April 1, 2010

VIA HAND DELIVERY

Ms. Ann Cole
Division of the Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

100000-OT

RE: 2010-2019 Ten-Year Power Plant Site Plan

Dear Ms. Cole:

In accordance with Rule 25-22.071, F.A.C., please find enclosed for filing the original and twenty-five (25) copies of Florida Power & Light Company's 2010-2019 Ten-Year Power Plant Site Plan.

Please acknowledge your receipt of the above filing on the enclosed copy of this letter and return to the undersigned. Thank you for your assistance on this matter.

Sincerely,

Monica P. Caballero

Monica P. Caballero
Regulatory Analyst

Enclosures

COM ____
APA ____
ECR ____
GCL 2
RAD 21
SSC ____
ADM ____
OPC ____
CLK 2

Ten Year Power Plant Site Plan
2010 – 2019

1000000-07

FPL

Ten Year Power Plant Site Plan

2010-2019

Submitted To:

Florida Public
Service Commission

Miami, Florida
April 2010

(This page is intentionally left blank.)

Table of Contents

List of Figures and Tables

List of Schedules

Overview of the Document

Chapter 186, Florida Statutes, requires that each electric utility in the State of Florida with a minimum existing generating capacity of 250 megawatts (MW) must annually submit a Ten Year Power Plant Site Plan. This plan should include an estimate of the utility's future electric power generating needs, a projection of how these estimated generating needs would be met, and disclosure of information pertaining to the utility's preferred and potential power plant sites. The information contained in this Site Plan is compiled and presented in accordance with rules 25-22.070, 25-22.071, and 25-22.072, Florida Administrative Code (F.A.C.).

This Ten Year Power Plant Site Plan (Site Plan) document is based on Florida Power & Light Company's (FPL) integrated resource planning (IRP) analyses that were carried out in 2009 and that were on-going in the first Quarter of 2010. The forecasted information presented in this plan addresses the 2010–2019 time frame.

Site Plans are long-term planning documents and should be viewed in this context. A Site Plan contains tentative information, especially for the latter years of the ten-year time horizon, and all of this information is subject to change at the discretion of the utility. Much of the data submitted is preliminary in nature and is presented in a general manner. Specific and detailed data will be submitted as part of the Florida site certification process, or through other proceedings and filings, at the appropriate time.

This document is organized in the following manner:

Chapter I – Description of Existing Resources

This chapter provides an overview of FPL's current generating facilities. Also included is information on other FPL resources including purchased power, demand side management, and FPL's transmission system.

Chapter II – Forecast of Electric Power Demand

FPL's load forecasting methodology, and its forecast of seasonal peaks and annual energy usage, is presented in Chapter II.

Chapter III – Projection of Incremental Resource Additions

This chapter discusses FPL's integrated resource planning (IRP) process and outlines FPL's projected resource additions, especially new power plants, based on FPL's IRP work in 2009 and

early 2010.

Chapter IV – Environmental and Land Use Information

This chapter discusses environmental information as well as Preferred and Potential site locations for additional electric generation facilities.

Chapter V – Other Planning Assumptions and Information

This chapter addresses twelve "discussion items" which pertain to additional information that is included in a Site Plan filing.

FPL
List of Abbreviations
Used in FPL Forms

Reference	Abbreviation	Definition
Unit Type	BIT	Bituminous Coal
	CC	Combined Cycle
	CT	Combustion Turbine
	GT	Gas Turbine
	IC	Internal Combustion
	NP	Nuclear Power
	PV	Photovoltaic
	ST	Steam Unit
Fuel Type	UR	Uranium
	BIT	Bituminous Coal
	FO2	#1, #2 or Kerosene Oil (Distillate)
	FO6	#4,#5,#6 Oil (Heavy)
	NG	Natural Gas
	No	None
	SUB	Sub Bituminous Coal
	Pet	Petroleum Coke
Fuel Transportation	No	None
	PL	Pipeline
	RR	Railroad
	TK	Truck
	WA	Water
Unit/Site Status	OT	Other
	P	Planned Unit
	T	Regulatory approval received but not under construction
	U	Under construction, less than or equal to 50% Complete
	V	Under construction, more than 50% Complete

(This page is left intentionally blank.)

Executive Summary

Florida Power & Light Company's (FPL) 2010 Ten Year Power Plant Site Plan (Site Plan) presents FPL's current plans to augment and enhance its electric generation capability (owned or purchased) as part of its efforts to meet its projected incremental resource needs for the 2010 - 2019 time period. By design, the primary focus of this document is on supply side additions; i.e., electric generation capability and the sites for these additions. The supply side additions discussed in this document are resources projected to be needed after accounting for FPL's demand side management (DSM) contributions and the significant energy efficiency contributions from the latest, enhanced federal appliance and lighting efficiency standards. The projected impacts of the federal appliance and lighting efficiency standards are already reflected in FPL's load forecast presented in this document. The projected impacts of FPL's DSM contributions are addressed as projected reductions to the forecasted load.

The resource plan that is presented in FPL's 2010 Site Plan contains five key similarities to the resource plan presented in FPL's 2009 Site Plan. These similarities are especially applicable to the early years of the ten-year period. Conversely, there are three specific factors that are driving changes in FPL's resource plans. In addition, there are other factors that will continue to influence FPL's on-going resource planning work. A brief discussion of these similarities, changes, and other factors is provided below.

I. Similarities to the Resource Plan Presented in the 2009 Site Plan:

There are five key similarities in the current resource plan presented in this document compared to the resource plan presented in the 2009 Site Plan.

Similarity # 1: A third highly efficient combined cycle (CC) generating unit will be added to FPL's system in 2011.

One similarity to FPL's 2009 Site Plan is the addition of a third new highly efficient natural gas-fired CC generating unit at FPL's West County Energy Center (WCEC) site in 2011. FPL placed in-service two 1,219 MW (Summer) CC units at the WCEC site in 2009. These units are identified as WCEC Units 1 and 2. The WCEC Units 1 and 2 were approved by the Florida Public Service Commission (FPSC) in June 2006. Site Certification for these units under the Florida Electric Power Plant Siting Act was approved by the Governor and the Cabinet serving as the Siting Board in December 2006.

FPL is currently constructing the third new CC unit, WCEC Unit 3, at this site. This new CC unit is projected to go into commercial operation by mid-2011. The WCEC Unit 3 was approved by the FPSC in September 2008 and Site Certification for this unit was obtained in November 2008.

Similarity # 2: Additional renewable energy generation facilities will be installed on FPL's system in 2010.

In 2009, FPL completed construction, and began operation, of a 25 MW (nameplate rating) photovoltaic (PV) generation facility in DeSoto County. This was the first of three renewable energy installations that FPL committed to place in-service in the near-term. The other two renewable energy installations are a 10 MW (nameplate rating) PV facility in Brevard County and a 75 MW (nameplate rating) solar thermal facility in Martin County. The latter two projects are currently under construction and are scheduled to begin commercial operation in 2010.

Similarity # 3: Generating capacity at FPL's four existing nuclear generation units will increase in 2011 and 2012.

FPL will be adding approximately 400 MW of increased generating capacity from its existing Turkey Point and St. Lucie nuclear power plants. This increased capacity is scheduled to come in-service in the 2011 and 2012 time period. The need for these nuclear capacity "uprates" was approved by the FPSC in January 2008. The Final Order for the Site Certification was issued in September 2008 for the St. Lucie uprates and in October 2008 for the Turkey Point uprates.

Similarity # 4: A number of existing generating units will be placed temporarily on Inactive Reserve.

In 2009, FPL began to temporarily take a number of its existing generating units out of active service and place them on Inactive Reserve status until their continued operation is again needed. This practice will continue in 2010 and is currently projected to continue beyond 2010. The specific generating units that will be placed on Inactive Reserve status are discussed in Chapter III of this document.

Similarity # 5: This Site Plan continues to reflect the modernizations of FPL's existing Cape Canaveral and Riviera plant sites in 2013 and 2014.

FPL's 2009 Site Plan projected that the modernizations of FPL existing generating units at these two sites would occur in 2013 (Cape Canaveral) and 2014 (Riviera). FPL received need

determination approval from the FPSC for both of these modernizations in 2008. FPL's 2010 Site Plan continues to show this same projection for resource planning purposes. As FPL has recently stated, FPL has suspended work on the modernization projects.

II. Factors That Are Driving Changes in FPL's Resource Plan:

There are three primary factors that are driving the changes in FPL's 2010 resource plan compared to the resource plan presented in FPL's 2009 Site Plan. These three factors, and their impacts on the resource plan, are summarized below and are addressed in more detail in Chapters II and III of this document.

Factor # 1: FPL's forecast of projected load is lower in the long-term than the 2009 load forecast.

The first factor that is driving changes in FPL's resource plan is FPL's new long-term load forecast that was prepared in February 2010. This new forecast projects lower growth in electrical demand and energy starting in 2015 compared to the 2009 load forecast that was shown in FPL's 2009 Site Plan. As a result of this new lower load forecast, FPL's current projected need for new resources in the 2010 – 2019 time period is significantly lower than had been projected in 2009.

Factor # 2: The FPSC has significantly increased goals for demand side management (DSM) resources that FPL must meet in the 2010 – 2019 time period.

The second factor that is driving changes in the current resource plan is the FPSC's decision in late 2009 to impose significantly higher goals for DSM resources for FPL to add in the 2010 – 2019 period. The amount of demand (MW) reduction from the new DSM goals far exceeds the 2009 projection of FPL's remaining resource needs through 2019.[1] Now, with FPL's lower 2010 load forecast, and the commensurately lower 2010 projection of resource needs, the amount by which the MW reductions from the new DSM goals exceeds FPL's resource needs is even larger. The new level of DSM goals has other significant implications for resource planning as indicated in the following section.

[1] It is the demand (MW) reduction aspect of DSM programs, not the energy (MWh) aspect that enables DSM to meet future resource needs; i.e., avoid the need for new generating units.

Factor # 3: Due to regulatory and commercial developments in 2009, the Turkey Point 6 & 7 project schedule is under review. For planning purposes, it is now assumed that the in-service dates will not be within the ten year reporting window of this Site Plan.

In recent Site Plans, FPL discussed its plans for pursuing additional nuclear capacity (beyond the above-mentioned nuclear uprates) through the addition of new nuclear units. These previous Site Plans reflected the addition of two new nuclear units at FPL's existing Turkey Point plant site, with these new units, Turkey Point Units 6 & 7, assumed to be placed in-service in 2018 and 2020, respectively. FPL received need determination approval from the FPSC for these units in early 2008. The assumed 2018 and 2020 in-service dates represented the earliest possible dates that FPL foresaw that these new units could become operational.

Beginning in late 2009, FPL began a review of project schedule, costs, and feasibility to determine the best path forward for the Turkey Point Units 6 & 7 project in light of the most current information. A revised plan based on that review will include the steps necessary to maintain progress in creating the option for new nuclear units while maintaining an appropriate control of risk exposure. Although the revised plan is not yet completed, it has become evident that, for planning purposes, it would not be appropriate to reflect the assumed in-service dates of Turkey Point Units 6 & 7 within the period covered by this Ten Year Site Plan.

III. Resulting Changes in FPL's Resource Plan Compared to the Resource Plan Presented in the 2009 Site Plan:

The factors discussed above contribute to two significant changes in FPL's resource plan presented in this document compared to the resource plan presented in FPL's 2009 Site Plan. The changes are summarized below.

Resulting Change # 1: FPL's 2010 Site Plan now projects no additional new generating units in the 2015 through 2019 time period.

FPL's lower February 2010 load forecast significantly reduces FPL's projected resource needs. And, as previously mentioned, the FPSC-imposed new goals for DSM, especially the new MW goals, already greatly exceeded the resource needs that FPL had previously projected, even using the higher load forecast that FPL utilized in 2009. The combination of these two factors results in FPL having no need for additional resources through the 2019 reporting period addressed in this Site Plan, beyond the previously mentioned WCEC 3 unit, the modernizations

of the Cape Canaveral and Riviera sites, and the nuclear uprates. All of these capacity additions are currently projected to be completed by 2014.

Therefore, as shown by Table ES-1 that is presented at the end of this Executive Summary, FPL projects no new FPL generation unit additions from 2015 through 2019.

Resulting Change # 2: For planning purposes, the assumed in-service dates for the new Turkey Point Units 6 & 7 have moved beyond the 2010 – 2019 reporting frame of this Site Plan document.

As stated above, FPL's ongoing review of the Turkey Point Units 6 & 7 project indicates that, for planning purposes, it is no longer appropriate to reflect assumed in-service dates for the Turkey Point Units 6 & 7 within the 2010 – 2019 reporting time frame of this Site Plan. This is a result of slower than anticipated progress in a number of critical project areas. As a result, FPL's 2010 Site Plan does not include either of the new nuclear units as part of its resource plan in 2010 – 2019.

FPL recognizes that the addition of new nuclear units will result in significant system fuel savings, system emission savings, (including CO_2), and gains in system fuel diversity. For these reasons, FPL is continuing to pursue the licenses that will be necessary to construct new nuclear units at Turkey Point. At the time this document is being prepared, FPL is evaluating what the revised in-service dates for Turkey Point Units 6 & 7 should be for planning purposes. FPL will address those revised in-service dates for planning purposes in its May 3, 2010 nuclear cost recovery filing to the FPSC.

IV. Additional Factors Influencing FPL's Resource Planning Work:

In addition to the factors described above, other items will also influence FPL's resource planning work. Among these other items are two that FPL typically refers to as on-going system concerns that FPL has considered in its resource planning work for a number of years. These two on-going system concerns are: (1) maintaining/enhancing fuel diversity in the FPL system, and (2) maintaining a balance between load and generating capacity in Southeastern Florida.

A third factor that will influence FPL's on-going resource planning efforts is the Executive Order directive issued in 2007 by Governor Crist, calling for reductions in greenhouse gas emissions and for increased contribution from renewable energy sources.

A fourth factor that could affect FPL's resource planning is the possibility of the establishment of a Florida standard for renewable energy or clean energy. A Renewable Portfolio Standard (RPS) proposal was prepared by the FPSC, and then sent to the Florida Legislature for consideration, with a possible change to a Clean Portfolio Standard (CPS), during the 2009 legislative session. However, no RPS or CPS legislation was enacted during the 2009 legislative session. RPS or CPS legislation, or other legislative initiatives regarding renewable or clean energy contributions, may occur in the future. If such legislation is enacted during 2010 or in later years, FPL will then determine what steps need to be taken to address the legislation. Such steps would then be discussed in FPL's Site Plan in the year following the enactment of such legislation.

Table ES-1 presents a current projection of the changes in the generating resources portion of FPL's resource plan based on the factors and changes discussed above. As such, this table does not specifically identify the impacts of the new DSM Goals, but these impacts are reflected in the reserve margin values presented in the table. The table also presents the impacts of the temporary placement of specific existing generating units on Inactive Reserve and the beginning of the return to active service of these generating units in the latter portion of the ten-year planning period.

Table ES-1: Projected Capacity Changes and Reserve Margins for FPL

Projected Capacity Changes and Reserve Margins for FPL [1]					
		Net Capacity Changes (MW)		Reserve Margin (%)	
Year	Projected Capacity Changes	Winter [2]	Summer [3]	Winter	Summer
2010	Martin Next Generation Solar Energy Center (Solar Thermal) [7]	---	---		
	Space Coast Next Generation Solar Energy Center (PV) [6]	---	---		
	Changes to Existing Purchases [4]	---	(50)		
	Riviera Unit 3 - offline for modernization	(280)	(277)		
	Riviera Unit 4 - offline for modernization	(291)	(288)		
	Cape Canaveral Unit 1 - offline for modernization	---	(396)		
	Cape Canaveral Unit 2 - offline for modernization	---	(396)		
	Changes to Existing Units	149	15		
	Inactive Reserve of Existing Units - offline [8]	(775)	(769)	43.1%	23.7%
2011	Changes to Existing Purchases [4]	(90)	(45)		
	Cape Canaveral Unit 1 - offline for modernization	(398)	---		
	Cape Canaveral Unit 2 - offline for modernization	(398)	---		
	West County Unit 3 [5]	---	1,219		
	Inactive Reserve of Existing Units - offline [8]	(394)	(1,171)		
	Changes to Existing Units	0	0	35.9%	25.4%
2012	Changes to Existing Purchases [4]	---	(100)		
	West County Unit 3 [5]	1,335	---		
	Changes to Existing Units	3	3		
	Inactive Reserve of Existing Units - offline [8]	(783)	---		
	Existing Nuclear Units Capacity Uprates - St. Lucie 1	103	103		
	Existing Nuclear Units Capacity Uprates - St. Lucie 2	---	88		
	Existing Nuclear Units Capacity Uprates - Turkey Point 3	---	104	38.2%	25.2%
2013	Changes to Existing Purchases [4]	(180)	---		
	Cape Canaveral Next Generation Clean Energy Center	---	1,210		
	Existing Nuclear Units Capacity Uprates - St. Lucie 2	88	---		
	Existing Nuclear Units Capacity Uprates - Turkey Point 3	104	---		
	Existing Nuclear Units Capacity Uprates - Turkey Point 4	104	104	37.5%	31.7%
2014	Cape Canaveral Next Generation Clean Energy Center	1,355	---		
	Riviera Beach Next Generation Clean Energy Center	---	1,212	37.8%	30.8%
2015	Riviera Beach Next Generation Clean Energy Center	1,344	---	40.9%	29.7%
2016	Changes to Existing Purchases [4]	(931)	(1,306)	34.4%	22.0%
2017	Changes to Existing Purchases [4]	(375)	---	30.7%	20.4%
2018	Inactive Reserve of Existing Units - online [8]	0	392	28.6%	19.9%
2019	Inactive Reserve of Existing Units - online [8]	394	387	28.4%	19.8%
	TOTALS =	**84**	**39**		

(1) Additional information about these resulting reserve margins and capacity changes are found on Schedules 7 & 8 respectively.
(2) Winter values are forecasted values for January of the year shown. FPL's actual 2010 Winter peak was significantly higher than forecasted.
(3) Summer values are forecasted values for August of the year shown.
(4) These are firm capacity and energy contracts with QF, utilities, and other entities. See Table I.B.1 and Table I.B.2 for more details.
(5) All new unit additions are scheduled to be in-service in June of the year shown. All additions assumed to start in June are included in the Summer reserve margin calculation starting in that year and in the Winter reserve margin calculation starting with the next year.
(6) Because of the intermittent nature of the photovoltaics (PV) resource, FPL is currently assigning no firm capacity benefit to these generating additions. FPL will reassess this once actual operating data from the PV facilities at these locations is available. This location-specific information is needed in order to gauge consistent output during the peak hours which are accounted for in FPL's reserve margin calculations.
(7) The Martin solar thermal facility is designed to provide steam for FPL's existing Martin Unit 8 combined cycle unit, thus reducing FPL's use of natural gas. No additional capacity (MW) will result from the operation of the solar thermal facility.
(8) A number of existing FPL power plants are being temporarily removed from service and placed on Inactive Reserve status. FPL plans to return these units to active service in the future as needed. The timing of the return of these units to full-time active status is uncertain at this time primarily due to the uncertainty regarding FPL's future load. However, for planning purposes, FPL is showing in this document that these units begin to return to active service starting in 2018.

(This page is left intentionally blank.)

CHAPTER I

Description of Existing Resources

(This page is left intentionally blank.)

I. Description of Existing Resources

FPL's service area contains approximately 27,650 square miles and has a population of approximately 8.7 million people. FPL served an average of 4,499,067 customer accounts in thirty-five counties during 2009. These customers were served from a variety of resources including: FPL-owned fossil and nuclear generating units, non-utility owned generation, demand side management (DSM), and interchange/purchased power.

I.A. FPL-Owned Resources

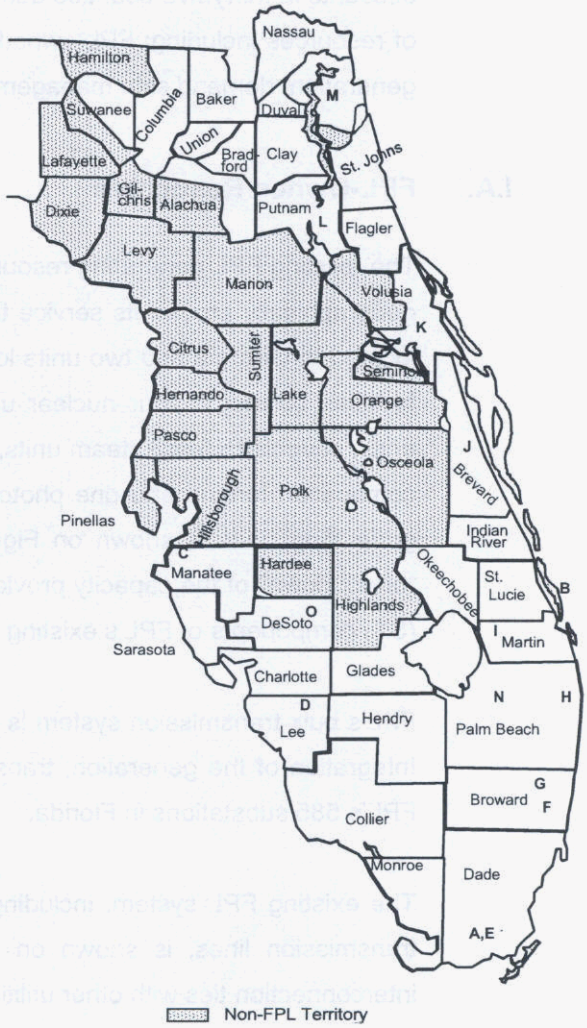
The existing FPL generating resources are located at sixteen generating sites distributed geographically around its service territory and also include partial ownership of one unit located in Georgia and two units located in Jacksonville, Florida. The current generating facilities consist of four nuclear units, three coal units, fourteen combined cycle (CC) units, seventeen fossil steam units, forty-eight combustion gas turbines, one simple cycle combustion turbine and one photovoltaic facility. The location of these eighty-eight firm generating units is shown on Figure I.A.1 and in Table I.A.1. Table I.A.2 provides a "break down" of the capacity provided by the combustion turbine (CT) and steam turbine (ST) components of FPL's existing CC units.

FPL's bulk transmission system is comprised of 6,727 circuit miles of transmission lines. Integration of the generation, transmission, and distribution system is achieved through FPL's 585 substations in Florida.

The existing FPL system, including generating plants, major transmission stations, and transmission lines, is shown on Figure I.A.2. In addition, Figure I.A.3 shows FPL's interconnection ties with other utilities.

FPL Generating Resources by Location

Location/ Map Key	Plant Name	Number of Units	Summer MW
A	Turkey Point	5	3,322
B	St. Lucie *	2	1,553
C	Manatee	3	2,735
D	Fort Myers	2	1,755
E	Cutler	2	205
F	Lauderdale	2	884
G	Port Everglades	4	1,205
H	Riviera	2	565
I	Martin	5	3,695
J	Cape Canaveral	2	792
K	Sanford	3	2,050
L	Putnam	2	498
M	SJRPP **	2	254
N	West County Energy Center	2	2,438
O	DeSoto ***	1	25
	Scherer ****	1	646
	Gas Turbines	48	1,908
Total System Generating Capacity =		**88**	**24,530**
System Firm Generating Capacity =		**87**	**24,505**



* Represents FPL's ownership share: St Lucie nuclear: 100% unit 1, 85% unit 2: St. Johns River: 20% of two units.

