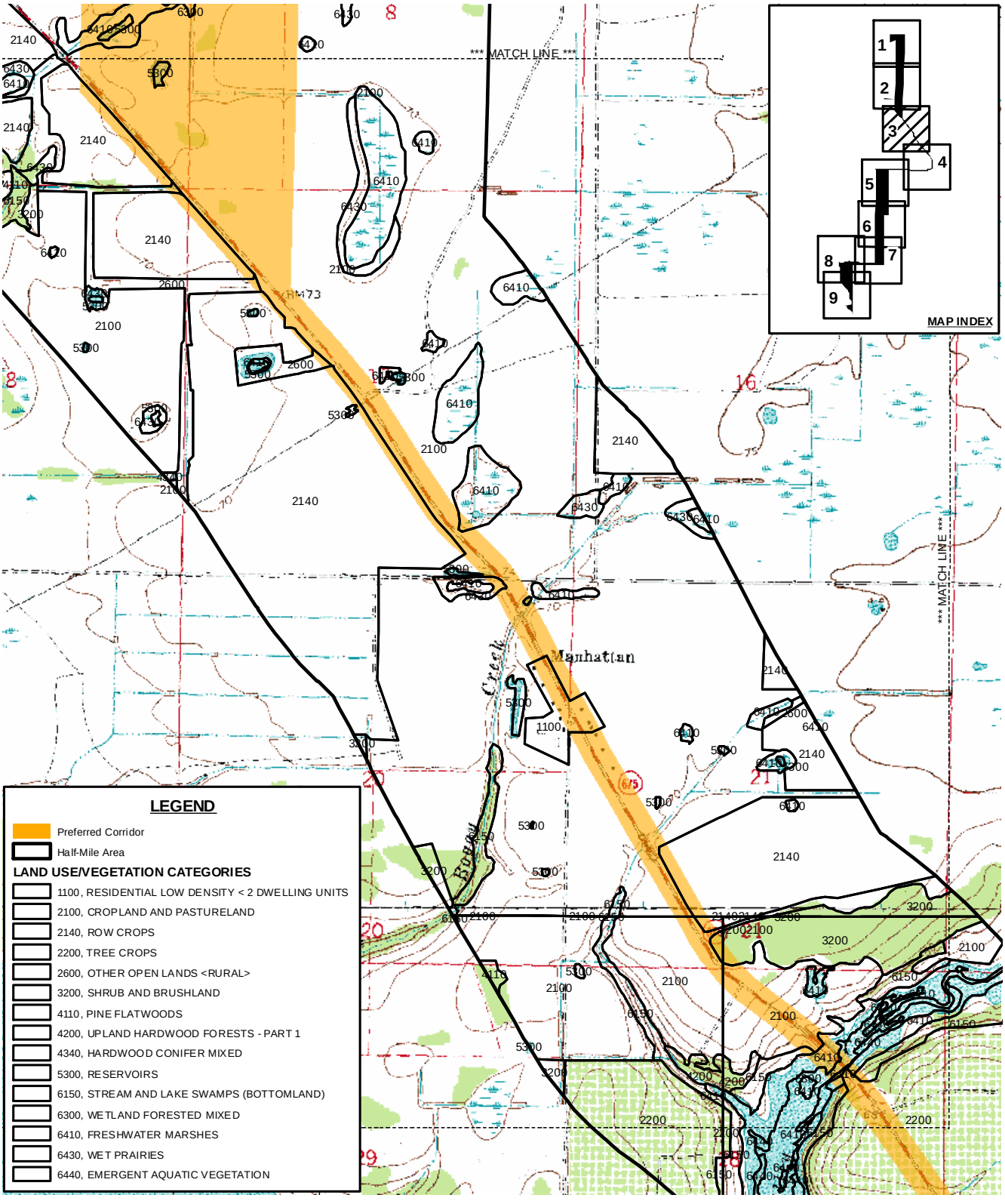

ATTACHMENT 2-4.

LAND USE/VEGETATION: MAP 3 OF 9

Sources: SWFWMD, 2004; Manatee County, 2006; ECT, 2006.

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GRAPHIC SCALE

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SCALE IN FEET

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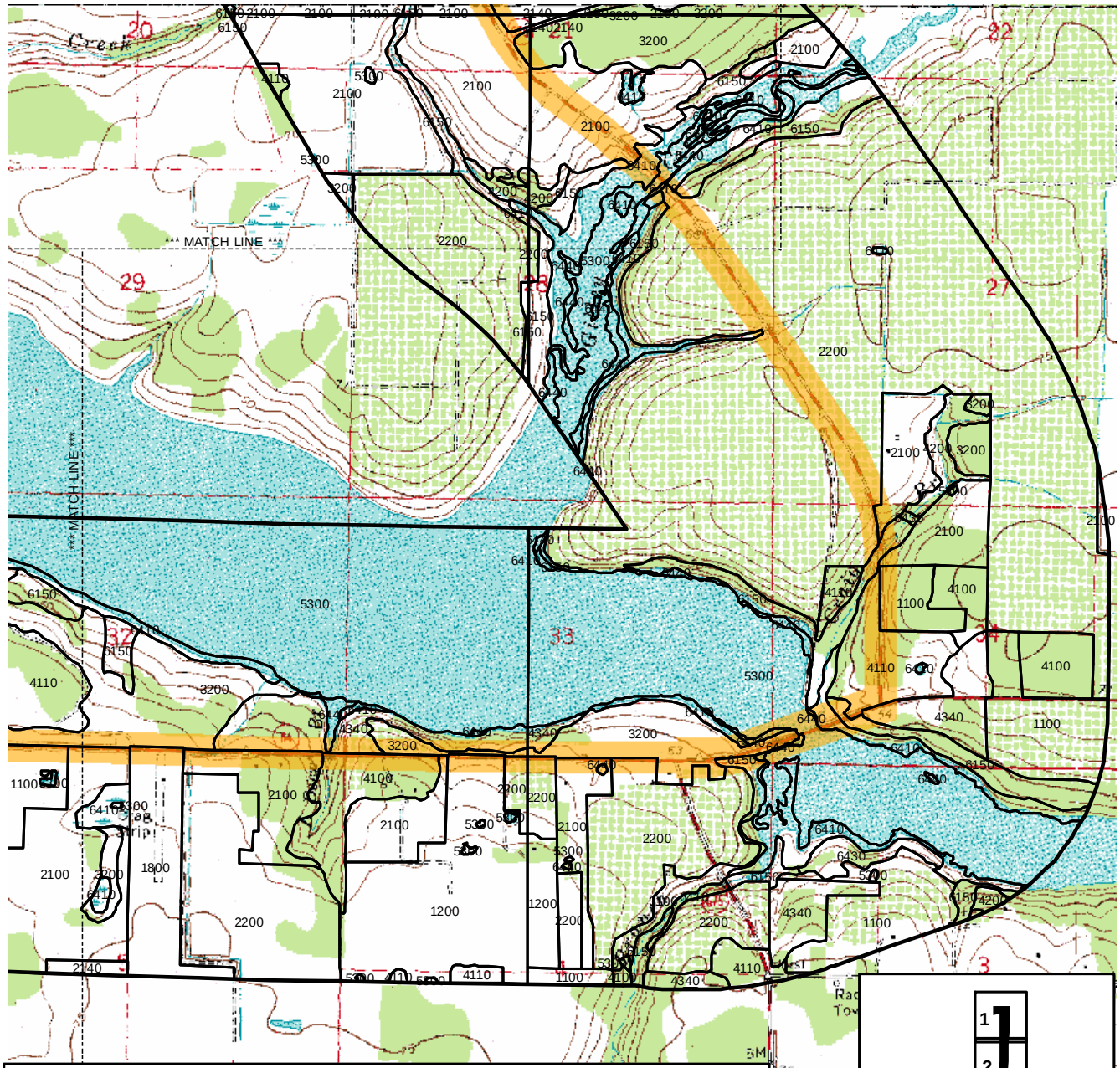
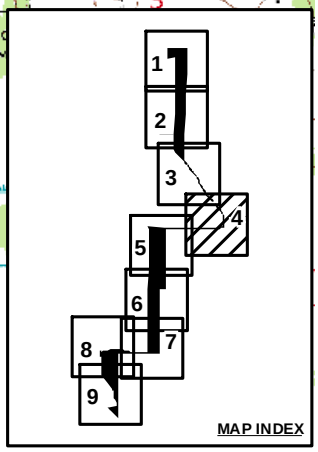


LEGEND

- Preferred Corridor
- Half-Mile Area

LAND USE/VEGETATION CATEGORIES

- 1100, RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS
- 1200, RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT
- 1800, RECREATIONAL
- 2100, CROPLAND AND PASTURELAND
- 2140, ROW CROPS
- 2200, TREE CROPS
- 3100, HERBACEOUS
- 3200, SHRUB AND BRUSHLAND
- 4100, UPLAND CONIFEROUS FOREST
- 4110, PINE FLATWOODS
- 4200, UPLAND HARDWOOD FORESTS - PART 1
- 4340, HARDWOOD CONIFER MIXED
- 5300, RESERVOIRS
- 6150, STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 6410, FRESHWATER MARSHES
- 6430, WET PRAIRIES
- 6440, EMERGENT AQUATIC VEGETATION



ATTACHMENT 2-4.

LAND USE/VEGETATION: MAP 4 OF 9

Sources: SWFWMD, 2004; Manatee County, 2006; ECT, 2006.

N

GRAPHIC SCALE

0 500 1,000 2,000

SCALE IN FEET

FPL

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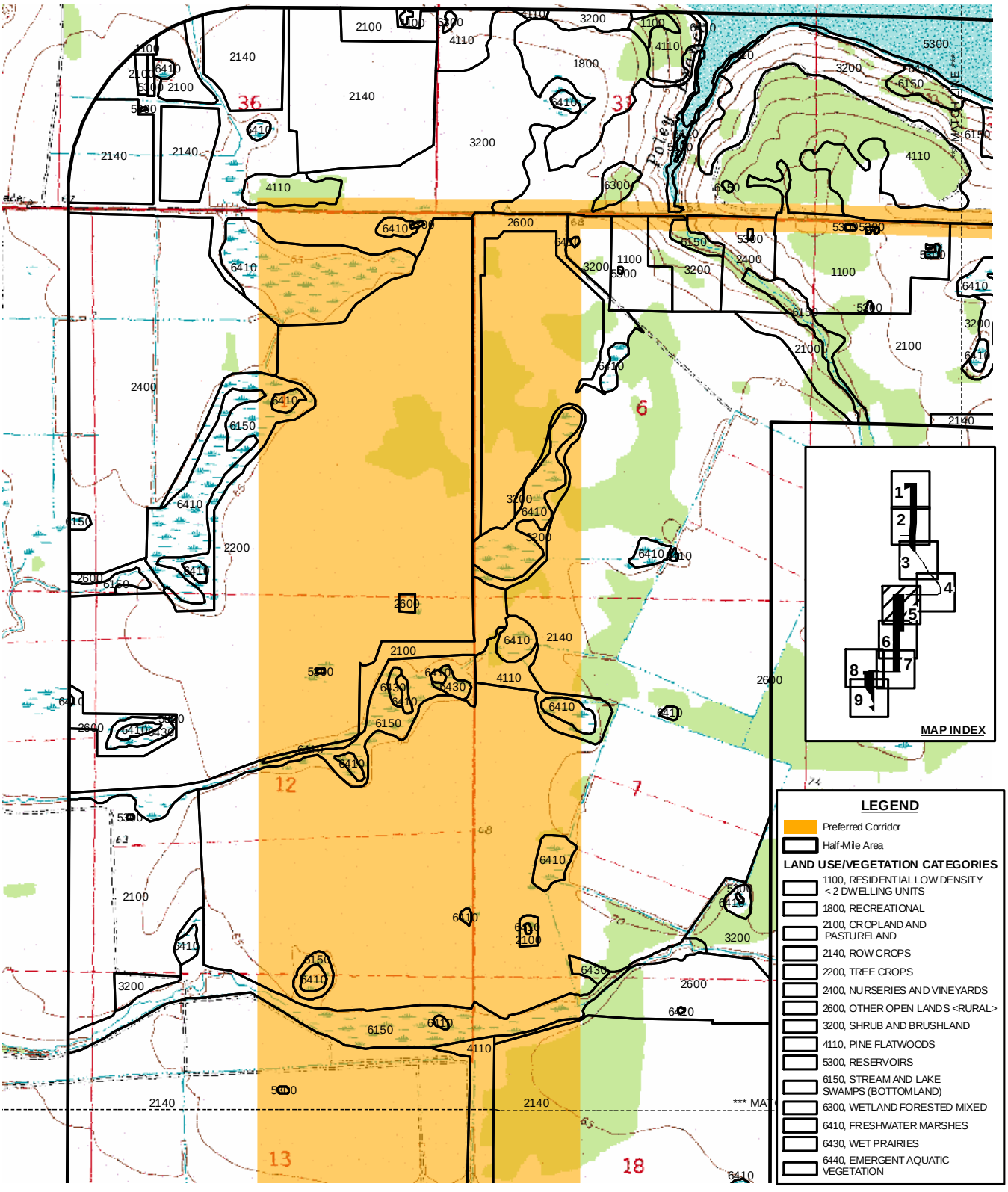

ATTACHMENT 2-4.

LAND USE/VEGETATION: MAP 5 OF 9

Sources: SWFWMD, 2004; Manatee County, 2006; ECT, 2006.

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SCALE IN FEET

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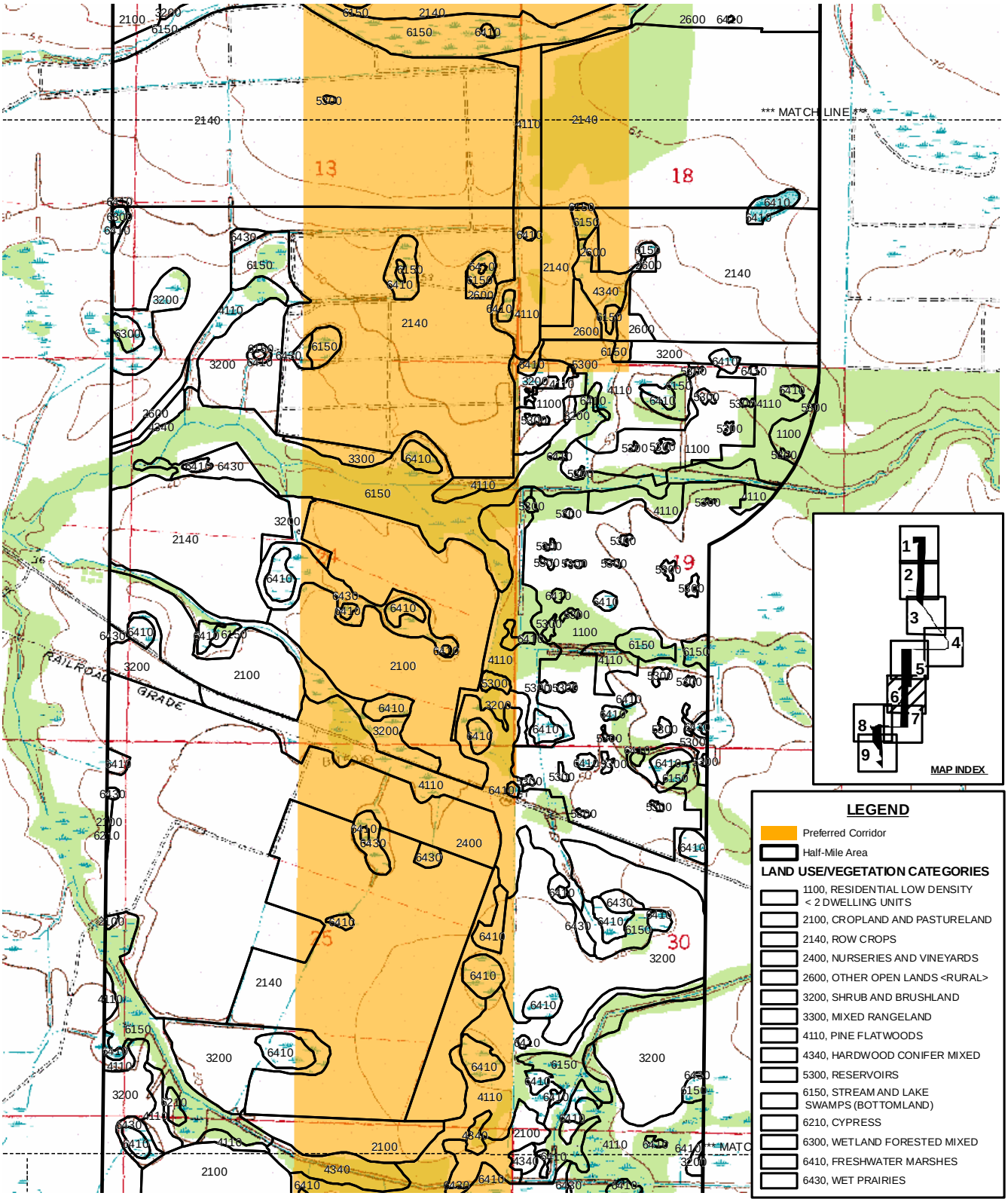

ATTACHMENT 2-4.

LAND USE/VEGETATION: MAP 6 OF 9

Sources: SWFWMD, 2004; Manatee County, 2006; ECT, 2006.

