Riviera Beach

Energy Center









Modification of Site Certification for Riviera Beach Energy Center

February 2012

FPL

003222.0015.01

This page left blank intentionally.

Petition to Modify
Riviera Beach Energy Center (RBEC) Certification

Proposed Martin Plant to RBEC Lateral Project

February 2012

Prepared by:

ecology and environment, inc.
Global Environmental Specialists

This page left blank intentionally.

Table of Contents

Section Page

List of Tables v
List of Figures vii
Acronyms and Abbreviations ix

9.0 Natural Gas Lateral Pipeline 1

9.1 Maps 1

9.2 Project Description 1
9.2.1 Pipeline Safety and Reliability 2
9.2.1.1 Safety Standards 5
9.2.1.2 Operations and Maintenance Program 5
9.2.1.3 Emergency Response Capabilities 5
9.2.1.4 Corrosion Control Measures 6
9.2.1.5 Stray Current and Interference 6

9.3 Corridor 6
9.3.1 Corridor Selection 6
9.3.1.1 Corridor Selection Methodology 7
9.3.1.2 Corridor Selection Findings 7
9.3.1.3 Conclusions 20
9.3.2 Corridor Description 23
9.3.3 Accessways 23
9.3.4 Cost Projections 27
9.3.5 Social and Political Environment of the Corridor Area 27
9.3.5.1 Government Jurisdictions 27
9.3.5.2 Zoning and Land Use Plans 30
9.3.5.3 Easements, Titles, and Agency Works 34
9.3.5.4 Regional Scenic, Cultural, and Natural Landmarks 38
9.3.5.5 Archaeological and Historic Sites 38
9.3.5.6 Traffic and Lighting 41
9.3.5.7 Work Force and Unemployment 63
9.3.6 Biological and Physical Environment of the Corridor Area 64
9.3.6.1 Vegetation and Land Cover 64
9.3.6.2 Affected Waters and Wetlands 72
9.3.6.3 Ecology 98
9.3.6.4 Existing Noise Environment 109
9.3.7 Variances, Exemptions, and Exceptions 112
9.3.7.1 Variances, Exemptions, and Exceptions from State Nonprocedural Standards 112
9.3.7.2 Exemption from Comprehensive Plans and Zoning Regulations 114
9.3.7.3 Variances, Exemptions, and Exceptions from Local Nonprocedural Standards 114

9.4 Effects of ROW Preparation and Construction 114
9.4.1 Construction Techniques 114
9.4.1.1 General Methods 114
9.4.1.2 Accessways 127

Table of Contents, continued

Section Page

9.4.1.3 Temporary Pipe Storage Yards and Construction Wareyards 127
9.4.2 Environmental Resource Permit and Impacts to Affected Waters and Wetlands 127
9.4.2.1 Surface Water and Groundwater Resources 128
9.4.1.3 Wetlands 129
9.4.3 Solid Wastes and Hazardous Materials 132
9.4.3.1 Regulatory Framework 132
9.4.3.2 Solid Waste Management 133
9.4.3.3 Oil and Hazardous Materials Management 133
9.4.4 Impacts to Vegetation, Wildlife, and Aquatic Life 134
9.4.4.1 Land Cover 135
9.4.4.2 Noxious Weeds 136
9.4.4.3 Protected Plant Species 136
9.4.4.4 Threatened and Endangered Species 137
9.4.4.5 Migratory Birds 139
9.4.4.5 Fisheries 139
9.4.5 Impacts to Human Populations 141
9.4.5.1 Land Use and Zoning 141
9.4.5.2 Traffic and Lighting 142
9.4.5.3 Work Force and Unemployment 144
9.4.5.4 Noise 144
9.4.6 Impacts on Regional Scenic, Cultural, and Natural Landmarks 145
9.4.7 Impacts on Archaeological and Historic Sites 145

9.5 Post-Construction Impacts and Effects of Maintenance 148
9.5.1 Maintenance Techniques 148
9.5.2 Multiple Uses 148
9.5.3 Changes in Species Populations 149
9.5.4 Effects of Public Access 149
9.5.5 Other Post-Construction Effects 149

9.6 References 151

Appendices

A Aerial Photography Maps
B Topographic Maps
C Government Jurisdiction Maps
D Future Land Use Maps
E Zoning Maps
F Cultural Resources Maps (Confidential)
G Environmental Resource Permit
H Agency Coordination
I HDD Contingency Plan
J Public Outreach
K Ecological Assessment and Wetland Delineation Report
L Best Management Practices

List of Tables

Table		Page
9.3-1	Siting Criteria for Corridor Design and Selection	11
9.3-2	Siting Criteria Analysis for Corridor Alternatives	13
9.3-3	Length of the Preferred Corridor within Counties and Incorporated Municipalities	23
9.3-4	Easements, Titles, and Agency Works	35
9.3-5	Previously Recorded Cultural Resources	41
9.3-6	Preferred Corridor Road Crossings in Martin County	61
9.3-7	Preferred Corridor Road Crossings in Palm Beach County	62
9.3-8	Changes in Labor Force and Unemployment Rates between 2006 and 2010, Martin and Palm Beach Counties, Florida	64
9.3-9	Summary of Land Cover within the Preferred Corridor	65
9.3-10	Noxious Weeds Areas Identified in the Preferred Corridor	69
9.3-11	Federally and State-Listed Plant Species Potentially Located Within the Preferred Corridor	71
9.3-12	Surveyed Waterbodies within the Preferred Corridor	73
9.3-13	SWAPP Zones Crossed by the Preferred Corridors	85
9.3-14	Locations with Limited-Use Wells within the Preferred Corridor	90
9.3-15	Delineated Wetlands within the Preferred Corridor	91
9.3-16	Federally and State-Listed Wildlife Species Potentially Located Within the Preferred Corridor	98
9.3-17	Non-Imperiled Aquatic Species Anticipated to Occur within the Preferred Corridor	106
9.3-18	Community Noise Exposure Levels by Land Use Category	110
9.3-19	Construction Noise Ordinances in Counties and Municipalities Traversed by the Project	111
9.4-1	Estimated Acreage of Wetland Impacts by FLUCFCS Type	130
9.4-2	Estimated Acreage of Land Cover Impacts by FLUCFCS Type	136
9.4-3	Sound Pressure Levels from Pipeline Construction Equipment	146
9.4-4	Horizontal Directional Drilling Sound Pressure Levels at Various Distances	147
9.5-1	Emissions Calculations	150

This page left blank intentionally.

List of Figures

Figure		Page
9.2-1	Overall Project Map	3
9.2-2	Typical Post-Construction Right-of-Way	4
9.3-1	Study Area	8
9.3-2	Tier 1 Siting Criteria	9
9.3-3	Alternative Corridors	15
9.3-4	Alternative Corridors	17
9.3-5	Preferred Corridor	21
9.3-6	Overlapping Certified Boundaries *(series)*	24
9.3-7	Road Crossings *(series)*	43
9.3-8	Wetland Overview Maps *(series)*	76
9.3-9	Groundwater Resources *(series)*	86
9.3-10	Wood Stork Core Foraging Area	101
9.4-1	Typical Pipeline Construction Sequence	116
9.4-2	Dry Crossing: Typical Horizontal Directional Drill (HDD) Method	120
9.4-3	Wet Crossing: Typical Open Cut Method	121
9.4-4	Dry Crossing: Typical Flume-Pipe Method	123
9.4-5	Dry Crossing: Typical Dam and Pump Method	124
9.4-6	Typical Wetland Construction Method	126

This page left blank intentionally.

Acronyms and Abbreviations

AADT	Average Annual Daily Traffic
AC	alternating current
AFUDC	Allowance for Funds Used During Construction
BGEPA	Bald and Golden Eagle Protection Act
BLS	(United States) Bureau of Labor Statistics
BMP	best management practice
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO_2-e	carbon dioxide equivalents
dB	decibel
dBA	A-weighted scale
DC	direct current
DHR	(Florida Department of State) Division of Historical Resources
ESA	Endangered Species Act
F.A.C.	Florida Administrative Code
F.S.	Florida Statutes
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FGT	Florida Gas Transmission Company
FHWA	Federal Highway Administration
FLEPPC	Florida Exotic Pest Plant Council
FLUCFCS	Florida Land Use Cover and Forms Classification System
FNAI	Florida Natural Areas Inventory
FPL	Florida Power & Light Company
FWC	(Florida) Fish and Wildlife Conservation Commission
GHG	greenhouse gas
HDD	horizontal directional drilling; also, horizontal direction drill
i.e.	that is
IRL	Indian River Lagoon
L_{dn}	day-night sound level
L_{eq}	nighttime energy-equivalent

Acronyms and Abbreviations, continued

LOS	Level of Service
Martin Plant	Martin Clean Energy Center
MBTA	Migratory Bird Treaty Act
MMcfd	million cubic feet per day
MMPA	Marine Mammal Protection Act
MP	milepost
MSA	metropolitan statistical area
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
NTSB	National Transportation Safety Board
NTU	nephelometric turbidity unit
OFW	Outstanding Florida Waters
OPS	Office of Pipeline Safety
Origination Point	FPL's Martin Plant property
PPSA	(Florida Electrical) Power Plant Siting Act
Project, the	Martin Plant to RBEC Lateral
R.A.R.E.	Roadless Area Review and Evaluation
RBEC	Riviera Beach Energy Center
ROW	right-of-way
SCA	Site Certification Application
SFWMD	South Florida Water Management District
SHPO	State Historic Preservation Officer
SPCC	Spill Prevention, Control, and Countermeasures
SPL	sound pressure level
SR	State Road
SSC	species of special concern
SWAPP	Source Water Assessment and Protection Program
Termination Point	FPL's Riviera Beach Lateral
U.S.C.	United States Code
U.S.C.A.	United States Code Annotated
ULDC	Unified Land Development Code
UMAM	Uniform Mitigation Assessment Method

Acronyms and Abbreviations, continued

UPA	unit(s) per acre
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
WEA	Wildlife and Environmental Area
WMA	Wildlife Management Area
WMD	water management district

This page left blank intentionally.

9.0 Natural Gas Lateral Pipeline

Florida Power & Light Company (FPL) is petitioning to modify the Site Certification for the Riviera Beach Energy Center (RBEC) in order to construct, own, and operate a natural gas pipeline lateral as an associated linear facility (referred to as the "Martin Plant to RBEC Lateral" or "the Project"). The Project would consist of an approximately 32-mile, up to 24-inch-diameter natural gas transmission pipeline, delivering natural gas to RBEC, originating at an existing natural gas yard within FPL's Martin Clean Energy Center (Martin Plant) property located northwest of Indiantown, Martin County, Florida, and terminating at the western end of FPL's Riviera Beach Lateral located at the intersection of Florida's Turnpike and State Road (SR) 710, West Palm Beach, Palm Beach County, Florida.

Purpose and Need

FPL submitted a Site Certification Application (SCA) to the Florida Department of Environmental Protection (FDEP) under the Florida Electrical Power Plant Siting Act (PPSA) for the RBEC on February 13, 2009 (PA-0954), and received its Final Order approving site certification on November 24, 2009 (Final Order No. 09-1245). This Final Order authorized FPL to convert the former Riviera Plant (which consisted of two nominal 300-megawatt conventional dual fuel-fired generating units and support facilities) to a modern, highly efficient, lower emission next generation clean energy center using the latest combined cycle technology and to rename the plant RBEC. On March 15, 2011, FDEP issued a modification to the RBEC Site Certification authorizing FPL to construct, own and operate a 6-mile natural gas pipeline ("Riviera Beach Lateral"). The 6-mile pipeline runs from RBEC to the intersection of the Florida Turnpike and SR 710. The Riviera Beach Lateral was the first of two laterals necessary to connect RBEC to a third party natural gas supply facility located on FPL's Martin Plant property.

The Martin South Lateral (the existing FPL 18-inch fuel pipeline) was initially expected to be used as the second lateral to complete the connection of RBEC to a third party natural gas yard at the Martin Plant property. FPL has since determined that the Martin South Lateral cannot supply both the required volumes of natural gas to RBEC and the required volumes of heavy fuel oil to the FPL Martin Plant under the range of realistic operating scenarios. Therefore, the 32-mile pipeline is necessary to operate RBEC and to realize the full environmental benefits and fuel cost savings that RBEC will provide.

FPL accordingly submits this modification petition to construct, own, and operate a new up to 24-inch-diameter natural gas lateral to connect the 6-mile Riviera Beach Lateral to a third party gas yard located on the Martin Plant property.

9.1 Maps

Maps providing information for the Project, as required by FDEP's Application Instruction Guide for Electrical Power Plant Sites and Associated Facilities and Electrical Transmission Lines (Draft, June 27, 2007), the same guide used for the RBEC SCA and RBEC Site Certification Modification, are provided throughout Section 9 and within the associated appendices.

9.2 Project Description

The Project would consist of an approximately 32-mile, up to 24-inch-diameter natural gas transmission pipeline, delivering natural gas to RBEC, originating at an existing natural gas yard within FPL's Martin Plant property ("Origination Point") and terminating at the western end of FPL's Riviera Beach Lateral ("Termination Point").

The Project would traverse portions of Martin and Palm Beach Counties and would run generally southeast from the Origination Point to the Termination Point (Figure 9.2-1). The pipeline would have the capacity to deliver approximately 200 million cubic feet per day (MMcfd) of natural gas to the Riviera Beach Lateral and ultimately to the RBEC.

From the Origination Point the preferred corridor would be collocated[1] with the existing FPL 18-inch fuel pipeline for approximately 1.6 miles east until the preferred corridor intersects the CSX Rail Line right-of-way (ROW) and SR 710 ROW. At SR 710, the preferred corridor would turn southeast and would be collocated with SR 710, the existing FPL 18-inch fuel pipeline, and the CSX Rail Line ROW for approximately 30.7 miles to the Termination Point. The pipeline would be installed a minimum of 3 feet below ground for its entire length.

In addition to the pipeline, the Project would have minor aboveground facilities typically associated with natural gas pipelines, including a meter station and pig launcher near the Origination Point and mainline block valves along the pipeline in accordance with United States Department of Transportation (USDOT) Minimum Federal Safety Standards in 49 Code of Federal Regulations (CFR) 192. Typical post-construction ROW, mainline block valve, and pig launching facilities are depicted on Figure 9.2-2.

The location of the preferred corridor would significantly minimize impacts to the environment and adjoining landowners by being collocated with existing linear facilities to the greatest extent practicable. These existing linear facilities include, but are not limited to, the existing FPL 18-inch fuel pipeline, the CSX Rail Line ROW, and the SR 710 ROW.

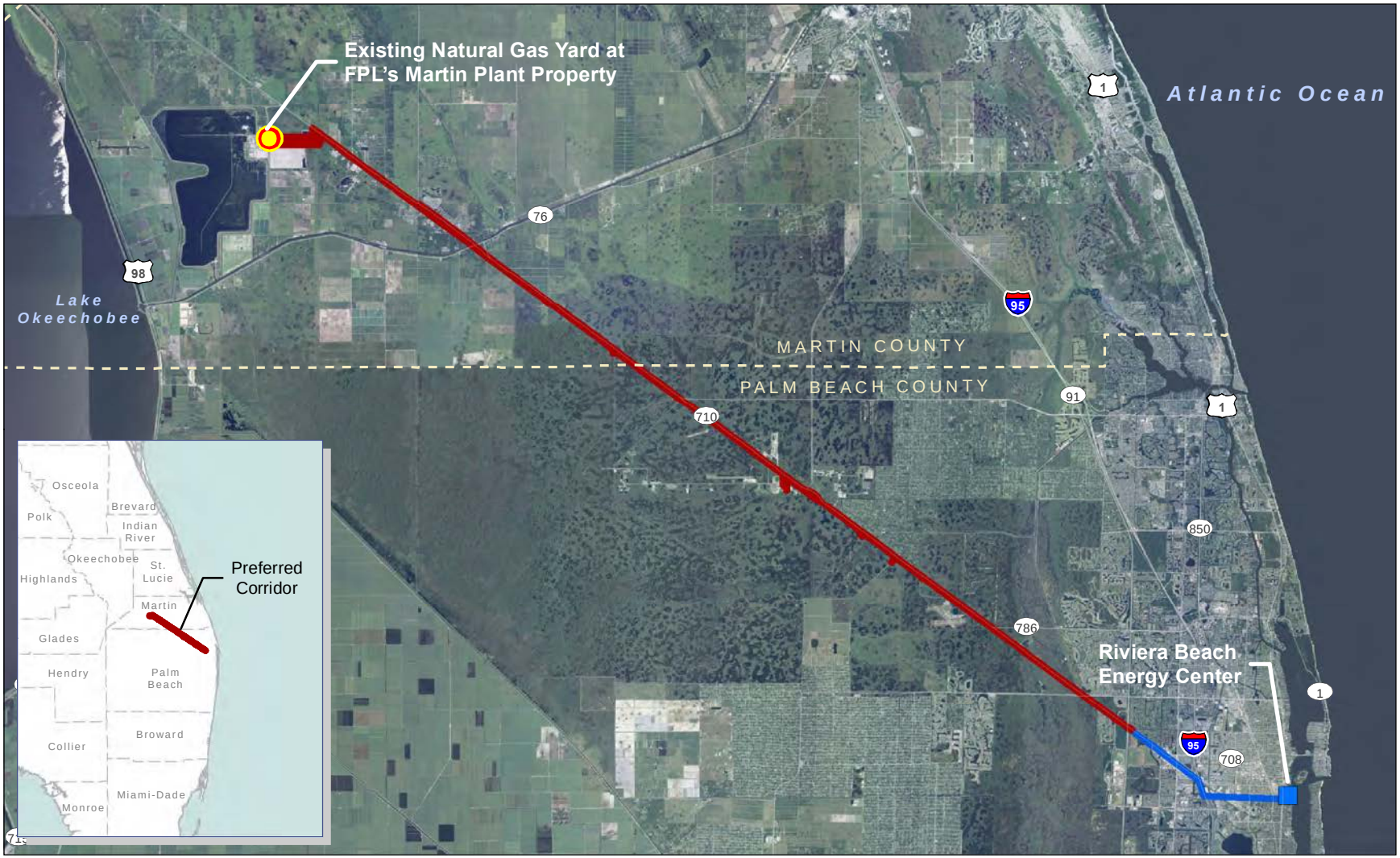
9.2.1 Pipeline Safety and Reliability

The Project will be constructed, operated, and maintained in accordance with the most stringent federal, state and, local regulations. Specifically, the USDOT has detailed regulations regarding pipeline safety under Title 49, United States Code (U.S.C.) Chapter 601. The USDOT Office of Pipeline Safety (OPS) administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It maintains safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. The OPS ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and others at the federal, state, and local levels.

In comparison with all means of energy transportation, the National Transportation Safety Board (NTSB) has found that natural gas pipelines provide the safest mode of delivering fuel to the market. The NTSB data indicate that less than 1/100th of 1% (0.01%) of all transportation accidents in the United States occurs on interstate natural gas pipelines. For complete and up-to-date statistics regarding pipeline safety, the USDOT maintains http://phmsa.dot.gov/.

FPL has a public awareness program for pipelines it currently operates. The following website contains information on pipeline safety: http://www.fpl.com/pipelinesafety (Spanish version: www.fpl.com/seguridadtuberias).

[1] **collocate** (*as defined by Encarta Dictionary*): to put something next to something; *transitive verb* to arrange something so that it is next to or close to something else.



NORTH

0 5 Miles

Existing Natural Gas Yard at FPL's Martin Plant Property

Riviera Beach Energy Center

Preferred Corridor

FPL's Riviera Beach Lateral

County Boundary

Figure 9.2-1
Overall Project Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source : ESRI 2010; USGS NHD 2008; FNAI 1991, 2011.



Typical Maintained Permanent Right-of-Way and Aboveground Marker



Typical Maintained Permanent Right-of-Way and Mainline Block Valve



Typical Pig Launching / Receiving Facility

SOURCE: Ecology and Environment, Inc. 2009

Definitions:

Pig Launching / Receiving Facilities - Pigs are internal devices that can be moved (pushed under pressure) through the pipeline during testing, maintenance, or inspection. These facilities are areas where the pig maybe deployed or retrieved during pipeline integrity inspections.

Mainline Block Valve - This is a valve that can isolate portions of the pipeline.

Figure 9.2-2
Typical Post-construction Right-of-way and Minor Above Ground Facilities
Martin Plant To RBEC Lateral Project

August 10, 2011

FPL

9.2.1.1 Safety Standards

The pipeline and aboveground facilities associated with the Project must be designed, constructed, operated, and maintained in accordance with the USDOT Minimum Federal Safety Standards in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. Part 192 specifies material selection and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion. Part 192 also defines area classifications, based on population density in the vicinity of the pipeline, and specifies more rigorous safety requirements for populated areas. The class location unit is an area that extends 220 yards on either side of the centerline of any continuous 1-mile length of pipeline. The four area classifications are defined as:

- **Class 1 Location** with 10 or fewer buildings intended for human occupancy;
- **Class 2 Location** with more than 10 but less than 46 buildings intended for human occupancy;
- **Class 3 Location** with 46 or more buildings intended for human occupancy or where the pipeline lies within 100 yards of any building, or small well-defined outside area occupied by 20 or more people on at least five days a week for 10 weeks in any 12-month period; and
- **Class 4 Location** where buildings with four or more stories aboveground are prevalent.

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation.

9.2.1.2 Operations and Maintenance Program

FPL will institute a comprehensive operations and maintenance program for the Project similar to other pipelines currently within the FPL system and in accordance with USDOT pipeline safety regulations. FPL's operations and maintenance program includes: a comprehensive pipeline integrity management program utilizing state of the art inline inspection tools; regularly scheduled aerial and ground patrols of the pipeline ROW and leak inspection surveys; participation in the existing Sunshine State One-Call of Florida system. The One-Call of Florida system allows anyone planning excavation activities to call a single number to alert all utilities, and thus prevent unintentional contact with the pipeline. Additionally, FPL representatives will visit any construction site close to the pipeline and mark the location identifying the existence of FPL's underground facilities. They also remain on site during excavation activities within the pipeline ROW.

9.2.1.3 Emergency Response Capabilities

FPL maintains 24-hour emergency response capabilities, including an emergency-only toll-free phone number. The number is included in informational mail-outs, and on the following website: http://www.fpl.com/pipelinesafety (Spanish version: www.fpl.com/seguridadtuberias). The number will be posted on all pipeline markers and provided to local emergency agencies in the vicinity of the pipeline.

As part of FPL's public safety efforts, FPL representatives meet regularly with the emergency responders and public officials of the municipalities and counties along its pipeline facilities. FPL personnel and local emergency responders are trained in response procedures. FPL personnel consult with local fire departments and emergency response agencies to determine if additional equipment, training, and support are needed. FPL provides these departments with the 24-hour emergency numbers and verbal, written, and mapping descriptions of the pipeline system.

9.2.1.4 Corrosion Control Measures

Protecting the pipeline from internal and external corrosion is another key measure to ensure public safety. This pipeline will be constructed with a fusion bonded epoxy outer coating system as well as an impressed current cathodic protection system. These measures work in tandem to mitigate external corrosion of the pipeline.

Additionally, dry natural gas is a non-corrosive material which does not contribute to internal pipeline corrosion. As noted in Section 9.2.1.2, FPL's pipeline integrity management program requires that state of the art inline inspection surveys be conducted periodically to monitor pipeline wall thickness and provide information on internal or external pipeline corrosion activity. Evidence of pipeline anomalies will be analyzed and if needed, repaired in accordance with the USDOT Minimum Federal Safety Standards in 49 CFR 192.

9.2.1.5 Stray Current and Interference

Alternating current (AC) and direct current (DC) electrical sources may cause stray currents to interfere with corrosion control systems on buried steel pipelines. Additionally, transient fault currents may occur when high-voltage electrical transmission power lines experience an earthen ground in the vicinity of buried pipelines.

With the appropriate engineering and mitigation measures, stray electrical currents should not present a safety issue for the Project. FPL's pipeline system will have special grounding systems as well DC decoupling devices to mitigate induced and transient stray currents.

Adjacent buried pipelines, with either galvanic anode or impressed current anode systems, may adversely affect or interfere with the cathodic protection system of the proposed pipeline being constructed. If necessary, the pipeline will utilize electrical bonds (i.e., interference bonds) to foreign pipelines to ensure sufficient levels of corrosion protection are maintained for the Project. Interference bonds will be monitored as specified by the USDOT Minimum Federal Safety Standards in 49 CFR 192.

9.3 Corridor

The following section provides a description of the pipeline corridor selection process, the preferred corridor, accessways, Project cost projections, the social and political environment of the corridor area, biological and physical environment of the corridor area, and variances, exceptions, and exemptions needed.

9.3.1 Corridor Selection

FPL undertook a comprehensive pipeline corridor alternatives analysis that considered numerous factors, including environmental, safety, socioeconomic, and engineering. As a result of this study, FPL selected the best alternative to meet the purpose and need of the Project (the "Preferred Corridor").

FPL only considered alternatives that are practicable. (Some alternatives may be impracticable because sites or technology are unavailable and/or because cost or logistical constraints hinder FPL's ability to achieve the Project's overall purpose.) The analysis then focused on alternatives that potentially reduce adverse environmental impacts. Through the application of the siting criteria and subsequent environmental comparisons, each alternative was evaluated until it was apparent that a particular alternative was not practical or would result in significantly greater environmental impacts that could not be reasonably mitigated when compared with another alternative. The following subsections describe the process FPL undertook to perform the alternatives analysis.

9.3.1.1 Corridor Selection Methodology

In order to identify alternative corridors and select the Preferred Corridor, the following steps were taken:

- A study area was defined based on Origination and Termination Points;
- A series of alternative corridors within the study area were identified/selected;
- The alternative corridors were evaluated based on application of siting considerations; and
- The Preferred Corridor was selected.

The first step in the corridor alternatives analysis was to develop a broad study area defined by the Origination and Termination Points (Figure 9.3-1). The Origination Point was identified as a gas yard within FPL's Martin Plant property and the Termination Point was identified at the westernmost point of FPL's Riviera Beach Lateral near the intersection of the Florida Turnpike and SR 710, near West Palm Beach, Palm Beach County, Florida.

Once the study area was identified (Figure 9.3-1), a two-tier siting criteria approach was applied to first identify alternative corridors within the study area and then compare the attributes of each of the alternative corridors. The Tier 1 siting criteria evaluates high-level constraints to the siting of a natural gas pipeline that are utilized to develop alternative corridors within the study area. Figure 9.3-2 illustrates the Tier 1 siting criteria within the study area. Tier 2 siting criteria define the factors that were used to evaluate each corridor to determine which alternative minimizes or avoids potential impacts. Table 9.3-1 details the Tier 1 and Tier 2 siting criteria developed and applied for the Project.

9.3.1.2 Corridor Selection Findings

Utilizing the defined study area and the Tier 1 siting criteria (Table 9.3-2), 11 potentially viable corridor alternatives were identified as described below and illustrated on Figures 9.3-3 and 9.3-4.

- **Alternative Corridor 1** is approximately 32.2 miles in length, all of which is collocated with existing linear facilities. This alternative is collocated with the existing FPL 18-inch fuel pipeline ROW from the Origination Point to the Termination Point. This alternative corridor represents the shortest of all the corridors examined.
- **Alternative Corridor 2** is approximately 49.4 miles in length, of which 30.2 miles (61.2%) are collocated with existing linear facilities. This corridor heads west from the Origination Point and then south into Palm Beach County. At the southern edge of the J.W. Corbett Wildlife Management Area (WMA), the alternative turns east before intersecting with the existing FPL 18-inch fuel pipeline ROW, where it remains collocated to the Termination Point.
- **Alternative Corridor 3** is approximately 38.0 miles in length, all of which is collocated with existing linear facilities. This alternative is collocated with the existing FPL 18-inch fuel pipeline ROW from the Origination Point then runs due east along a utility ROW at the intersection with SR 706. The corridor then continues east along the utility ROW before turning south along another utility ROW at the intersection with the Florida Turnpike. This corridor continues south along this utility ROW and the Florida Turnpike until it arrives at the Termination Point.

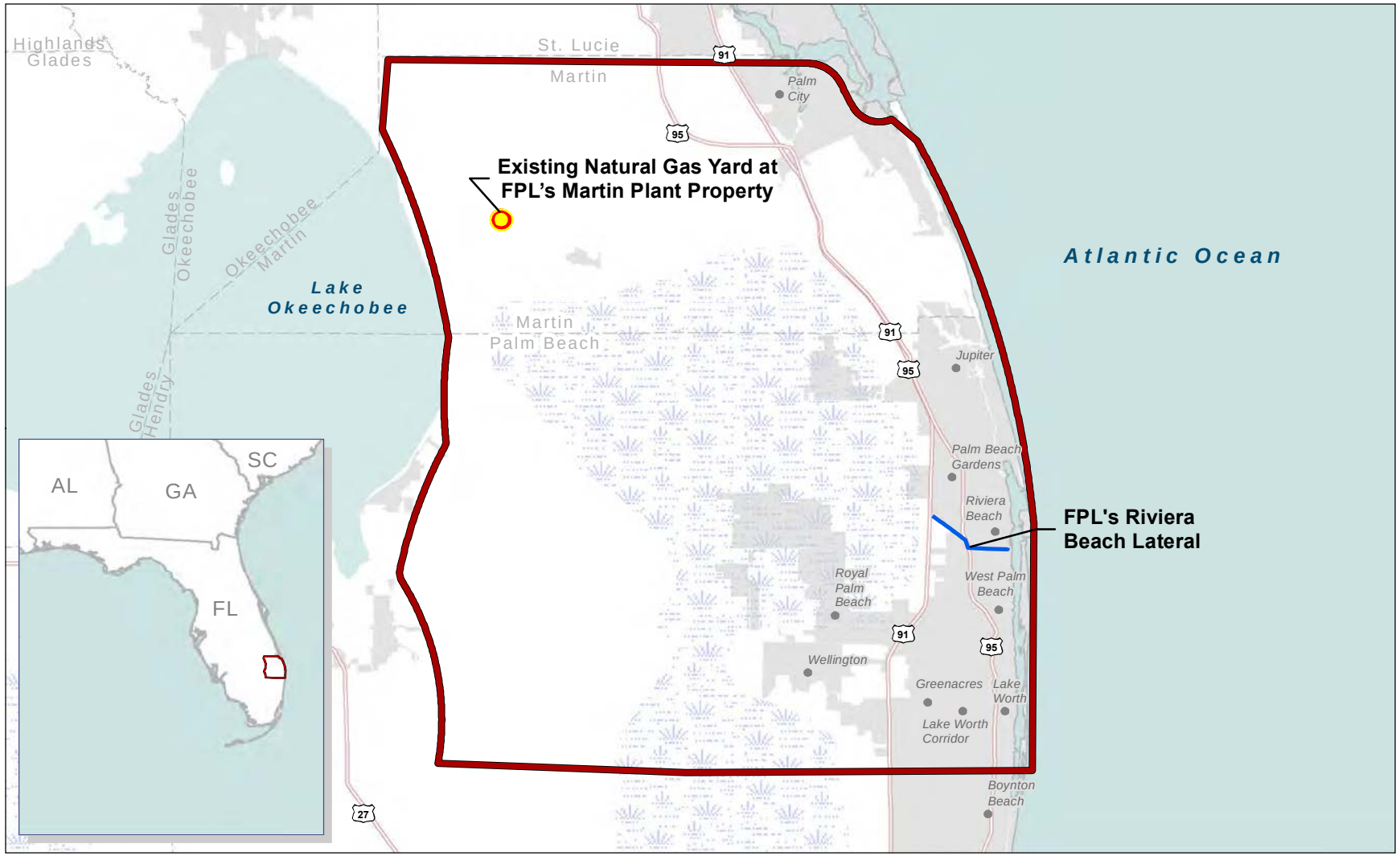


Figure 9.3-1
Study Area
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/21/2012

Source : ESRI 2010; USGS NHD 2008; FNAI 1991, 2011.

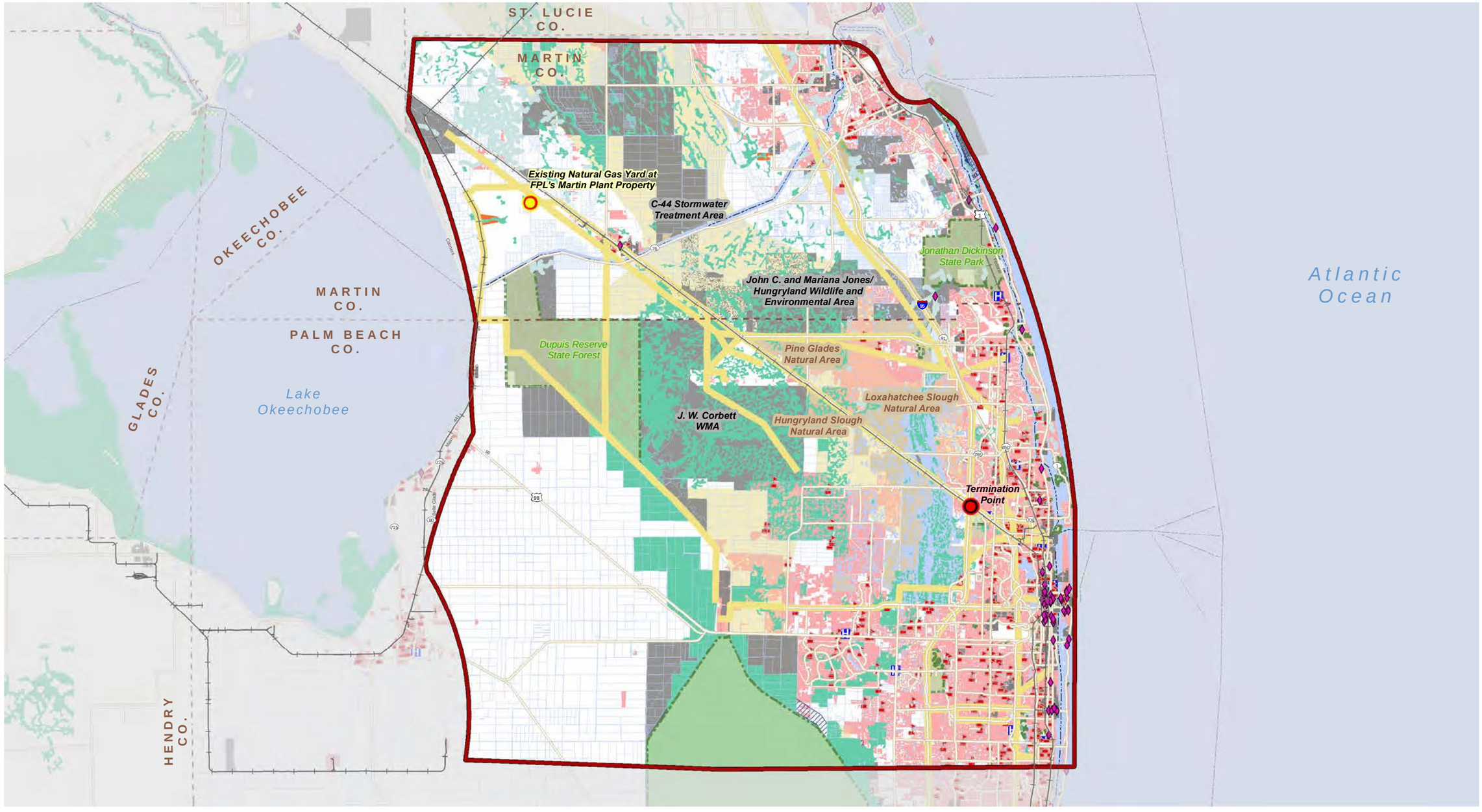


Figure 9.3-2
Tier 1 Siting Criteria
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source : ESRI 2010; USGS NHD 2008; FNAI 1991, 2011; FWCC 2004; South Florida Water Management District 2005.

This page left blank intentionally.

Table 9.3-1
Siting Criteria for Corridor Design and Selection
Martin Plant to RBEC Lateral

Criterion	Resource Area	Unit Measure	Guidance for Siting	Source	Brief Description
Tier 1 Siting Criteria					
Collocation with Major Infrastructure	Overall Consideration	% of total length	Preference given to collocated corridors	Platts Transmission Line Data, FPL Transmission Line Data; National Pipeline Mapping System 2006, FPL Pipeline Data, ESRI 2010	Collocation with existing compatible linear infrastructure such as other pipelines, transmission lines, major roads, railroads, and other linear facilities can minimize the overall impacts associated with Project implementation.
Proximity to Receipt and Delivery Points	Overall Consideration	n/a	Project must start and end at receipt and delivery points	Provided by FPL	The alternative corridors developed during the alternatives analysis should allow for practicable delivery to desired locations.
Major or Significant Built Features / Infrastructure	Overall Consideration	Number Intersected	Avoidance to the extent practicable	ESRI and Aerial Imagery	To the extent practicable, the alternative corridors developed during the alternatives analysis will avoid major interest facilities, tourist attractions, and infrastructure such as hospitals, churches, parks, and schools.
Reservoirs and Major Waterbodies	Water Resources	Number intersected	Minimization to the extent practicable; also cross perpendicularly	USGS NHD	The USGS NHD will be used to identify reservoirs and major waterbodies, typically defined as greater than 100 feet wide. These may not be avoided entirely due to the linear nature of the Project. However, preference will be given to alignments that minimize the crossing of major waterbodies and reservoirs.
Tier 2 Siting Criteria					
Collocation with Existing Utilities	Overall Consideration	% of total length	Preference given to collocated corridors	Platts Transmission Line Data; FPL Transmission Line Data; National Pipeline Mapping System 2006	To the extent practicable, the corridor should be collocated with existing utility corridors to maintain consistent existing land uses. Within these areas, existing utility corridors will be examined for potential collocation opportunities.
Federal Lands	Land Use / Land Cover	Miles	Avoidance and minimization to the extent practicable	ESRI 2010	Crossing of federally managed lands would increase the overall permitting complexity and permit review timeframes for the Project. If federal lands cannot be avoided, preference will be given to collocating with existing ROWs that cross federal lands.
State Lands	Land Use / Land Cover	Miles	Avoidance and minimization to the extent practicable	ESRI 2010	Crossing of state-owned lands would increase the permitting complexity and permit review timeframes for the Project. If state-owned lands cannot be avoided, preference will be given to collocating with existing ROWs that cross state lands.
County or Municipality Lands	Land Use / Land Cover	Miles	Avoidance and minimization to the extent practicable	ESRI 2010	Crossing of county-owned lands would increase the easement and permitting complexity of the Project. These lands normally consist of small public parks or preserves and could lead to local opposition if crossed. Avoidance of these areas is preferred and typically can be accomplished.
Agriculture, Barren Land, and Upland Non-Forested	Land Use / Land Cover	Miles	Open lands are preferable	Aerial Imagery and FLUCFCS	Agricultural and open lands are generally considered compatible with siting of pipelines and would not require land cover conversion. The FLUCFCS data were used to determine the land use of the corridors. On agricultural lands, care should be taken to minimize the amount of land taken out of agricultural production.
Forested Areas	Land Use / Land Cover	Miles	Avoidance and minimization to the extent practicable	Aerial Imagery and FLUCFCS	These areas would require clearing of trees during Project construction and continued maintenance of a permanent ROW, which would cause land cover conversion and increased Project costs, so they are considered less desirable with siting of a pipeline. In addition, clearing forested lands potentially increases impacts on wildlife due to forest loss and/or fragmentation and to increased impacts to wetland functions. Maintenance procedures through forested areas are typically more labor intensive and are required at a greater frequency. Required clearing should be adjacent to already cleared areas to the extent practicable. The FLUCFCS data were used to determine the land use of the corridors.
Urban and Built-Up	Land Use / Land Cover	Miles	Avoidance and minimization to the extent practicable	Aerial Imagery and FLUCFCS	These lands can be difficult to navigate for the siting of pipelines, have greater potential for socioeconomic impact, and can increase Project costs due to the cost of real estate and special mitigation that may be needed. Therefore, preference will be given to avoiding dense urban development. The FLUCFCS data were used to determine the land use of the corridors.
Scenic Routes or Trails	Land Use / Land Cover	Number intersected	Avoidance and minimization to the extent practicable	ESRI 2010	The crossing of scenic routes and/or trails poses concerns about potential impacts on cultural, historical, visual, and/or aesthetic resources. Preference will be given to avoidance of scenic routes or trails, or perpendicular crossings in proximity to existing utility crossings.
Wild and Scenic Rivers	Land Use / Land Cover	Number intersected	Avoidance and minimization to the extent practicable	National Wild and Scenic Rivers System	Preference will be given to avoiding crossings of Wild and Scenic Rivers, if possible. Where avoidance is not possible, preference will be to collocate with other infrastructure crossings.
USFWS-designated Critical Habitat	Biological Resources	Miles	Avoidance and minimization to the extent practicable	USFWS	Preference will be given to alternatives that would avoid or minimize the crossing of USFWS-designated critical habitat for federally threatened or endangered species.

Table 9.3-1
Siting Criteria for Corridor Design and Selection
Martin Plant to RBEC Lateral

Criterion	Resource Area	Unit Measure	Guidance for Siting	Source	Brief Description
Wood Stork Core Foraging Area	Biological Resources	Feet within foraging habitat	Avoidance and minimization to the extent practicable	USFWS	The locations of wood stork rookeries are known and projects with direct impacts to the rookeries would not likely be permitted. Additionally projects that occur within 18.6 miles of the known rookeries are within core foraging areas and must be constructed utilizing certain best management practices. The traversing of these areas should be avoided and minimized to the extent practicable.
Wetlands	Water Resources	Miles	Minimization to the extent practicable	National Wetlands Inventory, FLUCFCS, Aerial Imagery	Wetland resources will be mapped using available datasets and aerial photo-interpretation. ROWs traversing wetland areas have the potential to increase impacts to wetlands and wildlife and to increase the complexity and time required for Project permitting. Preference will be given to alignments that will avoid or minimize the number/length of crossings of wetlands systems, particularly forested wetlands. Wetland fragmentation also will be considered. Preference also will be given to siting accessways outside of wetlands.
Waterbodies	Water Resources	Number intersected	Avoidance and minimization to the extent practicable	USGS NHD	As the pipeline is sited, the location and angle of crossing of waterbodies will be taken into consideration so that, to the extent practicable, impacts to the streambed and riparian areas can be avoided or minimized.
Springs	Water Resources	Number within 0.25 mile	Avoidance and minimization to the extent practicable	USGS NHD	Springs normally provide the headwaters of streams or provide a significant inflow of water to streams. These areas have a direct interface with groundwater. To the extent practicable, impacts to springs will be avoided or minimized. Preference will be given to siting the ROW and accessways outside of and 50 feet from springs, to the extent practicable.
Waterbody Classification	Water Resources	Number intersected	Avoidance and minimization to the extent practicable high value designated waterbodies	Florida Department of Environmental Protection	Outstanding Florida Waters, high quality waters, water protection areas, and sensitive fisheries habitat should be avoided to the extent possible.
NRHP Sites	Cultural Resources	Number within 0.25 mile	Avoidance and minimization to the extent practicable	NRHP	The NRHP will be used to identify officially designated historic places deemed worthy of preservation. Impacts to registered sites would increase the regulatory review and require offsetting mitigation. Preference will be given to alignments that avoid or minimize impacts to registered sites.
Environmentally Regulated Sites	Contamination	Number within 0.25 mile	Avoidance and minimization to the extent practicable	U.S. Environmental Protection Agency	The presence of environmentally regulated sites that are likely contaminated and are potentially undergoing site investigation or remediation will be mapped if within 0.25 mile of the corridor. Avoidance of these areas to the extent practicable would be beneficial so that issues pertaining to the remediation of contaminated soils or groundwater contamination do not adversely affect the Project (e.g., temporary or permanent removal or relocation of pipelines during removal of contaminated soils).
Total Length	Project Cost	Miles	Preference given to shorter corridors	Calculated by ESRI ArcMap	Total length will be used as a criterion correlating to costs, and preference will be given to alignments that will minimize overall length. Preference also will be given to minimizing overall length as a means of minimizing overall land use impacts.
Electrical Transmission Line Crossings	Engineering Consideration	Number intersected	Avoidance and minimization to the extent practicable of lines greater than 230kV	Platts Transmission Line Data, FPL Transmission Line Data	Any electrical transmission line crossing may present construction constraints that must be considered in the pipeline corridor siting process.
Transmission Pipeline Crossings	Engineering Consideration	Number intersected	Minimization to the extent practicable	National Pipeline Mapping System 2006, FPL Pipeline Data	Engineering constraints must be considered in areas where the Project would cross transmission pipelines. Construction methods will need to accommodate the presence of the pipeline and, as a result, construction costs could be significantly higher in these areas.
Major Road Crossings	Engineering Consideration	Number intersected	Minimization to the extent practicable	ESRI 2010	Engineering constraints must be considered where the Project would cross major roads. Major road crossings can increase construction costs and cause visual disruption for a traveler, which may result in social and political resistance to the Project. Additionally, easements or permits from the state Departments of Transportation are required when crossing major roads.

Key:
ESRI = Environmental Systems Research Institute, Inc.
FLUCFCS = Florida Land Use Cover and Forms Classification System
FPL = Florida Power & Light Company
NRHP = National Register of Historic Places
ROW = right-of-way
USFWS = United States Fish and Wildlife Service
USGS NHG = United States Geological Survey National Hydrography Dataset

Table 9.3-2
Siting Criteria Analysis for Corridor Alternatives
Martin Plant to RBEC Lateral Project

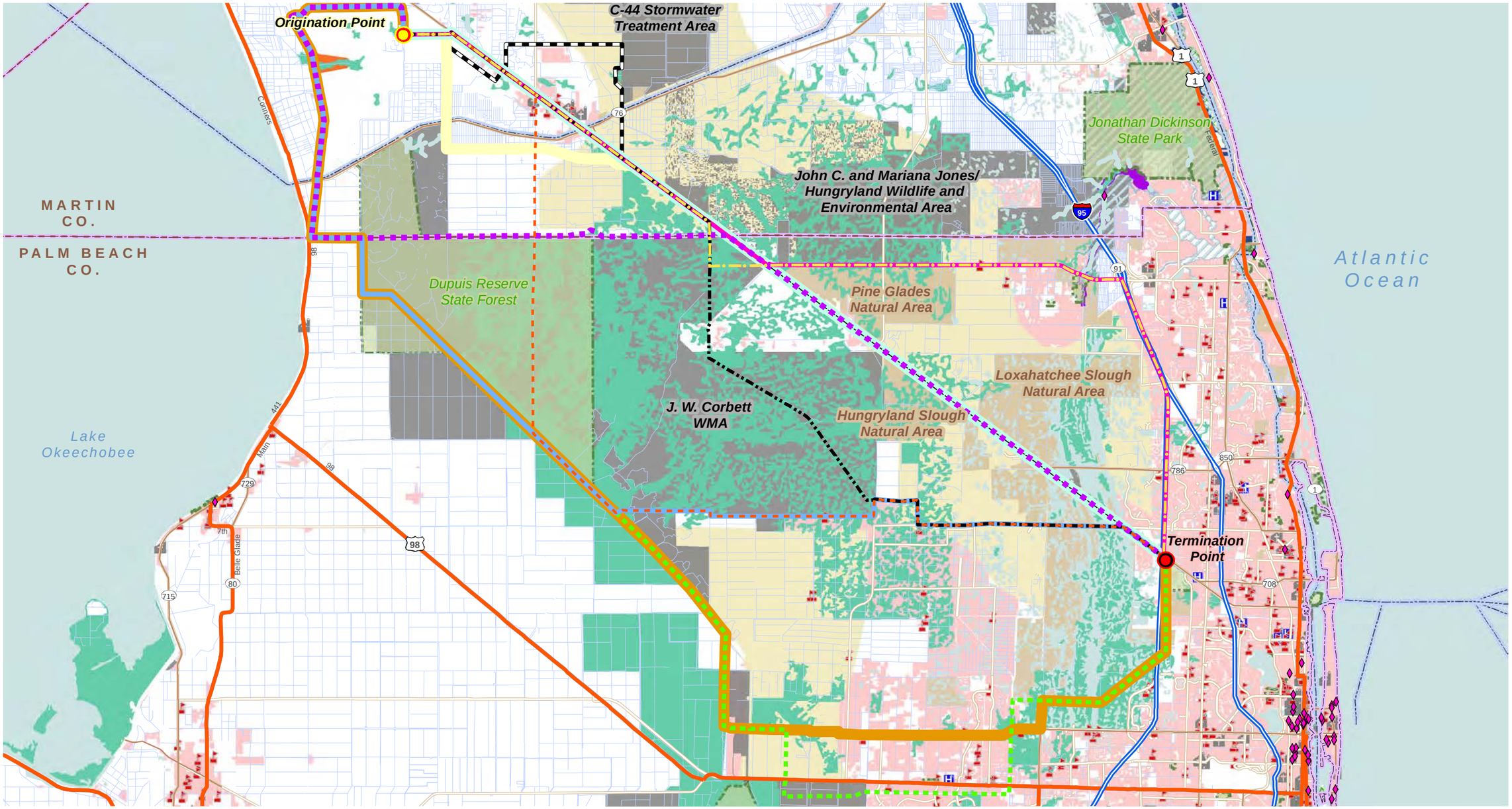
Criteria	Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5		Alternative 6		Alternative 7		Alternative 8		Alternative 9		Alternative 10		Alternative 11	
	Length[a]	Percent	Length	Percent	Length	Percent	Length	Percent	Length	Percent	Length	Percent	Length	Percent	Length	Percent	Length	Percent	Length	Percent	Length	Percent
Total Length	**32.2**	**-**	**49.4**	**-**	**38.0**	**-**	**36.9**	**-**	**46.2**	**-**	**42.4**	**-**	**39.0**	**-**	**62.0**	**-**	**57.5**	**-**	**35.0**	**-**	**37.7**	**-**
Collocation																						
Collocation with Existing Utilities	32.2	100.0	30.2	61.2	38.0	100.0	27.1	73.6	34.4	72.4	23.2	54.7	37.0	94.8	43.8	70.6	53.7	93.4	24.5	70.2	25.6	67.8
Collocation with other Non-Utility Linear Features (i.e., roads)	0.0	0.0	19.2	38.8	0.0	0.0	9.8	24.3	3.0	6.0	19.2	45.3	0.0	0.0	11.4	18.6	0.0	0.0	0.3	0.7	5.2	13.9
Total Collocation	32.2	100.0	49.4	100.0	38.0	100.0	36.9	100.0	39.2	78.8	42.4	100.0	37.0	94.8	55.2	89.1	53.7	93.4	24.8	70.9	30.8	81.7
Federally Owned Land Crossings																						
No federal lands would be traversed by the corridor alternatives.																						
State-Owned Land Crossings																						
C-44 Stormwater Treatment Area	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.6
C-51 and L-8 Reservoir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.3	0.0	0.0	0.0	0.0
Dupuis Reserve	0.0	0.0	9.9	20.0	0.0	0.0	0.0	0.0	3.0	6.5	6.9	16.3	0.0	0.0	9.9	16.0	9.9	17.2	0.0	0.0	0.0	0.0
J.W. Corbett Wildlife Management Area	0.0	0.0	13.6	27.5	0.0	0.0	11.3	30.6	0.6	1.3	13.6	32.1	3.2	8.2	8.6	13.9	8.6	15.0	0.0	0.0	0.0	0.0
Stormwater Treatment Areas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	5.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	23.5	47.5	0.0	0.0	11.3	30.6	3.6	7.8	20.5	48.4	3.2	8.2	22.1	35.6	18.7	32.5	0.0	0.0	0.6	1.6
County- and Municipal-Owned Land Crossings																						
Cypress Creek Natural Area	0.0	0.0	0.0	0.0	0.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grassy Waters Preserve	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.8	0.5	0.9	0.0	0.0	0.0	0.0
J. W. Corbett to Loxahatchee NWR Connector	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<0.1	<0.1	<0.1	<0.1	0.0	0.0	0.0	0.0
Loxahatchee Slough Natural Area	0.0	0.0	0.7	1.4	0.0	0.0	0.7	1.9	0.0	0.0	0.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pond Cypress Natural Area	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.5	0.0	0.0	0.0	0.0	0.0	0.0
Winding Waters Natural Area	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.5	0.9	1.6	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.7	1.4	0.3	0.7	0.7	1.8	0.0	0.0	0.7	1.7	0.3	0.8	2.3	3.8	1.4	2.5	0.0	0.0	0.0	0.0
FLUCFCS Land Use / Land Cover																						
Agriculture, Barren Land, and Upland Non-Forested	4.5	13.7	12.5	25.2	6.1	16.1	7.4	20.1	13.4	29.0	9.0	21.2	6.1	15.7	12.8	20.9	11.7	20.4	8.9	25.5	12.5	33.1
Urban and Built-Up	0.5	1.6	0.8	1.5	1.4	3.7	0.9	2.3	0.4	0.9	0.5	1.3	1.4	3.6	1.8	2.9	5.6	9.8	0.0	0.0	0.6	1.5
Upland and Wetland Forested	4.7	14.2	11.2	22.5	10.7	28.2	10.0	27.1	11.7	25.3	14.1	33.3	11.9	30.6	5.8	9.4	7.9	13.7	1.9	5.5	8.5	22.5
Wetland Non-Forested	1.4	4.4	13.0	26.1	1.2	3.2	8.6	23.4	2.7	5.8	7.4	17.4	3.5	8.9	12.0	19.6	11.1	19.3	1.1	3.3	3.0	7.9
Transportation, Communication, and Utilities	13.7	41.9	9.2	18.4	13.4	35.3	7.4	20.0	13.3	28.8	9.7	22.9	13.4	34.4	25.6	41.6	17.9	31.1	15.1	43.1	6.9	6.9
Waterbodies[b]																						
USGS NHD Streams	0	-	0	-	1	-	0	-	0	-	0	-	1	-	0	-	0	-	0	-	0	-
USGS NHD Canals / Ditches	1	-	31	-	15	-	5	-	30	-	19	-	16	-	63	-	55	-	67	-	24	-
USGS NHD Springs	*No USGS NHD springs would be traversed by the corridor alternatives.*																					
Wild and Scenic Rivers	0	-	0	-	1	-	0	-	0	-	0	-	1	-	0	-	0	-	0	-	0	-

Table 9.3-2
Siting Criteria Analysis for Corridor Alternatives
Martin Plant to RBEC Lateral Project

Criteria	Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5		Alternative 6		Alternative 7		Alternative 8		Alternative 9		Alternative 10		Alternative 11	
	Length[a]	Percent	Length	Percent	Length	Percent	Length	Percent	Length	Percent	Length	Percent	Length	Percent	Length	Percent	Length	Percent	Length	Percent	Length	Percent
Outstanding Florida Waters	*No Outstanding Florida Waters would be traversed by the corridor alternatives.*																					
NWI Wetlands																						
Forested	0.0	0.0	2.0	4.1	0.2	0.6	1.4	3.7	0.9	2.0	3.3	7.7	0.2	0.6	3.0	4.9	3.2	5.6	0.2	0.7	0.1	0.3
Non-Forested	5.1	15.6	15.0	30.4	5.1	13.4	15.4	41.8	4.5	9.8	11.0	26.0	5.8	14.8	13.6	22.0	12.9	22.4	5.4	15.4	5.8	15.5
Total	5.1	15.6	17.0	34.5	5.3	14.0	16.8	45.5	5.4	11.7	14.3	33.7	6.0	15.4	16.6	26.9	16.1	28.0	5.6	16.2	5.9	15.7
Biological Resources																						
USFWS Designated Critical Habitat	*No USFWS-designated critical habitat would be traversed by the corridor alternatives*																					
Wood Stork Core Foraging Area	22.7	69.5	30.2	61.1	28.0	73.8	26.2	71.1	27.0	58.3	25.9	61.2	28.4	72.9	42.7	69.0	38.3	66.6	21.9	62.7	30.7	81.5
Cultural Resources[c]																						
NRHP Sites	*No NRHP sites are located within 0.25 mile of the corridor alternatives.*																					
Environmentally Regulated Sites[c]																						
USEPA Superfund Sites	1	-	0	-	1	-	1	-	0	-	1	-	1	-	0	-	0	-	0	-	1	-
RCRA Sites	1	-	0	-	0	-	1	-	1	-	0	-	0	-	0	-	0	-	1	-	1	-
Sensitive Infrastructure[c]																						
Schools	1	-	2	-	3	-	2	-	0	-	3	-	3	-	1	-	3	-	0	-	0	-
Hospitals	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
Churches	2	-	0	-	2	-	2	-	0	-	2	-	2	-	0	-	1	-	0	-	0	-
Total	3	-	3	-	5	-	4	-	5	-	5	-	5	-	1	-	4	-	0	-	0	-
Engineering Considerations[b]																						
Major Road Crossings	7	-	6	-	25	-	6	-	7	-	6	-	26	-	14	-	15	-	7	-	11	-

Notes:
(a) Miles along hypothetical centerline.
(b) Not recorded in area, but number of crossings.
(c) Number within 0.25 mile of hypothetical centerline.

Key:
FLUCFCS = Florida Land Use Cover and Forms Classification System
NRHP = National Register of Historic Places
NWI = National Wetlands Inventory
PDC = Physical Distribution Center
RBEC = Riviera Beach Energy Center
RCRA = Resource Conservation and Recovery Act
USEPA = United States Environmental Protection Agency
USFWS = United States Fish and Wildlife Service
USGS NHD = United States Geologic Survey National Hydrography Dataset



Alternative 1
Alternative 2
Alternative 3
Alternative 4
Alternative 5
Alternative 6
Alternative 7
Alternative 8
Alternative 9
Alternative 10
Alternative 11

Existing Natural Gas Yard at FPL's Martin Plant Property
Termination Point
National Register Historic Place
Schools
Hospital
Church

Park/Forest
Ditch or canal
Intermittent
Stream
Navigable Waterway
Major Road
County Boundary
Lake/Pond
Swamp/Marsh

Wild and Scenic River
Outstanding Florida Waters
Federal Lands
Federally Owned Lands
Locally Owned Lands
State Owned Lands
Private (non residential) Owned Lands

USFWS Habitat
Part of the conservation interest areas
Part of the priority ecological resource conservation areas
SFWMD FLUCCS Urban/Built-Up

NORTH
0 5 Miles

Figure 9.3-3
Alternative Corridors
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source : ESRI 2010; USGS NHD 2008; FNAI 1991, 2011; FWCC 2004; South Florida Water Management District 2005.

This page left blank intentionally.

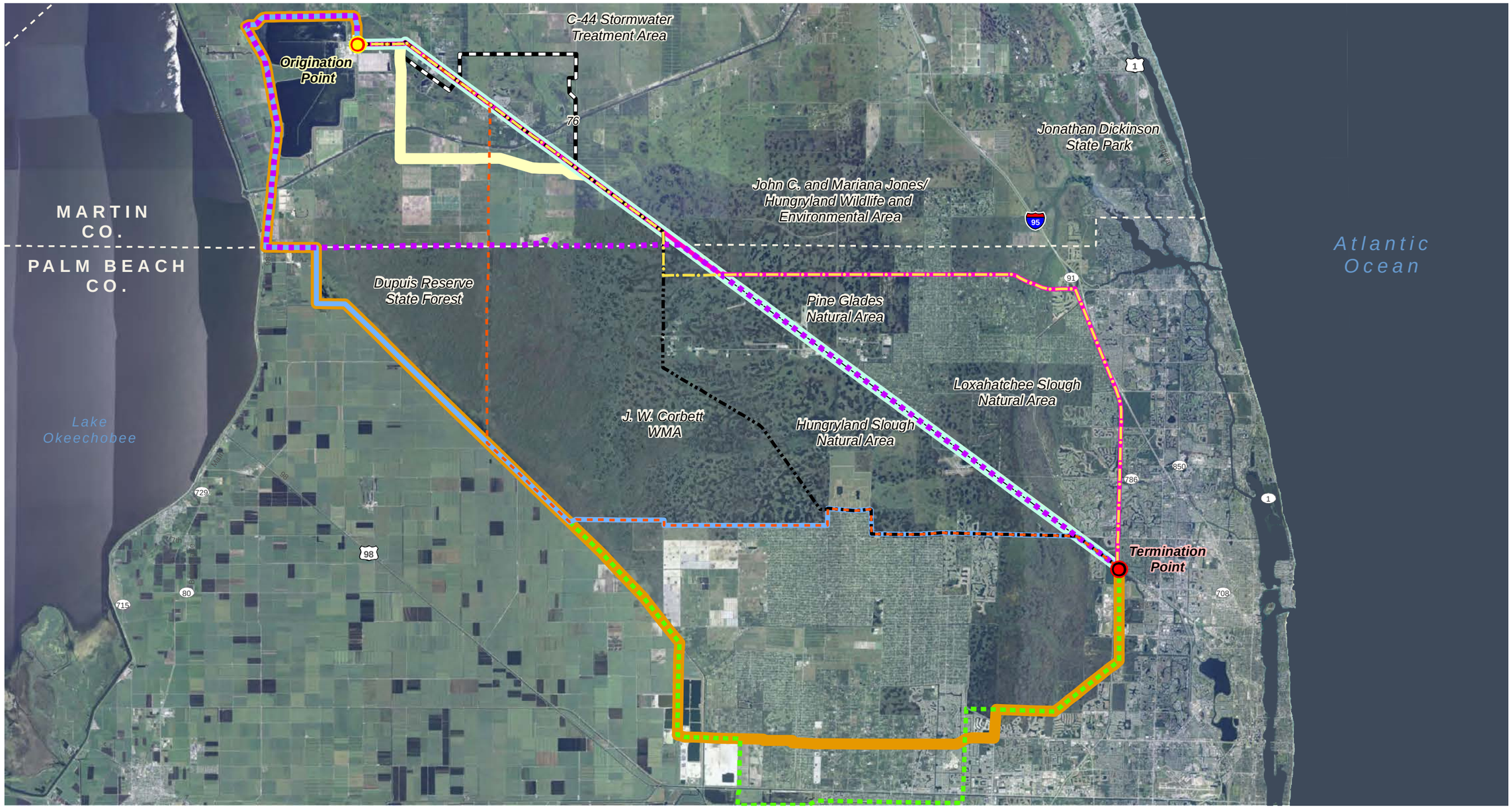


Figure 9.3-4
Alternative Corridors
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source : ESRI 2010; USGS NHD 2008; FNAI 1991, 2011; Microsoft Virtual Earth Aerial 2009.

This page left blank intentionally.

- **Alternative Corridor 4** is approximately 36.9 miles in length, of which 27.1 miles (73.6%) is collocated with existing linear facilities. This alternative is collocated with the existing FPL 18-inch fuel pipeline ROW from the Origination Point then turns due south along utility ROW approximately 13 miles southeast of the Origination Point. This alternative continues south then southeast along the utility ROW the turns east at the southeast corner of the J.W. Corbett WMA. The corridor continues east until it intersects with the existing FPL 18-inch fuel pipeline ROW, where it remains collocated to the Termination Point.
- **Alternative Corridor 5** is approximately 46.2 miles in length, of which 34.4 miles (72.4%) is collocated with existing linear facilities. This corridor is collocated with the utility ROW west of the Origination Point and then south into Palm Beach County. At the northern edge of the J.W. Corbett WMA, the alternative turns east before intersecting with the existing FPL 18-inch fuel pipeline ROW, where it remains collocated to the Termination Point.
- **Alternative Corridor 6** is approximately 42.4 miles in length, of which 23.2 miles (54.7%) is collocated with the existing linear facilities. This alternative is collocated with existing FPL 18-inch fuel pipeline ROW from the Origination Point, then turns due south along a utility ROW approximately 5 miles southeast of the Origination Point. This alternative continues south then southeast along the FPL transmission line before intersecting with another utility ROW, that it is collocated with to the southeast, before turning east along the southern boundary of the J.W. Corbett WMA. The corridor continues east then intersects with the existing FPL 18-inch fuel pipeline ROW, where it remains collocated to the Termination Point.
- **Alternative Corridor 7** is approximately 39.0 miles in length, 37.0 miles (94.8%) of which is collocated with existing linear facilities. This alternative begins by collocating with the existing FPL 18-inch fuel pipeline ROW from the Origination Point before turning south along a utility ROW for approximately 13 miles southeast of the Origination Point. This corridor is collocated with this utility ROW for approximately 1.5 miles before turning due east along a greenfield corridor for approximately 2 miles, then intersects with another utility ROW at SR 710. The corridor then continues east along the utility ROW before turning south along another utility ROW at the intersection with the Florida Turnpike. This corridor continues south to the Termination Point.
- **Alternative Corridor 8** is approximately 62.0 miles in length, of which 43.8 miles (70.6%) is collocated with existing linear facilities. This corridor is collocated with a utility ROW west of the Origination Point and then southeast to the FPL West County Energy Center. From the West County Energy Center, the corridor is collocated with a utility ROW east and then northeast until the intersection with another utility ROW along the Florida Turnpike. At this point, the corridor turns north along the same utility ROW until it reaches the Termination Point.
- **Alternative Corridor 9** is approximately 57.5 miles in length, 53.7 miles (93.4%) of which is collocated with existing linear facilities. This corridor is collocated with a utility ROW west of the Origination Point and then southeast to the FPL West County Energy Center. From the West County Energy Center, the corridor is collocated with a reclaimed water pipeline continuing due east. At the intersection with another utility ROW, the corridor is collocated with it east and then northeast until the intersection with a utility ROW along the Florida Turnpike. At this point, the corridor turns north along the same utility ROW until it reaches the Termination Point.
- **Alternative Corridor 10** is approximately 35.0 miles in length, 24.5 miles (70.2%) of which is collocated with existing linear facilities. This corridor is collocated with a utility ROW south from the Origination Point for approximately 4 miles and then turns east

along a greenfield corridor traversing agricultural lands for approximately 9.5 miles until it intersects with the existing FPL 18-inch fuel pipeline ROW, where it remains collocated to the Termination Point.

- **Alternative Corridor 11** is approximately 37.7 miles in length, 25.6 miles (67.8%) of which is collocated with existing linear facilities. This corridor traverses east out of the Origination Point then turns southeast along a greenfield corridor south of SR 710 for approximately 2.1 miles. The corridor turns north, crosses SR 710, and continues to a point north of any development associated with Indiantown, Florida. The corridor then turns east to the South Florida Water Management District's (SFWMD's) C-44 Stormwater Treatment Area, until it turns south near the border of the SFWMD lands. The corridor then continues south before intersecting with the existing FPL 18-inch fuel pipeline ROW where it remains collocated to the Termination Point.

9.3.1.3 Conclusions

A comparative analysis of the 11 alternative corridors for the siting of the Project was completed (see Table 9.3-2). It is not the intent of this alternatives analysis to evaluate all potential impacts that may occur from the construction and operation of a natural gas pipeline for each corridor alternative considered in this evaluation. The goal of this analysis was to select the most practicable alternative with the least overall impacts that meets the Project's purpose.

Impacts to water resources, biological resources, cultural resources, federal/state/county/ municipal land, potentially contaminated sites, and engineering considerations were compared for all alternative corridors considered. Based on review of the siting criteria, several alternative corridors showed distinct disadvantages due to the increased foreseeable impacts associated with these alternatives.

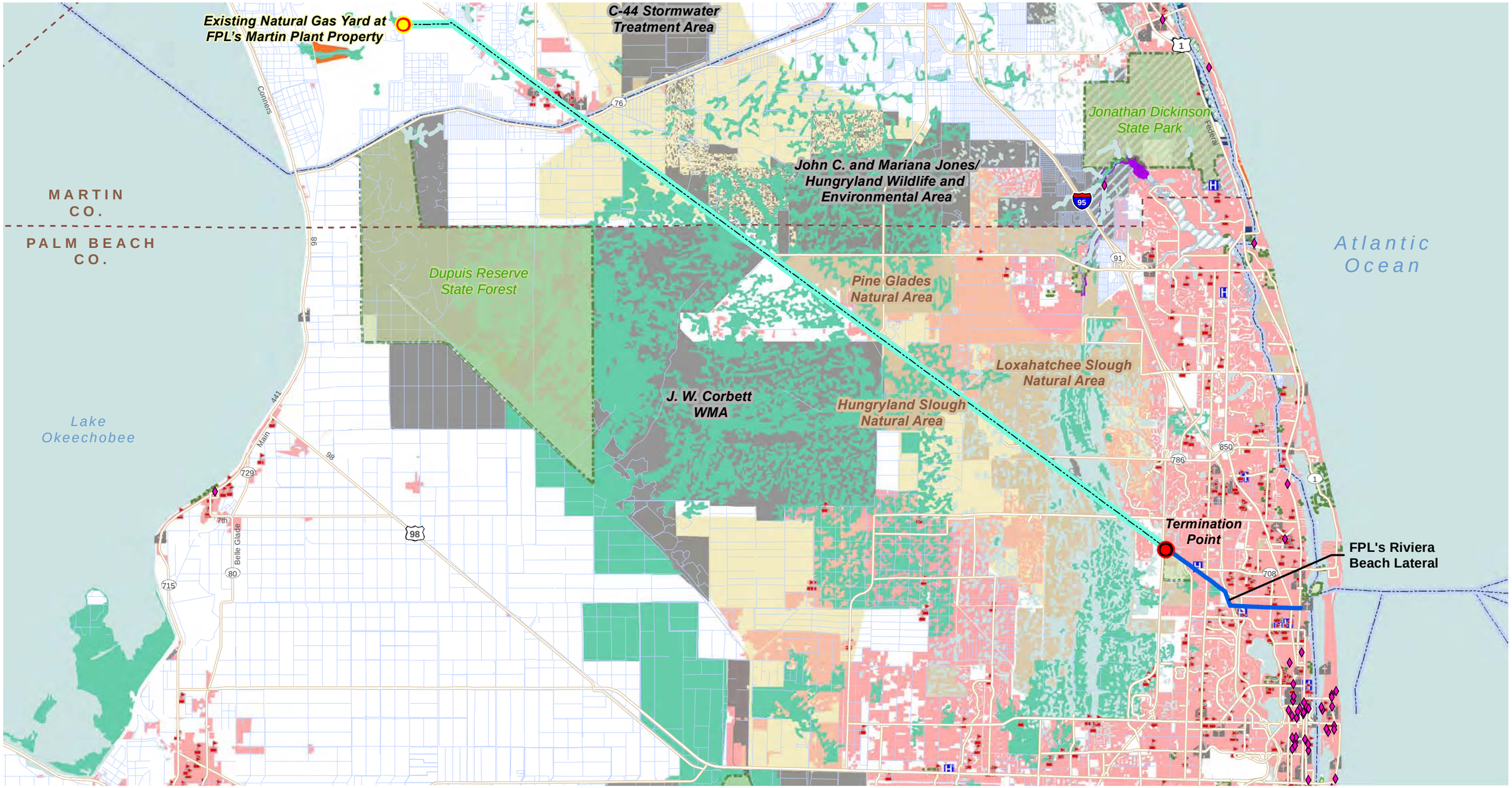
Alternative Corridors 2, 4, 6, 8, and 9 would cross a significant amount of State-owned land and would require impacts to lands set aside for preservation. Because these lands have been set aside for conservation, a natural gas transmission pipeline may not be consistent with their intended use. Since some of the other alternatives would have lesser impacts, these alternatives likely would not be granted an easement to traverse through State-owned lands.

Wetlands anticipated to be impacted by Alternative Corridors 1, 3, 5, 7, 10, and 11 are comparable and therefore are not a discriminator for selection. As shown in Table 9.3-2, Alternative Corridors 5, 10, and 11 include 20% to 30% of the corridor crossing greenfield and provide no distinct advantage over Alternative Corridors 1, 3, and 7, which are mostly collocated with other ROWs. Therefore, Alternative Corridors 5, 10, and 11 were not selected based upon this criterion.

Of the remaining three alternative corridors, Alternative Corridors 3 and 7 would traverse State- or county-owned conservation lands and both would be 5 to 6 miles longer in length than Alternative Corridor 1. Therefore, Alternative Corridors 3 and 7 were not selected based upon this criterion.

Alternative Corridor 1 would have the least overall land disturbance when compared to the other alternatives based on all criteria evaluated, and it is the shortest corridor. Additionally, even though the total wetlands area that would be traversed by Alternative 1 is comparable to other alternative corridors, all wetlands that would be crossed by Alternative Corridor 1 are mapped as non-forested, while all other alternatives would cross areas identified by NWI as forested wetlands.

Based upon these comparisons, Alternative Corridor 1 (Figure 9.3-5) meets the intended Project purpose as it offers environmental advantages over the other alternatives and it has been determined to be the Preferred Corridor for the Project.



Existing Natural Gas Yard at FPL's Martin Plant Property
Termination Point
Major Road
County Boundary

Preferred Corridor
National Register Historic Place
Schools
Hospital
Church
Park/Forest

Navigable Waterway
Ditch or canal
Intermittent
Stream
Lake/Pond
Swamp/Marsh
Wild and Scenic River
Outstanding Florida Waters

Federal Lands
Federally Owned Lands
Locally Owned Lands
State Owned Lands
Private (non residential) Owned Lands
USFWS Habitat
Part of the conservation interest areas
Part of the priority ecological resource conservation areas
SFWMD FLUCCS Urban/Built-Up

NORTH
0 5 Miles

Figure 9.3-5
Preferred Corridor
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source : ESRI 2010; USGS NHD 2008; FNAI 1991, 2011; FWCC 2004; South Florida Water Management District 2005.

This page left blank intentionally.

9.3.2 Corridor Description

The Preferred Corridor would be located entirely within Martin and Palm Beach Counties (see Figure 9.2-1; see also Appendix A). Appendix A depicts the Preferred Corridor on aerial imagery. All aerial imagery was collected by the United States Geologic Survey (USGS) National Aerial Imagery Program at a 1-meter resolution during 2010. From the Origination Point the preferred corridor would be collocated with the existing FPL 18-inch fuel pipeline from milepost (MP) 0.0 to MP 1.6[2], east until the preferred corridor meets the CSX Rail Line ROW and SR 710 ROW. At SR 710, the preferred corridor would turn southeast and would be collocated with SR 710, the existing FPL 18-inch fuel pipeline, and the CSX Rail Line ROW from MP 1.6 to MP 32.2 to the Termination Point. Table 9.3-3 details the length of the Preferred Corridor within counties and incorporated municipalities.

Table 9.3-3
Length of the Preferred Corridor within Counties and Incorporated Municipalities

County or Incorporated Municipality	Beginning Milepost	Ending Milepost
Martin County	0.0	13.5
Palm Beach County	13.5	32.2
City of Palm Beach Gardens	22.1	22.2
City of Palm Beach Gardens [(a)]	23.4	23.4
City of Palm Beach Gardens	27.1	27.3
City of West Palm Beach	27.3	32.2

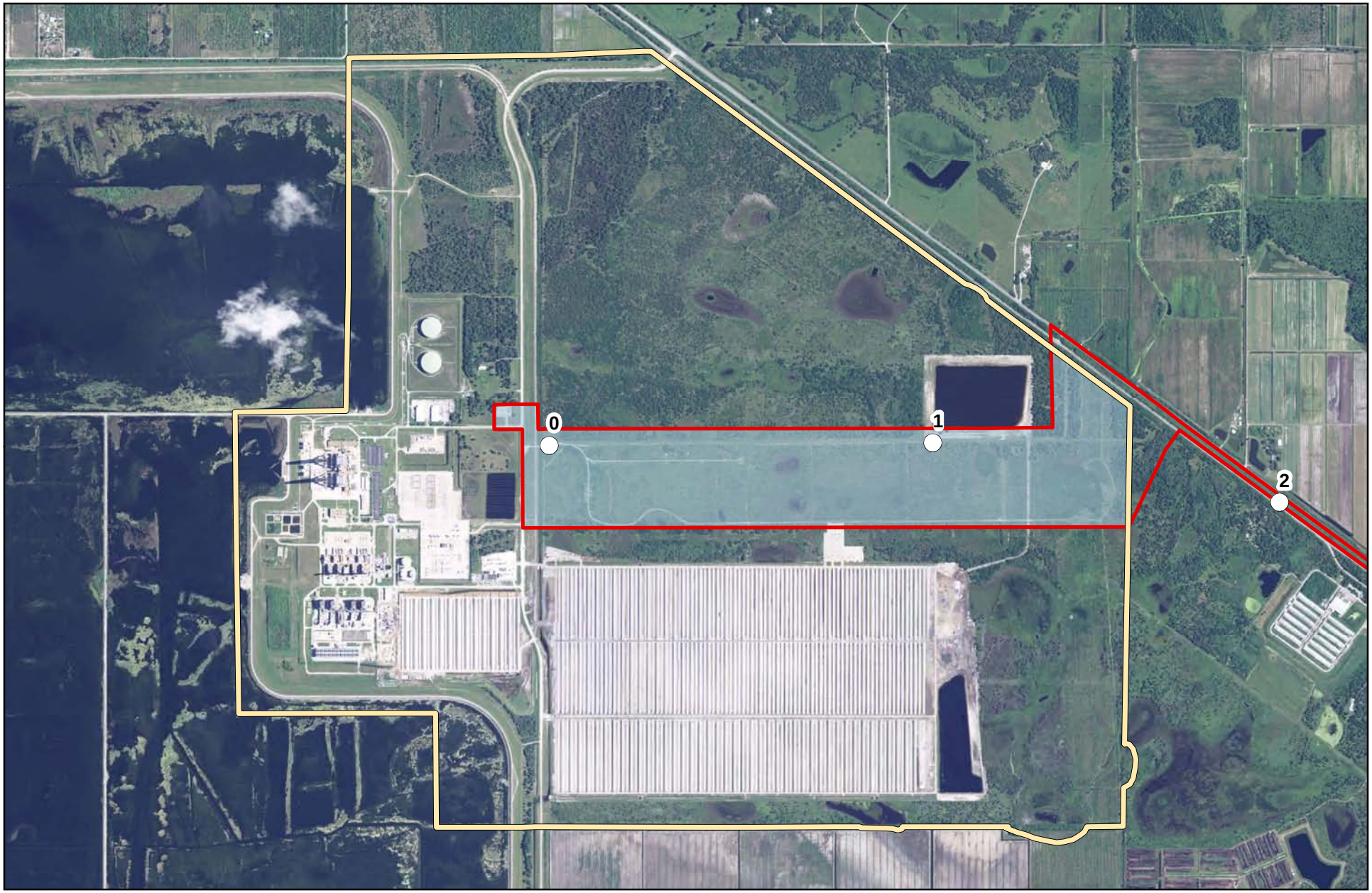
Note:
(a) Second crossing of the City of Palm Beach Gardens is less that 0.1 mile, crossing is 0.02 mile in length.

The Preferred Corridor generally varies from 100 to 1,360 feet in width. Following Site Certification and based on field survey data and final engineering design, much narrower construction and permanent pipeline ROWs (approximately 50 to 100 feet) would be identified within the certified corridor. After the property interests required have been obtained and construction has been completed by FPL, the boundaries of the certified corridor would be narrowed to include only that land within the permanent pipeline ROW. Portions of the Martin Plant property are certified under the PPSA (PA-89-27L). Where the Project would overlap the areas certified under the PPSA from approximately MP 0.0 to 1.5, this Petition to Modify is proposed to serve to modify the Martin Plant Site Certification as needed. Near MP 12.7, the Preferred Corridor would overlap with the FPL Levee – Midway 500kV Transmission Line Certified Corridor (TA89-07). This corridor received its certification on April 20, 1990, from FDEP. Near the Termination Point of the Preferred Corridor from MP 32.1 to MP 32.2, an overlap with the previous modification to RBEC for the Riviera Beach Lateral occurs. Figure 9.3-6 (*series*) illustrates the location of these overlapping certified boundaries. Other non-certified utilities are illustrated on the topographic maps in Appendix B.

9.3.3 Accessways

The numbers and types of accessways necessary to access work areas will be determined post-certification once the specific pipeline alignment has been determined within the Preferred Corridor. Existing highways and roads are expected to be used as the principal means of accessing the construction areas. Temporary accessways would be used during the construction period. The accessways would allow for the delivery of materials and equipment to the pipeline work areas and would provide construction, inspection, and maintenance personnel daily access to the work sites.

[2] Milepost designations have been identified for this Project as a reference point only, based on a hypothetical centerline of the corridor.



NORTH

0 2,000 Feet

Milepost

Preferred Corridor

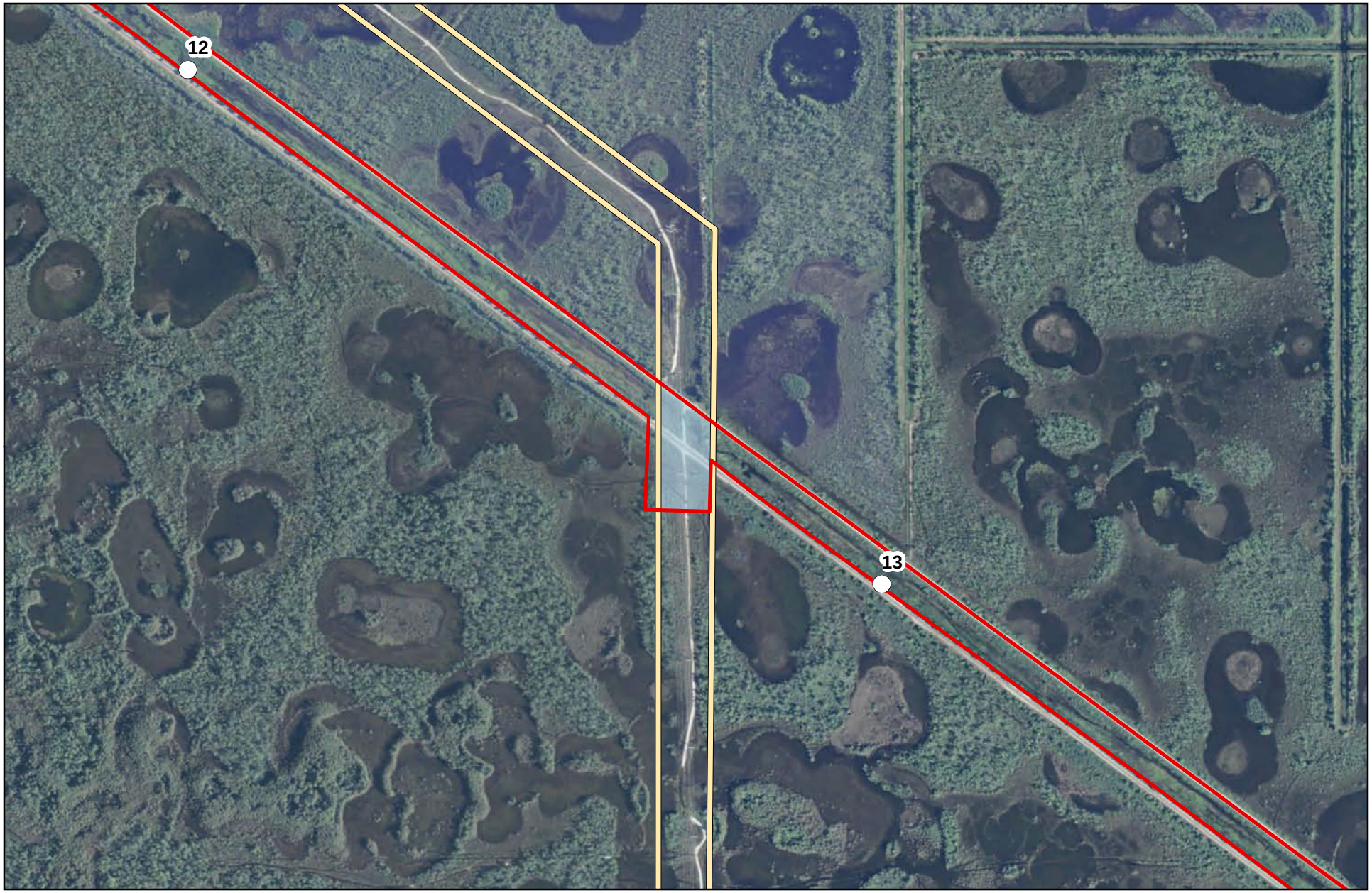
Martin Plant Certified Area

Certified Area Intersection

Figure 9.3-6 (Sheet 1 of 3)
Overlapping Certified Boundaries
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010.



NORTH

0 1,000 Feet

Milepost

Preferred Corridor

Levee- Midway 500 KV Transmission Line Certified Corridor

Certified Area Intersection

Figure 9.3-6 (Sheet 2 of 3)
Overlapping Certified Boundaries
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010.



NORTH

0 1,000 Feet

Milepost

Preferred Corridor

Riviera Beach Lateral Certified Corridor

Certified Area Intersection

FPL

Figure 9.3-6 (Sheet 3 of 3)
Overlapping Certified Boundaries
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010; NAIP 2010.

9.3.4 Cost Projections

The costs of the Project were incorporated into the anticipated project costs of the RBEC which were estimated at $1,276 million. The actual cost of the Project will depend on factors such as the final location of the ROWs within the corridor, final design, mitigation costs, other location-specific conditions, and conditions of certification.

9.3.5 Social and Political Environment of the Corridor Area

The following sub-sections discuss the social and political existing environment of the Preferred Corridor and surrounding areas as appropriate or in accordance to the FDEP Power Plant Siting Act Application Instruction Guide. These resources include:

- Government Jurisdictions (Section 9.3.5.1);
- Zoning and Land Use Plans (Section 9.3.5.2);
- Easement, Titles, and Agency Works (Section 9.3.5.3);
- Regional Scenic, Cultural, and Natural Landmarks (Section 9.3.5.4);
- Archaeological and Historic Sites (Section 9.3.5.5);
- Traffic and Lighting (Section 9.5.6.6); and
- Socioeconomics (Section 9.3.5.7).

9.3.5.1 Governmental Jurisdictions

As part of the requirements of the PPSA, the Applicant must identify any government jurisdictions crossed by, or within 5 miles of, the plant's associated facilities which would be the Preferred Corridor for this Project. Appendix C contains the corresponding figures that detail the location of the Preferred Corridor in relation to governmental jurisdiction boundaries at a scale of at least 1:126,720 or 1 inch equals 2 miles. The scale may vary for each government jurisdiction as the size of the jurisdiction may vary. The presence of major private landholdings with conservation easements whose primary purpose is environmental protection are identified, if information is readily available. The areas identified are:

- Counties;
- Municipalities;
- National Parks;
- National Forests;
- National Seashores;
- National Wildlife Refuges;
- National Wilderness Areas;
- National Memorials or Monuments;
- National Marine Sanctuaries;
- National Estuarine Sanctuaries;
- Roadless Area Review and Evaluation (R.A.R.E.) areas;
- National Wild and Scenic Rivers;
- United States Fish and Wildlife Service (USFWS) Threatened and Endangered Species Critical Habitat;
- State Parks;
- State Forests;
- Wildlife Management Areas;
- Areas of Critical State Concern;
- State Conservation and Recreation Lands including State Trails and Recreation Areas;
- Save Our Rivers Lands;
- State Archaeological Landmarks or Landmark Zones;
- State Aquatic Preserves;
- Outstanding Florida Waters (OFWs);
- Florida Springs;
- Florida Wild and Scenic Rivers;
- County Parks or Special Management Areas Established by Law;
- Indian Reservations;
- Military Lands; and
- Other private landholdings for which the primary purpose is environmental protection.

9.3.5.1.1 Governmental Jurisdictions Crossed by, or Within 5 Miles of, the Preferred Corridor

Counties

The Preferred Corridor would traverse two counties, Martin and Palm Beach. Additionally, the Preferred Corridor would not be within 5 miles of any other county lines (see Figure C-1, in Appendix C).

Municipalities

The Project would cross two municipalities the City of Palm Beach Gardens and the City of West Palm Beach. Figures C-1 thru C-6 (Appendix C) represent the municipalities that would be traversed by the Project. In addition to the municipalities that would be crossed by the Preferred Corridor, five additional municipalities would be within 5 miles of, but would not be crossed by, the Preferred Corridor as depicted on Figure C-1 and listed below:

- City of Lake Park;
- City of Mangonia Park;
- City of North Palm Beach;
- City of Riviera Beach; and
- City of Jupiter.

State Wildlife Management Areas

Florida's WMA system is managed by the Florida Fish and Wildlife Conservation Commission (FWC) to sustain the widest possible range of native wildlife in their natural habitats. These lands are more rugged than parks, with fewer developed amenities. This system includes more than 5.8 million acres of land established as WMAs or Wildlife and Environmental Areas (WEAs), which include Mitigation Banks.

No WMAs or WEAs would be traversed by the Preferred Corridor.

Two WMAs, Allapattah Flats WMA, owned by the SFWMD, and J.W. Corbett WMA, owned by the FWC, would be within 5 miles of the Preferred Corridor. Figures C-7, C-8, and C-9 detail the locations of these WMAs relative to the Preferred Corridor.

State Conservation and Recreation Lands, including State Trails and Recreation Areas

Florida State Conservation and Recreational Lands are lands that have been purchased by state agencies or water management districts for the purposes of conservation or for public recreation. Although lands previously discussed may fit this description, those lands are defined in their own category for purpose of this section. Lands defined herein as State Conservation and Recreational Lands have been purchased through a number of programs and are combined into this category for the purposes of this application.

No State Conservation and Recreation Lands would be traversed by the Preferred Corridor.

The following State Conservation and Recreation Lands would be within 5 miles of the Preferred Corridor (ownership is shown in parentheses):

- Dupuis Reserve (SFWMD);
- Hungryland/SFWMD Parcels (SFWMD);
- Gentle Ben Flowage Easement (SFWMD);
- John C. Mariana Jones/Hungryland Wildlife and Environmental Area (FWC); and
- C-44 Stormwater Treatment Area (SFWMD).

Figures C-7, C-8, and C-9 show the locations of these State Conservation and Recreational Lands in relation to the Preferred Corridor.

Save Our Rivers Lands

The "Save Our Rivers" Program was instituted by the SFWMD in order to acquire the following types of lands:

- Completion of the land acquisition necessary for the Four River Basins, Florida Project to provide environmentally sound flood control and other benefits;
- Riverine swamps and corridors especially in areas of heavy development or adjacent to other District land holdings; and
- Other lands having some unique water management function, such as special recharge areas or water supply protection.

No "Save Our Rivers" lands would be crossed by the Preferred Corridor.

Allapattah Flats WMA is part of the Save Our Rivers Program and is owned by the SFWMD. Allapattah Flats would not be traversed by the Preferred Corridor, but it would be within 5 miles of it (see Figure C-7). No additional Save Our Rivers lands would be traversed or would be located within 5 miles of the Preferred Corridor.

State Archaeological Landmarks or Landmark Zones

The Florida Department of State Division of Historical Resources (DHR) can designate archaeological resources on private property as an Archaeological Landmark or Landmark Zone to recognize the significance and increase legal protection of privately owned archaeological sites under state law. A designated site or group of sites must demonstrate "significance to the scientific study or public representation of the state's historical, prehistoric, or aboriginal past" (Chapter 267.11, Florida Statutes [F.S.]). The DHR requires that archaeological resources be eligible for listing on the National Register of Historic Places (NRHP) in order to be designated a State Archaeological Landmark or Landmark Zone. Information concerning the crossing of State Archaeological Landmarks or Landmark Zones is considered non-public and is included in the non-public Appendix F.

County Parks or Special Management Areas

This section designates lands that have been acquired by counties or municipalities to serve as parks or Special Management Areas.

No County Parks or Special Management Areas would be crossed by the Preferred Corridor.

The following lands in this category (note ownership in parentheses) would be within 5 miles of the Preferred Corridor:

- Timber Powers Park (Martin County);
- C-44 Park Parcel (Martin County);
- Lake Park Scrub Natural Area (Palm Beach County);
- Winding Waters Natural Area (Palm Beach County);
- Sweetbay Natural Area (Palm Beach County);
- Hungryland Slough Natural Area (Palm Beach County);
- Pond Cypress Natural Area (Palm Beach County);
- Loxahatchee Slough Natural Area (Palm Beach County);
- Pine Glades Natural Area (Palm Beach County);
- Cypress Creek Natural Area (Palm Beach County);
- Riverbend Park (Palm Beach County);

- Dyer Blvd Park (Palm Beach County);
- Jupiter Farms (Palm Beach County);
- Palm Beach Gardens District (Palm Beach County); and
- Grassy Waters Preserve (City of West Palm Beach).

Figures C-7, C-8, and C-9 show the locations of these county parks or Special Management Areas in relation to the Preferred Corridor.

Private Landholdings for Which the Primary Purpose is Environmental Protection

Private holdings with conservation easements for which the primary purpose is environmental protection consists of lands with whom a federal agency, state agency, water management district, or county has signed an easement or agreement so that these lands are managed with the primary purpose being environmental protection.

No Private Landholdings with conservation easements would be crossed by the Preferred Corridor.

One property, the Barley Barber Swamp owned by FPL, would be within 5 miles of the Preferred Corridor. Figure C-7 illustrates the location of this land in relation to the Preferred Corridor.

9.3.5.1.2 Governmental Jurisdictions Not Crossed by, or Within 5 Miles of, the Project Corridors

The following governmental jurisdictions would not be crossed by Project corridors, nor would any of these jurisdictions be within 5 miles of the Preferred Corridor:

- National Parks;
- National Forests;
- National Seashores;
- National Wildlife Refuges;
- National Wilderness Areas;
- National Memorials or Monuments;
- National Marine Sanctuaries;
- National Estuarine Sanctuaries;
- R.A.R.E. areas;
- USFWS Threatened and Endangered Species Critical Habitat;
- State Parks;
- National Wild and Scenic Rivers;
- Areas of Critical State Concern;
- State Aquatic Preserves;
- OFWs;
- Florida Springs (First Magnitude Springs Database);
- Florida Wild and Scenic Rivers;
- Military Lands; and
- Indian Reservations.

9.3.5.2 Zoning and Land Use Plans

This section provides an analysis of the existing land uses that would be traversed by the Project's Preferred Corridor. Resource discussions for each future land use designation and zoning district of the counties and municipalities that would be crossed are organized in this section from north to south and include:

- Martin County;
- Palm Beach County;
- City of Palm Beach Gardens; and
- City of West Palm Beach.

It is important to note that natural gas pipelines are exempt from the State of Florida's definition of "development," and therefore are not subject to any local comprehensive future land use plans or zoning regulations. Specifically, pursuant to Section 163.3164(8) F.S., a "development permit" includes any building permit, zoning permit, subdivision approval, rezoning, certification, special exception, variance, or any other official action of local government having the effect of permitting the development of land. At 163.3164(6), F.S., "development" is defined as having "the meaning given it in s.380.04." In Section 380.04(1), F.S., "development" is defined as the carrying out of any building activity or mining operation, the making of any material change in the use or appearance of any structure or land, or the dividing of land into three or more parcels. Then, Section 380.04(2), F.S., lists certain activities that are specifically determined to involve "development." Natural gas pipelines are not named in either Sections 380.04(1) or (2), F.S. Most importantly, in Section 380.04(3)(b), natural gas pipelines constructed on established ROWs are expressly excluded from the definition of "development" and do not require land use and zoning approvals from counties or local governments. Therefore, the information below is provided for reference only.

Compatibility with existing land uses/land cover for the Project (natural gas transmission pipeline, mainline block valves, aboveground markers, and pig launching facilities) is discussed in Section 9.4.5.1.

9.3.5.2.1 Martin County

The Preferred Corridor would originate at an existing natural gas yard at FPL's Martin Plant property and then is collocated with the existing FPL 18-inch fuel pipeline east for approximately 1.6 miles until the Preferred Corridor meets the CSX Rail Line ROW and SR 710 ROW. At SR 710, the Preferred Corridor would turn southeast and would be collocated with SR 710, the existing FPL 18-inch fuel pipeline, and the CSX Rail Line ROW for approximately 11.9 miles until it would cross into Palm Beach County.

The Preferred Corridor would traverse approximately 13.5 miles of lands within Martin County. These lands are primarily characterized as being used for transportation, commercial, or industrial purposes. The Preferred Corridor would traverse through Indiantown, a census-designated place with a 2010 population of 6,083 people. Conservation areas that lie adjacent to the Preferred Corridor in Martin County include:

- **John C. and Mariana Jones/Hungryland Wildlife and Environmental Area** (MP 10.8 to 12.7). This conservation area is managed by the FWC and owned by the SFWMD, with the Trustees of the Internal Improvement Trust Fund as co-owners.
- **Hungryland/SFWMD Parcels** (MP 12.7 to 13.5). This conservation area is managed and owned by the SFWMD.
- **J.W. Corbett WMA** (MP 13.1 to 13.5). This conservation area is managed and owned by the FWC.

<u>Martin County Comprehensive Plan</u>

The Future Land Use Element of the Martin County Comprehensive Growth Management Plan, as amended through December 14, 2010, was used for the following analysis (Martin County 1990). Figures D-1 through D-9 (Appendix D) illustrate the Preferred Corridor in relation to the Martin County future land use map. The Preferred Corridor would cross the following future land use designations:

- Agricultural Ranchette;
- Agriculture;
- Commercial General;
- Commercial Waterfront;

- General Institutional;
- Industrial;
- Power Generation;
- Residential Estate Density – up to 2 units per acre (UPA);
- Residential Low Density – up to 5 UPA;
- Residential Medium Density – up to 8 UPA; and
- Residential High Density – up to 10 UPA.

Martin County Zoning

Based on the Martin County Zoning Map, the Preferred Corridor would cross the following zoning districts, as illustrated on Figures E-1 through E-11 (Appendix E):

- Agricultural (A-2);
- Business (B-1);
- Business Wholesale (B-2);
- General Agricultural District (AG-20A);
- General Commercial District (GC);
- General Industrial District (G1);
- Heavy Industrial (HI);
- High Density Residential District (RM-10);
- Industrial (M-1);
- Industrial (M-3);
- Interim Zoning (IZ);
- Liberal Multi-Family Residential (R-3A);
- Limited Industrial (LI); and
- Planned Unit Development (PUD) – Industrial (PUD-I) & Commercial (PUD-C).

9.3.5.2.2 Palm Beach County

Once the Preferred Corridor crosses into Palm Beach County, it would continue to be collocated with SR 710, the existing FPL 18-inch fuel pipeline, and the CSX Rail Line ROW for approximately 18.7 miles until it reaches the Termination Point. The Preferred Corridor would be collocated with the existing CSX Rail Line ROW and the SR 710 ROW for its entirety within Palm Beach County and the municipalities of the City of West Palm Beach and the City of Palm Beach Gardens.

Conservation areas that lie adjacent to the Preferred Corridor in Palm Beach County and the municipalities of the City of West Palm Beach and the City of Palm Beach Gardens include:

- **Hungryland/SFWMD Parcels** (MP 13.5 to 15.2). This conservation area is managed and owned by the SFWMD.
- **J.W. Corbett WMA** (MP 13.5 to 15.2). This conservation area is managed and owned by the FWC.
- **Pine Glades Natural Area** (MP 15.3 to 19.9). This conservation area is managed and owned by Palm Beach County.
- **Hungryland Slough Natural Area** (MP 12.3 to 23.4). This conservation area is managed and owned by Palm Beach County.
- **Sweetbay Natural Area** (MP 23.8 to 26.8). This conservation area is managed and owned by Palm Beach County.
- **Loxahatchee Slough Natural Area** (MP 24.3 to 30.3). This conservation area is managed and owned by Palm Beach County.

- **Gentle Ben Flowage Easement** (MP 27.1 to 28.8). This conservation area is managed by the SFWMD and owned by private individuals.
- **Grassy Waters Preserve** (MP 27.3 to 31.1). This conservation area is managed and owned by City of West Palm Beach.

Palm Beach County Comprehensive Plan

The Palm Beach County Comprehensive Plan, as effective on October 20, 2011, was used for the following analysis (Palm Beach County 2011). Figures D-10 through D-17 and D-20 (Appendix D) illustrate the Preferred Corridor in relation to the County's future land use map. It should be noted that Palm Beach County Future Land Use Element Policy 2.2.9-d states that utilities uses, with the exception of power plants, will be permitted in all future land use designations subject to special siting criteria set forth in the Unified Land Development Code (ULDC). This policy further states that the placement of utility uses in residentially designated areas will be controlled through the ULDC to ensure the protection of existing and anticipated residential areas from adverse impacts of the facility.

The Preferred Corridor would cross the following future land use designations:

- Conservation (CON);
- Industrial (IND);
- Commercial High Intensity - with underlying Industrial (CH/IND);
- Commercial Recreation - with underlying Industrial (CR/IND);
- Economic Development Center (EDC);
- Rural Residential (RR-20, RR-10);
- Utilities and Transportation (U/T); and
- Parks and Recreation (PARK).

Palm Beach County Zoning

Based on the Palm Beach County Zoning Map, the Preferred Corridor would cross the following zoning districts, as illustrated on Figures E-11 through E-22 (Appendix E):

- Agricultural Production (AP);
- Industrial (IG);
- Commercial/Multiple Use Planned Development (MUPD);
- Residential Estate District (RE); and
- Public Ownership (PO).

9.3.5.2.3 City of Palm Beach Gardens

City of Palm Beach Gardens Comprehensive Plan

The City of Palm Beach Gardens Comprehensive Plan, as effective on October 20, 2011, was used for the following analysis (City of Palm Beach Gardens 2008). Figures D-15 through D-20 (Appendix D) illustrate the Preferred Corridor in relation to the City's future land use map. The Preferred Corridor would cross the following future land use designations:

- Commercial (C);
- Conservation (CONS);
- Industrial (I);
- Rural Residential (RR-10); and
- Residential Low (RL).

City of Palm Beach Gardens Zoning

Based on the City of Palm Beach Gardens Zoning Map, the Preferred Corridor would traverse the following zoning districts, as illustrated on Figures E-15 through E-21 (Appendix E):

- Conservation (CONS);
- Planned Development Area (PDA); and
- Residential Estates (RE) Northlake Boulevard Overlay Zone (NBOZ).

9.3.5.2.4 City of West Palm Beach

City of West Palm Beach Comprehensive Plan

The City of West Palm Beach Comprehensive Plan, effective as of October 20, 2011, was used for the following analysis. Figures D-18 through D-20 (Appendix D) illustrate the Preferred Corridor in relation to the City's future land use map. As the municipality boundary for the City of West Palm Beach was revised on January 25, 2012, the future land use within the City of West Palm Beach has not been updated for the area within the Preferred Corridor. Therefore, it has been assumed that the adjacent future land use designations would be extended into the Preferred Corridor, so the Preferred Corridor would cross the following future land use designations:

- Conservation (CON);
- Residential - Single Family (SF); and
- Special Impact Zone/Community Service (SIZ/CS).

City of West Palm Beach Zoning

Similar to future land use, zoning maps have not been updated for the area that would be traversed by the Preferred Corridor and it is assumed that the adjacent mapped zoning would be extended. Based on the City of West Palm Beach Zoning Map, as illustrated on Figures E-18 through E-21 (Appendix E), the Preferred Corridor would cross the following zoning districts:

- Conservation (W);
- Community Service (CS); and
- Residential Planned Development (RPD).

9.3.5.3 Easements, Titles, and Agency Works

FPL will own and operate the Project. Table 9.3-4 provides identification of the anticipated governmental features within the Preferred Corridor and the associated easements and approvals that may be needed for the Project. Authorization for collocating the Project within existing governmental linear ROWs and crossings for the pipeline are being requested under this Petition to Modify the RBEC Certification. In addition, Table 9.3-4 summarizes any changes to these lands or structures that may occur as a result of this Project.

Table 9.3-4
Easements, Titles, and Agency Works

Governmental Feature	Affected Governmental Agency	Easement or Approval Likely Required	Beginning MP	Ending MP [(a)]	Potential Change or Impact
Martin County					
SR 710, Beeline Hwy, Warfield Blvd, Warfield Hwy	FDOT	Utility Permit	1.6	13.5	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
SW Silver Fox Ln	Martin County	ROW Approval	2.9	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
SW Dr. Martin Luther King Dr	Martin County	ROW Approval	5.0	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
Palm Way	Martin County	ROW Approval	6.2	6.4	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
SW Jefferson Ave	Martin County	ROW Approval	6.2	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
SW Washington Ave	Martin County	ROW Approval	6.3	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
SW Indian Ave	Martin County	ROW Approval	6.3	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
SW Adams Ave	Martin County	ROW Approval	6.4	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
SW Farm Rd	Martin County	ROW Approval	6.4	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
SW Madison Ave	Martin County	ROW Approval	6.5	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.

Table 9.3-4
Easements, Titles, and Agency Works

Governmental Feature	Affected Governmental Agency	Easement or Approval Likely Required	Beginning MP	Ending MP [(a)]	Potential Change or Impact
Fernwood Forest Rd	Martin County	ROW Approval	6.8	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
C-44 Canal; St. Lucie Canal	SFWMD	Crossing Easement	7.3	n/a	Potential temporary impacts could occur during construction including clearing of vegetation or increased turbidity. See Section 9.4 for impact analysis.
SR 76, SW Kanner Hwy	FDOT	Utility Permit	7.4	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
Palm Beach County					
SR 710, Beeline Hwy, Warfield Blvd, Warfield Hwy	FDOT	Utility Permit	13.5	32.2	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
N Grade Rd	Palm Beach County	Utility Approval	15.1	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
Endeavor Dr.	Palm Beach County	Utility Approval	19.2 / Contractor Yard	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
Innovation Drive	Palm Beach County	Utility Approval	20.0	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
C-18 Canal	SFWMD	Crossing Easement	23.4	n/a	Potential temporary impacts could occur during construction including clearing of vegetation or increased turbidity. See Section 9.4 for impact analysis.
Airport Rd/Aviation Blvd	Palm Beach County	Utility Approval	24.4	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
CR 809/Northlake Blvd.	Palm Beach County	Utility Approval	30.5	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.

Table 9.3-4
Easements, Titles, and Agency Works

Governmental Feature	Affected Governmental Agency	Easement or Approval Likely Required	Beginning MP	Ending MP [(a)]	Potential Change or Impact
Jog Rd	Palm Beach County	Utility Approval	31.8	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.
SR 91, Florida's Turnpike	FDOT	Utility Permit	32.2	n/a	No permanent changes or impacts to the roadway anticipated; potential temporary impacts to traffic during construction of the pipeline.

Note:
(a) Ending milepost applicable only to features collocated along the corridor. Features not collocated with, but would intersect, the corridor do not have an ending milepost.

Key:
CR = County Road
FDOT = Florida Department of Transportation
MP = Milepost
ROW = right-of-way
SFWMD = South Florida Water Management District
SR = State Road

9.3.5.4 Regional Scenic, Cultural, and Natural Landmarks

A search of the study corridor was conducted for all scenic, cultural, and natural landmarks. The study corridor was defined as the Preferred Corridor, as well as an additional 5-mile area surrounding the edges of the corridor. Resources used in this search included: the National Park Service (NPS) list of Historic Landmarks, county websites, the State of Florida Historical Marker list, the Florida Department of Transportation (FDOT) list of scenic highways, and the Florida Master Site Files.

As a result, a desktop study determined that the Preferred Corridor would not cross any vicinity or regional scenic, cultural, or natural landmarks.

9.3.5.5 Archaeological and Historical Sites

This section discusses cultural resources within the Preferred Corridor. The information in this section is based on a desktop database search conducted in January 2012. Appendix F provides maps of all locations found during the desktop analysis. Appendix F is non-public information and is submitted under rules of confidentiality pursuant to the National Historic Preservation Act (NHPA) of 1966; it is exempt from disclosure under Chapter 119, F.S.

Cultural resources are considered to be archaeological and architectural resources, including those cultural resources that have been determined historic properties pursuant to regulations for implementing Section 106 of the NHPA, as amended (36 CFR 800 "Protection of Historic Properties"), and they have been determined significant in terms of the criteria presented in 36 CFR 63 "Determination of Eligibility for Inclusion in the National Register of Historic Places."

Regional scenic, cultural and natural landmarks are considered to be National Historic Landmarks, National Natural Landmarks, American Heritage Rivers, Scenic Highways and Byways, and cultural resources listed in the NRHP. Agencies that designate landmarks include, but are not limited to, the NPS, the United States Environmental Protection Agency (USEPA), the FDOT, the Federal Highway Administration (FHWA), and the Florida DHR.

Regulatory Setting

FPL will comply with Section 106 of the NHPA and with Chapter 267, F.S., "Historic Resources," and Rule 1A-46, Florida Administrative Code (F.A.C.), "Archaeological and Historical Report Standards and Guidelines." Additionally, FPL will comply with Chapter 872.02 and 872.05, F.S., "Offenses Concerning Dead Bodies and Graves." As part of this compliance and as applicable to the Project, FPL will incorporate the State of Florida standards and guidelines referenced in:

- "Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Property" (Florida DHR 2007);
- Cultural Resources Management Standards and Operations Manual (State of Florida 2012a);
- "Documentation Requirements for Buildings Proposed for Demolition and Standards for Architectural Documentation" (State of Florida 2012b); and
- "Performance Standards for Submerged Remote Sensing Surveys" (Florida DHR 2001).

Cultural Resources

A Florida Master Site File search was conducted in January 2012, in order to identify any previously recorded cultural resources in the Preferred Corridor, as well as identify previously completed cultural resource surveys in the Preferred Corridor. Florida DHR provided the results of the following surveys:

- An Archaeological and Historical Survey of the Martin Plant Tract in Martin County, December 1973;
- Historic Structure Form, MST No. 8MT80; Blake's Well and Pump, 16025 SW Warfield Blvd., Indiantown, FL, March 1989;
- Cultural Resource Assessment Survey of the Florida Power & Light Coal Gasification/Combined Cycle Project Site, Martin County, Florida, October 1989;
- Cultural Resource Assessment of the Proposed lndiantown Cogeneration Limited Plant Site and Pipeline Corridor, Martin County, Florida, September 1990;
- Cultural Resource Assessment of the Proposed Crane-Bridge-Plumosus 230kV Transmission Line Project Corridor, Palm Beach and Martin Counties, June 1991;
- Cultural Resource Assessment of the Proposed Martin GC/CC Project Natural Gas Pipeline Corridor, Martin County, Florida, December 1991;
- A Cultural Resource Assessment of the Proposed 12 Mile 230kV Transmission Line ROW Between the Indiantown Substation and the Martin Plant, Martin County, Florida, June 1992;
- An Archaeological Survey of Martin County, September 1995;
- Historical Structure Form, MST 8MT78, Indiantown Auto Sales, 15568 SW Warfield, Blvd., Indiantown, FL, January 25, 1997;
- Historical Structure Form, MST 8MT79, Bait and Feed, 15628 SW Warfield, Blvd., Indiantown, FL, January 25, 1997;
- Historic Architectural Survey of Martin County, Florida, June 1997;
- A Phase II Archaeological Survey of Martin County, Florida June 1998;
- Historical Structure Form, MST No. MT000S11, Hataway Gulf Station, 15548 SW Warfield Blvd., Indiantown, FL, May 3, 1999;
- Cultural Resource Assessment Survey New Interchange at Florida's Turnpike Between SR 710 and Northlake Boulevard, Palm Beach County, Florida, February 2000;
- A Cultural Resource Assessment of Eight Alternative Routes For SR 7 from Okeechobee Boulevard to the Beeline Highway (SR 710), Palm Beach County, Florida, September 2000;
- An Archaeological and Historical Survey of the Proposed Hungry Land Slough Tower Location in Palm Beach County, Florida, June 2001;
- An Archaeological and Historical Survey of the Proposed Palm Beach Switch Tower Location in Palm Beach County, Florida, August 2001;
- Historical Cemetery From, MST No. PB12209, unnamed cemetery, located along the northern side of the Bee Line Highway, approximately 3100 m northwest of its intersection with PGA Blvd., July 11, 2002;
- Phase I Cultural Resource Survey and Archaeological Inventory of the Onshore Florida Portion of the Proposed Seafarer U. S. Pipeline System Project in Palm Beach and Martin Counties, Florida, June 2003;
  Cultural Resource Assessment Survey of Gulfstream Natural Gas System Line 500 Re-Routes (Arbuckle Creek and Subdivision) and Line 701 Re-Route (FPL) Supplemental Report 8, August 2003;

- Phase I Cultural Resource Survey and Archaeological Inventory of the Onshore Florida Portion of the Proposed Seafarer U. S. Pipeline System Project in Palm Beach County, Florida July 2004;
- Archaeological Short Form, MST No. MT01349; Davis and Jenkins Tramline, linear resource that runs north-south from SR71O along the eastern property line of the western most Hungryland Wildlife and Environmental Area Tract, March, 25, 2005;
- A Phase I Archaeological Survey of the Varus North Parcel, Palm Beach County, Florida, July 2005;
- National Register of Historic Places Registration Form, MST No. 00073, Seminole Inn, 15885 SW Warfield Blvd., Indiantown, FL, April 13, 2006;
- Cultural Resource Assessment Survey of the Floridian Natural Gas Storage Company Project, Martin County, May 2007;
- Final: Cultural Resource Assessment Survey for State Road 91 (Florida's Turnpike) from North of Lake Worth to Indiantown Road/Jupiter PD&E Study, Palm Beach County, Florida, June 2007;
- Historical Structure Form, MST No. 8MT1504; Potter's House, 15318 SW Warfield Blvd., Indiantown, Florida, June 30, 2008;
- A Phase I Cultural Resource Assessment Survey of the Proposed Florida Gas Transmission Company Phase VIII Expansion Project, Station 29 to FPL Martin, Pipeline Corridor, Okeechobee and Martin Counties, October 2008;
- An Archaeological and Historical Survey of the Proposed Indiantown Tower Location in Martin County, Florida, October 2008;
- Florida Gas Transmission Phase VIII First Addendum Report Nos. 2008-07035 and 2008-07036, May 2009;
- Resource Group Form, MST No. MT1524, Fox Brown Road, linear resource road runs from the northeast edge of Section 20 through the southeast corner of Section 21 and from the northwest to the southeast through Section 29, October 16, 2009; and
- Florida Gas Transmission Phase VIII Second Addendum Report Nos. 2008-07035 and 2008-07036, October 2010.

Upon review of these surveys, 11 previously recorded cultural resources were identified within the vicinity of the Preferred Corridor (Table 9.3-5). These previously recorded cultural resources include the St. Lucie Canal and the Seaboard Air Line Railroad (also referred to as CSX Rail Line).

Of these resources, four occur within 500 feet of the Project but not within the Preferred Corridor; these four are the Seminole Inn, Unnamed Cemetery, Fox Brown Road, and Davis and Jenkins Tramline. The remaining seven resources are located within the Preferred Corridor.

Table 9.3-5
Previously Recorded Cultural Resources

Site ID	Site Description	Type
MT00073	Seminole Inn[(a)]	National Register
MT1524	Fox Brown Road[(a)]	Resource Group
MT01349	Davis and Jenkins Tramline[(a)]	Resource Group
MT01316	St. Lucie Canal[(b)]	Resource Group
PB12917	Seaboard Air Line Railroad[(b)]	Resource Group
PB12209	Unnamed Cemetery[(a)]	Cemetery
MT1504	Potter's House[(b)]	Structure
MT78	Indiantown Auto Sales[(b)]	Structure
MT79	Bait and Feed[(b)]	Structure
MT80	Blake's Well and Pump[(b)]	Structure
MT00511	Hataway Gulf Station[(b)]	Structure

Notes:
(a) Within 500 feet of the Project but not within the Preferred Corridor
(b) Within the Preferred Corridor

Key:
NRHP = National Register of Historic Places
SHPO = State Historic Preservation Officer

9.3.5.6 Traffic and Lighting

9.3.5.6.1 Traffic

This section covers existing traffic environment and general road conditions along the Preferred Corridor. The transportation data incorporated into this summary were primarily obtained from the FDOT and the two Florida counties through which the Preferred Corridor would cross, Martin and Palm Beach.

Data accumulated and used to identify and express current conditions of traffic and roads that intersect with the Preferred Corridor include recent Level of Service (LOS) values, Average Annual Daily Traffic (AADT) values, road type, road classification, number of lanes, road name(s), approximate pipeline MP location and identification of whether the Preferred Corridor would cross a road within an urbanized area.

Level of Service. LOS values are a quantitative stratification of the quality of service of a road into six different levels. Quality of service refers to a traveler-based perception of how well a transportation service and/or facility, such as a roadway, currently operates. LOS values stratify quality of service with the letters "A" through "F." A letter value of "A" refers to the best quality of service and "F" as the worst. These qualifiers are as follows:

- LOS A/B. These roads provide a good experience to users with limited times of high traffic on average;
- LOS C/D. These roads provide a moderate experience to users with moderate times of high traffic on average; and
- LOS E/F. These roads provide a poor experience to users with high to severe traffic on average.

As LOS values are used by planners, engineers, and decision makers to understand traffic issues, the FDOT has created Minimum LOS Standards for the State Highway System that are required to be used on Florida Intrastate Highway System routes (FDOT 2009). These same or similar standards are also used on other non-state roadways, such as county roads.

Average Annual Daily Traffic values. In the event an LOS value was not available for a road within the Preferred Corridor from the FDOT, AADT values were used to determine an appropriate LOS. AADT is the total volume on a highway segment for one year divided by the number of days in the year. AADT values are a basic traffic parameter for determining the LOS for motorized vehicles along a roadway and these values are routinely provided by the FDOT. The FDOT's (2009) Quality/Level of Service Handbook contains guidelines on assigning approximate LOS values to roads using AADT values. These are generalized LOS values rather than road specific values. (FDOT 2009).

Road Type. Road type identifies whether a road is a local, county, state, or federal road and whether the road is an interstate, U.S. highway, state highway, or county highway.

Road Classification. Road classification will be used to identify the federal functional classification of a road that is crossed by the Preferred Corridor. The federal functional classification allows the FDOT to understand the road relative to the hierarchy of the overall transportation system and allows for the evaluation of federal, state, and local highway programs (FDOT 2003).

Number of Lanes. Identification of the number of lanes allows for a better understanding of the potential traffic impacts that may occur as a result of pipeline construction activities.

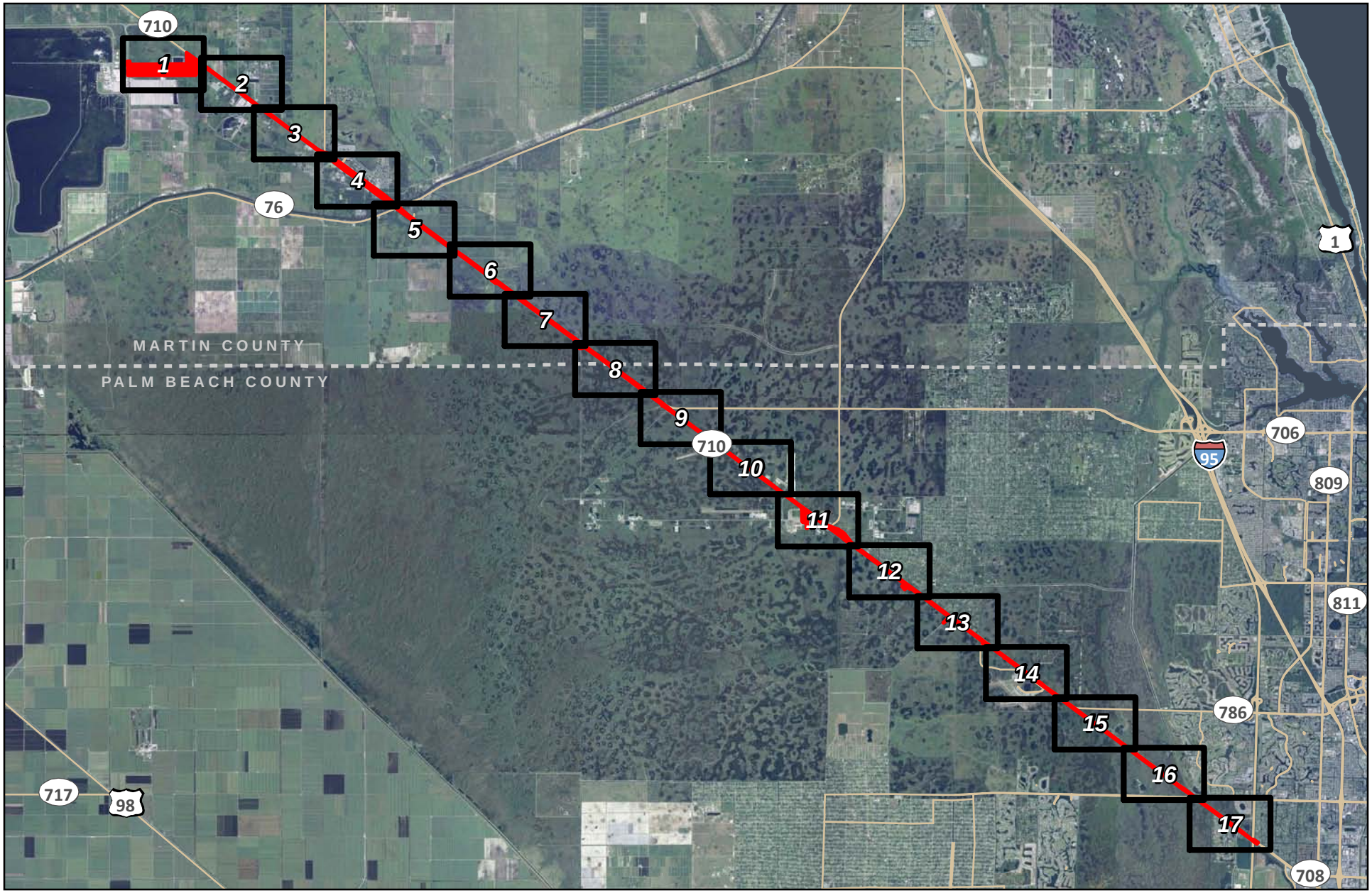
Road Name. The road name will be listed and will include the state, federal, and/or local designation, as a particular road is often recognized by more than one.

For a number of the identified road crossings current LOS values and AADT values are unavailable. In those instances, assumptions were made and noted based upon thresholds in the FDOT's (2009) Quality/Level of Service Handbook.

Figure 9.3-7 *(series)* provides a graphic illustration, by county, of the Preferred Corridor road crossings.

Martin County. The Preferred Corridor passes through Indiantown and intersects 11 rural roads and 3 urban roads. All of the roads that the Preferred Corridor would intersect in Martin County have LOS values of A or B. The Martin County road crossings, including attributes, are provided in Table 9.3-6.

Palm Beach County. The Preferred Corridor would intersect eight roads in Palm Beach County (four rural, three urban and the Florida Turnpike). The rural and urban roads have LOS values of A or B. The Florida Turnpike/SR 91 has a LOS of C. The Florida Turnpike is elevated at this location and traffic would be segregated so that it is not impacted. The Palm Beach County road crossings, including attributes, are provided in Table 9.3-7.



NORTH

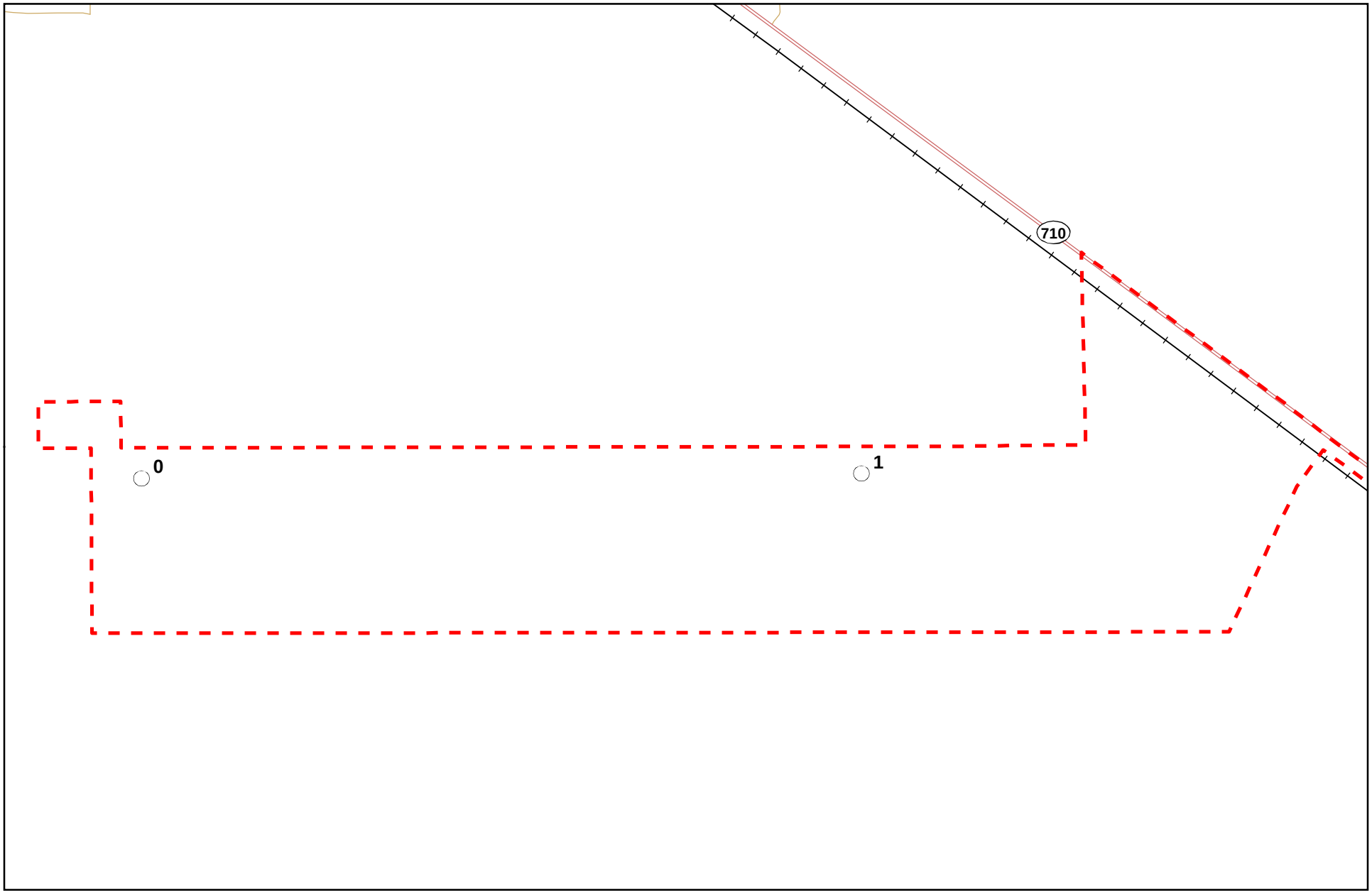
0 5 Miles

Map Index | Preferred Corridor | County Boundary

Figure 9.3-7 Map Index
Road Crossings
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010; NAIP 2010.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Railroad
County Boundary
Urban Area

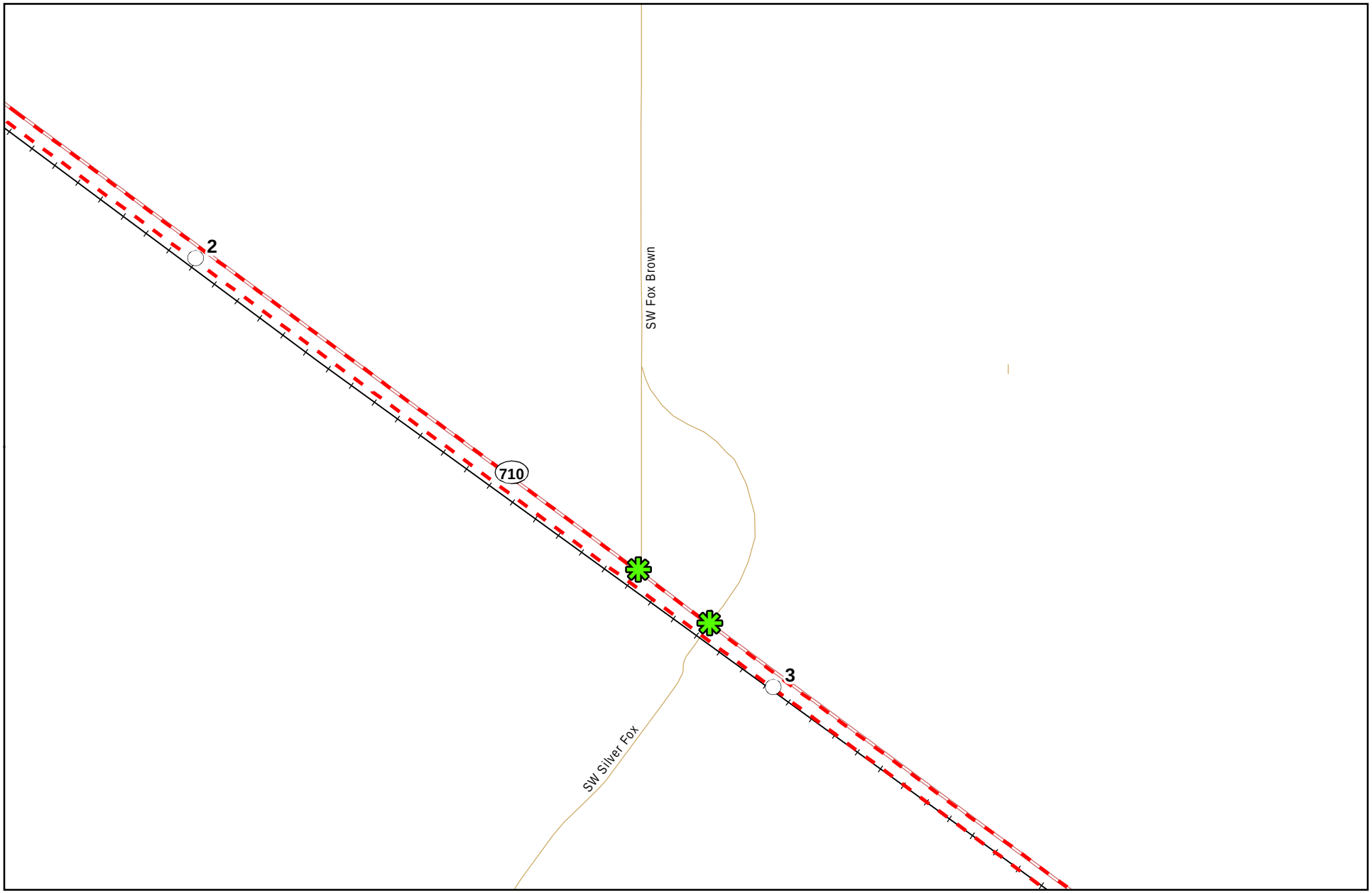
Interstate
State Road
County Road
Local Road

LOS
A or B
C or D
E or F

Figure 9.3-7 (Sheet 1 of 17)
Road Crossings
Martin County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Railroad
County Boundary
Urban Area
Interstate
State Road
County Road
Local Road
LOS
A or B
C or D
E or F

Figure 9.3-7 (Sheet 2 of 17)
Road Crossings
Martin County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.

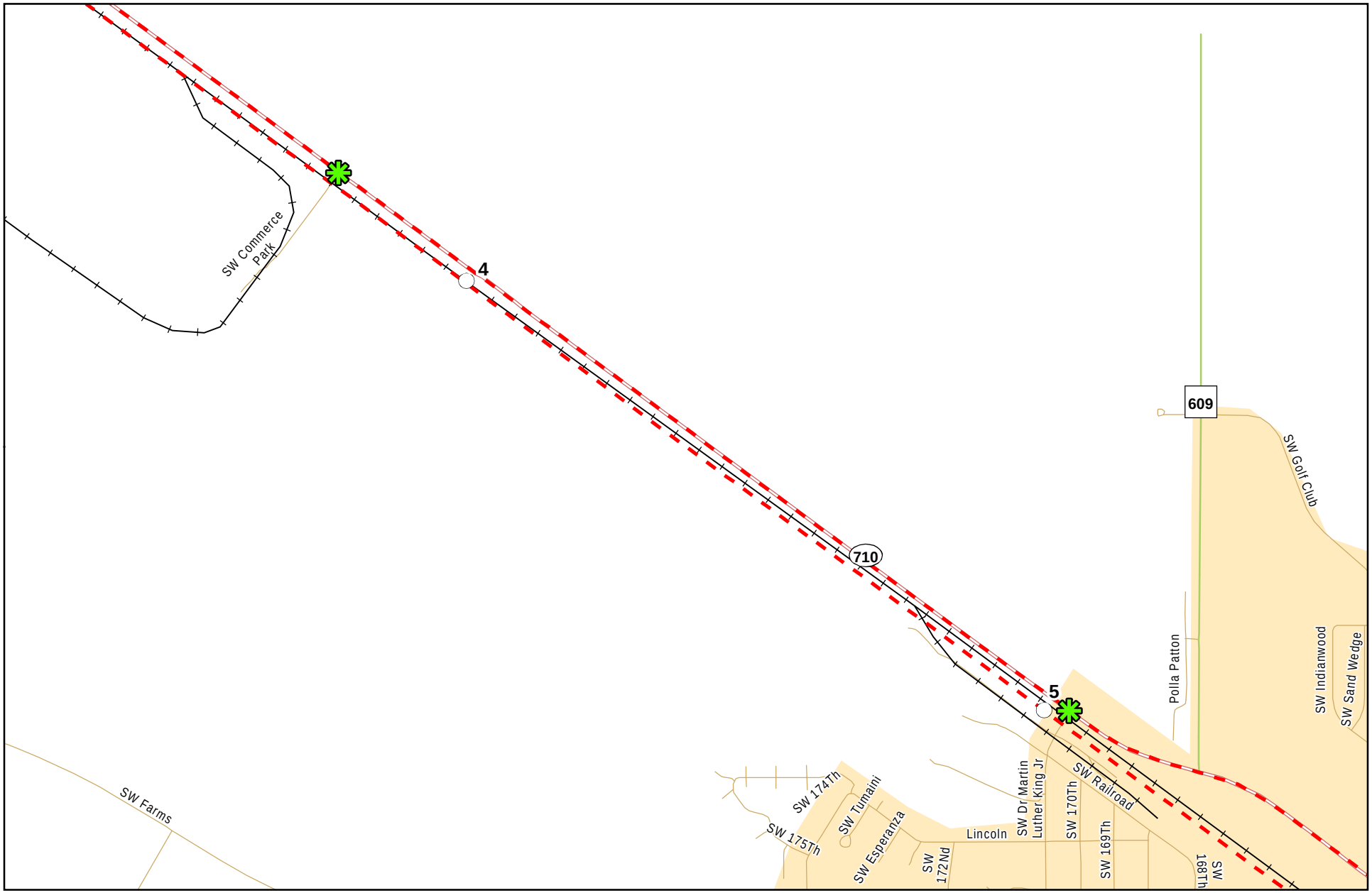


Figure 9.3-7 (Sheet 3 of 17)
Road Crossings
Martin County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.

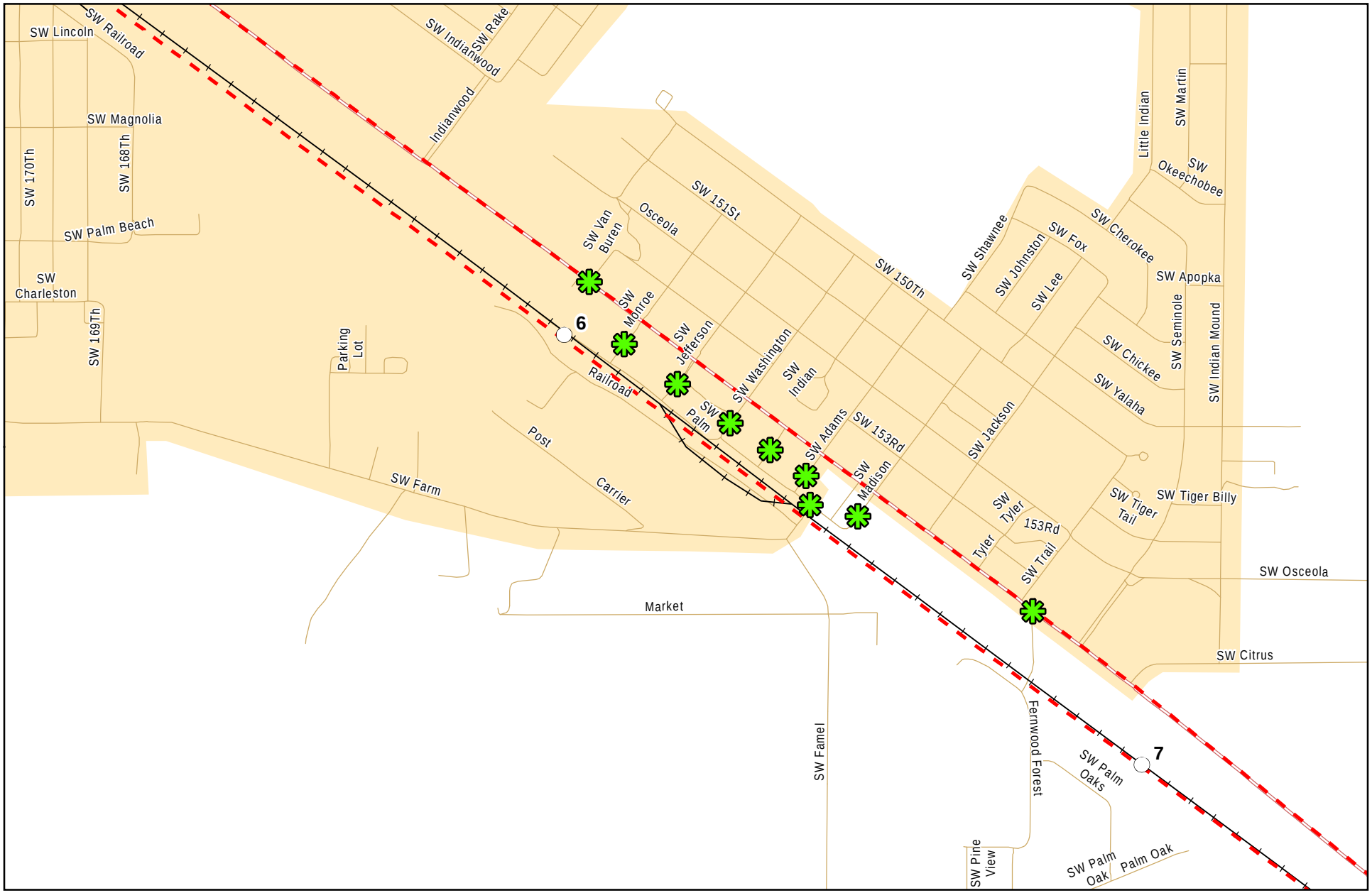


Figure 9.3-7 (Sheet 4 of 17)
Road Crossings
Martin County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.

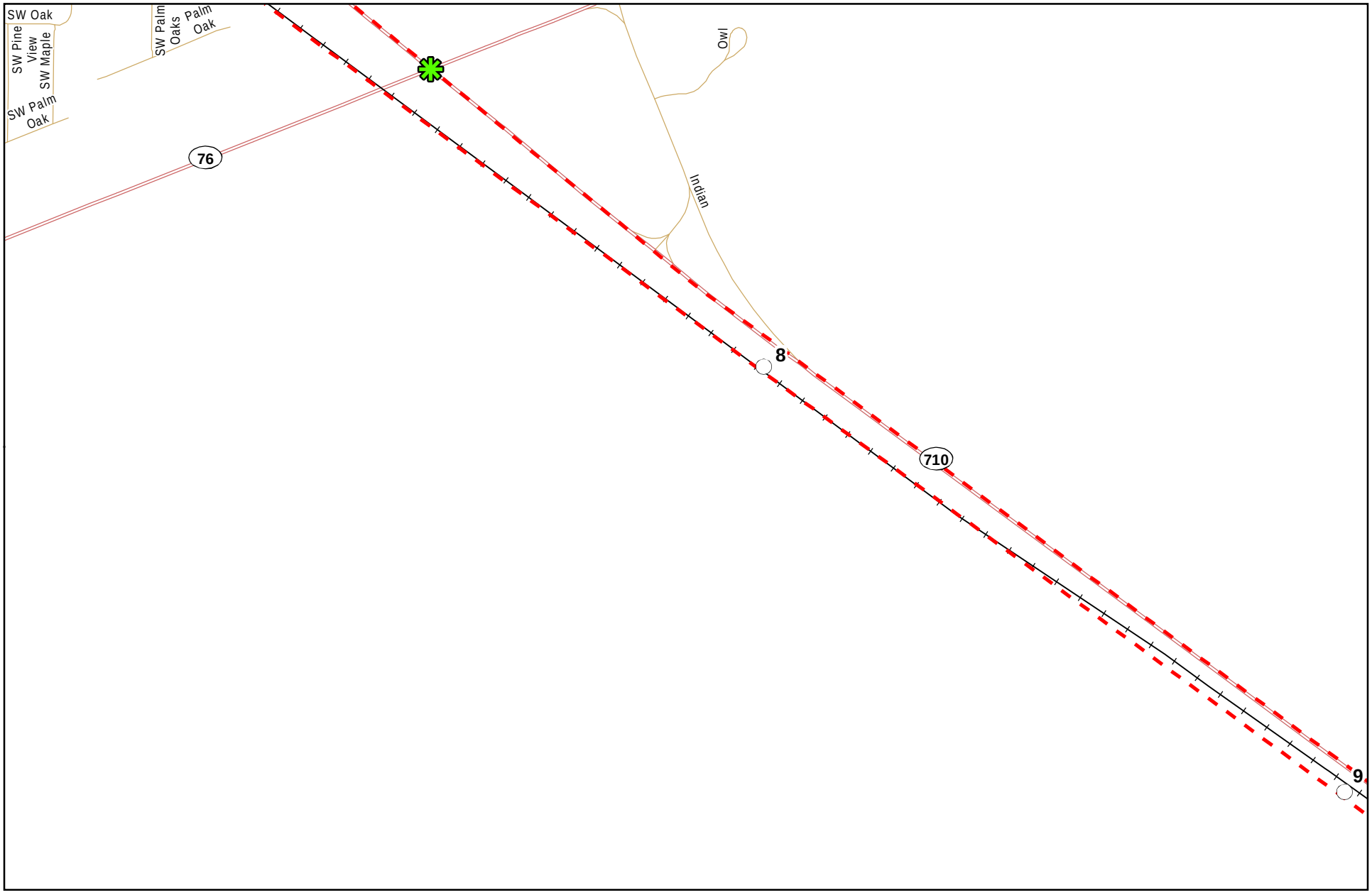
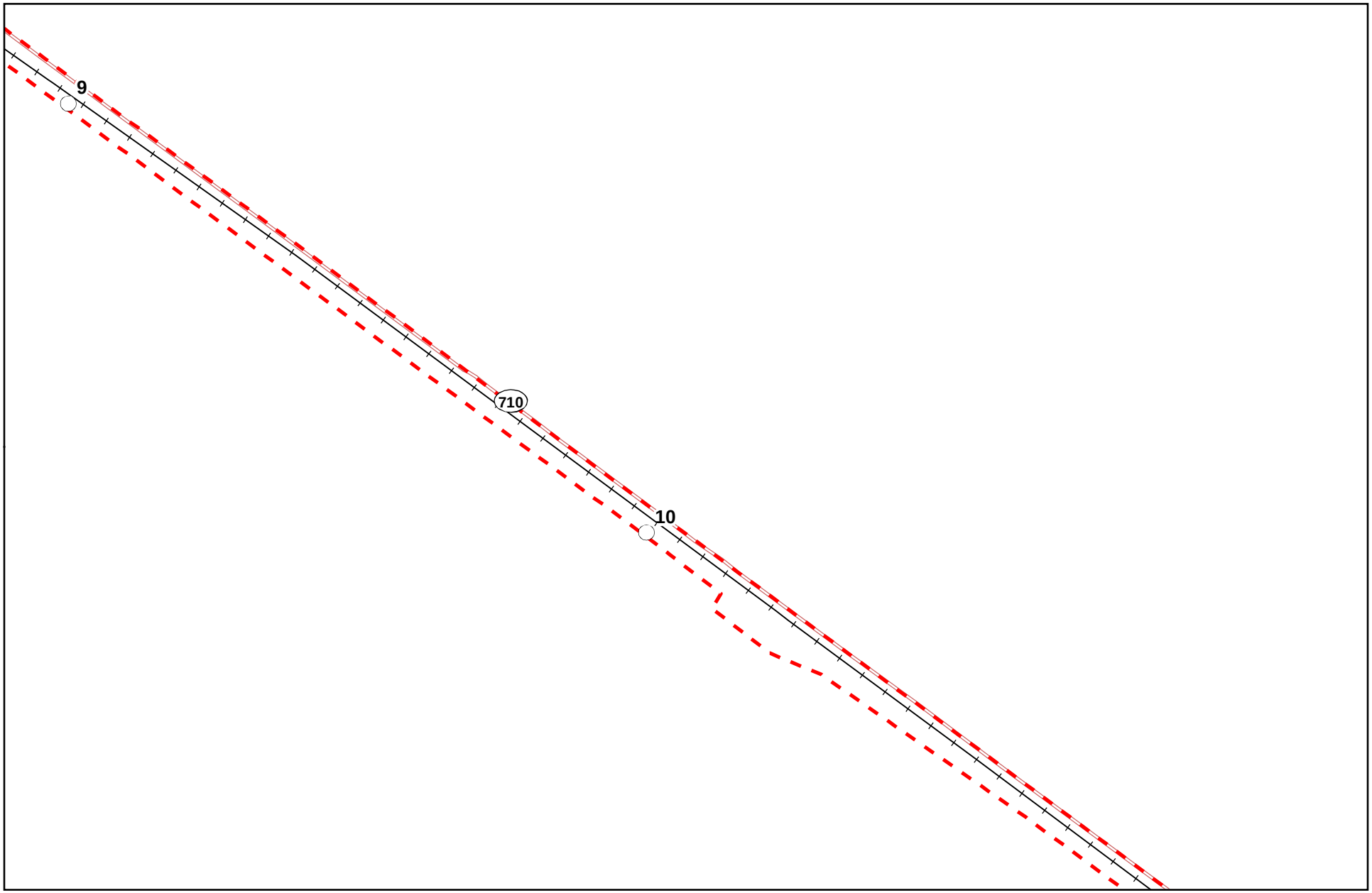


Figure 9.3-7 (Sheet 5 of 17)
Road Crossings
Martin County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.



NORTH

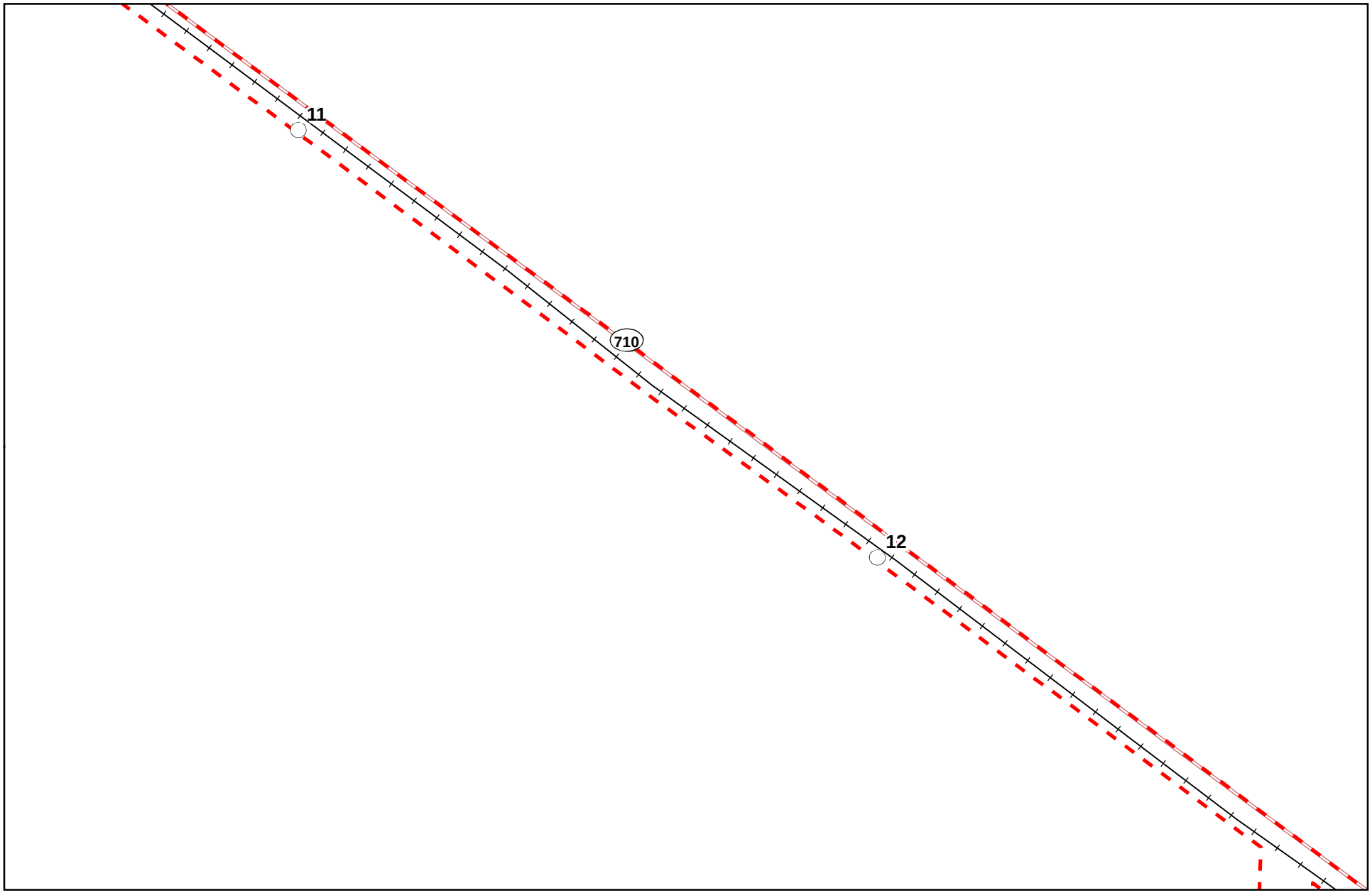
0 1,000 Feet

Milepost
Preferred Corridor
Railroad
County Boundary
Urban Area
Interstate
State Road
County Road
Local Road
LOS
A or B
C or D
E or F

Figure 9.3-7 (Sheet 6 of 17)
Road Crossings
Martin County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Railroad
County Boundary
Urban Area

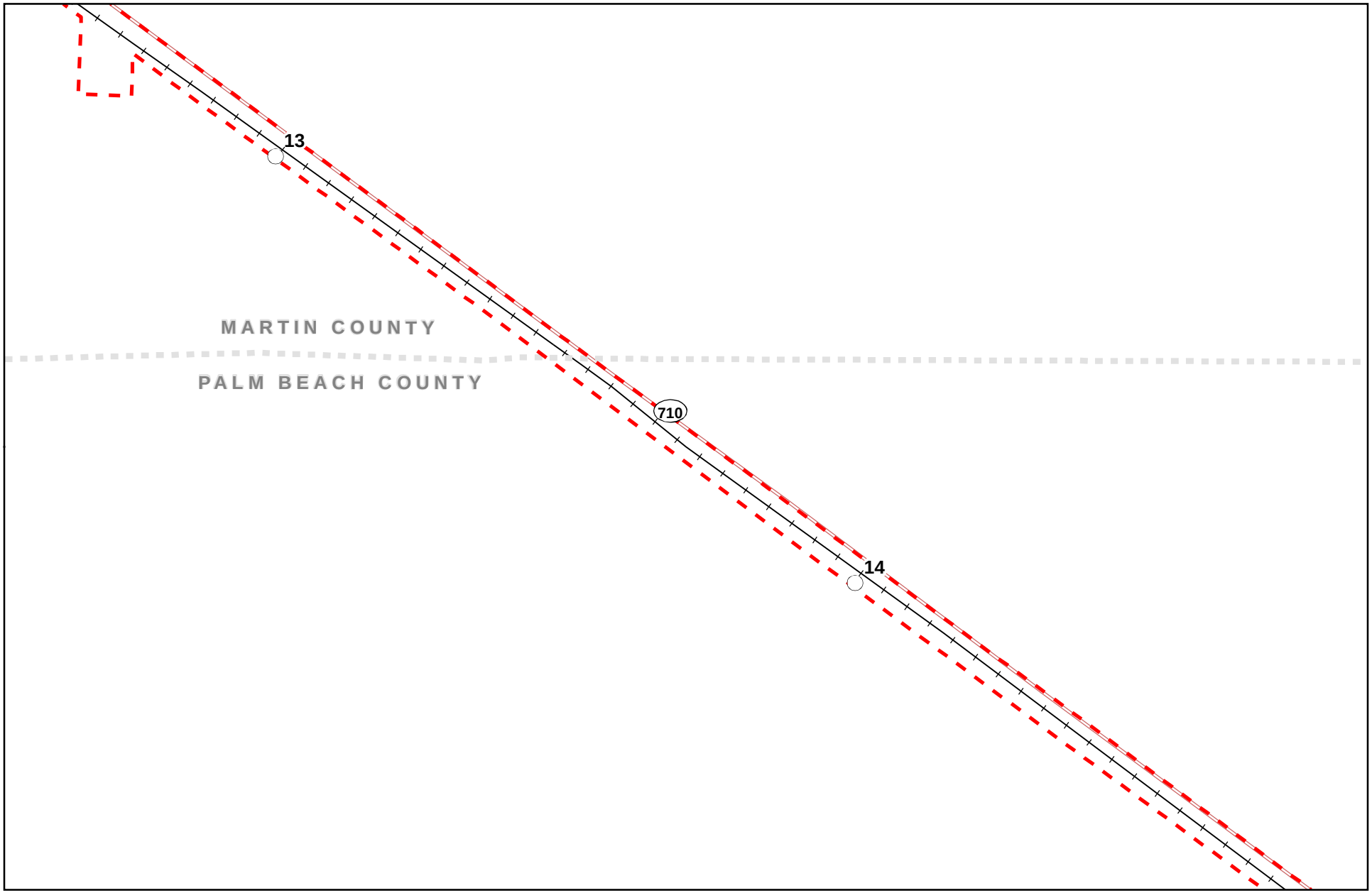
Interstate
State Road
County Road
Local Road

LOS
A or B
C or D
E or F

Figure 9.3-7 (Sheet 7 of 17)
Road Crossings
Martin County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Railroad
County Boundary
Urban Area
Interstate
State Road
County Road
Local Road
LOS
A or B
C or D
E or F

Figure 9.3-7 (Sheet 8 of 17)
Road Crossings
Martin County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.

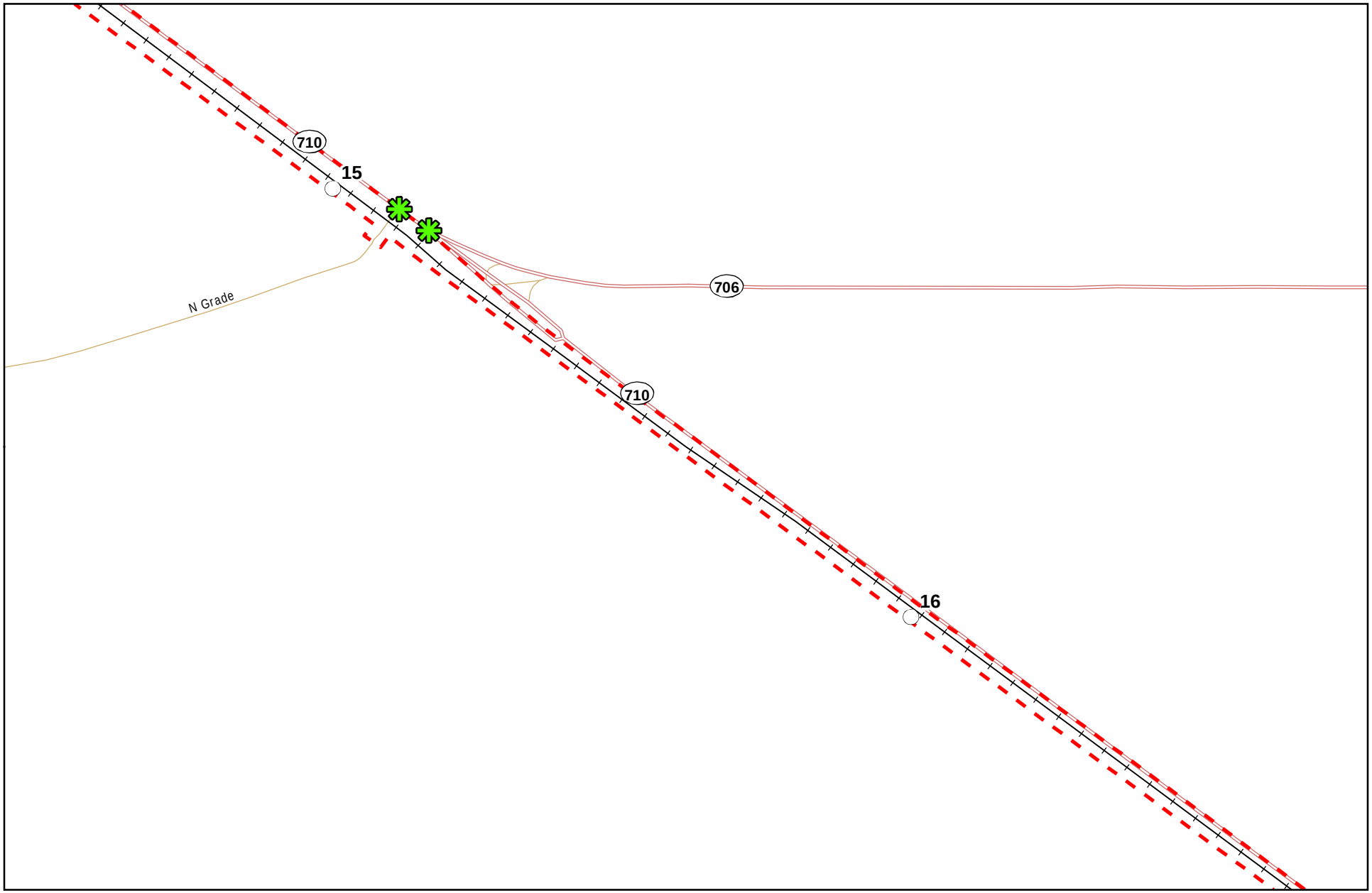
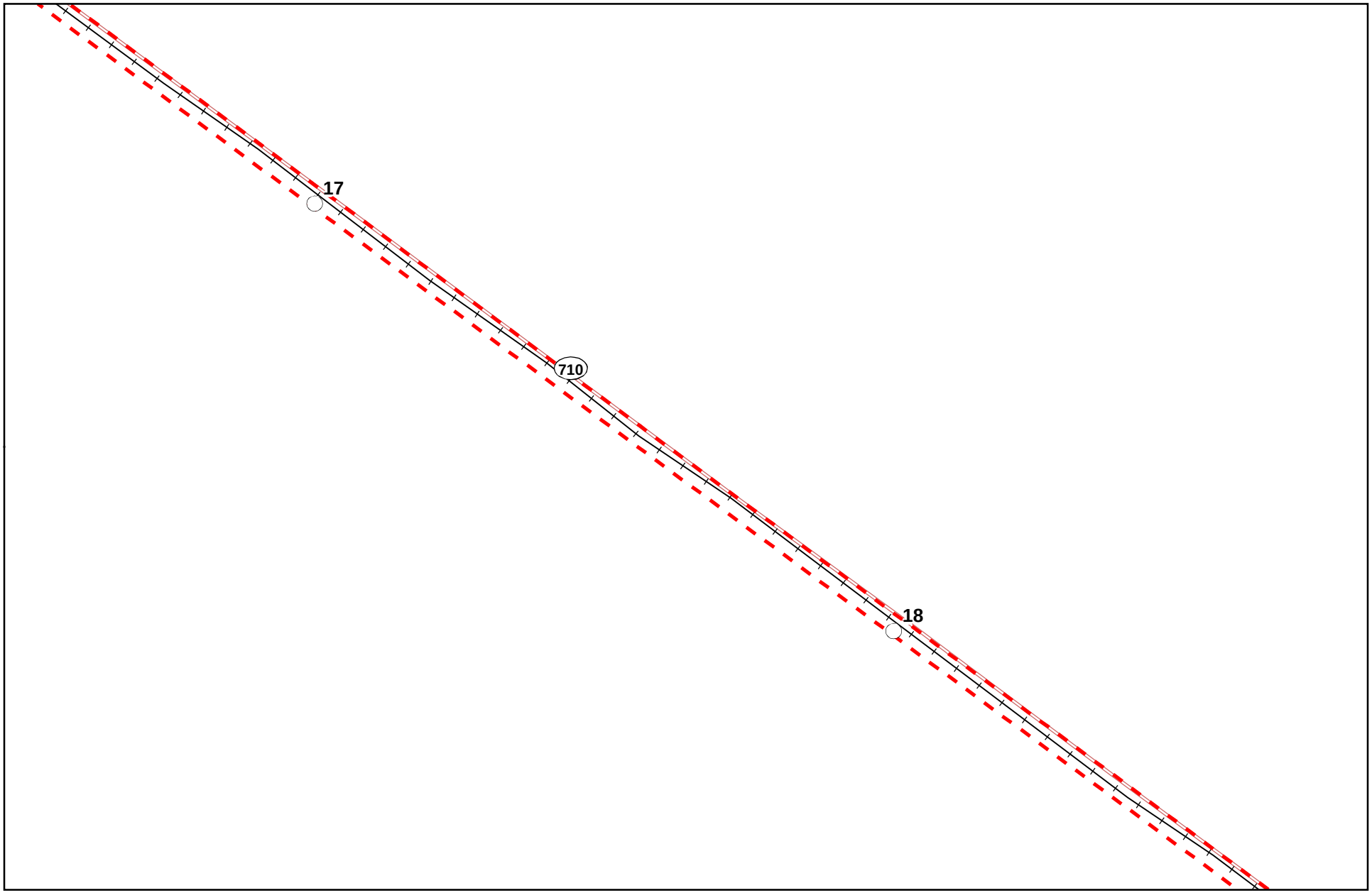


Figure 9.3-7 (Sheet 9 of 17)
Road Crossings
Palm Beach County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.