** SJRPP = St. John's River Power Park

*** The 25 MW of PV at DeSoto is considered as non-firm generating capacity.

**** The Scherer unit is located in Georgia and is not shown on this map.

Figure I.A.1: Capacity Resources by Location (as of December 31, 2009)

Table I.A.1: Capacity Resource by Unit Type (as of December 31, 2009)

Unit Type/ Plant Name	Location	Number of Units	Fuel	Summer MW
Nuclear				
Turkey Point	Florida City, FL	2	Nuclear	1,386
St. Lucie *	Hutchinson Island, FL	2	Nuclear	1,553
Total Nuclear		**4**		**2,939**
Coal Steam				
SJRPP **	Jacksonville, FL	2	Coal	254
Scherer	Monroe County, Ga	1	Coal	646
Total Coal Steam		**3**		**900**
Combined-Cycle * **				
Lauderdale	Dania, FL	2	Gas/Oil	884
Martin	Indiantown,FL	2	Gas	938
Martin	Indiantown,FL	1	Gas/Oil	1,105
Sanford	Lake Monroe, FL	2	Gas	1,912
Putnam	Palatka, FL	2	Gas/Oil	498
Fort Myers	Fort Myers, FL	1	Gas	1,440
Manatee	Parrish,FL	1	Gas	1,111
Turkey Point	Florida City, FL	1	Gas	1,148
West County Energy Center		2	Gas/Oil	2,438
Total Combined Cycle		**14**		**11,474**
Oil/Gas Steam				
Cape Canaveral	Cocoa, FL	2	Oil/Gas	792
Cutler	Miami, FL	2	Gas	205
Manatee	Parrish, FL	2	Oil/Gas	1,624
Martin	Indiantown,FL	2	Oil/Gas	1,652
Port Everglades	Port Everglades, FL	4	Oil/Gas	1,205
Riviera	Riviera Beach, FL	2	Oil/Gas	565
Sanford	Lake Monroe, FL	1	Oil/Gas	138
Turkey Point	Florida City, FL	2	Oil/Gas	788
Total Oil/Gas Steam		**17**		**6,969**
Gas Turbines(GT)/Diesels(IC)				
Lauderdale (GT)	Dania, FL	24	Gas/Oil	840
Port Everglades (GT)	Port Everglades, FL	12	Gas/Oil	420
Fort Myers (GT)	Fort Myers, FL	12	Oil	648
Total Gas Turbines/Diesels		**48**		**1,908**
Combustion Turbines * **				
Fort Myers ****	Fort Myers, FL	1	Gas/Oil	315
Total Combustion Turbines		**1**		**315**
PV				
DeSoto *****	DeSoto, FL	1	Solar Energy	25
Total PV		**1**		**25**
Total System Generating Capacity as of December 31, 2009 =		**88**		**24,530**
System Firm Generating Capacity as of December 31, 2009 =		**87**		**24,505**

* Total capability of each unit is 853/839 MW. FPL's ownership share of St. Lucie 1 and 2 is 100% and 85%, respectively. Capabilities shown represent FPL's output share from each of the units (approx. 92.5% and exclude the Orlando Utilities Commission (OUC) and Florida Municipal Power Agency (FMPA) combined portion of approximately 7.44776% per unit.

** Represents FPL's ownership share: SJRPP coal: 20% of two units

*** The Combined Cycles and Combustion Turbines are broken down by components on Table 1.A.2.

**** This unit consists of two combustion turbines.

***** The 25 MW of PV at DeSoto is considered non-firm generating capacity.

Table I.A.2: Combined Cycle and Combustion Turbine Components

Summer MW *

Combined-Cycle

Plant Name/ Unit No.	CT A	CT B	CT C	CT D	CT E	CT F	Steam 1	Steam 2	Total Unit MW
Ft Myers 2	158	158	158	158	158	158	59	432	1,440
Lauderdale 4	158	158	---	---	---	---	127	---	442
Lauderdale 5	158	158	---	---	---	---	127	---	442
Manatee 3	164	164	164	164	---	---	457	---	1,111
Martin 3	163	163	---	---	---	---	144	---	469
Martin 4	163	163	---	---	---	---	144	---	469
Martin 8	160	160	160	160	---	---	464	---	1,105
Putnam 1	70	70	---	---	---	---	110	---	249
Putnam 2	70	70	---	---	---	---	110	---	249
Sanford 4	161	161	161	161	---	---	316	---	958
Sanford 5	160	160	160	160	---	---	315	---	954
Turkey Point 5	174	174	174	174	---	---	451	---	1,147
West County Energy Center 1	243	243	243	---	---	---	492	---	1,219
West County Energy Center 2	243	243	243	---	---	---	492	---	1,219

Combustion Turbines

Ft. Myers 3	158	158	---	---	---	---	---	---	315

This table shows the breakdown of total MW for each unit by CT and steam component.

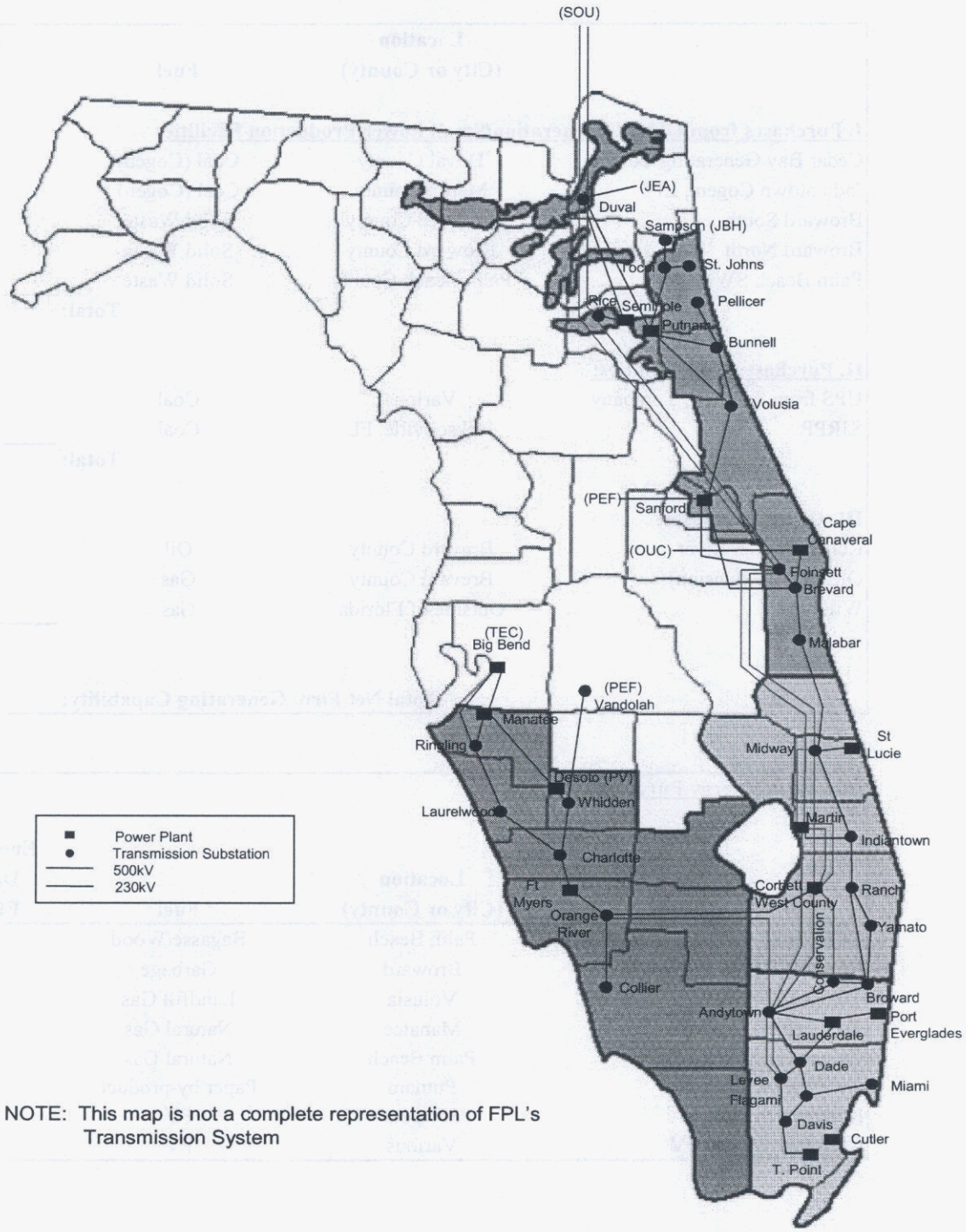
* The total MW values shown in this table may differ slightly from values shown in other tables due to rounding of per-component values.

Table 1.A.3: Purchase Power Resources by Contract (as of December 31, 2009)

	Location (City or County)	Fuel	Summer MW
I. Purchases from QF's: Cogeneration/Small Power Production Facilities			
Cedar Bay Generating Co.	Duval County	Coal (Cogen)	250
Indiantown Cogen., LP	Martin County	Coal (Cogen)	330
Broward South	Broward County	Solid Waste	4
Broward North	Broward County	Solid Waste	57
Palm Beach SWA	Palm Beach County	Solid Waste	50
		Total:	**691**
II. Purchases from Utilities:			
UPS from Southern Company	Various	Coal	931
SJRPP	Jacksonville, FL	Coal	381
		Total:	**1,312**
III. Other Purchases:			
Reliant/Indian River	Brevard County	Oil	250
Oleander (Extension)	Brevard County	Gas	156
Williams	Outside of Florida	Gas	106
			512
		Total Net Firm Generating Capability:	**2,515**

Non-Firm Energy Purchases (MWH)

Plant Name	Location (City or County)	Fuel	Energy (MWH) Delivered to FPL in 2009
Okeelanta	Palm Beach	Bagasse/Wood	265,929
Broward South	Broward	Garbage	130,430
Tomoka Farms	Volusia	Landfill Gas	16,436
Tropicana	Manatee	Natural Gas	53,517
Calnetix	Palm Beach	Natural Gas	44
Georgia Pacific	Putnam	Paper by-product	2,855
Rothenbach Park	Sarasota	PV	317
Customer Owned PV	Various	PV	84



NOTE: This map is not a complete representation of FPL's Transmission System

Figure I.A.2: FPL Substation and Transmission System Configuration

FPL Interconnection Diagram

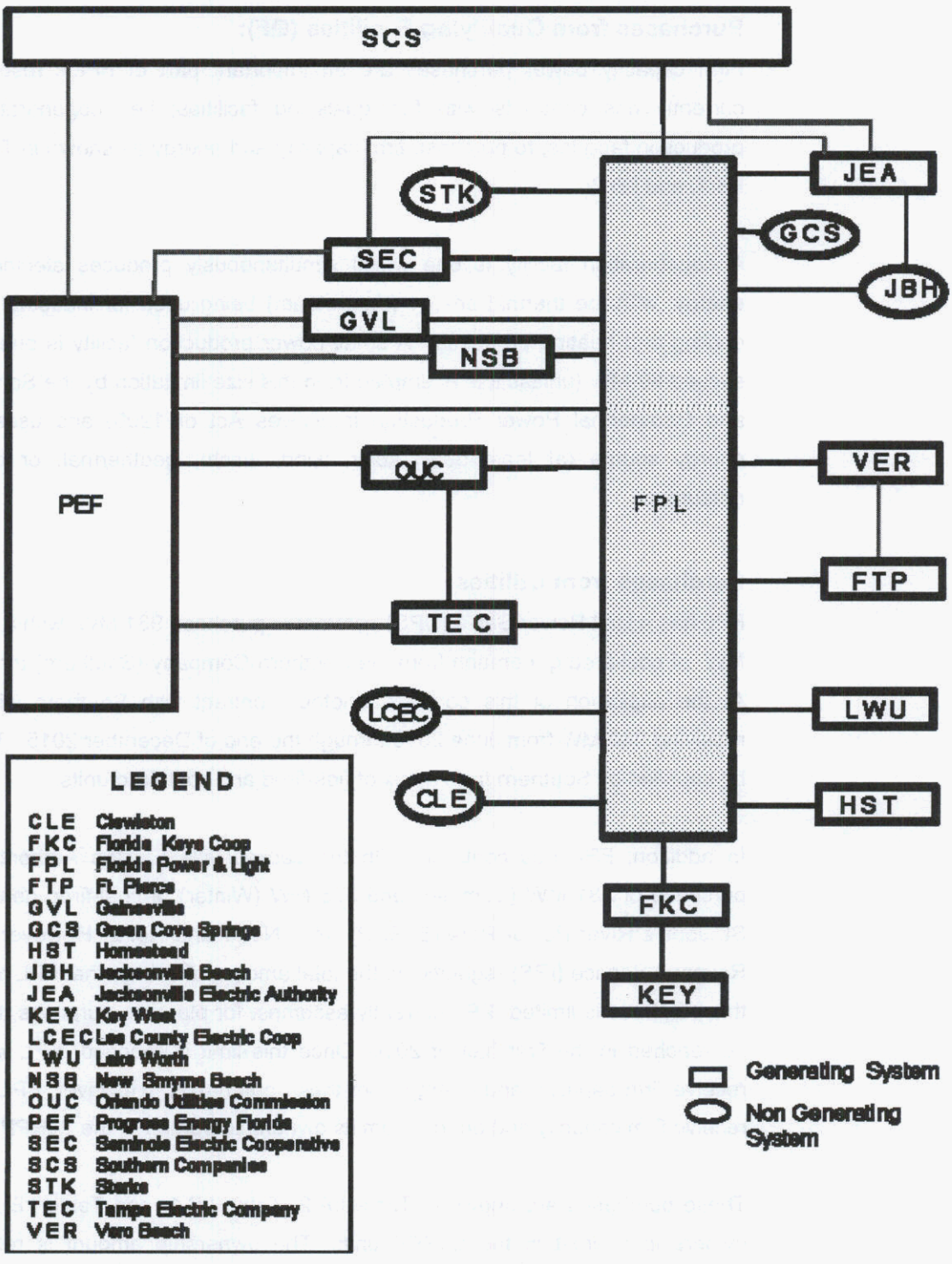


Figure I.A.3: FPL Interconnection Diagram

I.B Firm Capacity Power Purchases

Purchases from Qualifying Facilities (QF):

Firm capacity power purchases are an important part of FPL's resource mix. FPL currently has contracts with five qualifying facilities; i.e., cogeneration/small power production facilities, to purchase firm capacity and energy as shown in Table I.A.2, Table I.B.1, and I.B.2.

A cogeneration facility is one which simultaneously produces electrical and thermal energy, with the thermal energy (e.g., steam) being used for industrial, commercial, or cooling and heating purposes. A small power production facility is one which does not exceed 80 MW (unless it is exempted from this size limitation by the Solar, Wind, Waste, and Geothermal Power Production Incentives Act of 1990) and uses as its primary energy source (at least 50%) solar, wind, waste, geothermal, or other renewable resources.

Purchases from Utilities:

FPL has a Unit Power Sales (UPS) contract to purchase 931 MW, with a minimum of 380 MW, of coal-fired generation from the Southern Company (Southern) through May 2010. At the expiration of this contract, another contract with Southern will result in FPL receiving 930 MW from June 2010 through the end of December 2015. This capacity will be supplied by Southern from a mix of gas-fired and coal-fired units.

In addition, FPL has contracts with the Jacksonville Electric Authority (JEA) for the purchase of 381 MW (Summer) and 375 MW (Winter) of coal-fired generation from the St. John's River Power Park (SJRPP) Units No. 1 and No. 2. However, due to Internal Revenue Service (IRS) regulations, the total amount of energy that FPL may receive from this purchase is limited. FPL currently assumes, for planning purposes, that this limit will be reached in the first half of 2016. Once this limit is reached, FPL will be unable to receive firm capacity and energy from these purchases. (However, FPL will continue to receive firm capacity and energy from its ownership portion of the SJRPP units.)

These purchases are shown in Table I.A.2, Table I.B.1, and Table I.B.2. FPL also has ownership interest in the SJRPP units. The ownership amount is reflected in FPL's installed capacity shown on Figure I.A.1, in Table I.A.1, and on Schedule 1.

Other Purchases:

FPL has other firm capacity purchase contracts with a variety of Non-QF suppliers. These purchases are generally near-term in nature. Table I.B.1 and I.B.2 present the Summer and Winter MW, respectively, resulting from all firm purchased power contracts discussed above through the year 2019.

Table I.B.1: FPL's Firm Purchased Power Summer MW

Summary of FPL's Firm Capacity Purchases: Summer MW (for August of Year Shown)

I. Purchases from QF's:

Cogeneration/Small Power Production Facilities	Contract Start Date	Contract End Date	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Broward South	01/01/93	12/31/26	1	1	1	1	1	1	1	1	1	1
Broward South	01/01/95	12/31/26	2	2	2	2	2	2	2	2	2	2
Broward South	01/01/97	12/31/26	1	1	1	1	1	1	1	1	1	1
Broward North	04/01/92	12/31/10	45	0	0	0	0	0	0	0	0	0
Broward North	01/01/93	12/31/26	7	7	7	7	7	7	7	7	7	7
Broward North	01/01/95	12/31/26	2	2	2	2	2	2	2	2	2	2
Broward North	01/01/97	12/31/26	3	3	3	3	3	3	3	3	3	3
Cedar Bay Generating Co.	01/25/94	12/31/24	250	250	250	250	250	250	250	250	250	250
Indiantown Cogen., LP	12/22/95	12/01/25	330	330	330	330	330	330	330	330	330	330
Palm Beach SWA	04/01/92	03/31/10	0	0	0	0	0	0	0	0	0	0
Palm Beach SWA-extension	04/01/12	04/01/32	0	0	55	55	55	55	55	55	55	55
QF Purchases Sub Total:			**640**	**595**	**650**	**650**	**650**	**650**	**650**	**650**	**650**	**650**

II. Purchases from Utilities:

	Contract Start Date	Contract End Date	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
UPS Replacement	06/01/10	12/31/15	930	930	930	930	930	930	0	0	0	0
SJRPP	04/02/82	4/1/2016 *	375	375	375	375	375	375	0	0	0	0
Utility Purchases Sub Total:			**1,305**	**1,305**	**1,305**	**1,305**	**1,305**	**1,305**	**0**	**0**	**0**	**0**

Total of QF and Utility Purchases =			**1,945**	**1,900**	**1,955**	**1,955**	**1,955**	**1,955**	**650**	**650**	**650**	**650**

III. Other Purchases:

	Contract Start Date	Contract End Date	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Oleander (Extension)	06/01/07	05/31/12	155	155	0	0	0	0	0	0	0	0
Other Purchases Sub Total:			**155**	**155**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Total "Non-QF" Purchase Sub-Total =			**1,460**	**1,460**	**1,305**	**1,305**	**1,305**	**1,305**	**0**	**0**	**0**	**0**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Summer Firm Capacity Purchases Total MW:	**2,100**	**2,055**	**1,955**	**1,955**	**1,955**	**1,955**	**650**	**650**	**650**	**650**

* Contract End Date shown does not represent the actual contract date. Instead, this date represents a projection of the date at which FPL's ability to receive further capacity and energy from this purchase will be suspended due to IRS regulations.

Table I.B.2: FPL's Firm Purchased Power Winter MW

Summary of FPL's Firm Capacity Purchases: Winter MW (for January of Year Shown)

I. Purchases from QF's:

Cogeneration/Small Power Production Facilities	Start Date	End Date	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Broward South	01/01/93	12/31/26	1	1	1	1	1	1	1	1	1	1
Broward South	01/01/95	12/31/26	2	2	2	2	2	2	2	2	2	2
Broward South	01/01/97	12/31/26	1	1	1	1	1	1	1	1	1	1
Broward North	04/01/92	12/31/10	45	0	0	0	0	0	0	0	0	0
Broward North	01/01/93	12/31/26	7	7	7	7	7	7	7	7	7	7
Broward North	01/01/95	12/31/26	2	2	2	2	2	2	2	2	2	2
Broward North	01/01/97	12/31/26	3	3	3	3	3	3	3	3	3	3
Cedar Bay Generating Co.	01/25/94	12/31/24	250	250	250	250	250	250	250	250	250	250
Indiantown Cogen., LP	12/22/95	12/01/25	330	330	330	330	330	330	330	330	330	330
Palm Beach SWA	04/01/92	03/31/10	50	0	0	0	0	0	0	0	0	0
Palm Beach SWA-extension	04/01/12	04/01/32	0	0	0	55	55	55	55	55	55	55
QF Purchases Sub Total:			**690**	**595**	**595**	**650**	**650**	**650**	**650**	**650**	**650**	**650**

II. Purchases from Utilities:

	Start Date	End Date	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
UPS from Southern Co.	07/20/88	05/31/10	926	0	0	0	0	0	0	0	0	0
UPS Replacement	06/01/10	12/31/15	0	930	930	930	930	930	0	0	0	0
SJRPP	04/02/82	4/1/2016 *	375	375	375	375	375	375	375	0	0	0
Utility Purchases Sub Total:			**1,301**	**1,305**	**1,305**	**1,305**	**1,305**	**1,305**	**375**	**0**	**0**	**0**

Total of QF and Utility Purchases =			**1,991**	**1,900**	**1,900**	**1,955**	**1,955**	**1,955**	**1,025**	**650**	**650**	**650**

III. Other Purchases:

	Contract Start Date	Contract End Date	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Oleander (Extension)	06/01/07	05/31/12	180	180	180	0	0	0	0	0	0	0
Other Purchases Sub Total:			**180**	**180**	**180**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

"Non-QF" Purchase Sub-Total =			**1,481**	**1,485**	**1,485**	**1,305**	**1,305**	**1,305**	**375**	**0**	**0**	**0**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Winter Firm Capacity Purchases Total MW:	**2,171**	**2,080**	**2,080**	**1,955**	**1,955**	**1,955**	**1,025**	**650**	**650**	**650**

* Contract End Date shown does not represent the actual contract date. Instead, this date represents a projection of the date at which FPL's ability to receive further capacity and energy from this purchase will be suspended due to IRS regulations.

I.C Non-Firm (As Available) Energy Purchases

FPL purchases non-firm (as-available) energy from several cogeneration and small power production facilities. Table I.C.1 shows the amount of energy purchased in 2009 from these facilities.

Table I.C.1: As-Available Energy Purchases From Non-Utility Generators in 2009

Project	*County*	*Fuel*	*In-Service Date*	*Energy (MWH) Delivered to FPL in 2009*
Okeelanta	Palm Beach	Bagasse/Wood	11/95	265,929
Broward South	Broward	Garbage	9/09	130,430
Tomoka Farms	Volusia	Landfill Gas	7/98	16,436
Tropicana	Manatee	Natural Gas	2/90	53,517
Calnetix	Palm Beach	Natural Gas	7/05	44
Georgia Pacific	Putnam	Paper by-product	2/94	2,855
Rothenbach Park	Sarasota	PV	10/07	317
Customer Owned PV	Various	PV	Various	84

I.D. Demand Side Management (DSM)

FPL has sought out and implemented cost-effective DSM programs since 1978. These programs include a number of conservation/energy efficiency and load management initiatives. FPL's DSM efforts through 2009 have resulted in a cumulative Summer peak reduction of approximately 4,257 MW at the generator and an estimated cumulative energy saving of approximately 51,056 Gigawatt-hour (GWh) at the generator. After accounting for reserve margin requirements, FPL's DSM efforts through 2009 have eliminated the need to construct the equivalent of approximately 13 new 400 MW generating units.

In late 2009, the Florida Public Service Commission (FPSC) imposed new goals for DSM implementation for the period 2010 through 2019. The FPSC-imposed DSM goals for FPL were significantly higher (approximately 225%) than the amount of DSM that was projected in 2009 to meet 100% of FPL's remaining resource needs through 2019. This 2009 projection of FPL's resource needs was based on FPL's 2009 load forecast.

FPL's 2010 load forecast for the 2010 – 2019 time period is substantially lower than FPL's 2009 load forecast. As a result of this lower load forecast, FPL's projected

resource needs for 2010 – 2019 have also been lowered substantially below the 2009 projection. Consequently, the amount by which the FPSC-imposed DSM goals exceed FPL's projected resource needs has increased even further.

The impact of this fact on FPL's resource plan is discussed (along with other factors that impact the resource plan) in Chapter III of this document. Also, a discussion of FPL's DSM programs is presented in Chapter III.