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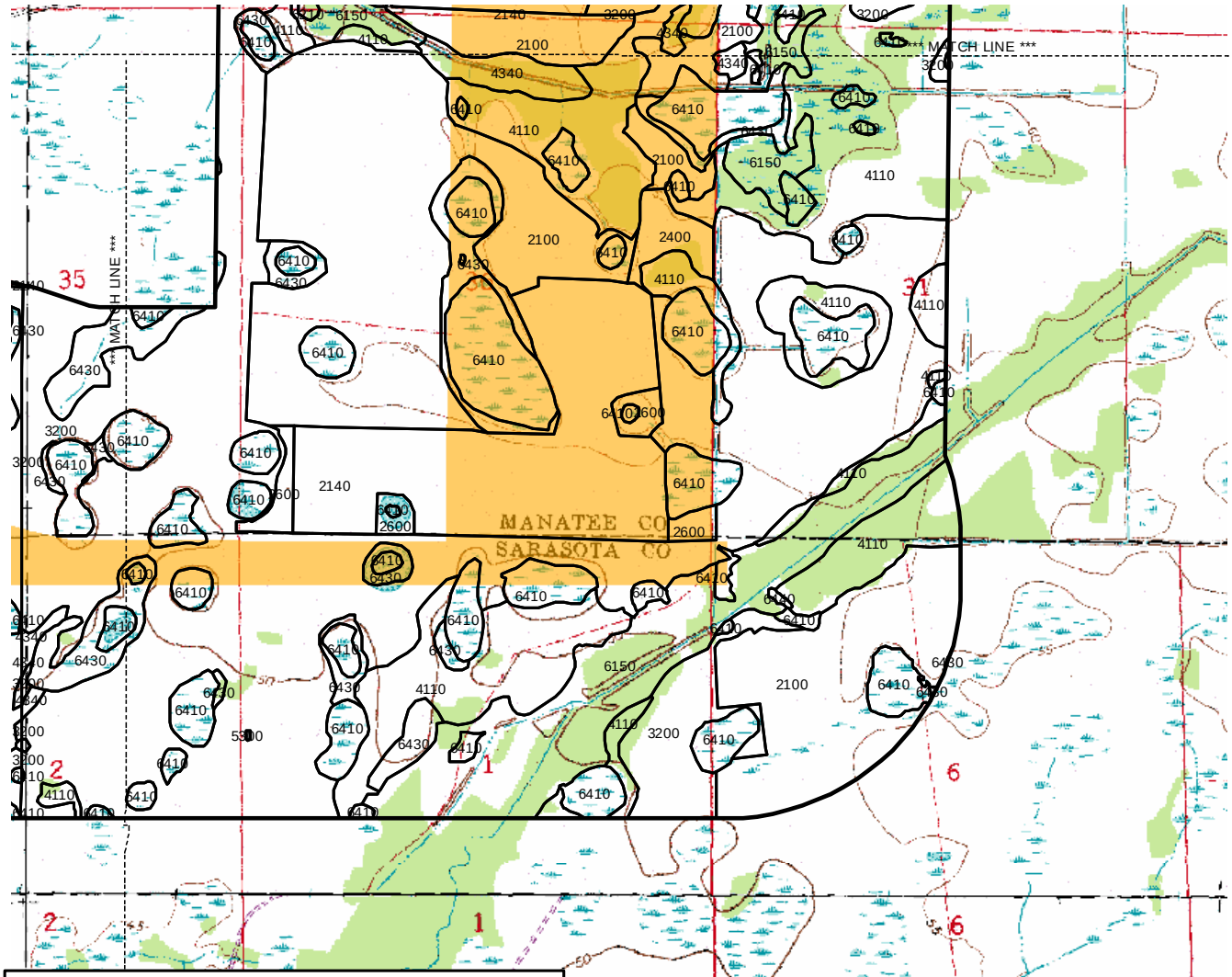
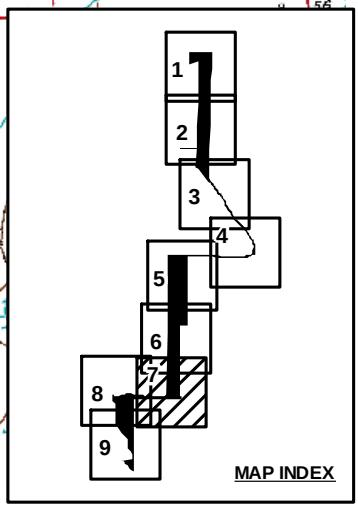


LEGEND

- Preferred Corridor
- Half-Mile Area

LAND USE/VEGETATION CATEGORIES

- 2100, CROPLAND AND PASTURELAND
- 2140, ROW CROPS
- 2400, NURSERIES AND VINEYARDS
- 2600, OTHER OPEN LANDS <RURAL>
- 3200, SHRUB AND BRUSHLAND
- 4110, PINE FLATWOODS
- 4340, HARDWOOD CONIFER MIXED
- 5300, RESERVOIRS
- 6150, STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 6210, CYPRESS
- 6410, FRESHWATER MARSHES
- 6430, WET PRAIRIES
- 6440, EMERGENT AQUATIC VEGETATION



ATTACHMENT 2-4.

LAND USE/VEGETATION: MAP 7 OF 9

Sources: SWFWMD, 2004; Manatee County, 2006; ECT, 2006.

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GRAPHIC SCALE

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SCALE IN FEET

FPL

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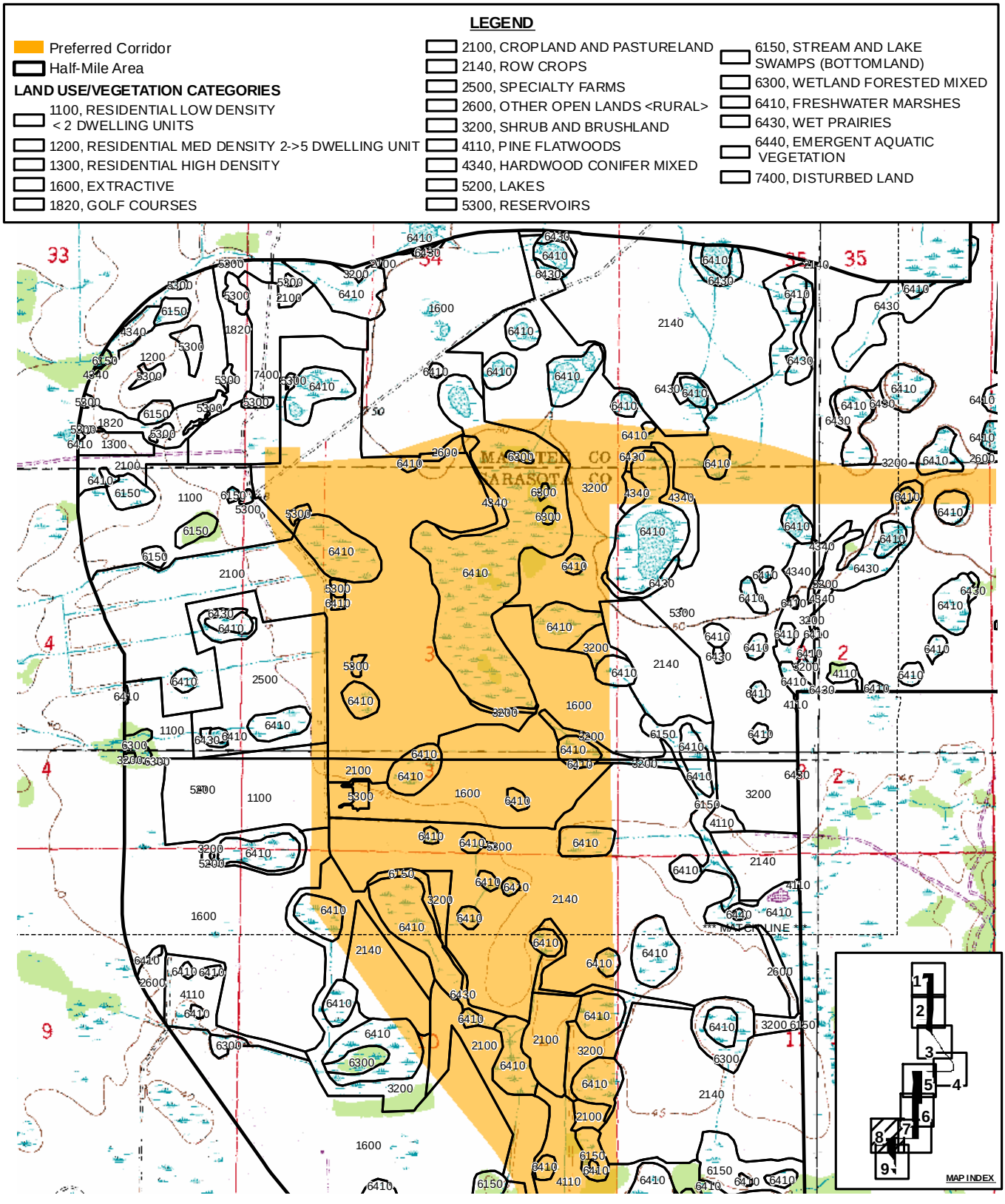

ATTACHMENT 2-4.

LAND USE/VEGETATION: MAP 8 OF 9

Sources: SWFWMD, 2004; Manatee County, 2006; Sarasota County, 2006; ECT, 2006.

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SCALE IN FEET

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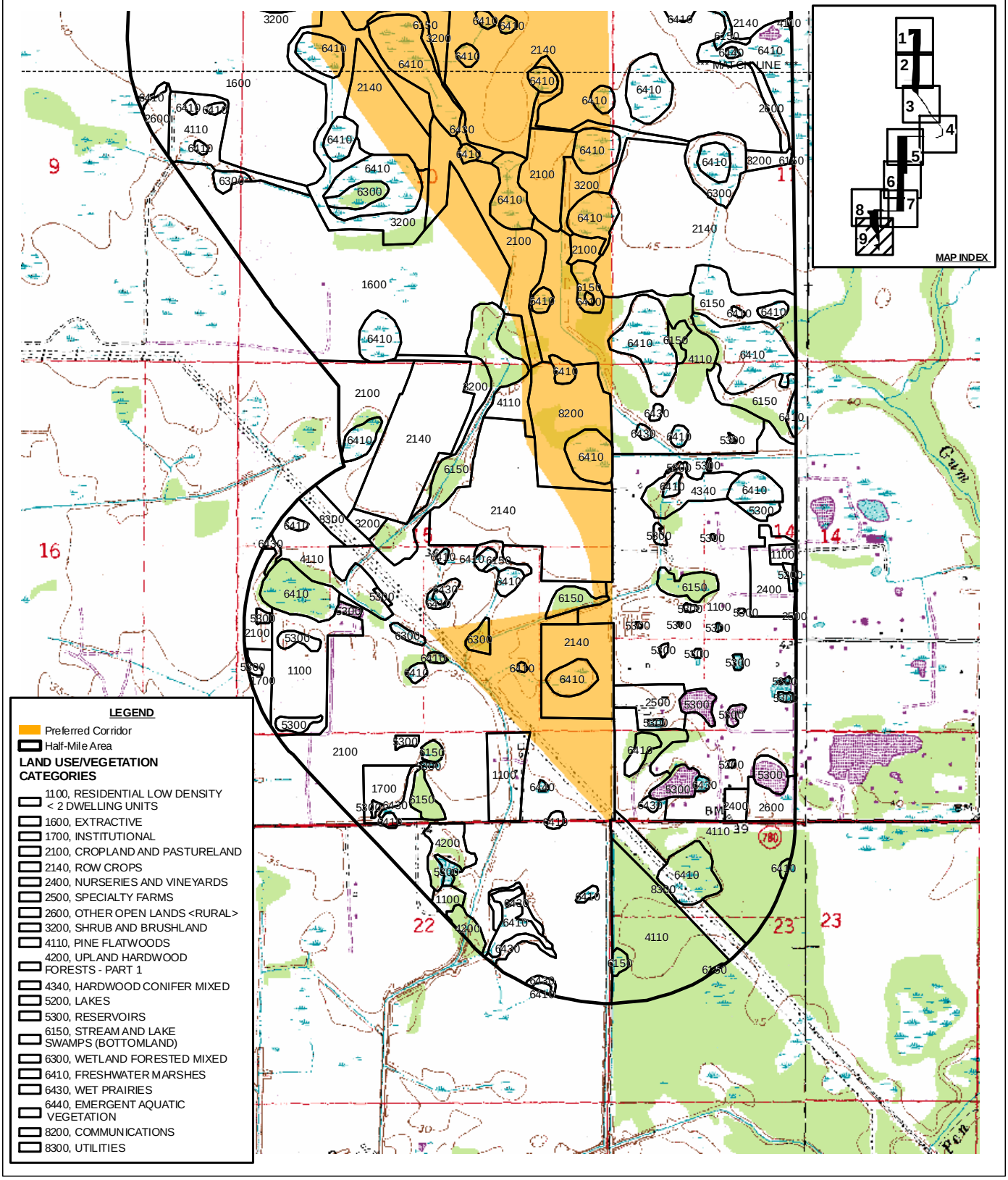


ATTACHMENT 2-4.

LAND USE/VEGETATION : MAP 9 OF 9

Sources: SWFWMD, 2004. Sarasota County, 2006; ECT, 2006.

N

GRAPHIC SCALE

0 500 1,000 2,000

SCALE IN FEET

FPL

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

It is anticipated that only moderate right-of-way clearing will be required for this transmission line due to the location of much of the preferred corridor along previously disturbed areas and the expectation of collocation adjacent to other linear facilities such as road rights-of-way. Where clearing is required, it will generally occur in the entire easement area, which is typically expected to be 15 to 75 ft in width. All trees and shrubs whose mature height could exceed 14 ft will be cleared in this area. 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.

The machinery used for clearing will depend on the density of trees to be cut and the restrictions on clearing in wetlands. Typical equipment will include bulldozers, shearing machinery, specialized mowing equipment, as well as chainsaws. Any vegetative clearing in wetlands will utilize low ground pressure equipment.

FPL will ensure the construction of the BWM Project will have minimal impacts to water resources and wetlands, both individually and cumulatively. Where there is a potential for erosion, turbidity screens and other erosion control devices and techniques will be used 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 transmission facilities on the rare occasion that they may be damaged.

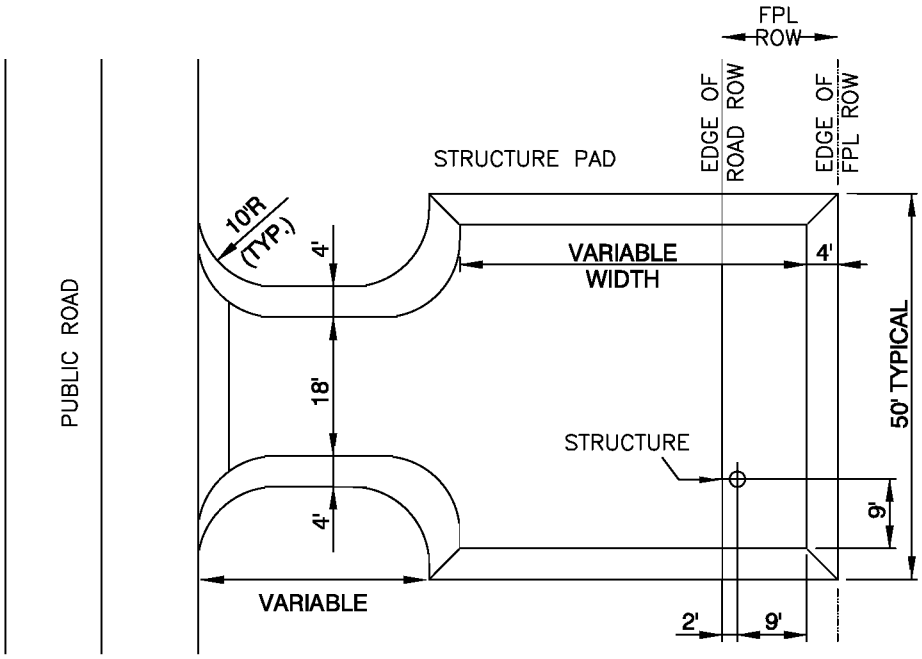
In those areas of the preferred corridor that already have public or FPL access, new access roads will not be needed. These areas include:

- Leaving the Manatee substation, the preferred corridor is located on existing FPL property down to SR 62.
- The preferred corridor follows CR 675 for approximately 4 miles and SR 64 for approximately 3 miles.
- Near the southern end, the preferred corridor follows University Parkway for nearly 3 miles before turning south along Lorraine Road and Dog Kennel Road into the Bobwhite substation.

It is anticipated new access road construction may be required for most of the remaining length of the preferred corridor. The new roads will be sited in such a way as to minimize wetland crossings. Where needed, the construction of all access roads will be completed with clean fill from sources outside the transmission line right-of-way. Figure 1.3-7 in Section 1.3 illustrates a typical cross-section of an access road. The access roads will have a top width of 14 ft and will be offset from the centerline of the structures.

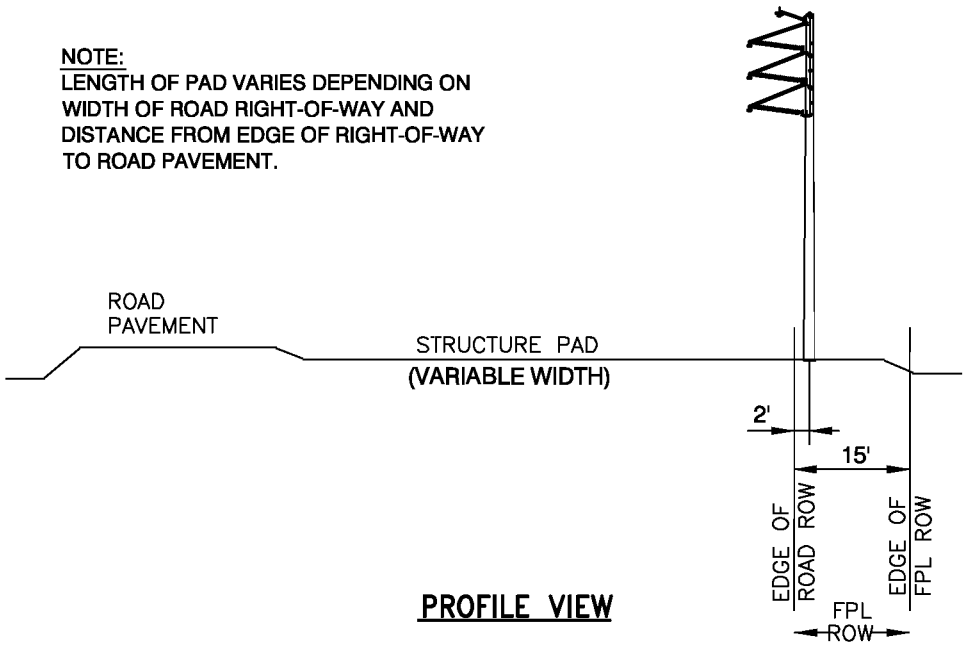
Temporary roads may at times be used in wetlands in lieu of permanent access, depending on site-specific situations. Most temporary access roads will be constructed in a manner similar to permanent access roads. Alternatively, the contractor may employ either matting or geotextile fabric covered with temporary fill. Crossings of existing drainage swales, ditches, or canals will require installation of appropriately sized culverts that will be sized and located to accommodate up- or downstream flow regimes.