Milepost
Preferred Corridor
Railroad
County Boundary
Urban Area
Interstate
State Road
County Road
Local Road
LOS
A or B
C or D
E or F

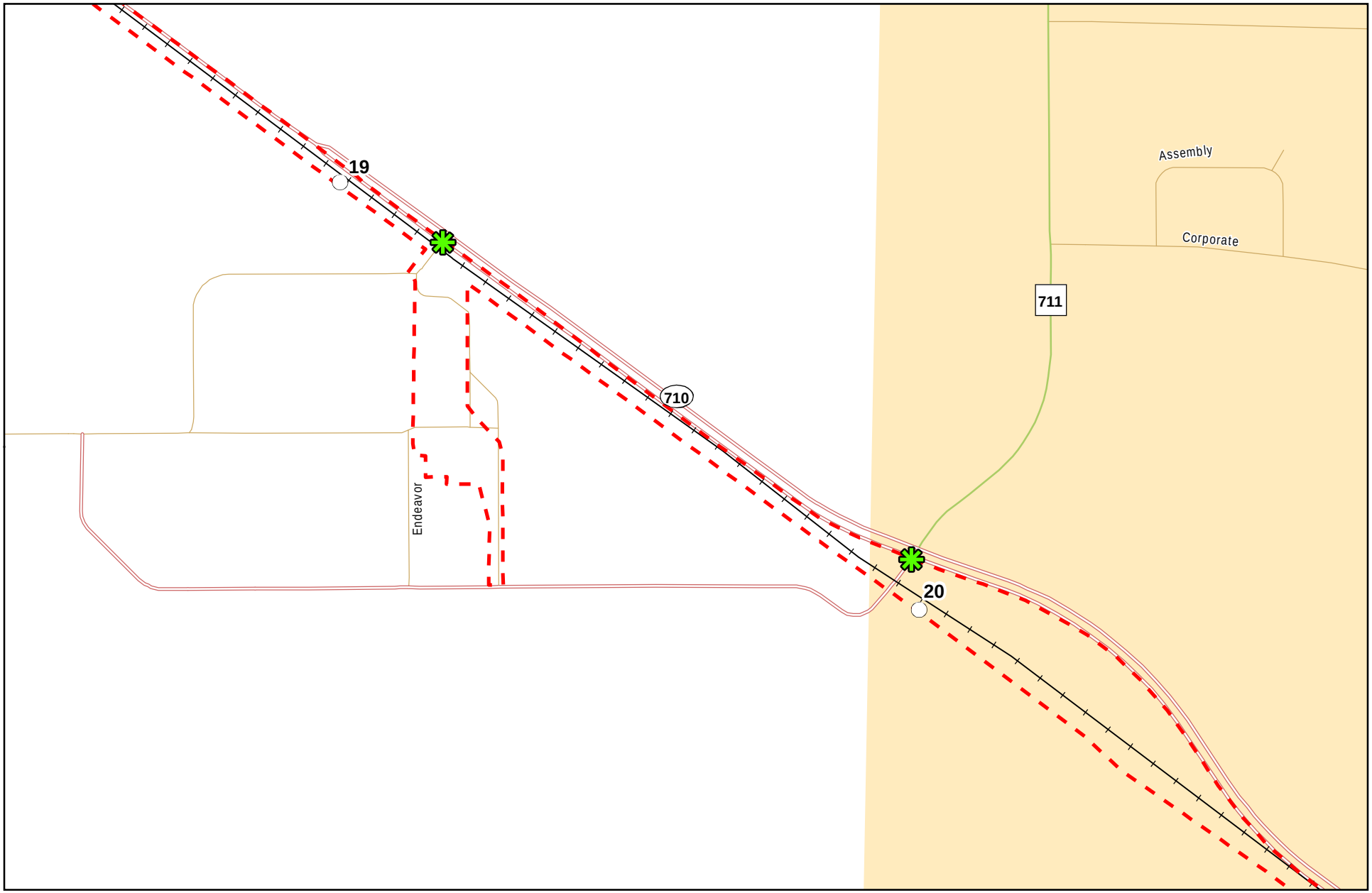
NORTH

0 1,000 Feet

Figure 9.3-7 (Sheet 10 of 17)
Road Crossings
Palm Beach County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Railroad
County Boundary
Urban Area
Interstate
State Road
County Road
Local Road
LOS
A or B
C or D
E or F

Figure 9.3-7 (Sheet 11 of 17)
Road Crossings
Palm Beach County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.



Figure 9.3-7 (Sheet 12 of 17)
Road Crossings
Palm Beach County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.

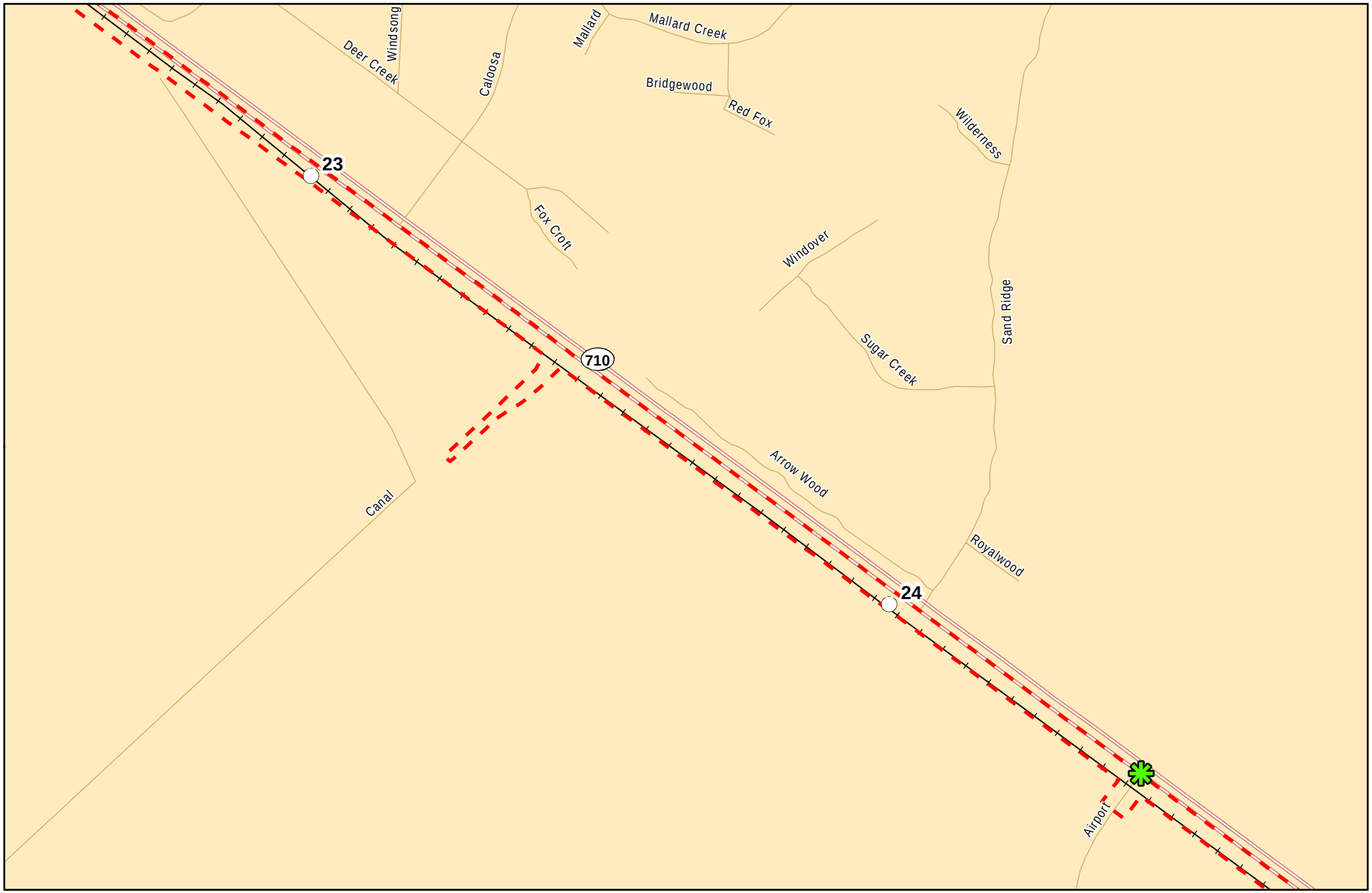
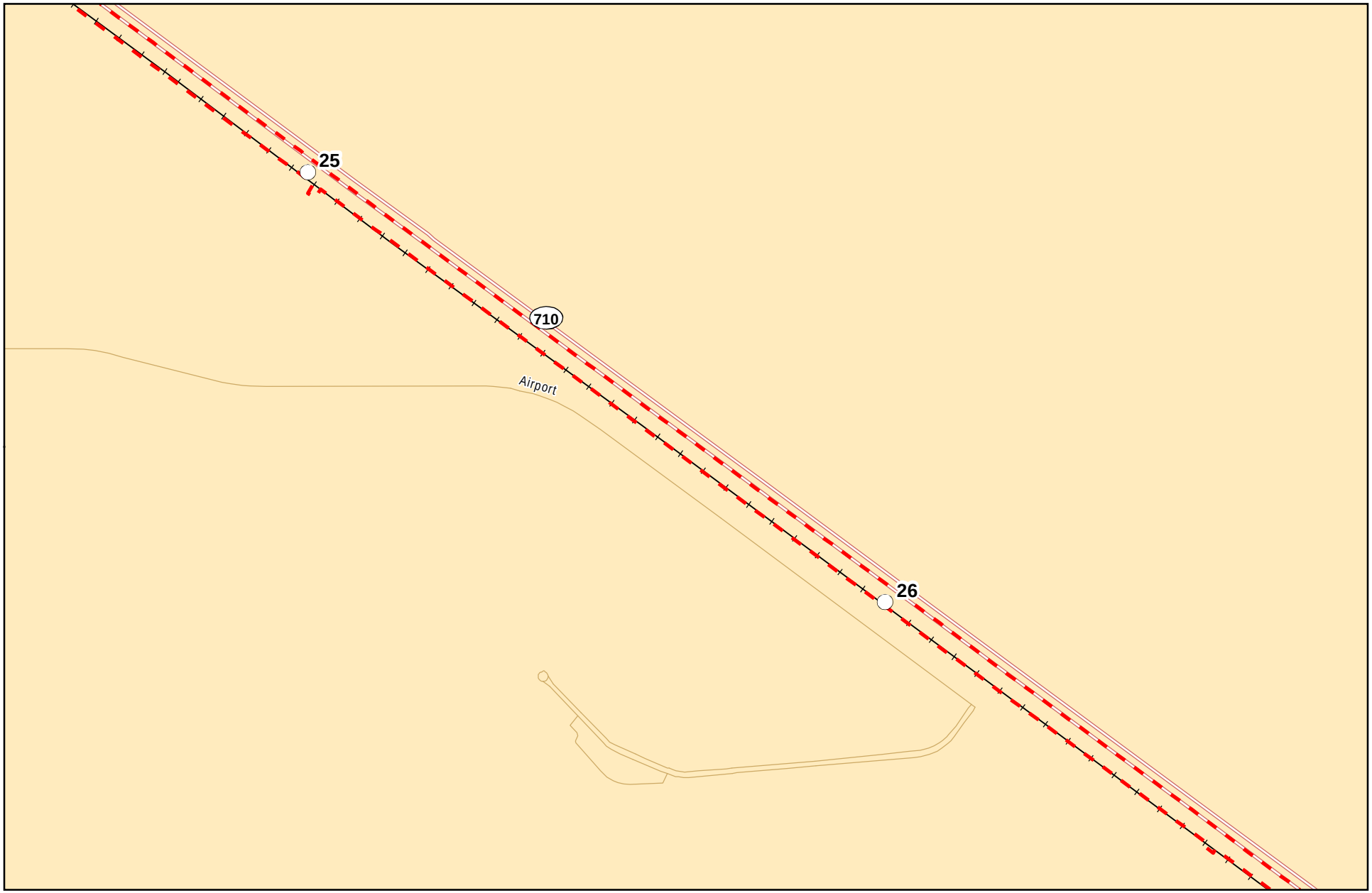


Figure 9.3-7 (Sheet 13 of 17)
Road Crossings
Palm Beach County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Railroad
County Boundary
Urban Area

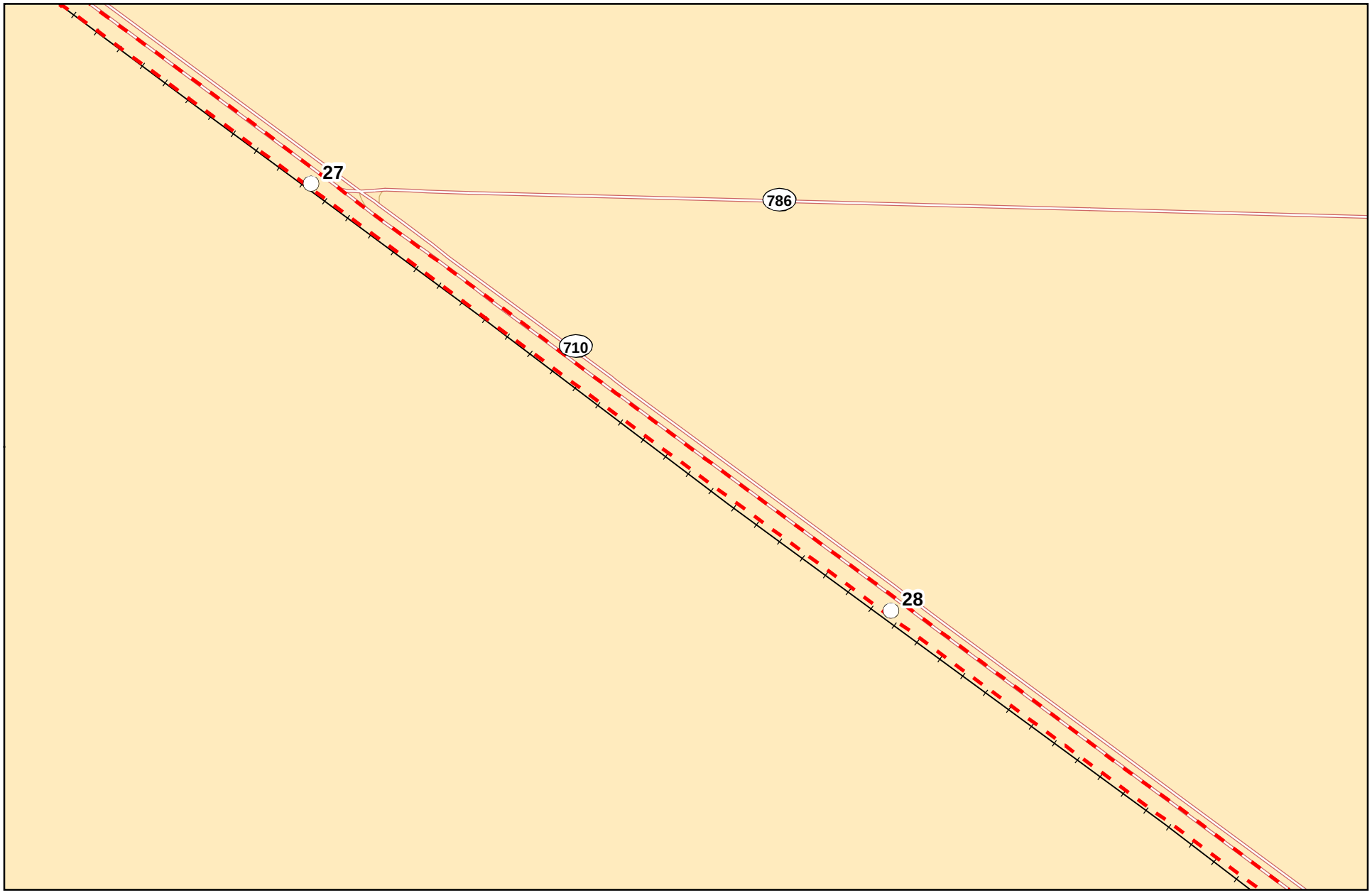
Interstate
State Road
County Road
Local Road

LOS
A or B
C or D
E or F

Figure 9.3-7 (Sheet 14 of 17)
Road Crossings
Palm Beach County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Railroad
County Boundary
Urban Area

Interstate
State Road
County Road
Local Road

LOS
A or B
C or D
E or F

Figure 9.3-7 (Sheet 15 of 17)
Road Crossings
Palm Beach County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.

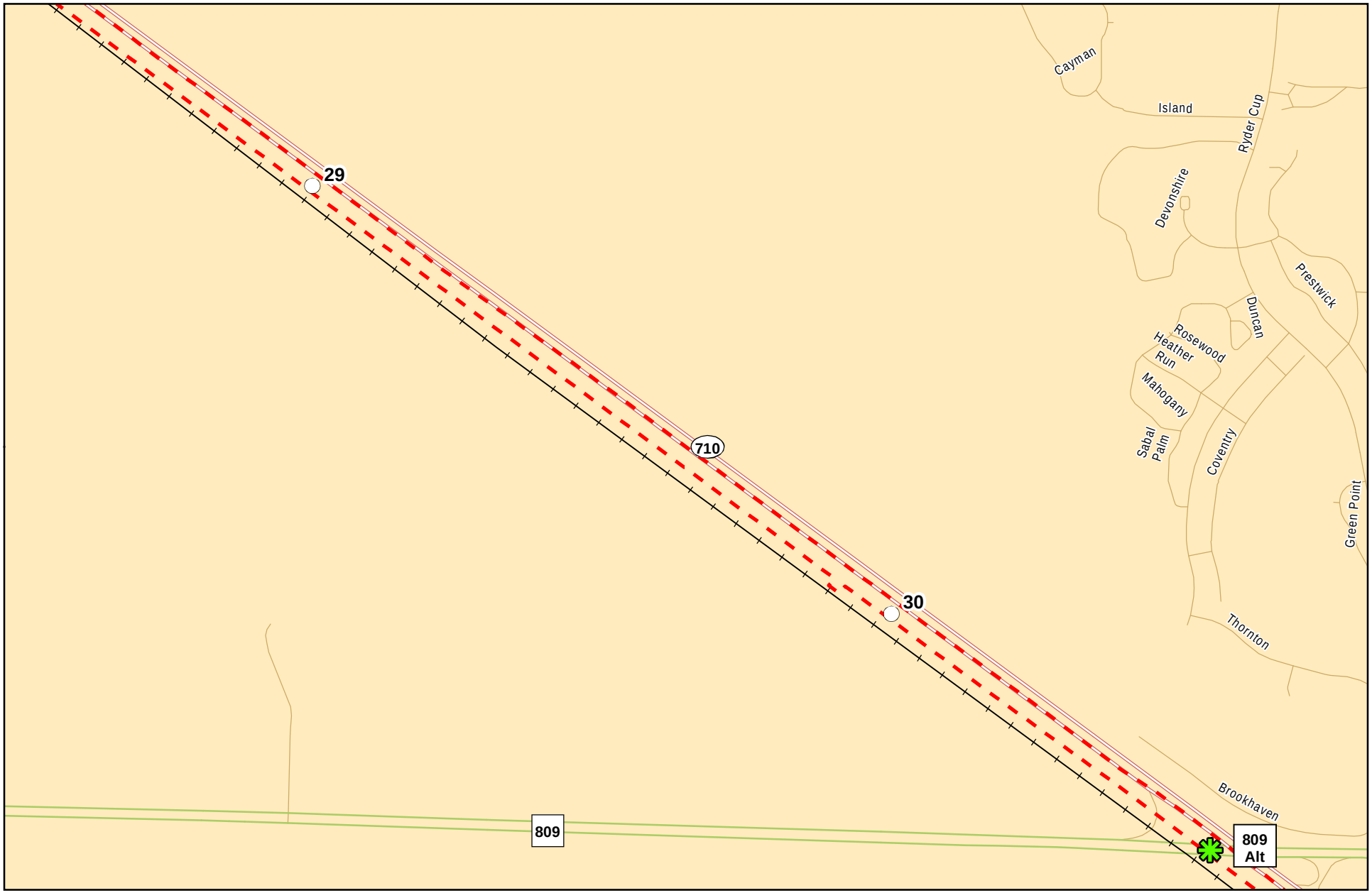
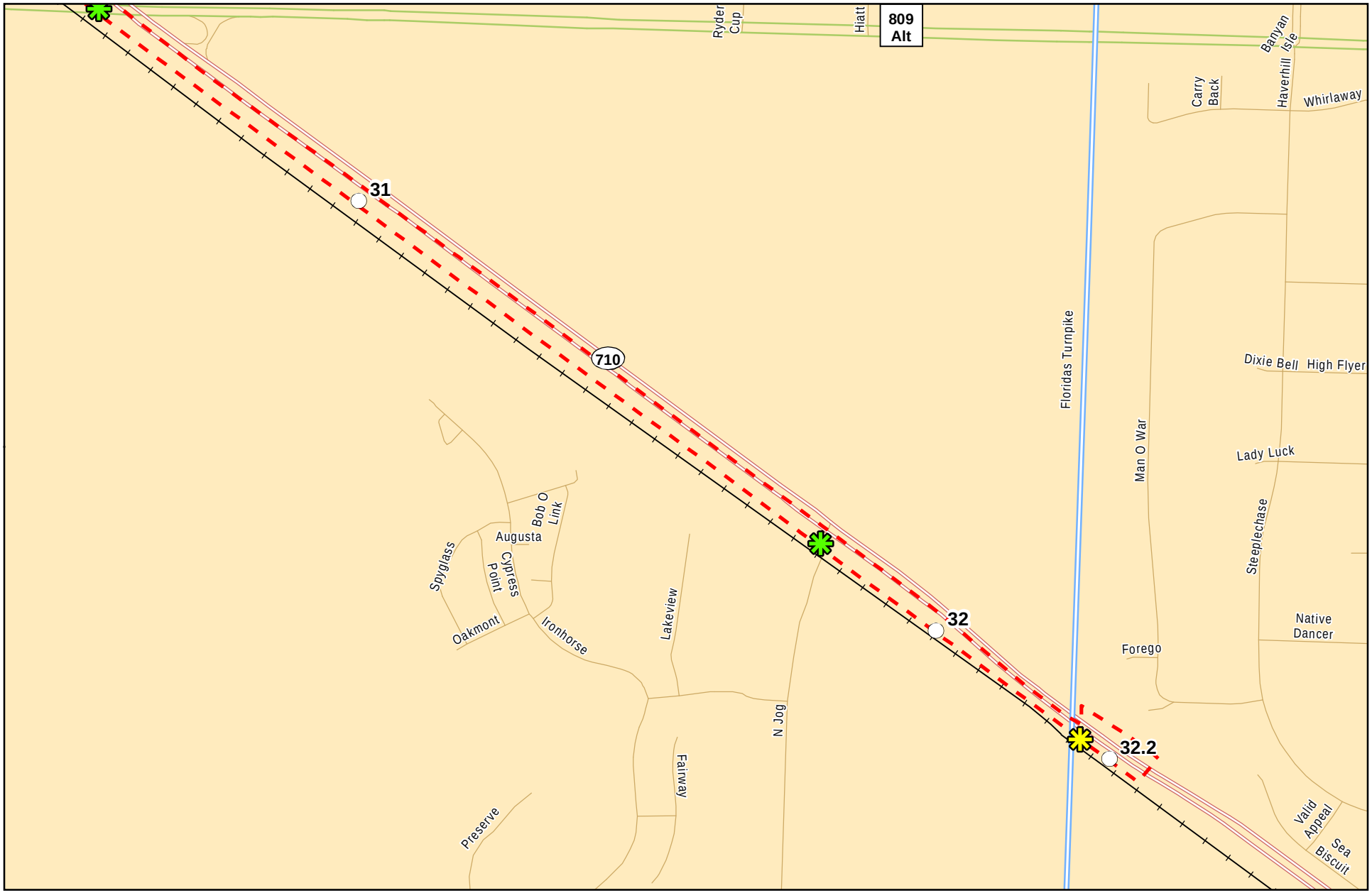


Figure 9.3-7 (Sheet 16 of 17)
Road Crossings
Palm Beach County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.



Milepost
Preferred Corridor
Railroad
County Boundary
Urban Area

Interstate
State Road
County Road
Local Road

LOS
A or B
C or D
E or F

NORTH

0 1,000 Feet

Figure 9.3-7 (Sheet 17 of 17)
Road Crossings
Palm Beach County
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010.

Table 9.3-6
Preferred Corridor Road Crossings in Martin County

Road Name	Milepost	LOS	AADT	Road Type	Classification	No. Lanes	Urban Area
SW Fox Brown Rd (north)	2.9	A/B	658	Uninterrupted Rural Hwy	Rural Major Collector	2	No
Silver Fox Lane (south)	2.9	A/B	190	Class I Undivided	Rural Major Collector	2	No
SW Commerce Park Drive	3.8	A[(a)]	-	Local	-	2	No
SW Dr. Martin Luther King Jr Dr	5.1	A/B	1782	Local Undivided Non-State	Urban Collector	2	Yes
SW Van Buren Ave	6.0	A[(a)]	-	Local	-	2	No
SW Monroe Ave	6.1	A[(a)]	-	Local	-	2	No
SW Jefferson Ave	6.2	A[(a)]	-	Local	-	2	No
SW Washington Ave	6.3	A[(a)]	-	Local	-	2	No
SW Indian Ave	6.4	A[(a)]	-	Local	-	2	No
SW Adams Ave	6.4	B[(b)]	-	Local	Urban Collector	2	Yes
SW Farm Rd	6.5	A/B	2334	Local Undivided Non-State	Urban Collector	2	Yes
SW Madison Ave	6.5	A[(a)]	-	Local	-	2	No
Fernwood Forest Rd	6.8	A[(a)]	-	Local	-	2	No
SR 76/Kanner Hwy	7.4	B	1761(West)/ 3160 (East)	Uninterrupted Rural Hwy	Rural Minor Arterial	2	No

Notes:
(a) As no current AADT or LOS values were available, an LOS of "A" was assumed as this roadway is located in a rural area and classified as a local road.
(b) As no current AADT or LOS values were available, an LOS of "B" was assumed as this roadway is located in an urban area and classified as an urban collector.

Key:
AADT = Average Annual Daily Traffic
LOS = Level of Service

Table 9.3-7
Preferred Corridor Road Crossings in Palm Beach County

Road Name	Milepost	LOS	AADT	Road Type	Classification	No. Lanes	Urban Area
CR 706/ Indiantown Rd (east)	15.1	A[(a)]	1588	County	Rural Minor Arterial	2	No
N Grade Rd (west)	15.1	A[(b)]	-	Local	-	2	No
Endeavor Dr	19.3/ 19.5	A[(b)]	-	Local	-	2	No
Innovation Dr (West)	20.0	A[(c)]	4300	County Rd	Rural Minor Arterial	2	Yes
Airport Rd/Aviation Blvd/Aviation Rd	24.4	B[(d)]	-	Local	-	2	Yes
Ramp/809 Alt/ Northlake Blvd/ CR 850	30.4	B[(e)]	32000	County	Urban Minor Arterial	4	Yes
N Jog Rd	31.8	A[(f)]	11310 (North) 5000 (south)	Local	County Road	4	Yes
Florida Turnpike/ SR 91	32.2	C	57200	State	Urban Principal Arterial-Other Freeways and Expressways	4/6	Yes

Notes:
(a) As no current LOS values were available, an LOS of "A" was assumed as this roadway is located in a rural area and classified as a rural minor collector, after review of Table 3 of the 2009 FDOT Quality/Level of Service Handbook.
(b) As no current AADT or LOS values were available, an LOS of "A" was assumed as this roadway is located in a rural area and classified as a local road.
(c) As no current LOS values were available, an LOS of "A" was assumed as this roadway is located in an urban area and classified as a rural minor collector, after review of Table 2 of the 2009 FDOT Quality/Level of Service Handbook.
(d) As no current AADT or LOS values were available, an LOS of "B" was assumed as this roadway is located in an urban area and classified as a local road.
(e) As no current LOS values were available, an LOS of "B" was assumed as this roadway is located in an urban area and classified as an urban minor arterial, after review of Table 1 of the 2009 FDOT Quality/Level of Service Handbook.
(f) As no current LOS values were available, an LOS of "A" was assumed as this roadway is located in an urban area and is a local/county road, after review of Table 1 of the 2009 FDOT Quality/Level of Service Handbook.

Key:
AADT = Average Annual Daily Traffic
CR = County Road
LOS = Level of Service
SR = State Road

9.3.5.6.2 Lighting

As shown in Appendix A much of the Preferred Corridor is located in rural areas without many artificial light sources, the exceptions to this are as follows: (a) Near the Origination Point (approximate MP 0.0 to 1.5) several artificial light sources exist for the operation and security of the FPL Martin Plant operations; (b) From approximate MP 5.0 to 7.0 the Preferred Corridor crosses the town of Indiantown which has artificial light sources from commercial and residential areas within and near the Preferred Corridor; (c) At MP 19.0 and the proposed contractor wareyard, industrial and commercial land uses exist that have artificial light sources for operations and security of the facilities in these areas; and (d) as mentioned previously, the area of the Preferred Corridor collocated with SR 710 (MP 1.6 to 32.2) would be exposed to artificial light sources from vehicular traffic along the road.

9.3.5.7 Work Force and Unemployment

This section describes the existing civilian local work force and unemployment rates for Martin and Palm Beach Counties. The local work force was assessed utilizing the U.S Census Bureau Data for Martin and Palm Beach Counties. This can be found in Table 9.3-8.

The heavy and civil engineering construction labor force in Martin County decreased overall between 2006 and 2009. The oil and gas pipeline construction labor force in Martin County has not changed measurably, according to U.S. Bureau of Labor Statistics (BLS) data. The heavy and civil engineering construction labor force in Palm Beach County decreased by 2,578 people from 2006 to 2009. While the oil and gas pipeline construction labor force in Palm Beach County decreased from between 20 and 99 people in 2006 and 2007, respectively, to less than 20 people in 2008 and 2009[3].

Martin and Palm Beach Counties are both included in larger metropolitan statistical areas (MSAs). Martin County is part of the Port St. Lucie, FL MSA, which also includes St. Lucie County. Palm Beach County is part of the Miami-Fort Lauderdale-Pompano Beach, FL MSA, which also includes Broward and Miami-Dade Counties. The heavy and civil engineering construction labor force in the Port St. Lucie, FL MSA includes 861 people, and the heavy and civil engineering construction labor force in the Miami-Fort Lauderdale-Pompano Beach, FL MSA includes 10,526 persons. However, the oil and gas pipeline construction labor forces in the MSAs are similar in size to the labor forces in the counties, thus this labor force is mainly within Martin and Palm Beach Counties. The oil and gas pipeline construction labor force in the Port St. Lucie, FL MSA includes between 20 and 99 people, and the labor force in the Miami-Fort Lauderdale-Pompano Beach, FL MSA includes 98 people.

[3] The U.S. Census Bureau's County Business Patterns survey does not provide specific data for sub-industries with only one or several establishments in a geographic area, to avoid disclosing data for individual companies.

Table 9.3-8
Changes in Labor Force and Unemployment Rates between 2006 and 2010, Martin and Palm Beach Counties, Florida

	Civilian Labor Force		Heavy and Civil Engineering Construction Labor Force		Oil and Gas Pipelines and Related Structures Construction Labor Force		Unemployment Rate (Annual, Not Seasonally Adjusted)	
Year	Martin	Palm Beach	Martin	Palm Beach	Martin	Palm Beach	Martin	Palm Beach
2006	67,016	615,773	669	5,877	20 - 99	20 - 99	3.4	3.6
2007	67,436	610,921	503	5,745	20 - 99	20 - 99	4.2	4.2
2008	63,084	618,511	573	4,198	20 - 99	<20	6.8	6.4
2009	64,012	634,087	484	3,299	20 - 99	<20	10.7	10.4
2010	66,962	669,830	n/a [(a)]	n/a [(a)]	n/a [(a)]	n/a [(a)]	11.8	11.7

Note:
(a) The U.S. Census Bureau has not released 2010 County Business Patterns survey data.

Sources: U.S. Census Bureau 2006a, 2006b 2007a, 2007b, 2008a, 2008b, 2009a, 2009b, and 2010; and U.S. BLS 2012.

9.3.6 Biological and Physical Environment of the Corridor Area

The following sections discuss the biological and physical existing environment of the Preferred Corridor and surrounding areas as appropriate or in accordance with FDEP's Power Plant Siting Act Application Instruction Guide. These resources include the following:

- Vegetation and Land Cover (Section 9.3.6.1);
- Affected Waters and Wetlands (Section 9.3.6.2);
- Ecology (Section 9.3.6.3); and
- Noise (Section 9.3.6.4).

9.3.6.1 Vegetation and Land Cover

The following subsections generally describe the existing vegetation and land cover resources present within the Preferred Corridor. These resources include vegetative land cover, invasive plant species, and protected plant species.

9.3.6.1.1 Land Cover and Land Use

Land cover and land use is classified according to the Florida Land Use Cover and Form Classification System (FLUCFCS). This is a hierarchical system developed by the FDOT that defines land cover types in the state of Florida.

The land cover types in the Preferred Corridor were mapped during field surveys. The acreages of each land cover type that occurs within the Preferred Corridor are listed in Table 9.3-9 by FLUCFCS code and description. Figures detailing the location of the land cover types are provided in "Ecological Assessment & Wetland Delineation Report" (see Appendix K). The differing types of land cover types identified are described below.

Table 9.3-9
Summary of Land Cover within the Preferred Corridor

FLUCFCS Level III Code	Habitat Description	Acreage	Percent of Corridor
140	Commercial and Services	22.7	2.3
211	Improved Pastures	0.4	<0.1
310	Herbaceous (Dry Prairie)	83.3	8.6
329	Other Shrubs and Brush	2.9	0.3
330	Mixed Rangeland	131.3	13.5
410	Upland Coniferous Forests	3.9	0.4
410/411	Upland Coniferous Forests/ Pine Flatwoods	5.0	0.5
411	Pine Flatwoods	7.9	0.8
422	Brazilian Pepper	23.0	2.4
423	Oak-Pine-Hickory	2.1	0.2
425	Temperate Hardwood	38.7	4.0
432	Sand Live Oak	1.2	0.1
434	Hardwood - Conifer Mixed	48.9	5.0
436	Upland Scrub, Pine and Hardwoods	11.2	1.2
437/422	Australian Pine/ Brazilian Pepper	31.6	3.2
510	Streams and Waterways	3.2	0.3
511/619	Natural Streams and Waterways/ Exotic Wetland Hardwoods	9.9	1.0
530	Reservoirs	0.3	<0.1
619	Exotic Wetland Hardwoods	116.1	11.9
621	Cypress	1.2	0.1
625	Hydric Pine Flatwoods	1.6	0.2
630	Wetland Forested Mixed	8.5	0.9
631	Wetland Scrub	0.3	0.0
641	Freshwater Marshes	237.7	24.4
812	Railroads	10.5	1.1
814	Roads and Highways	177.7	18.3
830	Utilities	0.4	<0.1
830/310	Utilities/ Herbaceous (Dry Prairie)	14.6	1.5

Commercial and Services (140). Commercial areas are predominantly associated with the distribution of products and services. This category is composed of a large number of individual types of commercial land uses which often occur in complex mixtures. The Commercial and Services category includes the main building and all secondary structures associated with an enterprise. Secondary structures include sheds, warehouses, office buildings, driveways, parking lots and landscaped areas. Other types of *Commercial* areas include shopping centers and commercial strip developments. These areas have distinctive patterns that are readily identifiable on aerial photographs. Frequently, individual houses and other classes of urban land use may be found within commercial areas. Otherwise, the *Mixed* category should be used. A *Commercial* use that cannot be easily identified on aerial photography is the commercial resort. These businesses cater to vacationing patrons and often contain associated recreational facilities, such as swimming pools and ball courts.

Improved Pastures (211). This category, in most cases, is comprised of land that has been cleared, tilled, reseeded with specific grass types, and periodically improved with brush control and fertilizer application. Water ponds, troughs, feed bunkers and, in some cases, cow trails are evident.

Herbaceous - Dry Prairie (310). This category includes upland prairie grasses that occur on non-hydric soils, but may be occasionally inundated by water. These grasslands are generally treeless

with a variety of vegetation types dominated by grasses, sedges, rushes, and other herbs, including wire grasses with some saw palmetto present.

Other Shrubs and Brush (329). This category includes other shrubs and brush cover types not included in other FLUCFCS categories.

Mixed Rangeland (330). When more than one-third intermixture of either grassland or shrub-brushland range species occurs, the specific classification is changed to *Mixed Rangeland*. Where the intermixture is less than one-third, it is classified as the dominant type of rangeland, either *Grassland* or *Shrub and Brushland* categories.

Upland Coniferous Forests (410). Any natural forest stand whose canopy is at least 66% dominated by coniferous species is classified as a *Coniferous Forest*. However, pine plantation monocultures will fall under the *Tree Plantation* category (the 440 class). The similar morphology of the pine species occurring in Florida makes them difficult to distinguish from one another on aerial photographs.

Pine Flatwoods (411). These forests are quite common throughout much of Northern and Central Florida. Originally, longleaf pines were common on drier sites while slash pines, which are less fire-resistant, were confined to moister sites—wildfire being the contributing factor in this distribution. However, fire control and artificial reforestation have extended the range of slash pine into former longleaf sites. The pine flatwoods class is dominated by either slash pine, longleaf pine, or both, and less frequently pond pine. The common flatwoods understory species include saw palmetto, wax myrtle, gallberry, and a wide variety of herbs and brush.

Brazilian Pepper (422). Brazilian pepper (*Schinus terebinthifolius*) is an exotic, pestilent tree species found on peninsular Florida from the Tampa Bay area south. Commonly found on disturbed sites, this native of Brazil is an aggressive invader of Florida's plant communities. Communities of these small, shrub-like trees are often established along borrow-pits, levees, dikes, and in old disturbed fields.

Oak-Pine-Hickory (423). This is a mixed forest community in which no single species is consistently dominant. However, this is a predominantly hardwood forest type in which various Southern pines are major associate species. Major component species of this community may include Southern red oak (*Quercus falcata*), post oak (*Quercus stellata*), black oak (*Quercus velutina*), live oak (*Quercus virginiana*), loblolly pine (*Pinus taeda*), shortleaf pine (*Pinus echinata*), slash pine (*Pinus elliottii*), mockernut hickory (*Carya tomentosa*), and pignut hickory (*Carya glabra*), in addition to numerous minor associate species. Composition varies throughout Florida.

Temperate Hardwood (425). This forest cover type is often referred to as either low or temperate hammock. Depending on the location, common components of this community may include a wide variety of oaks (*Quercus* spp.), red bay (*Persea borbonia*), sweetbay (*Magnolia virginiana*), southern magnolia (*Magnolia grandiflora*), sweetgum (*Liquidambar styraciflua*), sugarberry (*Celtis laevigata*), hickories (*Carya* spp.), cabbage palm (*Sabal palmetto*), hollies (*Ilex* spp.) and eastern red cedar (*Juniperus virginiana*). Various pines are minor associates.

Sand Live Oak (432). Sand live oak (*Quercus geminata*) predominates in this cover type. Associates are cabbage palm, eastern red cedar, and southern magnolia with smaller quantities of chapman oak (*Quercus chapmanii*), myrtle oak (*Quercus myrtifolia*), red maple (*Acer rubrum*), red bay, and holly. This cover type is generally found on old coastal dune and white sand areas.

Hardwood – Conifer Mixed (434). This category is reserved for those forested areas in which neither upland conifers nor hardwoods achieve a 66% crown canopy dominance.

Upland Scrub, Pine and Hardwoods (436). This scrub category represents a conglomeration of species found in the upland area. These areas have no one predominant species and are usually a disturbed site that has regenerated naturally.

Australian Pine (437). This exotic and invasive species, contrary to its name, is actually a hardwood. Its name is derived from its needle-like leaves and its characteristic cone-shaped crown structure. Australian pine (*Casuarina equisetifolia*) was introduced to South Florida from Australia and has colonized northward to the Tampa Bay area. It is common on disturbed sites, forming dense thickets, and is frequently planted as wind breaks and soil stabilizers, and can be found in some wetland areas.

Streams and Waterways (510). This category includes rivers, creeks, canals, and other linear waterbodies. Where the water course is interrupted by a control structure, the impounded water area will be placed in the *Reservoirs* category (530). The boundary between streams and lakes, reservoirs or the ocean is the straight line across the mouth of the stream unless the mouth is more than 1 mile (1.85 kilometers) wide.

Natural Streams and Waterways (511). This category includes natural rivers, creeks, lakes, and waterbodies that are unaltered by outside unnatural influence.

Reservoirs (530). Reservoirs are artificial impoundments of water. They are used for irrigation, flood control, municipal and rural water supplies, recreation, and hydro-electric power generation. Dams, levees, other water control structures, or the excavation itself usually will be evident to aid in the identification.

Exotic Wetland Hardwoods (619). This category is a wetland with a dominant exotic tree species such as Brazilian pepper, melaleuca (*Melaleuca quinquenervia*), or other exotic species.

Cypress (621). This community is composed of pond cypress (*Taxodium ascendens*) or bald cypress (*Taxodium distichum*) which is either pure or predominant. In the case of pond cypress, common associates are swamp tupelo (*Nyssa sylvatica*), slash pine, and black titi (*Cliftonia monophylla*). In the case of bald cypress, common associates are water tupelo, swamp cottonwood (*Populus heterophylla*), red maple, American elm (*Ulmus americana*), pumpkin ash (*Fraxinus profunda*), Carolina ash (*Fraxinus caroliniana*), overcup oak (*Quercus lyrata*), and water hickory (*Carya aquatica*). Bald cypress may be associated with laurel oak (*Quercus laurifolia*), sweetgum and sweetbay on less moist sites. Note that some authorities do not distinguish between the two varieties of cypress.

Hydric Pine Flatwoods (625). This category is forest with a sparse to moderate canopy of slash pine. The understory is grasses, wiregrass, forbs, and at times has sparse saw palmetto.

Wetland Forested Mixed (630). This category includes mixed wetlands forest communities in which neither hardwoods or conifers achieve a 66% dominance of the crown canopy composition.

Wetland Scrub (631). This community is associated with topographic depressions and poorly drained soil. Associated species include pond cypress, swamp tupelo, willows (*Salix* spp.), and other low scrub with no dominate species. The Loxahatchee Slough area is an example of this classification.

Freshwater Marshes (641). The communities included in this category are characterized by having one or more of the following species predominate:

- Sawgrass (*Cladium jamaicensis*);
- Cattail (*Typha* spp.);
- Arrowhead (*Sagittaria* spp.);
- Maidencane (*Panicum hemitomon*);
- Buttonbush (*Cephalanthus occidentalis*);
- Cordgrass (*Spartina bakeri*);
- Giant Cutgrass (*Zizaniopsis miliacea*);
- Switchgrass (*Panicum virgatum*);
- Bulrush (*Scirpus* spp.);
- Needlerush (*Juncus effusus*);

- Common reed (*Phragmites* spp.); and/or
- Arrowroot (*Thalia* spp.).

Railroads (812). This includes all railroad tracks greater than 30 meters wide and all facilities related to the rail operations. Only multi-track railroads are included. Related facilities include:

- Classification yards. A large set of parallel tracks used to sort freight cars;
- Servicing yards. Repair of locomotives and engines;
- Car repair shops. Long low buildings straddling one or more tracks;
- Freight or loading yards. With loading platforms, freight stations, warehouses;
- Storage yards. Used to store rolling stock; and
- Station yards. For storage of passenger cars.

Railroads that are abandoned or inactive are included, unless the tracks have been removed.

Roads and Highways (814). This class includes all four-lane highways with "substantial" median strips. In general, these are specified as the U.S. and State Routes identified as such on U.S. Geological Survey 7.5-minute topographic maps. Since substantial median is required for this category, most four-lane commercial "strips" are excluded. The intent is to include only the major transportation corridors.

All interchanges, rights-of-way, highway patrol facilities, maintenance and service facilities, and associated parking areas also are included in the mapping unit. However, parking lots along transportation routes that are used only for parking are in *Auto Parking Facilities (8180)*.

Utilities (830). Utilities usually include power-generating facilities and water treatment plants, including their related facilities such as transmission lines for electric generation plants and aeration fields for sewage treatment sites. Small facilities or those associated with an industrial, commercial, or extractive land use are included within these larger respective categories.

9.3.6.1.2 Noxious Weeds

Noxious weeds are regulated under Chapter 5B-57, F.A.C. The term noxious weed is defined as "any living stage, including, but not limited to, seeds and productive parts, of a parasitic or other plant of a kinds, or subdivision of a kind, which may be a serious agricultural threat in Florida, or have a negative impact on the plant species protected under Section 581.185, F.S., or if the plant is a naturalized plant that disrupts naturally occurring native plant communities." The Florida Department of Agriculture and Consumer Services, in cooperation with the United States Department of Agriculture and the FDEP, is responsible for regulating the movement of noxious weeds and invasive plans in Florida. Rule 5B-57.007, F.A.C., lists four genera of parasitic weeds and one genus and 69 species of terrestrial weeds.

In addition to the noxious weeds listed in Rule 5B-57.007, F.A.C., the Florida Exotic Pest Plant Council (FLEPPC) maintains a list of invasive plant species in Florida (FLEPPC 2011). This list divides invasive plants into two categories:

- **Category I:** Invasive exotics that are altering native plan communities by displacing native species, changing community structures or ecologic functions, or hybridizing with natives.
- **Category II:** Invasive exotics that have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category I.

The FLEPPC list contains 78 Category I species (23 of which are also contained in Rule 5B-57.007, F.A.C.), and 77 Category II species (three of which are also contained in Rule 5B-57.007, F.A.C.,). The FLEPPC list is not a regulatory list, and only those plants listed as noxious weeds in Rule 5B-57.007, F.A.C., are regulated by law. The purpose of the FLEPPC list is to bring attention to the problems associated with invasive species and to inform resource management agencies about which species may need to be monitored.

Noxious weeds are of concern due to their invasiveness and potential to spread. Noxious weeds may out-compete and displace native plant species and change the vegetative composition of the native communities. Changes in vegetative composition could then negatively impact wildlife that depend of the habitat for forage, breeding, nesting, or cover. Vegetative communities are more susceptible to infestations or spread of invasive or noxious weeds subsequent to soil disturbances.

Existing Conditions

Field surveys were conducted for noxious weeds along the Preferred Corridor that are listed in Rule 5B-57.007, F.A.C., as well as species on the FLEPPC list. A total of 180.6 acres of noxious weeds were identified along the Preferred Corridor; approximately 18.1% of the Project area is currently populated by noxious weed species. Table 9.3-10 provides details of the noxious weed survey and summarizes the locations of weed populations in the Preferred Corridor.

Table 9.3-10
Noxious Weeds Areas Identified in the Preferred Corridor

Begin Milepost	End Milepost	Invasive FLUCFCS Code	Acreage
0.0	0.0	511/619 - Natural Streams and Waterways/ Exotic Wetland Hardwoods	1.4
1.3	1.3	619-Exotic Wetland Hardwoods	0.2
1.3	1.7	511/619-Natural Streams and Waterways/ Exotic Wetland Hardwoods	1.3
1.3	2.9	422-Brazilian Pepper	12.2
2.5	2.9	619 - Exotic Wetland Hardwoods	1.9
3.2	3.6	422-Brazilian Pepper	1.0
3.2	3.8	619-Exotic Wetland Hardwoods	2.8
3.6	4.8	422-Brazilian Pepper	3.4
3.8	4.8	619-Exotic Wetland Hardwoods	4.8
5.1	5.2	619-Exotic Wetland Hardwoods	0.2
6.5	7.3	511/619-Natural Streams and Waterways/ Exotic Wetland Hardwoods	2.3
7.9	8.0	619-Exotic Wetland Hardwoods	4.4
8.4	9.0	422-Brazilian Pepper	1.5
8.5	10.2	619-Exotic Wetland Hardwoods	13.6
10.0	10.2	619-Exotic Wetland Hardwoods	0.5
10.1	10.2	511/619-Natural Streams and Waterways/ Exotic Wetland Hardwoods	0.7
10.2	10.6	619-Exotic Wetland Hardwoods	3.3
10.3	10.3	511/619 - Natural Streams and Waterways/ Exotic Wetland Hardwoods	>0.1
10.7	12.7	619 - Exotic Wetland Hardwoods	12.5
12.7	12.7	511/619 - Natural Streams and Waterways/ Exotic Wetland Hardwoods	0.2
12.7	12.8	619 - Exotic Wetland Hardwoods	0.4
12.7	12.8	511/619 - Natural Streams and Waterways/ Exotic Wetland Hardwoods	0.1
12.7	14.1	619 - Exotic Wetland Hardwoods	9.4

Table 9.3-10
Noxious Weeds Areas Identified in the Preferred Corridor

Begin Milepost	End Milepost	Invasive FLUCFCS Code	Acreage
13.8	14.1	619 - Exotic Wetland Hardwoods	1.4
14.2	14.4	619 - Exotic Wetland Hardwoods	0.8
14.4	15.1	619 - Exotic Wetland Hardwoods	3.4
15.1	15.2	619 - Exotic Wetland Hardwoods	0.9
15.1	15.4	422 - Brazilian Pepper	0.7
15.4	17.5	619 - Exotic Wetland Hardwoods	6.8
15.4	18.1	422 - Brazilian Pepper	5.7
17.6	18.3	619 - Exotic Wetland Hardwoods	3.1
19.2	20.4	511/619 - Natural Streams and Waterways/ Exotic Wetland Hardwoods	2.4
20.0	20.4	422 - Brazilian Pepper	1.7
20.1	20.4	619 - Exotic Wetland Hardwoods	11.7
20.4	21.0	422 - Brazilian Pepper	1.8
20.4	20.6	511/619 - Natural Streams and Waterways/ Exotic Wetland Hardwoods	0.6
20.4	20.5	619 - Exotic Wetland Hardwoods	1.3
20.5	20.6	422 - Brazilian Pepper	0.4
20.6	22.2	619 - Exotic Wetland Hardwoods	6.5
21.0	22.2	437/422 - Australian Pine/ Brazilian Pepper	3.9
22.1	22.2	511/619 - Natural Streams and Waterways/ Exotic Wetland Hardwoods	0.3
22.1	23.4	437/422 - Australian Pine/ Brazilian Pepper	3.8
22.2	22.3	511/619 - Natural Streams and Waterways/ Exotic Wetland Hardwoods	0.5
22.2	22.3	437/422 - Australian Pine/ Brazilian Pepper	0.2
22.2	23.4	619 - Exotic Wetland Hardwoods	3.7
23.5	24.4	437/422 - Australian Pine/ Brazilian Pepper	5.0
23.5	23.9	619 - Exotic Wetland Hardwoods	0.4
24.2	24.4	619 - Exotic Wetland Hardwoods	0.3
24.4	24.4	511/619 - Natural Streams and Waterways/ Exotic Wetland Hardwoods	>0.1
24.4	24.4	619 - Exotic Wetland Hardwoods	0.2
24.4	24.6	437/422 - Australian Pine/ Brazilian Pepper	0.6
24.4	24.4	511/619 - Natural Streams and Waterways/ Exotic Wetland Hardwoods	>0.1
24.5	24.6	619 - Exotic Wetland Hardwoods	0.3
24.7	26.6	437/422 - Australian Pine/ Brazilian Pepper	5.8
25.0	25.6	619 - Exotic Wetland Hardwoods	1.1
25.7	26.1	619 - Exotic Wetland Hardwoods	1.1
26.4	26.5	619 - Exotic Wetland Hardwoods	0.5
26.6	26.9	437/422 - Australian Pine/ Brazilian Pepper	1.0
26.7	26.9	619 - Exotic Wetland Hardwoods	0.6
26.9	27.0	437/422 - Australian Pine/ Brazilian Pepper	0.2
26.9	27.8	619 - Exotic Wetland Hardwoods	2.7
27.0	29.2	437/422 - Australian Pine/ Brazilian Pepper	6.2
28.7	29.2	619 - Exotic Wetland Hardwoods	2.0
29.2	29.9	437/422 - Australian Pine/ Brazilian Pepper	0.9
29.2	29.9	619 - Exotic Wetland Hardwoods	2.0
29.9	30.4	437/422-Australian Pine/ Brazilian Pepper	0.6
29.9	30.4	619 - Exotic Wetland Hardwoods	1.4
30.3	30.5	619 - Exotic Wetland Hardwoods	0.4
30.4	30.5	437/422 - Australian Pine/ Brazilian Pepper	0.1

Table 9.3-10
Noxious Weeds Areas Identified in the Preferred Corridor

Begin Milepost	End Milepost	Invasive FLUCFCS Code	Acreage
30.6	30.7	437/422 - Australian Pine/ Brazilian Pepper	0.2
30.7	31.4	619 - Exotic Wetland Hardwoods	2.9
30.7	31.8	437/422 - Australian Pine/ Brazilian Pepper	2.0
31.4	31.8	619 - Exotic Wetland Hardwoods	0.8
31.8	32.2	437/422 - Australian Pine/ Brazilian Pepper	1.2

9.3.6.1.3 Protected Plant Species

The State of Florida provides for the protection of plants that have been determined to be threatened, endangered, or commercially exploited as per Chapter 5B-40.0055, F.A.C. A review of the listed plants for Martin and Palm Beach Counties per the Florida Natural Areas Inventory (FNAI) and Chapter 5B-40.0055, F.A.C. was conducted, as well as a review of the necessary habitats for each. The species listed in Table 9.3-11 and described below, have the potential to occur within the Preferred Corridor. During field surveys one of the plant species listed in Table 9.3-11, the state listed threatened pine pink orchid (*Bletia purpurea*) was found within the Preferred Corridor. The species with the potential to occur within the Preferred Corridor are described below.

Table 9.3-11
Federally and State-Listed Plant Species
Potentially Located Within the Preferred Corridor

Common Name	Scientific Name	Federal Status	State Status
Meadow jointvetch	*Aeschynomene pratens*	-	LE
Pine pink orchid	*Bletia purpurea*	-	LT
Piedmont Jointgrass	*Coelorachis tuberculosa*	-	T
Celestial Lily	*Nemastylis floridana*	-	E
Cutthroat Grass	*Panicum abscissum*	-	E
Hand Fern	*Ophioglossum palmatum*	-	E

Key:
T = Threatened
E = Endangered

Meadow jointvetch (Aeschynomene pratens) is a state listed endangered species. It is found in a herbaceous or small shrub state in sawgrass marshes and amrgins of pineland depressions, marl praries, cypress domes, and swales.

Pine pink orchid (*Bletia purpurea*) is a state-listed threatened species. It is a perennial orchid found in normally open pine flatwoods. During the field survey this species was found in seven locations between MP 9 – 12 within roadside marshes adjacent to SR 710.

Piedmont jointgrass *(Coelorachis tuberculosa)* is a state-listed threatened species. It is a smooth taller grass that is typically confined to karst areas or on the edges of ponds, wet areas, shores, or marshes. It is known to occur in Alabama and Florida with a small population in Martin County.

Celestial lily (*Nemastylis floridana*) is a state-listed endangered species. It is a perennial herb found in wet flatwoods, prairies, marshes, and cabbage palm hammocks. The celestial lily is endemic to eastern counties of Florida, primarily in the St. Johns River drainage basin. It flowers from August to October in the late afternoon (FNAI 2001).

Cutthroat grass (*Panicum abscissum*), a robust grass, is state-listed as endangered. It is found in wet flatwoods, depression marshes, , and cutthroat seeps. It ranges from central to southeastern Florida and blooms from mid-April to late July (NatureServe Explorer 2012).

Hand fern (*Ophioglossum palmatum*) is listed as an endangered species by the State of Florida. This fern species is typically found at the bases of cabbage palms within maritime or wet hammocks, and its range stretches across much of central and southeastern Florida (Coile and Garland 2003).

9.3.6.2 Affected Waters and Wetlands

Florida's surface waters consist of over 1,700 streams and rivers, totaling 51,858 miles (about half of which are ditches and canals). This section describes waterbodies and water basins, water quality and sediment quality conditions, as well as public water supplies within the drainage basins crossed by the Preferred Corridor.

9.3.6.2.1 Surface Water Quality Classifications and Designations

Surface water quality monitoring in Florida is conducted by various agencies including FDEP, water management districts (WMDs), and local governments and agencies. As part of the State's Integrated Water Resources Monitoring Program, FDEP has worked closely with others to develop scientifically sound approaches and methodologies for surface water and groundwater quality monitoring, water chemistry, and sediment quality monitoring. This section discusses the surface water quality monitoring program and findings to date. Groundwater and sediment quality monitoring and findings are discussed in later subsections.

All surface waters in Florida have been classified according to their designated uses into one of the following five classes:

- Class I: Potable water use;
- Class II: Shellfish propagation or harvesting;
- Class III: Recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife;
- Class IV: Agricultural water supplies; and
- Class V: Navigation, utility, and industrial use.

These classifications are codified in Rule 62-302.400, F.A.C.

All Florida surface waters are required to meet the "Minimum Criteria for Surface Waters," defined in Rule 62-302.500, F.A.C. In addition, numerical water quality standards have been established in Rule 62-302.530, F.A.C. for each water use classification. Unless otherwise designated, the surface waters of the state are Class III, as described in Rule 62-302.400, F.A.C. (FDEP 2012a). Table 9.3-12 lists all of the waterbodies that are crossed by the Preferred Corridor.

Surface waterbodies that are "waters worthy of a special protection because of its natural attributes" are designated by FDEP rule as OFWs. No OFWs have been identified within the proposed Preferred Corridor.

Table 9.3-12
Surveyed Waterbodies within the Preferred Corridor

Waterbody ID	Milepost	Waterbody Name	Flow Type	Waterbody		Approximate Water Depth (feet)	CLASS
				Width [(a)] (feet)	Bank Height (feet)		
WB 01	0.0	Unnamed ditch	Nontidal, lower perennial	47	6-8	2	III
WB 02	0.0	Unnamed ditch	Nontidal, lower perennial	47	6-8	2	III
WB 03	1.0	Man-made reservoir	Nontidal, lower perennial	26	2	2	III
WB 04	1.3	Railroad ditch	Nontidal, lower perennial	29	5-6	3	III
WB 05	5.7	Canal	Nontidal, lower perennial	36	12	2	III
WB 06	6.4	Railroad ditch	Nontidal, lower perennial	29	3	0.25	III
WB 07	6.8	Railroad ditch	Nontidal, lower perennial	26	5	0.25	III
WB 08	7.2	St. Lucie Canal	Nontidal, lower perennial	262	18	5-10	III
WB 09	10.1	Railroad ditch	Nontidal, lower perennial	61	4-8	2	III
WB 10	10.2	Railroad ditch	Nontidal, lower perennial	20	4-8	2	III
WB 11	12.6	Railroad ditch	Nontidal, lower perennial	35	4-8	3	III
WB 12	12.7	Railroad ditch	Nontidal, lower perennial	25	4-8	3	III
WB 13	19.1	Railroad ditch	Nontidal, lower perennial	72	4-8	3	III
WB 14	19.3	Railroad ditch	Nontidal, lower perennial	16	4-8	3	III
WB 15	19.9	Railroad ditch	Nontidal, lower perennial	38	4-8	2	III
WB 16	20.4	Railroad ditch	Nontidal, lower perennial	26	4-8	2	III
WB 17	22.1	Railroad ditch	Nontidal, lower perennial	32	4-8	3	III
WB 18	22.2	Railroad ditch	Nontidal, lower perennial	43	4-8	3	III
WB 19	23.4	C-18 Canal	Nontidal, lower perennial	13	4-8	5	III
WB 20	23.4	Canal	Nontidal, lower perennial	44	4-8	5	III
WB 21	23.4	Canal	Nontidal, lower perennial	96	4-8	5	III
WB 22	24.4	Railroad ditch	Nontidal, lower perennial	20	4-8	2	III
WB 23	24.4	Railroad ditch	Nontidal, lower perennial	27	4-8	2	III
WB 24	29.2	Unnamed Stream	Nontidal, lower perennial	158	5-10	6	III
WB 25	30.3	Canal	Nontidal, lower perennial	85	5-10	5	III

Note:
(a) Waterbody widths based upon jurisdictional limits and therefore may include wetlands within distance measurement.

9.3.6.2.2 Stream & River Characteristics and Uses (Canals/Intermittent/Ditches)

In addition to waterbodies such as rivers, the majority of the waterbodies crossed by the Preferred Corridor are smaller waterbodies that flow year-round (perennial) or intermittently based on climate and precipitation. Many of the smaller waterbodies are identified as canals and ditches. Canals and ditches vary widely from small irrigation ditches to larger water supply and conveyance canals. The WMDs manage larger canals used for flood protection, conveyance, and water supply. WMDs manage conveyance through the major canals according to waterbody flows and flow levels throughout the system. As such, WMDs own, manage, and maintain control structures throughout the intricate canal systems. The SFWMD manages the bulk of the larger canal systems to ensure proper water supply to meet the population, agricultural, and environmental water demands in south Florida. Other drainage features identified as artificial paths are manmade conveyances for irrigation, agriculture, commercial, and residential uses.

9.3.6.2.3 Major Drainage Basins Traversed

The Preferred Corridor would cross two major basins in southeastern peninsular Florida: St. Lucie/Loxahatchee Rivers, and Lake Worth Lagoon/Palm Beach Coast Basins. This section provides a general description by county from north to south of the basins that would be traversed.

St. Lucie/Loxahatchee River Basin. The majority (99.5%) of the Preferred Corridor is located in the St. Lucie/Loxahatchee River Basin. The St. Lucie/Loxahatchee Basin extends approximately 1,328 square miles and includes the 1,050-square-mile St. Lucie River watershed in its northern portion and the Loxahatchee River watershed to the south. The basin lies within St. Lucie, Martin, and Palm Beach Counties. The St. Lucie watershed includes the southern segment of the Indian River Lagoon (IRL) as well as a system of canals, originally part of the Central and Southern Florida Project for Flood Control and Other Purposes (C&SF Project) and related activities. The IRL is a unique and diverse estuary that extends over 150 miles from Palm Beach County, north to Volusia County. In addition, the basin includes the Loxahatchee River and Estuary, Intracoastal Waterway, Tenmile Creek, Cypress Creek, and two state aquatic preserves, the North Fork and St. Lucie River Preserves. While there are a number of designated OFWs within the basin, all designated OFWs within this watershed are geographically separate from and unaffected by the Preferred Corridor. In addition, the St. Lucie Canal is subject to a navigational servitude in favor of the United States Army Corps of Engineers (USACE) as a part of the Cross-Florida Waterway.

Many changes in hydrological patterns have greatly affected the basin's water and ecological resources. In the St. Lucie watershed, development is concentrated along the coastal areas. Along the southern portion of the St. Lucie watershed, surface waters are susceptible to pollution from stormwater runoff and treated wastewater effluents. Primarily wetlands and agricultural lands cover the Loxahatchee watershed.

Stormwater and agricultural runoff, along with other contaminants, ultimately flow into the IRL and the St. Lucie Estuary via an intricate network of agricultural and drainage canals managed by private owners, counties, water control districts, and the SFWMD. The SFWMD manages the major canals and associated flow control structures. During large storm events, water along the major canals is released to tide, releasing significant freshwater flows into the estuarine systems.

Lake Worth Lagoon/Palm Beach Coast Basin. A 0.3-mile section of the Preferred Corridor is in the Lake Worth Lagoon/Palm Beach Coast Basin. The basin covers approximately 700 square miles, mostly within Palm Beach County, and includes the Atlantic Intracoastal Waterway, Lake Worth Lagoon, and several major SFWMD canals. Eastern Palm Beach County is highly urbanized, with almost half of the land cover being urban. The Lake Worth Lagoon, the county's major estuarine resource is about 20 miles long and susceptible to stormwater runoff from the surrounding urban environment. Stormwater runoff flows into the lagoon via multiple major canal systems (C-15, C-16, C-17, and C-51). In addition

to stormwater runoff, the lagoon continues to be adversely impacted by large freshwater releases into the system that result in high nutrient and sediment loads.

9.3.6.2.4 Waterbodies Traversed

A field survey was performed to determine the water features occurring within and crossed by the Preferred Corridor. Datasets from the USGS and the FDEP were compiled to identify other surface water features and water quality data. The following sections describe the waterbodies evaluated. Figure 9.3-8 *(series)* provides an overview of the waters and wetlands surveyed within the Preferred Corridor. Detailed waterbody and wetland drawings are provided in Appendix K "Ecological Assessment & Wetland Delineation Report".

Within the Preferred Corridor, 25 waterbodies were identified. The Preferred Corridor would not cross any waterbodies with an OFW designation or any that otherwise require special consideration. However, the corridor would cross two SFWMD canals: the C-44 (St. Lucie Canal) at MP 7.3 and the C-18 Canal at MP 23.4.

Table 9.3-12 provides a detailed list of waterbodies traversed by the Preferred Corridor, showing MPs, hydrologic basin names, location information, and any special designation.

9.3.6.2.5 Sediment Quality

The waterbodies located within the Preferred Corridor have no known sediment contaminant exceedances. In its 2008 report to the USEPA, FDEP reported that sediments in urban estuaries in Florida contain heavy metals and organic contaminants (FDEP 2008). This issue was identified as one of the primary concerns for the state, and most of the sediment sampling has focused on these urban estuarine areas.

Since there are no sediment quality standards, FDEP developed statistical analysis tools to assess sediment quality in lakes and streams. The agency developed high and low quantitative measures for each contaminant to serve as guidelines for each pollutant. In 2004, they completed sampling for sediments in 284 freshwater systems throughout the state, including waterbodies within the basins traversed by the Project. The basins that were found to have sediment quality issues are not traversed by the Project. Additionally, there are no known areas that have, or may have, caused sediment quality concerns to the waterbodies crossed by the Preferred Corridor.

9.3.6.2.6 Public Water Supplies

Surface public water supplies in Florida are few in number. South Florida relies almost entirely on groundwater for the potable water needs. This section describes the public water supply sources that would be crossed by the Preferred Corridor.

Surface Water

The Preferred Corridor would not cross any waterbodies designated as Class I, for Potable Water Use.

Path: M:\acad\110697\Wetland_Overview_Rev.mxd



Legend

Waterbody

Wetland

1 Mile Post

Preferred Corridor

N

0 1,000 2,000 4,000 Feet

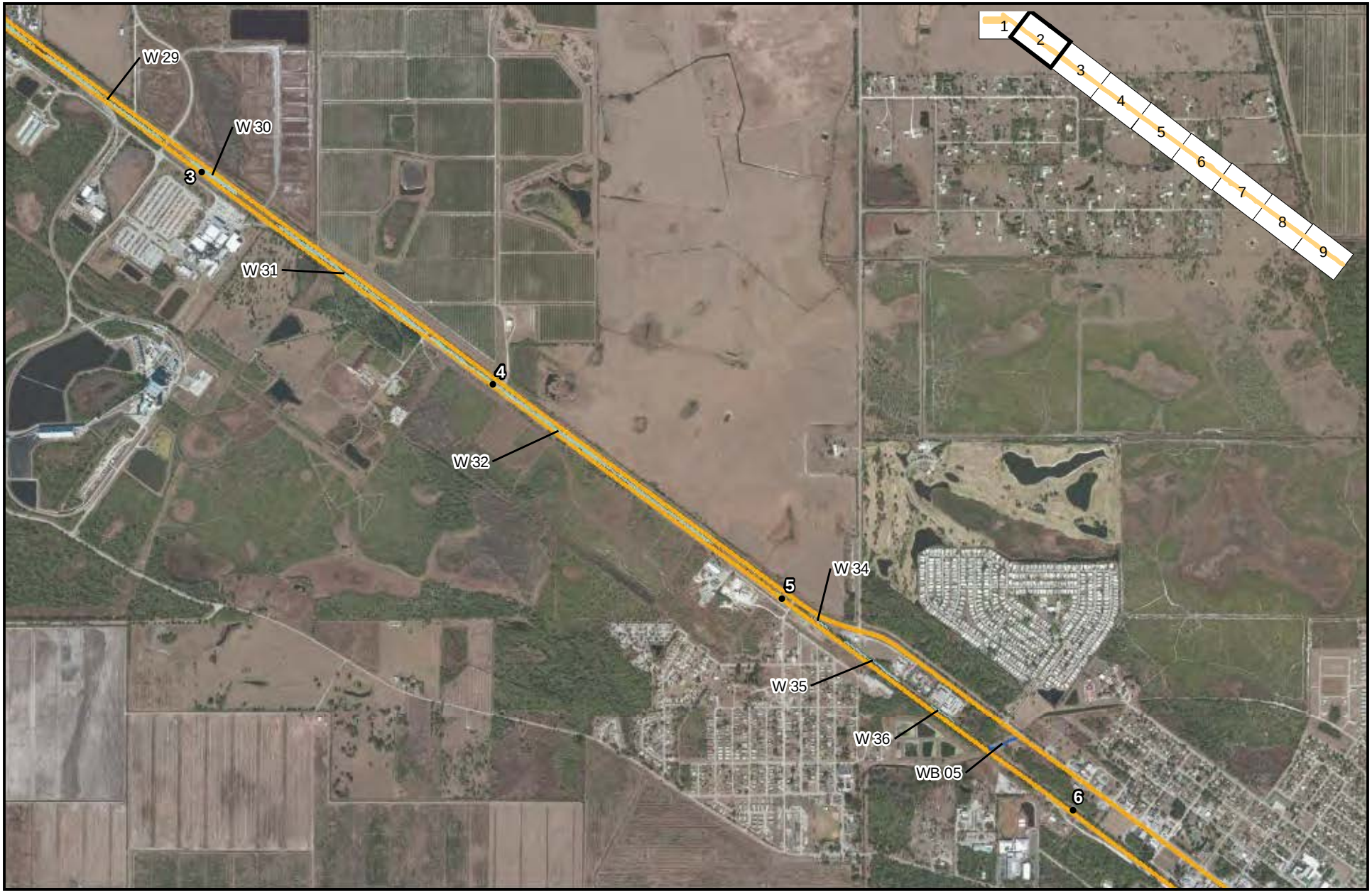
Figure 9.3-8 (Sheet 1 of 9)
Wetland Overview Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview_Rev.mxd



Legend

Waterbody
Wetland
Mile Post
Preferred Corridor

N

0 1,000 2,000 4,000 Feet

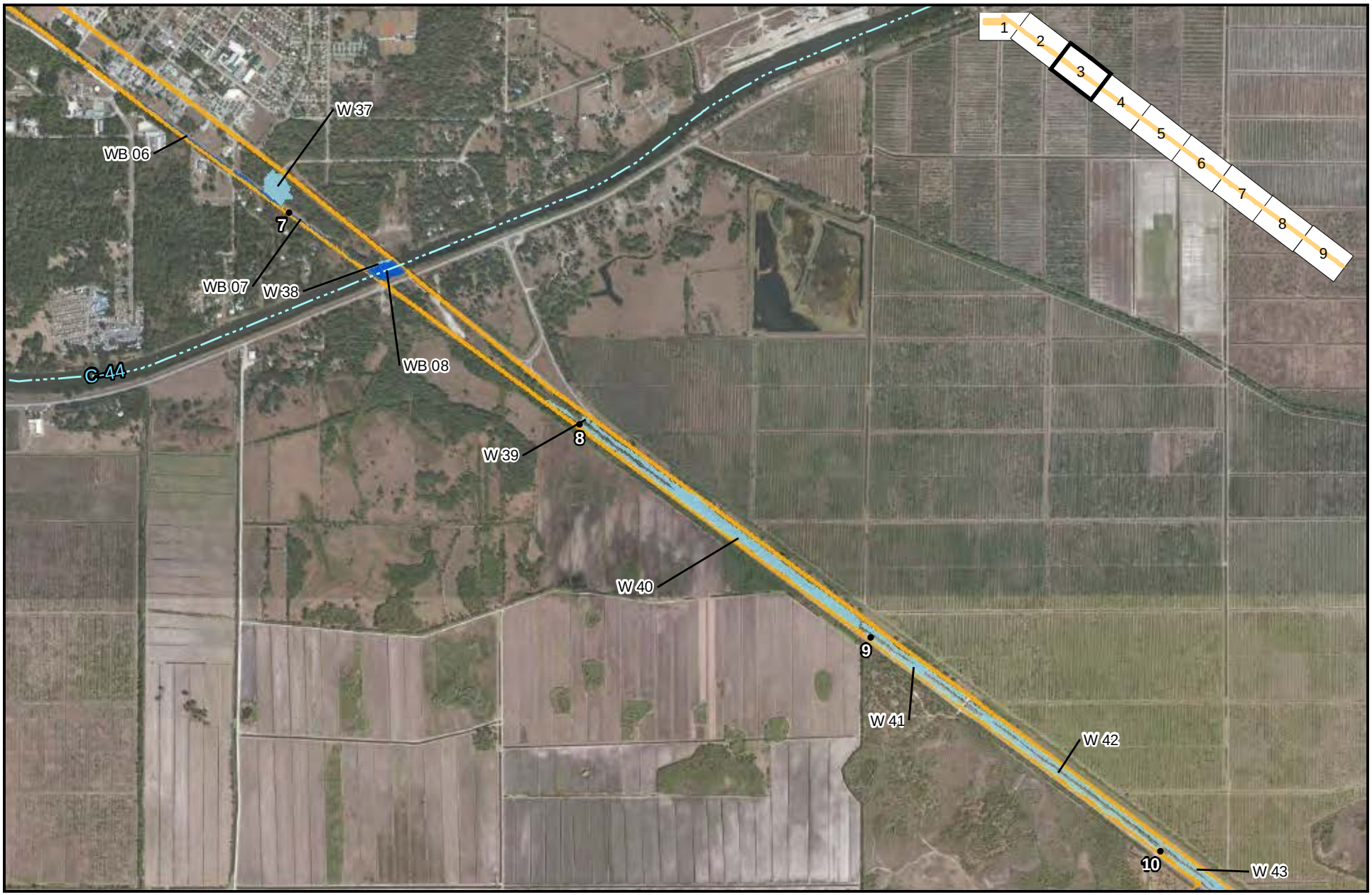
Figure 9.3-8 (Sheet 2 of 9)
Wetland Overview Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview_Rev.mxd



Legend

Waterbody

Wetland

1 Mile Post

Preferred Corridor

N

0 1,000 2,000 4,000 Feet

Figure 9.3-8 (Sheet 3 of 9)
Wetland Overview Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview_Rev.mxd



Legend

Waterbody
Wetland
1 Mile Post
Preferred Corridor

N

0 1,000 2,000 4,000 Feet

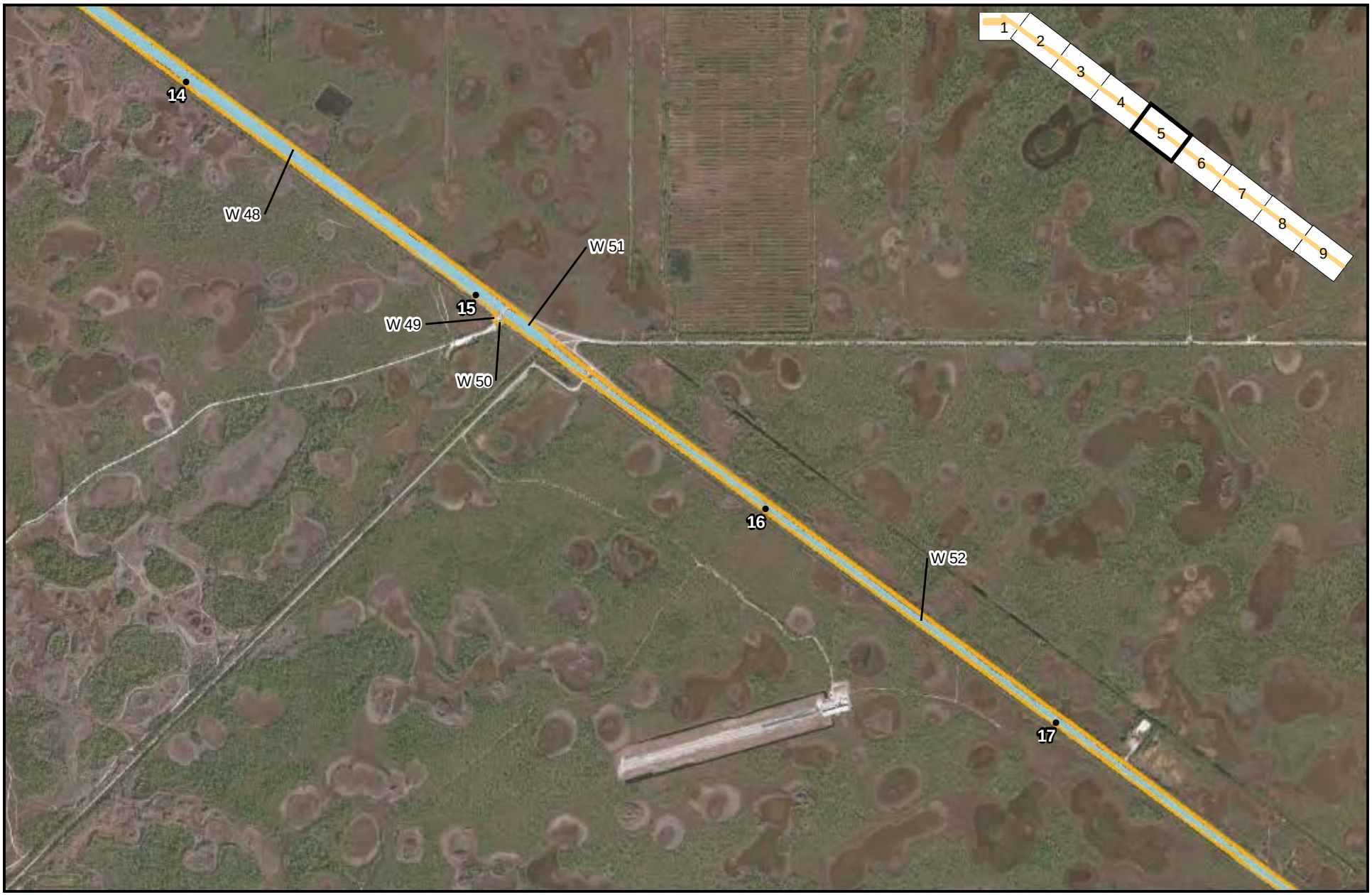
Figure 9.3-8 (Sheet 4 of 9)
Wetland Overview Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview_Rev.mxd



Legend

Waterbody
Wetland
Mile Post
Preferred Corridor

N

0 1,000 2,000 4,000 Feet

Figure 9.3-8 (Sheet 5 of 9)
Wetland Overview Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview_Rev.mxd



Legend

Waterbody
Wetland
1 Mile Post
Preferred Corridor

N

0 1,000 2,000 4,000 Feet

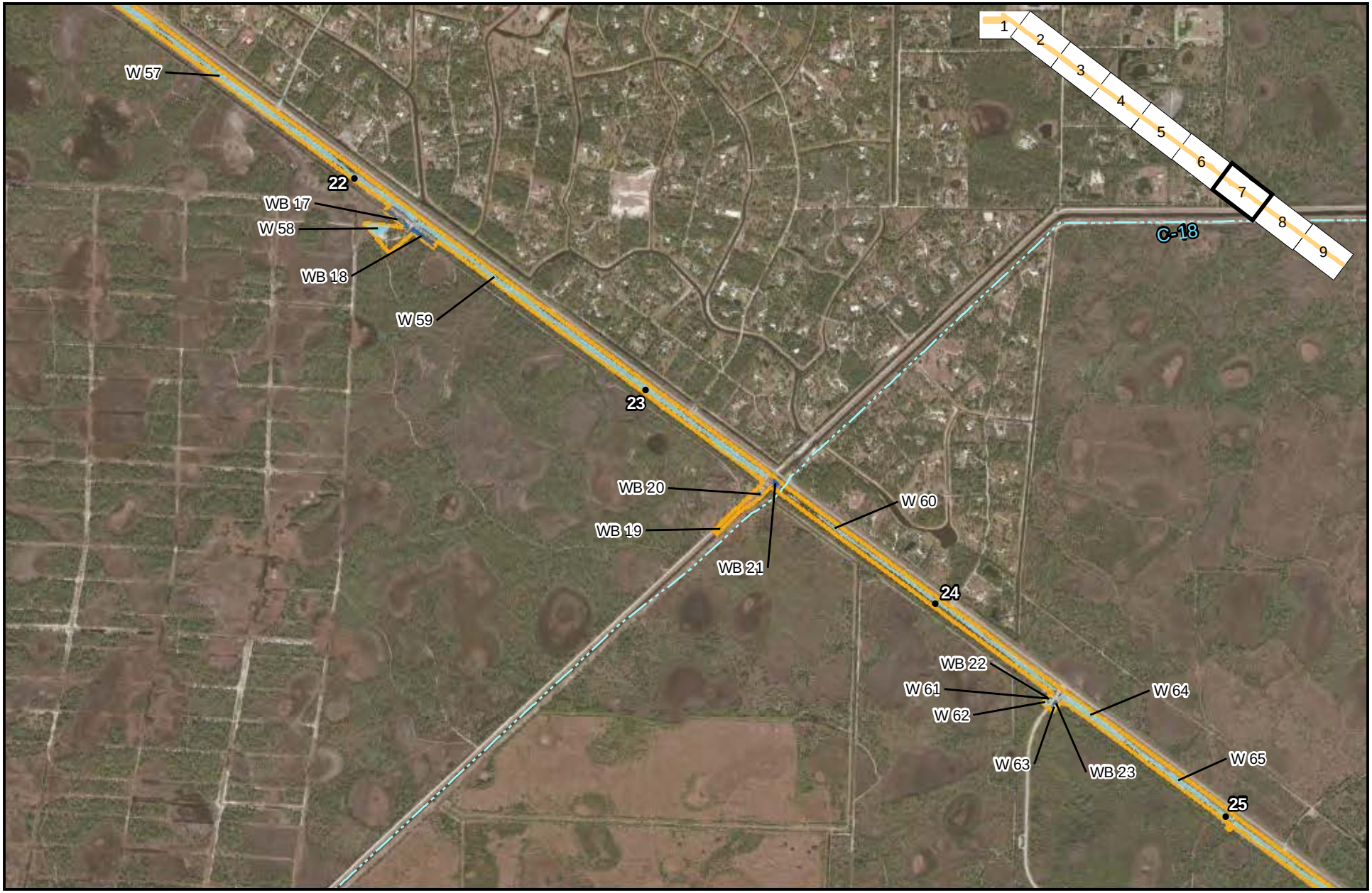
Figure 9.3-8 (Sheet 6 of 9)
Wetland Overview Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview_Rev.mxd



Legend

Waterbody
Wetland
Mile Post
Preferred Corridor

N

0 1,000 2,000 4,000 Feet

Figure 9.3-8 (Sheet 7 of 9)
Wetland Overview Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview_Rev.mxd



Legend

Waterbody
Wetland
Mile Post
Preferred Corridor

N

0 1,000 2,000 4,000 Feet

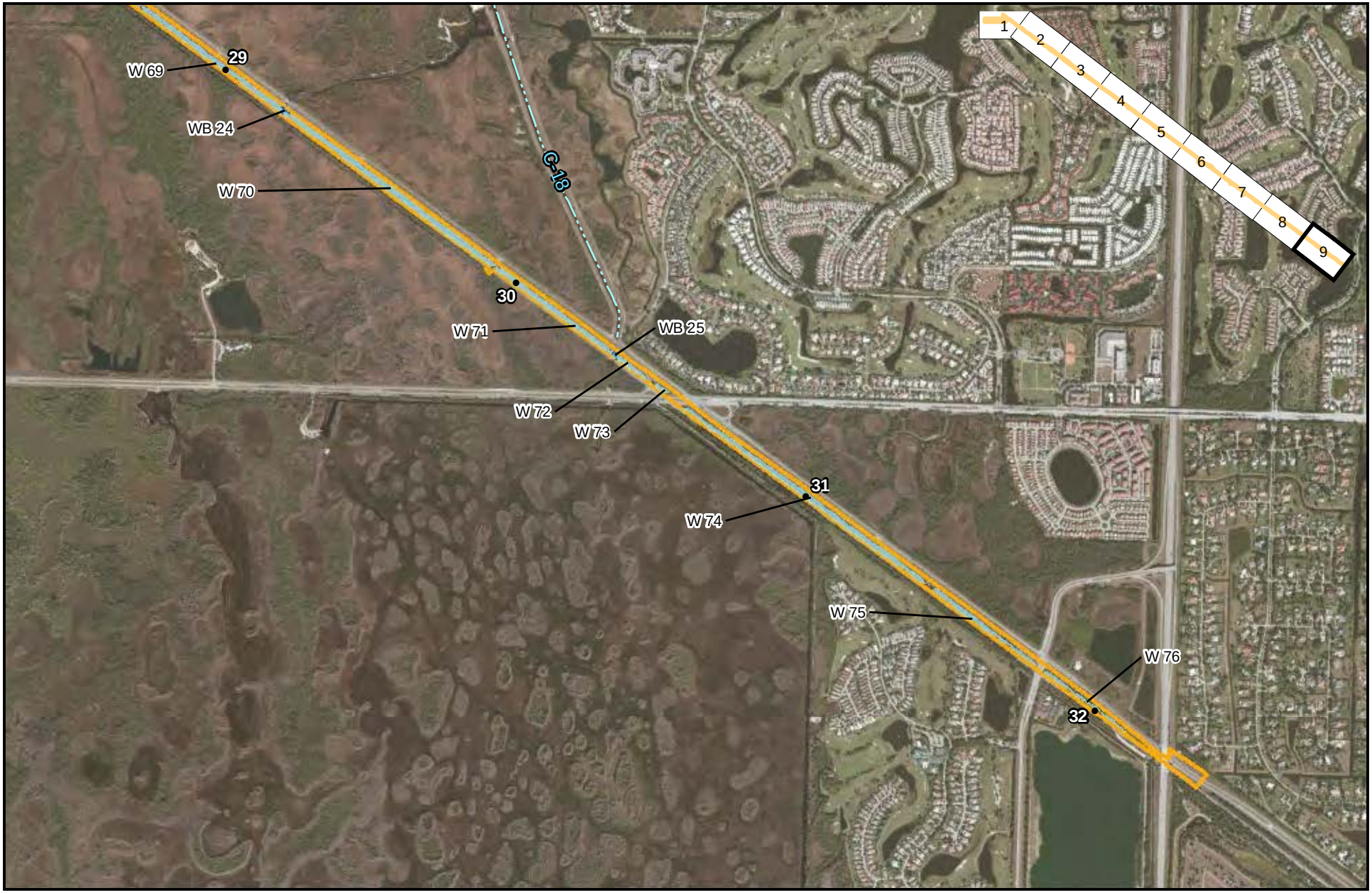
Figure 9.3-8 (Sheet 8 of 9)
Wetland Overview Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview_Rev.mxd



Legend

Waterbody

Wetland

1 Mile Post

Preferred Corridor

N

0 1,000 2,000 4,000 Feet

Figure 9.3-8 (Sheet 9 of 9)
Wetland Overview Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Groundwater

An analysis was conducted to identify potable groundwater wells crossed by or within 1,000 feet of the Preferred Corridor. The Preferred Corridor would be within 1,000 feet of two types of groundwater wells: public potable water wells and privately owned potable water wells. Figure 9.3-9 (*series*) shows the locations of these well with respect to the Preferred Corridor.

Pursuant to the Safe Drinking Water Act amendments of 1996, the FDEP's Source Water Assessment and Protection Program (SWAPP) establishes protection zones around public potable groundwater wells to protect drinking water sources from pollution or contamination. A SWAPP zone for groundwater wells is defined as "a 500-foot or 1000-foot radius for smaller water systems and a five-year groundwater travel time for larger water systems" (FDEP 2012b). Table 9.3-13 lists SWAPP zones that are crossed by the Preferred Corridor. As illustrated on Figure 9.3-9 *(series)*, there is a large concentration of SWAPP zones near MP 6.0 in Indiantown. This is due to a number of wells south of the Preferred Corridor. No SWAPP wells would be crossed by the Preferred Corridor. As no blasting would occur for the Project as planned, these wells or SWAPP zones would not be affected by the Project.

Table 9.3-13
SWAPP Zones Crossed by the Preferred Corridor

Milepost	Public Water System Name	Well ID	Estimated Population Served	Maximum Volume (gallons per day)	Aquifer
5.8 - 6.2	Indiantown Company, Inc.	8925	4,900	1,296,000	Surficial
5.8 - 6.2	Indiantown Company, Inc.	8927	4,900	1,296,000	Surficial
5.9 - 6.3	Indiantown Company, Inc.	8926	4,900	1,296,000	Surficial
6.0 - 6.4	Indiantown Company, Inc.	8924	4,900	1,296,000	Surficial
6.0 - 6.4	Indiantown Company, Inc.	8923	4,900	1,296,000	Surficial
6.1 - 6.5	Indiantown Company, Inc.	8922	4,900	1,296,000	Surficial
6.2 - 6.6	Indiantown Company, Inc.	8921	4,900	1,296,000	Surficial
6.3 - 6.7	Indiantown Company, Inc.	8928	4,900	1,296,000	Surficial
18.2 - 18.4	Biotools F/K/A AAA Wheelchair Wagon	10343	50	6,200	Surficial
19.3	Beeline Community Development District	9777	2,500	1,500,000	Surficial

Source: FDEP 2008.

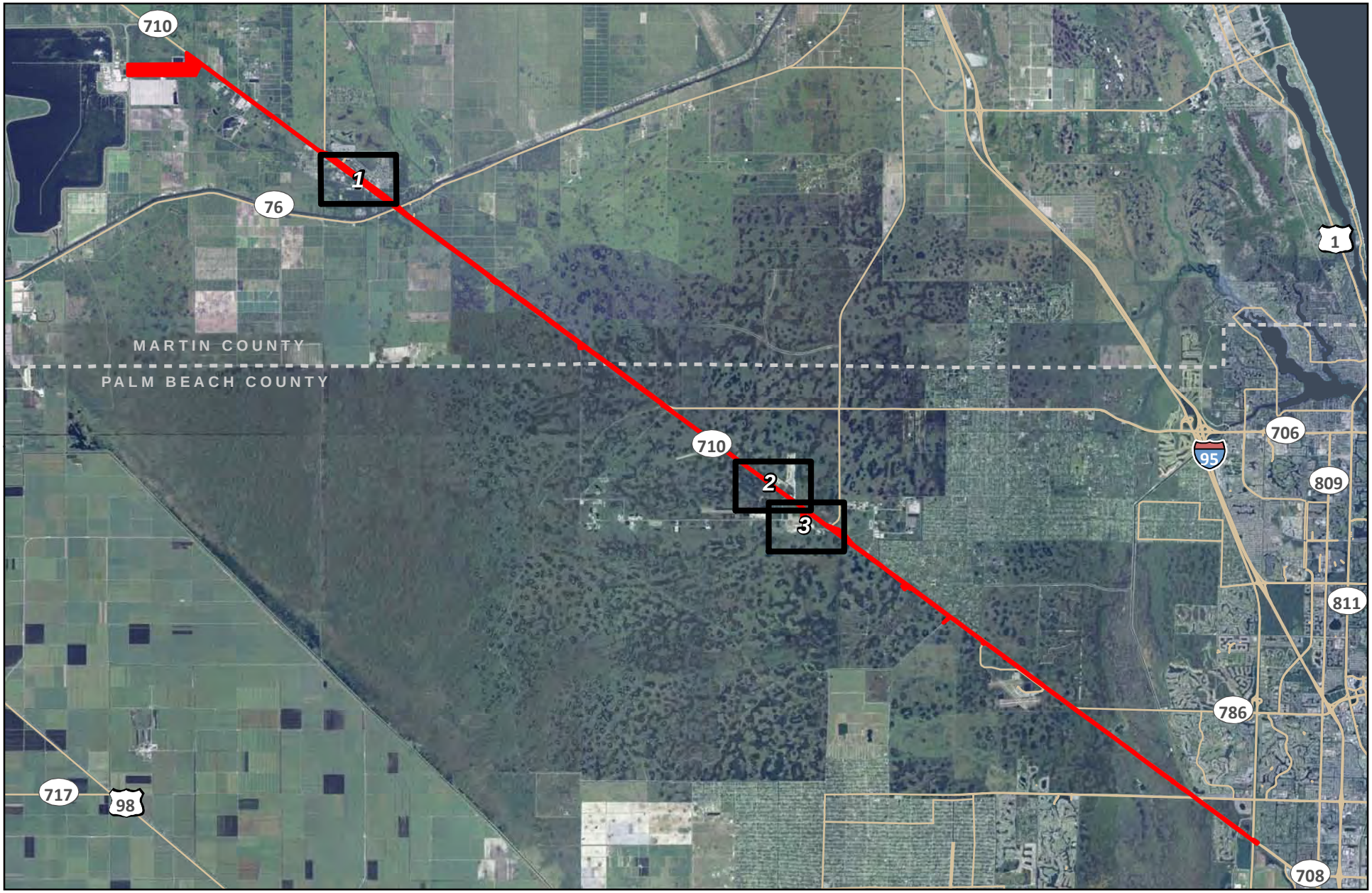


Figure 9.3-9 Map Index
Groundwater Resources
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010; NAIP 2010.



Figure 9.3-9 (Sheet 1 of 3)
Groundwater Resources
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

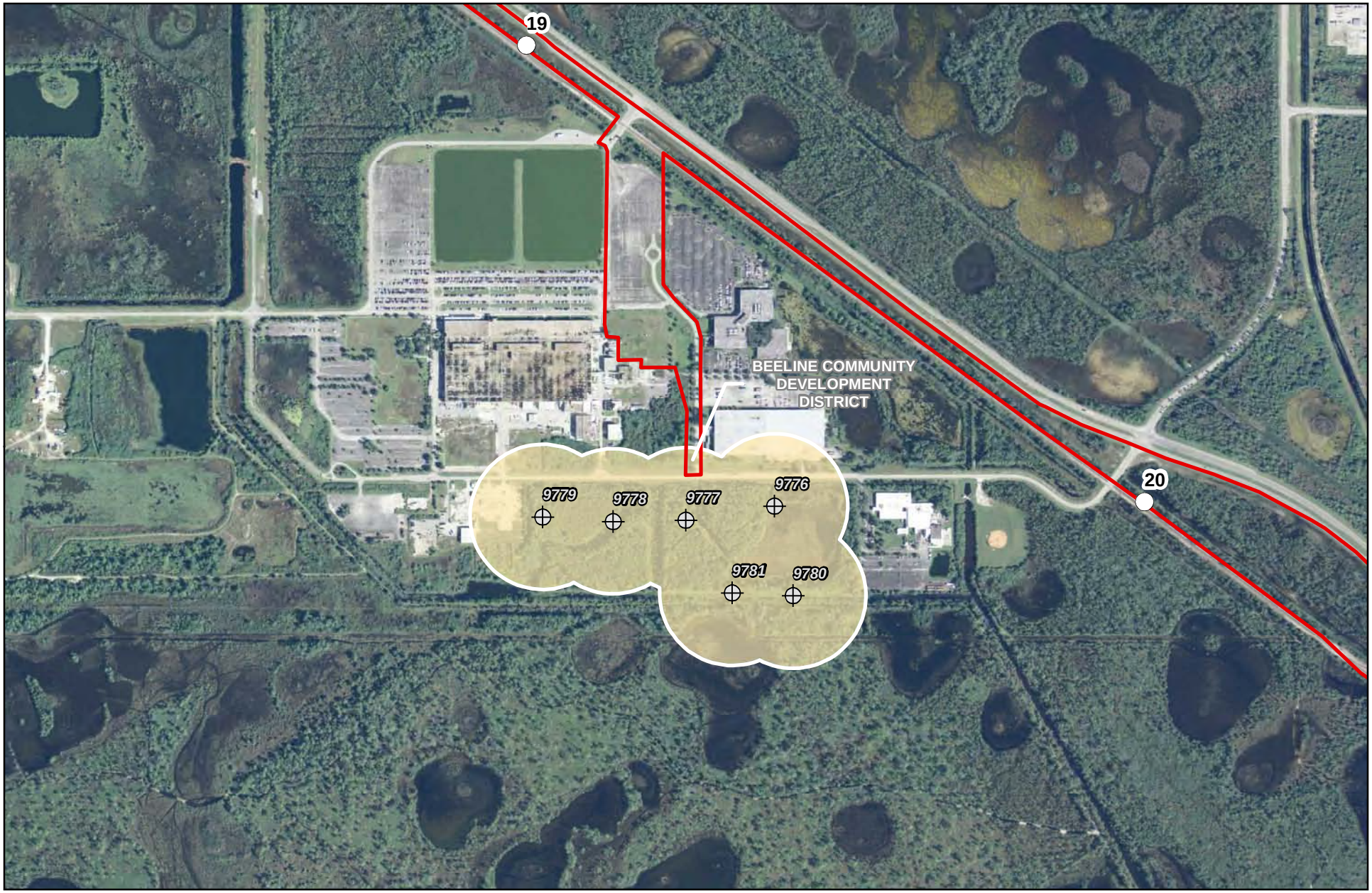
Source - ESRI 2010; NAIP 2010, FDEP 2008, FDH 2010.



Figure 9.3-9 (Sheet 2 of 3)
Groundwater Resources
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010; NAIP 2010, FDEP 2008, FDH 2010.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Limited Use Well
SWAPP Well
SWAPP Zone (500 Foot Well Buffer)
SWAPP Zone (1000 Foot Well Buffer)
Additional SWAPP Zone Area (Five Year Ground Water Travel Time)

Figure 9.3-9 (Sheet 3 of 3)
Groundwater Resources
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/24/2012

Source - ESRI 2010; NAIP 2010, FDEP 2008, FDH 2010.

The Florida Department of Health inspects privately owned potable groundwater wells that are not exempt from the Florida Safe Drinking Water Act. These wells are known as limited-use wells and can serve a single residential or non-residential user. Four limited-use wells have been identified within the Preferred Corridor: two in Martin County and two in Palm Beach County. Table 9.3-14 lists the locations with limited-use wells that would be within the Preferred Corridor.

Table 9.3-14
Locations with Limited-Use Wells within the Preferred Corridor

Milepost	Owner	Well ID	County	Type
6.8	Potters House	AAI9004	Martin	Public
6.9	Phoenix Transmission and Auto Repair	3232	Martin	Commercial
18.2	Pratt-Whitney Remote Test Site	9260	Palm Beach	Commercial
18.5	Bio Tools, Inc.	9352	Palm Beach	Commercial

Source: Florida Department of Health 2010; Florida Department of Health 2011.

9.3.6.2.7 Wetland Resources

As previously discussed, a wetland delineation of the majority Preferred Corridor was conducted by field survey, with the minor exception of a few inaccessible areas. In these areas, desktop analysis was utilized. In total, 83.8% of the Preferred Corridor was surveyed; as needed, the remaining areas will be surveyed post-certification in conjunction with final engineering design. The vast majority (65.1%) of wetlands delineated in the Preferred Corridor are herbaceous wetlands, which are often associated with linear roadside swales in the Preferred Corridor. Forested/shrub wetlands dominated by exotic species account for 90.2% of the forested wetlands and 31.8% of the total wetland coverage. Only 3.2% of the wetlands within the Preferred Corridor are forested/shrub communities with a predominantly desirable vegetation community.

The wetland delineation identified 113 wetlands totaling 365.38 acres, of which 116.04 acres is comprised of exotic forested wetlands, 237.73 acres is comprised of herbaceous wetlands; 11.35 acres is comprised of native forested wetlands; and 0.26 acre is comprised of native shrub wetlands. The information in this section represents total wetland resources within the Preferred Corridor. All wetlands delineated were assessed using the FDEP's Uniform Mitigation Assessment Method (UMAM) that quantifies the quality or functionality of the wetland. UMAM scores for the majority of the wetlands are low to medium due to surrounding development and traffic, altered hydroperiods, water quality impairment (e.g. high algae or duckweed content, high turbidity, oil sheen, etc.), prevalence of weedy and invasive plant species, relatively low plant species diversity, impacts to structural complexity, rutting by large wild hog populations, and limited wildlife support.

Table 9.3-15 identifies each wetland within the Preferred Corridor including the location, FLUCFCS cover type, NWI Classification, size, and UMAM scores. Figure 9.3-8 *(series)* provides an overview of the waters and wetlands that were surveyed within the Preferred Corridor. Detailed waterbody and wetland drawings can be found in the "Ecological Assessment & Wetland Delineation Report" in Appendix K. Section 9.4.2 discusses potential wetland impacts. FLUCFCS cover type descriptions are in Section 9.3.6.1.

Table 9.3-15
Delineated Wetlands within the Preferred Corridor

Wetland ID	Begin MP	End MP	Wetland Type (FLUCFCS)	NWI Classification	Description	Acres	UMAM Score: Location / Landscape Support	UMAM Score: Water Environment	UMAM Score: Community Structure	UMAM Score: Total	Current UMAM Score
Martin County											
W 01a	0.1	0.2	641	PEM1	Marsh	0.51	5	3	5	13	0.43
W 01b	0.1	0.2	621	PFO2	Cypress	0.58	5	3	6	14	0.47
W 02	0.1	0.2	641	PEM1	Marsh beneath t-line	0.28	5	3	4	12	0.40
W 03	0.2	0.2	641	PEM1	Marsh	0.96	5	3	4	12	0.40
W 04	0.2	0.2	641	PEM1	Marsh beneath t-line	0.50	5	3	4	12	0.40
W 05	0.2	0.3	641	PEM1	Roadside swale/marsh	0.15	4	3	3	10	0.33
W 06	0.2	0.3	641	PEM1	Marsh	1.29	5	3	4	12	0.40
W 07	0.3	0.3	641	PEM1	Marsh	0.48	4	3	4	11	0.37
W 08	0.4	0.4	641	PEM1	Marsh	0.24	4	3	3	10	0.33
W 09	0.4	0.4	641	PEM1	Marsh beneath t-line	0.70	4	3	3	10	0.33
W 10	0.3	0.4	641	PEM1	Marsh beneath t-line	1.73	5	3	4	12	0.40
W 11	0.3	0.4	641	PEM1	Marsh	0.40	5	3	4	12	0.40
W 12	0.5	0.6	641	PEM1	Marsh beneath t-line	3.52	5	3	4	12	0.40
W 13	0.5	0.8	641	PEM1	Marsh beneath t-line	7.28	5	3	4	12	0.40
W 14	0.8	0.9	641	PEM1	Marsh	0.12	5	3	5	13	0.43
W 15	0.8	0.9	641	PEM1	Marsh beneath t-line	2.49	5	3	4	12	0.40
W 16	0.8	0.9	641	PEM1	Roadside swale/marsh	0.21	4	3	4	11	0.37
W 17	1.0	1.0	641	PEM1	Marsh adjacent to reservoir	0.28	5	6	5	16	0.53
W 18	1.1	1.1	641	PEM1	Marsh beneath t-line	3.31	5	3	4	12	0.40
W 19	0.9	1.1	641	PEM1	Marsh beneath t-line	1.64	5	3	4	12	0.40
W 20	1.0	1.1	641	PEM1	Marsh	1.20	5	3	4	12	0.40
W 21	1.2	1.2	641	PEM1	Marsh adjacent to reservoir	0.02	5	4	4	13	0.43
W 22	1.2	1.4	641	PEM1	Marsh beneath t-line	15.42	5	3	3	11	0.37
W 23	1.3	1.3	641	PEM1	Marsh beneath t-line	0.50	5	3	4	12	0.40
W 24	1.4	1.4	641	PEM1	Marsh	0.01	4	3	4	11	0.37
W 25a	1.4	1.5	641	PEM1	Marsh	1.47	5	3	4	12	0.40

Table 9.3-15
Delineated Wetlands within the Preferred Corridor

Wetland ID	Begin MP	End MP	Wetland Type (FLUCFCS)	NWI Classification	Description	Acres	UMAM Score				
							Location / Landscape Support	Water Environment	Community Structure	Total	Current UMAM Score
W 25b	1.5	1.5	630	PFO	Mixed hardwood wetland	0.98	6	4	6	16	0.53
W 26	1.4	1.4	641	PEM1	Marsh	1.00	5	3	3	11	0.37
W 27	1.3	1.3	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	0.22	3	2	2	7	0.23
W 28	1.3	2.4	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	6.53	3	2	2	7	0.23
W 29	2.4	2.8	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	1.91	3	2	2	7	0.23
W 30	2.9	3.1	641	PEM1	Linear roadside marsh	0.93	3	5	4	12	0.40
W 31	3.2	3.7	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	2.77	3	2	2	7	0.23
W 32	3.7	4.7	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	4.84	3	2	2	7	0.23
W 33	4.9	5.0	641	PEM1	Linear roadside marsh	0.08	3	3	5	11	0.37
W 34	5.1	5.1	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	0.17	3	3	3	9	0.30
W 35	5.2	5.4	641	PEM1	Linear marsh in utility easement	0.65	4	5	5	14	0.47
W 36	5.5	5.6	641	PEM1	Linear marsh in utility easement	0.17	4	5	5	14	0.47
W 37a	6.8	6.9	630	PFO	Mixed hardwood wetland	2.93	6	6	6	18	0.60
W 37b	6.8	6.9	641	PEM1	Linear marsh in utility easement	0.27	5	5	5	15	0.50
W 38	7.2	7.3	630	PFO	Mixed hardwood wetland	0.24	6	6	6	18	0.60
W 39	7.9	8.0	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	0.18	4	5	4	13	0.43
W 40a	7.8	8.9	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	6.96	4	5	4	13	0.43

Table 9.3-15
Delineated Wetlands within the Preferred Corridor

Wetland ID	Begin MP	End MP	Wetland Type (FLUCFCS)	NWI Classification	Description	Acres	UMAM Score: Location / Landscape Support	UMAM Score: Water Environment	UMAM Score: Community Structure	UMAM Score: Total	Current UMAM Score
W 40b	7.8	8.9	641	PEM1	Linear marsh in utility & road easements	4.92	5	6	6	17	0.57
W 40c	8.3	8.9	630	PFO1/ PSS3	Linear strip of mixed wetland hardwoods	4.35	3	5	5	13	0.43
W 41a	8.9	9.3	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	3.99	5	5	4	14	0.47
W 41b	8.9	9.3	641	PEM1	Linear marsh in utility easement	1.65	5	5	5	15	0.50
W 42a	9.3	9.9	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	5.79	5	5	4	14	0.47
W 42b	9.3	9.9	641	PEM1	Linear marsh in utility & road easements	3.81	5	5	5	15	0.50
W 43a	10.0	10.2	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	1.58	4	4	4	12	0.40
W 43b	10.0	10.2	641	PEM1	Linear marsh in utility & road easements	1.63	4	5	5	14	0.47
W 44a	10.2	12.7	641	PEM1	Linear marsh in utility & road easements	31.06	4	5	5	14	0.47
W 44b	10.2	12.6	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	15.79	4	5	5	14	0.47
W 45a	12.7	12.7	641	PEM1	Marsh in utility & road easements	0.19	5	5	5	15	0.50
W 45b	12.7	12.7	619	PFO1/ PSS3	Exotic shrubs and trees in linear easement	0.38	4	5	4	13	0.43
W 46a	12.6	12.7	625	PFO4	Wet pine flatwoods	0.57	6	6	6	18	0.60
W 46b	12.6	12.7	641	PEM1	Marsh	1.55	7	7	7	21	0.70
W 47a	12.7	12.7	631	PSS1	Shrub wetland	0.01	5	6	5	16	0.53
W 47b	12.7	12.7	641	PEM1	Marsh	0.75	7	7	7	21	0.70

Table 9.3-15
Delineated Wetlands within the Preferred Corridor

Wetland ID	Begin MP	End MP	Wetland Type (FLUCFCS)	NWI Classification	Description	Acres	UMAM Score: Location / Landscape Support	UMAM Score: Water Environment	UMAM Score: Community Structure	UMAM Score: Total	Current UMAM Score
W 48a	12.7	14.9	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	14.98	5	5	4	14	0.47
W 48b	12.7	15.0	621	PFO2	Cypress wetland in transportation ROWs	0.36	4	5	5	14	0.47
W 48c	12.7	15.0	641	PEM1	Linear marsh in utility & transportation ROWs	30.86	5	5	5	15	0.50
Palm Beach County											
W 49	15.0	15.0	641	PEM1	Linear marsh in transportation ROWs	0.05	5	6	5	16	0.53
W 50	15.0	15.1	641	PEM1	Linear marsh in transportation ROWs	0.06	5	6	5	16	0.53
W 51a	15.0	15.3	641	PEM1	Linear marsh in transportation ROWs	3.03	5	5	5	15	0.50
W 51b	15.0	15.2	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	0.91	5	5	4	14	0.47
W 52a	15.3	17.6	641	PEM1	Linear roadside marsh	16.17	5	5	5	15	0.50
W 52b	15.3	17.4	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	6.80	4	5	4	13	0.43
W 52c	16.1	16.1	621	PFO2	Cypress wetland in transportation ROWs	0.29	4	5	6	15	0.50
W 53a	17.6	18.0	641	PEM1	Linear roadside marsh	4.10	5	5	5	15	0.50
W 53b	17.6	17.9	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	0.81	5	5	4	14	0.47
W 54a	18.1	19.1	641	PEM1	Linear roadside marsh	7.47	5	6	4	15	0.50
W 54b	18.1	18.9	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	2.33	5	6	4	15	0.50
W 55a	19.8	19.9	625	PFO4	Wet pine flatwoods in transportation easement	0.61	5	6	5	16	0.53

Table 9.3-15
Delineated Wetlands within the Preferred Corridor

Wetland ID	Begin MP	End MP	Wetland Type (FLUCFCS)	NWI Classification	Description	Acres	UMAM Score				
							Location / Landscape Support	Water Environment	Community Structure	Total	Current UMAM Score
W 55b	19.1	19.9	641	PEM1	Linear roadside marsh	6.66	5	6	5	16	0.53
W 56a	19.9	20.4	641	PEM1	Marsh in transportation ROWs	5.59	5	6	5	16	0.53
W 56b	20.1	20.4	619	PFO1/ PSS3	Exotic shrubs and trees in transportation ROW	11.7	5	6	4	15	0.50
W 56c	19.9	20.0	625	PFO4	Wet pine flatwoods in transportation ROWs	0.44	5	6	6	17	0.57
W 57a	20.4	22.2	641	PEM1	Linear marsh in transportation ROWs	8.99	5	4	5	14	0.47
W 57b	20.4	22.2	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	7.87	5	4	4	13	0.43
W 58	22.1	22.1	641	PEM1	Marsh	0.91	6	6	6	18	0.60
W 59a	22.2	23.4	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	3.70	5	5	3	13	0.43
W 59b	22.2	23.4	641	PEM1	Linear roadside marsh	7.45	5	5	5	15	0.50
W 60a	23.4	24.4	641	PEM1	Linear roadside marsh	4.86	5	5	5	15	0.50
W 60b	23.4	24.3	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	0.70	3	3	3	9	0.30
W 61	24.4	24.4	631	PSS1	Linear shrub wetland in RR ROW	0.04	4	5	5	14	0.47
W 62	24.4	24.4	619	PFO1/ PSS3	Exotic shrubs and trees	0.10	4	5	4	13	0.43
W 63	24.4	24.4	619	PFO1/ PSS3	Exotic shrubs and trees	0.10	4	5	4	13	0.43
W 64a	24.5	24.6	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	0.26	3	5	4	12	0.40
W 64b	24.4	24.6	641	PEM1	Linear roadside marsh	1.81	4	5	4	13	0.43
W 65	24.6	25.0	641	PEM1	Linear roadside marsh	2.74	5	5	4	14	0.47

Table 9.3-15
Delineated Wetlands within the Preferred Corridor

Wetland ID	Begin MP	End MP	Wetland Type (FLUCFCS)	NWI Classification	Description	Acres	UMAM Score				
							Location / Landscape Support	Water Environment	Community Structure	Total	Current UMAM Score
W 66a	25.0	26.5	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	2.65	3	5	4	12	0.40
W 66b	25.0	26.5	641	PEM1	Linear roadside marsh	9.72	5	5	4	14	0.47
W 67a	26.6	26.9	619	PFO1/ PSS3	Linear strip of exotic shrubs and trees	0.56	3	5	4	12	0.40
W 67b	26.5	26.9	641	PEM1	Linear roadside marsh	1.93	4	5	4	13	0.43
W 68a	26.9	28.7	641	PEM1	Linear roadside marsh	12.34	4	5	4	13	0.43
W 68b	26.9	27.8	619	PFO1	Linear strip of exotic shrubs and trees	2.73	3	5	4	12	0.40
W 69a	29.1	29.2	631	PSS1	Shrub wetland in transportation ROWs	0.11	4	5	5	14	0.47
W 69b	28.7	29.1	641	PEM1	Linear roadside marsh	3.32	4	5	5	14	0.47
W 69c	28.7	29.1	619	PFO1	Linear strip of exotic shrubs and trees	1.20	3	5	4	12	0.40
W 70a	29.2	29.9	641	PEM1	Linear roadside marsh	5.42	4	5	4	13	0.43
W 70b	29.2	29.9	619	PFO1	Linear strip of exotic shrubs and trees	1.98	3	5	4	12	0.40
W 70c	29.2	29.2	631	PSS1	Shrub wetland in transportation ROWs	0.10	4	5	4	13	0.43
W 71a	29.9	30.3	619	PFO1	Linear strip of exotic shrubs and trees	1.44	4	5	4	13	0.43
W 71b	29.9	30.3	641	PEM1	Linear roadside marsh	2.44	4	5	4	13	0.43
W 72a	30.3	30.4	641	PEM1	Linear roadside marsh	0.42	4	5	4	13	0.43
W 72b	30.3	30.4	619	PFO1	Linear strip of exotic shrubs and trees	0.39	4	5	5	14	0.47
W 73	30.4	30.5	641	PEM1	Roadside marsh	0.35	2	4	4	10	0.33
W 74a	30.6	31.4	619	PFO1	Linear strip of exotic shrubs and trees	2.92	4	5	3	12	0.40

Table 9.3-15
Delineated Wetlands within the Preferred Corridor

Wetland ID	Begin MP	End MP	Wetland Type (FLUCFCS)	NWI Classification	Description	Acres	UMAM Score: Location / Landscape Support	UMAM Score: Water Environment	UMAM Score: Community Structure	UMAM Score: Total	UMAM Score: Current UMAM Score
W 74b	30.5	31.4	641	PEM1	Linear roadside marsh	4.47	4	5	3	12	0.40
W 75a	31.4	31.7	619	PFO1	Linear strip of exotic shrubs and trees	0.80	3	4	3	10	0.33
W 75b	31.4	31.7	641	PEM1	Linear roadside marsh	1.72	3	4	3	10	0.33
W 76	31.8	32.1	641	PEM1	Linear roadside marsh	1.48	2	3	3	8	0.27
					Total	**365.38**					

9.3.6.3 Ecology

This section focuses on wildlife and fisheries. The following sub-sections describe the existing resources for threatened and endangered species, migratory birds, and fishery resources, respectively. Discussion about habitats and vegetation crossed by the Preferred Corridor are presented in Section 9.3.6.1.

9.3.6.3.1 Threatened and Endangered Species

The following section describes the federally and state-listed protected wildlife species within the Preferred Corridor. Protected plant species were discussed previously in Section 9.3.6.1. Endangered and threatened species are federally protected by the Endangered Species Act (ESA) of 1973 (16 United States Code Annotated [U.S.C.A.] §§ 1531-1543, P.L. 93-205). Additionally, the State of Florida has its own protection of imperiled species through the State Endangered Species Act, Chapter 379.2291, F.S. A review was conducted of the federal and state lists for Martin and Palm Beach Counties for species with potential habitat within the Preferred Corridor. Based on this review, 25 species have the potential to occur within the Preferred Corridor. Table 9.3-16 lists these species, as well as their status.

Table 9.3-16
Federally and State-Listed Wildlife Species
Potentially Located Within the Preferred Corridor

Common Name	Scientific Name	Federal Status	State Status
Florida Sandhill Crane	*Grus canadensis pratens*	-	T
Florida Burrowing Owl	*Athene cunicularia floridana*	-	SSC
Florida Black Bear	*Ursus americanus floridanus*	-	T
Sherman's Fox Squirrel	*Sciurus niger shermani*	-	SSC
Florida Mouse	*Podomys floridanus*	-	SSC
West Indian Manatee	*Trichechus manatus*	E	E
Wood Stork	*Mycteria americana*	E	E
Florida Scrub-Jay	*Aphelocoma coeruluscens*	T	T
Audubon's Crested Caracara	*Polyborus plancus audubinii*	T	T
Everglades Snail Kite	*Rostrhamus sociabilis plumbeus*	E	E
Osprey	*Pandion haliaetus*	-	SSC
Roseate Spoonbill	*Ajaia ajaja*	-	SSC
Florida Panther	*Puma concolor coryi*	E	E
Florida Grasshopper Sparrow	*Ammodramus savannarum floridanus*	E	E
Limpkin	*Aramus guarauna*	-	SSC
Snowy Egret	*Egretta thula*	-	SSC
Little Blue Heron	*Egretta caerulea*	-	SSC
Tricolored Heron	*Egretta tricolor*	-	SSC
White Ibis	*Eudocimus albus*	-	SSC
Southeastern American Kestrel	*Falco sparverius paulus*	-	T
Bald Eagle	*Haliaeetus leucocephalus*	BGEPA	
Eastern Indigo Snake	*Drymarchon corais couperi*	T	T
Florida Pine Snake	*Pituophis melanoleucus mugitus*	-	SSC
Gopher Tortoise	*Gopherus polyphemus*	-	T
Gopher Frog	*Rana capito*	-	SSC

Key:
T = Threatened
E = Endangered
CH = Critical Habitat Designated for this Species
BGEPA = Bald and Golden Eagle Protection Act
SSC = Species of Special Concern
T/SA = Threatened due to Similarity in Appearance to another species

The **Florida sandhill crane (*Grus canadensis pratensis*)** is state-listed as threatened in Florida. The sandhill crane's preferred habitat includes wet and dry prairies, as well as low-growth, emergent aquatic vegetation associated with freshwater marshes and ponds. They nest in the herbaceous wetlands associated with freshwater ponds or marshes (FWC 2003a). Florida sandhill cranes are found throughout much of peninsular Florida. Sandhill cranes are unlikely to nest within the Preferred Corridor, but they could likely use the Preferred Corridor as foraging habitat. During field surveys conducted October to December 2011, sandhill cranes were observed foraging in the general vicinity of the Preferred Corridor.

The **Florida burrowing owl (*Athene cunicularia floridana*)** is listed as a species of special concern (SSC) by the State of Florida. Burrowing owls inhabit open native prairies and cleared areas that offer an expanse of short, herbaceous groundcover such as pastures, fallow agricultural fields, and vacant lots; and urbanized environments such as airports, golf courses, and athletic fields. They also are attracted to elevated areas, such as road berms and canal banks. Florida burrowing owls lay their eggs and raise their young in burrows in the ground. While they will use gopher tortoise and armadillo burrows, most pairs excavate their own burrows (FWC 2003a). Upland areas within the Preferred Corridor, namely near the Martin Plant property, would have the greatest likelihood for occurrence of burrowing owls. During field surveys conducted October to December 2011, no burrowing owls or their burrows were identified.

The **Florida black bear (*Ursus americanus floridanus*)** is one of three subspecies of American black bear recognized in the southeastern United States. It is state-listed as threatened and historically ranges throughout Florida and the southern portions of adjoining states. The Florida black bear is dependent upon forest vegetation, but is not limited to specific forest types. While forested wetlands and bottomland hardwoods provide optimal habitat, any forested areas of large size with a diverse food supply and dispersed cover can support this species. The primary range in Florida has been restricted to six large populations (Apalachicola, Big Cypress, Eglin, Ocala, Osceola, and St. John's) and two small populations (Chassahowitzka and Glades/Highlands). The sizes of these populations range from a few individuals to several hundred bears and vary significantly in distribution, habitats occupied, and threats to existence (Eason 2003). Although black bears are known to exist in Martin and Palm Beach Counties, it is unlikely that the Preferred Corridor is utilized very often. Highway traffic would deter the black bears, and no bottomland forests with trees large enough to be used for denning are found within the Preferred Corridor.

The **Sherman's fox squirrel (*Sciurus niger shermani*)** is listed as a SSC by the State of Florida. It is found in the pine flatwoods of central and northeastern Florida. Their diet consists primarily of plant material such as nuts, seeds, fungi, fruit and buds, but they mostly favor pine seeds. They also have been known to occasionally eat animal material such as insects and bird eggs. Fox squirrels are much less numerous than gray squirrels, but can sometimes be observed foraging for food in pastures or openings adjacent to forested areas. The most likely location that could provide adequate habitat for the fox squirrel would be the pine flatwoods near the FPL's Martin Plant property.

The **Florida mouse (*Podomys floridanus*)** is listed as a SSC by the State of Florida. A fairly large mouse, the Florida mouse resides in xeric upland communities with sandy soils, including scrub and longleaf pine-xeric oak, where they inhabit gopher tortoise burrows. In the absence of gopher tortoises, Florida mice will dig their own burrows. The Florida mouse is found from North-Central Florida south, including all along the Atlantic coastal counties (FNAI 2001). The Florida mouse could be found in upland habitats of the Preferred Corridor where gopher tortoises may exist.

The **West Indian manatee (*Trichechus manatus*)** is both federally and state-listed as endangered. This species is also protected under the Marine Mammal Protection Act (MMPA). Manatees occur in both freshwater and saltwater habitats within tropical and subtropical regions and are found in the waterways along all of coastal Florida (USFWS 1999). The manatee moves between freshwater, brackish, and saltwater environments preferring large, slow-moving rivers, river mouths, and shallow coastal areas (USFWS 2008). They depend on areas with access to natural springs or manmade warm water refugia and access to areas with vascular plants and freshwater sources. Normally, manatees feed

on a variety of submergent, emergent, and natant (floating) vegetation (USFWS 1999). Manatees are known to inhabit the St. Lucie Canal.

The **wood stork (*Mycteria americana*)** is a federally and state-listed species (endangered), one of two species of storks that breed in the United States. The wood stork is primarily associated with freshwater and estuarine habitats for nesting, roosting, and foraging. Wood storks typically construct their nests in medium to tall trees that occur in stands located either in swamps or on islands surrounded by relatively broad expanses of open water. They are found across much of peninsular Florida. Wood storks tend to use the same colony sites over many years, as long as the sites remain undisturbed and sufficient feeding habitat remains in the surrounding wetlands. Within Florida, wood storks lay eggs as early as October and as late as June (USFWS 1999). No known wood stork rookeries are located within the Preferred Corridor. However, much of the Preferred Corridor is within the core foraging area for several wood stork rookeries. In South Florida, wood stork core foraging areas are defined as the area 18.6 miles in radius from a known wood stork rookery. This is the area that wood storks are likely to use as their primary foraging area and have been found to be important in reproductive success. Figure 9.3-10 illustrates the Preferred Corridor in respect to the wood stork's core foraging areas in South Florida.

The **Florida scrub-jay (*Aphelocoma coerulescens*)** is federally and state-listed as threatened. The scrub-jay is extremely habitat-specific, sedentary, and territorial. It is endemic to peninsular Florida's ancient dune ecosystems or scrubs, which occur on well-drained to excessively well-drained sandy soils. This oak-dominated scrub, or xeric oak scrub, is essential habitat to the Florida scrub-jay. On the Atlantic coast, scrub-jays extend from Flagler to Palm Beach Counties and in Central Florida, scrub-jays range from southwestern Clay through Putnam and Marion Counties, south through Polk, Highlands, and Glades Counties. Nesting typically extends from March until June (USFWS 1999). Little scrub habitat exists in the Preferred Corridor, and no known scrub jay populations are located within the Preferred Corridor. Therefore, the likelihood of scrub jays being present in the Preferred Corridor would be low.

The **Audubon's crested caracara (*Polyborus plancus audubinii*)** is a federally and state-listed threatened raptor found across Central and South Florida, including Martin, Orange, Osceola, Palm Beach, and St. Lucie Counties. It commonly occurs in dry or wet prairie areas with scattered cabbage palms. It also may be found in lightly wooded areas of scattered saw palmetto, scrub oaks (*Quercus geminata, Q. minima, Q. pumila*), and cypress. Caracaras are highly opportunistic in their feeding habits, eating carrion and capturing live prey. Their diets include insects and other invertebrates, fish, snakes, turtles, birds, and mammals. Caracaras are resident, diurnal, and non-migratory and adult caracaras may be found in their home range year-round (USFWS 1999). There is no critical habitat designated for this species. Caracaras could use most, if not all, of the Preferred Corridor for foraging habitats. During field surveys, no nests were observed in the Preferred Corridor.

The **Everglades snail kite (*Rostrhamus sociabilis plumbeus*)** is a wide-ranging new world raptor species found primarily in lowland freshwater marshes in Central and South Florida. It is listed as an endangered species both federally and by the State of Florida. The current distribution of the Everglade snail kite in Florida is limited to central and southern portions of the state, including Volusia, Orange, St. Lucie, Osceola, Indian River, Martin, and Palm Beach Counties. Snail kite habitat consists of freshwater marshes and the shallow vegetated edges of lakes (natural and manmade) where apple snails, their primary source of food, can be found (USFWS 1999). No snail kite nests were found during field surveys within the Preferred Corridor.

The **osprey (*Pandion haliaetus)*** is listed as a SSC by the State of Florida. It is a large raptor also known as a fish hawk or sea hawk. They are large birds with a distinctive black streak across the eye. It is black and white and is identified in flight by its bent wing flying style. Ospreys are primarily located near water and nest in old trees higher than most vegetation. They are located throughout Florida (FNAI 2001). No osprey nests were observed in the Preferred Corridor during field surveys.

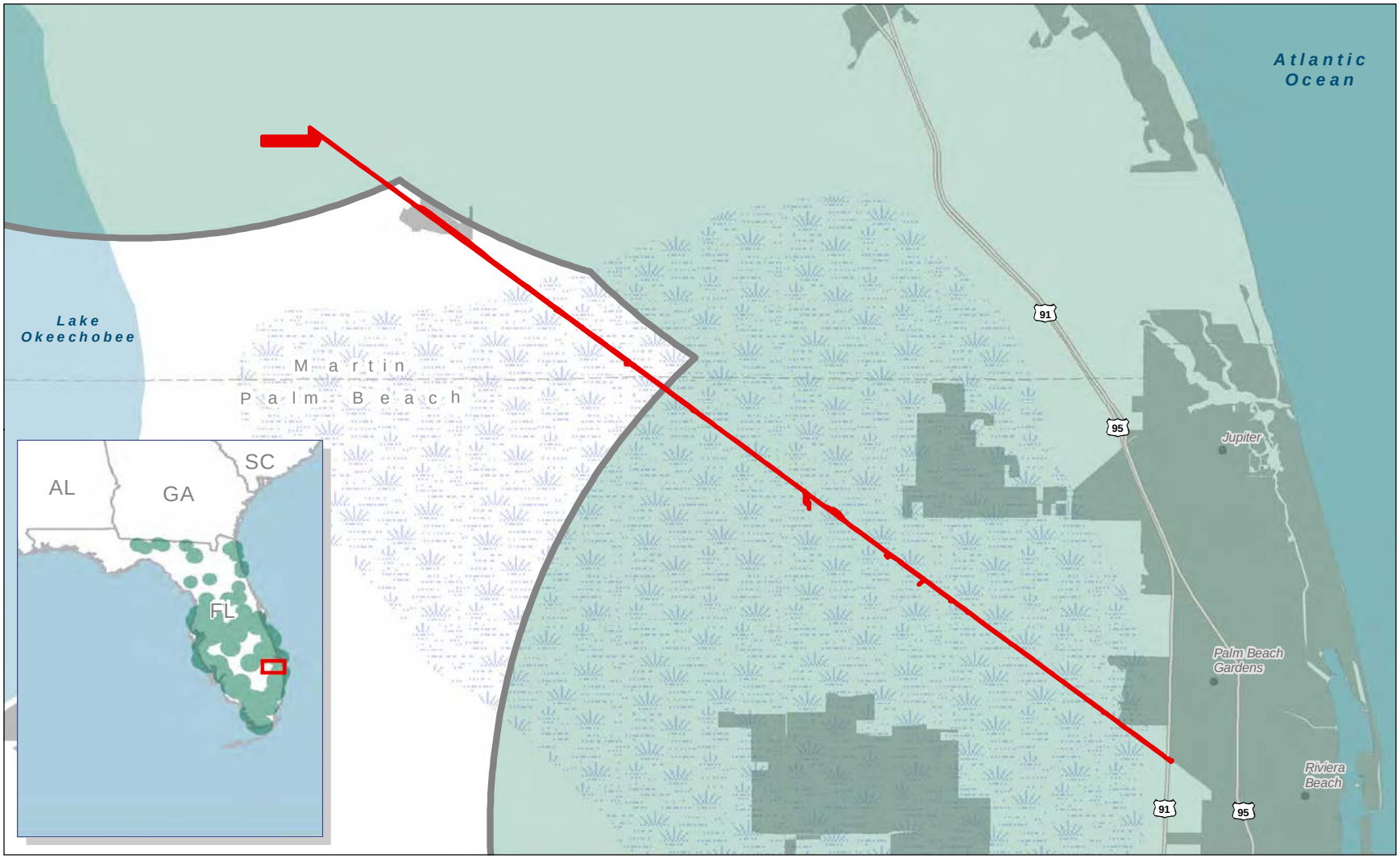


Figure 9.3-10
Wood Stock Core Foraging Area
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source : ESRI 2010; USGS NHD 2008; FNAI 1991, 2011; UFWS 2010.

NORTH

0 5 Miles

City
Interstate Highway
County Boundary
Urban Area
Wood Stork Core Foraging Area
Preferred Corridor

The **roseate spoonbill (*Ajaia ajaja*)** is listed as a state SSC. It is a large wading bird identified by the distinctive pink color of the feathers and the beak which is shaped like a large spoon. It utilizes mangrove islands for nesting and forages in shallow marine or freshwater areas. Although, it is present mostly in South Florida, it also has been documented in Northern Florida (FNAI 2001). Roseate spoonbills may utilize the Preferred Corridor for foraging habitat, but no rookeries were found during field surveys.

The **Florida panther (*Puma concolor coryi*)** is listed as endangered both federally and by the State of Florida. It is a large cat ranging from 70 to 150 pounds. It is similar to a western puma, but with a crook in the tail and white specks on the chest and shoulders. The Florida panther requires large tracts of forested lands with interspersed wetlands to survive. It is currently concentrated in South Florida within preserved lands, although occasionally may roam further north (FNAI 2001). Due to the proximity of development and transportation corridors, the potential that the Florida panther utilizes the Preferred Corridor is low.

The **Florida grasshopper sparrow (*Ammodramus savannarum floridanus*)** is listed as endangered, both federally and by the State of Florida. This is a subspecies of grasshopper sparrow that is endemic to the dry prairie of Central and South Florida. Their habitat consists of large, treeless, relatively poorly drained grasslands that have a history of frequent fires. The Florida grasshopper sparrow occurs in prairies dominated by saw palmetto and dwarf oaks. Bluestem grasses, St. John's wort, and wiregrasses are also typically found within Florida grasshopper sparrow habitat. Nesting season for this species usually lasts from April to June, but breeding activities can last until September (USFWS 1999). There is little habitat present in the Preferred Corridor that is conducive to the grasshopper sparrow, and no populations have been sighted, reported, or are known to exist within the Preferred Corridor.

The **limpkin (*Aramus guarauna*)** is an endemic wading bird found in certain freshwater habitats statewide and is listed as a state SSC. Limpkins typically breed in rivers, lakes, and marshes that host large apple snail populations. The majority of nesting in southern Florida occurs from early February through May, and in Central and North Florida from late February through June. Limpkins nest in a wide variety of situations. Limpkin nests may be located in piles of aquatic vegetation, in clumps of bulrush within open water, between cypress knees, in densely tangled branches and vines along streams and rivers, on high branches of cypress trees, in cypress tree cavities, or in the tops of sabal palms (FWC 2003a). Within the Preferred Corridor limpkins are likely to utilize the habitats for foraging but not likely to nest within the Preferred Corridor.

The **snowy egret (*Egretta thula*)** is considered a SSC by the State of Florida as a result of extensive historical hunting practices due to the desire for the snowy egrets' feathers. The snowy egret usually nests in colonies with other species of wading birds in swamps and mangroves on islands or in emergent vegetation over water. It forages in both freshwater and saltwater habitats, where it often actively pursues its prey, typically with other wading birds. The snowy egret breeds in colonies mostly in the central and southern peninsula (FWC 2003a). No nesting colonies for snowy egrets were found during field surveys, but snowy egrets were observed foraging in the general vicinity of the Preferred Corridor.

The **little blue heron (*Egretta caerulea*)** is listed as a SSC by the State of Florida. Like other wading birds, this species prefers freshwater habitats and it nests in colonies, often with other waders. Nests of sticks are placed in trees and shrubs on islands, in thickets near water, or in emergent vegetation over water. Breeding occurs from April through September in Florida. While found throughout the state, the little blue heron breeds in greater abundance in the central and southern peninsula (FWC 2003a). No nesting colonies for little blue herons were found during field surveys, but this species was observed foraging in the general vicinity of the Preferred Corridor.

The **tricolored heron (*Egretta tricolor*)**, a wading bird, is considered a state SSC. While it is found mostly in saltwater and brackish-water habitats, the tricolored heron often forages in freshwater marshes as well as saltwater habitats. Tricolored herons regularly nest in colonies with other heron and

ibis species. This species is found across peninsular Florida where it breeds in inland and coastal habitats, but it is far less common in the Panhandle where it is limited to breeding along the coast (FWC 2003a). No nesting colonies for the tricolored heron were encountered during field surveys conducted. The Preferred Corridor is likely to be utilized for foraging.

The **white ibis (*Eudocimus albus*)** is listed as a SSC by the State of Florida. They usually breed in mixed-species colonies located over various waterbodies, within freshwater marshes or ponds, or on coastal islands. Nesting occurs in trees, shrubs, and grass clumps. Within Florida, nesting typically lasts from March to August. Colonies are most numerous in Central and South Florida, with much smaller numbers in north-central and Panhandle counties (FWC 2003a). No nesting colonies for the white ibis were found during field surveys, but white ibises were observed foraging in the general vicinity of the Preferred Corridor.

The **Southeastern American kestrel (*Falco sparverius*)** is a diminutive falcon that is state-listed as threatened. This species is typically found in open habitats, such as pine savannas, longleaf pine-xeric oak pine flatwoods, pastures, and even some urbanized locations. Sparse and open vegetation that support prey species and available perching areas make these habitats particularly suitable for the kestrel. Southeastern American kestrels nest in cavities excavated by woodpeckers and in artificial objects such as power poles and buildings (FWC 2003a). No nests were found within the Preferred Corridor during field surveys.

The **bald eagle (*Haliaeetus leucocephalus*)**, the largest raptor in the eastern United States, was delisted by the USFWS in 2007. However, it is remains protected by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Bald eagles are considered a water-dependent species typically found near estuaries, large lakes, reservoirs, major rivers, and some seacoast habitats. Their distribution is influenced by the availability of suitable nest and perch sites near large, open waterbodies, typically with high amounts of shoreline. Nesting habitat includes a nest tree, perch, and roost sites, and adjacent high-use areas, but usually does not include foraging areas. In Florida, nests are often in the transitional zone (i.e., ecotone) between forest and marsh or water, and are constructed in dominant or co-dominant living pine or bald cypress trees. Within peninsular Florida, bald eagles breed and nest during the temperate winter. Contrary to changes in habitat use exhibited by northern bald eagle populations, eagles in the south do not substantially alter habitat use throughout the year (USFWS 1999). No nests were found within the Preferred Corridor during field surveys.

The **eastern indigo snake (*Drymarchon corais couperi*)** is listed as threatened both federally and by the State of Florida. It is a large, black, non-venomous snake found in the southeastern United States, widely distributed throughout Central and South Florida. Over most of its range, the Eastern indigo snake frequents several habitat types, including pine flatwoods, scrubby flatwoods, dry prairie, tropical hardwood hammocks, edges of freshwater marshes, pastures, coastal dunes, and human-altered habitats. Within xeric habitats, it is closely associated with the gopher tortoise, as the burrows provide shelter from winter cold and desiccation. Indigo snakes range over large areas and into various habitats throughout the year, with most activity occurring in the summer and fall. The eastern indigo snake still occurs throughout Florida, even though they are not commonly seen (USFWS 1999). Eastern indigo snakes likely occur within the Preferred Corridor.

The **Florida pine snake (*Pituophis melanoleucus mugitus*)** is considered a SSC by the State of Florida. It is fairly large and stocky, and usually tan or rust-colored. The Florida pine snake prefers habitats with relatively open canopies and dry sandy soils in which it burrows. Typical habitats include longleaf pine-xeric oak, as well as old fields and pastures. It also may be found in sand pine scrub and scrubby flatwoods and often coexists with pocket gophers and gopher tortoises. The Florida pine snake is found in most of the panhandle and peninsular Florida (FNAI 2001). Florida pine snakes are most likely to be found near the FPL Martin Plant property in portions of the Preferred Corridor where upland sandy habitats exist.

The **gopher tortoise (*Gopherus polyphemus*)** is state-listed as threatened. This species is listed as federally threatened in Alabama, Mississippi, and Louisiana and is under review for federal listing in Florida; however, the population in Florida is not currently protected under the ESA. The gopher tortoise typically inhabits upland habitats, especially those with relatively well-drained, sandy soils. In general, this species is associated with longleaf pine and xeric oak (*Quercus* spp.) sandhills, but also occurs in scrub, xeric hammock, pine flatwoods, dry prairie, coastal grasslands and dunes, mixed hardwood-pine communities, and a variety of disturbed habitats. Gopher tortoises excavate burrows that provide protection from temperature extremes, moisture loss, and predators. These burrows serve as refuges for 350 to 400 other species, including listed commensal species such as the gopher frog, eastern indigo snake, Florida pine snake, and the Florida mouse. Two gopher tortoise burrows were found between MPs 0 and 1. One burrow was observed to be potentially active and the other was abandoned.

The **gopher frog (*Rana capito*)** is considered a SSC by the State of Florida. Gopher frogs inhabit dry, sandy uplands, (particularly sandhill and scrub) that also include isolated wetlands or large ponds (for breeding). They are a nocturnal species and often spend daylight hours in stump holes or burrows, especially those of the gopher tortoise. Within Florida, they are potentially found throughout the state with the exception of the Everglades and the Florida Keys (FWC 2002). Gopher frogs would likely inhabit the Preferred Corridor near the FPL's Martin Plant property where upland habitats exist that are conducive to the gopher tortoise and gopher frog.

9.3.6.3.2 Migratory Birds

The MBTA protects over 1,000 species of migratory birds, some of which are also protected by additional federal regulations such as the ESA and the BGEPA, as well as by state-level regulations (USFWS 2010). In order to be protected by the MBTA, a bird must be native to the United States or its territories, and it must belong to a taxa covered by at least one of the four migratory bird conventions to which the United States is a party (USFWS 2005).

Florida's diverse habitats including uplands, wetlands, and ample access to various freshwater and marine environments make it an ideal destination or stopover location for numerous migratory bird species. While it is virtually impossible to identify all of the species of migratory birds that may be found within Martin and Palm Beach Counties, it is possible to identify those species that typically use the habitats encountered by the Preferred Corridor.

The birds listed below are the common species that may occur during the winter, breeding season, or year-round in the habitats that would be crossed by the corridor. This list was developed through a review of USGS Breeding Bird Survey data (Sauer et al. 2011), National Audubon Society Christmas Bird Count data (National Audubon Society 2010), and the Conceptual Management Plan of the J.W. Corbett WMA (FWC 2003b). This is not an exhaustive list and does not include the additional bird species that fleetingly may use the habitats that would be crossed by the Preferred Corridor as stopover habitat during spring and fall migration. Additionally, the lists below are not necessarily mutually exclusive; for example, while wading birds are most common in wetland habitats they a will also forage in open uplands, especially when flooded, and along shorelines of open water.

Disturbed/ Developed – *Includes FLUCFCS 140 Commercial and Services, 812 Railroads, 814 Roads and Highways, 830 Utilities, 830/310 Utilities/ Herbaceous (Dry Prairie).* Typical migratory bird species of disturbed and developed areas include: killdeer (*Charadrius vociferous*), mourning dove (*Zenaida macroura*), American robin (*Turdus migratorius*), northern mockingbird (*Mimus polyglottos*), common grackle (*Quiscalus quiscula*), and boat-tailed grackle (*Quiscalus major*).

Open Upland – *Includes FLUCFCS 211 Improved Pastures, and 310 Herbaceous (Dry Prairie).* Typical migratory bird species of pastures and grasslands include: turkey vulture (*Cathartes aura*), black vulture (*Coragyps atratus*), cattle egret (*Bubulcus ibis*), sandhill crane (*Grus canadensis*), killdeer, mourning dove, common nighthawk (*Chordeiles minor*), loggerhead shrike (*Lanius ludovicianus*),

American robin, eastern meadowlark (*Sturnella magna*), common grackle, and American goldfinch (*Spinus tristis*).

Shrub/ Scrub Upland – *Includes FLUCFCS 329 Other Shrubs and Brush, and 330 Mixed Rangeland.* Typical migratory bird species of upland shrub/ scrub habitats include: common ground dove (*Columbina passerine*), white-winged dove (*Zenaida asiatica*), northern mockingbird, gray catbird (*Dumetella carolinensis*), white-eyed vireo (*Vireo griseus*), Carolina wren (*Thryothorus ludovicianus*), blue-gray gnatcatcher (*Polioptila caerulea*), brown thrasher (*Toxostoma rufum*), yellow-rumped warbler (*Dendroica coronate*), palm warbler (*Dendroica palmarum*), and eastern towhee (*Pipilo erythrophthalmus*).

Forested Upland – *Includes FLUCFCS 410 Upland Coniferous Forests, 410/411 Upland Coniferous Forests/ Pine Flatwoods, 411 Pine Flatwoods, 422 Brazilian Pepper, 423 Oak-Pine-Hickory, 425 Temperate Hardwood, 432 Sand Live Oak, 434 Hardwood-Conifer Mixed, 436 Upland Scrub, Pine and Hardwoods, 437/422 Australian Pine/ Brazilian Pepper, and 625 Hydric Pine Flatwoods.* Typical migratory bird species of forested uplands include: red-shouldered hawk (*Buteo lineatus*), common ground dove, white-winged dove, yellow-billed cuckoo (*Coccyzus americanus*), great horned owl (*Bubo virginianus*), barred owl (*Strix varia*), eastern screech owl (*Megascops asio*), Chuck-will's-widow (*Caprimulgus carolinensis*), red-headed woodpecker (*Melanerpes erythrocephalus*), red-bellied woodpecker (*Melanerpes carolinus*), northern flicker (*Colaptes auratus*), downy woodpecker (*Picoides pubescens*), pileated woodpecker (*Dryocopus pileatus*), blue jay (*Cyanocitta cristata*), fish crow (*Corvus ossifragus*), Carolina wren, blue-gray gnatcatcher, brown thrasher, cedar waxwing (*Bombycilla cedrorum*), pine warbler (*Dendroica pinus*), yellow-rumped warbler, and northern cardinal (*Cardinalis cardinalis*). Note that bird diversity can be expected to be lowest in forests dominated by exotic species (e.g. Brazilian pepper, Australian pine). Additionally, bird diversity increases with structural diversity of the vegetation, which tends to be highest in mixed hardwood forests and lower in coniferous forests.

Herbaceous Wetland – *Includes FLUCFCS 641 Freshwater Marshes.* Typical migratory bird species of freshwater marshes include: mottled duck (*Anas fulvigula*), pied-billed grebe (*Podilymbus podiceps*), green heron (*Butorides virescens*), little blue heron, tricolored heron, cattle egret, great egret (*Ardea alba*), snowy egret, great blue heron (*Ardea herodias*), glossy ibis (*Plegadis falcinellus*), white ibis, common moorhen (*Gallinula chloropus*), sandhill crane, Wilson's snipe (*Gallinago delicata*), fish crow, swamp sparrow (*Melospiza georgiana*), boat-tailed grackle, and red-winged blackbird (*Agelaius phoeniceus*).

Shrub/ Scrub Wetland – *Includes FLUCFCS 631 Wetland Scrub.* Typical migratory bird species of wetland scrub habitat include: green heron, yellow-billed cuckoo, white-eyed vireo, fish crow, Carolina wren, blue-gray gnatcatcher, yellow-rumped warbler, palm warbler, common yellowthroat (*Geothlypis trichas*), swamp sparrow, northern cardinal, and red-winged blackbird.

Forested Wetland – *Includes FLUCFCS 511/619 Natural Streams and Waterways/ Exotic Wetland Hardwoods, 619 Exotic Wetland Hardwoods, 621 Cypress, and 630 Wetland Forested Mixed.* Typical migratory bird species of forested wetlands include: anhinga (*Anhinga anhinga*), swallow-tailed kite (*Elanoides forficatus*), bald eagle, red-shouldered hawk, yellow-billed cuckoo, barred owl, red-bellied woodpecker, downy woodpecker, pileated woodpecker, great crested flycatcher (*Myiarchus crinitus*), fish crow, American crow, cedar waxwing, yellow-rumped warbler, and northern cardinal. Note that overall bird diversity is likely to be lower in exotic (e.g. Brazilian pepper) dominated forested wetlands compared to native forested wetlands.

Open Water – *Includes FLUCFCS 510 Streams and Waterways, and 530 Reservoirs.* Typical migratory bird species of open freshwater include: mottled duck, pied-billed grebe, double-crested cormorant (*Phalacrocorax auritus*), brown pelican (*Pelecanus occidentalis*), osprey, laughing gull (*Leucophaeus atricilla*), ring-billed gull (*Larus delawarensis*), northern rough-winged swallow (*Stelgidopteryx serripennis*), and cliff swallow (*Petrochelidon pyrrhonota*).

9.3.6.3.3 Fisheries

This section covers recreational and commercial fishery resources present or potential to be present in the waterbodies crossed by the Preferred Corridor. Protected and native non-imperiled fish species are discussed, including the habitats where they are found.

Florida has 3 million acres of freshwater lakes and 12,000 miles of streams and rivers with over 250 different fish species including non-native fishes (FWC 2012). As listed in Section 9.3.6.2, "Affected Waters and Wetlands," 25 waterbodies are crossed by the Preferred Corridor. The fishery resources found in the waterbodies that are crossed by the Preferred Corridor are discussed here and listed in (Table 9.3-17). It should be noted that the Preferred Corridor would not cross areas designated by the National Oceanic and Atmospheric Administration's Office of Protected Habitat Division as Essential Fish Habitat. As such, Essential Fish Habitat is not discussed in this modification.

Table 9.3-17
Non-Imperiled Aquatic Species Anticipated to Occur within the Preferred Corridor

Common Name	Scientific Name
Florida Largemouth Bass	*Micropterus salmoides floridanus*
Black Crappie	*Pomoxis nigromaculatus*
Bluegill	*Lepomis macrochirus*
Spotted Sunfish	*Lepomis punctatus*
Redear Sunfish (Shellcracker)	*Lepomis microlophus*
Blue Spotted Sunfish	*Enneacanthus gloriosus*
Longnose Gar	*Lepisosteus osseus*
Florida Gar	*Lepisosteus platyrhincus*
Warmouth	*Chaenobryttus gulosus*
Brown Bullhead	*Ameiurus nebulosus*
Channel Catfish	*Ictalurus punctatus*
White Catfish	*Ameiurus catus*
Yellow Bullhead	*Ameiurus natalis*
Lake Chubsucker	*Erimyzon sucetta*
Mayan Cichlid	*Cichlasoma urophthalmus*
Eastern Mosquito Fish	*Gambusia holbrooki*
Redfin Pickerel	*Esox americanus*
Chain Pickerel	*Esox niger*
Golden Shiner	*Notemigonus chrysoleucas*
Bowfin	*Amia calva*
Tadpole Madtom	*Noturus gyrinus*
Flagfish	*Jordanella floridae*
Bluefin Killifish	*Lucania goodie*
Seminole Killifish	*Fundulus seminolis*
Golden Topminnow	*Fundulus chrysotus*
Least Killifish	*Heterandria formosa*
Sailfin Molly	*Poecilia latipinna*
Coastal Shiner	*Pternontropis petersoni*
Swamp Darter	*Etheostoma fusiforme*

Sources: Burgess n.d., FWC 2009.

Non-Imperiled Aquatic Species

Multiple data sources were used in determining the fishery resources within the crossed waterbodies, including the FWC freshwater fisheries information and recent fishing reports from the larger streams and rivers crossed by the Preferred Corridor (FWC 2003c). Based on a compilation of these data, Table 9.3-17, though not an exhaustive list, indicates many of those freshwater fish species that are expected to occur within waterbodies that would be crossed by the Preferred Corridor. Additional details on these species follow the table.

The **Florida largemouth bass (*Micropterus salmoides floridanus*)** is the largest member of the sunfish family. They prefer clear, non-flowing waters with aquatic vegetation, and where food and cover are available. They occupy brackish to freshwater habitats, including upper estuaries, rivers, lakes, reservoirs and ponds. The Florida largemouth bass is also the most popular freshwater game fish in the state.

The **black crappie (*Pomoxis nigromaculatus*)** is a species of panfish that lives in clear, natural lakes and reservoirs with moderate vegetation. They are also found in large, slow-moving, less-turbid rivers across Florida with the exception of the Florida Keys.

The **bluegill (*Lepomis macrochirus*)**, a type of panfish that may be referred to as bream, is found throughout the state. They inhabit lakes and ponds, slow-flowing rivers and streams with sand, mud, or gravel bottoms, near aquatic vegetation.

The **spotted sunfish (*Lepomis punctatus*)** is a panfish species that inhabits slow-moving, heavily vegetated streams and rivers with limestone, sand, or gravel substrates. They are found throughout the Florida peninsula.

The **redear sunfish (*Lepomis microlophus*)**, also called bream or shellcracker, is found in almost every freshwater aquatic system in Florida. They are common in lower, more slowly flowing reaches of rivers.

The **blue spotted sunfish (*Enneacanthus gloriosus*)** is a solitary fish that seldom strays far from cover. As such, it prefers vegetated freshwater lakes, ponds, pools, and stream backwaters. The blue spotted sunfish has been found across much of Florida.

The **longnose gar (*Lepisosteus osseus*)** is one of the most widespread and numerous gar species in Florida. They are generally found north of and in Lake Okeechobee, inhabiting slow-moving, sometimes poorly oxygenated water, backwaters and oxbows of medium-to-large rivers and lakes.

The **Florida gar (*Lepisosteus platyrhincus*)** inhabits medium-to-large lowland streams, canals, and lakes with mud or sand bottoms, with a plentiful supply of submerged vegetation. They are found across much of peninsular Florida.

The **warmouth (*Chaenobryttus gulosus*)** is a type of panfish found statewide in Florida. They tend to inhabit swamps, marshes, shallow lakes, slow-moving streams, and canals with soft, muddy bottoms.

The **brown bullhead (*Ameiurus nebulosus*)** is a species of catfish that generally inhabits still or slowly flowing warm waters in ponds, lakes, reservoirs, large rivers, and sluggish streams. They inhabit areas with mud or deep muck, as well as sand or gravel bottoms and are found throughout Florida except for the extreme southern portion of the state.

The **channel catfish (*Ictalurus punctatus*)** is found throughout the state with the exception of the Florida Keys. They are most commonly found in big rivers and streams as they prefer some current, and in deep water with sand, gravel, or rubble bottoms. Channel catfish also inhabit lakes, reservoirs, and ponds.

The **white catfish (*Ameiurus catus*)** is found in slow-moving streams, river backwaters, reservoirs, and ponds. They are widely distributed across the state of Florida.

The **yellow bullhead (*Ameiurus natalis*)** is a type of catfish found in vegetated areas of clear, shallow lakes, reservoirs, ponds, and slow-flowing streams. This species is found throughout the state of Florida.

The **lake chubsucker (*Erimyzon* sucetta)**, a species of sucker, lives in quiet or sluggishly flowing waters, and is usually most abundant where the bottom is soft, with much organic debris, and in areas of dense aquatic vegetation. They are found throughout the state.

The non-native **Mayan cichlid (*Cichlasoma urophthalmus*)** lives in a variety of habitats including canals, rivers, lakes, and marshes. It is abundant in South Florida as far north as Lake Okeechobee and the St. Lucie Canal.

The very small **Eastern mosquito fish (*Gambusia holbrooki*)** is normally found throughout Florida in the shallows of various freshwater systems among vegetation. It has an affinity for consuming mosquito larvae and is often stocked in small ponds to help control mosquitoes.

The **redfin pickerel (*Esox americanus*)** is found in the heavy growths of aquatic plants within sluggish streams and in the shallow coves of lakes or in ponds. Often the dominant predator fish in small creeks, the redfin pickerel is widely distributed in Florida.

The **chain pickerel (*Esox niger*)** is normally found in vegetated lakes, swamps and backwaters, and small to large rivers across the entire State of Florida.

The **golden shiner (*Notemigonus chrysoleucas*)** is a popular bait fish that is found in vegetated ponds and lakes, as well as in the slack waters of rivers. It is widely distributed along the east coast of North America and throughout Florida.

The **bowfin (*Amia calva*)** typically inhabits backwaters, oxbow lakes, and clear, well-vegetated streams. They have a preference for clear water with abundant vegetation, but are tolerant of silt, mud, and high temperatures. Bowfins are found across the State of Florida.

The **tadpole madtom (*Noturus gyrinus*)** is typically found in medium to large rivers, lakes, reservoirs, and sloughs. Their range includes most of peninsular Florida, particularly the major interior waterbodies.

The **flagfish (*Jordanella floridae*)**, a killifish, is found in heavily vegetated waterbodies across peninsular Florida, but not the Panhandle.

The **pygmy killifish (*Leptolucania ommata*)** prefers shallow, extensively vegetated overflow pools, sloughs, and blackwater swamps. It ranges across parts of Central and North Florida.

The **bluefin killifish (*Lucania goodei*)** occurs in shallow, vegetated margins in association with extensive organic debris and cypress knees. It is found in waterbodies statewide.

The **Seminole killifish (*Fundulus seminolis*)** is a common fish found only in the state of Florida, ranging from the New River (the first river drainage east of the Apalachicola River) to just below Lake Okeechobee. They are adapted to live in a large variety of habitat types in Florida lakes, but they are usually found in open areas of those lakes and in quiet stream pools with vegetation.

The **golden topminnow (*Fundulus chrysotus*)** inhabits backwaters and pools of ditches and slow-moving streams with heavy vegetation. It is widely distributed across the State of Florida.

The **least killifish (*Heterandria formosa*)** is one of the smallest fish and smallest vertebrates known to science. It lives primarily in slow-moving or standing freshwater, but also occurs in brackish waters and is found statewide across Florida.

The **sailfin molly (*Poecilia latipinna*)** prefers marshes, lowland streams, swamps, and estuaries, and is very common in peninsular Florida.

The **coastal shiner (*Pternontropis petersoni*)** is widely distributed, ranging across the entire state with limited occurrence in southeastern Florida. It is typically an inhabitant of slow backwaters, lakes, and impoundments near coastal areas.

The **swamp darter (*Etheostoma fusiforme*)** is a species true to its name, found in swamps and weed-choked ponds. It has a virtually statewide range with the exception of the extreme southern portion of Florida.

Identification of Protected Fisheries Species

No federally listed fisheries species are known to occur within the Preferred Corridor in Martin and Palm Beach Counties. The State of Florida lists an additional 48 species (for the entire state) as imperiled; however, none are located within the Preferred Corridor. Therefore, no further discussion of protected fisheries is addressed in the modification.

9.3.6.4 Existing Noise Environment

Noise is generally defined as sound with intensity greater than the ambient or background sound pressure level (SPL). The SPL is determined by measuring noise emissions in terms of sound pressure in a relationship defined as a decibel (dB). All sound levels are referenced to the A-weighted scale (dBA) to adjust for the sensitivity of different sound frequencies to the human ear. The day-night sound level (L_{dn}) is a statistical measure for relating the time-varying quality of environmental noise to its effect on people. The L_{dn} is a weighted 24-hour sound level calculated by adding 10 dBA to the nighttime energy-equivalent (L_{eq}) sound levels, which accounts for people's greater sensitivities to sound during nighttime hours. The L_{eq} is the level of steady sound with the same total energy as the time-varying sound energy averaged over a given period.

The Preferred Corridor would pass through commercial, industrial, residential and agricultural areas. Compatible noise levels for these types of land use are presented in Table 9.3-18. The majority of the Preferred Corridor is collocated with SR 710. Existing noise levels in the vicinity of the highway would be expected to range from 60 dBA to 80 dBA depending on the distance from the highway and volume of traffic.

Noise Regulations

The State of Florida currently does not have noise regulations. However, Martin and Palm Beach counties and the Cities of Palm Beach Gardens and West Palm Beach have implemented ordinances to regulate noise levels and establish timeframes in which construction activities can be conducted. The construction limitations/exemptions contained in county and municipal ordinances that may apply to the construction of the Project are outlined in Table 9.3-19.

FPL will make good faith efforts to comply with all applicable nonprocedural standards of local codes and will vary from those standards when necessary for some construction activities, such as horizontal directional drill (HDD) crossings, as described in Section 9.3.7 of this petition.

Table 9.3-18
Community Noise Exposure Level by Land Use Category

Land Use Category	Community Noise Exposure Level - L_{dn} or CNEL (dB)													
	50		55		60		65		70		75		80	
Residential - Low-Density Single Family, Duplex, Mobile Home														
Residential - Multi-Family														
Schools, Libraries, Churches, Hospitals, Nursing Homes														
Sports Arena, Outdoor Spectator Sports														
Playgrounds, Neighborhood Parks														
Golf Courses, Riding Stables, Water Recreation, Cemeteries														
Office Buildings, Business Commercial and Professional														
Industrial Manufacturing, Utilities, Agriculture														

Source: State of California General Plan Guidelines, Office of Planning and Research (OPR), October 2008.
Key:

	= Normally Acceptable. Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	= Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	= Normally Unacceptable. New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
	= Clearly Unacceptable. New construction or development should generally not be undertaken unless mitigation measures are taken.