Schedule 1

Existing Generating Facilities
As of December 31, 2009

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
				Fuel		Fuel Transport		Alt. Fuel Days	Commercial In-Service	Expected Retirement	Gen.Max. Nameplate	Net Capability [1]	
Plant Name	Unit No.	Location	Unit Type	Pri.	Alt.	Pri.	Alt.	Use	Month/Year	Month/Year	KW	Winter MW	Summer MW
Cape Canaveral		Brevard County 19/24S/36F									804,100	796	792
	1		ST	FO6	NG	WA	PL	Unknown	Apr-65	Unknown	402,050	398	396
	2		ST	FO6	NG	WA	PL	Unknown	May-69	Unknown	402,050	398	396
Cutler		Miami Dade County 27/55S/40E									236,500	207	205
	5		ST	NG	No	PL	No	Unknown	Nov-54	Unknown	75,000	69	68
	6		ST	NG	No	PL	No	Unknown	Jul-55	Unknown	161,500	138	137
DeSoto [2]		DeSoto County	Photovoltaic										
	1	27/36S/25E									25,000	25	25
			PV	N/A	N/A	N/A	N/A	Unknown	10/27/2009	Unknown	25,000	25	25
Fort Myers		Lee County 35/43S/25E									2,895,890	2,660	2,403
	2		CC	NG	No	PL	No	Unknown	Jun-02	Unknown	1,775,390	1,570	1,440
	3A & B		CT	NG	FO2	PL	PL	Unknown	Jun-03	Unknown	376,380	370	315
	1-12		GT	FO2	No	PL	No	Unknown	May-74	Unknown	744,120	720	648
Lauderdale		Broward County 30/50S/42E									1,873,968	1,930	1,724
	4		CC	NG	FO2	PL	PL	Unknown	May-93	Unknown	526,250	485	442
	5		CC	NG	FO2	PL	PL	Unknown	Jun-93	Unknown	526,250	485	442
	1-12		GT	NG	FO2	PL	PL	Unknown	Aug-70	Unknown	410,734	480	420
	13-24		GT	NG	FO2	PL	PL	Unknown	Aug-72	Unknown	410,734	480	420
Manatee		Manatee County 18/33S/20E									2,951,110	2,831	2,735
	1		ST	FO6	NG	WA	PL	Unknown	Oct-76	Unknown	863,300	822	812
	2		ST	FO6	NG	WA	PL	Unknown	Dec-77	Unknown	863,300	822	812
	3		CC	NG	No	PL	No	Unknown	Jun-05	Unknown	1,224,510	1,187	1,111

1/ These ratings are peak capability.
2/ The capacity shown for the PV facility at DeSoto is considered as non-firm generating capacity due to the intermittent nature of the solar resource.

Schedule 1

Existing Generating Facilities
As of December 31, 2009

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9) Alt.	(10)	(11)	(12)	(13)	(14)
				Fuel		Fuel Transport		Fuel Days	Commercial In-Service	Expected Retirement	Gen.Max. Nameplate	Net Capability 1/	
Plant Name	Unit No.	Location	Unit Type	Pri.	Alt.	Pri.	Alt.	Use	Month/Year	Month/Year	KW	Winter MW	Summer MW
Martin		Martin County 29/29S/38E									4,317,510	3,840	3,695
	1		ST	FO6	NG	PL	PL	Unknown	Dec-80	Unknown	934,500	832	826
	2		ST	FO6	NG	PL	PL	Unknown	Jun-81	Unknown	934,500	832	826
	3		CC	NG	No	PL	No	Unknown	Feb-94	Unknown	612,000	498	469
	4		CC	NG	No	PL	No	Unknown	Apr-94	Unknown	612,000	498	469
	8*		CC	NG	FO2	PL	PL	Unknown	Jun-05	Unknown	1,224,510	1,180	1,105
Port Everglades		City of Hollywood 23/50S/42E									1,665,334	1,691	1,625
	1		ST	FO6	NG	WA	PL	Unknown	Jun-60	Unknown	225,250	214	213
	2		ST	FO6	NG	WA	PL	Unknown	Apr-61	Unknown	225,250	214	213
	3		ST	FO6	NG	WA	PL	Unknown	Jul-64	Unknown	402,050	389	387
	4		ST	FO6	NG	WA	PL	Unknown	Apr-65	Unknown	402,050	394	392
	1-12		GT	NG	FO2	PL	PL	Unknown	Aug-71	Unknown	410,734	480	420
Putnam		Putnam County 16/10S/27E									580,008	536	498
	1		CC	NG	FO2	PL	WA	Unknown	4/1/1978	Unknown	290,004	268	249
	2		CC	NG	FO2	PL	WA	Unknown	8/1/1977	Unknown	290,004	268	249
Riviera		City of Riviera Beach 33/42S/43E									620,840	571	565
	3		ST	FO6	NG	WA	PL	Unknown	Jun-62	Unknown	310,420	280	277
	4		ST	FO6	NG	WA	PL	Unknown	Mar-63	Unknown	310,420	291	288
Sanford		Volusia County 16/19S/30E									2,533,970	2,217	2,050
	3		ST	FO6	NG	WA	PL	Unknown	May-59	Unknown	156,250	140	138
	4		CC	NG	No	PL	No	Unknown	Oct-03	Unknown	1,188,860	1,040	958
	5		CC	NG	No	PL	No	Unknown	Jun-02	Unknown	1,188,860	1,037	954

1/ These ratings are peak capability.

* Martin 8 A and B combustion turbine units went into service on 6/14/2001 and the conversion to Combined Cycle went into service 6/30/2005.

Schedule 1

Existing Generating Facilities
As of December 31, 2009

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9) Alt.	(10)	(11)	(12)	(13)	(14)
						Fuel Transport		Fuel	Commercial	Expected	Gen.Max.	Net Capability [1]	
Plant Name	Unit No.	Location	Unit Type	Fuel Pri.	Fuel Alt.	Pri.	Alt.	Days Use	In-Service Month/Year	Retirement Month/Year	Nameplate KW	Winter MW	Summer MW
Scherer [2]		Monroe, GA									680,368	652	646
	4		BIT	SUB	No	RR	No	Unknown	Jul-89	Unknown	680,368	652	646
St. Johns River Power Park [3]		Duval County 12/15/28E (RPC4)									271,836	250	254
	1		BIT	BIT	Pet	RR	WA	Unknown	Mar-87	Unknown	135,918	125	127
	2		BIT	BIT	Pet	RR	WA	Unknown	May-88	Unknown	135,918	125	127
St. Lucie		St. Lucie County 16/36S/41E									1,573,775	1,579	1,553
	1		NP	UR	No	TK	No	Unknown	May-76	Unknown	850,000	853	839
	2	[4]	NP	UR	No	TK	No	Unknown	Jun-83	Unknown	723,775	726	714
Turkey Point		Miami Dade County 27/57S/40E									3,548,550	3,405	3,322
	1		ST	FO6	NG	WA	PL	Unknown	Apr-67	Unknown	402,050	398	396
	2		ST	FO6	NG	WA	PL	Unknown	Apr-68	Unknown	402,050	394	392
	3		NP	UR	No	TK	No	Unknown	Nov-72	Unknown	759,970	717	693
	4		NP	UR	No	TK	No	Unknown	Jun-73	Unknown	759,970	717	693
	5		CC	NG	FO2	PL	PL	Unknown	May-07	Unknown	1,224,510	1,179	1,148
West County Energy Center		Palm Beach County 29&32/43S/40E									2,733,600	2,670	2,438
	1		CC	NG	FO2	PL	PL	Unknown	Aug-09	Unknown	1,366,800	1,335	1,219
	2		CC	NG	FO2	PL	PL	Unknown	Nov-09	Unknown	1,366,800	1,335	1,219
									Total System Generating Capacity as of December 31, 2009 [5] =			**25,860**	**24,530**
									System Firm Generating Capacity as of December 31, 2009 [6] =			**25,835**	**24,505**

1/ These ratings are peak capability.
2/ These ratings represent Florida Power & Light Company's share of Scherer Unit No. 4, adjusted for transmission losses.
3/ The net capability ratings represent Florida Power & Light Company's share of St. Johns River Park Unit No. 1 and No. 2, excluding Jacksonville Electric Authority (JEA) share of 80%.
4/ Total capability of each unit is 853/839 MW. FPL's ownership share of St. Lucie 1 and 2 is 100%(853/839) and 85% (714/726) respectively as shown above. FPL's share of the deliverable capacity from each unit is approx. 92.5% and exclude the Orlando Utilities Commission (OUC) and Florida Municipal Power Agency (FMPA) combined portion of approximately 7.44776% per unit.
5/ The Total System Generating Cpacity value shown includes FPL-owned firm and non-firm generating capacity.
6/ The System Firm Generating Capacity value shown includes only firm generating capacity.

CHAPTER II

Forecast of Electric Power Demand

(This page is left intentionally blank.)

II. Forecast of Electric Power Demand

II. A. Overview of the Load Forecasting Process

Long-term (20-year) forecasts of sales, net energy for load (NEL), and peak loads are typically developed on an annual basis for resource planning work at FPL. New long-term forecasts were developed by FPL in early 2010 that replaced the previous long-term load forecasts that were used by FPL during 2009 in much of its resource planning work and which were presented in FPL's 2009 Site Plan. These new load forecasts are utilized throughout FPL's 2010 Site Plan. These forecasts are a key input to the models used to develop FPL's integrated resource plan. The following pages describe how forecasts are developed for each component of the long-term forecast: sales, NEL, and peak loads.

Consistent with past forecasts, the primary drivers to develop these forecasts include economic conditions and weather.

The projections for the national and Florida economies are obtained from the consulting firm IHS Global Insight. Population projections are obtained from the Bureau of Economic and Business Research (BEBR) of the University of Florida. These inputs are quantified and qualified using statistical models in terms of their impact on the future demand for electricity.

Weather is always a key factor that affects FPL's energy sales and peak demand. Two sets of weather variables are developed and used in FPL's forecasting models:

1. Cooling and Heating Degree-Hours are used to forecast energy sales.
2. Temperature data, along with Cooling and Heating Degree-Hours, are used to forecast Summer and Winter peaks.

The Cooling and Heating Degree-Hours are used to capture the changes in the electric usage of weather-sensitive appliances such as air conditioners and electric space heaters. A composite temperature hourly profile is derived using hourly temperatures across FPL's service territory. Miami, Ft. Myers, Daytona Beach, and West Palm Beach are the locations from which temperatures are obtained. In developing the composite hourly profile, these regional temperatures are weighted by regional energy sales. This composite temperature is used to derive Cooling and Heating Degree-Hours, which are based on starting point temperatures of 72° F and 66° F degrees, respectively. Similarly,

composite temperature and hourly profile of temperatures are used for the Summer and Winter peak models.

II. B. Comparison of FPL's Current and Previous Load Forecasts

While reflecting somewhat lower growth in the later years of the forecast, FPL's current load forecast is generally in line with the load forecast presented in its 2009 Site Plan. There are two primary factors that are driving the current load forecast: projected population growth, and the lingering effects of the economic recession in Florida.

The customer forecast is based on recent population projections. Population projections are derived from the University of Florida's January 2010 population projections which are lower than prior projections. In fact, in 2009, Florida's population declined for the first time since World War II. According to the University of Florida, net migration has fallen to a record low as a result of the economic slowdown and is expected to remain at historically low levels through 2010, then gradually increase. Consequently, FPL is projecting that customer growth in 2010 will be significantly below its historical average. As population growth recovers, a modest rebound in customer growth is projected in 2011 and 2012. However, population growth is not expected to reach the level historically experienced in Florida until 2014. As a result of lower growth, the total number of customers projected in the current load forecast is below the levels projected in FPL's 2009 Site Plan.

Consistent with the economic assumptions incorporated into the 2009 Site Plan, the state's economy continues to suffer the lingering effects of an economic recession. Over the last year, Florida has lost nearly a quarter-of-a-million jobs and is second only to California in the number of mortgage foreclosures. The severity of current economic conditions suggests that Florida's economic recovery will be gradual. By 2012, the state's economy is projected to resume a more historically typical rate of growth.

Although the projected load growth in the later years of the forecast is generally below that presented in FPL's 2009 Site Plan, the total growth projected for the ten-year reporting period of this document is still significant. The Summer peak is projected to increase to 25,785 MW by 2019, an increase of 3,434 MW over the 2009 actual Summer peak. Likewise, NEL is projected to reach 131,712 GWH in 2019, an increase of 20,408 GWH from the actual 2009 value.

II.C. Long-Term Sales Forecasts

Long-term forecasts of electricity sales were developed for each revenue class and are adjusted to match the NEL forecast. The results of these sales forecasts for the years 2010 - 2019 are presented in Schedules 2.1 - 2.3 which appear at the end of this chapter. Econometric models are developed for each revenue class using the statistical software package MetrixND. The methodologies used to develop energy sales forecasts for each jurisdictional revenue class and NEL forecast are outlined below.

1. **Residential Sales**

   Residential electric usage per customer is estimated by using an econometric model. Residential sales are a function of: Cooling Degree-Hours, Heating Degree-Hours, lagged Cooling Degree-Hours, lagged Heating Degree-Hours, real price of electricity (a 12-month moving average), Florida real household disposable income, a variable designed to reflect the impact of empty homes, and a dummy variable for the specific month of November 2005. The impact of weather is captured by the Cooling Degree-Hours, Heating Degree-Hours, and the one month lag of these variables. The price of electricity plays a role in explaining electric usage, because electricity, like all other goods and services, will be used in greater or lesser quantities depending upon its price. To capture economic conditions, the model includes Florida's real household disposable income. The housing crisis has also had an impact on use per customer. Consequently, the model includes a variable designed to capture the impact of empty homes. A dummy variable for November 2005 was included because an analysis of residuals identified that data point as an outlier. Residential energy sales are forecasted by multiplying the residential use per customer forecast by the number of residential customers forecasted.

2. **Commercial Sales**

   The commercial sales forecast is also developed using an econometric model. Commercial sales are a function of the following variables: Florida real household disposable income, commercial real price of electricity (a 12-month moving average), Cooling Degree-Hours, Heating Degree-Hours, lagged Cooling Degree-Hours, a variable designed to reflect the impact of empty homes, seasonal dummy variables for the months of February and December, a dummy variable for the specific month of January 2007, and an autoregressive term. Cooling Degree-Hours, Heating Degree-Hours, and the one month lag of Cooling Degree-Hours are used to capture weather-sensitive load in the commercial sector.

3. **Industrial Sales**

The industrial class is comprised of two distinct groups; very small accounts (those with less than 20 kW of demand) and large, traditionally industrial customers. As such, the forecast is developed using a separate econometric model for each group of industrial customer. The small industrial sales model utilizes the following variables: Florida Housing Starts, Cooling Degree-Hours, lagged Cooling Degree-Hours, industrial real price of electricity (a 12-month moving average), and an autoregressive and seasonal autoregressive terms. The Cooling Degree-Hour is used to capture the weather-sensitive load in this group of industrial customers. Florida Housing Starts are reflective of construction activity which comprises a significant portion of this group. The large industrial sales model utilizes the following variables: Florida Housing Starts, industrial real price of electricity (a 12-month moving average), dummy variables for October and November 2004, and an autoregressive term.

4. **Railroad and Railways Sales and Street and Highway Sales**

The projections for railroad and railways sales are based on historical average use per customer because the number of customers is projected to remain the same. This class consists solely of Miami-Dade County's Metrorail system.

The forecast for street and highway sales is developed using historical usage patterns and multiplying these usage levels by the number of forecasted customers.

5. **Other Public Authority Sales**

This revenue class is a closed class with no new customers being added. This class consists of sports fields and a government account. The forecast for this class is based on historical knowledge of its usage characteristics.

6. **Total Sales to Ultimate Customer**

Sales forecasts by revenue class are summed to produce a total sales forecast.

7. **Sales for Resale**

Sales for resale (wholesale) customers are composed of municipalities and/or electric co-operatives. These customers differ from jurisdictional customers in that they are not the ultimate users of the electricity they buy. Instead, they resell this electricity to their own customers. Currently there are four customers in this class: the Florida Keys Electric Cooperative; City of Key West; Metro-Dade County; and Lee County

Electric Cooperative. In addition, FPL will begin making sales to Seminole Electric Cooperative under a long term agreement in June 2014.

FPL provides service to the Florida Keys Electric Cooperative under a long-term partial requirements contract. The sales to Florida Keys Electric Cooperative are forecasted using a regression model.

FPL's sales to the City of Key West are expected to terminate in 2013. Forecasted sales to the City of Key West are based on assumptions regarding their contract demand and expected load factor.

Metro-Dade County sells 60 MW to Florida Progress. Line losses are billed to Metro-Dade under a wholesale contract.

Lee County has contracted with FPL for FPL to supply a portion of their load beginning in January 2010 and for FPL to supply their total load beginning in January 2014 through December 2033. Forecasted sales to Lee County are based on assumptions regarding their contract demand and expected load factor.

Seminole Electric Cooperative's contract for delivery of 75 MW expired in December 2009. A new contract included in the forecast is for delivery of 200 MW to Seminole Electric beginning in June 2014.

II.D. Net Energy for Load (NEL)

An econometric model is developed to produce a NEL per customer forecast. The key inputs to the model are: the real price of electricity (a 12-month moving average), Cooling and Heating Degree-Hours, and Florida real household disposable income. In addition, the model also includes variables for mandated energy efficiency and a variable designed to capture the impact of empty homes. Seasonal dummies are included for the months of February, July, and December.

The mandated energy efficiency variables are included to capture the impacts of the 2005 National Energy Policy Act, the 2007 Energy Independence and Security Act, and compact florescent light bulbs. The estimated impact of these programs for the 2010 to 2019 time period is a reduction, on average, of 7,592 GWh per year. The increase in the number of empty homes resulting from the current housing slump has affected use per

customer and is captured in a separate variable. The forecast was also adjusted for additional load estimated from hybrid cars, beginning in 2010, which resulted in an increase of approximately 322 GWh by the end of the ten-year reporting period.

The NEL forecast is developed by multiplying the NEL per customer forecast by the total number of customers forecasted. Once the NEL forecast is obtained, total billed sales are computed using a historical ratio of sales to NEL. The sales by class forecasts previously discussed are then adjusted to match the total billed sales. The forecasted NEL values for 2010 – 2019 are presented in Schedule 3.3 that appears at the end of this chapter.

II.E. System Peak Forecasts

The rate of absolute growth in FPL system peak load has been a function of the size of the customer base, varying weather conditions, projected economic conditions, changing patterns of customer behavior (including an increased stock of electricity-consuming appliances), and more efficient appliances and lighting. FPL developed the peak forecast models to capture these behavioral relationships. Impacts of the 2005 National Energy Policy Act, the 2007 Energy Independence and Security Act, and the impact of compact fluorescent light bulbs are taken into account in developing the peak forecast. The estimated impact of these federal mandates for the 2010 to 2019 time frame is a reduction of approximately 883 MW (Summer) and 334 MW (Winter) in 2010, and approximately 1,746 MW (Summer) and 941 MW (Winter) by 2019. The forecast was also adjusted for additional load estimated from hybrid cars which resulted in an increase of approximately 65 MW in the Summer and 8 MW in the Winter by the end of the ten-year reporting period.

The forecasting methodology of Summer, Winter, and monthly system peaks is discussed below. The forecasted values for Summer and Winter peak loads for the years 2010 – 2019 are presented in Schedules 3.1 and 3.2 as well as in Schedules 7.1 and 7.2.

1. System Summer Peak

The Summer peak forecast is developed using an econometric model. The variables included in the model are the real price of electricity, Florida real household disposable income, Cooling Degree-Hours in the two days prior to the peak, the average temperature on the day of the peak, and a variable for mandated energy

efficiency. The model is based on the Summer peak contribution per customer and is, therefore, multiplied by total customers to derive FPL's system Summer peak.

2. **System Winter Peak**

Like the system Summer peak model, this model is also an econometric model. The model consists of two weather-related variables: the average temperature on the peak day and Heating Degree-Hours for the prior day as well as for the morning of the Winter peak day. In addition, Florida real household disposable income is a variable used in the model. A dummy variable for the year 1996 is also utilized. The forecasted results are adjusted for the impact of mandated energy efficiency. The model is based on the Winter peak contribution per customer and is, therefore, multiplied by total customers to derive FPL's system Winter peak.

3. **Monthly Peak Forecasts**

The forecasting process for monthly peaks consists of the following actions:

a. Develop the historical seasonal factor for each month by using ratios of historical monthly peaks to the appropriate seasonal peak.

b. Apply the monthly ratios to their respective seasonal peak forecast to derive the peak forecast by month. This process assumes that the seasonal factors remain unchanged over the forecasting period.

II.F. The Hourly Load Forecast

Forecasted values for system hourly load for the period 2010-2019 are produced using a System Load Forecasting "shaper" program. This model uses years of historical FPL hourly system load data to develop load shapes for weekdays, weekend days, and holidays. The model allows calibration of hourly values where the peak is maintained or where both the peak and minimum load-to-peak ratio is maintained.

II.G. Uncertainty

In order to address uncertainty in the forecasts of aggregate peak demand and NEL, FPL first evaluates the assumptions underlying the forecasts. FPL takes a series of steps in evaluating the input variables, including comparing projections from different sources, identifying outliers in the series, and assessing the series' consistency with past

forecasts. In addition, FPL reviews factors which may affect the input variables. This may require reviewing data from local economic development boards or from FPL's own Customer Service Business Unit. Other factors which may be considered include demographic trends and housing characteristics such as starts, size, and vintage of homes.

Uncertainty is also addressed in the modeling process. Generally, econometric models are used to forecast the aggregate peak demand and NEL. During the modeling process, the relevant statistics (goodness of fit, F-statistic, P-values, mean absolute deviation (MAD), mean absolute percentage error (MAPE), etc.) are scrutinized to ensure that the models adequately explain historical variation. Once a forecast is developed, it is compared with past forecasts. Deviations from past forecasts are examined in light of changes in input assumption to ensure that the drivers underlying the forecast are well understood. Finally, forecasts of aggregate peak demand and NEL are compared with their actual values as they become available. An ongoing process of variance analyses is performed. To the extent that the variance analysis identifies large unexplained deviations between the forecast and actual values, revisions to the econometric model may be considered.

The inherent uncertainty in load forecasting is addressed in different ways in regard to FPL's overall resource planning and operational planning work. In regard to FPL's resource planning work, FPL's utilization of a 20% reserve margin criterion (approved by the FPSC) is designed, in part, to maintain reliable electric service to FPL's customers in light of forecasting uncertainty. In regard to operational planning, an extreme weather load forecast for the projected Summer peak day is produced based on maximum historical temperatures on the day of the Summer peak. Likewise, an extreme weather Winter peak forecast is developed by considering minimum historical temperatures at the time of the Winter peak. Statistical analysis on the distribution of historical weather data is performed to evaluate and understand the impact of extreme weather on the peaks and on NEL, and the likelihood of experiencing extreme weather.

It should be noted that despite the downturn in the economy, and negative growth in Florida's population during 2009, FPL experienced a near record Summer peak of 22,351 MW, and an all-time peak of 24,339 MW during the 2009-2010 Winter peak period. These peaks were driven by extreme weather.

II.H. DSM

The effects of FPL's DSM implementation to-date are assumed to be imbedded in the actual usage data for forecasting purposes. Any change in usage pattern, be it the impact of FPL's DSM efforts, price impact, or weather impact, is reflected in the actual observed load data. Therefore, energy efficiency impacts, whether market-driven or as a result of FPL's DSM programs, are assumed to be included in the historical usage data for peaks and NEL.

The impacts of incremental energy efficiency that FPL plans to implement in the future, plus the impacts of FPL's cumulative and incremental load management programs, are accounted for as "line item reductions" to the forecasts as part of the IRP process as shown in Schedules 7.1 and 7.2. After making these adjustments to the load forecasts, the resulting "firm" load forecast is then used in FPL's IRP work.