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 BWM Project.



PLAN VIEW

NOTE:
LENGTH OF PAD VARIES DEPENDING ON WIDTH OF ROAD RIGHT-OF-WAY AND DISTANCE FROM EDGE OF RIGHT-OF-WAY TO ROAD PAVEMENT.

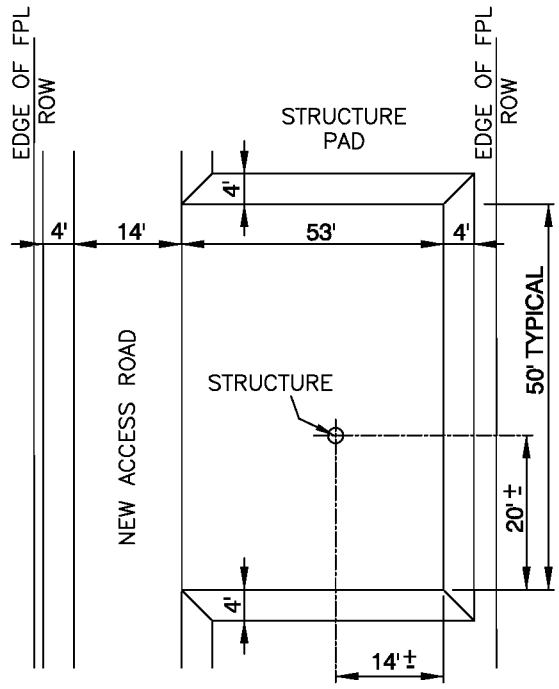


PROFILE VIEW

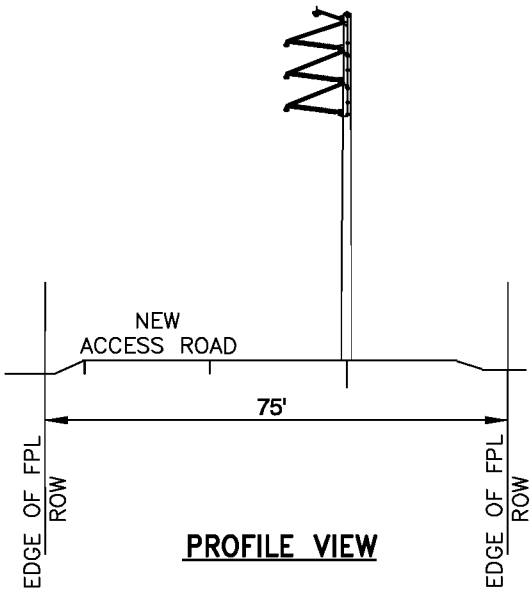
NOT TO SCALE

FIGURE 3.1-1.
TYPICAL STRUCTURE PAD DESIGN WITH EXISTING PUBLIC ROAD ACCESS

Source: FPL, 2006; ECT, 2006.



PLAN VIEW

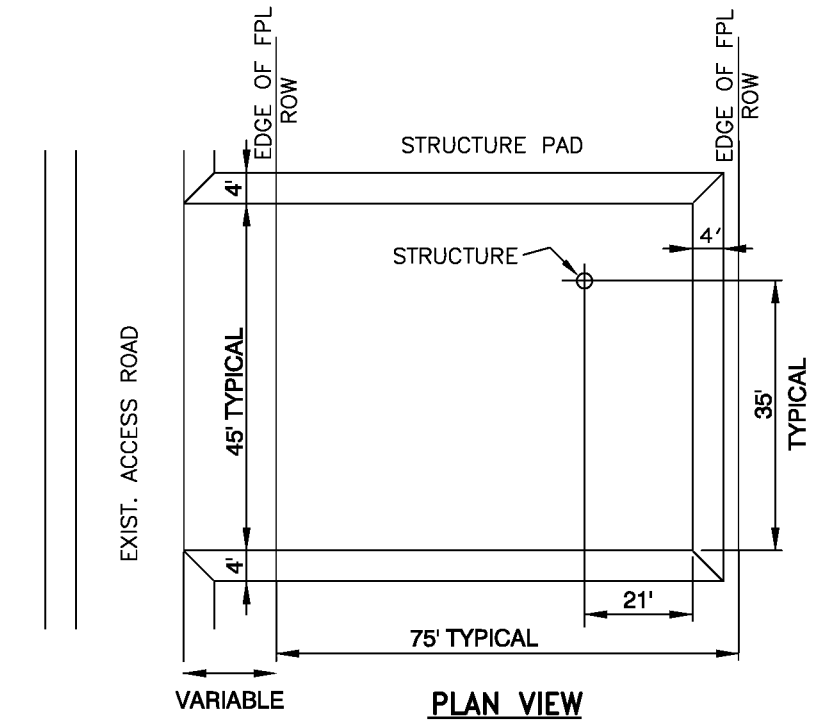


PROFILE VIEW

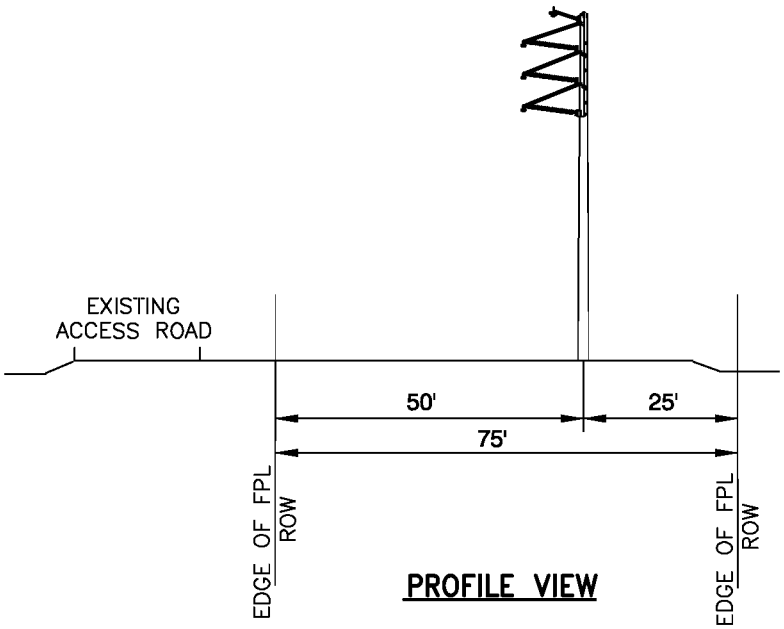
NOT TO SCALE

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

Source: FPL, 2006; ECT, 2006.



PLAN VIEW



PROFILE VIEW

NOT TO SCALE

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

Source: FPL, 2006; ECT, 2006.

3.1.2 LINE CONSTRUCTION

To install the transmission line structures, a digger truck will auger a hole approximately 18 to 25 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 vehicles. Once the structures are set, 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. Construction mats and low-pressure rubber-tired or nontracked vehicles may be used where appropriate in wetlands, which 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 and farm fields for much of the BWM 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

A new transmission line of this length will cross some wetland areas. Wetlands in the study area were avoided and minimized by the route selection methodology. Many of the wetlands within the preferred corridor have been previously impacted by existing agricultural operations or roads. Impacts to these wetlands will be minimized to the extent pos-

sible 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 an existing clearing so only supplemental clearing is needed. It is FPL's intent to widen existing cleared wetland areas where practicable 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 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. As previously noted, 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 on steep slopes will be seeded and mulched to control erosion (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 Gilley Creek and Manatee River crossings are believed to be the only navigable waterways crossed by the preferred corridor. Since these crossings are relatively narrow, FPL will be able to span these waterways. Therefore, no impacts to navigation will occur on either of these waterways.

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 evaluation 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 of the state 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 extent practicable. 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. An example of this is reflected in the fact that, as noted previously, FPL is seeking certification of a 50-ft-wide access-only corridor east from CR 675 connecting to the preferred corridor to take advantage of an existing access opportunity (see Map 2 of 9, Attachment 2-1).

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 BWM 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 12 miles (50 percent) of the preferred corridor include the opportunity to locate within or adjacent to existing road 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 included within the preferred corridor consist of natural and disturbed upland and wetland community types as well as agricultural lands, pastures, and vacant land expected to become low-density residential developments in the future. An evaluation of potential and expected impacts on vegetation and wildlife components is presented in the following subsections.

3.4.1 VEGETATION

Because much of the preferred corridor contains lands that have already been 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. The preferred corridor crosses no large expanses of forested uplands or wetlands.

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. Section 3.1,

Construction Techniques, addresses types of impacts associated with construction that are expected to occur to the existing vegetation communities crossed by the preferred corridor. In areas of the corridor where collocation opportunities occur with existing roads, forested wetlands may have already been impacted. Limited additional clearing of trees directly adjacent to the existing rights-of-way will be required. In these areas, 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 the wetlands. Impacts to wetlands will also 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 two active bald eagle nests documented for the corridor vicinity are located at least 0.75 mile from the preferred corridor in Manatee County. This distance is beyond the 750- to 1,500-ft buffer zones recommended by USFWS (1987). This distance and the fact FPL would propose to construct the BWM transmission line adjacent to existing state highway right-of-way or in open pastures near these nests will reduce potential for additional impacts to these nest locations.

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 implemented as necessary.

3.4.3 AQUATIC LIFE

Impacts on aquatic systems and species are expected to be minor since the proposed corridor avoids major lakes and crosses Manatee River and Gilley Creek at existing bridges. Additionally FPL will span these waterways 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 or in agricultural or developing lands. This alignment significantly minimizes the crossing of natural or undisturbed systems.

Principal impacts from right-of-way clearing and construction of the BWM 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 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 (where necessary) include clearing the right-of-way, constructing access roads, preparing foundations, assembling and erecting support structures, stringing conductors, and cleanup activities. Construction of the entire transmission line is expected to take approximately 13 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. The construction and associated noise-producing activities are intermittent in nature and will take place only during normal daylight working hours unless otherwise directed by local permitting agencies.

Population density in the vicinity of the preferred corridor varies, but remains relatively low throughout most of the length of the corridor. Much of the preferred corridor is along rural or undeveloped land, with only a sparse scattering of homes. In the few areas where development exists or is ongoing in southern Manatee and Sarasota Counties, the preferred corridor is located along boundaries and, in some cases, is collocated with existing linear facilities. For example, the preferred corridor is along the western boundary of Panther Ridge north of SR 70, where homes are on larger lots. In this area, the preferred corridor is 3,000 ft wide and provides flexibility, including the potential to collocate adjacent to the proposed future extension of Dam Road between SR 64 and University Parkway.

South of SR 70 and east of the preferred corridor is The Concession, currently under construction. Most of the length of the corridor in this area parallels The Concession's golf course. In Lakewood Ranch, the Lake Club is under construction on the north side of University Parkway in the vicinity of the preferred corridor. The preferred corridor predominately encompasses the south side of University Parkway, which is a four-lane divided highway in this area. At the northwest corner of Lorraine Road and University Parkway is a condominium development called Miramar, where the corridor includes part of the corner to allow room for the guying structures required to support the hard angle needed to turn the transmission line south down Lorraine Road.

In Sarasota County, where the corridor follows the Lorraine Road extension, the Sarasota Polo Club is located on the west side of the road where homes are on larger lots. The east side of the Lorraine Road extension, which is part of Lakewood Ranch and where most of the width of the preferred corridor is located, is currently vacant and used for aggregate mining. This area is planned for future development under the Sarasota County 2050 Plan as a village, and the width of the preferred corridor allows flexibility for placement of the transmission line in this area of potential future development. Further south along the Lorraine Road extension and Dog Kennel Road there are homes on large lots on the east side of the road. In much of this area, the preferred corridor is limited to the west side of Dog Kennel Road. Impacts to the human population attributable to construction and operation of the BWM Project will be minimal due to the avoidance of much of the existing development in the region by the preferred corridor, the collocation with existing linear facility rights-of-way where feasible, and the short duration of construction activities 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, four known archaeological/historic features are found in the preferred corridor. Every effort will be made to avoid these sites. 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.

4.0 ENVIRONMENTAL EFFECTS OF TRANSMISSION LINE RIGHT-OF-WAY MAINTENANCE AND POST-CONSTRUCTION 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, vegetation regrowth, 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.

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. Any vegetation that could restrict access will be removed. Other species are generally allowed to remain, resulting in a shrubby and herbaceous cover within the right-of-way. 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. Application of these herbicides will meet federal, state, and local regulations. Due to the selective nature of vegetation

cutting, the limited use of herbicides, and the infrequent occurrence of maintenance activities, the potential effects on wildlife and water quality will be minimal. FPL works to 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 creates habitat that 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 and row-crop 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 BWM 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 transportation rights-of-way and through crossing of agricultural lands, pastures, and developing lands.

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 BWM 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 BWM 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.

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

Right-of-Way Configuration	Electric Field (kV/m)		Magnetic Field (mG)
	On Right-of-Way	Edge of Right-of-Way	at MCR* on Edge of Right-of-Way
BWM Project exiting Manatee switchyard property	4.3	0	1.8
BWM Project on typical 75-ft right-of-way (vertical)	2.6	0.4	149
BWM Project on typical 75-ft right-of-way (triangular)	2.2	1.6	146.3
BWM Project Manatee River crossing	1.6	1.6	145.9
BWM Project on typical 15-ft right-of-way along road easement (vertical)	1.6	1.5	146.2
BWM Project on typical 15-ft right-of-way along road easement (triangular)	1.7	1.6	149.1
BWM Project exiting Bobwhite substation property	4.3	0.1	10.7
Florida EMF Rule limit for new 230-kV lines†	*8.0*	*2.0*	*150*

*The MCR for the BWM 230-kV line is 2,990 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, 2006.

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 a phenomenon 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, 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 BWM Project

Right-of-Way Configuration	L50* (dBA)
BWM Project exiting Manatee switchyard property	32.3
BWM Project on typical 75-ft right-of-way (vertical)	35
BWM Project on typical 75-ft right-of-way (triangular)	32.7
BWM Project Manatee River crossing	29.7
BWM Project on typical 15-ft right-of-way along road easement (vertical)	29.7
BWM Project on typical 15-ft right-of-way along road easement (triangular)	32.1
BWM Project exiting Bobwhite substation property	32.3

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

Source: FPL, 2006

For a 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 29.7 to 35 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 Manatee and Sarasota Counties (see Section 2.2.2.2 for applicable limits).

4.5.3 RADIO AND TELEVISION INTERFERENCE

Corona, which can occur on high-voltage transmission lines, produces electromagnetic noise. When this noise is sufficiently strong, it can cause interference with radio and television signals. Since corona is enhanced by water droplets or water vapor, the magnitude of this noise is greater during wet or rainy periods than during dry or fair weather periods.

The amplitude-modulated (AM) broadcast radio band and two television bands (very high frequency [VHF] and ultra high frequency [UHF] bands) are susceptible to this potential interference. No interference is expected for frequency-modulated (FM) radio, cable or satellite television systems, cellular telephones, home cordless telephones, or wireless networking.

In general, the electromagnetic noise levels from a transmission line decrease with increasing distance from the right-of-way and with increasing noise frequency. Thus, interference effects are greatest immediately adjacent to the right-of-way and at the lower broadcast frequencies for radio and television.

Radio and television interference calculation results serve as a general indication of the likelihood for interference. Actual interference from transmission line corona will depend on numerous factors, including the weather, terrain, broadcast signal strength, and frequency.

Electromagnetic noise levels produced by transmission line corona were calculated using software produced by Bonneville Power Administration (BPA). This software performs

noise calculations as a function of the transmission line configuration, the frequency of the electromagnetic noise, and the distance from the transmission line. These electromagnetic noise levels were compared to typical broadcast radio and television signals to evaluate radio interference in the AM broadcast frequency and television interference over the VHF and UHF bands. Specifically, the calculated L50 (median) ratio interference and television interference levels were used to determine distances at which the noise levels dropped below typical broadcast signal strengths minus a required noise margin (to meet a target signal to noise ratio). The results of these evaluations are summarized in the following paragraphs. Because the noise levels decrease with increasing frequency, the evaluation was conservatively performed at the low end of the frequency bands being considered.

Radio

For broadcast signal levels with typical residential broadcast signal strength, fair weather interference is unlikely anywhere outside the right-of-way. For strong and weak rural broadcast signals, fair weather interference is possible at the low end of the AM band within 60 and 200 ft, respectively, of the edge of the right-of-way.

For strong residential broadcast signals during rain, interference is not expected outside the right-of-way. For a weak residential broadcast signal level during rain, interference is possible within 100 ft of the edge of the right-of-way. For strong rural broadcast signals, rainy weather interference is possible within 240 ft of the edge of the right-of-way. For weak rural broadcast signals, the possibility for rainy weather interference extends up to 820 ft from the edge of the right-of-way.