Table 9.3-19
Construction Noise Ordinances in Counties and Municipalities Traversed by the Project

Citation		Limitations
COUNTY		
Martin County	Article 10, Sec. 67.307(B)	Martin County prohibits operating any equipment or performing any outside activity in furtherance of construction, repair, alteration, or demolition work on buildings, structures, roads, or projects within the County between the hours of 9:00 p.m. and 7:00 a.m. unless a variance as set forth in section 67.308 for such construction or repair work between such hours has been obtained from Martin County on the basis of good cause shown.
Palm Beach County	Land Development Code, Article 5	The operation of any machinery, demolition equipment, construction equipment, excavating equipment, power tool, equipment of semi-mechanical device, or undertaking construction work which generates excessive noise at the property line of inhabited residential land between the hours of 10:00 p.m. and 7:00 a.m. Construction work other than minor repairs by a homeowner and work permitted to an owner builder shall be prohibited on Sunday. This restriction shall not prohibit the use of pumps or machinery which, because of their nature and purpose, are required to be in operation 24 hours a day.
MUNICIPALITY		
West Palm Beach	Chapter 34, Article 2, Sec. 34-39	West Palm Beach requires that all equipment shall be operated in accordance with manufacturers specifications, shall be in good operating condition, and shall utilize all noise baffling methods as specified by the manufacturer. Such activities shall occur only as follows: Between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday; and between the hours of 8:00 a.m. and 8:00 p.m., Saturday and Sunday.
Palm Beach Gardens	Chapter 34, Article III, Sec. 34-59	Construction equipment may be operated in the actual construction of buildings and improvement of construction sites within a residential district beginning at 7:00 a.m. on any day from Monday through Saturday.

9.3.7 Variances, Exemptions, and Exceptions

In order to construct the Project, certain variances, exemptions, and exceptions (or waivers) from state, county, and local regulations would be required. Section 9.3.7.1 details state variances, exceptions, and exemptions; and Sections 9.3.7.2 and 9.3.7.3 detail other variances, exceptions, and exemptions that may be required for the Project.

Section 9.4.1 and other sections of this petition to modify explain how the Project would be constructed and operated. FPL will make good faith efforts to comply with all applicable nonprocedural standards of local codes and will only vary from those standards when necessary to construct the Project as described in Section 9.2 "Project Description" of this petition. FPL is committed to continuing an open dialogue with local governments and authoritative agencies during the development of conditions of certification for the Project.

All parties whose jurisdictions would be crossed by the Project must respond to FPL during the modification process with any additional applicable codes not included here that apply to the Project. Pursuant to Section 403.531(2)(b), F.S., if these parties do not identify additional applicable codes in their agency reports during the certification process, all nonprocedural standards of that agency will be waived for the construction period once the Project is certified.

As detailed in Section 9.3.7.2, natural gas pipelines are exempt from the State of Florida's definition of "development" and, therefore, are not subject to any comprehensive land use plans or zoning regulations.

9.3.7.1 Variances, Exemptions, and Exceptions from State Nonprocedural Standards

The only variance from a state nonprocedural standard requested as part of this petition to modify is a variance from the state water quality standards for turbidity during construction. No permanent impacts from construction activities are expected. FPL hereby requests a variance from state water quality standards for turbidity during construction.

9.3.7.1.1 Background

Pipeline construction at wetlands and waterbody crossings could potentially affect the aquatic environment. Turbidity control measures will be employed at each crossing to reduce potential impacts due to possibility of increased sedimentation associated with construction.

The proposed construction techniques, as outlined in Section 9.4.1, would enable FPL to comply with the state turbidity standard of 29 nephelometric turbidity units (NTUs) above the natural background level at many of the proposed wetland and waterbody crossings. Given the proposed use of turbidity controls for the Project, FPL may be able to meet turbidity standards for the mixing zone, depending upon site-specific conditions of each crossing. However, the physical characteristics (hydraulic and geometric features) of some waterbodies could prohibit the practical implementation of construction methods that would enable compliance with this turbidity standard for the construction period of the Project. Consequently, FPL requests conditions of certification that would grant a mixing zone pursuant to Rule 62-4.244, F.A.C., and a variance, exemption, or exception from the state turbidity standard as described in Rule 62-302..530(69), F.A.C., for waterbodies crossed by the Project.

FPL will specify in a post-certification submittal to the FDEP the mixing zone size (in meters) and/or the numerical variance to the turbidity standard (in NTUs) that FPL believes will be necessary to construct across certain waterbodies. The waterbodies where mixing zones or these variances, exemptions, or exceptions will be needed will be listed in the post-certification submittal.

The extent of impacts to waterbodies depends on waterbody bank and bed composition. If the streambed and waterbody bank is predominantly sand, turbidity is not expected to increase significantly, as sand-size particles settle out quickly after being disturbed. However, if the streambed and embankment material contain a significant amount of clay- and silt-sized particles, appropriate construction methods will be used to prevent significant increases in turbidity. Some of the small perennial waterbodies located in slow-draining wetlands areas may contain some fine-grained sediment. In addition, some waterbodies may have sandy sediments on the surface overlying more finely grained sediments. Furthermore, water quality could be impacted by wetland construction adjacent to a waterbody crossing that could increase turbidity at the crossing.

Data will be collected and analyzed and the results will be used to assess the potential for construction-induced turbidity impacts and assist in determining the most appropriate crossing methods for each waterbody.

9.3.7.1.2 Information Supporting Variance Request

Efforts to reduce potential impacts to surface water began in the initial stages of the planning process. The process of determining the Preferred Corridor considered the avoidance of environmentally sensitive areas, and it is explained in Section 9.3 “Corridor.” Tier 1 siting criteria included the review of existing linear facilities including existing pipelines, transmission lines, railroad corridors and major roads, but avoided major built features or infrastructure such as hospitals, tourist attractions, reservoirs, and major waterbodies. Tier 2 siting criteria used to evaluate the corridors included collocating with existing linear facilities and the avoidance of federal, state, county, and other protected lands, critical habitat, waterbodies and wetlands, and urban areas. As a result, the Preferred Corridor is predominately collocated with existing linear facilities.

The effects of suspended material and turbidity caused by pipeline crossings have been studied and documented over the last 20 years. The biota that may be influenced by construction activities include phytoplankton, rooted aquatic vegetation, invertebrates (zooplankton and benthos) and fishes. The effects that suspended solids may have on organisms are dependent upon composition, absorbed minerals or toxins, and tolerance of the organisms to the suspended material, as well as concentration of the suspension. Review of case studies monitoring pipeline construction effects on downstream environments indicates that short term impact to aquatic life are likely to occur as a result of the suspension and subsequent deposition of sediment (Interstate Natural Gas Association of America 1998).

Increased sedimentation and turbidity within the waterbody from construction activities may temporarily impact fish downstream by temporarily reducing dissolved oxygen levels. In the immediate construction area, fish reproduction may be affected due to temporary disturbance of spawning areas, disturbances to fish, or reduced egg survival caused by increased sedimentation. Additionally, the release of nutrients from resuspended bottom sediments could potentially create temporary eutrophic conditions that may stimulate algal blooms or cause toxic effects to aquatic organisms. Impacts would be temporary and suspended sediment concentrations would return to background levels soon after in-stream construction is complete.

9.3.7.1.3 Conclusions about Turbidity and Sedimentation

During construction of waterbody crossings for this Project, the concentration of suspended sediments would be relatively high for only short periods and for short distances from the crossings. The studies reviewed indicate that a wide variety of species can tolerate increased concentrations of suspended material during dredging activities; changes that do occur would be short-term and reversible. Therefore, it is unlikely that pipeline construction activities at waterbody crossings would have any long-term impacts to water quality and aquatic habitats. FPL has developed best management practices (BMPs) that

would be implemented in order to minimize and mitigate impacts from turbidity. These BMPs are found in Appendix L.

9.3.7.2 Exemption from Comprehensive Plans and Zoning Regulations

Natural gas pipelines are exempt from the State of Florida's definition of "development," and therefore are not subject to any comprehensive land use plans and zoning regulations.

9.3.7.3 Variances, Exemptions, and Exceptions from Local Nonprocedural Standards

Where the Project would not meet applicable nonprocedural standards of county and municipal codes, a variance, exemption, or exception may be required prior to construction. Pursuant to Section 403.531(2)(b), F.S., parties to the proceeding must list in their agency reports all nonprocedural standards from which a variance, exemption, or exception are required.

9.4 Effects of ROW Preparation and Construction

The following sections discuss the effects of the ROW preparation and construction as appropriate or in accordance to the FDEP Power Plant Siting Act Application Instruction Guide. These resources include the following:

- Construction Techniques (Section 9.4.1);
- Environmental Resource Permit and Impacts to Affected Waters and Wetlands (Section 9.4.2);
- Solid Wastes and Hazardous Materials (Section 9.4.3);
- Impacts to Vegetation, Wildlife, and Aquatic Life (Section 9.4.4);
- Impacts to Human Populations (Section 9.4.5);
- Impacts on Regional Scenic, Cultural, and Natural Landmarks (Section 9.4.6); and
- Impacts on Archaeological and Historic Sites (Section 9.4.7).

Efforts to reduce potential impacts to the resources discussed began in the initial stages of the corridor planning process. The process of determining the Preferred Corridor considered the avoidance of environmentally sensitive areas and land use constraints as described in the siting criteria (see Section 9.3.1). Primary siting criteria sought to collocate the pipeline with existing linear facilities such as other existing pipelines, transmission lines, and major roads, but to avoid major built features or infrastructure such as hospitals and tourist attractions, and to avoid reservoirs and major waterbodies. Secondary siting criteria sought to collocate the Preferred Corridor with existing utility corridors and to avoid federal, state, county, and other protected lands, critical habitat, waterbodies and wetlands, and urban areas. As a result, the Preferred Corridor is predominately collocated with existing linear facilities, which would significantly reduce potential impacts to vegetation and wildlife.

9.4.1 Construction Techniques

9.4.1.1 General Methods

FPL will coordinate with appropriate regulatory agencies and local landowners to facilitate construction in a manner compatible with current land uses and the landowners' authorizations. FPL will monitor construction activities for compliance with applicable regulations and the conditions of certification.

The pipeline would be constructed of high-strength carbon steel and manufactured in accordance with USDOT pipeline regulations. The entire pipeline would be coated with a corrosion-resistant, non-conductive coating that forms a waterproof barrier on the pipe. Prior to backfilling the trench, the coating

on the entire pipe would be inspected and electronically tested to ensure there are no anomalies in the coating. Where pipe would be located beneath roads, railroads, and major waterbodies, an abrasion resistance coating would be applied to prevent damage to the pipe when it is installed beneath these obstacles.

In flooded areas, such as wetlands or waterbodies, the pipe will have a concrete weight coating applied to the pipeline to provide negative buoyancy, which prevents pipeline movement due to flotation in high water table terrain such as wetlands and underwater pipeline crossings. This dense, homogenous concrete coating has a low porosity and finish that provides protection for the pipe and prevents corrosion and erosion of the primary coating system.

The pipeline will conform to applicable regulations such as 49 CFR 192. The pipeline would be buried with at least 3 feet of cover. Areas of the pipeline construction that involve crossing rivers, railroads or major highways may have construction going concurrently. Construction would require approximately 200 employees on average and 300 employees during peak construction. Construction and restoration activities planned would be completed in approximately 10 to 12 months. The construction process would involve the completion of various activities, including ROW clearing and grading; pipeline stringing, bending, welding, and joint coating; trenching; lowering-in; backfilling; and cleanup. These activities are described in the following subsections (see Figure 9.4-1).

Mobilization could occur several months prior to construction. Before construction begins, the ROW would be surveyed and staked. Existing utility lines along the construction ROW would be located and marked to prevent accidental damage during pipeline construction.

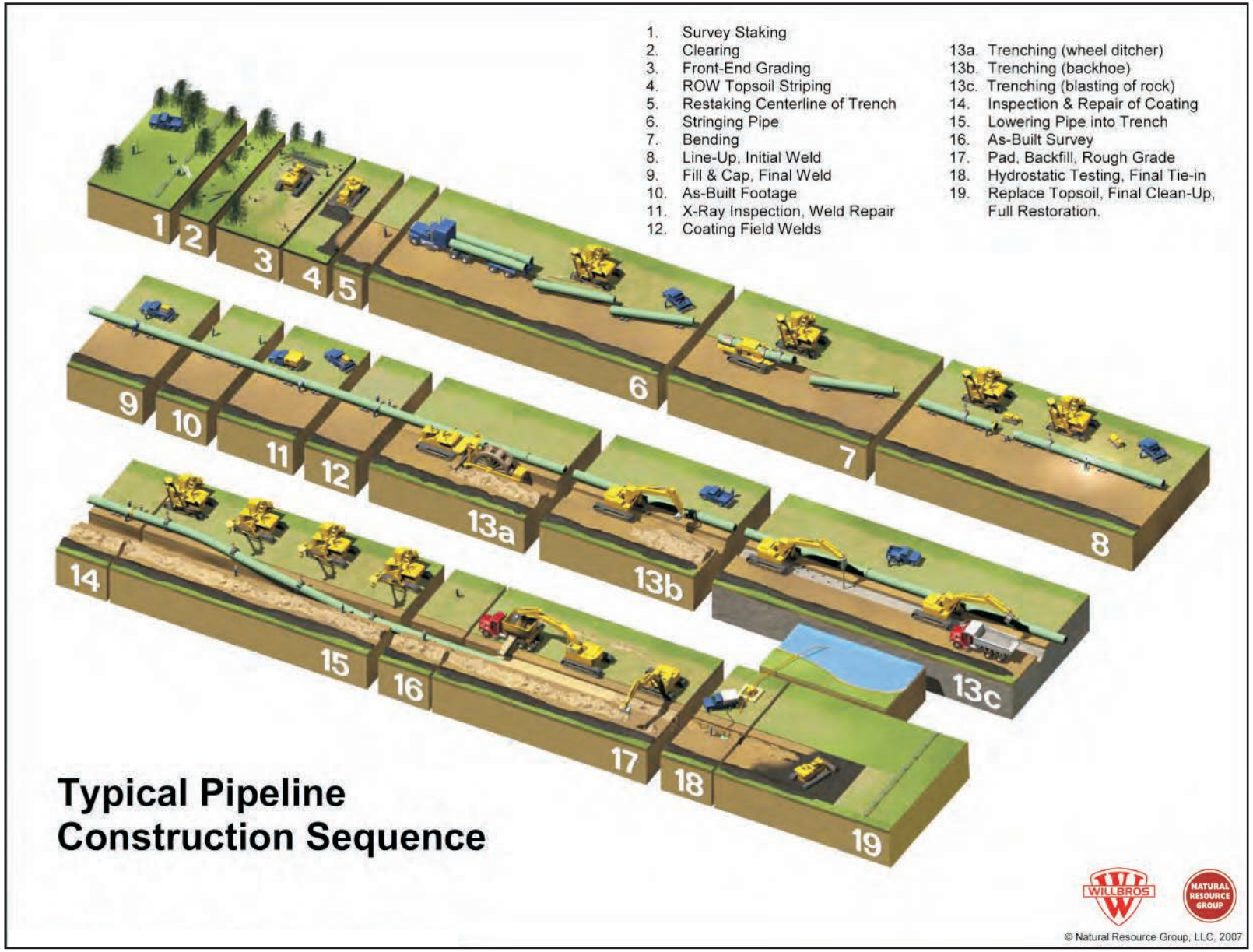
Project construction would generally be conducted six days a week (Monday through Saturday), 10 to 12 hours per day during daylight hours. However, in certain cases, work may be performed during non-daylight hours or on Sundays. For example, the drilling rigs used to perform an HDD may operate 24 hours per day until the pipe installation activities are complete. Similarly, timing restrictions may be associated with crossing a waterbody that would require work outside of daylight hours.

9.4.1.1.1 Clearing

Clearing consists of the removal of trees and other obstructions from the construction ROW. Various clearing methods would be employed and would depend upon tree size, contour of the land, and the ability of the ground to support clearing equipment. Merchantable timber may be cut in log lengths. Non-merchantable timber would be chipped, burned, or disposed in a landfill, in accordance with applicable local, county, and state regulations.

9.4.1.1.2 Grading

When rock outcroppings, ridges, boulders, and tree stumps are encountered, they may be removed from work areas as necessary. Sharp topographical irregularities would be graded to ensure safe passage of the work crews. Topsoil may be stripped from the trench and spoil-stockpile area and preserved for later restoration of the ROW.



SOURCE: Willbros and Natural Resource Group, 2007

Figure 9.4-1
Typical Pipeline Construction Sequence
Martin Plant To RBEC Lateral Project

August 10, 2011

FPL

9.4.1.1.3 Stringing

Prior to construction, trucks and rail transport would be used to haul the pipe from pipe mills to storage yards within the Preferred Corridor. Pipe would be transported from these yards and placed along the ROW.

9.4.1.1.4 Bending

Pipe would be bent by a hydraulic bending machine to fit the contour of the trench bottom. All activities would be supervised by qualified, specialized, bending technicians.

9.4.1.1.5 Welding

Welding procedures will adhere to federal regulations. Welding procedures will identify process, particular type of filler metal and number of welding beads (passes), electrical characteristics, position and direction of welding, time lapse between passes, line-up clamp removal, cleaning, preheating, and speed of travel. All welders used on the Project would be qualified to perform these procedures, and test welds would be completed and then evaluated visually and by radiography and/or by destructive testing.

9.4.1.1.6 Joint Coating

All line pipes would be pre-coated prior to stringing. Field welds may be covered with an "over the trench" bond coating. A fusion type or epoxy coating would be applied. Following application of the coating, the quality of the coating would be inspected for any holidays (holes in the coating).

9.4.1.1.7 Trenching

Following completion of grading, the trench centerline would be staked. The trench would be excavated to a depth sufficient to provide a minimum cover of three feet, which would meet or exceed USDOT specifications. The method used to excavate the trench would depend upon the soil conditions encountered. Blasting is not anticipated to be necessary given the known geologic conditions in Florida. However, should localized blasting be necessary to fracture bedrock to create a trench, a controlled Blasting Plan will be developed by qualified professionals in compliance with applicable nonprocedural standards. Trench line breakers, usually composed of sandbags or sprayed foam, may be installed on steep slopes or at the boundaries of wetlands and waterbodies to prevent drainage from becoming channelized along the buried pipeline.

9.4.1.1.8 Lowering-In

Prior to lowering-in, the trench would be cleaned of all debris and the bottom smoothed. The pipe would typically be lifted and lowered directly into the trench using a sufficient number of side-boom tractors equipped with rubber cradles and/or slings and belts to prevent damage to the pipe and pipe coating.

Before backfilling begins, a final inspection would be conducted to ensure that all debris has been removed from the trench and that the pipe and pipe coating are undamaged. Trench-line breakers, consisting of sand, gravel, cement, or cement-filled sacks, may be installed in the trench over and around the pipe to provide protection against erosion.

9.4.1.1.9 Backfill

The trench would be backfilled using material either excavated from the pipeline trench or imported. Imported material, if needed, would be similar to the surrounding soils. To compensate for settling, soil excavated from the trench would be used to form a crown over the trench centerline. Openings would be left in the completed crown to restore lateral surface drainage to pre-construction

conditions. Typically, this crown is not apparent on the surface contours after one to two years, once natural settlement has occurred, and does not interfere with normal agricultural activities. However, a crown generally would not be left in wetlands in order to prevent interference with natural drainage patterns.

9.4.1.1.10 Cleanup and Restoration

When backfilling is completed, excess material and debris would be removed, and the ROW would be restored to its approximate original contours. FPL has developed BMPs (Appendix L) that generally state how erosion controls and revegetation measures would be implemented for the Project. Permanent pipeline markers and warning signs would be erected at roads, waterbodies, and other points where line awareness is required. All surplus materials and construction equipment would be removed.

9.4.1.1.11 Hydrostatic Testing

Prior to the pipeline going into service, it would be hydrostatically tested according to USDOT specifications. Water for hydrostatic test would be withdrawn from a water source(s) identified through the post-certification review process and pumped into the test section (see Section 9.4.2 for discussion on water source(s)). A pump would be used to bring the test section to specified pressure. The test pressure would be maintained in accordance with applicable requirements. The test section would be depressurized, and the water would be discharged either back to its source, discharged at another location, or pumped into another test section for reuse as approved post-certification. The section being tested would by dried.

Additives are not expected to be used in the hydrotest water. However, dependent on site conditions, non-hazardous leak detection additives may be used. The water may be screened on the intake side. On the discharge side, erosion control and dissipation devices would be used.

9.4.1.1.12 Special Construction Techniques

Various field conditions that may occur along the ROW, such as railway and roadway crossings and wetland and waterbody crossings, may require special construction techniques. Typical special construction techniques that may be used during the construction of the Project are discussed below. The specific construction methods to be used at particular locations would be determined based on site-specific field data and after thorough evaluation of the engineering, environmental, and economic factors.

Railway crossings and major roadway crossings require special construction techniques such as borings. These crossings are normally constructed independently by separate construction crews and later tied into the rest of the pipeline. Typically, a jack and bore technique is used to install the pipeline under these transportation features. This method involves the excavation of pits on either side of the transportation feature and the placement of a bore machine within one of the pits. This device would bore under the road to install the pipeline segment. Once the bore has reached the other pit, the pipeline segment would be tied in with the pipeline installed on the other side.

Excavation in watercourses would be scheduled so that the trenches are cut just prior to pipe installation operations, and flow would be maintained at all trench and water crossings. Where fluming or other similar measures are used, the crossing would be designed to pass high flows and prevent excessive scouring. In addition, trenching across waterbodies will be conducted in accordance with applicable federal and state requirements.

Horizontal Directional Drilling

The HDD method, which is utilized to cross significant features, such as major waterbodies or roads, avoids disturbances to the feature. Use of HDD is limited and is dependent on the crossing length, burial depth, subsurface conditions, sediment composition, bank conditions, and access. This method requires large additional temporary workspaces for drilling equipment and for pipeline assembly.

HDD consists of drilling a tunnel under the significant feature with multiple passes. The first pass (coming from the "drill side") of the drill is usually one-half the diameter of the pipe. During this first pass, the hole is filled with bentonite drilling mud in order to avoid a collapse or cave-in of the hole. Once this first drill has reached the opposite side of the feature, the original drill head is removed and a larger diameter drill head is installed. One or more reaming passes through the hole, with drill heads of increasing diameter, are performed until the hole is large enough for the pipeline segment to be pulled back through it. The pipeline segment would be assembled on the opposite side, or "laydown side", and after the final ream pass is completed the pipeline segment would be pulled back through the tunnel to complete the HDD crossing. Figure 9.4-2 provides a typical illustration of a HDD crossing.

HDD crossings for the Project's Preferred Corridor are preliminarily proposed at two locations (see Appendix I). All proposed HDD crossings are subject to verification based on engineering and geologic review during post-certification.

Waterbody Crossings

The Project would employ one of four major types of construction methods for waterbody crossings, as described below. Waterbodies expected to be crossed using HDD are detailed in the HDD Contingency Plan (Appendix I). Other waterbody crossings are expected to be wet crossings, however final construction techniques will be selected post-certification based on site-specific information. The four major types of construction methods are:

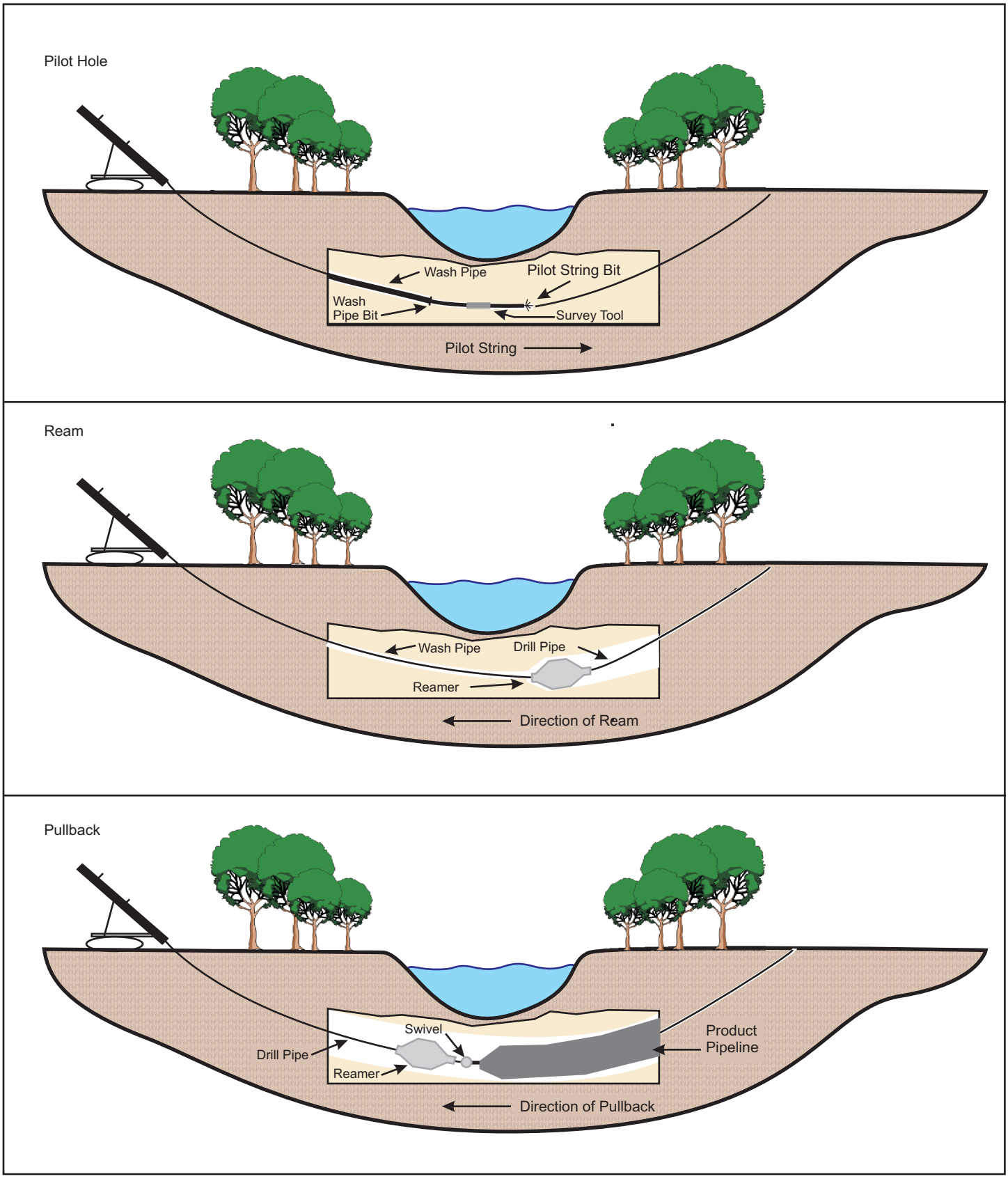
- The open-cut method, which is a wet-crossing method; or
- Three dry-crossing methods:
  - Flume pipe,
  - Dam-and-pump, and
  - HDD.

In some cases, a temporary floating or flume bridge may be used on many of the larger perennial streams to provide equipment access. Specific techniques are described below.

Wet Crossings

Open-Cut Method. The open-cut method would be used for almost all waterbody crossings. This construction method involves installing the pipeline directly in the water. Depending on waterbody size, the trench would be excavated with land-based, amphibious, or marine-based equipment. After placement of the pipe in the trench, it would be buried at least 3 feet deep.

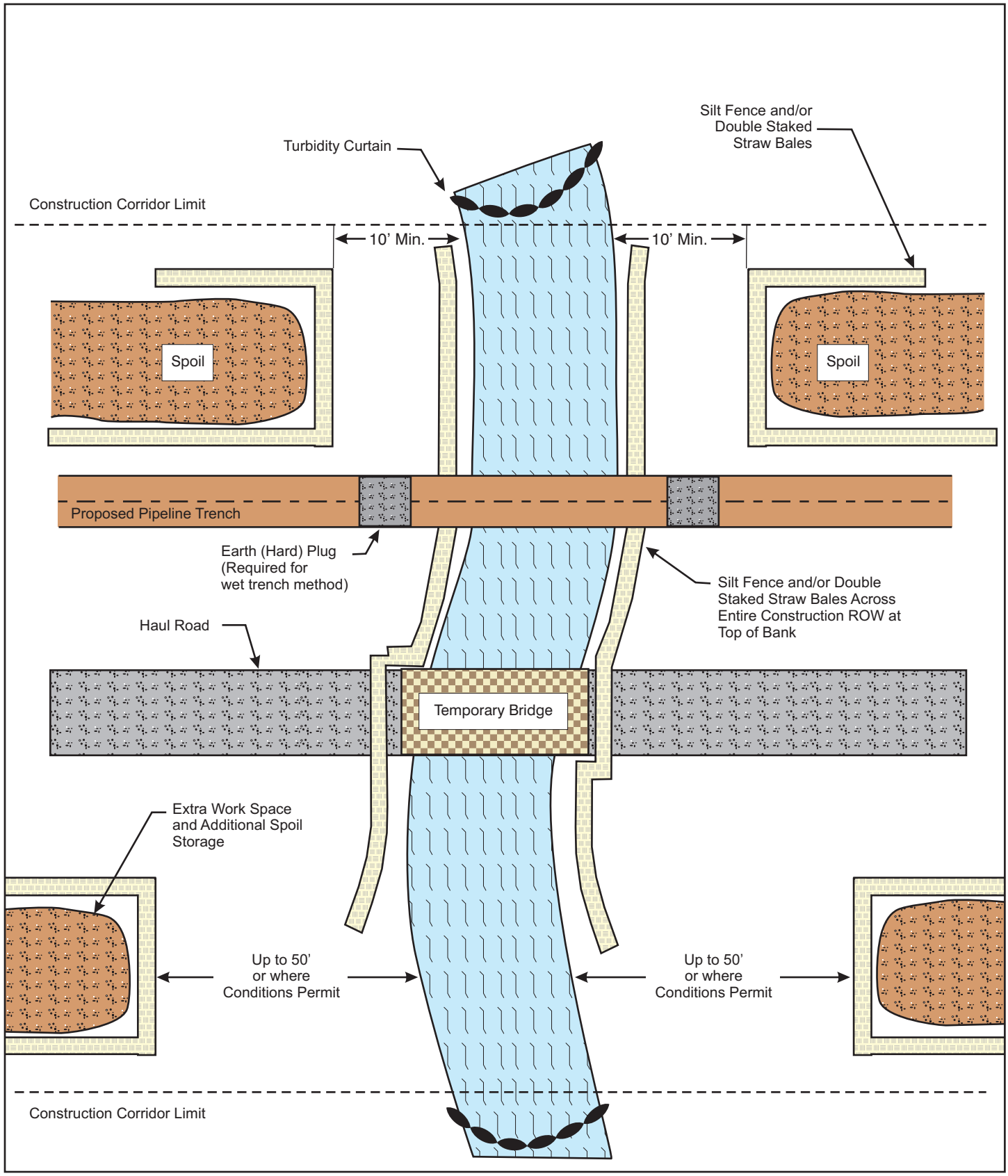
Spoils would be placed upland from the waterbody bank edge. BMPs such as silt fence and/or straw bales would be installed to minimize the potential for sediment to flow off the construction ROW or back into the waterbody. Once the pipeline is installed, the trench would be backfilled. Based on field conditions, trench plugs may be placed on either side of the crossing so that the waterbody does not divert into the upland trench and to keep accumulated water in the upland trench from flowing into the waterbody. Figure 9.4-3 provides a typical illustration of an open-cut waterbody crossing.



SOURCE: Willbros and Natural Resource Group, 2008

Figure 9.4-2
Dry Crossing: Typical Horizontal Directional Drill (HDD) Method
Martin Plant To RBEC Lateral Project

July 6, 2009



SOURCE: Willbros and Natural Resource Group, 2008/Edited by E & E, 2012

Figure 9.4-3
Wet Crossing: Typical Open Cut Method
Martin Plant To RBEC Lateral Project

February 20, 2012

Dry Crossings

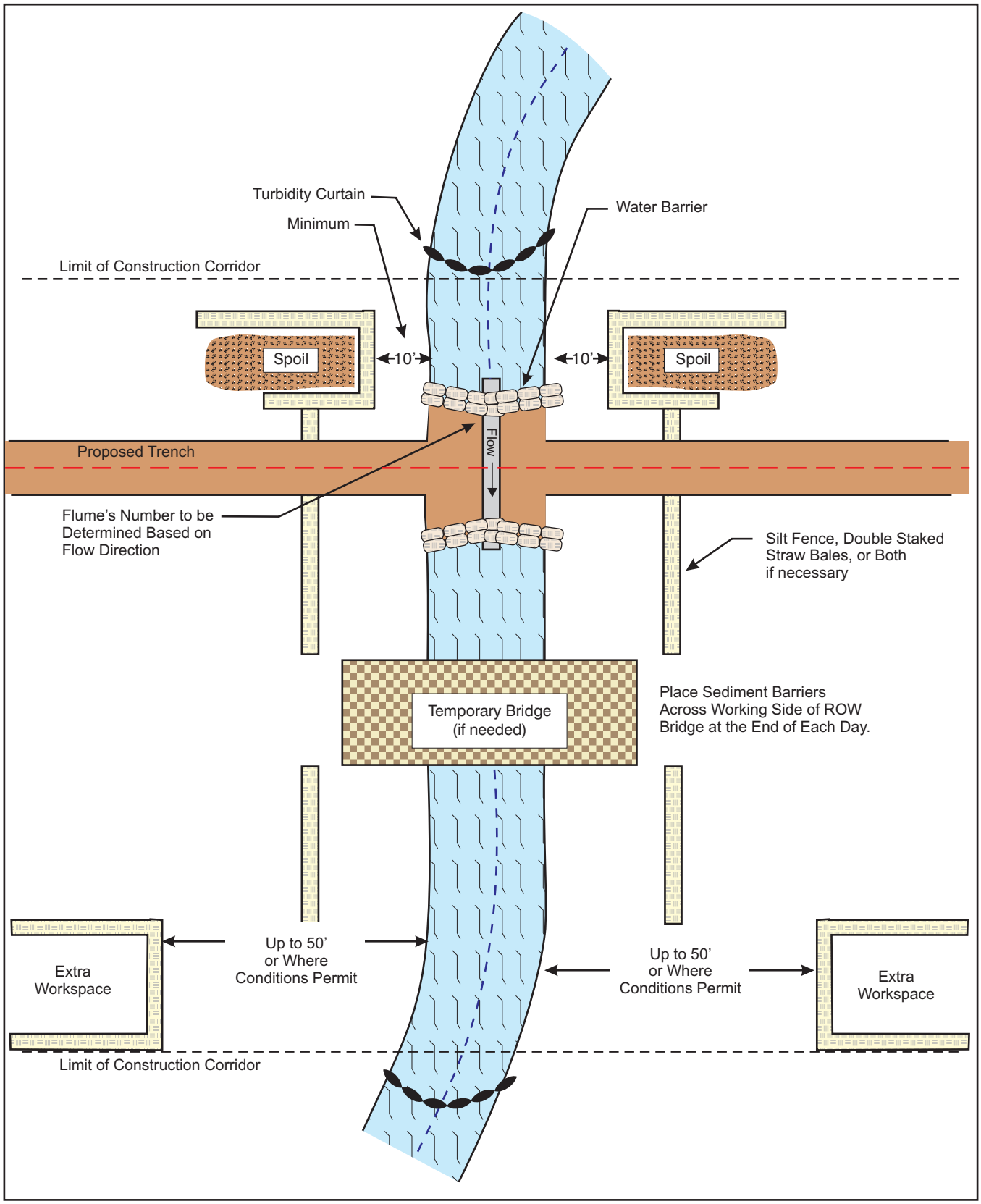
Dry crossing methods are anticipated to be used on a limited basis. Dry trench crossing methods may be used for waterbodies up to 30 feet in width or greater where turbidity associated with construction activities may potentially pose a significant problem (i.e., waterbodies with naturally low turbidity, fine-grained substrate, and significant downstream biological resources). Three types of dry crossing methods are described below.

Flume-Pipe Crossing. The flume-pipe crossing method may be used for minor waterbodies. Prior to excavation, a flume pipe(s) of sufficient size would be placed into the waterbody across the entire crossing. Dams would then be erected at the upstream and downstream portions of the flume to divert the water through the flume. Any water left in the crossing would be pumped out to the downstream side. Once the water has been diverted and the crossing is dry, a land-based backhoe or similar type of equipment would be used to excavate a trench under the flume and across the waterbody. The excavated material would be temporarily stored and then used to backfill the trench once the pipeline segment has been placed. The flume pipes and associated dams would be removed once the pipeline segment is installed. Restoration of the waterbody crossing would then be completed.

This method is usually limited to waterbodies with flows (including anticipated flood stages) that can be transported by a maximum of three 36-inch-diameter flume pipes (approximately 40 cubic feet per second or less) and in waterbodies that are relatively free of large rocks and bedrock at the trenchline. This method is not suitable for larger crossings, high flow velocities, or deeper waterbodies. Figure 9.4-4 provides a typical illustration of a flume-pipe waterbody crossing.

Dam and Pump Crossing. The dam and pump method may be used for smaller waterbodies with low flows, and meandering channels. In this method, dams would be placed across the waterbody both upstream and downstream of the crossing. Water upstream of the crossing would be pumped through hoses downstream. This method is limited by the pump capacity since the pumps must convey the water flow during construction activities. Pumps would be sized to be greater than the anticipated water flow at the waterbody crossing. Intake screens would be placed to prevent entrainment of fish or other debris into the pumps.

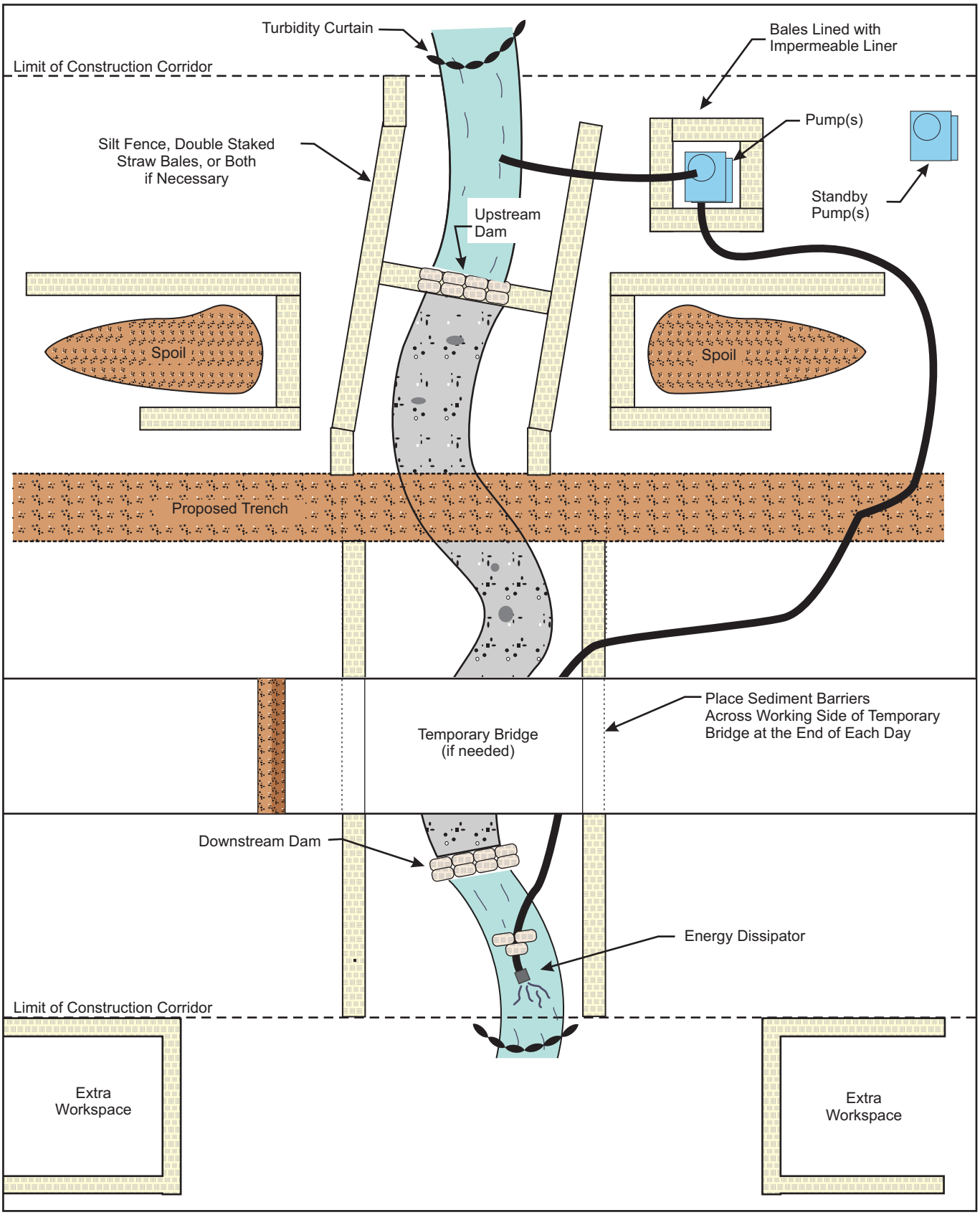
Once the water has been successfully diverted, the trench would be excavated and the pipeline installed. BMPs such as silt fence or fences would be used to contain spoil materials and prevent downstream sedimentation from upland areas. Prior to backfilling and removal of the dams, the trench would be dewatered using BMPs to prevent erosion and sedimentation. Upon installation of the pipeline, the trench would be backfilled and re-stabilized. The dams would then be removed and the waterbody allowed to return to its natural condition. Figure 9.4-5 provides a typical illustration of a dam and pump waterbody crossing.



SOURCE: Willbros and Natural Resource Group, 2008/Modified by E & E, 2012

Figure 9.4-4
Dry Crossing: Typical Flume-Pipe Method
Martin Plant To RBEC Lateral Project

February 20, 2012



SOURCE: Willbros and Natural Resource Group, 2008/Modified by E & E, 2012

Figure 9.4-5
Dry Crossing: Typical Dam and Pump Method
Martin Plant To RBEC Lateral Project

February 20, 2012

Wetland Crossings

Based on preliminary engineering design, FPL could use three different types of wetland crossing methods to minimize potential impacts (see Section 9.4.4). After assessment of each wetland to be crossed and based on field conditions, a decision would be made regarding which crossing method to implement at a given location. The following are summaries of each of the three wetland crossing methods:

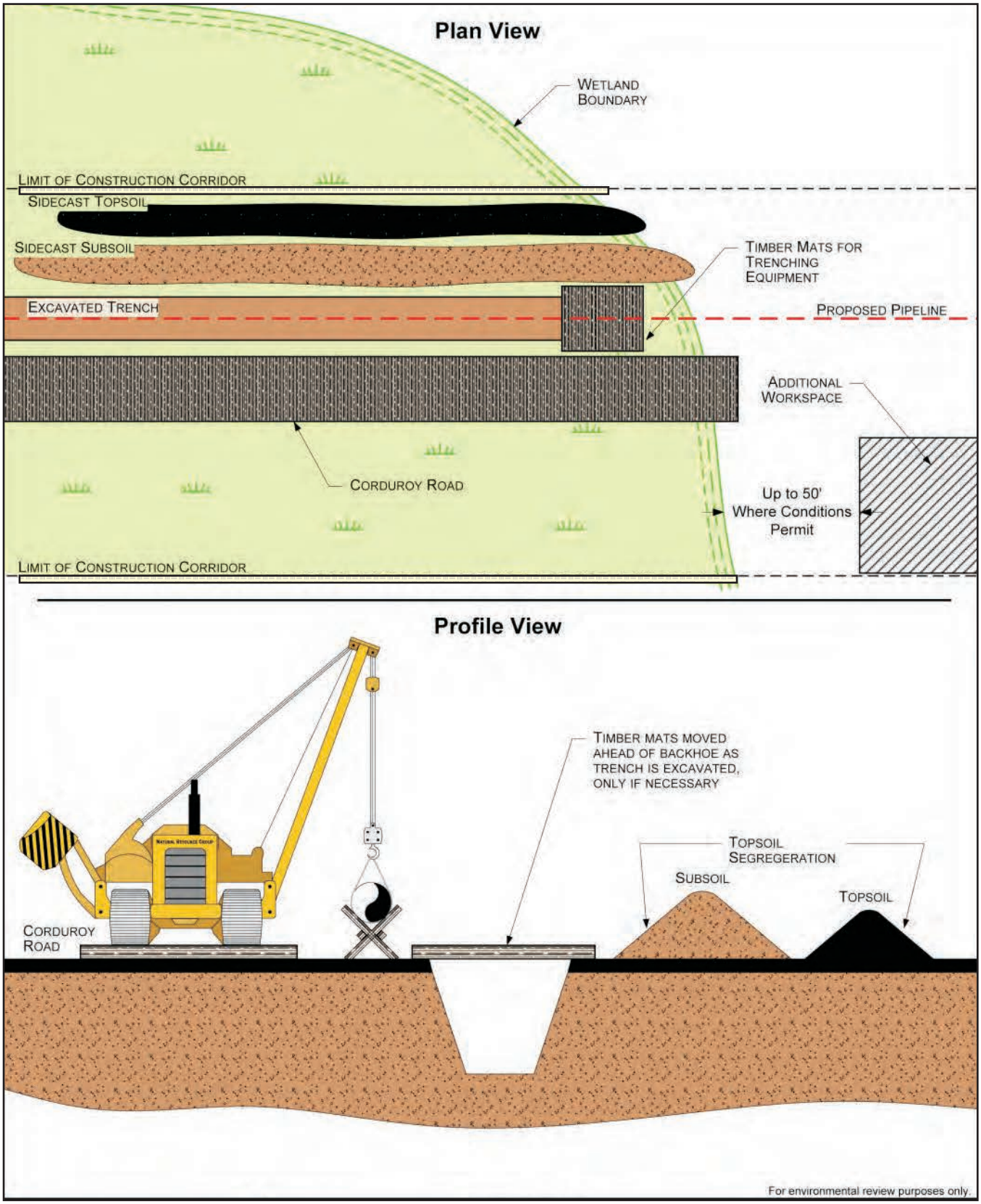
- **Crossing Method 1**: Conventional wetlands construction in unsaturated soils. This method can be used in wetlands where the soils are dry and stable enough to support construction equipment without sinking. Topsoil would be segregated and timber mats or corduroy roads would generally not be required.
- **Crossing Method 2**: Conventional wetlands construction in saturated soils. This method can be used in wetlands where soils are too wet to support pipeline construction equipment, such as permanently or semi-permanently saturated soils. Topsoil would not be segregated and timber mats or corduroy roads would be used, as necessary.
- **Crossing Method 3**: Push/pull wetlands construction. This method would involve trenching within a saturated wetland and floating the pipeline segment using floats within the inundated trench. The floating pipeline segment would then be pushed or pulled into place for installation. This method can be used in wetlands where standing water is present at the time of construction. Topsoil would not be segregated and timber mats or corduroy roads would be used, as necessary.

The excavated materials would be used to backfill the trench, restoring sediment horizons, where practicable. To maintain flow patterns within the wetland, any excess soil would be removed from the wetland to prevent obstructing the water flow or altering the wetland hydrology. In general, excess soil material is not anticipated once cleanup and restoration are completed. Figure 9.4-6 provides a typical illustration of a wetland crossing.

Cleanup would include removal of any construction work pads. If they are used, log riprap and/or work floats would be removed from the ROW. Natural topographic and hydrologic conditions would be restored, to the extent practicable.

9.4.1.1.13 Construction Plans

Several plans will be developed or revised post-certification; these include but are not limited to the following: HDD Contingency Plan (Appendix K); FPL's BMPs (Appendix L); Invasive Species Management Plan; Protected Species Specific Plans (if necessary); and Spill Prevention, Control, and Countermeasures (SPCC) Plan. These plans will be developed or revised in accordance with the conditions of certification, after a final ROW has been identified. These detailed plans will be used by FPL to minimize impacts associated with construction.



SOURCE: Willbros and Natural Resource Group, 2008/Modified by E & E, 2012

Figure 9.4-6
Typical Wetland Construction Method
Martin Plant To RBEC Lateral Project

February 20, 2012

9.4.1.2 Accessways

Access to the work sites off SR 710 would be necessary. Temporary accessways from SR 710 to the work sites may be constructed by installing aprons off the edge of the road at designated intervals. In addition, gravel or other compacted material would be installed from the apron at the edge of the road to the pipeline work site. Traffic safety measures would be provided at roadway access points as required by the authority having jurisdiction over the roadway.

The temporary accessways would be short in length, normally less than 100 feet, and approximately 25 feet wide. Existing roads would be used for access and construction where available and feasible. Improvements to existing accessways may be made as necessary. Once Project construction is complete, temporary accessways constructed specifically for the Project would be removed and the area would be allowed to revert to pre-construction conditions, to the extent practicable.

Permanent accessways may be constructed as necessary. They would be constructed to provide all-weather access, which would be above expected seasonal high water levels. Permanent accessways would be approximately 15 feet wide and constructed to efficiently provide access to the pipeline ROW while minimizing environmental impacts. If needed, these accessways would be constructed within the certified corridor. Public accessibility to accessways would be determined based on agreements between FPL and landowners. Any impacts associated with accessways will be mitigated in accordance with applicable regulations.

9.4.1.3 Temporary Pipe Storage Yards and Construction Wareyards

Construction wareyards and pipe storage yards would be used by FPL construction personnel, as well as FPL's contractor, to stage equipment and materials and for temporary trailers used for jobsite office space. FPL will locate pipe storage yards in upland areas to the greatest extent possible.

Pipe would have to be temporarily stored until the ROW has been prepared. The sites would be prepared to allow stringing trucks to pull in and unload/pick up pipe. Generally, the sites would consist of commercial, agricultural, or industrial-use sites with ready access to stockpile materials and would provide equipment storage and contractor parking. Additionally, the pipe may be coated with concrete at the pipe storage yard. This process would include constructing sheet metal forms around the pipe into which the concrete would be poured and allowed to cure. This would occur within a 3 to 5 acre site at the pipe storage yard.

After construction, the yards would be allowed to revert to natural conditions to the extent practicable. Any temporary impacts associated with pipe storage yards and construction wareyards will be mitigated in accordance with applicable regulations.

FPL has preliminarily planned to utilize cleared areas on FPL's Martin Plant property as a pipe storage yard and utilize a developed parcel near MP 19.2 as a construction wareyard.

9.4.2 Environmental Resource Permit and Impacts to Affected Waters and Wetlands

This section describes the potential impacts to water and wetland resources associated with construction of the Project. The associated Environmental Resource Permit Application is included in Appendix G.

9.4.2.1 Surface Water and Groundwater Resources

This section describes anticipated potential impacts to surface and groundwater water resources associated with the Project. Section 9.3.6.2 describes the existing resources identified within the Preferred Corridor. Additionally, FPL has developed BMPs (Appendix L) in order to minimize or mitigate impacts to these resources. A Project-specific SPCC Plan will be developed and implemented during construction by FPL to prevent and reduce inadvertent spills of petroleum products from construction equipment.

Construction Impacts to Surface Water and Groundwater Resources

Waterbody Crossings

The extent of potential construction impacts to water resources depends on various factors: waterbody type, waterbody bank and sediment bed composition/grain-size distribution, and the method of construction. Features, such as waterbody width, bottom composition, and special waterbody classifications will be considered when determining the appropriate construction crossing method. The subsections below provide detailed descriptions of each crossing method.

The Project would use one of four major types of construction methods for crossings of waterbodies: one wet-crossing method which is the open-cut method, and three dry-crossing methods that include dam and pump, flume pipe, and HDD. Specific crossing techniques were previously described in detail in Section 9.4.1.1.

Upon final engineering design, the crossing methods for each waterbody crossings will be selected and provided post-certification. Site-specific drawings of each crossing will be provided with the post-certification submittal. Only one major waterbody, the St. Lucie Canal, would be crossed by the Project. FPL anticipates that this waterbody would be crossed utilizing HDD. Additionally, a variance from state turbidity requirements for the period of construction is expected to be required for all waterbodies that are not crossed via an HDD. The variance request is described in Section 9.3.7.

When crossing waterbodies during construction, temporary impacts to these waterbodies are anticipated. These impacts would be from increased turbidity during the crossing and disturbance to the waterbody beds and banks. Sediment barriers and erosion control structures would be used to minimize impacts from increased turbidity. This use of BMPs will keep impacts localized to the area of the crossing and minimize turbidity plumes from moving away for the crossing. As described in Section 9.3.7.1, FPL is requesting a variance to the state turbidity requirements for the period of construction. In the case of the use of an HDD to cross a waterbody, no impacts to the waterbody are anticipated.

Trench Dewatering

During construction activities, the open pipeline trench would, on occasion, accumulate water, either from surface water, groundwater intrusion, or precipitation. The trench may need to be dewatered periodically to prevent sedimentation of perennial waterbodies or rivers and to allow for proper construction. Generally, a pump would be placed alongside the trench with an intake hose suspended into the water-filled trench. In areas with a very high water table and soils prone to sloughing, a well point system may be installed. Water may be pumped from the trench into vegetated areas, to the extent practicable, to prevent trench water from flowing directly into a waterbody. Dewatering structures are anticipated to be placed in some wetland areas. These areas are bounded by the CSX Rail Line ROW and SR 710 on either side of the construction ROW. Temporary sediment barriers would be placed at waterbody crossings in order to minimize erosion or the flow of trench water from flowing into a waterbody and leaving the construction ROW. If adequately vegetated areas are too far removed from the dewatering site, the trench water may be discharged into straw bale or sediment fence containment areas, sediment bags, or other sediment removal devices.

During construction, temporary impacts to waterbody water quality from trench dewatering are anticipated. These impacts would be localized to the construction ROW crossing and would end once the Project has been completed and dewatering operations are discontinued. FPL will implement the BMPs in Appendix L in order to minimize or mitigate these impacts.

Hydrostatic Testing and HDD Operation Water

Temporary minor impacts to waterbody flow are anticipated during withdrawal and discharge of water for use in hydrostatic testing and water needed for HDD operations.

Source points would be selected during the post-certification, final engineering design phase of the Project. At source points, screens would be placed at the intake hose to prevent entrainment of fish. Hydrostatic test manifolds would be located outside wetlands and riparian areas, to the extent practicable.

Hydrostatic test water discharge rates would be controlled with energy dissipation devices. Test waters may be discharged into a hay bale or silt fence containment structure or similar device to reduce erosion and sedimentation of adjacent waterbodies and wetlands, or into the appropriate receiving waterbody.

9.4.2.2 Wetlands

This section describes potential impacts to wetland resources associated with the Project. Section 9.3.6.2 describes the existing resources identified within the Preferred Corridor. Additionally, FPL has developed BMPs (Appendix L) to minimize or mitigate impacts to these resources. FPL would develop and implement a Project-specific SPCC Plan during construction to prevent and reduce inadvertent spills of petroleum products from construction equipment.

9.4.2.2.1 Construction and Operation Impacts to Wetlands

Overall, potential construction impacts to emergent wetlands would be minor and temporary as impacted wetland areas would be allowed to naturally revert to pre-existing hydrologic conditions. . As stated in Section 9.3.6.2.7, the vast majority (65.1%) of wetlands delineated in the Preferred Corridor are herbaceous wetlands, which are often associated with linear roadside swales in the Preferred Corridor. Forested/shrub wetlands dominated by exotic species account for 90.2% of the forested wetlands and 31.8% of the total wetland coverage. Only 3.2% of the wetlands within the Preferred Corridor are forested/shrub communities with a predominantly desirable vegetation community. Additionally, the UMAM scores for the majority of the wetlands are low to medium due to surrounding development and traffic, altered hydroperiods, water quality impairment (e.g. high algae or duckweed content, high turbidity, oil sheen, etc.), prevalence of weedy and invasive plant species, relatively low plant species diversity, impacts to structural complexity, rutting by large wild hog populations, and limited wildlife support.

Long-term impacts would occur only in forested wetlands that are within the pipeline's permanent ROW as they would not be allowed to reestablish as forested areas. Instead they would become emergent or scrub/shrub wetlands. It is anticipated that four or five mainline valves may need to be placed in wetlands and would be installed in accordance with the USDOT pipeline safety guidelines. Each of these would require the construction of a 20-foot by 40-foot graveled pad and fence. Additionally, upon final placement of these mainline valves, accessways to sites may need to be constructed. Accessways would consist of a 15-foot-wide gravel area. To the extent that these mainline valves and accessways are within wetlands, the associated permanent fill would cause a permanent impact and loss of wetland at that location. It is anticipated that these impacts would be 0.15 acres or less.

The Project will be constructed in accordance with all applicable state nonprocedural standards and conditions of certification. The wetlands within the Preferred Corridor would be temporarily impacted by construction activities. After construction, these areas would be restored to pre-existing

contours and wetland vegetation would be allowed to return. An approximate 50-foot wide permanent ROW over the pipeline would be maintained clear of woody vegetation for the life of the Project.

Potential impacts to wetlands from operation of the Project would be limited to those resulting from periodic vegetation maintenance within the permanent ROW. Under 49 CFR Part 192, vegetative clearing and maintenance is required to the extent necessary to ensure unimpeded access to a pipeline. Thus, wetlands that are within the permanent ROW would be regularly maintained to prevent the establishment of deeply rooted vegetation, but could remain as herbaceous wetlands.

FPL has utilized preliminary engineering designs to estimate the extent of wetlands that would be impacted by the Project. Table 9.4-1 details these estimated acreages. These impact acreages were based upon conservative estimates utilizing a preliminary engineering design consisting of an approximate 100-foot wide construction ROW.FPL will provide the actual wetland impact acreages during post-certification based on final engineering design. It is anticipated that the impact acreages would decrease once the final engineering design is completed.

Of the 239.52 acres of wetlands that are anticipated to be impacted by the Project, 2.32 acres (0.9%) consists of native forested areas. Of these 2.32 acres, 0.51 acre (0.2%) would be within the permanent maintained ROW. The vast majority of these impacts would be to either herbaceous wetlands (165.39 acres or 69.1%) which would only have temporary impacts and would revert to pre-existing conditions shortly after the construction is complete or wetlands dominated by noxious forested species (71.66 acres or 29.1%). Wetlands that are dominated by forested noxious species within the permanent ROW (45.49 acres) would likely have long term beneficial impacts as these wetlands would be maintained in an herbaceous state that would discourage the growth of these noxious woody species.

Table 9.4-1
Estimated Acreage of Wetland Impacts by FLUCFCS Type

FLUCFCS	Temporary Impacts [(a)]	Permanent Impacts
619 – *Exotic Wetland Hardwoods*	71.66	0.03
Total Noxious Forested Wetland	**71.66**	**0.03**
621 – *Cypress*	0.32	0.00
625 – *Hydric Pine Flatwoods*	0.39	0.00
630 – *Wetland Forested Mixed*	1.61	0.00
Total Native Forested Wetland	**2.32**	**0.00**
631 – *Wetland Scrub*	0.18	0.00
641 – *Freshwater Marshes*	165.21	0.12
Total Herbaceous and Scrub Wetlands	**165.39**	**0.12**
Totals	**239.37**	**0.15**

Note:
(a) Areas provided in acres

9.4.2.2.2 Potential Mitigation Measures for Wetlands Impacts

FPL has developed BMPs (Appendix L) that address mitigation measures for activities that are anticipated to occur in wetlands. Additionally, once final engineering is complete, FPL will provide compensatory mitigation for unavoidable permanent wetland impacts.

Compensatory mitigation to offset permanent wetland impacts would be offered based on functional value. This type of mitigation can occur at an offsite mitigation area or on site. FPL has identified several offsite mitigation banks within varying watersheds that have been approved for use by the FDEP and the USACE and would accommodate the needs of the Project. Mitigation banks that have adequate, available credits are located within service areas that would be crossed by the Preferred Corridor.

Furthermore, Chapter 62-342.470, F.A.C., indicates that linear projects such as pipelines could acquire compensatory mitigation credits at mitigation banks that do not serve areas where the wetland impact is located. However, some portion of the Project would need to be within the mitigation bank(s) service area. Subsequently, FPL could acquire compensatory mitigation credits from a single mitigation bank, provided the proper credits are available for purchase.

9.4.2.2.3 Cumulative Impacts to Wetlands

FPL does not anticipate cumulative impacts to wetlands resulting from the construction and operation of the Project. Section 373.414(8), F.S., requires the consideration of cumulative impacts of any proposed activity which is subject to the nonprocedural standards of Part IV of Chapter 373, F.S. This requirement is implemented through the Environmental Resource Permit standards adopted by each water management district. This Petition to Modify the RBEC Certification, including post-certification submittals, serves as that authorization in lieu of the Environmental Resource Permit. The Project would be located within the geographic boundaries of one of Florida's five water management districts, the SFWMD. The SFWMD has adopted rules for applicants with regard to cumulative impacts. The cumulative impact rules adopted are provided as follows:

> *An applicant must provide reasonable assurances that a regulated activity will not cause unacceptable cumulative impacts upon wetlands and other surface waters within the same drainage basin as the regulated activity for which a permit is sought. The potential impact on wetlands and other surface waters shall be reviewed by evaluating the impacts to water quality and by evaluating the impacts to the functions performed by wetlands and other surface waters. If an applicant proposes to mitigate these adverse impacts within the same drainage basin as the impacts, and if the mitigation fully offsets these impacts, then the regulated activity will be deemed to have no unacceptable cumulative impacts upon wetlands and other surface waters, and consequently, the cumulative impact analysis requirement will be satisfied.*
>
> *When adverse impacts to water quality or adverse impacts to the functions of wetlands and other surface waters, as referenced in the paragraph above, are not fully offset within the same drainage basin as the impacts, then an applicant must provide reasonable assurance that the proposed system, when considered with the following activities, will not result in unacceptable cumulative impacts to water quality or the functions of wetlands and other surface waters, within the same drainage basin:*
>
> *(a) Projects that are existing or activities regulated under Part IV, Chapter 373, F.S., which are under construction or projects for which permits or determinations pursuant to Sections 373.421, F.S. or 403.914, F.S. have been sought.*
>
> *(b) Activities that are under review, approved, or vested pursuant to Section 380.06, F.S., or other activities regulated under Part IV, Chapter 373, F.S., which may reasonably be expected to be located within wetlands or other surface waters, in the same drainage basin, based upon the comprehensive plans, adopted pursuant to Chapter 163 F.S., of the local governments having jurisdiction over the activities, or applicable land use restrictions and regulations.*

> *Only those activities listed in paragraphs (a) and (b) which have similar types of impacts (adverse effects) to those that will be caused by the proposed system will be considered.*

The cumulative impact evaluation is conducted using an assumption that reasonably expected future applications with like impacts will be sought, thus necessitating equitable distribution of acceptable impacts among future applications.

Cumulative impacts would be considered unacceptable when the proposed system, considered in conjunction with the past, present, and future activities as described above would result in a violation of state water quality standards, or significant, adverse impacts to functions of wetlands or other surface waters, within the same drainage basin when considering the basin as a whole. This analysis asks the question whether the proposed system, considered in conjunction with past, present and future activities, would cause a cumulative detrimental effect regarding the above-referenced water quality or wetland and other surface water functions in the basin.

Applicants may propose measures such as preservation to prevent cumulative impacts. If unacceptable cumulative impacts are expected to occur, the applicant may propose mitigation measures. As FPL anticipates the majority of the impacts to be temporary with very little loss of wetlands as shown in Table 9.4-1, it is anticipated that sufficient compensatory mitigation can be purchased. Therefore as stated above, FPL does not anticipate cumulative impacts to wetlands resulting from the construction and operation of the Project.

9.4.3 Solid Wastes and Hazardous Materials

This section provides a general description of the regulatory framework and the solid and hazardous wastes that would be generated during ROW preparation, pipeline construction, operation and maintenance, and the methods that would be used for disposal of the wastes. A Project-specific Solid and Hazardous Waste Management Plan, to be developed by FPL post-certification, will specify procedures for the storage and disposal of solid and hazardous wastes that would be generated during construction of the pipeline facilities in accordance with applicable federal state and local regulations. This Solid and Hazardous Waste Management Plan will ensure that its facilities, personnel, and FPL's contractors comply with federal, state, and local laws regulating the use, storage, transport, and disposal of solid and hazardous wastes and adhere to required emergency response and cleanup procedures in the event of a spill of oil or hazardous substance.

9.4.3.1 Regulatory Framework

This section provides a generalized description of the regulatory framework for solid and hazardous waste covering activities typically encountered during construction and operation of natural gas pipelines. These activities include: handling and management of solid and hazardous materials, minimizing potential discharges of fuel or other hazardous substances, and protecting areas that are environmentally sensitive.

Major legislation pertaining to waste materials includes the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), the Clean Air Act, and the Clean Water Act. Other federal, state, and local regulations also govern the use, storage, transport, production, and disposal of hazardous materials. Some of the key requirements are defined in the following regulations:

- 29 CFR 1900-1910, Occupational Safety and Health Act;
- 40 CFR 100-149, 400-469, Clean Water Act;
- 40 CFR 141-143, Safe Drinking Water Act;

- 40 CFR 50-99, Clean Air Act;
- 40 CFR 702-799, Toxic Substances Control Act;
- 40 CFR 300-306, CERCLA/Superfund Amendments and Reauthorization Act;
- 40 CFR 260-280, RCRA/Hazardous and Solid Waste (Subchapter I);
- 49 CFR 171-179, Hazardous Materials Transportation Act (USDOT);
- Chapter 62-710, F.A.C., Used Oil Management;
- Chapter 62-730, F.A.C., Hazardous Waste; and,
- Chapter 62-737, F.A.C., Management of Spent Mercury-Containing Lamps and Devices Destined for Recycling.

9.4.3.2 Solid Waste Management

Solid wastes generated would typically consist of unsuitable soils, asphalt, vegetation, used oils, aerosol cans, universal waste, and construction and demolition debris. During construction, solid wastes that may be generated include stripped vegetation, scrap lumber, concrete, metal, plastic, and general trash from the construction crews and office trash and garbage from office trailers. All solid waste will be gathered and disposed of properly in accordance with state and local regulations. It is possible that some local governments may allow for burning of stripped vegetation. In the event that burning becomes a disposal option for stripped vegetation for some areas of the Preferred Corridor, appropriate officials would be contacted to assure compliance with nonprocedural standards for such activities.

9.4.3.3 Oil and Hazardous Materials Management

Oil and hazardous materials that may be used during construction of the pipeline facilities include petroleum products such as diesel fuel, gasoline, hydraulic fluid, lubricating oils and greases, solvents, degreasers, antifreeze, herbicides, pesticides, and other substances. The specific types of substances to be used will be described in the Solid and Hazardous Waste Management Plan and applicable material safety data sheets will be included. All hazardous wastes that may be generated during construction of the pipeline facilities will be stored, transported, and disposed of in accordance with applicable federal, state, and local regulations.

9.4.3.3.1 Disposal of Oil, Hazardous, and Universal Wastes

Oil, hazardous, and universal wastes will be collected regularly and disposed of in accordance with all applicable laws and practices. Oil, hazardous, special and universal wastes typically include used oil, used oil filters, used gasoline containers, spent batteries, and other items. Every effort will be made to minimize the production of hazardous waste during the Project including, but not limited to, minimizing the amount of hazardous materials needed for the Project; using alternative non-hazardous substances when available; recycling usable materials such as oils, paints, and batteries to the maximum extent; and filtering and reusing solvents and thinners whenever possible.

9.4.3.3.2 Contaminated Containers

FPL will comply with all applicable regulations regarding contaminated containers. Containers that once held hazardous substances as products or that held hazardous wastes will be considered as potential hazardous wastes due to the residues of hazardous contents that may remain. Regulations specify an essentially empty container and certain handling requirements for the empty container for the container to be handled as a non-hazardous waste:

- The containers must be empty, which means as much of the contents as possible has been removed so that none would pour out in any orientation.

- If the empty containers are less than 5 gallons, they may be disposed of as a nonhazardous solid waste or scrapped.
- If the empty containers are greater than 5 gallons, they must be handled in the following manner: (a) returned to the vendor for re-use; (b) sent to a drum recycler for reconditioning; or (c) used or recycled on site.
- All these actions must occur within one year of the container being emptied.

9.4.3.3.3 Waste Oil Filters

Used metal-canister oil filters can be managed as nonhazardous wastes as long as they are thoroughly drained of "free flowing" oil (oil exiting drop-by-drop is not considered "free flowing"); the filters are accumulated, stored, and transferred in a closed, rainproof container; and the filters are transferred for purposes of recycling.

9.4.3.3.4 Used Lubricating Oil

FPL will comply with all applicable regulations regarding used lubricating oils. Waste lubrication oil is considered a regulated "Used Oil" as follows:

- Any oil that has been refined from crude oil and has been used, and as a result of use, has been contaminated with physical or chemical impurities;
- Any oil that has been refined from crude oil and, as a consequence of extended storage, spillage, or contamination with non-hazardous impurities such as dirt, rags, and water, is no longer useful to the original purchaser and cannot be recycled; and/or
- Spent lubricating fluids that have been removed from a bus, truck, automobile, or heavy equipment.

9.4.3.3.5 Wetlands and Waterbody Crossings, Horizontal Drilling Operations

Refer to Appendices I and L for FPL's HDD Contingency Plan and BMPs for the Project.

9.4.3.3.6 Contaminated Soils

No areas of contaminated groundwater or soils are known to exist within the Preferred Corridor. If during construction, contaminated groundwater or soils are found, FDEP will be notified of the discovery. A plan will be developed to address the situation in coordination with FDEP including delineation of the contaminated soils, testing and disposal, if necessary. Any groundwater that has to be dewatered would be treated and disposed of properly.

9.4.3.3.7 Notification and Documentation Procedures

Response to spills that may occur during Project construction would conform to applicable federal, state, and local laws and the protocols outlined in the Solid and Hazardous Waste Management Plan to be developed post-certification. Notification would be in accordance with applicable requirements.

9.4.4 Impacts to Vegetation, Wildlife, and Aquatic Life

This section describes the potential impacts to the vegetation, wildlife, and aquatic life resources associated with the construction, operation, and maintenance of the Project, as well as potential mitigation measures that may be used to offset or reduce potential impacts. These resources include vegetative land cover, invasive plant species, protected plant species, threatened and endangered species, migratory birds, and fishery resources.

9.4.4.1 Land Cover

Construction of the pipeline would result in the temporary disturbance of natural communities and wildlife within the construction ROW. Following construction, the entire ROW would be allowed to revert to natural vegetative conditions and the permanent ROW would be maintained throughout the life of the Project in herbaceous and other low-growing vegetation, clear of large shrubs and trees. Temporary work space utilized during construction would be allowed to revert to pre-construction conditions.

Based on data gathered during the field survey, 77.8% of the Preferred Corridor is vegetated. The non-vegetated areas within the corridor include open water (i.e., rivers, streams, lakes, and ponds) or non-vegetated land (i.e., highway, road, and railroad ROW); and commercial, industrial, or residential land uses. Vegetation types crossed by the Preferred Corridor are illustrated on figures provided in Appendix K and are summarized in Section 9.3.6.1.

As illustrated in Section 9.3.6.1 and described in Table 9.3-9, 19 vegetative habitats exist within the Preferred Corridor. Of these, 13 are forested habitats, including upland coniferous forest; pine flatwoods; Brazilian pepper; oak-pine-hickory; temperate hardwood; sand live oak; hardwood-coniferous mixed; upland scrub, pine, and hardwoods; Australian pine; exotic wetland hardwoods; cypress; hydric pine flatwoods; and wetland forested mixed. The remaining six are non-forested habitats and agricultural lands that include improved pasture, herbaceous dry prairie, other shrub and brush, mixed rangeland, wetland scrub, and freshwater wetlands.

The entire width of the Preferred Corridor would not be directly impacted by the Project. Generally up to 125-foot wide ROW would be required for construction. The location of the ROW within the Project Preferred Corridor will not be finalized until final engineering design is complete. Forested areas will be avoided during siting of the construction and permanent ROW within the corridor, to the extent practicable.

The direct impacts of the Project on vegetative habitats would be the clearing and removal of vegetation that would occur within the construction ROW. Temporary workspaces also would be cleared during construction activities. The extent of potential impacts would be dependent on the type of habitat impacted, the size of the area cleared, the time required for vegetation to reestablish, and subsequent maintenance practices within the cleared areas. While forested habitats would be avoided to the greatest extent practicable, potential impacts to these communities could be long-term in small areas due to the varying recovery periods of these vegetation types. These potential impacts would involve the most significant change in appearance and habitat value, as mature trees would be replaced for a period of time by herbaceous plants, shrubs, or saplings. Maintenance of the permanent ROW (~50-foot wide) would prevent restoration of forested habitat to ensure the integrity of the pipeline in accordance with applicable safety regulations. Based upon preliminary engineering, the impacts to vegetative land cover are provided in Table 9.4-2. As final engineering has not been completed, these are estimated impacts and will likely be reduced once the final design is complete.

Of the 428.84 acres of vegetated lands (both upland and wetlands) that are anticipated to be impacted by the Project, 34.47 acres (8.1%) consists of native forested areas. Of these 34.47 acres, 8.54 acres (2.0%) would be within the permanent ROW and not be allowed to revert to native forested wetlands. The remaining lands would be anticipated to incur temporary impacts due to construction.

Table 9.4-2
Estimated Acreage of Land Cover Impacts by FLUCFCS Type

FLUFCCS	Temporary Impacts [(a)]	Permanent Impacts[(b)]
140 – *Commercial and Services*	1.26	0.00
310 – *Herbaceous (Dry Prairie)*	33.34	0.00
330 – *Mixed Rangeland*	24.19	0.04
410 – *Upland Coniferous Forests*	1.58	0.12
422 – *Brazilian Pepper*	11.72	2.88
423 – *Oak-Pine-Hickory*	0.20	0.36
425 – *Temperate Hardwood*	3.51	1.13
432 – *Sand Live Oak*	1.09	0.02
434 – *Hardwood - Conifer Mixed*	9.25	6.13
436 – *Upland Scrub, Pine and Hardwoods*	8.49	0.28
437/422 – *Australian Pine/Brazilian Pepper*	24.74	3.91
511/619 – *Natural Streams and Waterways/ Exotic Wetland Hardwoods*	0.09	2.46
619 – *Exotic Wetland Hardwoods*	26.13	49.46
621 – *Cypress*	0.06	0.26
625 – *Hydric Pine Flatwoods*	0.36	0.03
630 – *Wetland Forested Mixed*	1.39	0.22
631 – *Wetland Scrub*	0.22	0.00
641 – *Freshwater Marshes*	165.41	0.12
812 – *Railroads*	2.16	0.00
814 - *Roads and Highways*	41.46	0.00
830 - *Utilities*	0.02	0.00
830/310 - *Utilities/ Herbaceous (Dry Prairie)*	4.77	0.00
Totals	361.44	67.42[(c)]

Notes:
(a) Areas provided in acres
(b) Includes areas that would be converted from forested to herbaceous cover types
(c) Includes 58.71 acres (87% of forested cover types) of noxious species cover types

9.4.4.2 Noxious Weeds

Within the Preferred Corridor, many areas are dominated by noxious weeds or invasive vegetation such as Brazilian pepper (*Schinus terebinthifolius*), Australian pine (*Casuarina equisetifolia*), or melaleuca (*Melaleuca quinquenervia*), which are all woody species. Based on field survey results, 18.1% (180.6 acres) of the Preferred Corridor consists of areas dominated by noxious weeds. Construction activities would include the removal of exotic species within the ROW. During operations and maintenance of the Project, the permanent ROW would be maintained, thereby prohibiting these woody noxious weed species from growing.

9.4.4.3 Protected Plant Species

Protected plant species may be impacted by the Project during clearing of the ROW and during maintenance of the permanent ROW after the Project is in operation. As stated in Section 9.3.6.1.3, six protected plant species have the potential to occur within the Preferred Corridor. During field surveys, one of these species was found within the Preferred Corridor. This species is the state listed threatened pine pink orchid (*Bletia purpurea*). The state has adopted rules on plants on the threatened species list, Rule 5B-40.005 *To Harvest Plants on the Threatened Plant List*, F.A.C. is provided as follows:

(1) To willfully harvest, collect, pick, remove, injure or destroy any such plant listed as threatened growing on the private land of another or on any public land or water, a person shall obtain the written permission of the owner of the land or water or his legal representative.

(2) To transport, carry, or convey on any public road or highway or sell or offer for sale in any place threatened plants which have been collected without the written permission of the property owner or his legal representative, or in the case of public land and water the superintendent or custodian of such public land or water, is in violation of this chapter.

FPL would comply with the Rule 5B-40.005, F.A.C in that it would contact the landowner to gain permission prior to clearing of the ROW. As this species was observed occurring within a disturbed existing utility ROW it is anticipated that once the construction is completed and the ROW has been restored that the species could recolonize in the ROW through natural recruitment.

9.4.4.4 Threatened and Endangered Species

This section discusses potential impacts to threatened and endangered species, and species of special concern. Construction of the Project is anticipated to have temporary, minor impacts on protected wildlife habitat, and no long term impacts. Habitat field surveys were conducted for threatened and endangered species within the Preferred Corridor. As discussed in Section 9.3.6.3, threatened and endangered species include those identified by the USFWS and the FWC. Table 9.3-16 presented threatened and endangered species and species of special concern that have the potential to occur in the Preferred Corridor and may be impacted.

In general, disturbance of the ROW associated with construction activities would likely cause the temporary displacement of most wildlife from the immediate construction zone and adjacent areas. Most protected species are highly mobile. These species are expected to temporarily leave the area until construction equipment and workers have demobilized from the site. Construction of the Project is anticipated to have minor impacts on protected wildlife habitat, which in turn may have localized minor impacts on populations of imperiled wildlife species. As much of the ROW is within a disturbed transportation and utility ROW, it does not offer high value habitat for many threatened or endangered species. Short-term impacts would result in the direct displacement of individual species on the ROW. Short-term impacts to avian species also could result in indirect impacts resulting from failed nesting in the vicinity of the ROW. Because of the mobility of most wildlife species, and the variability of breeding seasons, the actual construction impacts can vary significantly from season to season.

Construction activities may affect protected wildlife species that use these habitats. Temporary impacts could include the temporary loss of habitat for foraging or nesting and displacement as a result of the presence of man, machinery, vehicles, and noise associated with construction. Because the ROW would be allowed to revert to natural conditions, nothing would prohibit protected wildlife species from crossing the ROW from one habitat to another or even using the ROW for foraging. The latter would likely be limited, however, to species that are not particularly dependent upon cover or protection by trees and shrubs. While there would be a permanent loss of trees and shrubs within the permanent ROW, the permanent ROW would be relatively narrow in comparison to the remaining forested uplands that would flank the ROW. Therefore, protected species that are dependent upon woody vegetation would still be able to use this vegetation on either side of the ROW.

As appropriate, protected species were grouped together where certain groups of species would have the same or similar anticipated impacts for the discussion below.

West Indian Manatee

As stated in Section 9.3.6.3.1, the West Indian manatee could occur in the St. Lucie Canal which is crossed by the Project. As the crossing of the St. Lucie Canal is anticipated to be

completed utilizing a HDD no impacts are anticipated to the manatee. Additionally FPL would comply with the USFWS's 2011 *Standard Manatee Conditions for In-Water Activities* for any in-water activities.

Raptors

Raptors include the following species: bald eagle, Florida burrowing owl, Audubon's crested caracara, southeastern American kestrel, everglades snail kite, and osprey. Preliminary surveys show that raptor species are present in the vicinity of the Preferred Corridor, however, no potentially active raptor nests exist within the Preferred Corridor. Raptors are protected by a number of regulations including the MBTA, the BGEPA, and the ESA. As raptors are wide-ranging animals, concerns with respect to pipeline construction are limited primarily to disturbance to nest sites and potential impacts to breeding, nesting, and fledging activities. FPL recognizes the sensitivity of these nesting birds and, to the extent possible, will coordinate construction activities to minimize impacts. Impacts are expected to be short-term and limited to nesting birds in the vicinity of the Project.

Indirect impacts to raptor habitat would be relatively short in duration as construction crews would be in a given area for only a short period, typically six to eight weeks. Construction would be limited to the approved ROW and designated additional temporary workspace. The ROW would be restored following construction.

Wading Birds

Wading birds include the following species: Florida sandhill crane, wood stork, roseate spoonbill, limpkin, snowy egret, little blue heron, tricolored heron, and white ibis. As stated in Section 9.3.6.3, no wading bird nests or rookeries were found in the Preferred Corridor during the field surveys that occurred from October to December 2011. The Preferred Corridor would provide foraging habitat for wading birds as much of the area consists of shallow water marshes. During construction, these areas would be disturbed and would not be available for foraging for wading birds. Once construction is complete, the ROW would be restored and these areas would once again be available for foraging so this impact would be temporary. Additionally, large areas of freshwater marsh exist adjacent to the Preferred Corridor, so wading birds could readily move to other foraging areas. Therefore, the temporary loss of foraging habitat in the Preferred Corridor would be minor.

Gopher Tortoise and Commensal Species

Gopher tortoises and commensal species may be impacted by construction activities from the loss of habitat or the inadvertent collapse of an occupied burrow. Gopher tortoises would most likely occur between approximate MPs 0.0 to 1.6.

As per the FWC guidelines, FPL would obtain a Temporary Exclusion Permit from the FWC for gopher tortoises that may exist in the Project ROW. This permit applies to situations that require the temporary exclusion of tortoises from the construction ROW corridor. Habitats within the Preferred Corridor would be restored to provide suitable habitat for tortoises following completion of Project. The permit requires the temporary installation of filter fabric (silt fencing) or other comparable fencing (buried at least 8 inches into the ground) along the outer edge of the construction ROW to block tortoise reentry into the corridor during construction activities. Fencing is only required along those portions of the construction corridor where tortoises are documented and are to be relocated from the construction area. Prior to ground-disturbing activities, gopher tortoise burrows within the ROW would be excavated, and the gopher tortoise and any commensal species would be relocated to appropriate gopher tortoise habitat outside the ROW. Impacts are anticipated to be short-term and minor.

Eastern Indigo Snake and Florida Pine Snake

Eastern indigo snakes occur throughout a variety of habitats in South Florida and could occur throughout the Preferred Corridor. The Florida pine snake exists in xeric habitats with sandy soils similar to that of gopher tortoises. Impacts to these snakes could occur during construction from the inadvertent take of these species through contact with construction or construction-related equipment and vehicles. FPL would include the identification and avoidance of the eastern indigo snake and the Florida pine snake as part of the environmental training of all construction personnel and would provide training for each crew during construction to ensure that no snakes are disturbed during construction activities. If an eastern indigo snake or a Florida pine snake is found on the ROW during construction, construction operations would stop until the snake has evacuated the Project ROW. Since appropriate habitat exists in areas adjacent to the Preferred Corridor, the snakes would be able to move to appropriate habitats outside the construction ROW. Once construction and the restoration of the ROW are complete, the snakes would be able to utilize the habitats within the Preferred Corridor. Impacts are anticipated to be short-term and minor.

9.4.4.5 Migratory Birds

Construction of the Project would have minor and temporary impacts on migratory birds and the habitat they use within the Preferred Corridor. During construction activities, the clearing and grading of the ROW would result in a loss of vegetative cover, including nesting and foraging areas. In addition, the general disturbance of the ROW associated with construction activities would likely cause the temporary displacement of most wildlife, including migratory birds, from the immediate construction zone and adjacent areas.

Construction activities within upland and wetland habitats would directly affect migratory bird species that use these habitats, creating temporary impacts. Temporary impacts would include the temporary loss of habitat for foraging and nesting activities. Additional temporary impacts would include displacement as a result of the presence of man and noise produced by machinery and associated vehicles. However, since migratory birds are highly mobile, they are expected to temporarily leave the area until all construction equipment and workers have demobilized from the site. Following construction, most birds would be expected to resume their normal behavioral patterns consistent with the availability of post-construction habitats. While there would be a permanent loss of trees and shrubs within the ROW, the ROW would be relatively narrow in comparison to the remaining forested uplands that would be adjacent to the ROW. Therefore, migratory birds that are dependent upon woody vegetation would still be able to use vegetation on either side of the selected ROW.

9.4.4.6 Fisheries

Any potential construction impacts to fish are expected to be minor and short-term because waterbody conditions and suspended sediment concentrations would quickly return to pre-construction conditions once construction activities are complete. Many fish species in Florida, particularly warm-water species, are resilient to turbid conditions. The waterbodies proposed to be crossed normally carry heavy silt loads during rainy seasons and continually collect runoff from agricultural lands in the area. Potential impacts on spawning areas would be temporary and minor due to the homogeneous sediment matrix and habitat found in the crossed waterbodies.

Potential impacts from increased sedimentation and turbidity would be localized and temporary because waterbody conditions and suspended sediment concentrations would quickly return to pre-construction conditions once construction activities are complete. The extent of potential impacts from sedimentation and increased turbidity would depend on sediment loads, flow velocity, composition of the waterbody bank and the waterbody bed, sediment particle size, and the duration of the construction activities causing the disturbance. A short-term increase in water column turbidity within the crossed

waterbodies may occur as a result of runoff associated with pipeline construction and vegetation removal in upland areas, underwater excavation, and backfilling of the pipeline trench. Elevation of the concentration of suspended solids would be only for short periods and short distances from the crossing.

Increased suspended sediment levels during construction activities could increase invertebrate drift and reduce feeding opportunities for brief periods of time. Potential impacts on spawning areas would be temporary and minor due to the homogeneous sediment matrix and habitat found in the crossed waterbodies. Additionally, an increase in sedimentation may adversely affect nesting sites and reduce access to some food sources. Benthic macroinvertebrates that typically provide a key food source for fish may be buried under accumulated sediments along with fish nesting sites containing eggs or larvae. In the immediate construction area, fish reproductive activities may be temporarily affected due to temporary disturbance of spawning areas, physical disturbances to the fish, or reduced egg survival as a result of increased sedimentation. However, the waterbodies proposed to be crossed normally carry heavy silt loads during rainy seasons and continually collect runoff from harvested silviculture lands in the area.

The suspension of sediments or erosion during construction activities may temporarily increase water turbidity, subsequently reducing light penetration and the photosynthesis of aquatic vegetation, which could negatively affect dissolved oxygen levels within the water column. Additionally, re-suspension of organic and inorganic materials can cause an increase in biological and chemical oxygen uptake in the water column, resulting in a decrease in the availability of dissolved oxygen. Depleted oxygen supplies could temporarily displace fish from the immediate area or cause mortality if they cannot emigrate outside the affected area.

In addition to the potential direct impacts of sedimentation and turbidity from in-stream construction at waterbody crossings, increases in sedimentation and turbidity may result from trenching activities adjacent to waterbodies or from the removal of vegetation in the surrounding areas. Surface drainage patterns and hydrology could be temporarily altered and could increase the potential for the trench to act as a drainage channel. Disturbance of adjacent wetlands also could temporarily affect the erosion control and flooding due to a reduction in soil stabilization.

Waterbody bank vegetation, logs and rocks, and undercut banks provide important cover for fish. Fish that normally reside in these areas would be temporarily displaced during construction activities. Open-cut construction would require the clearing of shore vegetation and would result in reduced shading and possible localized increases in water temperature, as well as the potential displacement of fish that normally reside in these areas. However, potential impacts on water temperature are not expected to be significant because of the limited amount of waterbody canopy that would be cleared relative to the existing riparian vegetation in most cases. Following construction activities, trees and shrubs would be allowed to reestablish on waterbody banks, except for within the permanent ROW which would be maintained to ensure the integrity of the facilities. The use of dry/flume-pipe crossing methods and construction activities could disrupt benthic communities; however, these effects would be relatively minor because of the small area affected at each waterbody.

There is a potential for impacts to fisheries from fuel spills from storage containers, from equipment working in or near streams, and from fuel transfers. Implementation of a construction SPCC Plan to be prepared during post-certification will ensure these types of incidents would be reduced, eliminated, or mitigated.

Other potential impacts related to construction activities include entrainment of fish during hydrostatic testing and the interruption of fish migration. Entrainment or impingement of fish is not likely to occur during the withdrawal of water for hydrostatic testing as intake pipes would be screened; however, fish eggs and young fry could be drawn into the pipeline in the immediate area of the water intake hose. Construction also may cause temporary emigration of fish populations from the immediate area, or fish movements and migrations upstream or downstream may be temporarily disrupted by construction activities. However, relocation or disrupted migration would not significantly affect fish

populations as construction activities are expected to be completed in 24 to 48 hours, depending on the width of the crossed waterbody.

As the ROW and all stream crossing would be restored once construction is complete, no impacts to fisheries are anticipated during the operation of the Project.

9.4.5 Impacts to Human Populations

This section describes the impacts to human populations associated with the construction, of the Project, as well as potential mitigation measures that may be used to offset or reduce potential impacts. These resources include land use and zoning, traffic and lighting, socioeconomics, and noise.

9.4.5.1 Land Use and Zoning

This section describes the potential impacts of construction and operation of the Project on current and future land uses along the Preferred Corridor and aboveground facilities. Section 9.3.5.2 describes the existing land use conditions within these areas.

The Project consists of only linear facilities, including the natural gas transmission pipeline, mainline block valves, aboveground markers, metering and pig launching / receiving facilities. As explained in Section 9.3.5.2, linear facilities are not subject to local government comprehensive plan requirements or zoning regulations. This section discusses compatibility of the Preferred Corridor linear facilities with existing land use/land cover.

9.4.5.1.1 Construction Impacts to Land Use and Zoning

This section discusses the potential impacts of construction within the Preferred Corridor and associated facilities on the existing land use/land cover that would be crossed in each county and municipality.

Construction Impacts to Existing Land Use/Land Cover

Construction impacts to existing land use/land cover typically would be temporary and are expected to have minimal, if any, long-term impacts. Activities associated with the construction of the Project would result in temporary impacts to existing land use/land cover, such as clearing of vegetation and excavation of the pipeline trench. FPL would use the existing ROWs to the extent practicable in order to avoid the clearing of additional lands. Tree removal would be required for construction and would be conducted in accordance with applicable local nonprocedural standards to the extent practicable.

The natural gas pipeline lateral would be installed at a minimum of 3 feet below ground for its approximate 32-mile length. The Preferred Corridor generally ranges from 100 to 1,360 feet in width. Following site certification and based on field survey data, a much narrower construction and permanent pipeline ROW (approximately 100 feet and 50 feet, respectively) will be identified within the certified corridor. After the required property interests are secured and construction is completed by the Applicant, the boundaries of the corridor would be narrowed to include only that land within the permanent pipeline ROW.

Following construction, the ROW would be reestablished to its pre-existing conditions, to the extent practicable, and temporary construction areas would be allowed to revert to natural conditions. The ROW would be maintained free of deeply rooted vegetation throughout the life of the Project, and it would provide open areas to facilitate aerial surveillance and to permit access to the pipeline for inspection and maintenance.

In the event that new, permanent accessways are constructed within the Preferred Corridor, they would be approximately 15 feet wide and constructed to efficiently provide access to the ROW while minimizing environmental impacts. Public accessibility to accessways would be determined based on

agreements between FPL and landowners. Any impacts associated with accessways would be mitigated in accordance with applicable regulations.

The vast majority of the lands surrounding the Preferred Corridor are in low-population rural areas that are primarily characterized as being used for industrial, agricultural, conservation, commercial, and residential purposes. The Preferred Corridor would cross Indiantown, a census-designated place in Martin County, as well as the City of West Palm Beach and the City of Palm Beach Gardens in Palm Beach County. As mentioned previously, the Preferred Corridor would be collocated entirely with existing linear facilities. Consequently, construction of the Project is not expected to result in any significant short-term or long-term impacts to current or future land use.

Construction of the pipeline through wetlands is discussed further in Section 9.4.2. Construction across existing highway, railroad, utility, and pipeline ROWs would be performed in accordance with applicable nonprocedural standards, conditions of certification, post-certification review, and easement requirements. Special construction techniques are discussed in further detail in Section 9.4.1.

Construction Compliance with Land Development Regulations

As discussed in Section 9.3.5.2, consistency with local government comprehensive plans and zoning regulations does not need to be demonstrated for linear facilities. The Preferred Corridor would be collocated entirely with existing linear facilities; therefore, the use of this area for a pipeline would be compatible with existing land uses and would not interfere with adjacent land uses.

9.4.5.1.2 Operation and Maintenance Compliance with Land Use

Maintenance of the linear facilities would involve periodic mowing or other appropriate maintenance measures to ensure that deeply rooted vegetation does not grow over the pipeline, as required by the USDOT pipeline safety regulations.

9.4.5.2 Traffic and Lighting

Installation of a natural gas pipeline involves numerous activities, such as the preparation of the ROW, transport, storage, layout, excavation, and installation of the pipe, backfilling, and restoration, as detailed in Section 9.4.1. Pipeline installation activities may affect traffic and lighting, driving conditions, and traffic flow conditions.

9.4.5.2.1 Traffic

As the Preferred Corridor would intersect a number of roads, it is anticipated that some roads may be temporarily impacted by construction. Road crossings are performed by either open cuts, which involve removal of the road surface (asphalt, dirt, concrete and/or gravel), removal of the road bed, and excavation of the pipeline trench, or by less intrusive construction techniques, such as jack and bore crossings or HDD, as discussed in Section 9.4.1.1.12. These less intrusive techniques would not require the removal of the road surface and would not significantly impact traffic as the entire road would remain open while the pipeline is being installed. Impacted roadways and adjacent areas would be restored to pre-construction conditions during restoration activities.

Construction Traffic. Traffic on roads in proximity to the construction ROW may be temporarily impacted by construction activities. Local, county, and state roads will be used to transport materials, supplies, and equipment.

As the construction ROW is cleared, the pipeline is laid, installed, and backfilled along the length of the construction ROW; there would be a temporary impacts along SR 710. Once the pipeline is installed and restoration activities are complete in each area, traffic impacts from the Project would cease.

Upon final engineering design, FPL will consult with the FDOT on the need to develop traffic control plans for the Project. The traffic control plan would include topics such as:

- The placement of advance signage (informational signage placed in advance of a construction zone to inform drivers of upcoming lane closures, time delays, and/or duration of traffic impact); and
- The use of contractor personnel to control traffic flow and direction, as appropriate.

Pipeline Road Crossings. Current road conditions throughout the length of the Preferred Corridor are described in Section 9.3.2.

Minimal disruption of traffic is expected at pipeline-road crossings as a result of construction and installation activities. Most roads will be crossed using jack and bore method thereby minimizing traffic disruptions. Construction and installation activities would be temporary; hence, potential traffic impacts to the roads being crossed would be temporary. These impacts on traffic are expected to reduce the LOS on affected roads for the duration of the construction. As construction would be a temporary process, the reduction of the LOS for roads also would be temporary.

The Preferred Corridor includes 22 local, county, and state roads. The actual number of road crossings will be based on the centerline of the pipeline as determined through detailed engineering design. FPL will implement measures to follow the Work Zone Safety and Mobility Rule (23 CFR 630 Subpart J) and utilize the Manual on Uniform Traffic Control Devices (MUTCD) as mandated by the Florida Highway Administration of the U.S. Department of Transportation for roads included in the State Highway System, as well as fulfill any additional requirements for traffic impacts or road construction mandated by applicable local governments and agencies. Previously prepared Maintenance of Traffic Plans mandated by the FDOT also will be implemented. Implementation of the various plans would reduce the traffic impact on the roads to be crossed and would ensure safe conditions for construction workers on site. Prior to construction, FPL will develop site-specific traffic plans and crossing techniques for each road that may be crossed.

9.4.5.2.2 Lighting

No permanent lighting will be installed as part of the Project. Portable temporary generator-powered lighting will be brought in to aid in construction and ensure safety, security, and compliance while work is being conducted. Temporary lighting is likely to be used in a number of locations, including, but not limited to, contractor yards and pipeline storage yards during construction, and during HDD activities.

Storage and Wareyards. Temporary lighting may be utilized for the safety and security of Project-related equipment and personnel. This lighting would be located within storage yards and contractor yards to provide for the safety of personnel and to deter theft. Illumination would be provided by temporary portable lights typically powered by generators and would use the lowest wattage necessary to provide a sufficiently lit area. These are existing industrial and commercial areas, so lighting is currently prevalent. As such, no impacts are anticipated due to the utilization of lighting in these areas.

Horizontal Directional Drilling. HDD crossings may require construction operations to occur past daylight hours. During HDD activities after daylight hours, the crew would primarily rely on light fixtures already located on site, including truck lights, drill rig lights, and other equipment lights. If these lights are not sufficient for safe continuation of construction activities, additional light fixtures would be utilized. If temporary lighting is used for HDD nighttime work or for safety and security of items stored within storage and contractor yards, measures would be implemented to prevent obscuring the vision of drivers traveling adjacent to the site. Lighting would not be faced parallel to the road, but rather perpendicular to it, thereby minimizing negative effects or glare to drivers. This would also minimize any

nuisance lighting to nearby homes and roads. Additional precautions include directing the temporary light fixtures downward to create a smaller angle of lit surface area and the use of the lowest intensity light necessary to fulfill the lighting need. If circumstances allow, lights would be faced away from homes and roads to further reduce the likelihood of nuisance lighting. In the event FPL determines that a proposed storage yard site is safe from vandalism or robbery and adequate ambient light is available, no additional lighting would be used.

9.4.5.3 Workforce and Unemployment

Project construction would have a short-term, beneficial impact by providing some employment opportunities to the local labor force. Construction would require approximately 200 personnel on average and 300 personnel during peak construction. Construction personnel would consist of supervisors and administrators, truck drivers, welders and welder helpers, equipment operators, and laborers. Gas pipeline contractors experienced in this type of construction would, most likely, be from outside Martin and Palm Beach Counties; however, the contractors would need to hire some local personnel to supplement their own workforces. In addition, these contractors would need to hire local subcontractors and suppliers to furnish and install related materials and services, such as truck hauling, road paving, sidewalks, sod, landscaping, dewatering, erosion control, painting, etc. It is expected that this additional workforce could account for as much as 40% of the entire workforce. These approximations of local versus non-local work force have been assumed utilizing industry standards for pipeline projects and are subject to change depending upon the actual contractors selected to perform the work.

Construction would occur over approximately 10 to 12 months. The temporary increase in local employment during the construction period would have a beneficial impact on the regional economy through increased payroll expenditures, some portion of which would be spent locally by construction workers. Non-local workers temporarily housed in the region also would spend some part of their pay on goods and services in the region, contributing to the temporary, beneficial impact the Project would have on the regional economy.

9.4.5.4 Noise

In order to evaluate the potential noise impacts associated with the Project, acoustical calculations were performed to estimate maximum noise levels that may result from these construction activities. The following subsections contain the noise impact evaluations and any necessary mitigation measures. Project construction would generally be conducted six days a week (Monday through Saturday), 10 to 12 hours per day during daylight hours. However, in certain cases, work may be performed during non-daylight hours or on Sundays. For example, the drilling rigs used to perform an HDD may operate 24 hours per day schedule until the pipe installation activities are complete. Similarly, timing restrictions may be associated with crossing a waterbody that would require work outside of daylight hours.

Pipeline Construction

The construction of the Project is anticipated to be completed in approximately 10 to 12 months. Installation of the Project would employ conventional overland construction techniques. In general, an up to 125-foot-wide construction ROW would be needed for the construction of the proposed pipeline. Pipeline construction would be typical of other pipeline projects in terms of schedule, equipment used, mode of operation, length of time the equipment is in use, and amount of equipment used simultaneously. Construction equipment would be operated on an as-needed basis, mostly during daylight hours, and would be maintained to manufacturers' specifications to reduce potential noise impacts.

Pipeline construction would cause temporary increases in ambient noise levels in the immediate vicinity of the construction sites. Onsite construction noise would occur mainly from heavy-duty construction equipment, e.g., trucks, backhoes, excavators, loaders, cranes, and drill rigs. The anticipated pipeline construction equipment (both mobile and stationary) and corresponding SPLs are presented in Table 9.4-3. As presented in the table, the worst-case SPL for the construction of the pipeline (excluding HDD) is approximately 94 dBA at 50 feet. Based on the values presented in Table 9.4-3, with all of the equipment operating simultaneously, there is a potential that pipeline construction may have an impact on residences. This impact would be negligible and temporary and would be eliminated once the pipeline construction operation has moved along the corridor away from the residence. Additionally, as adjacent SR 710 would create an ambient noise level of between 60 to 80 dBA, the worst case scenario would not be significantly greater than the current noise level. Furthermore, significant noise would be generated by the CSX Rail Line during train operations.

Horizontal Directional Drilling

HDD operations could generate relatively high noise levels in one stationary location for longer periods compared to conventional pipeline construction, in that HDD operations may occur 24 hours per day and on a seven-day-per-week basis. Primary equipment that would be used during HDD operations and corresponding SPLs at various distances are presented in Table 9.4-4. Based on the values presented in Table 9.4-4, with all of the equipment operating at the percent usage indicated and with the potential for operating during nighttime hours, the HDD operation may have a temporary noise impact on residences located in close proximity. Additionally, as adjacent SR 710 would create an ambient noise level of between 60 to 80 dBA, the worst case scenario would not be significantly greater than the current noise level.

9.4.6 Impacts on Regional Scenic, Cultural, and Natural Landmarks

As stated in Section 9.3.5.4, no regional scenic, cultural or natural landmark resources exist within 5 miles of the Preferred Corridor. Therefore, no impacts from the construction or operation and maintenance of the Project are anticipated.

9.4.7 Impacts on Archaeological and Historic Sites

This section discusses how potential impacts from construction, operation, and maintenance would be addressed for cultural resources within the Preferred Corridor. The source of the information for cultural resources was a desktop file search study conducted in January 2012. Cultural resources are considered to be archaeological and architectural resources, including those cultural resources that have been determined historic properties pursuant to regulations for implementing Section 106 of the NHPA of 1966, as amended (36 CFR 800 “Protection of Historic Properties”) and have been determined significant in terms of the criteria presented in 36 CFR 63 “Determination of Eligibility for Inclusion in the National Register of Historic Places.” For the cultural resources component, the desktop file search included the area within 500 feet of the Preferred Corridor.

Table 9.4-3
Sound Pressure Levels from Pipeline Construction Equipment

Equipment	Reference dBA at 50 feet	Number of Devices	Usage (percent) [a]	Estimated Noise Level, dBA at the Specified Distance from the Source (feet)					
				50	100	250	500	1000	2500
1-Ton Truck	84	2	40	80	74	66	60	54	46
2-Ton Truck	84	1	40	80	74	66	60	54	46
Fuel Truck	84	1	40	54	48	40	34	28	20
Mechanic Truck	55	2	40	57	51	43	37	31	23
Operator Truck	55	4	40	76	72	73	74	74	76
Dump Truck	84	1	40	87	81	73	67	61	53
Cat Excavator	85	2	80	87	81	73	67	61	53
Sideboom/pipelayer	85	2	80	80	74	66	60	54	46
Farm Tractor	84	1	40	80	74	66	60	54	46
Boom Truck	84	1	40	78	72	64	58	52	44
Boring Machine	85	1	20	87	81	73	67	61	53
Bulldozer	85	2	80	80	74	66	60	54	46
Water Pumps	77	4	50	74	68	60	54	48	40
Fork Lift	75	2	40	71	67	68	69	69	71
Welding Rig	73	4	40	80	74	66	60	54	46
Stringing Truck	84	1	40	81	75	67	61	55	47
Vacuum Truck	85	1	40	83	77	69	63	57	49
Water Truck	84	1	80	74	68	60	54	48	40
D-6 Tack Rigs	79	1	80	89	81	78	76	77	89
Total worst case result [b]				**94**	**89**	**81**	**78**	**76**	**77**

Notes:
(a) Source: Federal Highway Administration 2006.
(b) The worst-case result is derived by adding the individual equipment noise levels logarithmically using the following formula:

$$Leq_{total} = 10\log\left(10^{\frac{Leq_1}{10}} + 10^{\frac{Leq_2}{10}} + 10^{\frac{Leq_3}{10}} \ldots etc.\right)$$

Key:
dBA = A-weighted decibels.

Table 9.4-4
Horizontal Directional Drilling Sound Pressure Levels at Various Distances

Equipment	Reference dBA at 50 feet	Number of Devices	Usage (%)	Estimated SPL (dBA) at the Specified Distance from the Source (feet)					
				50	100	250	500	1,000	2,500
Large Drilling Rig (HDD)	85	1	80	84	78	70	64	58	50
Mud Cleaner Generator	72	1	80	71	65	57	51	45	37
Mud Pumps	70	2	80	72	66	58	52	46	38
Fluid-Handling Pumps	70	4	80	75	69	61	55	49	41
Track Backhoe	85	1	40	81	75	67	61	55	47
All-Terrain Forklift	85	1	40	81	75	67	61	55	47
Light Towers	72	6	100	80	74	66	60	54	46
Heavy Lift Crane	85	1	16	77	71	63	57	51	43
18-Wheeler Truck	84	1	40	80	74	66	60	54	46
Total Worst-Case Result				**89**	**83**	**75**	**69**	**63**	**55**

Sources: Federal Highway Administration 2006; United States Environmental Protection Agency 1971.

Key:
dBA = A-weighted decibels

As stated in Section 9.3.5.5, seven historical features are within the Preferred Corridor and four historical features are outside of, but within 500 feet of the Preferred Corridor. Of the seven historic features within the Preferred Corridor, five are historic structures (Indiantown Auto Sales, Potter's House, Bait and Feed, Blake's Well and Pump, and Hataway Gulf Station) and two are linear resource groups (St. Lucie Canal and Seaboard Air Line Railroad). These structures are located in a commercial portion of Indiantown, where FPL plans to identify additional workspace for contractor parking and storage. Given the potentially significant historic nature of these structures, and the availability of other suitable lots nearby, FPL would avoid siting construction activities within 50 feet of these structures. If construction activities within 50 feet of these structures cannot be avoided, prior to performing such activities FPL would first, request and obtain SHPO clearance. As FPL does not plan to be within 50 feet of any historic structures at this time, no impacts to these structures are anticipated. Four of these features occur outside the Preferred Corridor and no impacts to these resources would occur.

The Project is anticipated to intersect both the C-44 Canal also known as St. Lucie Canal (Site ID MT01316) and the Seaboard Air Line Railroad (also referred to as the CSX Rail Line ROW in this Petition) (Site ID PB12917). However, impacts would be avoided by HDD beneath the St. Lucie Canal and maintaining a safe working distance from the railroad. Therefore, no impacts to these historic features are anticipated. Any crossings of the railroad would be conducted in a manner acceptable to CSX.

9.5 Post-Construction Impacts and Effects of Maintenance

9.5.1 Maintenance Techniques

FPL will institute a comprehensive operations and maintenance program for the proposed facilities similar to other pipelines currently within the FPL system and in accordance with USDOT pipeline safety regulations. FPL's pipeline operations and maintenance program includes: a comprehensive corrosion control program utilizing state-of-the-art inline inspection tools; regularly scheduled aerial and ground patrols of the pipeline ROW and leak inspection surveys; participation in the existing Sunshine State One-Call of Florida system; and a gas pipeline integrity program. The One-Call of Florida system allows anyone planning excavation activities to call a single number to alert all utilities and thus prevent unintentional contact with the pipeline. Additionally, FPL representatives would visit any construction site close to the pipeline and mark the location of FPL's underground facilities. They also would remain on site during excavation activities within the pipeline ROW.

9.5.2 Multiple Uses

Current uses of the Preferred Corridor would continue once the installation of pipeline is completed. These uses include electrical transmission, pipeline ROWs, transportation, and water conveyance.

9.5.3 Changes in Species Populations

Normal maintenance activities along the approximately 50-foot permanent ROW for the Project would include mowing and maintaining the permanent ROW free of woody vegetation in accordance with USDOT pipeline safety regulations. As this permanent ROW would be sited, to the extent practicable, within currently mowed and maintained linear facilities ROWs, it is anticipated that the wildlife habitat along the permanent ROW would not be significantly altered by the Project due to being within existing linear facilities ROWs. Additionally, wildlife within the permanent ROW should be accustomed to the routine maintenance that currently takes place. Any trees and shrubs within the permanent ROW would be subject to maintenance to reduce interference with the pipeline integrity. Therefore, no significant changes in species populations are anticipated during the planned maintenance activities associated with the Project.

9.5.4 Effects of Public Access

There would be no limitation to currently accessible public areas as a result of the installation of the pipeline. The portion of the pipeline within existing railways and roads would not be noticeable to the public. Access to areas within the existing FPL transmission ROWs or in private lands would be controlled, in most locations, by locked gates used only by FPL, its contractors, leaseholders, or property owners. No change in public access is planned or anticipated to these areas when construction is complete.

9.5.5 Other Post-Construction Effects

Negligible quantities of greenhouse gas (GHG) emissions are expected from the operation and maintenance of the pipeline and the associated meter station. Natural gas emissions (primarily methane) would only be vented from pipeline and meter station equipment under upset conditions or as required for routine maintenance. In addition, fugitive natural gas emissions may occur from pipeline and meter station components. Though it is not possible to fully determine the amount of future maintenance required, it is estimated that blowdown/equipment venting and fugitive releases from the pipeline could generate approximately 40 metric tons of GHGs per year (primarily methane), which is equivalent to approximately 900 metric tons of carbon dioxide equivalents (CO_2-e) per year of GHG emissions. Table 9.5-1 provides the emission calculations conducted for the Project. No other effects from the operation of the Project are anticipated.

Table 9.5-1
Emissions Calculations

Emission Type	Activity			Emission Factor			Annual Emissions (metric tons/year)		CO_2-e Annual Emissions (metric tons/year)
	Description	No.	Units	CO_2	CH_4	Units	CO_2	CH_4	
Fugitive[a]	Pipeline Length	32	miles	2.2	15.1	lb/mile-yr	0.032	0.22	5.1
	Meter Station	1	stations	27.77	480.8	lb/station-yr	0.013	0.22	5.0
Blowdown and Equipment Venting[b]	Pipeline Length	32	miles	-	1,729	lb/mile-yr	-	25.1	577
	Meter Station	1	stations	-	29,817	lb/station-yr	-	13.5	311
						Total	**0.045**	**39.1**	**898**

Notes:
(a) Emission factors from Table 4.4 in Greenhouse Gas Emission Estimation Guidelines for Natural Gas Transmission and Storage - Volume 1 – GHG Emission Estimation Methodologies and Procedures (Interstate Natural Gas Association of America [INGAA] 2005).
(b) Emission factors from Table 3.6 in Greenhouse Gas Emission Estimation Guidelines for Natural Gas Transmission and Storage - Volume 1 – GHG Emission Estimation Methodologies and Procedures (Interstate Natural Gas Association of America [INGAA] 2005).

9.6 References

Burgess, G. no date (n.d.). Identification Key to Native Freshwater Fishes of Peninsular Florida, Florida Museum of Natural History. Tallahassee, Florida. Online at http://www.flmnh.ufl.edu/fish/southflorida/everglades/marshes/fishkeyedu.html. Accessed January 11, 2012.

City of Palm Beach Gardens. 2008. Comprehensive Plan Future Land Use Element. Adopted on December 18, 2008. Last updated March 3, 2011. Accessed on October 24, 2011 at: http://pbgfl.com/filestorage/74/118/1343/1346/Future_Land_Use.pdf.

Coile, N. and M. Garland. 2003. Notes on Florida's Endangered and Threatened Plants. Florida Department of Agriculture and Consumer Services (DOACS), Gainesville, Florida.

Florida Department of Environmental Protection (FDEP). 2008. Integrated Water Quality Assessment for Florida: 2008 305(b) Report and 303(d) List Update. FDEP, Division of Environmental Assessment and Restoration, Bureau of Watershed Management, Tallahassee, Florida. Online at http://www.dep.state.fl.us/water/docs/2008_Integrated_Report.pdf. Accessed January 20, 2012.

Florida Department of Environmental Protection (FDEP). 2012a. Surface Water Quality Classifications. FDEP, Tallahassee, Florida. http://www.dep.state.fl.us/water/wqssp/classes.htm. Accessed January 17, 2012.

Florida Department of Environmental Protection (FDEP). 2012b. The Assessment Process. FDEP, Source Water Assessment and Protection Program (SWAPP), Tallahassee, Florida. Online at http://www.dep.state.fl.us/swapp/assess.asp. Accessed January 18, 2012.

Florida Department of Transportation (FDOT). 2003. FHWA Urban Boundary and Federal Functional Classification Handbook. April 4, 2003. Transportation Statistics Office, FDOT, Tallahassee, Florida.

Florida Department of Transportation (FDOT). 2009. 2009 Quality/Level Service Handbook. State of Florida, FDOT, Systems Planning Office, Tallahassee, Florida.

Florida Division of Historical Resources (Florida DHR). 2001. Performance Standards for Submerged Remote Sensing Surveys. Version 2.1, last updated 05/17/01. Online at http://www.flheritage.com/preservation/compliance/docs/Remote_Surveys.pdf. Accessed January 5, 2012.

Florida Division of Historical Resources (Florida DHR). 2007. Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Property. Revised February 2007. Online at http://www.flheritage.com/preservation/compliance/docs/management_procedures_current.pdf. Accessed January 5, 2012.

Florida Exotic Pest Plant Council (FLEPPC). 2011. List of Invasive Plant Species. Florida Exotic Pest Plant Council. Online at http://www.fleppc.org/list/11list.htm. Accessed January 25, 2012.

Florida Fish and Wildlife Conservation Commission (FWC). 2002. FWC Wildlife Observations 2002, downloadable data. FWC, Tallahassee, Florida.

Florida Fish and Wildlife Conservation Commission (FWC). 2003a. Florida's Breeding Bird Atlas: A Collaborative Study of Florida's Birdlife. FWC, Tallahassee, Florida. Online at http://www.myfwc.com/bba/. Accessed January 2012.

Florida Fish and Wildlife Conservation Commission (FWC). 2003a. Florida's Breeding Bird Atlas: A Collaborative Study of Florida's Birdlife. FWC, Tallahassee, Florida. Online at http://www.myfwc.com/bba/. Accessed January 2012.

Florida Fish and Wildlife Conservation Commission (FWC). 2003b. A Conceptual Management Plan for J.W. Corbett Wildlife Management Area 2003-2013. FWC, Tallahassee, Florida. Online at http://myfwc.com/media/132278/CMP_JW_Corbett_2002_2007.pdf Accessed January 18, 2012.

Florida Fish and Wildlife Conservation Commission (FWC). 2003c. Watersheds Containing Rare and Imperiled Fish, Spatial data. FWC, Tallahassee, Florida. Online at http://www.fgdl.org/metadataexplorer/explorer.jsp. Accessed January 12, 2012.

Florida Fish and Wildlife Conservation Commission (FWC). 2012. Fish ID: Freshwater. Online at http://myfwc.com/wildlifehabitats/profiles/fish/freshwater-fish/. Accessed January 2012.

Florida Natural Areas Inventory (FNAI). 2001. *Field Guide to the Rare Plants and Animals of Florida.* FNAI, Tallahassee, Florida. Online at http://www.fnai.org/fieldguide/. Accessed January 11, 2012.

Interstate Natural Gas Association of America (INGAA), 1998, *River and Stream Crossings Study (Phase I)*, INGAA, Washington, D.C.

Interstate Natural Gas Association of America (INGAA) 2005. Greenhouse Gas Emission Estimation Guidelines for Natural Gas Transmission and Storage. Volume 1 – GHG Emission Estimation Methodologies and Procedures. INGAA, Washington, D.C. September 28, 2005.

Martin County. 1990. Martin County Comprehensive Plan Chapter 4 Future Land Use Element. Adopted in 1990. Last updated March 1, 2011. Accessed on October 20, 2011 at: http://library.municode.com/index.aspx?clientID=13591&stateID=9&statename=Florida.

National Audubon Society. 2010. The Christmas Bird Count Historical Results [Online]. Online at http://www.christmasbirdcount.org. Accessed January 18, 2012.

National Safety Council. 2009. Hearing Loss in Agricultural Workers. Available online at http://www.nsc.org/resources/issues/articles/hearingloss.aspx. Accessed January 14, 2009.

NatureServe Explorer. 2012. An Online Encyclopedia of Life. Online at http://www.natureserve.org/explorer/. Accessed January 27, 2012.

Palm Beach County Planning Division. 2011. Palm Beach County Comprehensive Plan Future Land Use Element. Adopted in 1989. Last updated on July 26, 2011. Accessed on October 20, 2011 at: http://pbcgov.org/pzb/Planning/comprehensiveplan/2011/FLUE_11_1.pdf.

Sauer, J.R., J.E. Hines, J.E. Fallon, K.L. Pardieck, D.J. Ziolkowski, Jr., and W.A. Link. 2011. The North American Breeding Bird Survey, Results and Analysis 1966 - 2009. Version 3.23.2011 USGS Patuxent Wildlife Research Center, Laurel, Maryland. Online at http://www.mbr-pwrc.usgs.gov/bbs/. Accessed January 18, 2012.

State of Florida. 2012a. Cultural Resources Management Standards and Operational Manual. Online at http://www.flheritage.com/preservation/compliance/manual.cfm. Accessed January 5, 2012.

State of Florida. 2012b. Compliance and Review Section, Division of Historical Resources, Tallahassee, Florida. Online at http://www.flheritage.com/preservation/compliance/index.cfm. Accessed January 5, 2012.

U.S Bureau of Labor Statistics (BLS). 2012. Local Area Unemployment Statistics (LAUS) for Martin County and Palm Beach County, Florida (Not Seasonally Adjusted). http://www.bls.gov/data/#unemployment. Accessed February 1, 2012.

U.S. Census Bureau. 2006a. 2006 County Business Patterns. Detail for NAICS Code 23---- Construction, for Martin, FL, and Palm Beach, FL. http://www.census.gov/econ/cbp/index.html. Accessed February 1, 2012.

U.S. Census Bureau. 2006b. 2006 American Community Survey. DP03 Selected Economic Characteristics: 2006 for Martin County and Palm Beach County, Florida. http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed February 1, 2012.

U.S. Census Bureau. 2007a. 2007 County Business Patterns. Detail for NAICS Code 23---- Construction, for Martin, FL, and Palm Beach, FL. http://www.census.gov/econ/cbp/index.html. Accessed February 1, 2012.

U.S. Census Bureau. 2007b. 2007 American Community Survey 1-Year Estimates. DP03 Selected Economic Characteristics: 2007 for Martin County and Palm Beach County, Florida. http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed February 1, 2012.

U.S. Census Bureau. 2008a. 2008 County Business Patterns. Detail for NAICS Code 23---- Construction, for Martin, FL, and Palm Beach, FL. http://www.census.gov/econ/cbp/index.html. Accessed February 1, 2012.

U.S. Census Bureau. 2008b. 2008 American Community Survey 1-Year Estimates. DP03 Selected Economic Characteristics: 2008 for Martin County and Palm Beach County, Florida. http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed February 1, 2012.

U.S. Census Bureau. 2009a. 2009 County Business Patterns. Detail for NAICS Code 23---- Construction, for Martin, FL; Palm Beach, FL; Port St. Lucie, FL MSA; and Miami-Fort Lauderdale-Pompano Beach, FL MSA. http://www.census.gov/econ/cbp/index.html. Accessed February 1, 2012.

U.S. Census Bureau. 2009b. 2009 American Community Survey 1-Year Estimates. DP03 Selected Economic Characteristics: 2009 for Martin County and Palm Beach County, Florida. http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed February 1, 2012.

U.S. Census Bureau. 2010. 2010 American Community Survey 1-Year Estimates. DP03 Selected Economic Characteristics for Martin County and Palm Beach County, Florida. http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed February 1, 2012.

United States Fish and Wildlife Service (USFWS). 1999. South Florida Multi-Species Recovery Plan. USFWS, South Florida Ecological Services Office, Vero Beach, Florida.

United States Fish and Wildlife Service (USFWS). 2005. Bird Species of the United States and its Territories and Their Protection Under the Migratory Bird Treaty Act. Division of Migratory Bird Management, Arlington, Virginia. Online at http://www.fws.gov/migratorybirds/RegulationsPolicies/mbta/MBTAProtectedNonprotected.html. Accessed January 19, 2012.

United States Fish and Wildlife Service (USFWS). 2008. West Indian Manatee (*Trichechus manatus*). USFWS, Endangered Species Program, Arlington, Virginia, and USFWS, Southeast Region, Atlanta, Georgia. Online at http://www.fws.gov/endangered/esa-library/pdf/manatee.pdf. Accessed February 20, 2012.

United States Fish and Wildlife Service (USFWS). 2010. Official Number of Protected Migratory Bird Species Climbs to More than 1,000. *Midwest Region News*. Online at http://www.fws.gov/midwest/News/release.cfm?rid=184. Accessed January 18, 2012.

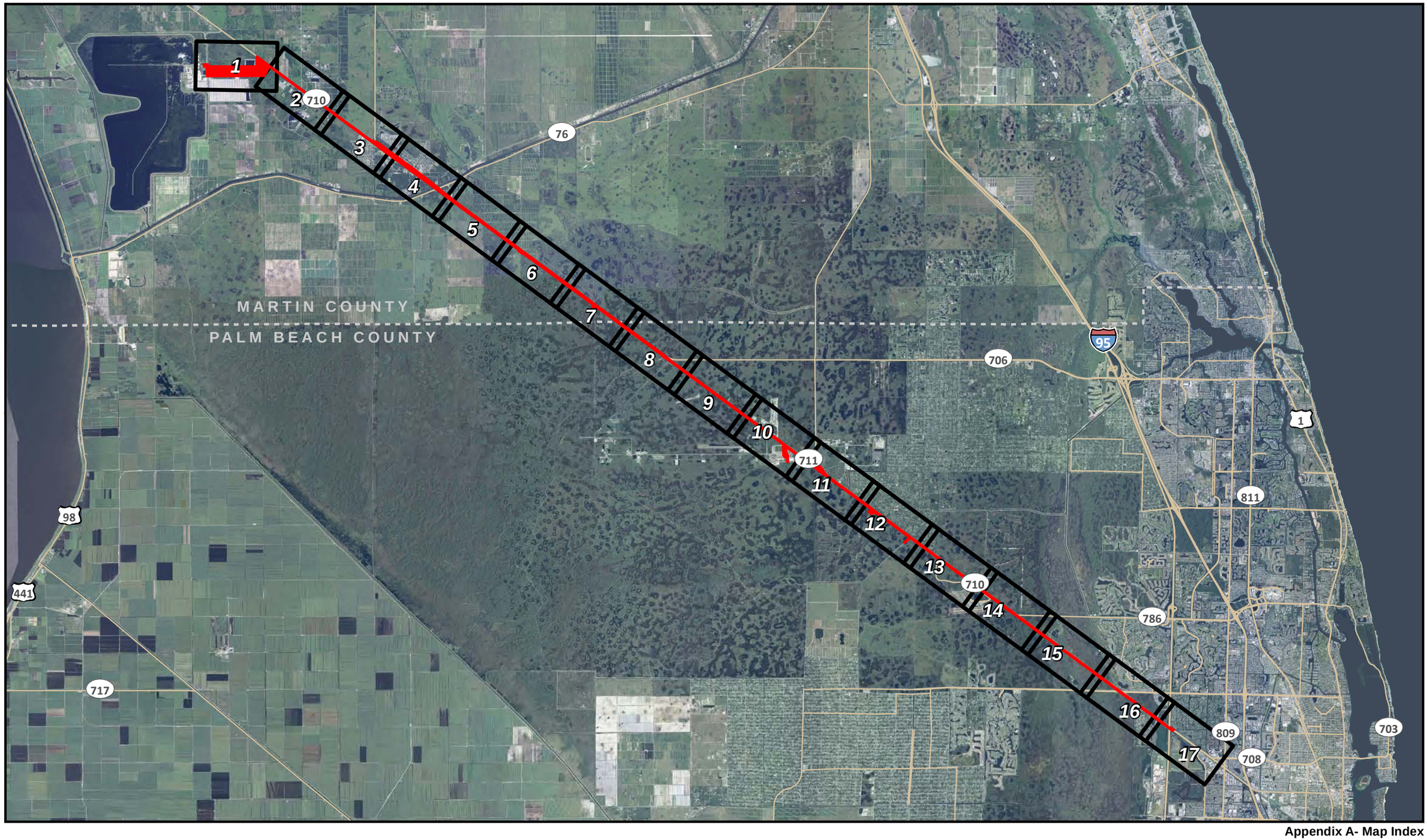
This page left blank intentionally.



Appendix A

Aerial Photography Maps

This page left blank intentionally.



NORTH

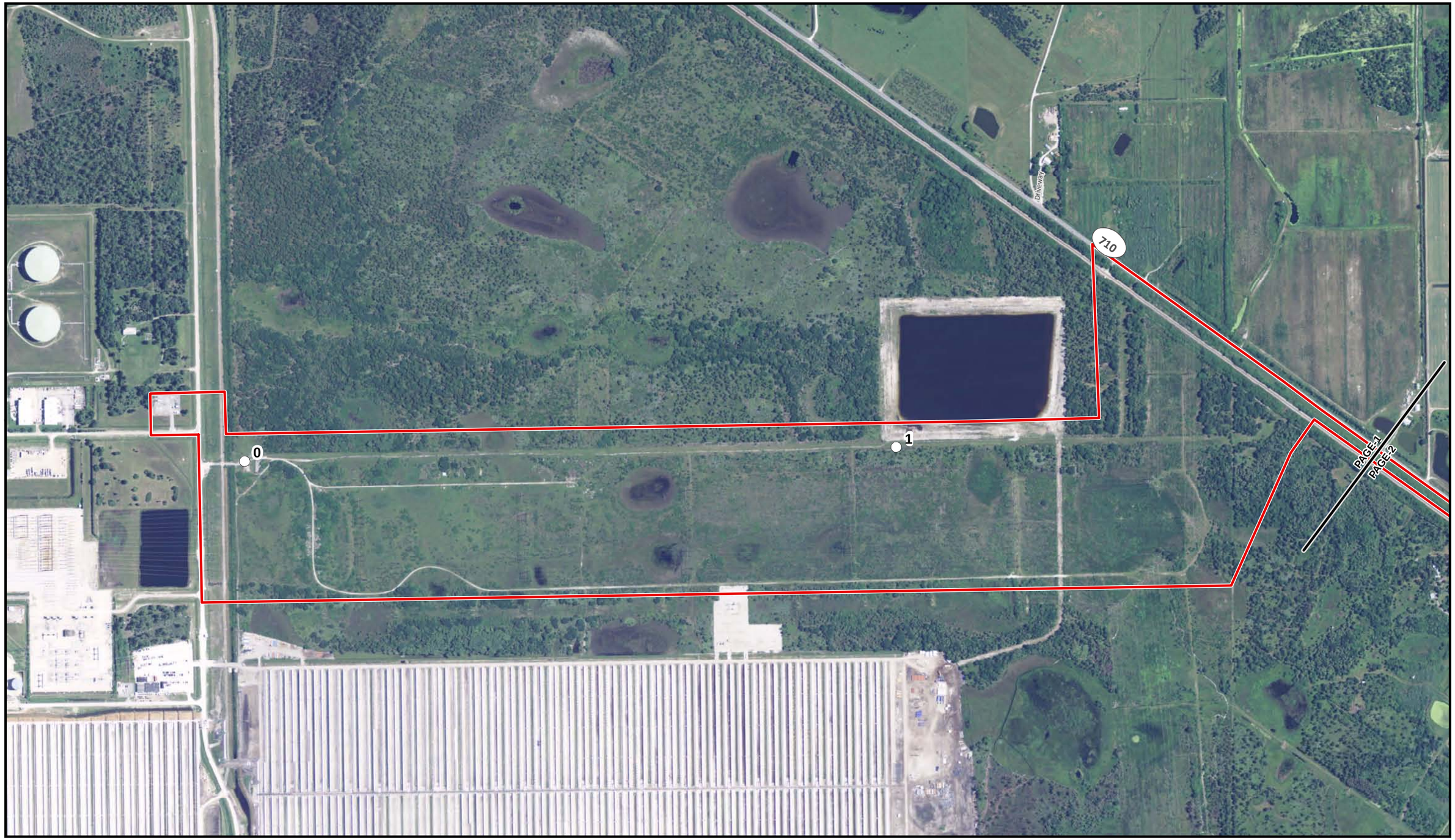
0 5 Miles

Map Index | Preferred Corridor | County Boundary

Appendix A- Map Index
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

0 1,000 Feet

Milepost

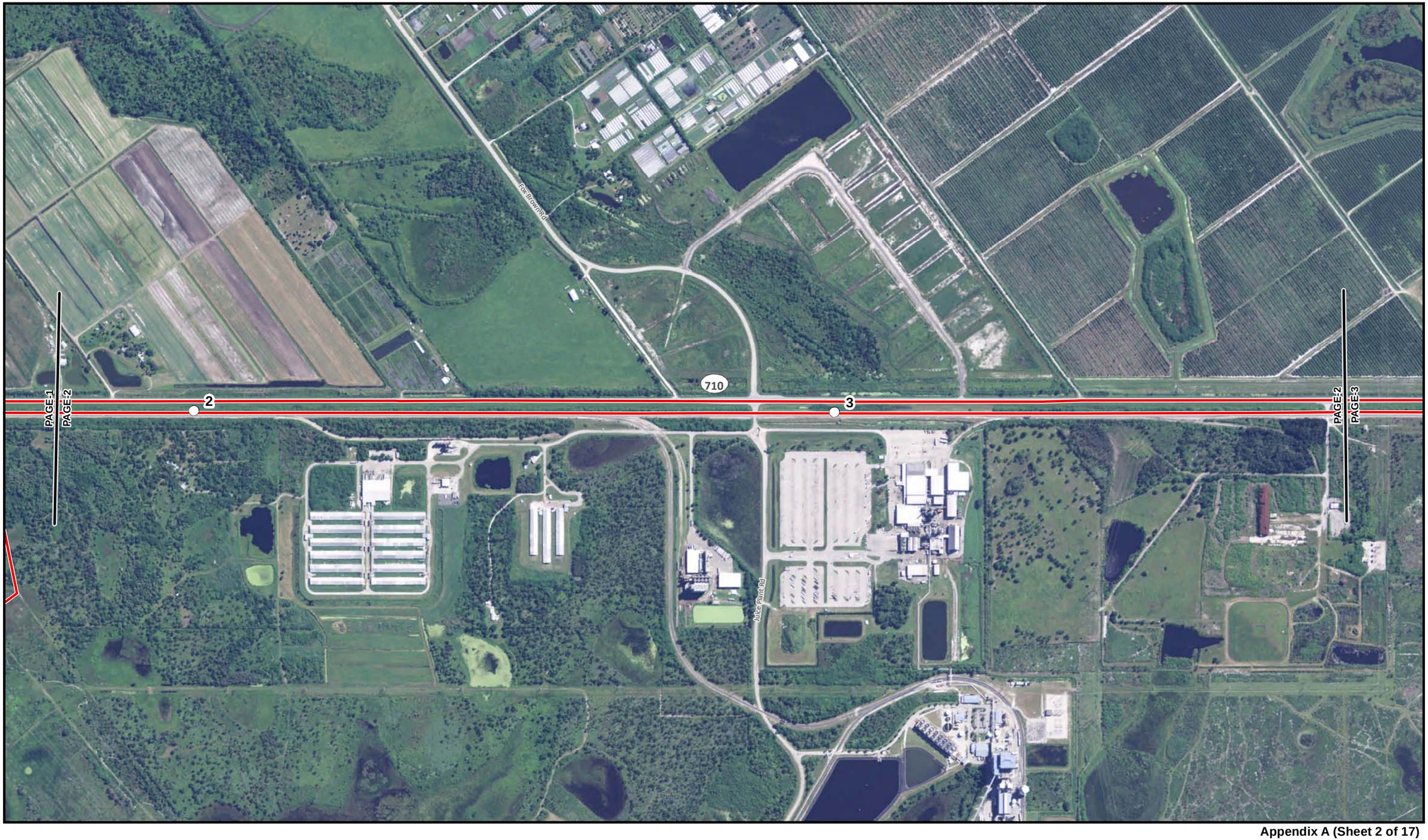
Match Line

Preferred Corridor

Appendix A (Sheet 1 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

0 1,000 Feet

Milepost Match Line Preferred Corridor

Appendix A (Sheet 2 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

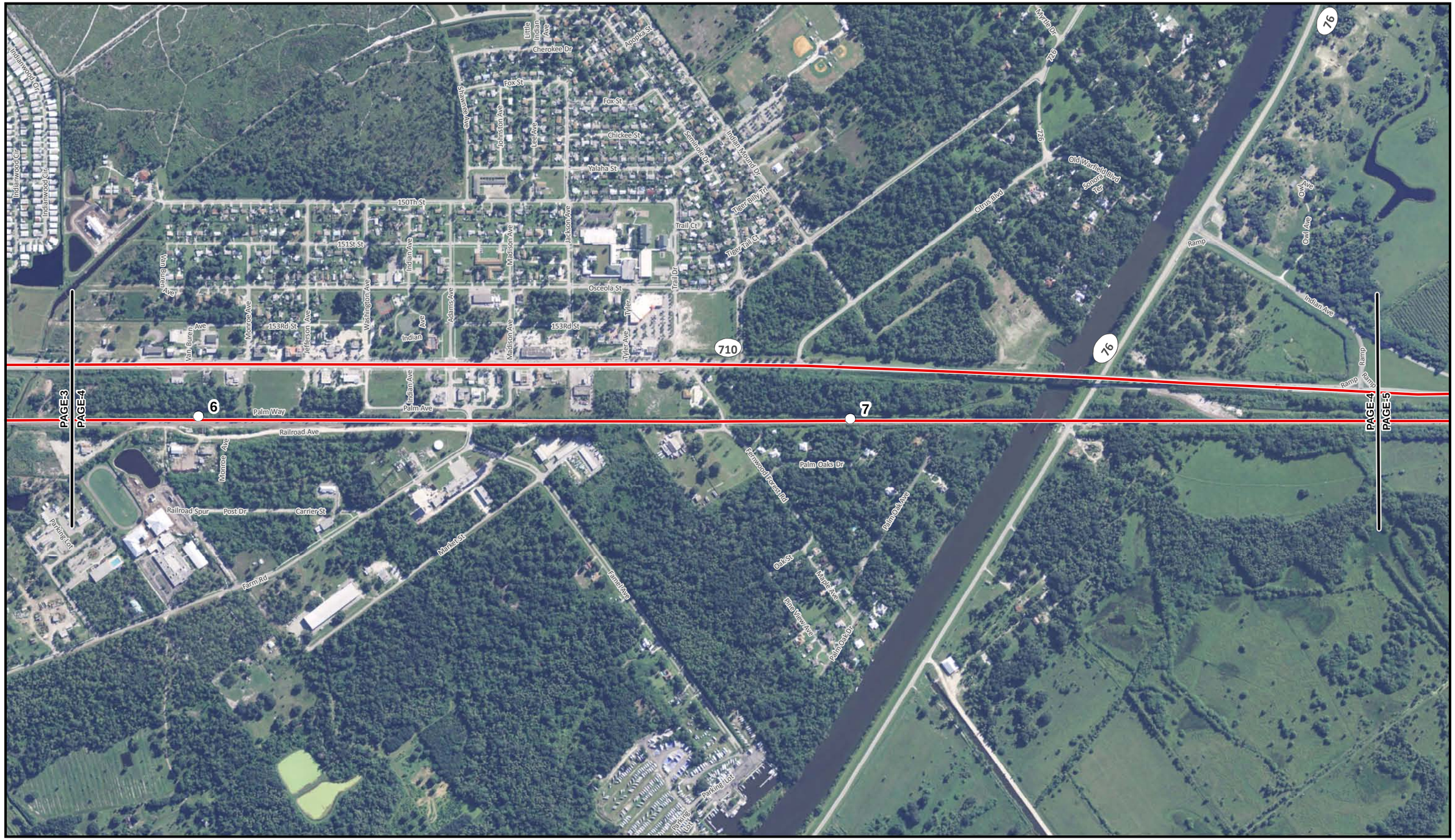
0 1,000 Feet

Milepost | Match Line | Preferred Corridor

Appendix A (Sheet 3 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

0 1,000 Feet

Milepost | Match Line | Preferred Corridor

Appendix A (Sheet 4 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012
Source - ESRI 2010; NAIP 2010



NORTH

0 1,000 Feet

Milepost

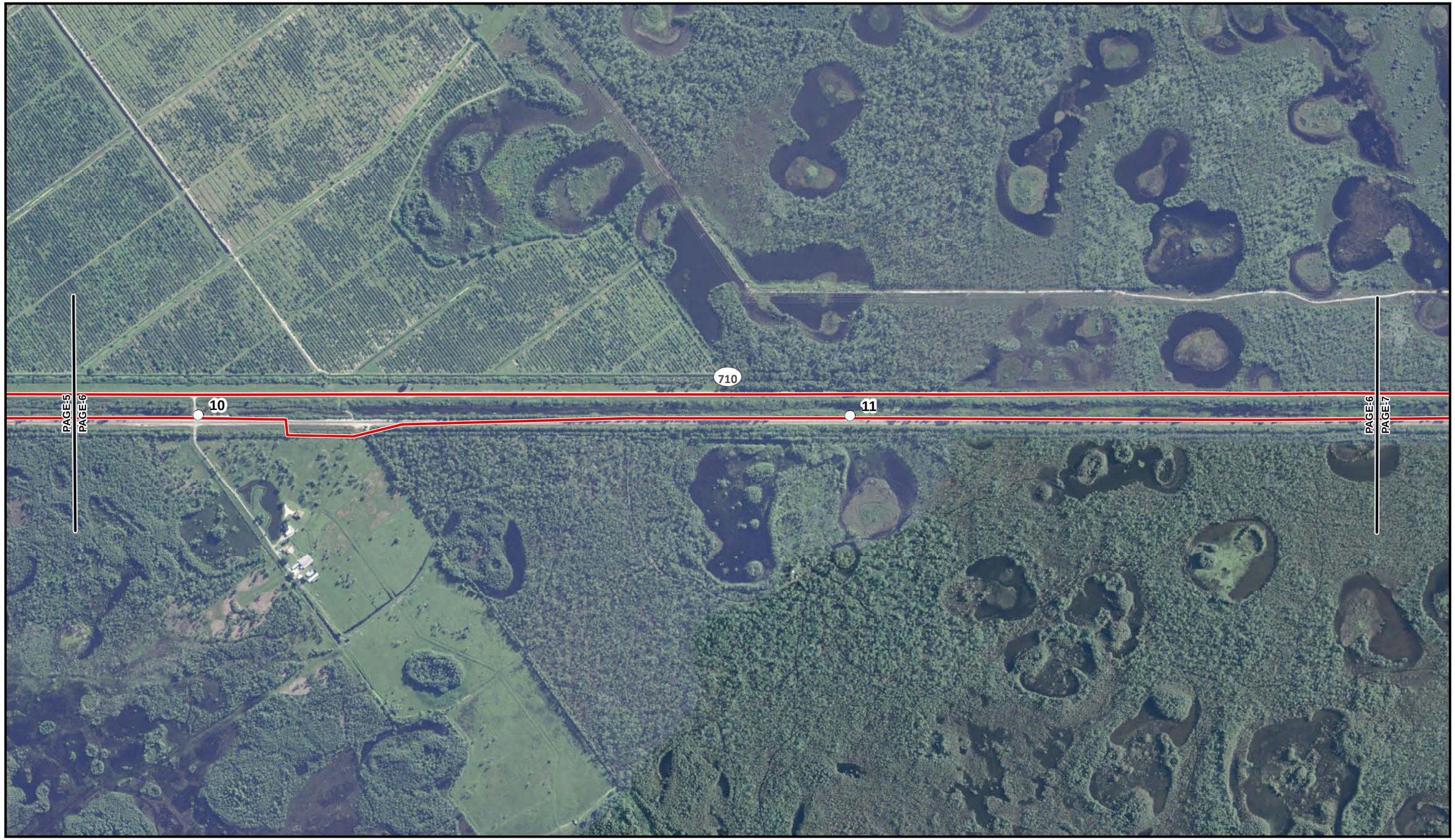
Match Line

Preferred Corridor

Appendix A (Sheet 5 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

0 1,000 Feet

Milepost | Match Line | Preferred Corridor

Appendix A (Sheet 6 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

0 1,000 Feet

Milepost

Match Line

Preferred Corridor

Appendix A (Sheet 7 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

0 1,000 Feet

Milepost

Match Line

Preferred Corridor

Appendix A (Sheet 8 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

0 1,000 Feet

Milepost

Match Line

Preferred Corridor

Appendix A (Sheet 9 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

0 1,000 Feet

Milepost

Match Line

Preferred Corridor

Appendix A (Sheet 10 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

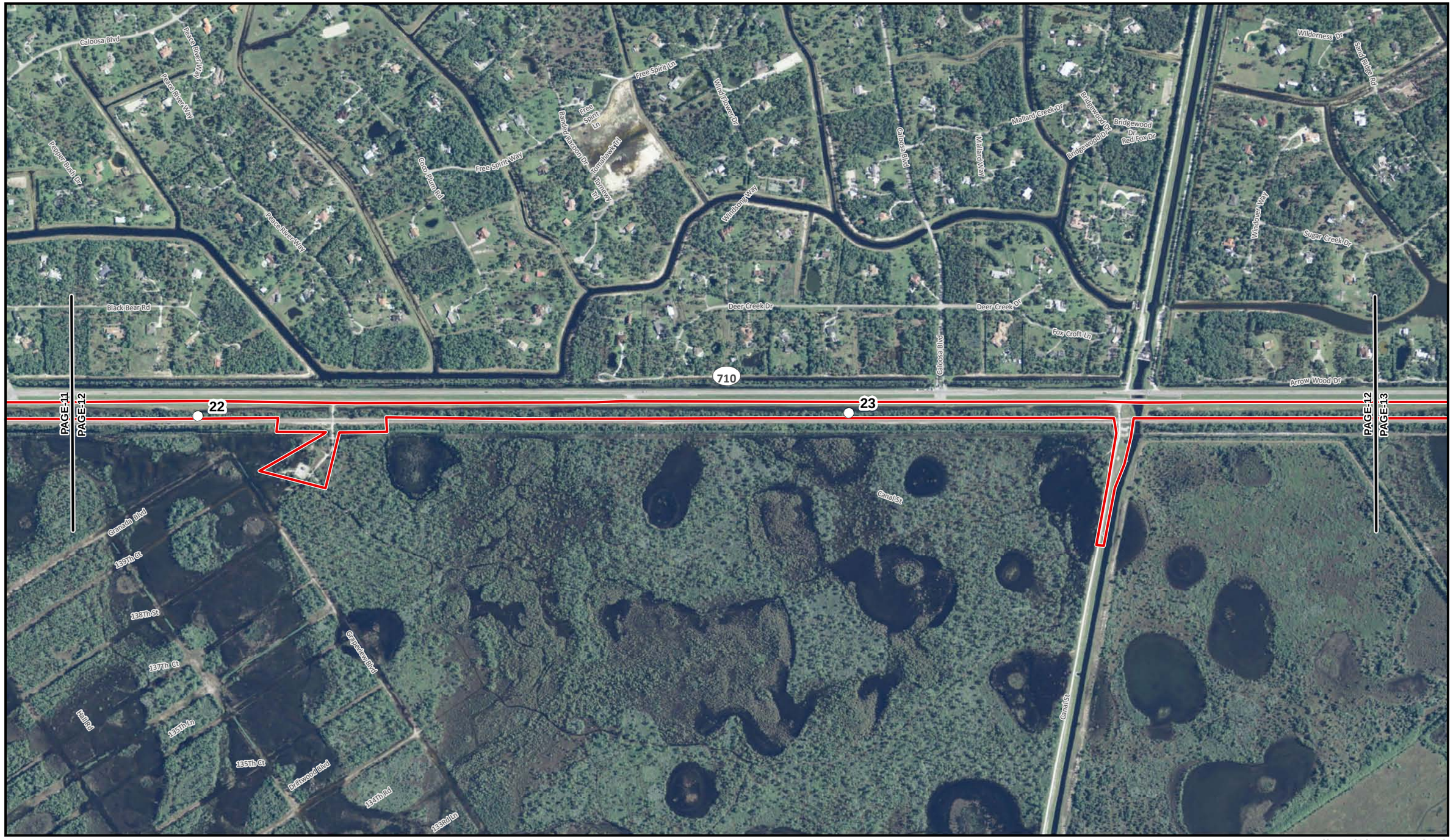
0 1,000 Feet

Milepost | Match Line | Preferred Corridor

Appendix A (Sheet 11 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

0 1,000 Feet

Milepost | Match Line | Preferred Corridor

Appendix A (Sheet 12 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

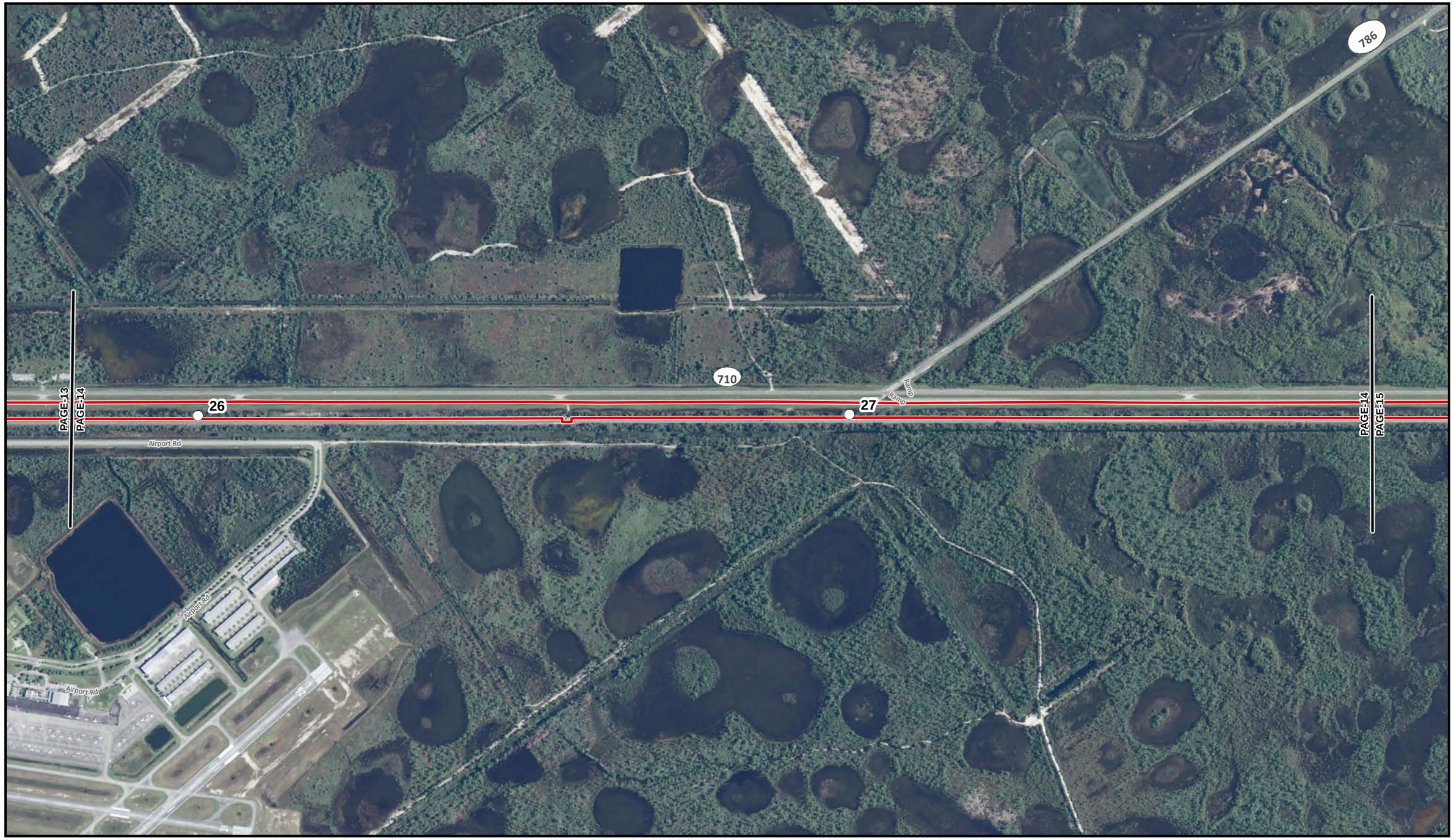
0 1,000 Feet

Milepost | Match Line | Preferred Corridor

Appendix A (Sheet 13 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

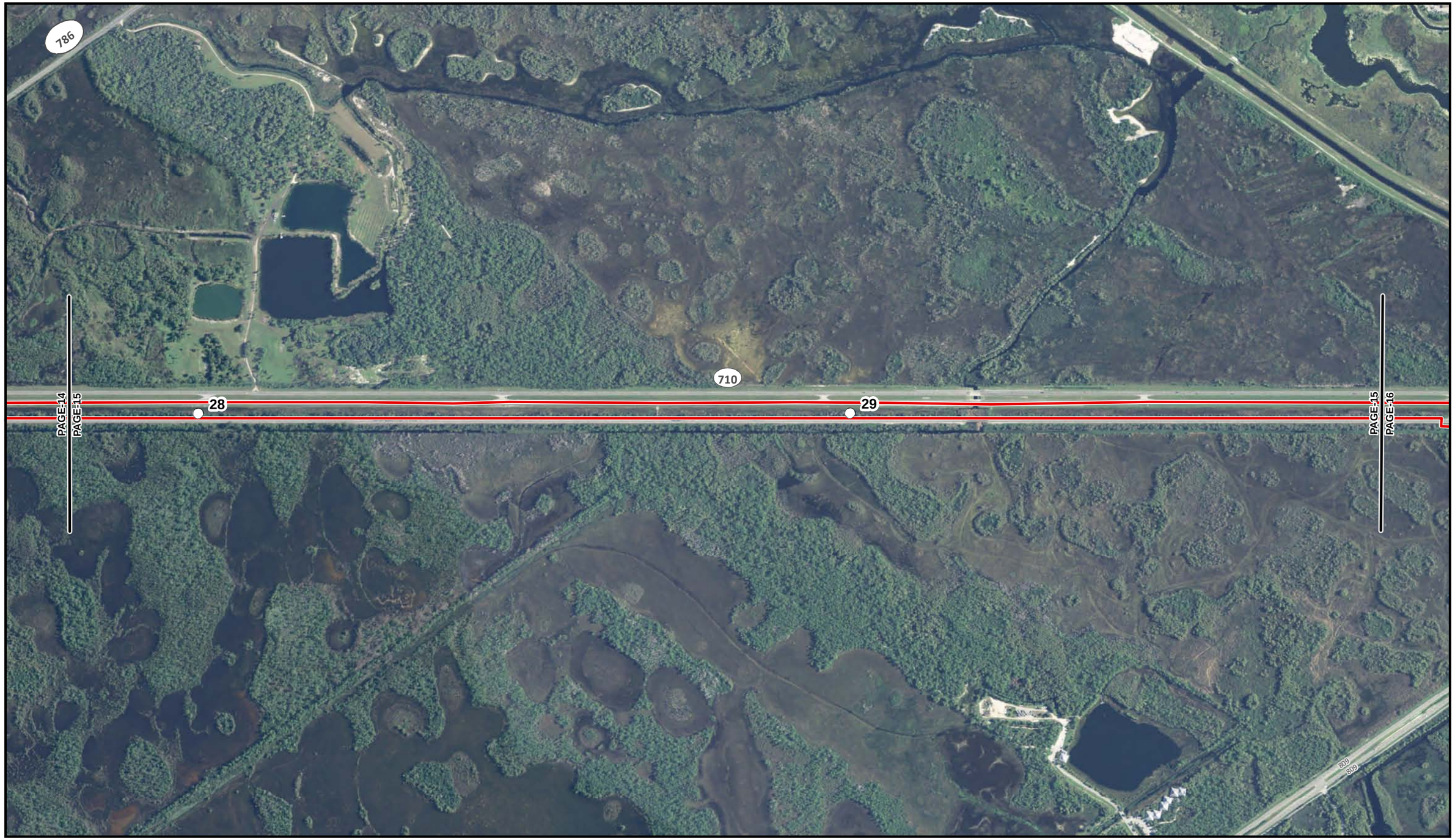
0 1,000 Feet

Milepost | Match Line | Preferred Corridor

Appendix A (Sheet 14 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

0 1,000 Feet

Milepost | Match Line | Preferred Corridor

Appendix A (Sheet 15 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



NORTH

0 1,000 Feet

Milepost | Match Line | Preferred Corridor

Appendix A (Sheet 16 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



Appendix A (Sheet 17 of 17)
2010 Aerial Imagery
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012
Source - ESRI 2010; NAIP 2010

Appendix B

Topographic Maps

This page left blank intentionally.

BATHYMETRIC FEATURES

- Area exposed at mean low tide; sounding datum line***
- Channel***
- Sunken rock***

BOUNDARIES

- National
- State or territorial
- County or equivalent
- Civil township or equivalent
- Incorporated city or equivalent
- Federally administered park, reservation, or monument (external)
- Federally administered park, reservation, or monument (internal)
- State forest, park, reservation, or monument and large county park
- Forest Service administrative area*
- Forest Service ranger district*
- National Forest System land status, Forest Service lands*
- National Forest System land status, non-Forest Service lands*
- Small park (county or city)

BUILDINGS AND RELATED FEATURES

- Building
- School; house of worship
- Athletic field
- Built-up area
- Forest headquarters*
- Ranger district office*
- Guard station or work center*
- Racetrack or raceway
- Airport, paved landing strip, runway, taxiway, or apron
- Unpaved landing strip
- Well (other than water), windmill or wind generator
- Tanks
- Covered reservoir
- Gaging station
- Located or landmark object (feature as labeled)
- Boat ramp or boat access*
- Roadside park or rest area
- Picnic area
- Campground
- Winter recreation area*
- Cemetery

COASTAL FEATURES

- Foreshore flat
- Coral or rock reef
- Rock, bare or awash; dangerous to navigation
- Group of rocks, bare or awash
- Exposed wreck
- Depth curve; sounding
- Breakwater, pier, jetty, or wharf
- Seawall
- Oil or gas well; platform

CONTOURS

Topographic

- Index
- Approximate or indefinite
- Intermediate
- Approximate or indefinite
- Supplementary
- Depression
- Cut
- Fill
- Continental divide

Bathymetric

- Index***
- Intermediate***
- Index primary***
- Primary***
- Supplementary***

CONTROL DATA AND MONUMENTS

- Principal point**
- U.S. mineral or location monument
- River mileage marker

Boundary monument

- Third-order or better elevation, with tablet
- Third-order or better elevation, recoverable mark, no tablet
- With number and elevation

Horizontal control

- Third-order or better, permanent mark
- With third-order or better elevation
- With checked spot elevation
- Coincident with found section corner
- Unmonumented**

CONTROL DATA AND MONUMENTS – *continued*

Vertical control

- Third-order or better elevation, with tablet — BM 5280
- Third-order or better elevation, recoverable mark, no tablet — 528
- Bench mark coincident with found section corner — BM 5280
- Spot elevation — 7523

GLACIERS AND PERMANENT SNOWFIELDS

- Contours and limits
- Formlines
- Glacial advance
- Glacial retreat

LAND SURVEYS

Public land survey system

- Range or Township line
  - Location approximate
  - Location doubtful
  - Protracted
  - Protracted (AK 1:63,360-scale)
  - Range or Township labels — R1E T2N R3W T4S
- Section line
  - Location approximate
  - Location doubtful
  - Protracted
  - Protracted (AK 1:63,360-scale)
  - Section numbers — 1 - 36
- Found section corner
- Found closing corner
- Witness corner — WC
- Meander corner — MC
- Weak corner*

Other land surveys

- Range or Township line
- Section line
- Land grant, mining claim, donation land claim, or tract
- Land grant, homestead, mineral, or other special survey monument
- Fence or field lines

MARINE SHORELINES

- Shoreline
- Apparent (edge of vegetation)***
- Indefinite or unsurveyed

MINES AND CAVES

- Quarry or open pit mine
- Gravel, sand, clay, or borrow pit
- Mine tunnel or cave entrance
- Mine shaft
- Prospect — X
- Tailings — Tailings
- Mine dump
- Former disposal site or mine

PROJECTION AND GRIDS

- Neatline — 39°15′ 90°37′30″
- Graticule tick — 55′
- Graticule intersection
- Datum shift tick

State plane coordinate systems

- Primary zone tick — 640 000 FEET
- Secondary zone tick — 247 500 METERS
- Tertiary zone tick — 260 000 FEET
- Quaternary zone tick — 98 500 METERS
- Quintary zone tick — 320 000 FEET

Universal transverse metcator grid

- UTM grid (full grid) — 273
- UTM grid ticks* — 269

RAILROADS AND RELATED FEATURES

- Standard guage railroad, single track
- Standard guage railroad, multiple track
- Narrow guage railroad, single track
- Narrow guage railroad, multiple track
- Railroad siding
- Railroad in highway
  Railroad in road
  Railroad in light duty road*
- Railroad underpass; overpass
- Railroad bridge; drawbridge
- Railroad tunnel
- Railroad yard
- Railroad turntable; roundhouse

RIVERS, LAKES, AND CANALS

- Perennial stream
- Perennial river
- Intermittent stream
- Intermittent river
- Disappearing stream
- Falls, small
- Falls, large
- Rapids, small
- Rapids, large
- Masonry dam
- Dam with lock
- Dam carrying road

RIVERS, LAKES, AND CANALS – *continued*

- Perennial lake/pond
- Intermittent lake/pond
- Dry lake/pond
- Narrow wash
- Wide wash
- Canal, flume, or aqueduct with lock
- Elevated aqueduct, flume, or conduit
- Aqueduct tunnel
- Water well, geyser, fumarole, or mud pot
- Spring or seep

ROADS AND RELATED FEATURES

Please note: Roads on Provisional-edition maps are not classified as primary, secondary, or light duty. These roads are all classified as improved roads and are symbolized the same as light duty roads.

- Primary highway
- Secondary highway
- Light duty road
- Light duty road, paved*
- Light duty road, gravel*
- Light duty road, dirt*
- Light duty road, unspecified*
- Unimproved road
- Unimproved road*
- 4WD road
- 4WD road*
- Trail
- Highway or road with median strip
- Highway or road under construction
- Highway or road underpass; overpass
- Highway or road bridge; drawbridge
- Highway or road tunnel
- Road block, berm, or barrier*
- Gate on road*
- Trailhead*

SUBMERGED AREAS AND BOGS

- Marsh or swamp
- Submerged marsh or swamp
- Wooded marsh or swamp
- Submerged wooded marsh or swamp
- Land subject to inundation

SURFACE FEATURES

- Levee
- Sand or mud
- Disturbed surface
- Gravel beach or glacial moraine
- Tailings pond

TRANSMISSION LINES AND PIPELINES

- Power transmission line; pole; tower
- Telephone line
- Aboveground pipeline
- Underground pipeline

VEGETATION

- Woodland
- Shrubland
- Orchard
- Vineyard
- Mangrove

* USGS-USDA Forest Service Single-Edition Quadrangle maps only.

In August 1993, the U.S. Geological Survey and the U.S. Department of Agriculture's Forest Service signed an Interagency Agreement to begin a single-edition joint mapping program. This agreement established the coordination for producing and maintaining single-edition primary series topographic maps for quadrangles containing National Forest System lands. The joint mapping program eliminates duplication of effort by the agencies and results in a more frequent revision cycle for quadrangles containing National Forests. Maps are revised on the basis of jointly developed standards and contain normal features mapped by the USGS, as well as additional features required for efficient management of National Forest System lands. Single-edition maps look slightly different but meet the content, accuracy, and quality criteria of other USGS products.

** Provisional-Edition maps only.

Provisional-edition maps were established to expedite completion of the remaining large-scale topographic quadrangles of the conterminous United States. They contain essentially the same level of information as the standard series maps. This series can be easily recognized by the title "Provisional Edition" in the lower right-hand corner.