Schedule 2.1
History and Forecast of Energy Consumption
And Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Rural & Residential			Commercial		
Year	Population [1]	Members per Household	GWh 2/	Average [3] No. of Customers	Average kWh Consumption Per Customer	GWh 2/	Average [3] No. of Customers	Average kWh Consumption Per Customer
2000	7,603,964	2.23	46,320	3,413,953	13,568	37,001	415,293	89,097
2001	7,754,846	2.22	47,588	3,490,541	13,633	37,960	426,573	88,989
2002	7,898,628	2.21	50,865	3,566,167	14,263	40,029	435,313	91,955
2003	8,079,316	2.21	53,485	3,652,663	14,643	41,425	444,650	93,163
2004	8,247,442	2.20	52,502	3,744,915	14,020	42,064	458,053	91,832
2005	8,469,602	2.21	54,348	3,828,374	14,196	43,468	469,973	92,490
2006	8,620,855	2.21	54,570	3,906,267	13,970	44,487	478,867	92,901
2007	8,729,806	2.19	55,138	3,981,451	13,849	45,921	493,130	93,121
2008	8,771,694	2.20	53,229	3,992,257	13,333	45,561	500,748	90,987
2009	8,731,397	2.20	53,950	3,984,490	13,540	45,025	501,055	89,860
2010	8,773,235	2.20	52,160	3,987,834	13,080	44,652	500,788	89,164
2011	8,833,618	2.20	53,365	4,015,281	13,290	45,009	502,102	89,642
2012	8,916,643	2.20	54,310	4,053,020	13,400	45,632	505,780	90,221
2013	9,043,647	2.20	55,783	4,110,748	13,570	46,484	512,042	90,781
2014	9,186,256	2.20	57,670	4,175,571	13,811	47,787	520,279	91,849
2015	9,322,630	2.20	58,471	4,237,559	13,798	48,713	528,609	92,153
2016	9,455,432	2.20	58,782	4,297,924	13,677	49,228	536,766	91,712
2017	9,584,118	2.20	59,418	4,356,417	13,639	50,012	544,669	91,821
2018	9,709,760	2.20	60,450	4,413,527	13,696	51,158	552,418	92,607
2019	9,833,269	2.20	61,316	4,469,668	13,718	52,185	560,044	93,180

Historical Values (2000 - 2009):

1/ Population represents only the area served by FPL.

2/ Actual energy sales include the impacts of existing conservation. These values are at the meter.

3/ Average No. of Customers is the annual average of the twelve month values.

Projected Values (2010 - 2019):

1/ Population represents only the area served by FPL.

2/ Forecasted energy sales do not include the impact of incremental conservation. These values are at the meter.

3/ Average No. of Customers is the annual average of the projected twelve month values.

Schedule 2.2
History and Forecast of Energy Consumption
And Number of Customers by Customer Class

(1)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
		Industrial		Railroads	Street &	Other	Total [4/]
		Average [3/]	Average kWh	&	Highway	Sales to	Sales to
		No. of	Consumption	Railways	Lighting	Public	Ultimate
Year	GWh 2/	Customers	Per Customer	GWh	GWh 2/	Authorities GWh	Consumers GWh
2000	3,768	16,411	229,578	81	408	381	87,959
2001	4,091	15,445	264,872	86	419	67	90,212
2002	4,057	15,533	261,199	89	420	63	95,523
2003	4,004	17,029	235,135	93	425	64	99,496
2004	3,964	18,512	214,139	93	413	58	99,095
2005	3,913	20,392	191,873	95	424	49	102,296
2006	4,036	21,211	190,277	94	422	49	103,659
2007	3,774	18,732	201,499	91	437	53	105,415
2008	3,587	13,377	268,168	81	423	37	102,919
2009	3,245	10,084	321,796	80	422	34	102,755
2010	3,348	9,276	360,993	89	382	36	100,668
2011	3,464	9,587	361,297	89	378	35	102,340
2012	3,530	10,232	345,009	89	383	34	103,979
2013	3,567	10,727	332,540	89	391	33	106,347
2014	3,578	10,964	326,355	89	401	33	109,558
2015	3,560	11,079	321,320	89	412	33	111,278
2016	3,534	11,156	316,775	89	425	33	112,089
2017	3,519	11,237	313,110	89	437	33	113,508
2018	3,513	11,534	304,559	89	451	33	115,693
2019	3,509	11,957	293,465	89	464	33	117,596

Historical Values (2000 - 2009):

2/ Actual energy sales include the impacts of existing conservation. These values are at the meter.

3/ Average No.of Customers is the annual average of the twelve month values.

4/ GWh Col. (16) = Col. (4) + Col. (7) + Col. (10) + Col. (13) + Col. (14) + Col. (15).

Projected Values (2010 - 2019):

2/ Forecasted energy sales do not include the impact of incremental conservation.

3/ Average No. of Customers is the annual average of the projected twelve month values.

4/ GWh Col. (16) = Col. (4) + Col. (7) + Col. (10) + Col. (13) + Col. (14) + Col. (15).

Schedule 2.3
History and Forecast of Energy Consumption
And Number of Customers by Customer Class

(1)	(17)	(18)	(19)	(20)	(21)
Year	Sales for Resale GWh	Utility Use & Losses GWh	Net [5/] Energy For Load GWh 2/	Average [3/] No. of Other Customers	Total Average [3/,6/] Number of Customers
2000	970	7,059	95,989	2,693	3,848,350
2001	970	7,222	98,404	2,722	3,935,281
2002	1,233	7,443	104,199	2,792	4,019,805
2003	1,511	7,386	108,393	2,879	4,117,221
2004	1,531	7,467	108,093	3,029	4,224,509
2005	1,506	7,498	111,301	3,156	4,321,895
2006	1,569	7,909	113,137	3,218	4,409,563
2007	1,499	7,401	114,315	3,276	4,496,589
2008	993	7,092	111,004	3,348	4,509,730
2009	1,155	7,394	111,304	3,439	4,499,067
2010	2,046	7,172	109,886	3,435	4,501,332
2011	2,145	7,150	111,634	3,398	4,530,367
2012	2,166	7,372	113,516	3,438	4,572,470
2013	2,059	7,493	115,899	3,499	4,637,017
2014	4,846	8,068	122,471	3,580	4,710,393
2015	5,484	7,980	124,742	3,675	4,780,922
2016	5,513	8,070	125,672	3,779	4,849,624
2017	5,555	8,173	127,236	3,888	4,916,211
2018	5,602	8,370	129,665	3,999	4,981,479
2019	5,648	8,468	131,712	4,111	5,045,779

Historical Values (2000 - 2009):

2/ Actual energy sales include the impacts of existing conservation. These values are at the meter.

3/ Average No.of Customers is the annual average of the twelve month values.

5/ GWh Col. (19) = Col. (16) + Col. (17) + Col. (18). Actual NEL include the impacts of existing conservation and agrees to Col. (8) on schedule 3.3.

6/ Total Col. (21) = Col. (5) + Col. (8) + Col. (11) + Col. (20).

Projected Values (2010 - 2019):

2/ Forecasted energy sales do not include the impact of incremental conservation and agrees to Col. (2) on Schedule 3.3.

3/ Average No.of Customers is the annual average of the projected twelve month values.

5/ GWh Col. (19) = Col. (16) + Col. (17) + Col. (18).

6/ Total Col. (21) = Col. (5) + Col. (8) + Col. (11) + Col. (20).

Schedule 3.1
History and Forecast of Summer Peak Demand: Base Case

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
August of Year	Total	Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2000	17,808	161	17,647	0	719	645	467	451	16,622
2001	18,754	169	18,585	0	737	697	488	481	17,529
2002	19,219	261	18,958	0	770	755	489	517	17,960
2003	19,668	253	19,415	0	781	799	577	554	18,310
2004	20,545	258	20,287	0	783	847	588	578	19,174
2005	22,361	264	22,097	0	790	895	600	611	20,971
2006	21,819	256	21,563	0	809	948	635	640	20,375
2007	21,962	261	21,701	0	954	982	715	683	20,293
2008	21,060	181	20,879	0	974	1035	735	708	19,351
2009	22,351	212	22,139	0	985	1084	793	734	20,573
2010	21,922	381	21,541	0	1,026	115	884	92	19,805
2011	21,788	386	21,402	0	1,039	135	954	121	19,540
2012	22,139	391	21,748	0	1,055	160	1,038	154	19,732
2013	22,332	352	21,980	0	1,073	187	1,131	192	19,751
2014	23,575	1,178	22,397	0	1,091	215	1,227	231	20,812
2015	23,924	1,200	22,724	0	1,109	242	1,321	268	20,985
2016	24,344	1,225	23,119	0	1,125	267	1,406	302	21,244
2017	24,774	1,253	23,521	0	1,140	289	1,483	333	21,528
2018	25,328	1,283	24,045	0	1,153	309	1,554	362	21,949
2019	25,785	1,314	24,470	0	1,165	328	1,619	388	22,284

Historical Values (2000 - 2009):

Col. (2) - Col. (4) are actual values for historical summer peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 9), and may incorporate the effects of load control if load control was operated on these peak days. Therefore, Col. (2) represents the actual Net Firm Demand.

Col. (5) - Col. (9) for 2000 through 2009 represent actual DSM capabilities starting from January 1988 and are annual (12-month) values. Note that the values for FPL's former Interruptible Rate are incorporated into Col. (8), which also includes Business On Call (BOC), CILC and Commercial /Industrial Demand Reduction (CDR).

Col. (11) represents a HYPOTHETICAL "Net Firm Demand" if the load control values had definitely been exercised on the peak. Col. (11) is derived by the formula:Col. (10) = Col.(2) - Col.(6) - Col.(8).

Projected Values (2010 - 2019):

Col. (2) - Col.(4) represent FPL's forecasted peak w/o incremental conservation or cumulative load control. The effects of conservation implemented prior to 2010 are incorporated into the load forecast.

Col. (5) - Col. (9) represent all incremental conservation,current load management and incremental load management. These values are projected August values and the conservation values are based on projections with a 1/2010 starting point for use with the 2010 load forecast.

Col (8) represents FPL's Business On Call, CDR,CILC, and Curtailable programs/rates.

Col. (10) represents a 'Net Firm Demand" which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by using the formula: Col. (10) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9).

Schedule 3.2
History and Forecast of Winter Peak Demand:Base Case

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
January of Year	Total	Firm Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
2000	17,057	142	16,915	0	741	434	438	176	15,878
2001	18,199	150	18,049	0	791	459	448	183	16,960
2002	17,597	145	17,452	0	811	500	457	196	16,329
2003	20,190	246	19,944	0	847	546	453	206	18,890
2004	14,752	211	14,541	0	857	570	532	230	13,363
2005	18,108	225	17,883	0	862	583	542	233	16,704
2006	19,683	225	19,458	0	870	600	550	240	18,263
2007	16,815	223	16,592	0	894	620	577	249	15,344
2008	18,055	163	17,892	0	879	644	635	279	16,541
2009	20,081	162	19,919	0	951	678	764	295	18,366
2010	20,550	376	20,174	0	937	71	768	41	18,734
2011	20,647	381	20,266	0	943	78	784	55	18,788
2012	20,861	386	20,475	0	949	87	804	72	18,949
2013	21,138	392	20,746	0	957	97	827	93	19,163
2014	22,152	1,060	21,092	0	966	108	854	116	20,108
2015	22,745	1,284	21,461	0	975	121	882	141	20,627
2016	23,118	1,311	21,807	0	984	132	908	164	20,929
2017	23,488	1,341	22,147	0	993	143	933	186	21,232
2018	23,889	1,374	22,514	0	1,001	154	957	208	21,569
2019	24,293	1,409	22,884	0	1,007	163	977	225	21,921

Historical Values (2000 - 2009):

Col. (2) - Col. (4) are actual values for historical winter peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 9), and may incorporate the effects of load control if load control was operated on these peak days. Therefore, Col. (2) represents the actual Net Firm Demand.

Col. (5) - Col. (9) for 2000 through 2009 represent actual DSM capabilities starting from January 1988 and are annual (12-month) values. Note that the values for FPL's former Interruptible Rate are incorporated into Col. (8), which also includes Business On Call (BOC), CILC and Commercial /Industrial Demand Reduction (CDR).

Col. (10) represents a HYPOTHETICAL "Net Firm Demand" if the load control values had definitely been exercised on the peak. Col. (11) is derived by the formula:Col. (10) = Col.(2) - Col.(6) - Col.(8) - Col.(9).

Projected Values (2010 - 2019):

Col. (2) - Col.(4) represent FPL's forecasted peak w/o incremental conservation or cumulative load control. The effects of conservation implemented prior to 2010 are incorporated into the load forecast.

Col. (5) - Col. (9) represent all incremental conservation,current load management and incremental load management. These values are projected August values and the conservation values are based on projections with a 1/2010 starting point for use with the 2010 load forecast.

Col (8) represents FPL's Business On Call, CDR,CILC, and Curtailable programs/rates.

Col. (10) represents a 'Net Firm Demand" which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by using the formula: Col. (10) = Col. (2) - Col. (5) - Col. (6) - Col. (7) - Col. (8) - Col. (9).

Schedule 3.3
History of Annual Net Energy for Load - GWh: Base Case
(All values are "at the generator" values except for Col (8))

(1)	(2) = (5) + (3) + (4) Total Net Energy For Load without DSM	(3) Residential Conservation	(4) C/I Conservation	(5) **Actual** Net Energy For Load	(6) Sales for Resale GWh	(7) Utility Use & Losses	(8) = (5) - (6) - (7) **Actual** Total Billed Retail Energy Sales (GWh)	(9) Load Factor(%)
Year								
2000	99,097	1,674	1,434	95,989	970	7,059	87,959	61.4%
2001	101,739	1,789	1,545	98,404	970	7,222	90,212	59.9%
2002	107,755	1,917	1,639	104,199	1,233	7,443	95,523	61.9%
2003	112,160	2,008	1,759	108,393	1,511	7,386	99,496	62.9%
2004	112,034	2,106	1,834	108,093	1,531	7,467	99,095	59.9%
2005	115,440	2,205	1,934	111,301	1,506	7,498	102,296	56.8%
2006	117,490	2,312	2,041	113,137	1,569	7,909	103,659	59.2%
2007	118,894	2,373	2,206	114,315	1,499	7,401	105,415	59.4%
2008	115,755	2,485	2,267	111,004	993	7,092	102,919	60.0%
2009	116,221	2,581	2,336	111,304	1,155	7,394	107,671	59.4%

Historical Values (2000 - 2009):

Col. (2) represents derived "Total Net Energy For Load w/o DSM". The values are calculated using the formula: Col. (2) = Col. (3) + Col. (4) + Col. (5).

Col.(3) & Col.(4) for 2000 through 2009 are DSM values starting in January 1988 and are annual (12-month) values. Col. (3) and Col. (4) for 2009 are "estimated actuals" and are also annual (12-month) values. The values represent the total GWh reductions actually experienced each year .

Col. (5) is the **actual** Net Energy for Load (NEL) for years 2000 - 2009.

Col. (8) is the Total Retail Billed Sales. The values are calculated using the formula: Col. (8) = Col. (5) - Col. (6) - Col. (7). These values are at the meter.

Col. (9) is calculated using Col. (5) from this page and Col. (2), "Total", from Schedule 3.1 using the formula: Col. (9) = ((Col. (5)*1000) / ((Col.(2) * 8760) Adjustments are made for leap years.

Forecast of Annual Net Energy for Load - GWh: Base Case
(All values are "at the generator"values except for Col (8))

(1)	(2) **Forecasted** Net Energy For Load without DSM	(3) Residential Conservation	(4) C/I Conservation	(5) = (2) - (3) - (4) Net Energy For Load Adjusted for DSM	(6) Sales for Resale GWh	(7) Utility Use & Losses	(8) = (2) - (6) - (7) **Forecasted** Total Billed Retail Energy Sales (GWh) without DSM	(9) Load Factor(%)
Year								
2010	109,886	193	141	109,552	2,046	7,172	100,668	57.2%
2011	111,634	360	252	111,021	2,145	7,150	102,340	58.5%
2012	113,516	578	398	112,540	2,166	7,372	103,979	58.4%
2013	115,899	827	563	114,509	2,059	7,493	106,347	59.2%
2014	122,471	1,091	739	120,641	4,846	8,068	109,558	59.3%
2015	124,742	1,340	906	122,496	5,484	7,980	111,278	59.5%
2016	125,672	1,564	1,055	123,053	5,513	8,070	112,089	58.8%
2017	127,236	1,767	1,190	124,279	5,555	8,173	113,508	58.6%
2018	129,665	1,959	1,318	126,387	5,602	8,370	115,693	58.4%
2019	131,712	2,142	1,440	128,130	5,648	8,468	117,596	58.3%

Projected Values (2010 - 2019):

Col. (2) represents Forecasted Net Energy for Load w/o DSM values. The values are extracted from Schedule 2.3, Col. (19).

Col. (3) & Col. (4) are forecasted values of the reduction on sales from incremental conservation and are mid-year (6-month) values. The effects of conservation implemented prior to 2010 are incorporated into the load forecast.

Col. (5) is the forecasted Net Energy for Load (NEL) after adjusting for DSM impacts DSM for years 2010 - 2019. Col.(5) = Col.(2) - Col.(3) - Col.(4)

Col. (8) is the Total Retail Billed Sales. The values are calculated using the formula: Col. (8) = Col. (2) - Col. (6) - Col. (7). These values are at the meter.

Col. (9) is calculated using Col. (2) from this page and Col. (2), "Total", from Schedule 3.1. Col. (9) = ((Col. (2)*1000) / ((Col. (2) * 8760) Adjustments are made for leap years.

Schedule 4
Previous Year Actual and Two-Year Forecast of
Retail Peak Demand and Net Energy for Load (NEL) by Month

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	2009 ACTUAL		2010 FORECAST		2011 FORECAST	
Month	Total Peak Demand MW	NEL GWh	Total Peak Demand MW	NEL GWh	Total Peak Demand MW	NEL GWh
JAN	19,378	7,982	20,550	7,883	20,647	8,144
FEB	20,081	7,299	17,985	7,142	18,070	7,400
MAR	15,347	7,899	17,108	8,010	17,189	8,245
APR	17,145	8,751	17,437	8,453	17,331	8,656
MAY	19,210	9,334	19,494	9,408	19,375	9,582
JUN	22,351	10,632	20,983	10,458	20,855	10,605
JUL	21,138	10,636	21,481	10,633	21,350	10,755
AUG	21,015	11,434	21,922	11,166	21,788	11,274
SEP	20,334	10,772	21,264	10,780	21,135	10,856
OCT	21,014	9,981	19,809	9,631	19,688	9,684
NOV	19,226	8,676	17,447	8,406	17,530	8,472
DEC	16,122	7,908	17,158	7,915	17,239	7,960
TOTALS		111,304		109,886		111,634

* Forecasted Peaks & NEL do not include the impacts of cumulative load management and incremental conservation and are consistent with values shown in Col. (19) of Schedule 2.3 and Col. (2) of Schedule 3.3.

CHAPTER III

Projection of Incremental Resource Additions

(This page is left intentionally blank.)

III. Projection of Incremental Resource Additions

III.A FPL's Resource Planning:

FPL developed an integrated resource planning (IRP) process in the early 1990s and has since utilized this approach, in whole or in part as analysis needs warranted, to determine when new resources are needed, what the magnitude of the needed resources are, and what type of resources should be added. The timing and type of new power plants, the primary subjects of this document, are determined as part of the IRP process work.

This section describes FPL's basic IRP process. Some of the key assumptions, in addition to a new load forecast, that were used in FPL's 2009 and early 2010 resource planning work are also discussed.

Four Fundamental Steps of FPL's Resource Planning:

There are 4 fundamental steps to FPL's resource planning. These steps can be described as follows:

Step 1: Determine the magnitude and timing of FPL's new resource needs;

Step 2: Identify which resource options and resource plans can meet the determined magnitude and timing of FPL's resource needs (i.e., identify competing options and resource plans);

Step 3: Evaluate the competing options and resource plans in regard to system economics and non-economic factors; and,

Step 4: Select a resource plan and commit, as needed, to near-term options.

Figure III.A.1 graphically outlines the 4 steps.

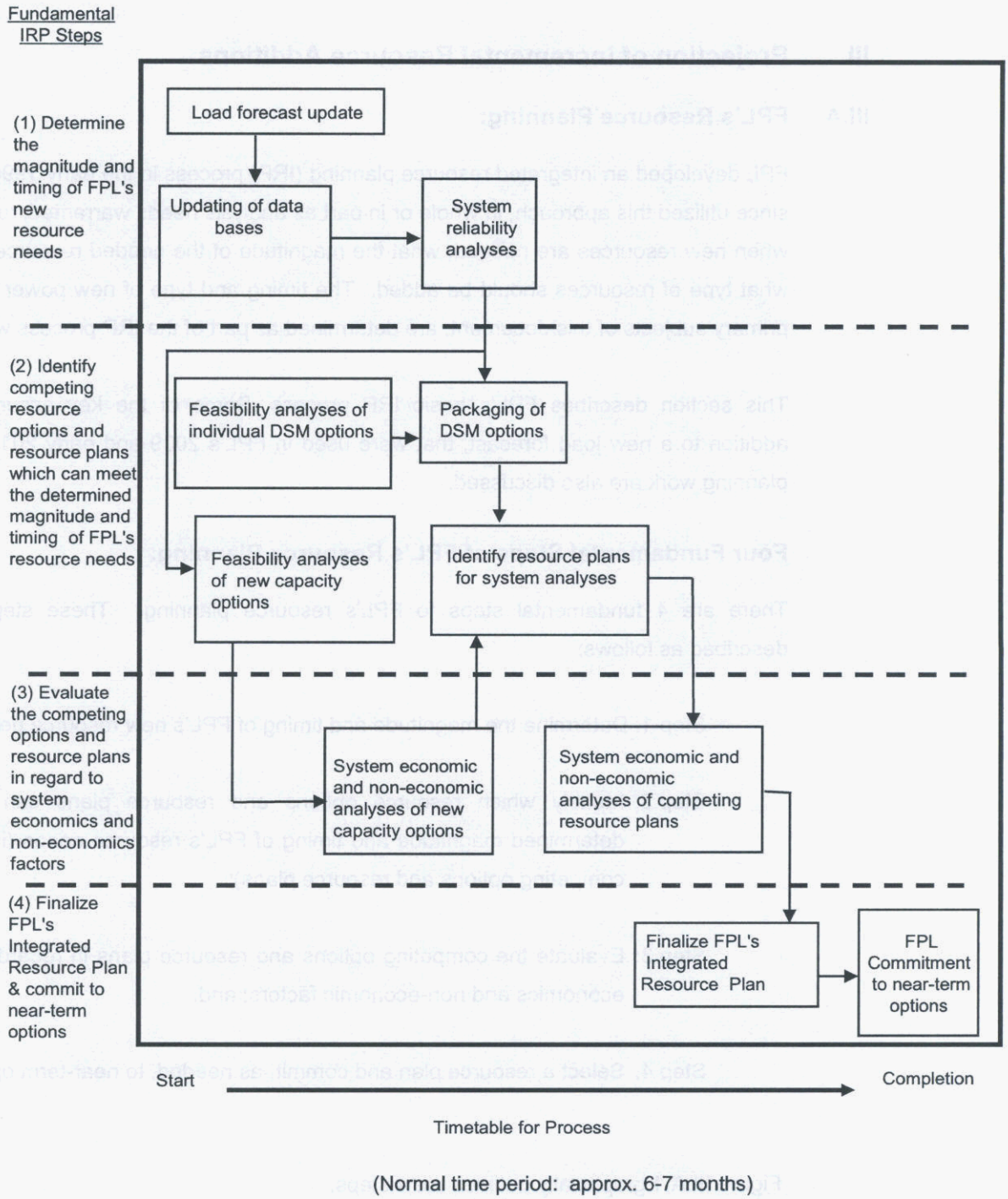


Figure III.A.1: Overview of FPL's IRP Process

Step 1: Determine the Magnitude and Timing of FPL's New Resource Needs:

The first of the four resource planning steps, determining the magnitude and timing of FPL's resource needs, is essentially a determination of the amount of capacity or megawatts (MW) of load reduction, new capacity additions, or a combination of both load reduction and new capacity additions that are needed to maintain system reliability. Also determined in this step is when the MW are needed to meet FPL's reliability criteria. This step is often referred to as a reliability assessment, or resource adequacy, analysis for the utility system.