Television

For television stations meeting the minimum Grade A service as defined by the Federal Communications Commission (FCC), calculations indicate that television interference is unlikely anywhere. For television stations meeting the minimum Grade B service as defined by the FCC, calculations indicate that interference is possible within 180 ft of the edge of the right-of-way.

Summary

Due to the 230-kV operating voltage of the proposed transmission line and the conservative evaluation method, the overall impact to radio or television is expected to be minimal, with the main potential for impact being the AM radio band. In general, corona effects from transmission lines at 230 kV or lower are not a significant issue. Should any homeowner or business experience abnormal interference as a result of these transmission lines, FPL will work with them to resolve the interference issue.

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

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Florida Department of Transportation (FDOT). 2002. Florida aeronautical chart.

FDOT. 2001. Manatee County highway map.

FDOT. 2003. Sarasota County highway map.

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). 2006:

- Florida Managed Area (FLMA)—File: Federal, state, local, privately managed lands
- Florida Forever/Board of Trustees (FFBOT) Environmental Lands, 2006—File: FDEP Managed lands
- Element Occurrences (EO) quadrangle—File listed species/high quality habitats by quadrangle
- Data report form, 2006—Element occurrence within study area; May 10; Jason Griffen

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

Southwest Florida River Water Management District (SWFWMD). 2006. Digital files for:

- 2004 digital ortho photo quadrangles
- Hydrography

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WEB SITES:

Areas of critical concern	www.dca.state.fl.us/fdcp/dcp/acsc/index.cfm
	www.fightbackputnam.org/pdf/commplanprogguide.pdf
Conservation and Recreation Lands	www.tfn.net/NatureConserv/stories/manage.html
County codes	www.municode.com/resources/code
Estuarine Sanctuaries	www.sanctuaries.nos.noaa.gov/welcome.html
Florida Department of Environmental Protection	www.dep.state.fl.us/siting/programs/transmission-lines.htm
Florida Natural Areas Inventory	www.fnai.org
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Manatee County	www.co.manatee.fl.us/
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	www.fws.gov/refuges/
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
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
Sarasota County	www.co.sarasota.fl.us/
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/
Southwest Florida Water Management District	www.swfwmd.state.fl.us/

APPENDIX A

FINAL ORDER ON NEED DETERMINATION

BEFORE THE PUBLIC SERVICE COMMISSION

In re: Petition for determination of need for Bobwhite-Manatee 230 kV transmission line in Manatee and Sarasota Counties, by Florida Power & Light Company.	DOCKET NO. 060424-EI ORDER NO. PSC-06-0723-FOF-EI ISSUED: August 28, 2006

The following Commissioners participated in the disposition of this matter:

ISILIO ARRIAGA
MATTHEW M. CARTER II
KATRINA J. TEW

FINAL ORDER DETERMINING THE NEED
FOR AN ELECTRICAL TRANSMISSION LINE

APPEARANCES:

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On behalf of Florida Power & Light Company.

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On behalf of the Florida Public Service Commission.

BY THE COMMISSION:

CASE BACKGROUND

On May 26, 2006, Florida Power and Light Company (FPL) filed a Notice of Intent to File a Petition for Determination of Need for a proposed 230 kV electrical transmission line in Manatee and Sarasota 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 a public administrative hearing on FPL's petition on August 8, 2006. Notice of the filing of FPL's petition and of the 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 August 8, 2006, 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 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

Over the past five years (2001-2005), the load in FPL's West Region, an area that includes Manatee, Sarasota, DeSoto, Charlotte, Glades, Lee, Hendry and Collier Counties and the specific Project Service Area,[1] has grown by a Compound Annual Average Growth Rate ("CAAGR") of 3.8%. FPL is forecasting the West Region to continue to grow at CAAGR of 3.4% over the next five years (2007-2011). Transmission assessment studies conducted by FPL during 2006 have identified regional transmission system limitations in Manatee and Sarasota Counties. These studies show that by 2011, the existing 230kV transmission network which closely parallels the coast between Manatee and Ringling Substations will not have sufficient capacity to provide reliable service to existing and proposed substations.

FPL has proposed to build a new 230kV transmission line extending from FPL's existing Manatee Substation in Manatee County to FPL's planned Bobwhite Substation (scheduled to be in service by December of 2011) in Sarasota County to meet the anticipated transmission system limitations.

A study of transmission alternatives resulted in FPL's selection of the project as the most cost-effective and efficient means to: (a) provide additional reinforcement to the existing 230kV transmission network between Manatee and Ringling Substations in a reliable manner consistent with NERC, FRCC and other applicable transmission system standards; (b) serve the increasing load and customer base in the area south of the existing Manatee Substation and north of the planned Bobwhite Substation to the east of the existing 230kV transmission network; and (c) provide another electrical feed from the Manatee Plant in Manatee County to the Ringling area in Sarasota County via a separate right-of-way ("ROW"), thereby reducing the impact of a loss of the existing transmission facilities on a Common ROW.

[1]The Project Service Area includes the area south of the existing Manatee Substation, north of the planned Bobwhite Substation and to the east of the existing 230kV transmission network.

The project is the most cost-effective alternative available, taking into account the demand for electricity, the need for electric system reliability and integrity, and the need for abundant, low-cost electrical energy to assure the economic well-being of the citizens of this state. Further, the project meets area load requirements by serving proposed future distribution substations east of I-75 and east of the existing 230kV transmission network from the northern portion of Manatee County to the northern portion of Sarasota County while maximizing system reliability and minimizing cost to customers. The cost and reliability benefits of the project would be enhanced by the construction of the project in a geographically separate ROW. For these reasons, as explained in detail below, we approve FPL's Petition to Determine the Need for the Bobwhite-Manatee 230kV Project.

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

FPL has demonstrated the need for the Bobwhite-Manatee 230kV project by December 2011 to: (a) provide additional transmission reinforcement to the existing 230kV transmission network between Manatee and Ringling Substations in a reliable manner consistent with the North American Electric Reliability Council (NERC) and the Florida Reliability Coordinating Council (FRCC) and other applicable standards; (b) serve the increasing load and customer base in the projected service area; and (c) provide for another electrical feed via a separate right-of-way ("ROW") path, thereby reducing the impact of a loss of the existing transmission facilities on a common ROW.

FPL's studies showed transmission limitations on the existing 230 kV transmission network south of Manatee Substation and north of Ringling Substation. The 230kV line will efficiently and effectively integrate and serve new FPL and Peace River Electric Cooperative distribution substations that are needed to serve the projected service area. In addition, the 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 the projected service area by December 2011, overloads ranging from 101 to 113 percent of the thermal line rating are forecasted under 11 separate single contingencies.

For these reasons we find that the Bobwhite-Manatee 230 kV 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

The proposed project would 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. The project will reduce transmission losses by approximately 8 MW. The estimated capital cost of the project is $46.9 million. While the final cost of the project is subject to the final route and length of the line, and other conditions that could be imposed through the Transmission Line Siting Act process, the estimated cost appears reasonable.

FPL evaluated 3 alternatives to the proposed BMP. All three alternatives were transmission modifications to the proposed ROW that proposed using a portion of or all of the existing common ROW. Alternative I consists of building a new 230kV transmission line on new ROW from FPL's existing Manatee Substation to a future Bluejay Transmission Substation located approximately 16 miles southeast of the proposed Bobwhite Substation. The portion of the route from the proposed Bobwhite Substation to the Bluejay Substation would be constructed on the existing ROW. The estimated capital cost of this alternative is $55.0 million. Alternative II consists of building a new 230 kV transmission line from the existing Manatee substation to the existing Howard Substation. This alternative was not considered a viable option because the Howard Substation property is completely full and located in a residential area with no possibility for expansion. Alternative III consists of a new 230kV transmission line extending from FPL's existing Manatee Substation to FPL's proposed future Bobwhite Substation. This alternative would be constructed within the existing ROW, and it would require looping in and out from the existing corridor to the locations of FPL's future distribution substation, thereby increasing the cost. The estimated capital cost of this alternative is $54.6 million. FPL rejected alternatives I and III due to economics, and alternative II because it was not considered a viable option.

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 estimated 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 the existing Manatee Substation and the proposed Bobwhite Substation are the appropriate starting and ending points of the proposed Manatee-Bobwhite 230kV electrical transmission line. Both the Manatee and the proposed Bobwhite Substations are adjacent to FPL future load centers. Also, the Manatee Substation is currently connected to the rest of FPL's electric system via its existing 230kV transmission lines. The proposed Bobwhite Substation will be connected to the Manatee Substation via a new 230kV transmission line in 2011. 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 Manatee-Bobwhite 230kV electrical transmission line project. FPL has adequately demonstrated the need for the proposed Manatee-Bobwhite 230kV electrical transmission line project according to the criteria prescribed in section 403.537, Florida Statutes. This Order memorializing our decision will serve as our report to the Department of Environmental Protection

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 Manatee-Bobwhite 230 kV transmission line is granted. It is further

ORDERED that Florida Power & Light Company's Manatee-Bobwhite 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 28th day of August, 2006.

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 five (5) 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

COMMUNITY ADVISORY PANEL

APPENDIX B

FPL BOBWHITE-MANATEE COMMUNITY ADVISORY PANEL

FPL's project team for the Bobwhite-Manatee transmission line project convened a group of 24 citizens to assist them in the routing of the proposed new transmission line. The Community Advisory Panel was not asked or expected to endorse or support any route selected by FPL. They were asked to share their knowledge of the community and their perspectives to help the FPL team: (1) find a preferred route, (2) minimize the impacts of the project as best they can, and (3) communicate effectively with the community. Panel members were drawn from a wide range of neighborhood and community groups and institutions. Their names and affiliations are listed herein.

- Ellen Adams, Manatee County Rural Health Services
- Michael Adams, Pomello Ranches Homeowners' Association
- David Cole, Parrish Community Foundation
- Gerry Cool, Sarasota County resident, Tatum Ridge/Fruitville Road area
- Jacki Dezelski, Manatee Chamber of Commerce
- Bill Earl, Manatee-Sarasota Sierra Club
- Brad Frank, Primrose School
- Tom Headley, Lakewood Ranch Community Development District 4
- Joan Hodges, Parrish Civic Association
- Michael Hunsader, Hunsader Family Farms
- Chuck Johnston, Sarasota County resident
- Ben Jordan, Parrish Civic Association
- Cookie Jordan, Parrish Civic Association
- Rod Krebs, Indian Creek Development
- Chris Manring, Sarasota Chamber of Commerce
- Iris McClain, Parrish Civic Association
- Peg McGarity, League of Women Voters of Manatee County
- Lynn Mergen, Lakewood Ranch Medical Center
- Dave Minton, Bosshardt Realty Services
- Glenn Peachey, Peachey Dairy
- Glenda Robertson, Lakewood Ranch Community Development District 5
- Phyllis Troy, Lakewood Ranch Community Development District 1
- Sonny Vergara, Mainstream Companies Inc.
- Leslie Wells, Leslie Wells Realty Inc.

The Community Advisory Panel met three times between July and October 2006 to learn about FPL's plans and share their views.

APPENDIX C

AGENCY CONTACTS

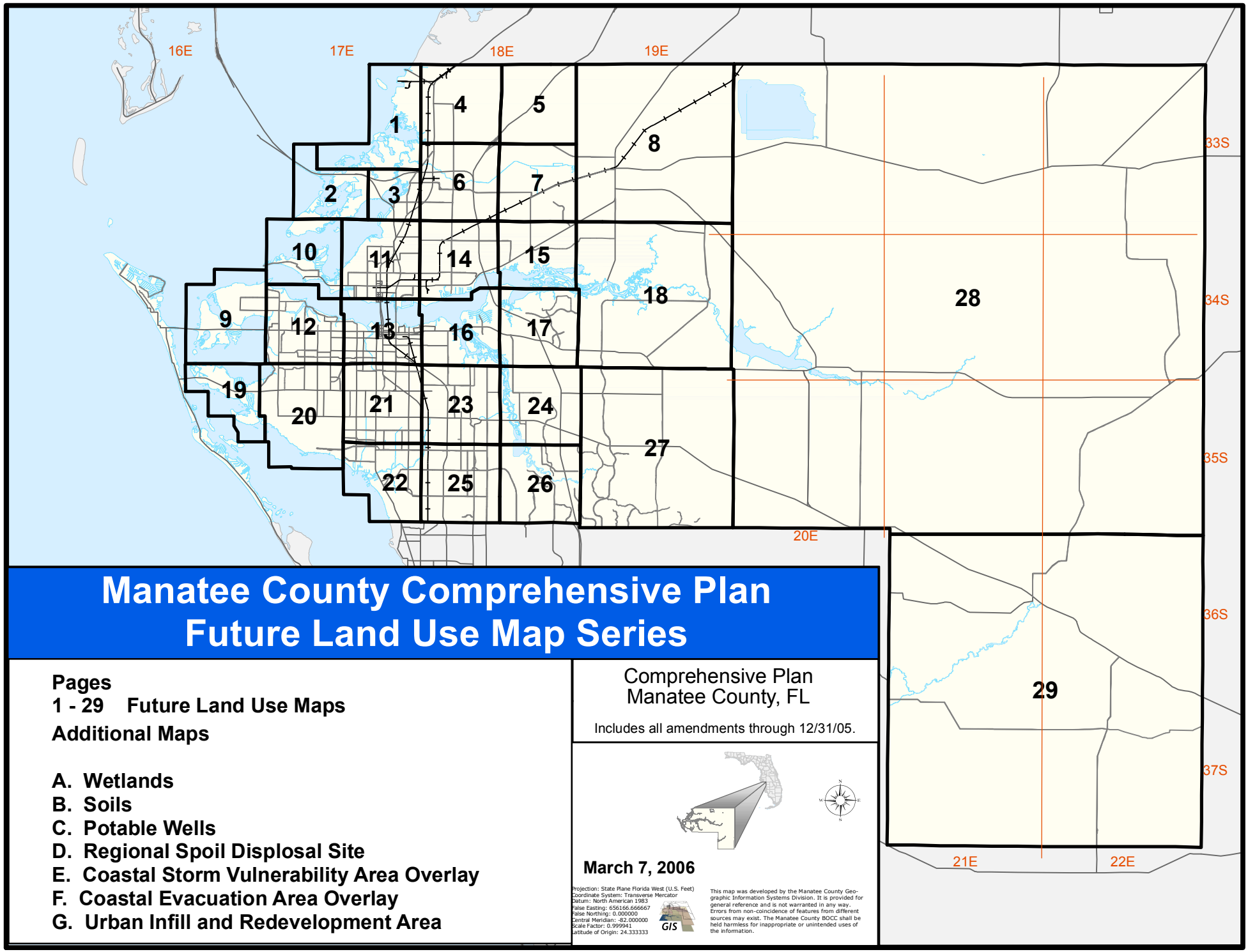
APPENDIX C
AGENCY CONTACTS

Date	Contact Name	Agency	Subject
04/12/06	Iris Hu	Manatee County Property Appraisers	Digital property files
05/02/06	Dorothy Rainy	Manatee County Planning Department	Conservation regulations
05/05/06	Chance Steed	Sarasota County	Wetland regulations
05/08/06	David Crosby	Sarasota County	GIS databases for county
05/31/06	MaryAnn Poole Scott Sanders	FWC	Project introduction
05/31/06	Paul Darst	DCA	Project introduction
05/31/06	Buck Oven Ann Seiler	DEP Siting Office	Project introduction
05/31/06	Gina Sowdes Will Miller	SWFWMD	Project introduction
05/31/06	Mark Peterson Charles Schnepel	USACE	Project introduction
05/31/06	Dave Crawford David Burr	SWFRPC	Project introduction
05/31/06	Suzanne Cooper	TBRPC	Project introduction
06/01/06	Curt Wolbert	FDEP	Project introduction
06/13/06	Ming Gao	FDOT	Future road corridors
06/15/06	Joe Walsh, Ph.D.	FWC	E/T species for study area
06/16/06	Ming Gao	FDOT	Future road corridors
06/21/06	Robert Lasker, Jr.	City of Sarasota	Location of water pipeline
06/21/06	Buck Oven Mike Halpin Ted Murray Gina Sowders Suzanne Cooper Theresa Conner Carolyn Keber George MacFarlane Amy Meese James Dieroff Mike Wood Sarah Schenk	FDEP FDEP FDEP District SWFWMD TBRPC Sarasota County Sarasota County Sarasota County Sarasota County Sarasota County Manatee County Manatee County	Project introductory meeting
06/26/06	Susan Hochuli, P.E.	Peace River/Manatee Regional Water Supply Authority	Possible joint corridor use

Date	Contact Name	Agency	Subject
06/28/06	Susan Hochuli, P.E.	Peace River/Manatee Regional Water Supply Authority	Follow-up information
06/29/06	Danny Lundeen	School Board of Manatee County	Location of schools
07/10/06	Alisa Cline	School Board of Manatee County	Future school sites
07/26/06	Alisa Cline	School Board of Manatee County	Future school sites
08/25/06	Greg Brock	FDEP	Information on state lands
09/08/06	Brooke Elias	Sarasota County	Information on Heritage Ranch Conservation easement
10/11/06	Alisa Cline	School Board of Manatee County	Potential school sites along preferred route
10/11/06	Kent Perez Diana Sawaya-Crane Jim Boxold Kevin Stanfield	Office of the Governor Office of the Attorney General Office of the Commissioner, Agriculture and Consumer Services Office of Chief Financial Officer	Project introduction
10/25/06	Ginny Jones	DHR	Master Site File search
10/26/06	Dawn Creamer	DHR	Master Site File search

APPENDIX D

FUTURE LAND USE MAPS



Manatee County Comprehensive Plan
Future Land Use Map Series

Pages
1 - 29 Future Land Use Maps
Additional Maps

A. Wetlands
B. Soils
C. Potable Wells
D. Regional Spoil Displosal Site
E. Coastal Storm Vulnerability Area Overlay
F. Coastal Evacuation Area Overlay
G. Urban Infill and Redevelopment Area