*** Topographic Bathymetric maps only.

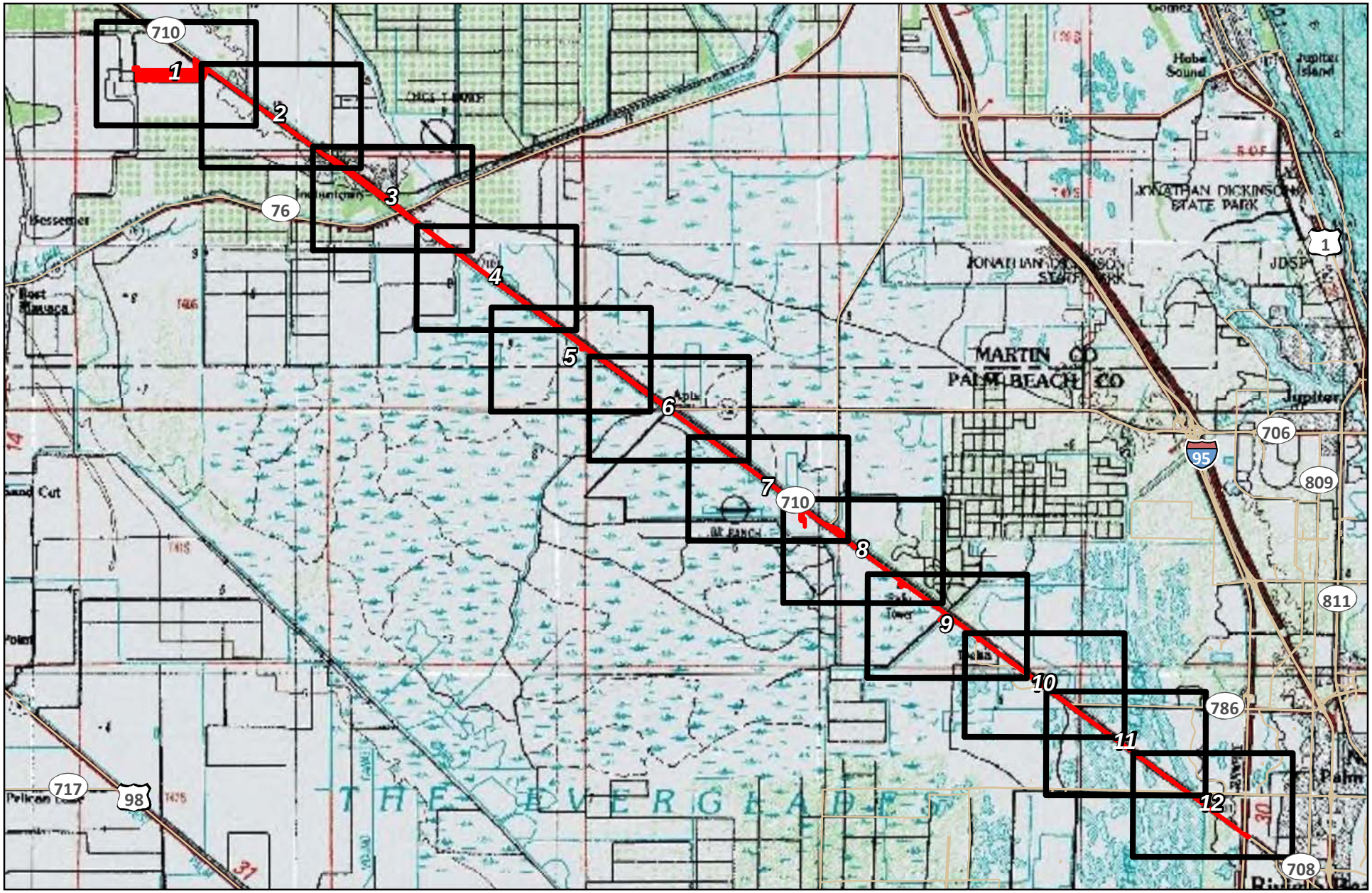
Topographic Map Information

For more information about topographic maps produced by the USGS, please call: 1-888-ASK-USGS or visit us at http://ask.usgs.gov/

ISBN 0-607-96942-3

Printed on recycled paper

This page left blank intentionally.



NORTH

0 5 Miles

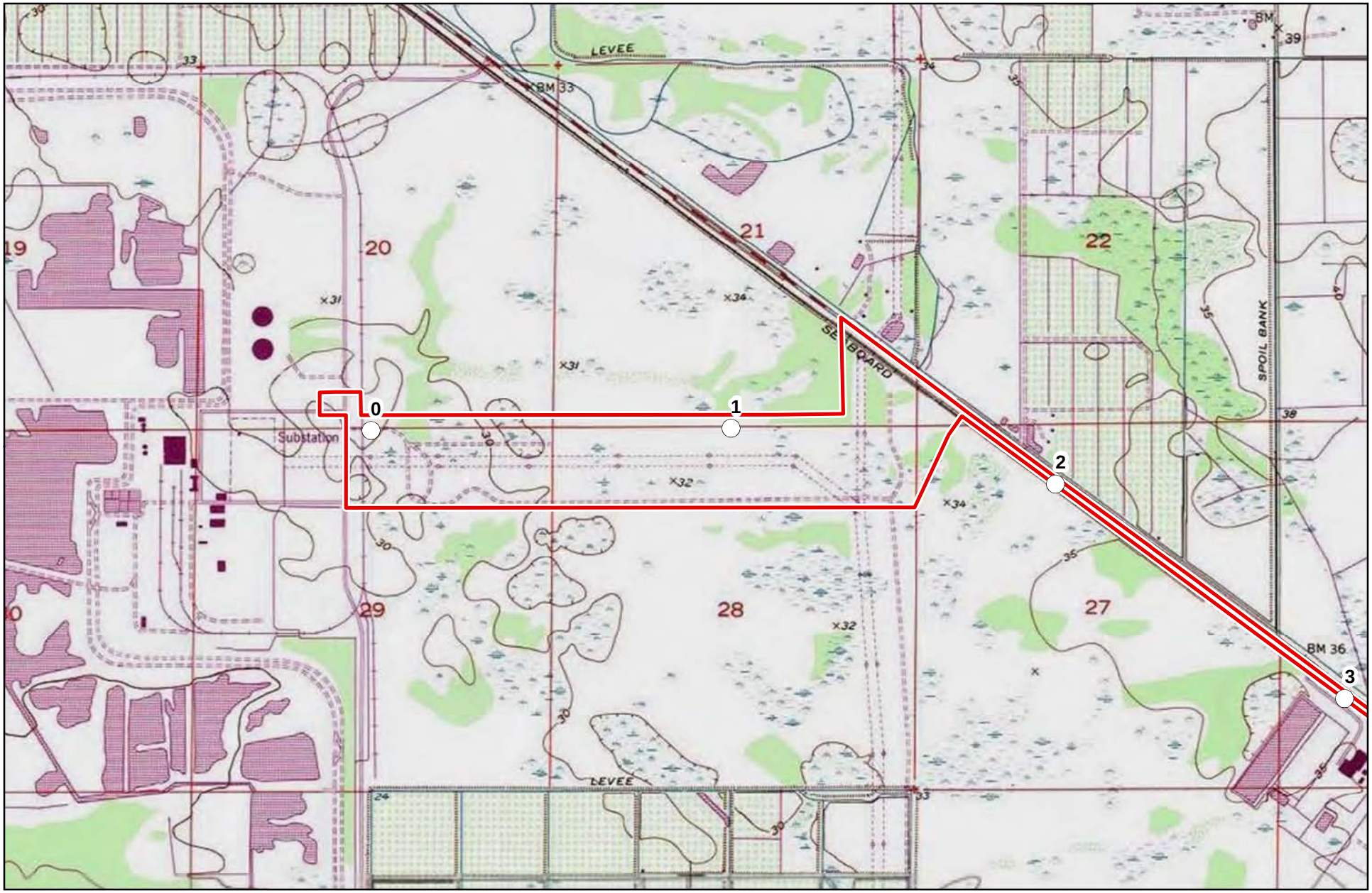
Map Index

Preferred Corridor

Appendix B- Map Index
24K Topo Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - USGS 2007; ESRI 2010.



NORTH

0 2,000 Feet

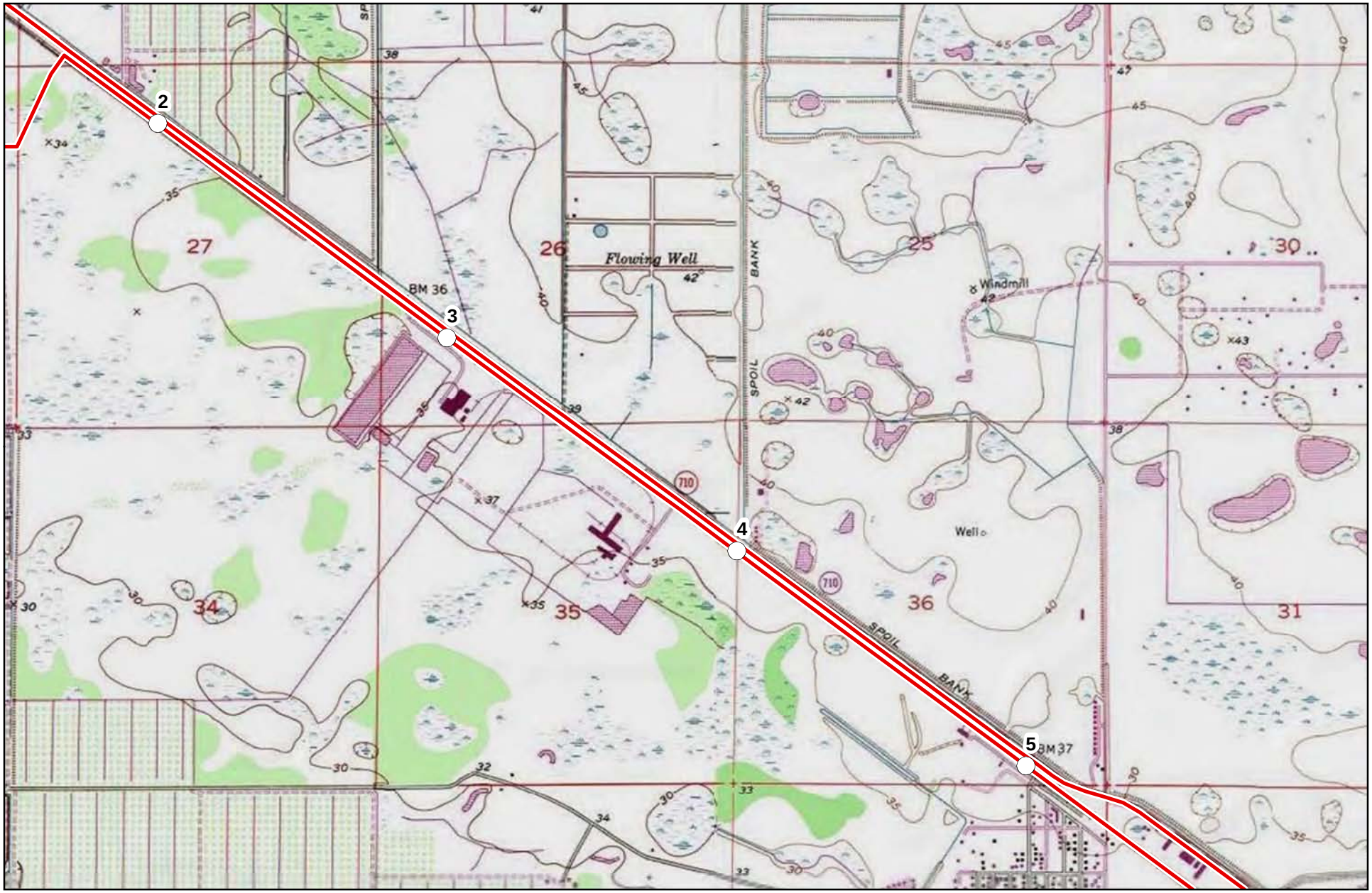
Milepost

Preferred Corridor

Appendix B (Sheet 1 of 12)
24K Topo Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - USGS 2007; ESRI 2010.



Appendix B (Sheet 2 of 12)
24K Topo Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

NORTH

0 2,000 Feet

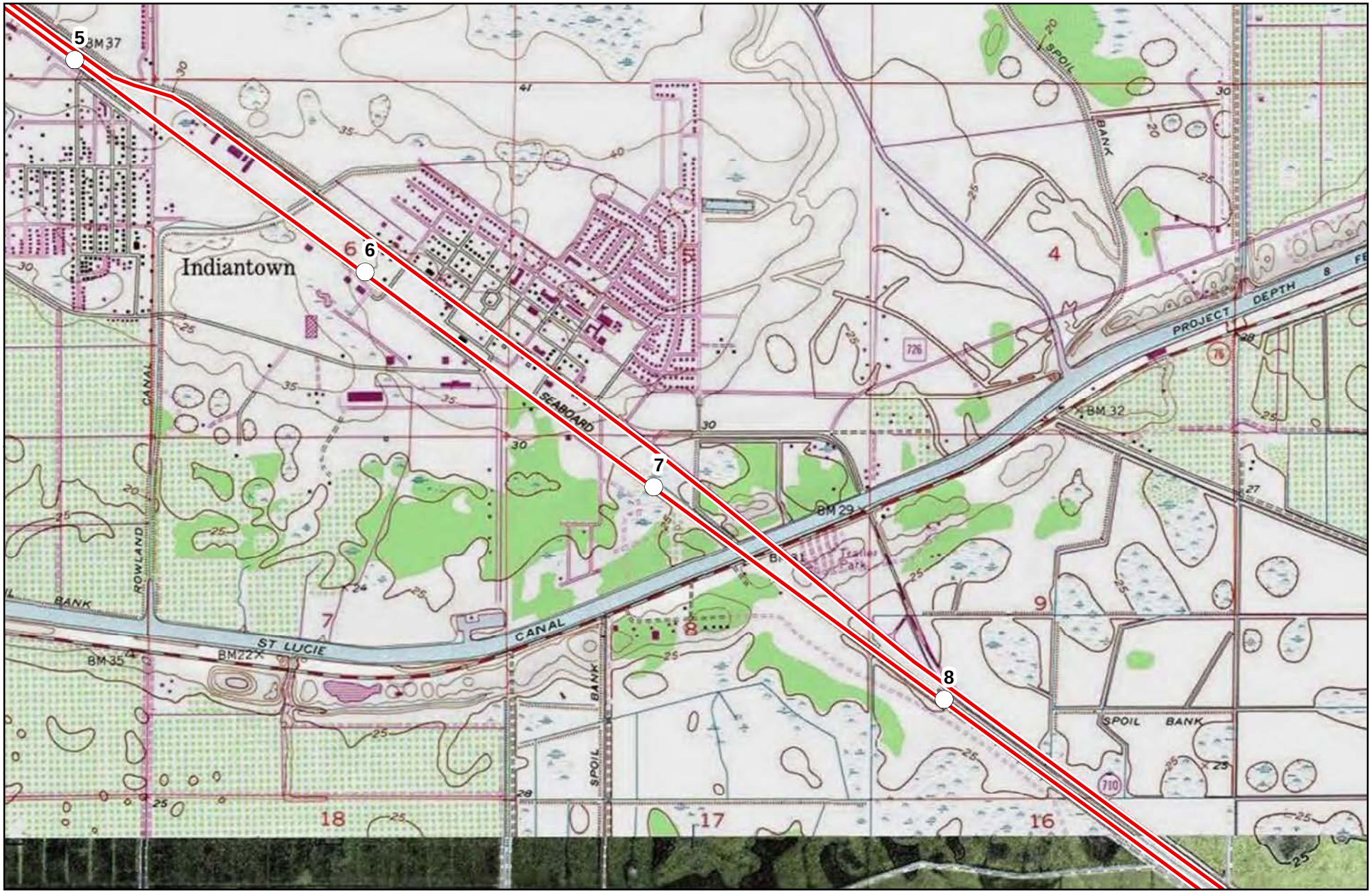
Milepost

Preferred Corridor

FPL

Date: 2/17/2012

Source - USGS 2007; ESRI 2010.



NORTH

0 2,000 Feet

Milepost

Preferred Corridor

Appendix B (Sheet 3 of 12)
24K Topo Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - USGS 2007; ESRI 2010.



NORTH

0 2,000 Feet

Milepost

Preferred Corridor

Appendix B (Sheet 4 of 12)
24K Topo Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - USGS 2007; ESRI 2010.



Appendix B (Sheet 5 of 12)
24K Topo Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

NORTH

0 2,000 Feet

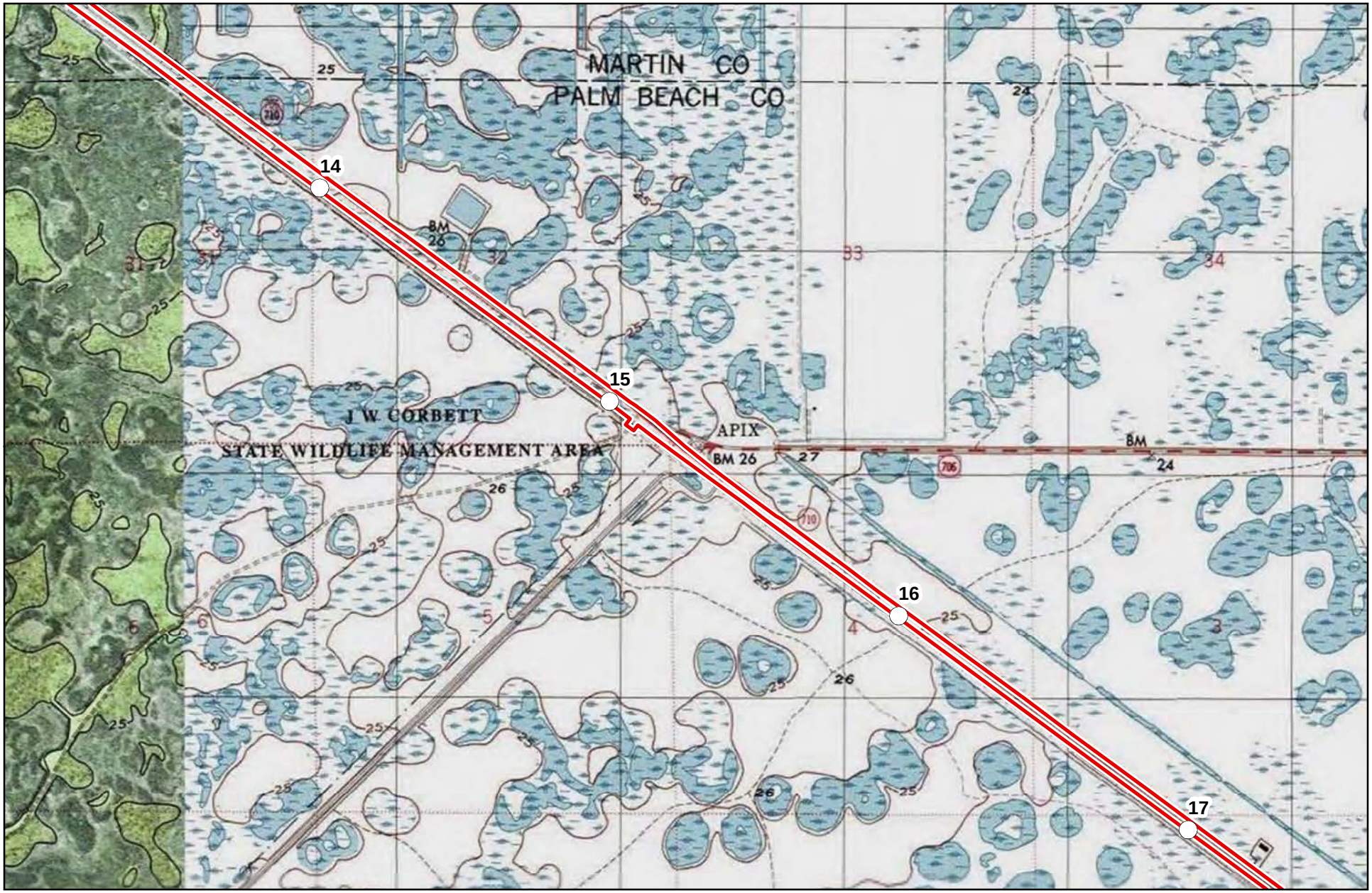
Milepost

Preferred Corridor

FPL

Date: 2/17/2012

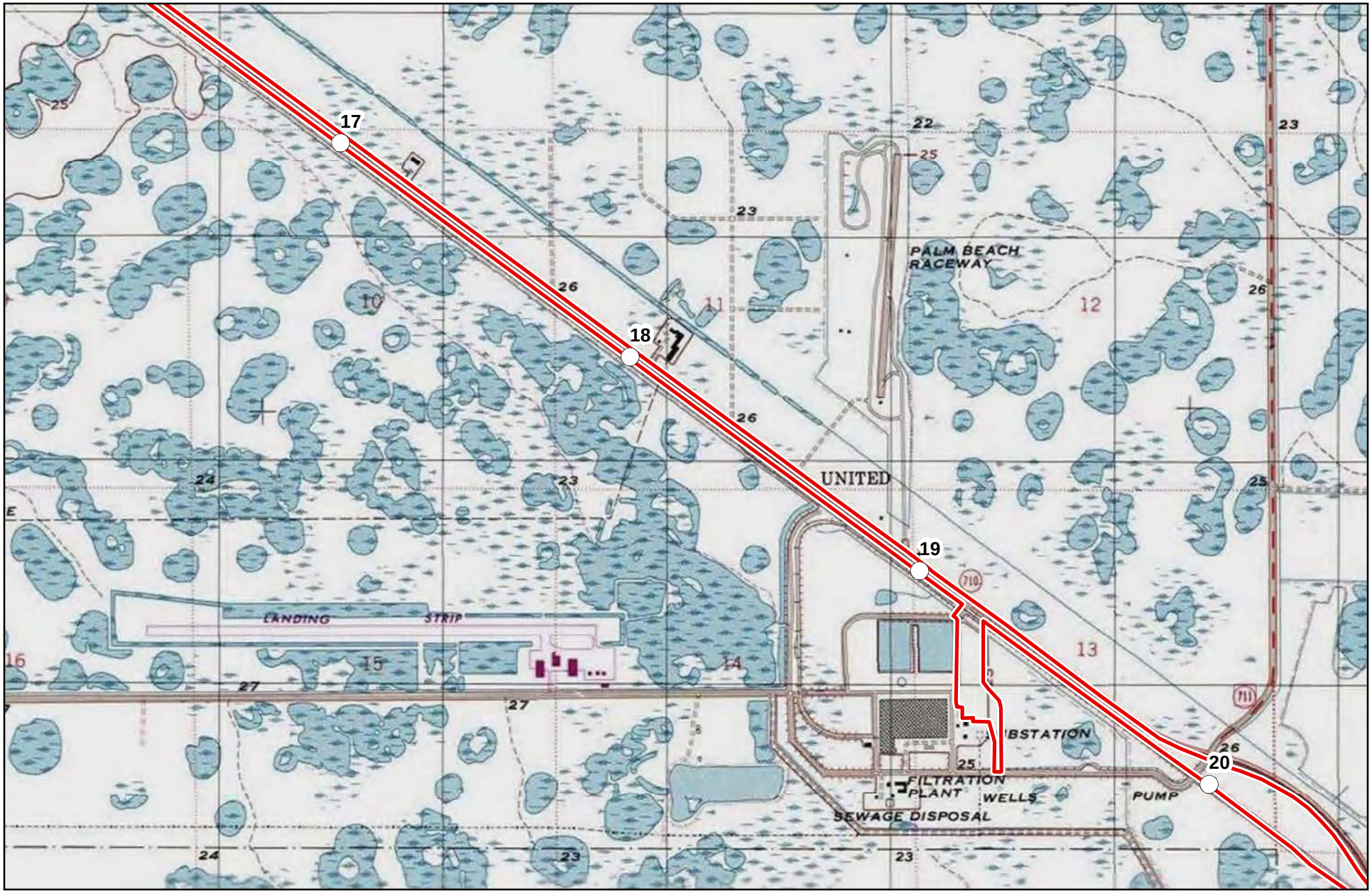
Source - USGS 2007; ESRI 2010.



Appendix B (Sheet 6 of 12)
24K Topo Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

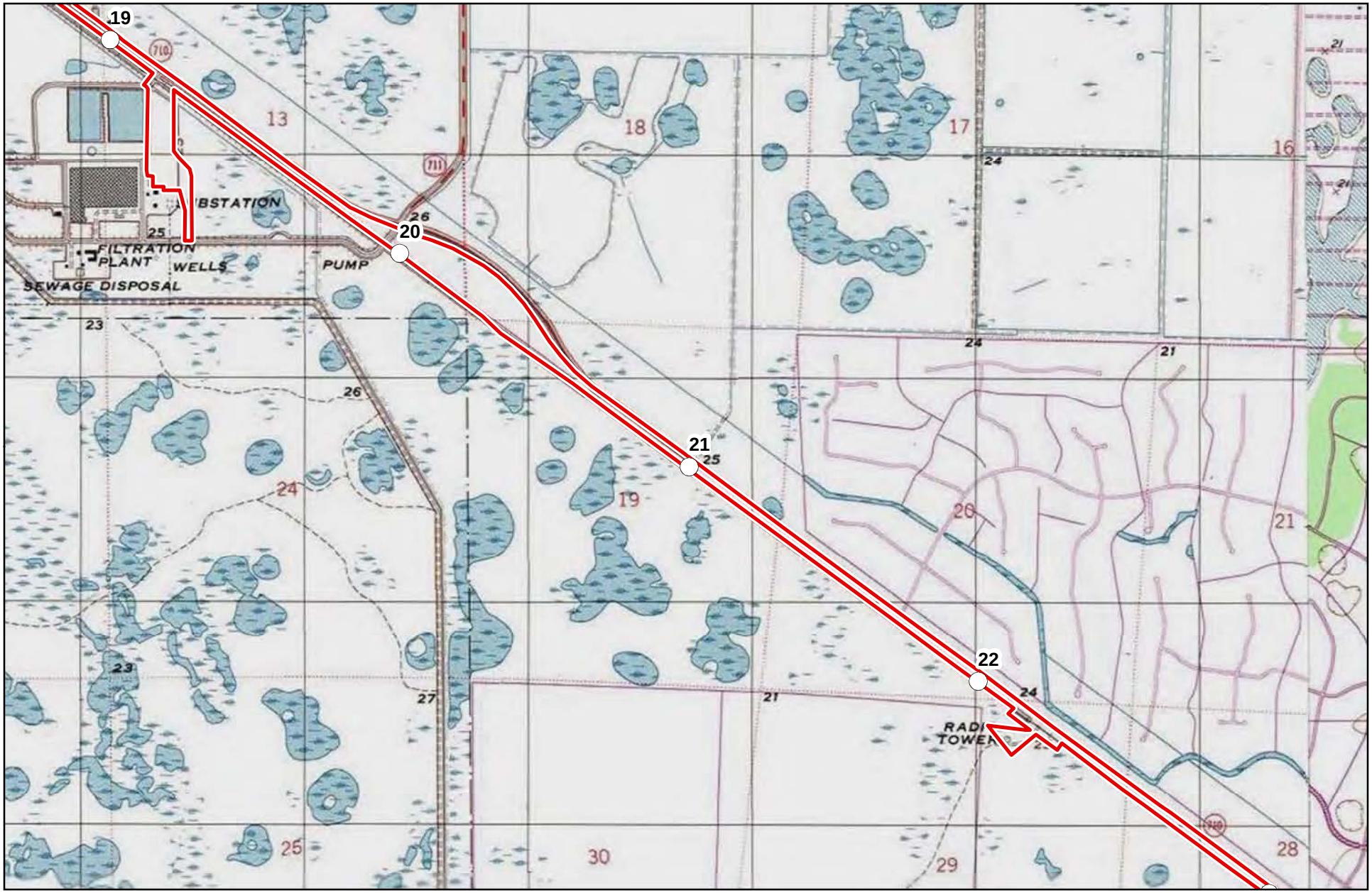
Source - USGS 2007; ESRI 2010.



Appendix B (Sheet 7 of 12)
24K Topo Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - USGS 2007; ESRI 2010.



Appendix B (Sheet 8 of 12)
24K Topo Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

NORTH

0 2,000 Feet

Milepost

Preferred Corridor

FPL

Date: 2/17/2012

Source - USGS 2007; ESRI 2010.



NORTH

0 2,000 Feet

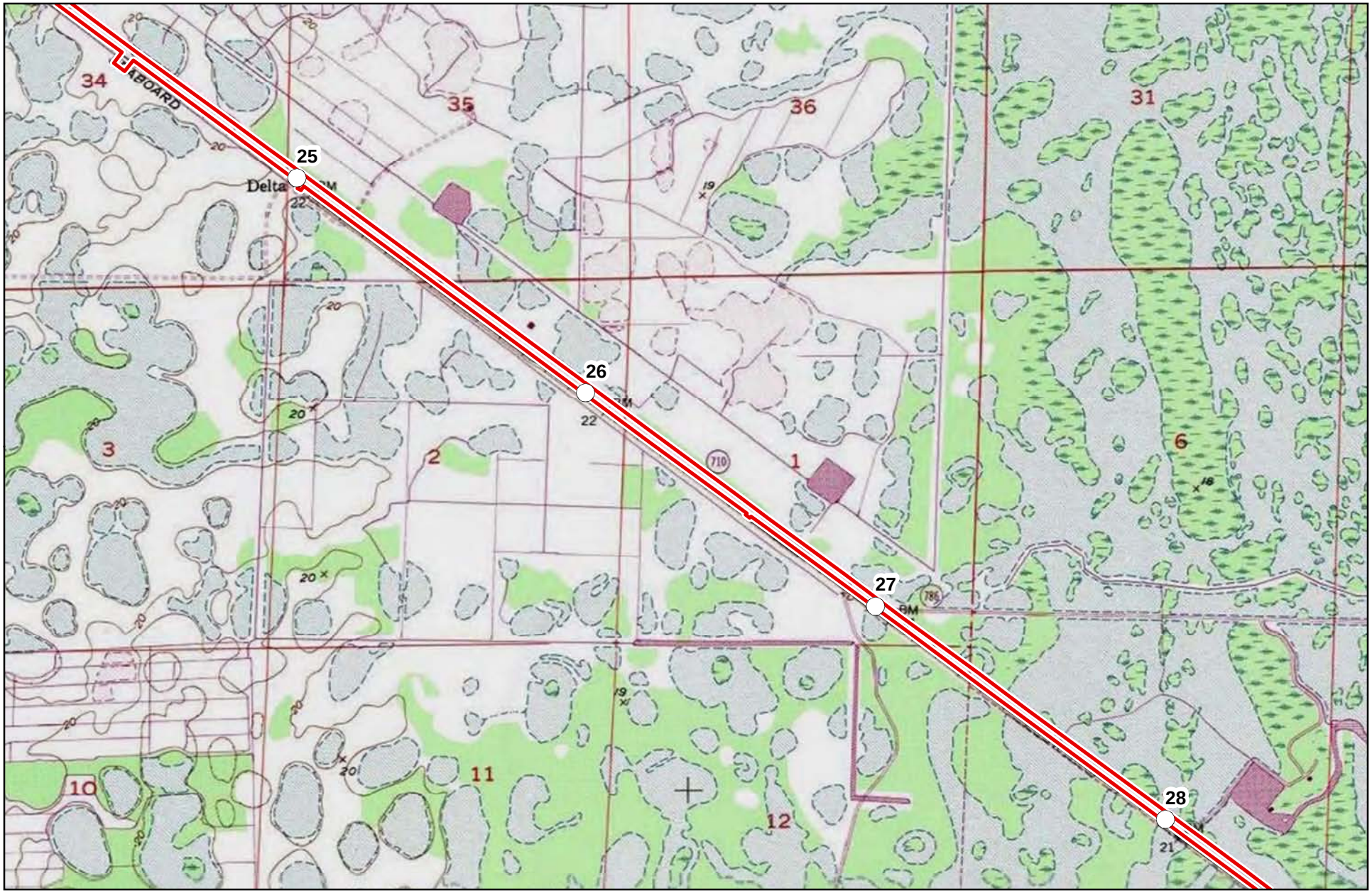
Milepost

Preferred Corridor

Appendix B (Sheet 9 of 12)
24K Topo Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - USGS 2007; ESRI 2010.



Appendix B (Sheet 10 of 12)
24K Topo Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - USGS 2007; ESRI 2010.



NORTH

0 2,000 Feet

Milepost

Preferred Corridor

Appendix B (Sheet 11 of 12)
24K Topo Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - USGS 2007; ESRI 2010.



Appendix B (Sheet 12 of 12)
24K Topo Map
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - USGS 2007; ESRI 2010.

NORTH

0 2,000 Feet

Milepost

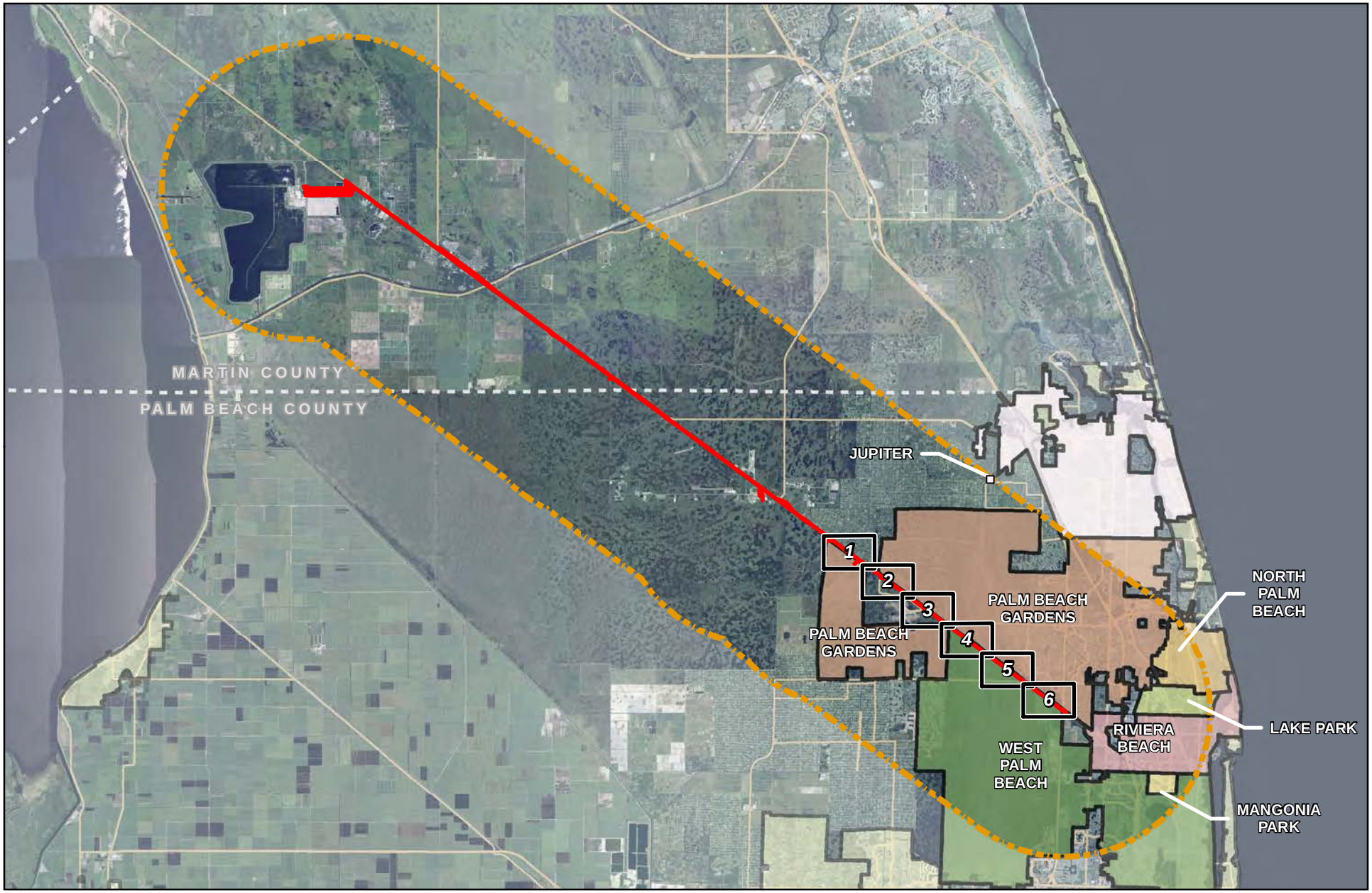
Preferred Corridor

This page left blank intentionally.

Appendix C

Government Jurisdiction Maps

This page left blank intentionally.



NORTH

0 5 Miles

Preferred Corridor
5 Mile Buffer Zone
County Boundary
Map Index

Municipal Boundary
Jupiter
Lake Park
Mangonia Park

North Palm Beach
Palm Beach Gardens
Riviera Beach
West Palm Beach

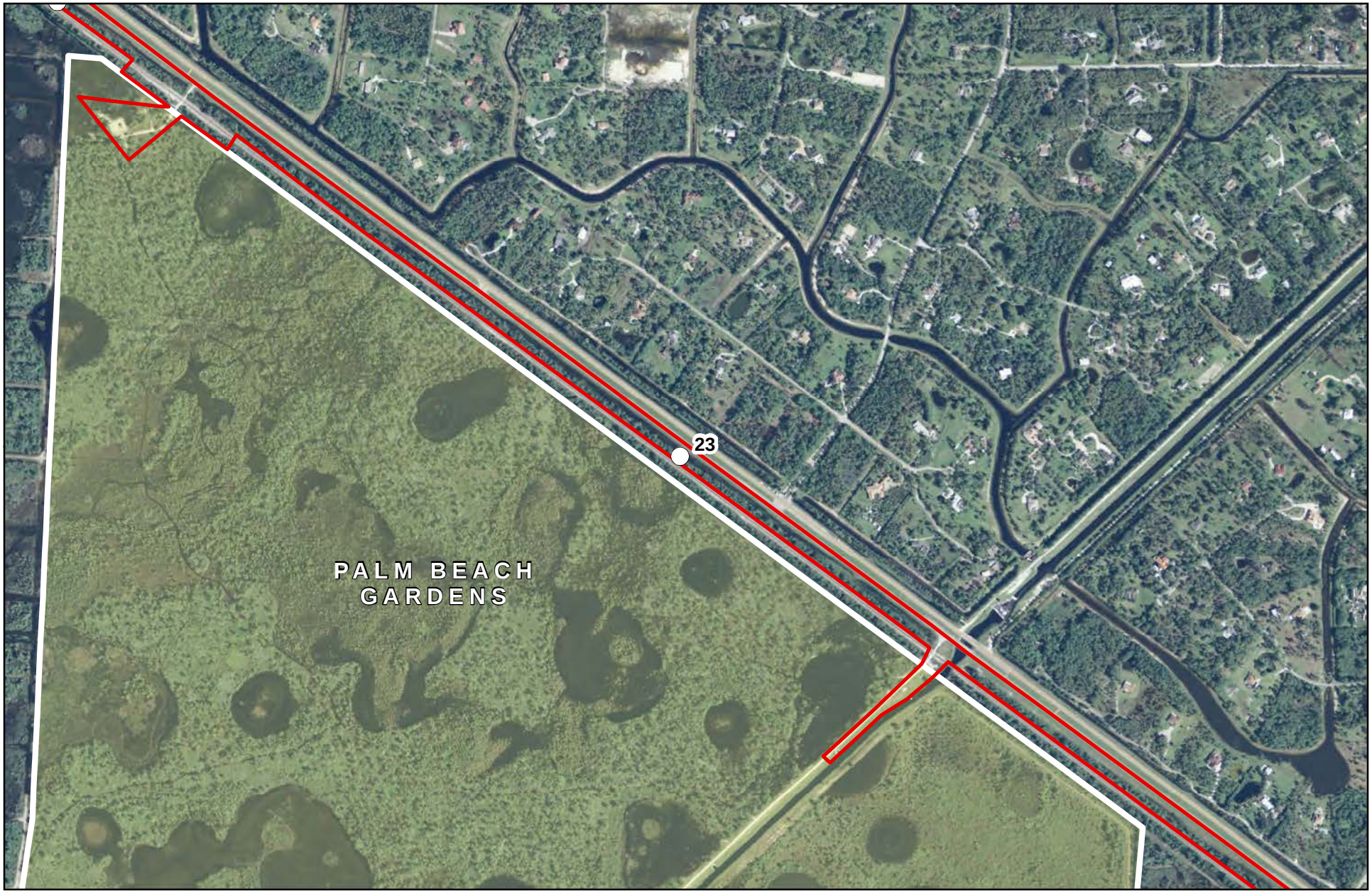
FPL

Appendix C- Map Index

County and Municipal Boundaries
Government Jurisdiction
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
County Boundary

Municipal Boundary
Palm Beach Gardens
West Palm Beach

Appendix C (Sheet 1 of 6)
Municipal Boundaries
Government Jurisdiction
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010; NAIP 2010, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
County Boundary

Municipal Boundary
Palm Beach Gardens
West Palm Beach

Appendix C (Sheet 2 of 6)
Municipal Boundaries
Government Jurisdiction
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010; NAIP 2010, Palm Beach County GIS.



NORTH

0 1,000 Feet

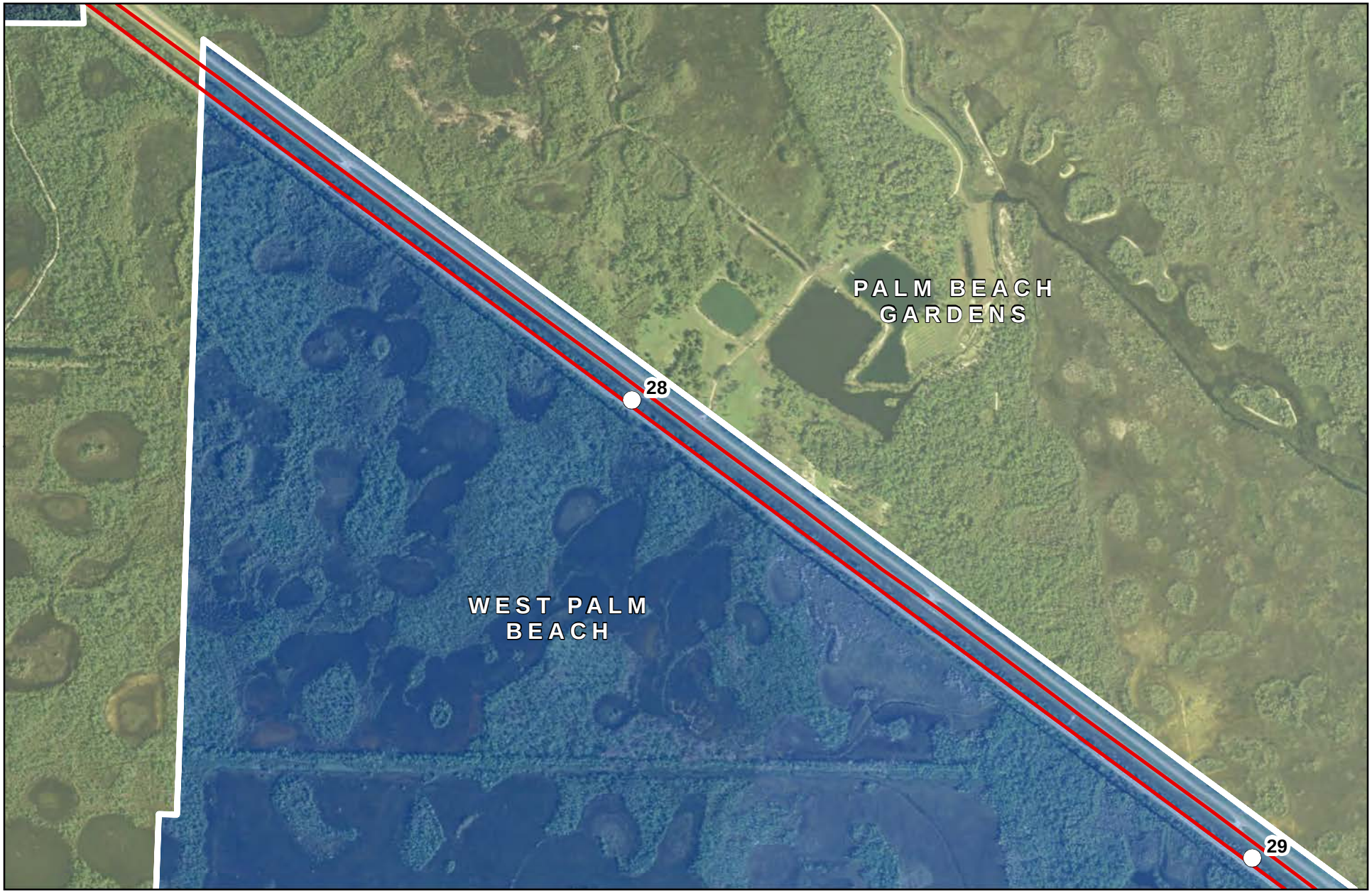
Milepost
Preferred Corridor
County Boundary

Municipal Boundary
Palm Beach Gardens
West Palm Beach

Appendix C (Sheet 3 of 6)
Municipal Boundaries
Government Jurisdiction
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010; NAIP 2010, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
County Boundary

Municipal Boundary
Palm Beach Gardens
West Palm Beach

Appendix C (Sheet 4 of 6)
Municipal Boundaries
Government Jurisdiction
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010; NAIP 2010, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
County Boundary

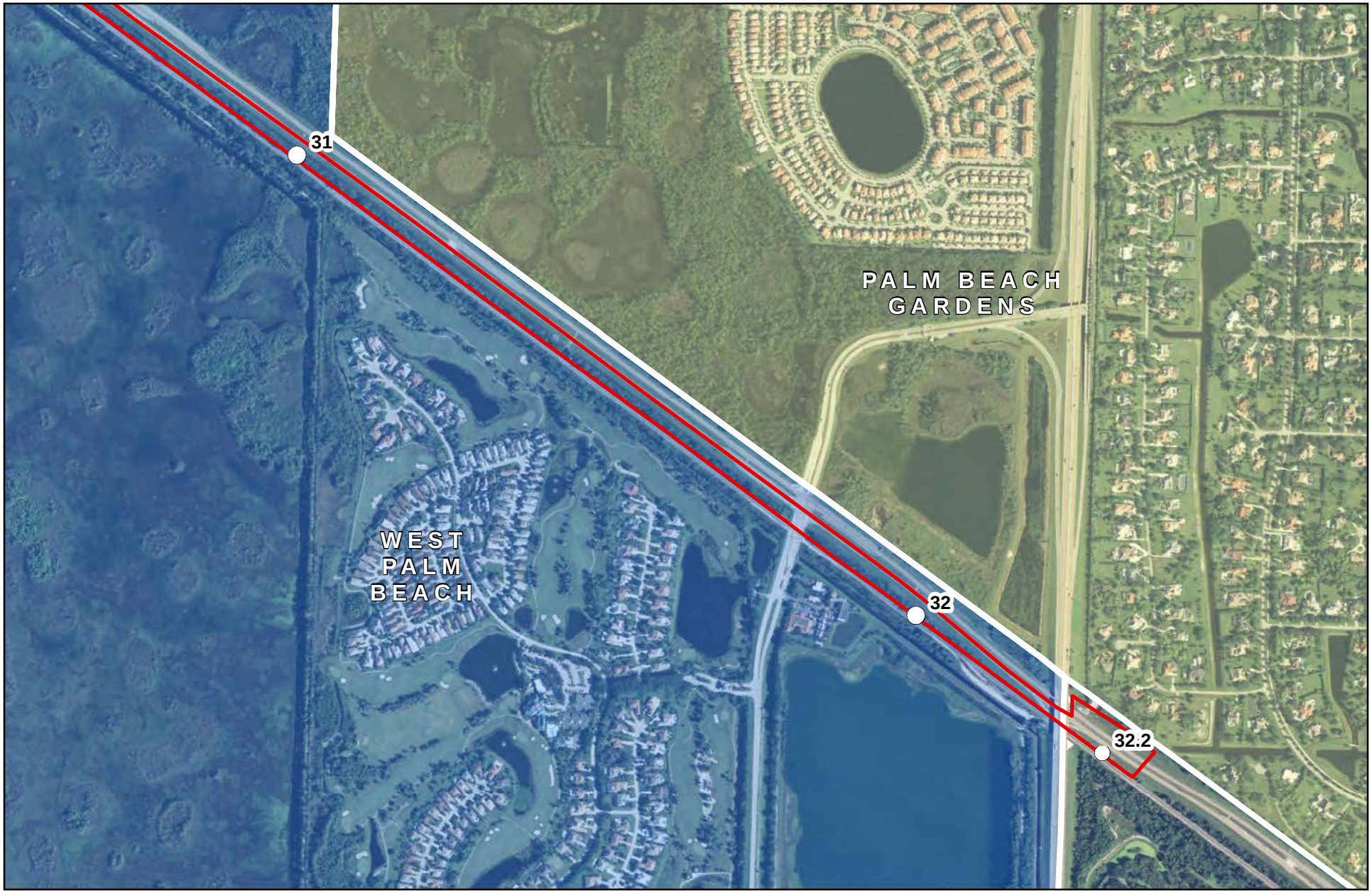
Municipal Boundary
Palm Beach Gardens
West Palm Beach

FPL

Appendix C (Sheet 5 of 6)
Municipal Boundaries
Government Jurisdiction
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010; NAIP 2010, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
County Boundary

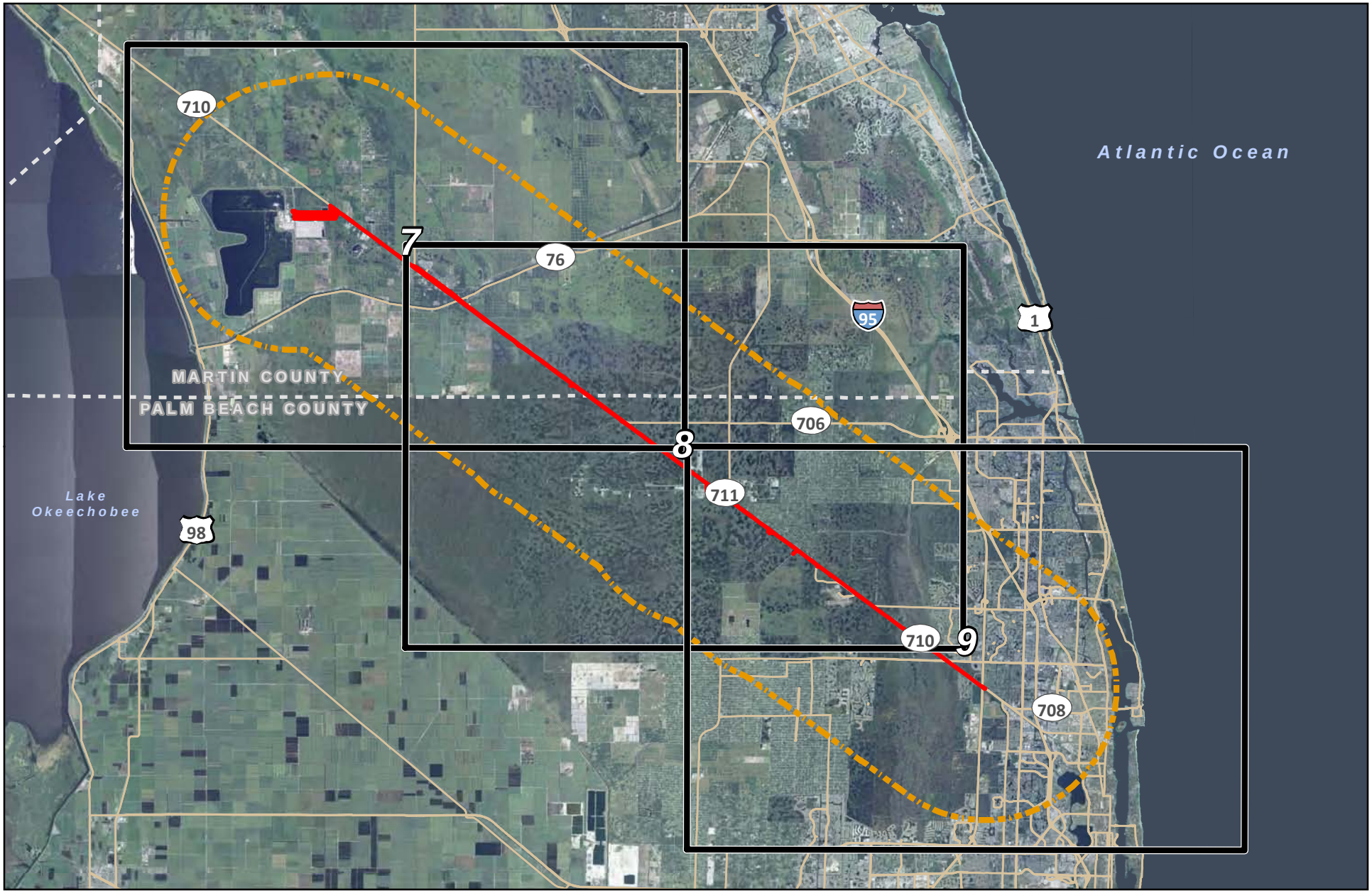
Municipal Boundary
Palm Beach Gardens
West Palm Beach

FPL

Appendix C (Sheet 6 of 6)
Municipal Boundaries
Government Jurisdiction
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010; NAIP 2010, Palm Beach County GIS.



NORTH

0 5 Miles

Map Index

County Boundary

Preferred Corridor

5 Mile Buffer Zone

FPL

Appendix C- Map Index

Florida Conservation Lands

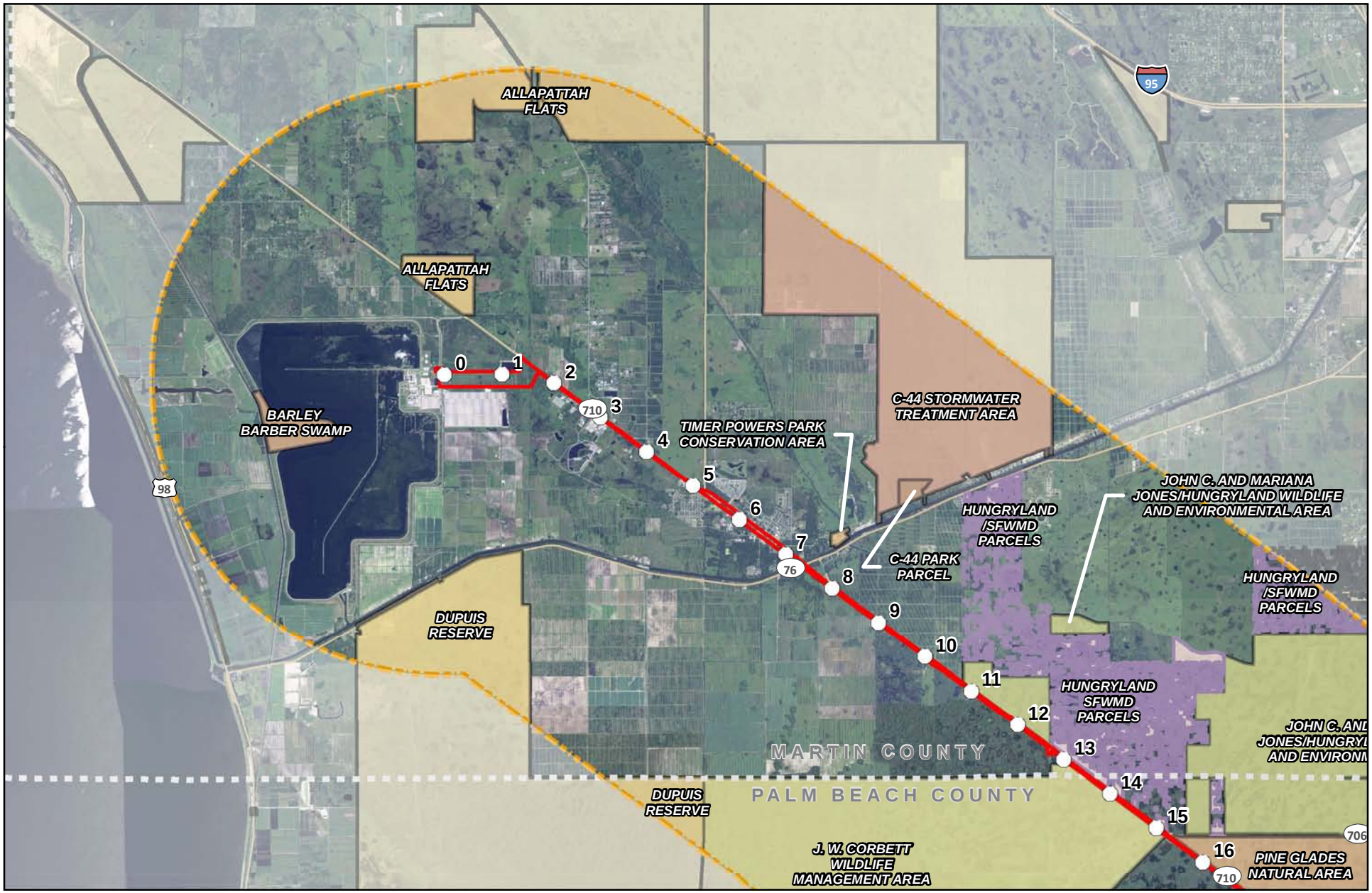
Government Jurisdiction

Martin Plant to RBEC Lateral

Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010



Appendix C (Sheet 7 of 9)
Florida Conservation Lands
Government Jurisdiction
Martin Plant to RBEC Lateral
Florida Power & Light Company

NORTH

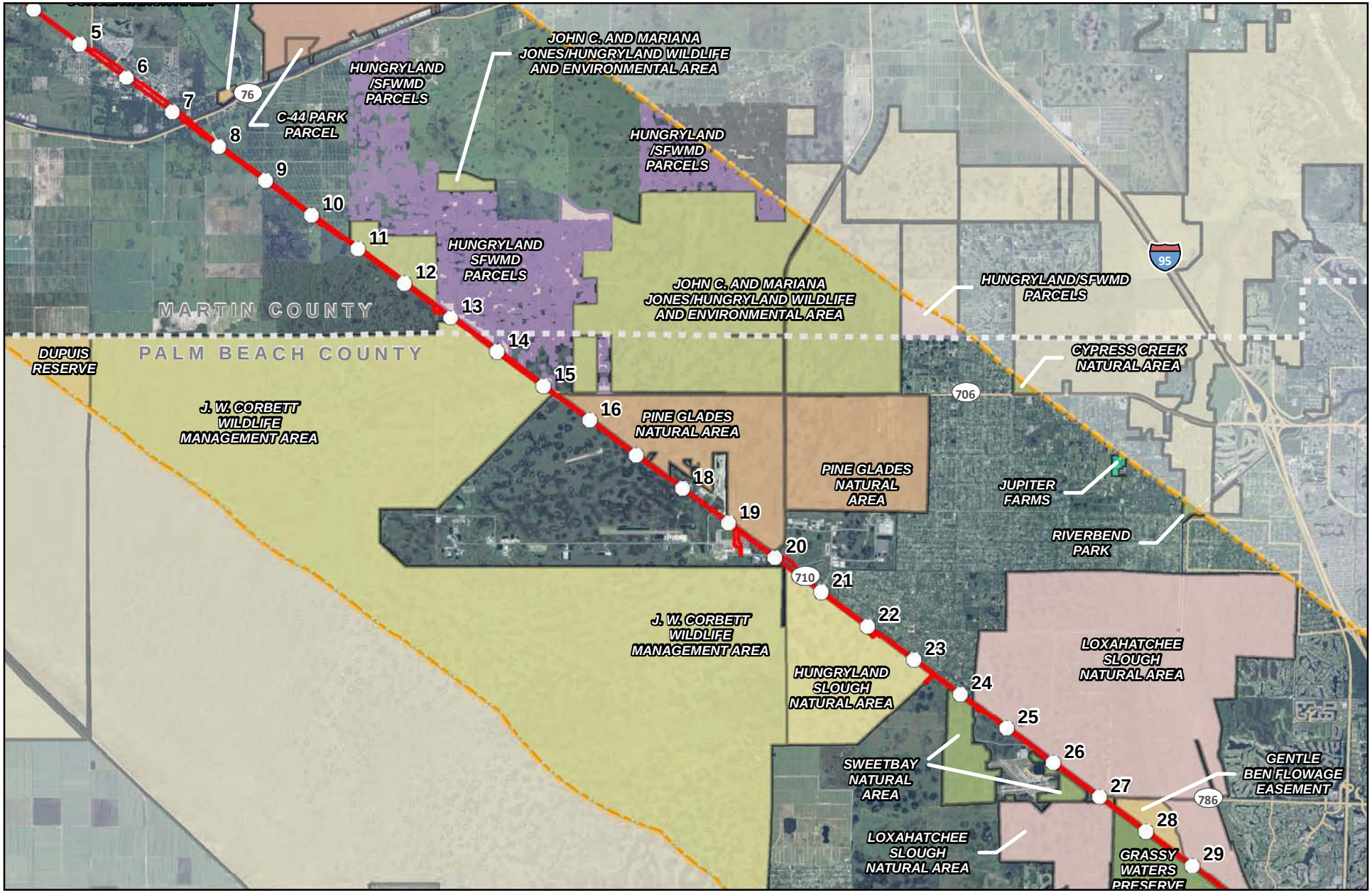
0 2 Miles

Milepost
County Boundary
Preferred Corridor
5 Mile Buffer Zone

FPL

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010, FNAI 2010, Palm Beach County GIS.



Appendix C (Sheet 8 of 9)
Florida Conservation Lands
Government Jurisdiction
Martin Plant to RBEC Lateral
Florida Power & Light Company

NORTH

0 2 Miles

Milepost
County Boundary
Preferred Corridor
5 Mile Buffer Zone

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010, FNAI 2010, Palm Beach County GIS.



Appendix C (Sheet 9 of 9)
Florida Conservation Lands
Government Jurisdiction
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010, FNAI 2010, Palm Beach County GIS.

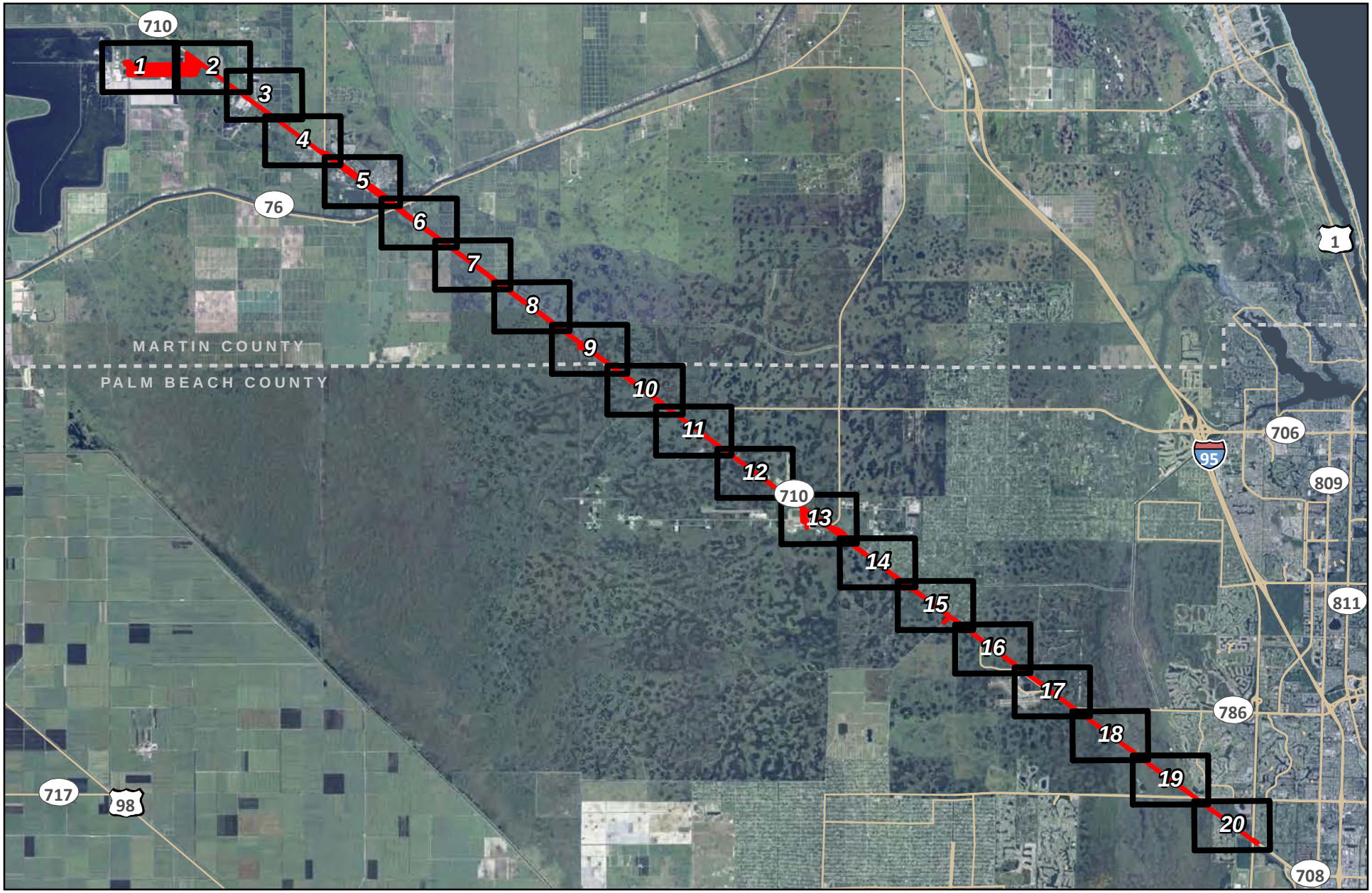
This page left blank intentionally.



Appendix D

Future Land Use Maps

This page left blank intentionally.



Appendix D- Map Index
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

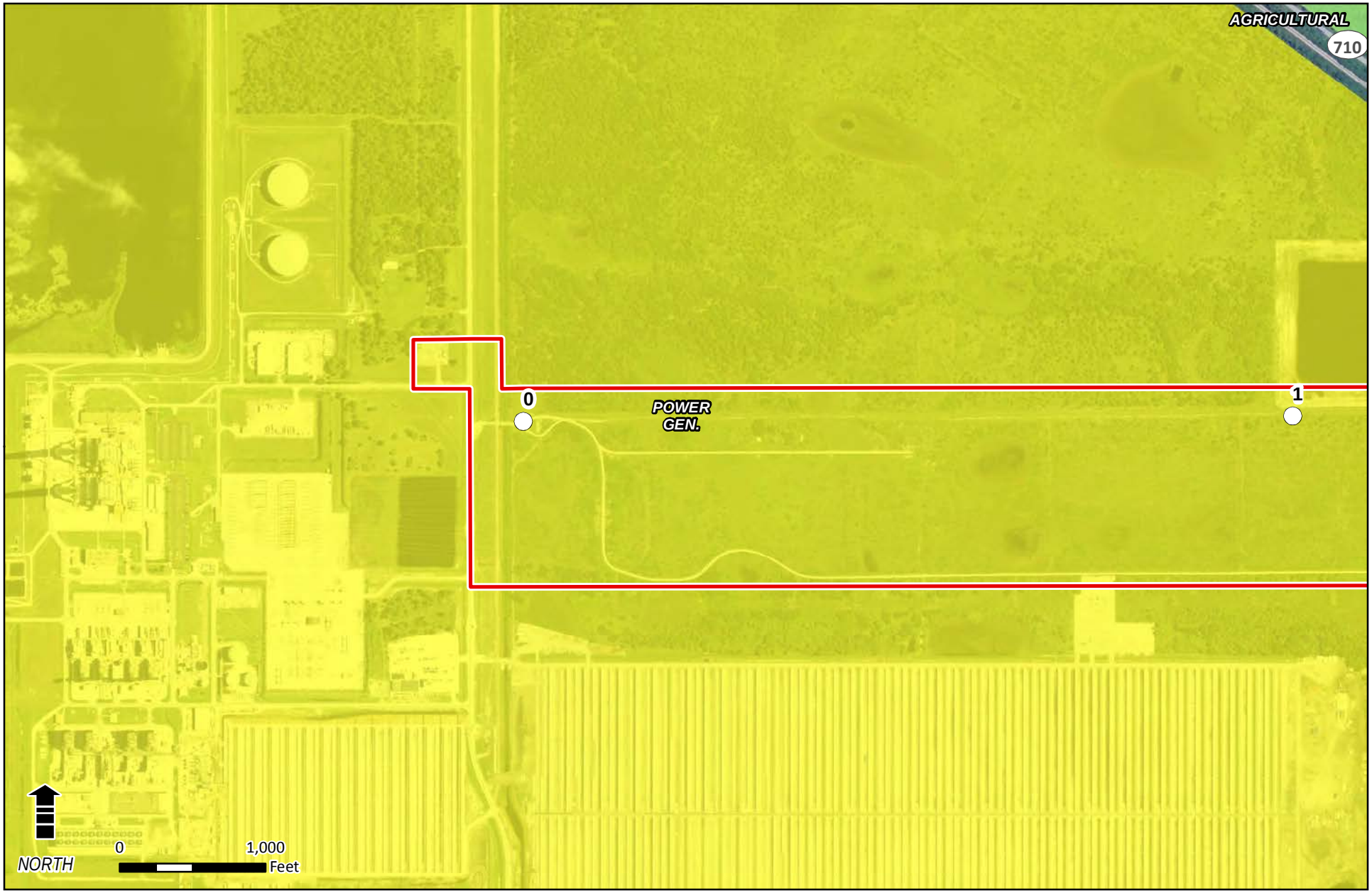
NORTH

0 5 Miles

Map Index Preferred Corridor County Boundary

Date: 2/17/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

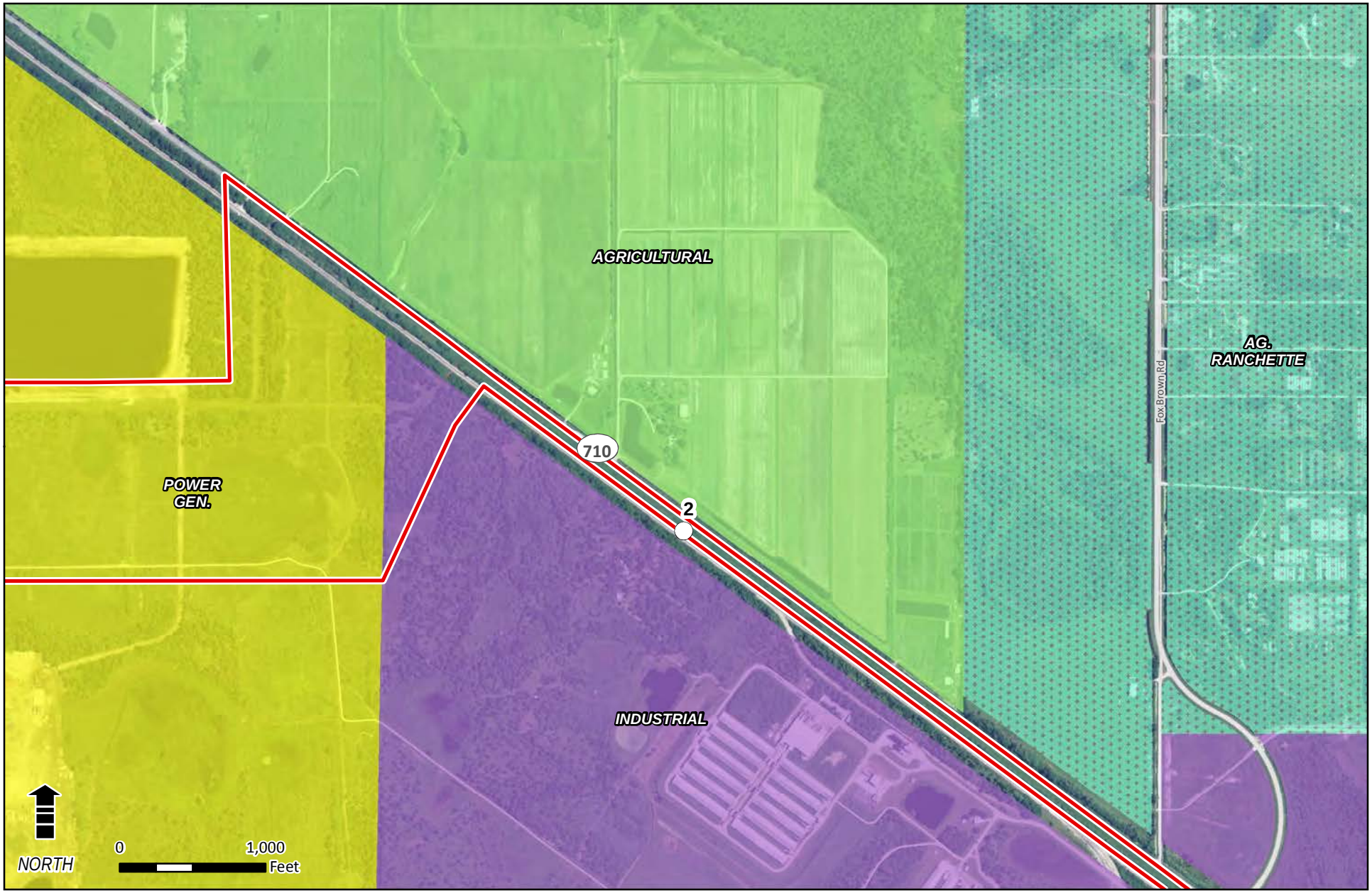
FPL

Appendix D (Sheet 1 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

**No transparent Future Land Use layer indicates No Data available.



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION
- OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

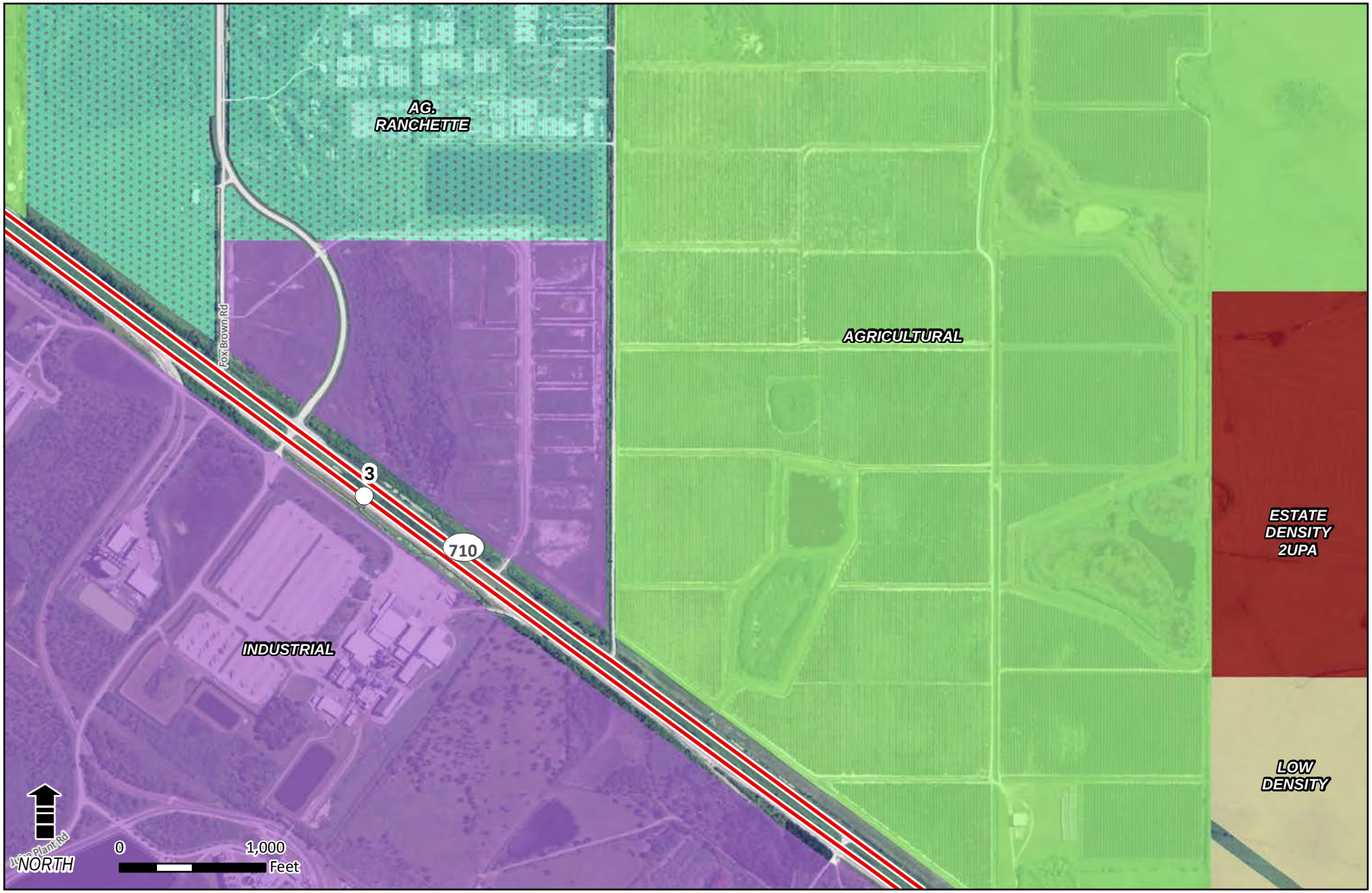
City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 2 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

**No transparent Future Land Use layer indicates No Data available.



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION
- OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

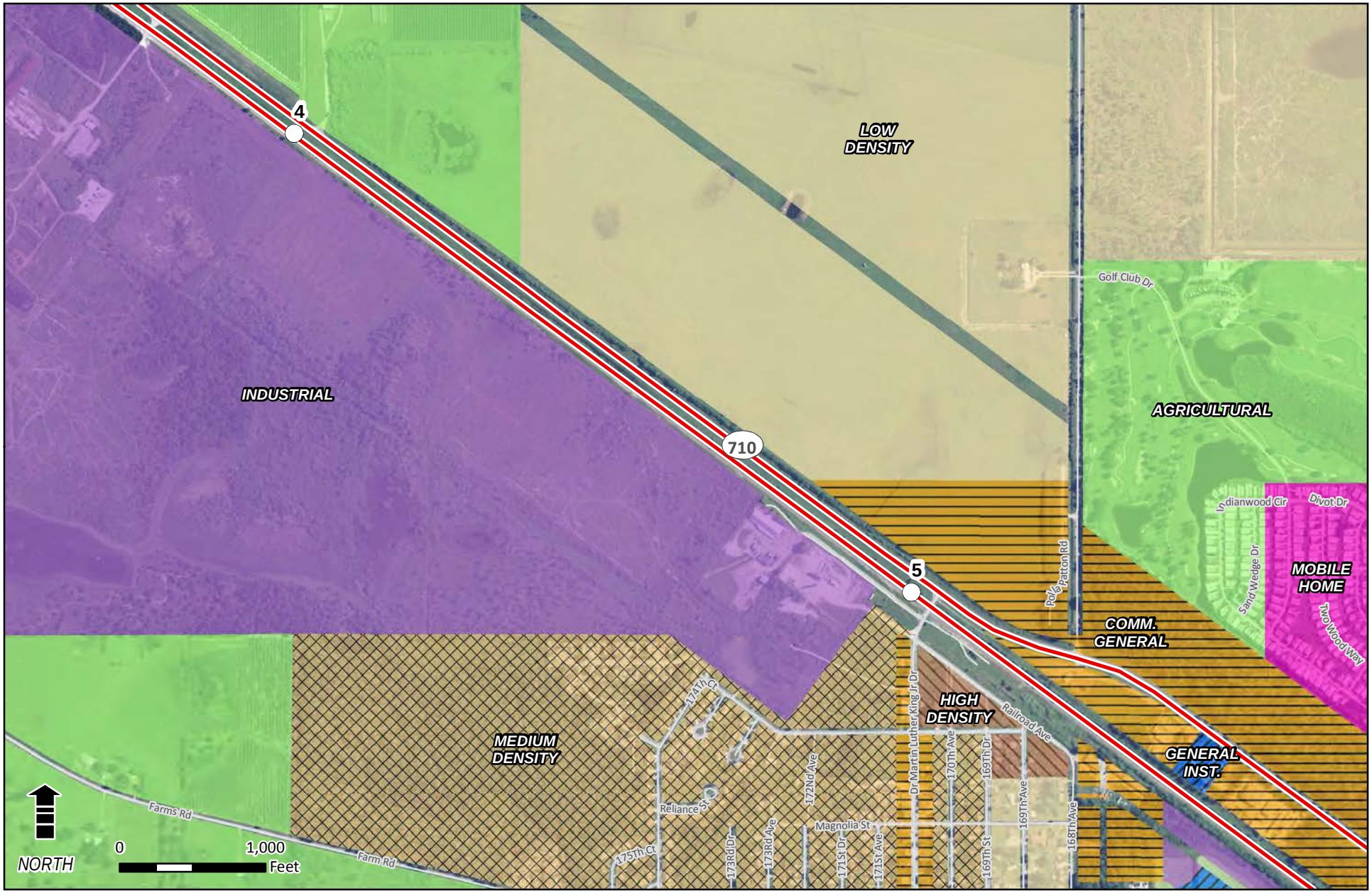
Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 3 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.
Date: 2/22/2012

**No transparent Future Land Use layer indicates No Data available.



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION
- OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

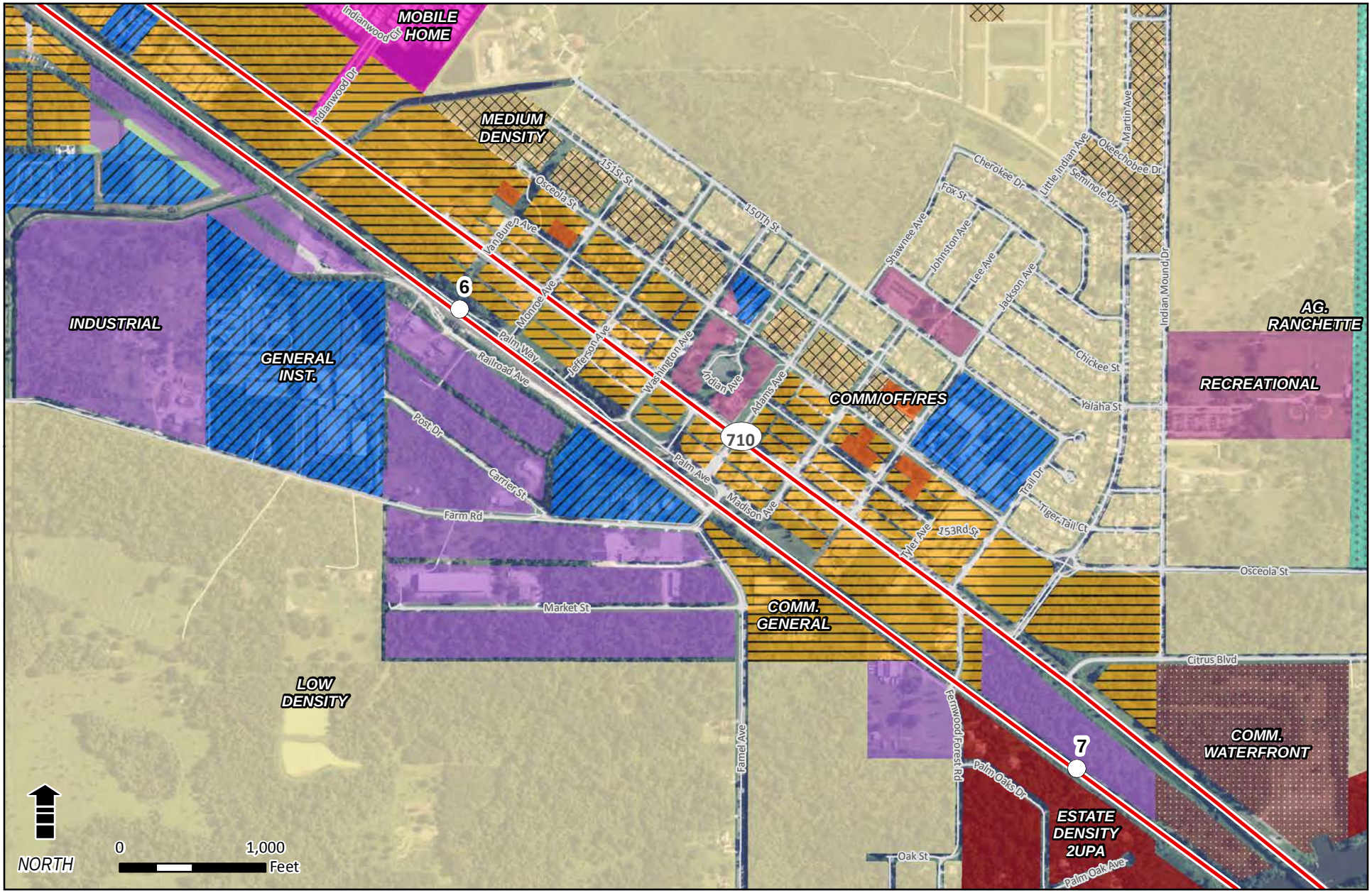
Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 4 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.
Date: 2/22/2012

**No transparent Future Land Use layer indicates No Data available.



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

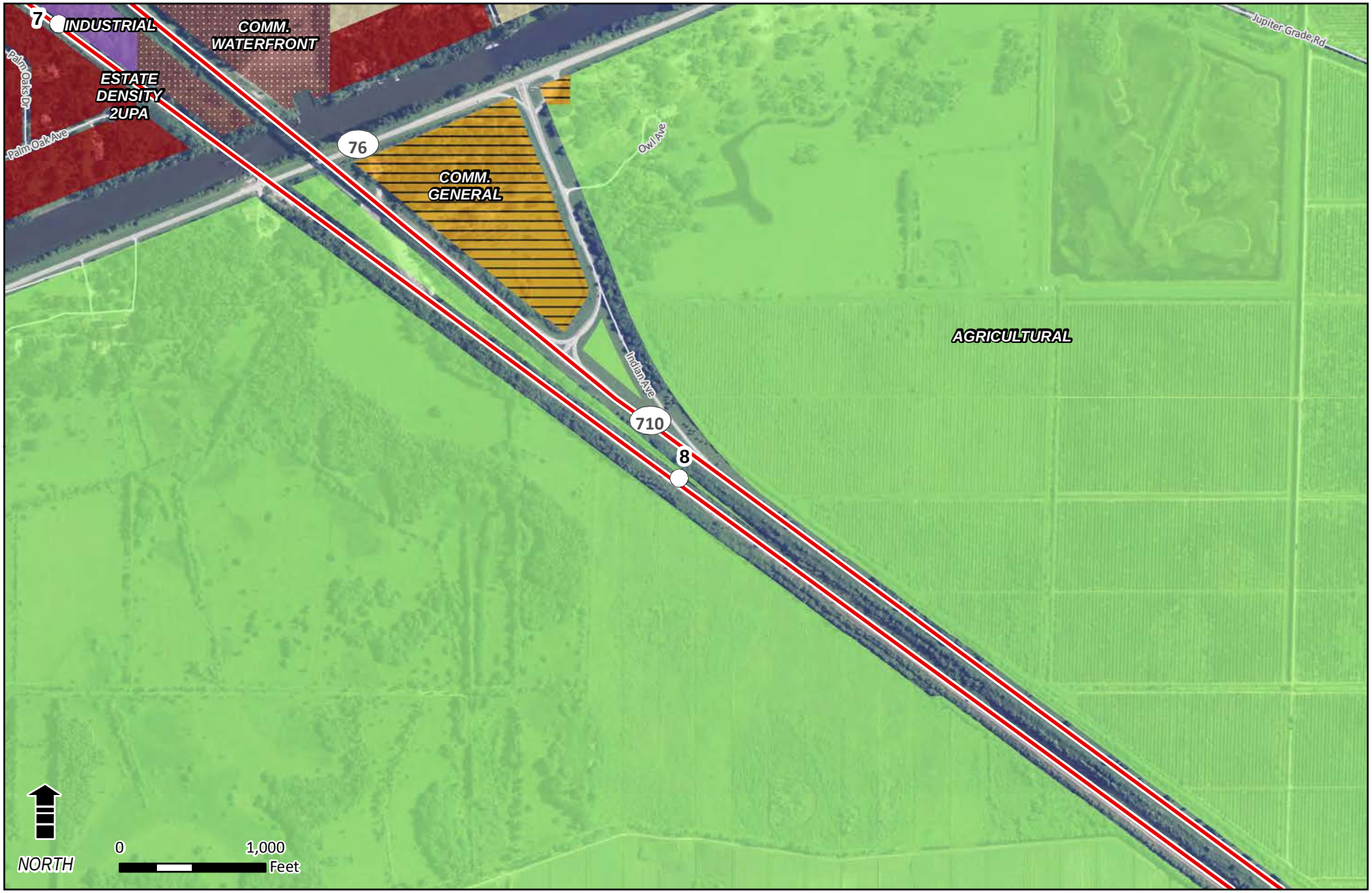
City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 5 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

**No transparent Future Land Use layer indicates No Data available.*



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 6 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

Date: 2/22/2012

**No transparent Future Land Use layer indicates No Data available.



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION
- OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

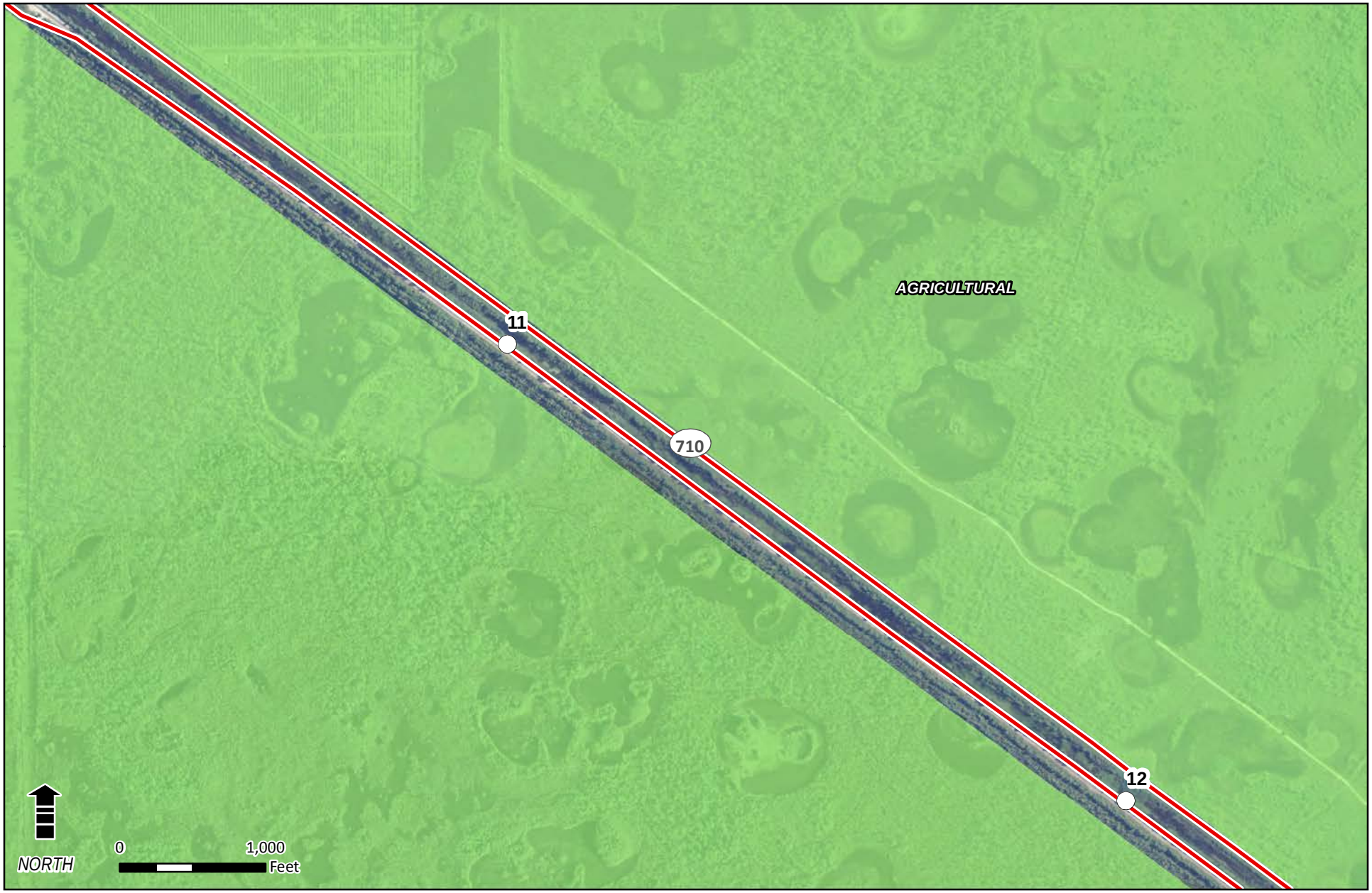
City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 7 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

**No transparent Future Land Use layer indicates No Data available.



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION
- OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 8 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

**No transparent Future Land Use layer indicates No Data available.



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION
- OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

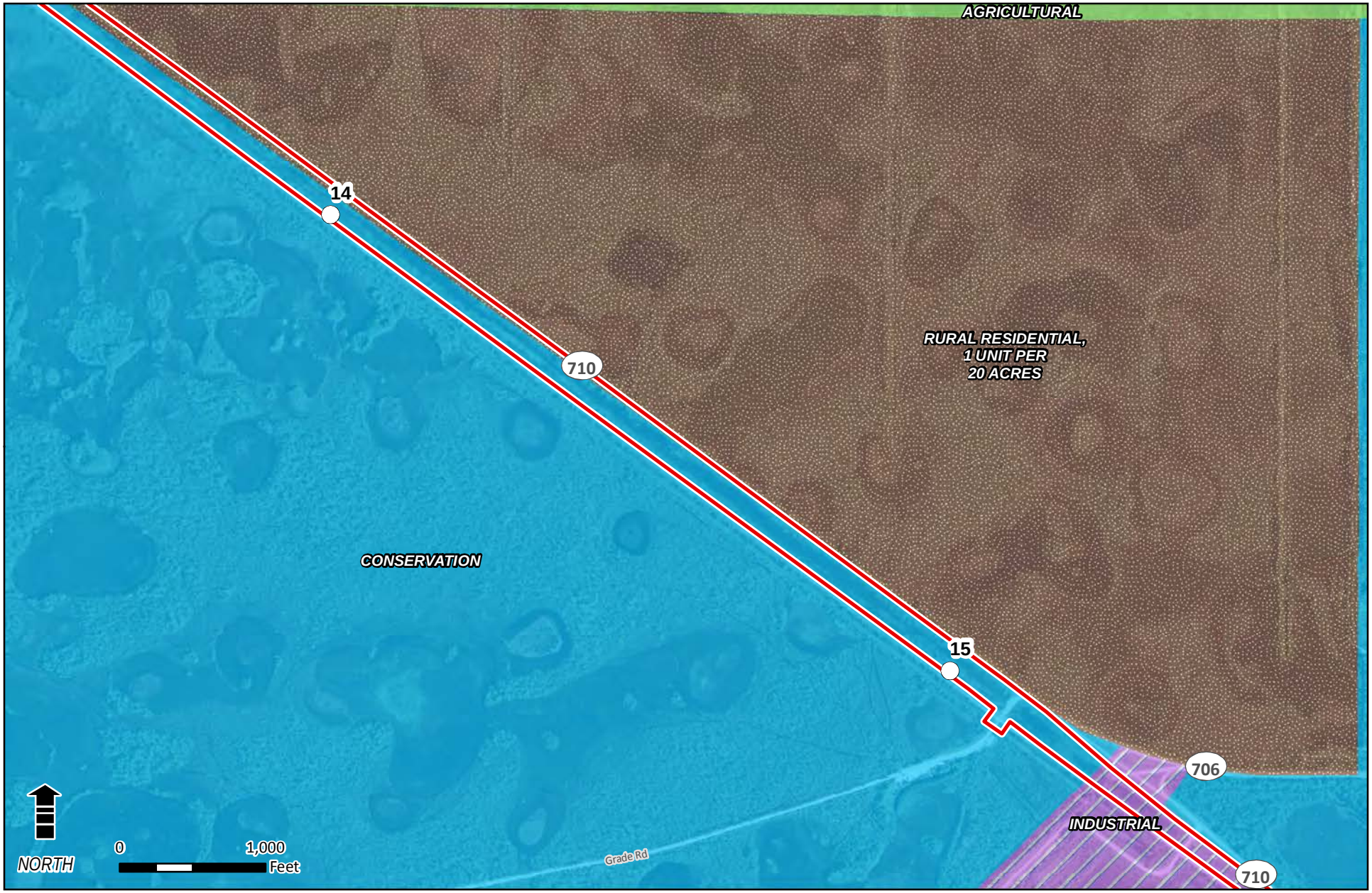
City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 9 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

**No transparent Future Land Use layer indicates No Data available.



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION
- OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

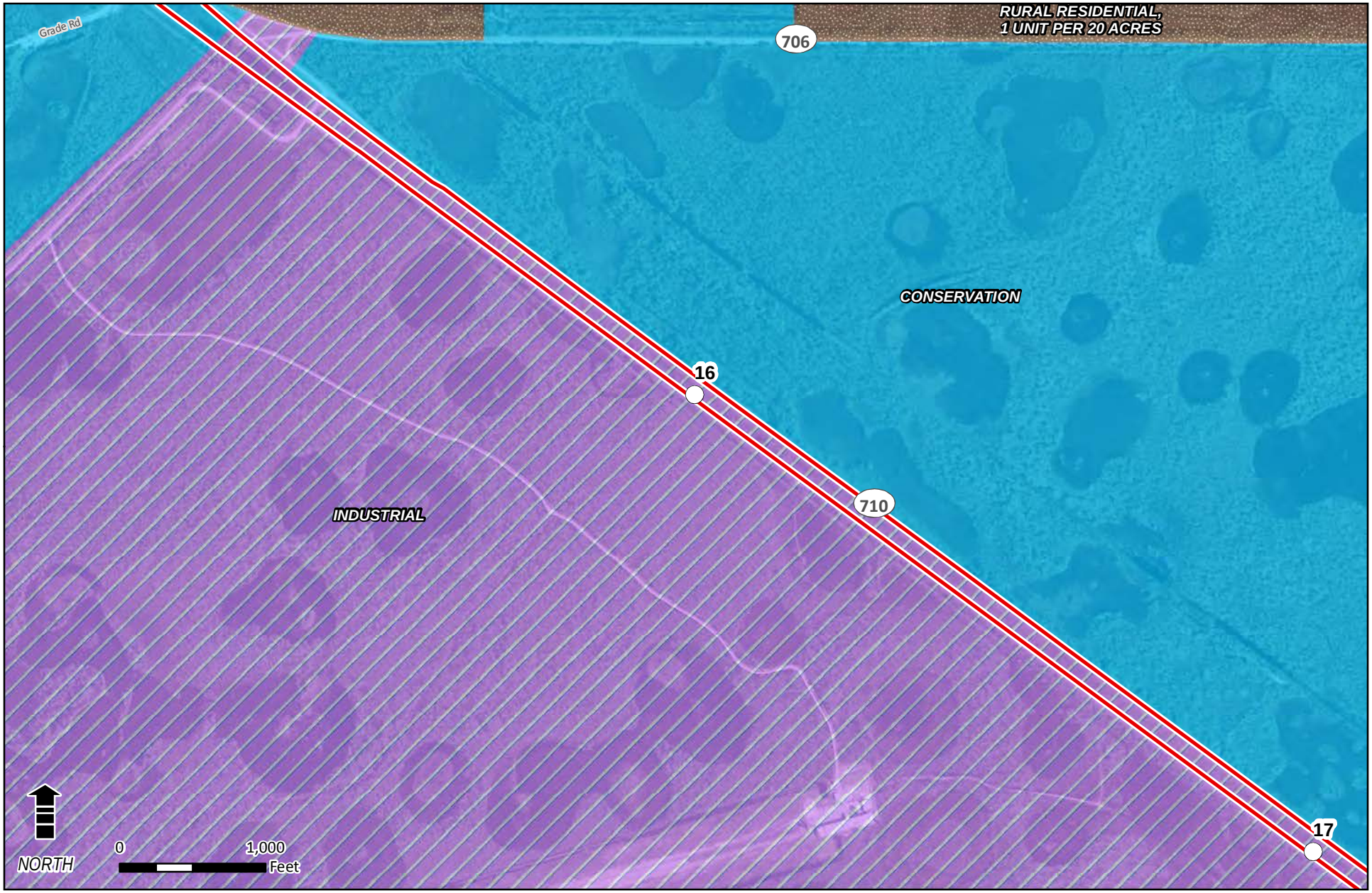
City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 10 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

**No transparent Future Land Use layer indicates No Data available.



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**

- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION
- OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**

- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**

- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

City of West Palm Beach Future Land Use**

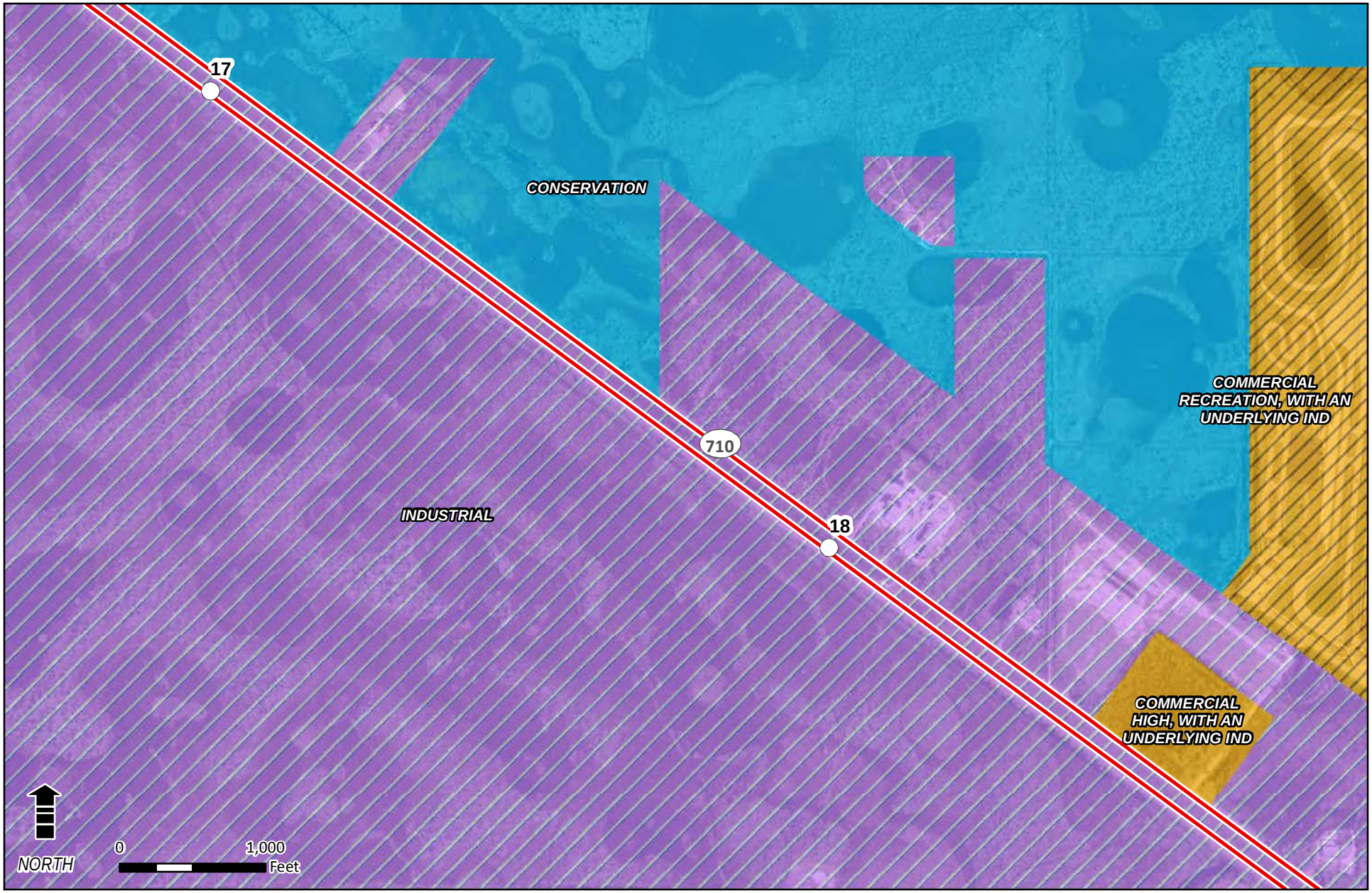
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 11 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

**No transparent Future Land Use layer indicates No Data available.



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

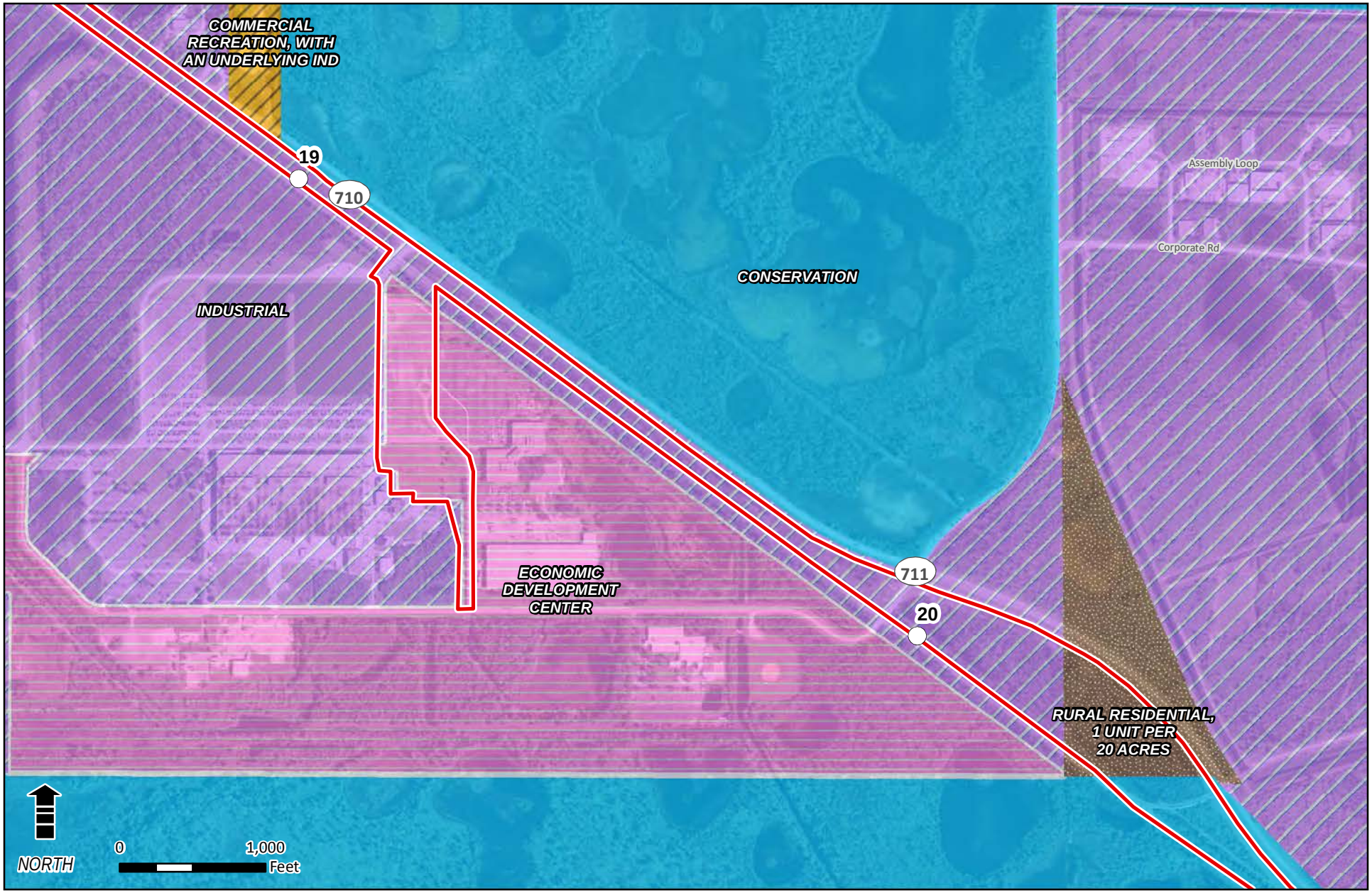
City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 12 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

**No transparent Future Land Use layer indicates No Data available.



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION
- OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

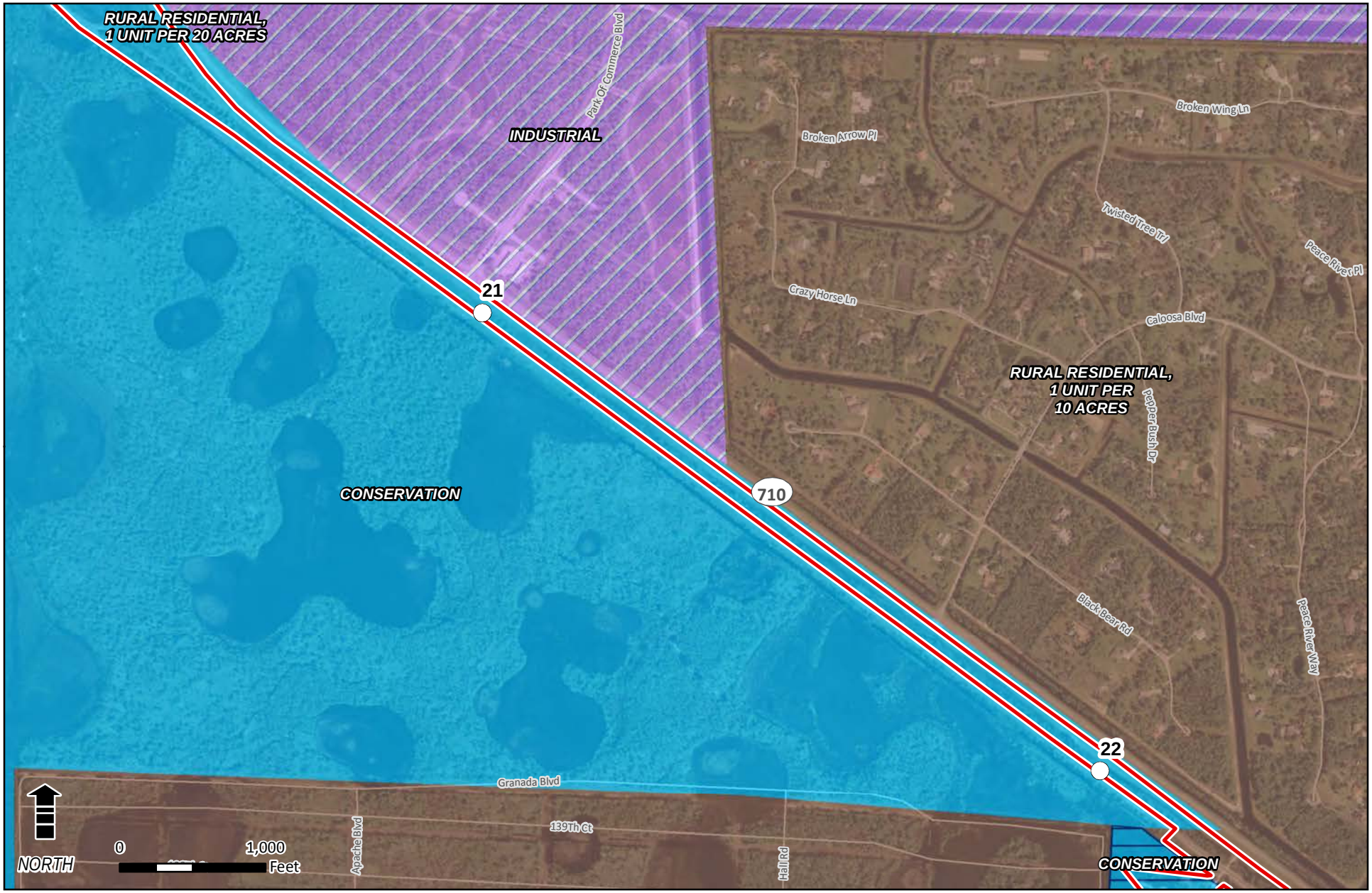
Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 13 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.
Date: 2/22/2012

***No transparent Future Land Use layer indicates No Data available.*



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

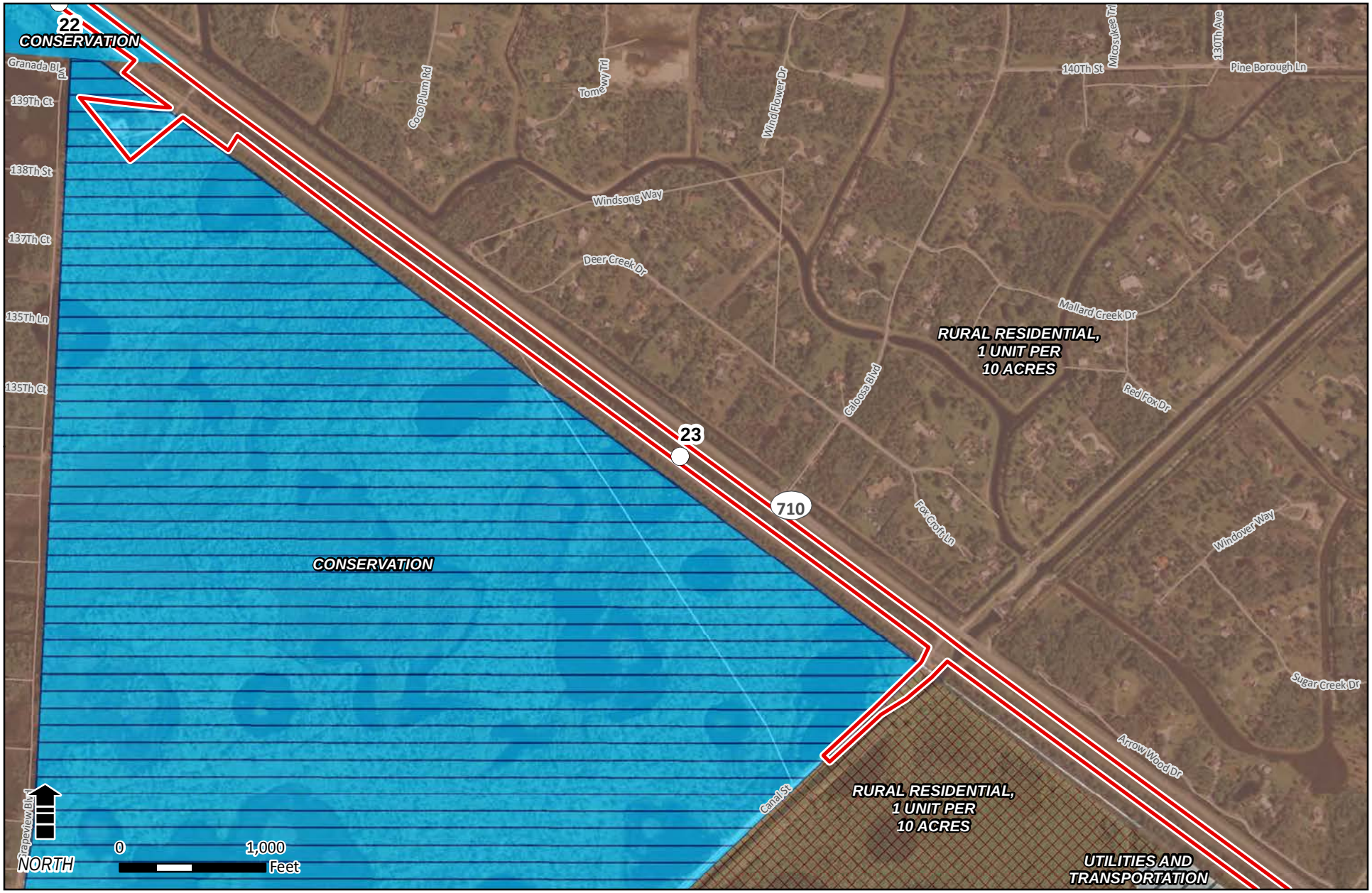
FPL

Appendix D (Sheet 14 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

**No transparent Future Land Use layer indicates No Data available.



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION
- OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

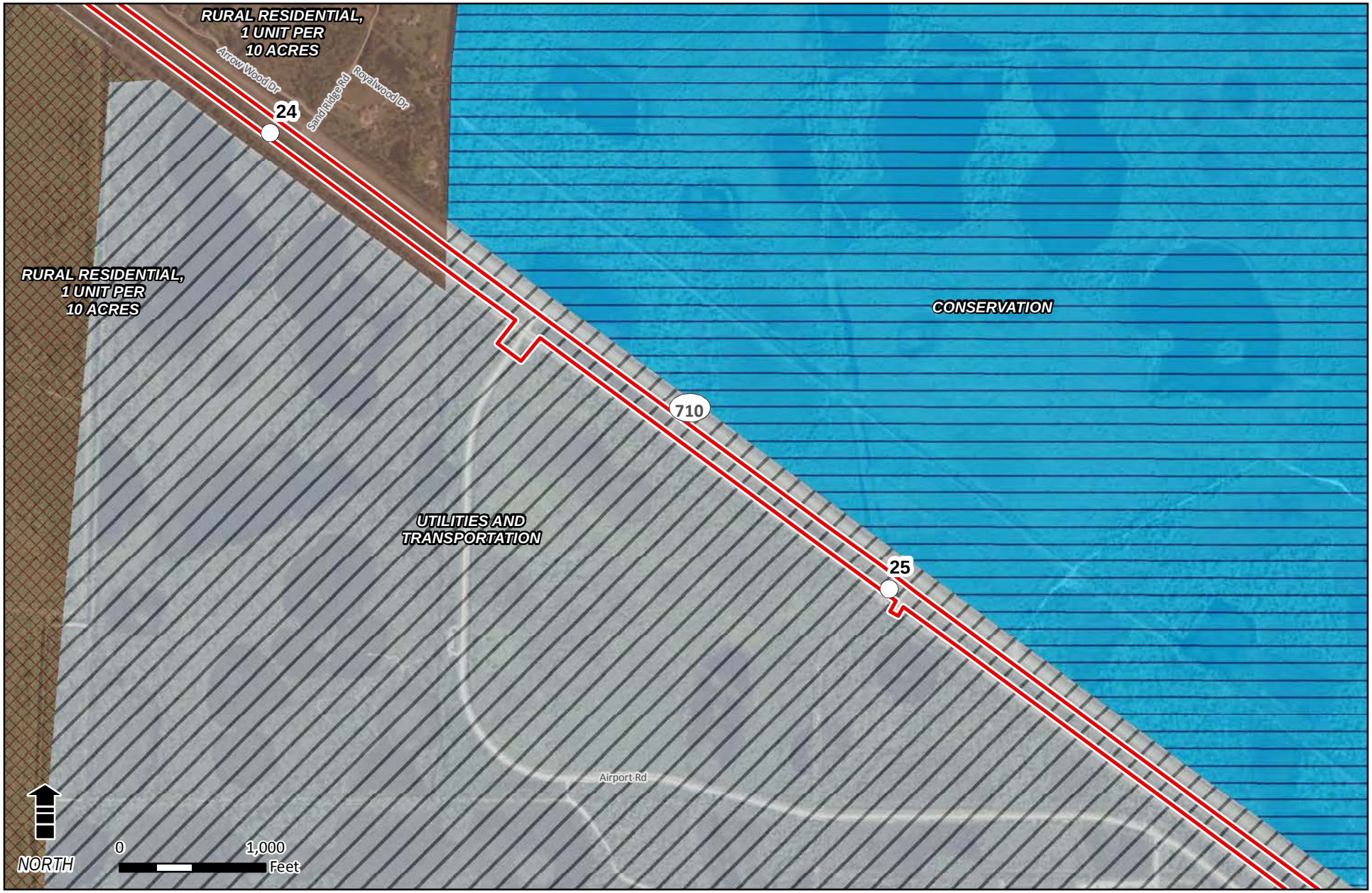
FPL

Appendix D (Sheet 15 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

**No transparent Future Land Use layer indicates No Data available.*



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION
- OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

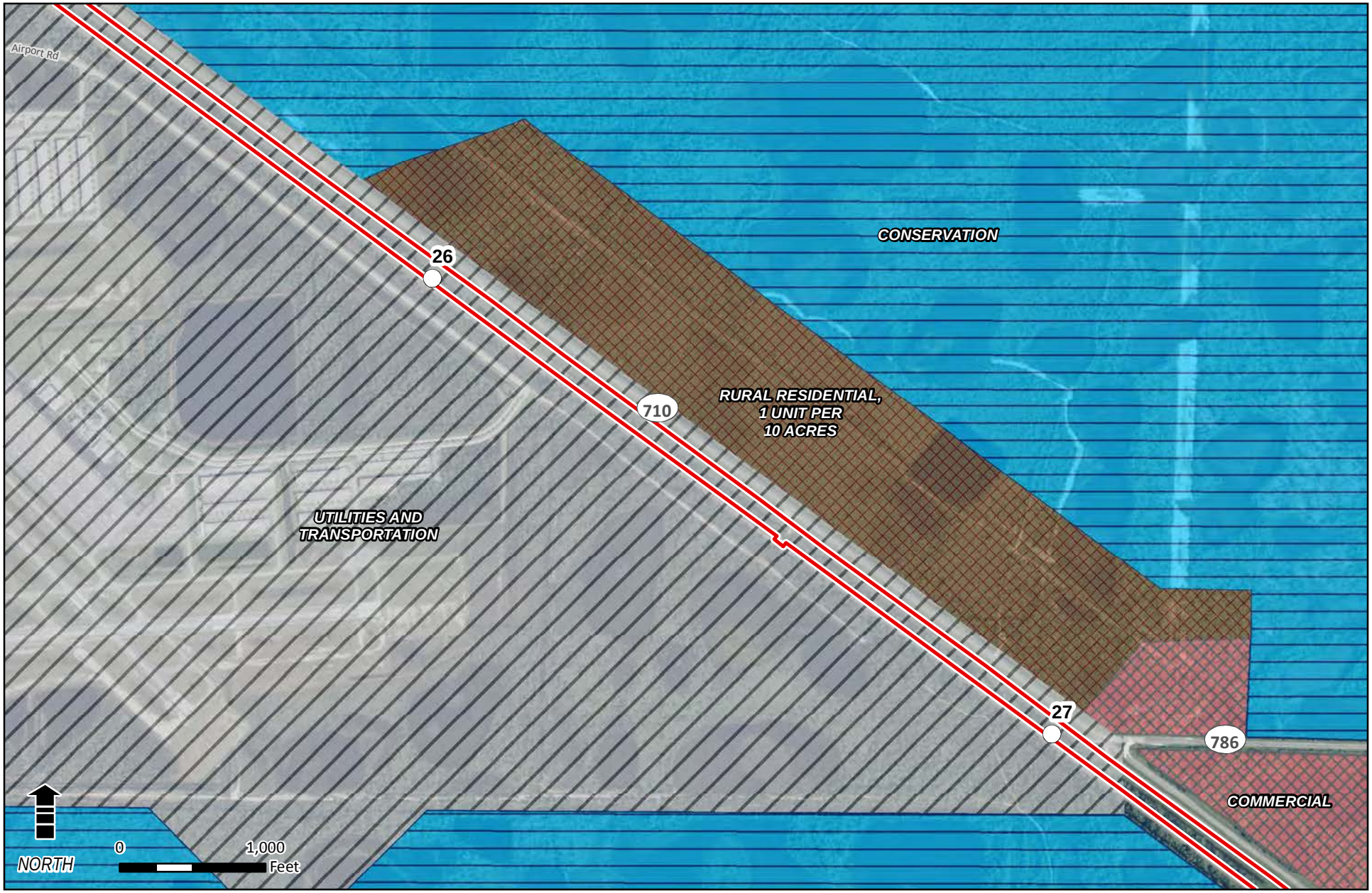
City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 16 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Future Land Use layer indicates No Data available.*



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION
- OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

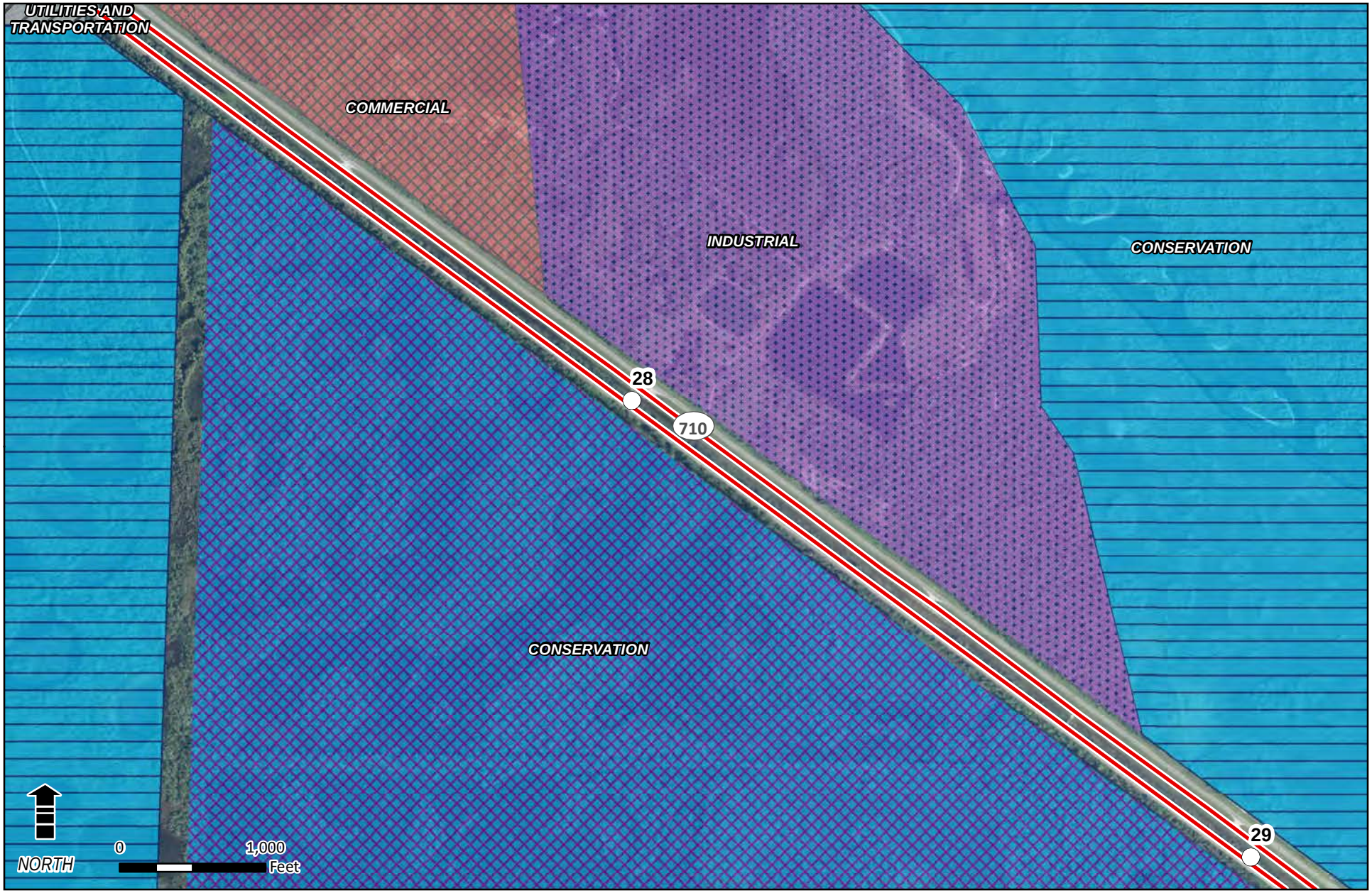
City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

FPL

Appendix D (Sheet 17 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.
Date: 2/22/2012

**No transparent Future Land Use layer indicates No Data available.



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION
- OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

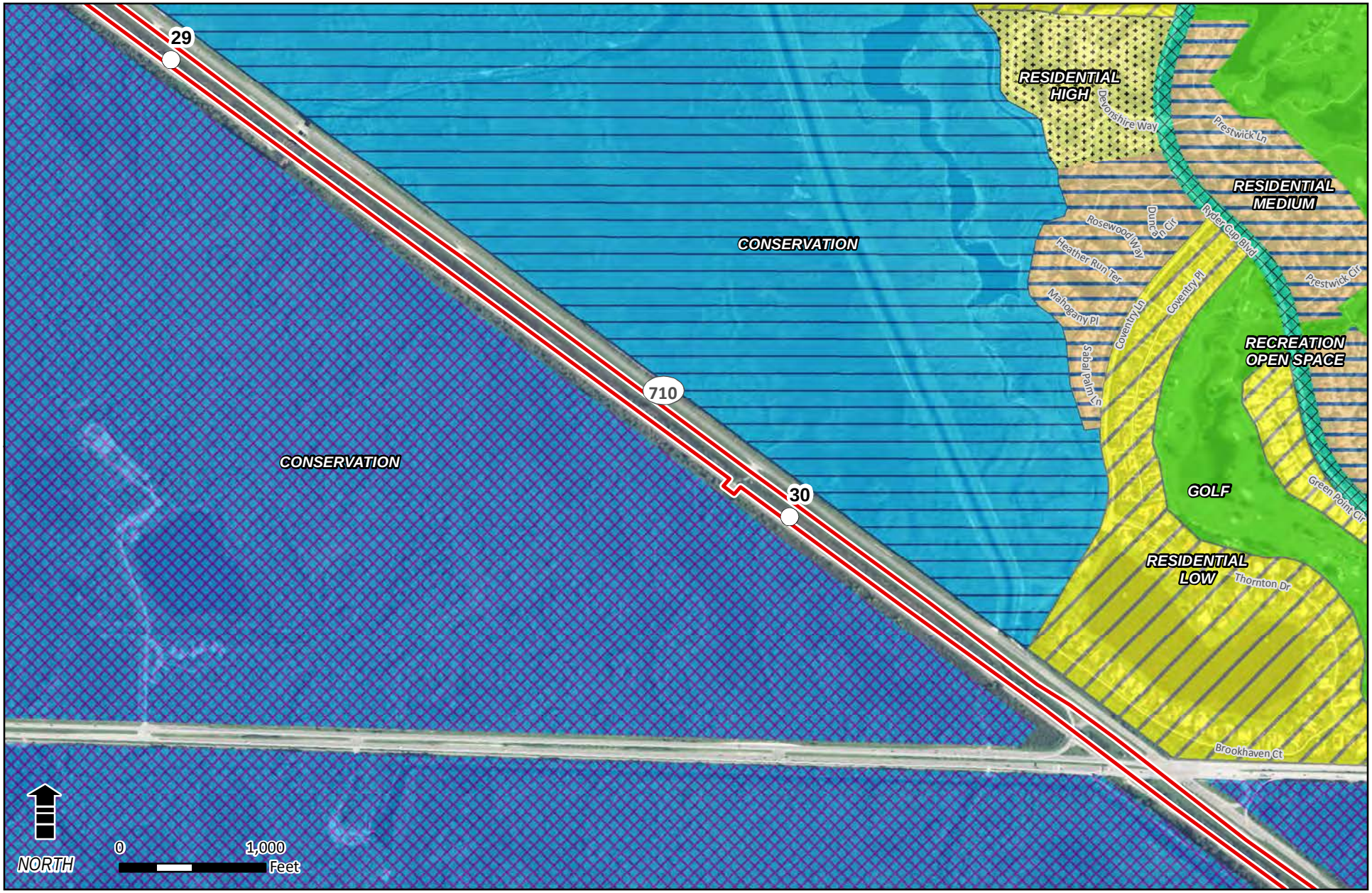
City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 18 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

**No transparent Future Land Use layer indicates No Data available.



Milepost

Preferred Corridor

City of Palm Beach Gardens Future Land Use**

- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**

- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**

- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

City of West Palm Beach Future Land Use**

- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

Appendix D (Sheet 19 of 20)

Future Land Use

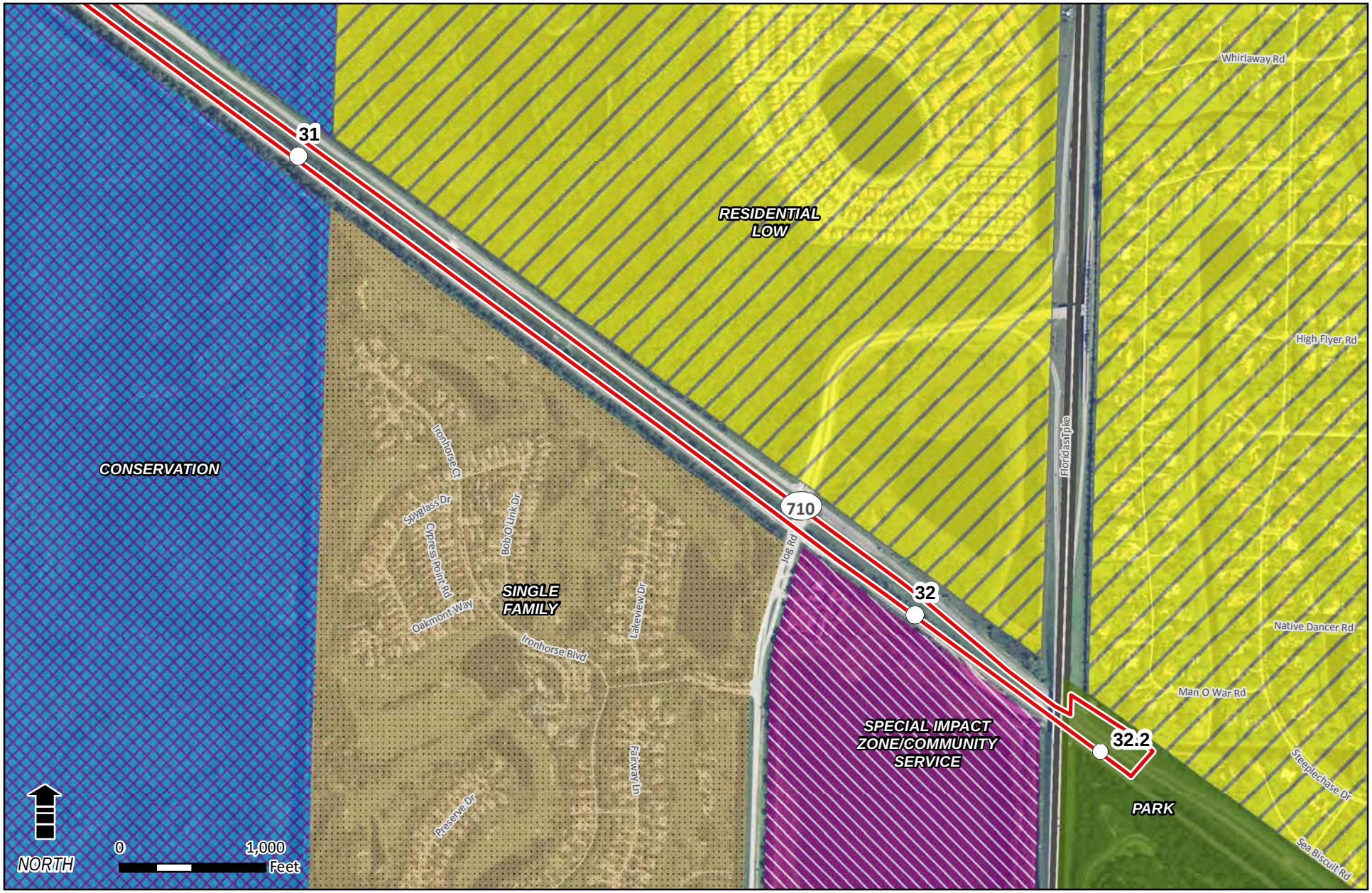
Martin Plant to RBEC Lateral

Florida Power & Light Company

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

Date: 2/22/2012

**No transparent Future Land Use layer indicates No Data available.*



Milepost
Preferred Corridor

City of Palm Beach Gardens Future Land Use**
- COMMERCIAL
- CONSERVATION
- GOLF
- INDUSTRIAL
- RECREATION
- OPEN SPACE
- RESIDENTIAL LOW
- RESIDENTIAL MEDIUM
- RESIDENTIAL HIGH
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES

Martin County Future Land Use**
- AG. RANCHETTE
- AGRICULTURAL
- COMM. GENERAL
- COMM/OFF/RES
- COMM. WATERFRONT
- ESTATE DENSITY 2UPA
- GENERAL INST.
- INDUSTRIAL
- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY UP TO 10 UPA
- MOBILE HOME
- POWER GEN.
- RECREATIONAL

Palm Beach County Future Land Use**
- COMMERCIAL HIGH, WITH AN UNDERLYING IND
- COMMERCIAL RECREATION, WITH AN UNDERLYING IND
- CONSERVATION
- ECONOMIC DEVELOPMENT CENTER
- INDUSTRIAL
- PARK
- RURAL RESIDENTIAL, 1 UNIT PER 10 ACRES
- RURAL RESIDENTIAL, 1 UNIT PER 20 ACRES
- UTILITIES AND TRANSPORTATION

City of West Palm Beach Future Land Use**
- CONSERVATION
- SPECIAL IMPACT ZONE/COMMUNITY SERVICE
- SINGLE FAMILY

FPL

Appendix D (Sheet 20 of 20)
Future Land Use
Martin Plant to RBEC Lateral
Florida Power & Light Company

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.
Date: 2/22/2012

**No transparent Future Land Use layer indicates No Data available.

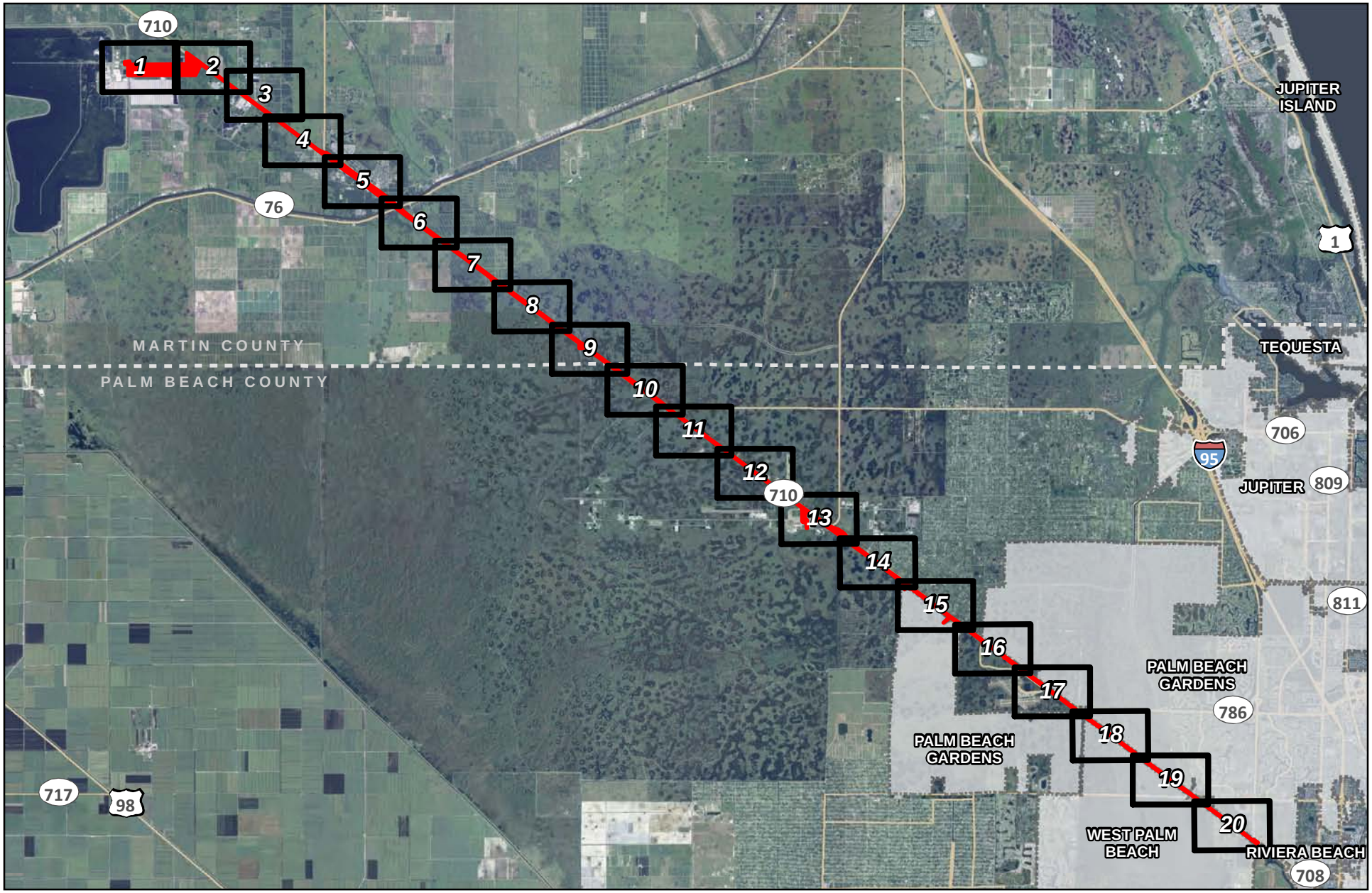
This page left blank intentionally.



Appendix E

Zoning Maps

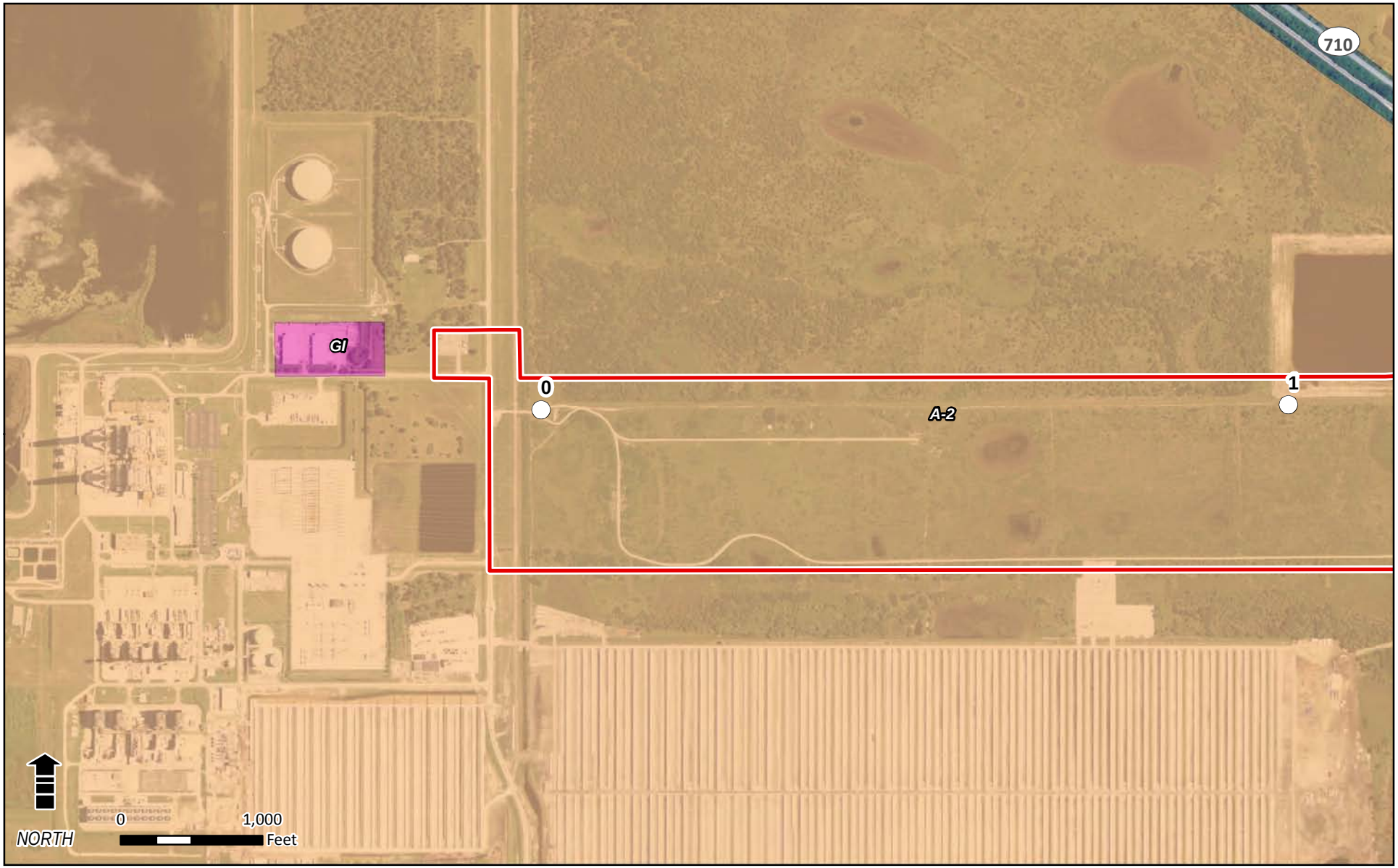
This page left blank intentionally.