Step 1 typically starts with an updated load forecast. Several databases are also updated in this first fundamental step, not only with the new information regarding forecasted loads, but also with other information that is used in many of the fundamental steps in resource planning. Examples of this new information include, but are not limited to: delivered fuel price projections, current financial and economic assumptions, and power plant capability and reliability assumptions. FPL also includes key assumptions regarding three specific resource areas: (1) near-term construction capacity additions, (2) firm capacity power purchases, and (3) DSM implementation.

The first of these assumptions is based on new generating capacity additions that have been approved by the Florida Public Service Commission (FPSC) through Determination of Need proceedings that evaluated both the need for, and the cost-effectiveness of, each of the new capacity additions. These generating capacity additions have also either received the necessary Site Certification approvals from either the Secretary of the Florida Department of Environmental Protection (FDEP) or the Governor and Cabinet (acting as the Siting Board) or, as in the case of the new nuclear units, are in the process of receiving the necessary state and federal approvals. Several new generating unit additions will occur in the 2010 – 2019 reporting time frame of this document.

These generating unit additions include:

- The completion of a third gas-fired CC unit at FPL's West County Energy Center (WCEC) site which is scheduled to come in-service in mid-2011. This new unit, WCEC Unit 3, will add approximately 1,219 MW (Summer) of generation capacity. FPSC approval for this unit was obtained in September 2008 (PSC Order 08-0237-FOF-EI) and site certification was granted in November 2008.

- A new photovoltaic (PV) facility that is currently under construction in Brevard County and which is projected to be completed and in-service in 2010. This PV facility, named the Space Coast Next Generation Solar Energy Center, is projected to have a nameplate rating of 10 MW. The FPSC approved the eligibility of expenditures for this PV facility to be recovered through the Environmental Cost Recovery Clause (ECRC) in August 2008 (PSC Order 08-0941-PAA-EI). The Space Coast Next Generation Solar Energy Center received the Army Corps of Engineers permit in December 2008 and received the Environmental Resource Permit in April 2009.
- A new solar thermal facility at FPL's existing Martin plant site is also under construction and projected to be brought into service in 2010. This solar thermal facility, named the Martin Next Generation Solar Energy Center, which does not add to the capacity (MW) of the Martin plant, is projected to be able to produce up to 75 MW of steam capability, thus reducing use of fossil fuels by FPL when the solar thermal facility is producing steam. The FPSC approved the eligibility of expenditures for this solar thermal facility to be recovered through the ECRC in August 2008 (PSC Order 08-0941-PAA-EI). FPL received the site certification modification approval in August 2008.
- Two existing generating plants, each consisting of two older fossil fuel-fired steam generating units, are currently projected to be modernized by removing the existing generating units and replacing them with new, highly efficient CC units. The new plant at FPL's Cape Canaveral site is projected to be placed in-service in 2013. This new CC unit is projected to have a peak output of 1,210 MW. This new plant will be called the Cape Canaveral Next Generation Clean Energy Center. The new plant at FPL's Riviera site is projected to be placed in-service in 2014. This new CC unit is projected to have a peak output of 1,212 MW. This new plant will be called the Riviera Beach Next Generation Clean Energy Center. These conversions were approved by the FPSC in September 2008 (PSC Order 08-0591-FOF-EI). The site certification application for Cape Canaveral was filed in December 2008 and granted in October 2009. The site certification application for Riviera Beach was filed in February 2009 and granted in November 2009.

  As FPL has recently stated, work on these modernization projects has been suspended.
- In addition, FPL will be adding approximately 400 MW of generating capacity at its existing nuclear power plants at the Turkey Point and St. Lucie sites. This added capacity is scheduled to come in-service in 2011 and 2012, respectively. These

capacity "uprates" were approved by the FPSC in January 2008 (PSC Order 08-0021-FOF-EI). The Final Order for the Site Certification was issued in September 2008 for the St. Lucie uprates and October 2008 for the Turkey Point uprates.

These new generating units and generating capacity additions were selected for a variety of reasons including cost-effectiveness, significant system fuel savings, fuel diversity, and significant system emission reductions, including greenhouse gas emission reductions. In addition, the solar projects will increase the contribution of renewable energy sources towards meeting the electricity needs of FPL's customers.

The second of these assumptions involves firm capacity power purchases. FPL's current projection of firm capacity purchases is very similar to the projection shown in FPL's 2009 Site Plan, after accounting for the fact that the contracts for several purchases presented in the 2009 Site Plan have now ended. These firm capacity purchases are from a combination of utility and independent power producers. Details, including the annual total capacity values for these purchases, are presented in Chapter I in Tables I.B.1 and I.B.2. These purchased capacity amounts were incorporated in FPL's resource planning work.

The third of these assumptions involves a projection of the amount of additional demand side management (DSM) that is anticipated to be implemented annually over the ten-year period. Since 1994, FPL's resource planning work has assumed that, at a minimum, the DSM MW called for in FPL's approved DSM Goals will be achieved as planned. The resource plan presented in FPL's 2010 Site Plan accounts for the new DSM goals.

The amount of DSM included in the 2010 Site Plan is different than the amount included in the 2009 Site Plan. In late 2009, the FPSC imposed significantly higher goals for DSM resources for FPL to add in the 2010 – 2019 period. The amount of demand (MW) reduction from the new DSM goals far exceeds (i.e., is more than double) the 2009 projection of FPL's remaining resource needs through 2019. Now, with FPL's lower long-term 2010 load forecast, and the commensurately lower 2010 projection of resource needs, the amount by which the MW reductions from the new DSM goals exceeds FPL's resource needs is even larger.

These key assumptions, plus the other updated information described above, are then applied in the first fundamental step: the determination of the magnitude and the timing of FPL's future resource needs. This determination is accomplished by system reliability

analyses which for FPL are currently based on dual planning criteria of a minimum peak period reserve margin of 20% (FPL applies this to both Summer and Winter peaks) and a maximum loss-of-load probability (LOLP) of 0.1 day per year. Both of these criteria are commonly used throughout the utility industry.

Historically, two types of methodologies, deterministic and probabilistic, have been employed in system reliability analysis. The calculation of excess firm capacity at the annual system peaks (reserve margin) is the most common method, and this relatively simple deterministic calculation can be performed on a spreadsheet. It provides an indication of the adequacy of a generating system's capacity resources compared to its load during peak periods. However, deterministic methods do not take into account probabilistic-related elements such as the impact of individual unit failures. For example: two 50 MW units which can be counted on to run 90% of the time are more valuable in regard to utility system reliability than is one 100 MW unit which can also be counted on to run 90% of the time. Probabilistic methods also recognize the value of being part of an interconnected system with access to multiple capacity sources.

For this reason, probabilistic methodologies have been used to provide an additional perspective on the reliability of a generating system. There are a number of probabilistic methods that are being used to perform system reliability analyses. Of these, the most widely used is loss-of-load probability or LOLP. Simply stated, LOLP is an index of how well a generating system may be able to meet its demand (i.e., a measure of how often load may exceed available resources). In contrast to reserve margin, the calculation of LOLP looks at the daily peak demands for each year, while taking into consideration such probabilistic events as the unavailability of individual generators due to scheduled maintenance or forced outages.

LOLP is expressed in units of the "number of times per year" that the system demand could not be served. The standard for LOLP accepted throughout the industry is a maximum of 0.1 day per year. This analysis requires a more complicated calculation methodology than does the reserve margin analysis. LOLP analyses are typically carried out using computer software models such as the Tie Line Assistance and Generation Reliability (TIGER) program used by FPL.

The result of the first fundamental step of resource planning is a projection of how many new MW of resources are needed to meet both reserve margin and LOLP criteria, and thus maintain system reliability, and of when the MW are needed. Information regarding

the timing and magnitude of these resource needs is used in the second fundamental step: identifying resource options and resource plans that can meet the determined magnitude and timing of FPL's resource needs.

Step 2: Identify Resource Options and Plans That Can Meet the Determined Magnitude and Timing of FPL's Resource Needs:

The initial activities associated with this second fundamental step of resource planning generally proceed concurrently with the activities associated with Step 1. During Step 2, feasibility analyses of new capacity options are conducted to determine which new capacity options appear to be the most competitive on FPL's system. These analyses also establish capacity size (MW) values, projected construction/permitting schedules, and operating parameters and costs. In similar analyses, feasibility analyses of new DSM options and/or continued growth in existing DSM options are typically conducted.

The individual new resource options emerging from these feasibility options are then typically "packaged" into different resource plans which are designed to meet the system reliability criteria. In other words, resource plans are created by combining individual resource options so that the timing and magnitude of FPL's new resource needs are met. The creation of these competing resource plans is typically carried out using spreadsheet, dynamic programming, and/or linear and non-linear programming techniques.

At the conclusion of the second fundamental resource planning step, a number of different combinations of new resource options (i.e., resource plans) of a magnitude and timing necessary to meet FPL's resource needs are identified.

Step 3: Evaluate the Competing Options and Resource Plans in Regard to System Economics and Non-Economic Factors:

At the completion of fundamental steps 1 & 2, the most viable new resource options have been identified, and these resource options have been combined into a number of resource plans which meet the magnitude and timing of FPL's resource needs. The stage is set for evaluating these resource options and resource plans. In 2009, once the resource plans were developed, FPL utilized the P-MArea production cost model and a Fixed Cost Spreadsheet to perform the economic analyses. The P-MArea model is the

model used by FPL to develop the Fuel Cost Budget and to conduct other production cost-related analyses.

FPL also utilized several other models in the economic evaluation portion of its resource planning work. For analyses of individual DSM options, FPL typically uses its DSM cost-effectiveness model which is an FPL spreadsheet model utilizing the FPSC's approved methodology for analyzing the cost-effectiveness of individual DSM measures/programs, and its non-linear programming model for analyzing the potential for lowering system peak loads through additional load management capacity. FPL then utilizes its linear programming model to develop DSM portfolios.

The basic economic analyses of the competing resource plans focus on total system economics. The standard basis for comparing the economics of competing resource plans is their relative impact on FPL's electricity rate levels, with the intent of minimizing FPL's leveled system average rate (i.e., a Rate Impact Measure or RIM methodology). However, in cases in which the DSM contribution was assumed as a given and the only competing options were new generating units and/or purchase options, comparisons of competing resource plans' impacts on electricity rates and on system revenue requirements are equivalent. Consequently, the competing options and plans in such cases were evaluated on a cumulative present value revenue requirement (CPVRR) basis.

Other factors are also included in FPL's evaluation of resource options and resource plans. While these factors may have an economic component or impact, they are often discussed in quantitative, but non-economic terms, such as percentages, tons, etc. rather than in terms of dollars. These factors are often referred to by FPL as "system concerns" that include (but are not necessarily limited to) maintaining/enhancing fuel diversity in the FPL system, system emission levels, and maintaining a regional balance between load and generating capacity, particularly in Southeastern Florida. In conducting the evaluations needed to determine which resource options and resource plans are best for FPL's system, both the economic and non-economic evaluations are conducted with an eye to whether the system concern is positively or negatively impacted by a given resource option or resource plan.

Step 4: Finalizing FPL's Current Resource Plan

The results of the previous three fundamental steps were used to develop the future generation plan. This plan is presented in the following section.

III.B Incremental Resource Additions/Changes

FPL's projected incremental generation capacity additions/changes for 2010 through 2019 are depicted in Table III.B.1. These capacity additions/changes result from a variety of actions including: changes to existing units (which are frequently achieved as a result of plant component replacements during major overhauls), temporarily removing older, less efficient generating units from active service and placing them into Inactive Reserve status until their continued operation is again needed, changes in the amounts of purchased power being delivered under existing contracts as per the contract schedules or by entering into new purchase contracts, increases in generating capacity at FPL's four existing nuclear units, the projected modernizations of FPL's steam generating units at its existing Cape Canaveral and Riviera sites into new, very fuel-efficient CC generating units, and by construction of approved new generating units such as West County Energy Center (WCEC) Unit 3.

As shown in Table III.B.1, the capacity additions consist primarily of construction of one new CC unit, the projected modernization of existing steam units into new CC units, and capacity increases at FPL's existing nuclear generating units. (The DSM additions that are consistent with the DSM goals imposed by the FPSC through 2019 are not explicitly presented in this table, but have been accounted for in FPL's resource planning work. In addition, the projected MW reductions from these DSM additions are reflected in the projected reserve margin values shown in the table.)

This table also shows the addition of the previously discussed 85 MW of new solar facilities (10 MW of PV and 75 MW of solar thermal). However, as indicated in the table and its footnotes, these new solar facilities are not projected to contribute new firm capacity. There are two reasons for this. First, one of these facilities – the 75 MW solar thermal facility at the Martin site – is designed not to add new capacity, but to serve solely as a "fuel substitute" facility. (When sufficient sunlight is available, the solar thermal facility will produce steam that would otherwise have been produced by burning fossil fuels.) Second, in regard to the new PV facility that has a 10 MW nameplate rating, it is unclear at this time what the output of this facility will consistently be during FPL's late afternoon Summer and early morning Winter peak hours. Consequently, FPL is not

assigning a firm capacity value (i.e., those values reflected in Table III.B.1) to this PV facility at this time. Once FPL has actual operating experience with this PV facility, it will evaluate what an appropriate firm capacity value for this facility should be. However, FPL's economic and non-economic analyses fully capture the system fuel and emission savings from both of these two new solar facilities.

The significantly lower long-term load forecast, coupled with the approved additions of highly efficient new natural gas-fired and nuclear generating capacity, and the new DSM goals imposed by the FPSC, allow the opportunity for FPL to temporarily remove some older, less efficient generating capacity from active service, resulting in savings in operational and maintenance costs. A number of such units are/will be on Inactive Reserve status in 2010. These units are: Cutler Units 5 & 6, Sanford Unit 3, Port Everglades Units 1 & 2, and Turkey Point Unit 2. In 2011, Port Everglades Units 3 & 4 are also projected to be placed on Inactive Reserve. These generating units will continue to be maintained and will be returned to active service when needed. The timing of the return of these units is uncertain at this time primarily due to the uncertainty regarding FPL's future load. However, for planning purposes, FPL is showing in this document that these units begin to return to active service starting in the latter years of the ten-year reporting period, 2018 and 2019.

In addition, the existing Cape Canaveral and Riviera units that would be removed as part of the projected modernization work, will initially be placed on Inactive Reserve status, then would be completely removed from service in preparation for the construction of the new CC units at those sites if the modernization projects proceed.

Finally, as shown in the table below, FPL is currently projecting no additional new generating units beyond those discussed above for the years 2015 through 2019. This result is primarily driven by the combination of the lower long-term 2010 load forecast and the higher DSM goals.[2]

[2] For purposes of establishing a Standard Offer Contract, and using the same forecasts and other assumptions presented in this document, FPL projects that it's next fossil-fueled new generating unit would be a Greenfield 3x1 H CC with a 2025 in-service date. Details of that unit are not provided in this Site Plan because its projected in-service date is beyond the 2010-2019 time period addressed in this document.

Table III.B.1: Projected Capacity Changes for FPL

Projected Capacity Changes and Reserve Margins for FPL [1]			
		Net Capacity Changes (MW)	
Year	Projected Capacity Changes	Winter [2]	Summer [3]
2010	Martin Next Generation Solar Energy Center (Solar Thermal) [7]	---	---
	Space Coast Next Generation Solar Energy Center (PV) [6]	---	---
	Changes to Existing Purchases [4]	---	(50)
	Riviera Unit 3 - offline for modernization	(280)	(277)
	Riviera Unit 4 - offline for modernization	(291)	(288)
	Cape Canaveral Unit 1 - offline for modernization	---	(396)
	Cape Canaveral Unit 2 - offline for modernization	---	(396)
	Changes to Existing Units	149	15
	Inactive Reserve of Existing Units - offline [8]	(775)	(769)
2011	Changes to Existing Purchases [4]	(90)	(45)
	Cape Canaveral Unit 1 - offline for modernization	(398)	---
	Cape Canaveral Unit 2 - offline for modernization	(398)	---
	West County Unit 3 [5]	---	1,219
	Inactive Reserve of Existing Units - offline [8]	(394)	(1,171)
	Changes to Existing Units	0	0
2012	Changes to Existing Purchases [4]	---	(100)
	West County Unit 3 [5]	1,335	---
	Changes to Existing Units	3	3
	Inactive Reserve of Existing Units - offline [8]	(783)	---
	Existing Nuclear Units Capacity Uprates - St. Lucie 1	103	103
	Existing Nuclear Units Capacity Uprates - St. Lucie 2	---	88
	Existing Nuclear Units Capacity Uprates - Turkey Point 3	---	104
2013	Changes to Existing Purchases [4]	(180)	---
	Cape Canaveral Next Generation Clean Energy Center	---	1,210
	Existing Nuclear Units Capacity Uprates - St. Lucie 2	88	---
	Existing Nuclear Units Capacity Uprates - Turkey Point 3	104	---
	Existing Nuclear Units Capacity Uprates - Turkey Point 4	104	104
2014	Cape Canaveral Next Generation Clean Energy Center	1,355	---
	Riviera Beach Next Generation Clean Energy Center	---	1,212
2015	Riviera Beach Next Generation Clean Energy Center	1,344	---
2016	Changes to Existing Purchases [4]	(931)	(1,306)
2017	Changes to Existing Purchases [4]	(375)	---
2018	Inactive Reserve of Existing Units - online [8]	0	392
2019	Inactive Reserve of Existing Units - online [8]	394	387
	TOTALS =	**84**	**39**

(1) Additional information about these resulting reserve margins and capacity changes are found on Schedules 7 & 8 respectively.

(2) Winter values are forecasted values for January of the year shown. FPL's actual 2010 Winter peak was significantly higher than forecasted.

(3) Summer values are forecasted values for August of the year shown.

(4) These are firm capacity and energy contracts with QF, utilities, and other entities. See Table I.B.1 and Table I.B.2 for more details.

(5) All new unit additions are scheduled to be in-service in June of the year shown. All additions assumed to start in June are included in the Summer reserve margin calculation starting in that year and in the Winter reserve margin calculation starting with the next year.

(6) Because of the intermittent nature of the photovoltaics (PV) resource, FPL is currently assigning no firm capacity benefit to these generating additions. FPL will reassess this once actual operating data from the PV facilities at these locations is available. This location-specific information is needed in order to gauge consistent output during the peak hours which are accounted for in FPL's reserve margin calculations.

(7) The Martin solar thermal facility is designed to provide steam for FPL's existing Martin Unit 8 combined cycle unit, thus reducing FPL's use of natural gas. No additional capacity (MW) will result from the operation of the solar thermal facility.

(8) A number of existing FPL power plants are being temporarily removed from service and placed on Inactive Reserve status. FPL plans to return these units to active service in the future as needed. The timing of the return of these units to full-time active status is uncertain at this time primarily due to the uncertainty regarding FPL's future load. However, for planning purposes, FPL is showing in this document that these units begin to return to active service starting in 2018.

III.C Issues Impacting FPL's Resource Planning Work

As indicated in the Executive Summary, FPL's resource planning efforts in 2010 will continue to be influenced by three factors: (i) a new lower long-term load forecast, (ii) significantly increased DSM goals for the 2010-2019 time frame, and (iii) regulatory and commercial developments regarding FPL's new nuclear units, Turkey Point 6 & 7.

In addition, there are other items that will also influence FPL's resource planning work. Among these other items are two that FPL typically refers to as on-going system concerns that FPL has considered in its resource planning work for a number of years. These two on-going system concerns are: (1) maintaining/enhancing fuel diversity in the FPL system, and (2) maintaining a balance between load and generating capacity in Southeastern Florida.

A third factor that will influence FPL's on-going resource planning efforts is the Executive Order directive issued in 2007 by Governor Crist, calling for reductions in greenhouse gas emissions and for increased contribution from renewable energy sources.

A fourth factor that could affect FPL's resource planning is the future establishment of Florida standards for renewable or clean energy contributions to a utility system. A Renewable Portfolio Standard (RPS) proposal was prepared by the FPSC, and sent to the Florida Legislature for consideration, with a possible change to a Clean Portfolio Standard (CPS), during the 2009 legislative session. However, no RPS or CPS legislation was enacted during the 2009 legislative session. RPS or CPS legislation, or other legislative initiatives regarding renewable or clean energy contributions, may occur in the future. If such legislation is enacted in 2010 or later years, FPL will then determine what steps need to be taken to address the legislation. Such steps would then be discussed in FPL's Site Plan in the year following the enactment of such legislation.

These four (4) factors that impact FPL's on-going resource planning work are briefly discussed below.

1. **System Fuel Diversity**

   FPL is currently dependent upon using natural gas to generate slightly more than half of the electricity it delivers to its customers. In the future, the percentage of FPL's electricity that is generated by natural gas is projected to increase. Therefore, FPL is continually seeking opportunities to maintain and enhance the fuel diversity of its system.

In 2007, FPL sought approval from the FPSC to add two new advanced technology coal units to its system. These two new units would have been placed in-service in 2013 and 2014. However, due to concerns over greenhouse gas emissions, FPL was unable to obtain approval for these units. Consequently, FPL does not believe that new advanced technology coal units are viable fuel diversity enhancement options in Florida for the foreseeable future.

Therefore, FPL has turned its attention to nuclear energy, renewable energy, and more efficient ways in which to generate electricity using natural gas in order to enhance its fuel diversity. In regard to nuclear energy, FPL obtained approval to increase capacity at each of its four existing nuclear units. In total, these capacity "uprates" will add approximately 400 MW of capacity and energy for FPL's customers beginning in the 2011/2012 time period. In 2008, the FPSC approved both the need for these uprates and the ability to recover uprates-related expenditures.

FPL also has been involved in activities to investigate adding or maintaining renewable resources as a part of its generation supply. One of these activities is a variety of discussions with the owners of existing facilities aimed at maintaining or extending current agreements that are scheduled to end during the ten-year reporting period of this document. Another activity is to periodically issue a request for proposals to solicit cost-effective new renewable projects from outside parties. Also, as previously discussed, FPL sought and received approval from the FPSC in 2008 to add 110 MW through three new FPL-owned solar facilities, one solar thermal facility and two PV facilities. One 25 MW PV facility began commercial operation in 2009. The remaining two solar facilities are scheduled to be in-service by the end of 2010. FPL's efforts to utilize renewable energy are discussed further in Section III.F.

In regard to using natural gas more efficiently, FPL received approvals in 2008 from the FPSC to build a third highly efficient CC unit at its West County Energy Center site (WCEC Unit 3) and to convert the older steam generating units at its existing Cape Canaveral and Riviera plant sites to new, highly efficient CC units. WCEC Unit 3 is currently projected to go in-service in 2011.

In the future, FPL will continue to identify and evaluate alternatives that may maintain or enhance system fuel diversity. FPL also plans to maintain the ability to utilize fuel oil at those existing units that have that capability, although cost factors currently limit the expected use of these facilities. Furthermore, FPL has traditionally purchased the gas

transportation capacity required for new natural gas generating units from an existing natural gas pipeline company. As an alternative, FPL sought approval in 2009 from the FPSC for the construction of a new natural gas pipeline in Florida capable of serving future generation needs. Such a third pipeline was projected to have potential benefits for FPL and its customers by increasing the diversity of FPL's fuel supply sources, increasing the physical reliability of the pipeline delivery system, and enhancing competition among pipelines. However, the application for an FPL-owned pipeline was denied by the FPSC in 2009. FPL is currently re-evaluating how natural gas can be delivered to its system in the future.