Comprehensive Plan
Manatee County, FL

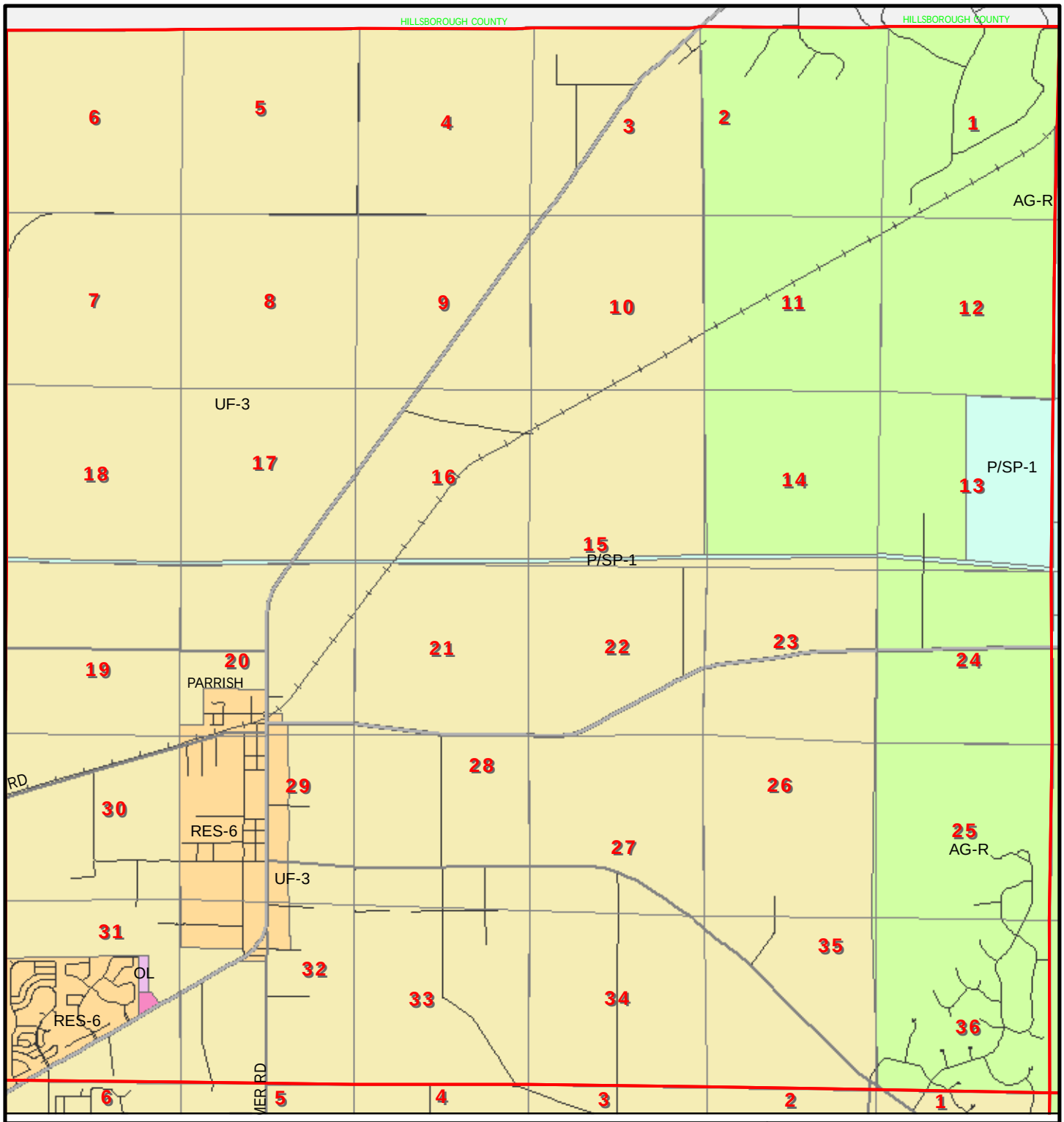
Includes all amendments through 12/31/05.

March 7, 2006

Projection: State Plane Florida West (U.S. Feet)
Coordinate System: Transverse Mercator
Datum: North American 1983
False Easting: 656166.666667
False Northing: 0.000000
Central Meridian: -82.000000
Scale Factor: 0.999941
Latitude of Origin: 24.333333

GIS

This map was developed by the Manatee County Geographic Information Systems Division. It is provided for general reference and is not warranted in any way. Errors from non-coincidence of features from different sources may exist. The Manatee County BOCC shall be held harmless for inappropriate or unintended uses of the information.



Manatee County
Future Land Use Map Series

1 inch equals 4,294 feet

Map 8 of 29

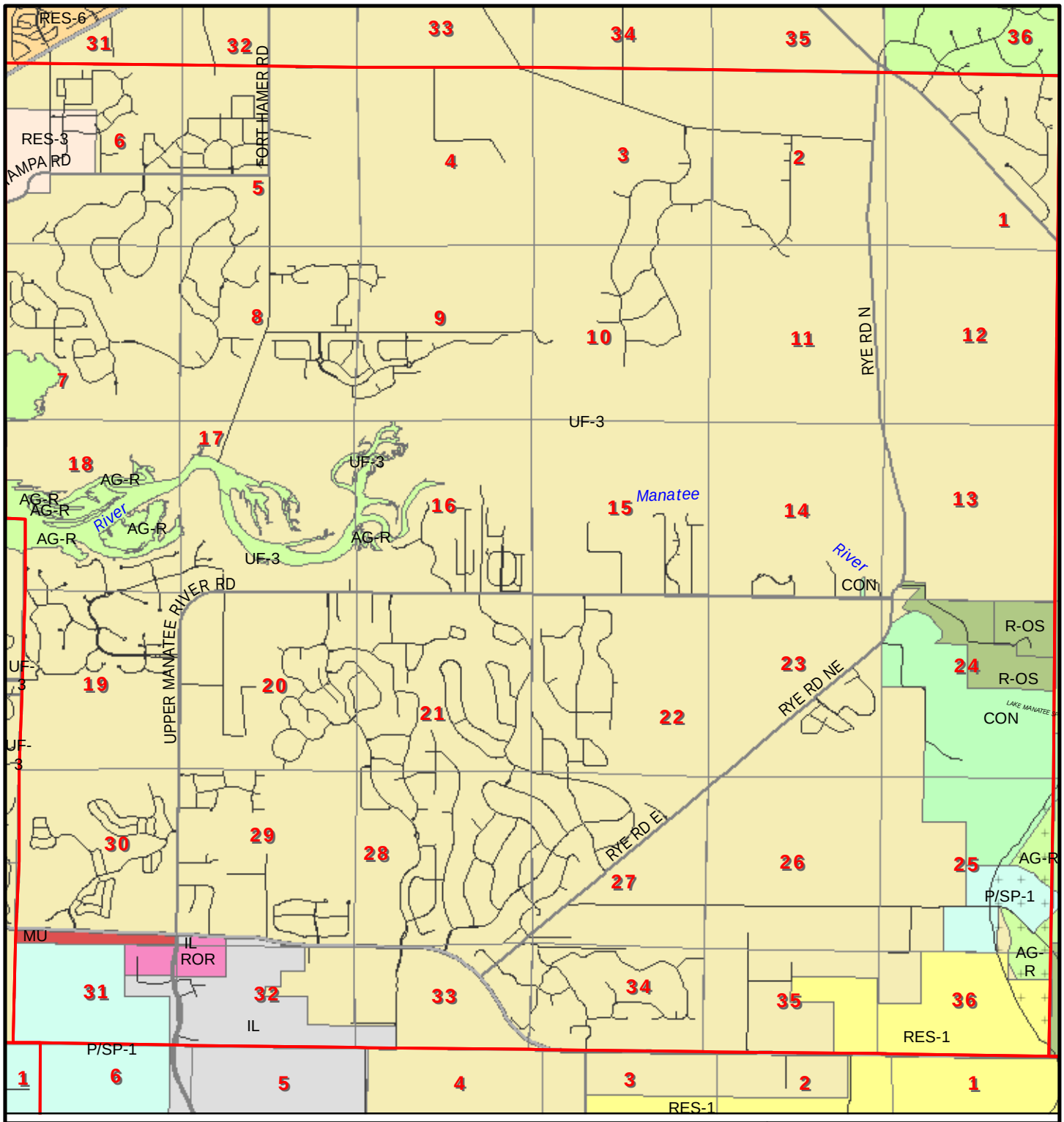
AG-R	RES-6	MU	OL	ROR	36 Section
CON	RES-9	IH	P/SP-1	CITY	Township/Range
RES-1	RES-16	IL	P/SP-2	ICR	33 / 19 Watershed Overlay
RES-3	UF-3	IU	R-OS		Historical Overlay

Affordable housing density bonuses consistent with policy 6.1.3.5 may be considered.

Site Map

This maps was developed by the Planning Department with the use of Manatee County's Geographic Information System. It is intended for general reference, is subject to change, and is not warranted in any way.

Mar 07, 2006



Manatee County
Future Land Use Map Series

1 inch equals 4,255 feet

Map 18 of 29

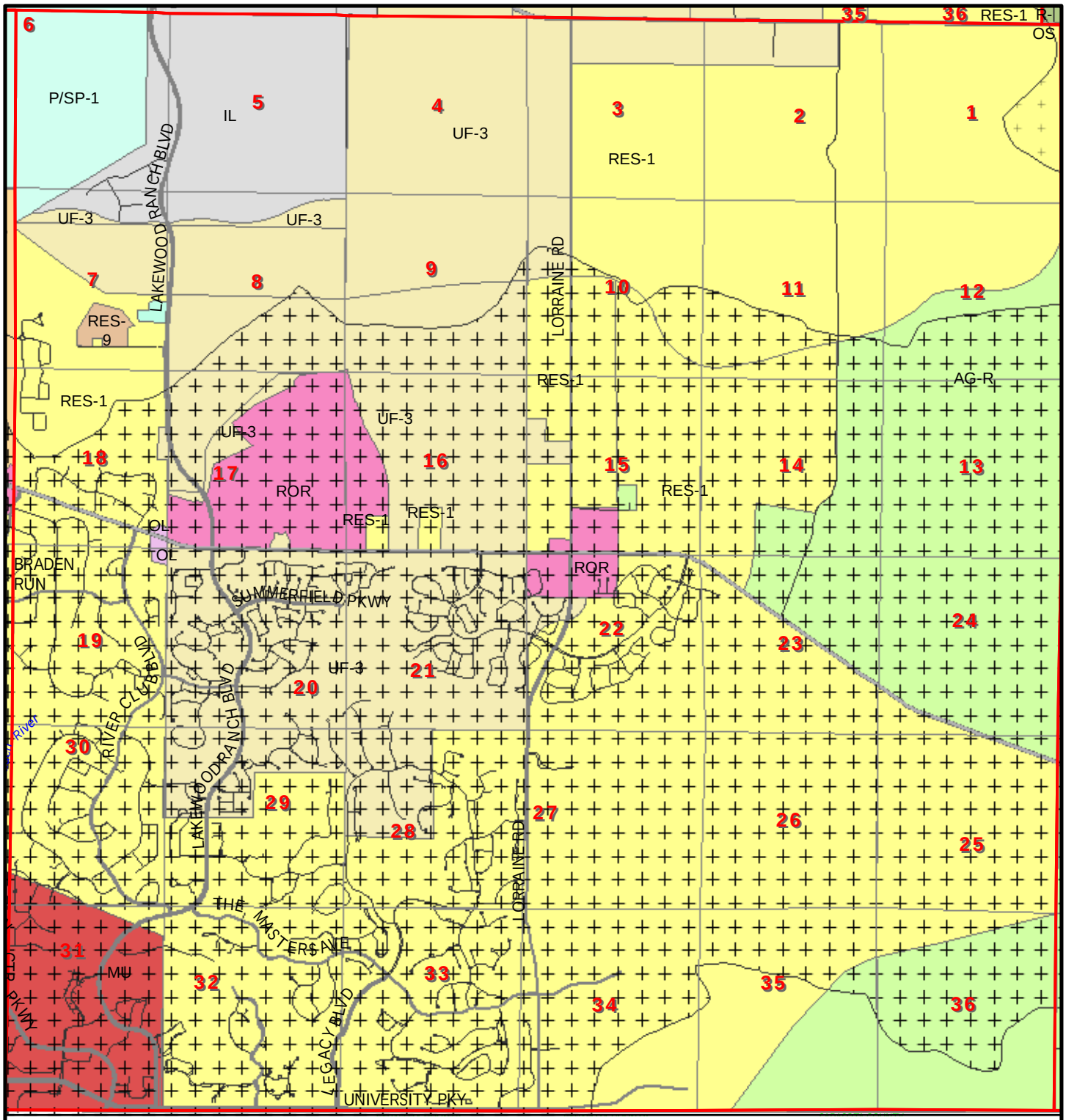
AG-R	RES-6	MU	OL	ROR	36 Section
CON	RES-9	IH	P/SP-1	CITY	Township/Range
RES-1	RES-16	IL	P/SP-2	ICR	34 / 19 Watershed Overlay
RES-3	UF-3	IU	R-OS		Historical Overlay

Affordable housing density bonuses consistent with policy 6.1.3.5 may be considered.

Site Map

This maps was developed by the Planning Department with the use of Manatee County's Geographic Information System. It is intended for general reference, is subject to change, and is not warranted in any way.

Mar 17, 2006



Manatee County
Future Land Use Map Series

1 inch equals 4,190 feet

Map 27 of 29

AG-R
CON
RES-1
RES-3
RES-6
RES-9
RES-16
UF-3
MU
IH
IL
IU
OL
P/SP-1
P/SP-2
R-OS
ROR
CITY
ICR
36 Section
Township/Range 35 / 19
Watershed Overlay
Historical Overlay

Site Map

Affordable housing density bonuses consistent with policy 6.1.3.5 may be considered.

This maps was developed by the Planning Department with the use of Manatee County's Geographic Information System. It is intended for general reference, is subject to change, and is not warranted in any way.

Mar 07, 2006

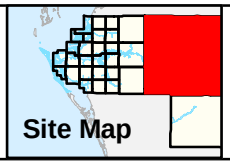
Manatee County
Future Land Use Map Series

1 inch equals 12,890 feet

Map 28 of 29

AG-R	RES-6	MU	OL	ROR	36 Section
CON	RES-9	IH	P/SP-1	CITY	Township/Range
RES-1	RES-16	IL	P/SP-2	ICR	Watershed Overlay
RES-3	UF-3	IU	R-OS		Historical Overlay

Affordable housing density bonuses consistent with policy 6.1.3.5 may be considered.



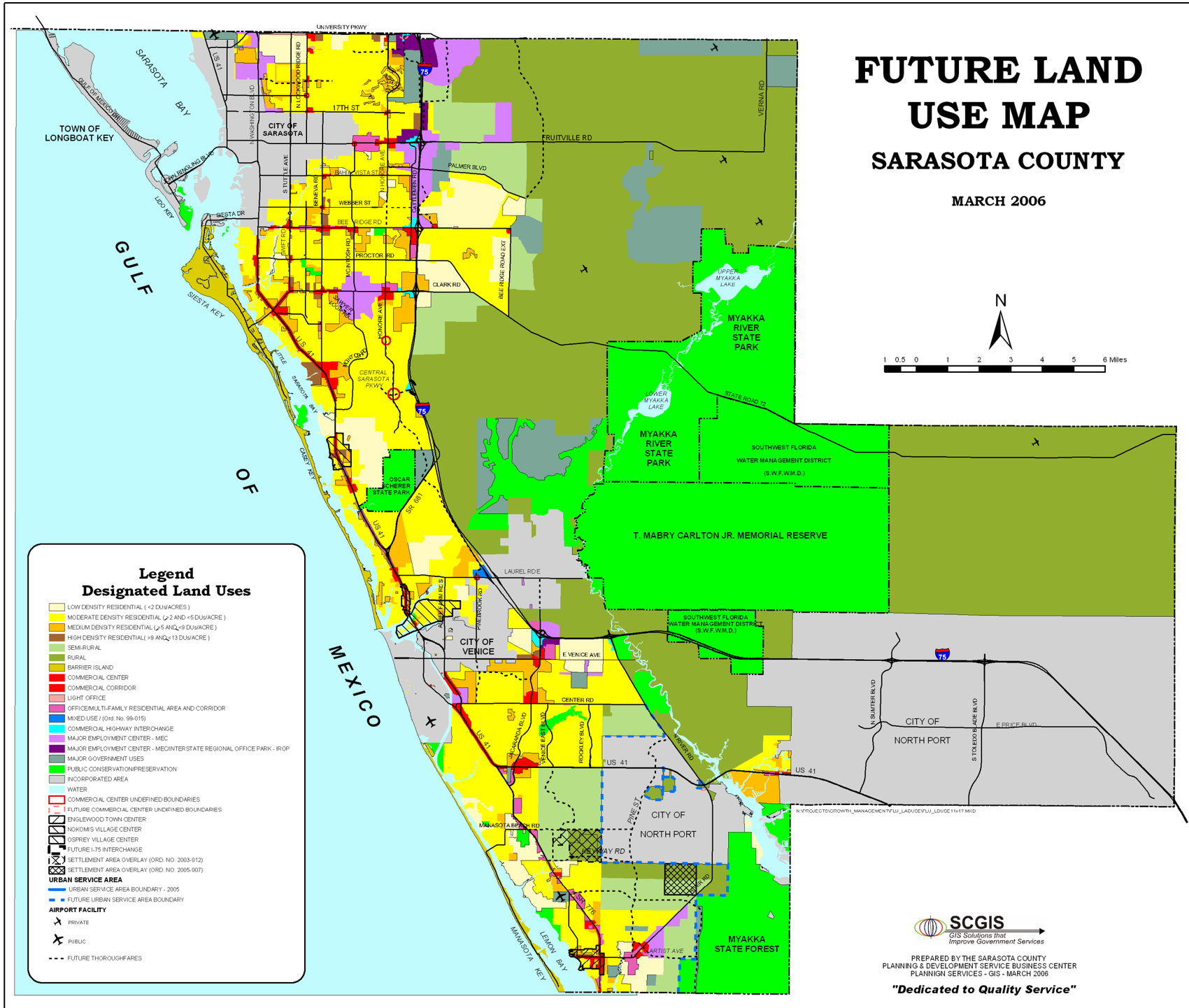
This maps was developed by the Planning Department with the use of Manatee County's Geographic Information System. It is intended for general reference, is subject to change, and is not warranted in any way.