Appendix E- Map Index
Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

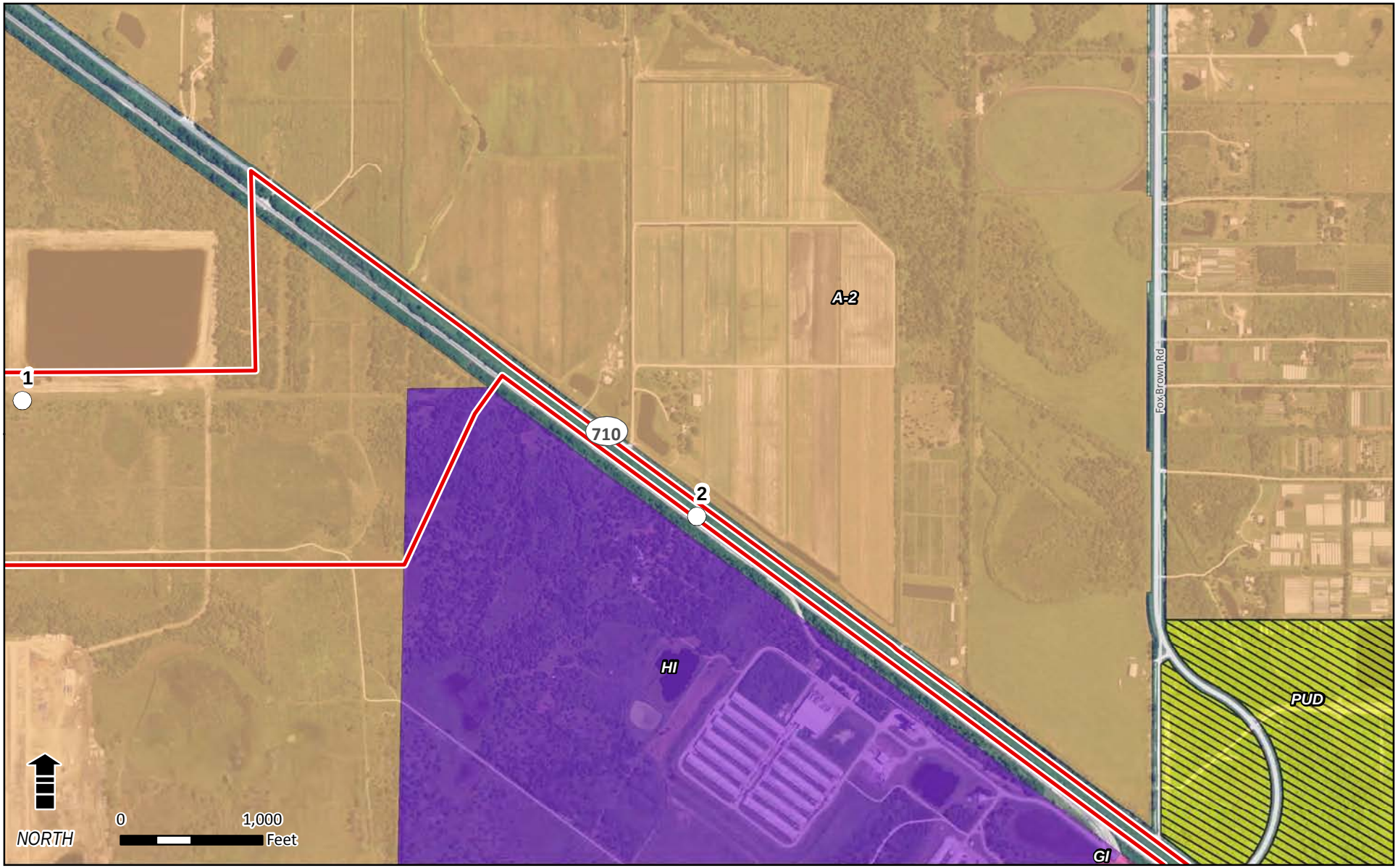
Appendix E (Sheet 1 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

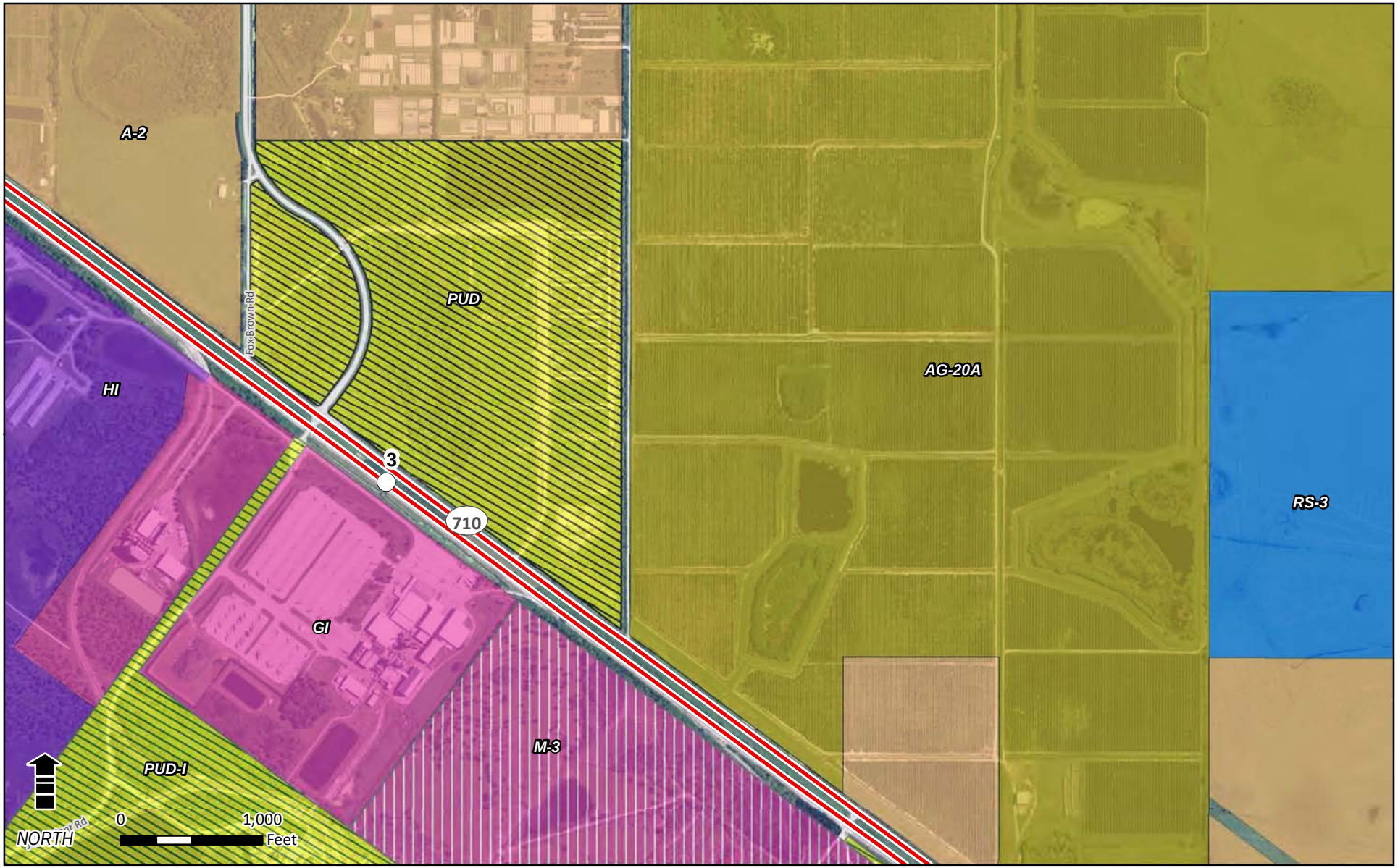
Appendix E (Sheet 2 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

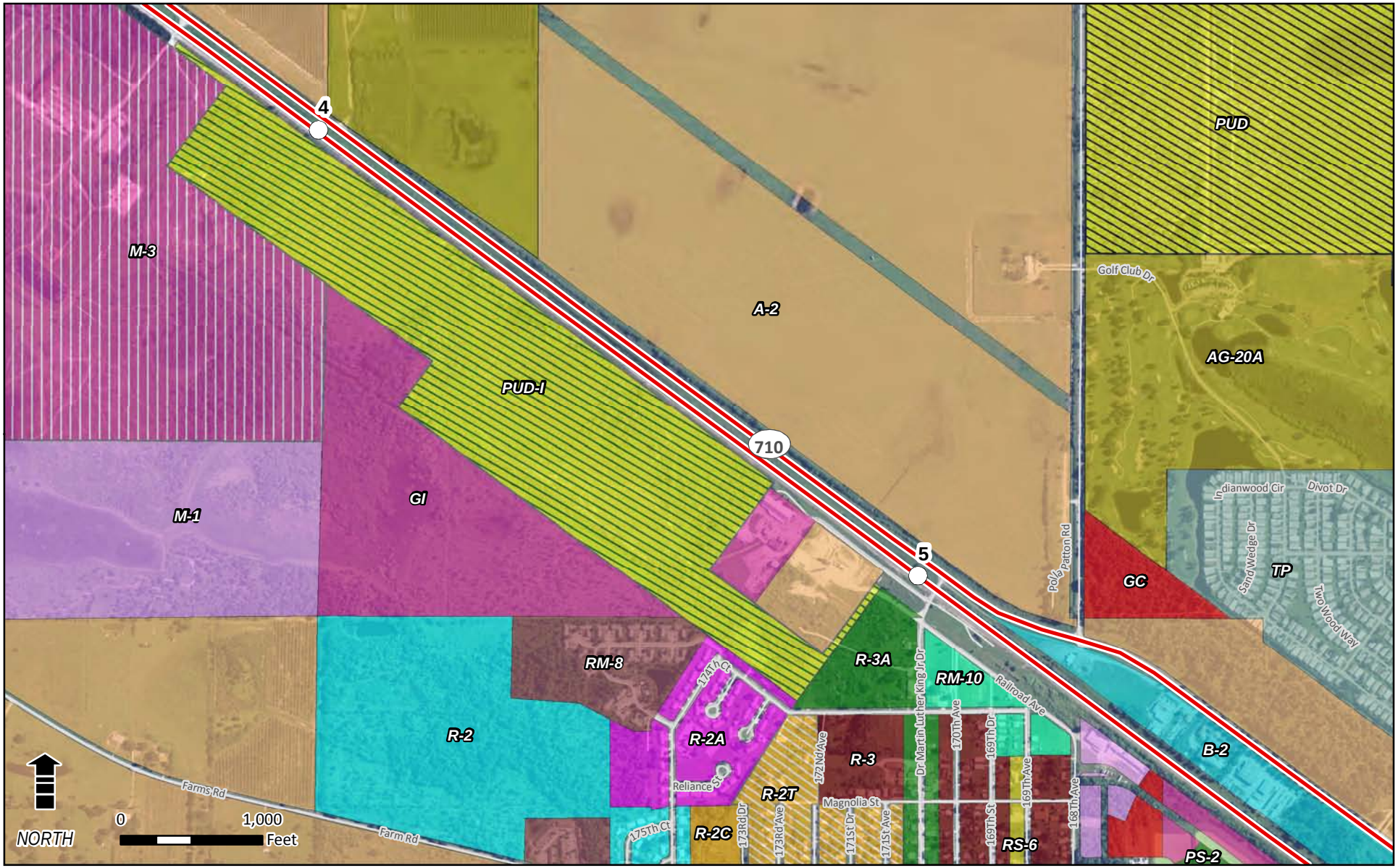
Appendix E (Sheet 3 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

Appendix E (Sheet 4 of 20)

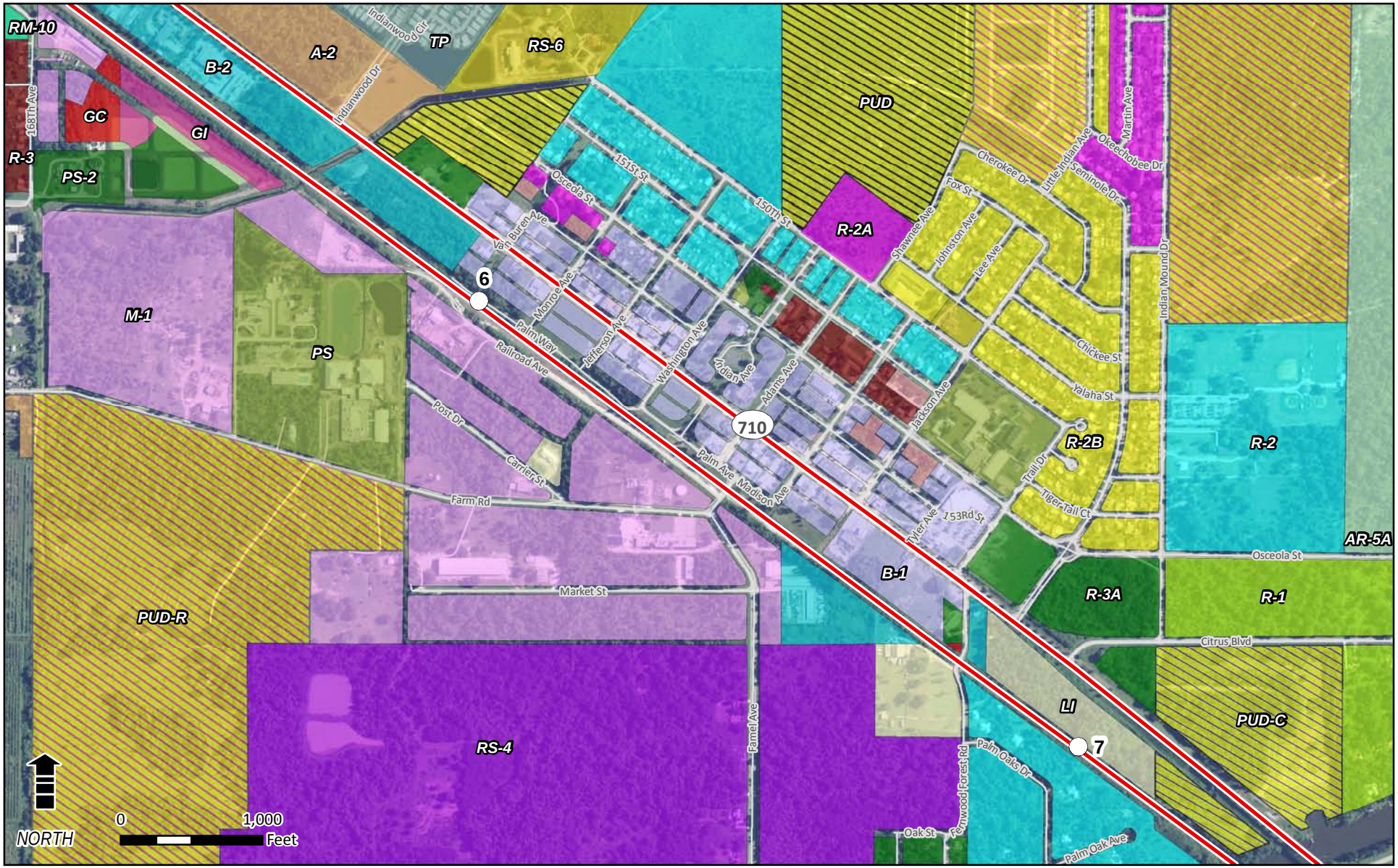
Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

FPL

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

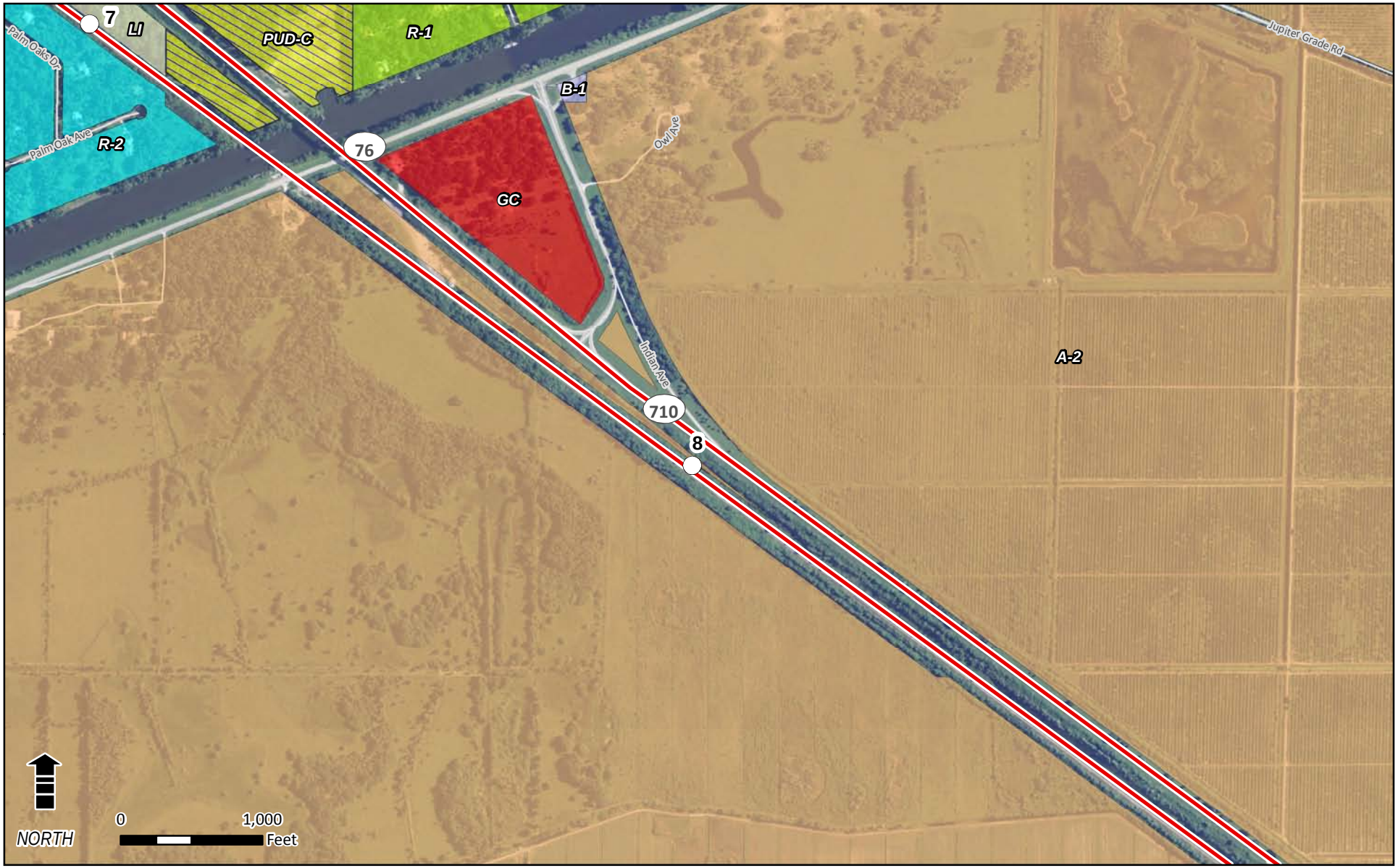
Appendix E (Sheet 5 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

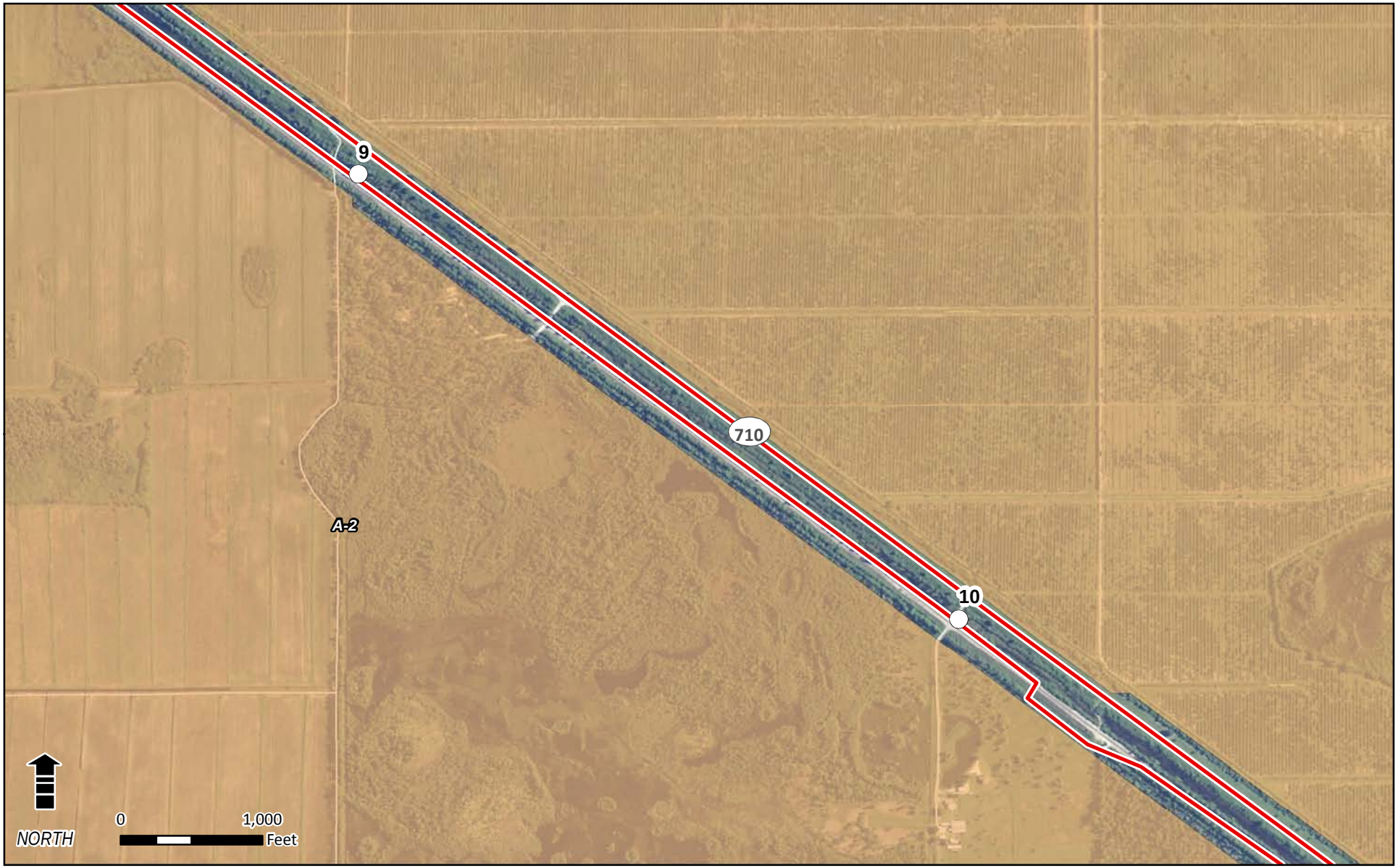
Appendix E (Sheet 6 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

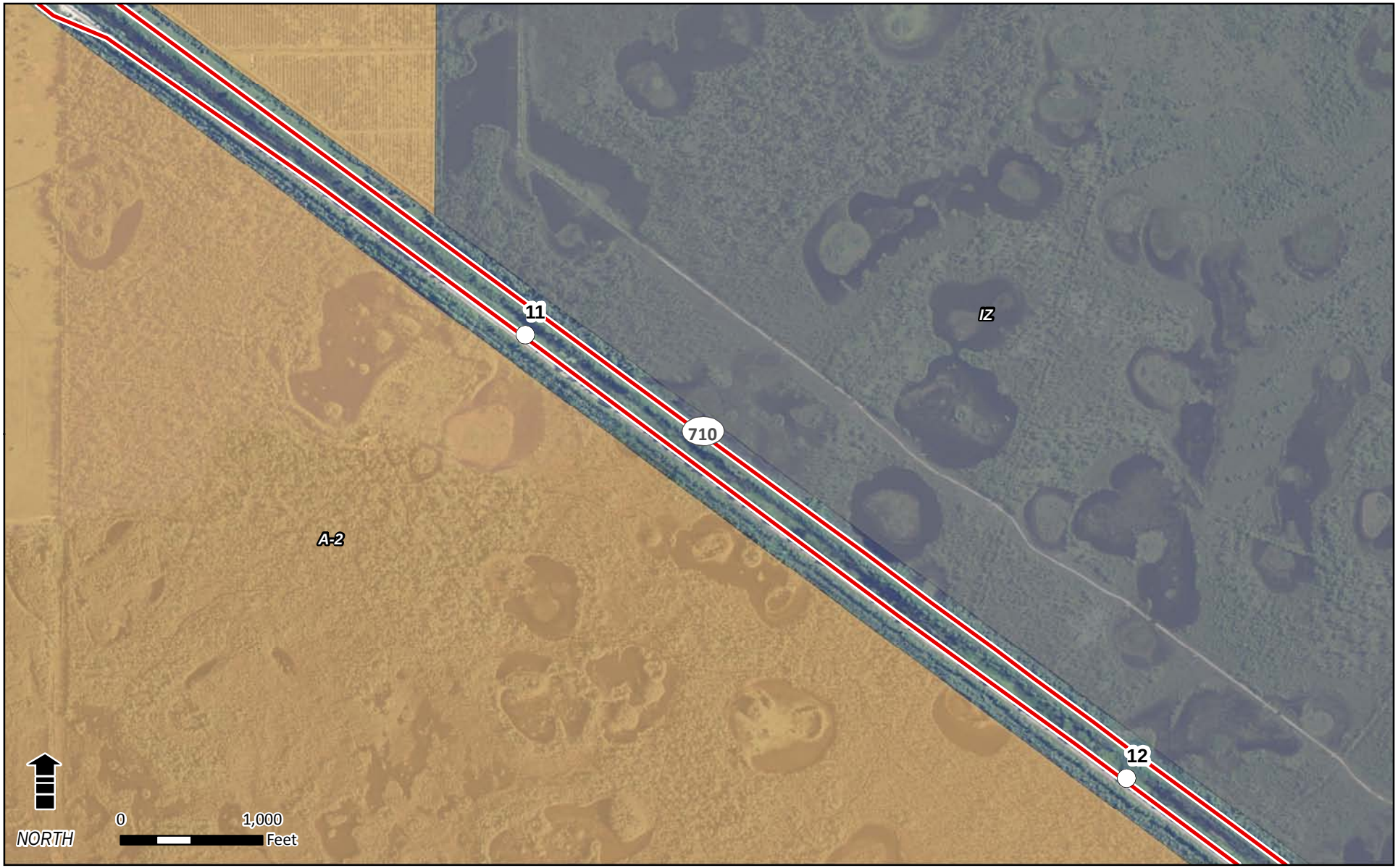
Appendix E (Sheet 7 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

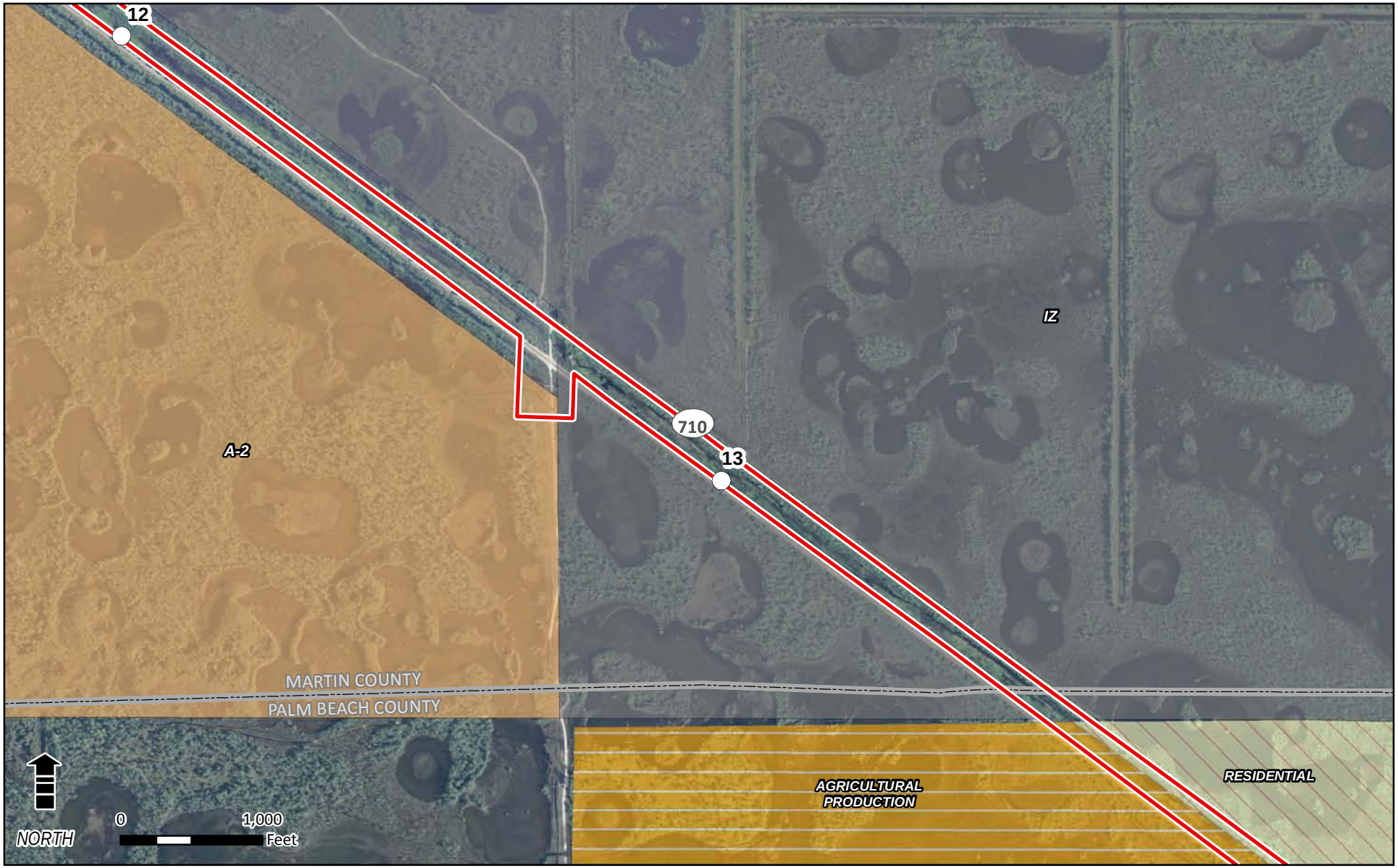
Appendix E (Sheet 8 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

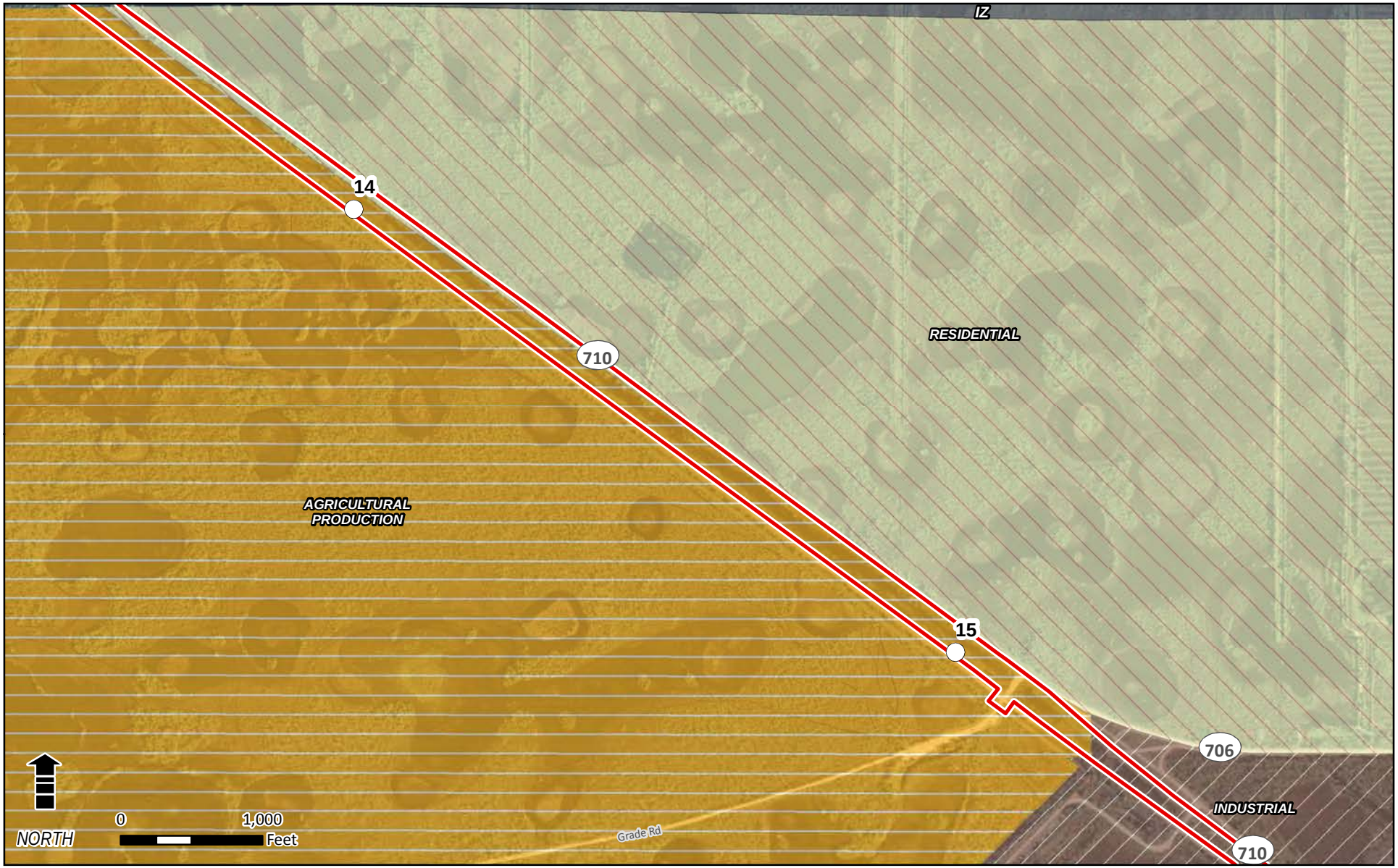
Appendix E (Sheet 9 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

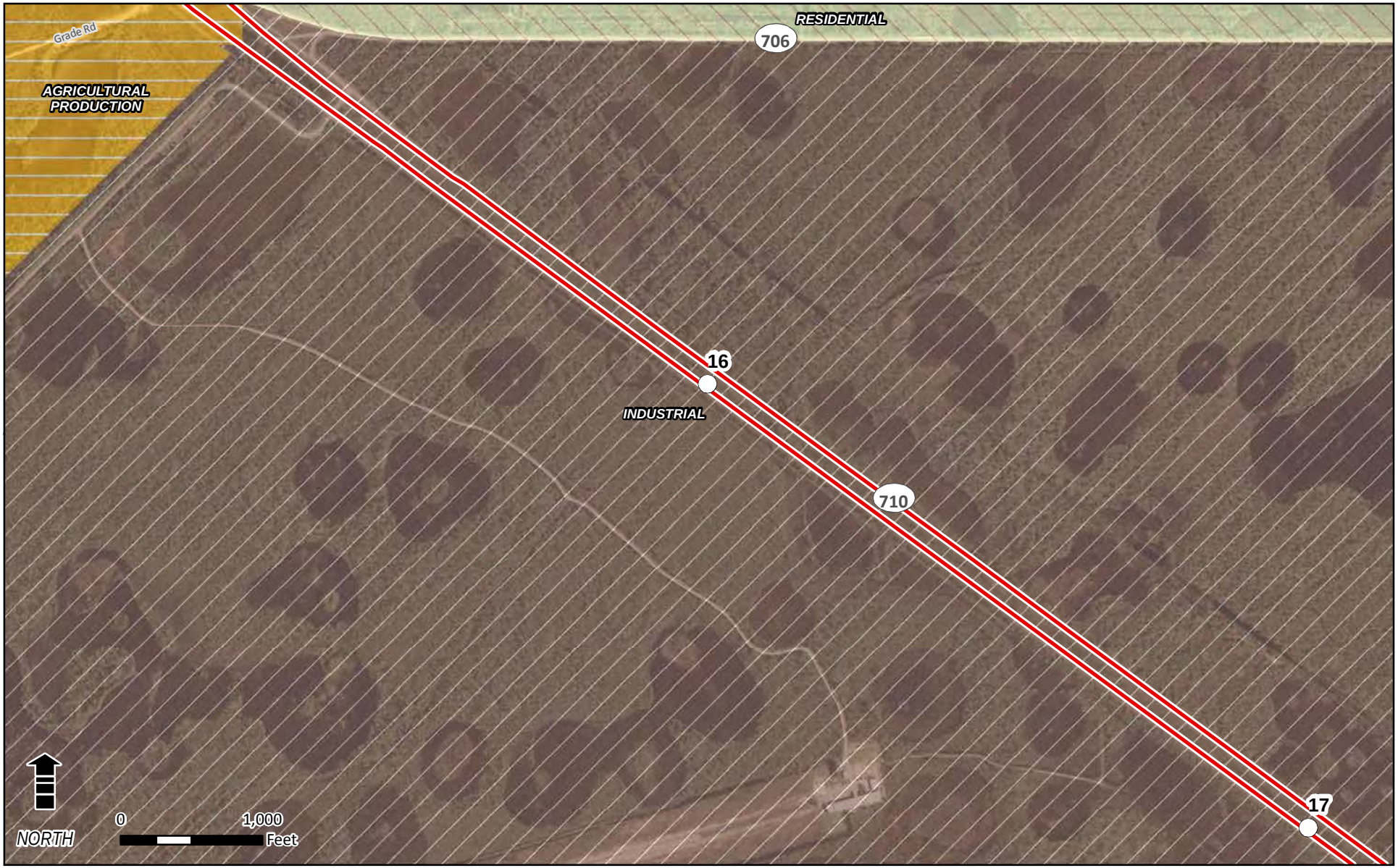
Appendix E (Sheet 10 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

Appendix E (Sheet 11 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

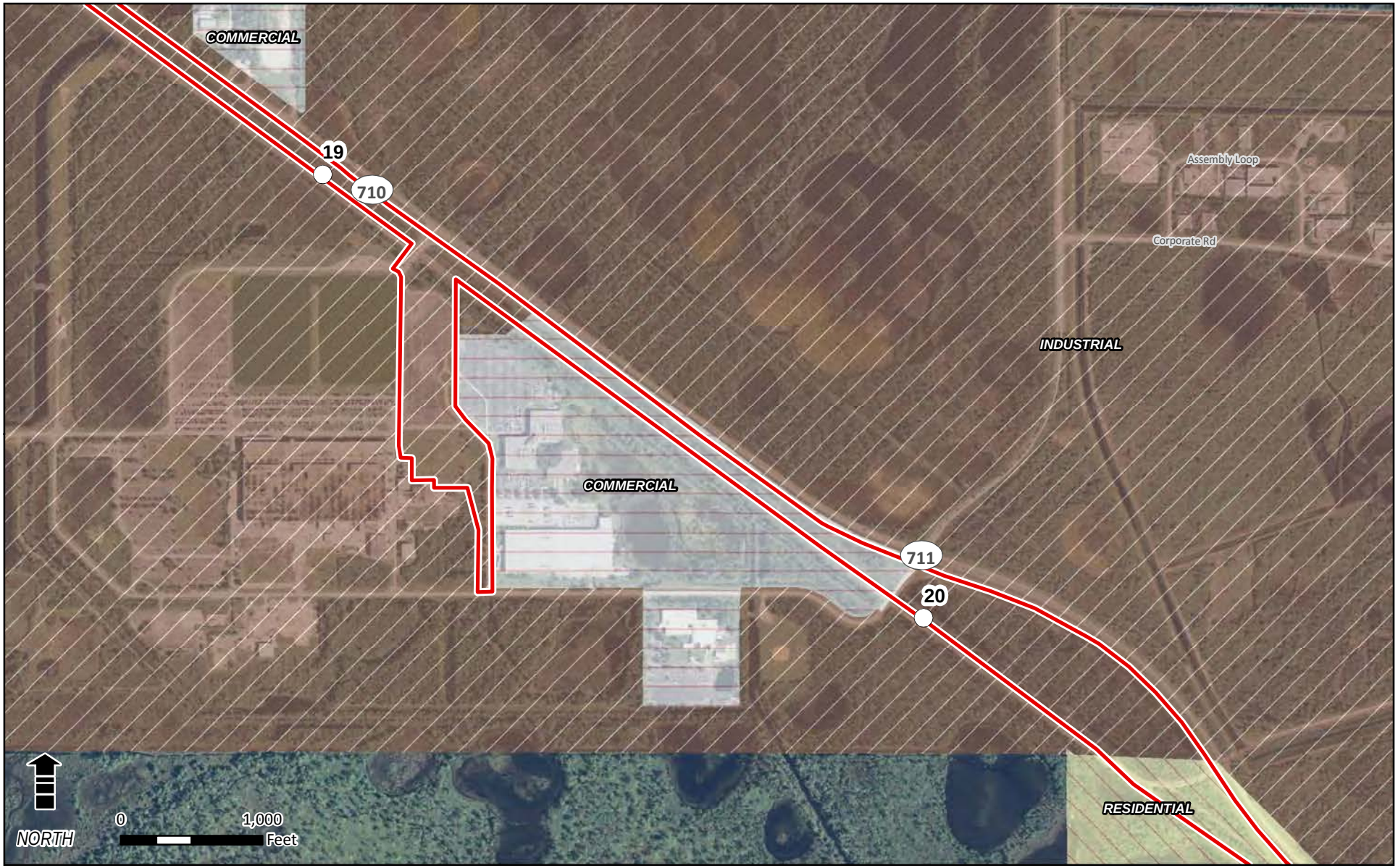
Appendix E (Sheet 12 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

Appendix E (Sheet 13 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

Appendix E (Sheet 14 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

Appendix E (Sheet 15 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

Appendix E (Sheet 16 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

Appendix E (Sheet 17 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

Appendix E (Sheet 18 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

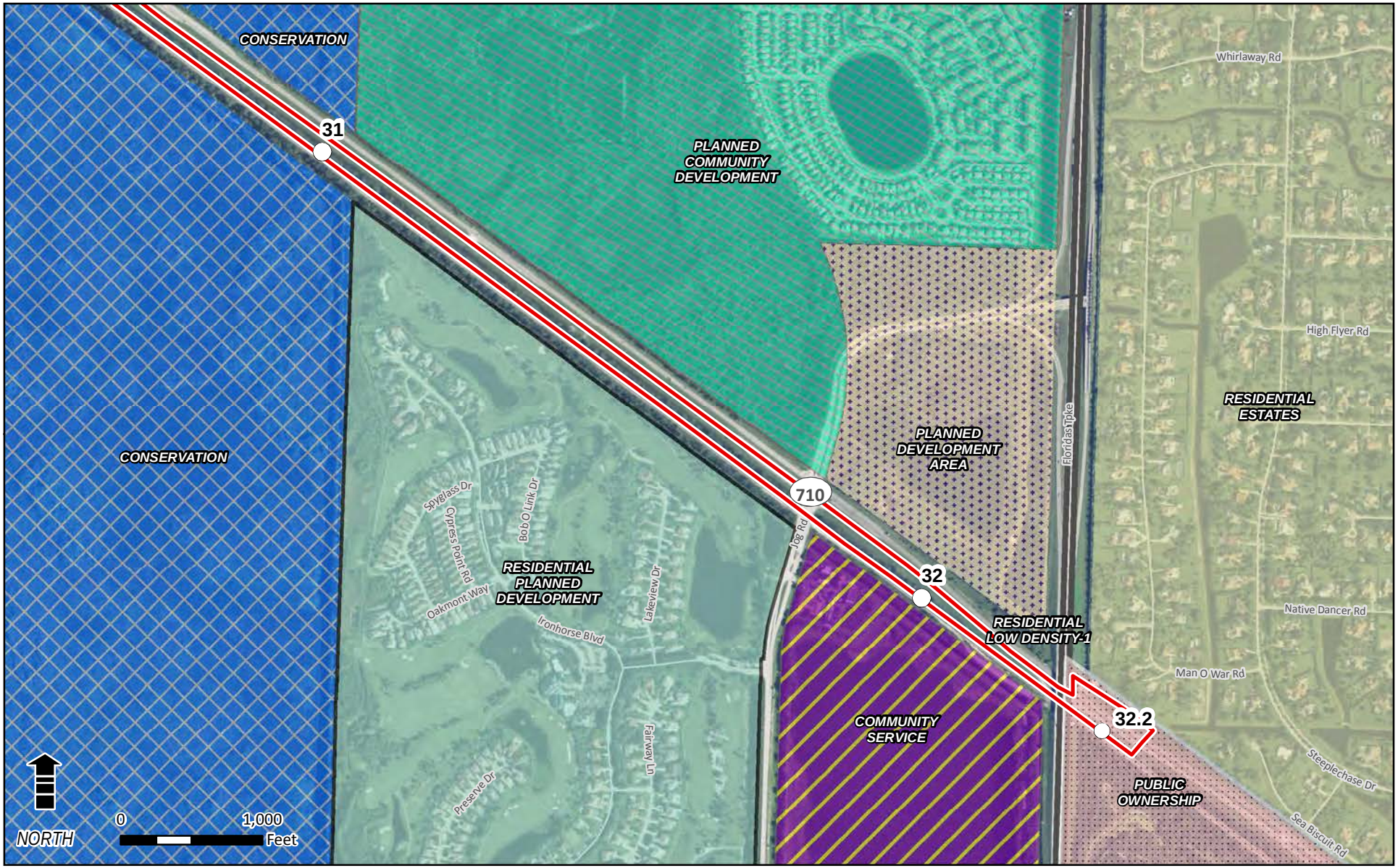
Appendix E (Sheet 19 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*



Milepost

Preferred Corridor

Martin County Zoning**

- A-2 (AGRICULTURAL)
- AG-20A (GENERAL AGRICULTURAL DISTRICT)
- AR-5A (AGRICULTURAL RANCHETTE DISTRICT)
- B-1 (BUSINESS)
- B-2 (BUSINESS WHOLESALE)
- COR-1 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- COR-2 (COMMERCIAL OFFICE/RESIDENTIAL DISTRICT)
- GC (GENERAL COMMERCIAL DISTRICT)
- GI (GENERAL INDUSTRIAL DISTRICT)
- HI (HEAVY INDUSTRIAL DISTRICT)
- IZ - INTERIM ZONING
- LI (LIMITED INDUSTRIAL DISTRICT)
- M-1 (INDUSTRIAL)
- M-3 (INDUSTRIAL)
- PS (PUBLIC SERVICING DISTRICT)
- PS-2 (PUBLIC SERVICE DISTRICT)
- PUD
- PUD-C (COMMERCIAL)
- PUD-I (INDUSTRIAL)
- PUD-R (RESIDENTIAL)
- R-1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2A (TWO-FAMILY RESIDENTIAL DISTRICT)
- R-2B (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2C (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-2T (SINGLE-FAMILY RESIDENTIAL DISTRICT)
- R-3 (MULTI-FAMILY RESIDENTIAL)
- R-3A (LIBERAL MULTI-FAMILY)
- RM-10 (HIGH DENSITY RESIDENTIAL DISTRICT)
- RM-8 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- RS-3 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-4 (LOW DENSITY RESIDENTIAL DISTRICT)
- RS-6 (MEDIUM DENSITY RESIDENTIAL DISTRICT)
- TP (MOBILE HOME PARK DISTRICT)

City of Palm Beach Gardens Zoning**

- CONSERVATION
- PLANNED COMMUNITY DEVELOPMENT
- PLANNED DEVELOPMENT AREA
- RESIDENTIAL ESTATES

Palm Beach County Zoning**

- AGRICULTURAL PRODUCTION
- COMMERCIAL
- INDUSTRIAL
- PUBLIC OWNERSHIP
- RESIDENTIAL LOW DENSITY-1
- RESIDENTIAL

City of West Palm Beach Zoning**

- COMMUNITY SERVICE
- CONSERVATION
- RESIDENTIAL PLANNED DEVELOPMENT

Appendix E (Sheet 20 of 20)

Zoning
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010, NAIP 2010, Martin County GIS, Palm Beach County GIS, Palm Beach Gardens GIS, West Palm Beach GIS.

***No transparent Zoning layer indicates No Data available.*

This page left blank intentionally.

Appendix F

Cultural Resources Maps

(Confidential – Not for Public Release)

Submitted under rules of confidentiality pursuant to the National Historic Preservation Act. Exempt from disclosure under Chapter 119 of Florida Statutes.

This page left blank intentionally.



Appendix G

Environmental Resource Permit

This page left blank intentionally.

JOINT APPLICATION FOR ENVIRONMENTAL RESOURCE PERMIT/

AUTHORIZATION TO USE SOVEREIGN SUBMERGED LANDS/

FEDERAL DREDGE AND FILL PERMIT

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION/
WATER MANAGEMENT DISTRICTS/
U.S. ARMY CORPS OF ENGINEERS

This page left blank intentionally.

INTRODUCTION FOR JOINT APPLICATION FOR
ENVIRONMENTAL RESOURCE PERMIT/AUTHORIZATION TO USE
STATE OWNED SUBMERGED LANDS/FEDERAL DREDGE AND
FILL PERMIT

INTRODUCTION
Attached is a joint application for:

1) activities regulated under Part IV of Chapter 373, F.S.;
2) activities which require authorization to use state owned submerged lands; and
3) activities which require federal dredge and fill permit.

Certain activities may qualify for an exemption. If an activity qualifies for an exemption, an application is not required, although the use of this application form is the most expeditious way for the agencies to make the determination that the activity qualifies for an exemption. Attachment 2 list various regulated activities and the type of permit required for each activity. If you have any questions, please contact the staff of the nearest office of either the Florida Department of Environmental Protection (DEP) or a Water Management District (WMD).

PROCESSING AGENCY/DISTRICT SERVICE CENTERS
The Department of Environmental Protection ("Department" or "DEP") regulates some types of activities, and the Water Management Districts ("WMDs") regulate others. Attachment 1, DEP/WMD Permitting Responsibilities, specifies which activities are regulated by each agency. Environmental Resource Permit Applications shall be made tot he appropriate District/Department office serving the area in which the activity is proposed. Attachment 4 designates the appropriate agency office for each geographic area.

COPIES/APPLICATION FEES
Submit an original signed application form plus four copies of the form, and five complete sets of all the requested drawings and other information to the appropriate DEP or WMD office. Submit the appropriate fee with your application. Application fees are listed in Attachment 3.

DISTRIBUTION TO U.S. ARMY CORPS OF ENGINEERS
When activities are proposed in, on or over wetlands or other surface waters, a portion of the application (Section A and Section C, with the associated drawings) will be forwarded to the Army Corps of Engineers (ACOE) by the reviewing agency. The ACOE will advise you of any additional information that may be required to complete your federal dredge and fill permit application. It is not necessary for the applicant to submit a separate application to the ACOE. The information requested in this application form may be more than required to make a complete application to the ACOE. However, it is useful and may be essential for subsequent evaluation. Reducing unnecessary paperwork and delays is a continuing goal of the ACOE.

DISTRIBUTION TO THE DEP FOR STATE LAND APPROVAL
If the application checks the box to request authorization to use sovereign submerged lands, the Department will begin processing the request for sovereign submerged lands approval. Additionally, if at any time during the processing of the application, it appears that the proposed activities may take place on sovereign submerged lands, the Department will initiate a review for the authorization to use such lands. For an explanation of sovereign submerged lands approval see Attachment 5.

NOTE: The information listed in Sections B, D, E, and F of this application package is not intended to be all-inclusive. Additional information may be requested by the reviewing agency in order to complete your application.

SECTION A

FOR AGENCY USE ONLY	
ACOE Application #	DEP/WMD Application #
Date Application Received	*Date Application Received*
Proposed Project Lat.	Fee Received $
Proposed Project Long.	Fee Receipt #

PART 1:
Are any of the activities described in this application proposed to occur in, on, or over wetlands or other surface waters?
☒ yes ☐ no
Is this application being filed by or on behalf of a government entity or drainage district? ☐yes ☒no

A. Type of Environmental Resource Permit Requested (check at least one). See Attachment 2 for thresholds and descriptions.

☐ Noticed General - include information requested in Section B.
☐ Standard General (Single Family Dwelling) - include information requested in Sections C and D.
☐ Standard General (all other Standard General projects) - include information requested in Sections C and E.
☐ Individual (Single Family Dwelling) - include information requested in Sections C and D.
☒ Individual (all other Individual projects) - include information requested in Sections C and E.
☐ Conceptual - include information requested in Sections C and E.
☐ Mitigation Bank Permit (construction) - include information requested in Sections C and F. (If the proposed mitigation bank involves the construction of a surface water management system requiring another permit defined above, check the appropriate box and submit the information requested by the applicable section.)
☐ Mitigation Bank (conceptual) - include information requested in Sections C and F.

B. Type of activity for which you are applying (check at least one)

☒ Construction or operation of a new system, other than a solid waste facility, including dredging or filling in, on or over wetlands and other surface waters.
☐ Construction, expansion or modification of a solid waste facility.
☐ Alteration or operation of an existing system which was not previously permitted by a WMD or DEP.
☐ Modification of a system previously permitted by a WMD or DEP.
Provide previous permit numbers:_____

☐ Alteration of a system ☐ Extension of permit duration
☐ Abandonment of a system ☐ Construction of additional phases of a system
☐ Removal of a system

C. Are you requesting authorization to use Sovereign Submerged Lands?
☐yes ☒no
(See Section G and Attachment 5 for more information before answering this question.)

D. For activities in, on,or over wetlands or other surface waters, check type of federal dredge and fill permit requested:
☒Individual ☐Programmatic General ☐General
☐Nationwide ☐Not Applicable

E. Are you claiming to qualify for an exemption? ☐yes ☒no
If yes, provide rule number if known. _____

PART 3: **A. OWNER(S) OF LAND**	**B. ENTITY TO RECEIVE PERMIT (IF OTHER THAN OWNER)**
Name Florida Power & Light Company (FPL)	Name
Title and Company	Title and Company
Address 700 Universe Boulevard	Address
City, State, Zip Juno Beach, Florida 33408	City, State, Zip
Telephone and Fax (561) 691-7001 (Office) (561) 691-7070 (Fax)	Telephone and Fax
C. AGENT AUTHORIZED TO SECURE PERMIT	**D. CONSULTANT (IF DIFFERENT FROM AGENT)**
Name Mr. Randall R. LaBauve	Name David A. Crawley Jr.
Title and Company Vice President, FPL	Title and Company Project Manager, Ecology & Environment, Inc.
Address 700 Universe Boulevard	Address 220 West Garden Street Suite 404
City, State, Zip Juno Beach, Florida 33408	City, State, Zip Pensacola, FL 32502
Telephone and Fax (561) 691-7001 (Office) (561) 691-7070 (Fax)	Telephone and Fax (850) 435-8925 (Office) (866) 374-7549 (Fax)

PART 4: (Please provide metric equivalent for federally funded projects):

A. Name of Project, including phase if applicable: **Martin Plant to Riviera Beach Energy Center (RBEC) Lateral**

B. Is this application for part of a multi-phase project?
☐yes ☒no

C. Total applicant-owned area contiguous to the project?
996.26 ac.; 403.2 ha.

D. Total area served by the system: N/A ac.; N/A ha.

E. Impervious area for which a permit is sought: 0.15 ac.; 0.06 ha.

F. Volume of water that the system is capable of impounding:
0.00 ac. ft.; 0.00 m

G. What is the total area of work in, on, or over wetlands or other surface waters?
Approximately 239.52 ac.; 96.93 ha. 10,433,491.2 sq. ft.; 969,301.51 sq. m.

H. Total volume of material to be dredged: approximately 96,342.40 yd; 73,605.59 m for trench excavation

I. Number of new boat slips proposed: N/A wet slips; N/A dry slips

PART 5:

Project location (use additional sheets if needed):
County(ies): **Martin and Palm Beach**
Provided in Attachment A

Section(s)	Township	Range
Section(s)	Township	Range
Section(s)	Township	Range

Land Grant name, if applicable: **n/a**

Tax Parcel Identification Number: See Attachment B to of this ERP Application

Street Address, Road, or other location: Between FPL's Martin Plant and Florida's Turnpike with the majority paralleling the south side of State Road 710. Section 9.3.2 of the Site Certification Modification provides a detailed description of the Project location.

City, Zip Code, if applicable: N/A

PART 6: Describe in general terms the proposed project, system, or activity.

Installation of an approximately 32-mile natural gas pipeline between FPL's Martin Plant property and Florida's Turnpike with the majority paralleling the south side of State Road 710. Section 9.3.2 of the Site Certification Modification provides a detailed description of the Project location. The pipeline would be up to 24-inches in diameter and would be installed a minimum of three feet below ground for its entire length. The Project will involve anticipated temporary impacts up to 165.39 acres of herbaceous wetlands; 2.32 acres of native forested wetlands; and 71.66 acres of exotic forested wetlands during trench excavation for pipeline installation. Additionally up to 0.15 acres of herbaceous wetlands would be permanently impacted for the installation of mainline valves as required per the U.S. Department of Transportation. Actual impact acreages would be provided once detailed engineering is complete prior to construction. All areas of temporary wetland impact will be restored to original topographic grade using native wetland soils and allowed to revegetate through natural recruitment from the seed bank.

PART 7:

A. If there have been any pre-application meetings, including on-site meetings, with regulatory staff, please list the date(s), location(s), and names of key staff and project representatives.
USACE Meeting on January 12, 2012 with Linda Knoeck and Leah Oberlin.

B. Please identify by number any MSSW/Wetland Resource/ERP/ACOE Permits pending, issued or denied for projects at the location, and any related enforcement actions.

Agency	Date	No.\Type of Application	Action Taken

C. Note: The following information is required for projects proposed to occur in, on or over wetlands that need a federal dredge and fill permit or an authorization to use state owned submerged lands. Please provide the names, addresses and zip codes of property owners whose property directly adjoins the project (excluding application) and/or (for proprietary authorizations) is located within a 500 ft. radius of the applicant's land. Please attach a plan view showing the owner's names and adjoining property lines. Attach additional sheets if necessary.

1. 2.
See Attachment B of this ERP Application
3. 4.
5. 6.
7. 8.

PART 8:

A. By signing this application form, I am applying, or I am applying on behalf of the applicant, for the permit and any proprietary authorizations identified above, according to the supporting data and other incidental information filed with this application. I am familiar with the information contained in this application and represent that such information is true, complete and accurate. I understand this is an application and not a permit, and that work prior to approval is a violation. I understand that this application and any permit issued or proprietary authorization issued pursuant thereto, does not relive me of any obligation for obtaining any other required federal, state, water management district or local permit prior to commencement of construction. I agree, or I agree on behalf of the applicant, to operate and maintain the permitted system unless the permitting agency authorizes transfer of the permit to a responsible operation entity. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

_____
Typed/Printed Name of Applicant (If no Agent is used) or Agent (If one is so authorized below)

_____ _____
Signature of Applicant/Agent Date

_____
(Corporate Title if applicable)

AN AGENT MAY SIGN ABOVE <u>ONLY</u> IF THE APPLICANT COMPLETES THE FOLLOWING:

B. I hereby designate and authorize the agent listed above to act on my behalf, or on behalf of my corporation, as the agent in the processing of this application for the permit and/or proprietary authorization indicated above; and to furnish, on request, supplemental information in support of the application. In addition, I authorize the above-listed agent to bind me, or my corporation, to perform any requirements which may be necessary to procure the permit or authorization indicated above. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

_____		
Typed/Printed Name of Applicant	Signature of Applicant	Date

_____
(Corporate Title if applicable)

<u>Please note: The applicant's original signature (not a copy) is required above.</u>

PERSON AUTHORIZING ACCESS TO THE PROPERTY MUST COMPLETE THE FOLLOWING:

C. I either own the property described in this application or I have legal authority to allow access to the property, and I consent, after receiving prior notification, to any site visit on the property by agents or personnel from the Department of Environmental Protection, the Water Management District and the U.S. Army Corps of Engineers necessary for the review and inspection of the proposed project specified in this application. I authorize these agents or personnel to enter the property as many times as may be necessary to make such review and inspection. Further, I agree to provide entry to the project site for such agents or personnel to monitor permitted work if a permit is granted.

_____		
Typed/Printed Name of Applicant	Signature of Applicant	Date

_____
(Corporate Title if applicable)

SECTION C

Environmental Resource Permit Notice of Receipt of Application

Note: this form does not need to be submitted for noticed general permits.
This information is required in addition to that required in other sections of the application. Please submit five copies of this notice of receipt of application and all attachments with the other required information. Please submit all information on 8 1/2" x 11" paper.

Project Name	FPL Martin Plant to RBEC Lateral
County	Martin and Palm Beach
Owner	Florida Power & Light Company
Applicant:	Florida Power & Light Company
Applicant's Address:	700 Universe Blvd, Juno Beach , FL 33408

1. Indicate the project boundaries on a USGS quadrangle map. Attach a location map showing the boundary of the proposed activity. The map should also contain a north arrow and a graphic scale; show Section(s), Township(s), and Range(s); and must be of sufficient detail to allow a person unfamiliar with the site to find it.
Provided in Appendix B of the Petition to Modify the RBEC Certification.

2. Provide the names of all wetlands, or other surface waters that would be dredged, filled, impounded, diverted, drained, or would receive discharge (either directly or indirectly), or would otherwise be impacted by the proposed activity, and specify if they are in an Outstanding Florida Water or Aquatic Preserve:
Provided in Appendix K of the Petition to Modify the RBEC Certification

3. Attach a depiction (plan and section views), which clearly shows the works or other facilities proposed to be constructed. Use multiple sheets, if necessary. Use a scale sufficient to show the location and type of works.
Location of preferred corridor provided in Appendix A of Petition to Modify the RBEC Certification, typical construction activities and associated typical drawings area provided in Section 9.4.1 of the Petition to Modify the RBEC Certification. Final engineering design of the right-of-way will be available post-certification.

4. Briefly describe the proposed project (such as "construct dock with boat shelter", "replace two existing culverts", "construct surface water management system to serve 150 acre residential development"):
Construct, operate, and maintain an approximate 32-mile natural gas pipeline.

5. Specify the acreage of wetlands or other surface waters, if any, that are proposed to be filled, excavated, or otherwise disturbed or impacted by the proposed activity:

filled 0.15 ac.; n/a excavated ac.;

other impacts 239.37 ac.

6. Provide a brief statement describing any proposed mitigation for impacts to wetlands and other surface waters (attach additional sheets if necessary):
Impacts would be mitigated per the measures identified in Section 9.4.2 and Appendix L of the Petition to Modify the RBEC Certification.

FOR AGENCY USE ONLY

Application Name:
Application Number:
Office where the application can be inspected:

Note to Notice recipient: The information in this notice has been submitted by the applicant, and has not been verified by the agency. It may be incorrect, incomplete or may be subject to change.

SECTION E

INFORMATION REQUESTED FOR STANDARD GENERAL, INDIVIDUAL AND CONCEPTUAL ENVIRONMENTAL RESOURCE PERMIT APPLICATIONS NOT RELATED TO A SINGLE FAMILY DWELLING UNIT

Please provide the information requested below if the proposed project requires either a standard general, individual, or conceptual approval environmental resource permit and is not related to an individual, single family dwelling unit, duplex or quadruplex. The information listed below represents the level of information that is usually required to evaluate an application. The level of information required for a specific project will vary depending on the nature and location of the site and the activity proposed. Conceptual approvals generally do not require the same level of detail as a construction permit. However, providing a greater level of detail will reduce the need to submit additional information at a later date. If an item does not apply to your project, proceed to the next item. Please submit all information that is required by the Department on either 8 1/2 in. X 11 in. paper or 11 in. X 17 in. paper. Larger drawings may be submitted to supplement but not replace these smaller drawings.

I. Site Information

A. Provide a map(s) of the project area and vicinity delineating USDA/SCS soil types.

Provided in Attachment C of this ERP Application.

B. Provide recent aerials, legible for photo interpretation with a scale of 1" = 400 ft, or more detailed, with project boundaries delineated on the aerial.

Provided in Appendix A of the Petition to Modify the RBEC Certification.

C. Identify the seasonal high water or mean high tide elevation and normal pool or mean low tide elevation for each on site wetland or surface water, including receiving waters into which runoff will be discharged. Include dates, datum, and methods used to determine these elevations.

The seasonal high water mark for each wetland would be the jurisdictional wetland boundary recorded for each wetland within Appendix K of the Petition to Modify the RBEC Certification.

D. Identify the wet season high water tables at the locations representative of the entire project site. Include dates, datum, and methods used to determine these elevations.

As the majority of the Project is within a large drainage swale the wet season high water table or high water mark is dependent on the meteorological conditions. As the Project would consist of a temporary disturbance and the disturbance would not disrupt water storage within the system this should not be impacted.

II. Environmental Considerations

A. Provide results of any wildlife surveys that have been conducted on the site, and provide any comments pertaining to the project from the Florida Game and Fresh Water Fish Commission and the U.S. Fish and Wildlife Service.

Habitat level threatened and endangered species surveys were conducted for the Project. See Appendix K of the Petition to Modify the RBEC Certification for details on threatened and endangered species surveys.

B. Provide a description of how water quantity, quality, hydroperiod, and habitat will be maintained in on-site wetlands and other surface waters that will be preserved or will remain undisturbed.

All work onsite will be conducted in accordance with FPL's Best Management Practices in Appendix L of the Petition to Modify the RBEC Certification which was developed in order to ensure compliance of all state, local and Federal guidelines as well as mitigate impacts to wetland and water resources.

C. Provide a narrative description of any proposed mitigation plans, including purpose, maintenance, monitoring, and construction sequence and techniques, and estimated costs

FPL has developed Best Management Practices (Appendix L of the Petition to Modify the RBEC Certification) that provides guidance to construction contractors on requirements for erosion and sedimentation controls, wetland crossing procedures, waterbody crossing procedures, restoration and revegetation of all temporary impact areas.

D. Describe how boundaries of wetlands or other surface waters were determined. If there has ever been a jurisdictional declaratory statement, a formal wetland determination, a formal determination, a validated informal determination, or a revalidated jurisdictional determination, provide the identifying number.

As per the Ecological Assessment and Wetland Delineation Report contained in Appendix K, wetland determinations were conducted in accordance to the USACE and FDEP guidelines.

E. Impact Summary Tables:

1. For all projects, complete Tables 1, 2 and 3 as applicable.

2. For docking facilities or other structures constructed over wetlands or other surface waters, provide the information requested in Table 4.

3. For shoreline stabilization projects, provide the information requested in Table 5.

III. Plans

Provide clear, detailed plans for the system including specifications, plan (overhead) views, cross sections (with the locations of the cross sections shown on the corresponding plan view), and profile (longitudinal) views of the proposed project. The plans must be signed and sealed by an appropriate registered professional as required by law. Plans must include a scale and a north arrow. These plans should show the following:

A. Project area boundary and total land area, including distances and orientation from roads or other land marks;

Appendices A & B of the Petition to Modify the RBEC Certification detail the location of the Preferred Corridor on aerial and topographic maps. The location and extent of the construction and permanent ROWs would be submitted post-certification once final engineering design is completed.

B. Existing land use and land cover (acreage and percentages), and on-site natural communities, including wetlands and other surface waters, aquatic communities, and uplands. Use the Florida Land Use Cover & Classification System (FLUCCS)(Level 3) for projects proposed in the South Florida Water Management District, the St. Johns River Water Management District, and the Suwannee River Water Management District and use the National Wetlands Inventory (NWI) for projects proposed in the Southwest Florida Water Management District. Also identify each community with a unique identification number which must be consistent in all exhibits.

Provided in Section 9.3.7.1 of the Petition to Modify the RBEC Certification.

C. The existing topography extending at least 100 feet off the project area, and including adjacent wetlands and other surface waters. All topography shall include the location and a description of known benchmarks, referenced to NGVD. For systems waterward of the mean high water (MHW) or seasonal high water lines, show water depths, referenced to mean low water (MLW) in tidal areas or seasonal low water in non-tidal areas, and list the range between MHW and MLW. For docking facilities, indicate the distance to, location of, and depths of the nearest navigational channel and access routes to the channel.

Provided in Appendix B of Petition to Modify the RBEC Certification.

D. If the project is in the known flood plain of a stream or other water course, identify the following: 1) the flood plain boundary and approximate flooding elevations; and 2) the 100-year flood elevation and floodplain boundary of any lake, stream or other watercourse located on or adjacent to the site;

As the much of the Project is located near drainage swales along State Road 710, it is subject to periodic flooding during significant rain events. Additionally waterbodies are identified as part of Appendix K of the Petition to Modify the RBEC Certification.

E. The boundaries of wetlands and other surface waters within the project area. Distinguish those wetlands and other surface waters that have been delineated by any binding jurisdictional determination;

Provided in Appendix K of this Petition to Modify the RBEC Certification.

F. Proposed land use, land cover and natural communities (acreage and percentages), including wetlands and other surface waters, undisturbed uplands, aquatic communities, impervious surfaces, and water management areas. Use the same classification system and community identification number used in III (B) above.

Upon completion of the Project all work spaces would be restored to pre-existing contours and would be allowed to revert to its previous land cover to the extent practicable. The exception would be for a 50-ft wide permanent ROW located over the pipeline that would be mowed and maintained as per U.S. Department of Transportation regulations. Final engineering design will dictate the location of the construction and permanent ROW in the preferred corridor to be completed and submitted post-certification.

G. Proposed impacts to wetlands and other surface waters, and any proposed connections/outfalls to other surface waters or wetlands;

See Section 9.4.2 of the Petition to Modify the RBEC Certification for a discussion of impacts associated with the Project.

H. Proposed buffer zones;

n/a

I. Pre- and post-development drainage patterns and basin boundaries showing the direction of flows, including any off-site runoff being routed through or around the system; and connections between wetlands and other surface waters;

n/a

J. Location of all water management areas with details of size, side slopes, and designed water depths;

n/a

K. Location and details of all water control structures, control elevations, any seasonal water level regulation schedules; and the location and description of benchmarks (minimum of one benchmark per structure);

n/a

L. Location, dimensions and elevations of all proposed structures, including docks, seawalls, utility lines, roads, and buildings;

To be completed and submitted post-certification upon final engineering design.

M. Location, size, and design capacity of the internal water management facilities;

n/a

N. Rights-of-way and easements for the system, including all on-site and off-site areas to be reserved for water management purposes, and rights-of-way and easements for the existing drainage system, if any;

Provided in Section 9.3.6.3 of the Petition to Modify the RBEC Certification.

O. Receiving waters or surface water management systems into which runoff from the developed site will be discharged;

Provided in Section Appendix K of the Petition to Modify the RBEC Certification.

P. Location and details of the erosion, sediment and turbidity control measures to be implemented during each phase of construction and all permanent control measures to be implemented in post-development conditions;

FPL's Best Management Practices are found in Appendix L of the Petition to Modify the RBEC Certification.

Q. Location, grading, design water levels, and planting details of all mitigation areas;

n/a

R. Site grading details, including perimeter site grading;

To be completed and submitted post-certification upon final engineering design.

S. Disposal site for any excavated material, including temporary and permanent disposal sites;

To be completed and submitted post-certification upon final engineering design.

T. Dewatering plan details;

FPL's Best Management Practices are found in Appendix L of the Petition to Modify the RBEC Certification.

U. For marina facilities, locations of any sewage pumpout facilities, fueling facilities, boat repair and maintenance facilities, and fish cleaning stations;

n/a

V. Location and description of any nearby existing offsite features which might be affected by the proposed construction or development such as stormwater management ponds, buildings or other structures, wetlands or other surface waters.

Located in Appendix K of the Petition to Modify the RBEC Certification.

W. For phased projects, provide a master development plan.

n/a

IV. Construction Schedule and Techniques

Provide a construction schedule, and a description of construction techniques, sequencing and equipment. This information should specifically include the following:

See Section 9.4.1 of the Petition to Modify the RBEC Certification for a discussion of the construction techniques. The construction schedule will be developed and submitted post certification .

A. Method for installing any pilings or seawall slabs;

n/a

B. Schedule of implementation of temporary or permanent erosion and turbidity control measures;

FPL's Best Management Practices are found in Appendix L of the Petition to Modify the RBEC Certification.

C. For projects that involve dredging or excavation in wetlands or other surface waters, describe the method of excavation, and the type of material to be excavated;

See Section 9.4.1 of the Petition to Modify the RBEC Certification.

D. For projects that involve fill in wetlands or other surface waters, describe the source and type of fill material to be used. For shoreline stabilization projects that involve the installation of riprap, state how these materials are to be placed, (i.e., individually or with heavy equipment) and whether the rocks will be underlain with filter cloth;

If a permanent fill is deemed necessary this information would be completed and submitted post-certification upon final engineering design.

E. If dewatering is required, detail the dewatering proposal including the methods that are proposed to contain the discharge, methods of isolating dewatering areas, and indicate the period dewatering structures will be in place (Note: a consumptive use or water use permit may by required);

FPL's Best Management Practices are found in Appendix L of the Petition to Modify the RBEC Certification.

F. Methods for transporting equipment and materials to and from the work site. If barges are required for access, provide the low water depths and draft of the fully loaded barge;

All equipment and material to be utilized in this Project will be delivered to the certified Preferred Corridor and approved work spaces. Equipment will be transported to the site overland by existing paved roads or existing rail.

G. Demolition plan for any existing structures to be removed; and

n/a

H. Identify the schedule and party responsible for completing monitoring, record drawings, and as-built certifications for the project when completed.

This will be provided by FPL within 6 months from the time the construction and final restoration is complete.

V. Drainage Information

A. Provide pre-development and post-development drainage calculations, signed and sealed by an appropriate registered professional, as follows:

This section is not applicable to the Project.

1. Runoff characteristics, including area, runoff curve number or runoff coefficient, and time of concentration for each drainage basin;

2. Water table elevations (normal and seasonal high) including aerial extent and magnitude of any proposed water table draw down;

3. Receiving water elevations (normal, wet season, design storm);

4. Design storms used including rainfall depth, duration, frequency, and distribution;

5. Runoff hydrograph(s) for each drainage basin, for all required design storm event(s);

6. Stage-storage computations for any area such as a reservoir, close basin, detention area, or channel, used in storage routing;

7. Stage-discharge computations for any storage areas at a selected control point, such as control structure or natural restriction;

8. Flood routings through on-site conveyance and storage areas;

9. Water surface profiles in the primary drainage system for each required design storm event(s);

10. Runoff peak rates and volumes discharged from the system for each required design storm event(s);

11. Tail water history and justification (time and elevation); and

12. Pump specifications and operating curves for range of possible operating conditions (if used in system).

B. Provide the results of any percolation tests, where appropriate, and soil borings that are representative of the actual site conditions;

C. Provide the acreage, and percentages of the total project, of the following:

1. Impervious surfaces, excluding wetlands;

2. Pervious surfaces (green areas, not including wetlands);

3. Lakes, canals, retention areas, other open water areas; and

4. Wetlands.

D. Provide an engineering analysis of floodplain storage and conveyance (if applicable), including:

1. Hydraulic calculations for all proposed traversing works;

2. Backwater water surface profiles showing upstream impact of traversing works;

3. Location and volume of encroachment within regulated floodplain(s); and

4. Plan for compensating floodplain storage, if necessary, and calculations required for determining minimum building and road flood elevations.

E. Provide an analysis of the water quality treatment system including:

1. A description of the proposed stormwater treatment methodology that addresses the type of treatment, pollution abatement volumes, and recovery analysis; and

2. Construction plans and calculations that address stage-storage and design elevations, which demonstrate compliance with the appropriate water quality treatment criteria.

F. Provide a description of the engineering methodology, assumptions and references for the parameters listed above, and a copy of all such computations, engineering plans, and specifications used to analyze the system. If a

computer program is used for the analysis, provide the name of the program, a description of the program, input and output data, two diskette copies, if available, and justification for model selection.

VI. Operation and Maintenance and Legal Documentation

A. Describe the overall maintenance and operation schedule for the proposed system.

See Section 9.5 of the Petition to Modify the RBEC Certification and FPL's Best Management Practices included in Appendix L of the Petition to Modify the RBEC Certification.

B. Identify the entity that will be responsible for operating and maintaining the system in perpetuity if different than the permittee, a draft document enumerating the enforceable affirmative obligations on the entity to properly operate and maintain the system for its expected life, and documentation of the entity's financial responsibility for long-term maintenance. If the proposed operation and maintenance entity is not a property owner's association, provide proof of the existence of an entity, or the future acceptance of the system by an entity which will operate and maintain the system. If a property owner's association is the proposed operation and maintenance entity, provide copies of the articles of incorporation for the association and copies of the declaration, restrictive covenants, deed restrictions, or other operational documents that assign responsibility for the operation and maintenance of the system. Provide information ensuring the continued adequate access to the system for maintenance purposes. Before transfer of the system to the operating entity will be approved, the permittee must document that the transferee will be bound by all terms and conditions of the permit.

See Section 9.5 of the Petition to Modify the RBEC Certification.

C. Provide copies of all proposed conservation easements, storm water management system easements, property owner's association documents, and plats for the property containing the proposed system.

See Section 9.3.6.3 of the Petition to Modify the RBEC Certification.

D. Provide indication of how water and waste water service will be supplied. Letters of commitment from off-site suppliers must be included.

n/a

E. Provide a copy of the boundary survey and/or legal description and acreage of the total land area of contiguous property owned/controlled by the applicant.
To be completed and submitted post-certification upon final engineering design.

VII. Water Use

A. Will the surface water system be used for water supply, including landscape irrigation, or recreation.

n/a

B. If a Consumptive Use or Water Use permit has been issued for the project, state the permit number.

n/a

C. If no Consumptive Use or Water Use permit has been issued for the project, indicate if such a permit will be required and when the application for a permit will be submitted.

Waterbodies crossed by the Project may need to be utilized as a water source during hydrostatic testing. This Petition to Modify the RBEC Certification serves as the application for that permit.

D. Indicate how any existing wells located within the project site will be utilized or abandoned.

n/a

TABLE 1
Project Impact Summary

WL & SW ID	WL & SW TYPE	WL & SW SIZE (ac.) ON SITE	WL & SW ACRES NOT IMPACTED	PERMANENT IMPACTS TO WL & SW		TEMPORARY IMPACTS TO WL & SW		MITIGATION ID
				IMPACT SIZE (acres)	IMPACT CODE	IMPACT SIZE (acres)	IMPACT CODE	
W 03	641	0.96	0.76	N/A	N/A	0.20	Pipeline Construction	Restore to Pre-existing contours
W 28	619	6.53	0.95	N/A	N/A	5.58	Pipeline Construction	Restore to Pre-existing contours
W 29	619	1.91	0.00	N/A	N/A	1.91	Pipeline Construction	Restore to Pre-existing contours
W 30	641	0.93	0.00	N/A	N/A	0.93	Pipeline Construction	Restore to Pre-existing contours
W 31	619	2.77	0.00	N/A	N/A	2.77	Pipeline Construction	Restore to Pre-existing contours
W 32	619	4.84	0.00	N/A	N/A	4.84	Pipeline Construction	Restore to Pre-existing contours
W 33	641	0.08	0.00	N/A	N/A	0.08	Pipeline Construction	Restore to Pre-existing contours
W 34	619	0.17	0.00	N/A	N/A	0.17	Pipeline Construction	Restore to Pre-existing contours
W 35	641	0.65	0.00	N/A	N/A	0.65	Pipeline Construction	Restore to Pre-existing contours
W 36	641	0.17	0.00	N/A	N/A	0.17	Pipeline Construction	Restore to Pre-existing contours
W 37a	630	2.93	2.63	N/A	N/A	0.30	Pipeline Construction	Restore to Pre-existing contours
W 37b	641	0.27	0.00	N/A	N/A	0.27	Pipeline Construction	Restore to Pre-existing contours
W 38	630	0.24	0.21	N/A	N/A	0.03	Pipeline Construction	Restore to Pre-existing contours

WL & SW ID	WL & SW TYPE	WL & SW SIZE (ac.) ON SITE	WL & SW ACRES NOT IMPACTED	PERMANENT IMPACTS TO WL & SW		TEMPORARY IMPACTS TO WL & SW		MITIGATION ID
				IMPACT SIZE (acres)	IMPACT CODE	IMPACT SIZE (acres)	IMPACT CODE	
W 40a	619	6.96	4.09	N/A	N/A	2.87	Pipeline Construction	Restore to Pre-existing contours
W40b	641	4.92	0.09	N/A	N/A	4.83	Pipeline Construction	Restore to Pre-existing contours
W 40c	630	4.35	3.07	N/A	N/A	1.28	Pipeline Construction	Restore to Pre-existing contours
W 41a	619	3.99	2.66	N/A	N/A	1.33	Pipeline Construction	Restore to Pre-existing contours
W 41b	641	1.65	0.07	N/A	N/A	1.58	Pipeline Construction	Restore to Pre-existing contours
W 42a	619	5.79	3.26	N/A	N/A	2.53	Pipeline Construction	Restore to Pre-existing contours
W 42b	641	3.81	0.98	N/A	N/A	2.83	Pipeline Construction	Restore to Pre-existing contours
W43a	619	1.58	1.03	N/A	N/A	0.55	Pipeline Construction	Restore to Pre-existing contours
W43b	641	1.63	0.57	N/A	N/A	1.06	Pipeline Construction	Restore to Pre-existing contours
W44a	641	31.06	8.15	N/A	N/A	22.91	Pipeline Construction	Restore to Pre-existing contours
W 44b	619	15.79	12.58	N/A	N/A	3.21	Pipeline Construction	Restore to Pre-existing contours
W 45a	641	0.19	0.06	N/A	N/A	0.13	Pipeline Construction	Restore to Pre-existing contours

WL & SW ID	WL & SW TYPE	WL & SW SIZE (ac.) ON SITE	WL & SW ACRES NOT IMPACTED	PERMANENT IMPACTS TO WL & SW		TEMPORARY IMPACTS TO WL & SW		MITIGATION ID
				IMPACT SIZE (acres)	IMPACT CODE	IMPACT SIZE (acres)	IMPACT CODE	
W 45b	619	0.38	0.15	N/A	N/A	0.23	Pipeline Construction	Restore to Pre-existing contours
W 46b	619	1.55	0.23	N/A	N/A	1.32	Pipeline Construction	Restore to Pre-existing contours
W 48a	619	14.98	8.19	N/A	N/A	6.79	Pipeline Construction	Restore to Pre-existing contours
W48c	641	30.86	12.48	N/A	N/A	18.38	Pipeline Construction	Restore to Pre-existing contours
W 51a	641	3.03	0.10	0.05	Fill	2.93	Pipeline Construction	Mitigation Bank Credits
W 51b	619	0.91	0.81	N/A	N/A	0.10	Pipeline Construction	Restore to Pre-existing contours
W 52a	641	16.17	1.44	N/A	N/A	14.73	Pipeline Construction	Restore to Pre-existing contours
W 52b	619	6.80	0.00	N/A	N/A	6.80	Pipeline Construction	Restore to Pre-existing contours
W 52c	621	0.29	0.00	N/A	N/A	0.29	Pipeline Construction	Restore to Pre-existing contours
W 53a	641	4.10	0.25	N/A	N/A	3.85	Pipeline Construction	Restore to Pre-existing contours
W 53b	619	0.81	0.01	N/A	N/A	0.80	Pipeline Construction	Restore to Pre-existing contours
W 54a	641	7.47	0.39	N/A	N/A	7.08	Pipeline Construction	Restore to Pre-existing contours

WL & SW ID	WL & SW TYPE	WL & SW SIZE (ac.) ON SITE	WL & SW ACRES NOT IMPACTED	PERMANENT IMPACTS TO WL & SW		TEMPORARY IMPACTS TO WL & SW		MITIGATION ID
				IMPACT SIZE (acres)	IMPACT CODE	IMPACT SIZE (acres)	IMPACT CODE	
W 54b	619	2.33	0.00	N/A	N/A	2.33	Pipeline Construction	Restore to Pre-existing contours
W 55a	625	0.61	0.52	N/A	N/A	0.09	Pipeline Construction	Restore to Pre-existing contours
W 55b	641	6.66	0.25	N/A	N/A	6.41	Pipeline Construction	Mitigation Bank Credits
W 56a	641	5.59	3.08	N/A	N/A	2.51	Pipeline Construction	Restore to Pre-existing contours
W 56b	619	11.7	10.34	N/A	N/A	1.36	Pipeline Construction	Restore to Pre-existing contours
W 56c	625	0.44	0.13	N/A	N/A	0.31	Pipeline Construction	Restore to Pre-existing contours
W 57a	641	8.99	0.41	N/A	N/A	8.58	Pipeline Construction	Restore to Pre-existing contours
W 57b	619	7.87	0.44	N/A	N/A	7.43	Pipeline Construction	Restore to Pre-existing contours
W 59a	619	3.70	0.00	N/A	N/A	3.70	Pipeline Construction	Restore to Pre-existing contours
W 59b	641	7.45	0.64	0.04	Fill	6.81	Pipeline Construction	Restore to Pre-existing contours
W 60a	641	4.86	0.15	N/A	N/A	4.71	Pipeline Construction	Restore to Pre-existing contours
W 64a	619	0.26	0.00	N/A	N/A	0.26	Pipeline Construction	Restore to Pre-existing contours

WL & SW ID	WL & SW TYPE	WL & SW SIZE (ac.) ON SITE	WL & SW ACRES NOT IMPACTED	PERMANENT IMPACTS TO WL & SW		TEMPORARY IMPACTS TO WL & SW		MITIGATION ID
				IMPACT SIZE (acres)	IMPACT CODE	IMPACT SIZE (acres)	IMPACT CODE	
W 64b	641	1.81	0.08	N/A	N/A	1.73	Pipeline Construction	Restore to Pre-existing contours
W 65	641	2.74	0.01	N/A	N/A	2.73	Pipeline Construction	Restore to Pre-existing contours
W 66a	619	2.65	0.00	N/A	N/A	2.65	Pipeline Construction	Restore to Pre-existing contours
W 66b	641	9.72	0.09	N/A	N/A	9.63	Pipeline Construction	Restore to Pre-existing contours
W 67a	619	0.56	0.00	N/A	N/A	0.56	Pipeline Construction	Restore to Pre-existing contours
W 67b	641	1.93	0.01	N/A	N/A	1.92	Pipeline Construction	Restore to Pre-existing contours
W 68a	641	12.34	0.96	N/A	N/A	11.38	Pipeline Construction	Restore to Pre-existing contours
W 68b	619	2.73	0.00	N/A	N/A	2.73	Pipeline Construction	Restore to Pre-existing contours
W 69a	631	0.11	0.00	N/A	N/A	0.11	Pipeline Construction	Restore to Pre-existing contours
W 69b	641	3.32	0.11	N/A	N/A	3.21	Pipeline Construction	Restore to Pre-existing contours
W 69c	619	1.20	0.00	N/A	N/A	1.20	Pipeline Construction	Restore to Pre-existing contours
W 70a	641	5.42	0.44	N/A	N/A	4.98	Pipeline Construction	Restore to Pre-existing contours

WL & SW ID	WL & SW TYPE	WL & SW SIZE (ac.) ON SITE	WL & SW ACRES NOT IMPACTED	PERMANENT IMPACTS TO WL & SW		TEMPORARY IMPACTS TO WL & SW		MITIGATION ID
				IMPACT SIZE (acres)	IMPACT CODE	IMPACT SIZE (acres)	IMPACT CODE	
W 70b	619	1.98	0.00	N/A	N/A	1.98	Pipeline Construction	Restore to Pre-existing contours
W 70c	631	0.10	0.00	N/A	N/A	0.10	Pipeline Construction	Restore to Pre-existing contours
W 71a	619	1.44	0.00	0.03	Fill	1.44	Pipeline Construction	Mitigation Bank Credits
W 71b	641	2.44	0.09	0.03	Fill	2.35	Pipeline Construction	Mitigation bank Credits
W 72a	641	0.42	0.00	N/A	N/A	0.42	Pipeline Construction	Restore to Pre-existing contours
W 72b	619	0.39	0.00	N/A	N/A	0.39	Pipeline Construction	Restore to Pre-existing contours
W 73	641	0.35	0.00	N/A	N/A	0.35	Pipeline Construction	Restore to Pre-existing contours
W 74a	619	2.92	0.00	N/A	N/A	2.92	Pipeline Construction	Restore to Pre-existing contours
W 74b	641	4.47	0.02	N/A	N/A	4.45	Pipeline Construction	Restore to Pre-existing contours
W 75a	619	0.80	0.00	N/A	N/A	0.80	Pipeline Construction	Restore to Pre-existing contours
W 75b	641	1.72	0.00	N/A	N/A	1.72	Pipeline Construction	Restore to Pre-existing contours
W 76	641	1.48	0.00	N/A	N/A	1.48	Pipeline Construction	Restore to Pre-existing contours

WL = Wetland; **SW** = Surface water; **ID** = Identification number, letter, etc.
Wetland Type: Use an established wetland classification system and, in the comments section below, indicate which classification system is being used.
Impact Code (Type): D = dredge; F = fill; H = change hydrology; S = shading; C = clearing; O = other. Indicate the final impact if more than one impact type is proposed in a given area. For example, show F only for an area that will first be demucked and then backfilled.

Note: Multiple entries per cell are not allowed, except in the "Mitigation ID" column. Any given acreage of wetland should be listed in one row only, such that the total of all rows equals the project total for a given category (column). For example, if Wetland No. 1 includes multiple wetland types and multiple impact codes are proposed in each type, then each proposed impact in each wetland type should be shown on a separate row, while the size of each wetland type found in Wetland No. 1 should be listed in only one row.

Comments: _____

Attachment A Section, Township, and Range			
Section	**Township**	**Range**	**County**
20	39	38	Martin
21	39	38	Martin
22	39	38	Martin
26	39	38	Martin
27	39	38	Martin
28	39	38	Martin
29	39	38	Martin
35	39	38	Martin
36	39	38	Martin
01	40	38	Martin
05	40	39	Martin
06	40	39	Martin
08	40	39	Martin
09	40	39	Martin
15	40	39	Martin
16	40	39	Martin
22	40	39	Martin
23	40	39	Martin
24	40	39	Martin
25	40	39	Martin
30	40	40	Martin
31	40	40	Palm Beach
32	40	40	Palm Beach
33	40	40	Palm Beach
03	41	40	Palm Beach
04	41	40	Palm Beach
05	41	40	Palm Beach
10	41	40	Palm Beach
11	41	40	Palm Beach
13	41	40	Palm Beach
14	41	40	Palm Beach
18	41	41	Palm Beach
19	41	41	Palm Beach
20	41	41	Palm Beach
27	41	41	Palm Beach
28	41	41	Palm Beach
29	41	41	Palm Beach
34	41	41	Palm Beach
35	41	41	Palm Beach
01	42	41	Palm Beach
02	42	41	Palm Beach
12	42	41	Palm Beach
07	42	42	Palm Beach
08	42	42	Palm Beach
16	42	42	Palm Beach
17	42	42	Palm Beach
21	42	42	Palm Beach
22	42	42	Palm Beach
23	42	42	Palm Beach
26	42	42	Palm Beach

This page left blank intentionally.

Attachment B Adjacent Land Ownership								
Map ID	**Property Control Number**	**Address**	**City**	**State**	**Zip Code**	**Owner 1**	**Owner 2**	**County**
1	2039380000000003000000	UNASSIGNED	INDIANTOWN	FL	34956	FLORIDA POWER & LIGHT COMPANY	-	Martin County
2	2939380000000001050000	21900 SW WARFIELD BLVD	INDIANTOWN	FL	34956	FLORIDA POWER & LIGHT COMPANY	-	Martin County
3	2039380000000003190000	UNASSIGNED	INDIANTOWN	FL	34956	FLORIDA EAST COAST RAILWAY CO	-	Martin County
4	2939380000000001140000	UNASSIGNED	INDIANTOWN	FL	34956	FLORIDA EAST COAST RAILWAY CO	-	Martin County
5	2039380000000002020000	UNASSIGNED	INDIANTOWN	FL	34956	FLORIDA POWER & LIGHT COMPANY	-	Martin County
6	2139380000000003080000	UNASSIGNED	INDIANTOWN	FL	34956	FLORIDA POWER & LIGHT COMPANY	-	Martin County
7	2839380000000001070000	UNASSIGNED	INDIANTOWN	FL	34956	FLORIDA POWER & LIGHT COMPANY	-	Martin County
8	2239380000000004040000	UNASSIGNED	INDIANTOWN	FL	34956	TAMPA FARM SERVICE INC	-	Martin County
9	2739380000000004030000	-	-	FL	-	TAMPA FARM SERVICE INC	-	Martin County
10	3639380010000001090000	16810 SW WARFEILD BV	INDIANTOWN	FL	34956	CULPEPPER PROPERTIES OF FLORIDA LLC	-	Martin County
11	3639380010000002070000	16630 SW WARFIELD BLVD	INDIANTOWN	FL	34956	INDEEECO INC	-	Martin County
12	3639380010000006080000	16600 SW WARFIELD BLVD	INDIANTOWN	FL	34956	FLORIDA PUBLIC UTILITIES COMPANY	-	Martin County
13	3639380010000007060000	16550 SW WARFIELD BV	INDIANTOWN	FL	34956	MARTIN COUNTY	-	Martin County
14	3639380010000010000000	16500 SW WARFIELD BV	INDIANTOWN	FL	34956	FLORIDA MADE HOMES INC	-	Martin County
15	3639380010000013040000	SW WARFIELD HW	INDIANTOWN	FL	34956	WALL, IRIS	-	Martin County
16	3639380010000014020000	WARFIELD HW	INDIANTOWN	FL	34956	WALL, IRIS	-	Martin County
17	0640390000000005000000	SW WARFIELD BV	INDIANTOWN	FL	34956	WALL, IRIS	-	Martin County

Attachment B Adjacent Land Ownership								
Map ID	**Property Control Number**	**Address**	**City**	**State**	**Zip Code**	**Owner 1**	**Owner 2**	**County**
18	0640390000000005190000	SW WARFIELD BV	INDIANTOWN	FL	34956	WITTMER STEVEN C CO-TR	ROBINSON BARNETT JR CO-TR	Martin County
19	0640390000000002070000	SW WARFIELD BV	INDIANTOWN	FL	34956	WARFIELD INVESTMENTS LLC	-	Martin County
20	0540390050100007020000	SW WARFIELD BV	INDIANTOWN	FL	34956	M.H.M. REAL ESTATE CORPORATION	-	Martin County
21	0540390050100001050000	SW PALM / VAN BURENWY	INDIANTOWN	FL	34956	LONG GATOR LLC	-	Martin County
22	0540390050100009080000	16058 SW WARFIELD BV	INDIANTOWN	FL	34956	M.H.M. REAL ESTATE CORPORATION	-	Martin County
23	0540390050090017030000	SW WARFIELD BLVD	INDIANTOWN	FL	34956	GILBERT, SCOTT R & KAREN L	-	Martin County
24	0540390050090003030000	SW PALM / VAN BURENWY	INDIANTOWN	FL	34956	BARNES EUGENE C SR & CHERYL H (TR)	-	Martin County
25	0540390050090020070000	16022 WARFIELD BV	INDIANTOWN	FL	34956	MORALES, SANTOS & DIOLANDA G	-	Martin County
26	0540390050090023010000	SW WARFIELD BV	INDIANTOWN	FL	34956	BARNES EUGENE C SR & CHERYL H (TR)	-	Martin County
27	0540390050090027020000	15988 SW WARFIELD BV	INDIANTOWN	FL	34956	MANEAGE, RICHARD D	MANEAGE, KAREN JEAN	Martin County
28	0540390050090031040000	SW WARFIELD / MONROHW	INDIANTOWN	FL	34956	MANEAGE, RICHARD D	MANEAGE, KAREN JEAN	Martin County
29	0540390050090001070000	SW PALM / MONROE WY	INDIANTOWN	FL	34956	MANEAGE, RICHARD D	MANEAGE, KAREN J	Martin County
30	0540390050080001090000	SW WARFIELD BV	INDIANTOWN	FL	34956	KIRKBRIDE TAMARA A TR	-	Martin County
31	0540390050070017070000	15858 SW WARFIELD BV	INDIANTOWN	FL	34956	FLORIDA COMMUNITY HEALTH CTR	-	Martin County
32	0540390050070001010000	SW WASHINGTON / PALAV	INDIANTOWN	FL	34956	MARTINIQUE CONSTRUCTION INC	-	Martin County
33	0540390050070026080000	15842 SW WARFIELD BV	INDIANTOWN	FL	34956	DQJN CORP	-	Martin County
34	0540390050070027060000	15798 SW WARFIELD BV	INDIANTOWN	FL	34956	FENNELL, REGINALD E	-	Martin County

Attachment B
Adjacent Land Ownership

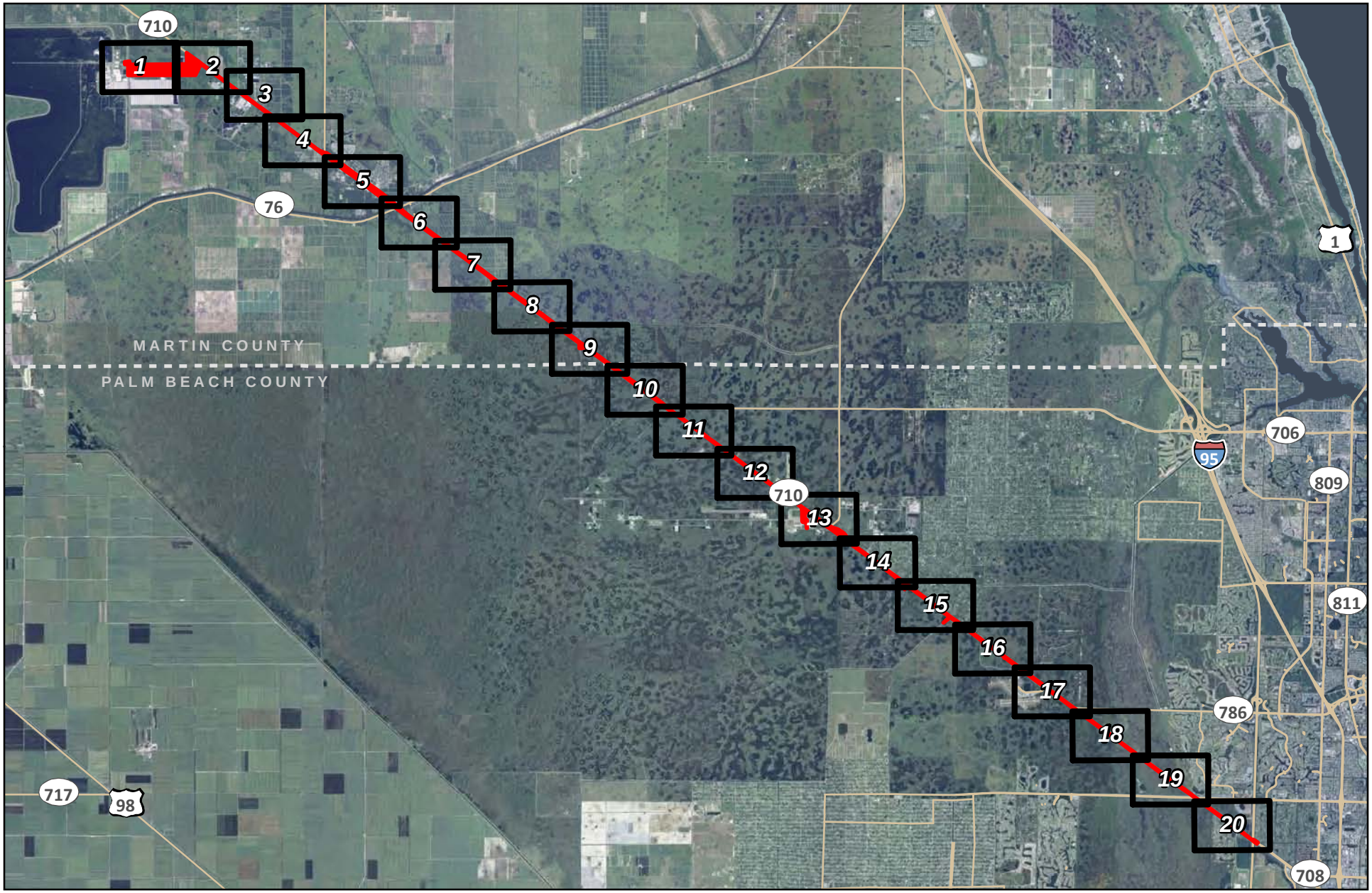
Map ID	Property Control Number	Address	City	State	Zip Code	Owner 1	Owner 2	County
35	05403900500600090600000	SW WARFIELD / WASHIBV	INDIANTOWN	FL	34956	SEHAYIK, SAMI	-	Martin County
36	05403900500600010300000	SW PALM/INDIAN/WASHWY	INDIANTOWN	FL	34956	EDWARDS CRAIG D & EVA	-	Martin County
37	05403900500600100400000	SW WARFIELD/INDIAN BV	INDIANTOWN	FL	34956	LONG GATOR LLC	-	Martin County
38	05403900500500090800000	WARFIELD BV	INDIANTOWN	FL	34956	NEW JERUSALEM EVANGELICAL CHURCH INC	-	Martin County
39	05403900500500060400000	SW PALM / INDIAN WY	INDIANTOWN	FL	34956	LONG GATOR LLC	-	Martin County
40	05403900500500110400000	15690 SW WARFIELD BV	INDIANTOWN	FL	34956	FAMILY DRUGS OF INDIANTOWN INC	-	Martin County
41	05403900500500010500000	15300 SW ADAMS AV	INDIANTOWN	FL	34956	SANZONE, FRANK W	-	Martin County
42	05403900600400170300000	15668 SW WARFIELD BV	INDIANTOWN	FL	34956	BAYLES, STEVEN V	-	Martin County
43	05403900600400120400000	15275 SW ADAMS AV	INDIANTOWN	FL	34956	INDEEECO INC	-	Martin County
44	05403900600400200700000	15648 SW WARFIELD BV	INDIANTOWN	FL	34956	FREDERICK, ROBERT S	-	Martin County
45	05403900600400220300000	15628 SW WARFIELD BLVD	INDIANTOWN	FL	34956	HATAWAY, RONALD	-	Martin County
46	05403900600400070400000	15651 SW PALM WAY	INDIANTOWN	FL	34956	ICS CAR WASH LLC	-	Martin County
47	05403900600400230100000	15638 SW WARFIELD BV	INDIANTOWN	FL	34956	HATAWAY, OWEN R & DOROTHY H	-	Martin County
48	05403900600400010700000	15608 SW WARFIELD BV	INDIANTOWN	FL	34956	FAST FOOD ENTERPRISES NO. 2	-	Martin County
49	05403900600300170500000	15588 SW WARFIELD BV	INDIANTOWN	FL	34956	FIRST BANK OF INDIANTOWN	-	Martin County
50	05403900600300010900000	SW PALM/MADISON/JACWY	INDIANTOWN	FL	34956	HARBOR COMMUNITY BANK FSB	-	Martin County
51	05403900600300240100000	15568 SW WARFIELD BV	INDIANTOWN	FL	34956	PACHECO, MARIA DEJESUS	-	Martin County
52	05403900600300260600000	15528 SW WARFIELD BLVD	INDIANTOWN	FL	34956	WALL, IRIS	-	Martin County

Attachment B
Adjacent Land Ownership

Map ID	Property Control Number	Address	City	State	Zip Code	Owner 1	Owner 2	County
53	054039000000012080000	15488 SW WARFIELD BV	INDIANTOWN	FL	34956	SAZANT LARRY S TR	-	Martin County
54	054039000000012260000	SW WARFIELD BV	INDIANTOWN	FL	34956	SEAGLADES INV CO INC	-	Martin County
55	054039000000011190000	15398 SW WARFIELD BV	INDIANTOWN	FL	34956	SEAGLADES INVESTMENT CO	-	Martin County
56	054039000000011000000	WARFIELD HW	INDIANTOWN	FL	34956	RINES PROPERTIES INC	-	Martin County
57	054039000000011280000	15328 SW WARFIELD BV	INDIANTOWN	FL	34956	SEAGLADES INVESTMENT CO	-	Martin County
58	054039000000011370000	15550 SW FERNWOOD FORREST	PALM CITY	FL	34990	PALM CITY CONGREGATION OF JEHOVAHS W	-	Martin County
59	084039000000017010000	15650 SW FERNWOOD FOREST RD	INDIANTOWN	FL	34956	CARL REALTY CO LLC	-	Martin County
60	054039000000009040000	15318 SW WARFIELD BV	INDIANTOWN	FL	34956	ROYAL'S INC	-	Martin County
61	054039000000009130000	WARFIELD BV	INDIANTOWN	FL	34956	ROYAL'S INC	-	Martin County
62	084039000000013000000	SW CITRUS BLVD	INDIANTOWN	FL	34956	INDIANTOWN MARINA DEVELOPMENT LLC	-	Martin County
63	084039000000014170000	UNASSIGNED	INDIANTOWN	FL	34956	FLORIDA POWER & LIGHT COMPANY	-	Martin County
64	084039000000012100000	UNASSIGNED	INDIANTOWN	FL	34956	CULLOM & CULLOM LLC	-	Martin County
65	084039000000022010000	UNASSIGNED	INDIANTOWN	FL	34956	CSX TRANSPORTATION INC	-	Martin County
66	254039000000002070000	UNASSIGNED	INDIANTOWN	FL	34956	MINKIN, DAVID (TR)	-	Martin County
67	304040000000003030000	UNASSIGNED	PALM CITY	FL	34990	PALM BEACH COUNTY	-	Martin County
68	00404113000003010	17900 BEE LINE HWY	JUPITER	FL	06032	UNITED AIRCRAFT CORP	TAX DEPT - 10FS1 C/O	Palm Beach County
69	00404113020010000	15585 ENDEAVOR DR	JUPITER	FL	33418	CONGRESS AVENUE PROPERTIES LTD	-	Palm Beach County
70	00404113020020000	15385 ENDEAVOR DR	JUPITER	FL	33418	CONGRESS AVENUE PROPERTIES LTD	-	Palm Beach County

Attachment B Adjacent Land Ownership								
Map ID	**Property Control Number**	**Address**	**City**	**State**	**Zip Code**	**Owner 1**	**Owner 2**	**County**
71	52414129000001020	-	-	FL		-	-	Palm Beach County
72	00414128000005030	-	COUNTY OF PALM BEACH	FL	33401	OCONNELL PHIL D JR CO-TR &	COHEN WILLIAM S CO-TR	Palm Beach County
73	00414134000001010	-	COUNTY OF PALM BEACH	FL	33411	PALM BEACH COUNTY	PREM DIVISION C/O	Palm Beach County
74	00414134000005000	12560 AVIATION BLVD	WEST PALM BEACH	FL	33411	PALM BEACH COUNTY	PREM DIVISION C/O	Palm Beach County
75	00424216000005030	-	COUNTY OF PALM BEACH	FL	33408	FLORIDA POWER & LIGHT CO	PROPERTY TAX DEPT C/O	Palm Beach County

This page left blank intentionally.



NORTH

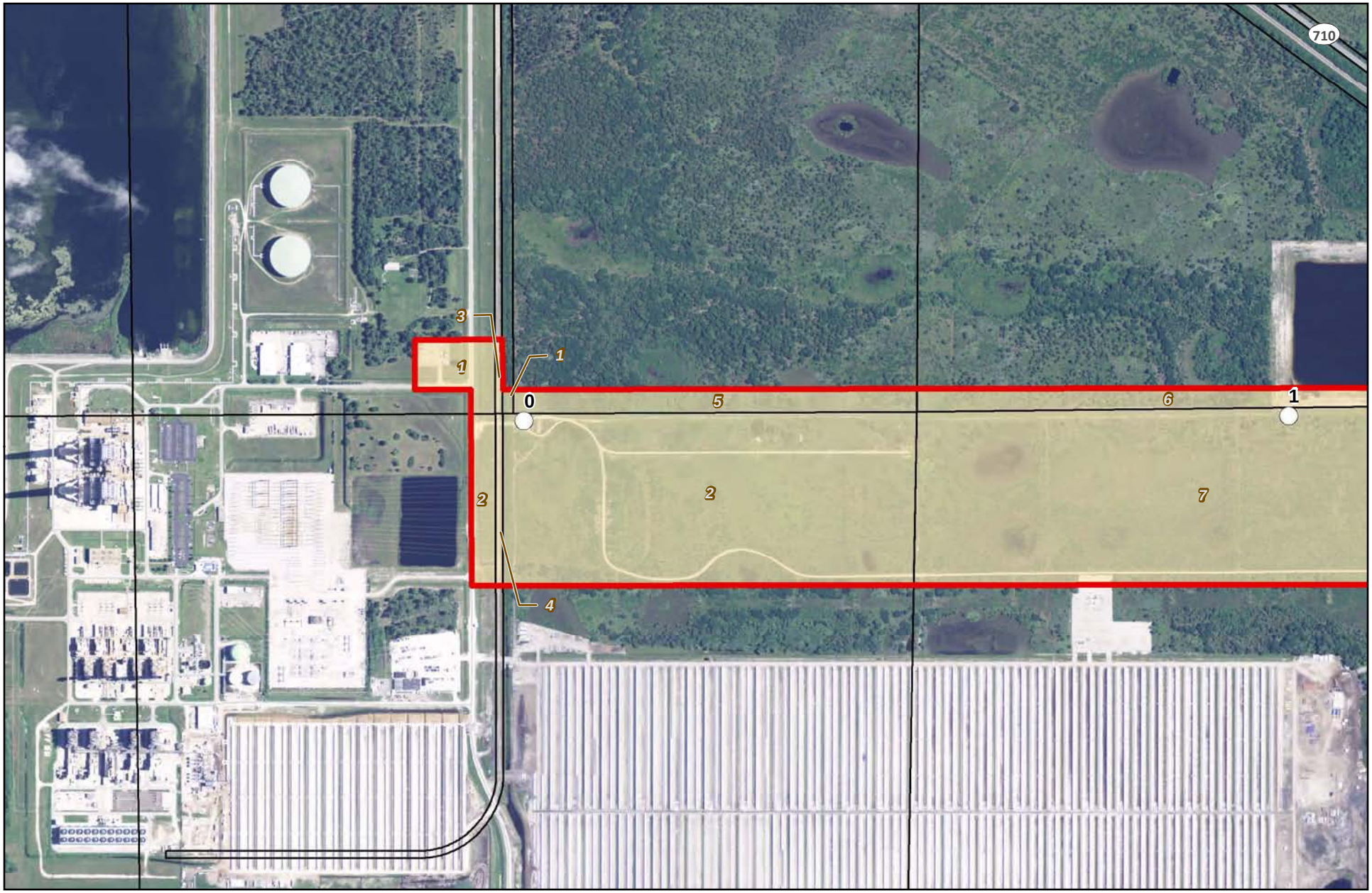
0 5 Miles

Map Index | Preferred Corridor | County Boundary

Appendix G- Map Index
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010.



NORTH

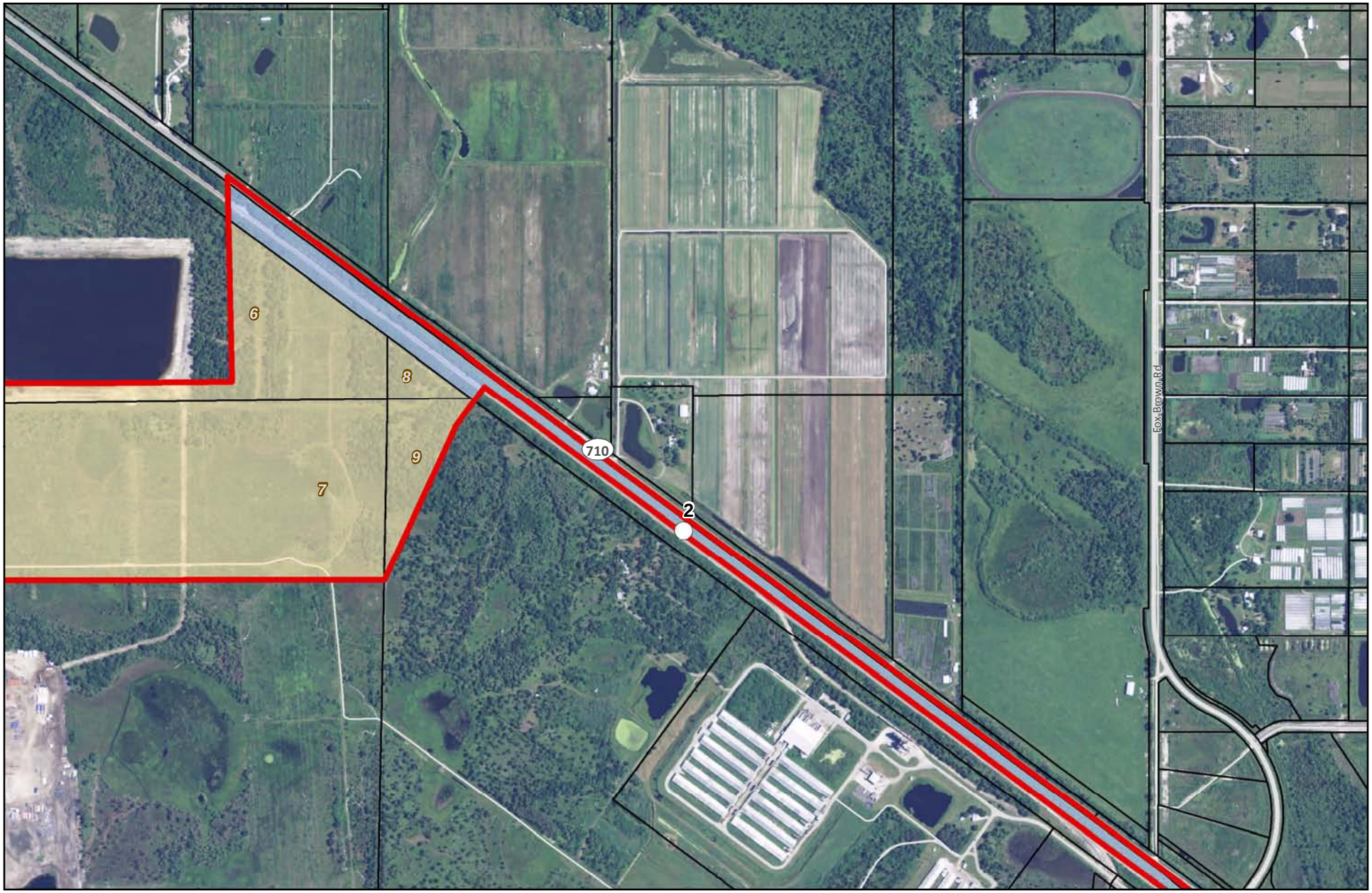
0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 1 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 2 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

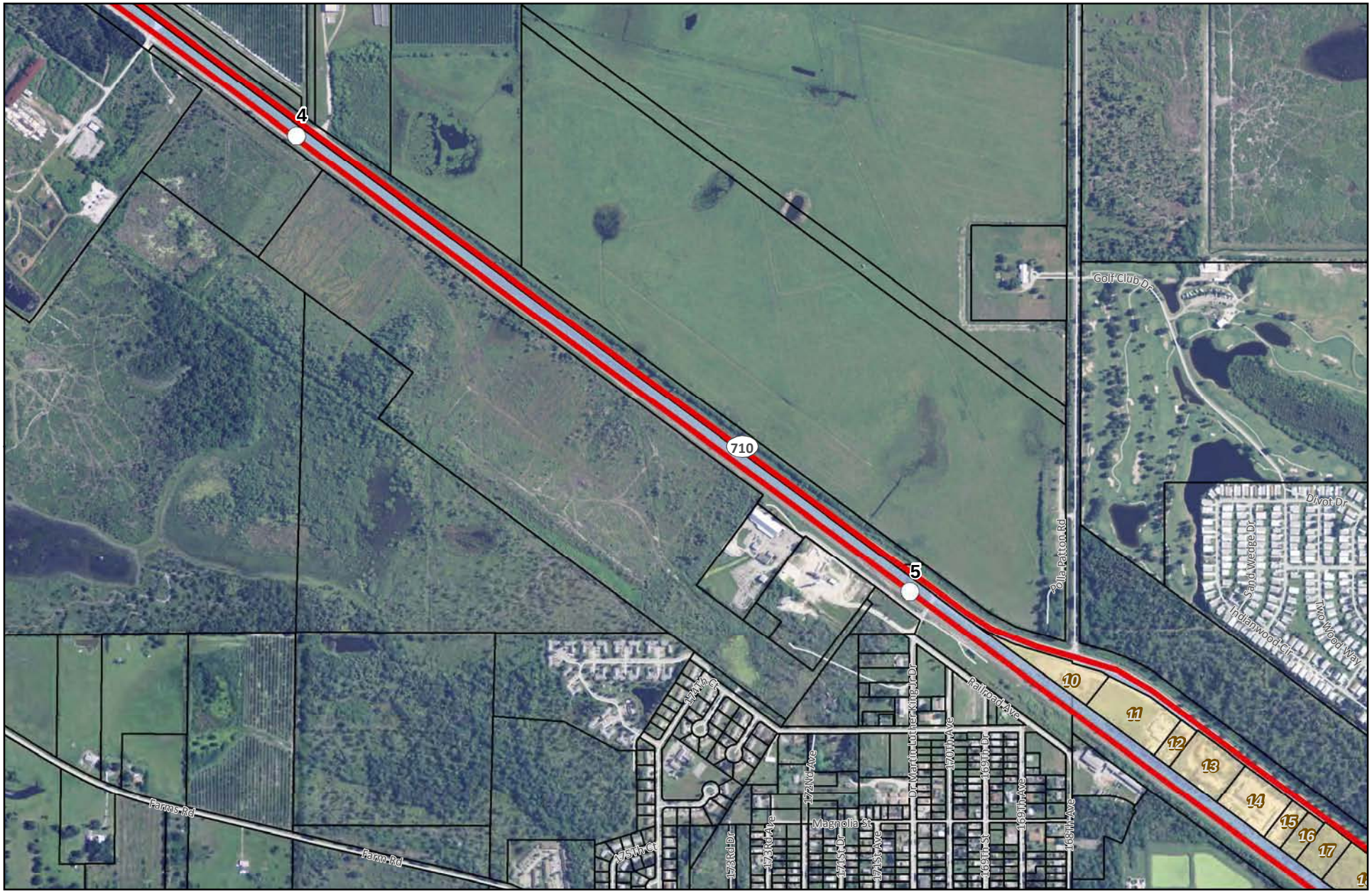
0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 3 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost

Preferred Corridor

Parcel Boundary

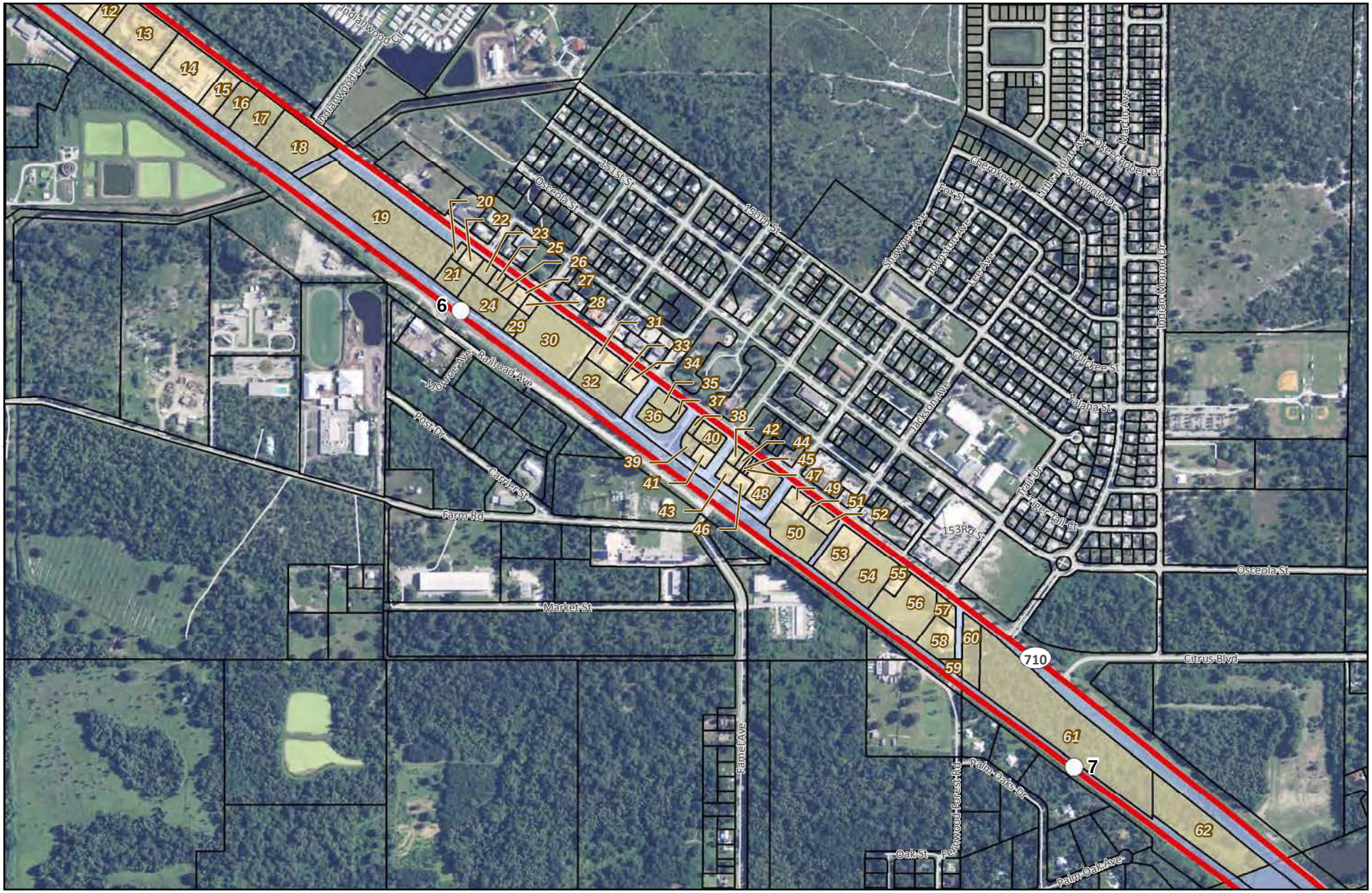
Parcel Boundary (Intersecting Survey Corridor)

Parcel Boundary (No Property Control Number)

Appendix G (Sheet 4 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost

Preferred Corridor

Parcel Boundary

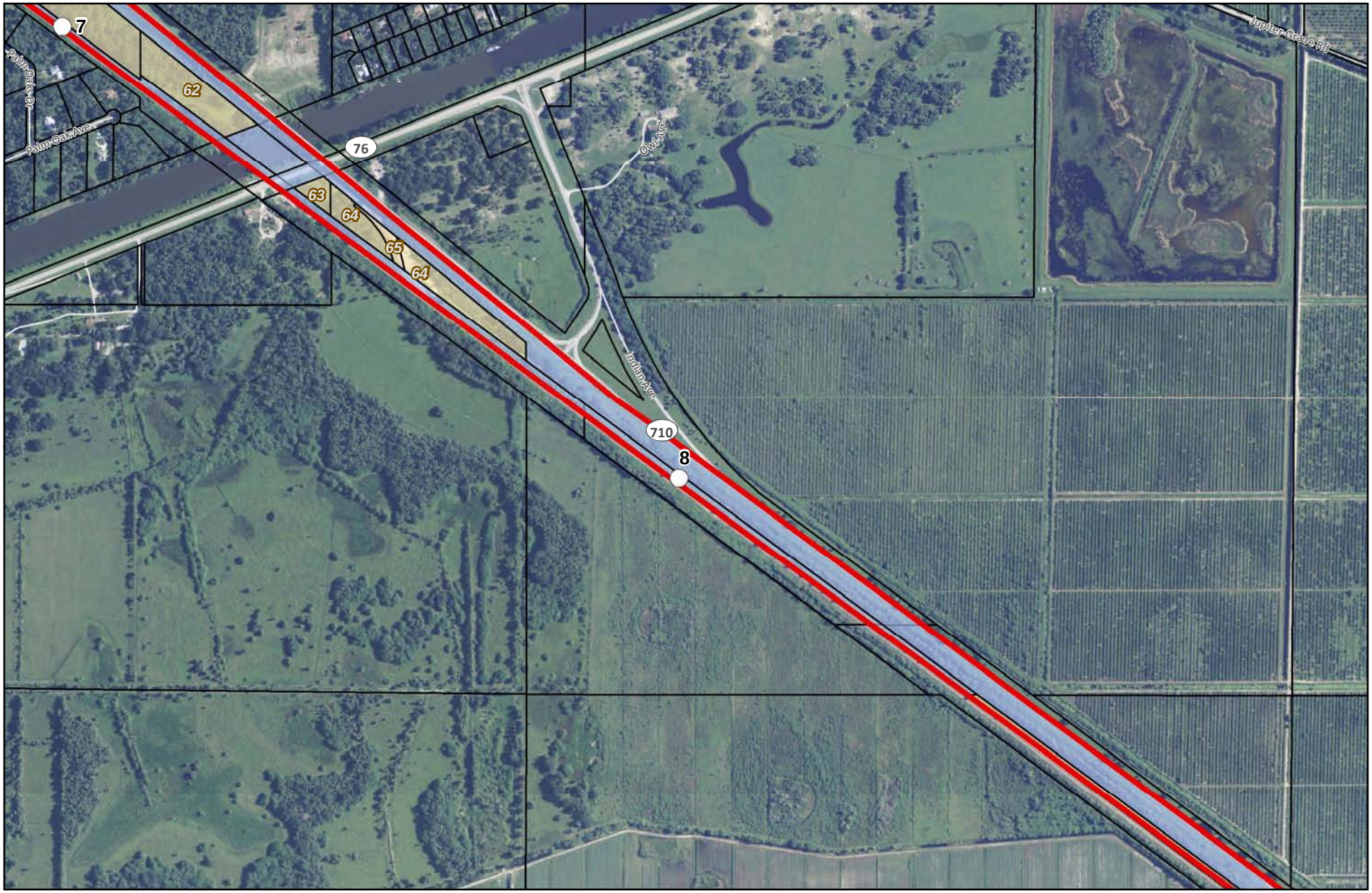
Parcel Boundary (Intersecting Survey Corridor)

Parcel Boundary (No Property Control Number)

Appendix G (Sheet 5 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

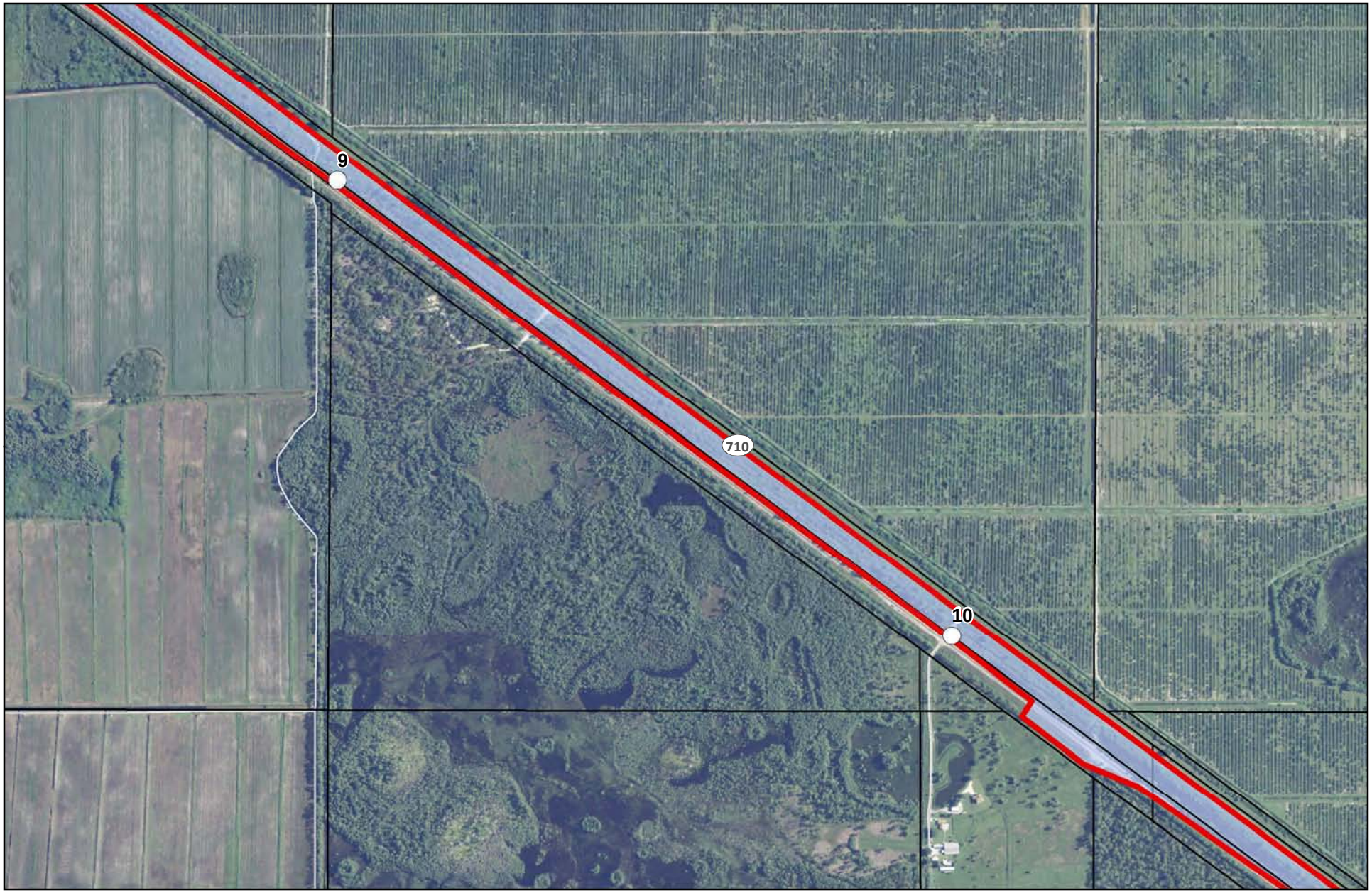
0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 6 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 7 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 8 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 9 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 10 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 11 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

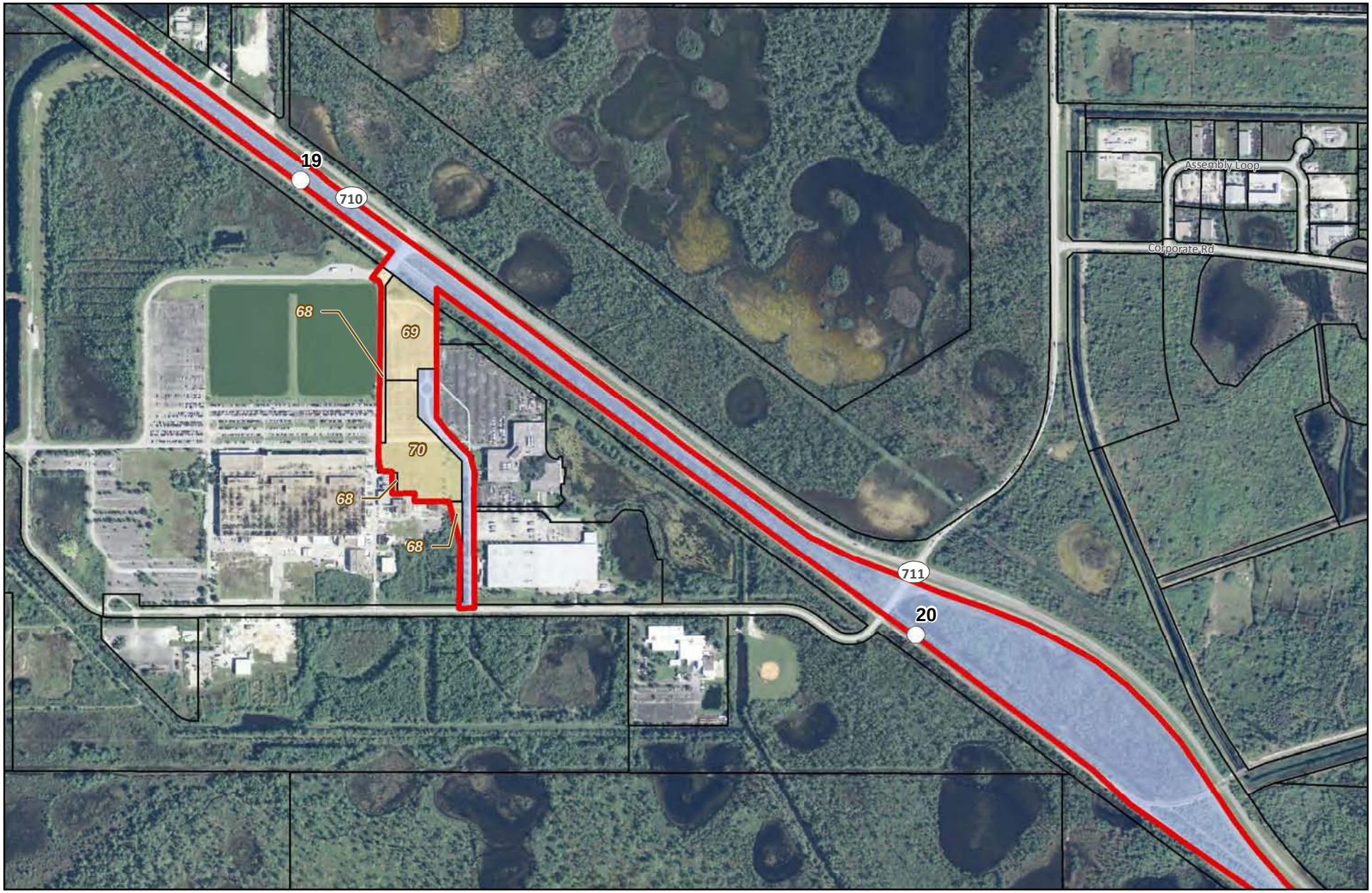
0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 12 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 13 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

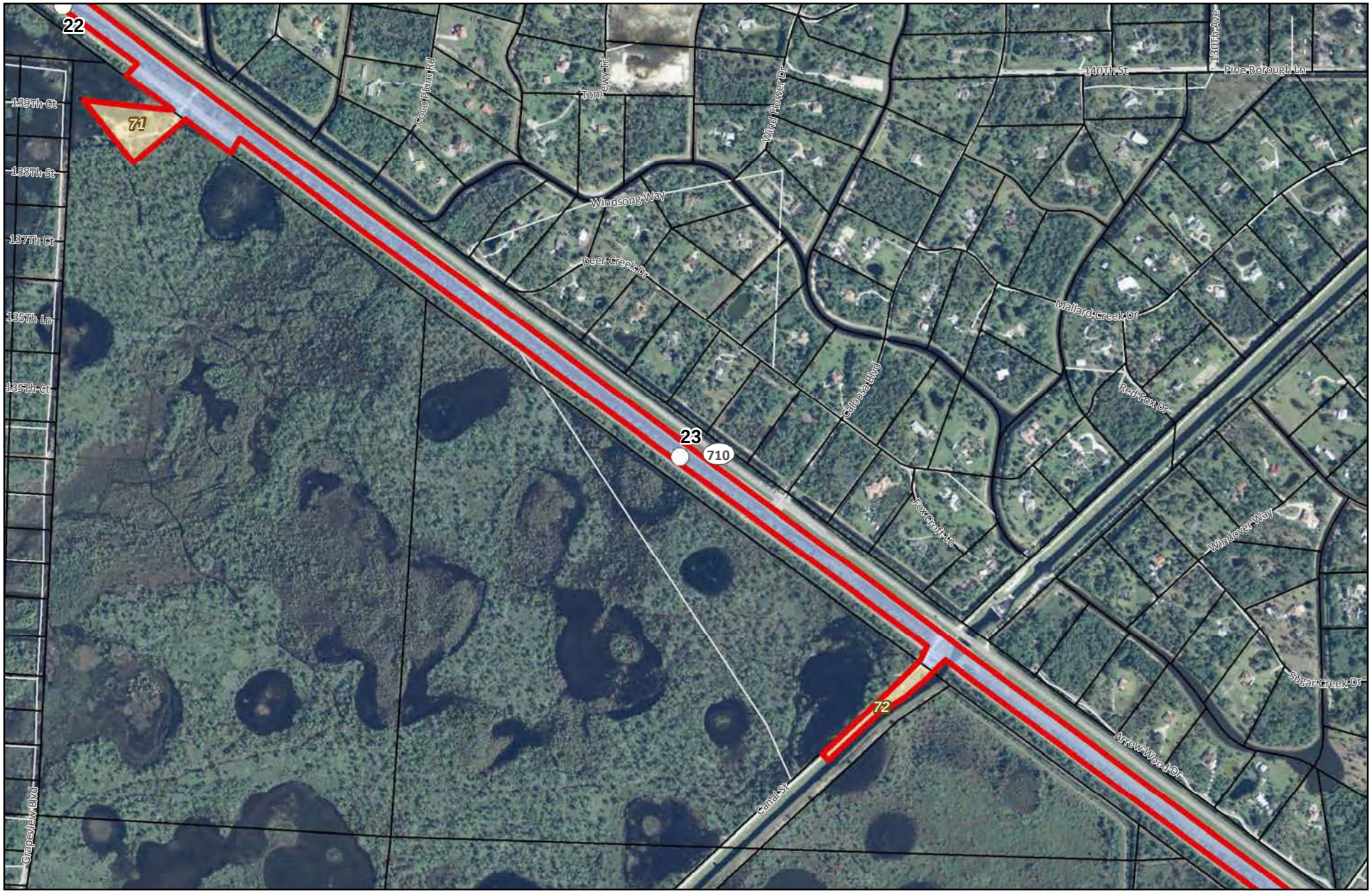
0 1,000 Feet

- Milepost
- Preferred Corridor
- Parcel Boundary
- Parcel Boundary (Intersecting Survey Corridor)
- Parcel Boundary (No Property Control Number)

Appendix G (Sheet 14 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

0 1,000 Feet

- Milepost
- Preferred Corridor
- Parcel Boundary
- Parcel Boundary (Intersecting Survey Corridor)
- Parcel Boundary (No Property Control Number)

Appendix G (Sheet 15 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

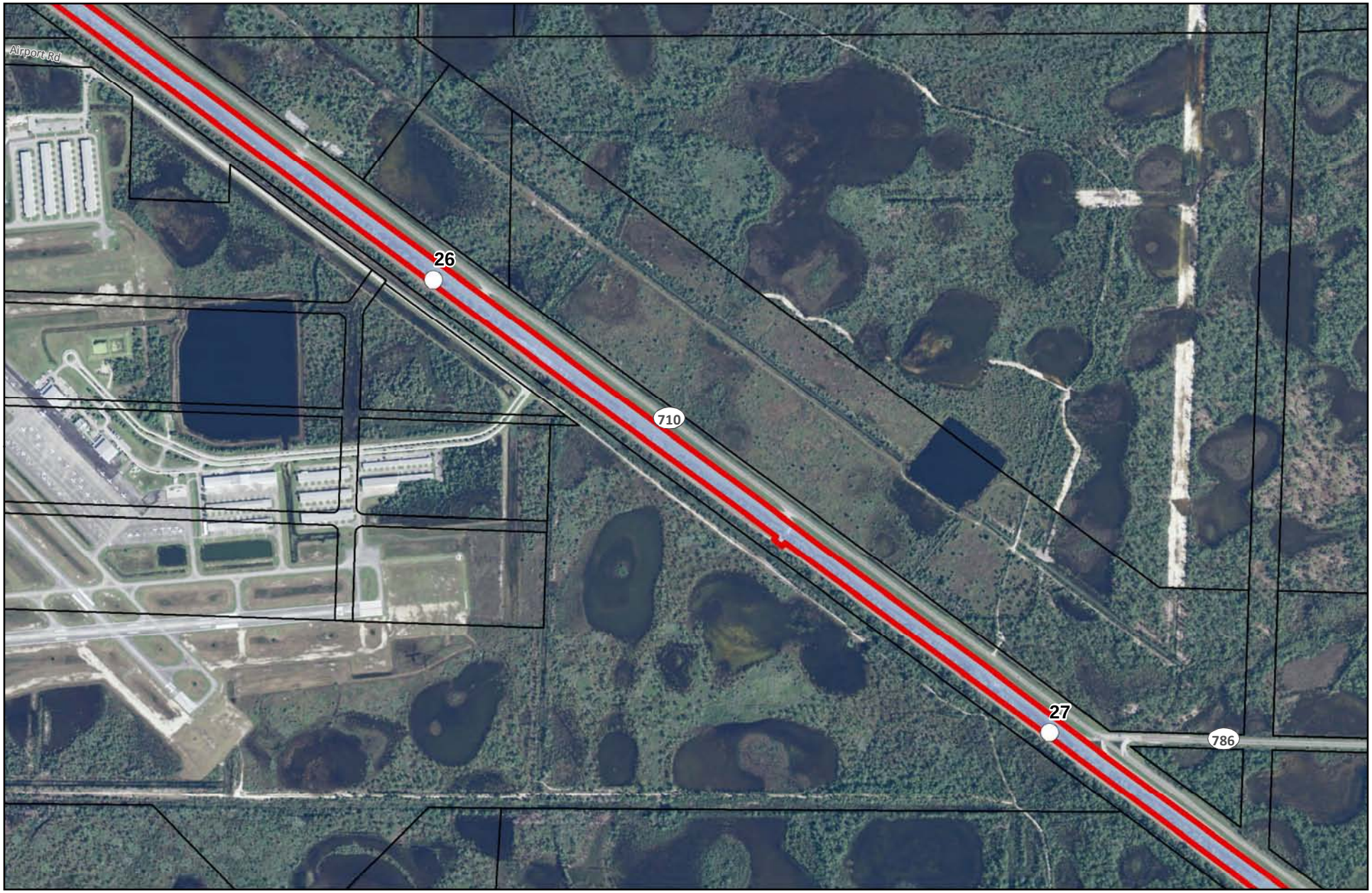
0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 16 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 17 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

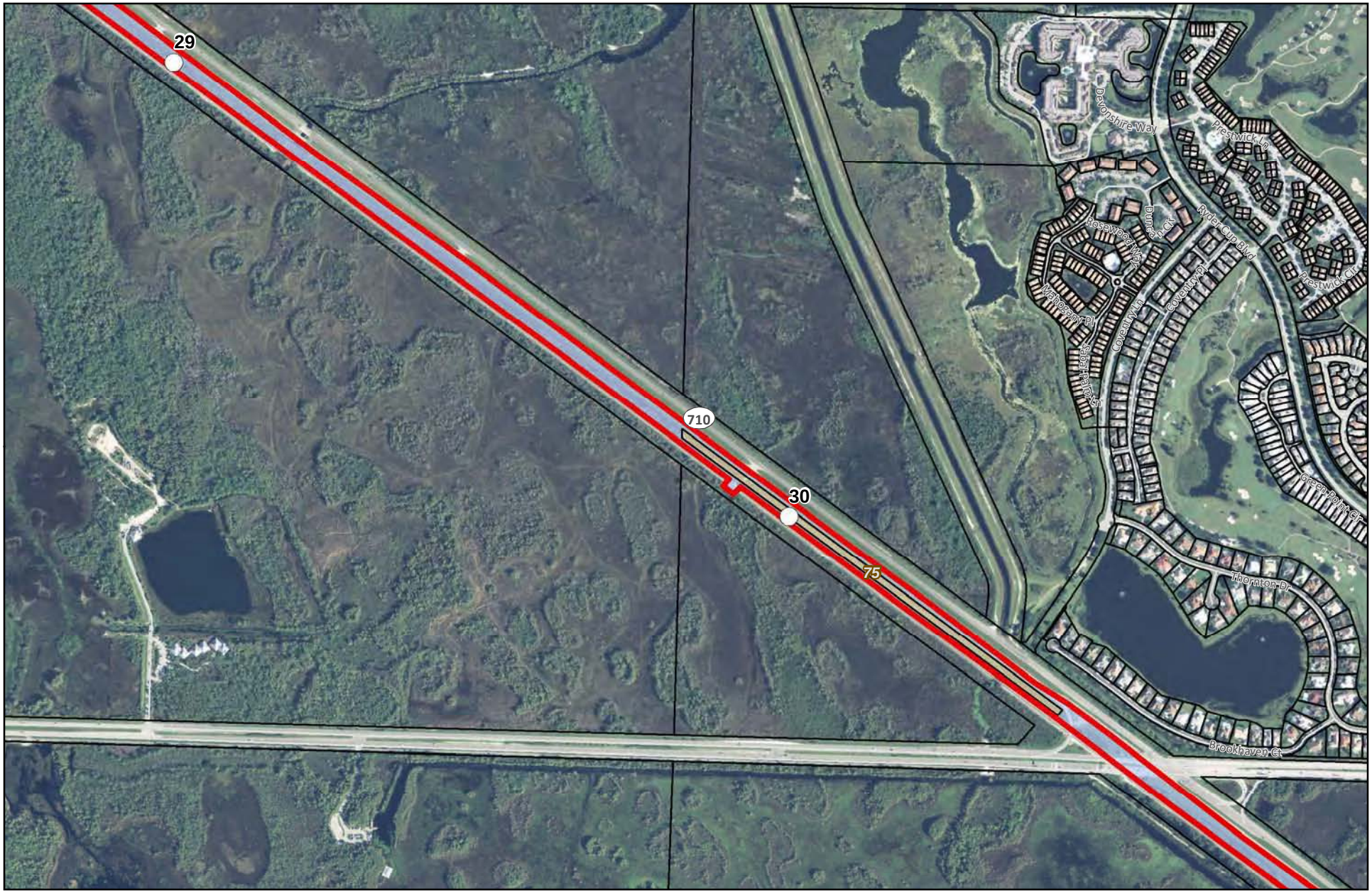
0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 18 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

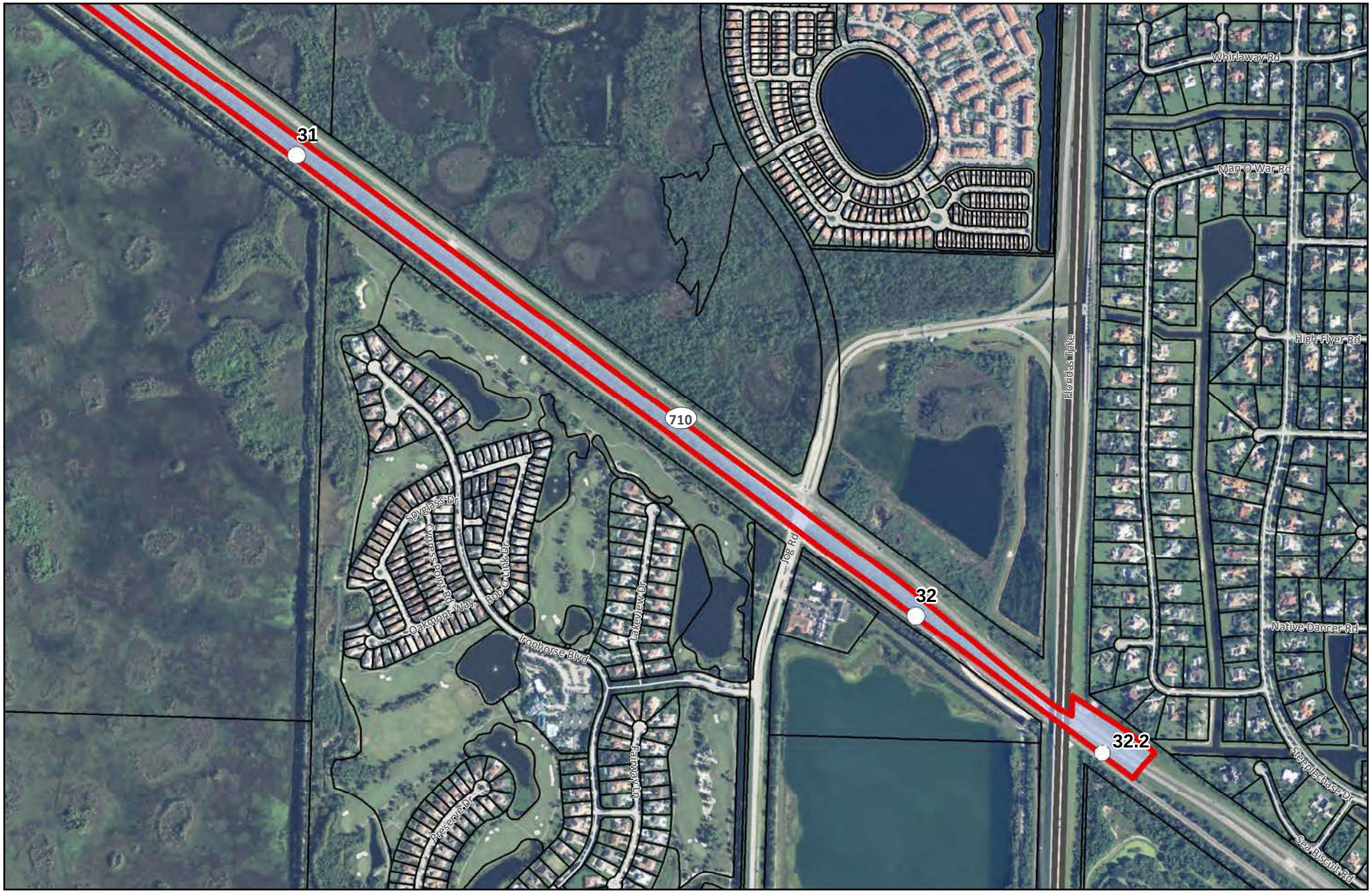
0 1,000 Feet

Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 19 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.



NORTH

0 1,000 Feet

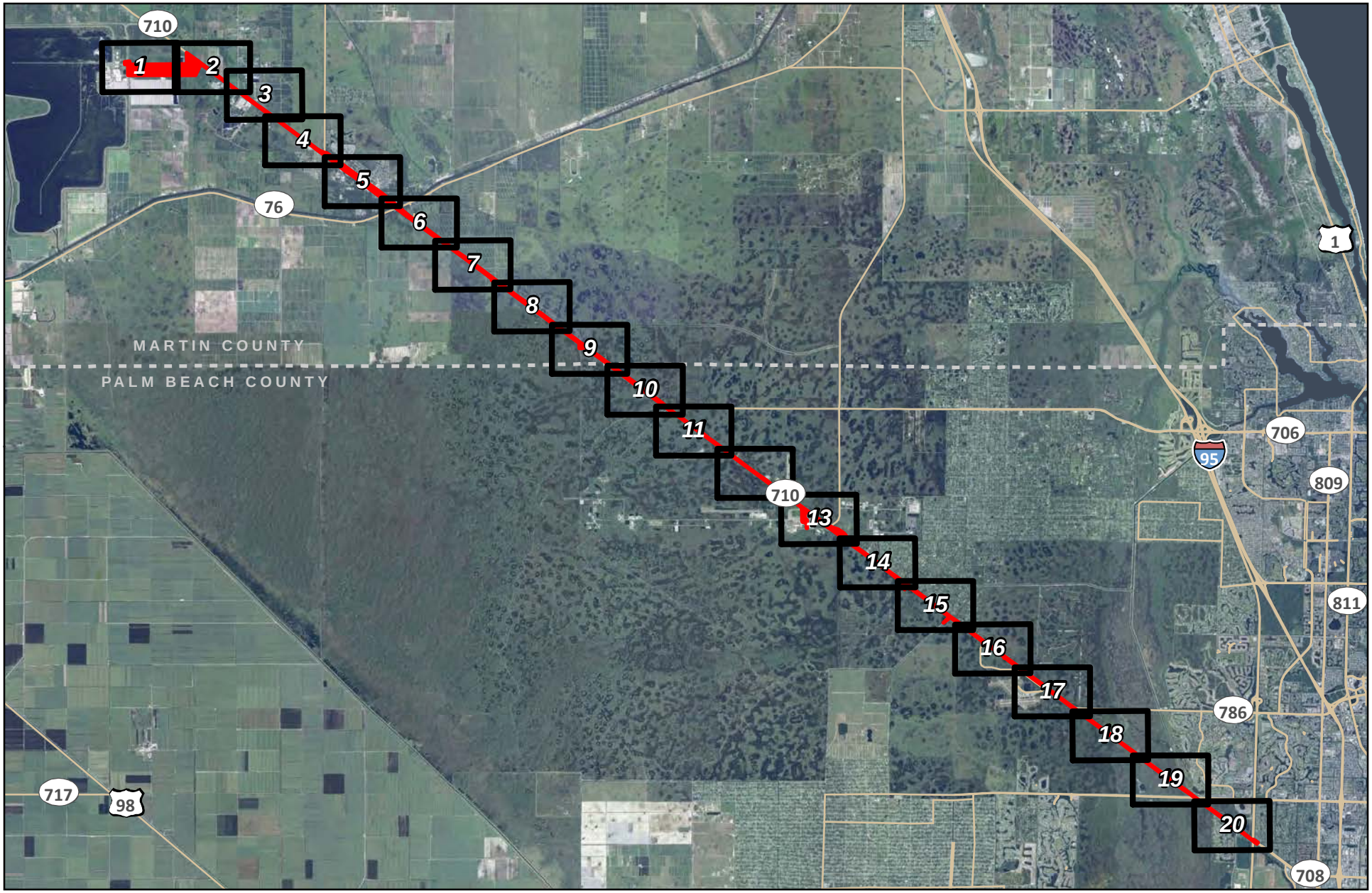
Milepost
Preferred Corridor
Parcel Boundary
Parcel Boundary (Intersecting Survey Corridor)
Parcel Boundary (No Property Control Number)

Appendix G (Sheet 20 of 20)
Landowners
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010; NAIP 2010, Martin County GIS, Palm Beach County GIS.

This page left blank intentionally.



NORTH

0 5 Miles

Map Index Preferred Corridor County Boundary

Appendix G- Map Index
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.

SSURGO Soils Key

Martin County Key

Musym Label	Description
2	Lawnwood and Myakka fine sands
4	Waveland and Immokalee fine sands
5	Waveland and Lawnwood fine sands, depressional
6	Paola and St. Lucie sands, 0 to 8 percent slopes
8	Palm Beach-Beaches complex, 0 to 8 percent slopes
9	Pomello sand, 0 to 5 percent slopes
13	Placid and Basinger fine sands, depressional
14	Archbold sand
16	Oldsmar fine sand
17	Wabasso sand
19	Winder sand, depressional
21	Pineda and Riviera fine sands
22	Okeelanta muck
23	Urban land
27	Arents, organic substratum, 0 to 5 percent slopes
28	Canaveral sand, 0 to 5 percent slopes
30	Bessie muck
34	St. Lucie-Paola-Urban land complex, 0 to 8 percent slopes
35	Salerno sand
36	Arents, 0 to 2 percent slopes
38	Floridana fine sand, depressional
40	Sanibel muck
41	Jonathan sand, 0 to 5 percent slopes
42	Hallandale sand
44	Boca fine sand
47	Pinellas fine sand
48	Jupiter sand
49	Riviera fine sand, depressional
50	Wulfert and Durbin mucks, tidal
52	Malabar fine sand, high
53	Udorthents, 0 to 35 percent slopes
55	Basinger fine sand
56	Wabasso and Oldsmar fine sands, depressional
57	Chobee loamy sand, depressional
58	Gator and Tequesta mucks
61	Hobe fine sand, 0 to 5 percent slopes
63	Nettles sand
66	Holopaw fine sand
67	Kesson sand, tidal
69	Hontoon muck
70	Canova muck, moderately deep, drained
73	Samsula muck
77	Paola and St. Lucie sands, 8 to 20 percent slopes
78	Duette fine sand
99	Water
100	Waters of the Atlantic Ocean

Palm Beach County Key

Musym Label	Description
2	Anclote fine sand
4	Arents-Urban land complex, 0 to 5 percent slopes
5	Arents-Urban land complex, organic substratum
6	Basinger fine sand
7	Basinger-Urban land complex
8	Basinger and Myakka sands, depressional
9	Beaches
10	Boca fine sand
11	Canaveral-Urban land complex, 0 to 5 percent slopes
12	Chobee fine sandy loam
13	Cocoa-Urban land complex, 0 to 5 percent slopes
14	Dania muck
15	Floridana fine sand
16	Hallandale fine sand
17	Holopaw fine sand
18	Immokalee fine sand
19	Jupiter fine sand
20	Lauderhill muck
21	Myakka fine sand
22	Myakka-Urban land complex
23	Okeechobee muck
24	Okeelanta muck
25	Oldsmar sand
26	Pahokee muck
27	Palm Beach-Urban land complex, 0 to 8 percent slopes
29	Pineda fine sand
30	Pinellas fine sand
31	Pits, 0 to 5 percent slopes
33	Pomello fine sand, 0 to 5 percent slopes
34	Pompano fine sand
35	Quartzipsamments, shaped, 0 to 5 percent slopes
36	Riviera fine sand
37	Riviera fine sand, depressional
38	Riviera-Urban land complex
39	Sanibel muck
41	St. Lucie-Paola-Urban land complex, 0 to 8 percent slopes
42	Tequesta muck
43	Terra Ceia muck
44	Kesson mucky sand, tidal
45	Wulfert and Durbin muck, tidal
46	Torry muck
47	Udorthents, 2 to 35 percent slopes
48	Urban land
49	Wabasso fine sand
50	Winder fine sand
99	Water
100	Waters of the Atlantic Ocean



Appendix G (Sheet 1 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



Appendix G (Sheet 2 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

NORTH

0 1,000 Feet

Milepost

Preferred Corridor

FPL

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



NORTH

0 1,000 Feet

Milepost

Preferred Corridor

Appendix G (Sheet 3 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



NORTH

0 1,000 Feet

Milepost

Preferred Corridor

Appendix G (Sheet 4 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



NORTH

0 1,000 Feet

Milepost

Preferred Corridor

Appendix G (Sheet 5 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



Appendix G (Sheet 6 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

NORTH

0 1,000 Feet

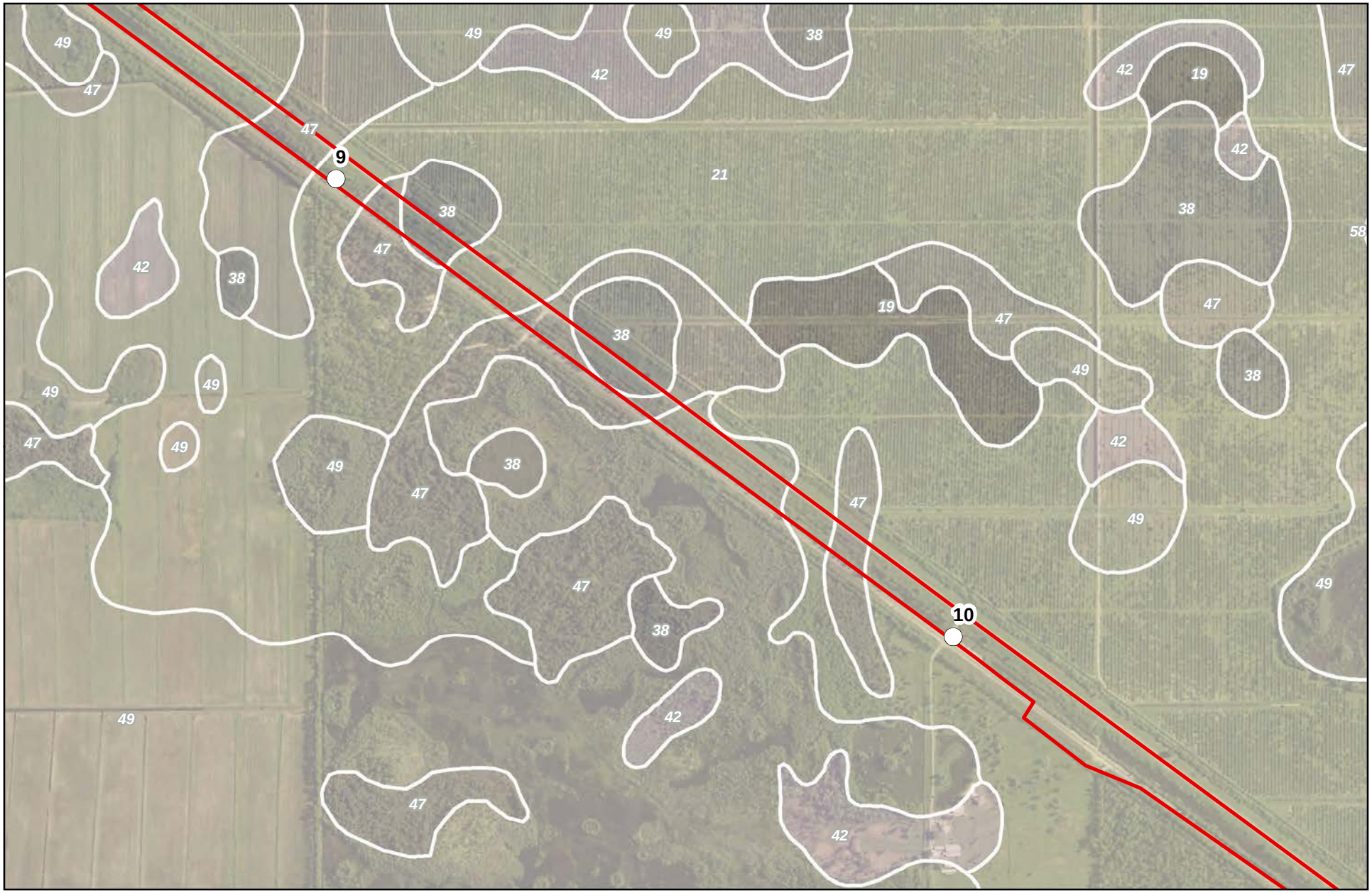
Milepost

Preferred Corridor

FPL

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



NORTH

0 1,000 Feet

Milepost

Preferred Corridor

Appendix G (Sheet 7 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



NORTH

0 1,000 Feet

Milepost

Preferred Corridor

Appendix G (Sheet 8 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



Appendix G (Sheet 9 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



Appendix G (Sheet 10 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

NORTH

0 1,000 Feet

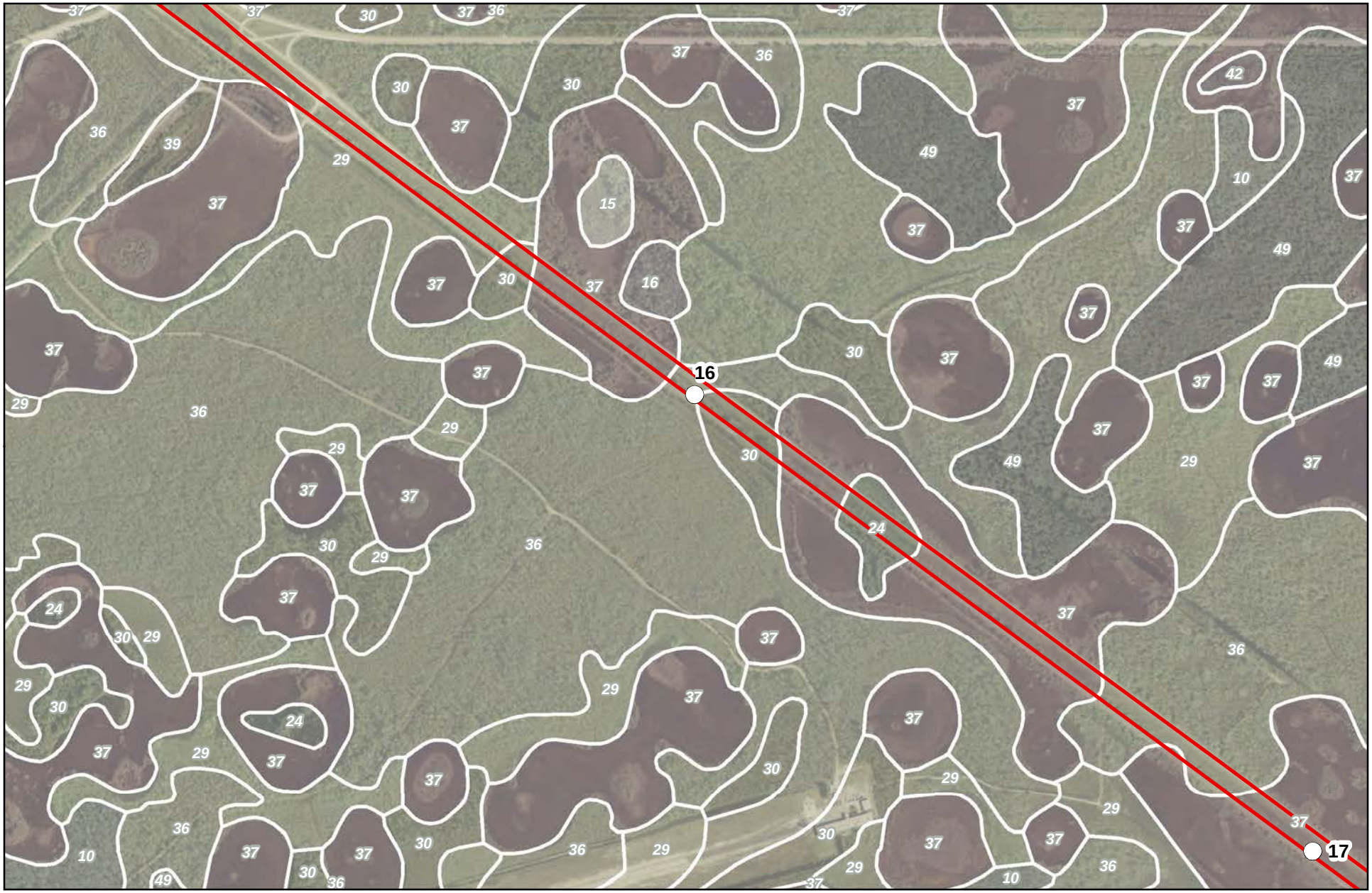
Milepost

Preferred Corridor

FPL

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



NORTH

0 1,000 Feet

Milepost

Preferred Corridor

Appendix G (Sheet 11 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



NORTH

0 1,000 Feet

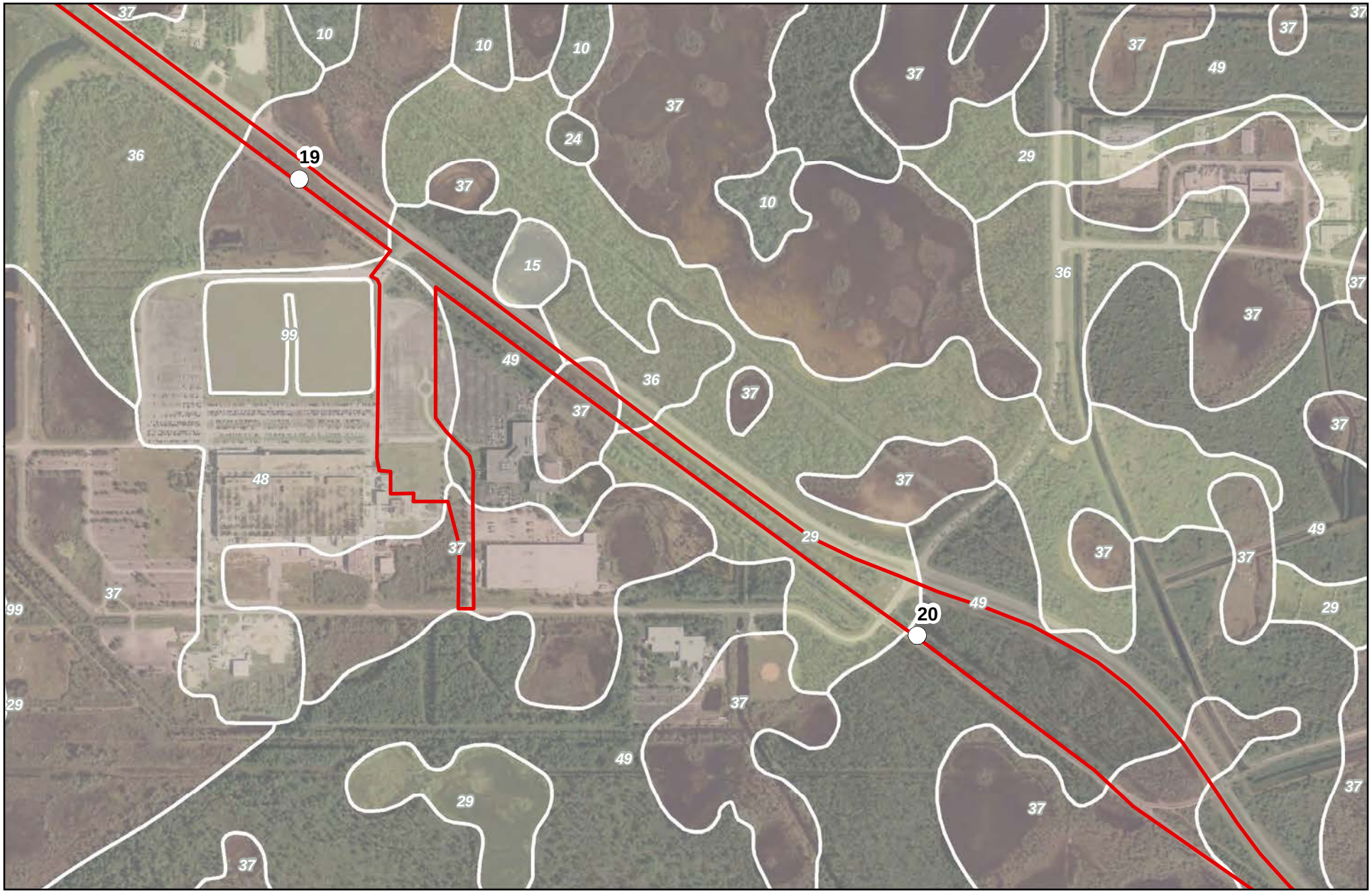
Milepost

Preferred Corridor

Appendix G (Sheet 12 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



Appendix G (Sheet 13 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



Appendix G (Sheet 14 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

NORTH

0 1,000 Feet

Milepost

Preferred Corridor

FPL

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



NORTH

0 1,000 Feet

Milepost

Preferred Corridor

Appendix G (Sheet 15 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



NORTH

0 1,000 Feet

Milepost

Preferred Corridor

Appendix G (Sheet 16 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



Appendix G (Sheet 17 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

NORTH

0 1,000 Feet

Milepost

Preferred Corridor

FPL

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



Appendix G (Sheet 18 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

NORTH

0 1,000 Feet

Milepost

Preferred Corridor

FPL

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



Appendix G (Sheet 19 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/20/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



NORTH

0 1,000 Feet

Milepost

Preferred Corridor

Appendix G (Sheet 20 of 20)
SSURGO Soils
Martin Plant to RBEC Lateral
Florida Power & Light Company

Date: 2/22/2012

Source - ESRI 2010; NAIP 2010, NRCS 2010.



Appendix H

Agency Coordination

This page left blank intentionally.

H Agency Coordination

Florida Power & Light Company (FPL) initiated consultation and review of the proposed Project by organizing and attending meetings and/or conference calls with the state, regional, and local government agencies in advance of filing this application. FPL consulted with all agencies that will have a role in the review and permitting of the Project. FPL also consulted with some local governments that are not parties to the proceeding, but have an interest in the application. For example, some municipalities are not located within the corridor boundary, but their residents received a letter notifying them of this application because they live within ¼ mile of the boundary of the preferred corridor.

In addition to consulting with state, regional and local governments, FPL also met with the U.S. Army Corps of Engineers (USACE). FPL will submit a permit to the USACE separate from this application. FPL will continue to coordinate with agencies as necessary after submittal of the application.

In addition to consulting with regulatory agencies, FPL initiated a community outreach program. This outreach program included two open houses along the proposed corridor (see Appendix J).

This page left blank intentionally.



Appendix I

HDD Contingency Plan

This page left blank intentionally.

I.1 Introduction

This plan provides procedures and steps to manage contingencies during the performance of horizontal directional drills (HDDs) for Florida Power & Light Company's (FPL's) proposed Martin Plant to Riviera Beach Energy Center (RBEC) Lateral (herein the 'Project'). The Project proposes to utilize HDDs at various locations to install the natural gas transmission pipeline. As final engineering has yet to be completed, only potential locations are currently available. Currently, FPL plans to have two HDD crossings associated with the Project, at the St. Lucie Canal (MP 7.3) and at the C-18 Canal (MP 23.4).

HDDs are commonly used in pipeline construction for crossing large waterbodies, transportation corridors, or other sensitive features. This technique allows for the pipeline to be placed using an underground drill without breaking the ground surface between the entry and exit locations.

Installation of a pipeline section by HDD is generally accomplished as described in Section 9.4.1 "Construction Techniques" of FPL's Petition to Modify the RBEC Site Certification. This HDD Contingency Plan identifies procedures that will be implemented in the event an HDD is deemed not viable at any of the proposed locations and provides procedures for monitoring and containing an inadvertent release of drilling fluids or muds during the operation.

I.2 Alternative Construction to HDD

HDDs have been in use since the 1970s. The technology has become relatively common and is a proven method that is readily available for installing the up to 24-inch diameter pipeline that FPL proposes to use for the Project.

Problems with HDDs are generally associated with subsurface conditions where, in some cases, non-uniformity may exist in the underlying formations—notably those containing scattered rock, sands, or gravel—or cavities where the drilling fluid pressures on the drill head cannot be maintained. In these cases, the pilot hole or reaming hole may become unstable or collapse, causing a sudden loss of pressure during the drilling operation.

If, for any reason, it becomes necessary to suspend HDD operations and/or abandon a partially completed drill hole, the drill will be withdrawn and the hole will be filled and plugged at the surface.

If it is determined necessary to abandon the original HDD location, the proposed alignment may be shifted about 50 feet to either side of the original location, remaining within the Preferred Corridor, and retried.

FPL may also adopt alternative construction methods to suit site-specific conditions including open-cut excavation followed by backfilling or jack and bores (see Section 9.4.1 "Construction Techniques" of FPL's modification petition). Such alternative methods would only be used after notifying applicable regulatory agencies and obtaining the necessary approvals as appropriate in accordance with the conditions of certification. No alternative crossing methods will be implemented without proper agency notification and approval.

I.3 HDD Monitoring Procedures

During the HDD process, there is a potential risk of an inadvertent release of drilling muds or fluids to the surface. The HDD supervisory personnel will be on site at all times during HDD activities to continuously monitor all operations during drilling activities for any anomalous conditions.

The drilling mud likely to be used for the Project would generally consist of fresh water, with a high yield bentonite added to achieve the necessary properties, such as viscosity. Bentonite is composed of clay minerals, and it is not considered a hazardous material by the U.S. Environmental Protection Agency (USEPA) or Florida Department of Environmental Protection (FDEP). Therefore, in the event of a release into a wetland or waterbody, there would be a temporary impact due to an increase in turbidity from the bentonite and the efforts to contain and clean up the released drilling mud. Drilling parameters will be established to maximize circulation and minimize risk of inadvertent releases. Monitoring of all HDD activities will be done in accordance with procedures to be provided by the FPL's drilling contractor. Monitoring and sampling procedures will include:

- Visual inspection along the drill path, including monitoring the wetlands and waterbodies for evidence of a release;
- Continuous monitoring of drilling mud consistency, drilling mud pressures, and return flows;
- Periodic recording of drill status information regarding drill conditions, pressures, returns, and progress during the course of drilling activities; and
- A wetland scientist within a two-hour drive of any HDD crossings of wetlands so that if a release occurred within a wetland, the wetland scientist can assess the impact to the wetland and make recommendations to mitigate the impact.