2. **Southeastern Florida Imbalance**

In recent years, an imbalance had developed between regionally installed generation and peak load in Southeastern Florida. A significant amount of energy required in the Southeastern Florida region during peak periods was being provided through the transmission system from plants located outside the region. FPL's prior planning work concluded that either additional installed generating capacity in this region, or transmission capacity capable of delivering additional electricity from outside the region, would be required to address this imbalance.

Partly because of the lower transmission-related costs resulting from their location, four recent capacity addition decisions (Turkey Point Unit 5 and WCEC Units 1, 2, & 3) were evaluated as the most cost-effective options to meet FPL's capacity needs in the near-term. Adding these units will significantly reduce the imbalance between generation and load in Southeastern Florida.

In addition, FPL will be adding increased capacity at FPL's existing two nuclear units at Turkey Point in 2011 and 2012 and is currently projected to increase the generating capacity at its Riviera site through a modernization of that site in 2014. These generating unit additions in Southeastern Florida are expected to address the imbalance for most, if not all, of the 2010-2019 reporting period addressed in this document even after accounting for temporarily placing some of the existing generating units in the region on Inactive Reserve status. However, the Southeastern Florida imbalance will remain a consideration in FPL's on-going resource planning work.

3. **Governor Crist's Executive Order**

The Executive Order directive issued in 2007, particularly the portions of the directive that call for significant increases in renewable, non-emitting energy, and decreases in

greenhouse gas emissions, are being addressed by FPL in a variety of ways. With respect to renewable energy, FPL's efforts to build its own renewable energy facilities were mentioned above in regard to fuel diversity and are also discussed in more detail in Section III.F.

These renewable energy efforts have the potential to help lower greenhouse gas emissions. In addition, significant reductions, particularly of carbon dioxide (CO_2), will be accomplished in the ten-year reporting time frame of this document by the approved capacity uprates at FPL's four existing nuclear power plants. Further reductions in greenhouse gas emissions are also expected from increasing the overall fuel efficiency of FPL's system through the addition of WCEC Unit 3 and the currently projected modernizations of FPL's existing Cape Canaveral and Riviera plant sites. FPL will also continue to look for cost-effective ways to further improve the efficiency of its system that will lead to even more greenhouse gas emission reductions.

FPL's system CO_2 emission rate (amount of CO_2 emitted per MWh of electricity generated) is already relatively low due in large part to the overall efficiency of FPL's system. The efforts described above have the potential not only to continue the trend of steadily lowering FPL's already low CO_2 emission rate, but also to begin to lower total system CO_2 emissions despite continued growth in population.

4. **Renewable Portfolio or Clean Energy Standards (RPS or CPS)**

At the time this document is being prepared, Florida does not have a Renewable or Clean Energy Portfolio Standard (RPS or CPS). An RPS proposal was prepared by the FPSC and sent to the Florida Legislature for their consideration, with a possible change to a Clean Portfolio Standard (CPS), during the 2009 legislative session. However, no RPS or CPS legislation was enacted during that session. RPS or CPS legislation, or other legislative initiatives regarding renewable or clean energy contributions, may occur in the future. If such legislation is enacted in 2010 or in a later year, FPL will then determine what steps need to be taken to address the legislation. Such steps would then be discussed in FPL's Site Plan in the year following the enactment of such legislation.

III.D Demand Side Management (DSM)

As previously discussed in Chapter I, and earlier in this chapter, the FPSC in late 2009 imposed significantly higher DSM goals for FPL for 2010 – 2019 than are needed to meet 100% of FPL's remaining resource needs through 2019. In addition, the FPSC ordered

FPL to spend up to $15.5 million per year to promote DSM-based applications of solar water heating and photovoltaics (PV).

The DSM goals recently imposed by the FPSC have three components: Summer MW reductions, Winter MW reductions, and GWh reductions. Table III.D.1 presents the Summer MW reduction component of these goals. (The Summer MW component, and to a much lesser degree the Winter MW reduction component, impacts FPL's need for future resources such as those discussed in this document. The GWh reduction component has no impact on FPL's need for future resources.)

Table III.D.1: FPL's Summer MW Reduction Goals for DSM (at the Generator)

Year	Cumulative Summer MW DSM Goals for FPL (at Generator)
2010	110
2011	253
2012	419
2013	599
2014	783
2015	955
2016	1,111
2017	1,251
2018	1,379
2019	1,498

By March 30, 2010, FPL is required to petition the FPSC for approval of the DSM Plan it proposes to implement to meet the DSM goals and renewable energy expenditure mandates. At the time this Site Plan is being prepared, FPL was still developing its DSM Plan that it will petition the FPSC for approval to implement. FPL expects that the FPSC approval process for its DSM Plan will likely take several months. Therefore, FPL does not expect to know with certainty what its portfolio of approved DSM programs will be until mid-2010 at the earliest. FPL expects to provide a description of its approved DSM programs in its 2011 Site Plan.

FPL has sought out and implemented cost-effective DSM programs since 1978. These programs include both conservation initiatives and load management. FPL's DSM efforts through 2009 have resulted in a cumulative Summer peak reduction of approximately 4,257 MW at the generator and an estimated cumulative energy saving of approximately

51,055 Gigawatt Hour (GWh) at the generator. Accounting for reserve margin requirements, FPL's DSM efforts through 2009 have eliminated the need to construct approximately 13 new 400 MW generating units.

FPL has consistently been among the leading utilities nationally in DSM achievement. For example, according to the U.S. Department of Energy's 2007 data (the last year for which the DOE data was available at the time this Site Plan is being developed), FPL ranked # 1 nationally in energy efficiency demand reduction and # 2 nationally in load management demand reduction. And, importantly, FPL has achieved these significant DSM accomplishments while minimizing the impact on electric rates for all of its customers.

FPL's intent is to address the FPSC's DSM goals and funding mandate for DSM-based solar applications, to continue its national leadership role in DSM, and to continue to minimize the electric rate impact resulting from its DSM efforts.

III.E Transmission Plan

The transmission plan will allow for the reliable delivery of the required capacity and energy to FPL's retail and wholesale customers. The following table presents FPL's proposed future additions of 230 kV bulk transmission lines that must be certified under the Transmission Line Siting Act.

Table III.E.1: List of Proposed Power Lines

(1) Line Ownership	(2) Terminals (To)	(3) Terminals (From)	(4) Line Length CKT. Miles	(5) Commercial In-Service Date (Mo/Yr)	(6) Nominal Voltage (KV)	(7) Capacity (MVA)
FPL	St. Johns [1/]	Pringle	25	Dec - 13	230	759
FPL	Manatee [2/]	BobWhite	30	Dec - 12	230	1190

1/ Final order certifying the corridor was issued on April 21, 2006. This project is to be completed in two phases. Phase I consisted of 4 miles of new 230kV line (Pringle to Pellicer) and was completed in May-2009. Phase II consists of 21 miles of new 230kV line (St. Johns to Pellicer) and is scheduled to be completed by Dec-2013.

2/ Final order certifying the corridor was issued on November 6, 2008. This project consists of 30 miles of new 230kV line (Manatee to Bobwhite) and is scheduled to be completed by Dec-2012

In addition, there will be transmission facilities needed to connect several of FPL's projected generating capacity additions to the system transmission grid. These transmission facilities for the projected generating capacity additions at the West County Energy Center site Unit 3, the capacity increases (uprates) at the existing St. Lucie and Turkey Point nuclear sites, and the Cape Canaveral and Riviera Beach modernizations are described on the following pages.

Certain new generation additions will not need new transmission facilities. These generation additions include the Martin Next Generation Solar Energy Center and the Space Coast Next Generation Solar Energy Center. The Martin solar thermal facility does not add any new generation capacity at the site and, therefore, no new transmission facilities are required. The Space Coast facility is an addition of 10 MW of PV generation that will be connected at distribution voltage at the Grissom substation. No new transmission facilities are needed.

In regard to the existing generating units that are projected to be temporarily placed on Inactive Reserve status in 2010 and 2011, there are no projected impacts to FPL's transmission system from these units because these units can be returned to active service with adequate notice.

III.E.1 Transmission Facilities for West County Energy Center (WCEC) Unit 3

The work required to connect West County Energy Center (WCEC) Unit 3 in 2011 to the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing two collector busses with four breakers to connect the three combustion turbines (CT), and one steam turbine (ST).
2. Build new Sugar 230 kV Substation on WCEC site.
3. Construct two string busses to connect the collector busses to Sugar 230kV Substation.
4. Add four main step-up transformers (3-370 MVA, 1- 580 MVA), one for each CT, and one for the ST.
5. At Corbett Substation, relocate Germantown 230 kV line terminal from Corbett to Sugar Sub.
6. At Corbett Substation, relocate Broward/Yamato 230 kV line terminal from Corbett to Sugar Sub.
7. At Corbett Substation, install new Sugar 230 kV line terminal in Bay 2W.
8. At Corbett Substation, install one 5-ohm inductor on the 230 kV side of the 500/230 kV autotransformer.
9. Add relays and other protective equipment.

II. Transmission:

1. Relocate Germantown 230 kV line from Corbett to Sugar.
2. Relocate Broward/Yamato 230 kV line from Corbett to Sugar.
3. Construct one mile 230 kV 1190 MVA line from Sugar to Corbett.

III.E.2 Transmission Facilities for St. Lucie Units 1 & 2 Capacity Uprates

The work required to address the St. Lucie Units 1 & 2 uprates in 2011 for Unit 1, and in 2012 for Unit 2, in regard to the FPL grid is projected to be as follows:

I. Substation:

1. At Midway Substation, replace eleven 230 kV disconnect switches, and six wave traps. Also upgrade associated jumpers, bus work and equipment connections.
2. At St. Lucie Switchyard, replace eighteen 230 kV disconnect switches and six wave traps.
3. Uprate the Unit 1A and 1B main step-up transformers to 635 MVA.
4. Uprate the spare main step-up transformer to 635 MVA to replace Unit 2A main step-up transformer.
5. Replace the Unit 2B main step-up transformer with a new one rated at 635 MVA.
6. Add relays and other protective equipment.

II. Transmission:

1. Upgrade the three existing St. Lucie-Midway 230 kV lines with spacers between the conductors to achieve a normal (continuous) rating of 2790 Amperes.
2. Replace one existing overhead ground wire on each of the three existing St. Lucie Midway 230kV line with fiber optic overhead ground wire for protective relay communication.

III.E.3 Transmission Facilities for Turkey Point Units 3 & 4 Capacity Uprates

The work required to address the Turkey Point Units 3 & 4 uprates in 2012 in regard to the FPL grid is projected to be as follows:

I. Substation:

1. At Turkey Point Switchyard, install two 5-Ohm series phase inductors combined with external shunt capacitors on the southeast and southwest 230 kV operating busses.
2. At Turkey Point Switchyard, replace twelve 230 kV disconnect switches. Also upgrade associated jumpers, bus work and equipment connections.
3. Uprate the Unit 3 and Unit 4 main step-up transformers to 970 MVA.
4. Replace spare main step-up transformer with 1028 MVA transformer.
5. Add relays and other protective equipment.
6. Replace breaker failure panels at Davis Substation.
7. Replace breaker failure panels at Flagami Substation.

II. Transmission:

1. Upgrade the existing string busses for both Units 3 & 4 between the main step-up transformers and the switchyard with spacers between the conductors.

III.E.4 Transmission Facilities for Cape Canaveral Next Generation Clean Energy Center (Projected Modernization)

The work required to connect the projected Cape Canaveral Next Generation Clean Energy Center in 2013 to the FPL grid is forecasted to be as follows:

I. Substation:

1. Build new collector yard containing two collector busses with four breakers to connect the three combustion turbines (CT), and one steam turbine (ST).
2. Construct two string busses to connect the collector busses to Cape Canaveral 230kV Substation.
3. Add four main step-up transformers (3-370 MVA, 1- 580 MVA), one for each CT, and one for the ST.
4. At Cape Canaveral Switchyard replace eight 230 kV disconnect switches. Also upgrade associated jumpers, bus work and equipment connections.
5. Expand switchyard relay vault and add relays and other protective equipment.

II. Transmission:

1. Relocate the Cape Canaveral-Grissom 115 kV line.

III.E.5 Transmission Facilities for Riviera Beach Next Generation Clean Energy Center (Projected Modernization)

The work required to connect the projected Riviera Beach Next Generation Clean Energy Center in 2014 to the FPL grid is forecasted to be as follows:

I. Substation:

1. Expand the Riviera 230 kV Switchyard five breakers to accommodate terminals for one combustion turbine (CT), and one steam turbine (ST).
2. Construct a new 138 kV Riviera Switchyard - five bays, 14 breakers with terminals to connect two CT units and seven 138 kV lines.
3. Add four main step-up transformers (3-370 MVA, 1- 580 MVA), one for each CT, and one for the ST.
4. Add relays and other protective equipment.
5. At Ranch Substation, add a new 230 kV bay 5 and upgrade bay 4 to 3000 Amperes.
6. Breaker replacements:
   Ranch Substation – Replace one 230 kV breaker
   Broward Substation – Replace one 230 kV breaker

II. Transmission:

1. Break the Indiantown-Riviera 230kV and extend each of the line segments south (approx. 4 miles) to connect to the Ranch 230 kV Substation forming Indiantown-Ranch and a Ranch-Riviera 230 kV circuits.
2. Remove Corbett-Ranch #2 230 kV line at Ranch and:
   a. extend to meet the Cedar-Lauderdale 230 kV line N/S corridor (approx. 10 miles).
3. Break Cedar -Corbett 230 kV (near Ranch Sub in Corbett-Jog section) and:
   a. Extend Cedar side to Riviera, (approx. 15 miles) creating new Cedar-Riviera 230 kV.
   b. Extend Corbett side to meet the Cedar-Lauderdale 230 kV N/S corridor (approx. 10 miles).
4. Break Cedar-Lauderdale 230 kV (near 230 corridor running N/S)
   a. Connect Cedar side to meet 3.b. to create a Cedar to Corbett 230 kV.
   b. Connect Lauderdale side to meet 2.a. to create a Corbett to Lauderdale 230 kV.
5. Upgrade the existing IBM-Yamato 138 kV line to 1200 Amperes.
6. New underground 138 kV tie line between new Riviera 138 kV Switchyard and 560 MVA, 230/138 kV autotransformer in the expanded Riviera 230 kV Substation.
7. Relocate six existing 138 kV lines from existing Ranch 138 kV Switchyard to new Riviera 138 kV Switchyard.

III.F. Renewable Resources

FPL has been the leading Florida utility in examining ways to utilize renewable energy technologies to meet its customers' current and future needs. FPL has been involved since 1976 in renewable energy research and development and in facilitating the implementation of various renewable energy technologies. For purposes of discussing FPL's renewable energy efforts in this document, those efforts will be placed into five categories.

1) **Early Research & Development Efforts:**

FPL assisted the Florida Solar Energy Center (FSEC) in the late 1970s in demonstrating the first residential solar photovoltaic (PV) system east of the Mississippi. This PV installation at FSEC's Brevard County location was in operation for over 15 years and provided valuable information about PV performance capabilities in Florida on both a daily and annual basis. FPL later installed a second PV system at the FPL Flagami substation in Miami. This 10-kilowatt (kW) system was placed into operation in 1984. (The system was removed in 1990 to make room for substation expansion once testing of this PV installation had been completed.)

For a number of years, FPL maintained a thin-film PV test facility located at the FPL Martin Plant Site. This FPL PV test facility was used to test new thin-film PV technologies and to identify design, equipment, or procedure changes necessary to accommodate direct current electricity from PV facilities into the FPL system. Although this testing has ended, the site is now the home for PV capacity which was installed as a result of FPL's recent Green Pricing effort (which is discussed below).

2) **Demand Side & Customer Efforts:**

In terms of utilizing renewable energy sources to meet its customers' needs, FPL initiated the first utility-sponsored conservation program in Florida designed to facilitate the implementation of solar technologies by its customers. FPL's Conservation Water Heating Program, first implemented in 1982, offered incentive payments to customers choosing solar water heaters. Before the program ended (due to the fact that it was no longer cost-effective), FPL paid incentives to approximately 48,000 customers who installed solar water heaters.

In the mid-1980s, FPL introduced another renewable energy program, FPL's Passive Home Program. This program was created in order to broadly disseminate information about passive solar building design techniques which are most applicable

in Florida's climate. As part of this program, three Florida architectural firms created complete construction blueprints for six passive home designs with the assistance of the FSEC and FPL. These designs and blueprints were available to customers at a low cost. During its existence, this program was popular and received a U.S. Department of Energy award for innovation. The program was eventually phased out due to a revision of the Florida Model Energy Building Code (Code). This revision was brought about in part by FPL's Passive Home Program. The revision incorporated into the Code one of the most significant passive design techniques highlighted in the program: radiant barrier insulation.

In early 1991, FPL received approval from the FPSC to conduct a research project to evaluate the feasibility of using small PV systems to directly power residential swimming pool pumps. This research project was completed with mixed results. Some of the performance problems identified in the test were deemed to be solvable, particularly when new pools are constructed. However, the high cost of PV, the significant percentage of sites with unacceptable shading, and various customer satisfaction issues remain as significant barriers to wide acceptance and use of this particular solar application.

FPL has since continued to analyze and promote the utilization of PV. These efforts have included a PV research, development, and education project, "green energy" research projects and pricing programs, and participation in the State of Florida's PV for Schools program. With resources from the FPL Group Foundation, FPL will contribute 30 kw of PV to schools and educational non-profits in its service area during 2010. This initiative also delivers teacher training and curriculum that is tied to the Sunshine Teacher Standards in Florida. Additionally, it provides teacher grants to promote and fund projects in the classrooms.

FPL has also been investigating fuel cell technologies through monitoring of industry trends, discussions with manufacturers, and direct field trials. From 2002 through the end of 2005, FPL conducted field trials and demonstration projects of Proton Exchange Membrane (PEM) fuel cells with the objectives of serving customer end-uses while evaluating the technical performance, reliability, economics, and relative readiness of the PEM technology. The demonstration projects were conducted in partnership with customers and included 5 locations. The research projects were useful to FPL in identifying specific issues that can occur in field applications and the current commercial viability of this technology. FPL will continue to monitor the

progress of these technologies and conduct additional field evaluations as significant developments in fuel cell technologies occur.

In addition, FPL assists customers who are interested in installing PV equipment at their facilities. Consistent with Florida Administrative Code Rule 25-6.065, Interconnection and Net Metering of Customer-Owned Renewable Generation, FPL works with customers to interconnect these customer-owned PV systems. Through December 2009, approximately 645 customer systems (predominantly residential) have been interconnected.

Finally, as part of its DSM goals decision, the FPSC imposed a requirement for Florida's investor-owned utilities to spend up to a set, not-to-exceed amount of money annually to facilitate demand side solar water heater and photovoltaic applications. FPL's not-to-exceed annual amount of money for these applications is approximately $15.5 million. At the time this Site Plan is being prepared, FPL is developing its plan for how these expenditures will be made and is scheduled to file its plan for FPSC approval on March 30, 2010. The FPSC is expected to approve FPL's plan in mid-2010. FPL expects to provide a description of its approved plan for these DSM-based solar expenditures in its 2011 Site Plan.

3) **Supply Side Efforts – Power Purchases:**

FPL has also facilitated renewable energy projects (facilities which burn bagasse, waste wood, municipal waste, etc.). Firm capacity and energy, and as-available energy, have been purchased by FPL from these types of facilities. (Please refer to Tables I.B.1, I.B.2, and Table I.C.1 in Chapter I).

Periodically, FPL invites renewables suppliers to provide proposals for renewable power and energy at or below avoided costs in response to FPL's Requests for Proposals (RFPs). FPL issued Renewable RFP's in 2007 and 2008 soliciting proposals to provide firm capacity and energy, and energy only, at or below avoided costs from renewable generators. FPL also promptly responds to inquiries for information from prospective renewable energy suppliers either by e-mail or phone.

With regard to existing contracts that have recently ended, FPL and the Solid Waste Authority of Palm Beach (SWA) agreed to extend their contract that expired March 31, 2010 for a 20 year term from April 1, 2012 through April 1, 2032. Also, the firm

capacity and energy contract with Broward South that expired August 2009 was not renewed, but Broward South continues as an as-available supplier of energy to FPL

4) **Supply Side Efforts – FPL Facilities:**

FPL is in the process of developing a wind generation project on South Hutchinson Island in St. Lucie County. This project is known as the St. Lucie Wind project and it consists of up to six wind turbine generators capable of generating up to approximately 13.8 MW. In 2007, FPL began the St. Lucie County land use approval process, and soon after applied for the necessary federal and state permitting. However, a decision by the state and federal agencies on the St. Lucie Wind project's permitting will not be finalized until the local land use approval process is completed. The in-service date will depend on the approval and permitting process.

With regard to solar projects, FPL has completed construction of the nation's largest photovoltaic (PV) power generation facility in the country, the 25 MW DeSoto Next Generation Solar Energy Center. In addition, two solar projects that will add 85 MW of solar capacity are projected to be completed in 2010. These three projects are in response to the Florida Legislature's House Bill 7135 which was signed into law by Governor Crist in June 2008. House Bill 7135 (hereafter referred to as the 2008 Energy Bill), was enacted to enable the development of clean, zero greenhouse gas emitting renewable generation in the State of Florida. Specifically, the 2008 Energy Bill authorized cost recovery for the first 110 MW of eligible renewable projects that had the proper land, zoning and transmission rights in place. FPL's three solar projects met the specified criteria, and were granted approval for cost recovery in 2008. Each of the three solar projects is discussed below.

a. **The Martin Next Generation Solar Energy Center:**

This project will provide 75 MW of solar thermal capacity in an innovative way that directly displaces fossil fuel usage on the FPL system. This project will involve the installation of solar thermal technology that will be integrated into the existing steam cycle for the Martin Unit 8 natural gas-fired CC plant. This project will be the first "hybrid" solar plant in the world, the second largest solar facility in the world, and the largest solar plant of any kind in the U.S. outside of California. Construction began in December 2008 and is expected to be completed by the end of 2010.

b. **The DeSoto Next Generation Solar Energy Center:**

This facility has been constructed and began commercial operation in October 2009. It currently is providing up to 25 MW of PV non-firm capacity and energy, making it the largest PV facility in the U.S. The facility utilizes a tracking array that is designed to follow the sun as it traverses through the sky.

c. **The Space Coast Next Generation Solar Energy Center:**

Located at the Kennedy Space Center, this project is part of an innovative public/private partnership with NASA. When completed, it will provide up to 10 MW of PV non-firm capacity and energy. Construction began in June 2009 and is expected to be completed in 2010.

Each of these facilities is a significant and innovative renewable generating plant in its own right. Collectively, these Next Generation Solar Energy Centers are expected to produce a total of approximately 213,000 megawatt-hours (MWh) of electricity each year, and at peak production provide enough energy to serve the requirements of more than 15,000 homes.

For resource planning purposes, FPL projects that the energy delivered from these renewable facilities will be "as available", non-firm energy. This is due to several factors. First, the Martin solar thermal facility is designed as a "fuel-substitute" facility, not as a facility that will result in additional capacity and energy being generated. The solar thermal facility will displace the use of fossil fuel on the FPL system when the solar thermal facility is operating. Second, in regard to the two PV facilities, the intermittent nature of the solar resource makes it difficult to accurately determine what contribution the PV facilities at these specific locations can consistently make at FPL's late Summer afternoon and early Winter morning peak load hours. Once site-specific operating data has been gathered for an appropriate amount of time, FPL will then re-evaluate the actual output from each PV facility to determine what portion, if any, of its output can be projected as firm capacity at the projected peak hours in FPL's resource planning work.