Mar 07, 2006

FUTURE LAND USE MAP

SARASOTA COUNTY

MARCH 2006



N

1 0.5 0 1 2 3 4 5 6 Miles

Legend
Designated Land Uses

- LOW DENSITY RESIDENTIAL (<2 DUs/ACRES)
- MODERATE DENSITY RESIDENTIAL (≥ 2 AND <5 DUs/ACRE)
- MEDIUM DENSITY RESIDENTIAL (≥ 5 AND <9 DUs/ACRE)
- HIGH DENSITY RESIDENTIAL(>9 AND<13 DUs/ACRE)
- SEMI-RURAL
- RURAL
- BARRIER ISLAND
- COMMERCIAL CENTER
- COMMERCIAL CORRIDOR
- LIGHT OFFICE
- OFFICE/MULTI-FAMILY RESIDENTIAL AREA AND CORRIDOR
- MIXED USE / (Ord. No. 99-015)
- COMMERCIAL HIGHWAY INTERCHANGE
- MAJOR EMPLOYMENT CENTER - MEC
- MAJOR EMPLOYMENT CENTER - MEC/INTERSTATE REGIONAL OFFICE PARK - IROP
- MAJOR GOVERNMENT USES
- PUBLIC CONSERVATION/PRESERVATION
- INCORPORATED AREA
- WATER
- COMMERCIAL CENTER UNDEFINED BOUNDARIES
- FUTURE COMMERCIAL CENTER UNDEFINED BOUNDARIES
- ENGLEWOOD TOWN CENTER
- NOKOMIS VILLAGE CENTER
- OSPREY VILLAGE CENTER
- FUTURE I-75 INTERCHANGE
- SETTLEMENT AREA OVERLAY (ORD. NO. 2003-012)
- SETTLEMENT AREA OVERLAY (ORD. NO. 2005-007)

URBAN SERVICE AREA

- URBAN SERVICE AREA BOUNDARY - 2005
- FUTURE URBAN SERVICE AREA BOUNDARY

AIRPORT FACILITY

- PRIVATE
- PUBLIC
- FUTURE THOROUGHFARES

SCGIS
GIS Solutions that Improve Government Services

PREPARED BY THE SARASOTA COUNTY
PLANNING & DEVELOPMENT SERVICE BUSINESS CENTER
PLANNIGN SERVICES - GIS - MARCH 2006

"Dedicated to Quality Service"

INTERACTIVE FUTURE LAND USE MAP CAN BE FOUND AT:
WWW.SCGOV.NET

1. CLICK ON 'MAPS'
2. RELATED LINKS CLICK ON 'INTERACTIVE MAPS'
3. CLICK ON 'ZONING LOOKUP MAP'
4. UPPER LEFT CLICK ON 'LAYERS' TO TURN LAYER ON/OFF

NOTE: THIS MAP CANNOT BE CORRECTY INTERPRETED INDEPENDENT OF THE SARASOTA COUNTY COMPREHENSIVE PLAN AS ADOPTED BY SARASOTA COUNTY ORDINANCE NO. 89-18, AS THE SAME MAY BE AMENDED FROM TIME TO TIME. THE BOUNDARIES OF LAND USE DESIGNATIONS, WHERE THEY HAVE BEEN ESTABLISHED, MAY BE REVIEWED AT SARASOTA COUNTY PLANNING & DEVELOPMENT SERVICE BUSINESS CENTER, 1660 RINGLING BOULEVARD, SARASOTA, FLORIDA.

Comprehensive Plan Amendments:

RU-27 Adopted by Ordinance No. 96-027 – April 30, 1996
RU-41 Adopted by Ordinance No. 98-050 – June 09, 1998
RU-44 Adopted by Ordinance No. 98-053 – June 09, 1998
RU-47 Adopted by Ordinance No. 99-015 – Feb. 09, 1999
RU-51 Adopted by Ordinance No. 98-024 – July 14, 1998
RU 52 Adopted by Ordinance No. 98 034 – May 26, 1998
RU-53 Adopted by Ordinance No. 99-026 – April 27, 1999
RU-55 Adopted by Ordinance No. 99-028 – April 27, 1999
RU-58 Adopted by Ordinance No. 98-094 – Dec. 06, 1998
RU-59 Adopted by Ordinance No. 99-053 – July 14, 1999
RU-67 Adopted by Ordinance No. 00-013 – Feb. 23, 2000
RU-70 Adopted by Ordinance No. 00-023 – Mar. 15, 2000
RU-71 Adopted by Ordinance No. 00-055 – Oct. 16, 2000
RU-72 Adopted by Ordinance No. 01-016 – May 23, 2001
RU-78 Adopted by Ordinance No. 00-055 – Oct. 16, 2000
RU-79 Adopted by Ordinance No. 01-004 – Feb. 12, 2001
RU-80 Adopted by Ordinance No. 01-015 – April 16, 2001
RU-81 Adopted by Ordinance No. 01-046 – June 19, 2001
RU-82 Adopted by Ordinance No. 01-092 – Dec. 12, 2001
RU-83 Adopted by Ordinance No. 01-093 – Dec. 12, 2001
RU-84 Adopted by Ordinance No. 01-094 – Sept.26, 2001
RU-86 Adopted by Ordinance No. 01-241 – Dec. 12, 2001
RU-87 Adopted by Ordinance No. 01-078 – Nov. 19, 2001
RU-89 Adopted by Ordinance No. 02-025 – May 24, 2002
RU-90 Adopted by Ordinance No. 02-038 – July 31, 2002
RU-91 Adopted by Ordinance No. 02-260 – Sept 25, 2002
RU-94 Adopted by Ordinance No. 02-255 – Sept 24, 2002
RU-95 Adopted by Ordinance No. 03-011 – Sept 24, 2002
RU-97 Adopted by Ordinance No. 03-012 – Sept 24, 2002
RU-100 Adopted by Ordinance No. 03-053 – Oct. 21, 2003
RU-102 Adopted by Ordinance No. 03-045 – June 02, 2003
RU-103 Adopted by Ordinance No. 03-078 – Oct. 07, 2003
RU-105 Adopted by Ordinance No. 04-002 – Jan 14, 2004
RU-110 Adopted by Ordinance No. 04-007 – Jan 14, 2004
RU-111 Adopted by Ordinance No. 04-008 – Jan 14, 2004
RU-114 Adopted by Ordinance No. 05-001 – Feb. 08, 2005
RU-115 Adopted by Ordinance No. 05-002 – Feb. 08, 2005
RU-121 Adopted by Ordinance No. 05-007 – Feb. 08, 2005
RU-122 Adopted by Ordinance No. 05-008 – Feb. 08, 2005
RU-123 Adopted by Ordinance No. 05-009 – Feb. 08, 2005
RU-124 Adopted by Ordinance No. 05-030 – April 27, 2005
RU-125 Adopted by Ordinance No. 05-053 – Sept. 14, 2005
RU-128 Adopted by Ordinance No. 05-066 – Dec 6, 2005
RU-129 Adopted by Ordinance No. 06-023 – Mar 15, 2006

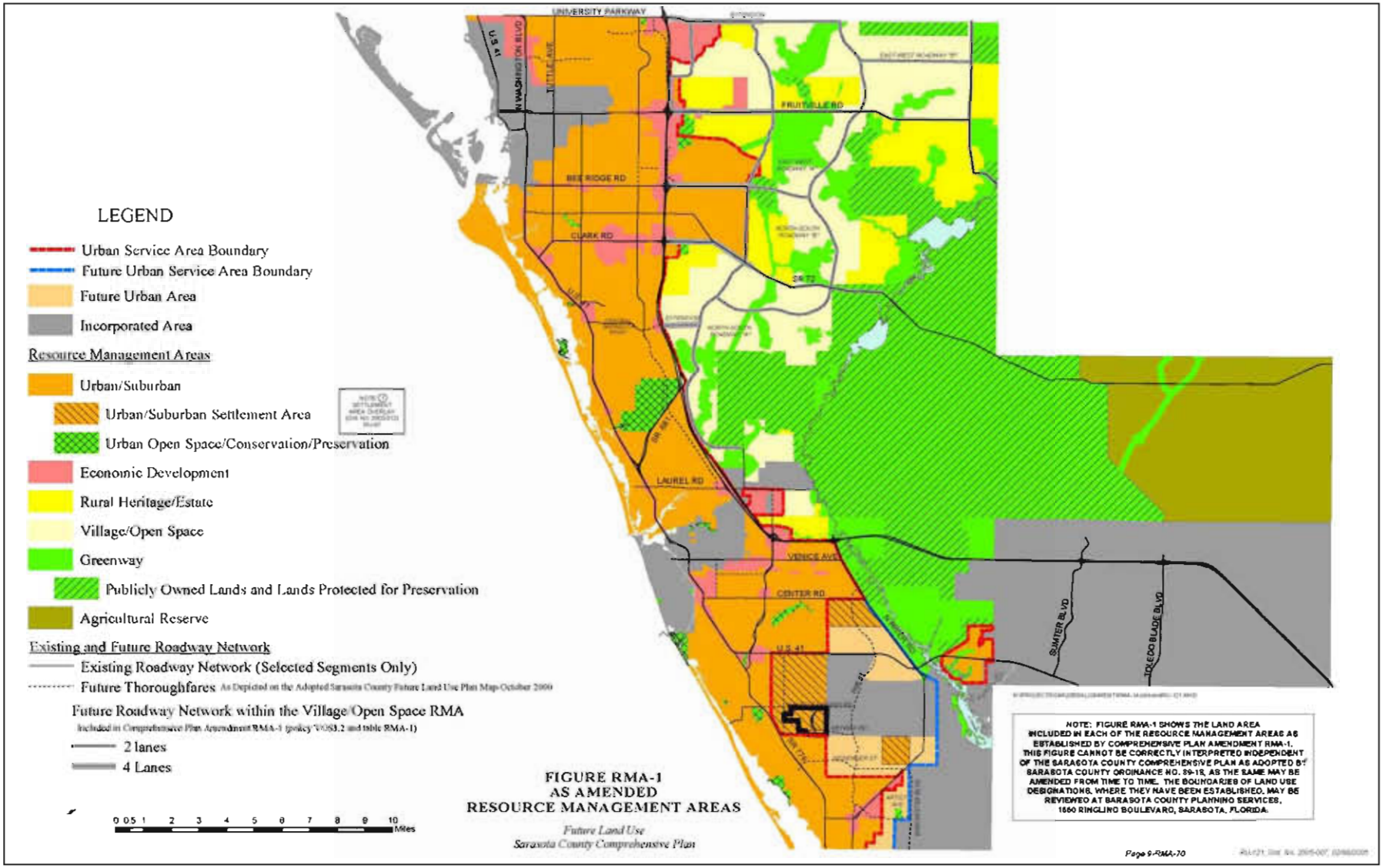
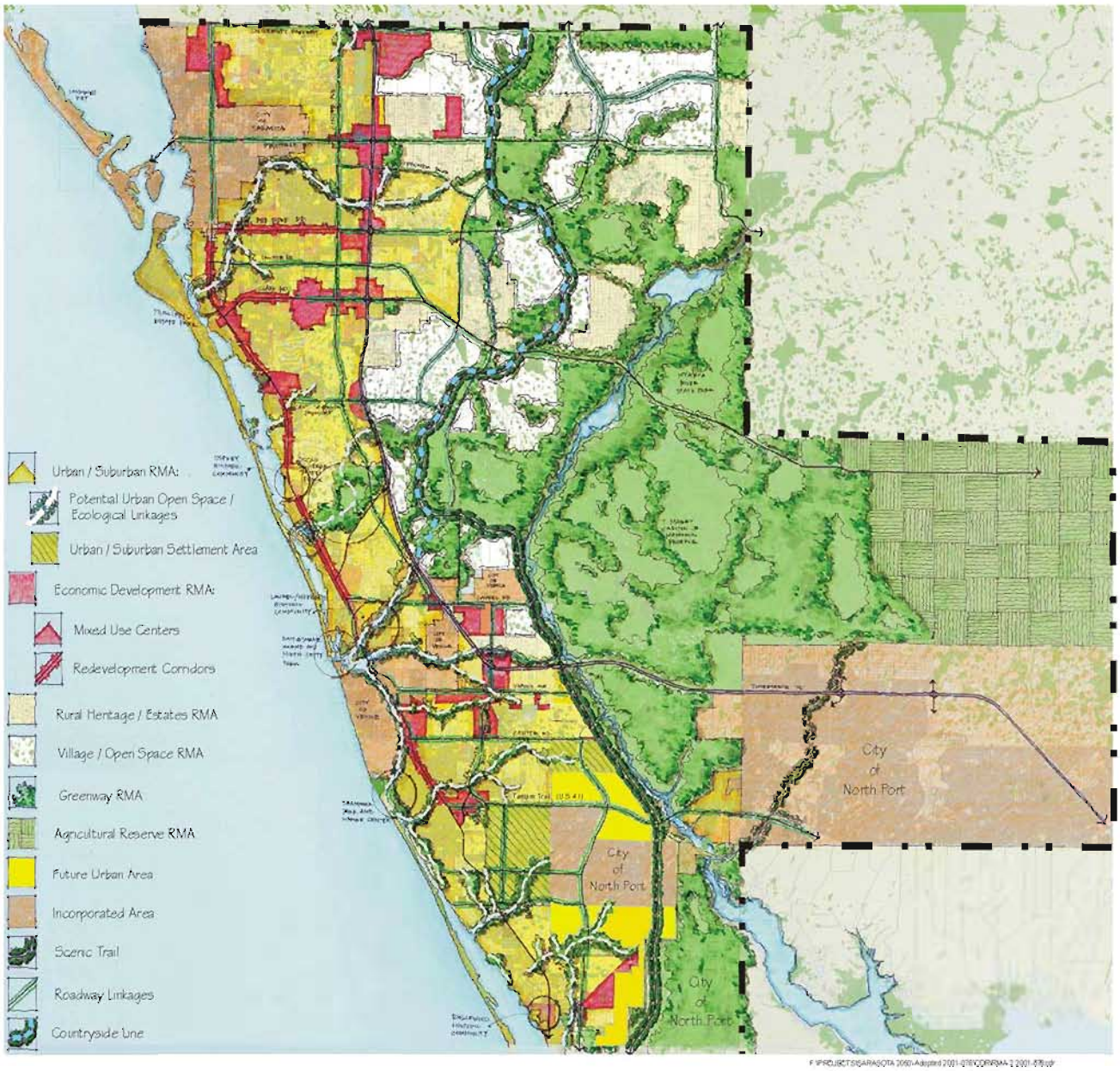


FIGURE RMA-1
AS AMENDED
RESOURCE MANAGEMENT AREAS

Future Land Use
Sarasota County Comprehensive Plan



F:\PROJECTS\SARASOTA 2050\Adopted 2001-076\CORRMA-2 2001-076.cdr

NOTES:

FIGURE RMA-2 IS A GRAPHIC ILLUSTRATION THAT DEMONSTRATES THE RESOURCE MANAGEMENT AREA IDEALS ESTABLISHED BY COMPREHENSIVE PLAN AMENDMENT RMA-1. THIS FIGURE PROVIDES NO REGULATORY FUNCTION WITHIN THE COMPREHENSIVE PLAN. THIS FIGURE CANNOT BE CORRECTLY INTERPRETED INDEPENDENT OF THE SARASOTA COUNTY COMPREHENSIVE PLAN AS ADOPTED BY SARASOTA COUNTY ORDINANCE NO. 89-18, AS THE SAME MAY BE AMENDED FROM TIME TO TIME. THE BOUNDARIES OF LAND USE DESIGNATIONS, WHERE THEY HAVE BEEN ESTABLISHED, MAY BE REVIEWED AT SARASOTA COUNTY GROWTH MANAGEMENT, 1660 RINGLING BOULEVARD, SARASOTA, FLORIDA.