Once the drilling activities are completed, the site will be inspected after equipment removal to identify visual signs of release.

I.4 Drilling Fluids Control and Containment

I.4.1 Storage of Fluids and Lubricants

Storage of fluids and lubricants that could potentially harm the environment will be handled in accordance with applicable federal, state, and local regulations. A Spill Prevention, Control, and Countermeasures (SPCC) Plan will be developed post-certification.

I.4.2 Containment and Cleanup of Drilling Fluids

HDD procedures demand that highly accurate monitoring and control systems be used to track the progress and exact location of the drilling head at all times. Drilling fluid is used during the advancement of the drill string to penetrate the formation and aid in stabilizing the bore hole. The specific weight of the drilling fluid is adjusted throughout the procedure to ensure hydrological stability of the drill hole. Only experienced personnel trained in the HDD process will be assigned the task of conducting and monitoring HDD drilling operations. If a release of drilling fluid should occur in the Project area, the following measures will be implemented.

I.4.2.1 Measures to Contain a Release of Drilling Fluid in a Wetland or Waterbody

- A sample of the drilling slurry will be collected and held for future analysis in the event that an analysis is requested by regulatory agencies.
- If a release of drilling fluid (frac out) occurs within a wetland or sensitive area, appropriate regulatory agencies will be contacted in accordance with applicable regulations and conditions of certification. Drilling fluid pressure will be reduced and operations will be suspended to assess the extent of the release and to implement necessary corrective actions.
- Inspection will be initiated to determine the potential movement of released drilling mud within the wetland or waterbody.
- FPL will determine and implement modifications to the drilling technique or composition of drilling fluid (e.g., thickening of mud by increasing bentonite content) as appropriate to minimize or prevent further releases of drilling mud.
- FPL will evaluate the release to determine if containment structures, such as sediment barriers or erosion controls, are warranted and can effectively contain the release. When making this determination, FPL will also consider if placement of containment structures will cause additional adverse environmental impacts.
- If accessible, FPL will clean up and remove all drilling fluid from the site and dispose of it in accordance with the Solid and Hazardous Waste Plan to be developed post-certification.
- Upon completion of the drilling operations, FPL will consult with applicable regulatory agencies to determine any final cleanup requirements for the inadvertent release.

I.4.2.2 Measures to Contain a Release of Drilling Fluid on Land

- If a land release is detected, FPL will take corrective action to contain and recover the release.
- If public health and safety are threatened by an inadvertent release, drilling operations will be shut down until the threat is effectively addressed or eliminated.
- FPL will determine and implement modifications to the drilling technique or composition of drilling fluid (e.g., thickening of mud by increasing bentonite content) as appropriate to minimize or prevent further releases of drilling mud.

I.5 Notification Procedures

Agency contact names and telephone numbers will be maintained by FPL's Construction Manager. If a release occurs, FPL's contractor must immediately notify FPL's Construction Manager. Notifications will include any affected agencies with jurisdiction over the Project.

This page left blank intentionally.



Appendix J

Public Outreach

This page left blank intentionally.

Appendix J

Public Outreach

Florida Power & Light Company (FPL) **is** committed to providing information and maintaining an open dialogue with the public about its activities and programs. FPL has implemented a comprehensive outreach program with the communities where the Project is proposed. The outreach program includes a number of initiatives described below, and expands on the robust outreach efforts conducted for the Riviera Beach Clean Energy Center (RBEC) modernization project, and the previously approved Riviera Beach Lateral.

Specifically for this Petition to Modify, FPL conducted Open Houses in each of the two counties crossed by the proposed corridor. The Martin County Open House was held on February 1, 2012 at the Indiantown Civic Center and the Palm Beach County Open House was held on February 7, 2012 at Grove Park Elementary School. During these Open Houses, FPL representatives spoke directly to residents from the public about the Project. FPL had information about every aspect of the Project including several handouts. FPL encouraged attendance at the Open Houses through sending a letter to residents and property owners within ¼ mile of the boundaries of the proposed corridor, and notifying reviewing agencies of the Open Houses by telephone. The letters are provided as follows. About 25 people attended the Open Houses, including community leaders, and no media attended.

FPL representatives also discussed the Project with Indiantown Chamber Board and the Chamber's general membership. FPL expects to continue to make presentations about the Project in the coming weeks and months as warranted. FPL will continue to share information about the Project and obtain stakeholder input through these outreach efforts. FPL developed a website that contained project information, including an interactive map that allowed visitors to type in their address and see where they live in relation to the proposed corridor.

FPL is committed to continuing the dialogue with these communities throughout the development of the Project. FPL will continue to maintain contact with the community through the following methods:

- Internet: www.FPL.com/rbec ; www.FPL.com/environment/lines/rb_gas_pipeline.shtml
- Email: Riviera_email@FPL.com; and

This page left blank intentionally.

FPL COMMUNITY UPDATE

January 2012

Efficiency and energy savings to be hallmarks of FPL's Riviera Beach Next Generation Clean Energy Center

Proposed natural gas pipeline to improve service reliability

Florida Power & Light Company has begun construction of the Riviera Beach Next Generation Clean Energy Center, which is on track to begin serving customers in 2014. The new, state-of-the-art, natural gas-fired, combined-cycle plant will replace the previous power plant at the site that was demolished in June 2011.

Over its 30-year operational lifespan, the new energy center will generate cleaner, more fuel-efficient power and produce hundreds of millions of dollars in net savings for customers over and above the cost of construction. It will reduce air emissions by more than 90 percent and use 33 percent less fuel per kilowatt of power generated while producing enough electricity to power 250,000 homes and businesses. Construction of the project is also currently generating a substantial economic impact to the local community through the creation of hundreds of jobs and by supporting many local businesses. In the plant's first full year of operation, it will also mean more than $20 million in new tax revenue to local governments and school districts.

As part of the modernization project, FPL is petitioning to modify the existing site certification for the Riviera Beach Energy Center in order to supplement the existing fuel pipeline to the site to ensure that a reliable source of natural gas is available year round to serve the highly efficient new energy center.

Proposed Natural Gas Pipeline Upgrade

To keep fuel costs as low as possible for its customers, FPL tries to operate its most efficient plants as much as possible. The existing two-way pipeline used to transport natural gas to Riviera Beach as well as oil from the Port of Palm Beach to FPL's Martin Plant would cause periodic interruptions to the natural gas supply to the Riviera Beach Energy Center. A new natural gas pipeline will provide an uninterrupted supply of natural gas to the Riviera Beach Energy Center and eliminate these interruptions and allow FPL to operate its new energy center as efficiently and reliably as possible to benefit its customers.

The pipeline will be approximately 32 miles in length, starting near FPL's Martin Plant located northwest of Indiantown, and terminating at the western end of FPL's Riviera Beach pipeline located at the intersection of Florida's Turnpike and State Road 710 in West Palm Beach.

The pipeline corridor will be located within an existing FPL 500-kV transmission line corridor, an existing railroad right of way, and the State Road 710 right of way and will run parallel with an existing pipeline in the area to minimize impacts to the environment and adjacent property owners. Each of these corridors or rights of way already have easements for similar existing underground gas and fuel oil pipelines. You are receiving this letter because you live or own property within a quarter mile of the location of the proposed pipeline.



Pipelines exist almost everywhere throughout the United States. Safety is a cornerstone of our commitment to customers and employees and we have an excellent safety record when it comes to the operation of all of our facilities. Once in service, the pipeline would be inspected, maintained, and upgraded by FPL to provide continued safe operation. The new and upgraded portions of the pipeline will meet or exceed all environmental and safety requirements. To learn more about FPL's safety focus, visit **www.FPL.com/pipelinesafety**.

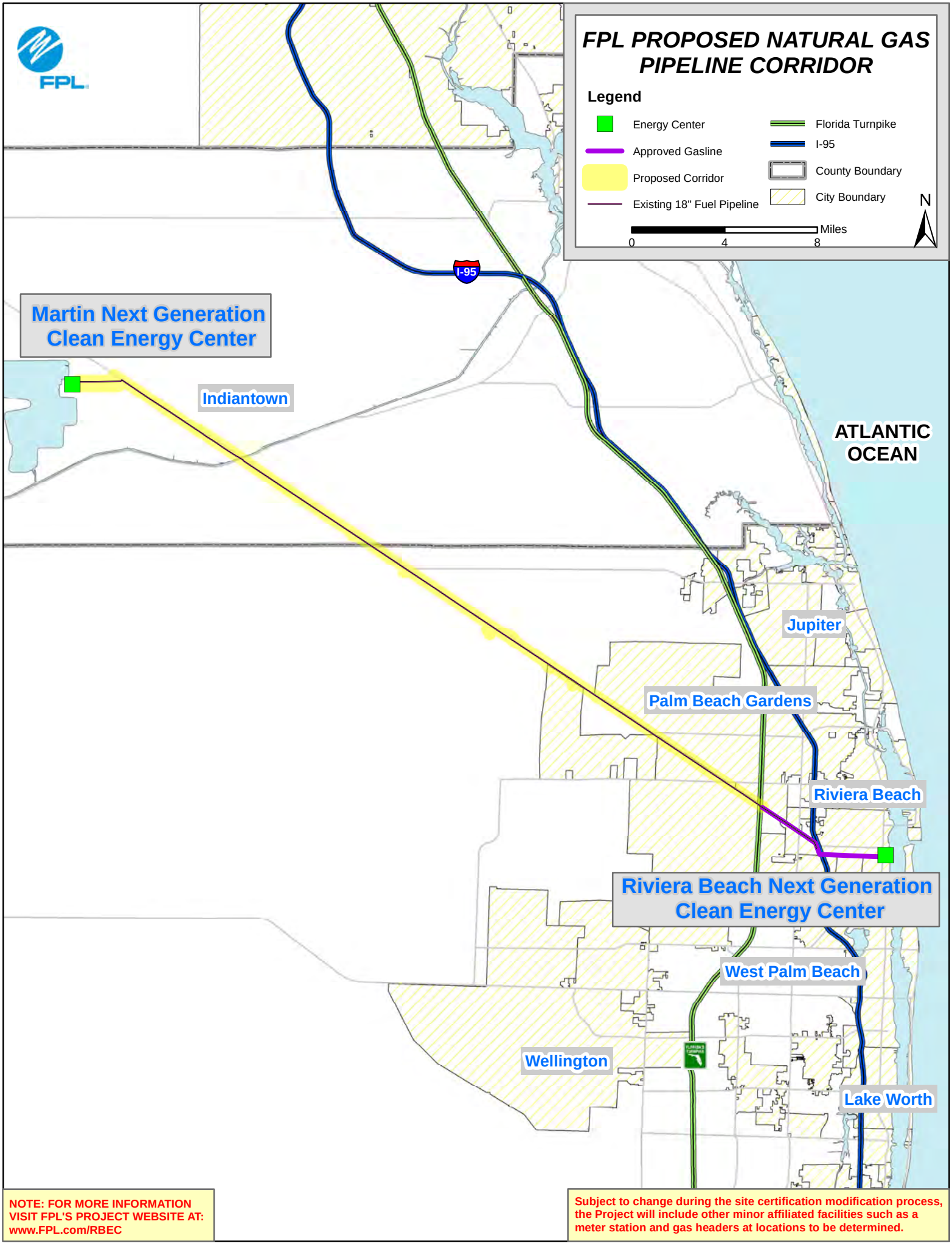
FPL Open House

Martin County
Feb. 1, 2012
Indiantown Civic Center
15675 SW Osceola Ave.
Indiantown, FL 34956
6 p.m.–8 p.m.

FPL plans to submit a petition to modify its existing site certification to the Florida Department of Environmental Protection (DEP) in early 2012 to include the proposed pipeline. The Florida DEP will be the lead agency reviewing the petition to modify the site certification. FPL will also submit a permit application to the U.S Army Corps of Engineers. Construction of the pipeline will take about a year and would start in early 2013 and be completed in early 2014.

FPL sincerely appreciates the opportunity to share our plans and progress with you and to get your input. We will be hosting an informal open house and we invite you to drop by, look at our exhibits and speak one-on-one with an FPL project team member.

FPL will continue to discuss progress with our customers and community members throughout this exciting project's development. To learn more, please visit **www.FPL.com/RBEC** or call (561) 845-4875.


FPL PROPOSED NATURAL GAS PIPELINE CORRIDOR
Legend
Energy Center
Approved Gasline
Proposed Corridor
Existing 18" Fuel Pipeline
Florida Turnpike
I-95
County Boundary
City Boundary
N
Miles
0
4
8
I-95
Martin Next Generation Clean Energy Center
Indiantown
ATLANTIC OCEAN
Jupiter
Palm Beach Gardens
Riviera Beach
Riviera Beach Next Generation Clean Energy Center
West Palm Beach
Wellington
Lake Worth
NOTE: FOR MORE INFORMATION VISIT FPL'S PROJECT WEBSITE AT: www.FPL.com/RBEC
Subject to change during the site certification modification process, the Project will include other minor affiliated facilities such as a meter station and gas headers at locations to be determined.

FPL COMMUNITY UPDATE

January 2012

Efficiency and energy savings to be hallmarks of FPL's Riviera Beach Next Generation Clean Energy Center

Proposed natural gas pipeline to improve service reliability

Florida Power & Light Company has begun construction of the Riviera Beach Next Generation Clean Energy Center, which is on track to begin serving customers in 2014. The new, state-of-the-art, natural gas-fired, combined-cycle plant will replace the previous power plant at the site that was demolished in June 2011.

Over its 30-year operational lifespan, the new energy center will generate cleaner, more fuel-efficient power and produce hundreds of millions of dollars in net savings for customers over and above the cost of construction. It will reduce air emissions by more than 90 percent and use 33 percent less fuel per kilowatt of power generated while producing enough electricity to power 250,000 homes and businesses. Construction of the project is also currently generating a substantial economic impact to the local community through the creation of hundreds of jobs and by supporting many local businesses. In the plant's first full year of operation, it will also mean more than $20 million in new tax revenue to local governments and school districts.

As part of the modernization project, FPL is petitioning to modify the existing site certification for the Riviera Beach Energy Center in order to supplement the existing fuel pipeline to the site to ensure that a reliable source of natural gas is available year round to serve the highly efficient new energy center.

Proposed Natural Gas Pipeline Upgrade

To keep fuel costs as low as possible for its customers, FPL tries to operate its most efficient plants as much as possible. The existing two-way pipeline used to transport natural gas to Riviera Beach as well as oil from the Port of Palm Beach to FPL's Martin Plant would cause periodic interruptions to the natural gas supply to the Riviera Beach Energy Center. A new natural gas pipeline will provide an uninterrupted supply of natural gas to the Riviera Beach Energy Center and eliminate these interruptions and allow FPL to operate its new energy center as efficiently and reliably as possible to benefit its customers.

The pipeline will be approximately 32 miles in length, starting near FPL's Martin Plant located northwest of Indiantown, and terminating at the western end of FPL's Riviera Beach pipeline located at the intersection of Florida's Turnpike and State Road 710 in West Palm Beach.

The pipeline corridor will be located within an existing FPL 500-kV transmission line corridor, an existing railroad right of way, and the State Road 710 right of way and will run parallel with an existing pipeline in the area to minimize impacts to the environment and adjacent property owners. Each of these corridors or rights of way already have easements for similar existing underground gas and fuel oil pipelines. You are receiving this letter because you live or own property within a quarter mile of the location of the proposed pipeline.



Pipelines exist almost everywhere throughout the United States. Safety is a cornerstone of our commitment to customers and employees and we have an excellent safety record when it comes to the operation of all of our facilities. Once in service, the pipeline would be inspected, maintained, and upgraded by FPL to provide continued safe operation. The new and upgraded portions of the pipeline will meet or exceed all environmental and safety requirements. To learn more about FPL's safety focus, visit **www.FPL.com/pipelinesafety**.

FPL Open House

Palm Beach County

Feb. 7, 2012

Grove Park Elementary School

8330 N Military Trail

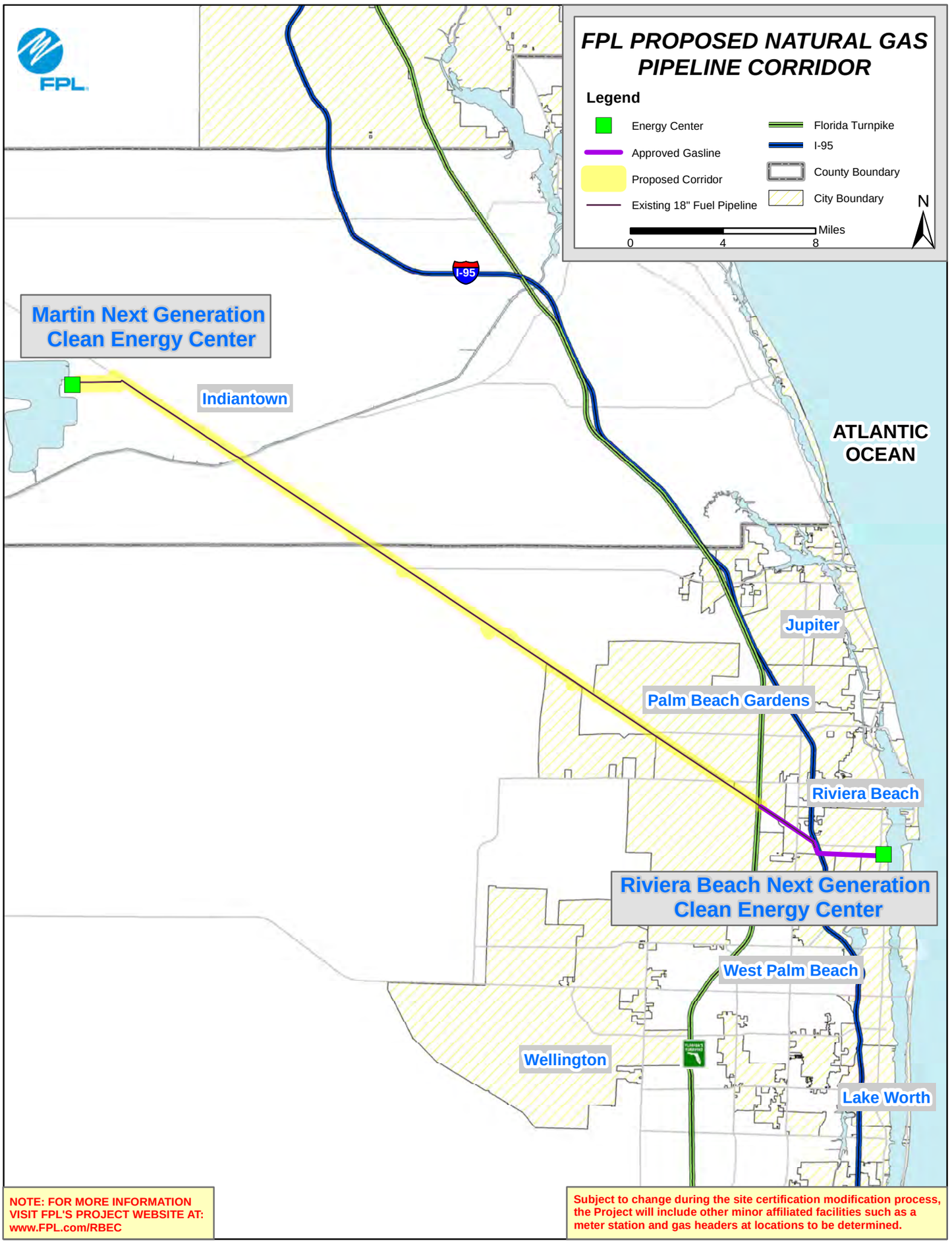
Palm Beach Gardens, FL 33410

6 p.m. – 8 p.m.

FPL plans to submit a petition to modify its existing site certification to the Florida Department of Environmental Protection (DEP) in early 2012 to include the proposed pipeline. The Florida DEP will be the lead agency reviewing the petition to modify the site certification. FPL will also submit a permit application to the U.S Army Corps of Engineers. Construction of the pipeline will take about a year and would start in early 2013 and be completed in early 2014.

FPL sincerely appreciates the opportunity to share our plans and progress with you and to get your input. We will be hosting an informal open house and we invite you to drop by, look at our exhibits and speak one-on-one with an FPL project team member.

FPL will continue to discuss progress with our customers and community members throughout this exciting project's development. To learn more, please visit **www.FPL.com/RBEC** or call (561) 845-4875.


FPL PROPOSED NATURAL GAS PIPELINE CORRIDOR
Legend
Energy Center
Approved Gasline
Proposed Corridor
Existing 18" Fuel Pipeline
Florida Turnpike
I-95
County Boundary
City Boundary
N
Miles
0
4
8
I-95
Martin Next Generation Clean Energy Center
Indiantown
ATLANTIC OCEAN
Jupiter
Palm Beach Gardens
Riviera Beach
Riviera Beach Next Generation Clean Energy Center
West Palm Beach
Wellington
Lake Worth
NOTE: FOR MORE INFORMATION VISIT FPL'S PROJECT WEBSITE AT: www.FPL.com/RBEC
Subject to change during the site certification modification process, the Project will include other minor affiliated facilities such as a meter station and gas headers at locations to be determined.



Appendix K

Ecological Assessment and Wetland Delineation Report

This page left blank intentionally.

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT
PALM BEACH AND MARTIN COUNTIES, FLORIDA

ECOLOGICAL ASSESSMENT AND WETLAND DELINEATION REPORT

Prepared for:

Florida Power and Light Company
Juno Beach, Florida

Prepared by:

ECT Environmental Consulting & Technology, Inc.
6410 Southpoint Parkway, Suite 120
Jacksonville, Florida 32216

ECT No. 110697-0100

February 2012

TABLE OF CONTENTS

Section			Page
1.0	INTRODUCTION		1
2.0	METHODOLOGY		3
	2.1 MAP AND LITERATURE REVIEW		3
	2.2 LAND USE MAPPING		3
	2.3 WETLAND DELINEATION		4
	2.4 LISTED SPECIES		5
3.0	SURVEY RESULTS		6
	3.1 LAND USE AND VEGETATION COMMUNITIES		6
		3.1.1 URBAN AND BUILT UP	6
		3.1.2 AGRICULTURE	6
		3.1.3 NONFORESTED UPLAND LAND COVERS	6
		3.1.4 FORESTED UPLAND LAND COVERS	8
		3.1.5 NONFORESTED FRESHWATER WETLANDS	9
		3.1.6 WETLAND FOREST COMMUNITIES	9
		3.1.7 WATER BODIES	10
		3.1.8 TRANSPORTATION, COMMUNICATION, AND UTILITIES	10
	3.2 WETLANDS AND WATERWAYS		11
		3.2.1 WETLANDS	11
		3.2.1.1 Martin Plant Property	11
		3.2.1.2 CSX RR/SR 710 Corridor from MPs 1.6 to 7 (North of St. Lucie Canal)	17
		3.2.1.3 CSX RR/SR 710 Corridor from MPs 7 to 32 (South of St. Lucie Canal)	18
		3.2.2 WATER BODIES	19
	3.3 LISTED SPECIES		21
4.0	SUMMARY		27
5.0	REFERENCES		30

TABLE OF CONTENTS
(Continued, Page 2 of 2)

Section Page

ATTACHMENTS

ATTACHMENT 1—SITE PHOTOGRAPHS
ATTACHMENT 2—USACE WETLAND/UPLAND DATA SHEETS
ATTACHMENT 3—UMAM DATA FORMS
ATTACHMENT 4—AGENCY CORRESPONDENCE

LIST OF TABLES

Table		Page
1	Land Use/Vegetation Community Types within the FPL Martin Plant to RBEC Lateral Project Area	7
2	Breakdown of Wetland Types within the FPL Martin Plant to RBEC Lateral Project Area	12
3	Location, Size, Type, and Quality of Wetlands in the FPL Martin Plant to RBEC Lateral Project Area	13
4	Water Bodies within the FPL Martin Plant to RBEC Lateral Project Area	20
5	Federally and State-Listed Plant Species Known to Occur in Palm Beach and Martin Counties, Florida	22
6	Federally and State-Listed Wildlife Species Known to Occur in Palm Beach and Martin Counties, Florida	24

LIST OF FIGURES

Figure		Page
1	Project Location Map	32
2	USGS Topographic Quadrangle	33
3	Land Use Map	42
4	Soils Map	77
5	Limits of Desktop Survey	94
6	Wetland Overview Map	103
7	Wetland Delineation Map	112
8	Listed Species Map	173

1.0 INTRODUCTION

Environmental Consulting & Technology, Inc. (ECT), was contracted by Florida Power & Light Company (FPL) to conduct a wetland delineation and threatened and endangered (T&E) species survey for the Martin Plant to Riviera Beach Energy Center (RBEC) Lateral Project (Project), located in Palm Beach and Martin Counties, Florida. The Project consists of an approximately 32-mile long natural gas transmission pipeline originating at a receipt point at FPL's Martin Plant located northwest of Indiantown, Martin County, Florida, and terminating at the western end of FPL's Riviera Beach Lateral located at the intersection of Florida's Turnpike and State Road (SR) 710, West Palm Beach, Palm Beach County, Florida (Figure 1). The pipeline will be used to deliver natural gas to the Riviera Beach Lateral and ultimately to the RBEC, which was being modernized to a highly efficient, lower emissions, next generation clean energy center using the latest combined-cycle technology. In addition to the pipeline, the Project would have minor aboveground facilities typically associated with natural gas pipelines, such as mainline block valves and pig launching/receiving facilities.

The location of the corridor would significantly minimize impacts to the environment and adjoining landowners by being collocated with existing linear facilities to the greatest extent practicable. As shown on Figure 2, the proposed corridor originates at an existing gas yard at FPL's Martin Plant and then follows FPL's existing 18-inch oil/gas pipeline east for approximately 1.6 miles east until it meets SR 710, where it turns southeast and is collocated with SR 710, FPL's existing 18-inch oil/gas pipeline, and the CSX Transportation, Inc. (CSX) rail line for approximately 30.7 miles to the termination point.

ECT was also tasked with inspecting several contractor laydown yards and additional extra work space locations, which are identified on Figure 2.

As part of the ecological assessment, ECT characterized the baseline ecological conditions of the linear corridor and work spaces, delineated jurisdictional wetlands, mapped vegetation and land use communities, assessed habitats for the potential presence of T&E species, and searched suitable habitats for listed species.

In short, ECT identified a variety of land use/vegetation community types within the Project area: 62 percent are upland or developed land use types and approximately 38 percent are wetlands or water bodies (WB). The dominant land use types include herbaceous dry prairie, mixed rangeland, transportation rights-of-way, freshwater marsh, and exotic wetland hardwoods. Exotic invasive plant species, especially Brazilian pepper, comprise a significant portion of the vegetation communities within the Project area. No unique or especially high-quality community types were observed.

With the exception of wetlands on the Martin Plant property, most wetlands in the Project area are associated with the linear depression (roadside swale) between the CSX railroad (RR) and SR 710. Unified Wetland Mitigation Assessment Method (UMAM) scores for most of the wetlands are low to medium due to surrounding development and traffic, altered hydroperiods, water quality impairment (e.g., high algae or duckweed content, high turbidity, oil sheen, etc.), prevalence of weedy and invasive plant species, relatively low plant species diversity, impacts to structural complexity, rutting by large wild hog populations, and limited wildlife support.

A total of 25 water bodies were identified in the Project area. Most are manmade ditches that run parallel to the CSX RR track, but also included are one unnamed stream and four canals, including the St. Lucie Canal (C44 Canal) and the Hungry Land Slough Canal (C18 Canal).

Based on U.S. Fish & Wildlife Service (USFWS) and Florida Natural Areas Inventory (FNAI) species occurrence data, there are 36 plant and 39 wildlife state- or federally listed species known to occur in Martin and Palm Beach Counties. ECT's field evaluation identified potential habitat for 28 of these species, including 6 plant and 22 wildlife species. Of those, one listed plant and eight listed wildlife species were observed during the field surveys.

The remainder of this report provides the data collection and survey methodologies employed as well as an explanation of the results.

2.0 METHODOLOGY

The ecological assessment was conducted through a combination of map and literature review and field surveys. A description of methodologies used is provided in the following subsections.

2.1 MAP AND LITERATURE REVIEW

Prior to conducting the field survey, available literature and maps were collected and reviewed to determine the approximate extent of land use vegetation communities, wetlands and waters, and T&E species. Relevant data sources included local plant lists, soil survey data, state and federal regulations, county ordinances, and previous reports prepared for the Project area. The following map and literature sources were examined:

- U.S. Geological Survey (USGS) topographic maps (Figure 2).
- Aerial photography (Google Earth®, Bing®, ESRI® ArcMap).
- Martin and Palm Beach County soil surveys (Figure 3).
- National Wetland Inventory (NWI) maps.
- Land use/vegetation community map (Figure 4).
- USFWS South Florida Field Office Website.
- 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual.
- Regional Supplement to the USACE Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (USACE, 2010).
- South Florida Water Management District (SFWMD) Website.
- FNAI.

2.2 LAND USE MAPPING

Using a combination of aerial photography and the Florida Land Use Cover and Forms Classification System (FLUCFCS) maps, ECT developed a baseline map showing the extent of land use and vegetation communities on and adjacent to the Project area. The accuracy of the various land uses and vegetation communities was verified in the field.

2.3 WETLAND DELINEATION

After reviewing the NWI, soils, and FLUCFCS maps, ECT conducted a field wetland delineation for the linear corridor and additional work areas, where survey access was available. The surveys were completed between September 26 and December 17, 2011, by qualified wetland scientists. Potentially jurisdictional wetlands/waters were identified using the currently accepted methods for the State of Florida and United States (i.e., Florida Department of Environmental Protection [FDEP] regulations, Sections 62-301 and 62-340, Florida Administrative Code [F.A.C.], including the Florida Wetlands Delineation Manual [1995] and the Routine Onsite Determination Methods as described in the USACE 1987 Wetlands Delineation Manual, the 2010 Regional Supplement to the USACE Wetlands Delineation Manual: Atlantic and Gulf Coastal Plan Region [Version 2.0], and the most current vegetative index, respectively). Both state and federal methodologies involve identifying three wetland criteria: a predominance of hydrophytic vegetation, the presence of hydric soil indicators, and evidence of wetland hydrology.

For each wetland/waterway, ECT flagged the wetland/upland boundary using pink surveyor's ribbon labeled with the words "Wetlands Delineation." The wetland flags were sequentially numbered, and their locations were surveyed using Trimble® Geo XH or similar global positioning system (GPS) units. ECT photographed representative wetlands and water bodies and completed the required USACE upland/wetland data forms. In addition, the functional quality of each wetland was assessed using the UMAM. Data collection for UMAM scoring purposes included wetland type, location in relation to other wetlands or surface waters, structure, extent, and functional status. Functional attributes such as value as wildlife habitat, water environment, location in the landscape, and community structure were evaluated and documented.

A desktop survey was used to characterize several extra workspace locations where survey access was not available. For these few locations, map data was supplemented with visual inspection and photographs, where possible. Figure 5 identifies these areas.

2.4 LISTED SPECIES

Information regarding the potential presence of state- and federally protected plant and wildlife species or their critical habitats within the vicinity of the Project was obtained by a combination of literature review, agency consultation, and field survey. An information request letter was sent to FNAI to obtain information regarding protected plant and wildlife species within or near the Project area. FNAI's response dated December 9, 2011, is provided in Attachment 4 (Agency Correspondence).

ECT also reviewed other sources of information pertaining to protected species such as FNAI Website tracking lists and digital FNAI species sighting records and element occurrence records by quadrangle maintained by the state of Florida (Florida Geographic Data Library), FNAI Field Guide to the Rare Plants of Florida, FNAI Field Guide to the Rare Animals of Florida, and the USFWS list of T&E species for Florida.

Agency information request letters and data found on USFWS's Website were used to compile a list of protected plant or wildlife species potentially occurring within the vicinity of the Project. This list formed the basis of species and potential habitats searched for during the field surveys.

Field surveys were conducted by experienced biologists working in pairs along the route. Species groups of special interest included:

- Raptors/wading bird nesting locations (emphasis on eagle nests and wading bird/wood stork colonies).
- Protected plants.
- Gopher tortoises.

ECT used GPS to locate gopher tortoise burrows identified in the corridor. The gopher tortoise survey included approximately 50 percent of the suitable habitat within the Project area. A 100-percent gopher tortoise burrow survey will be conducted, and any necessary permits obtained, prior to starting construction. Habitats where listed species were observed were photographed and characterized by type and quality.

3.0 SURVEY RESULTS

Results of map and literature review and field surveys are presented in this section.

3.1 LAND USE AND VEGETATION COMMUNITIES

A total of 28 distinct land use/vegetation community types are identified within the Project area. Table 1 presents the various communities and their approximate acreage within the corridor, and Figure 3 provides a land use map depicting their approximate locations. Attachment 1 contains photographs of representative communities. The following subsections provide brief descriptions of the dominant land use or vegetation types as they occur within the Project area.

3.1.1 URBAN AND BUILT UP

There are approximately 23 acres of commercial and services (140) land uses within the Project area. This land use type is limited to the portion of the corridor that runs through Indiantown and comprises 2.3 percent of the Project area. Typical services present include retail, banks, and churches.

3.1.2 AGRICULTURE

There is one small area of agricultural land use within the Project area. Less than 0.4 acre of improved pasture (210) is present east of the Martin Plant in an area that may be used for extra workspace. The pasture is primarily vegetated by bahiagrass (*Paspalum notatum*) and carpetgrass (*Axonopus fissifolius*) and appears to be recently maintained (mowed). Neither pasture animals nor evidence thereof, were observed during the fall 2011 survey. Rather, the field appears to be used for hunting purposes.

3.1.3 NONFORESTED UPLAND LAND COVERS

Approximately 220.6 acres, or 22 percent of the Project area, is comprised of nonforested upland land covers consisting of herbaceous dry prairie (310), other shrub and brushland (329), and mixed rangeland (330). Herbaceous dry prairie (310) is represented throughout the Project area, including large portions of the extra workspace near the Martin Plant, within utility corridors and in the road and railroad rights-of-ways, and as open fields

Table 1. Land Use/Vegetation Community Types within the FPL Martin Plant to RBEC Lateral Project Area

Land Use Cover (FLUCFCS Level III)	Habitat Description	Acreage	Percent of Corridor
140	Commercial and services	22.7	2.3
211	Improved pasture	0.4	0.0
310	Herbaceous (dry prairie)	86.1	8.6
329	Other shrub and brush	2.9	0.3
330	Mixed rangeland	131.3	13.1
410	Upland coniferous forest	3.9	0.4
410/422	Upland coniferous forest/Brazilian pepper	5.0	0.5
411	Pine flatwoods	7.9	0.8
422	Brazilian pepper	23.0	2.3
423	Oak pine hickory	2.1	0.2
425	Temperate hardwoods	38.7	3.9
432	Sand live oak	1.2	0.1
434	Hardwood—coniferous mixed	48.9	4.9
436	Upland scrub, pine, and hardwoods	11.2	1.1
437/422	Australian pines/Brazilian pepper	31.6	3.2
510	Streams and waterways	3.2	0.3
511/619	Ditch/exotic wetland hardwood	9.9	1.0
530	Reservoirs	0.3	0.0
619	Exotic wetland hardwood	116.1	11.6
621	Cypress	1.2	0.1
625	Hydric pine flatwoods	1.6	0.2
630	Wetland forested mixed	8.5	0.8
631	Wetland shrub	0.3	0.0
641	Fresh water marsh	237.7	23.8
812	Railroad	10.8	1.1
814	Road and highway	178.5	17.8
830	Utilities	1.2	0.1
830/310	Utilities/herbaceous	14.6	1.5
	Total	**1,000.8**	**100**

Source: ECT, 2012.

between commercial properties in Indiantown. The majority of this land use type is vegetated by weedy upland grasses, herbs, and forbs intermixed with a few shrubs and small trees. Typical species include bahiagrass, carpetgrass, broomsedge (A*ndropogon virginicus*), smutgrass (*Sporobolus indicus*), fingergrass (*Eustachys glauca*), crowfootgrass (*Dactyloctenium aegyptium*), dogfennel (*Eupatorium* spp.), Mexican clover (*Richardia* spp.), Spanish needles (*Bidens alba*), Caesarweed (*Urena lobata*), nightshade (*Solanum* spp.), and bala (*Sida cordifolia*). The shrub and brushland (329) and mixed rangeland communites (330) are primarily located at the large extra workspace near the Martin Plant property. In addition to these grasses and herbs mentioned, common shrub and small tree species include saw palmetto (*Serenoa repens*), Brazilian pepper (*Schinus terribenthifolius*), wax myrtle (*Myrica cerifera*), salt bush (*Baccharis halimifolia*), and cabbage palm (*Sabal palmetto*).

3.1.4 FORESTED UPLAND LAND COVERS

Forested upland land covers comprise approximately 173.5 acres or approximately 18 percent of the Project area. Common tree species in the upland forests are Brazilian pepper, slash pine (*Pinus elliottii*), Austrailian pine (*Casuarina equisetifolia*), live oak (*Quercus virginiana*), laurel oak (*Quercus laurifolia*), and cabbage palm. The upland forests were differentiated depending on the dominant species or dominant species combinations. A total of 10 different community types were distinguished: upland coniferous forest (410); upland coniferous forest mixed with Brazilian pepper (410/422); pine flatwoods (411); Brazilian pepper (422); oak-pine-hickory forest (423); temperate hardwoods (425); sand live oak (432); hardwood-coniferous mixed (434); upland scrub, pine, and hardwoods (436); and Australian pine mixed with Brazilian pepper (437/422). Brazilian pepper, an invasive exotic, is large component of many of the upland forests within the Project area. Along the RR corridor, upland forests are limited to a narrow strip of trees (typically slash pine or Autrailian pine) intermixed with a dense layer of Brazilian pepper shrubs or small trees. Larger forest stands are limited to the Martin Plant property and undeveloped lots between commercial properties in Indiantown. Japanese climbing fern (*Lygodium japonicum*) is also prevalent throughout the forested communities.

3.1.5 NONFORESTED FRESHWATER WETLANDS

Nonforested wetland vegetation communities cover approximately 238 acres or 24 percent of the Project area. These wetlands are primarily comprised of freshwater marshes (641), with shrub wetland (631) accounting for only a small fraction. A number of isolated small and large freshwater marshes are present on the Martin Plant property. Elsewhere, the marshes are linear features in the lower elevations between SR 710 and the CSX RR. Typical marsh vegetation species include alligatorweed (*Alternanthera philoxeroides*) dogfennel, duck potato (*Saggitaria* spp.), torpedograss (*Panicum repens*), pickerelweed (*Pontedaria cordata*), cattail (*Typha* spp.), common reed (*Phragmites australis*), maidencane (*Panicum hemitomon*), false buttonweed (*Spermacoce assurgens*), pennywort (*Hydrocotyle umbellata*), lovegrass (*Eragrostis* spp.), bladderwort (*Utricularia* spp.), spikerush (*Eleocharis* spp.), primrose willow (*Ludwigia peruviana*), white top sedge (*Dichromena colorata*), sweet flag (*Thalia geniculata*), sawgrass (*Cladium jamaicense*), climbing hempvine (*Mikania scandens*), sedges (*Cyperus* spp, *Carex* spp.) and beak rushes (*Rynchospora* spp.)

Shrub wetlands (631) were comprised of similar species as the marsh but also had a dominant shrub component of either buttonbush (*Cephalanthus occidentalis*) or coastalplain willow (*Salix caroliniana*).

3.1.6 WETLAND FOREST COMMUNITIES

Four types of wetland forest communities were observed within the Project area: exotic hardwoods (619), cypress (621), hydric pine flatwoods (625), and mixed wetland forest (630). Combined they cover approximately 127 acres or 13 percent of the Project area. Exotic wetland hardwoods (619) were by far the most prevalent community, occurring as a linear feature along the length of the corridor between SR 710 and the CSX RR. This community was comprised predominately of Brazilian pepper shrubs and small trees. Other species included punk tree (*Melaleuca quinquenervia*), Austrailian pine, slash pine, coastal plain willow, wild coffee (*Psychotria nervosa*), wax myrtle, myrisine (*Myrisine floridana*), earleaf acacia (*Acacia auriculiformis*), and occasionally saw palmetto, dahoon holly (*Ilex cassine*), or cocoplum (*Chrysobalanus icaco*). Herbaceous species included swamp fern (*Blechnum serrulatum*), saw grass, and an occasional royal fern (*Osumundia*

regalis). Dense stands of Japanese climbing fern were also prevalent throughout this community.

A large almost homogenous forest of punk tree (619) was present near milepost (MP) 20, where the corridor is slightly wider. Smaller pockets of hydric pine flatwoods (625) were also present in this portion of the corridor.

Three small cypress wetlands totaling approximately 1.2 acres were observed. One was on the Martin Plant property, and the other two were along the SR 710 roadside near MPs 13 and 16. Dominate plant species included pond cypress (*Taxodium ascendens*), red maple (*Acer rubrum*), wax myrtle, myrisine, Brazilian pepper, and swamp fern.

Mixed forested wetlands (630) included areas that were comprised of a mix of hardwood and coniferous trees. This community occurred on the Martin Plant property, in forest stands north of the St. Lucie Canal, and along a linear strip between the CSX RR and SR 710. Common species included slash pine, cabbage palm, red maple, laurel oak, coastal plain willow, Brazilian pepper, and wax myrtle.

3.1.7 WATER BODIES

Three types of water bodies are located within the Project area: canals and streams (510), wetland swales and ditches (511/619), and manmade reservoir (530). Combined these waters cover approximately 13 acres (approximately 1 percent) of the Project area.

3.1.8 TRANSPORTATION, COMMUNICATION, AND UTILITIES

With exception for a few extra workspaces on the south side of the CSX RR tracks and through Indiantown, the entire Project is located either within a Florida Department of Transportation (FDOT) road right-of-way, CSX RR right-of-way, utility easement, or FPL fee-owned property. Thus, the vast majority of the Project area has been historically cleared or disturbed in some form. Furthermore, a good portion of the Project is under some type of routine maintenance (e.g., mowing, cutting, etc.). Areas that were classified as transportation or utility are primarily limited to cleared land directly adjacent to SR 710 (814 - highway), the CSX RR track (812 - railroad), or within a fuel pipeline cor-

ridor on the Martin Plant property (830, 830/310). The majority of these areas are either stone/gravel (along the railroad track) or mowed grass along the road right-of-way and fuel pipeline corridor.

3.2 WETLANDS AND WATERWAYS

ECT delineated 76 wetlands and 25 waterways within the Project area. Figure 6 provides an overview of the wetland and water body locations, and Figure 7 shows the limits and types of wetlands/waters in greater detail. Attachment 1 contains photographs of representative wetlands and water bodies. Attachment 2 provides USACE wetland/upland data sheets. Attachment 3 presents UMAM data sheets.

3.2.1 WETLANDS

Overall, wetlands encompass approximately 365.41 acres and are distributed throughout the Project area. Table 2 summarizes wetlands by type, and Table 3 provides details on individual wetland locations, type, size, and quality. Wetlands were numbered sequentially starting from MP 1. Wetlands comprised of more than one vegetative type are subdivided using letter designations.

The vast majority (65 percent) of wetlands delineated in the Project area are freshwater marshes, which are often associated with linear roadside swales. Forested/shrub wetlands dominated by exotic species account for 91 percent of the forested wetlands and 32 percent of the total wetland coverage. Only 3 percent of the wetlands within the Project area are forested/shrub communities with a predominantly desirable vegetation community.

Wetland descriptions are provided in the following subsections by Project location.

3.2.1.1 Martin Plant Property

A total of 26 wetlands (W 01 to W 26) were identified on FPL's Martin Plant property. Two of these wetlands (W 01b and W 25b) had a forested component, while the remainder were marsh. The wetlands on the Martin Plant property are considerably drier than those to the south. Most of these wetlands were dry during the fall 2011 surveys, though still exhibiting wetland characteristics (e.g., hydric soils, hydrophytic vegetation, and

Table 2. Breakdown of Wetland Types within the FPL Martin Plant to RBEC Lateral Project Area

Land Use Cover (FLUCFCS Level III)	Type of Wetland	Acreage	Percent of Total Wetlands
619	Exotic wetland hardwood	116.1	31.8
621	Cypress	1.2	0.3
625	Hydric pine flatwoods	1.6	0.4
630	Wetland forested mixed	8.5	2.3
631	Shrub wetland	0.3	0.1
641	Freshwater marsh	237.7	65.1
	Total	**365.4**	**100**

Source: ECT, 2012.

Table 3. Location, Size, Type, and Quality of Wetlands in the FPL Martin Plant to RBEC Lateral Project Area

Wetland ID	Begin MP	End MP	Wetland Type (FLUCFCS)	NWI Classification	Description	Acres	UMAM Scores				
							Location/Land-scape Support	Water Environment	Community Structure	Total	Current UMAM Score
W 01a	0.1	0.2	641	PEM1	Marsh	0.51	5	3	5	13	0.43
W 01b	0.1	0.2	621	PFO2	Cypress	0.58	5	3	6	14	0.47
W 02	0.1	0.2	641	PEM1	Marsh beneath transmission line	0.28	5	3	4	12	0.40
W 03	0.2	0.2	641	PEM1	Marsh	0.96	5	3	4	12	0.40
W 04	0.2	0.2	641	PEM1	Marsh beneath transmission line	0.50	5	3	4	12	0.40
W 05	0.2	0.3	641	PEM1	Roadside swale/marsh	0.15	4	3	3	10	0.33
W 06	0.2	0.3	641	PEM1	Marsh	1.29	5	3	4	12	0.40
W 07	0.3	0.3	641	PEM1	Marsh	0.48	4	3	4	11	0.37
W 08	0.4	0.4	641	PEM1	Marsh	0.24	4	3	3	10	0.33
W 09	0.4	0.4	641	PEM1	Marsh beneath transmission line	0.70	4	3	3	10	0.33
W 10	0.3	0.4	641	PEM1	Marsh beneath transmission line	1.73	5	3	4	12	0.40
W 11	0.3	0.4	641	PEM1	Marsh	0.40	5	3	4	12	0.40
W 12	0.5	0.6	641	PEM1	Marsh beneath transmission line	3.52	5	3	4	12	0.40
W 13	0.5	0.8	641	PEM1	Marsh beneath transmission line	7.28	5	3	4	12	0.40
W 14	0.8	0.9	641	PEM1	Marsh	0.12	5	3	5	13	0.43
W 15	0.8	0.9	641	PEM1	Marsh beneath transmission line	2.49	5	3	4	12	0.40
W 16	0.8	0.9	641	PEM1	Roadside swale/marsh	0.21	4	3	4	11	0.37
W 17	1.0	1.0	641	PEM1	Marsh adjacent to reservoir	0.28	5	6	5	16	0.53
W 18	1.1	1.1	641	PEM1	Marsh beneath transmission line	3.31	5	3	4	12	0.40
W 19	0.9	1.1	641	PEM1	Marsh beneath transmission line	1.64	5	3	4	12	0.40
W 20	1.0	1.1	641	PEM1	Marsh	1.20	5	3	4	12	0.40
W 21	1.2	1.2	641	PEM1	Marsh adjacent to reservoir	0.02	5	4	4	13	0.43
W 22	1.2	1.4	641	PEM1	Marsh beneath transmission line	15.42	5	3	3	11	0.37
W 23	1.3	1.3	641	PEM1	Marsh beneath transmission line	0.50	5	3	4	12	0.40
W 24	1.4	1.4	641	PEM1	Marsh	0.01	4	3	4	11	0.37
W 25a	1.4	1.5	641	PEM1	Marsh	1.47	5	3	4	12	0.40
W 25b	1.5	1.5	630	PFO	Mixed hardwood wetland	0.98	6	4	6	16	0.53
W 26	1.4	1.4	641	PEM1	Marsh	1.00	5	3	3	11	0.37
W 27	1.3	1.3	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	0.22	3	2	2	7	0.23
W 28	1.3	2.4	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	6.53	3	2	2	7	0.23
W 29	2.4	2.8	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	1.91	3	2	2	7	0.23
W 30	2.9	3.1	641	PEM1	Linear roadside marsh	0.93	3	5	4	12	0.40
W 31	3.2	3.7	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	2.77	3	2	2	7	0.23
W 32	3.7	4.7	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	4.84	3	2	2	7	0.23
W 33	4.9	5.0	641	PEM1	Linear roadside marsh	0.08	3	3	5	11	0.37

Table 3. Location, Size, Type, and Quality of Wetlands in the FPL Martin Plant to RBEC Lateral Project Area (Continued, Page 2 of 4)

Wetland ID	Begin MP	End MP	Wetland Type (FLUCFCS)	NWI Classification	Description	Acres	UMAM Scores				
							Location/Land-scape Support	Water Environment	Community Structure	Total	Current UMAM Score
W 34	5.1	5.1	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	0.17	3	3	3	9	0.30
W 35	5.2	5.4	641	PEM1	Linear marsh in utility easement	0.65	4	5	5	14	0.47
W 36	5.5	5.6	641	PEM1	Linear marsh in utility easement	0.17	4	5	5	14	0.47
W 37a	6.8	6.9	630	PFO	Mixed hardwood wetland	2.93	6	6	6	18	0.60
W 37b	6.8	6.9	641	PEM1	Linear marsh in utility easement	0.27	5	5	5	15	0.50
W 38	7.2	7.3	630	PFO	Mixed hardwood wetland	0.24	6	6	6	18	0.60
W 39	7.9	8.0	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	0.18	4	5	4	13	0.43
W 40a	7.8	8.9	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	6.96	4	5	4	13	0.43
W 40b	7.8	8.9	641	PEM1	Linear marsh in utility and road easements	4.92	5	6	6	17	0.57
W 40c	8.3	8.9	630	PFO1/PSS3	Linear strip of mixed wetland hardwoods	4.35	3	5	5	13	0.43
W 41a	8.9	9.3	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	3.99	5	5	4	14	0.47
W 41b	8.9	9.3	641	PEM1	Linear marsh in utility easement	1.65	5	5	5	15	0.50
W 42a	9.3	9.9	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	5.79	5	5	4	14	0.47
W 42b	9.3	9.9	641	PEM1	Linear marsh in utility and road easements	3.81	5	5	5	15	0.50
W 43a	10.0	10.2	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	1.58	4	4	4	12	0.40
W 43b	10.0	10.2	641	PEM1	Linear marsh in utility and road easements	1.63	4	5	5	14	0.47
W 44a	10.2	12.7	641	PEM1	Linear marsh in utility and road easements	31.06	4	5	5	14	0.47
W 44b	10.2	12.6	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	15.79	4	5	5	14	0.47
W 45a	12.7	12.7	641	PEM1	Marsh in utility and road easements	0.19	5	5	5	15	0.50
W 45b	12.7	12.7	619	PFO1/PSS3	Exotic shrubs and trees in linear easement	0.38	4	5	4	13	0.43
W 46a	12.6	12.7	625	PFO4	Wet pine flatwoods	0.57	6	6	6	18	0.60
W 46b	12.6	12.7	641	PEM1	Marsh	1.55	7	7	7	21	0.70
W 47a	12.7	12.7	631	PSS1	Shrub wetland	0.01	5	6	5	16	0.53
W 47b	12.7	12.7	641	PEM1	Marsh	0.75	7	7	7	21	0.70
W 48a	12.7	14.9	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	14.98	5	5	4	14	0.47
W 48b	12.7	15.0	621	PFO2	Cypress wetland in transportation rights-of-way	0.36	4	5	5	14	0.47
W 48c	12.7	15.0	641	PEM1	Linear marsh in utility and transportation rights-of-way	30.86	5	5	5	15	0.50
W 49	15.0	15.0	641	PEM1	Linear marsh in transportation rights-of-way	0.05	5	6	5	16	0.53
W 50	15.0	15.1	641	PEM1	Linear marsh in transportation rights-of-way	0.06	5	6	5	16	0.53
W 51a	15.0	15.3	641	PEM1	Linear marsh in transportation rights-of-way	3.03	5	5	5	15	0.50
W 51b	15.0	15.2	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	0.91	5	5	4	14	0.47
W 52a	15.3	17.6	641	PEM1	Linear roadside marsh	16.17	5	5	5	15	0.50
W 52b	15.3	17.4	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	6.80	4	5	4	13	0.43
W 52c	16.1	16.1	621	PFO2	Cypress wetland in transportation rights-of-way	0.29	4	5	6	15	0.50
W 53a	17.6	18.0	641	PEM1	Linear roadside marsh	4.10	5	5	5	15	0.50

Table 3. Location, Size, Type, and Quality of Wetlands in the FPL Martin Plant to RBEC Lateral Project Area (Continued, Page 3 of 4)

Wetland ID	Begin MP	End MP	Wetland Type (FLUCFCS)	NWI Classification	Description	Acres	UMAM Scores				
							Location/Land-scape Support	Water Environment	Community Structure	Total	Current UMAM Score
W 53b	17.6	17.9	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	0.81	5	5	4	14	0.47
W 54a	18.1	19.1	641	PEM1	Linear roadside marsh	7.47	5	6	4	15	0.50
W 54b	18.1	18.9	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	2.33	5	6	4	15	0.50
W 55a	19.8	19.9	625	PFO4	Wet pine flatwoods in transportation easement	0.61	5	6	5	16	0.53
W 55b	19.1	19.9	641	PEM1	Linear roadside marsh	6.66	5	6	5	16	0.53
W 56a	19.9	20.4	641	PEM1	Marsh in transportation rights-of-way	5.59	5	6	5	16	0.53
W 56b	20.1	20.4	619	PFO1/PSS3	Exotic shrubs and trees in transportation right-of-way	11.70	5	6	4	15	0.50
W 56c	19.9	20.0	625	PFO4	Wet pine flatwoods in transportation rights-of-way	0.44	5	6	6	17	0.57
W 57a	20.4	22.2	641	PEM1	Linear marsh in transportation rights-of-way	8.99	5	4	5	14	0.47
W 57b	20.4	22.2	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	7.87	5	4	4	13	0.43
W 58	22.1	22.1	641	PEM1	Marsh	0.91	6	6	6	18	0.60
W 59a	22.2	23.4	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	3.70	5	5	3	13	0.43
W 59b	22.2	23.4	641	PEM1	Linear roadside marsh	7.45	5	5	5	15	0.50
W 60a	23.4	24.4	641	PEM1	Linear roadside marsh	4.86	5	5	5	15	0.50
W 60b	23.4	24.3	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	0.70	3	3	3	9	0.30
W 61	24.4	24.4	631	PSS1	Linear shrub wetland in RR ROW	0.04	4	5	5	14	0.47
W 62	24.4	24.4	619	PFO1/PSS3	Exotic shrubs and trees	0.10	4	5	4	13	0.43
W 63	24.4	24.4	619	PFO1/PSS3	Exotic shrubs and trees	0.10	4	5	4	13	0.43
W 64a	24.5	24.6	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	0.26	3	5	4	12	0.40
W 64b	24.4	24.6	641	PEM1	Linear roadside marsh	1.81	4	5	4	13	0.43
W 65	24.6	25.0	641	PEM1	Linear roadside marsh	2.74	5	5	4	14	0.47
W 66a	25.0	26.5	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	2.65	3	5	4	12	0.40
W 66b	25.0	26.5	641	PEM1	Linear roadside marsh	9.72	5	5	4	14	0.47
W 67a	26.6	26.9	619	PFO1/PSS3	Linear strip of exotic shrubs and trees	0.56	3	5	4	12	0.40
W 67b	26.5	26.9	641	PEM1	Linear roadside marsh	1.93	4	5	4	13	0.43
W 68a	26.9	28.7	641	PEM1	Linear roadside marsh	12.34	4	5	4	13	0.43
W 68b	26.9	27.8	619	PFO1	Linear strip of exotic shrubs and trees	2.73	3	5	4	12	0.40
W 69a	29.1	29.2	631	PSS1	Shrub wetland in transportation rights-of-way	0.11	4	5	5	14	0.47
W 69b	28.7	29.1	641	PEM1	Linear roadside marsh	3.32	4	5	5	14	0.47
W 69c	28.7	29.1	619	PFO1	Linear strip of exotic shrubs and trees	1.20	3	5	4	12	0.40
W 70a	29.2	29.9	641	PEM1	Linear roadside marsh	5.42	4	5	4	13	0.43
W 70b	29.2	29.9	619	PFO1	Linear strip of exotic shrubs and trees	1.98	3	5	4	12	0.40
W 70c	29.2	29.2	631	PSS1	Shrub wetland in transportation rights-of-way	0.10	4	5	4	13	0.43
W 71a	29.9	30.3	619	PFO1	Linear strip of exotic shrubs and trees	1.44	4	5	4	13	0.43
W 71b	29.9	30.3	641	PEM1	Linear roadside marsh	2.44	4	5	4	13	0.43

Table 3. Location, Size, Type, and Quality of Wetlands in the FPL Martin Plant to RBEC Lateral Project Area (Continued, Page 4 of 4)

Wetland ID	Begin MP	End MP	Wetland Type (FLUCFCS)	NWI Classification	Description	Acres	UMAM Scores				
							Location/Land-scape Support	Water Environment	Community Structure	Total	Current UMAM Score
W 72a	30.3	30.4	641	PEM1	Linear roadside marsh	0.42	4	5	4	13	0.43
W 72b	30.3	30.4	619	PFO1	Linear strip of exotic shrubs and trees	0.39	4	5	5	14	0.47
W 73	30.4	30.5	641	PEM1	Roadside marsh	0.35	2	4	4	10	0.33
W 74a	30.6	31.4	619	PFO1	Linear strip of exotic shrubs and trees	2.92	4	5	3	12	0.40
W 74b	30.5	31.4	641	PEM1	Linear roadside marsh	4.47	4	5	3	12	0.40
W 75a	31.4	31.7	619	PFO1	Linear strip of exotic shrubs and trees	0.80	3	4	3	10	0.33
W 75b	31.4	31.7	641	PEM1	Linear roadside marsh	1.72	3	4	3	10	0.33
W 76	31.8	32.1	641	PEM1	Linear roadside marsh	1.48	2	3	3	8	0.27
					Total	365.42					

Source: ECT, 2012.

evidence of prior hydrology). The marshes were rather homogenous, consisting of isolated shallow depressions with rough concentric vegetation zones. Lower elevations were vegetated by wetter species such as sweet flag, duck potato, pickerelweed, and maidencane. The higher zones were vegetated by dogfennel, flat top goldenrod (*Euthamia minor*), carpetgrass, blue maidencane (*Amphicarpum muhlenbergia*), foxtail (*Setaria geniculata*), and big cordgrass (*Spartina cynosuroides*). Brazilian pepper, saw palmetto, and wax myrtle occurred along the upper edge. Forested wetland (W 01b) was dominated by pond cypress, and W 25b was dominated by red maple and slash pine. Both wetlands were dry but showed historic water marks 24 to 36 inches above the ground surface.

The hydric soils series Gator, Holopaw, Pineda, Placid, and Chobee underlie the Martin Plant property wetlands. Typical hydric soil indicators observed include thin dark surface, dark surface, stripped matrix, and sandy redox.

The UMAM scores for these wetlands varied between a 0.33 and a 0.53. Their quality is downgraded due to significant hydrologic impairment, prevalence of weedy/invasive plant species, relatively low plant species diversity, surrounding development (e.g., power plant, transmission line, fuel pipeline, solar field, cooling ponds, agriculture, etc.), and a large wild hog population that has caused extensive rooting damage throughout the property and has likely impacted survival of other wildlife species onsite.

3.2.1.2 CSX RR/SR 710 Corridor from MPs 1.6 to 7 (North of St. Lucie Canal)

A total of 12 wetlands (W 27 through W 38) were delineated along the CSX corridor north of the St. Lucie Canal. With exception for two mixed forested wetlands near the canal, all of these are wetlands that developed in the relatively narrow linear shallow depression between the CSX RR and SR 710. Similar to the Martin Plant property, these wetlands tended to be significantly drier than those delineated south of the St. Lucie Canal. The wetlands classified as exotic shrubs and trees are densely vegetated by Brazilian pepper, with a few Austrialian pine, slash pine, cabbage palm, or punk trees intermixed. The marshes are vegetated with false buttonweed, torpedo grass, duck potato, pickerelweed, pennywort, white top sedge, and carpetgrass. The two mixed forested wetlands

(W 37a and W 38) north of the St. Lucie Canal are primarily vegetated with red maple, laurel oak, cabbage palm, slash pine, privet (*Ligustrum* sp.), swamp fern, wild coffee, and Brazilian pepper. Hydric soils underlying these wetlands include Riviera, Holopaw, Pineda, Placid, and Floridana. Hydric soil indicators observed are similar to those on the Martin Plant property and include stripped matrix, thin dark surface, and sandy redox.

The UMAM scores for these wetlands vary between 0.23 and 0.60 (in the mixed forested wetlands W 37a and W 38). Their scores are relatively low due to the surrounding development and traffic (SR 710, RR, Indiantown, agriculture, industrial/commercial activities), altered hydroperiods due to ditching, evidence of water quality impairment (e.g., high algae or duckweed content, high turbidity, oil sheen, etc.), extensive invasive plant populations, low vegetation diversity, and limited wildlife support.

3.2.1.3 CSX RR/SR 710 Corridor from MPs 7 to 32 (South of St. Lucie Canal)

Much of the corridor south of the St. Lucie Canal is comprised of a relatively continuous linear swath of wetland associated with the depression between the raised CSX RR and SR 710 road beds. A total of 30 wetlands were delineated in this strip. These wetlands are separated by road crossings, but are still hydrologically connected via culverts. Another eight wetlands (W 46, W 47, W 49, W 50, W 58, and W 61 through W 63) delineated south of the St. Lucie Canal are located in extra work spaces on the south side of the CSX RR. The wetlands occurring between the CSX RR and SR 710 are comprised of a combination of alternating strips of marsh and exotic shrubs and small trees. Between MPs 8 and 10, there are a few stretches of a narrow strip of upland between linear strips of wetland. This linear upland stretch is associated with an existing underground fuel pipeline.

Marsh occurs in the lowest elevations. Typical vegetation species include cattail, common reed, spike rush, saw grass, primrose willow, white top sedge, fogfruit (*Phyla nodiflora*), false buttonweed, smutgrass, maidencane, pickerelweed, duck potato, pennywort, alligatorweed, love grass, clustered bushmint (*Hyptis alata*), bladderwort, and various sedges and rushes. Exotic shrubs and trees occur in the higher elevations on either side of the marsh. Brazilian pepper is the dominant species in this community along the length of the corridor. Other species present include Austrialian pine, slash pine, punk

tree, coastal plain willow, ear leaf acacia, dahoon holly, wax myrtle, silverling (*Baccharis glomeruliflora*), myrisine, cocoplum, saw palmetto, swamp fern, blackberry (*Rubus* spp.), elderberry (*Sambucus canadensis*), grapevine (*Vitis rotundifolia*), cat greenbrier (*Smilax laurifolia*), and Japense climbing fern.

Hydric soils underlying these wetlands include Riviera, Pineda, Okeelanta, Winder, and Hallandale. Typical hydric soil indicators observed include muck presence, thin dark surface, dark surface, sandy redox, and stripped matrix.

UMAM scores for the wetlands within the pipeline corridor south of the St. Lucie Canal vary between 0.27 and 0.57. The quality of these wetlands was downgraded due to surrounding development and traffic (SR 710 and CSX RR), routine right-of-way maintenance/disturbance, prevalence of exotic and weedy species, altered hydroperiod due to ditching/damming, impacts to structural complexity, and limited wildlife support.

Wetlands on the south side of the CSX RR track, which are in extra workspaces, tend to be of higher quality than those north of the track, because they are surrounded by more natural habitats, are not as disturbed, have more natural/native vegetation communities, and offer better wildlife support. The UMAM scores for these wetlands vary between 0.43 and 0.70.

3.2.2 WATER BODIES

Water bodies include manmade ditches, streams, and canals. ECT delineated 25 water bodies within the Project area, which are listed and described in Table 4. Most of the water bodies within the Project area are manmade ditches that run parallel to the CSX RR track. Vegetation within and adjacent to the RR ditches is primarily weedy and/or exotic species with a large concentration of Brazilian pepper. Other species include elephantgrass (*Pennisetum purpureum*), cattail, primrose willow, coastal plain willow, elderberry, yellow water lily (*Nuphar lutea*), American lotus (*Nelumbo lutea*), duckweed (*Lemna* spp.), common reed, and sweetflag.

Table 4. Water Bodies within the FPL Martin Plant to RBEC Lateral Project Area

Water Body ID	Milepost	Water Body Name	Flow Type	Channel Width (ft)	Channel Depth (ft)	Approximate Water Depth (ft)	CLASS
WB 01	0.0	Unnamed ditch	Nontidal, lower perennial	47	6 to 8	2	III
WB 02	0.0	Unnamed ditch	Nontidal, lower perennial	47	6 to 8	2	III
WB 03	1.0	Manmade reservoir	Nontidal, lower perennial	26	2	2	III
WB 04	1.3	RR ditch	Nontidal, lower perennial	29	5 to 6	3	III
WB 05	5.7	Canal	Nontidal, lower perennial	36	12	2	III
WB 06	6.4	RR ditch	Nontidal, lower perennial	29	3	0.25	III
WB 07	6.8	RR ditch	Nontidal, lower perennial	26	5	0.25	III
WB 08	7.2	St. Lucie Canal	Nontidal, lower perennial	262	18	5-10	III
WB 09	10.1	RR ditch	Nontidal, lower perennial	61	4 to 8	2	III
WB 10	10.2	RR ditch	Nontidal, lower perennial	20	4 to 8	2	III
WB 11	12.6	RR ditch	Nontidal, lower perennial	35	4 to 8	3	III
WB 12	12.7	RR ditch	Nontidal, lower perennial	25	4 to 8	3	III
WB 13	19.1	RR ditch	Nontidal, lower perennial	72	4 to 8	3	III
WB 14	19.3	RR ditch	Nontidal, lower perennial	16	4 to 8	3	III
WB 15	19.9	RR ditch	Nontidal, lower perennial	38	4 to 8	2	III
WB 16	20.4	RR ditch	Nontidal, lower perennial	26	4 to 8	2	III
WB 17	22.1	RR ditch	Nontidal, lower perennial	32	4 to 8	3	III
WB 18	22.2	RR ditch	Nontidal, lower perennial	43	4 to 8	3	III
WB 19	23.4	Canal	Nontidal, lower perennial	13	4 to 8	5	III
WB 20	23.4	Canal	Nontidal, lower perennial	44	4 to 8	5	III
WB 21	23.4	Canal	Nontidal, lower perennial	96	4 to 8	5	III
WB 22	24.4	RR ditch	Nontidal, lower perennial	20	4 to 8	2	III
WB 23	24.4	RR ditch	Nontidal, lower perennial	27	4 to 8	2	III
WB 24	29.2	Unnamed stream	Nontidal, lower perennial	158	5 to 10	6	III
WB 25	30.3	Canal	Nontidal, lower perennial	85	5 to 10	5	III

Source: ECT, 2012.

The Project corridor crosses four canals and one unnamed stream. WB 5 and 25 are unnamed canals. WB 8 is the St. Lucie Canal (C44 Canal), and WBs 19 through 21 are the Hungry Land Slough Canal (C18 Canal). WBs 19 and 20 are small protrusions of the canal that extend in the edge of an extra workspace, whereas WB 21 is where the main fuel pipeline corridor crosses the canal. The canals and stream are open water features, and lack a significant vegetation community. WB 24, a slow moving unnamed stream, is surrounded by shrub wetlands on either side.

Depending on their location, most of the RR ditches had between 2 and 3 feet of water. The canals and streams were deeper and are estimated to have between 5 and 10 feet of water. All 25 water bodies have a Class III surface water designation, meaning they are intended for fish consumption, recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife.

3.3 LISTED SPECIES

Based on USFWS and FNAI species occurrence data, there are 36 plant and 39 wildlife state- or federally listed species known to occur in Martin and Palm Beach Counties. Tables 5 and 6 provide a list of these species, including their status, preferred habitat, and potential to occur within the Project area. There are no species with critical habitat within the Project area.

ECT's field evaluation identified potential habitat for 28 of the listed species, including 6 plant and 22 wildlife species. A site-specific FNAI evaluation (provided in Attachment 4) did not identify any known locations of listed species within the Project area, though a number were suggested to have a high probability of occurring within the vicinity of the Project, probably due to the close proximity of a numerous managed conservation properties.

As indicated in the Tables 5 and 6, one listed plant and eight listed wildlife species were observed during the field surveys. The plant, pine pink orchid (*Bletia purpurea*), is a state-listed threatened orchid species that was observed in several locations in roadside marshes adjacent to SR 710, as shown on Figure 8. Wildlife species observed include

Table 5. Federally and State-Listed Plant Species Known to Occur in Palm Beach and Martin Counties, Florida

Scientific Name	Common Name	State Status	Federal Status	Preferred Habitat	Likelihood of Occurrence
Acrostichum aureum	Golden leather fern	LT		Tidal swamps and marshes, brackish and fresh water	Low
Aeschynomene pratensis	Meadow jointvetch	LE		Sawgrass marshes and margins of pineland depressions, marl prairies, cypress domes, swales	Medium
Argusia gnaphalodes	Sea lavender	LE		Beaches and sandy soils, salt-tolerant	Low
Asimina tetramera	Four-petal pawpaw	LE	LE	Openings in sand pine scrub	Low
Bletia purpurea	Pine pink orchid	LT		Open pine flatwoods	Medium*
Calopogon multiflorus	Many-flowered grass pink	LE		Dry to moist flatwoods with longleaf pine, wiregrass, saw palmetto	Low
Chamaesyce cumulicola	Sand-dune spurge	LE		Scrub, beach dune, maritime hammock, coastal strand; found in openings	Low
Cladonia perforata	Perforate reindeer lichen	LE	LE	Rosemary scrub	Low
Coccthrinax argentat	Silver palm	LT		Pine rockland, rockland hammock, maritime hammock	Low
Coelorachis tuberculosa	Piedmont jointgrass	LT		Wet places, shores, marshy sites	Medium
Conradina grandiflora	Large-flowered rosemary	LT		Scrub, coastal strand, disturbed places	Low
Ctenitis sloanei	Florida tree fern	LE		Rockland hammock, strand swamp	Low
Cucurbita okeechobeensis	Okeechobee gourd	LE	LE	Pond apple swamps and mucky soils on Lake Okeechobee shores and islands	Low
Dicerandra immaculata	Lakela's mint	LE	LE	Scrub on the Atlantic coast ridge	Low
Eugenia confusa	Tropical ironwood	LE		Rockland hammock	Low
Glandularia maritima	Coastal vervain	LE		Back dunes, dune swales, coastal hammocks; disturbed sandy areas	Low
Halophila johnsonii	Johnson's seagrass		LT	Tidal deltas inside inlets, sandy shoals, mouths of canals; at water depths from shallow intertidal to 9 ft deep	Low
Jacquemontia reclinata	Beach jacquemontia	LE	LE	Lee side of stable vegetated dunes, disturbed openings in maritime hammock, coastal strand, coastal scrub, often with sea grape, sand spurs, poisonwood, and prickly pear cactus	Low
Lantana depressa var. floridana	Atlantic coast Florida lantana	LE		Dunes and sandy inland ridges	Low
Lechea cernua	Nodding pinweed	LE		Scrub, openings, and disturbed areas; common after fire	Low
Lechea divaricata	Pine pinweed	LE		Scrub and scrubby flatwoods	Low
Linum carteri var. smallii	Small's flax	LE		Pine rocklands, pine flatwoods, adjacent disturbed sites	Low
Nemastylis floridana	Celestial lily	LE		Wet flatwoods, prairies, marshes, cabbage palm hammocks edges	Medium
Okenia hypogaea	Burrowing four o'clock	LE		Beach dunes, coastal strand	Low

Table 5. Federally and State-Listed Plant Species Known to Occur in Palm Beach and Martin Counties, Florida (Continued, Page 2 of 2)

Scientific Name	Common Name	State Status	Federal Status	Preferred Habitat	Likelihood of Occurrence
Ophioglossum palmatum	Hand fern	LE		"Boots" or old leaf bases of cabbage palms in maritime hammocks and wet hammocks	Medium
Panicum abscissum	Cutthroat grass	LE		Cutthroat seeps, depression marshes, wet flatwoods; flowers after fire	Medium
Peperomia humilis	Terrestrial peperomia	LE		Shell mounds and limestone outcrops in mesic hammocks, coastal berms, cypress swamps; rarely on tree trunks, branches or rotting logs	Low
Peperomia obtusifolia	Blunt-leaved peperomia	LE		Rockland hammocks, hydric hammocks, strand swamps	Low
Polygala smallii	Tiny polygala	LE	LE	Pine rockland, scrub, sandhill, open coastal spoil piles	Low
Pteris bahamensis	Bahama brake	LT		Pineland rockland, sinkhole edges; on limestone	Low
Pteroglossaspis ecristata	Giant orchid	LT		Sandhill, scrub, pine flatwoods, pine rocklands	Low
Sacoila lanceolata var. paludicola	Fahkahatchee ladies' tresses	LT		Swamps and hydric hammocks	Low
Schizaea pennula	Ray fern	LE		Prairie hammock, bayhead, wet flatwoods; found on decaying wood of red bay or moist earth	Low
Tephrosia angustissima var. curtissii	Coastal hoary-pea	LE		Scrub and sandy areas	Low
Thelypteris serrata	Toothed maiden fern	LE		Cypress swamps, sloughs, floodplains	Low
Tillandsia flexuosa	Banded wild-pine	LT		Xeric hammock, shell mound, tropical rockland hammock, coastal berm, maritime hammock, marine tidal swamp, estuarine tidal swamp; epiphytic	Low
Tolumnia bahamensis	Dancing lady orchid	LE		Coastal scrub	Low
Vanilla mexicana	Scentless vanilla	LE		Tropical rockland hammock, maritime hammock, hydric hammock; epiphytic	Low

Note: E = endangered.
T = threatened.
CH = critical habitat designated.

Sources: FNAI, 2012.
USFWS, 2011.
ECT 2012.

Table 6. Federally and State-Listed Wildlife Species Known to Occur in Palm Beach and Martin Counties, Florida

Scientific Name	Common Name	State Status	Federal Status	Preferred Habitat	Likelihood of Occurrence
Bairdiella sanctaeluciae	Striped croaker	SC		Rock reef habitat	Low
Microphis brachyurus	Opossum pipefish	SC		Spawn in estuaries; adults in freshwater tributaries within 30 miles of the shore	Low
Alligator mississippiensis	American alligator	SAT	FT(S/A)	Various freshwater wetland habitats	High*
Caretta caretta	Loggerhead	LT	FT	Marine waters	Low
Chelonia mydas	Green turtle	LE	FE	Marine waters	Low
Crocodylus acutus	American crocodile	LT	FT	Large, shallow lakes, marshes, ponds, swamps, rivers, and creeks; estuarine or low salinity water	Low
Dermochelys coriacea	Leatherback	LE	FE	Marine waters	Low
Drymarchon couperi	Eastern indigo snake	LT	FT	Requires large tracts of land, can tolerate wide variety of habitats	Medium
Eretmochelys imbricata	Hawksbill	LE	FE	Marine waters	Low
Gopherus polyphemus	Gopher tortoise		ST	Dry upland habitats with deep sandy soils	Medium*
Lepidochelys kempii	Kemp's ridley	LE	FE	Marine waters	Low
Pituophis melanoleucus mugitus	Florida pine snake		SSC	Relatively open habitats with dry sandy soil; sandhills, old fields, pastures, scrubby flatwoods; often coexist with gopher tortoise	Medium
Rana capito	Gopher frog		SSC	Dry, sandy uplands, chiefly sandhill and scrub that includes isolated wetlands or large ponds within 1 mile	Medium
Aphelocoma coerulescens	Florida scrub-jay	LT	FT	Fire-dominated, low-growing oak scrub habitat found on well-drained sandy soils	Low
Aramus guarauna	Limpkin		SSC	Wide range of wetland habitats	High
Athene cunicularia floridana	Florida burrowing owl		SSC	High, sparsely vegetated, sandy ground including dry prairie, ruderal areas, and vacant lots	Medium
Caracara cheriway	Crested caracara	LT	FT	Open country, including dry prairie and pasture lands; preferred nest trees are cabbage palm and live oaks	Medium
Charadrius melodus	Piping plover	LT	FT	Open sandy beaches and tidal mudflats	Low
Egretta caerulea	Little blue heron		SSC	Feeds in shallow freshwater or brackish wetlands	High*
Egretta thula	Snowy egret		SSC	Nests on islands over shallow waters; feeds in a variety of wetland habitats	High*
Egretta tricolor	Tricolored heron		SSC	Variety of freshwater wetlands	High
Eudocimus albus	White ibis		SSC	Variety of freshwater wetlands	High*
Falco sparverius paulus	Southeastern American kestrel		ST	Open pine habitats, woodland edges, prairies, and pastures	Medium
Grus canadensis pratensis	Florida sandhill crane		ST	Prairies, freshwater marshes, and pasture lands	High*

Table 6. Federally and State-Listed Wildlife Species Known to Occur in Palm Beach and Martin Counties, Florida (Continued, Page 2 of 2)

Scientific Name	Common Name	State Status	Federal Status	Preferred Habitat	Likelihood of Occurrence
Haematopus palliatus	American oystercatcher		SSC	Large areas of beach, sandbar, mudflats and shellfish beds	Low
Haliaeetus leucocephalus	Bald eagle			Large open water bodies	Medium*
Mycteria americana	Wood stork	LE	FE	Colonial nester in a variety of forested wetlands; forages in a variety of shallow water freshwater marshes	High*
Pandion haliaetus	Osprey		SSC	Large lakes, rivers, and coastal waters	High*
Pelecanus occidentalis	Brown pelican		SSC	Coastal estuarine shallow waters	Low
Picoides borealis	Red-cockaded woodpecker	LE	FE	Open, mature pine woodlands with a diversity of herbs and shrubs	Low
Platalea ajaja	Roseate spoonbill		SSC	Nests in coastal islands, forages in a variety of salt- or freshwater wetlands	High
Rostrhamus sociabilis plumbeus	Snail kite	LE	FE	Large open freshwater marshes and lakes with shallow water and low density of emergent vegetation	Low
Rynchops niger	Black skimmer		SSC	Coastal waters including beaches, bays, estuaries, sand-bars, tidal creeks, and inland waters of large lakes, etc.	Medium
Sternula antillarum	Least tern		ST	Coastal areas	Low
Podomys floridanus	Florida mouse		SSC	Xeric upland communities with sandy soils, including ruderal sites where they inhabit burrows of the gopher tortoise	Medium
Puma concolor coryi	Florida panther	LE	FE	Very large tracts of upland habitats	Low
Sciurus niger shermani	Sherman's fox squirrel		SSC	Sandhills (high pine), pine flatwoods, pastures, and other open ruderal habitats with scattered pines and oaks	Medium
Trichechus manatus	Manatee	LE	FE	Shallow, slow-moving rivers, estuaries, saltwater bays, canals, and coastal areas, where seagrass beds or freshwa-ter vegetation is present	Medium
Ursus americanus floridanus	Florida black bear		ST	Require wide variety of forested communities, especially forested wetlands such as bayheads	Low

*Observed during fall 2011 site surveys within or near the Project limits.

Sources: FNAI, 2012.
USFWS, 2011.
ECT 2012.

gopher tortoise (*Gopherus polyphemus*), American alligator (*Alligator mississippiensis*), sandhill crane (*Grus canadensis*), woodstork (*Mycteria americana*), white ibis (*Eudocimus albus*), little blue heron (*Egretta caerulea*), and snowy egret (*Egretta thula*).

Two potentially active gopher tortoise burrows and one large gopher tortoise were observed in the northern part of the Martin Plant property. Figure 8 identifies the burrow locations. None of the listed commensal species (e.g., eastern indigo snake [*Drymarchon couperi*], Florida pine snake [*Pituophis melanoleucus lodingi*], Florida mouse [*Podomys floridanus*], gopher frog [*Rana capito*]) were observed, but they do have the potential to occur on the Martin Plant site, given the presence of suitable habitat.

Sandhill crane, wood stork, little blue heron, white ibis, snowy egret, and numerous other wading birds were frequently seen foraging in the roadside swales adjacent to SR 710. No nests or bird rookeries were observed within or near the Project area. However, the Project is located within the core foraging habitat of a known wood stork colony, located approximately 11,900 feet south of the southern terminus of the Project. Although not a formally listed species, at least one bald eagle (*Haliaeetus leucocephalus*) was observed flying in the vicinity of the Project.

The roadside marshes are also where two alligator sightings were made during the fall 2011 surveys.

4.0 SUMMARY

ECT conducted a baseline ecological assessment of the Martin Plant to RBEC Lateral Project, located in Palm Beach and Martin Counties, Florida. The Project consists of approximately 32 miles of linear corridor, as well as several contractor yards/extra work spaces, including a large tract of land at the Martin Plant property. Combined, the assessment area is approximately 1,000 acres. The entire linear corridor is collocated within existing linear facilities, including CSX RR, SR 710 right-of-way, and FPL fuel pipeline corridor.

As part of the ecological assessment, ECT characterized the baseline ecological conditions of the linear corridor and work spaces, delineated jurisdictional wetlands, mapped vegetation and land use communities, assessed habitats for the potential presence of T&E species, and searched suitable habitats for listed species. Data was collected from a combination of existing maps and literature, agency consultation, and a detailed field survey.

A total of 28 distinct land use/vegetation community types were identified within the Project area. Of these, approximately 62 percent are upland or developed land use types, approximately 37 percent are wetland communities, and approximately 1 percent are water bodies. The dominant land use types include exotic wetland hardwoods, freshwater marsh, herbaceous dry prairie, mixed rangeland, and transportation rights-of-way. Exotic invasive plant species, especially Brazilian pepper, comprise a significant portion of the vegetation communities within the Project area. No unique or especially high-quality community types were observed.

ECT delineated 76 wetlands within the Project area, which encompass approximately 365.38 acres and are distributed throughout the Project area. The vast majority (65 percent) of wetlands are freshwater marshes, which are often associated with linear roadside swales. Forested/shrub wetlands dominated by exotic species account for 91 percent of the forested wetlands and 32 percent of the total wetland coverage. Only 3 percent of the wetlands within the Project area are forested/shrub communities with a predominantly desirable vegetation community.

A total of 26 wetlands were identified on FPL's Martin Plant property. Of those, two had a forested component, while the remainder were marsh. A total of 12 wetlands were delineated along the CSX corridor north of the St. Lucie Canal. With the exception of two mixed forested wetlands near the canal, all of these are wetlands that developed in the relatively narrow linear shallow depression (e.g., roadside swales) between the CSX RR and SR 710 and are heavily vegetated by Brazilian pepper. South of the St. Lucie Canal, the corridor is comprised of a relatively continuous linear swath of wetland associated with the depression between the raised CSX RR and SR 710 road beds. A total of 30 wetlands were delineated in this strip. These wetlands are separated by road crossings but are still hydrologically connected via culverts. Eight wetlands delineated south of the St. Lucie Canal are located in extra work spaces on the south side of the CSX RR.

The UMAM scores for most of the wetlands within the Project area are low to medium. Existing impacts to these wetlands include surrounding development and traffic, altered hydroperiods due to ditching and damming, water quality impairment (e.g., high algae or duckweed content, high turbidity, oil sheen, etc.), prevalence of weedy and invasive plant species, relatively low plant species diversity, impacts to structural complexity, rutting by large wild hog populations, and limited wildlife support.

ECT delineated 25 water bodies, most of which are manmade ditches that run parallel to the CSX RR track. Vegetation within and adjacent to the RR ditches is primarily weedy and/or exotic species with a large concentration of Brazilian pepper. The Project corridor also crosses one unnamed stream and four canals, including the St. Lucie Canal (C44 Canal) and the Hungry Land Slough Canal (C18 Canal). All 25 water bodies have a Class III surface water designation.

Based on USFWS and FNAI species occurrence data, there are 36 plant and 39 wildlife state- or federally listed species known to occur in Martin and Palm Beach Counties. ECT's field evaluation identified potential habitat for 28 of these species, including 6 plant and 22 wildlife species. One listed plant and eight listed wildlife species were observed during the field surveys. The plant, pine pink orchid, is a state-listed threatened

orchid species that was observed in several locations in roadside marshes. Listed wildlife species observed include gopher tortoise, American alligator, sandhill crane, wood stork, little blue heron, white ibis, and snowy egret. The gopher tortoise burrow observations were made on the Martin Plant property. The listed wading birds were frequently seen foraging in the roadside swales adjacent to SR 710. These roadside marshes are also where two alligator sightings were made during the fall 2011 surveys.

5.0 REFERENCES

Florida Department of Transportation (FDOT). 1999. Surveying and Mapping Geographic Mapping Section. Florida Land Use, Cover and Forms Classification System. Handbook. January 1999, Third Edition.

Florida Natural Areas Inventory (FNAI). 2012. <http://www.fnai.org/>.

———. 2000. Field Guide to the Rare Plants and Animals of Florida. <http://www.fnai.org/fieldguide/>.

Gilbert, K.M., J.D. Tobe, R.W. Cantrell, M.W. Sweeley, and J.R. Cooper. 1995. The Florida Wetlands Delineation Manual. <http://www.dep.state.fl.us/water/wetlands/delineation/manual.htm>.

Myers, R.L., and J.J. Ewel. 1990. Ecosystems of Florida. University Central Florida Press, Orlando. 765 p.

Reed, P.B., Jr. 1988. National List of Plant Species that Occur in Wetlands: National Summary. U.S. Fish and Wildlife Service, Washington, DC. Biol. Rpt. 88(24). 244 p.

Taylor, W.K. 2009. A Guide to Florida Grasses. University Press of Florida. 362 pp.

Tobe, J.D., K.C. Burks, R.W. Cantrell, M.A. Garland, M.E. Sweeley, D.W. Hall, P. Wallace, G. Anglin, G. Nelson, J.R. Cooper, D. Bickner, K. Gilbert, N. Aymond, K. Greenwood, and N. Raymond. 1998. Florida Wetland Plants: An Identification Manual. University of Florida/The Institute of Food and Agricultural Sciences (UF/IFAS) Publications, Gainesville, Florida.

U.S. Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0), ERDC/EL TR-10-20. U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi.

———. 1987. Environmental Laboratory. Wetlands Delineation Manual Technical Report Y-8-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

U. S. Department of Agriculture (USDA). 2010. Natural Resources Conservation Service (NRCS). Field Indicators of Hydric Soils in the United States, Version 7.0. L.M. Vasilas, G.W. Hurt, and C.V. Noble, Editors. In cooperation with the National Technical Committee for Hydric Soils.

———. 1981. Soil Conservation Service. Soil Survey of the Martin County Area, Florida. U.S. Government Printing Office, Washington, DC.

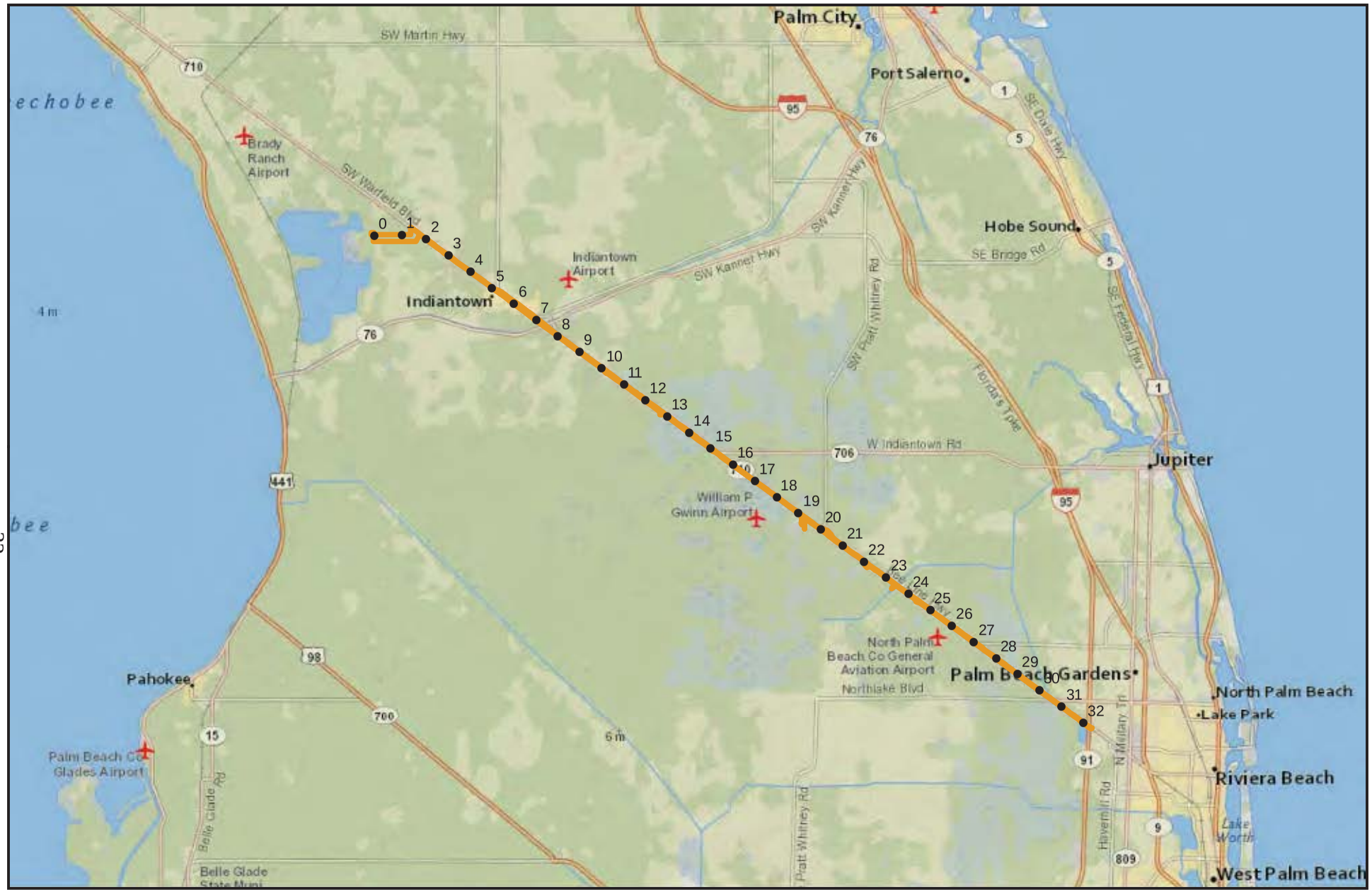
———. 1978. Soil Conservation Service. Soil Survey of the Palm Beach County Area, Florida. U.S. Government Printing Office, Washington, DC.

U.S. Fish and Wildlife Service (USFWS). 2012. South Florida Field Office Website. <http://www.fws.gov/verobeach/>.

Wunderlin, R.P. 1998. Guide to the Vascular Plants of Florida. The University of Florida Press. Gainesville, Florida.

FIGURES

Path: M:\acad\110697\Location.mxd



32

Legend

- Mile post
- Proposed Corridor

N

0 2.5 5 10 Miles

Figure 1

PROJECT LOCATION MAP

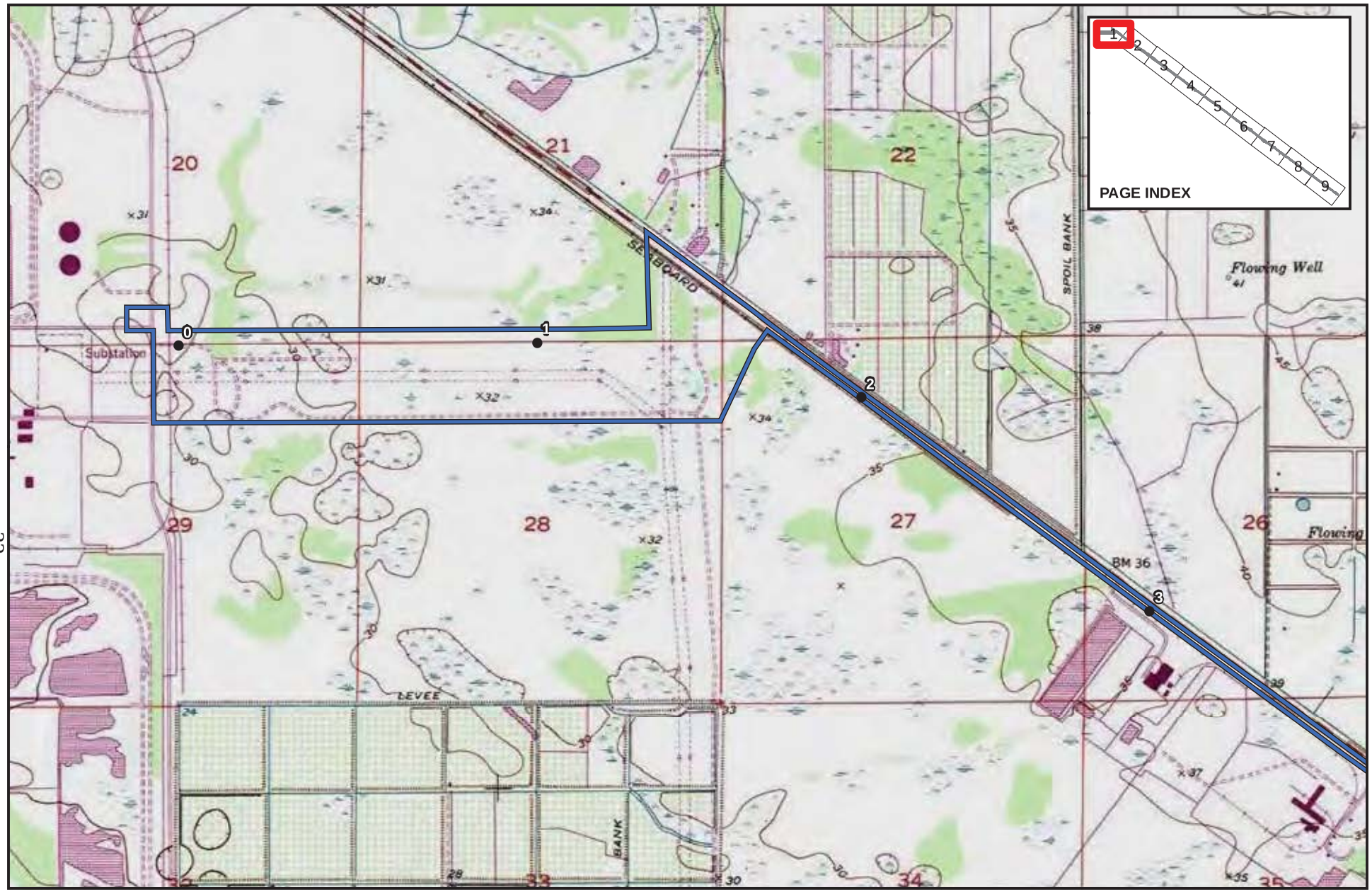
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - FPL,2011; ERSI, 2011; ECT, 2011.

Path: M:\acad\110697\topo.mxd



33

Legend

- Mile Post
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

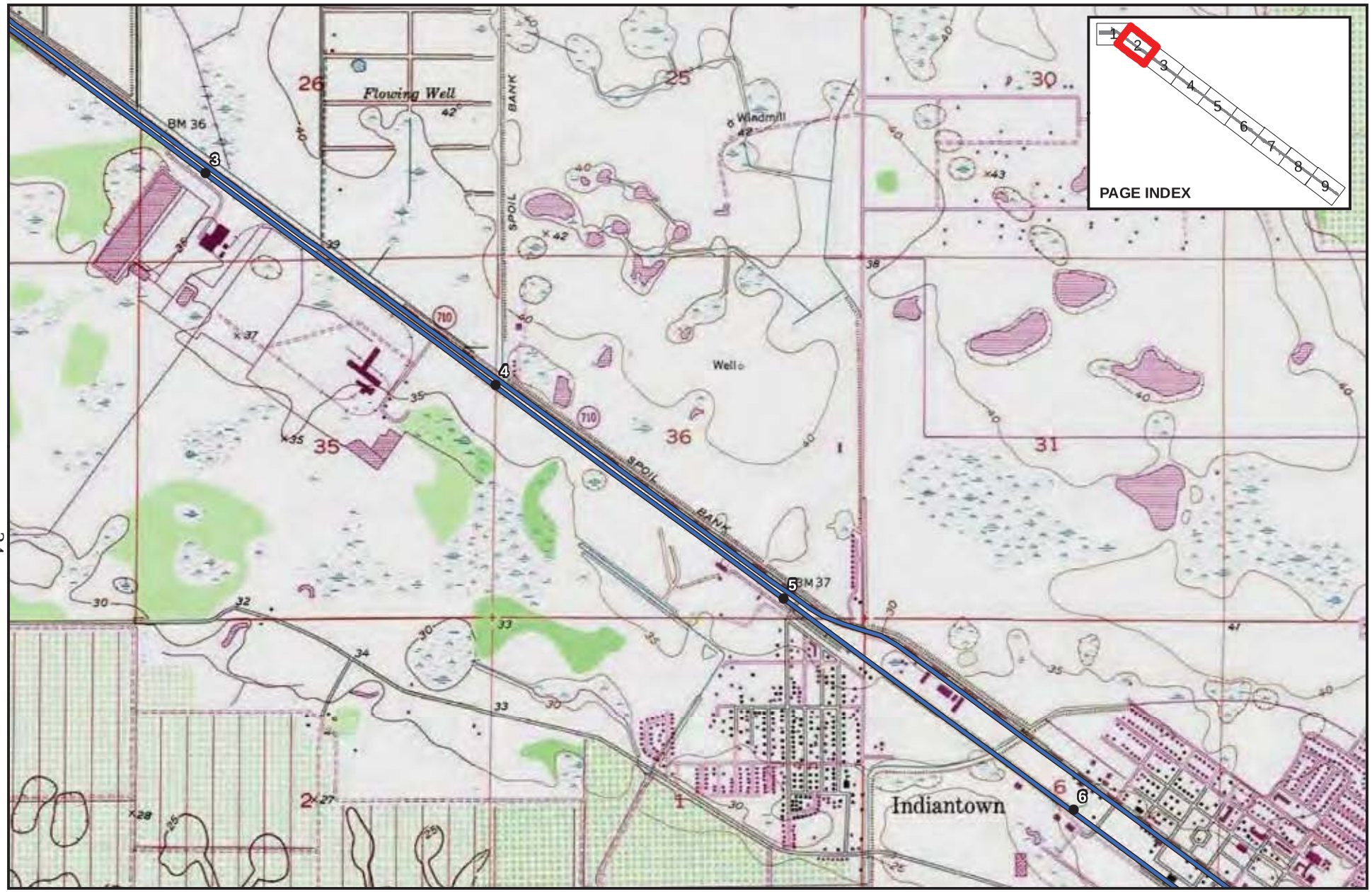
Figure 2
USGS TOPOGRAPHIC QUAD
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - USGS Quads, Delta, West of Delta, Rood, West of Rood, Rivera Beach, Big Mound North, IndianTown, Barly Barber Swamp, Port Mayaca, 1976-1994; FPL,2011; ERSI, 2011; ECT, 2011.

Path: M:\acad\110697\topo.mxd



34

Legend

- Mile Post
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 2
USGS TOPOGRAPHIC QUAD
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - USGS Quads, Delta, West of Delta, Rood, West of Rood, Rivera Beach, Big Mound North, IndianTown, Barly Barber Swamp, Port Mayaca, 1976-1994; FPL,2011; ERSI, 2011; ECT, 2011.

Path: M:\acad\110697\topo.mxd



35

Legend

- Mile Post
- Proposed Corridor

N

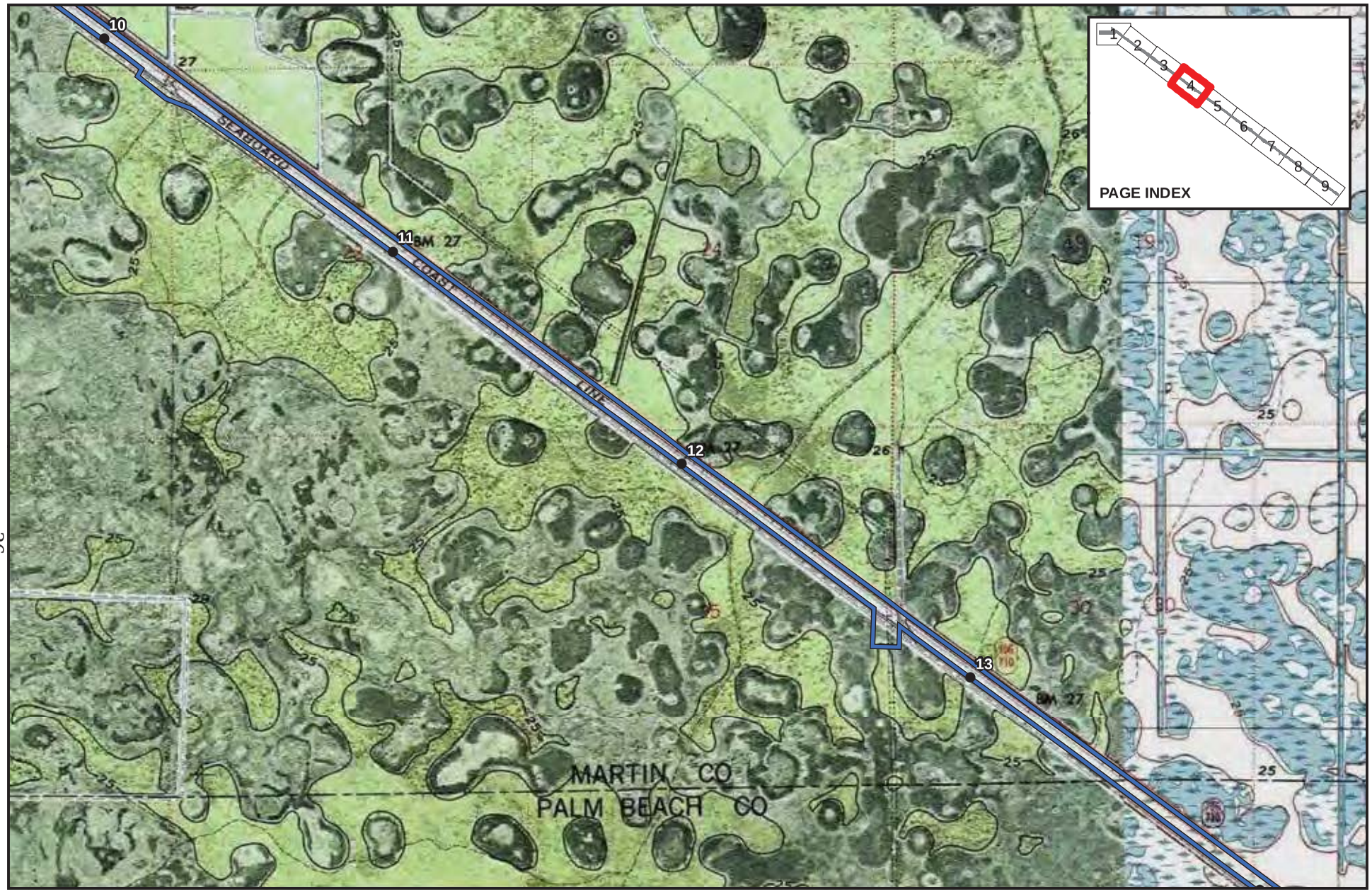
0 1,000 2,000 4,000 Feet

Figure 2
USGS TOPOGRAPHIC QUAD
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - USGS Quads, Delta, West of Delta, Rood, West of Rood, Rivera Beach, Big Mound North, IndianTown, Barly Barber Swamp, Port Mayaca, 1976-1994; FPL,2011; ERSI, 2011; ECT, 2011.

Path: M:\acad\110697\topo.mxd



Legend

- Mile Post
- Proposed Corridor

N

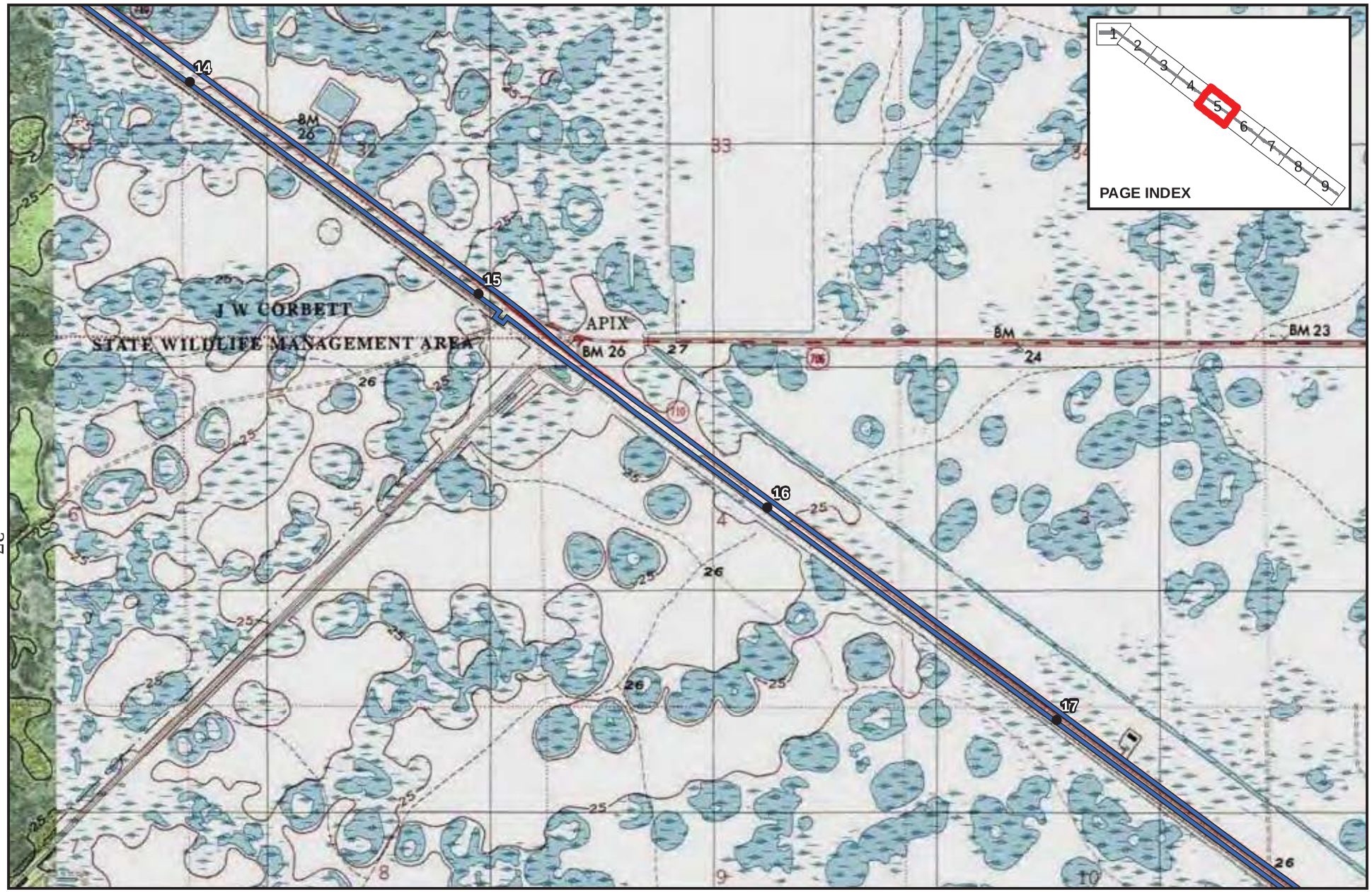
0 1,000 2,000 4,000 Feet

Figure 2
USGS TOPOGRAPHIC QUAD
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - USGS Quads, Delta, West of Delta, Rood, West of Rood, Rivera Beach, Big Mound North, IndianTown, Barly Barber Swamp, Port Mayaca, 1976-1994; FPL,2011; ERSI, 2011; ECT, 2011.

Path: M:\acad\110697\topo.mxd



37

Legend

- 1 Mile Post
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

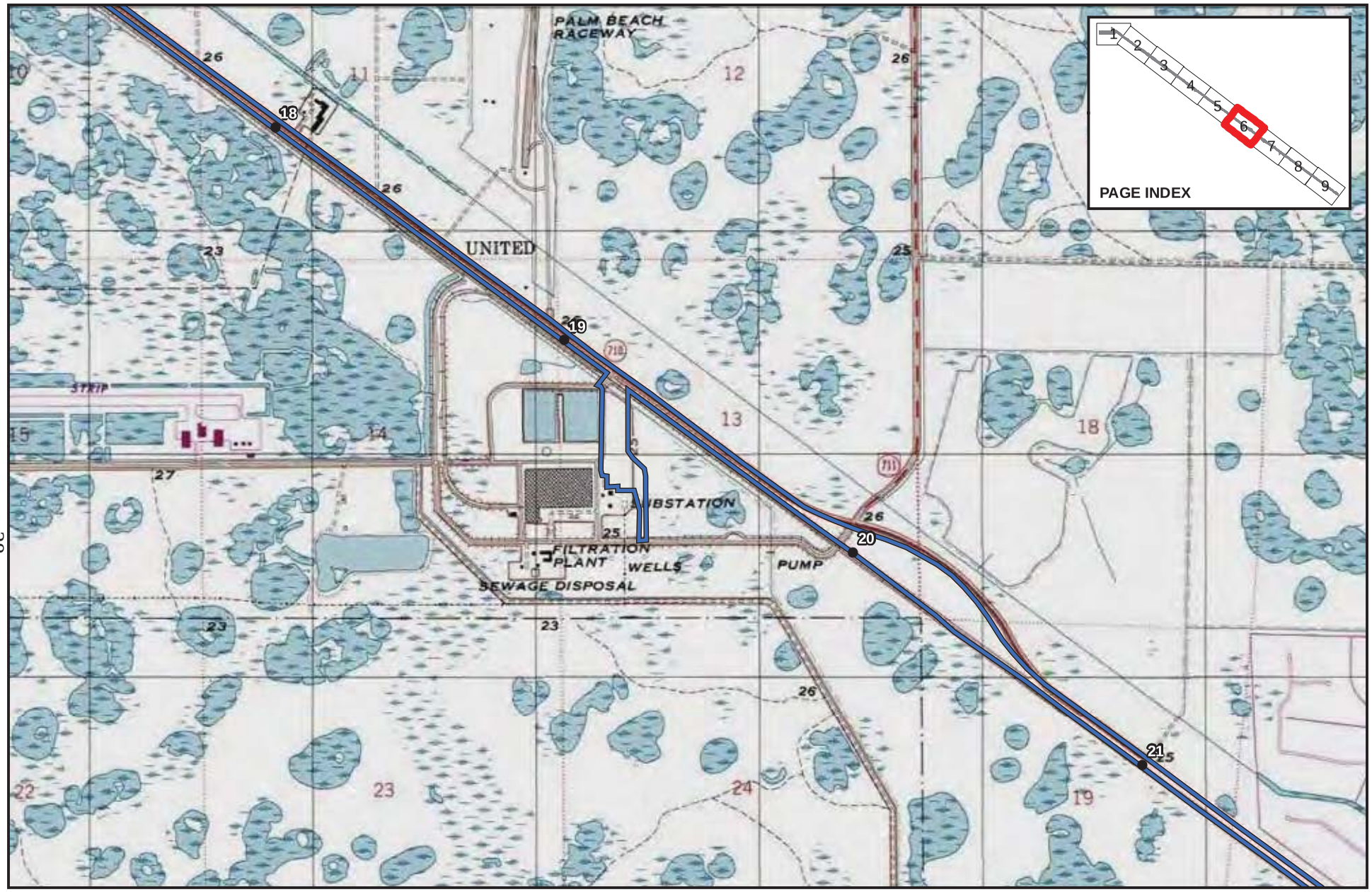
Figure 2
USGS TOPOGRAPHIC QUAD
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - USGS Quads, Delta, West of Delta, Rood, West of Rood, Rivera Beach, Big Mound North, IndianTown, Barly Barber Swamp, Port Mayaca, 1976-1994; FPL,2011; ERSI, 2011; ECT, 2011.

Path: M:\acad\110697\topo.mxd



38

Legend

- Mile Post
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 2
USGS TOPOGRAPHIC QUAD
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - USGS Quads, Delta, West of Delta, Rood, West of Rood, Rivera Beach, Big Mound North, IndianTown, Barly Barber Swamp, Port Mayaca, 1976-1994; FPL,2011; ERSI, 2011; ECT, 2011.

Path: M:\acad\110697\topo.mxd



Legend

- Mile Post
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 2
USGS TOPOGRAPHIC QUAD
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - USGS Quads, Delta, West of Delta, Rood, West of Rood, Rivera Beach, Big Mound North, IndianTown, Barly Barber Swamp, Port Mayaca, 1976-1994; FPL,2011; ERSI, 2011; ECT, 2011.

Path: M:\acad\110697\topo.mxd



40

Legend

- Mile Post
- Proposed Corridor

N

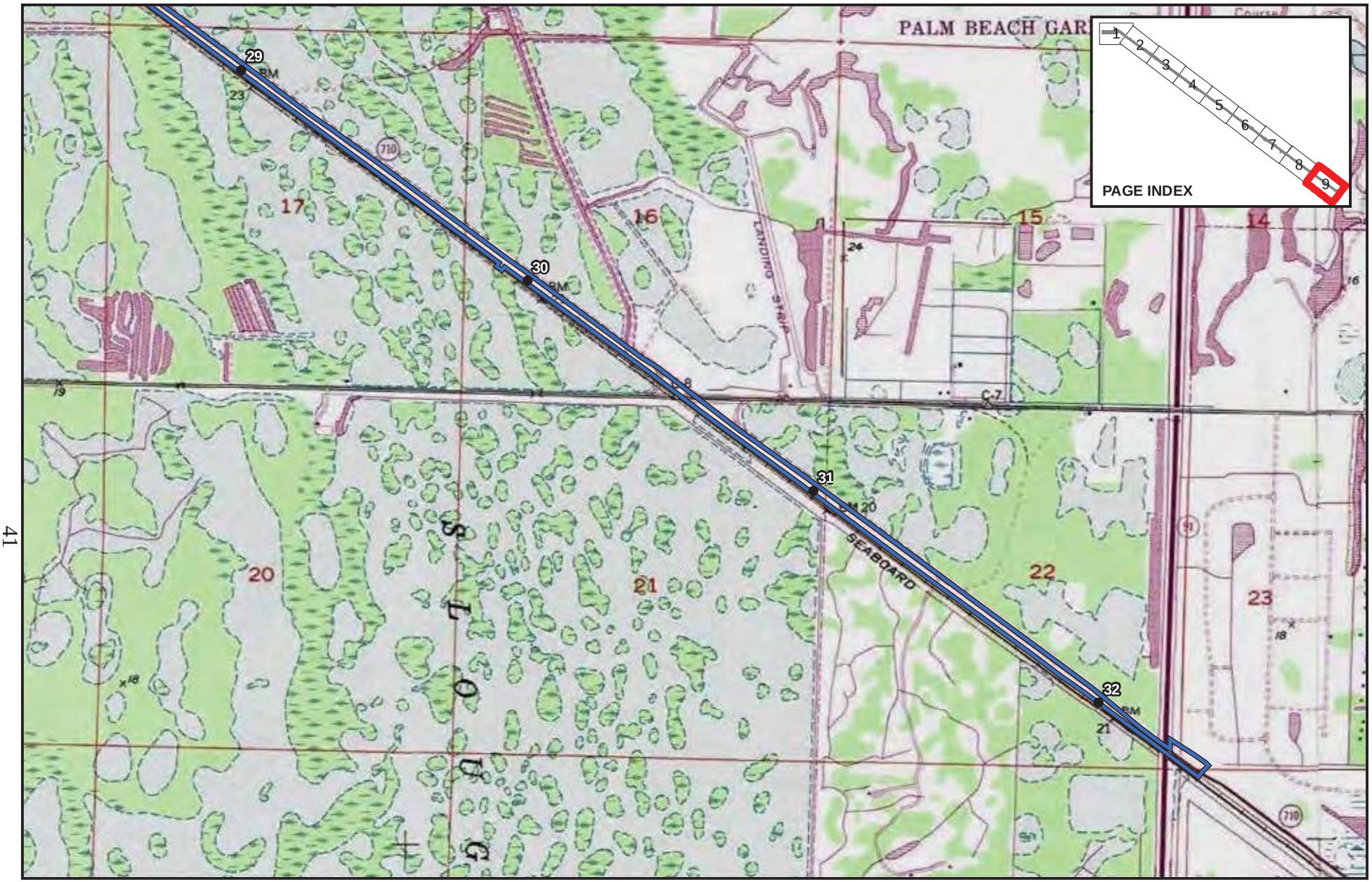
0 1,000 2,000 4,000 Feet

Figure 2
USGS TOPOGRAPHIC QUAD
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - USGS Quads, Delta, West of Delta, Rood, West of Rood, Rivera Beach, Big Mound North, IndianTown, Barly Barber Swamp, Port Mayaca, 1976-1994; FPL,2011; ERSI, 2011; ECT, 2011.

Path: M:\acad\110697\topo.mxd



41

Legend

- Mile Post
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 2
USGS TOPOGRAPHIC QUAD
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - USGS Quads, Delta, West of Delta, Rood, West of Rood, Rivera Beach, Big Mound North, IndianTown, Barly Barber Swamp, Port Mayaca, 1976-1994; FPL,2011; ERSI, 2011; ECT, 2011.

Path: M:\acad\110697\Vegkey.mxd



Legend

Map Sheets

Proposed Corridor

N

0 1.5 3 6 Miles

Figure 3

LAND USE MAP - KEY

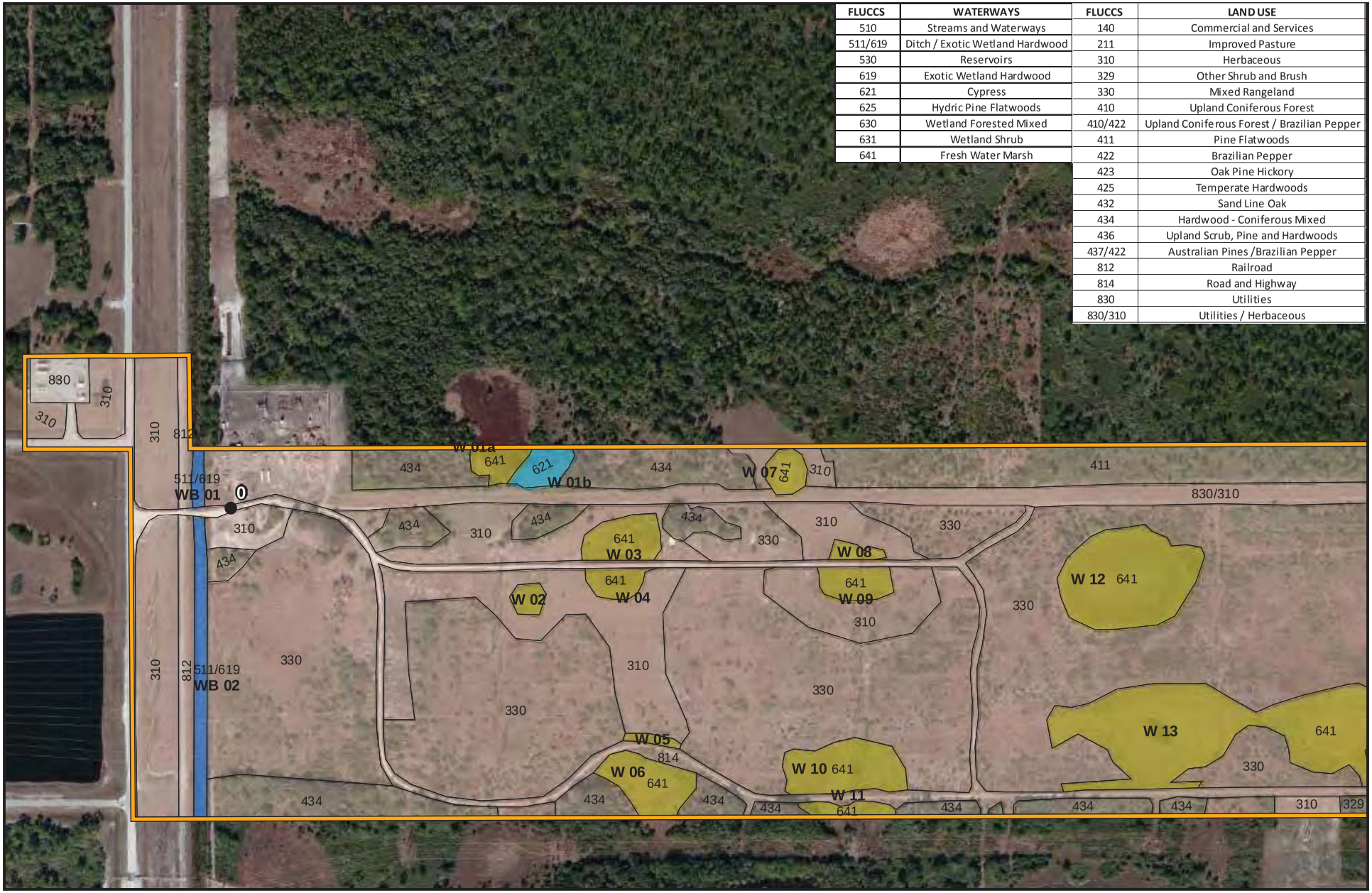
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

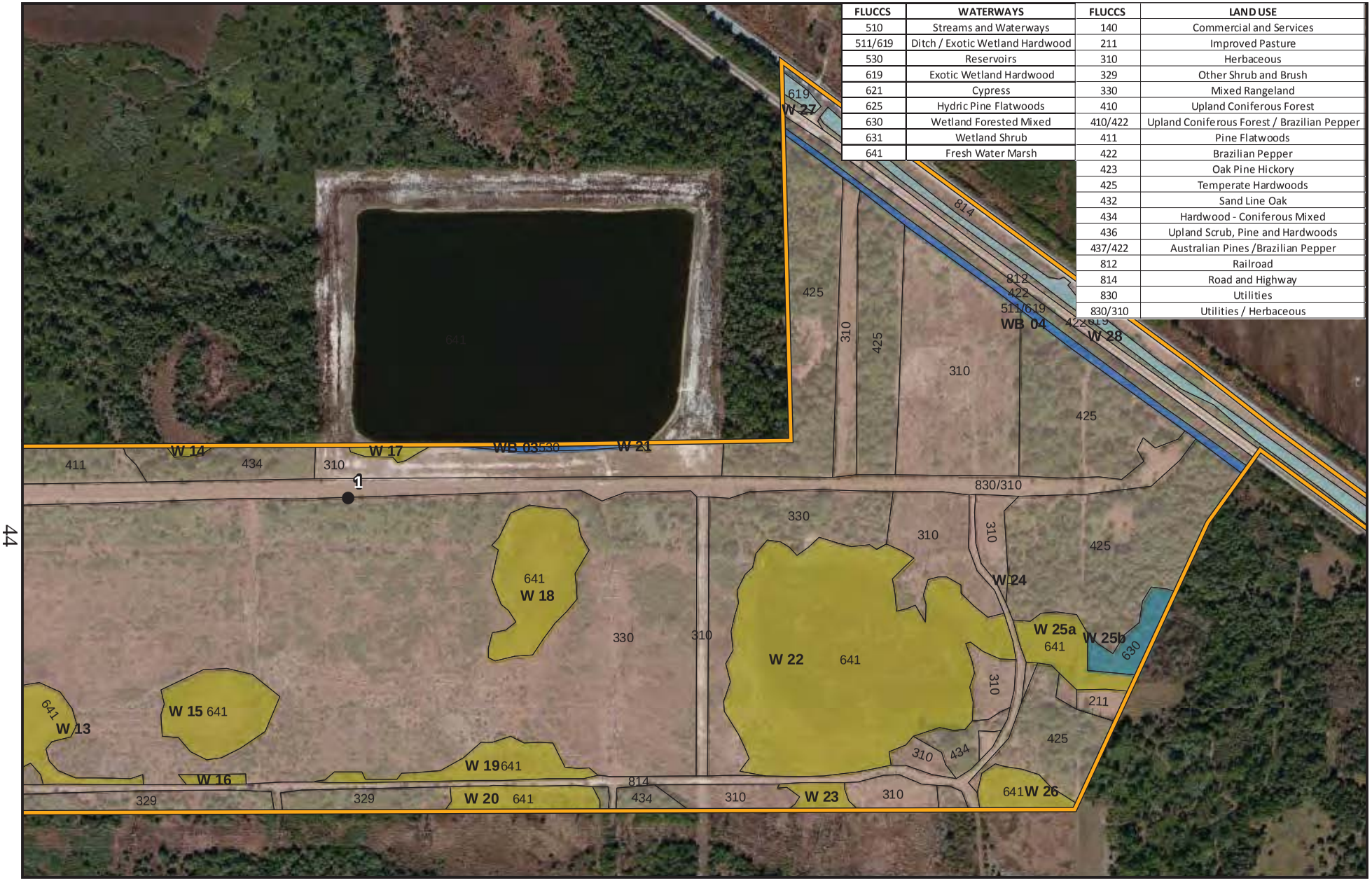
0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 1 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

1 Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

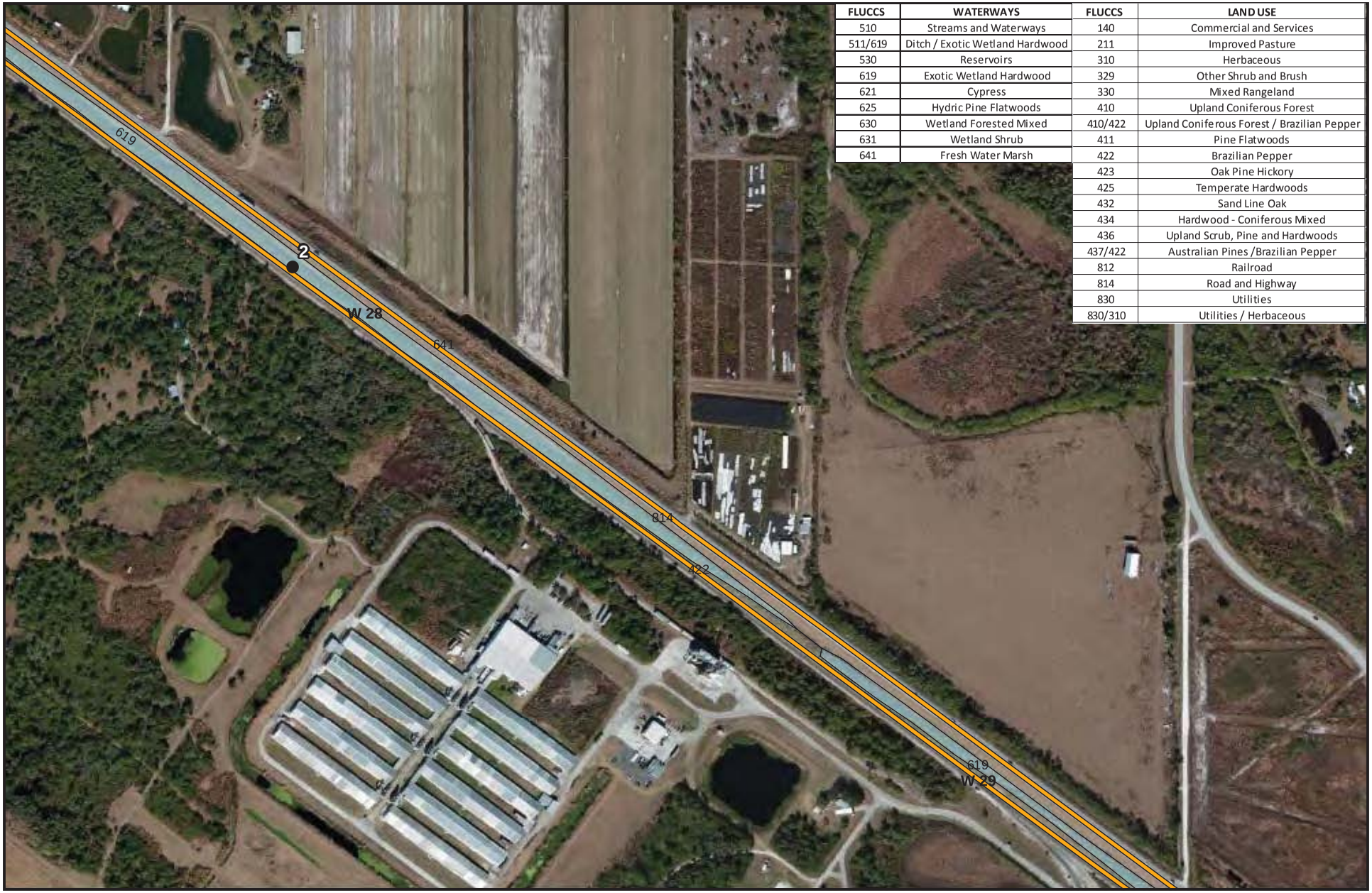
Figure 3
LAND USE MAP - SHEET 2 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

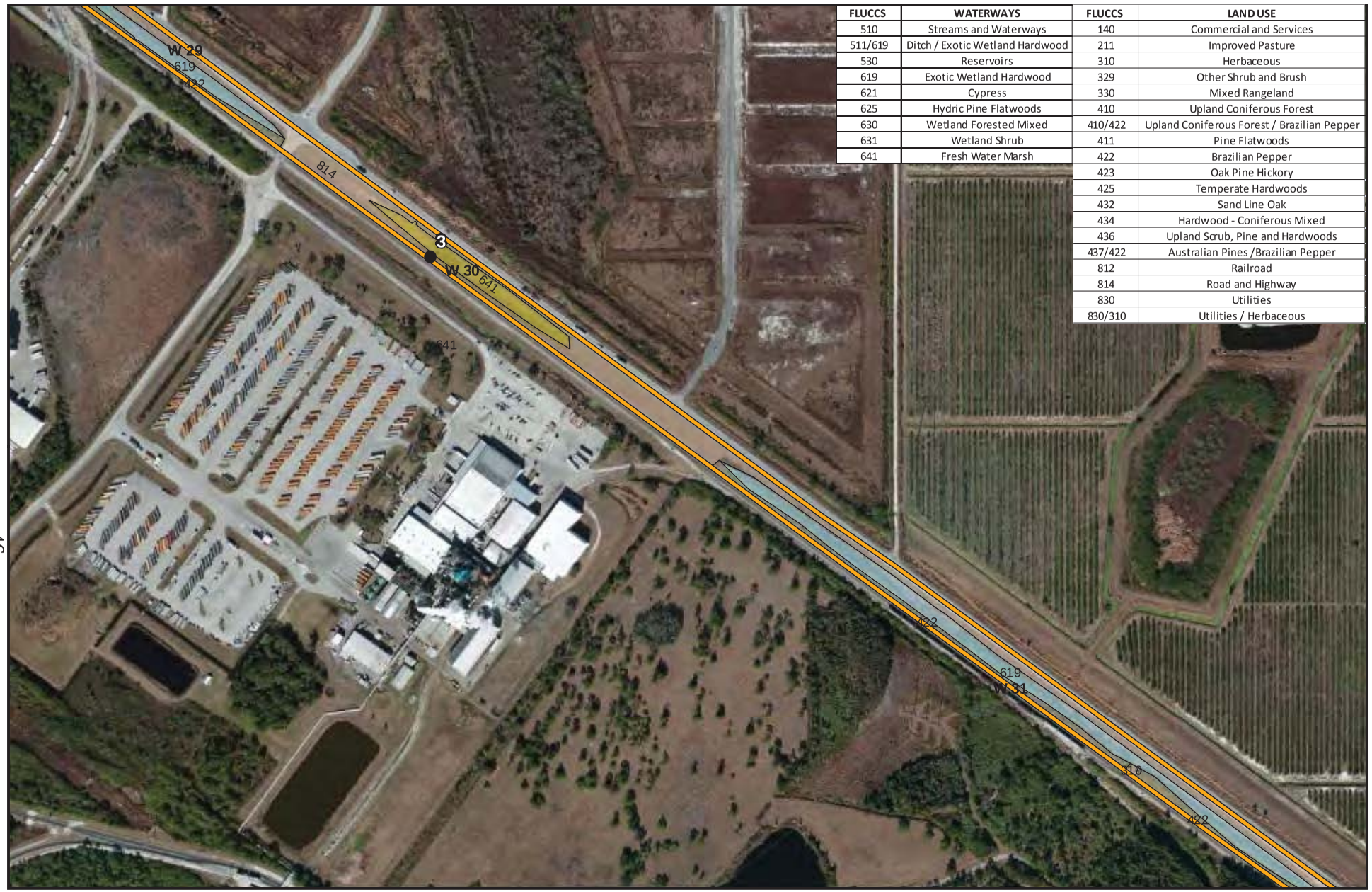
0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 3 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 4 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 5 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 6 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

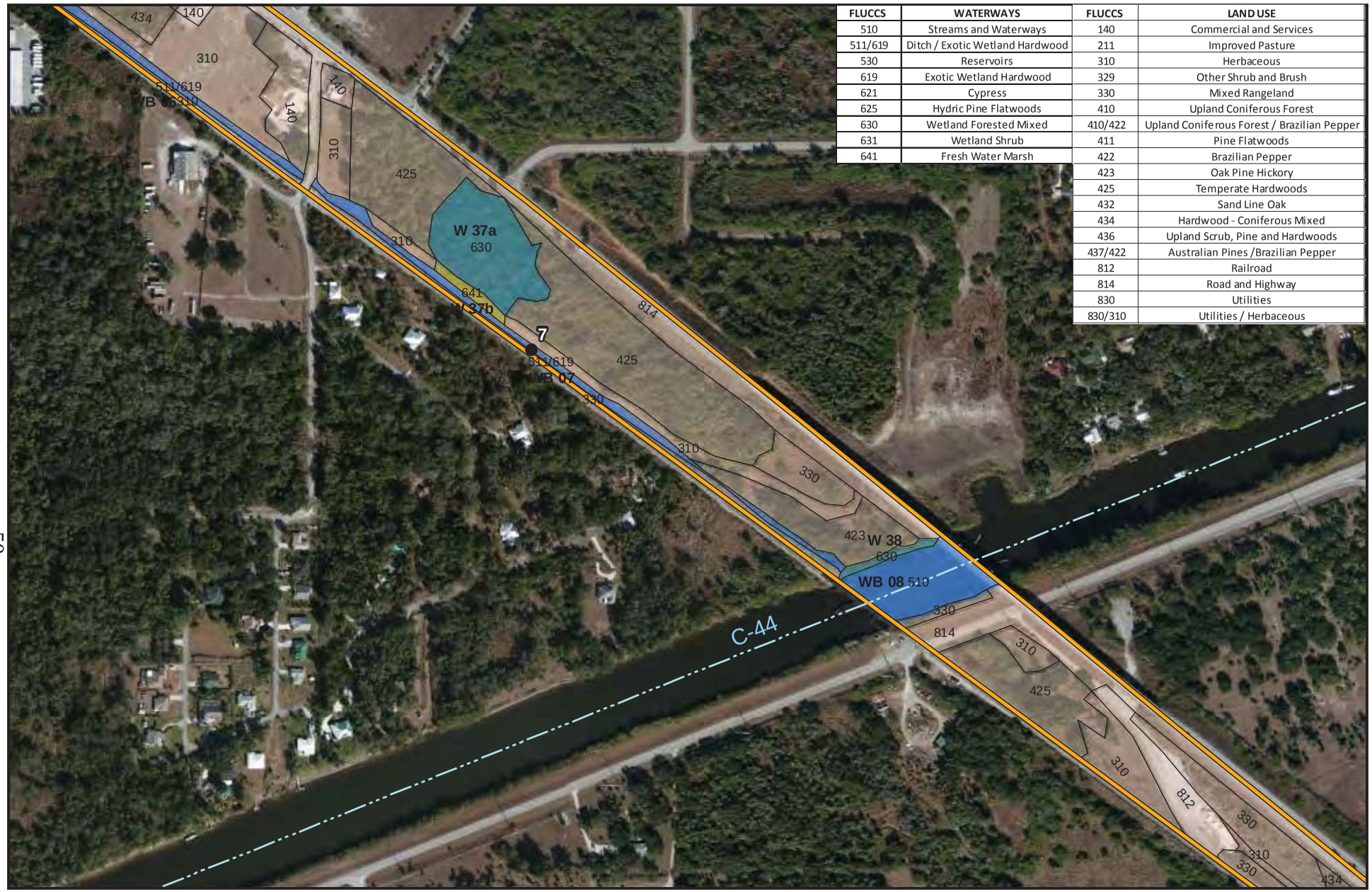
0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 7 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

50

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

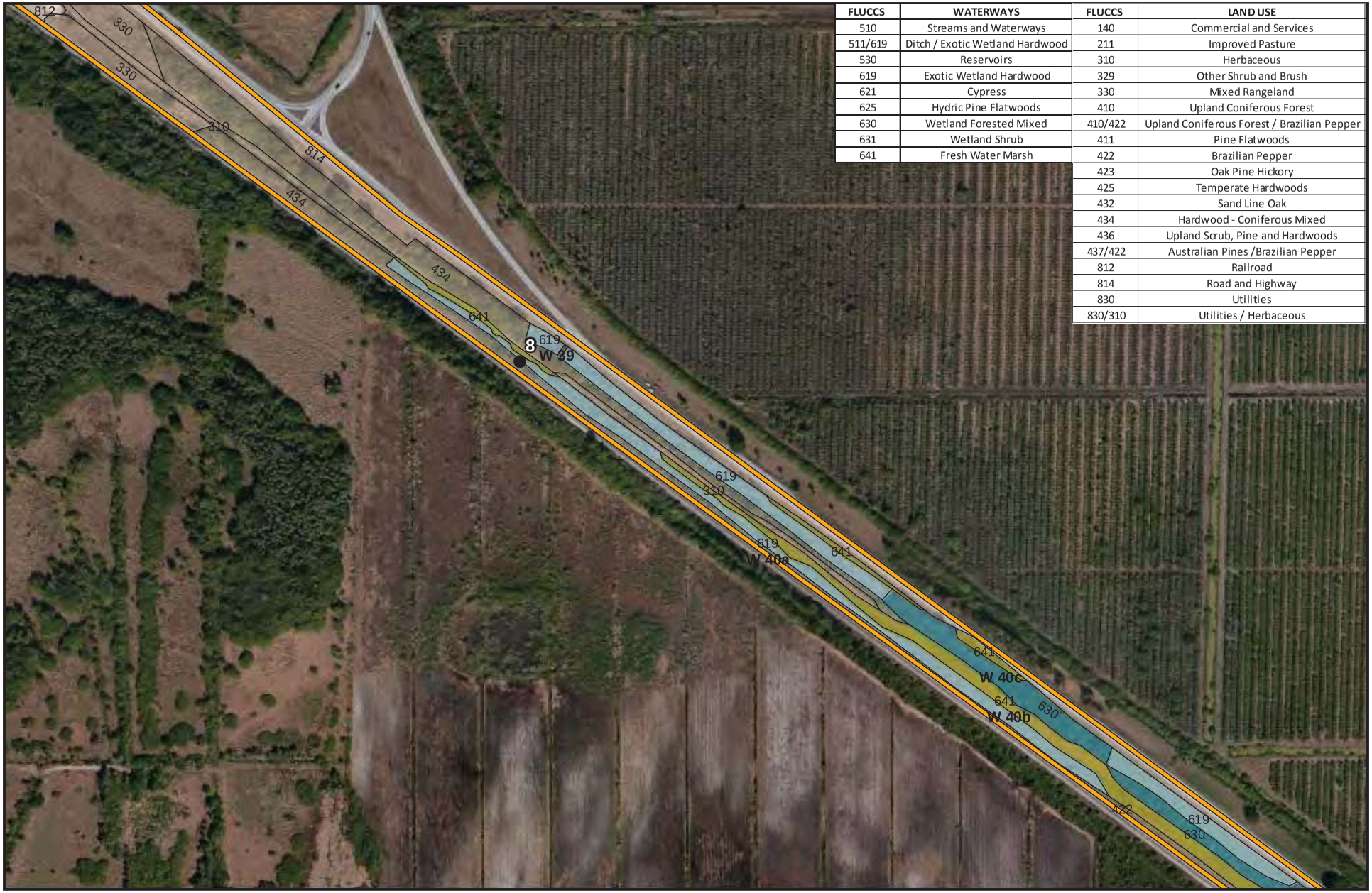
0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 8 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

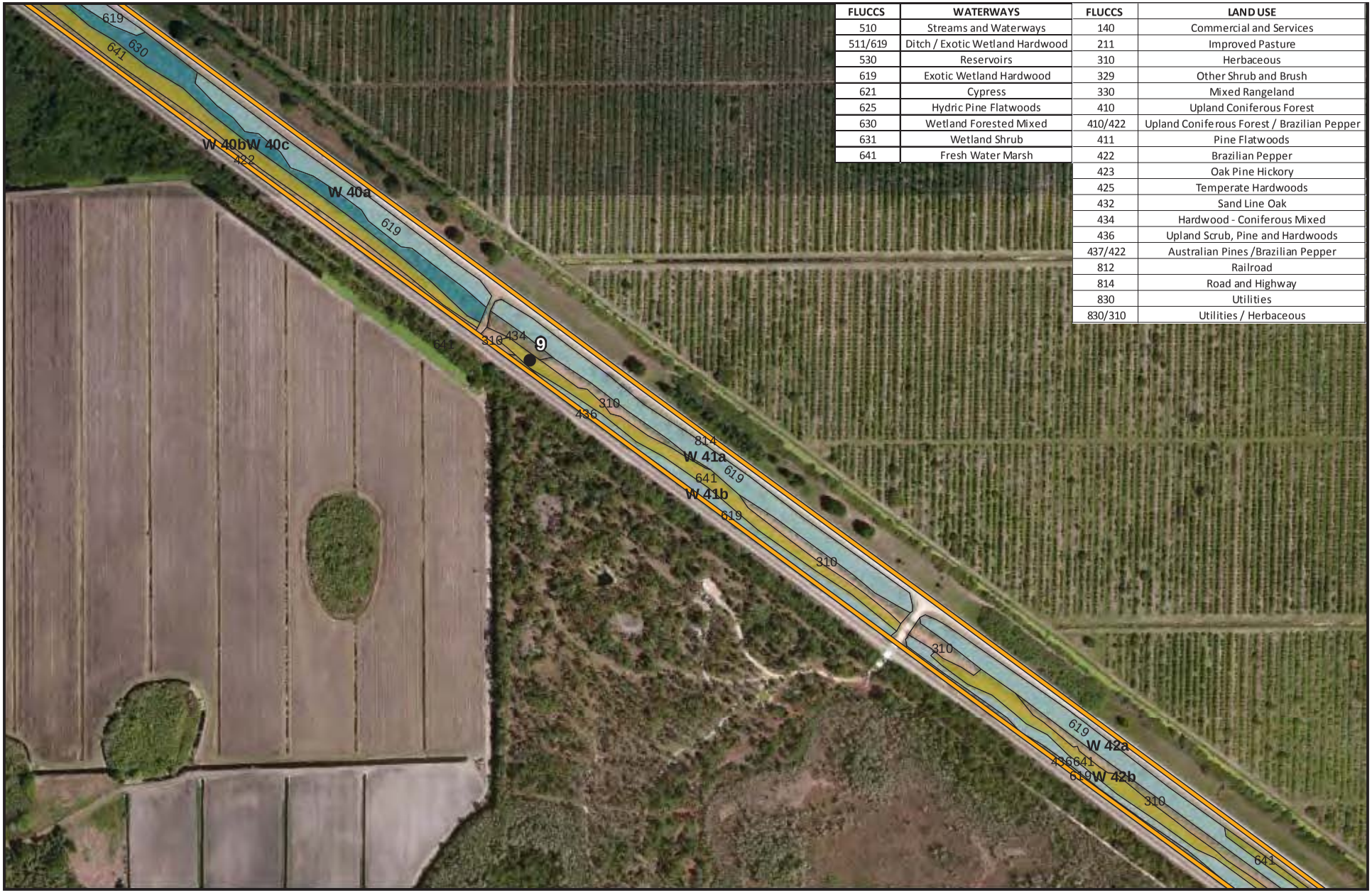
0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 9 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

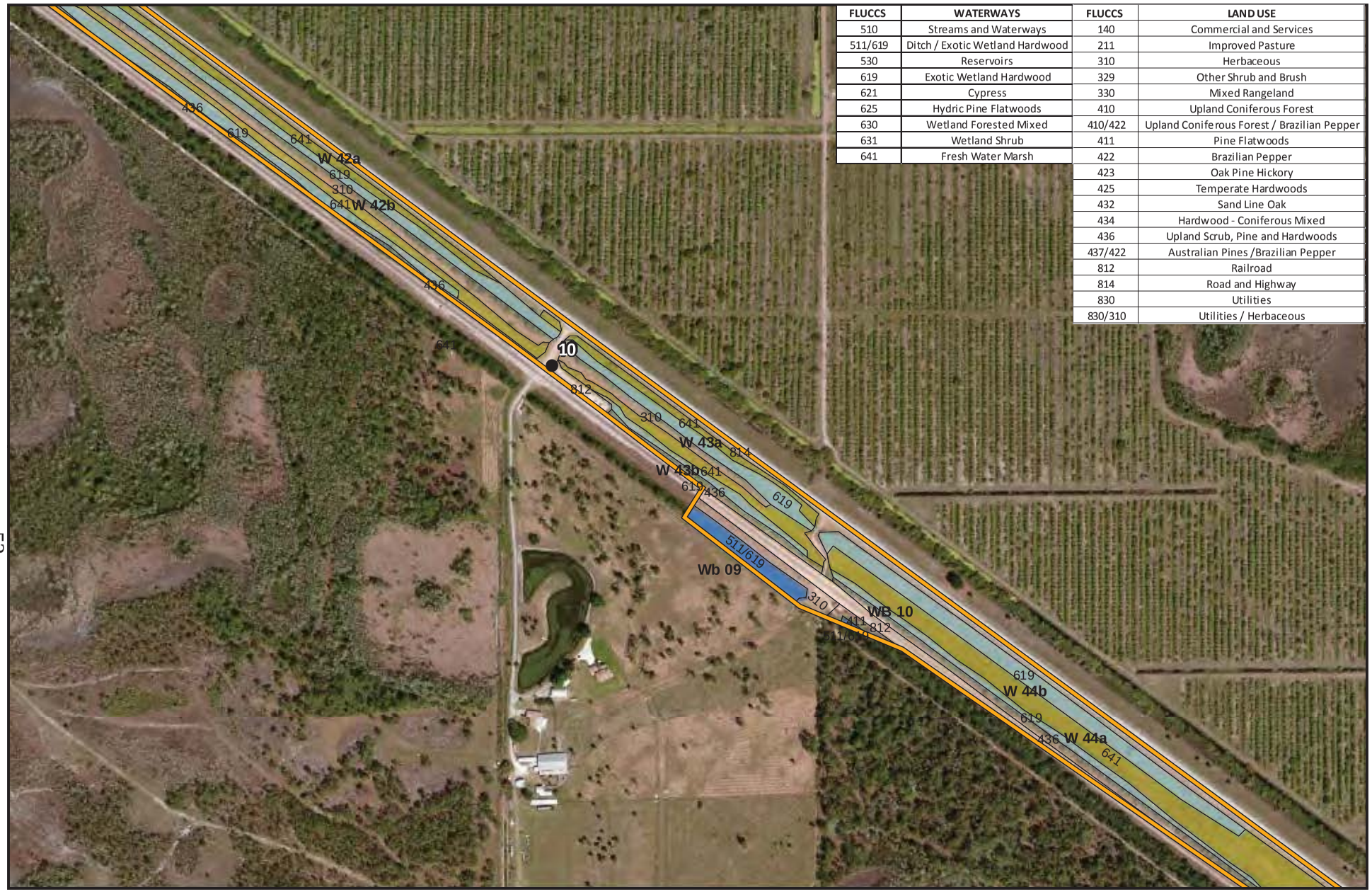
Figure 3
LAND USE MAP - SHEET 10 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 11 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 12 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd

FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous



55

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

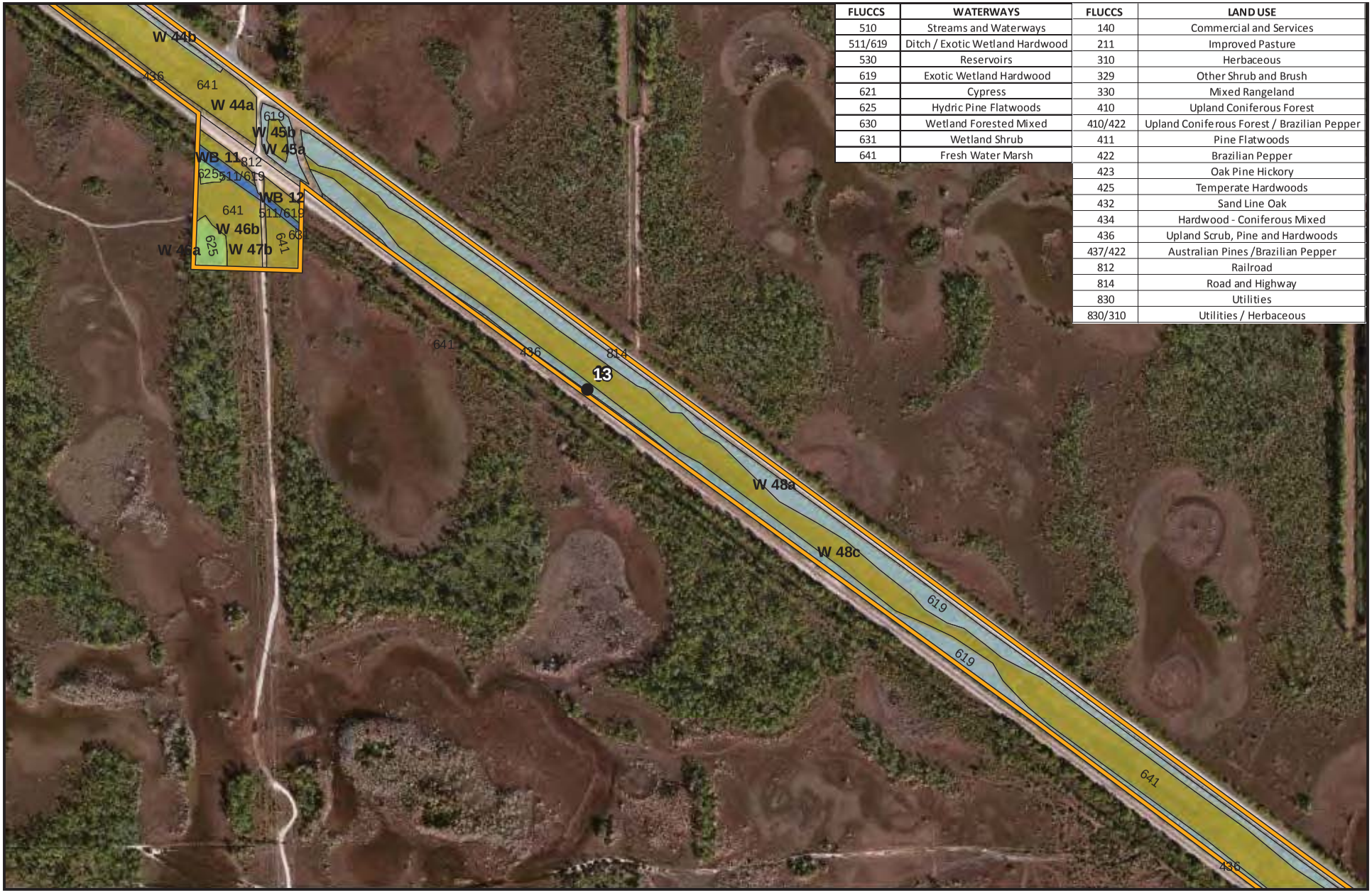
0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 13 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 14 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 15 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 16 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 17 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd

FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous



60

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 18 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 19 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

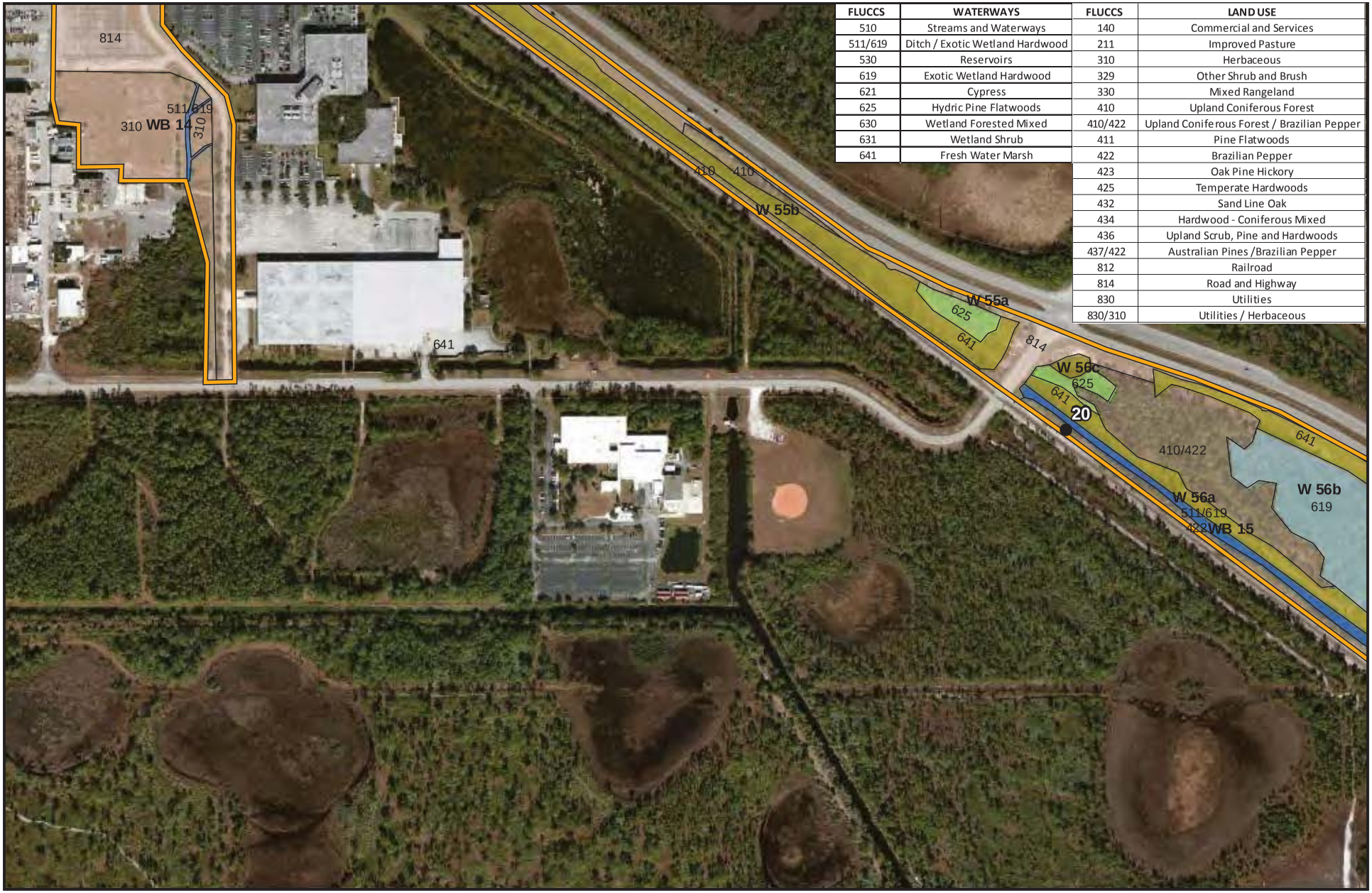
0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 20 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

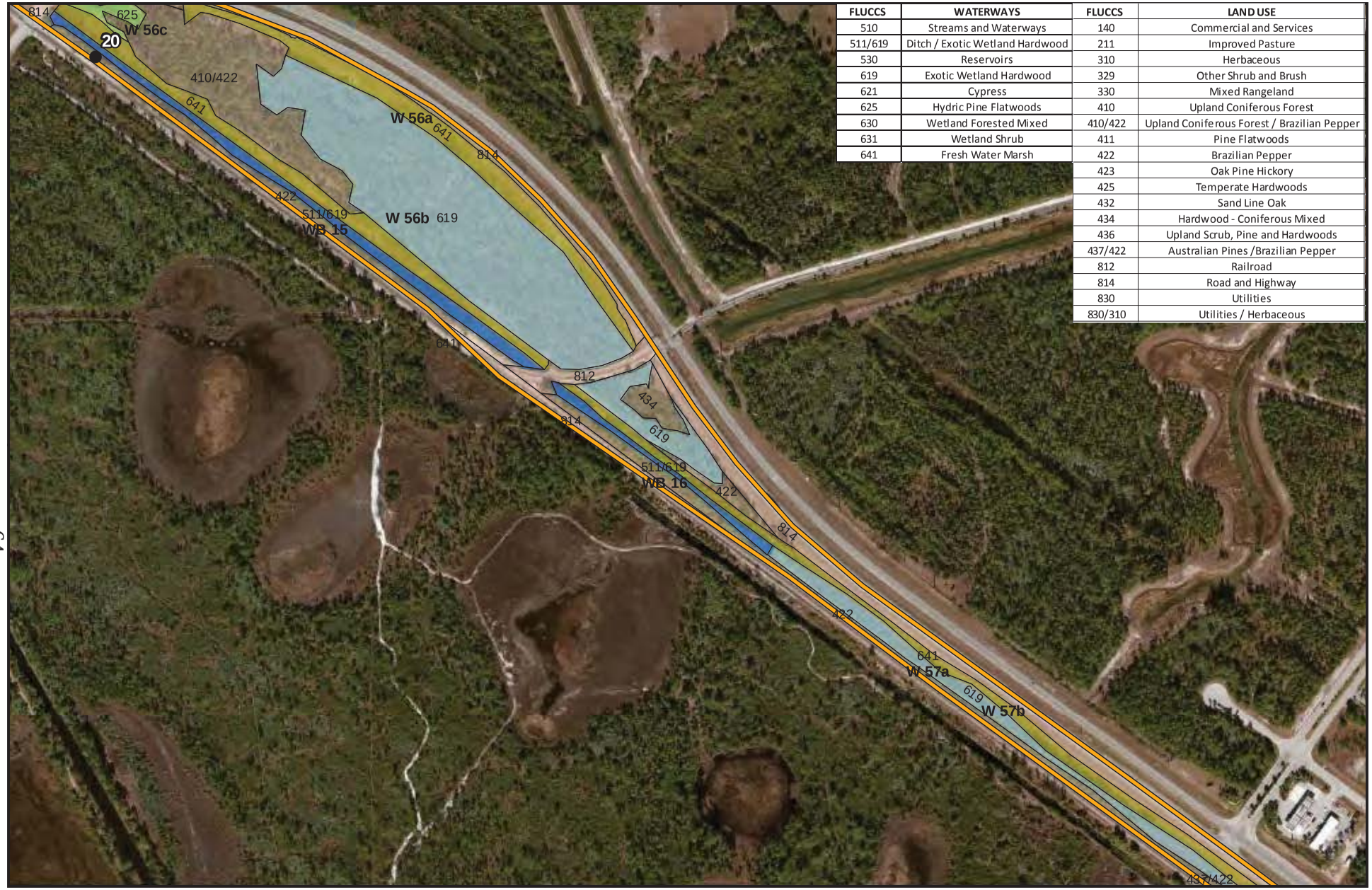
0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 21 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 22 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