In addition to these three approved projects, FPL is currently in the process of identifying other potential solar sites in the state in the event that a future Renewable Portfolio Standard (RPS), Clean Energy Portfolio Standard (CPS), or other enabling legislation is enacted by the Florida legislature. FPL is evaluating existing FPL

generation sites along with potential greenfield sites within FPL's service territory. These potential FPL and greenfield sites are discussed further in Chapter IV.

5) **Ongoing Research & Development Efforts:**

FPL has developed alliances with several Florida universities to promote development of emerging technologies. For example, an alliance has been established with the newly formed Center for Ocean Energy Technology at Florida Atlantic University (FAU), which will focus on the commercialization of ocean current, ocean thermal (i.e., energy conversion as well as cold water air conditioning) and hydrogen technologies. FPL has been taking the lead in assisting FAU with the discussions being held with the U.S. Department of the Interior's Minerals Management Service Department (MMS). MMS is working to establish the permitting process for ocean energy development on the outer continental shelf.

FPL has also developed an alliance with the University of Florida to support its studies of biomass renewable potential and wind studies in the state. In addition, FPL has partnered with the Florida Institute of Technology on fuel cell technology and with the Florida State Universities Center for Applied Power System in regard to grid integration of ocean energy and other renewables.

FPL is also developing a "living lab" to demonstrate FPL's solar energy commitment to employees and visitors at its Juno Beach facility. FPL will evaluate multiple solar technologies and applications to develop a renewable business model resulting in the most cost-effective and reliable source(s) of solar energy to FPL customers.

FPL has also been in discussions with several private companies on multiple emerging technology initiatives including ocean current, ocean thermal, hydrogen, fuel cell technology, biomass, biofuels, and energy storage.

III.G FPL's Fuel Mix and Fuel Price Forecasts

1. **FPL's Fuel Mix**

Until the mid-1980s, FPL relied primarily on a combination of fuel oil, natural gas, and nuclear energy to generate electricity with significant reliance on oil–fired generation. In the early 1980s, FPL began to purchase "coal-by-wire." In 1987, coal was first added to the fuel mix through FPL's partial ownership and additional purchases from

the St. Johns River Power Park (SJRPP). This allowed FPL to meet its customers' energy needs with a more diversified mix of energy sources. Additional coal resources were added with the partial acquisition (76%) of Scherer Unit 4 which began serving FPL's customers in 1991. Starting in 1997, petroleum coke was added to the fuel mix as a blend stock with coal at SJRPP.

The trend since the early 1990s has been a steady increase in the amount of natural gas that is used by FPL to provide electricity due, in part, to the introduction of highly efficient and cost-effective CC generating units and the ready availability of natural gas. This planning document reflects an evolution in that trend in recognition that, although efficient gas-fired generation continues to provide significant benefits to FPL's customers, adding natural gas-fired additions exclusively would, in the long term, create an unbalanced generation portfolio. In 2009, FPL placed into commercial operation two new gas-fired CC units at the West County Energy Center (WCEC) site. A third new CC unit is projected to be added to the WCEC site in 2011. In addition, FPL is currently projecting to modernize its existing Cape Canaveral and Riviera plant sites by removing the existing steam generating units and replacing them with two highly efficient new CC units, one at each site. These new CC units will provide highly efficient generation that will dramatically improve FPL's overall system generation efficiency.

In addition, FPL is increasing its utilization of nuclear energy through capacity uprates of its four existing nuclear units. These uprates will add a total of approximately 400 MW of nuclear generation capacity by 2012. (FPL is also pursuing plans to obtain permits to build two new nuclear units at its existing Turkey Point site that, in total, would add approximately 2,200 MW of new nuclear generating capacity. FPL currently assumes, for resource planning purposes, that the in-service dates for the new nuclear units are outside of the 2010-2019 reporting time frame of this document. At the time this document is being prepared, FPL is evaluating what the revised in-service dates for Turkey Point Units 6 & 7 should be for planning purposes. FPL will address those revised in-service dates for planning purposes in its May 3, 2010 nuclear cost recovery filing to the FPSC.)

In regard to utilizing renewable energy, FPL has committed to add 110 MW of solar generating capacity by 2010 through a 75 MW solar thermal facility at FPL's existing Martin site, a 25 MW PV facility in DeSoto County, and a 10 MW PV facility in

Brevard County. The 25 MW PV facility was placed into commercial operation in 2009. The other two solar facilities are projected to be completed in 2010.

FPL's future resource planning work will continue to focus on identifying and evaluating alternatives that would most cost-effectively maintain and/or enhance FPL's long-term fuel diversity. These fuel diverse alternatives may include: the purchase of power from renewable energy facilities, addition of FPL-owned renewable energy facilities, obtaining access to diversified sources of natural gas such as liquefied natural gas (LNG) and natural gas from the Mid-Continent unconventional reserves, preserving FPL's ability to utilize fuel oil at its existing units, and increased utilization of nuclear energy. (New advanced technology coal generating units are not currently considered as viable options in Florida in the ten-year reporting period of this document due to concerns over greenhouse gas emissions.) The evaluation of the feasibility and cost-effectiveness of these, and other possible alternatives, will be an ongoing part of future planning cycles.

FPL's current use of various fuels to supply energy to customers, plus a projection of this "fuel mix" through 2019 based on the resource plan presented in this document, is presented in Schedules 5, 6.1, and 6.2 later in this chapter.

2. FPL's Fuel Mix

Fossil fuel price forecasts, and the resulting projected price differentials between fuels, are major drivers used in evaluating alternatives for meeting future generating capacity needs. FPL's forecasts are generally consistent with other published contemporary forecasts.

Future oil and natural gas prices, and to a lesser extent, coal and petroleum coke prices, are inherently uncertain due to a significant number of unpredictable and uncontrollable drivers that influence the short-and long-term price of oil, natural gas, coal, and petroleum coke. These drivers include:

a. Current and projected worldwide demand for crude oil and petroleum products;

b. Current and projected worldwide refinery capacity/production;

c. Expected worldwide economic growth, in particular in China, and other Pacific Rim countries;

d. Organization of Petroleum Exporting Countries (OPEC) production, the availability of spare OPEC production capacity and the assumed growth in spare OPEC production capacity;

e. Non-OPEC production and expected growth in non-OPEC production;

f. The geopolitics of the Middle East, West Africa, the Former Soviet Union, Nigeria, Venezuela, etc., as well as, the uncertainty and impact upon worldwide energy consumption related to U. S. and worldwide environmental legislation, politics, etc.;

g. Current and projected North American natural gas demand;

h. Current and projected U.S., Canadian, and Mexican natural gas production;

i. The worldwide supply and demand for LNG; and

j. The growth in solid fuel generation on a U. S. and worldwide basis.

The inherent uncertainty and unpredictability in these factors today and tomorrow clearly underscores the need to develop a set of plausible oil, natural gas, and solid fuel (coal and petroleum coke) price scenarios that will bound a reasonable set of long-term price outcomes. In this light, FPL developed and utilized Low, Medium, and High price forecasts for fossil fuels in some of its 2009 resource planning work, particularly in regard to the nuclear cost recovery filings.

FPL's Medium price forecast methodology is consistent for oil and natural gas. For oil and natural gas commodity prices, FPL's Medium price forecast applies the following methodology:

a. For 2010 through 2012, the methodology used the January 26, 2010 forward curve for New York Harbor 1% sulfur heavy oil, U. S. Gulf Coast 1% sulfur heavy oil, ultra low sulfur diesel, and Henry Hub natural gas commodity prices;

b. For the next two years (2013 and 2014), FPL used a 50/50 blend of the January 26, 2010 forward curve and the most current projections at the time from The PIRA Energy Group;

c. For the 2015 through 2025 period, FPL used the annual projections from The PIRA Energy Group, and;

d. For the period beyond 2025, FPL used the real rate of escalation provided in the Energy Information Administration (EIA) *Annual Energy Outlook 2009* publication. FPL assumed a 2.5% annual rate of escalation to convert real prices to nominal prices prior to 2025, with no escalation from 2025 forward. In addition to the development of oil and natural gas commodity prices, nominal price forecasts also were prepared for oil and natural gas transportation costs. The addition of commodity and transportation forecasts resulted in delivered price forecasts.

FPL's Medium price forecast methodology is also consistent for coal and petroleum coke prices. Coal and petroleum coke prices were based upon the following approach:

a. The price forecasts for Central Appalachian coal (CAPP), Powder River Basin (PRB), South American coal, and petroleum coke were provided by JD Energy;

b. The marine transportation rates from the loading port for coal and petroleum coke to an import terminal were also provided by JD Energy;

c. The coal price forecast for SJRPP and Plant Scherer assume the continuation of the existing mine-mouth and transportation contracts until expiration, along with the purchase of spot coal, to meet generation requirements.

The development of FPL's Low and High price forecasts for oil, natural gas, coal, and petroleum coke prices were based on the historical volatility of the 12-month forward price, one year ahead. FPL developed these forecasts to account for the uncertainty which exists within each commodity as well as across commodities. These forecasts reflect a range of reasonable forecast outcomes.

3. Nuclear Fuel Cost Forecast

This section reviews the various steps needed to fabricate nuclear fuel for delivery to the nuclear power plants, the method used to forecast the price for each step, and other comments regarding FPL's nuclear fuel cost forecast.

a) Steps Required for Nuclear Fuel to be delivered to FPL's Plants

Four separate steps are required before nuclear fuel can be used in a commercial nuclear power reactor. These steps are summarized below.

(1) **Mining:** Uranium is produced in many countries such as Canada, Australia, Kazakhstan, and the United States. During the first step, uranium is mined from the ground using techniques such as open pit mining, underground mining, in-situ leaching operations, or production as a by-product from other mining operations, such as gold, copper, or phosphate rocks. The product from this first step is the raw uranium delivered as an oxide, U3O8 (sometimes referred to as yellowcake).

(2) **Conversion:** During the second step, the U3O8 is chemically converted into UF6 which, when heated, changes into a gaseous state. This second step further removes any chemical impurities and serves as preparation for the third step, which requires uranium to be in a gaseous state.

(3) **Enrichment:** The third step is called enrichment. Natural uranium contains 0.711% of uranium at an atomic mass of 235 (U-235) and 99.289% of uranium at an atomic mass of 238 (U-238). FPL's nuclear reactors use uranium with a higher percentage of up to five percent (5%) of U-235 atoms. Because natural uranium does not contain a sufficient amount of U-235, the third step increases the percentage amount of U-235 from 0.711% to a level specified when designing the reactor core (typically in a range from approximately 3% to as high as 5%). The output of this enrichment process is enriched uranium in the form of UF6.

(4) **Fabrication:** During the last step, fuel fabrication, the enriched UF6 is changed to a UO2 powder, pressed into pellets, and fed into tubes, which are sealed and bundled together into fuel assemblies. These fuel assemblies are then delivered to the plant site for insertion in a reactor.

Like other utilities, FPL has purchased raw uranium and the other components of the nuclear fuel cycle separately from numerous suppliers from different countries.

b) Price Forecasts for Each Step

(1) **Mining:** There is some volatility in the current uranium market. Demand is rather stable and outputs from production facilities have been increasing steadily. The following are the current major contributors that led to less volatility in the prices for uranium:

- The recent financial crisis had caused significant sales of inventories and caused the market price to drop earlier than predicted. However, Hedge funds continue to purchase uranium, reducing its availability to end users.

- The large inventory from the U.S. Department of Energy (DOE) is being withheld from the market due to political pressure from suppliers concerned about further price drop already affected by the current financial downturn. However, some of it is made available as barter in exchange for clean-up costs for the Department of Energy enrichment facilities.

- The Russians have announced that they would not supply down-blended weapons material to the U.S. government after 2013 for sale in the U.S. market. However, there is not an agreement between the U.S. and Russian government for the sales of enriched uranium.

- The U.S. Department of Commerce (DOC) has imposed restrictions on the import of nuclear fuel from France and Russia.

FPL expects the market to be more consistent with market fundamentals. In 2008 and 2009, a number of actions resolved restrictions of imports of foreign uranium. Recent law enacted in 2008 resolved the import of Russian-enriched uranium, by allowing some imports of Russian-enriched uranium to about 20-25% of needs for currently operating units, but with no restriction on the first core for new units and no restrictions after 2020. As mentioned earlier, the economic recession has also had a major impact and eliminated a significant portion of speculative demands with uranium pricing returning to close to the fundamentals. FPL cannot discount the possibility of future periodic sharp increase in prices, but believes such occurrences will likely be temporary in nature.

FPL's nuclear fuel price forecasts are the result of FPL's analysis based on inputs from various nuclear fuel market expert reports and studies.

(2) <u>Conversion:</u> FPL's price forecast considers the construction of new nuclear units. Just like for raw uranium, an increase in demand for conversion services would result from this need. Insufficient planned production is currently forecasted after 2013 to meet the higher demand scenario. As with additional

raw uranium production, supply will expand beyond current level once more firm commitments are made including commitments to building new nuclear units.

(3) Enrichment: With no new production capacity, the current tight market supply for economically produced enrichment services will continue until 2013. The current expensive diffusion plant can make up any gaps in supply of enrichment services. In addition, there are a number of new facilities coming on-line through 2013, using more efficient and proven processes such as the use of centrifuges for enrichment of uranium. As with supply for the other steps of the nuclear fuel cycle, expansion of future capacity is feasible within the lead time for constructing new nuclear units and any other projected increase in demand. Meanwhile, world supply and demand will continue to be balanced such that FPL expects adequate supply of enrichment services. The tight supply/demand will most likely cause the price of enrichment services to continue to rise in the future.

(4) Fabrication: Because the nuclear fuel fabrication process is highly regulated by the Nuclear Regulatory Commission (NRC), not all production facilities can qualify as suppliers to nuclear reactors in the U.S. Although world supply and demand is expected to show significant excess capacity for the foreseeable future, the gap is not as wide for U.S. supply and demand. The supply for the U.S. market is expected to be sufficient to meet U.S. demand for the foreseeable future.

c) Other Comments Regarding FPL's Nuclear Fuel Cost Forecast

The calculations for the nuclear fuel cost forecasts used in FPL's 2009 resource planning work were performed consistent with the method then used for FPL's Fuel Clause filings, including the assumption of a fuel lease and the assumption of refueling outages every 18 months. The costs for each step to fabricate the nuclear fuels were added to come up with the total costs of the fresh fuel to be loaded at each refueling (acquisition costs). The acquisition cost for each group of fresh fuel assemblies were then amortized over the energy produced by each group of fuel assemblies FPL also added 1 mill per kilowatt hour net to reflect payment to DOE for spent fuel disposal.[3]

[3] Consistent with the FPSC's decision in FPL's recent base rate case, FPL will no longer be leasing its nuclear fuel. This fact, and its implications on the projected costs of nuclear fuel, will be reflected in FPL's 2010 and later resource planning work.

Schedule 5
Fuel Requirements [1/]

Fuel Requirements	Units	Actual 2/ 2008	2009	Forecasted 2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
(1) Nuclear	Trillion BTU	261	250	267	249	260	304	309	305	305	309	305	304
(2) Coal	1,000 TON	3,599	3,577	3,289	3,956	3,249	3,959	3,639	3,956	3,775	3,760	3,764	3,765
(3) Residual (FO6)- Total	1,000 BBL	9,379	7,489	2,825	1,965	1,432	730	687	759	1,459	1,750	1,876	2,067
(4) Steam	1,000 BBL	9,379	7,489	2,825	1,965	1,432	730	687	759	1,459	1,750	1,876	2,067
(5) Distillate (FO2)- Total	1,000 BBL	38	47	62	101	32	0	0	28	74	70	84	99
(6) Steam	1,000 BBL	11	0	0	0	0	0	0	0	0	0	0	0
(7) CC	1,000 BBL	8	6	5	35	0	0	0	0	0	0	0	0
(8) CT	1,000 BBL	20	40	57	66	32	0	0	28	74	70	84	99
(9) Natural Gas -Total	1,000 MCF	449,819	481,426	452,751	490,961	499,105	477,157	515,407	520,939	568,505	576,404	595,266	609,770
(10) Steam	1,000 MCF	143,581	81,260	21,279	28,814	20,688	10,791	10,341	10,823	21,205	22,879	27,979	34,253
(11) CC	1,000 MCF	303,942	395,703	430,900	461,073	477,926	466,366	505,066	509,798	546,450	552,683	566,289	574,427
(12) CT	1,000 MCF	2,296	4,462	573	1,075	492	0	0	318	850	842	999	1,089

1/ Reflects fuel requirements for FPL only.
2/ Source: A Schedules.

Schedule 6.1
Energy Sources

	Energy Sources	Units	Actual 1/ 2008	2009	Forecasted 2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
(1)	Annual Energy Interchange 2/	GWH	10,141	9,508	8,429	6,092	5,757	5,587	5,696	5,689	606	0	0	0
(2)	Nuclear	GWH	24,024	22,893	23,912	22,346	23,358	27,275	27,751	27,353	27,355	27,751	27,353	27,276
(3)	Coal	GWH	6,423	6,362	6,274	7,418	6,223	7,446	6,894	7,438	7,118	7,088	7,099	7,100
(4)	Residual(FO6) -Total	GWH	5,702	4,560	1,871	1,304	952	487	458	505	971	1,164	1,248	1,373
(5)	Steam	GWH	5,702	4,560	1,871	1,304	952	487	458	505	971	1,164	1,248	1,373
(6)	Distillate(FO2) -Total	GWH	17	21	23	52	9	0	0	8	23	22	27	33
(7)	Steam	GWH	6	3	0	0	0	0	0	0	0	0	0	0
(8)	CC	GWH	3	3	4	30	0	0	0	0	0	0	0	0
(9)	CT	GWH	9	15	19	22	9	0	0	8	23	22	27	33
(10)	Natural Gas -Total	GWH	58,820	62,728	64,256	69,523	71,420	69,174	75,234	76,103	82,375	83,391	85,796	87,531
(11)	Steam	GWH	7,257	8,705	2,105	2,844	2,043	1,070	1,025	1,071	2,093	2,260	2,762	3,376
(12)	CC	GWH	51,368	53,636	62,109	66,602	69,343	68,104	74,209	75,011	80,224	81,074	82,967	84,086
(13)	CT	GWH	195	387	42	76	34	0	0	22	58	57	67	70
(14)	Other 3/	GWH	5,877	5,231	5,122	4,901	5,799	5,931	6,438	7,645	7,224	7,821	8,142	8,400
	Net Energy For Load 4/	GWH	111,004	111,304	109,886	111,634	113,516	115,899	122,471	124,742	125,672	127,236	129,665	131,712

1/ Source: A Schedules
2/ The projected figures are based on estimated energy purchases from SJRPP and the Southern Companies.
3/ Represents a forecast of energy expected to be purchased from Qualifying Facilities, Independent Power Producers, net of Economy and other Power Sales.
4/ Net Energy For Load values for the years 2010 - 2019 are also shown in Schedule 2.3.

Schedule 6.2
Energy Sources % by Fuel Type

	Energy Source	Units	Actual 1/ 2008	2009	Forecasted 2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
(1)	Annual Energy Interchange 2/	%	9.1	8.5	7.7	5.5	5.1	4.8	4.7	4.6	0.5	0.0	0.0	0.0
(2)	Nuclear	%	21.6	20.6	21.8	20.0	20.6	23.5	22.7	21.9	21.8	21.8	21.1	20.7
(3)	Coal	%	5.8	5.7	5.7	6.6	5.5	6.4	5.6	6.0	5.7	5.6	5.5	5.4
(4)	Residual (FO6) -Total	%	5.1	4.1	1.7	1.2	0.8	0.4	0.4	0.4	0.8	0.9	1.0	1.0
(5)	Steam	%	5.1	4.1	1.7	1.2	0.8	0.4	0.4	0.4	0.8	0.9	1.0	1.0
(6)	Distillate (FO2) -Total	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(7)	Steam	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(8)	CC	%	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)	CT	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(10)	Natural Gas -Total	%	53.0	56.4	58.5	62.3	62.9	59.7	61.4	61.0	65.5	65.5	66.2	66.5
(11)	Steam	%	6.5	7.8	1.9	2.5	1.8	0.9	0.8	0.9	1.7	1.8	2.1	2.6
(12)	CC	%	46.3	48.2	56.5	59.7	61.1	58.8	60.6	60.1	63.8	63.7	64.0	63.8
(13)	CT	%	0.2	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
(14)	Other 3/	%	5.3	4.7	4.7	4.4	5.1	5.1	5.3	6.1	5.7	6.1	6.3	6.4
			100	100	100	100	100	100	100	100	100	100	100	100

1/ Source: A Schedules.
2/ The projected figures are based on estimated energy purchases from SJRPP and the Southern Companies.
3/ Represents a forecast of energy expected to be purchased from Qualifying Facilities, Independent Power Producers, net of Economy and other Power Sales.

Schedule 7.1
Forecast of Capacity, Demand, and Scheduled Maintenance At Time Of Summer Peak

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
August of Year	Firm Installed [1] Capacity MW	Firm Capacity Import MW	Firm Capacity Export MW	Firm QF MW	Total Firm Capacity Available [2] MW	Total Peak [3] Demand MW	DSM [4] MW	Firm Summer Peak Demand MW	Reserve Margin Before Maintenance [5] MW	Reserve Margin Before Maintenance [5] % of Peak	Scheduled Maintenance MW	Reserve Margin After Maintenance [6] MW	Reserve Margin After Maintenance [6] % of Peak
2010	22,394	1,460	0	640	24,494	21,922	2,118	19,804	4,689	23.7	0	4,689	23.7
2011	22,442	1,460	0	595	24,497	21,788	2,249	19,539	4,958	25.4	0	4,958	25.4
2012	22,740	1,305	0	650	24,695	22,139	2,408	19,731	4,963	25.2	0	4,963	25.2
2013	24,054	1,305	0	650	26,009	22,332	2,583	19,749	6,259	31.7	0	6,259	31.7
2014	25,266	1,305	0	650	27,221	23,575	2,765	20,810	6,410	30.8	0	6,410	30.8
2015	25,266	1,305	0	650	27,221	23,924	2,941	20,983	6,238	29.7	0	6,238	29.7
2016	25,266	0	0	650	25,916	24,344	3,103	21,242	4,674	22.0	0	4,674	22.0
2017	25,266	0	0	650	25,916	24,774	3,248	21,526	4,390	20.4	0	4,390	20.4
2018	25,658	0	0	650	26,308	25,328	3,381	21,947	4,360	19.9	0	4,360	19.9
2019	26,045	0	0	650	26,695	25,785	3,502	22,282	4,412	19.8	0	4,412	19.8

1/ Capacity additions and changes projected to be in-service by June 1st are generally considered to be available to meet Summer peak loads w are forecasted to occur during August of the year indicated. All values are Summer net MW.

2/ Total Capacity Available = Col.(2) + Col.(3) - Col.(4) + Col.(5).

3/ These forecasted values reflect the 2010 load forecast without incremental DSM or cumulative load management.

4/ The DSM MW shown represent cumulative load management capability plus incremental conservation from 1/2010-on intended for use with the 2010 load forecast. They are not included in total additional resources but reduce the peak load upon which Reserve Margin calculations are based.