FIGURE RMA-2
SARASOTA 2050 STRUCTURE GRAPHIC

Future Land Use
Sarasota County Comprehensive Plan

7/05/02

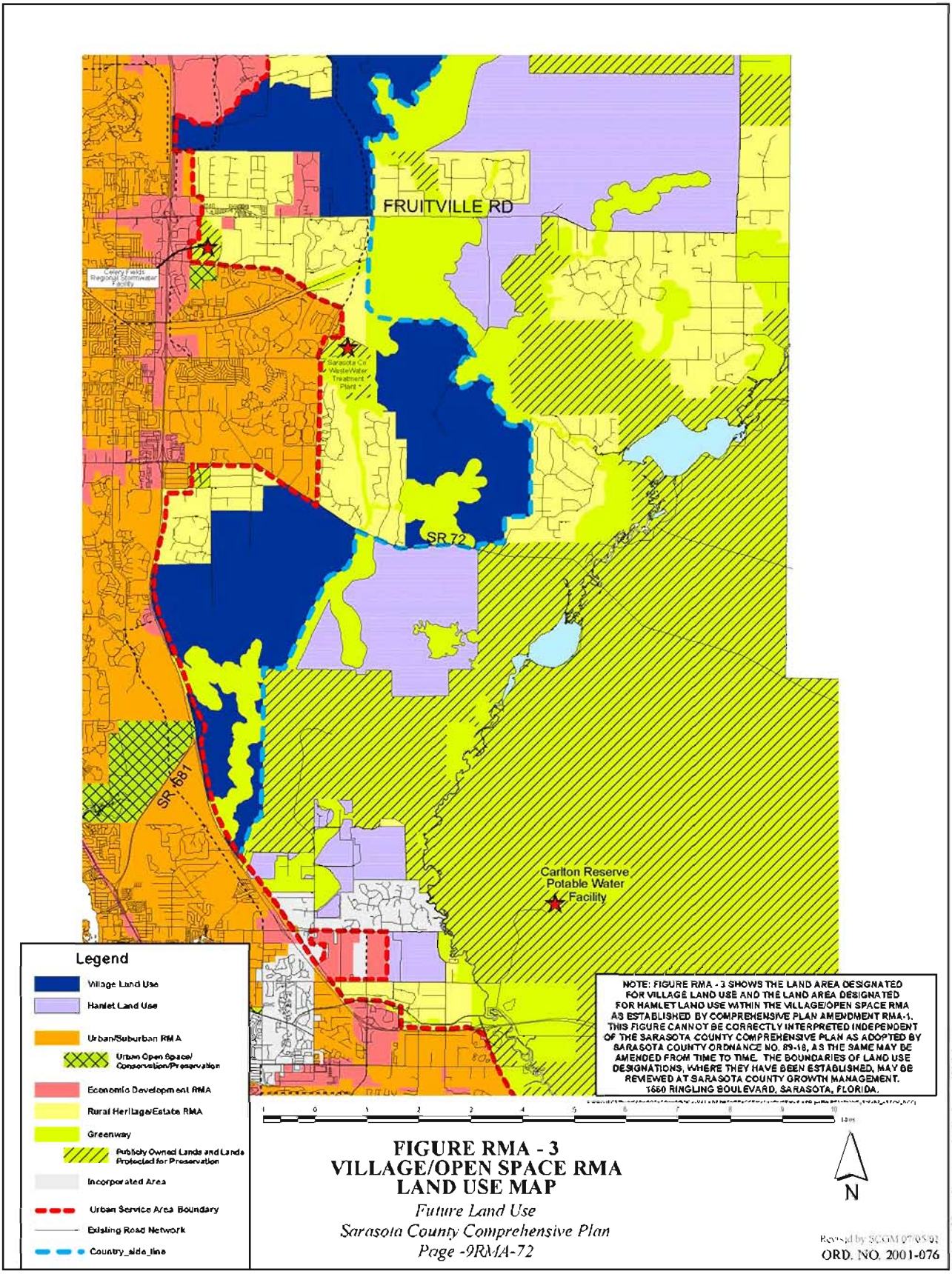
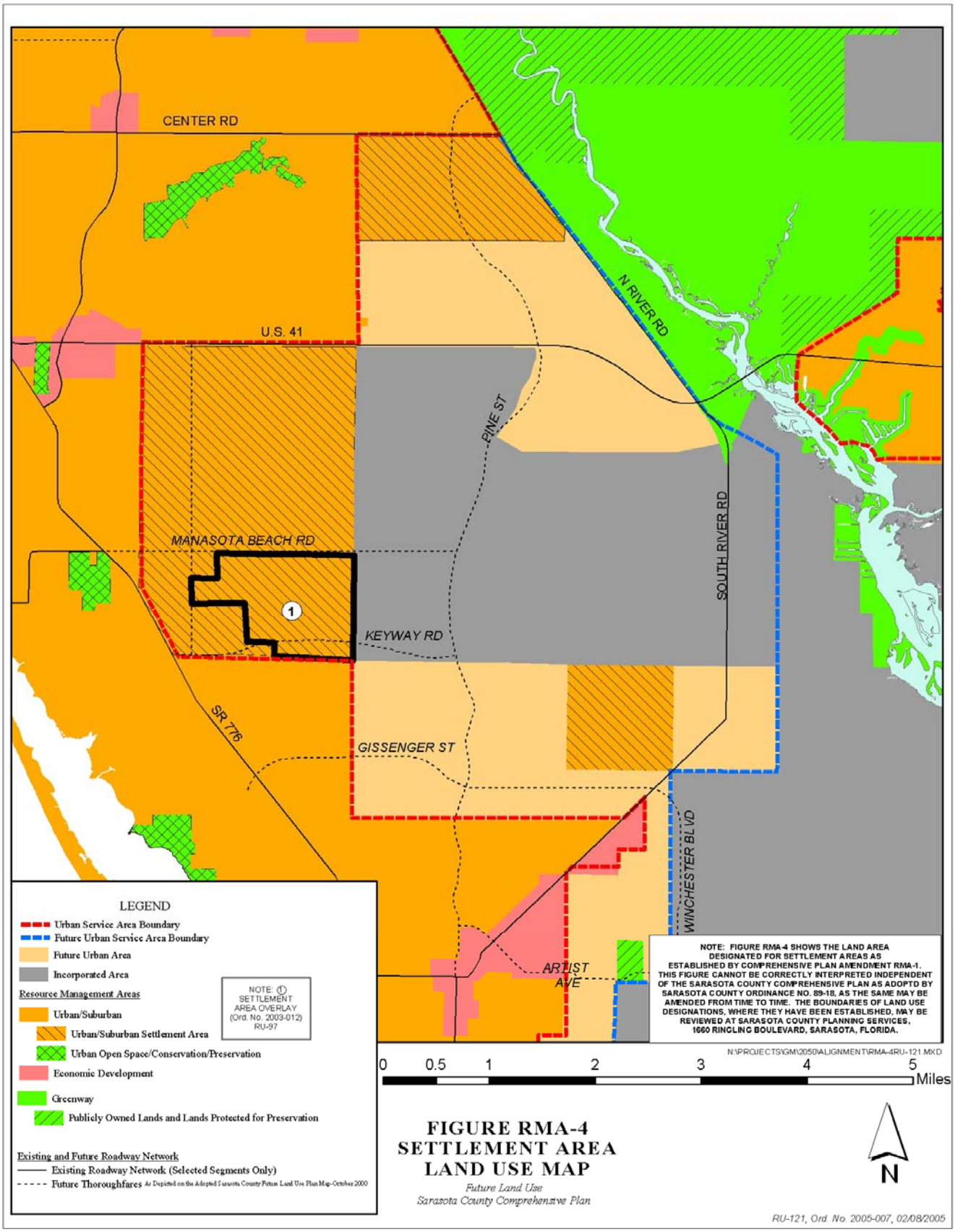


FIGURE RMA - 3
VILLAGE/OPEN SPACE RMA
LAND USE MAP

Future Land Use
Sarasota County Comprehensive Plan
Page -9RMA-72

Revised by SCGM 07/05/01
ORD. NO. 2001-076

N:\Projects\GrowthManagement\2050\Alignment\RMA-3.mxd


CENTER RD
U.S. 41
N RIVER RD
PINE ST
SOUTH RIVER RD
MANASOTA BEACH RD
1
KEYWAY RD
SR 776
GISSENGER ST
WINCHESTER BLVD
ARTIST AVE
LEGEND
Urban Service Area Boundary
Future Urban Service Area Boundary
Future Urban Area
Incorporated Area
Resource Management Areas
Urban/Suburban
Urban/Suburban Settlement Area
Urban Open Space/Conservation/Preservation
Economic Development
Greenway
Publicly Owned Lands and Lands Protected for Preservation
Existing and Future Roadway Network
Existing Roadway Network (Selected Segments Only)
Future Thoroughfares As Depicted on the Adopted Sarasota County Future Land Use Plan Map-October 2000
NOTE: ① SETTLEMENT AREA OVERLAY (Ord. No. 2003-012) RU-97
NOTE: FIGURE RMA-4 SHOWS THE LAND AREA DESIGNATED FOR SETTLEMENT AREAS AS ESTABLISHED BY COMPREHENSIVE PLAN AMENDMENT RMA-1. THIS FIGURE CANNOT BE CORRECTLY INTERPRETED INDEPENDENT OF THE SARASOTA COUNTY COMPREHENSIVE PLAN AS ADOPTD BY SARASOTA COUNTY ORDINANCE NO. 89-18, AS THE SAME MAY BE AMENDED FROM TIME TO TIME. THE BOUNDARIES OF LAND USE DESIGNATIONS, WHERE THEY HAVE BEEN ESTABLISHED, MAY BE REVIEWED AT SARASOTA COUNTY PLANNING SERVICES, 1660 RINGLING BOULEVARD, SARASOTA, FLORIDA.
N:\PROJECTS\GM\2050\ALIGNMENT\RMA-4RU-121.MXD
0 0.5 1 2 3 4 5 Miles
N
FIGURE RMA-4
SETTLEMENT AREA
LAND USE MAP
Future Land Use
Sarasota County Comprehensive Plan
RU-121, Ord. No. 2005-007, 02/08/2005

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

Bobwhite-Manatee
Name of Transmission Line/InterestPoint

January 03, 2011
Date of Proposed Construction

Florida Power and Light Co.
PO Box 14000, Juno Beach, FL 33408-0420
Name and Address of Facility (Utility) Owner

Greg Keller
PO Box 14000, Juno Beach, FL 33408-0420
Name and Address of Professional Engineer

Greg Keller
PO Box 14000, Juno Beach, FL 33408-0420
Name and Address of Authorized Agent

Signature of Authorized Agent

Date

Signature and Seal of Professional Engineer

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)
Manatee Plant	1000	**4.3**	500	**0.0**	1000	**1.8**	1000

Substations

None

Details for CrossSection: **Manatee Plant- BWM**

Bobwhite	230 kV	**NEW CIRCUIT**
Circuit Name	Rated Voltage	New/Existing

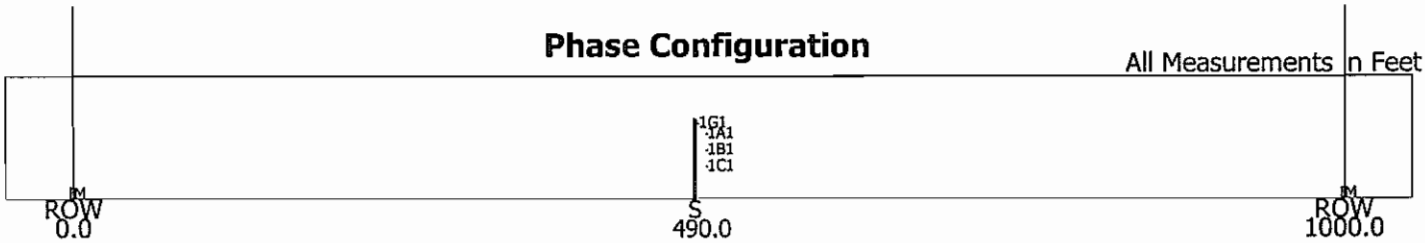
Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors # of	SubConductors Diameter (in)	SubConductors Spacing (in)	Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
1A1	500.00	10.00	51.00	2	1.20	12.00	230.0	0	2990
1B1	500.00	10.00	38.00	2	1.20	12.00	230.0	120	2990
1C1	500.00	10.00	25.00	2	1.20	12.00	230.0	240	2990
1G1	493.50	3.50	59.50	1	0.38	0.00	0.0	0	0

Points of Interest

None

Phase Configuration

All Measurements in Feet



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

Bobwhite-Manatee
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January 03, 2011
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Name and Address of Facility (Utility) Owner

Greg Keller
PO Box 14000, Juno Beach, FL 33408-0420
Name and Address of Professional Engineer

Greg Keller
PO Box 14000, Juno Beach, FL 33408-0420
Name and Address of Authorized Agent

Signature of Authorized Agent

Date

Signature and Seal of Professional Engineer

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)
Cross Country	75	**2.2**	56	**1.6**	75	**146.3**	75

Substations

None

Details for CrossSection: **Cross Country- Triangular Configuration**

Bobwhite	230 kV	**NEW CIRCUIT**
Circuit Name	Rated Voltage	New/Existing

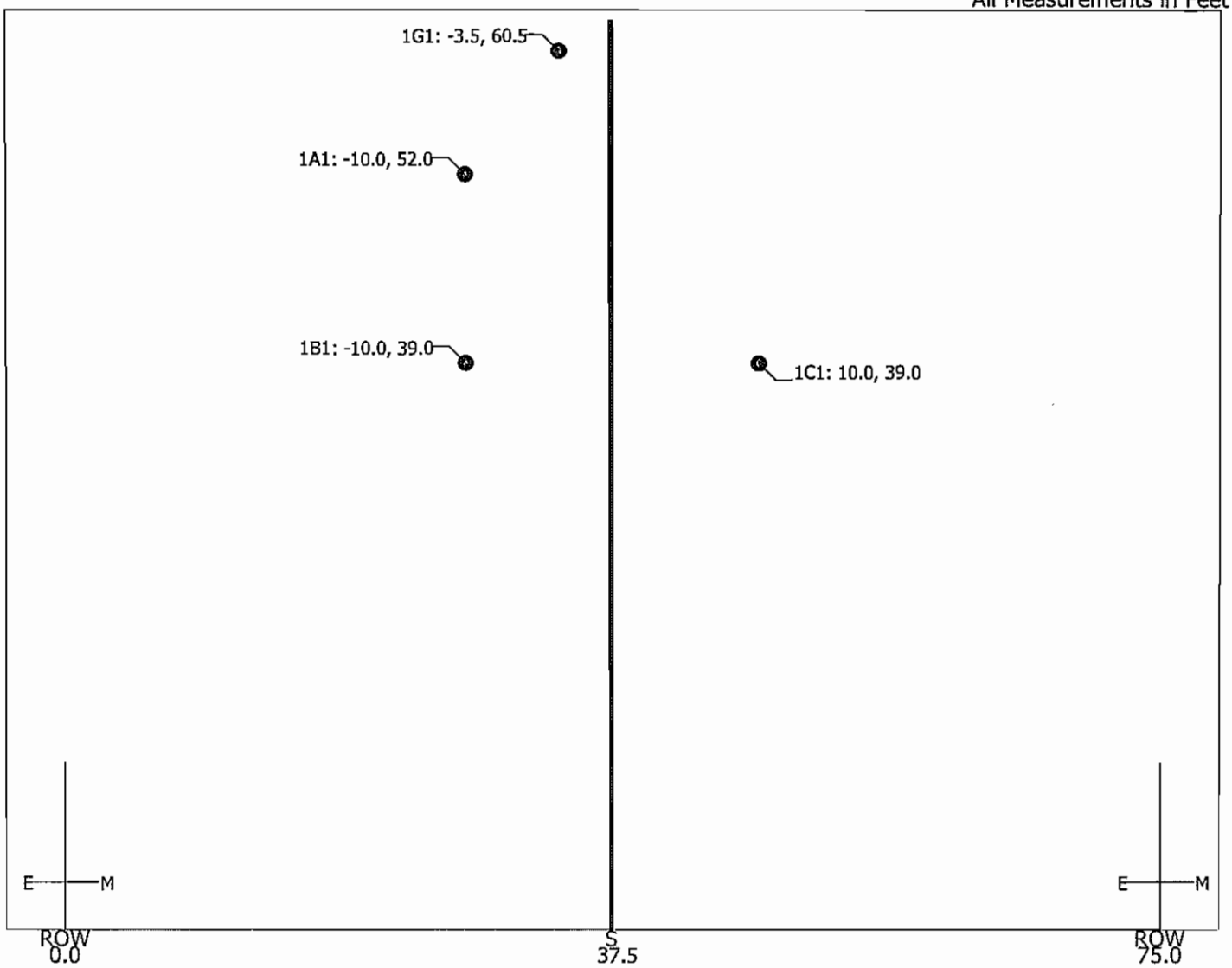
Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors # of	SubConductors Diameter (in)	SubConductors Spacing (in)	Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
1A1	27.50	-10.00	52.00	2	1.20	12.00	246.0	0	2990
1B1	27.50	-10.00	39.00	2	1.20	12.00	246.0	120	2990
1C1	47.50	10.00	39.00	2	1.20	12.00	246.0	240	2990
1G1	34.00	-3.50	60.50	1	0.38	0.00	0.0	0	0

Points of Interest

None

Phase Configuration

All Measurements in Feet



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

Bobwhite-Manatee
Name of Transmission Line/InterestPoint

January 03, 2011
Date of Proposed Construction

Florida Power and Light Co.
PO Box 14000, Juno Beach, FL 33408-0420
Name and Address of Facility (Utility) Owner

Greg Keller
PO Box 14000, Juno Beach, FL 33408-0420
Name and Address of Professional Engineer

Greg Keller
PO Box 14000, Juno Beach, FL 33408-0420
Name and Address of Authorized Agent

Signature of Authorized Agent

Date

Signature and Seal of Professional Engineer

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)
Cross Country	75	**2.6**	37	**0.4**	0	**149.0**	75