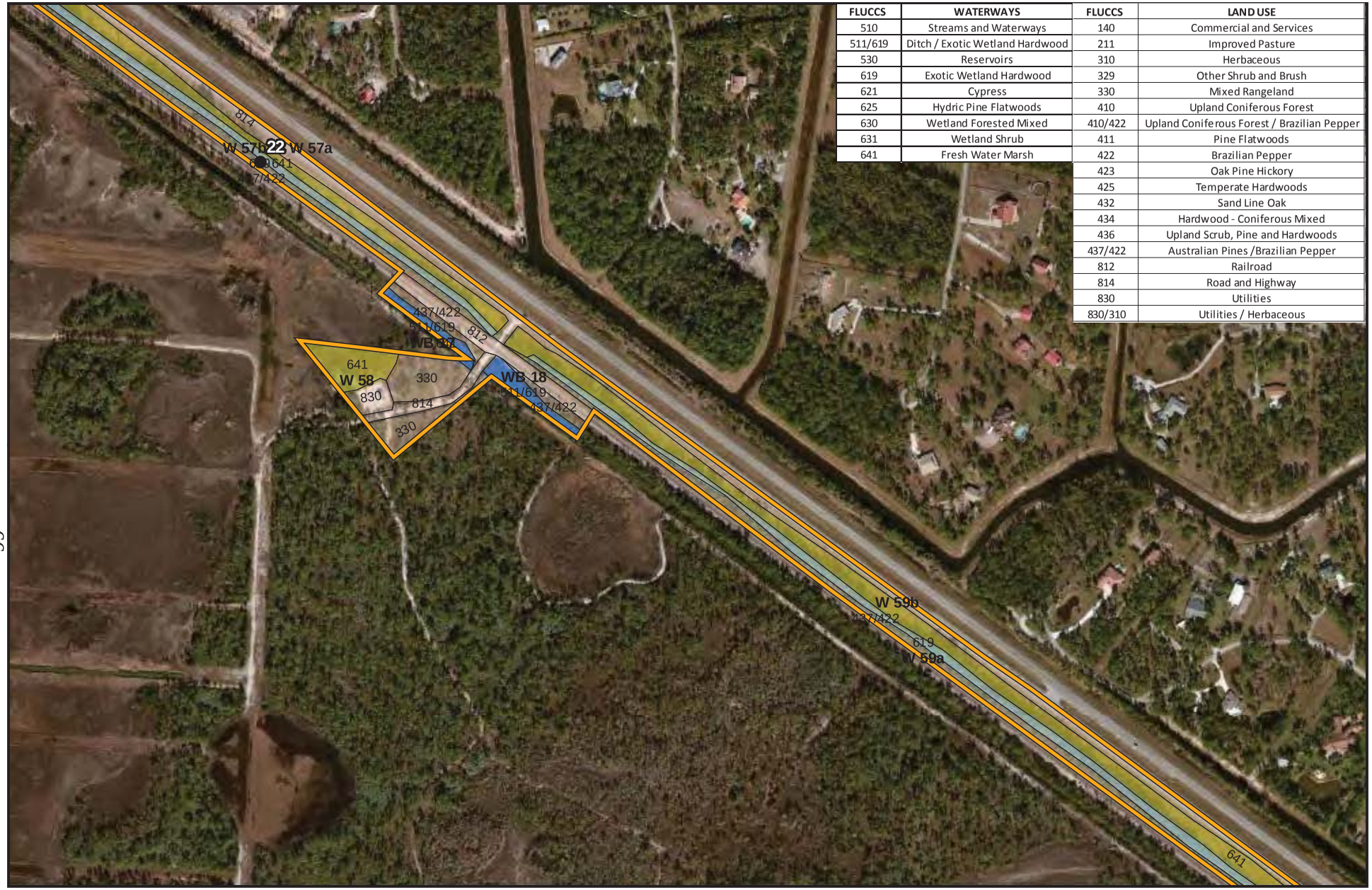
0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 23 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

99

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 24 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 25 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 26 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

69

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 27 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 28 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 29 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 30 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 31 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 32 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

75

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 33 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Veg.mxd



FLUCCS	WATERWAYS
510	Streams and Waterways
511/619	Ditch / Exotic Wetland Hardwood
530	Reservoirs
619	Exotic Wetland Hardwood
621	Cypress
625	Hydric Pine Flatwoods
630	Wetland Forested Mixed
631	Wetland Shrub
641	Fresh Water Marsh

FLUCCS	LAND USE
140	Commercial and Services
211	Improved Pasture
310	Herbaceous
329	Other Shrub and Brush
330	Mixed Rangeland
410	Upland Coniferous Forest
410/422	Upland Coniferous Forest / Brazilian Pepper
411	Pine Flatwoods
422	Brazilian Pepper
423	Oak Pine Hickory
425	Temperate Hardwoods
432	Sand Line Oak
434	Hardwood - Coniferous Mixed
436	Upland Scrub, Pine and Hardwoods
437/422	Australian Pines /Brazilian Pepper
812	Railroad
814	Road and Highway
830	Utilities
830/310	Utilities / Herbaceous

Legend

Mile Post
Water Body
619
621
625
630
631
641
Land Use
Proposed Corridor

N

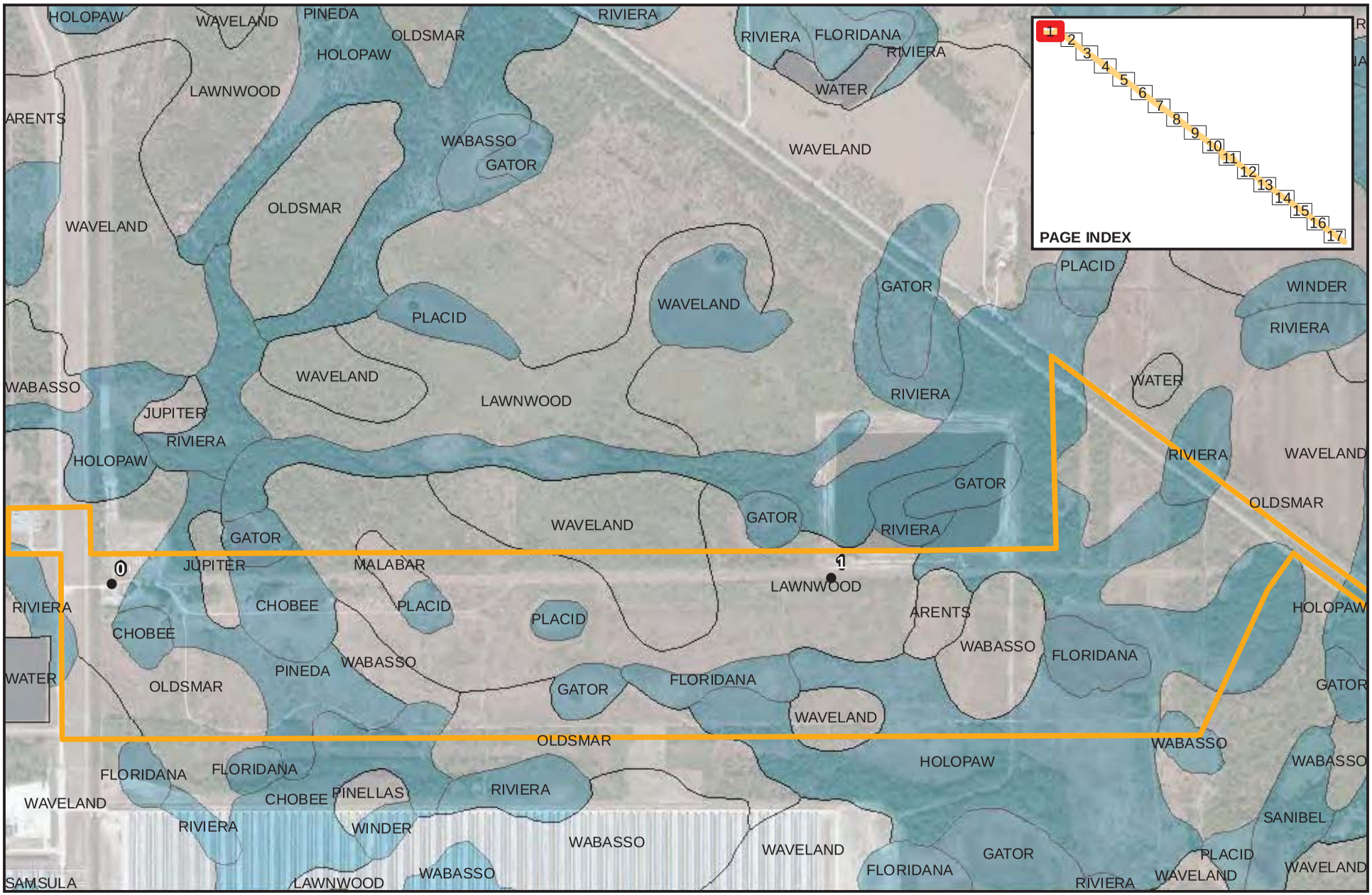
0 250 500 1,000 Feet

Figure 3
LAND USE MAP - SHEET 34 of 34
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



77

Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

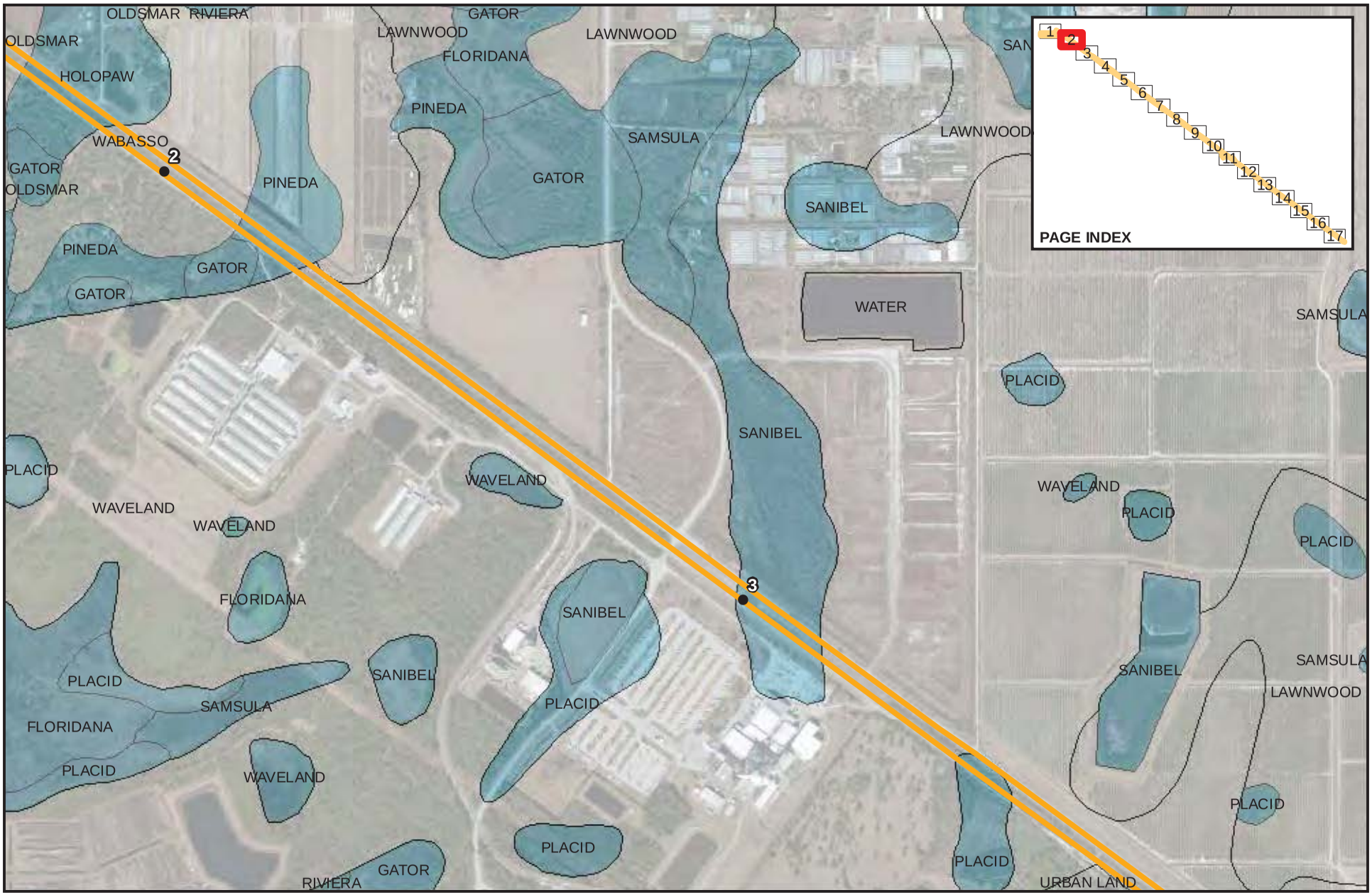
0 250 500 1,000 Feet

Figure 4
SOILS MAP - SHEET 1 of 17
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



78

Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

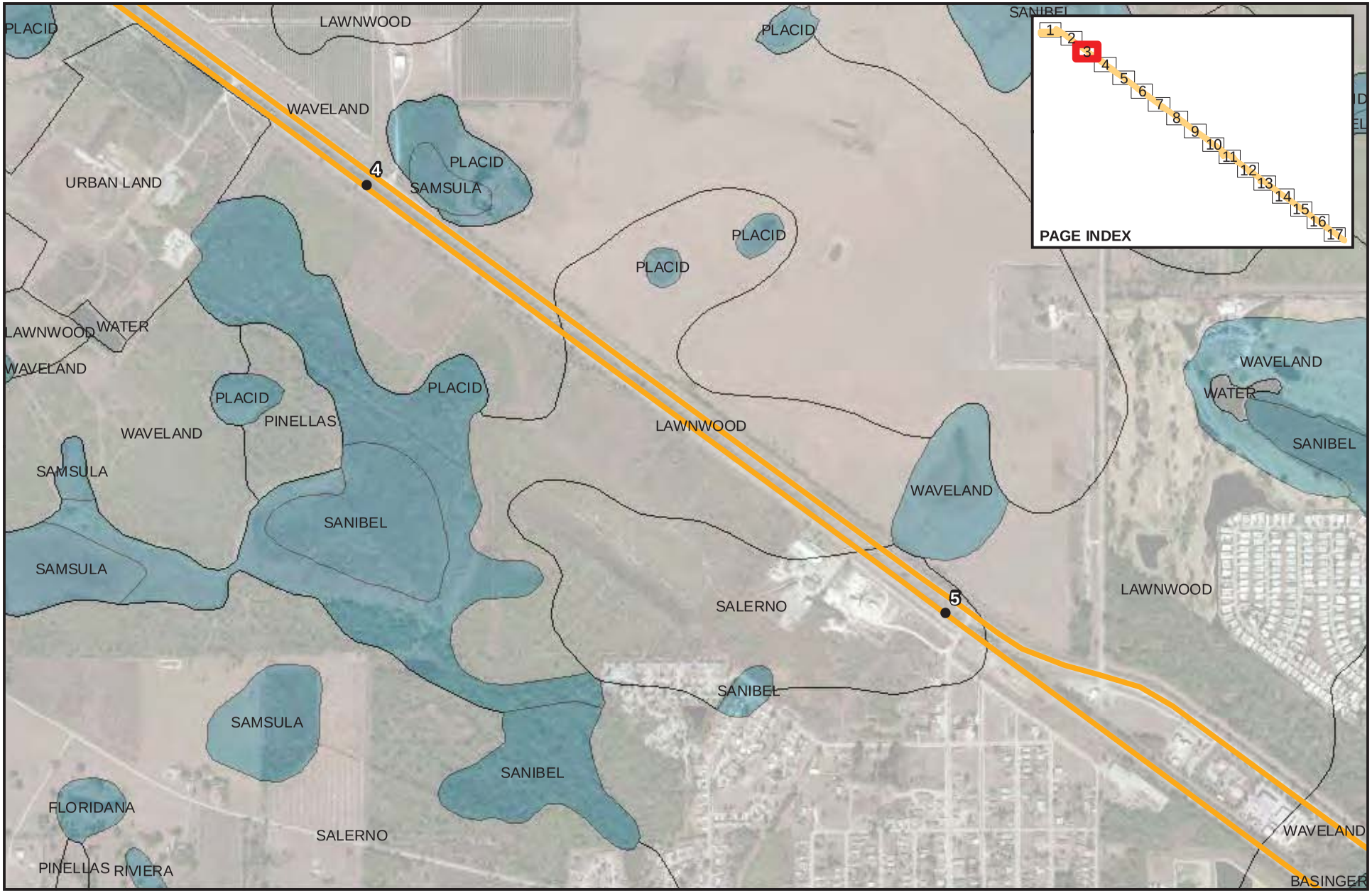
Figure 4
SOILS MAP - SHEET 2 of 17
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



79

Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

Figure 4

SOILS MAP - SHEET 3 of 17

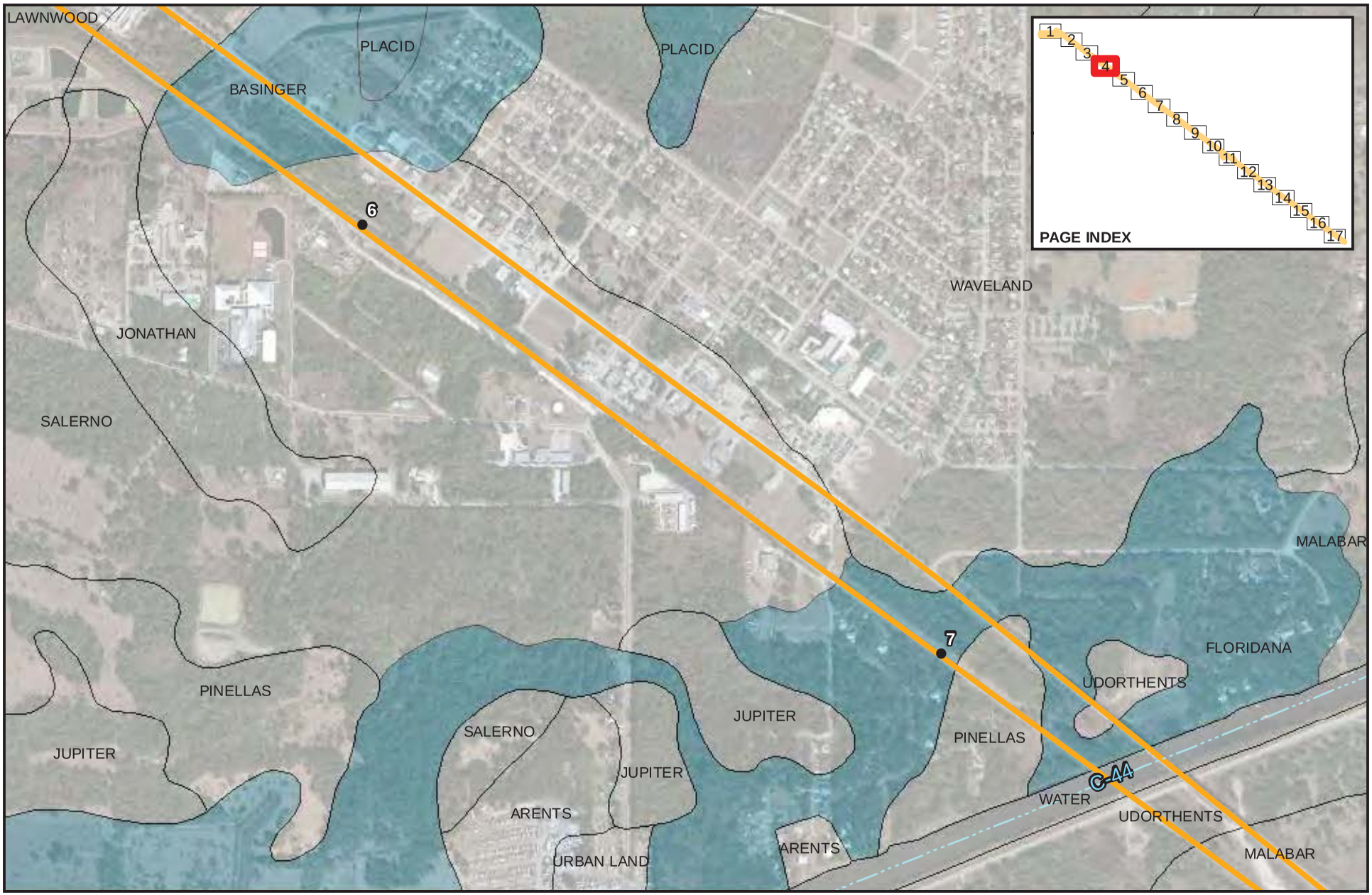
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



80

Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

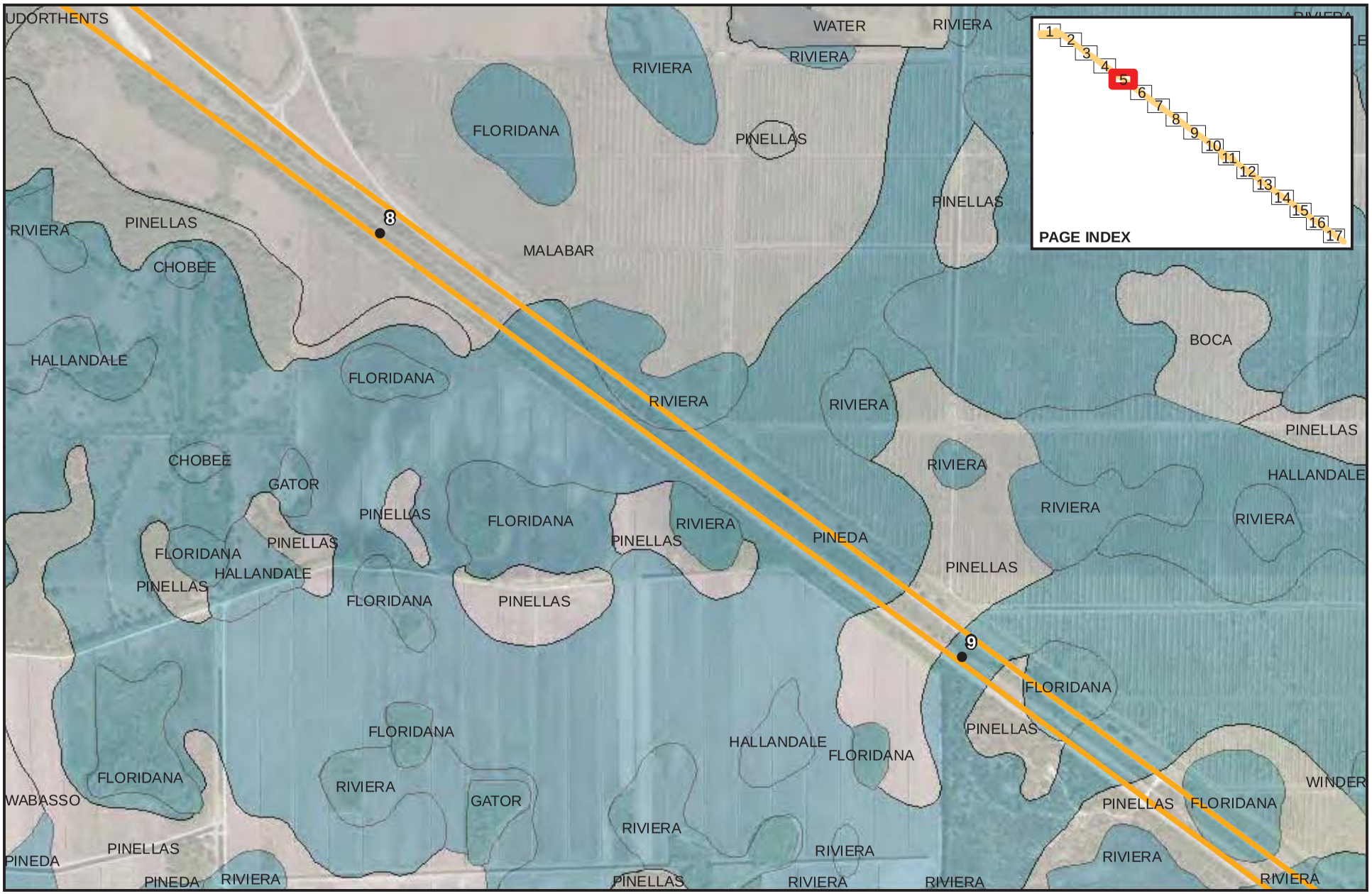
Figure 4
SOILS MAP - SHEET 4 of 17
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



81

Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

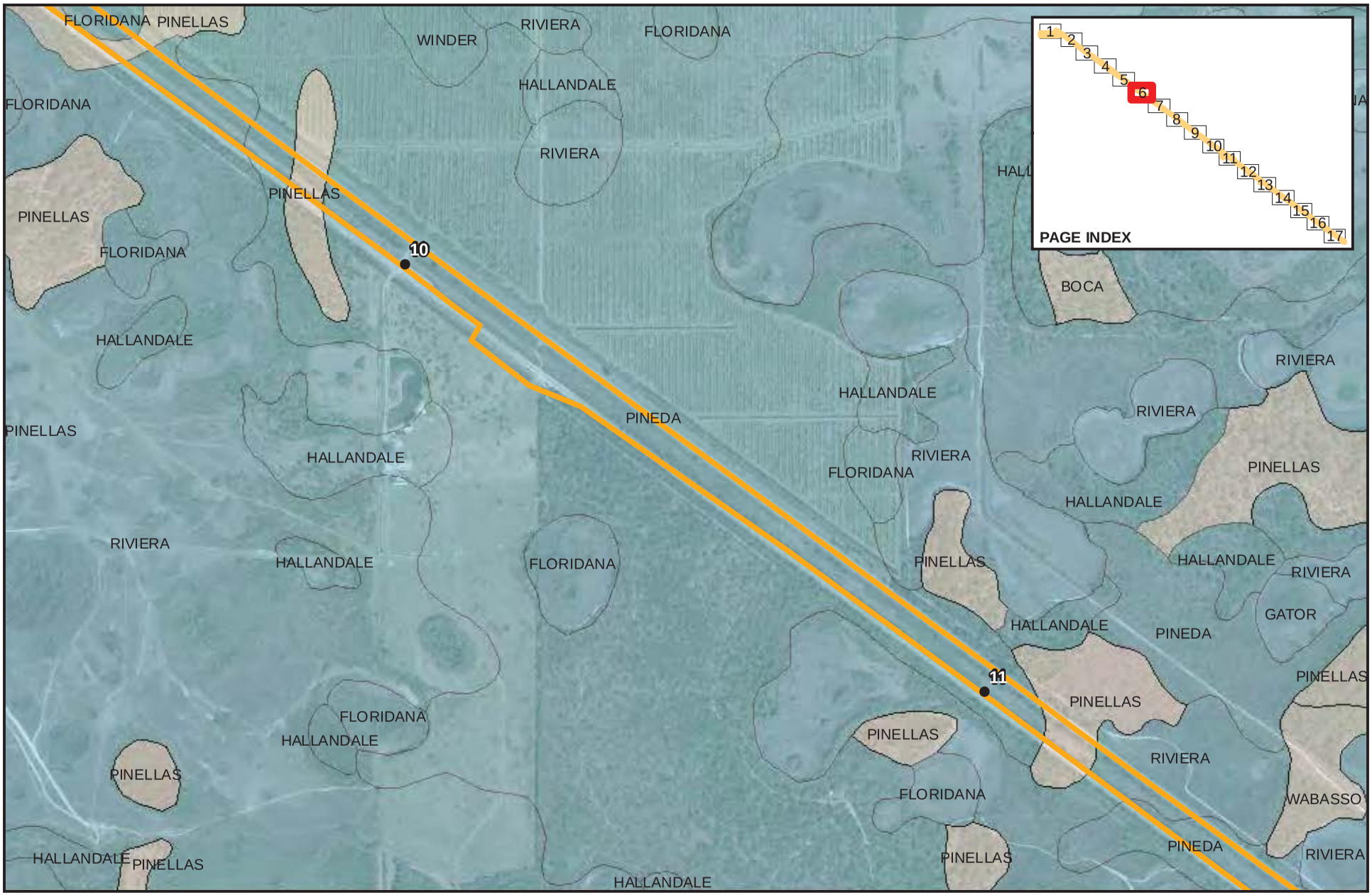
Figure 4
SOILS MAP - SHEET 5 of 17
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



82

Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

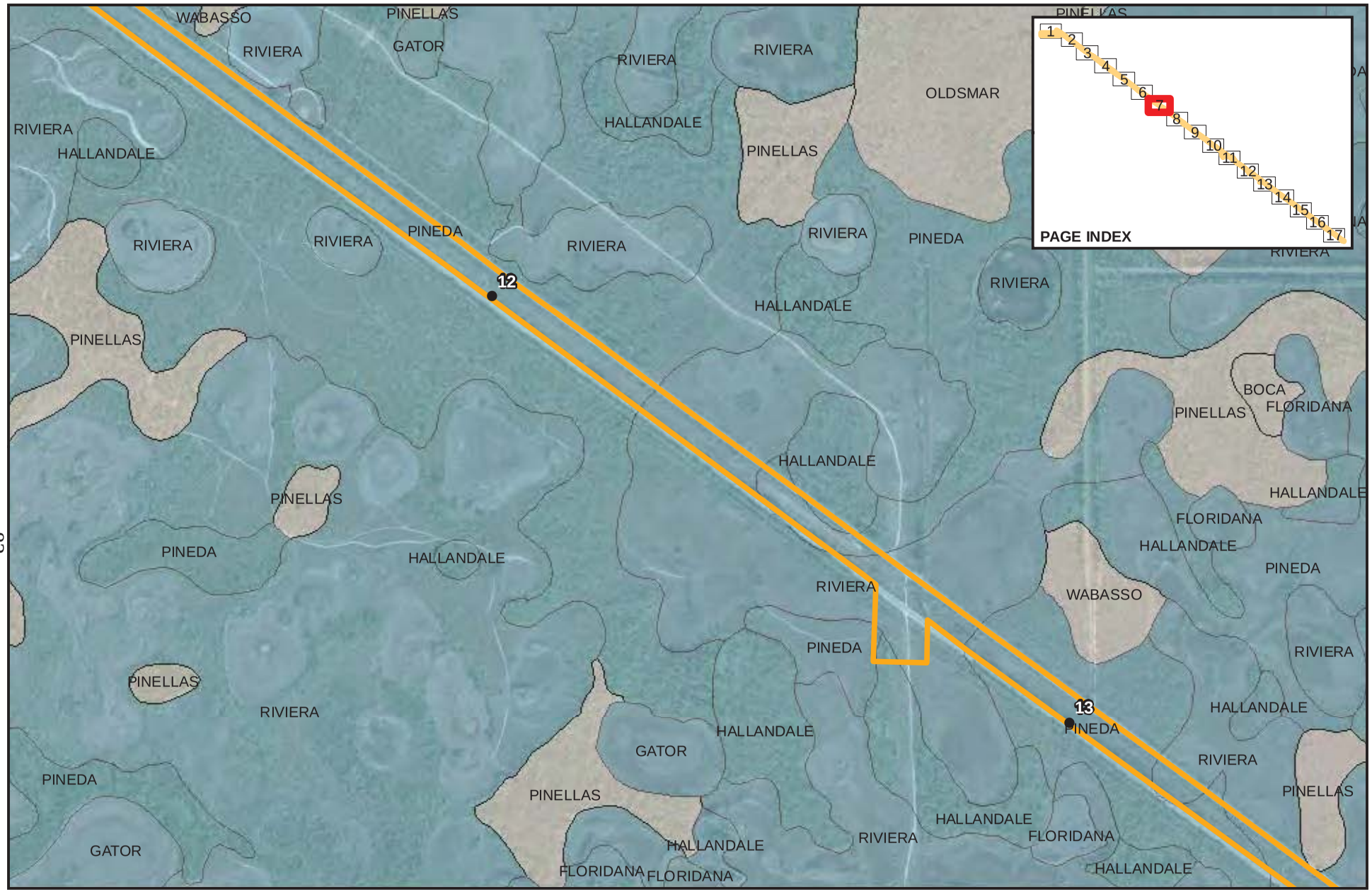
Figure 4
SOILS MAP - SHEET 6 of 17
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



83

Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

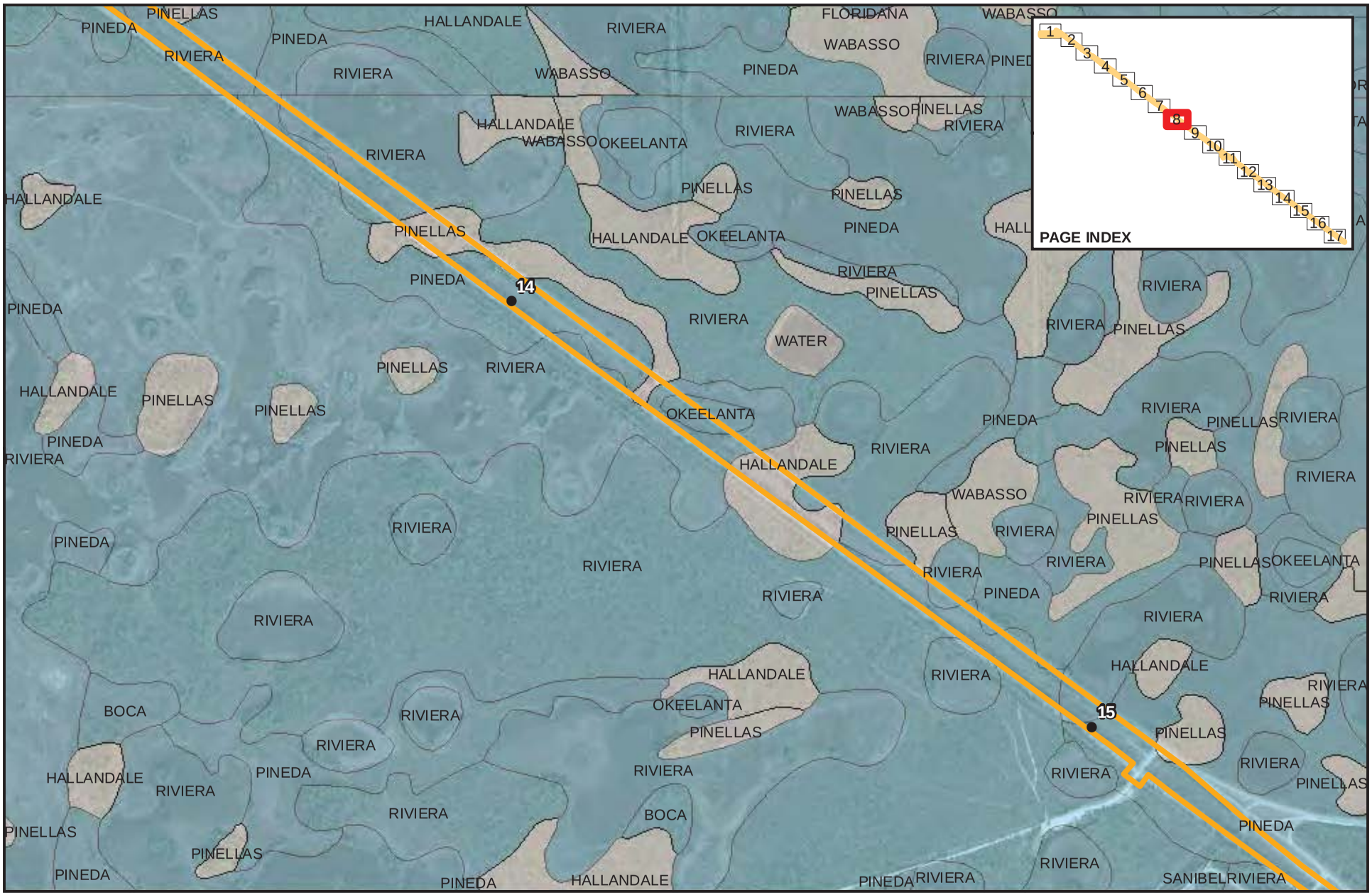
Figure 4
SOILS MAP - SHEET 7 of 17
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

Figure 4

SOILS MAP - SHEET 8 of 17

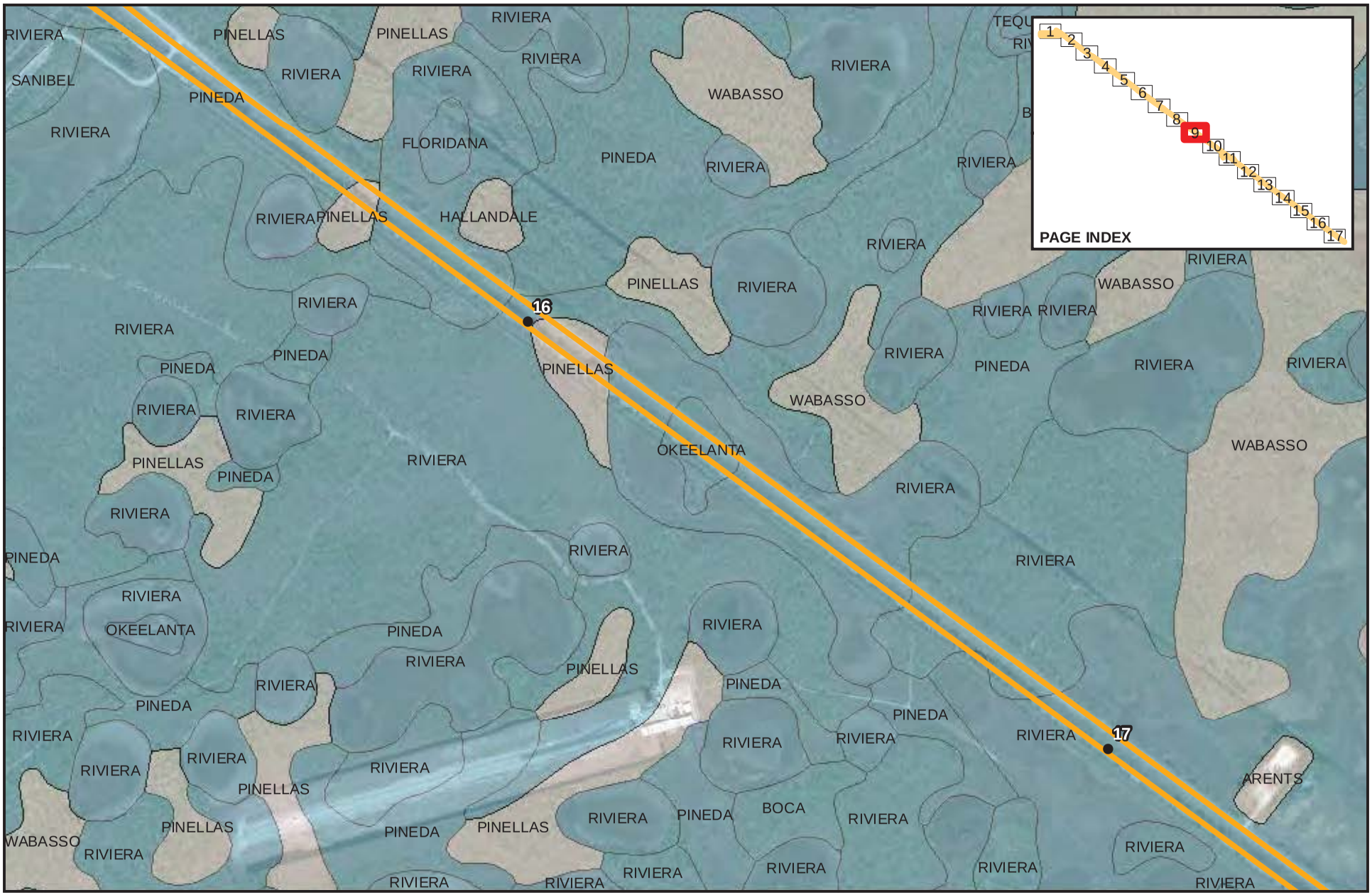
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



85

Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

Figure 4

SOILS MAP - SHEET 9 of 17

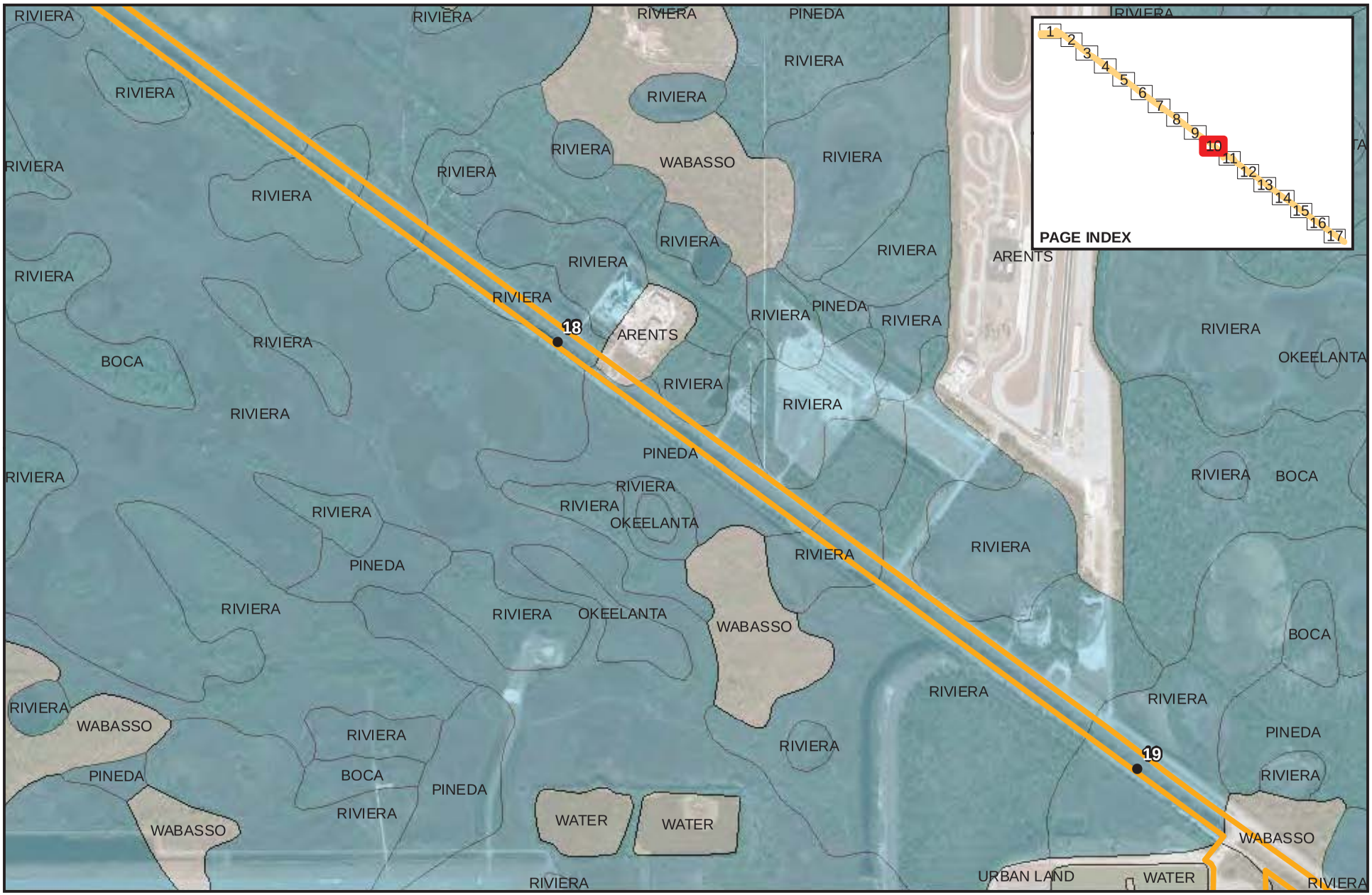
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



86

Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

Figure 4

SOILS MAP - SHEET 10 of 17

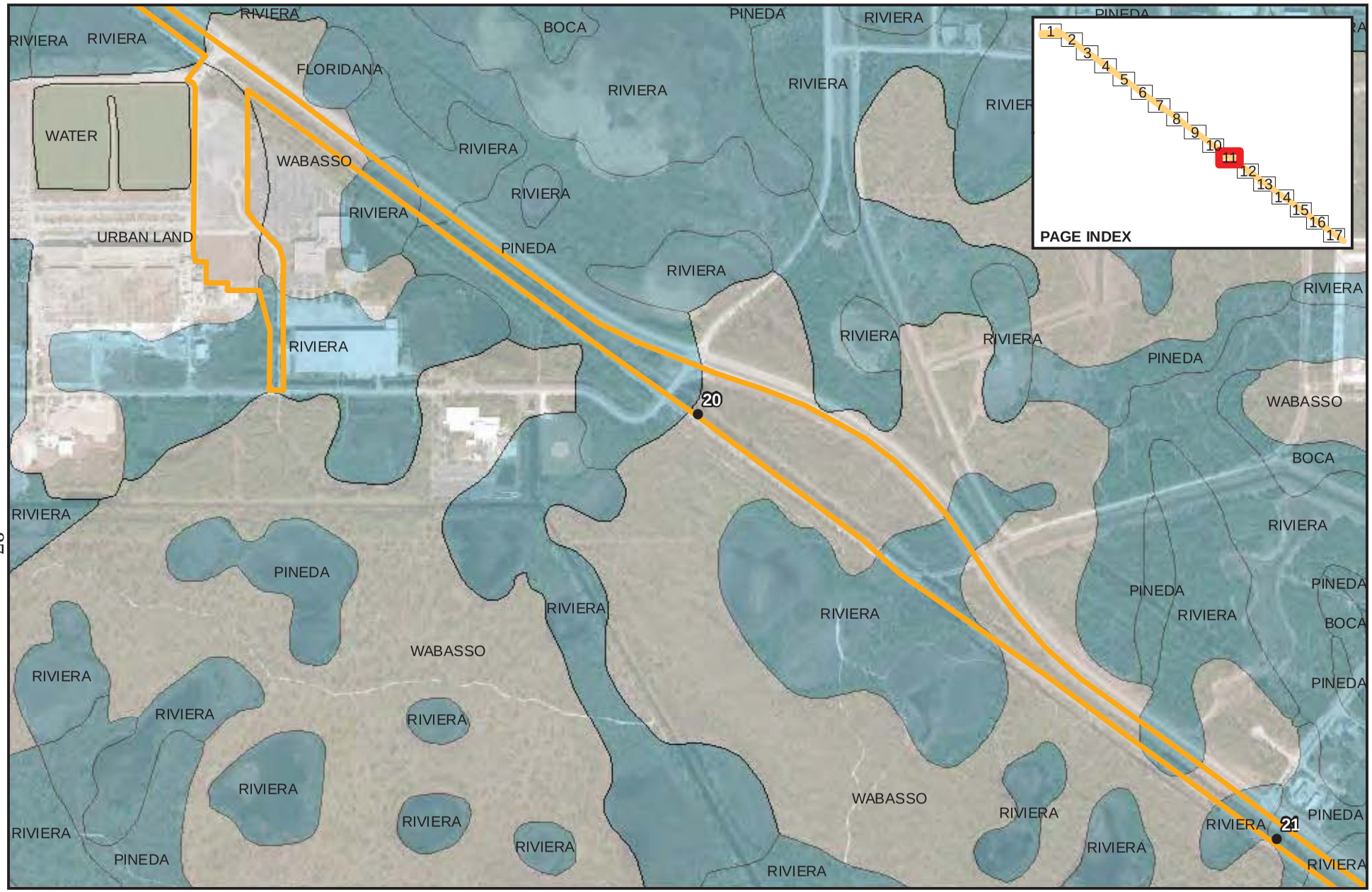
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

Figure 4
SOILS MAP - SHEET 11 of 17
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



88

Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

Figure 4

SOILS MAP - SHEET 12 of 17

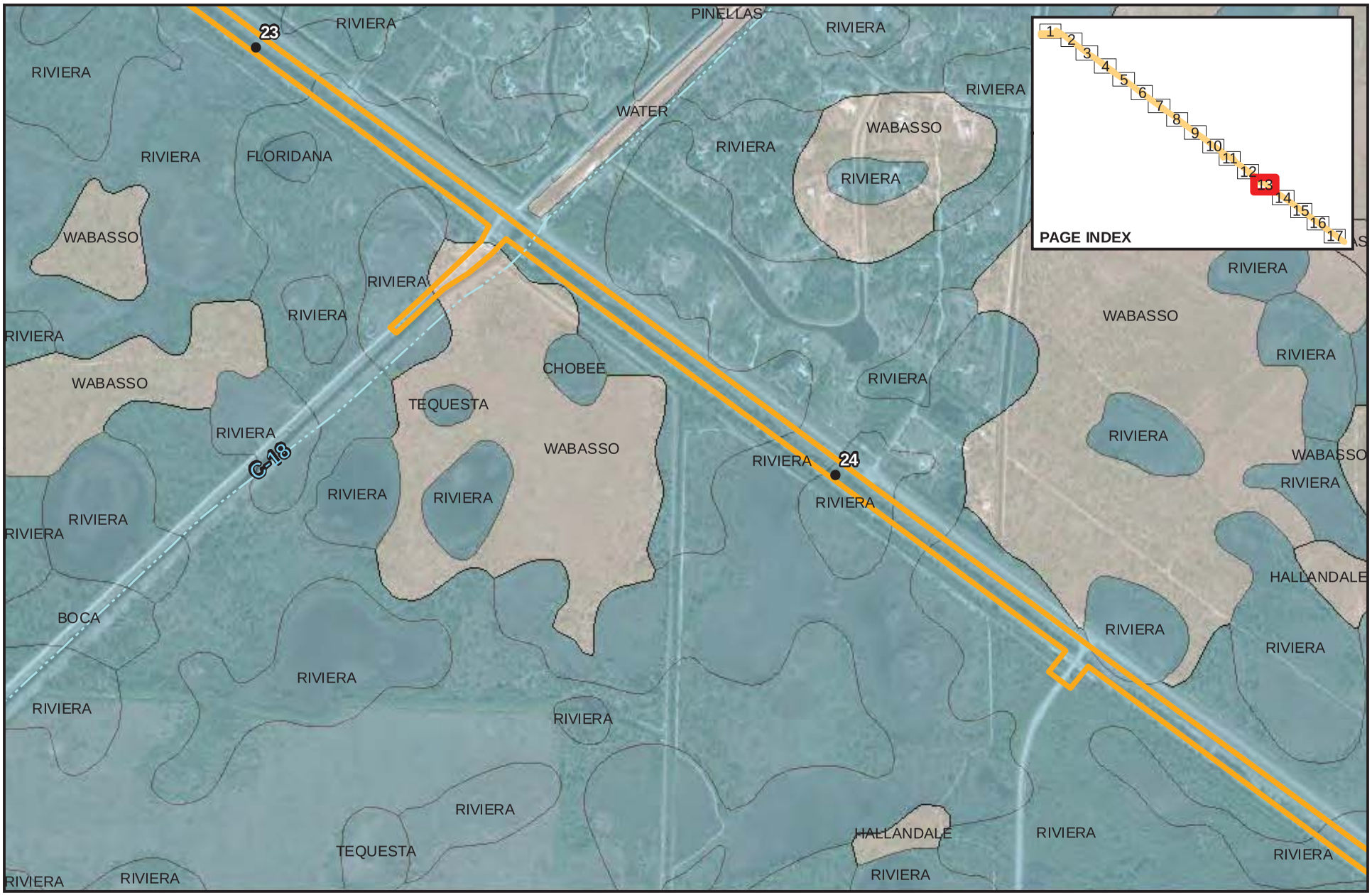
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



89

Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

Figure 4

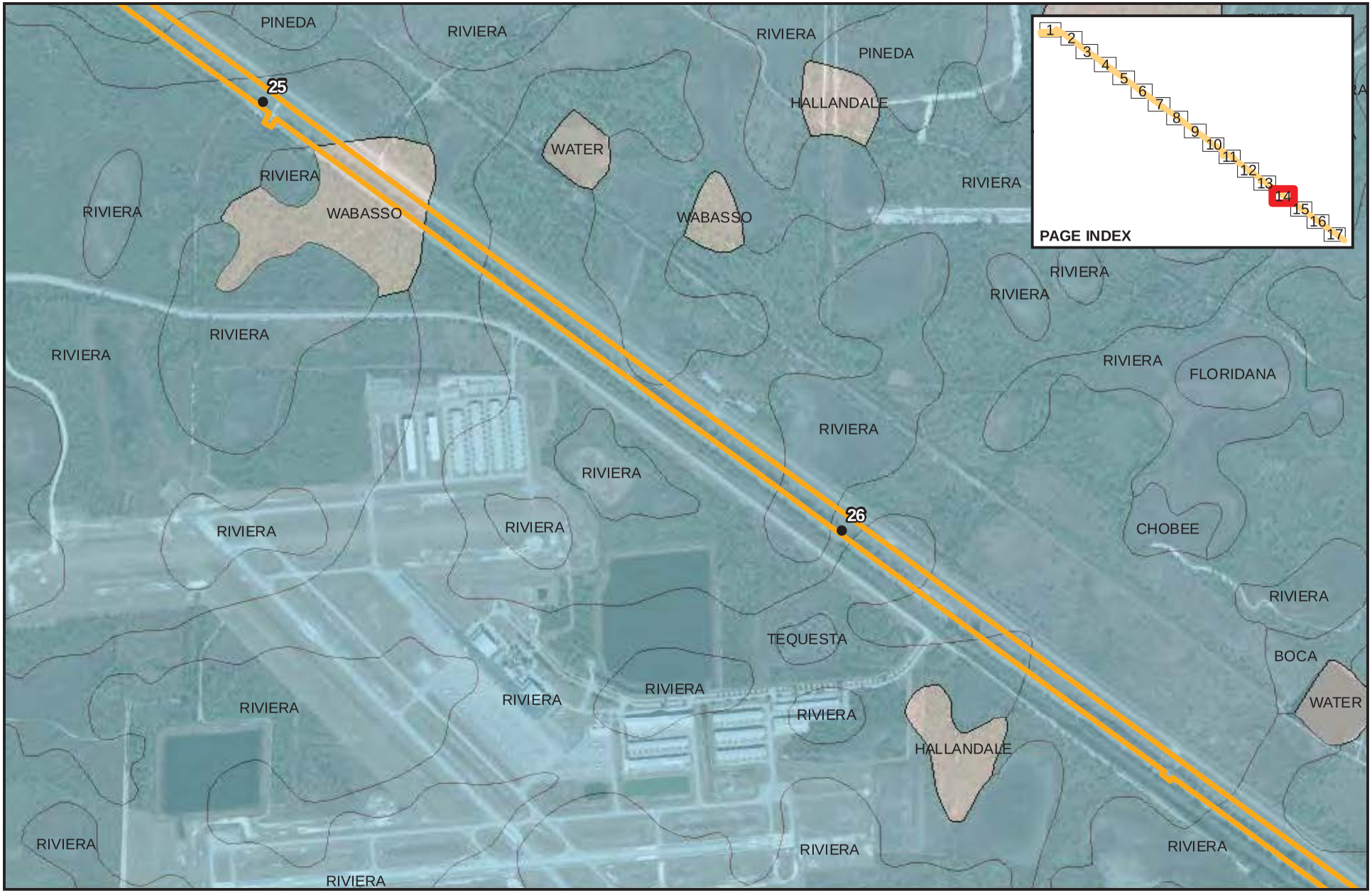
SOILS MAP - SHEET 13 of 17

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



90

Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

Figure 4

SOILS MAP - SHEET 14 of 17

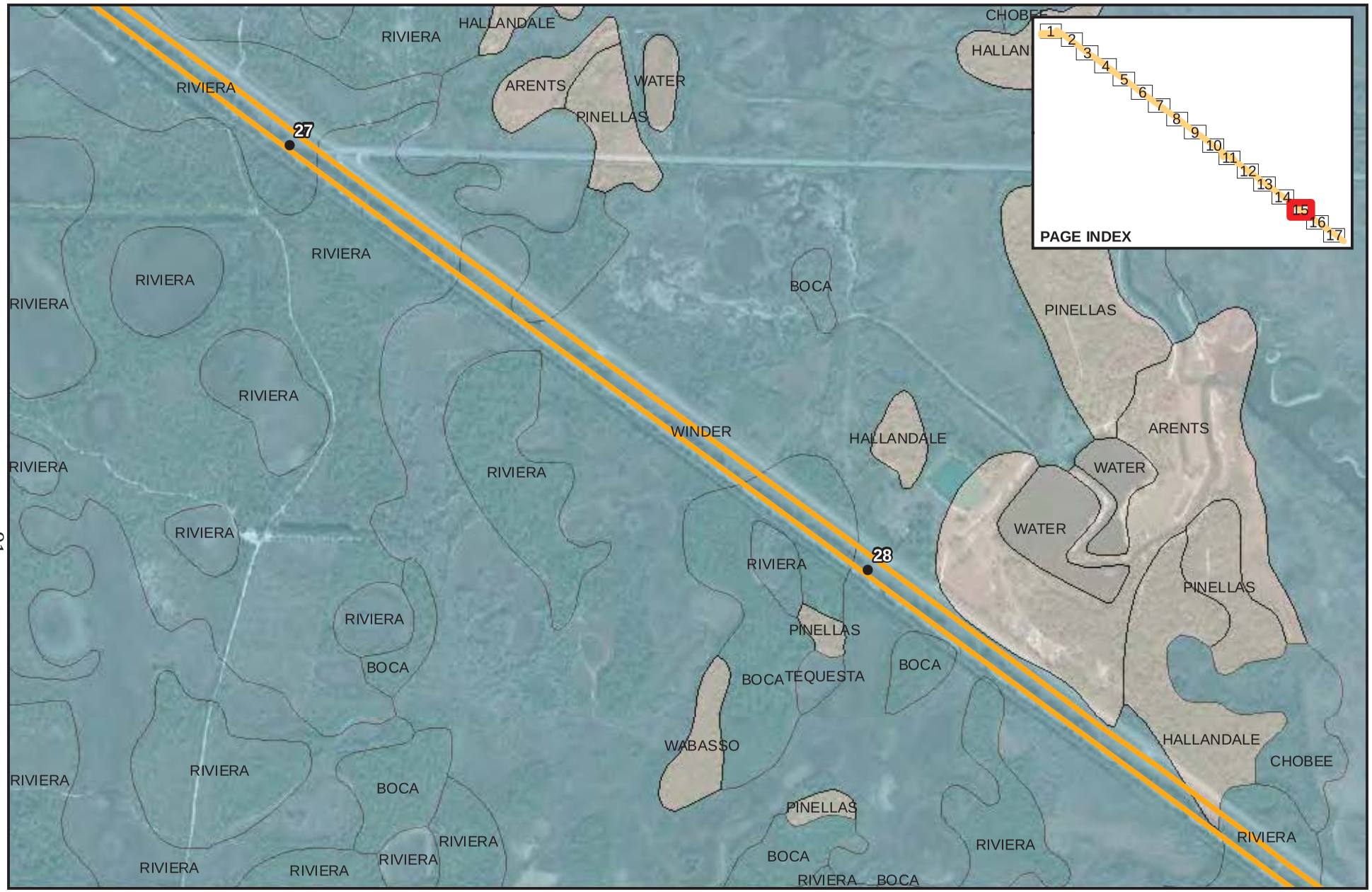
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

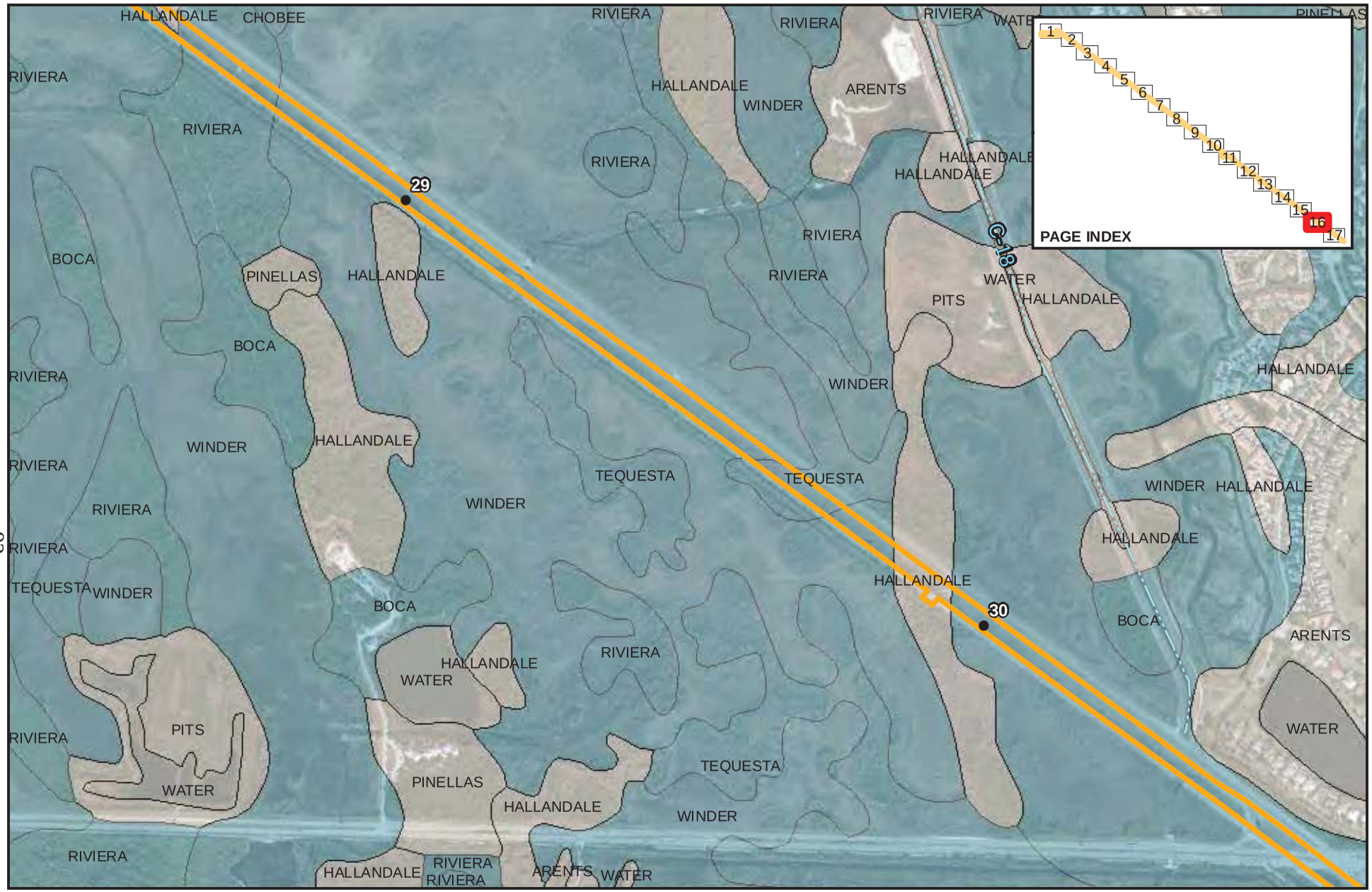
0 250 500 1,000 Feet

Figure 4
SOILS MAP - SHEET 15 of 17
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



92

Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

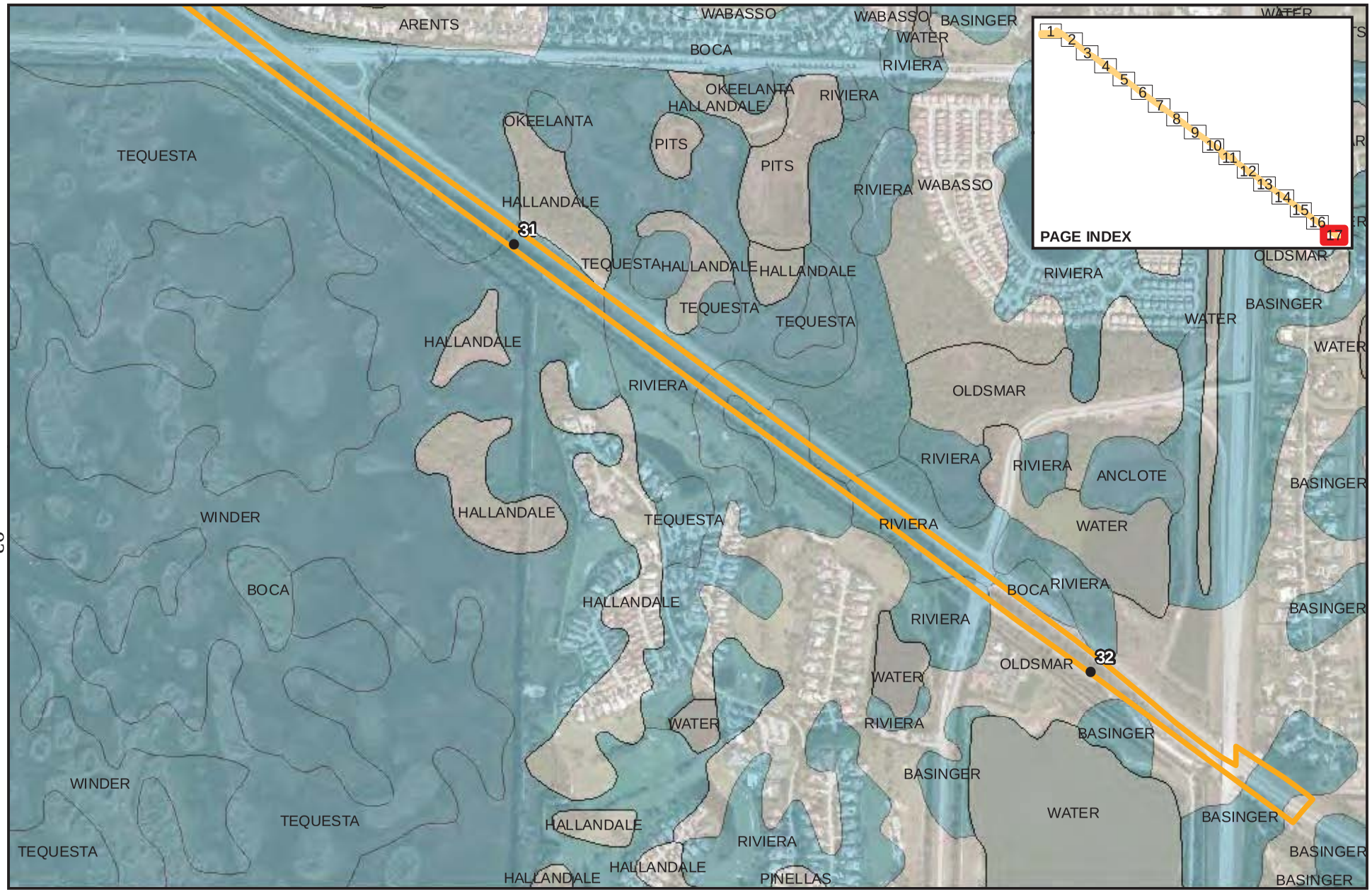
Figure 4
SOILS MAP - SHEET 16 of 17
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Soils.mxd



93

Legend

- Soils
- Hydric Soils
- Mile Post
- Proposed Corridor

N

0 250 500 1,000 Feet

Figure 4

SOILS MAP - SHEET 17 of 17

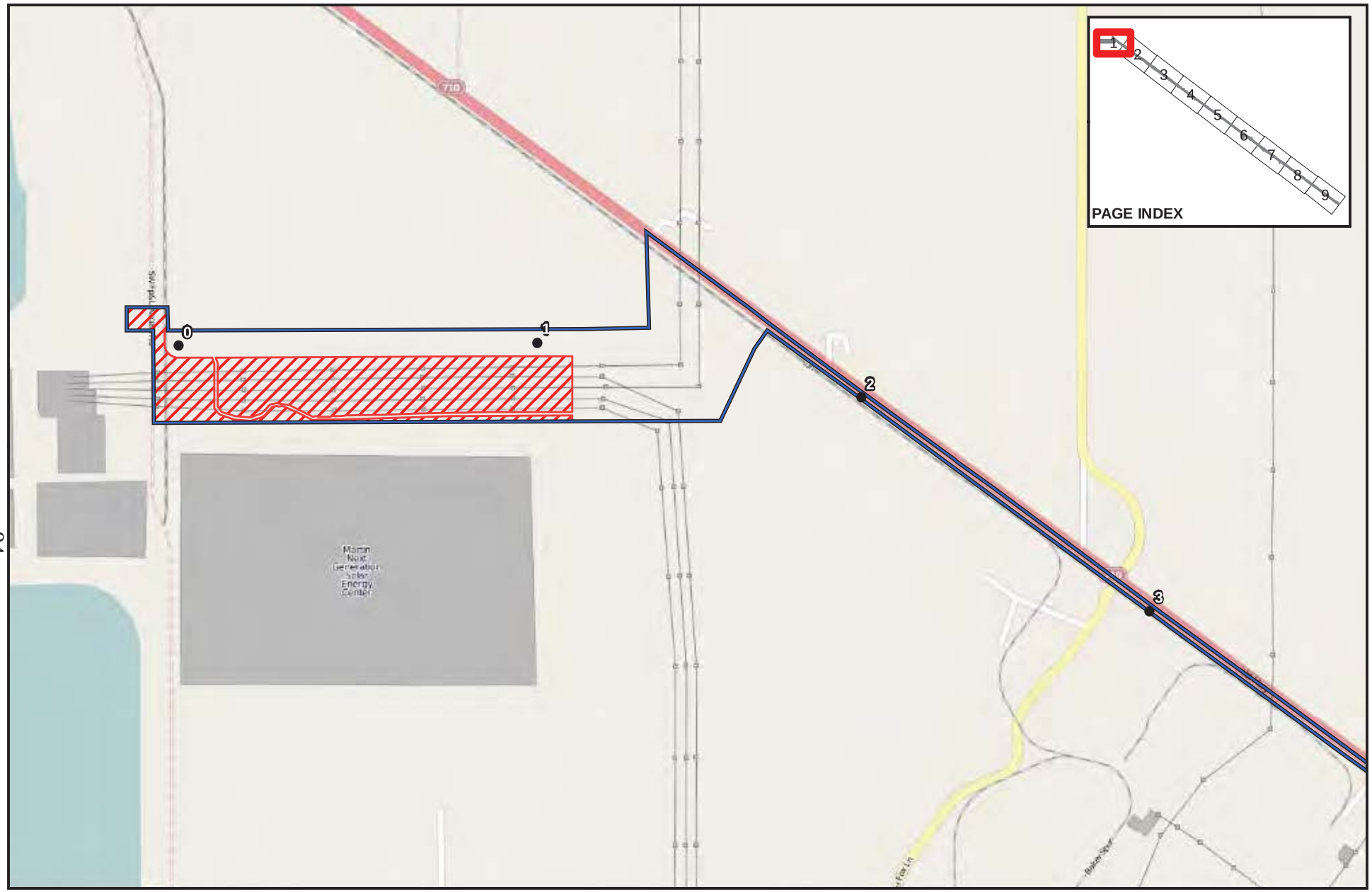
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - NRCS, 2010; BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\DeskTop.mxd



Legend

- Mile Post
- Limits of Desktop Survey
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 5
LIMITS OF DESKTOP SURVEY
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - FPL,2011; ERSI, 2012; ECT, 2012.

Path: M:\acad\110697\DeskTop.mxd



95

Legend

- Mile Post
- Limits of Desktop Survey
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 5

LIMITS OF DESKTOP SURVEY

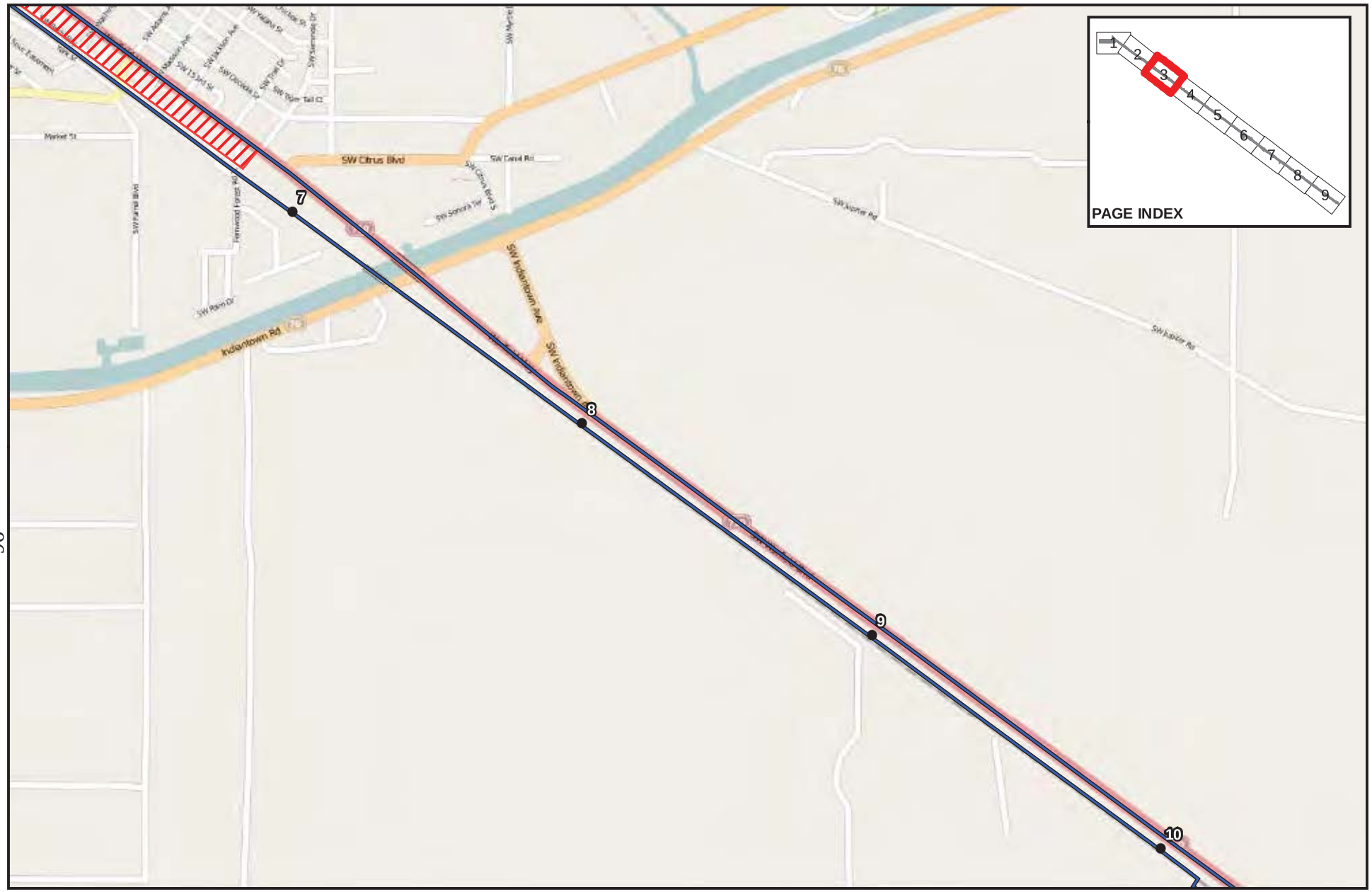
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - FPL,2011; ERSI, 2012; ECT, 2012.

Path: M:\acad\110697\DeskTop.mxd



96

Legend

- Mile Post
- Limits of Desktop Survey
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 5

LIMITS OF DESKTOP SURVEY

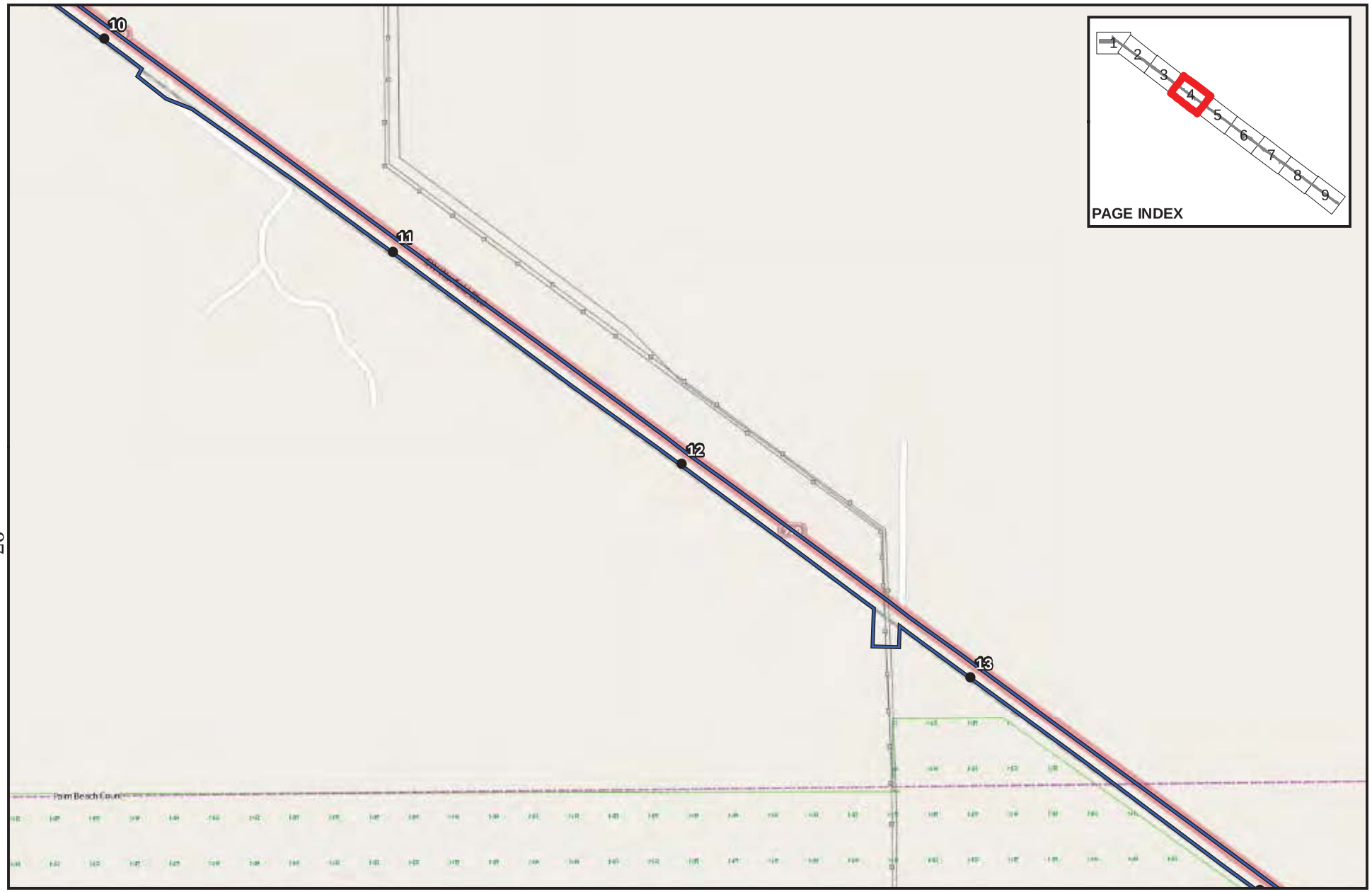
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - FPL,2011; ERSI, 2012; ECT, 2012.

Path: M:\acad\110697\DeskTop.mxd



97

Legend

- Mile Post
- Limits of Desktop Survey
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 5

LIMITS OF DESKTOP SURVEY

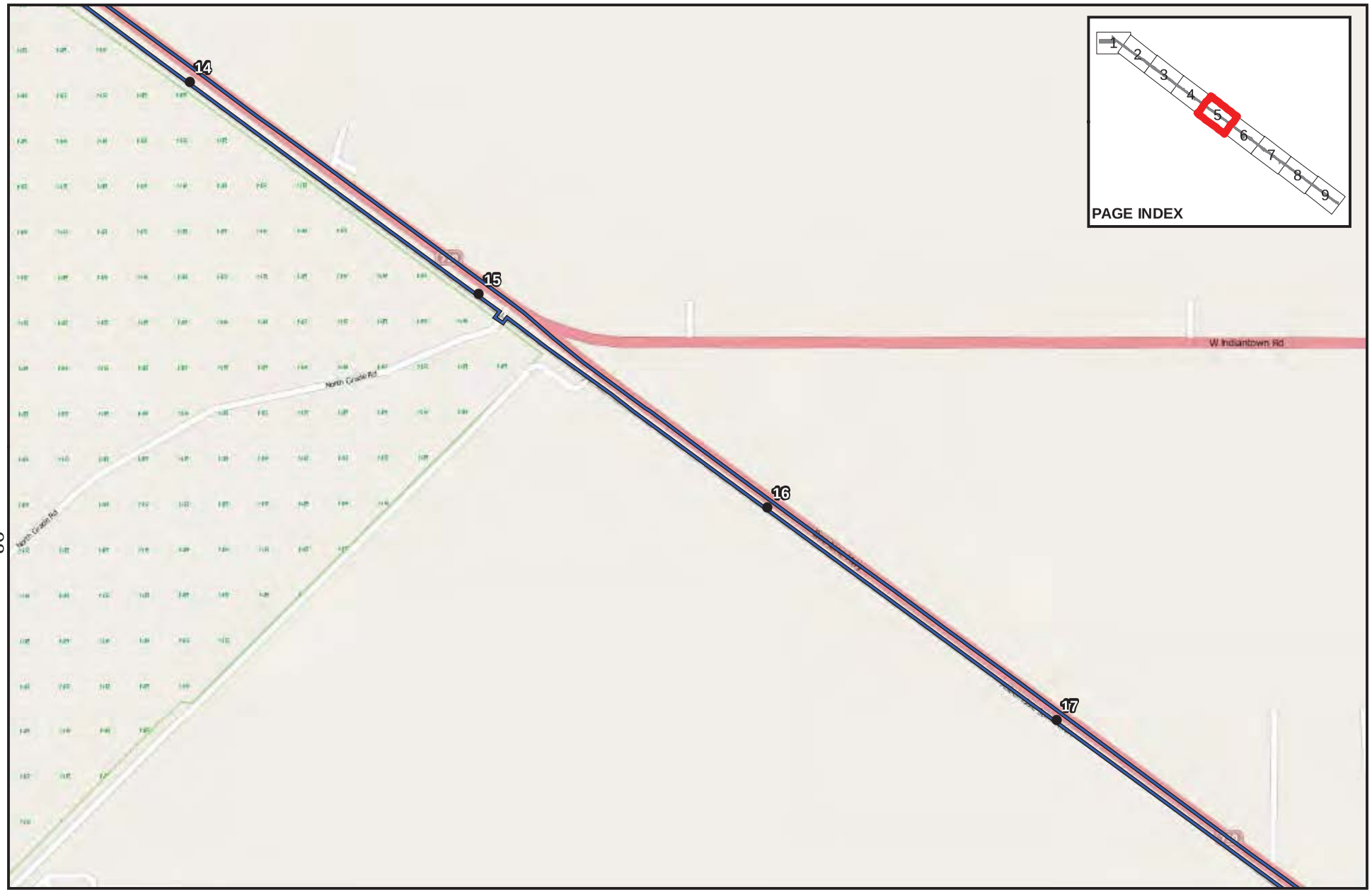
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - FPL,2011; ERSI, 2012; ECT, 2012.

Path: M:\acad\110697\DeskTop.mxd



98

Legend

- Mile Post
- Limits of Desktop Survey
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 5

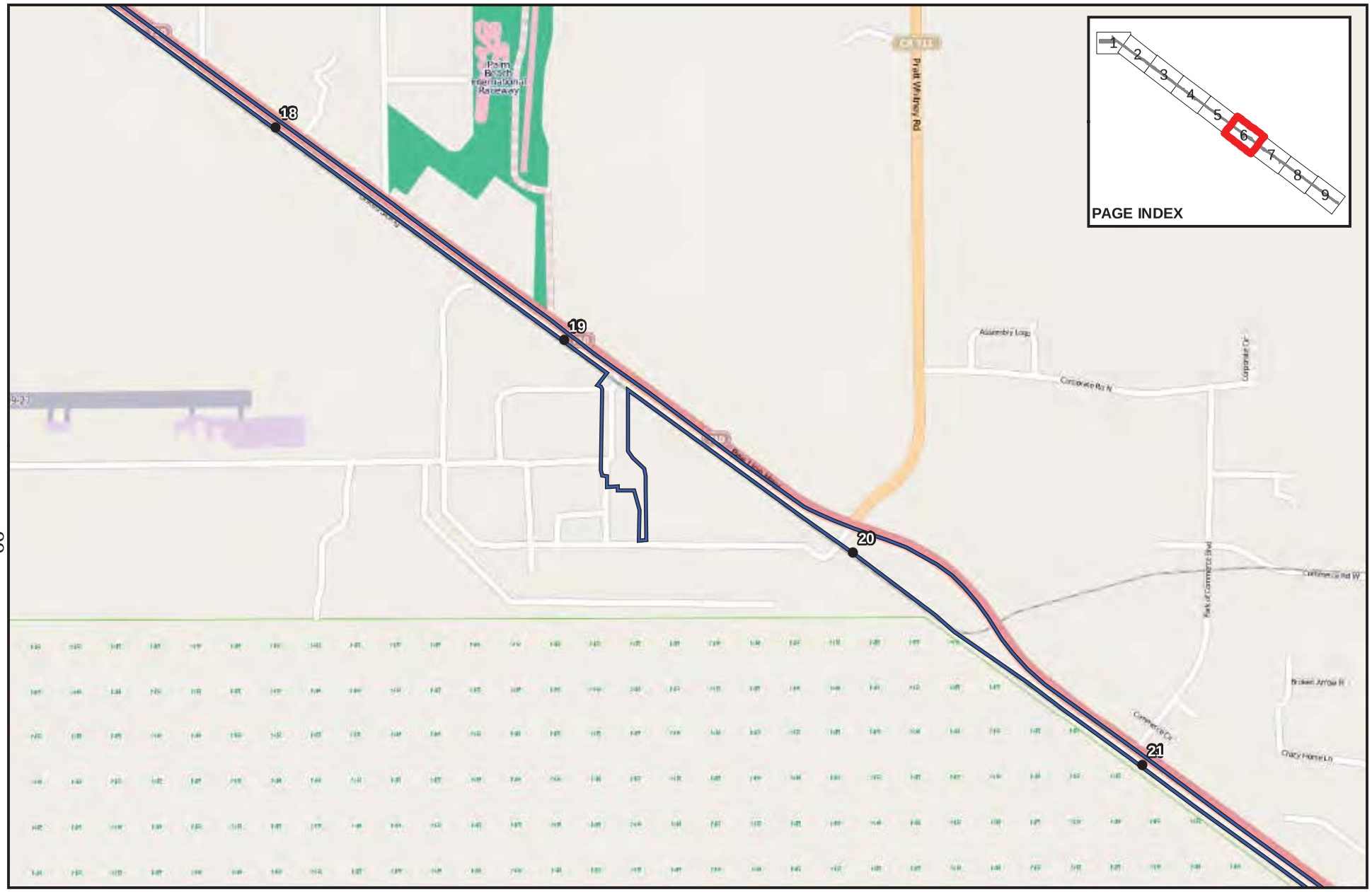
LIMITS OF DESKTOP SURVEY

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - FPL,2011; ERSI, 2012; ECT, 2012.



99

Legend

- Mile Post
- Limits of Desktop Survey
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 5
LIMITS OF DESKTOP SURVEY
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - FPL,2011; ERSI, 2012; ECT, 2012.

Path: M:\acad\110697\DeskTop.mxd



100

Legend

- Mile Post
- Limits of Desktop Survey
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 5
LIMITS OF DESKTOP SURVEY
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - FPL,2011; ERSI, 2012; ECT, 2012.

Path: M:\acad\110697\DeskTop.mxd



101

Legend

- Mile Post
- Limits of Desktop Survey
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 5

LIMITS OF DESKTOP SURVEY

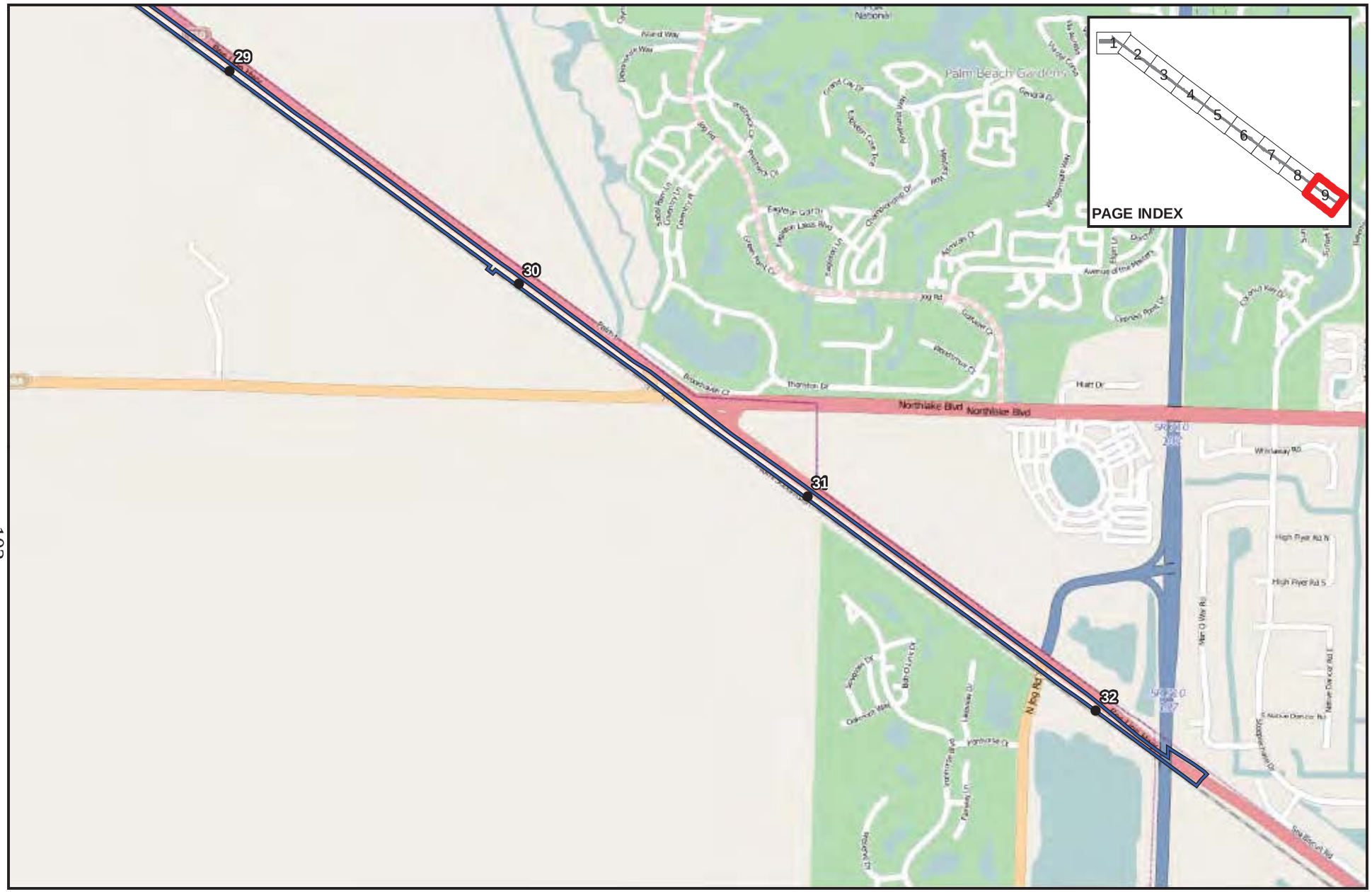
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - FPL,2011; ERSI, 2012; ECT, 2012.

Path: M:\acad\110697\DeskTop.mxd



102

Legend

- Mile Post
- Limits of Desktop Survey
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 5

LIMITS OF DESKTOP SURVEY

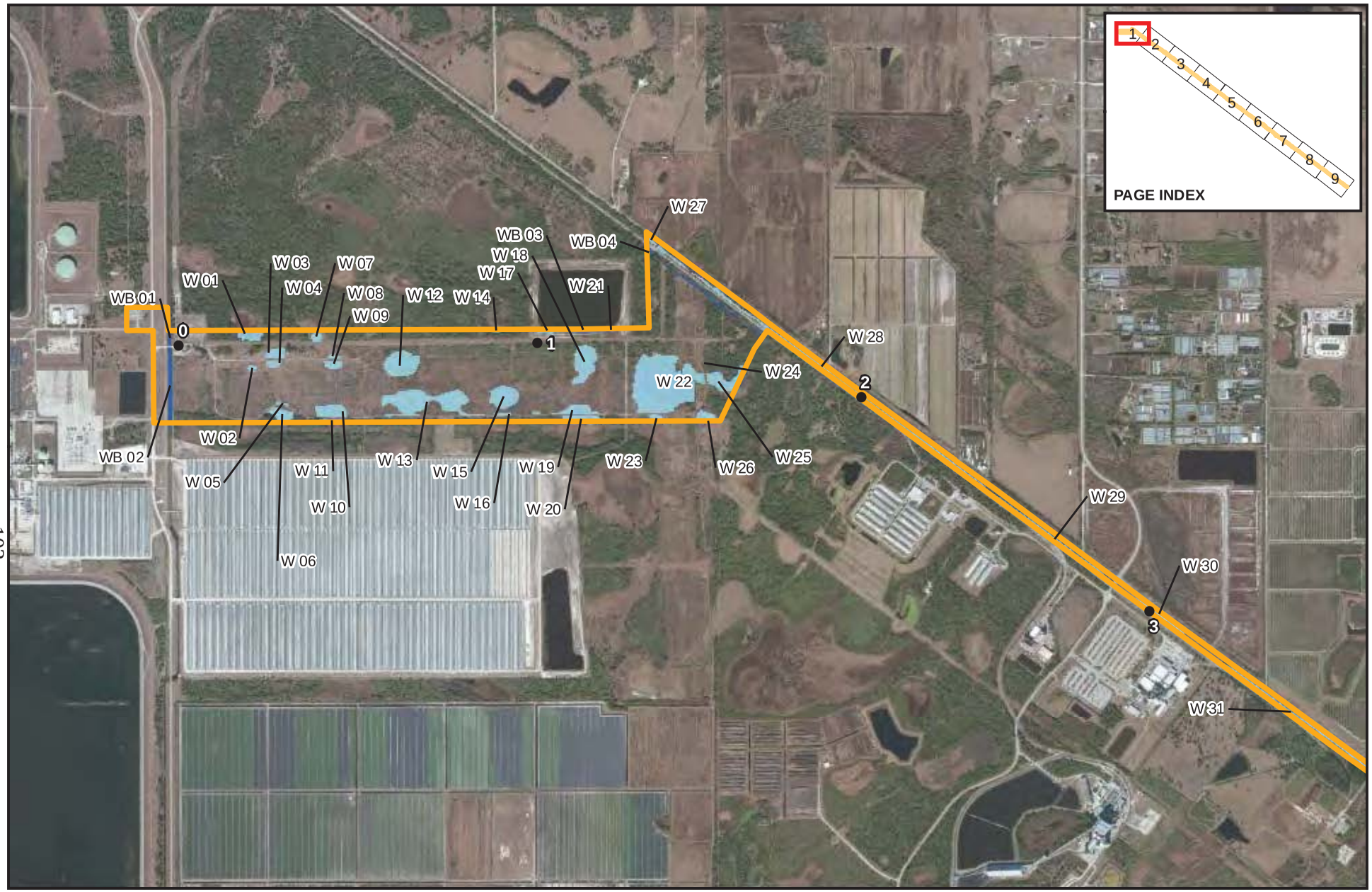
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - FPL,2011; ERSI, 2012; ECT, 2012.

Path: M:\acad\110697\Wetland_Overview.mxd



Legend

Waterbody

Wetland

Mile Post

Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 6

WETLAND OVERVIEW MAP - SHEET 1 of 9

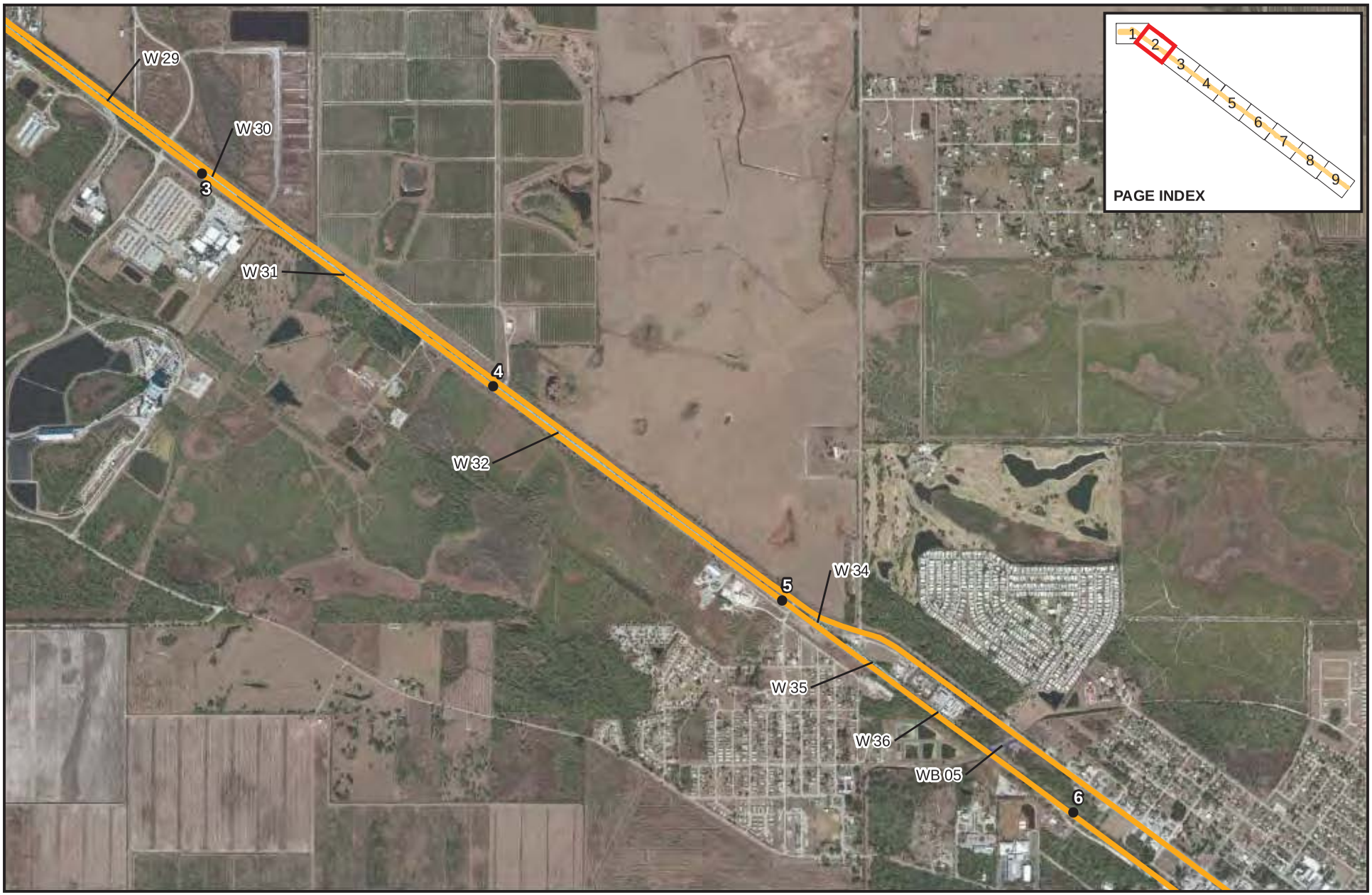
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview.mxd



104

Legend

- Waterbody
- Wetland
- 1 Mile Post
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 6

WETLAND OVERVIEW MAP - SHEET 2 of 9

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview.mxd



105

Legend

- Waterbody
- Wetland
- Mile Post
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 6

WETLAND OVERVIEW MAP - SHEET 3 of 9

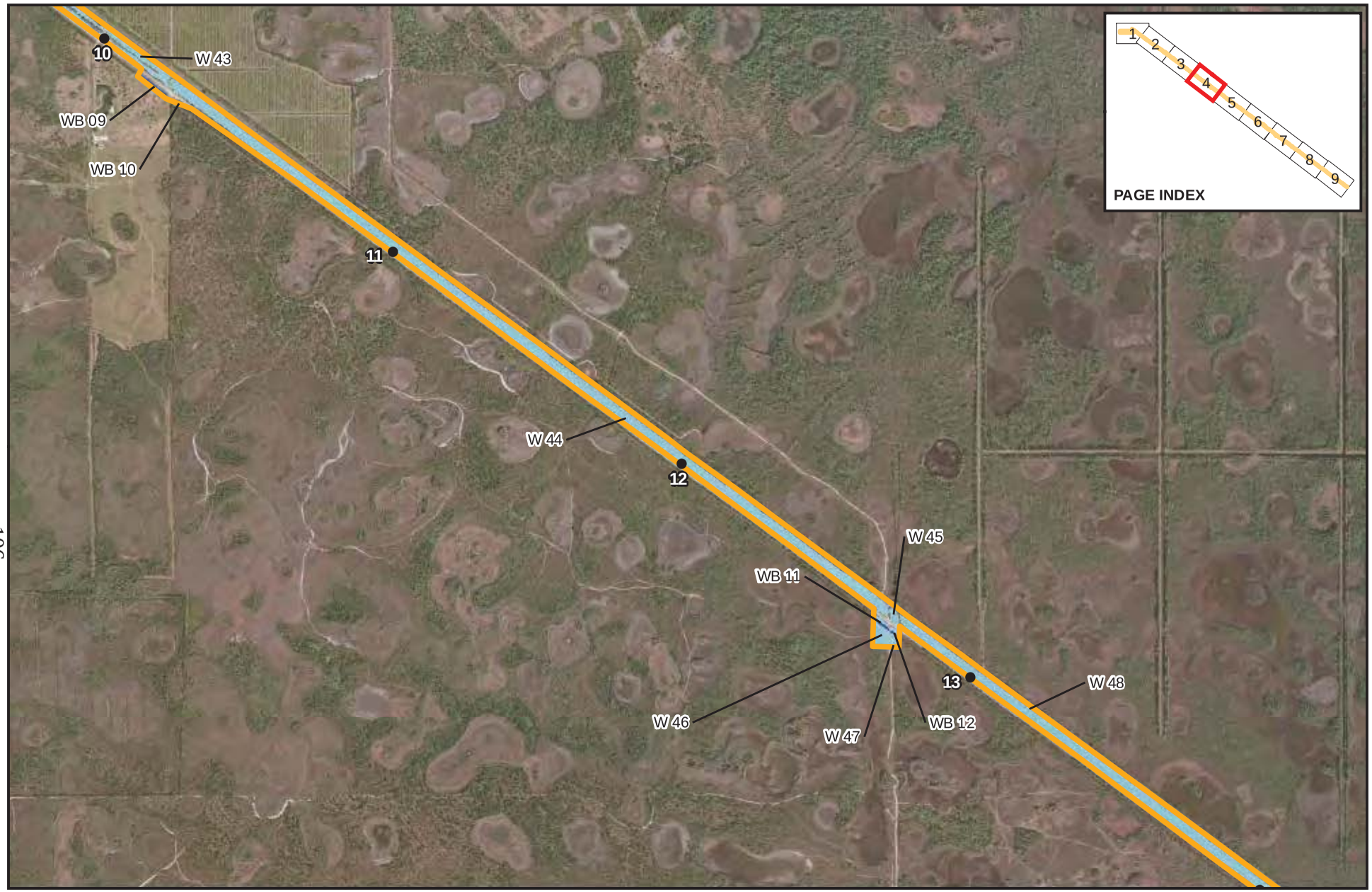
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview.mxd



106

Legend

Waterbody
Wetland
1 Mile Post
Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 6
WETLAND OVERVIEW MAP - SHEET 4 of 9
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview.mxd



107

Legend

- Waterbody
- Wetland
- Mile Post
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 6

WETLAND OVERVIEW MAP - SHEET 5 of 9

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview.mxd



Legend

Waterbody
Wetland
1 Mile Post
Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 6
WETLAND OVERVIEW MAP - SHEET 6 of 9
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview.mxd



Legend

- Waterbody
- Wetland
- Mile Post
- Proposed Corridor

N

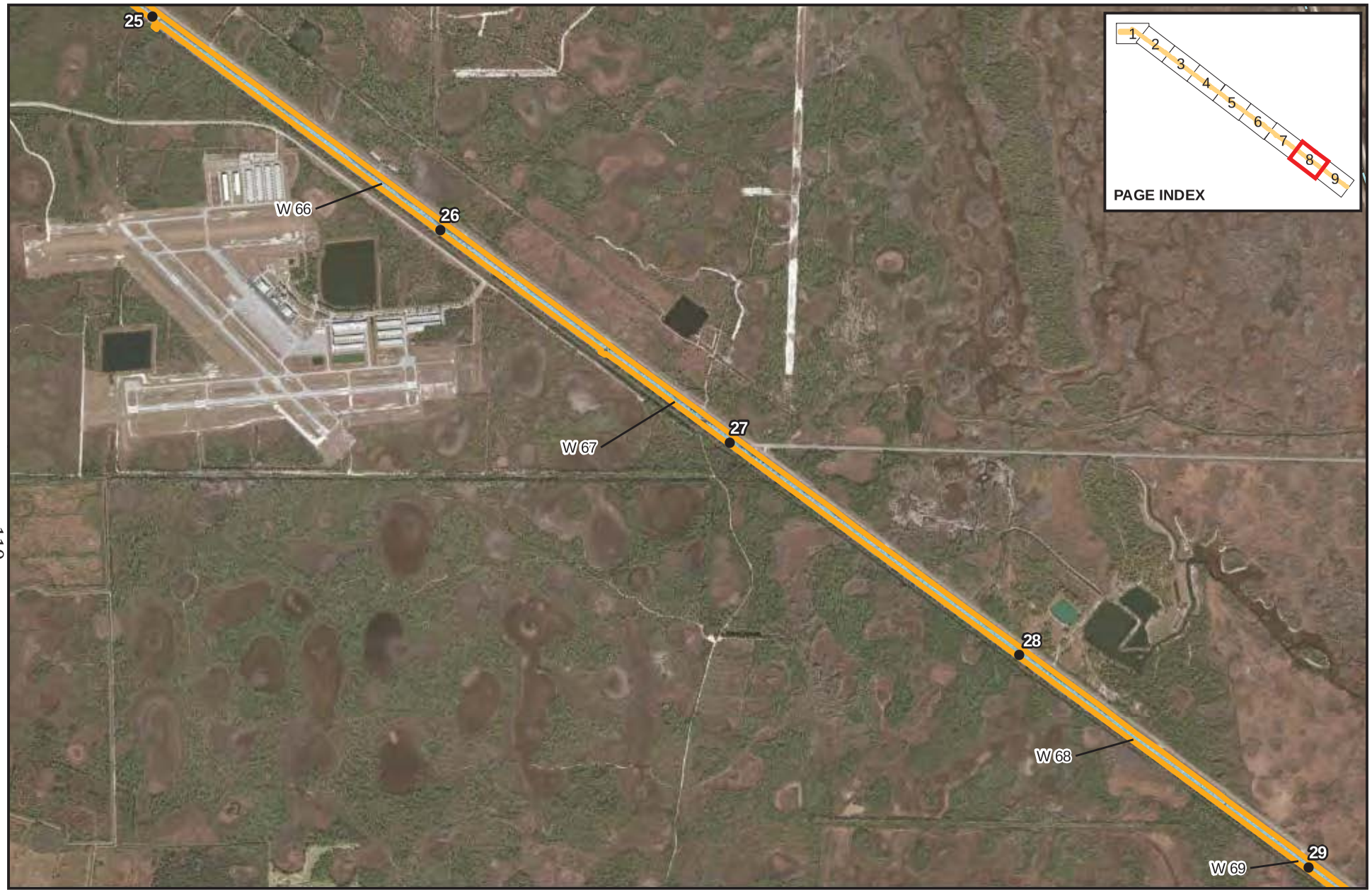
0 1,000 2,000 4,000 Feet

Figure 6
WETLAND OVERVIEW MAP - SHEET 7 of 9
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview.mxd



110

Legend

- Waterbody
- Wetland
- Mile Post
- Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 6
WETLAND OVERVIEW MAP - SHEET 8 of 9
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Overview.mxd



111

Legend

Waterbody

Wetland

1 Mile Post

Proposed Corridor

N

0 1,000 2,000 4,000 Feet

Figure 6

WETLAND OVERVIEW MAP - SHEET 9 of 9

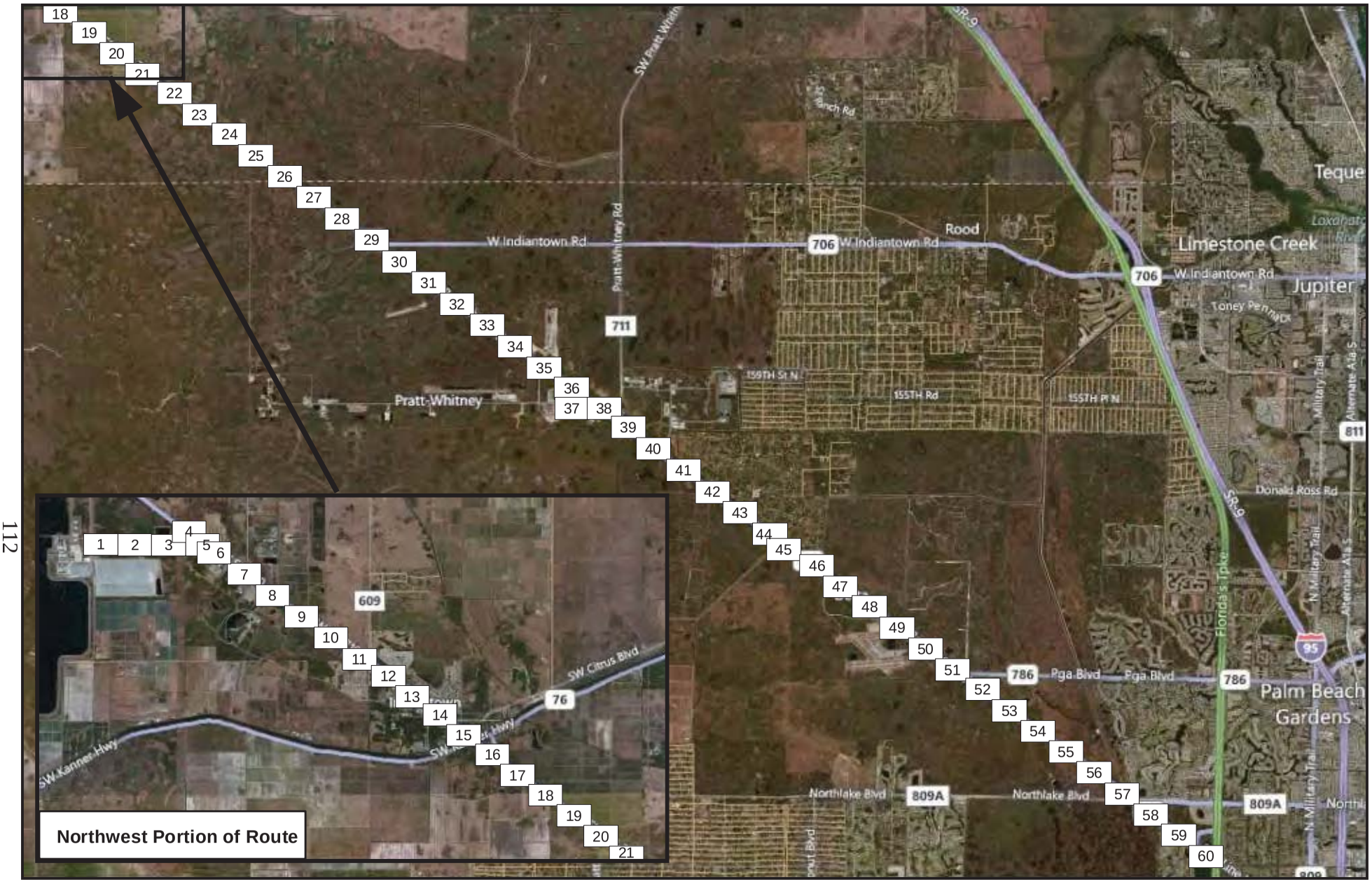
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation_key.mxd



112

Legend

Wetland Delineation Pages

N

0 1.5 3 6 Miles

Figure 7
WETLAND DELINEATION MAP - KEY
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 1 of 60

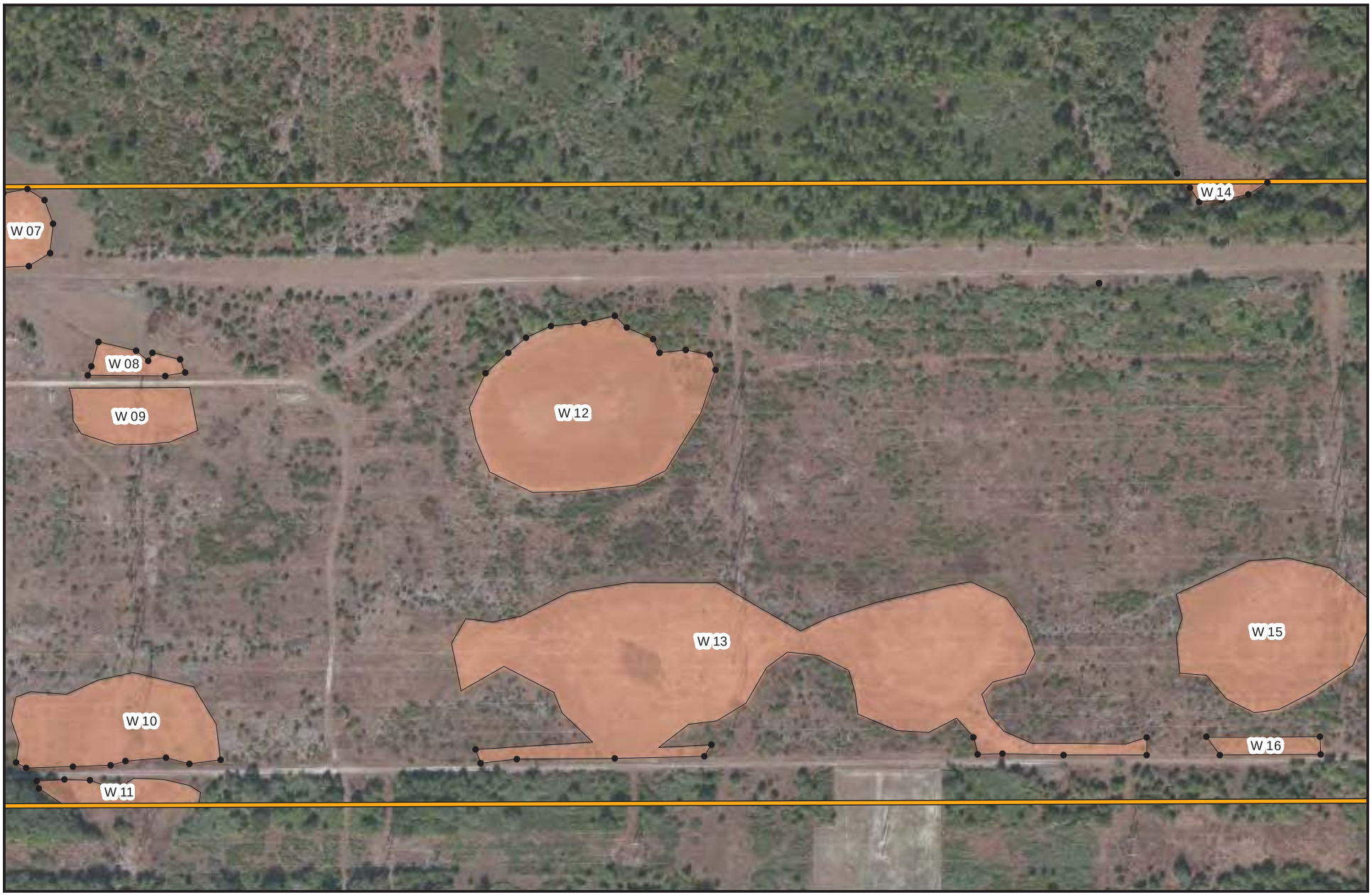
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 2 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



115

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 3 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



116

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 4 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



117

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 5 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 6 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 7 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



120

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 8 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



121

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 9 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



122

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 10 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 11 of 60

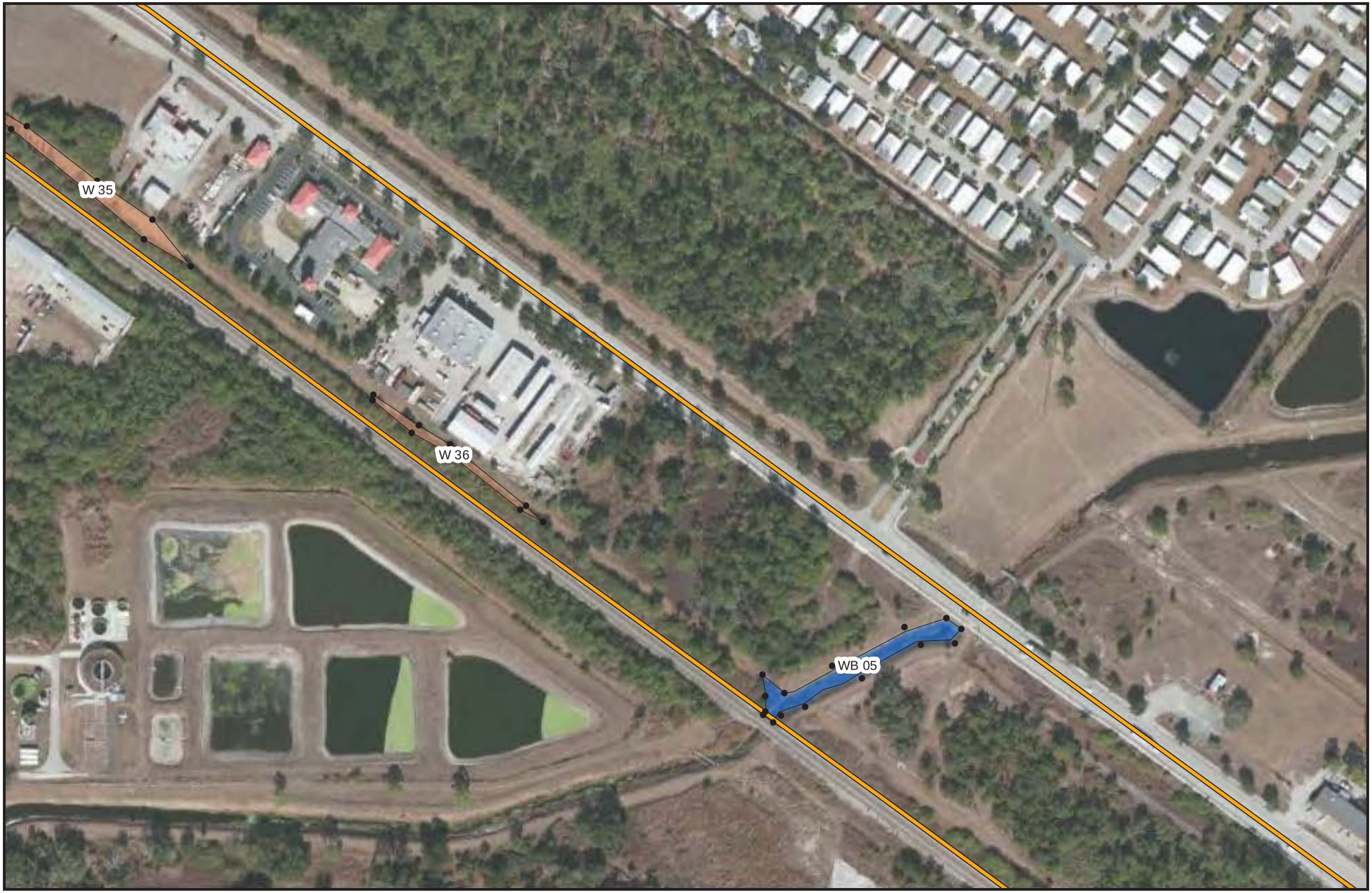
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 12 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



125

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 13 of 60

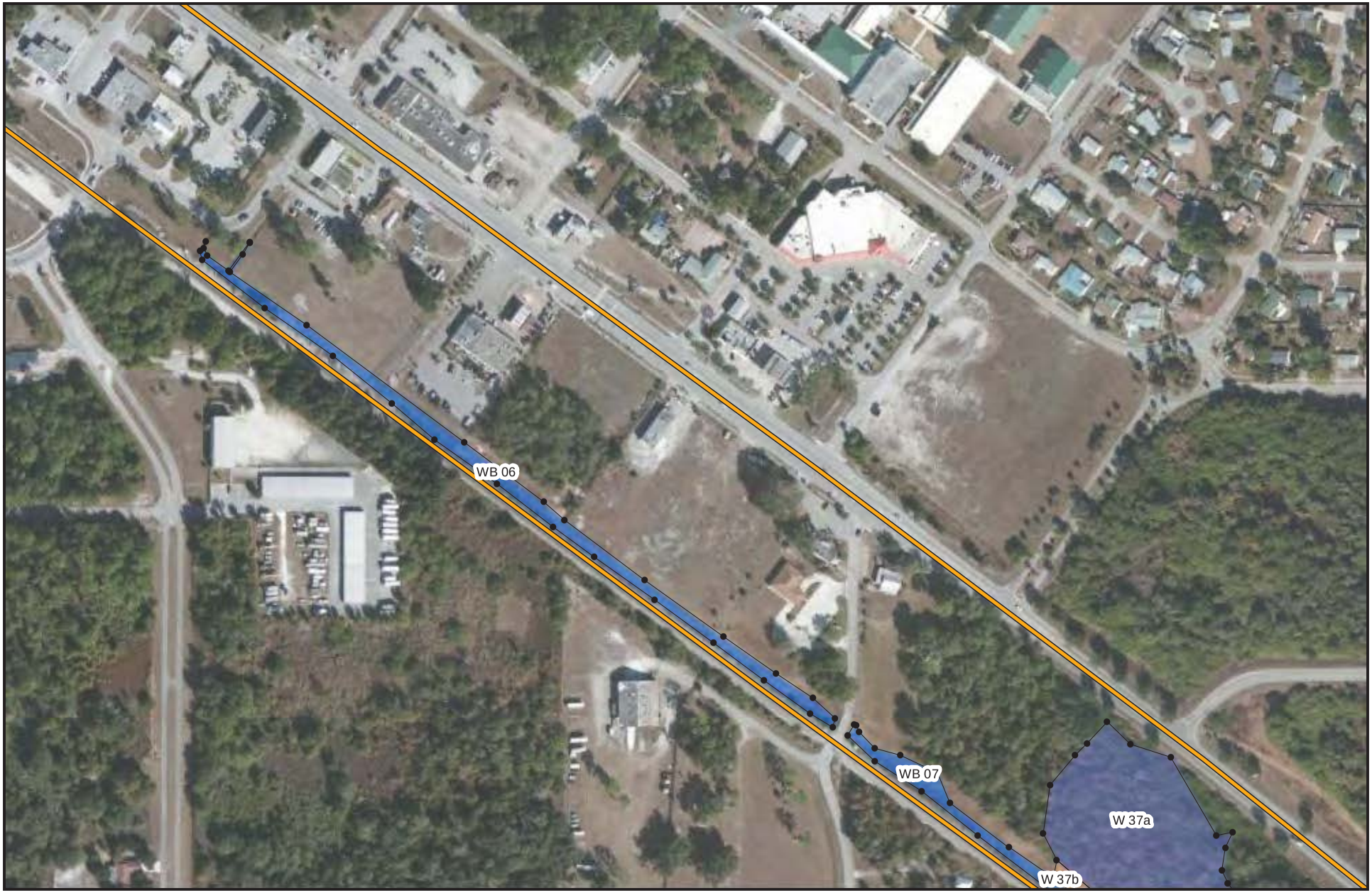
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



126

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 14 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



127

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 15 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



128

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 16 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



129

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 17 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



130

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 18 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 19 of 60

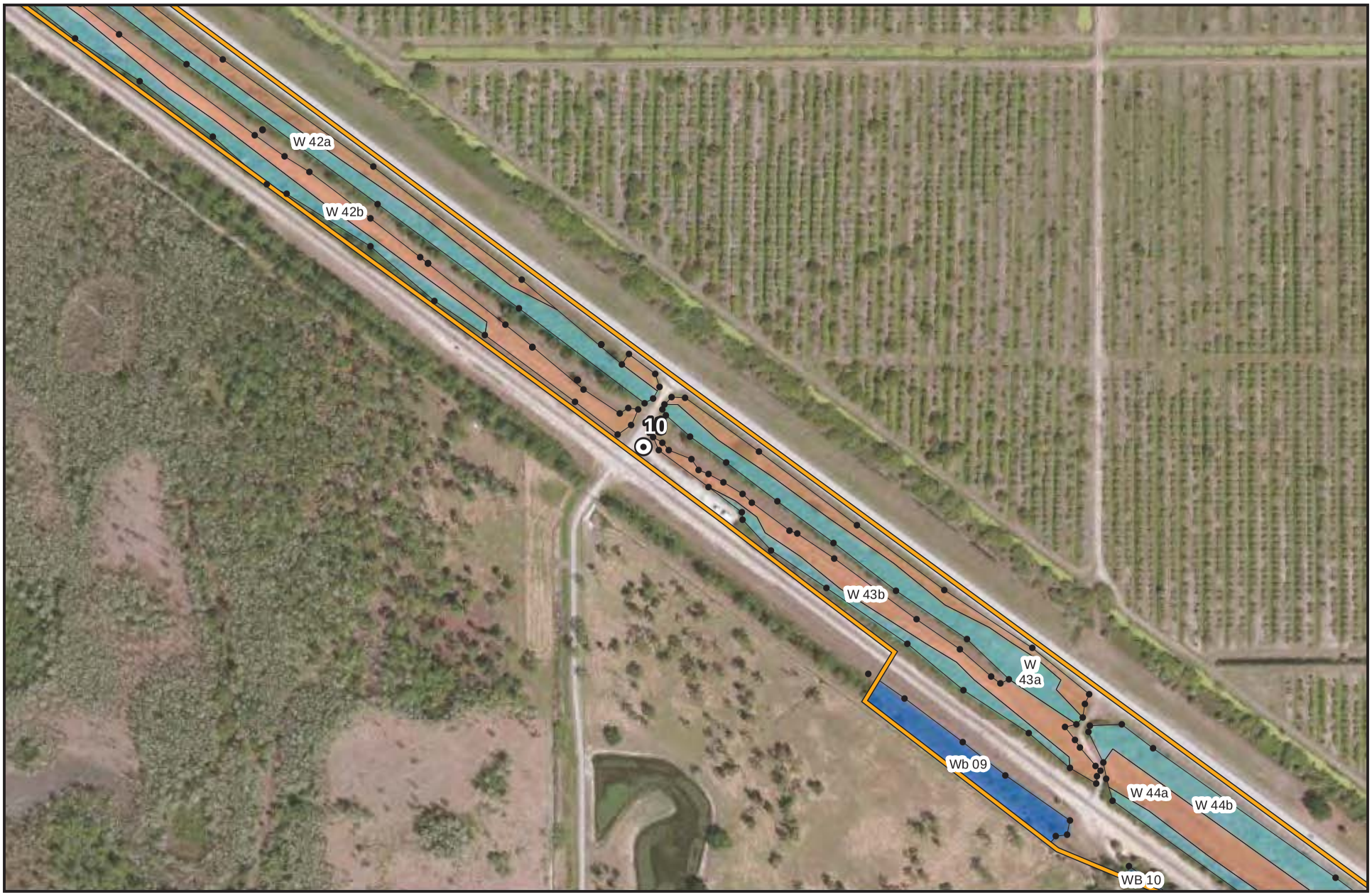
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



132

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 20 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



133

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 21 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 22 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



135

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 23 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



136

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 24 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



137

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 25 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 26 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



139

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 27 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



140

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 28 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 29 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



142

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 30 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



143

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 31 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



144

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 32 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



145

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 33 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



146

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 34 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



147

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 35 of 60

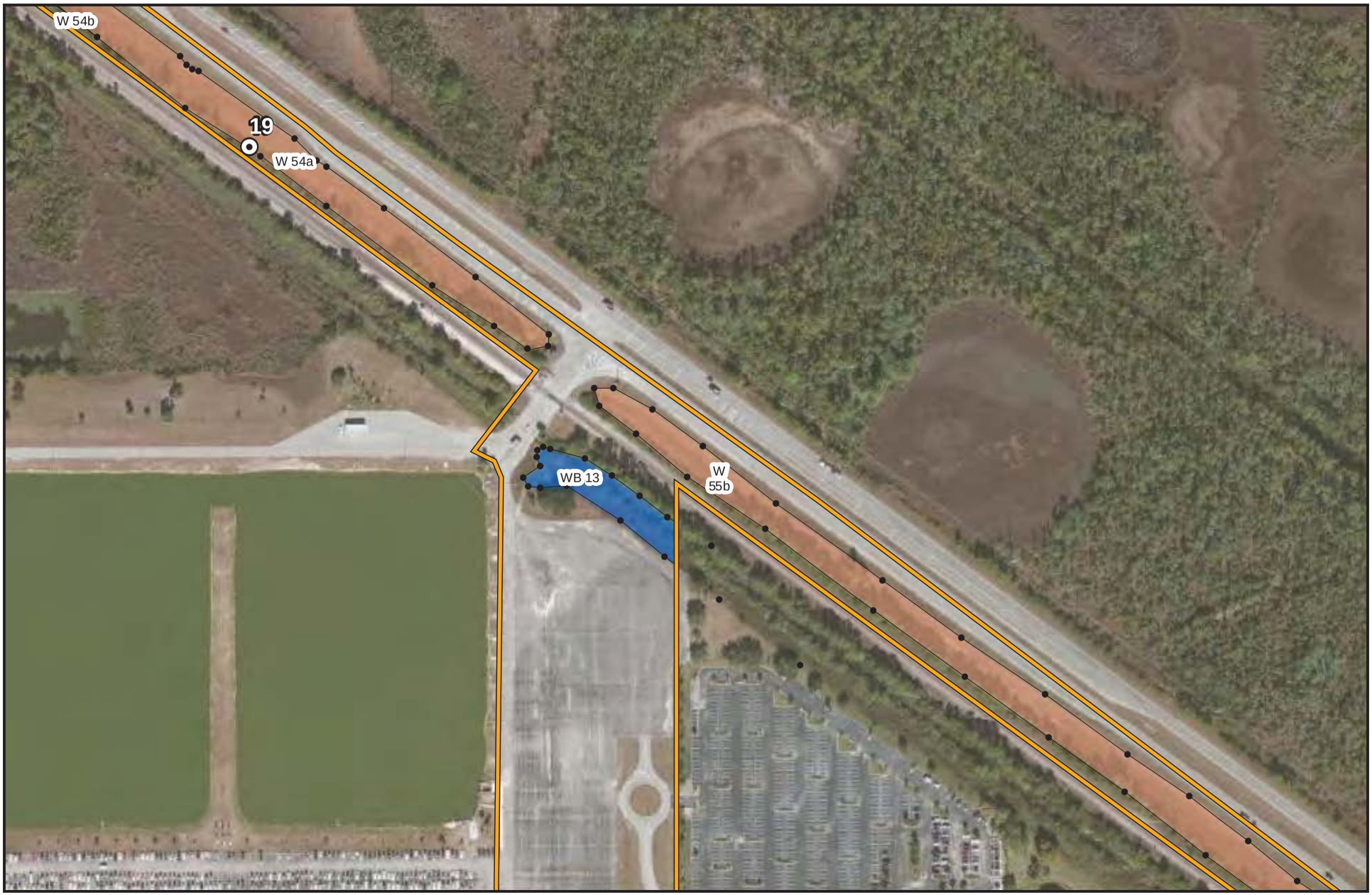
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



148

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 36 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



149

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 37 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



150

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 38 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 39 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



152

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 40 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



153

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 41 of 60

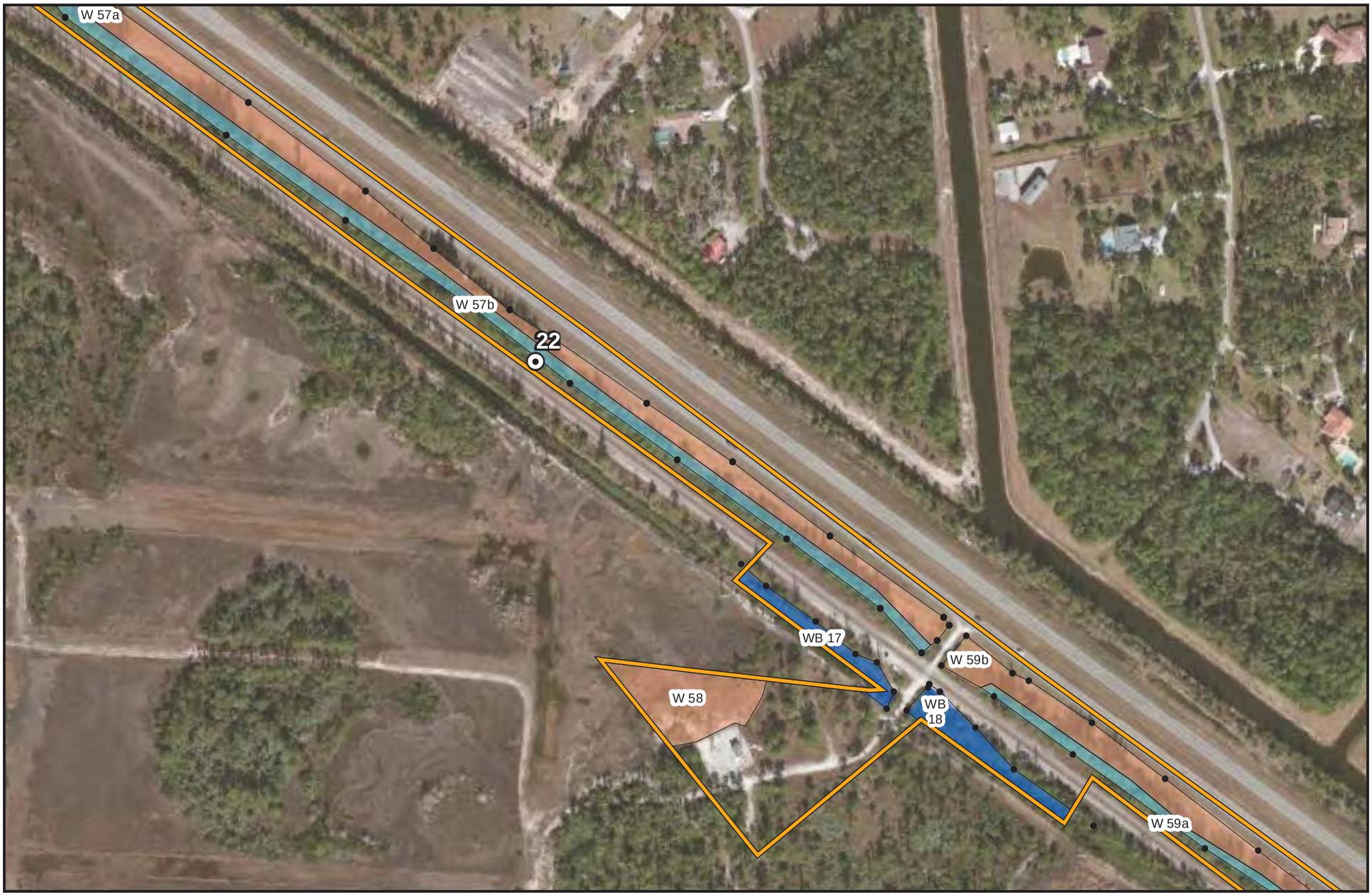
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



154

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 42 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



155

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 43 of 60

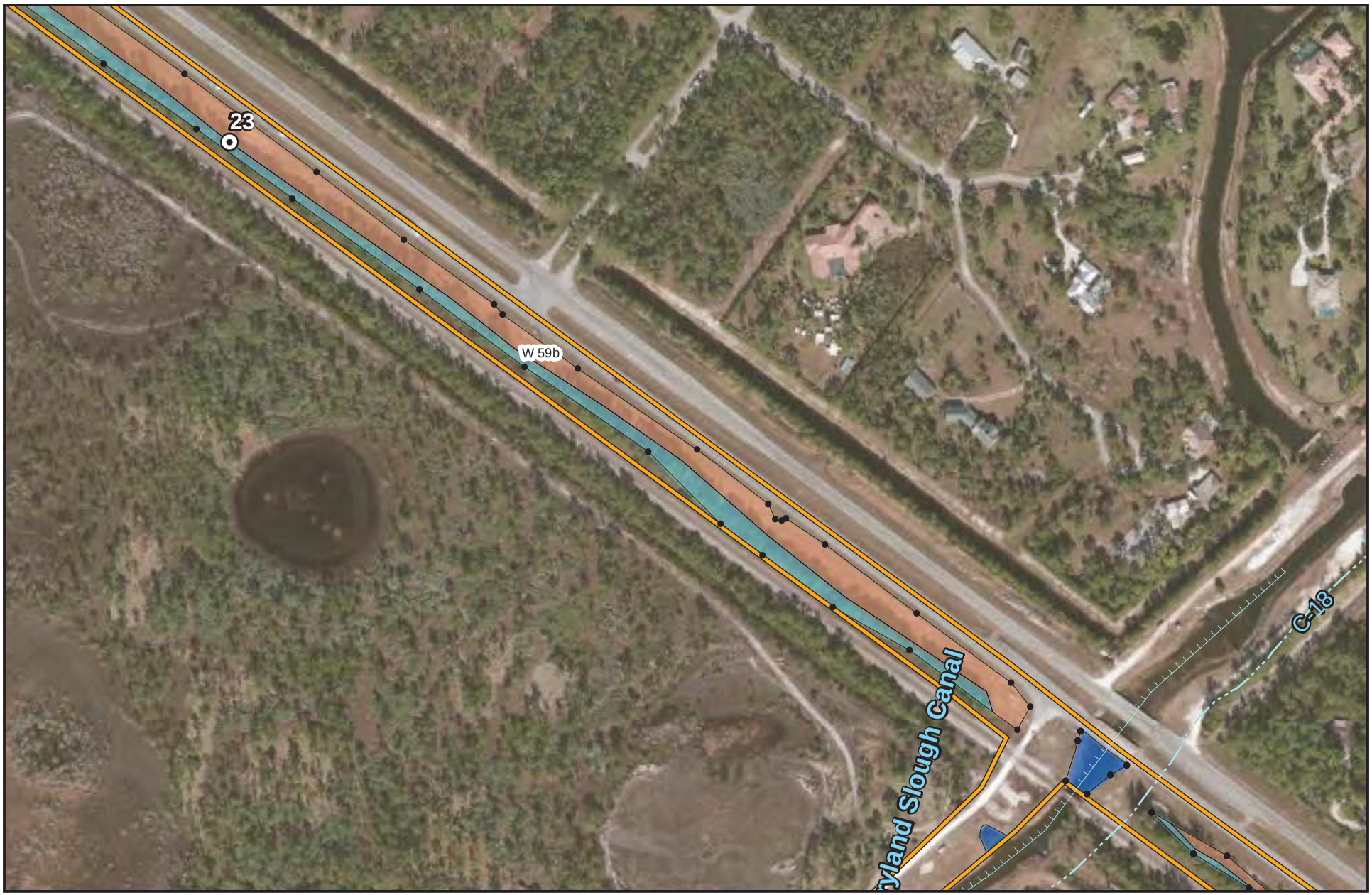
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



156

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 44 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 45 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



158

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 46 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 47 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



160

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 48 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



161

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 49 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



162

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 50 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



163

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 51 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 52 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 53 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



166

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 54 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 55 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



168

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 56 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



169

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 57 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



170

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 58 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



171

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 59 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\Wetland_Delineation.mxd



172

Legend

- GPS Point
- Waterbody
- Exotic Wetland Hardwood
- Cypress
- Hydric Pine Flatwoods
- Wetland Mixed Forested
- Wetland Shrub
- Fresh Water Marsh
- Proposed Corridor
- Mile Post

N

0 150 300 600 Feet

Figure 7

WETLAND DELINEATION MAP - SHEET 60 of 60

MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/20/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

Path: M:\acad\110697\ListedSpecies.mxd



Legend

- Gopher Tortoise Burrow - Abandoned
- Gopher Tortoise Burrow - Potentially Active
- Bletia Purpurea
- 1 Mile Post
- Proposed Corridor

N

0 0.5 1 2 Miles

Figure 8
LISTED SPECIES MAP
MARTIN PLANT TO RIVIERA BEACH ENERGY CENTER LATERAL PROJECT

FPL

Date: 2/22/2012

Source - BING, 2011; FPL,2011; ECT, 2011.

ATTACHMENT 1

SITE PHOTOGRAPHS



W 03 – Marsh (641)



W 07 – Marsh (641)



Typical view of hog rooting on Martin Power Plant site



WB 03 – View of American alligator in manmade reservoir on the Martin Power Plant site



W 17 and W 21 – Marsh (641) adjacent to manmade reservoir



W 22 – Marsh (641)



W 22 - Marsh (641)



Typical view of marsh on the Martin Power Plant site



Existing oil pipeline corridor on Martin Power Plant site



Typical herbaceous dry prairie (310) on Martin Power Plant site



Gopher tortoise burrow on Martin Power Plant site



WB 04 – Railroad ditch surrounded by exotic shrubs and trees (511/619)



Japanese climbing fern



W 25 – Mixed Hardwood W etland (630)



Typical view of mixed rangeland (630) on Martin Power Plant site



Overhead transmission line on Martin Power Plant
facing west toward cooling towers



W 30 – Linear roadside marsh (641)



W 34 – Linear roadside marsh (641)



W 35 – Marsh (641)



WB 05 – unnamed stream/ditch



WB 06 – railroad ditch



WB 07 – Railroad ditch



WB 08 - St. Lucie Canal



W 40c – Linear strip of mixed hardwood wetlands



W 40a – Linear strip of exotic shrubs and trees (619)



W 41 – Marsh (641) and exotics (619)



W 46 – Marsh (641)



W 55 – Linear roadside marsh (641) and exotic shrubs and trees (619)



W 56 – Exotic shrubs and trees (619)



W 56 – Marsh (641)



Sandhill Crane near MP 20



Typical view of CSX RR track



Extra workspace at MP 23.5



W ood stork at observed in extra workspace at MP 23.5



WB 21 – Hungryland Canal (Canal 18)



W 60 – Marsh (641)



W 66 – Marsh (641)



W 68 – Linear roadside marsh (641) and exotic shrubs and trees (619)



W 69 – Marsh (641) and exotics (619)



WB 24 – Unnamed Stream



W 70 – Linear strips of marsh and exotic shrubs and trees



WB 25 – Unnamed canal



W 72 – Linear roadside marsh and strip of exotic hardwoods (641, 619)



W 73 - Roadside marsh (641)



W 75 – Marsh (641) and exotic shrubs and trees (619)



W 76 – Linear roadside marsh (641)

ATTACHMENT 2

USACE WETLAND/UPLAND DATA SHEETS

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: Martin Sampling Date: Oct 12, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 7-Wetland

Investigator(s): L. Ricker Section, Township, Range:

Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR or MLRA): LRR T (MLRA 150A) Lat: Long: Datum:

Soil Map Unit Name: Placid NWI Classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 7 Wetland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Herb Stratum (Plot size: 1m x 1m)			
1. Eupatorium capillifolium	15	Y	FACU
2. Pontederia cordata	10	N	OBL
3. Panicum hemitomon	35	Y	OBL
4. Andropogon virginicus	15	Y	FAC-
5. Saggitaria lancifolia	10	N	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
50 % of total cover: 50	20 % of total cover: 20		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 7-Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR2/1	80			N/A	N/A	Sandy	
6-12	10YR3/1	70	10YR 6/1	15			Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- X Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- X Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: Martin Sampling Date: Oct 12, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 7- Upland

Investigator(s): L. Ricker Section, Township, Range:

Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Placid NWI Classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15) **(LRR U)**
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 7 Upland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Herb Stratum (Plot size: 1m x 1m)			
1. Eupatorium capillifolium	15	Y	FACU
2. Paspalum notatum	40	Y	UPL
3. Spermacoce glabra	15	Y	FACW
4. Andropogon virginicus	10	N	FAC-
5. Axonopus fissifolius	10	N	FACW-
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
50 % of total cover: 50	20 % of total cover: 20		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

___ 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 7-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/1	40			N/A	N/A	Sandy	Salt and pepper sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: Martin Sampling Date: Oct 12, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 12-Wetla

Investigator(s): L. Ricker Section, Township, Range:

Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR or MLRA): LRR T (MLRA 150A) Lat: Long: Datum:

Soil Map Unit Name: Placid NWI Classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 12-Wetland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:)			
1. Myrica cerifera	15	Y	FAC +
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Herb Stratum (Plot size: 1m x 1m)			
1. Eupatorium capillifolium	25	Y	FACU
2. Euthamia graminifolia	15	N	FACW-
3. Panicum hemitomon	15	N	OBL
4. Panicum repens	25	Y	
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
50 % of total cover: 50	20 % of total cover: 20		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 12 - Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR2/1	80			N/A	N/A	Sandy	
6-12	10YR3/1	70	10YR 6/1	15			Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- X Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- X Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: Martin Sampling Date: Oct 12, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 12-upland

Investigator(s): L. Ricker Section, Township, Range:

Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR or MLRA): LRR T (MLRA 150A) Lat: Long: Datum:

Soil Map Unit Name: Placid NWI Classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes No X	
Wetland Hydrology Present?	Yes No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 12-upland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Shrub Stratum (Plot size:)			
1. Myrica cerifera	15	Y	FAC+
2. Sabal palmetto	5		FAC +
3. Serenoa repens	35	Y	FACU
4. Schinus terribenthifolius	15	Y	FAC
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Herb Stratum (Plot size: 1m x 1m)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	

50 % of total cover: 50 20 % of total cover: 20

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 12-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR3/1	40			N/A	N/A	Sandy	Salt and pepper sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: Martin Sampling Date: Oct 12, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 22-

Investigator(s): L. Ricker Section, Township, Range:

Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Floridana NWI Classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 2"
Water Table Present?	Yes ___	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 22 Wetland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Shrub Stratum (Plot size:)			
1. Salix caroliniana	10	Y	OBL
2. Cephalanthus occidentalis	10	Y	OBL
3. Ludwigia peruviana	10	Y	OBL
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Herb Stratum (Plot size: 1m x 1m)			
1. Eupatorium capillifolium	25	Y	FACU
2. Panicum hemitomon	25	Y	OBL
3. Saggitaria lancifolia	15	N	OBL
4. Pontederia cordata	15	N	OBL
5. Spartina bakeri	15	N	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	

50 % of total cover: 50 20 % of total cover: 20

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 22-Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR2/1	75			N/A	N/A	Sandy	
4-12	10YR 3/1	65	10YR 6/1	25			Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- X Stripped Matrix (S6)
- X Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: Martin Sampling Date: Oct 12, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 22- Uplan

Investigator(s): L. Ricker Section, Township, Range:

Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Floridana NWI Classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes No X	
Wetland Hydrology Present?	Yes No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 22 Upland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:)			
1. Serenoa repens	15	Y	FACU
2. Myrica cerifera	10	Y	FAC+
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Herb Stratum (Plot size: 1m x 1m)			
1. Eupatorium capillifolium	15	Y	FACU
2. Axonopus fissifolius	25	Y	FACW-
3. Sporobolus jacquemontii	20	Y	FAC
4. Andropogon virginicus	10	N	FAC-
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
50 % of total cover: 50	20 % of total cover: 20		

Woody Vine Stratum (Plot size:)			
1. Vitis rotundifolia	15	Y	FAC
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 22-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/1	40			N/A	N/A	Sandy	Salt and pepper sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: Martin Sampling Date: Dec. 11, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 28- Wet

Investigator(s): L. Ricker Section, Township, Range:

Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Floridana NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- X Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15) **(LRR U)**
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches): 2"
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 28 Wetland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Shrub Stratum (Plot size:)			
1. Schinus terribenthifolius	75	Y	FAC
2. Ludwigia peruviana	10	N	OBL
3. Salix caroliniana	10	N	OBL
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Herb Stratum (Plot size: 1m x 1m)			
1. Thalia geniculata	5	Y	OBL
2. Saururus cernuus	5	Y	OBL
3. *Colocasia esculenta*	5	Y	FACW+
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	

50 % of total cover: 20 % of total cover:

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 28-Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR2/1	75			N/A	N/A	Sandy	
4-12	10YR 3/1	65	10YR 6/1	25			Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- X Stripped Matrix (S6)
- X Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: Martin Sampling Date: Dec. 11, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 28- Up

Investigator(s): L. Ricker Section, Township, Range:

Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Floridana NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No X	**Is the Sampled Area within a Wetland?** Yes ____ No ____
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ____
Water Table Present?	Yes ___	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 28 upland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Herb Stratum (Plot size: 1m x 1m)			
1. Paspalum notatum	15		FACU+
2. Richardia brasiliensis	25	Y	UPL
3. Phyla nodiflora	5		FACW
4. Bidens alba	5		UPL
5. Cynodon dactylon	15		FACU
6. Desmodium canadense	25	Y	FAC
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
50 % of total cover: 50	20 % of total cover: 20		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 22-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/1	50			N/A	N/A	Sandy	Salt & pepper sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 11, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 43-wetland

Investigator(s): M. Lee Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI Classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	
Water Table Present?	Yes ___	No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	~4"

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 43-wetland

Tree Stratum (Plot size: 5m x 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size: 5m x 5m)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size: 5m x 5m)			
1. Schinus terebinthifolius (Pepper-tree,brazilian)	100	Y	FAC
2.			
3.			
4.			
5.			
6.			
	100 = Total Cover		
50 % of total cover: 50	20 % of total cover: 20		

Herb Stratum (Plot size: 5m x 5m)			
1. Blechnum serrulatum (Fern,toothed mid-sorus)	90	Y	FACW
2. Osmunda cinnamomea (Fern,cinnamon)	10		FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50 % of total cover: 50	20 % of total cover: 20		

Woody Vine Stratum (Plot size: 5m x 5m)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	X 2 =
FAC species	X 3 =
FACU species	X 4 =
UPL species	X 5 =
Column Totals:	(A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 43-wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR2/1	90			C	N/A	N/A	Mucky sand
6-12+	10YR6/2	60	10YR6/8	5	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 11, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 43-upland

Investigator(s): M. Lee Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI Classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ____
Water Table Present?	Yes X	No ___	Depth (inches): 13 inches
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 9 inches

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 43-upland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Herb Stratum (Plot size: 1m x 1m)			
1. Paspalum acuminatum (Paspalum,brook)	80	Y	OBL
2. Richardia grandiflora (Largeflower mexican clover)	15	N	UPL
3. Sida acuta (Common wireweed)	5	N	NI
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
50 % of total cover: 50	20 % of total cover: 20		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 43-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR3/1	70			N/A	N/A	Sandy	Altered roadside soils.
5-9	10YR5/3	60			N/A	N/A	Sandy	Altered roadside soils.
9-15+	10YR6/3	80			N/A	N/A	Sandy	Altered roadside soils.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 11, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 44-wetland

Investigator(s): AGS/BD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR T (MLRA 150A) Lat: Long: Datum:

Soil Map Unit Name: NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):
Water Table Present?	Yes X	No ___	Depth (inches): 9"
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: Wetland 44-wetland

Tree Stratum (Plot size: 25 x 25)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus elliottii (Pine,slash)	95	Y	FACW
2.			
3.			
4.			
5.			
6.			
	95	= Total Cover	

50 % of total cover: 47.5 20 % of total cover: 19

Sapling Stratum (Plot size: 25 x 25)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Shrub Stratum (Plot size: 25 x 25)			
1. Schinus terebinthifolius (Pepper-tree,brazilian)	95	Y	FAC
2. Myrsine punctata (Kolea)	40	Y	
3.			
4.			
5.			
6.			
	135	= Total Cover	

50 % of total cover: 67.5 20 % of total cover: 27

Herb Stratum (Plot size: 25 x 25)			
1. Thelypteris kunthii (Fern,widespread maiden)	5	Y	FACW
2. Cladium jamaicense (Sawgrass,jamaica)	1		OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	6	= Total Cover	

50 % of total cover: 3 20 % of total cover: 1.2

Woody Vine Stratum (Plot size: 25 x 25)			
1. Vitis rotundifolia (Grape,muscadine)	10	Y	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	

50 % of total cover: 5 20 % of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 44-wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR2/1	100			N/A	N/A	N/A	Sandy muck*
3-12	10YR4/1	55		3	N/A	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

__ Histosol (A1)
__ Histic Epipedon (A2)
__ Black Histic (A3)
__ Hydrogen Sulfide (A4)
__ Stratified Layers (A5)
__ Organic Bodies (A6) **(LRR P, T, U)**
__ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
__ Muck Presence (A8) **(LRR U)**
__ 1 cm Muck (A9) **(LRR P, T)**
__ Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Coast Prairie Redox (A16) **(MLRA 150A)**
__ Sandy Mucky Mineral (S1) **(LRR O, S)**
__ Sandy Gleyed Matrix (S4)
X Sandy Redox (S5)
__ Stripped Matrix (S6)
__ Dark Surface (S7) **(LRR P, S, T, U)**
__ Polyvalue Below Surface (S8) **(LRR S, T, U)**
__ Thin Dark Suface (S9) **(LRR S, T, U)**
__ Loamy Gleyed Matrix (F1) **(LRR O)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)
__ Marl (F10) **(LRR U)**
__ Depleted Ochric (F11) **(MLRA 151)**
__ Iron Manganese Masses (F12) **(LRR O, P, T)**
__ Umbric Surface (F13) **(LRR P, T, U)**
__ Delta Ochric (F17) **(MLRA 151)**
__ Reduced Vertic (F18) **(MLRA 150A, 150B)**
__ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
__ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

__ 1 cm Muck (A9) **(LRR O)**
__ 2 cm Muck (A10) **(LRR S)**
__ Reduced Vertic (F18) **(outside MLRA 150A,B)**
__ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
__ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
__ Red Parent Material (TF2)
__ Very Shallow Dark Surface (TF12)
__ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

* Mostly organic bodies to 1 cm, bound together by a sandy muck. Organic bodies attached to roots. 0-3 = Not quite dark surface due to scattered uncoated sand grains. 3-12 = 55% sandy matrix with small scattered patches of organic material.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 7, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 44-upland

Investigator(s): AGS / BD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15) **(LRR U)**
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 44-upland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Herb Stratum (Plot size:)			
1. Eustachys petraea (Grass,pinewoods finger)	20	Y	FACU
2. Sida rhombifolia (Sida,arrow-leaf)	20	Y	FACU
3. Sporobolus indicus (Dropseed,west indian)	20	Y	FACU
4. Paspalum setaceum (Paspalum,thin)	5		FAC
5. Paspalum notatum (Grass,bahia)	3		FACU
6. Chamaesyce hirta (Pillpod sandmat)	2		NI
7. Andropogon virginicus (Broom-sedge)	1		FAC
8. Eragrostis spectabilis (Lovegrass,purple)	1		FACU
9.			
10.			
11.			
	72	= Total Cover	
50 % of total cover: 36	20 % of total cover: 14.4		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	X 2 =	0
FAC species	6	X 3 =	18
FACU species	64	X 4 =	256
UPL species	0	X 5 =	0
Column Totals:	70 (A)		274 (B)

Prevalence Index = B/A = 3.91

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

___ 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 44-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/1	100			N/A	N/A	Sandy	
2-10	7YR3/3	75			N/A	N/A	N/A	Mixture of soils.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

2-10 matrix 75% 7YR3/3 inclusion of soils from 10YR1/1, 10YR3/4.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 11, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 48-Wetland

Investigator(s): DBD Section, Township, Range:

Landform (hillslope, terrace, etc.) Slope Local relief (concave, convex, none): concave Slope (%): <1%

Subregion (LRR or MLRA): LRR T (MLRA 150A) Lat: Long: Datum:

Soil Map Unit Name: Riviera Sand NWI Classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology X naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:
Roadside edge of system has been recently mowed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	
Water Table Present?	Yes X No ___	Depth (inches):	10.0
Saturation Present? (includes capillary fringe)	Yes X No ___	Depth (inches):	2.0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Trees within sampling point are hummocked. Water stain lines observed on southwest portion of sample area.

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: Wetland 48-Wetland

Tree Stratum (Plot size: 5m x 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Melaleuca quinquenervia (Tree,punk)	20	Y	FAC
2. Taxodium ascendens (Pond cypress)	20	Y	OBL
3. Pinus elliottii (Pine,slash)	10	Y	FACW
4.			
5.			
6.			
	50	= Total Cover	

50 % of total cover: 25 20 % of total cover: 10

Sapling Stratum (Plot size: 5m x 5m)			
1. Taxodium ascendens (Pond cypress)	20	Y	OBL
2. Pinus elliottii (Pine,slash)	2	N	FACW
3.			
4.			
5.			
6.			
	22	= Total Cover	

50 % of total cover: 11 20 % of total cover: 4.4

Shrub Stratum (Plot size: 5m x 5m)			
1. Myrsine floridana (Florida colicwood)	20	Y	FAC
2. Myrica cerifera (Bayberry,southern)	15	Y	FAC
3. Persea borbonia (Bay,red)	5	N	FACW
4. Baccharis glomeruliflora (Tree,groundsel)	2	N	FACW
5. Schinus terebinthifolius (Pepper-tree,brazilian)	2	N	FAC
6.			
	44	= Total Cover	

50 % of total cover: 22 20 % of total cover: 8.8

Herb Stratum (Plot size: 1m x1m)			
1. Axonopus furcatus (Grass,big carpet)	15	Y	OBL
2. Spartina bakeri (Cordgrass,sand)	15	Y	FACW
3. Setaria geniculata (Grass,knotroot bristle)	10	N	FAC
4. Cladium jamaicense (Sawgrass,jamaica)	5	N	OBL
5. Phyla nodiflora (Frog-fruit,common)	5	N	FACW
6. Hydrocotyle umbellata (Penny-wort,many-flower)	2	N	OBL
7.			
8.			
9.			
10.			
11.			
	52	= Total Cover	

50 % of total cover: 26 20 % of total cover: 10.4

Woody Vine Stratum (Plot size: 5m x 5m)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Herbaceous sample recently moxed as part of road right-of-way.

SOIL

Sampling Point: Wetland 48-Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	20YR2/1	100			N/A	N/A	Muck	
2-15	10YR5/4		10YR5/8	2	RM	M	Coarse	Marl present.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- X Muck Presence (A8) **(LRR U)**
- X 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:
Muck layer present.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Jan 24, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 48-upland

Investigator(s): DBD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Slope Local relief (concave, convex, none): concave Slope (%): <1%

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Riviera Sand NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Area is maintained road right-of-way.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ____
Water Table Present?	Yes ___	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology indicators observed.

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 48-upland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Herb Stratum (Plot size: 1m x 1m)			
1. Paspalum notatum (Grass,bahia)	70	Y	FACU
2. Phyla nodiflora (Frog-fruit,common)	5	N	FACW
3. Desmodium triflorum (Tick-trefoil,three-flower)	2	N	FACU
4. Richardia grandiflora (Largeflower mexican clover)	2	N	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	79	= Total Cover	
50 % of total cover: 39.5	20 % of total cover: 15.8		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	X 2 =	10
FAC species	0	X 3 =	0
FACU species	72	X 4 =	288
UPL species	2	X 5 =	10
Column Totals:	79 (A)		308 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

___ 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Mowed right-of-way for highway.

SOIL

Sampling Point: Wetland 48-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR4/1	100			N/A	N/A	Sandy	Fill material
5-15	10YR5/2	80	10YR5/0	2	RM	M	Coarse	Marl present.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

Fill material for road bed construction. Coarse sand with marl is natural material. Very minor and sporadic redox noted.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 5, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 52-wetland

Investigator(s): AGS/BD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Riviera NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 5
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Shallow standing water throughout.