Substations

None

Details for CrossSection: **Cross Country- Vertical Configuration**

Bobwhite	230 kV	**NEW CIRCUIT**
Circuit Name	Rated Voltage	New/Existing

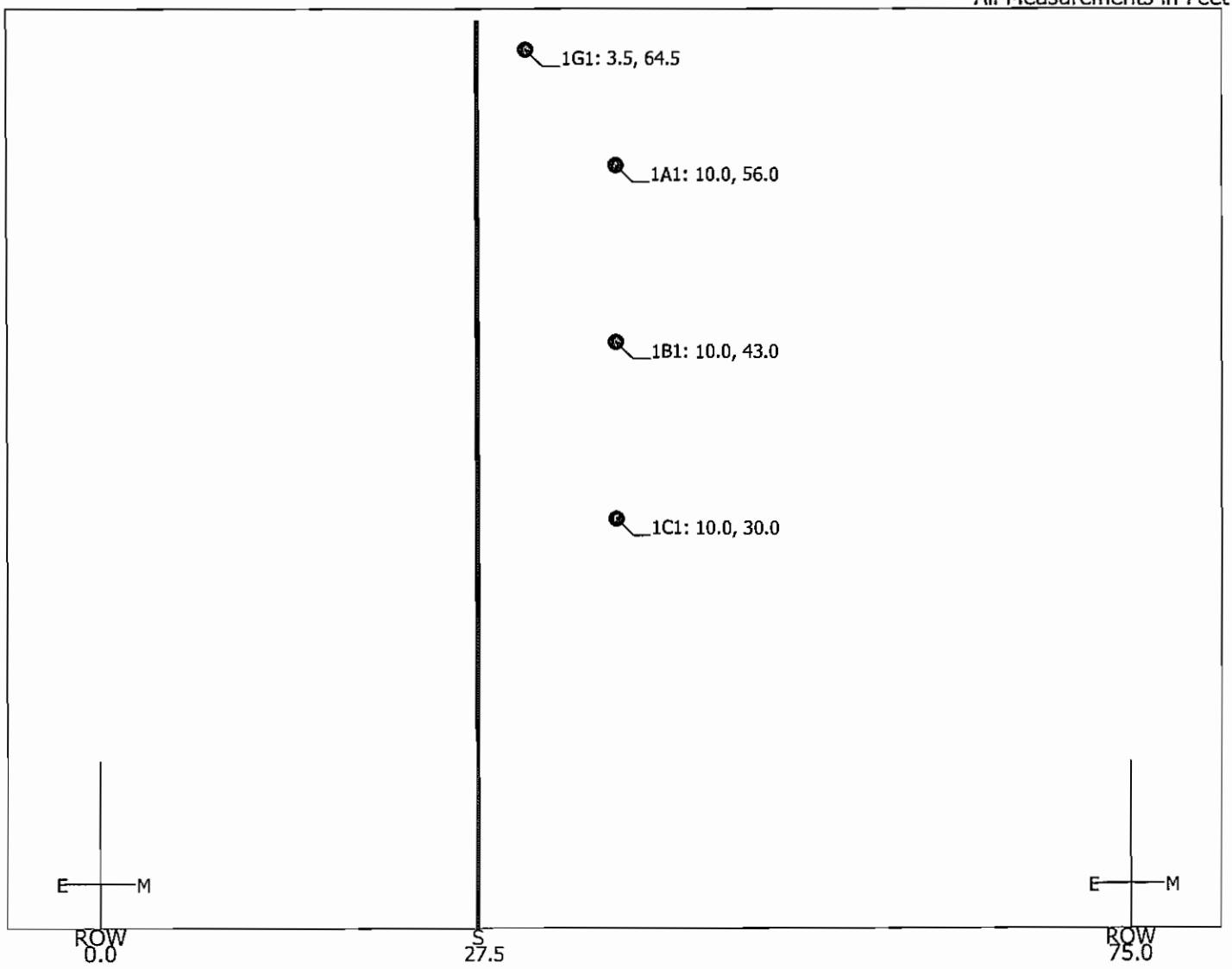
Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors # of	SubConductors Diameter (in)	SubConductors Spacing (in)	Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
1A1	37.50	10.00	56.00	1	1.20	12.00	246.0	0	2990
1B1	37.50	10.00	43.00	1	1.20	12.00	246.0	120	2990
1C1	37.50	10.00	30.00	1	1.20	12.00	246.0	240	2990
1G1	31.00	3.50	64.50	1	0.38	0.00	0.0	0	0

Points of Interest

None

Phase Configuration

All Measurements in Feet



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Name and Address of Authorized Agent

Signature of Authorized Agent

Date

Signature and Seal of Professional Engineer

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)
River Crossing	90	**1.6**	2	**1.6**	0	**145.9**	0

Substations

None

Details for CrossSection: **River Crossing- BWM**

Bobwhite	230 kV	**NEW CIRCUIT**
Circuit Name	Rated Voltage	New/Existing

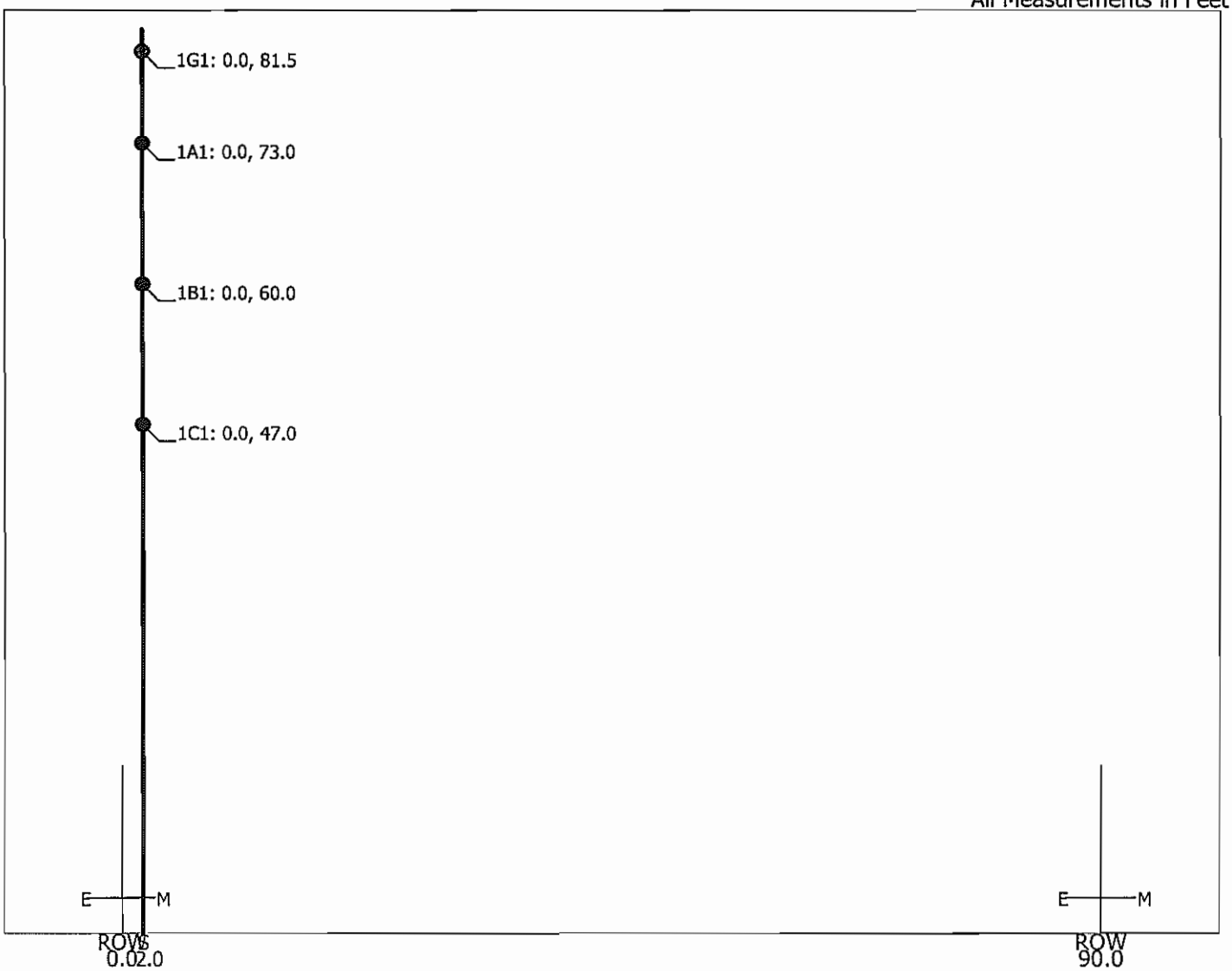
Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors # of	SubConductors Diameter (in)	SubConductors Spacing (in)	Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
1A1	2.00	0.00	73.00	2	1.20	12.00	230.0	0	2990
1B1	2.00	0.00	60.00	2	1.20	12.00	230.0	120	2990
1C1	2.00	0.00	47.00	2	1.20	12.00	230.0	240	2990
1G1	2.00	0.00	81.50	1	0.38	0.00	0.0	0	0

Points of Interest

None

Phase Configuration

All Measurements in Feet



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Signature of Authorized Agent

Date

Signature and Seal of Professional Engineer

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)
Road R-O-W	90	**1.6**	10	**1.5**	0	**146.2**	0

Substations

None

Details for CrossSection: **Road R-O-W- Road R/W**

Bobwhite	230 kV	**NEW CIRCUIT**
Circuit Name	Rated Voltage	New/Existing

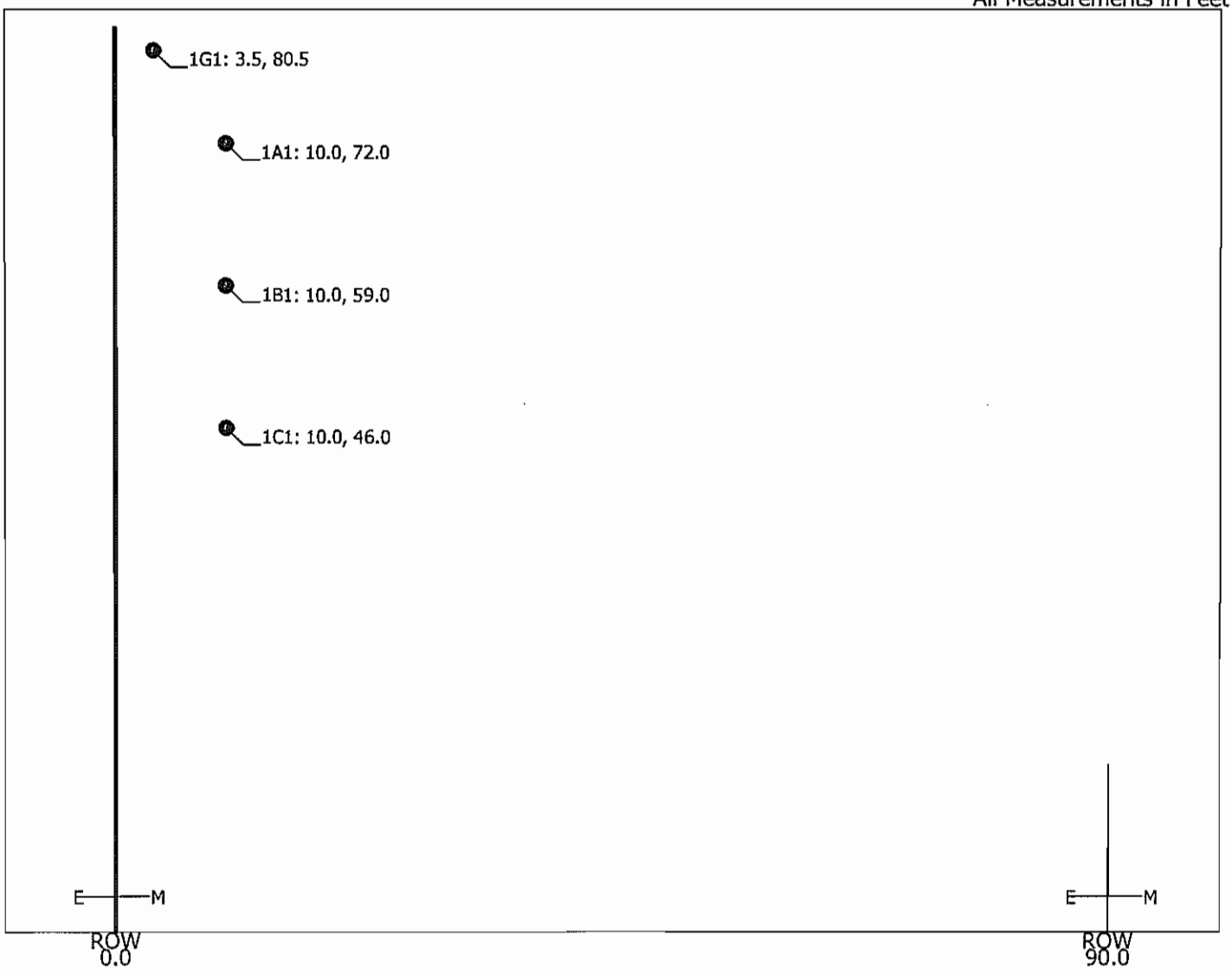
Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors # of	SubConductors Diameter (in)	SubConductors Spacing (in)	Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
1A1	10.00	10.00	72.00	2	1.20	12.00	230.0	0	2990
1B1	10.00	10.00	59.00	2	1.20	12.00	230.0	120	2990
1C1	10.00	10.00	46.00	2	1.20	12.00	230.0	240	2990
1G1	3.50	3.50	80.50	1	0.38	0.00	0.0	0	0

Points of Interest

None

Phase Configuration

All Measurements in Feet



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Signature of Authorized Agent

Date

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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)
Road RW	90	**1.7**	10	**1.6**	0	**149.1**	0

Substations

None

Details for CrossSection: **Road RW- Triangular Configuration**

Bobwhite	230 kV	**NEW CIRCUIT**
Circuit Name	Rated Voltage	New/Existing

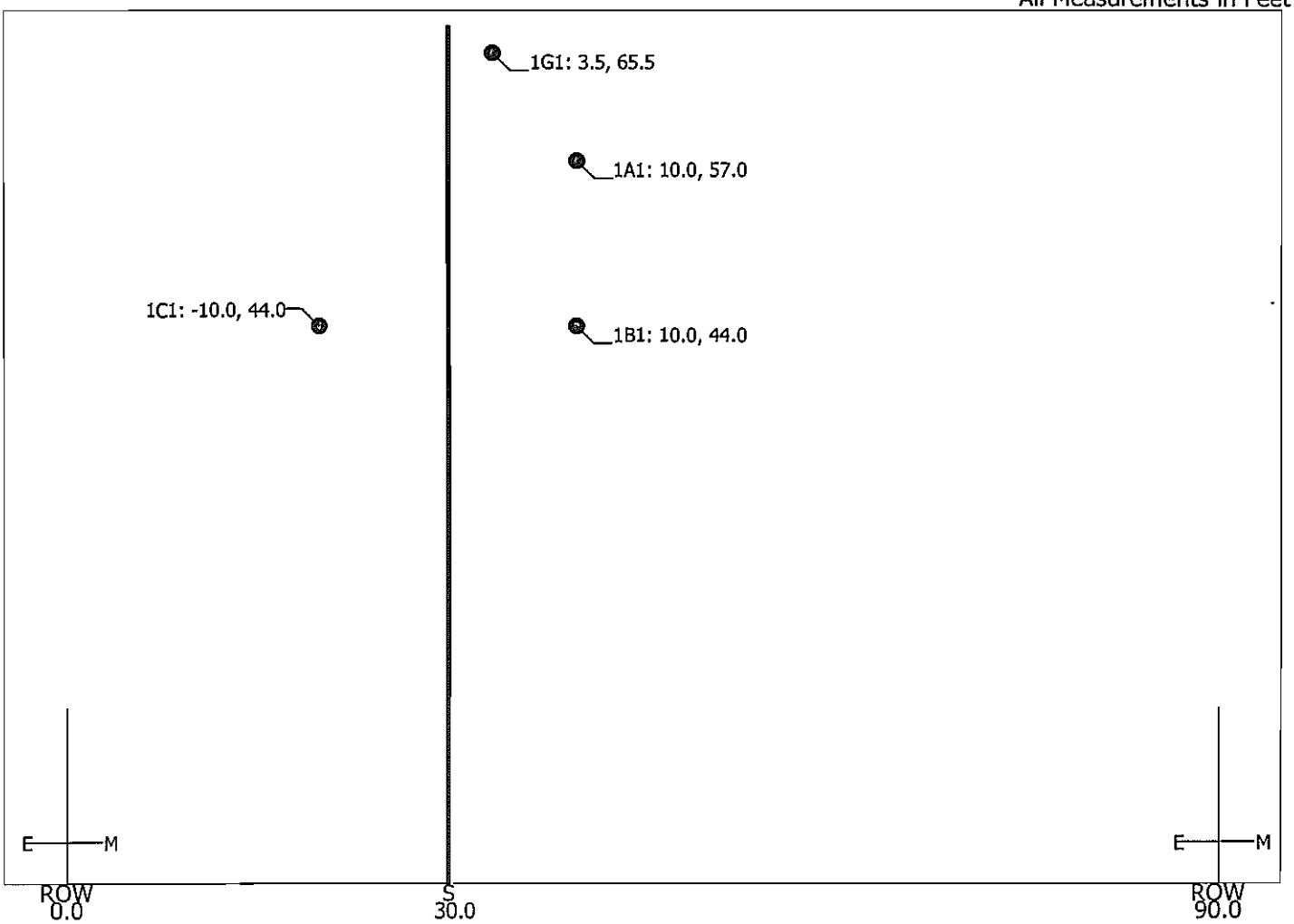
Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors # of	SubConductors Diameter (in)	SubConductors Spacing (in)	Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
1A1	40.00	10.00	57.00	2	1.20	12.00	246.0	0	2990
1B1	40.00	10.00	44.00	2	1.20	12.00	246.0	120	2990
1C1	20.00	-10.00	44.00	2	1.20	12.00	246.0	240	2990
1G1	33.50	3.50	65.50	1	0.38	0.00	0.0	0	0

Points of Interest

None

Phase Configuration

All Measurements in Feet



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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)
Bobwhite Substation	1750	**4.3**	200	**0.1**	0	**10.7**	0

Substations

None

Details for CrossSection: **Bobwhite Substation- BWM**

Bobwhite	230 kV	**NEW CIRCUIT**
Circuit Name	Rated Voltage	New/Existing

Id	Dist From Left ROW (ft)	Dist From Circuit CL (ft)	Minimum Height (ft)	SubConductors # of	SubConductors Diameter (in)	SubConductors Spacing (in)	Maximum Voltage (kV)	Angle (Degrees)	MCR (Amps)
1A1	200.00	0.00	51.00	2	1.20	12.00	230.0	0	2990
1B1	200.00	0.00	38.00	2	1.20	12.00	230.0	120	2990
1C1	200.00	0.00	25.00	2	1.20	12.00	230.0	240	2990
1G1	200.00	0.00	59.50	1	0.38	0.00	0.0	0	0

Points of Interest

None

Phase Configuration

All Measurements in Feet