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 52-Wet

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Taxodium ascendens (Pond cypress)	95	Y	OBL
2.			
3.			
4.			
5.			
6.			
	95	= Total Cover	

50 % of total cover: 47.5 20 % of total cover: 19

Sapling Stratum (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Shrub Stratum (Plot size:_____)			
1. Myrica cerifera (Bayberry,southern)	75	Y	FAC
2. Myrsine punctata (Kolea)	5		
3. Cephalanthus occidentalis (Buttonbush,common)	2		OBL
4.			
5.			
6.			
	82	= Total Cover	

50 % of total cover: 41 20 % of total cover: 16.4

Herb Stratum (Plot size:_____)			
1. Blechnum serrulatum (Fern,toothed mid-sorus)	50	Y	FACW
2. Osmunda regalis (Fern,royal)	20	Y	OBL
3. Lygodium microphyllum (Small-leaf climbing fern)	1		
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	71	= Total Cover	

50 % of total cover: 35.5 20 % of total cover: 14.2

Woody Vine Stratum (Plot size:_____)			
1. Smilax laurifolia (Greenbrier,laurel-leaf)	5	Y	FACW
2. Vitis rotundifolia (Grape,muscadine)	5	Y	FAC
3.			
4.			
5.			
	10	= Total Cover	

50 % of total cover: 5 20 % of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 52-wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR2/1	100			N/A	N/A	Muck	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- X Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Thick layer of undecomposed plant material overlying muck. NOte: No upland sample site due to prohibition to diggin in CSX railroad right-of-way.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 7, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 52-upland

Investigator(s): AGS/BD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Edge of railroad tracks Local relief (concave, convex, none): none Slope (%): 45%

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	
Hydric Soil Present?	Yes	No X	**Is the Sampled Area within a Wetland?** Yes No X
Wetland Hydrology Present?	Yes	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 52-upland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size: 9 x 27)			
1. Schinus terebinthifolius (Pepper-tree,brazilian)	75	Y	FAC
2. Myrsine punctata (Kolea)	5		
3.			
4.			
5.			
6.			
	80	= Total Cover	
50 % of total cover: 40	20 % of total cover: 16		

Herb Stratum (Plot size:)			
1. Andropogon virginicus (Broom-sedge)	5	Y	FAC
2. Thelypteris kunthii (Fern,widespread maiden)	5	Y	FACW
3. Lygodium microphyllum (Small-leaf climbing fern)	1		
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	11	= Total Cover	
50 % of total cover: 5.5	20 % of total cover: 2.2		

Woody Vine Stratum (Plot size:)			
1. Smilax bona-nox (Greenbrier,saw)	2	Y	FAC
2.			
3.			
4.			
5.			
	2	= Total Cover	
50 % of total cover: 1	20 % of total cover: 0.4		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Most vegetation recently herbicided. Edge of railroad easement.

SOIL

Sampling Point: Wetland 52-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

No soil data due to prohibition from digging in CSX right-of-way.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 4, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 52-wetland

Investigator(s): AGS / BD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none): concave Slope (%): 0%

Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI Classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes X No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 3"
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 52-wetland

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size: 25 x 25)			
1. Salix caroliniana (Willow,coastal-plain)	75	Y	OBL
2. Cephalanthus occidentalis (Buttonbush,common)	10		OBL
3. Ludwigia peruviana (Seedbox,peruvian)	10		OBL
4. Myrica cerifera (Bayberry,southern)	5		FAC
5. Baccharis glomeruliflora (Tree,groundsel)	3		FACW
6.			
	103	= Total Cover	
50 % of total cover: 51.5	20 % of total cover: 20.6		

Herb Stratum (Plot size:_____)			
1. Eleocharis equisetoides (Spikerush,horse-tail)	25	Y	OBL
2. Acrostichum danaeifolium (Fern,inland leather)	2		OBL
3. Cladium jamaicense (Sawgrass,jamaica)	2		OBL
4. Pontederia cordata (Weed,pickerel)	2		OBL
5. Typha domingensis (Cattail,southern)	2		OBL
6.			
7.			
8.			
9.			
10.			
11.			
	33	= Total Cover	
50 % of total cover: 16.5	20 % of total cover: 6.6		

Woody Vine Stratum (Plot size:_____)			
1. Mikania scandens (Hempweed,climbing)	1	Y	FACW
2.			
3.			
4.			
5.			
	1	= Total Cover	
50 % of total cover: 0.5	20 % of total cover: 0.2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 52-wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2.5	10YR2/1	90			N/A	N/A	Sandy	Muck
2.5-9	10YR4/2	100			N/A	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- X Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:
10% sand grains uncoated.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 4, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 52-upland

Investigator(s): AGS / BD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Road shoulder Local relief (concave, convex, none): none Slope (%): 3%

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Riviera NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes ____ No X		

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	
Water Table Present?	Yes ___ No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 52-upland

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:_____)			
1. Schinus terebinthifolius (Pepper-tree,brazilian)	90	Y	FAC
2. Myrsine punctata (Kolea)	15		
3.			
4.			
5.			
6.			
	105	= Total Cover	
50 % of total cover: 52.5	20 % of total cover: 21		

Herb Stratum (Plot size:_____)			
1. Thelypteris kunthii (Fern,widespread maiden)	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50	= Total Cover	
50 % of total cover: 25	20 % of total cover: 10		

Woody Vine Stratum (Plot size:_____)			
1. Vitis rotundifolia (Grape,muscadine)	1	Y	FAC
2.			
3.			
4.			
5.			
	1	= Total Cover	
50 % of total cover: 0.5	20 % of total cover: 0.2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 52-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/1				N/A	N/A	Sandy	
2-9	10YR5/3		10YR3/8	5	N/A	M	Sandy	Redox scattered throughout

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Redox 5%, scattered throughout. Sample taken along lower scope of road shoulder.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 3, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 53-wetland

Investigator(s): AGS/BD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Shallow marsh Local relief (concave, convex, none): concave Slope (%): 3%

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Riviera NWI Classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: Wetland 53-wetland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Herb Stratum (Plot size: 25 x 25)			
1. Panicum repens (Grass,torpedo)	80	Y	FACW
2. Ludwigia octovalvis (Seedbox,mexican)	5		OBL
3. Sagittaria lancifolia (Arrow-head,bull-tongue)	5		OBL
4. Eleocharis equisetoides (Spikerush,horse-tail)	2		OBL
5. Coreopsis leavenworthii (Tickseed,leavenworth's)	1		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	93	= Total Cover	
50 % of total cover: 46.5	20 % of total cover: 18.6		

Woody Vine Stratum (Plot size:)			
1. Mikania scandens (Hempweed,climbing)	2	Y	FACW
2.			
3.			
4.			
5.			
	2	= Total Cover	
50 % of total cover: 1	20 % of total cover: 0.4		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 53-wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/1	95			N/A	N/A	Sandy	Muck
2-8	10YR4/2	80			N/A	N/A	N/A	Coarse sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

__ Histosol (A1)
__ Histic Epipedon (A2)
__ Black Histic (A3)
__ Hydrogen Sulfide (A4)
__ Stratified Layers (A5)
__ Organic Bodies (A6) **(LRR P, T, U)**
__ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
X Muck Presence (A8) **(LRR U)**
__ 1 cm Muck (A9) **(LRR P, T)**
__ Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Coast Prairie Redox (A16) **(MLRA 150A)**
__ Sandy Mucky Mineral (S1) **(LRR O, S)**
__ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
__ Stripped Matrix (S6)
__ Dark Surface (S7) **(LRR P, S, T, U)**
__ Polyvalue Below Surface (S8) **(LRR S, T, U)**
__ Thin Dark Suface (S9) **(LRR S, T, U)**
__ Loamy Gleyed Matrix (F1) **(LRR O)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)
__ Marl (F10) **(LRR U)**
__ Depleted Ochric (F11) **(MLRA 151)**
__ Iron Manganese Masses (F12) **(LRR O, P, T)**
__ Umbric Surface (F13) **(LRR P, T, U)**
__ Delta Ochric (F17) **(MLRA 151)**
__ Reduced Vertic (F18) **(MLRA 150A, 150B)**
__ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
__ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

__ 1 cm Muck (A9) **(LRR O)**
__ 2 cm Muck (A10) **(LRR S)**
__ Reduced Vertic (F18) **(outside MLRA 150A,B)**
__ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
__ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
__ Red Parent Material (TF2)
__ Very Shallow Dark Surface (TF12)
__ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:
2-8" - A mixture of soil types predominantly coarse sand 10YR4/2 with inclusions of coarse sand 10YR3/3 and fine sand 10YR2/1. Small shell fragments throughout.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 3, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 53-upland

Investigator(s): AGS/BD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Road shoulder Local relief (concave, convex, none): concave Slope (%): 3%

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Riviera NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ____
Water Table Present?	Yes ___	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 53-upland

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Herb Stratum (Plot size:_____)			
1. Paspalum notatum (Grass,bahia)	80	Y	FACU
2. Sida rhombifolia (Sida,arrow-leaf)	2		FACU
3. Spermacoce verticillata (Shrubby false buttonweed)	2		
4. Bidens alba ((beggarticks))	1		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85	= Total Cover	
50 % of total cover: 42.5	20 % of total cover: 17		

Woody Vine Stratum (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	1	X 2 =	2
FAC species	0	X 3 =	0
FACU species	82	X 4 =	328
UPL species	0	X 5 =	0
Column Totals:	83 (A)		330 (B)

Prevalence Index = B/A = 3.98

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

___ 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 53-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR2/2	85%			N/A	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:
Road shoulder and fill soil - shell fragments and gravel in upper layers.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 4, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 54-wetland

Investigator(s): M. Lee Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI Classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Hydric Soil Present?	Yes ____ No X		
Wetland Hydrology Present?	Yes X No ____		

Remarks:
Part of linear retention area between railroad and roadway.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches):	8"
Water Table Present?	Yes X	No ___	Depth (inches):	at surface
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	throughout

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 54-wetland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size: 5m x 5m)			
1. Melaleuca quinquenervia (Tree,punk)	100	Y	FAC
2.			
3.			
4.			
5.			
6.			
	100	= Total Cover	
50 % of total cover: 50	20 % of total cover: 20		

Shrub Stratum (Plot size: 5m x 5m)			
1. Salix caroliniana (Willow,coastal-plain)	60	Y	OBL
2. Myrica cerifera (Bayberry,southern)	20	Y	FAC
3. Cephalanthus occidentalis (Buttonbush,common)	10		OBL
4. Ludwigia peruviana (Seedbox,peruvian)	10		OBL
5.			
6.			
	100	= Total Cover	
50 % of total cover: 50	20 % of total cover: 20		

Herb Stratum (Plot size: 5m x 5m)			
1. Cladium jamaicense (Sawgrass,jamaica)	50	Y	OBL
2. Pontederia cordata (Weed,pickerel)	40	Y	OBL
3. Sagittaria lancifolia (Arrow-head,bull-tongue)	10		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
50 % of total cover: 50	20 % of total cover: 20		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 54-wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:
Unable to dig soil pit with ~12" water inundation.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 4, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 54-upland

Investigator(s): M. Lee Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Riviera NWI Classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Hydric Soil Present?	Yes ____ No X		
Wetland Hydrology Present?	Yes ____ No X		

Remarks:
Area sampled is between wetland retention area and railroad right-of-way. Unable to sample soil due to CSX rules because of underground utilities.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	_____
Water Table Present?	Yes ___ No X	Depth (inches):	_____
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	_____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 54-upland

Tree Stratum (Plot size: 5m x 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus elliottii (Pine,slash)	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
	100	= Total Cover	

50 % of total cover: 50 20 % of total cover: 20

Sapling Stratum (Plot size: 5m x 5m)			
1. Myrsine floridana (Florida colicwood)	10	Y	FAC
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	

50 % of total cover: 5 20 % of total cover: 2

Shrub Stratum (Plot size: 5m x 5m)			
1. Schinus terebinthifolius (Pepper-tree,brazilian)	60	Y	FAC
2. Myrsine floridana (Florida colicwood)	30	Y	FAC
3. Myrica cerifera (Bayberry,southern)	10		FAC
4.			
5.			
6.			
	100	= Total Cover	

50 % of total cover: 50 20 % of total cover: 20

Herb Stratum (Plot size: 5m x 5m)			
1. Thelypteris interrupta (Fern,willdenow's maiden)			FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Woody Vine Stratum (Plot size: 5m x 5m)			
1. Toxicodendron radicans (Ivy,poison)			FAC
2. Vitis rotundifolia (Grape,muscadine)			FAC
3.			
4.			
5.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 54-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

Unable to dig soil pit due to CSX policy because of underground utilities present.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 4, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 55-wetland

Investigator(s): DBD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Slope Local relief (concave, convex, none): concave Slope (%): <1%

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Riviera fine sand NWI Classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:
Collection swale between roadway and railroad.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	
Water Table Present?	Yes X	No ___	Depth (inches):	7"
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	1"

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal rainfall normal - system is at normal levels.

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: Wetland 55-wetland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Herb Stratum (Plot size: 1m x 1m)			
1. Eleocharis baldwinii (Spikerush,baldwin's)	35	Y	FACW
2. Eleocharis cellulosa (Spikerush,gulf coast)	10		OBL
3. Centella asiatica (Coinleaf,asian)	2		FACW
4. Ludwigia arcuata (Seedbox,piedmont)	2		OBL
5. Panicum repens (Grass,torpedo)	2		FACW
6. Paspalum notatum (Grass,bahia)	2		FACU
7. Phyla nodiflora (Frog-fruit,common)	2		FACW
8.			
9.			
10.			
11.			
	55	= Total Cover	
50 % of total cover: 27.5	20 % of total cover: 11		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 55-wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR6/2	70	10YR5/8	7	N/A	M	Sandy	Dense in upper 2"
3-15	10YR7/3	80			N/A	N/A	N/A	Shell fill at 7"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 4, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 55-upland

Investigator(s): DBD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Slope Local relief (concave, convex, none): concave Slope (%): <1%

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Riveria fine sand NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Maintained road right-of-way at toe of slope.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ____
Water Table Present?	Yes ___	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Toe of slope at roadside.

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: Wetland 55-upland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Herb Stratum (Plot size: 1m x 1m)			
1. Paspalum notatum (Grass,bahia)	80	Y	FACU
2. Alysicarpus vaginalis (White moneywort)	5		
3. Desmodium triflorum (Tick-trefoil,three-flower)	3		FACU
4. Hydrocotyle umbellata (Penny-wort,many-flower)	3		OBL
5. Phyla nodiflora (Frog-fruit,common)	2		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	93	= Total Cover	
50 % of total cover: 46.5	20 % of total cover: 18.6		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species	2	X 2 =	4
FAC species	0	X 3 =	0
FACU species	83	X 4 =	332
UPL species	0	X 5 =	0
Column Totals:	88 (A)		339 (B)

Prevalence Index = B/A = 3.85

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

___ 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Recently mowed.

SOIL

Sampling Point: Wetland 55-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR3/1				N/A	N/A	Sandy	Root zone
2-9	10YR4/1				N/A	N/A	Sandy	Gravel mixed
9-14	10YR6/4				N/A	N/A	N/A	Coarse, mixing evident.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 5, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 56-wetland

Investigator(s): DBD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Swale Local relief (concave, convex, none): none Slope (%): ____

Subregion (LRR or MLRA): LRR U Lat: ____ Long: ____ Datum: ____

Soil Map Unit Name: Riveria Sand, Depressional NWI Classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:
Area has been previously disturbed for possible installation of a water line. Regularly mowed and maintained. Soils appear to have been disturbed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ____
Water Table Present?	Yes X	No ___	Depth (inches): 8"
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 3"

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Standing water noted throughout system. Roadside drainage runoff as well as input via culverts under roadway.

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 56-wetland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Herb Stratum (Plot size: 1m x 1m)			
1. Dichanthelium dichotomum (Witchgrass,cypress)	30	Y	FAC
2. Spermacoce glabra (Button-plant,smooth)	10	Y	FACW
3. Fimbristylis castanea (Fimbry,marsh)	5		OBL
4. Muhlenbergia capillaris (Muhly,long-awn)	5		FACU
5. Phyla nodiflora (Frog-fruit,common)	5		FACW
6. Rhynchospora colorata (Starrush whitetop)	5		FACW
7. Setaria geniculata (Grass,knotroot bristle)	5		FAC
8.			
9.			
10.			
11.			
	65	= Total Cover	
50 % of total cover: 32.5	20 % of total cover: 13		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Bare ground 35%

SOIL

Sampling Point: Wetland 56-wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR6/3	90			N/A	N/A	N/A	Coarse, mixed soils
3-8	7.5YR5/3	75			N/A	N/A	N/A	Coarse, marl present
8-13	7.5YR4/2	45			N/A	N/A	N/A	Sand, mixing probable

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- X Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Soils are highly disturbed 0-8". Below are probably disturbed but without marl intermixed.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 5, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 56-Upland

Investigator(s): DBD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Slope Local relief (concave, convex, none): concave Slope (%): <1!

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Riveria Sand, Depressional NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Maintained road right-of-way on slope from pavement.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ____
Water Table Present?	Yes ___	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 56-Upland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Herb Stratum (Plot size: 1m x 1m)			
1. Paspalum notatum (Grass,bahia)	50	Y	FACU
2. Desmodium triflorum (Tick-trefoil,three-flower)	20	Y	FACU
3. Sporobolus indicus (Dropseed,west indian)	10		FACU
4. Phyla nodiflora (Frog-fruit,common)	6		FACW
5. Dactyloctenium aegyptium (Egyptian grass)	5		
6. Spermacoce glabra (Button-plant,smooth)	5		FACW
7. Alysicarpus vaginalis (White moneywort)	2		
8. Richardia grandiflora (Largeflower mexican clover)	2		UPL
9.			
10.			
11.			
	100	= Total Cover	

50 % of total cover: 50 20 % of total cover: 20

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	11	X 2 =	22	
FAC species	0	X 3 =	0	
FACU species	80	X 4 =	320	
UPL species	2	X 5 =	10	
Column Totals:	93	(A)	352	(B)

Prevalence Index = B/A = 3.78

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

___ 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 56-Upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	7.5YR3/2	95			N/A	N/A	Sandy	
5-9	7.5YR4/3	75			N/A	N/A	Sandy	
9-14	7.5YR6/2	70			N/A	N/A	Sandy	with marl intermixed

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:
Soils appear mixed or fill material.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 5, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 56A-wetland

Investigator(s): DBD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Hillslope Local relief (concave, convex, none): concave Slope (%): <1%

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Wabasso Fine Sand NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?**	Yes X No
Hydric Soil Present?	Yes X No		
Wetland Hydrology Present?	Yes X No		

Remarks:
Impounding possible by road and railroad. Disturbance (roads, trails, dumping possible historic cleaning) Melaleuca invading. Clumps of palmetto with ferns throughout eastern portion.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X No ___	Depth (inches):	1-3"
Water Table Present?	Yes X No ___	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes X No ___	Depth (inches):	

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Standing water throughout system.

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: Wetland 56A-wetland

Tree Stratum (Plot size: 25m x 25m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus elliottii (Pine,slash)	10	Y	FACW
2. Melaleuca quinquenervia (Tree,punk)	5	Y	FAC
3.			
4.			
5.			
6.			
	15	= Total Cover	

50 % of total cover: 7.5 20 % of total cover: 3

Sapling Stratum (Plot size: 25m x 25m)			
1. Melaleuca quinquenervia (Tree,punk)	18	Y	FAC
2. Ilex cassine (Holly,dahoon)	1		FACW
3. Pinus elliottii (Pine,slash)	1		FACW
4.			
5.			
6.			
	20	= Total Cover	

50 % of total cover: 10 20 % of total cover: 4

Shrub Stratum (Plot size: 25m x 25m)			
1. Ilex glabra (Ink-berry)	10	Y	FACW
2. Myrica californica (Bayberry,pacific)	10	Y	
3. Chrysobalanus icaco (Cocoplum,icaco)	5		FACW
4. Ilex cassine (Holly,dahoon)	5		FACW
5. Myrsine floridana (Florida colicwood)	3		FAC
6. Hypericum fasciculatum (St. john's-wort,sandweed)	2		FACW
	35	= Total Cover	

50 % of total cover: 17.5 20 % of total cover: 7

Herb Stratum (Plot size: 5m x 5m)			
1. Eriocaulon decangulare (Pipewort,ten-angle)	15	Y	OBL
2. Lachnocaulon anceps (Bogbutton,white-head)	15	Y	OBL
3. Rhynchospora inundata (Beakrush,horned)	10	Y	OBL
4. Dichanthelium commutatum (Witchgrass,variable)	6		FAC
5. Lachnanthes caroliniana (Redroot,carolina)	5		OBL
6. Pluchea odorata (Camphor-weed,shrubby)	5		FACW
7. Xyris jupicai (Yellow-eyed-grass,richard's)	5		OBL
8. Andropogon glomeratus (Bluestem,bushy)	3		FACW
9. Eupatorium capillifolium (Thorough-wort,small dog-	1		FACU
10.			
11.			
	65	= Total Cover	

50 % of total cover: 32.5 20 % of total cover: 13

Woody Vine Stratum (Plot size: 5m x 5m)			
1. Smilax laurifolia (Greenbrier,laurel-leaf)			FACW
2.			
3.			
4.			
5.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hummocking present.

SOIL

Sampling Point: Wetland 56A-wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	5YR5/1		5YR5/6	5	RM	PL	Sandy	some organic banding
8-14	5YR				N/A	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- X Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Some organic bodies appear mucky - most are sandy. Stripped matrix appears just below 6 inches.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 5, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 56A-upland

Investigator(s): DBD Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Forest Local relief (concave, convex, none): concave Slope (%): <1%

Subregion (LRR or MLRA): LRR T (MLRA 150A) Lat: Long: Datum:

Soil Map Unit Name: Wabasso Fine Sand NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes No X	
Wetland Hydrology Present?	Yes X No	

Remarks:
Pine with palmtto understory.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	
Water Table Present?	Yes X	No ___	Depth (inches):	8 inches
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	4.5 inches

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seasonal to heavy rainfall experienced in the area. High water table typical for area.

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 56A-upland

Tree Stratum (Plot size: 25m x 25m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus elliottii (Pine,slash)	15	Y	FACW
2. Melaleuca quinquenervia (Tree,punk)	5	Y	FAC
3.			
4.			
5.			
6.			
	20	= Total Cover	

50 % of total cover: 10 20 % of total cover: 4

Sapling Stratum (Plot size: 25m x 25m)			
1. Melaleuca quinquenervia (Tree,punk)	10	Y	FAC
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	

50 % of total cover: 5 20 % of total cover: 2

Shrub Stratum (Plot size: 25m x 25m)			
1. Serenoa repens (Palmetto,saw)	40	Y	FACU
2. Ilex glabra (Ink-berry)	10		FACW
3. Myrsine floridana (Florida colicwood)	10		FAC
4.			
5.			
6.			
	60	= Total Cover	

50 % of total cover: 30 20 % of total cover: 12

Herb Stratum (Plot size: 5m x 5m)			
1. Lachnanthes caroliniana (Redroot,carolina)	8	Y	OBL
2. Andropogon virginicus (Broom-sedge)	2	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	= Total Cover	

50 % of total cover: 5 20 % of total cover: 2

Woody Vine Stratum (Plot size: 5m x 5m)			
1. Smilax laurifolia (Greenbrier,laurel-leaf)	5	Y	FACW
2.			
3.			
4.			
5.			
	5	= Total Cover	

50 % of total cover: 2.5 20 % of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Dense palmetto with herbs in opening between.

SOIL

Sampling Point: Wetland 56A-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR6/1	90			N/A	N/A	Sandy	0-3" dark bodies (sandy)

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

Root structure extends deep (8") into soil profile. Profile is uniform to sample depth. Dark bodies in upper 3 inches are sandy in nature (5-10% density), 1 cm general size.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 1, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 57-wetland

Investigator(s): MS/JS Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Riveriera NWI Classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): _____
Water Table Present?	Yes X	No ___	Depth (inches): 9"
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 6"

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: Wetland 57-wetland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus elliottii (Pine,slash)	20	Y	FACW
2. Melaleuca quinquenervia (Tree,punk)	15	Y	FAC
3. Myrsine floridana (Florida colicwood)	5		FAC
4. Ilex cassine (Holly,dahoon)	3		FACW
5.			
6.			
	43	= Total Cover	
50 % of total cover: 21.5	20 % of total cover: 8.6		

Sapling Stratum (Plot size:)			
1. Melaleuca quinquenervia (Tree,punk)	10	Y	FAC
2. Myrsine floridana (Florida colicwood)	8	Y	FAC
3.			
4.			
5.			
6.			
	18	= Total Cover	
50 % of total cover: 9	20 % of total cover: 3.6		

Shrub Stratum (Plot size:)			
1. Schinus terebinthifolius (Pepper-tree,brazilian)	10	Y	FAC
2. Serenoa repens (Palmetto,saw)	10	Y	FACU
3. Chrysobalanus icaco (Cocoplum,icaco)	5		FACW
4. Ilex glabra (Ink-berry)	5		FACW
5. Myrica californica (Bayberry,pacific)	5		
6. Lyonia fruticosa (Stagger-bush,coastal-plain)	2		FAC
	37	= Total Cover	
50 % of total cover: 18.5	20 % of total cover: 7.4		

Herb Stratum (Plot size:)			
1. Andropogon glomeratus (Bluestem,bushy)	20	Y	FACW
2. Eragrostis elliottii (Lovegrass,elliott's)	20	Y	FACW
3. Blechnum serrulatum (Fern,toothed mid-sorus)	10		FACW
4. Lachnanthes caroliniana (Redroot,carolina)	5		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55	= Total Cover	
50 % of total cover: 27.5	20 % of total cover: 11		

Woody Vine Stratum (Plot size:)			
1. Smilax bona-nox (Greenbrier,saw)	5	Y	FAC
2. Vitis rotundifolia (Grape,muscadine)	5	Y	FAC
3. Passiflora foetida (Passion-flower,red-fruit)	2		FACU
4.			
5.			
	12	= Total Cover	
50 % of total cover: 6	20 % of total cover: 2.4		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 90 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 57-wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/1	70			N/A	N/A	Forest Duff	
4-9	10YR5/1	90			N/A	N/A	Forest Duff	
9+	10YR3/2	80			N/A	N/A	Forest Duff	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

__ Histosol (A1)
__ Histic Epipedon (A2)
__ Black Histic (A3)
__ Hydrogen Sulfide (A4)
__ Stratified Layers (A5)
__ Organic Bodies (A6) **(LRR P, T, U)**
__ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
__ Muck Presence (A8) **(LRR U)**
__ 1 cm Muck (A9) **(LRR P, T)**
__ Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Coast Prairie Redox (A16) **(MLRA 150A)**
__ Sandy Mucky Mineral (S1) **(LRR O, S)**
__ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
X Stripped Matrix (S6)
__ Dark Surface (S7) **(LRR P, S, T, U)**
__ Polyvalue Below Surface (S8) **(LRR S, T, U)**
__ Thin Dark Suface (S9) **(LRR S, T, U)**
__ Loamy Gleyed Matrix (F1) **(LRR O)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)
__ Marl (F10) **(LRR U)**
__ Depleted Ochric (F11) **(MLRA 151)**
__ Iron Manganese Masses (F12) **(LRR O, P, T)**
__ Umbric Surface (F13) **(LRR P, T, U)**
__ Delta Ochric (F17) **(MLRA 151)**
__ Reduced Vertic (F18) **(MLRA 150A, 150B)**
__ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
__ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

__ 1 cm Muck (A9) **(LRR O)**
__ 2 cm Muck (A10) **(LRR S)**
__ Reduced Vertic (F18) **(outside MLRA 150A,B)**
__ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
__ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
__ Red Parent Material (TF2)
__ Very Shallow Dark Surface (TF12)
__ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Oct 5, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 57-Upland

Investigator(s): MS/JS Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Riviera NWI Classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): _____
Water Table Present?	Yes ___	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): _____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: Wetland 57-upland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus elliottii (Pine,slash)	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
	5	= Total Cover	

50 % of total cover: 2.5 20 % of total cover: 1

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Shrub Stratum (Plot size:)			
1. Serenoa repens (Palmetto,saw)	40	Y	FACU
2. Ilex glabra (Ink-berry)	10		FACW
3. Lyonia fruticosa (Stagger-bush,coastal-plain)	5		FAC
4.			
5.			
6.			
	55	= Total Cover	

50 % of total cover: 27.5 20 % of total cover: 11

Herb Stratum (Plot size:)			
1. Bidens alba ((beggarticks))	20	Y	FACW
2. Richardia grandiflora (Largeflower mexican clover)	20	Y	UPL
3. Eragrostis atrovirens (Lovegrass,thalia)	10		FAC
4. Sida acuta (Common wireweed)	10		
5. Pseudognaphalium obtusifolium (Rabbit-tobacco)	5		NI
6.			
7.			
8.			
9.			
10.			
11.			
	65	= Total Cover	

50 % of total cover: 32.5 20 % of total cover: 13

Woody Vine Stratum (Plot size:)			
1. Vitis rotundifolia (Grape,muscadine)	15	Y	FAC
2. Lygodium japonicum (Fern,japanese climbing)	5	Y	FAC
3. Passiflora foetida (Passion-flower,red-fruit)	5	Y	FACU
4.			
5.			
	25	= Total Cover	

50 % of total cover: 12.5 20 % of total cover: 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

_X_ 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 57-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR3/1	80			N/A	N/A	Sandy	
2-12+	10YR4/1	90			N/A	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

Soils likely disturbed due to nearby dirt road and 710 road building.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Sep 27, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 65-wetland

Investigator(s): MS/JS Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none): concave Slope (%): 3%

Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Winder NWI Classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:
Though soils lack hydrologic indicators, the area is clearly a wetland, a marsh surrounded by roads and railroad on all sides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X No ___	Depth (inches):	+/- 12 inches
Water Table Present?	Yes X No ___	Depth (inches):	_____
Saturation Present? (includes capillary fringe)	Yes X No ___	Depth (inches):	_____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: Wetland 73-wetland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	3	= Total Cover	
50 % of total cover: 1.5	20 % of total cover: 0.6		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	2	= Total Cover	
50 % of total cover: 1	20 % of total cover: 0.4		

Herb Stratum (Plot size:)			
1. Rhynchospora colorata	20	Y	FACW
2. Eleocharis interstincta	35	Y	OBL
3. Cyperus suranamensis	10		FACW
4. Phragmites australis (Reed,common)	20	Y	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
50 % of total cover:	% of total cover:		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 73-wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR2/1	90			N/A	N/A	Sandy	
4-12	10YR3/1	70	10YR8/1	30	N/A	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- X Stripped Matrix (S6)
- X Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Soils do not have hydric soil indicator, yet the area is considered wetland. Soils are highly disturbed, due to location in landscape (between busy roads). Roadside erosion deposition.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Sep 27, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 65-Up

Investigator(s): JS/MS Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Slope Local relief (concave, convex, none): none Slope (%): 5%

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Winder NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ____
Water Table Present?	Yes ___	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point Wetland 73-Up

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	6	= Total Cover	
50 % of total cover: 3	20 % of total cover: 1.2		

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	3	= Total Cover	
50 % of total cover: 1.5	20 % of total cover: 0.6		

Herb Stratum (Plot size:)			
1. Richardia brasiliensis	25	Y	UPL
2. Phyla nodiflora (Frog-fruit,common)	5		FACW
3. Bidens alba ((beggarticks))	5		UPL
4. Sporobolus jacquemontii (Rush-grass,west indian)	15		FAC
5. Desmodium canadense (Tick-trefoil,showy)	15		FAC
6. Paspalum notatum	35	Y	FACU+
7.			
8.			
9.			
10.			
11.			
	45	= Total Cover	
50 % of total cover: 22.5	20 % of total cover: 9		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 73-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR5/2	90			N/A	N/A	Sandy	
4-8	10YR2.5/1	90			N/A	N/A	Sandy	Sand mixed with shell and gravel
8-12+	10YR3/1	80			N/A	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Sep 27, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 73-wetland

Investigator(s): MS/JS Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none): concave Slope (%): 3%

Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Winder NWI Classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes ____ No X		
Wetland Hydrology Present?	Yes X No ____		

Remarks:
Though soils lack hydrologic indicators, the area is clearly a wetland, a marsh surrounded by roads and railroad on all sides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches):	+/- 12 inches
Water Table Present?	Yes X	No ___	Depth (inches):	_____
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	_____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: Wetland 73-wetland

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Melaleuca quinquenervia (Tree,punk)	2	Y	FAC
2. Taxodium ascendens (Pond cypress)	1	Y	OBL
3.			
4.			
5.			
6.			
	3	= Total Cover	

50 % of total cover: 1.5 20 % of total cover: 0.6

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Shrub Stratum (Plot size:)			
1. Cephalanthus occidentalis (Buttonbush,common)	2	Y	OBL
2.			
3.			
4.			
5.			
6.			
	2	= Total Cover	

50 % of total cover: 1 20 % of total cover: 0.4

Herb Stratum (Plot size:)			
1. Pontederia cordata (Weed,pickerel)	35	Y	OBL
2. Panicum repens (Grass,torpedo)	15	Y	FACW
3. Crinum americanum (Swamplily,southern)	10		OBL
4. Centella asiatica (Coinleaf,asian)	5		FACW
5. Cladium jamaicense (Sawgrass,jamaica)	5		OBL
6. Phragmites australis (Reed,common)	5		FACW
7. Sagittaria lancifolia (Arrow-head,bull-tongue)	5		OBL
8.			
9.			
10.			
11.			
	80	= Total Cover	

50 % of total cover: 40 20 % of total cover: 16

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 73-wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/1	90			N/A	N/A	Sandy	
2-5	10YR4/2	75			N/A	N/A	N/A	Mixed with shell
5-10	10YR3/1	80			N/A	N/A	N/A	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

Soils do not have hydric soil indicator, yet the area is considered wetland. Soils are highly disturbed, due to location in landscape (between busy roads). Roadside erosion deposition.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Martin Plant to Riviera Beach Energy Center Lateral Project City/County: West Palm Beach Sampling Date: Sep 27, 2011

Applicant/Owner: Florida Power & Light State: Florida Sampling Point: Wetland 73-upland

Investigator(s): JS/MS Section, Township, Range: 32 / 40S / 40E

Landform (hillslope, terrace, etc.) Slope Local relief (concave, convex, none): none Slope (%): 5%

Subregion (LRR or MLRA): LRR U Lat: Long: Datum:

Soil Map Unit Name: Winder NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ____
Water Table Present?	Yes ___	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sampling Point: Wetland 73-upland

VEGETATION (Five Strata) - Use scientific names of plants.

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Casuarina equisetifolia (Casuarina,horse-tail)	3	Y	FACU
2. Sabal palmetto (Palm,cabbage)	3	Y	FAC
3.			
4.			
5.			
6.			
	6	= Total Cover	
50 % of total cover: 3	20 % of total cover: 1.2		

Sapling Stratum (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Shrub Stratum (Plot size:_____)			
1. Schinus terebinthifolius (Pepper-tree,brazilian)	3	Y	FAC
2.			
3.			
4.			
5.			
6.			
	3	= Total Cover	
50 % of total cover: 1.5	20 % of total cover: 0.6		

Herb Stratum (Plot size:_____)			
1. Panicum repens (Grass,torpedo)	10	Y	FACW
2. Phyla nodiflora (Frog-fruit,common)	10	Y	FACW
3. Bidens alba ((beggarticks))	5	Y	UPL
4. Cynodon dactylon (Grass,bermuda)	5	Y	FACU
5. Dactyloctenium aegyptium (Egyptian grass)	5	Y	
6. Desmodium canadense (Tick-trefoil,showy)	5	Y	FAC
7. Sporobolus jacquemontii (Rush-grass,west indian)	5	Y	FAC
8.			
9.			
10.			
11.			
	45	= Total Cover	
50 % of total cover: 22.5	20 % of total cover: 9		

Woody Vine Stratum (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	X 2 = _____
FAC species _____	X 3 = _____
FACU species _____	X 4 = _____
UPL species _____	X 5 = _____
Column Totals: _____	(A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 73-upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR5/2	90			N/A	N/A	Sandy	
4-8	10YR2.5/1	90			N/A	N/A	Sandy	Sand mixed with shell and gravel
8-12+	10YR3/1	80			N/A	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

ATTACHMENT 3

UMAM DATA FORMS

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 1a, 14**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Depression Marsh** **NWI: PEM**	**Impact**	**0.63 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Isolated depression marshes surrouonded by mesic to xeric uplands. Similar wetlands in vicnity.

Assessment area description

Depression marshes on Martin Plant site.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Martin Power Plant, overhead electric transmission line, oil pipeline	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wild Hogs

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/15/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 1a, 14**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/15/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: **5**	with:
Surrounding habitats consist of maintained electric transmission line right-of-way, upland herbaecous prairie, mixed rangeland, and mesic to xeric pine and hardwood communities. Many disturbances in the vicnity that may impact wildlife utilization including power plant, solar plant, and active railroad. Invasive species throughout the surrounding area and invading the marshes. Marshes are hydrologically disconnected from downstream or surrounding wetlands/streams, but are capable of providing breeding habitat for amphibians. Brazilian pepper common in surrounding forest.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: **3**	with:
Water levels in marshes were below normal, despite high rainfall. Wetland hydrperiod appears to be impacted (maybe due to large cooling ponds, signficant ditching & agriculuture). Upland weedy vegetation species are invading and typical concentric marsh zonation is impacted. Wildlife support limted to amphian breeding, small amphibians and reptiles. Habitat for species requiring longer (e.g semi permanent or longer hydroperiods are lacking).		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: **5**	with:
Vegetation species are a mix of weedy, invasive and desirable species. Recruitment of upland species throughout all but lowest vegetation zone. Undesirable species such as torpedo grass, falsoe buttonweed, primrose willow, dog fennel, bahia grass, carpet grass, and tropical soda apple. Lower zones vegetated by sweet flag, pickerel weed, and duck potatoe. Land use practices inhibit typical fire regime and recruitment of native marsh species.		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.43	

If preservation as mitigation,
Preservation adjustment factor = N/A
Adjusted mitigation delta = N/A

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) = N/A
Risk factor = N/A

For mitigation assessment areas
RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 1b**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
621	**FNAI: Cypress Dome Swamp** **NWI: PFO2**	**Impact**	**0.58 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Cypress wetland adjacent to marsh. No other wetland/waterbody connections.

Assessment area description

Relatively small cypress wetland surrounded by pine flatwoods/mesic hardwoods on Martin Plant site.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Martin Power Plant, overhead electric transmission line, oil pipeline	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding; song bird feeding, cover.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Florida panther (E, foraging, cover), black bear (T, foraging, cover), American alligator (T, nesting, foraging, cover), woodstork (E, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wild Hogs

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/15/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 1b**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/15/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **5** with:	**Surrounding habitats consist of maintained electric transmission line right-of-way, upland herbaecous prairie, mixed rangeland, and mesic to xeric pine and hardwood communities. Many disturbances in the vicnity that may impact wildlife utilization including power plant, solar plant, and active railroad. Invasive species prevalent in surrounding habitats.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **3** with:	**Water levels were well below normal; soil subsidence throughout; historic watermarks on trees were ~ 18-24" above ground surface. Wetland hydrperiod appears to be impacted (maybe due to large cooling ponds, signficant ditching & agriculuture). Evidence of hog rooting throughout. Wetland condition not suitable to support typical widlife community.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **6** with:	**Pond cypress is dominant species. Recruitment of undesirables (Brazilian pepper, dog fennel) beginning to occur. Land use practices inhibit typical fire regime of cypress domes.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.47** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 2, 10, 12,13, 15, 18, 19, 23**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Depression Marsh** **NWI: PEM**	**Impact**	**20.75 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Isolated depression marsh surrouonded by mesic to xeric uplands. Similar wetlands in vicnity.

Assessment area description

Isolated depression marshes situated beneath overhead transmission line. Area is maintained free of large woody debris; heavily impacted by hog rooting.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Martin Power Plant, overhead electric transmission line, oil pipeline	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wild Hogs

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/15/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 2, 10, 12,13, 15, 18, 19, 23**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/15/2011**

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	**Surrounding habitats consist of maintained electric transmission line right-of-way, upland herbaecous prairie, mixed rangeland, and mesic to xeric pine and hardwood communities. Many disturbances in the vicnity that may impact wildlife utilization including power plant, solar plant, and active railroad. Invasive species prevalent throughout the surrounding area and invading the marshes. Marshes are hydrologically disconnected from downstream or surrounding wetlands/streams, but are capable of providing breeding and foraging support to amphibians, small reptiles, and small mammals.**	**5**	
.500(6)(b)Water Environment (n/a for uplands)	**All wetlands had water levels below normal, despite high rainfall. Wetland hydrperiods appear to be impacted (maybe due to large cooling ponds, signficant ditching & agriculuture). Upland weedy vegetation species are invading and typical concentric marsh zonation is impacted. Major hog rooting throughout marshes on Martin Plant site. Wildlife support limted to amphian breeding, small amphibians and reptiles. Habitat for species requiring longer (e.g semi permanent or longer hydroperiods are lacking).**	**3**	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	**Vegetation species are a mix of weedy, invasive and desirable species. Recruitment of upland species throughout all but lowest vegetation zone. Undesirable species such as torpedo grass, primrose willow, dog fennel, bahia grass, carpet grass, and tropical soda apple. Lower zones vegetated by sweet flag, pickerel weed, and duck potatoe. Signficant hog rooting throughout marshes has damaged typical marsh structure. Land use practices inhibit typical fire regime and recruitment of native marsh species.**	**4**	

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.40	

If preservation as mitigation,
Preservation adjustment factor = N/A
Adjusted mitigation delta = N/A

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) = N/A
Risk factor = N/A

For mitigation assessment areas
RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 3, 6, 11, 20, 25a**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Depression Marsh** **NWI: PEM**	**Impact**	**5.32 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Isolated depression marshes surrouonded by mesic to xeric uplands. Similar wetlands in vicnity.

Assessment area description

Depression marshes on Martin Plant site.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Martin Power Plant, overhead electric transmission line, oil pipeline	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wild Hogs

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/15/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 3, 6, 11, 20, 25a**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/15/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **5** with:	**Surrounding habitats consist of maintained electric transmission line right-of-way, upland herbaecous prairie, mixed rangeland, and mesic to xeric pine and hardwood communities. Many disturbances in the vicnity that may impact wildlife utilization including power plant, solar plant, and active railroad. Invasive species throughout the surrounding area and invading the marshes. Marshes are hydrologically disconnected from downstream or surrounding wetlands/streams, but are capable of providing breeding and foraging support to amphibians, small reptiles, and small mammals.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **3** with:	**Water levels in marshes were below normal, despite high rainfall. Wetland hydrperiod appears to be impacted (maybe due to large cooling ponds, signficant ditching & agriculuture). Upland weedy vegetation species are invading and typical concentric marsh zonation is impacted. Major hog rooting throughout the marsh. Wildlife support limted to amphian breeding, small amphibians and reptiles. Habitat for species requiring longer (e.g semi permanent or longer hydroperiods are lacking).**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **4** with:	**Vegetation species are a mix of weedy, invasive and desirable species. Recruitment of upland species throughout all but lowest vegetation zone. Undesirable species such as torpedo grass, primrose willow, dog fennel, bahia grass, carpet grass, and tropical soda apple. Lower zones vegetated by sweet flag, pickerel weed, and duck potatoe. Signficant hog rooting throughout marsh has damaged typical marsh structure. Land use practices inhibit typical fire regime and recruitment of native marsh species.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.40** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 5, 8**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Depression Marsh** **NWI: PEM**	**Impact**	**0.39 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Depression marshes surrouonded by mesic to xeric uplands. Similar wetlands in vicnity.

Assessment area description

Depression marshes on Martin Plant site.

Significant nearby features

FPL Martin Power Plant, overhead electric transmission line, oil pipeline

Uniqueness (considering the relative rarity in relation to the regional landscape.)

None

Functions

BIOLOGICAL:
Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.

PHYSICAL/CHEMICAL:
Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.

Mitigation for previous permit/other historic use

No

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)

Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders

Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)

Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wild Hogs

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/15/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 5, 8**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/15/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **4** with:	**Surrounding habitats consist of maintained electric transmission line right-of-way, upland herbaecous prairie, mixed rangeland, and mesic to xeric pine and hardwood communities. Many disturbances in the vicnity that may impact wildlife utilization including power plant, solar plant, active railroad, and transmission line access road. Invasive species throughout the surrounding area and invading the marshes. Marshes are hydrologically disconnected from downstream or surrounding wetlands/streams, but are capable of providing breeding habitat for amphibians. Brazilian pepper common in surrounding forest.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **3** with:	**Water levels in marshes were below normal, despite high rainfall. Wetland hydrperiod appears to be impacted (maybe due to large cooling ponds, signficant ditching & agriculuture). Upland weedy vegetation species are invading and typical concentric marsh zonation is impacted. Wildlife support limted to amphian breeding, small amphibians and reptiles. Habitat for species requiring longer (e.g semi permanent or longer hydroperiods are lacking).**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **3** with:	**Vegetation species are a mix of weedy, invasive and desirable species. Recruitment of upland species throughout all but lowest vegetation zone. Undesirable species such as torpedo grass, false buttonweed, primrose willow, dog fennel, bahia grass, carpet grass, and tropical soda apple. Lower zones vegetated by sweet flag, pickerel weed, and duck potatoe. Land use practices inhibit typical fire regime and recruitment of native marsh species.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.33** with:	Preservation adjustment factor = N/A	FL = delta x acres =
	Adjusted mitigation delta = N/A	

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A	RFG = delta/(t-factor x risk) = N/A
	Risk factor = N/A	

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 7, 16, 24**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Depression Marsh** **NWI: PEM**	**Impact**	**0.7 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Isolated depression marshes surrouonded by mesic to xeric uplands. Similar wetlands in vicnity.

Assessment area description

Depression marshes on Martin Plant site.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Martin Power Plant, overhead electric transmission line, oil pipeline	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wild Hogs

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/15/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 7, 16, 24**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/15/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **4** with:	**Surrounding habitats consist of maintained electric transmission line right-of-way, upland herbaecous prairie, mixed rangeland, and mesic to xeric pine and hardwood communities. Many disturbances in the vicnity that may impact wildlife utilization including power plant, solar plant, and active railroad. Invasive species throughout the surrounding area and invading the marshes. Marshes are hydrologically disconnected from downstream or surrounding wetlands/streams, but are capable of providing breeding habitat for amphibians.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **3** with:	**Water levels in marshes were below normal, despite high rainfall. Wetland hydrperiod appears to be impacted (maybe due to large cooling ponds, signficant ditching & agriculuture). Upland weedy vegetation species are invading and typical concentric marsh zonation is impacted. Wildlife support limted to amphian breeding, small amphibians and reptiles. Habitat for species requiring longer (e.g semi permanent or longer hydroperiods are lacking).**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **4** with:	**Vegetation species are a mix of weedy, invasive and desirable species. Recruitment of upland species throughout all but lowest vegetation zone. Undesirable species such as torpedo grass, primrose willow, dog fennel, bahia grass, carpet grass, and tropical soda apple. Lower zones vegetated by sweet flag, pickerel weed, and duck potatoe. Land use practices inhibit typical fire regime and recruitment of native marsh species.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.37** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 9**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Depression Marsh** **NWI: PEM**	**Impact**	**0.7 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Isolated depression marsh bisected by access road and surrouonded by mesic to xeric uplands. Similar wetlands in vicnity.

Assessment area description

Isolated depression marsh situated beneath overhead transmission line. Area is maintained free of large woody debris; heavily impacted by hog rooting.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Martin Power Plant, overhead electric transmission line, oil pipeline	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wild Hogs

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/15/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 9**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/15/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **4** with:	**Surrounding habitats consist of maintained electric transmission line right-of-way, upland herbaecous prairie, mixed rangeland, and mesic to xeric pine and hardwood communities. Many disturbances in the vicnity that may impact wildlife utilization including power plant, solar plant, and active railroad. Invasive species prevalent throughout the surrounding area and invading the marshes. Marshes are hydrologically disconnected from downstream or surrounding wetlands/streams, but are capable of providing breeding and foraging support to amphibians, small reptiles, and small mammals. Marsh is has been bisected by transmission line access road.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **3** with:	**Water level signficanty below that expected, considering high rainfall. Wetland hydrperiod may be impacted by large cooling ponds, signficant ditching, agriculuture, and access road. Upland weedy vegetation species are invading and typical concentric marsh zonation is impacted. Major hog rooting throughout marsh.Wildlife support limted to amphian breeding, small amphibians and reptiles. Habitat for species requiring longer (e.g semi permanent or longer hydroperiods are lacking).**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **3** with:	**Vegetation species are a mix of weedy, invasive and desirable species. Recruitment of upland species throughout all but lowest vegetation zone. Undesirable species such as torpedo grass, primrose willow, dog fennel, bahia grass, carpet grass, and tropical soda apple. Lower zones vegetated by sweet flag, pickerel weed, and duck potatoe. Signficant hog rooting throughout marshes has damaged typical marsh structure. Land use practices inhibit typical fire regime and recruitment of native marsh species.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.33** with:	Preservation adjustment factor = N/A	FL = delta x acres =
	Adjusted mitigation delta = N/A	

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A	RFG = delta/(t-factor x risk) = N/A
	Risk factor = N/A	

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 17**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Depression Marsh** **NWI: PEM**	**Impact**	**0.28 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Depression marsh adjacent to man-made reservoir. No other hydrologic connections to wetlands/waterbodies onsite.

Assessment area description

Narrow band of marsh adjacent to reservoir.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Martin Power Plant, overhead electric transmission line, oil pipeline	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wild Hogs

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/15/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 17**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/15/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **5** with:	**Surrounding habitats consist of man-made reservoir, maintained electric transmission line right-of-way, upland herbaecous prairie, mixed rangeland, and mesic to xeric pine and hardwood communities. Many disturbances in the vicnity that may impact wildlife utilization including power plant, solar plant, active railroad, and transmission line access road. Invasive species throughout the surrounding area and invading the marshes. Marshes are hydrologically disconnected from downstream or surrounding wetlands/streams, but are capable of providing breeding habitat for amphibians. Brazilian pepper common in surrounding forest.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **6** with:	**Marsh was saturated during site visit, and hydroperiod appears better than marshes in vicintiy. Marsh hydrology dependent on adjacent man-made reservoir. Alligator observed in reservoir. Erosion and soil cracking/sloughing in marsh. Bank is not well stabilized by vegetation (many open patches). Alage observed in reservoir.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **5** with:	**Vegetation species are a mix of weedy, invasive and desirable species. Recruitment of upland species throughout all but lowest vegetation zone. Undesirable species such as torpedo grass, cattail, and dog fennel. St. Johns wort present in higher elevations. Land use practices inhibit typical fire regime and recruitment of native marsh species.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.53** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 21**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Depression Marsh** **NWI: PEM**	**Impact**	**0.02 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Depression marsh adjacent to man-made reservoir. No other hydrologic connections to wetlands/waterbodies onsite.

Assessment area description

Narrow band of marsh adjacent to reservoir.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Martin Power Plant, overhead electric transmission line, oil pipeline	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wild Hogs

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/15/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 21**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/15/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **5** with:	**Surrounding habitats consist of man-made reservoir, maintained electric transmission line right-of-way, upland herbaecous prairie, mixed rangeland, and mesic to xeric pine and hardwood communities. Many disturbances in the vicnity that may impact wildlife utilization including power plant, solar plant, active railroad, and transmission line access road. Invasive species throughout the surrounding area and invading the marshes. Marshes are hydrologically disconnected from downstream or surrounding wetlands/streams, but are capable of providing breeding habitat for amphibians. Brazilian pepper common in surrounding forest.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **4** with:	**Marsh was saturated during site visit, and hydroperiod appears better than marshes in vicintiy. Marsh hydrology dependent on adjacent man-made reservoir. Alligator observed in reservoir. Severe erosion and soil cracking/sloughing in marsh. Bank is not well stabilized by vegetation (many open patches). Alage observed in reservoir.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **4** with:	**Vegetation species are a mix of weedy, invasive and desirable species. Vegetative cover is sparse due to unstable soil.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.43** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 22, 26**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Depression Marsh** **NWI: PEM**	**Impact**	**16.42 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Isolated depression marsh surrouonded by mesic to xeric uplands. Similar wetlands in vicnity.

Assessment area description

Large depression marsh situated beneath overhead transmission line. Area is maintained free of large woody debris; heavily impacted by hog rooting.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Martin Power Plant, overhead electric transmission line, oil pipeline	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wild Hogs

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/15/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 22, 26**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/15/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	**Surrounding habitats consist of maintained electric transmission line right-of-way, upland herbaecous prairie, mixed rangeland, and mesic to xeric pine and hardwood communities. Many disturbances in the vicnity that may impact wildlife utilization including power plant, solar plant, and active railroad. Invasive species prevalent throughout the surrounding area and invading the marshes. Marshes are hydrologically disconnected from downstream or surrounding wetlands/streams, but are capable of providing breeding and foraging support to amphibians, small reptiles, and small mammals.**	**5**	
.500(6)(b)Water Environment (n/a for uplands)	**Water levels in large isolated marsh were below normal, despite high rainfall. Wetland hydrperiod appears to be impacted (maybe due to large cooling ponds, signficant ditching & agriculuture). Upland weedy vegetation species are invading and typical concentric marsh zonation is impacted. Major hog rooting throughout the marsh. Wildlife support limted to amphian breeding, small amphibians and reptiles. Habitat for species requiring longer (e.g semi permanent or longer hydroperiods are lacking). Filling in several locations for transmission line structures.**	**3**	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	**Vegetation species are a mix of weedy, invasive and desirable species. Recruitment of upland species throughout all but lowest vegetation zone. Undesirable species such as torpedo grass, primrose willow, dog fennel, bahia grass, carpet grass, and tropical soda apple. Lower zones vegetated by sweet flag, pickerel weed, and duck potatoe. Signficant hog rooting throughout marsh has damaged typical marsh structure. Land use practices inhibit typical fire regime and recruitment of native marsh species. Unnatural fill piles in several places for above ground transmission line structures.**	**3**	

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.37	

If preservation as mitigation,
Preservation adjustment factor = N/A
Adjusted mitigation delta = N/A

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) = N/A
Risk factor = N/A

For mitigation assessment areas
RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 25b**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
630	**FNAI: Bottomland hardwood** **NWI: PFO**	**Impact**	**1.47 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Mixed pine and harwood swamp connected to marsh, but isolated from other wetlands or waterbodies.

Assessment area description

Red maple dominanted wetland forest on Martin Plant site.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
FPL Martin Power Plant, overhead electric transmission line, oil pipeline	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding; song bird feeding, cover.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Florida panther (E, foraging, cover), black bear (T, foraging, cover), American alligator (T, nesting, foraging, cover), woodstork (E, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wild Hogs

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/15/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 25b**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/15/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **5** with:	**Surrounding habitats consist of maintained electric transmission line right-of-way, upland herbaecous prairie, mixed rangeland, and mesic to xeric pine and hardwood communities. Many disturbances in the vicnity that may impact wildlife utilization including power plant, solar plant, and active railroad. Invasive species prevalent in surrounding habitats.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **3** with:	**Water levels were well below normal; soil subsidence throughout; historic watermarks on trees were ~ 12 - 18" above ground surface. Wetland hydrperiod appears to be impacted (maybe due to large cooling ponds, signficant ditching & agriculuture). Evidence of hog rooting throughout. Wetland condition not suitable to support typical widlife community.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **3** with:	**Red maple and cabagge palm are dominant canopy species. Soil subsidence prevalent as well as several fallen trees. Brazilian pepper and dog fennel recruiting into wetland.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.47** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 27-29, 31-32**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
619	**FNAI: Invasive Exotic Monoculture** **NWI: PFO1/PSS3**	**Impact**	**16.27 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear strip wetlands are hydrologically connected to one another via road culverts, but not connected to other significant wetlands or waterbodies.

Assessment area description

Linear strip of Brazilian pepper domianted shrub wetland between CSX RR and SR 710.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710, industrial plants	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding; song bird feeding, cover.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, roosting, seasonal),tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, roosting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/16/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 27-29, 31-32**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/16/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **3** with:	**Wetland sandwiched between active CSX RR and SR 710. Traffic and development inhibit wildlife movement to and from wetland. Adjacent upland habitats are routinely distrubed by ROW maintenance activities, which precludes normal habitat sucession and limits wildlife habitat. Invasive exotic species are very prevalent in surrounding areas and wetland.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **2** with:	**Wetland has evidence of historical ponding, but was dry in many locations during the site survey. Water levels are much lower than wetlands to south. Wetland formed in linear drainage area between RR and SR 710. Water quality is impacted by run-off. Hydroperiods artificial due to ditching and development. Evidence of hog rooting throughout. Wetland condition not suitable to support typical widlife community. Typical vegetaion zonation not present.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **2** with:	**Brazilian pepper is the dominant shrub/small trees species. Other invasive/weedy species present as well. Very little understory beneath dense Brazilian pepper layer. Diversity is low.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.23** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 30**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Basin Marsh** **NWI: PEM1**	**Impact**	**0.93 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear basin marsh between CSX RR and SR 710. No obvious hydrologic connections to other wetlands or waterways.

Assessment area description

Linear roadside marsh.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, Industrial development, SR 710	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/12/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 30**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/12/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **3** with:	**Surrounding habitats consist of maintained active CSX RR and SR 710. Orange processing plant further to south. Wetland is located within routinely maintained ROW and lacks any meaningful buffer between SR 710 or RR. Wetland provides very limited wildlife support.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **5** with:	**Wetland hydrology is sufficient to support wetland plant community. Water appears stagnant and is heavily laden with algae and oil sheen. Undesirable wetland species dominate vegetation community.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **4** with:	**Weedy species including cattail, primrose willow, and torpedo grass are common. Diversity and structural complexity are low.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.40** with:	Preservation adjustment factor = N/A	FL = delta x acres =
	Adjusted mitigation delta = N/A	

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A	RFG = delta/(t-factor x risk) = N/A
	Risk factor = N/A	

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 33**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Depression Marsh** **NWI: PEM1**	**Impact**	**0.08 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear depression marsh between CSX RR and SR 710. No obvious hydrologic connections to other wetlands or waterways.

Assessment area description

Linear roadside marsh.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/13/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 33**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/13/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **3** with:	**Surrounding habitats consist of maintained active CSX RR and SR 710. Wetland is located within routinely maintained ROW. Given small size and lack of suitable adjacent habitats, wetland provides only very limited wildlife support.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **3** with:	**Wetland hydrology is sufficient to support wetland plant community. Soils saturated and a few small locations of ponding. Hydroperiod is not sufficent to support most aquatic species.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **5** with:	**Weedy wetland species such as torpedo grass, day flower, penny wort, Asiatic are common. Structural complexity is very low due to routine ROW maintenance (e.g. mowing).**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.37** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 34**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
619	**FNAI: Hardwood succesional forest** **NWI: PFO1/PSS3**	**Impact**	**0.17 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear strip wetlands are hydrologically connected to one another via road culverts, but not connected to other significant wetlands or waterbodies.

Assessment area description

Linear strip of Brazilian pepper domianted shrub wetland between CSX RR and SR 710.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, Indiantown, commercial development, SR 710	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding; song bird feeding, cover.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, roosting, seasonal),tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, roosting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/13/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 34**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/13/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **3** with:	**Wetland sandwiched between active CSX RR and commerical development in Indiantown. Traffic and development inhibit wildlife movement to and from wetland. Adjacent upland habitats are routinely distrubed by ROW maintenance activities and human disturbance, which precludes normal habitat sucession and limits wildlife habitat. Invasive exotic species are very prevalent in surrounding areas and wetland. Foot traffic is common through and near wetland.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **3** with:	**Water levels are much lower than wetlands to south. Wetland formed in linear drainage area between RR and SR 710. Water quality is impacted by run-off. Hydroperiods artificial due to ditching and development. Evidence of hog rooting throughout. Wetland condition not suitable to support typical widlife community. Typical vegetaion zonation not present.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **3** with:	**Dominant vegetation species are invasive or undesirable (punk tree, Brazilian pepper). Foot traffic paths and copies of amounts of debris (glass bottles, trash, strayafoam, etc.) prevalent. . Many other invasive/weedy species present as well. Very little understory beneath dense Brazilian pepper layer. Diversity is low. Little resemblence to natural forested/shrub wetland community type.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.30** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 35, 36**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Depression Marsh** **NWI: PEM1**	**Impact**	**0.82 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear depression marsh situated in low elevation. No obvious hydrologic connections to other wetlands or waterways.

Assessment area description

Linear depression marsh between CSX RR and commerical development in Indiantown.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, comercial development, Indiantown	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/13/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 35, 36**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/14/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **4** with:	**Surrounding habitats consist of maintained active CSX RR and commerical development. Wetland is located within routinely maintained oil pipeline ROW. Invasive species populations prevalent throughout the surrounding habitats. Nuisance wild hog populations in vicinity.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **5** with:	**Water levels sufficient to support desirable wetland plant species. Wildlife support limted to amphian breeding, small amphibians and reptiles. Habitat for species requiring longer (e.g semi permanent or longer hydroperiods are lacking).**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **5** with:	**Vegetation species are a mix of weedy, invasive and desirable species. Routine maintenance of ROW prohibits natural succession of the vegetation community and limits structural diversity.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.43** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 33**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Depression Marsh** **NWI: PEM1**	**Impact**	**0.27 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear depression marsh adjacent to CSX RR ditch that connects to a forested wetland and drains into the St. Lucie Canal.

Assessment area description

Linear marsh in maintained utility easement.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710, Indiantown, St. Lucie Canal	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/13/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 37b**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/13/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **5** with:	**Surrounding habitats consist of maintained active CSX RR, mixed hardwood wetlands, Indiantown, and St. Lucie Canal. Wetland is located within routinely maintained ROW. Given active railroad and human disturbance, wildlife utilization is somewhat limted. Human dumping is prevalent. Invasive species are common in surrounding habitats.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **5** with:	**Wetland hydrology is sufficient to support wetland plant community. Soils saturated and a few small locations of ponding. Hydroperiod is not sufficent to support most aquatic species.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **5** with:	**Weedy wetland species such Napier grass and primrose willow are common. Sweet flag also present. Structural diversity is low due to ROW maintenance (e.g. mowing).**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.50** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 37a, 38**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
630	**FNAI: Hydric hammock/Fluvial Wetland** **NWI: PFO1/PSS3**	**Impact**	**3.17 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Mixed hardwood and conifer wetlands that are hydrologically connected to the St. Lucie Canal either directly or via man-made ditches along CSX RR track.

Assessment area description

Mixed hardwood wetlands on a lot between CSX RR and SR 710, on north bank of the St. Lucie Canal.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, St. Lucie Canal, Indiantown, SR 710	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding; song bird feeding, cover.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, roosting, seasonal),tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, roosting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/13/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 37a, 38**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/13/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: **6**	with:
Wetlands are isolated by development on three sides (roads, railroad, commercial development). Development inhibits wildlife movement to and from the wetland. Signficant invasive plant communities in area, including Brazilian pepper, old world climbing vine, and napier grass. Extensive human dumping in the area.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: **6**	with:
Hydroperiod is sufficent to maintain desirable wetland species, but is somewhat impacted by RR ditching. Water quality is likely impacted by run-off and dumping activities.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: **6**	with:
Canopy is comprised of red maple, cabbage palm, laurel oak and slash pine. Some desirable understory species present: royal fern and leather fern. Less desirable species include Brazilian pepper, privit, and wild coffee. Vertical structure is good for wildlife. Signficant dumping/trash within wetland.		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.60	

Delta = [with-current]

If preservation as mitigation,
Preservation adjustment factor = N/A
Adjusted mitigation delta = N/A

If mitigation
Time lag (t-factor) = N/A
Risk factor = N/A

For impact assessment areas
FL = delta x acres =

For mitigation assessment areas
RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 39, 40a, 45b**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
619	**FNAI: Exotic Shrub & Brush** **NWI: PFO1/PSS3**	**Impact**	**7.14 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear strip of exotic shrubs and trees between CSX RR and SR 710. Wetlands are part of a long linear wetland system in the depression between SR 710 and CSX RR that extends south and east along the remainder of the proposed corridor.

Assessment area description

Linear strip of exotic shrubs and trees adjacent to roadside marsh.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/14/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 39, 40a, 45b**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/14/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **5** with:	**Surrounding habitats consist of maintained active CSX RR, d St. Lucie Canal. Wetland is located within routinely maintained ROW. Given active railroad and human disturbance, wildlife utilization is somewhat limited. Human dumping is prevalent. Invasive species are common in surrounding habitats.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **5** with:	**Wetland hydrology is sufficient to support wetland plant community. Soils saturated and a few small locations of ponding. Hydroperiod is not sufficent to support most aquatic species.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **5** with:	**Weedy wetland species such Napier grass and primrose willow are common. Sweet flag also present. Structural diversity is low due to ROW maintenance (e.g. mowing).**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.50** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 40b**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Marsh** **NWI: PEM1**	**Impact**	**4.92 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear marsh buffered by exotic shrubs and trees. Wetlands are part of a long linear wetland system in the depression between SR 710 and CSX RR that extends south and east along the remainder of the proposed corridor.

Assessment area description

Linear strip of marsh adjacent to roadside.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710, CSX work yard, agricultural fields to the south.	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/14/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 40b**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/14/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **5** with:	**Surrounding habitats consist of maintained active CSX RR, SR 710, agricultural lands, and undeveloped wetland habitats. Wetland is within routinely maintained ROW. Given active railroad and human disturbance, wildlife utilization is somewhat limited. Invasive species are common in surrounding habitats.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **6** with:	**Wetland hydrology is sufficient to support wetland plant community. Soils saturated; surface water present throughout. Disturption to natural hydroperiod due to ditching and transporation and utlity infrastructure. Water qualitly may be impacted by road run-off.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **6** with:	**Invasive species such as torpedo grass and common reed and weedy species such as cattail are common. Species composition and diversity are impacted by land use management practicies.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.57** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 40c**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
630	**FNAI: Mixed Wetland Hardwood** **NWI: PFO**	**Impact**	**4.35 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear strip of mixed hardwood wetlands adjacent to marsh and exotic shrub wetlands.

Assessment area description

Linear strip of mixed hardwood wetlands between SR 710 and CSX RR.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding; song bird feeding, cover.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Florida panther (E, foraging, cover), black bear (T, foraging, cover), American alligator (T, nesting, foraging, cover), woodstork (E, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/14/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 40c**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/14/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **3** with:	**Surrounding habitats consist of maintained active CSX RR and SR 710. Wetland is within routinely maintained ROW. Given active railroad and human disturbance, wildlife utilization is somewhat limited. Invasive species are common in surrounding habitats.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **5** with:	**Wetland hydrology is sufficient to support wetland plant community. Soils saturated; surface water present in places. Disturption to natural hydroperiod due to ditching and transporation infrastructure. Water qualitly may be impacted by road run-off.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **5** with:	**Structural diversity limited due to narrow nature of community and routine land management practices. Some desirable tree species such as red maple and laurel oak are present.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.43** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 41a, 42a, 48a**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
619	**FNAI: Invasive Exotic Monoculture** **NWI: PFO1/PSS3**	**Impact**	**24.76 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear strip wetlands are hydrologically connected to one another via road culverts, but not connected to other significant wetlands or waterbodies.

Assessment area description

Linear strip of Brazilian pepper dominanted shrub wetland between CSX RR and SR 710.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding; song bird feeding, cover.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, roosting, seasonal),tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, roosting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wild hogs

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/16/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 41a, 42a, 48a**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/16/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **5** with:	**Wetland sandwiched between active CSX RR and SR 710. Traffic and development inhibit wildlife movement to and from wetland. Adjacent upland habitats are routinely distrubed by ROW maintenance activities, which precludes normal habitat sucession and limits wildlife habitat. Invasive exotic species are very prevalent in surrounding areas and wetland.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **5** with:	**Wetland hydroperiod sufficient to maintain wetland species. Railroad ditching alters natural condition. Wetland formed in linear drainage area between RR and SR 710. Water quality may be impacted by road and railroad run-off. Wetland does not support all typical widlife species, due to hydrologic impediments (roads, etc.). Typical vegetaion zonation not present due to topographic constraints of road and RR rights-of-ways.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **4** with:	**Brazilian pepper is the dominant shrub/small trees species. Other invasive/weedy species present as well. Very little understory beneath dense Brazilian pepper layer. Diversity is low.**

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres: **0.47**
with:

If preservation as mitigation,
Preservation adjustment factor = N/A
Adjusted mitigation delta = N/A

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) = N/A
Risk factor = N/A

For mitigation assessment areas
RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 41b, 42b, 45a, 48c**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Marsh** **NWI: PEM1**	**Impact**	**36.51 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear marsh buffered by exotic shrubs and trees. Wetlands are part of a long linear wetland system in the depression between SR 710 and CSX RR that extends south and east along the remainder of the proposed corridor.

Assessment area description

Linear strip of marsh adjacent to roadside.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710, CSX work yard	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/14/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 39, 40a, 45b, 48c**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/14/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **5** with:	**Surrounding habitats consist of maintained active CSX RR, SR 710, agricultural lands, and undeveloped wetland habitats. Wetland is within routinely maintained ROW. Given active railroad and human disturbance, wildlife utilization is somewhat limited. Invasive species are common in surrounding habitats.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **5** with:	**Wetland hydrology is sufficient to support wetland plant community. Soils saturated; surface water present throughout. Disturption to natural hydroperiod due to ditching and transporation infrastructure. Water qualitly may be impacted by road run-off.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **5** with:	**Invasive species such as torpedo grass and primrose willow and weedy species such as cattail are prevalent. Species composition and diversity are impacted by land use management practices.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.50** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 43b, 44a**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Marsh** **NWI: PEM1**	**Impact**	**32.69 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear marsh buffered by exotic shrubs and trees. Wetlands are part of a long linear wetland system in the depression between SR 710 and CSX RR that extends south and east along the remainder of the proposed corridor.

Assessment area description

Linear strip of marsh adjacent to roadside marsh.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
D. Donovan	**10/3/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 43b, 44a**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**D. Donovan**	**10/3/2011**

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **4** with:	**Surrounding habitats consist of maintained active CSX RR, SR 710, agricultural lands, and undeveloped wetland habitats. Wetland is within routinely maintained ROW. Given active railroad and human disturbance, wildlife utilization is somewhat limited. Invasive species are common in surrounding habitats.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **5** with:	**Wetland hydrology is sufficient to support wetland plant community. Soils saturated; surface water present throughout. Disturption to natural hydroperiod due to ditching and transporation infrastructure. Water qualitly may be impacted by road run-off.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **5** with:	**Invasive species such as torpedo grass and weedy species such as cattail are prevalent. Species composition and diversity are impacted by land use management practices.**

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres: **0.47**
with:

If preservation as mitigation,
Preservation adjustment factor = N/A
Adjusted mitigation delta = N/A

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) = N/A
Risk factor = N/A

For mitigation assessment areas
RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 44b**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
619	**FNAI: Invasive Exotic Monoculture** **NWI: PFO1/PSS3**	**Impact**	**15.79 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear strip wetlands are hydrologically connected to one another via road culverts, but not connected to other significant wetlands or waterbodies.

Assessment area description

Linear strip of Brazilian pepper dominanted shrub wetland between CSX RR and SR 710.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding; song bird feeding, cover.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, roosting, seasonal),tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, roosting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**10/5/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 44b**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**10/5/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **4** with:	**Wetland sandwiched between active CSX RR and SR 710. Traffic and development inhibit wildlife movement to and from wetland. Adjacent upland habitats are routinely distrubed by ROW maintenance activities, which precludes normal habitat sucession and limits wildlife habitat. Invasive exotic species are very prevalent in surrounding areas and wetland.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **5** with:	**Wetland hydroperiod sufficient to maintain wetland species. Railroad ditching alters natural condition. Wetland formed in linear drainage area between RR and SR 710. Water quality may be impacted by road and railroad run-off. Wetland does not support all typical widlife species, due to hydrologic impediments (roads, etc.). Typical vegetaion zonation not present due to topographic constraints of road and RR rights-of-ways.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **5** with:	**Brazilian pepper is the dominant shrub/small trees species. Other invasive/weedy species present as well. Diversity is low. Regeneration is primarily invasive species. Structural diversity present. Routine right-of-way maintenance impacts natural succession.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.47** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 46a**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
625	**FNAI: Wet Pine Flatwood** **NWI: PFO**	**Impact**	**0.57 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Wet pine flatwoods surrounded by marsh and wet prairie.

Assessment area description

Wet pine flatwoods surrounded by marsh and wet prairie.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710, overhead electric transmission line, and transmisison line access road.	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding; song bird feeding, cover.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Florida panther (E, foraging, cover), black bear (T, foraging, cover), American alligator (T, nesting, foraging, cover), woodstork (E, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/14/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 40c**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/14/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **6** with:	**Surrounding habitats consist of overhead transmission line, access road, CSX RR, and undeveloped marsh and wet praire wetlands. Nearby infrastructure may have some impact to wildlife movement, but plentiful adjacent habitats provide support. Invasive species are common in surrounding habitats.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **6** with:	**Wetland hydrology is somewhat affected by RR ditch and access road. Hydroperiod is sufficent to maintain high quality wetland system; Soils saturated; surface water present most places.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **6** with:	**Species are desirable, composition and structure somewhat affected by land use practices.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.60** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 48b**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
621	**FNAI: Cypress** **NWI: PFO**	**Impact**	**0.36 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Small cypress wetland adjacent to linear marsh and exotic wetland shrubs.

Assessment area description

Small cypress wetland in transportation right-of-way.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710, overhead electric transmission line, and transmisison line access road.	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding; song bird feeding, cover.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Florida panther (E, foraging, cover), black bear (T, foraging, cover), American alligator (T, nesting, foraging, cover), woodstork (E, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**12/14/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 48b**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**12/14/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **4** with:	**Surrounding habitats consist of maintained active CSX RR and SR 710. Wetland is within routinely maintained ROW. Given active railroad and human disturbance, wildlife utilization is somewhat limited. Invasive species are common in surrounding habitats.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **5** with:	**Wetland hydrology is sufficient to support wetland plant community. Soils saturated; surface water throughout. Disturption to natural hydroperiod due to ditching and transporation infrastructure. Water qualitly may be impacted by road run-off.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **5** with:	**Structural diversity limited due to narrow nature of community and routine land management practices. One of only a few locations where cypress are present within project limits. Invasive species common throughout wetland and adjacent areas.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.47** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 51a, 52a, 53a, 54a**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Marsh** **NWI: PEM1**	**Impact**	**30.77 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear marsh buffered by exotic shrubs and trees. Wetlands are part of a long linear wetland system in the depression between SR 710 and CSX RR that extends south and east along the remainder of the proposed corridor.

Assessment area description

Linear strip of marsh adjacent to roadside marsh.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710, CSX work yard	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

tadpoles, wild hog, racoon

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**10/12/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 51a, 52a, 53a, 54**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**10/12/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **5** with:	**Surrounding habitats consist of maintained active CSX RR, SR 710, and undeveloped wetland habitats. Wetland is within routinely maintained ROW. Given active railroad and human disturbance, wildlife utilization is somewhat limited. Invasive species are common in surrounding habitats.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **5** with:	**Wetland hydrology is sufficient to support wetland plant community. Soils saturated; surface water present throughout. Disturption to natural hydroperiod due to ditching and transporation infrastructure. Water qualitly may be impacted by road run-off.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **5** with:	**Invasive species such as torpedo grass and primrose willow and weedy species such as cattail are prevalent. Species composition and diversity are impacted by land use management practices.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.50** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 56**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Marsh** **NWI: PEM1**	**Impact**	**5.59 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear strip wetlands are hydrologically connected to one another via road culverts.

Assessment area description

Linear strip of marsh surrounded by punk tree, Austrailian pine, and Brazilian pepper, located between CSX RR and SR 710.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding; song bird feeding, cover.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, roosting, seasonal),tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, roosting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Great egrets, oak toad, black racer, leopard frog, red-winged black bird.

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
D. Donovan	**10/2/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 56a**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**10/2/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **5** with:	**Wetland sandwiched between active CSX RR and SR 710. Traffic and development inhibit wildlife movement to and from wetland. Adjacent upland habitats are routinely distrubed by ROW maintenance activities, which precludes normal habitat sucession and limits wildlife habitat. Invasive exotic species are very prevalent in surrounding areas and wetland. Habitat structure and aquatic component provide suitable support for most but not all wildlife. There are high quality habitats beyond CSX RR.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **6** with:	**Wetland hydroperiod sufficient to maintain wetland species. Railroad ditching alters natural condition. Wetland formed in linear drainage area between RR and SR 710. Water quality may be impacted by road and railroad run-off. Wetland does not support all typical widlife species, due to hydrologic impediments (roads, etc.). Typical vegetaion zonation not present due to topographic constraints of road and RR rights-of-ways.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **4** with:	**Invasive species (punk tree, Brazilian pepper, torpedo grass) are prevalent, recruitment is primarily invasive and weedy species, species diversity low, structural complexity is moderate.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.50** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 57b, 59a, 62, 63, 67b, 68a, 70a, 70c, 71, 72**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641, 619, 631	**FNAI: Marsh, exotics, shrub** **NWI: PEM1, PFO, PSS**	**Impact**	**37.67 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear marshes and exotic shrubs and trees located in long linear depression between SR 710 and CSX RR.

Assessment area description

Linear strip of marsh and exotic shrubs and trees between CSX RR and SR 710.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710.	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**10/10/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 57b, 59a, 62, 63, 67b, 68a, 70a, 70c, 71, 72**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**10/10/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **4** with:	**Surrounding habitats consist of maintained active CSX RR, SR 710, and undeveloped wetland habitats. Wetland is within routinely maintained ROW. Given active railroad and human disturbance, wildlife utilization is somewhat limited. Invasive species are common in surrounding habitats.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **5** with:	**Wetland hydrology is sufficient to support wetland plant community. Soils saturated; surface water present throughout. Disturption to natural hydroperiod due to ditching and transporation infrastructure. Water qualitly may be impacted by road run-off.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **4** with:	**Invasive species such as torpedo grass and weedy species such as cattail are prevalent. Species composition and diversity are impacted by land use management practices.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.43** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 59b, 60a**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641	**FNAI: Marsh** **NWI: PEM1**	**Impact**	**12.31 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear marsh buffered by exotic shrubs and trees. Wetlands are part of a long linear wetland system in the depression between SR 710 and CSX RR that extends south along the majority of the proposed corridor.

Assessment area description

Linear strip of marsh adjacent to roadside.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, foraging, roosting, seasonal), sandhill crane (T, foraging), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, foraging, roosting), snail kite (E, foraging, roosting, nesting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

bull frog

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**10/12/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 59b, 60a**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**10/11/2011**

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: **5** with:	**Surrounding habitats consist of maintained active CSX RR, SR 710, and undeveloped wetland habitats. Wetland is within routinely maintained ROW. Given active railroad and human disturbance, wildlife utilization is somewhat limited. Invasive species such as Brazilian pepper, Austrailian pine, and punk tree are common in surrounding habitats.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: **5** with:	**Wetland hydrology is sufficient to support wetland plant community. Soils saturated; surface water present throughout. Disturption to natural hydroperiod due to ditching and transporation infrastructure. Water qualitly may be impacted by road run-off.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: **5** with:	**Invasive species such as torpedo grass and weedy species such as cattail are prevalent. Species composition and diversity are impacted by land use management practices.**

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: **0.50** with:	Preservation adjustment factor = N/A Adjusted mitigation delta = N/A	FL = delta x acres =

Delta = [with-current]	If mitigation	For mitigation assessment areas
	Time lag (t-factor) = N/A Risk factor = N/A	RFG = delta/(t-factor x risk) = N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetland 75**

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641/619	**FNAI: Marsh/invasive shrubs** **NWI: PEM1/PSS**	**Impact**	**5.59 acres**

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
	Class III	**None**

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Linear strip of wetlands are hydrologically connected to one another via road culverts.

Assessment area description

Linear strip of marsh surrounded by punk tree, Austrailian pine, and Brazilian pepper, located between CSX RR and SR 710.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
CSX RR, SR 710	**None**

Functions	Mitigation for previous permit/other historic use
BIOLOGICAL: **Wading bird feeding, roosting, nesting; macroinvertebrate habitat; small - medium mammal habitat (cover, food); amphibian/reptile cover, breeding, and feeding; song bird feeding, cover.** **PHYSICAL/CHEMICAL:** **Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.**	**No**

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Mammals: raccoon, oppossum, squirrels, gray fox, white-tailed deer, bobcat; wild hogs; Birds: wading birds, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, red-shouldered hawk; Reptiles: green anole, box turtle, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator; Amphibians: cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders	**Bald eagle roosting, incidental), American alligator (SSC, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (E, roosting, seasonal),tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal), roseate spoonbill (SSC, roosting).**

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Great egret

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
L. Ricker	**9/29/2011**

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Martin Plant to Riviera Beach Energy Center Lateral Project		**Wetlands 75a,b**
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	**L. Ricker**	**9/28/2011**

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: **3**	with:	**Wetland sandwiched between active CSX RR and SR 710. Traffic and development inhibit wildlife movement to and from wetland. Adjacent upland habitats are routinely distrubed by ROW maintenance activities, which precludes normal habitat sucession and limits wildlife habitat. Invasive exotic species are very prevalent in surrounding areas. Wetland provides minimial wildlife support to outside habitats.**
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: **4**	with:	**Wetland hydroperiod is significantly altered but sufficient to support some wetland species. Railroad ditching and road culverts haved altered natural condition. Wetland formed in linear drainage area between RR and SR 710. Water quality may be impacted by road and railroad run-off. Wetland does not support all typical widlife species, due to hydrologic impediments (roads, etc.). Typical vegetaion zonation not present due to topographic constraints of road and RR rights-of-ways.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: **3**	with:	**Invasive species (punk tree, Austrailian pine, Brazilian pepper, torpedo grass, common reed) are prevalent, as well as weedy species such as cattail. Recruitment is primarily invasive species; diversity low. Structural complexity is low. Land management practices (e.g. routine right-of-way mowing) prevent natural succession of this community.**

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres: **0.33**	with:

Delta = [with-current]

If preservation as mitigation,
Preservation adjustment factor = N/A
Adjusted mitigation delta = N/A

If mitigation
Time lag (t-factor) = N/A
Risk factor = N/A

For impact assessment areas
FL = delta x acres =

For mitigation assessment areas
RFG = delta/(t-factor x risk) = N/A

ATTACHMENT 4

AGENCY CORRESPONDENCE

FLORIDA
Natural Areas
INVENTORY

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
fax 850-681-9364
www.fnai.org

December 9, 2011

Lisa Ricker
Environmental Consulting and Technology
6410 Southpoint Parkway, Suite 120
Jacksonville, FL 32216

Dear Ms. Ricker,

Thank you for requesting information from the Florida Natural Areas Inventory (FNAI). We have compiled the following information for your project area.

Project: Palm Beach - Martin Corridor

Date Received: 12/09/2011

Location: Palm Beach and Martin Counties

Based on the information available, this site appears to be located within a significant region of natural areas and habitat for several rare species. Special consideration should be taken to avoid and/or mitigate impacts to these natural resources, and to design land uses that are compatible with these resources.

Element Occurrences

A search of our maps and database indicates that currently we have several element occurrences mapped within the vicinity of the study area (see enclosed map and element occurrence table). Please be advised that a lack of element occurrences in the FNAI database is not a sufficient indication of the absence of rare or endangered species on a site.

Federally Listed Species

Our data indicate federally listed species are present on or very near this site (see enclosed map and tables for details). This statement should not be interpreted as a legal determination of presence or absence of federally listed species on a property.

The element occurrences data layer includes occurrences of rare species and natural communities. The map legend indicates that some element occurrences occur in the general vicinity of the label point. This may be due to lack of precision of the source data, or an element that occurs over an extended area (such as a wide ranging species or large natural community). For animals and plants, element occurrences generally refer to more than a casual sighting; they usually indicate a viable population of the species. Note that some element occurrences represent historically documented observations which may no longer be extant. Extirpated element occurrences will be marked with an 'X' following the occurrence label on the enclosed map.

*Several of the species and natural communities tracked by the Inventory are considered **data sensitive**. Occurrence records for these elements contain information that we consider sensitive due to collection pressures, extreme rarity, or at the request of the source of the information. The Element Occurrence Record has been labeled "Data Sensitive." We request that you not publish or release specific locational data about these species or communities without consent from the Inventory. If you have any questions concerning this please do not hesitate to call.*

Florida Resources
and Environmental
Analysis Center

Institute of Science
and Public Affairs

The Florida State University

Likely and Potential Rare Species

In addition to documented occurrences, other rare species and natural communities may be identified on or near the site based on habitat models and species range models (see enclosed Biodiversity Matrix Report). These species should be taken into consideration in field surveys, land management, and impact avoidance and mitigation.

FNAI habitat models indicate areas, which based on land cover type, offer suitable habitat for one or more rare species that is known to occur in the vicinity. Habitat models have been developed for approximately 300 of the rarest species tracked by the Inventory, including all federally listed species.

FNAI species range models indicate areas that are within the known or predicted range of a species, based on climate variables, soils, vegetation, and/or slope. Species range models have been developed for approximately 340 species, including all federally listed species.

The FNAI Biodiversity Matrix Geodatabase compiles Documented, Likely, and Potential species and natural communities for each square mile Matrix Unit statewide.

Managed Areas

The project corridor intersects the following managed areas:

MANAGED AREA	MANAGING AGENCY
Gentle Ben Flowage Easement	South Florida Water Management District
Grassy Waters Preserve	City of West Palm Beach
Hungryland Slough Natural Area	Palm Beach County
Hungryland/SFWMD Parcels	South Florida Water Management District
J. W. Corbett Wildlife Management Area	FL Fish and Wildlife Conservation Commission
John C. and Mariana Jones/Hungryland Wildlife and Environmental Area	FL Fish and Wildlife Conservation Commission
Loxahatchee Slough Natural Area	Palm Beach County
Pine Glades Natural Area	Palm Beach County
Sweetbay Natural Area	Palm Beach County

The Managed Areas data layer shows public and privately managed conservation lands throughout the state. Federal, state, local, and privately managed conservation lands are included.

Land Acquisition Projects

The project corridor also intersects the Pal-Mar Florida Forever BOT Project, which is part of the State of Florida's Conservation and Recreation Lands land acquisition program. A description of this project is enclosed. For more information on this Florida Forever Project, contact the Florida Department of Environmental Protection, Division of State Lands.

Florida Forever Board of Trustees (BOT) projects are proposed and acquired through the Florida Department of Environmental Protection, Division of State Lands. The state has no specific land management authority over these lands until they are purchased.

The Inventory always recommends that professionals familiar with Florida's flora and fauna conduct a site-specific survey to determine the current presence or absence of rare, threatened, or endangered species.

Please visit www.fnai.org/trackinglist.cfm for county or statewide element occurrence distributions and links to more element information.

The database maintained by the Florida Natural Areas Inventory is the single most comprehensive source of information available on the locations of rare species and other significant ecological resources. However, the data are not always based on comprehensive or site-specific field surveys. Therefore this

information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. Inventory data are designed for the purposes of conservation planning and scientific research, and are not intended for use as the primary criteria for regulatory decisions.

Information provided by this database may not be published without prior written notification to the Florida Natural Areas Inventory, and the Inventory must be credited as an information source in these publications. FNAI data may not be resold for profit.

Thank you for your use of FNAI services. An invoice will be mailed separately. If I can be of further assistance, please give me a call at (850) 224-8207.

Sincerely,

Michael O'Brien

Michael O'Brien
Data Services Analyst

Encl

Palm Beach - Martin Corridor (Map 1 of 2)

Site boundaries are approximate.

Palm Beach and Martin Counties

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax
www.fnai.org

FLORIDA Natural Areas INVENTORY

Element Occurrences

- Animals
- Plants
- Communities
- Other
- Data Sensitive

Point Indicates General Vicinity of Element

U.S. Fish & Wildlife Service Scrub Jay Survey 1992-96

Conservation Lands

- Federal
- State
- Local
- Private
- State Aquatic Preserves

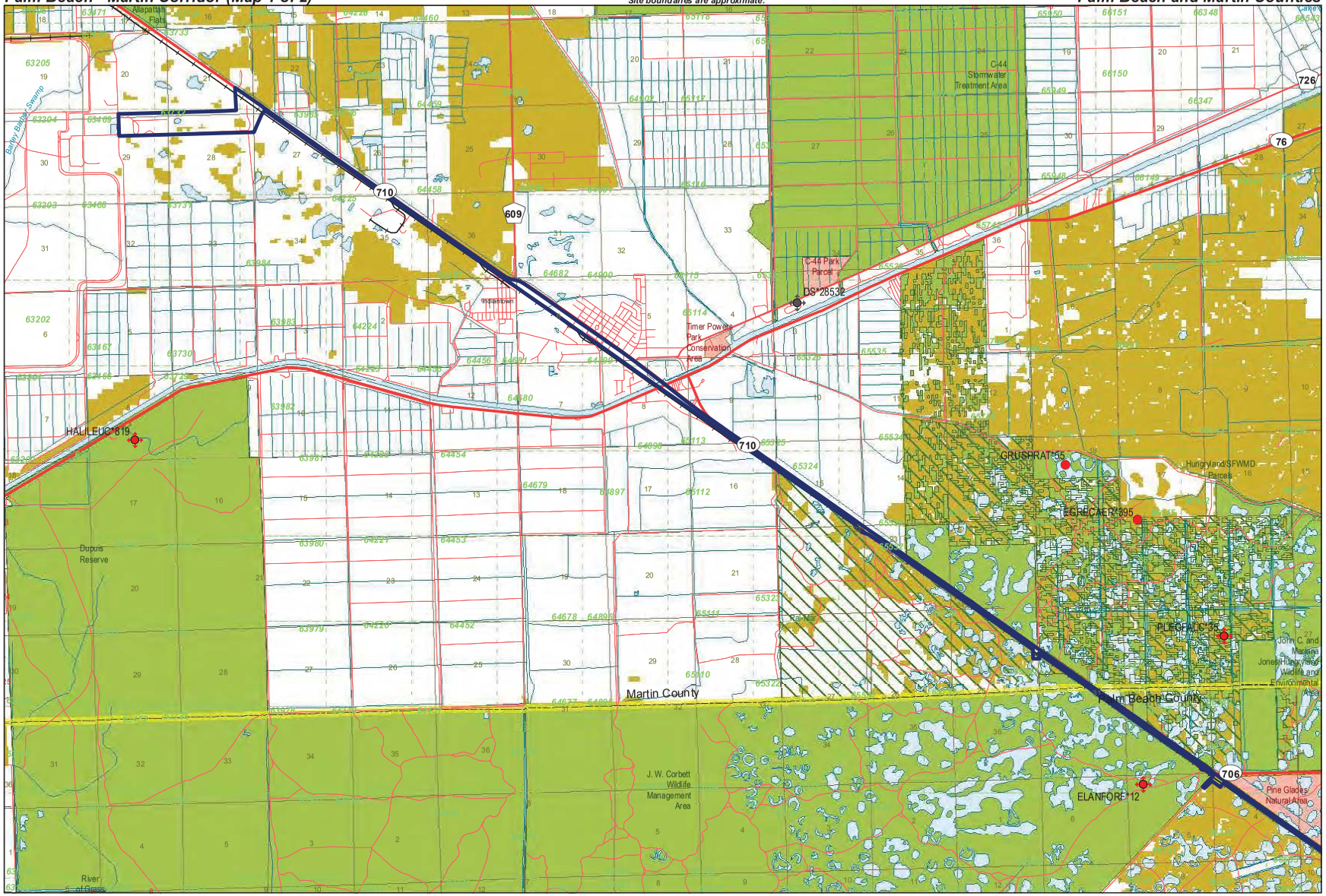
Land Acquisition Projects

- Florida Forever Board of Trustees Projects
- FNAI Rare Species Habitat
- FNAI Biodiversity Matrix Square Mile Units
- County Boundary
- Interstate
- Turnpike
- Major Highway
- Local Road
- Railroad [Inactive railroads shown in Gray]
- Water

NOTES

Map should not be interpreted without accompanying documents.

Only element occurrences within 2 miles of the project corridor are shown in this map and the associated element occurrence table.



Map produced by MGO
Map Date: 09 Dec 2011

Palm Beach - Martin Corridor (Map 2 of 2)

Site boundaries are approximate.

Palm Beach and Martin Counties

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax
www.fnai.org

FLORIDA Natural Areas INVENTORY

Element Occurrences

- Animals
- Plants
- Communities
- Other
- Data Sensitive
- Point Indicates General Vicinity of Element
- U.S. Fish & Wildlife Service Scrub Jay Survey 1992-96

Conservation Lands

- Federal
- State
- Local
- Private
- State Aquatic Preserves

Land Acquisition Projects

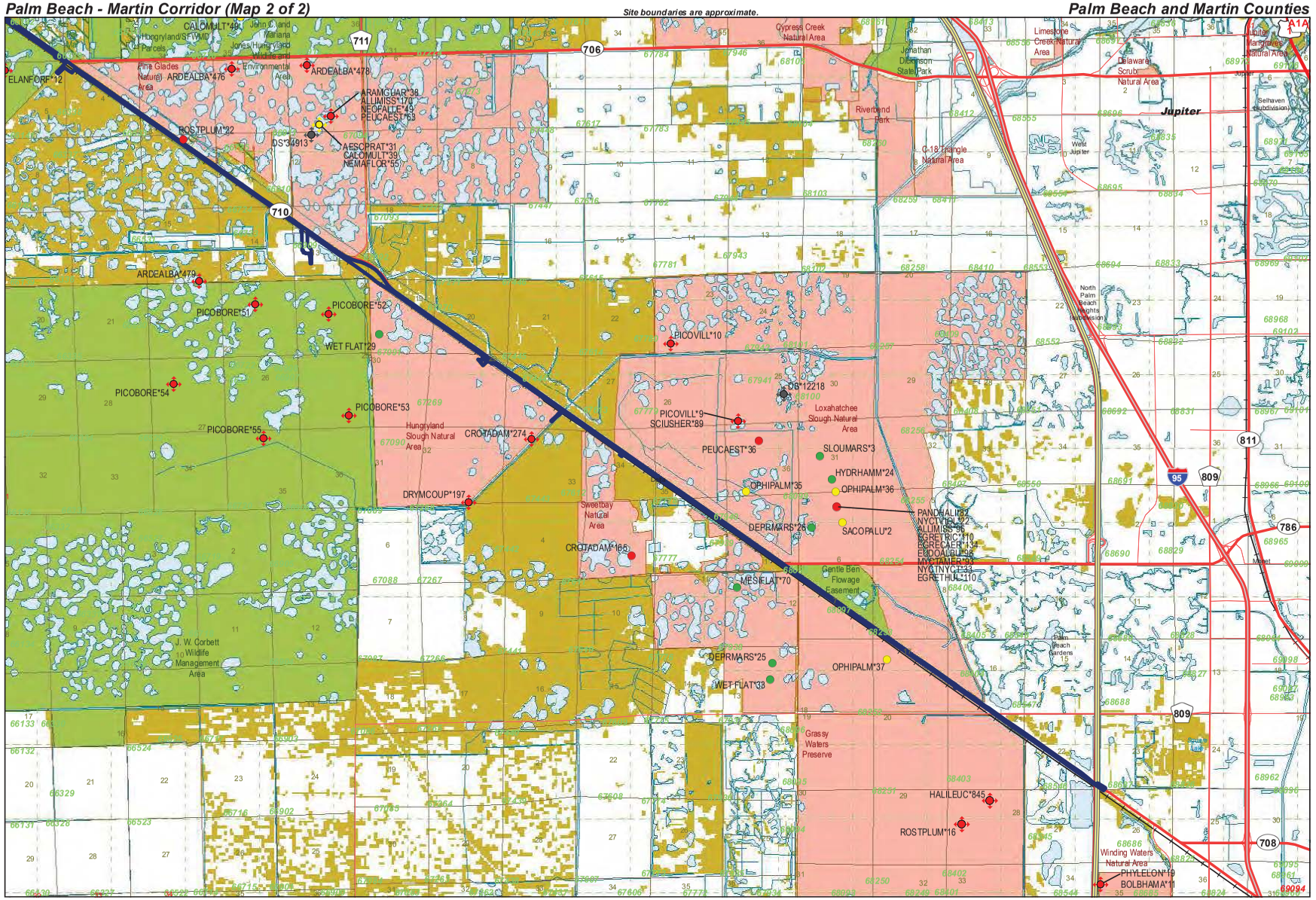
- Florida Forever Board of Trustees Projects
- FNAI Rare Species Habitat
- FNAI Biodiversity Matrix Square Mile Units

- County Boundary
- Interstate
- Turnpike
- Major Highway
- Local Road
- Railroad [Inactive railroads shown in Gray]
- Water

NOTES

Map should not be interpreted without accompanying documents.

Only element occurrences within 2 miles of the project corridor are shown in this map and the associated element occurrence table.



0 0.5 1 2 3 4 5 Miles

Map produced by MGO
Map Date: 09 Dec 2011

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax
www.fnai.org

Florida Natural Areas Inventory

DOCUMENTED ELEMENT OCCURRENCES ON OR NEAR
Palm Beach - Martin Corridor

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
AESCPRAT*31	*Aeschynomene pratensis*	Meadow Jointvetch	G4	S1	N	LE	2007	2007: Disturbed wet prairie; burned 2009-08-18 (PNDBRE05FLUS, U07BRE01FLUS).	2007: Brennan documented several individuals (PNDBRE05FLUS, U07BRE01FLUS).
ALLIMISS*170	*Alligator mississippiensis*	American Alligator	G5	S4	SAT	FT(S/A)	2005	2005: Found in various natural environments including wet prairie, depression marsh, borrow pit, and dome swamps (U05BRE03FLUS).	2005-2003, 1991: the element was observed on those dates (U05BRE03FLUS).
ALLIMISS*96	*Alligator mississippiensis*	American Alligator	G5	S4	SAT	FT(S/A)	1992-PRE	No general description given	Occurrence on site.
ARAMGUAR*38	*Aramus guarauna*	Limpkin	G5	S3	N	SSC	2005	2005: Observed in the dome swamp, disturbed wet prairie, and depression marsh, and along adjacent canal banks; prescribed burned on 2009-08-18 (U05BRE05FLUS).	2005 -- 1991: staff of the RBC ERM domented this species during those years and estimated the population to be 10 individuals (U05BRE05FLUS).
ARDEALBA*476	*Ardea alba*	Great Egret	G5	S4	N	N	1987-04-14	Channelized, dredged or otherwise altered freshwater stream or canal.	1987/04/14: D.E. Runde, GFC; No photo counts, but Total = 20 (includes GREG, GBHE).
ARDEALBA*478	*Ardea alba*	Great Egret	G5	S4	N	N	2008-04-02	2008-04-02: depression marsh with Cephalanthes occidentalis island in the center (U08FNA06FLUS). 1987-04-14: Channelized, dredged or otherwise altered freshwater stream or canal.	2008-04-02: about 20 birds and 7 nests observed (U08FNA06FLUS). 1987-04-14: D.E. Runde, GFC; No photo counts, counts are of nests from plane. Total = 8 (includes GREG, GBHE).
ARDEALBA*479	*Ardea alba*	Great Egret	G5	S4	N	N	1987-04-14	Willow head near runway.	1987/04/14: D.E. Runde, GFC; No photo counts, but Total = B (includes GREG, GBHE, SMDARK).
BOLBHAMA*11	*Bolbocerosoma hamatum*	Bicolored Burrowing Scarab Beetle	GNR	S3S5	N	N	1970-07-12	1970-07-12: No description given (B73WOO01FLUS).	1970-07-12: One specimen was collected by W.T. Rowan (B73WOO01FLUS).
CALOMULT*26	*Calopogon multiflorus*	Many-flowered Grass-pink	G2G3	S2S3	N	LE	2003-02-12	2003-02-12: mesic flatwoods subjected to moderate levels of ORV damage (F03FNA05FLUS).	2003-02-12: 1-10 individuals in flower/bud within <1 sq. meter area (F03FNA05FLUS).
CALOMULT*39	*Calopogon multiflorus*	Many-flowered Grass-pink	G2G3	S2S3	N	LE	1991	1991: "probably in wet flatwoods" (U91BRE02FLUS).	1991: Observed on site, population size unknown (U91BRE02FLUS).
CALOMULT*49	*Calopogon multiflorus*	Many-flowered Grass-pink	G2G3	S2S3	N	LE	2008-02-05	2008-02-05: mesic flatwoods and wet flatwoods (F08FNA12FLUS).	2008-02-05: 1 plant in flower at northern point. 3 plants in flower at southern point with very narrow leaves less than 2mm (F08FNA12FLUS).

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax
www.fnai.org

Florida Natural Areas Inventory

DOCUMENTED ELEMENT OCCURRENCES ON OR NEAR
Palm Beach - Martin Corridor

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
CROTADAM*165	*Crotalus adamanteus*	Eastern Diamondback Rattlesnake	G4	S3	N	N	1994-04-00	Hydric flatwoods/dried wet prairie; preserve area surrounding a small airport.	1994-04-00: 2 adults (4-5 ft.) observed (U95GRI01).
CROTADAM*274	*Crotalus adamanteus*	Eastern Diamondback Rattlesnake	G4	S3	N	N	1990-12-07	Wet flatwoods	1990-12-07: M.S. Robson, GFC, observed 1 adult.
DEPRMARS*25	Depression marsh		G4	S4	N	N	1999	DEPRESSION MARSHES ARE FOUND IN THE INNUMERABLE SHALLOW APPROXIMATELY CIRCULAR DEPRESSIONS, VARYING IN EXTENT FROM ONE TO MANY ACRES (UP TO 50 ACRES), WHICH MAY HOLD A FOOT OR MORE OF WATER IN WET WEATHER, BUT BECOME DRY DURING PART OF THE YEAR. THEY TYP	1999: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-10) (U05FNA02FLUS). THE FOLLOWING IS A GENERALIZED CHARACTERIZATION OF THE VEGETATION ZONES THAT ONE MIGHT ENCOUNTER WITHIN THE PROPOSAL IN A TYPI
DEPRMARS*26	Depression marsh		G4	S4	N	N	1999	1992-06-10: depression marshes are found in the many shallow circular depressions, varying in extent from one to many acres (up to 50 acres) which may hold a foot or more of water, but becomes dry during part of the year. They typically occur within the	1999: Update to last obs date was based on interpretation of aerial photography (U05FNA02FLUS). 1992-06-10: in some depression marshes the outermost ecotonal zone of the depression just downslope from the wet flatwoods is slightly calcareo
DRYMCOUP*197	*Drymarchon couperi*	Eastern Indigo Snake	G3	S3	LT	FT	1980	No general description given	INDIGO (D.O.R.) OBSERVED BY BRUCE BOWMAN IN 1980 (MOLER INTERVIEW OF BOWMAN, 1981-10-06).
DS*12218	*Data Sensitive Element*	Data Sensitive	G5	S3	N	LT	1992-08-18	Data Sensitive	Data Sensitive
DS*28532	*Data Sensitive Element*	Data Sensitive	G2G4	S1	N	LE	1980-05-29	Data Sensitive	Data Sensitive
DS*34913	*Data Sensitive Element*	Data Sensitive	G5	S3	N	LT	2004	Data Sensitive	Data Sensitive
EGRECAER*134	*Egretta caerulea*	Little Blue Heron	G5	S4	N	SSC	1992-PRE	No general description given	Common.
EGRECAER*395	*Egretta caerulea*	Little Blue Heron	G5	S4	N	SSC	2004-05-19	2004-05-19: extensive area of marshes, wet prairie and flatwoods. Good quality, but moderate Myrica encroachment in prairies.	2004-05-19: Hipes and Tancig observed 6 to 11 active nests (F04HIP02FLUS).
EGRETHUL*110	*Egretta thula*	Snowy Egret	G5	S3	N	SSC	1992-PRE	No general description given	Scattered sightings.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax
www.fnai.org

Florida Natural Areas Inventory

DOCUMENTED ELEMENT OCCURRENCES ON OR NEAR
Palm Beach - Martin Corridor

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
EGRETRIC*110	*Egretta tricolor*	Tricolored Heron	G5	S4	N	SSC	1992-PRE	No general description given	Common.
ELANFORF*12	*Elanoides forficatus*	Swallow-tailed Kite	G5	S2	N	N	1990-05-09	Wet Flatwoods; Freshwater Marsh.	1990-05-09: M.S. Robson, GFC - 2 adults soaring over the edge of a pine ridge, and near a sawgrass pond containing cypress.
EUDOALBU*98	*Eudocimus albus*	White Ibis	G5	S4	N	SSC	1992-PRE	No general description given	Common foraging.
GRUSPRAT*55	*Grus canadensis pratensis*	Florida Sandhill Crane	G5T2T3	S2S3	N	ST	2004-05-19	Extensive area of wet prairies and basin/depression marshes. Moderately invaded by Myrica, but generally in good shape.	2004-05-19: Mark Tancig observed 1 adult and two eggs at a nest (F04HIP01FLUS).
HALILEUC*819	*Haliaeetus leucocephalus*	Bald Eagle	G5	S3	N	N	2003	No general description given	Nest status 1999-2003: Continuously active; Status 1995-98: Active - 1997, 1996, 1995; Inactive - 1998; (U03FWC01FLUS). Previous data (note different format) NEST; 1995: PRODUCED 1 YOUNG; 1994: PRODUCED 1 YOUNG; 1993: PRODUCED 1 YOUNG; 1992: PRODUCED 2 Y
HALILEUC*845	*Haliaeetus leucocephalus*	Bald Eagle	G5	S3	N	N	2003	No general description given	Nest status 1995-2003: Continuously active. (U03FWC01FLUS). Previous data (note different format) Nest; 1995: Produced 2 young; 1994: Produced 2 young; 1993: Active, produced 0 young; 1992: Produced 1 young.
HYDRHAMM*24	Hydric hammock		G4	S4	N	N	1999	AT LEAST THREE RATHER LONG AND NARROW STRIPS OF LOW PALM-OAK HAMMOCK OCCUR WEST OF THE C-18 CANAL AND SOUTH OF ITS WEST SPUR CANAL WITHIN THE LOXAHATCHEE SLOUGH. THESE ELONGATED HAMMOCK "ISLANDS" VARY IN SIZE FROM ABOUT 0.5 MILES TO 1 MILE IN LENGTH AND	1999: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-11) (U05FNA02FLUS). THERE ARE TWO PLANT COMMUNITY TYPES REPRESENTED IN THE LOW HAMMOCKS EAST OF THE C-18 CANAL AT LOXAHATCHEE SLOUGH, A LIVE OAK/P

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax
www.fnai.org

Florida Natural Areas Inventory

DOCUMENTED ELEMENT OCCURRENCES ON OR NEAR
Palm Beach - Martin Corridor

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
MESIFLAT*70	Mesic flatwoods		G4	S4	N	N	1999	THE FLATWOODS LIE WITHIN TWO BIOGEOGRAPHICAL REGIONS AS DEFINED BY IVERSON & AUSTIN (1987) FOR PALM BEACH COUNTY. THEY ARE THE HUNGRYLAND WETLANDS AND LOXAHATCHEE SLOUGH. THE HUNGRYLAND IS MENTIONED IN SOME OF DR. SMALL'S BOTANICAL NARRATIVES AS LOW AND	1999: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-11) (U05FNA02FLUS). MESIC FLATWOODS OCCUR ONLY ON THE HIGHEST ELEVATIONS WITHIN THE LOXAHATCHEE SLOUGH CARL PROPOSAL. THE OVERSTORY CONSISTS OF SO
MYCTAMER*93	*Mycteria americana*	Wood Stork	G4	S2	LE	FE	1992-PRE	No general description given	Irregular.
NEMAFLOR*55	*Nemastylis floridana*	Celestial Lily	G2	S2	N	LE	2005-POST	2005: Wet flatwoods; burned 2009-08-18 (U05BLE01FLUS).	2005: one individual observed; several in subsequent years (U05BRE01FLUS).
NEOFALLE*49	*Neofiber alleni*	Round-tailed Muskrat	G3	S3	N	N	2005	2005: Wet prairie and depression marshes where there is dense emergent vegetation, usually monocultures of maidencane or spikerush (U05BRE02FLUS).	2005, 1993: 150 muskrates observed (U05BRE02FLUS). It is unclear if the 150 muskrats were seen on both dates or represents a cumulative total (PNDDAV04FLUS).
NYCTNYCT*33	*Nycticorax nycticorax*	Black-crowned Night-heron	G5	S3	N	N	1992-PRE	No general description given	Rare.
NYCTVIOL*22	*Nyctanassa violacea*	Yellow-crowned Night-heron	G5	S3	N	N	1992-PRE	No general description given	Occurrence on site.
OPHIPALM*35	*Ophioglossum palmatum*	Hand Fern	G4	S2	N	LE	1992-08-18	Slough.	1992: Greater than 1000 individuals (U92FAR01).
OPHIPALM*36	*Ophioglossum palmatum*	Hand Fern	G4	S2	N	LE	1992-08-18	Slough.	1992: Greater than 1000 individuals (U92FAR01).
OPHIPALM*37	*Ophioglossum palmatum*	Hand Fern	G4	S2	N	LE	1992-08-18	Slough.	1992: Greater than 1000 individuals (U92FAR01).
PANDHALI*82	*Pandion haliaetus*	Osprey	G5	S3S4	N	SSC*	1992-PRE	No general description given	Common.
PEUCAEST*36	*Peucaea aestivalis*	Bachman's Sparrow	G3	S3	N	N	1992-08-18	Slough.	1992: Common within boundaries.
PEUCAEST*63	*Peucaea aestivalis*	Bachman's Sparrow	G3	S3	N	N	2005	2005: mesic flatwoods and wet flatwoods (U05BRE04FLUS). 2004-05-18: extensive area of marshes, wet prairie, and flatwoods; some woody encroachment (F04HIP02FLUS).	2005, 2004, 1993: staff of the RBC ERM documented the presence of Bachman's Sparrow during those three years and estimated the population to be 200 (U05BRE04FLUS). 2004-05-18: D. Hipes and M. Jenkins heard 3 to 5 males singing in flatwoods

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax
www.fnai.org

Florida Natural Areas Inventory

DOCUMENTED ELEMENT OCCURRENCES ON OR NEAR
Palm Beach - Martin Corridor

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
PHYLELON*19	*Phyllophaga elongata*	Elongate June Beetle	G2G4	S2S4	N	N	1989-PRE	1989-Pre: No description given (B89WOO01FLUS).	1989-Pre: Two specimens were collected (B89WOO01FLUS).
PICOBORE*51	*Picoides borealis*	Red-cockaded Woodpecker	G3	S2	LE	FE	ZZ	No general description given	ACTIVE COLONY.
PICOBORE*52	*Picoides borealis*	Red-cockaded Woodpecker	G3	S2	LE	FE	ZZ	No general description given	ACTIVE COLONY.
PICOBORE*53	*Picoides borealis*	Red-cockaded Woodpecker	G3	S2	LE	FE	ZZ	No general description given	ACTIVE COLONY
PICOBORE*54	*Picoides borealis*	Red-cockaded Woodpecker	G3	S2	LE	FE	ZZ	No general description given	ACTIVE COLONY.
PICOBORE*55	*Picoides borealis*	Red-cockaded Woodpecker	G3	S2	LE	FE	ZZ	No general description given	ACTIVE COLONY.
PICOVILL*10	*Picoides villosus*	Hairy Woodpecker	G5	S3	N	N	1992-PRE	No general description given	1992-pre: Occurrence on site (U92FAR01FLUS).
PICOVILL*9	*Picoides villosus*	Hairy Woodpecker	G5	S3	N	N	1992-PRE	No general description given	1992-pre: Occurrence on site (U92FAR01FLUS).
PLEGFALC*35	*Plegadis falcinellus*	Glossy Ibis	G5	S3	N	N	1987-04-14	Channelized, dredged or otherwise altered freshwater stream or canal	1987-04-14: D.E. Runde, GFC - "Total" = C (includes GREG, GBHE, GLIB).
ROSTPLUM*16	*Rostrhamus sociabilis plumbeus*	Snail Kite	G4G5T2	S2	LE	FE	2006	Slough, wet prairie, tree islands. Artificially maintained impoundment formerly connected to the Everglades to the southwest.	2006: polygon classified as priority snail kite management area by U. S. Fish and Wildlife Service based on years of nesting data (U06FWS01FLUS). Site has been used inconsistently and sporadically since 1970. 1990-1991: 1991 GFC WildObs dat
ROSTPLUM*22	*Rostrhamus sociabilis plumbeus*	Snail Kite	G4G5T2	S2	LE	FE	2008-04-02	2008: basin marsh and depression marsh (U08FNA06FLUS). 1998-12-15: EXTENSIVE MOSAIC OF BASIN MARSH, DEPRESSION MARSH AND MESIC FLATWOODS (PNDPRI03FLUS).	2008: 1 bird observed foraging at each new location (3 total) (U08FNA06FLUS). 98-12-15: ONE FEMALE ADULT OBSERVED FORAGING FOR APPROXIMATELY 20 MINUTES; BIRD CONSUMED AT LEAST TWO SNAILS DURING THIS TIME (PNDPRI03FLUS, PNDSCH03FLUS).
SACOPALU*2	*Sacoila lanceolata var. paludicola*	Fahkahatchee Ladies' -tresses	G4T1	S1	N	LT	1992-08-18	Slough.	1992: Greater than 500 individuals seen (U92FAR01).
SCIUSHER*89	*Sciurus niger shermani*	Sherman's Fox Squirrel	G5T3	S3	N	SSC	1992-PRE	No general description given	1 individual seen.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax
www.fnai.org

Florida Natural Areas Inventory

DOCUMENTED ELEMENT OCCURRENCES ON OR NEAR
Palm Beach - Martin Corridor

Map Label	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing	Observation Date	Description	EO Comments
SLOUMARS*3	Slough marsh		G3?	S3?	N	N	1999	WITHIN TWO BIOGEOGRAPHICAL REGIONS AS DEFINED BY IVERSON & AUSTIN (1987) FOR PALM BEACH COUNTY. THEY ARE THE HUNGRYLAND WETLANDS AND LOXAHATCHEE SLOUGH. THE HUNGRYLAND IS MENTIONED IN SOME OF DR. SMALL'S BOTANICAL NARRATIVES AS LOW AND WET, WITH AS MUCH	2010: Prior to the 2010 natural community reclassification effort this EO had been known as Swale EO number 3 (see U10FNA01FLUS for updated community descriptions). 1999: Update to last obs date was based on interpretation of aerial photography (previous
WET FLAT*29	Wet flatwoods		G4	S4	N	N	1999	THESE FLATWOODS LIE WITHIN TWO BIOGEOGRAPHICAL REGIONS AS DEFINED BY IVERSON & AUSTIN (1987) FOR PALM BEACH COUNTY. THEY ARE THE HUNGRYLAND WETLANDS AND LOXAHATCHEE SLOUGH. THE HUNGRYLAND IS MENTIONED IN SOME OF DR. SMALL'S BOTANICAL NARRATIVES AS LOW AN	1999: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-10) (U05FNA02FLUS). THE NATURAL COMMUNITIES ON THIS TRACT INCLUDE MESIC FLATWOODS, DEPRESSION MARSHES, WET FLATWOODS AND CYPRESS DOMES. PARTS OF T
WET FLAT*33	Wet flatwoods		G4	S4	N	N	1999	THE LOXAHATCHEE SLOUGH PROPOSAL LIES WITHIN TWO BIOGEOGRAPHICAL REGIONS AS DEFINED BY IVERSON & AUSTIN (1987) FOR PALM BEACH COUNTY. THEY ARE THE HUNGRYLAND WETLANDS AND LOXAHATCHEE SLOUGH. THE HUNGRYLAND IS MENTIONED IN SOME OF DR. SMALL'S BOTANICAL NAR	1999: Update to last obs date was based on interpretation of aerial photography (previous value was 1992-06-10) (U05FNA02FLUS). WET FLATWOODS OCCUR ON SLIGHLY LOWER LANDSCAPE POSITIONS THAN THE MESIC FLATWOODS AND HAVE A VERY OPEN, SAVANNA LIKE APPEARANC

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Matrix Unit ID: 63469					
Likely					
Mesic flatwoods		G4	S4	N	N
Mycteria americana	Wood Stork	G4	S2	LE	FE
Potential					
Conradina grandiflora	Large-flowered Rosemary	G3	S3	N	LT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Nolina atopocarpa	Florida Beargrass	G3	S3	N	LT
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Rana capito	Gopher Frog	G3	S3	N	SSC
Matrix Unit ID: 63732					
Likely					
Mesic flatwoods		G4	S4	N	N
Mycteria americana	Wood Stork	G4	S2	LE	FE
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Nolina atopocarpa	Florida Beargrass	G3	S3	N	LT
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Rana capito	Gopher Frog	G3	S3	N	SSC
Matrix Unit ID: 63981					
Likely					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Potential					
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*
Matrix Unit ID: 63982					
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*
Matrix Unit ID: 63983					
Likely					
Mesic flatwoods		G4	S4	N	N
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*
Matrix Unit ID: 63984					
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Mycteria americana	Wood Stork	G4	S2	LE	FE
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Rana capito	Gopher Frog	G3	S3	N	SSC

Matrix Unit ID: 63985

Likely

Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Mycteria americana	Wood Stork	G4	S2	LE	FE

Potential

Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Heterodon simus	Southern Hognose Snake	G2	S2	N	N
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Rana capito	Gopher Frog	G3	S3	N	SSC

Matrix Unit ID: 64222

Potential

Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*

Matrix Unit ID: 64223

Likely

Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST

Potential

Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*

Matrix Unit ID: 64454

Potential

Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*

Matrix Unit ID: 64455

Potential

Calopogon multiflorus	Many-flowered Grass-pink	G2G3	S2S3	N	LE
Conradina grandiflora	Large-flowered Rosemary	G3	S3	N	LT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Rana capito	Gopher Frog	G3	S3	N	SSC
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*

Matrix Unit ID: 64679

Potential

Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Matrix Unit ID: 64680					
Potential					
Calopogon multiflorus	Many-flowered Grass-pink	G2G3	S2S3	N	LE
Conradina grandiflora	Large-flowered Rosemary	G3	S3	N	LT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Rana capito	Gopher Frog	G3	S3	N	SSC
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*
Matrix Unit ID: 64897					
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*
Matrix Unit ID: 64898					
Likely					
Mesic flatwoods		G4	S4	N	N
Potential					
Calopogon multiflorus	Many-flowered Grass-pink	G2G3	S2S3	N	LE
Conradina grandiflora	Large-flowered Rosemary	G3	S3	N	LT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Eumops floridanus	Florida bonneted bat	G1	S1	C	ST
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Heterodon simus	Southern Hognose Snake	G2	S2	N	N
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*
Matrix Unit ID: 65112					

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*
Matrix Unit ID: 65324					
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*
Matrix Unit ID: 65532					
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Matrix Unit ID: 65533					
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Ursus americanus floridanus	Florida Black Bear	G5T2	S2	N	ST*
Matrix Unit ID: 65737					
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Matrix Unit ID: 65738					
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Matrix Unit ID: 65942					
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Matrix Unit ID: 66142					
Likely					
Elanoides forficatus	Swallow-tailed Kite	G5	S2	N	N
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Matrix Unit ID: 66143					
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Plegadis falcinellus	Glossy Ibis	G5	S3	N	N
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Matrix Unit ID: 66338					
Likely					
Aeschynomene pratensis	Meadow Jointvetch	G4	S1	N	LE
Alligator mississippiensis	American Alligator	G5	S4	SAT	FT(S/A)
Aramus guarauna	Limpkin	G5	S3	N	SSC
Calopogon multiflorus	Many-flowered Grass-pink	G2G3	S2S3	N	LE

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Elanoides forficatus	Swallow-tailed Kite	G5	S2	N	N
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Neofiber alleni	Round-tailed Muskrat	G3	S3	N	N
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Tillandsia flexuosa	Banded Wild-pine	G5	S3	N	LT
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Matrix Unit ID: 66339					
Likely					
Aeschynomene pratensis	Meadow Jointvetch	G4	S1	N	LE
Alligator mississippiensis	American Alligator	G5	S4	SAT	FT(S/A)
Aramus guarauna	Limpkin	G5	S3	N	SSC
Calopogon multiflorus	Many-flowered Grass-pink	G2G3	S2S3	N	LE
Elanoides forficatus	Swallow-tailed Kite	G5	S2	N	N
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Neofiber alleni	Round-tailed Muskrat	G3	S3	N	N
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Tillandsia flexuosa	Banded Wild-pine	G5	S3	N	LT
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Matrix Unit ID: 66533					
Likely					
Aeschynomene pratensis	Meadow Jointvetch	G4	S1	N	LE
Alligator mississippiensis	American Alligator	G5	S4	SAT	FT(S/A)
Aramus guarauna	Limpkin	G5	S3	N	SSC
Calopogon multiflorus	Many-flowered Grass-pink	G2G3	S2S3	N	LE
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Neofiber alleni	Round-tailed Muskrat	G3	S3	N	N
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Tillandsia flexuosa	Banded Wild-pine	G5	S3	N	LT
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Matrix Unit ID: 66724					
Likely					
Aeschynomene pratensis	Meadow Jointvetch	G4	S1	N	LE
Alligator mississippiensis	American Alligator	G5	S4	SAT	FT(S/A)
Aramus guarauna	Limpkin	G5	S3	N	SSC
Calopogon multiflorus	Many-flowered Grass-pink	G2G3	S2S3	N	LE
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Neofiber alleni	Round-tailed Muskrat	G3	S3	N	N
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Tillandsia flexuosa	Banded Wild-pine	G5	S3	N	LT
Potential					
Ardea alba	Great Egret	G5	S4	N	N
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Matrix Unit ID: 66725					
Likely					
Aeschynomene pratensis	Meadow Jointvetch	G4	S1	N	LE
Alligator mississippiensis	American Alligator	G5	S4	SAT	FT(S/A)
Aramus guarauna	Limpkin	G5	S3	N	SSC
Calopogon multiflorus	Many-flowered Grass-pink	G2G3	S2S3	N	LE
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Nemastylis floridana	Celestial Lily	G2	S2	N	LE

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Neofiber alleni	Round-tailed Muskrat	G3	S3	N	N
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Tillandsia flexuosa	Banded Wild-pine	G5	S3	N	LT
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Matrix Unit ID: 66909					
Likely					
Aeschynomene pratensis	Meadow Jointvetch	G4	S1	N	LE
Alligator mississippiensis	American Alligator	G5	S4	SAT	FT(S/A)
Aramus guarauna	Limpkin	G5	S3	N	SSC
Calopogon multiflorus	Many-flowered Grass-pink	G2G3	S2S3	N	LE
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Neofiber alleni	Round-tailed Muskrat	G3	S3	N	N
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Tillandsia flexuosa	Banded Wild-pine	G5	S3	N	LT
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	SSC
Matrix Unit ID: 66910					
Likely					
Aeschynomene pratensis	Meadow Jointvetch	G4	S1	N	LE
Alligator mississippiensis	American Alligator	G5	S4	SAT	FT(S/A)
Aramus guarauna	Limpkin	G5	S3	N	SSC
Calopogon multiflorus	Many-flowered Grass-pink	G2G3	S2S3	N	LE
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Neofiber alleni	Round-tailed Muskrat	G3	S3	N	N

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Tillandsia flexuosa	Banded Wild-pine	G5	S3	N	LT
Potential					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	SSC
Matrix Unit ID: 67091					
Documented					
Calopogon multiflorus	Many-flowered Grass-pink	G2G3	S2S3	N	LE
Wet flatwoods		G4	S4	N	N
Likely					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Potential					
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	SSC
Matrix Unit ID: 67092					
Likely					
Aeschynomene pratensis	Meadow Jointvetch	G4	S1	N	LE
Alligator mississippiensis	American Alligator	G5	S4	SAT	FT(S/A)
Aramus guarauna	Limpkin	G5	S3	N	SSC
Calopogon multiflorus	Many-flowered Grass-pink	G2G3	S2S3	N	LE
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Neofiber alleni	Round-tailed Muskrat	G3	S3	N	N
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Tillandsia flexuosa	Banded Wild-pine	G5	S3	N	LT
Potential					
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	SSC
Matrix Unit ID: 67270					
Likely					
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Potential					
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	SSC
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE
Matrix Unit ID: 67444					
Likely					
Crotalus adamanteus	Eastern Diamondback Rattlesnake	G4	S3	N	N
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Potential					
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	LT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	SSC
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE

Matrix Unit ID: 67445

Likely

Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE

Potential

Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	LT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	SSC
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE

Matrix Unit ID: 67612

Likely

Crotalus adamanteus	Eastern Diamondback Rattlesnake	G4	S3	N	N
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE

Potential

Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	LT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Encyclia cochleata var. triandra	Clamshell Orchid	G4G5T2	S2	N	LE
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	SSC
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE

Matrix Unit ID: 67613

Likely

Crotalus adamanteus	Eastern Diamondback Rattlesnake	G4	S3	N	N
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Picoides villosus	Hairy Woodpecker	G5	S3	N	N
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE

Potential

Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	LT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	SSC
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE

Matrix Unit ID: 67778

Likely

Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Picoides villosus	Hairy Woodpecker	G5	S3	N	N
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	SSC

Potential

Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	LT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Encyclia cochleata var. triandra	Clamshell Orchid	G4G5T2	S2	N	LE
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	SSC
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE
Matrix Unit ID: 67939					
Documented					
Mesic flatwoods		G4	S4	N	N
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Potential					
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	LT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Encyclia cochleata var. triandra	Clamshell Orchid	G4G5T2	S2	N	LE
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	SSC
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	SSC
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE
Matrix Unit ID: 67940					
Documented					
Ophioglossum palmatum	Hand Fern	G4	S2	N	LE
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Picoides villosus	Hairy Woodpecker	G5	S3	N	N
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Sciurus niger shermani	Sherman's Fox Squirrel	G5T3	S3	N	SSC
Potential					
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	LT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	SSC
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE
Matrix Unit ID: 68097					
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Potential					
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	LT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Encyclia cochleata var. triandra	Clamshell Orchid	G4G5T2	S2	N	LE
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	SSC
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE
Matrix Unit ID: 68098					
Documented					
Depression marsh		G4	S4	N	N
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Sacoila lanceolata var. paludicola	Fahkahatchee Ladies' -tresses	G4T1	S1	N	LT
Potential					
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	LT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Encyclia cochleata var. triandra	Clamshell Orchid	G4G5T2	S2	N	LE
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Podomys floridanus	Florida Mouse	G3	S3	N	SSC
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE
Matrix Unit ID: 68253					
Documented					
Ophioglossum palmatum	Hand Fern	G4	S2	N	LE
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Potential					
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	LT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Encyclia cochleata var. triandra	Clamshell Orchid	G4G5T2	S2	N	LE
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Podomys floridanus	Florida Mouse	G3	S3	N	SSC
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Rana capito	Gopher Frog	G3	S3	N	SSC
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE
Matrix Unit ID: 68404					
Documented					
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Potential					
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Bolbocerosoma hamatum	Bicolored Burrowing Scarab Beetle	G3G4	S3	N	N
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Encyclia cochleata var. triandra	Clamshell Orchid	G4G5T2	S2	N	LE
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Phyllophaga elongata	Elongate June Beetle	G3	S3	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Podomys floridanus	Florida Mouse	G3	S3	N	SSC
Rana capito	Gopher Frog	G3	S3	N	SSC
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE

Matrix Unit ID: 68405

Likely

Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE

Potential

Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	LT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Encyclia cochleata var. triandra	Clamshell Orchid	G4G5T2	S2	N	LE
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Podomys floridanus	Florida Mouse	G3	S3	N	SSC
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Rana capito	Gopher Frog	G3	S3	N	SSC
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE

Matrix Unit ID: 68546

Documented

Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE

Likely

Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N

Potential

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC
Bolbocerosoma hamatum	Bicolored Burrowing Scarab Beetle	G3G4	S3	N	N
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	LT
Conradina grandiflora	Large-flowered Rosemary	G3	S3	N	LT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Encyclia cochleata var. triandra	Clamshell Orchid	G4G5T2	S2	N	LE
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Phyllophaga elongata	Elongate June Beetle	G3	S3	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Rana capito	Gopher Frog	G3	S3	N	SSC
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE

Matrix Unit ID: 68547

Likely

Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE

Potential

Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC
Bolbocerosoma hamatum	Bicolored Burrowing Scarab Beetle	G3G4	S3	N	N
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	LT
Conradina grandiflora	Large-flowered Rosemary	G3	S3	N	LT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Encyclia cochleata var. triandra	Clamshell Orchid	G4G5T2	S2	N	LE
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Phyllophaga elongata	Elongate June Beetle	G3	S3	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Podomys floridanus	Florida Mouse	G3	S3	N	SSC
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Rana capito	Gopher Frog	G3	S3	N	SSC
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
(850) 224-8207
(850) 681-9364 Fax

Florida Natural Areas Inventory

Biodiversity Matrix Report

Matrix Unit ID: 68687

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Listing
Likely					
Grus canadensis pratensis	Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Mesic flatwoods		G4	S4	N	N
Rostrhamus sociabilis plumbeus	Snail Kite	G4G5T2	S2	LE	FE
Potential					
Athene cunicularia floridana	Florida Burrowing Owl	G4T3	S3	N	SSC
Bolbocerosoma hamatum	Bicolored Burrowing Scarab Beetle	G3G4	S3	N	N
Coelorachis tuberculosa	Piedmont Jointgrass	G3	S3	N	LT
Conradina grandiflora	Large-flowered Rosemary	G3	S3	N	LT
Drymarchon couperi	Eastern Indigo Snake	G3	S3	LT	FT
Elytraria caroliniensis var. angustifolia	Narrow-leaved Carolina Scalystem	G4T2	S2	N	N
Encyclia cochleata var. triandra	Clamshell Orchid	G4G5T2	S2	N	LE
Forestiera segregata var. pinetorum	Florida Pinewood Privet	G4T2	S2	N	N
Gopherus polyphemus	Gopher Tortoise	G3	S3	N	ST
Lechea cernua	Nodding Pinweed	G3	S3	N	LT
Linum carteri var. smallii	Small's Flax	G2T2	S2	N	LE
Nemastylis floridana	Celestial Lily	G2	S2	N	LE
Panicum abscissum	Cutthroat Grass	G3	S3	N	LE
Peucaea aestivalis	Bachman's Sparrow	G3	S3	N	N
Phyllophaga elongata	Elongate June Beetle	G3	S3	N	N
Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	FE
Podomys floridanus	Florida Mouse	G3	S3	N	SSC
Polygala smallii	Tiny Polygala	G1	S1	LE	LE
Rana capito	Gopher Frog	G3	S3	N	SSC
Roystonea elata	Florida Royal Palm	G2G3	S2	N	LE
Sceloporus woodi	Florida Scrub Lizard	G3	S3	N	N
Trichomanes punctatum ssp. floridanum	Florida Filmy Fern	G4G5T1	S1	C	LE

Definitions: *Documented - Rare species and natural communities documented on or near this site.*
Documented-Historic - Rare species and natural communities documented, but not observed/reported within the last twenty years.
Likely - Rare species and natural communities likely to occur on this site based on suitable habitat and/or known occurrences in the vicinity.
Potential - This site lies within the known or predicted range of the species listed.

Elements and Element Occurrences

An **element** is any exemplary or rare component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave, or other ecological feature.

An **element occurrence (EO)** is an area of land and/or water in which a species or natural community is, or was, present. An EO should have practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location.

Element Ranking and Legal Status

Using a ranking system developed by NatureServe and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks for each element. The global rank is based on an element's worldwide status; the state rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of Element Occurrences (EOs), estimated abundance (number of individuals for species; area for natural communities), geographic range, estimated number of adequately protected EOs, relative threat of destruction, and ecological fragility.

FNAI GLOBAL ELEMENT RANK

G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
G2 = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
G3 = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
G4 = Apparently secure globally (may be rare in parts of range).
G5 = Demonstrably secure globally.
GH = Of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker).
GX = Believed to be extinct throughout range.
GXC = Extirpated from the wild but still known from captivity or cultivation.
G#? = Tentative rank (e.g., G2?).
G#G# = Range of rank; insufficient data to assign specific global rank (e.g., G2G3).
G#T# = Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1).
G#Q = Rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q).
G#T#Q = Same as above, but validity as subspecies or variety is questioned.
GU = Unrankable; due to a lack of information no rank or range can be assigned (e.g., GUT2).
GNA = Ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
GNR = Element not yet ranked (temporary).
GNRTNR = Neither the element nor the taxonomic subgroup has yet been ranked.

FNAI STATE ELEMENT RANK

S1 = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
S2 = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
S3 = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
S4 = Apparently secure in Florida (may be rare in parts of range).
S5 = Demonstrably secure in Florida.
SH = Of historical occurrence in Florida, possibly extirpated, but may be rediscovered (e.g., ivory-billed woodpecker).
SX = Believed to be extirpated throughout Florida.
SU = Unrankable; due to a lack of information no rank or range can be assigned.
SNA = State ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
SNR = Element not yet ranked (temporary).

FEDERAL LEGAL STATUS

Legal status information provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant federal agency.

Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.
LE = Endangered: species in danger of extinction throughout all or a significant portion of its range.
LE, LT = Species currently listed endangered in a portion of its range but only listed as threatened in other areas
LE, PDL = Species currently listed endangered but has been proposed for delisting.
LE, PT = Species currently listed endangered but has been proposed for listing as threatened.
LE, XN = Species currently listed endangered but tracked population is a non-essential experimental population.
LT = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.
SAT = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.
SC = Not currently listed, but considered a "species of concern" to USFWS.

STATE LEGAL STATUS

Provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant state agency.

Animals: Definitions derived from "Florida's Endangered Species and Species of Special Concern, Official Lists" published by Florida Fish and Wildlife Conservation Commission, 1 August 1997, and subsequent updates.

FE = Listed as Endangered Species at the Federal level by the U. S. Fish and Wildlife Service
FT = Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service
F(XN) = Federal listed as an experimental population in Florida
FT(S/A) = Federal Threatened due to similarity of appearance
ST = State population listed as Threatened by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future. (ST* for Ursus americanus floridanus (Florida black bear) indicates that this status does not apply in Baker and Columbia counties and in the Apalachicola National Forest. ST* for Neovison vison pop.1 (Southern mink, South Florida population) indicates that this status applies to the Everglades population only.)
SSC = Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* indicates that a species has SSC status only in selected portions of its range in Florida. SSC* for Pandion haliaetus (Osprey) indicates that this status applies in Monroe county only.)
N = Not currently listed, nor currently being considered for listing.

Plants: Definitions derived from Sections 581.011 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001. FNAI does not track all state-regulated plant species; for a complete list of state-regulated plant species, call Florida Division of Plant Industry, 352-372-3505 or see: http://www.doacs.state.fl.us/pi/.

LE = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.
LT = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.
N = Not currently listed, nor currently being considered for listing.

Element Occurrence Ranking

FNAI ranks of quality of the element occurrence in terms of its viability (EORANK). Viability is estimated using a combination of factors that contribute to continued survival of the element at the location. Among these are the size of the EO, general condition of the EO at the site, and the conditions of the landscape surrounding the EO (e.g. an immediate threat to an EO by local development pressure could lower an EO rank).

A = Excellent estimated viability
A? = Possibly excellent estimated viability
AB = Excellent or good estimated viability
AC = Excellent, good, or fair estimated viability
B = Good estimated viability
B? = Possibly good estimated viability
BC = Good or fair estimated viability
BD = Good, fair, or poor estimated viability
C = Fair estimated viability
C? = Possibly fair estimated viability
CD = Fair or poor estimated viability
D = Poor estimated viability
D? = Possibly poor estimated viability
E = Verified extant (viability not assessed)
F = Failed to find
H = Historical
NR = Not ranked, a placeholder when an EO is not (yet) ranked.
U = Unrankable
X = Extirpated

*For additional detail on the above ranks see: http://www.natureserve.org/explorer/eorankguide.htm

FNAI also uses the following EO ranks:

H? = Possibly historical
F? = Possibly failed to find
X? = Possibly extirpated

The following offers further explanation of the H and X ranks as they are used by FNAI:

The rank of H is used when there is a lack of recent field information verifying the continued existence of an EO, such as (a) when an EO is based only on historical collections data; or (b) when an EO was ranked A, B, C, D, or E at one time and is later, without field survey work, considered to be possibly extirpated due to general habitat loss or degradation of the environment in the area. This definition of the H rank is dependent on an interpretation of what constitutes "recent" field information. Generally, if there is no known survey of an EO within the last 20 to 40 years, it should be assigned an H rank. While these time frames represent suggested maximum limits, the actual time period for historical EOs may vary according to the biology of the element and the specific landscape context of each occurrence (including anthropogenic alteration of the environment). Thus, an H rank may be assigned to an EO before the maximum time frames have lapsed. Occurrences that have not been surveyed for periods exceeding these time frames should not be ranked A, B, C, or D. The higher maximum limit for plants and communities (i.e., ranging from 20 to 40 years) is based upon the assumption that occurrences of these elements generally have the potential to persist at a given location for longer periods of time. This greater potential is a reflection of plant biology and community dynamics. However, landscape factors must also be considered. Thus, areas with more anthropogenic impacts on the environment (e.g., development) will be at the lower end of the range, and less-impacted areas will be at the higher end.

The rank of X is assigned to EOs for which there is documented destruction of habitat or environment, or persuasive evidence of eradication based on adequate survey (i.e., thorough or repeated survey efforts by one or more experienced observers at times and under conditions appropriate for the Element at that location).

Pal-Mar

Palm Beach and Martin Counties

Partnerships

Purpose for State Acquisition

Agriculture and residential development have reduced natural areas in the interior of southeast Florida to fragments. One of the largest and best fragments, part of what was once a transition zone between pine flatwoods and the sawgrass marshes of the Everglades, will be protected by the Pal-Mar project. This project, by protecting these flatwoods and marshes, will insure habitat for the rare species listed below, will preserve natural lands linking the J. W. Corbett Wildlife Management Area (WMA) with Jonathan Dickinson State Park and other conservation lands, as well as provide land to the public of this fast-growing region for hiking, bicycling, camping, hunting, and learning about the original nature of this part of Florida.

Managers

The Florida Fish and Wildlife Conservation Commission (FWC) manages west of I-95 and north of Indiantown Road (Hungryland WEA [Wildlife and Environmental Area]). The Division of Recreation and Parks (DRP), Florida Department of Environmental Protection (DEP) manages east of I-95. Palm Beach County (PBC) manages south of Indiantown Road.

General Description

The project includes some of the highest quality, most intact pine flatwoods in southern Florida in an ecotone between pine flatwoods and the treeless Everglades and also includes high-quality examples of wet prairie and savanna with exceptional ground-cover diversity. The project provides habitat for at least five federally endangered or threatened animals including the snail kite, red-cockaded woodpecker, and wood stork. It includes the Pine Glades Natural Area, is contiguous with the J.W. Corbett Wildlife Management Area (WMA), the private Pratt-Whitney Preserve and the Cypress Creek lands owned by South Florida Water Management District (SFWMD), and includes a mile-wide connector to Jonathan Dickinson State Park. The project has low archaeological or historic value, except for a segment of the historic Jupiter-Indiantown Road. Urbanization is rapidly isolating the State Park and growth pressures on the uplands in this project are intense.

Pal-Mar
FNAI Elements

Snail Kite	G4G5T3Q/S2
Celestial Lily	G2/S2
Meadow Jointvetch	G4/S1
Many-flowered Grass-pink	G2G3/S2S3
Florida Sandhill Crane	G5T2T3/S2S3
Piedmont Jointgrass	G3/S3
Bachman's Sparrow	G3/S3
Round-tailed Muskrat	G3/S3
Banded Wild-pine	G5/S3
Glossy Ibis	G5/S3
Limpkin	G5/S3
Little Blue Heron	G5/S4

13 rare species are associated with the project

Public Use

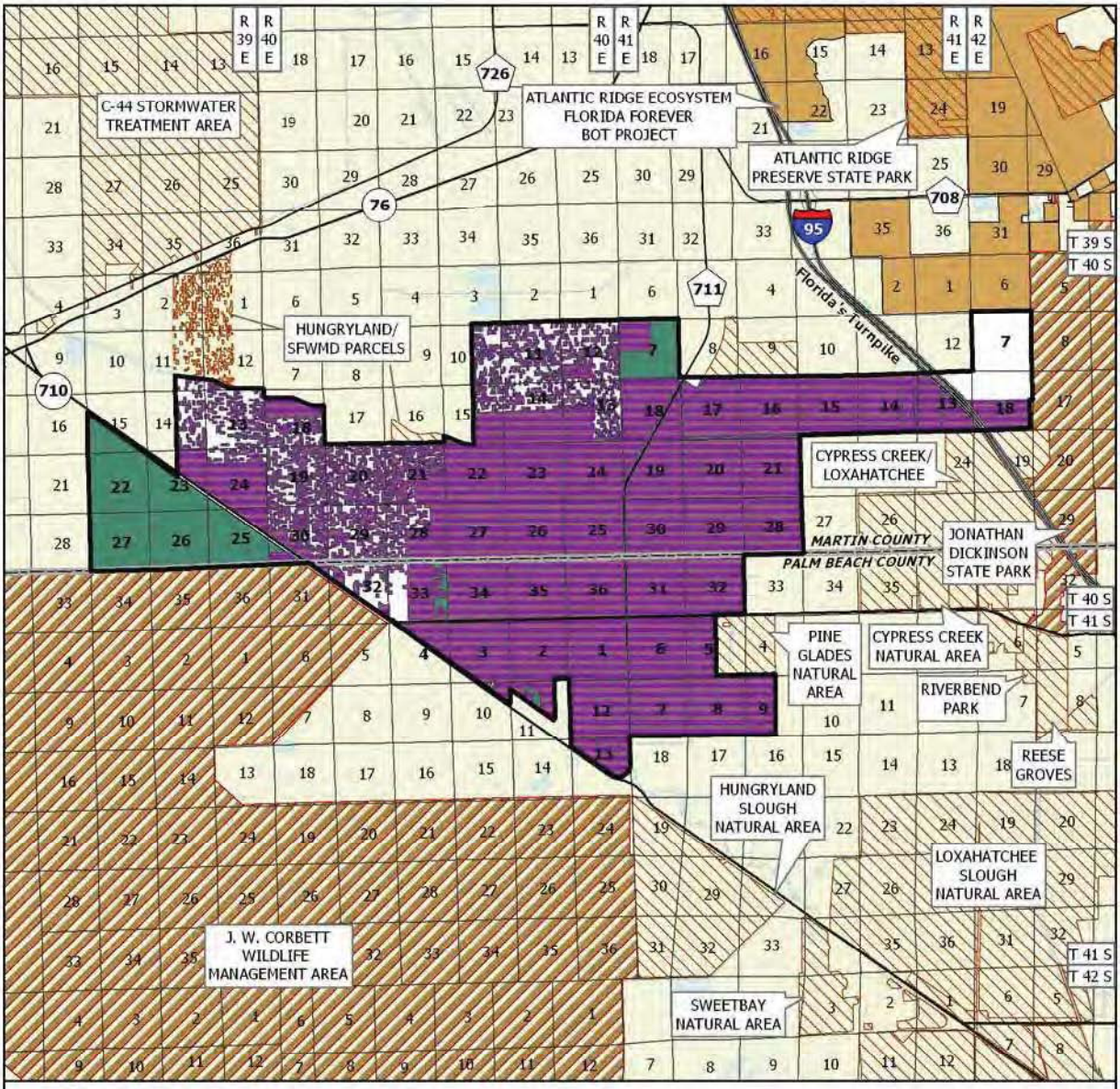
Most of this project has been designated for use as a wildlife management area. Plans are for the eastern-most portion of the project area to be added to Jonathan Dickinson State Park. Public uses will include hunting, fishing, hiking, horseback riding and nature appreciation. The project area south of Indiantown Road is the Pine Glades Natural Area, managed by PBC. Hunting is not allowed on that site.

Acquisition Planning

Phase I of this project consisted of approximately five larger ownerships, including tracts adjacent to J.W. Corbett WMA, FDIC (acquired by SFWMD and Martin County), MacArthur (acquired by PBC), Pal-Mar Water Control District (acquired), Lara (acquired by PBC) and Florida National Bank. The MacArthur lands north of Indiantown Road were sold to the State by PBC.

Placed on List	**1992**
Project Area (Acres)	**35,668**
Acres Acquired	**19,543***
at a Cost of	**$16,044,487**
Acres Remaining	**16,125**
with Estimated (Tax Assessed) Value of	**$27,570,411**

***includes acreage and expenditures by the SFWMD.**



PAL-MAR

PALM BEACH AND MARTIN COUNTIES

- Florida Forever BOT Project Boundary
- Acquired
- Essential Parcel(s) Remaining
- Other Florida Forever BOT Projects
- State Owned Lands
- Other Conservation Lands

0 1 2 4 Miles



APRIL 2009

Phase II consists of subdivided areas and a corridor to Jonathan Dickinson State Park. On October 21, 1999, the Council added 1,280 acres to the project boundary as essential parcels.

There is very little property remaining to acquire in the PBC side of the project. Martin County and the SFWMD have acquired most of the property on the Martin County side of the project.

In July 2007 the SFWMD acquired a 427-acre parcel parcel from Indiantown Realty Partners LP. The parcel is part of the John C. and Mariana Jones/Hungryland WEA.

Coordination

SFWMD, PBC and Martin County are acquisition partners in this project. Most of the larger ownerships have been acquired. PBC has acquired a number of the smaller parcels, totaling 223.63 acres, that are located north of Indiantown Road.

Management Policy Statement

The primary goals of management of the Pal-Mar Florida Forever project are to conserve and protect environmentally unique and irreplaceable lands that contain native, relatively unaltered flora and fauna representing a natural area unique to, or scarce within, a region of this state or a larger geographic area; to conserve and protect significant habitat for native species or endangered and threatened species; to conserve, protect, manage, or restore important ecosystems, landscapes, and forests, in order to enhance or protect significant surface water, coastal, recreational, timber, fish or wildlife resources which local or state regulatory programs cannot adequately protect; and to provide areas, including recreational trails, for natural-resource-based recreation.

Management Prospectus

Qualifications for state designation Preventing isolation of natural lands is important in enabling genetic interchange among plant and animal populations. This project is a large natural area connecting the J.W. Corbett WMA on the west with the SFWMD and PBC Cypress Creek lands and Jonathan Dickinson State Park on the east. The size, quality of wildlife resources and location next to the Corbett WMA of the northwestern part qualify it as a WMA. The part that lies south of Indiantown Road is part of the PBC Pine Glades Natural Area. The part of the project east of Interstate 95 is adjacent to Jonathan Dickinson and is a logical addition to that park.

Managers The FWC is manager for the area west of I-95 and north of Indiantown Road (Hungryland WEA). The DRP of DEP is the manager for the area east of I-95; PBC is the manager for the area south of Indiantown Road and a few small areas north of Indiantown Road.

Conditions affecting intensity of management For the project area west of I-95 and north of Indiantown Road, no known conditions would result in the need for intensive management. The land could be managed as a normal component of the WMA system. The portion of the project east of I-95 will be added to Jonathan Dickinson State Park, which is a high-need management area. The portion of the project south of Indiantown Road is being managed by PBC, which is conducting a multi-year restoration program on the site.

Timetable for implementing management and provisions for security and protection of infrastructure Initial management of the area west of I-95 involved posting and otherwise securing the tract against trespassing and vandalism, preparing roads and other infrastructure for public recreation, performing resource inventories and initiating the planning process. Subsequent resource and recreation management have occurred since the portion of the project north of Indiantown Road has been added to an existing WEA (Hungryland). Management activities, after acquisition of the eastern part, were concentrated on site security, natural and cultural resource protection, and the development of a plan for long-term public use and resource management. Most of the remaining lands to be acquired would represent an addition to an existing WMA (J.W. Corbett) or an existing WEA (Hungryland).

Revenue-generating potential Revenue potential for the western part (excluding the lands owned by PBC) would be moderate to low since it does not contain significant upland (timber) resources. However, some revenue could be generated from recreational use (over and above licenses and permits sold by FWC), if the Legislature could approve user fees for non-consumptive activities. The eastern part will be added to Jonathan Dickinson State Park. No significant revenue is expected to be generated by these lands on their own.

Cooperators in management PBC manages the property south of the Indiantown Road, which is Pine Glades Natural Area.

(continued)

Management Cost Summary/DRP		
Category	Startup	Recurring
Source of Funds	CARL	CARL
Salary	$0	$0
OPS	$12,000	$12,000
Expense	$0	$0
OCO	$20,000	$1,000
FCO	$60,000	$5,000
TOTAL	$92,000	$18,000

Management Cost Summary/FWC		
Category	Startup	Recurring
Source of Funds	CARL	CARL
Salary	$45,000	$100,000
OPS	$5,000	$5,000
Expense	$30.000	$65,000
OCO	$30,000	$15,000
FCO	$0	$40,000
TOTAL	$110,000	$225,000

Updated 1/6/2011

ON SALE NOW

Atlas of Florida's Natural Heritage

Biodiversity, Landscapes, Stewardship, and Opportunities

The Florida Natural Areas Inventory is pleased to announce the publication of the ***Atlas of Florida's Natural Heritage: Biodiversity, Landscapes, Stewardship, and Opportunities***. This high-quality, full-color *Atlas* is sure to become a standard reference for anyone involved in the conservation, management, study, or enjoyment of Florida's rich natural resources. We hope the *Atlas* will inspire, educate, and raise awareness of and interest in biodiversity and conservation issues.

Institute of Science and Public Affairs

FLORIDA Natural Areas INVENTORY

AUDIENCE:

The ***Atlas of Florida's Natural Heritage: Biodiversity, Landscapes, Stewardship, and Opportunities*** was envisioned as a resource that would appeal to a wide-ranging audience. Through its use of colorful maps, graphics, and photography, Florida's Natural Heritage and appeal is dramatically highlighted. It is intended to appeal to a wide audience. Hopefully, it will increase awareness of the resources we take for granted, and the challenges we face in preserving them.

It is for those who are informed, interested, and/or influential in environmental issues, but may lack specific information and expertise. These may include planners, policymakers, and environmental/conservation advocates from the local to state level. It is also for environmental/conservation/natural resource managers. While the atlas may not provide "new information" to this audience, it will serve as a useful reference that brings many of the elements of biodiversity together in one publication. The final audience are the citizens of Florida and those who may visit our state.

We want the atlas to inspire, educate, and raise awareness of and the interest in biodiversity and conservation issues. Florida's biodiversity is not only important to maintain our quality of life, but it is a primary reason why so many people visit our state.

FEATURES INCLUDE:

- 176 pages, 10" x 12" format, soft cover and hard cover editions
- Visually striking presentation with hundreds of maps, photos, illustrations, and other information-rich graphics
- Wide-ranging overview of natural communities and over 400 species of plants, and animals
- Coverage of timely conservation and land management issues



Learn more about the *Atlas*, view sample pages and order your copy today at:

FloridasNaturalHeritage.org



Appendix L

Best Management Practices

This page left blank intentionally.

Appendix L

Best Management Practices

The following document lists the Best Management Practices (BMPs) that Florida Power & Light Company (FPL) will follow during the construction of the proposed Martin Plant to Riviera Beach Energy Center (RBEC) Lateral (herein the 'Project'). The BMPs are organized into the three sections provided below:

- Environmental Inspection;
- Upland Erosion Control, Restoration, and Maintenance Plan; and
- Wetland and Waterbody Construction and Mitigation Procedures.

L.1 Environmental Inspection

An Environmental Specialist (ES) will be assigned to perform regular inspections of the project during construction and through restoration. The ES will have peer status with all other activity inspectors. The ES will have the authority to stop activities that violate the environmental conditions, permit requirements, or approvals placed on the Project and order corrective measures. The ES will, at minimum, have the following responsibilities:

- Ensuring compliance with all environmental conditions, permit requirements, or approvals for the Project;
- Identifying, documenting, and overseeing corrective actions;
- Verifying that the limits of authorized construction work areas and locations of accessways are properly marked;
- Verifying the locations of signs and highly visible flagging marking the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements along the construction work area;
- Verifying the locations of drainage and irrigation systems;
- Ensuring erosion/sediment control and soil stabilization needs are identified, installed, and maintained in all work areas;
- Ensuring that the location of dewatering structures and slope breakers does not direct water discharges into known cultural resources sites or locations with sensitive species;
- Ensuring restoration of grades and topsoil; and
- Keeping records of compliance with the environmental conditions, permit requirements, and approvals and the mitigation measures proposed by FPL.

L.2 Upland Erosion Control, Restoration, and Maintenance Plan

L.2.1 Construction

FPL will conduct and maintain the following BMPs during the installation of the Project:

Topsoil Segregation

- Where topsoil segregation is required, maintain separation of salvaged topsoil and subsoil throughout all construction activities.

Road Crossings and Accessways

- Maintain safe and accessible conditions at all road crossings and accessways during construction.

Temporary Erosion Control

- At least 24 hours prior to initial site preparation, temporary erosion controls will be in place and will be maintained throughout the construction work spaces until all disturbed areas have successfully revegetated and stabilized. This is in accordance with the BMPs Chapter 6 of *The Florida Stormwater, Erosion, and Sediment Control Inspector's Manual* (Florida Department of Environmental Protection and Florida Department of Transportation 1999).
- Temporary erosion controls must be properly maintained throughout construction and reinstalled as necessary until replaced by permanent erosion controls or restoration is complete.
- Sediment barriers are intended to stop the flow of sediments and to prevent the deposition of sediments into sensitive resources. They may be constructed of materials such as silt fence, staked hay or straw bales, compacted earth (e.g., driveable berms across accessways), sand bags, or other appropriate materials.
  - Where wetlands or waterbodies are adjacent to and downslope of construction work areas, install sediment barriers along the edge of these areas, as necessary to minimize sediment flow into the wetland or waterbody.

L.2.2 Restoration

- FPL will reseed or restabilize the ROW once all construction and restoration activities have been completed.

Cleanup

- Complete final grading, topsoil replacement, and installation of permanent erosion control structures as soon as practicable after backfilling the trench.
- Grade the construction ROW to restore pre-construction contours.
- Remove construction debris from all construction workspaces.
- Remove temporary sediment barriers when replaced by permanent erosion control measures or when revegetation is successful.

Soil Compaction Mitigation

- FPL will ensure soils are not compacted greater than pre-existing conditions in order to ensure revegetation success.

L.3 Wetland and Waterbody Construction and Mitigation Procedures

The following BMPs represent FPL's mitigation measures for minimizing the extent and duration of Project-related disturbance to wetlands and waterbodies. During construction, FPL's ES may recommend adjustments to these BMPs in order to comply with all conditions, permit requirements, or approvals for the Project.

L.3.1 Waterbody Crossings

L.3.1.1 Construction

Extra Workspaces

- Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from the waterbodies' top of bank.
- Limit clearing of vegetation between extra work areas and the edge of the waterbody to the construction ROW.
- Limit the size of extra work areas to the minimum needed to construct the waterbody crossing.

General Crossing Procedures

- Construct crossings as close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit.
- Maintain adequate flow rates to protect aquatic life and prevent the interruption of existing downstream uses.

Spoil Pile Placement and Control

- All spoil from waterbody crossings must be placed in the construction ROW at least 10 feet from the waterbodies' top of bank or in additional extra workspaces.
- Utilize sediment barriers to minimize the flow of spoil or heavily silt-laden water into any waterbody.

Crossing Methods

- Crossings of Minor Waterbodies. These are waterbodies less than 10 feet in width from water's edge to water's edge. Where a dry-ditch crossing is not required, minor waterbodies may be crossed using the open-cut crossing method.
- Crossings of Intermediate Waterbodies. These are waterbodies greater than 10 feet but less than 100 feet in width from water's edge to water's edge. Where a dry-ditch crossing is not required, intermediate waterbodies may be crossed using the open-cut crossing method.

Temporary Erosion and Sediment Control

- Install sediment barriers (as defined in Section L.2.1) immediately after initial disturbance of the waterbody or adjacent upland.
- Sediment barriers must be properly maintained throughout construction and replaced by permanent erosion controls or until restoration of adjacent upland areas is complete.
- Install turbidity curtains at waterbody crossings to minimize the size of the turbidity plumes.
- Temporary erosion and sediment control measures are addressed in more detail in Section L.2.1; however, the following specific measures must be implemented at stream crossings:
  - Install sediment barriers across the entire construction ROW at all waterbody crossings, where necessary to prevent the flow of sediments into the waterbody.

- Where waterbodies are adjacent to the construction ROW, install sediment barriers along the edge of the construction ROW as necessary to contain spoil and sediment within the construction ROW;

Trench Dewatering

- Dewater the trench (either on or off the construction ROW) in a manner that does not cause erosion and that minimizes heavily silt-laden water flowing into any waterbody. Remove the dewatering structures as soon as possible after the completion of dewatering activities.

L.3.1.2 Restoration

- For open-cut crossings, stabilize waterbody banks and install temporary sediment barriers as soon as practicable. For dry-ditch crossings, complete streambed and bank stabilization before returning flow to the waterbody channel.
- Return all waterbody banks to pre-construction contours or to a stable angle of repose.
- Application of riprap for bank stabilization must comply with conditions, permit requirements, and approvals.

L.3.1.3 Post Construction

- Do not use herbicides or pesticides in or within 100 feet of a waterbody except as allowed by the Florida Department of Environmental Protection (FDEP).

L.3.2 Wetland Crossings

L.3.2.1 Construction

Extra Workspaces and Accessways

- Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from wetland boundaries, to the extent practicable. It is anticipated some extra workspaces will be required in wetlands in order to construct the Project.
- If temporary work pads are needed in large wetland crossings, clean fill may be brought in to construct a temporary work pad within the ROW. A defined barrier (such as geotechnical fabric) must be placed on the native soil prior to placing fill. Once construction activities are completed, all imported material will be removed using the defined barrier as a guide for the border between native and imported material.

Crossing Procedures

- Use “push-pull” or “float” techniques to place the pipe in the trench where water and other site conditions allow.
- Do not cut trees outside of the approved construction work area to obtain timber for riprap or equipment mats.
- Remove all Project-related material used to support equipment on the construction ROW upon completion of construction.

Temporary Sediment Control

- Install sediment barriers (as defined in Section L.2.1) immediately after initial disturbance of the wetland or adjacent upland. Sediment barriers must be properly

maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench). Maintain temporary sediment barriers until restoration of adjacent upland areas is complete and permanent erosion controls measures are installed.

- Install sediment barriers across the entire construction ROW at all wetland crossings where necessary to minimize sediment flow into the wetland.
- Where wetlands are adjacent to the construction ROW and the ROW slopes toward the wetland, install sediment barriers along the edge of the construction ROW as necessary to prevent sediment flow into the wetland.
- Install sediment barriers along the edge of the construction ROW as necessary to contain spoil and sediment within the construction ROW through wetlands. Remove these sediment barriers during ROW cleanup.

Trench Dewatering

- Dewater the trench (either on or off the construction ROW) in a manner that does not cause erosion, and minimize discharges into any wetland, to the extent practicable. Dewatering structures are anticipated to occur in some wetland areas. These areas are bounded by the CSX Rail Line and State Road (SR) 710 on either side of the construction ROW. Place temporary sediment barriers at waterbody crossings in order to minimize erosion or discharges into a waterbody and leaving the construction ROW. Remove the dewatering structures as soon as possible after the completion of dewatering activities.

L.3.2.2 Restoration

- As appropriate, install a trench breaker at the base of slopes near the boundary between the wetland and adjacent upland areas. Install a permanent slope breaker as needed to prevent sediment transport into the wetland. In addition, install sediment barriers as outlined in the Section L.2.2. In some areas, with the approval of the ES, an earthen berm may be suitable as a sediment barrier adjacent to the wetland.
- Remove temporary sediment barriers located at the boundary between wetland and adjacent upland areas after upland revegetation and stabilization of adjacent upland areas are successful.

L.3.2.3 Post-Construction

- Do not use herbicides or pesticides in or within 100 feet of a waterbody except as allowed by the FDEP.

L.3.3 Hydrostatic Testing

- Post-certification, FPL shall provide a list identifying the location of all jurisdictional waterbodies proposed for use as a hydrostatic test water source or discharge location.

Intake Source and Rate

- Screen the intake hose to prevent entrainment of fish and aquatic vegetation.
- Maintain adequate flow rates to protect aquatic life, provide for all waterbody uses, and provide for downstream withdrawals of water by existing users.
- Locate hydrostatic test manifolds outside wetlands and riparian areas, to the extent practicable.

Discharge Location, Method, and Rate

- Regulate discharge rate, use energy dissipation device(s), and install sediment barriers, as necessary, to prevent erosion, streambed scour, suspension of sediments, or excessive stream flow.