5/ Margin (%) Before Maintenance = Col.(10) / Col.(9)

6/ Margin (%) After Maintenance = Col.(13) / Col.(9)

Schedule 7.2
Forecast of Capacity , Demand, and Scheduled Maintenance At Time of Winter Peak

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
January of Year	Firm Installed [1] Capability MW	Firm Capacity Import MW	Firm Capacity Export MW	Firm QF MW	Total Firm Capacity Available [2] MW	Total Peak [3] Demand MW	DSM [4] MW	Firm Winter Peak Demand MW	Reserve Margin Before Maintenance [5] MW	% of Peak	Scheduled Maintenance MW	Reserve Margin After Maintenance [6] MW	% of Peak
2010	24,638	1,481	0	690	26,809	20,550	1,816	18,734	8,074	43.1	0	8,074	43.1
2011	23,448	1,485	0	595	25,528	20,647	1,859	18,788	6,740	35.9	0	6,740	35.9
2012	24,106	1,485	0	595	26,186	20,861	1,912	18,949	7,237	38.2	0	7,237	38.2
2013	24,402	1,305	0	650	26,357	21,138	1,974	19,164	7,193	37.5	0	7,193	37.5
2014	25,757	1,305	0	650	27,712	22,152	2,044	20,108	7,604	37.8	0	7,604	37.8
2015	27,101	1,305	0	650	29,056	22,745	2,118	20,627	8,428	40.9	0	8,428	40.9
2016	27,101	375	0	650	28,126	23,118	2,189	20,929	7,196	34.4	0	7,196	34.4
2017	27,101	0	0	650	27,751	23,488	2,255	21,233	6,518	30.7	0	6,518	30.7
2018	27,101	0	0	650	27,751	23,889	2,316	21,573	6,178	28.6	0	6,178	28.6
2019	27,495	0	0	650	28,145	24,293	2,372	21,921	6,224	28.4	0	6,224	28.4

1/ Capacity additions and changes projected to be in-service by January 1st are considered to be available to meet Winter peak loads which are forecast to occur during January of the "second" year indicated. All values are Winter net MW.

2/ Total Capacity Available = Col.(2) + Col.(3) - Col.(4) + Col.(5).

3/ These forecasted values reflect the 2010 load forecast without incremental DSM or cumulative load management.

4/ The DSM MW shown represent cumulative load management capability plus incremental conservation from 1/2010-on intended for use with the 2010 load forecast. They are not included in total additional resources but reduce the peak load upon which Reserve Margin calculations are based.

5/ Margin (%) Before Maintenance = Col.(10) / Col.(9)

6/ Margin (%) After Maintenance = Col.(13) / Col.(9)

Schedule 8
Planned And Prospective Generating Facility Additions And Changes

(1) Plant Name	(2) Unit No.	(3) Location	(4) Unit Type	(5) Fuel Pri.	(5) Fuel Alt.	(7) Fuel Transport Pri.	(8) Fuel Transport Alt.	(9) Const. Start Mo./Yr.	(10) Comm. In-Service Mo./Yr.	(11) Expected Retirement Mo./Yr.	(12) Gen. Max. Nameplate KW	(13) Firm Net Capability Winter MW	(14) Firm Net Capability Summer MW	(15) Status
ADDITIONS/ CHANGES														
2010														
Cape Canaveral	1	Brevard County	ST	FO6	NG	WA	PL	Unknown	Unknown	Unknown	402,050	(398)	(396)	
Cape Canaveral	2	Brevard County	ST	FO6	NG	WA	PL	Unknown	Unknown	Unknown	402,050	(398)	(396)	
Riviera	3	City of Riviera Beach	ST	FO6	NG	WA	PL	Unknown	Unknown	Unknown	310,420	(280)	(277)	
Riviera	4	City of Riviera Beach	ST	FO6	NG	WA	PL	Unknown	Unknown	Unknown	310,420	(291)	(288)	
Lauderdale	4	Broward County	CC	NG	FO2	PL	PL	Jan-10	Jun-10	Unknown	526,250	2	—	OT
Lauderdale	5	Broward County	CC	NG	FO2	PL	PL	Jan-10	Jun-10	Unknown	526,250	2	—	OT
Lauderdale	1-12	Broward County	GT	NG	FO2	PL	PL	Jan-10	Jun-10	Unknown	410,734	29	—	OT
Lauderdale	12-24	Broward County	GT	NG	FO2	PL	PL	Jan-10	Jun-10	Unknown	410,734	29	—	OT
Manatee	3	Manatee County	CC	NG	No	PL	No	Jan-10	Jun-10	Unknown	1,224,510	(2)	6	OT
Ft. Myers	2	Lee County	CC	NG	No	PL	No	Jan-10	Jun-10	Unknown	1,775,390	(3)	—	OT
Ft. Myers	3A & B	Lee County	CT	NG	FO2	PL	PL	Jan-10	Jun-10	Unknown	376,380	(2)	3	OT
Ft. Myers	1-12	Lee County	GT	FO2	No	PL	No	Jan-10	Jun-10	Unknown	744,120	49	—	OT
Martin	3	Martin County	CC	NG	No	PL	No	Jan-10	Jun-10	Unknown	612,000	—	3	OT
Martin	4	Martin County	CC	NG	No	PL	No	Jan-10	Jun-10	Unknown	612,000	—	3	OT
Martin	8	Martin County	CC	NG	No	PL	No	Jan-10	Jun-10	Unknown	1,224,510	—	10	OT
Martin Next Generation Solar Energy Center		Martin County	PV						Dec-10			See Note 3		
Port Everglades	1-12	City of Hollywood	GT	NG	FO2	PL	PL	Jan-10	Jun-10	Unknown	410,734	29		OT
Putnam	1	Putnam County	CC	NG	FO2	PL	WA	Jan-10	Jun-10	Unknown	290,004	12	—	OT
Putnam	2	Putnam County	CC	NG	FO2	PL	WA	Jan-10	Jun-10	Unknown	290,004	12	—	OT
Scherer	4	Monroe, GA	BIT	SUB	No	RR	No	Jan-10	Jun-10	Unknown	680,368	(8)	(8)	OT
SJRPP	1	Duval County	BIT	BIT	Pet	RR	WA	Jan-10	Jun-10	Unknown	135,918	(1)	(1)	OT
SJRPP	2	Duval County	BIT	BIT	Pet	RR	WA	Jan-10	Jun-10	Unknown	135,918	(1)	(1)	OT
Space Coast Next Generating Solar Energy Center (PV)	1	Brevard County	PV						Jun-10		10,000	See Note 4		P
Turkey Point	5	Miami-Dade County	CC	NG	FO2	PL	PL	Jan-10	Jun-10	Unknown	1,224,510	2	—	OT
									2010 Changes/Additions w/o Inactive Reserve Total:			**(1,218)**	**(1,342)**	
Cutler	5	Miami Dade County	ST	NG	No	PL	No	—	—	—	75,000	(69)	(68)	OT
Cutler	6	Miami Dade County	ST	NG	No	PL	No	—	—	—	161,500	(138)	(137)	OT
Port Everglades	1	City of Hollywood	ST	FO6	NG	WA	PL	—	—	—	225,250	(214)	(213)	OT
Port Everglades	2	City of Hollywood	ST	FO6	NG	WA	PL	—	—	—	225,250	(214)	(213)	OT
Sanford	3	Volusia County	ST	FO6	NG	WA	PL	—	—	—	156,250	(140)	(138)	OT
									2010 Changes/Additions with Inactive Reserve Total:			**(1,993)**	**(2,111)**	
2011														
West County Energy Center	3	Palm Beach County	CC	NG	FO2	PL	PL	Jan-09	Jun-11	Unknown	1,366,800	—	1219	T
									2011 Changes/Additions w/o Inactive Reserve Total:			**0**	**1,219**	
Port Everglades	3	City of Hollywood	ST	FO6	NG	WA	PL	—	—	—	402,050	—	(387)	OT
Port Everglades	4	City of Hollywood	ST	FO6	NG	WA	PL	—	—	—	402,050	—	(392)	OT
Turkey Point	2	Miami Dade County	ST	FO6	NG	WA	PL	—	—	—	402,050	(394)	(392)	
									2011 Changes/Additions with Inactive Reserve Total:			**(394)**	**48**	
2012														
Scherer	4	Monroe, GA	BIT	SUB	No	RR	No	Jan-12	Jun-12	Unknown	680,368	3	3	OT
St. Lucie (Uprates)	1	St. Lucie County	NP	UR	No	TK	No	See Note 5	Dec-11	Unknown	850,000	103	103	T
St. Lucie (Uprates)	2	St. Lucie County	NP	UR	No	TK	No	See Note 5	Jun-12	Unknown	723,775	—	88	T
Turkey Point (Uprates)	3	Miami Dade County	NP	UR	No	TK	No	See Note 5	May-12	Unknown	759,900	—	104	T
West County Energy Center	3	Palm Beach County	CC	NG	FO2	PL	PL	Jan-09	Jun-11	Unknown	1,366,800	1,335	—	T
									2012 Changes/Additions w/o Inactive Reserve Total:			**1,441**	**298**	
Port Everglades	3	City of Hollywood	ST	FO6	NG	WA	PL	—	—	—	402,050	(389)	—	OT
Port Everglades	4	City of Hollywood	ST	FO6	NG	WA	PL	—	—	—	402,050	(394)	—	OT
									2012 Changes/Additions with Inactive Reserve Total:			**658**	**298**	

Note 1: The Winter Total MW value consists of all generation additions and changes achieved by January. The Summer Total MW value consists of all generation additions and changes achieved by June. All MW additions/changes occuring later in the year will be picked up for reporting/planning purposes in the following year.

Note 2: Changes shown may include different ratings than shown in Schedule 1 due solely to ambient temperature consistent with those in FPL 's peak load forecast to maintain consistency in reserve margin calculations.

Note 3: The Martin solar thermal facility is designed to provide steam for FPL's existing Martin Unit 8 combined cycle unit, thus reducing FPL's use of natural gas. No additional capacity (MW) will result from the operation of the solar thermal facility.

Note 4: The Photovoltaic MWs are not included in the total at this time because these facilities are assumed to provide non-firm energy only.

Note 5: The nuclear uprates will be performed during the scheduled refueling outages for each unit.

Note 6: Certain existing FPL units that have been placed temporarily on Inactive Reserve status are assumed, for planning purposes, to return to active reserve starting in 2018.

Schedule 8
Planned And Prospective Generating Facility Additions And Changes

Plant Name	(2) Unit No.	(3) Location	(4) Unit Type	(5) Fuel Pri.	(5) Fuel Alt.	(7) Fuel Transport Pri.	(8) Fuel Transport Alt.	(9) Const. Start Mo./Yr.	(10) Comm. In-Service Mo./Yr.	(11) Expected Retirement Mo./Yr.	(12) Gen. Max. Nameplate KW	(13) Firm Net Capability Winter MW	(14) Firm Net Capability Summer MW	(15) Status
ADDITIONS/ CHANGES														
2013														
Cape Canaveral Next Generation Clean Energy Center	1	Brevard County	CC	NG	FO2	PL	PL	Jun-11	Jun-13	Unknown	1,296,750	---	1,210	T
St. Lucie (Uprates)	2	St. Lucie County	NP	UR	No	TK	No	See Note 3	Jun-12	Unknown	723,775	88	---	T
Turkey Point (Uprates)	3	Miami Dade County	NP	UR	No	TK	No	See Note 3	May-12	Unknown	759,900	104	---	T
Turkey Point (Uprates)	4	Miami Dade County	NP	UR	No	TK	No	See Note 3	Dec-12	Unknown	759,900	104	104	T
									2013 Changes/Additions w/o Inactive Reserve Total:			296	1,314	
												---	---	
									2013 Changes/Additions with Inactive Reserve Total:			**296**	**1,314**	
2014														
Cape Canaveral Next Generation Clean Energy Center	1	Brevard County	CC	NG	FO2	PL	PL	Jun-11	Jun-13	Unknown	1,296,750	1,355	---	T
Riviera Beach Next Generation Clean Energy Center	1	City of Riviera Beach	CC	NG	FO2	PL	PL	Jun-12	Jun-14	Unknown	1,296,750	---	1,212	T
									2014 Changes/Additions w/o Inactive Reserve Total:			**1,355**	**1,212**	
												---	---	
									2014 Changes/Additions with Inactive Reserve Total:			**1,355**	**1,212**	
2015														
Riviera Beach Next Generation Clean Energy Center	1	City of Riviera Beach	CC	NG	FO2	PL	PL	Jun-12	Jun-14	Unknown	1,296,750	1,344	---	T
									2015 Changes/Additions w/o Inactive Reserve Total:			**1,344**	**0**	
												---	---	
									2015 Changes/Additions with Inactive Reserve Total:			**1,344**	**0**	
2016														
												---	---	
									2016 Changes/Additions w/o Inactive Reserve Total:			**0**	**0**	
												---	---	
									2016 Changes/Additions with Inactive Reserve Total:			**0**	**0**	
2017														
												---	---	
									2017 Changes/Additions w/o Inactive Reserve Total:			**0**	**0**	
												---	---	
									2017 Changes/Additions w/o Inactive Reserve Total:			**0**	**0**	
2018														
												---	---	
									2018 Changes/Additions w/o Inactive Reserve Total:			**0**	**0**	
Turkey Point	2	Miami Dade County	ST	FO6	NG	WA	PL	---	---	---	402,050	---	392	OT
									2018 Changes/Additions with Inactive Reserve Total:			**0**	**392**	
2019														
												---	---	
									2019 Changes/Additions w/o Inactive Reserve Total:			**0**	**0**	
Turkey Point	2	Miami Dade County	ST	FO6	NG	WA	PL	---	---	---	402,050	394	---	OT
Port Everglades	3	City of Hollywood	ST	FO6	NG	WA	PL	---	---	---	402,050	---	387	OT
									2019 Changes/Additions with Inactive Reserve Total:			**394**	**387**	

Note 1: The Winter Total MW value consists of all generation additions and changes achieved by January. The Summer Total MW value consists of all generation additions and changes achieved by June. All MW additions/changes occuring later in the year will be picked up for reporting/planning purposes in the following year.

Note 2: Changes shown may include different ratings than shown in Schedule 1 due solely to ambient temperature consistent with those in FPL 's peak load forecast to maintain consistency in reserve margin calculations.

Note 3: The nuclear uprates will be performed during the scheduled refueling outages for each unit.

Note 4: Certain existing FPL units that have been placed temporarily on Inactive Reserve status are assumed, for planning purposes,to return to active reserve starting in 2018.

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Space Coast Next Generation Energy Center

(2) **Capacity**
- a. Summer 10 MW
- b. Winter 10 MW

(3) **Technology Type:** Photovoltaic

(4) **Anticipated Construction Timing**
- a. Field construction start-date: 2009
- b. Commercial In-service date: 2010

(5) **Fuel**
- a. Primary Fuel: Solar
- b. Alternate Fuel: N/A

(6) **Air Pollution and Control Strategy:** N/A

(7) **Cooling Method:** N/A

(8) **Total Site Area:** 60 Acres

(9) **Construction Status:** U (Under Construction)

(10) **Certification Status:** Permitted (Individual Permits)

(11) **Status with Federal Agencies:** Permitted

(12) **Projected Unit Performance Data:**

Planned Outage Factor (POF):	N/A
Forced Outage Factor (FOF):	N/A
Equivalent Availability Factor (EAF):	0.98
Resulting Capacity Factor (%):	Approx. 21.3% (First Full Year of Operation)
Average Net Operating Heat Rate (ANOHR):	N/A Btu/kWh
Base Operation 75F,100%	

(13) **Projected Unit Financial Data *,****

Book Life (Years):	25 years
Total Installed Cost (2010 $/kW):	7,890
Direct Construction Cost ($/kW):	-
CWIP Amount ($/kW):	427.7
Escalation ($/kW):	-
Fixed O&M ($/kW -Yr.): (2010 $kW-Yr)	54
Variable O&M ($/MWH): (2010 $/MWH)	0
K Factor:	1.2100

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement.

NOTE: Total installed cost includes transmission interconnection.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** West County Energy Center Combined Cycle Unit 3

(2) **Capacity**
a. Summer 1,219 MW
b. Winter 1,335 MW

(3) **Technology Type:** Combined Cycle

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2009
b. Commercial In-service date: 2011

(5) **Fuel**
a. Primary Fuel Natural Gas
b. Alternate Fuel Distillate

(6) **Air Pollution and Control Strategy:** Natural Gas, Dry Low No_x Combustors, SCR 0.0015% S. Distillate, & Water Injection on Distillate

(7) **Cooling Method:** Cooling Tower

(8) **Total Site Area:** 220 Acres

(9) **Construction Status:** U (Under construction, less than or equal to 50% Complete)

(10) **Certification Status:** Permitted

(11) **Status with Federal Agencies:** Permitted

(12) **Projected Unit Performance Data:**

Planned Outage Factor (POF):	2.1%	
Forced Outage Factor (FOF):	1.1%	
Equivalent Availability Factor (EAF):	96.8%	(Base & Duct Firing Operation)
Resulting Capacity Factor (%):	Approx. 93%	(First Full Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	6,582 Btu/kWh	(Base Operation)
Base Operation 75F,100%		

(13) **Projected Unit Financial Data **,*****

Book Life (Years):	25 years
Total Installed Cost (2011 $/kW):	709
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	71
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2011 $kW-Yr)	11.63
Variable O&M ($/MWH): (2011 $/MWH)	0.480
K Factor:	1.4697

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement, but not firm gas transportation costs.

NOTE: Total installed cost includes gas expansion, transmission interconnection and integration, escalation, and AFUDC.

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** St. Lucie 1 Nuclear (Uprate)

(2) **Capacity**
a. Summer 103 MW (Incremental)
b. Winter 103 MW (Incremental)

(3) **Technology Type:** Nuclear

(4) **Anticipated Construction Timing**
a. Field construction start-date: During scheduled refueling outage
b. Commercial In-service date: 2011

(5) **Fuel**
a. Primary Fuel Uranium
b. Alternate Fuel ---

(6) **Air Pollution and Control Strategy:** No change from existing unit

(7) **Cooling Method:** No change from existing unit

(8) **Total Site Area:** No change from existing unit

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** T (Regulatory approval received, but not under construction)

(11) **Status with Federal Agencies:** T (Regulatory approval received, but not under construction)

(12) **Projected Unit Performance Data:**
Planned Outage Factor (POF): No change from existing unit
Forced Outage Factor (FOF): No change from existing unit
Equivalent Availability Factor (EAF): No change from existing unit
Resulting Capacity Factor (%): No change from existing unit
Average Net Operating Heat Rate (ANOHR): No change from existing unit
Base Operation 75F,100% No change from existing unit

(13) **Projected Unit Financial Data** •
Book Life (Years): 25 years (Matches the current operating license period.)
Total Installed Cost ($/kW): ** TBD (See Note (1) for explanation.)
Direct Construction Cost: TBD (See Note (1) for explanation.)
AFUDC Amount ($/kW): (See Note (2) for explanation.)
Escalation ($/kW): (See Note (3) for explanation.)
Fixed O&M ($/kW -Yr.): There is no additional O&M impact from this project.
Variable O&M ($/MWH): There is no additional O&M impact from this project.
K Factor: (See Note (2) for explanation.)

NOTE:

(1) The projected capital cost values for the capacity uprates at each of FPL's existing nuclear units is currently being reviewed in on-going analyses as this document is being prepared. The capital cost projections that will result from these analyses are expected to be presented in FPL's May 2010 Nuclear Cost recovery filing.
(2) Not applicable due to early recovery of capital carrying costs.
(3) These costs are included in the Total Installed Cost value.

* $/kW values are based on incremental Summer capacity.
** $/incremental kW

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Turkey Point 3 Nuclear (Uprate)

(2) **Capacity**
a. Summer 104 MW (Incremental)
b. Winter 104 MW (Incremental)

(3) **Technology Type:** Nuclear

(4) **Anticipated Construction Timing**
a. Field construction start-date: During scheduled refueling outage
b. Commercial In-service date: 2012

(5) **Fuel**
a. Primary Fuel Uranium
b. Alternate Fuel ---

(6) **Air Pollution and Control Strategy:** No change from existing unit

(7) **Cooling Method:** No change from existing unit

(8) **Total Site Area:** No change from existing unit

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** T (Regulatory approval received, but not under construction)

(11) **Status with Federal Agencies:** T (Regulatory approval received, but not under construction)

(12) **Projected Unit Performance Data:**
Planned Outage Factor (POF): No change from existing unit
Forced Outage Factor (FOF): No change from existing unit
Equivalent Availability Factor (EAF): No change from existing unit
Resulting Capacity Factor (%): No change from existing unit
Average Net Operating Heat Rate (ANOHR): No change from existing unit
Base Operation 75F,100% No change from existing unit

(13) **Projected Unit Financial Data** *
Book Life (Years): 20 years (Matches the current operating license period.)
Total Installed Cost ($/kW): ** TBD (See Note (1) for explanation.)
Direct Construction Cost ($/kW): TBD (See Note (1) for explanation.)
AFUDC Amount ($/kW): (See Note (2) for explanation.)
Escalation ($/kW): (See Note (3) for explanation.)
Fixed O&M ($/kW -Yr.): There is no additional O&M impact from this project.
Variable O&M ($/MWH): There is no additional O&M impact from this project.
K Factor: (See Note (2) for explanation.)

NOTE:
(1) The projected capital cost values for the capacity uprates at each of FPL's existing nuclear units is currently being reviewed in on-going analyses as this document is being prepared. The capital cost projections that will result from these analyses are expected to be presented in FPL's May 2010 Nuclear Cost recovery filing.
(2) Not applicable due to early recovery of capital carrying costs.
(3) These costs are included in the Total Installed Cost value.

* $/kW values are based on incremental Summer capacity.
** $/incremental kW

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** St. Lucie 2 Nuclear (Uprate)

(2) **Capacity**

a. Summer	103	MW (Total Incremental), 88 MW (incremental FPL's ownership share)
b. Winter	104	MW (Total Incremental), 88 MW (incremental FPL's ownership share)

(3) **Technology Type:** Nuclear

(4) **Anticipated Construction Timing**

a. Field construction start-date:	During scheduled refueling outage
b. Commercial In-service date:	2012

(5) **Fuel**

a. Primary Fuel	Uranium
b. Alternate Fuel	---

(6) **Air Pollution and Control Strategy:** No change from existing unit

(7) **Cooling Method:** No change from existing unit

(8) **Total Site Area:** No change from existing unit

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** T (Regulatory approval received, but not under construction)

(11) **Status with Federal Agencies:** T (Regulatory approval received, but not under construction)

(12) **Projected Unit Performance Data:**

Planned Outage Factor (POF):	No change from existing unit
Forced Outage Factor (FOF):	No change from existing unit
Equivalent Availability Factor (EAF):	No change from existing unit
Resulting Capacity Factor (%):	No change from existing unit
Average Net Operating Heat Rate (ANOHR):	No change from existing unit
Base Operation 75F,100%	No change from existing unit

(13) **Projected Unit Financial Data *,****

Book Life (Years):	31	years (Matches the current operating license period.)
Total Installed Cost ($/kW): **	TBD	(See Note (1) for explanation.)
Direct Construction Cost ($/kW):	TBD	(See Note (1) for explanation.)
AFUDC Amount ($/kW):		(See Note (2) for explanation.)
Escalation ($/kW):		(See Note (3) for explanation.)
Fixed O&M ($/kW -Yr.):	There is no additional O&M impact from this project.	
Variable O&M ($/MWH):	There is no additional O&M impact from this project.	
K Factor:		(See Note (2) for explanation.)

NOTE:

(1) The projected capital cost values for the capacity uprates at each of FPL's existing nuclear units is currently being reviewed in on-going analyses as this document is being prepared. The capital cost projections that will result from these analyses are expected to be presented in FPL's May 2010 Nuclear Cost recovery filing.
nuclear units.

(2) Not applicable due to early recovery of capital carrying costs.

(3) These costs are included in the Total Installed Cost value.

* $/kW values are based on incremental Summer capacity.

** $/incremental kW

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Turkey Point 4 Nuclear (Uprate)

(2) **Capacity**
- a. Summer 104 MW (Incremental)
- b. Winter 104 MW (Incremental)

(3) **Technology Type:** Nuclear

(4) **Anticipated Construction Timing**
- a. Field construction start-date: During scheduled refueling outage
- b. Commercial In-service date: 2012

(5) **Fuel**
- a. *Primary Fuel* Uranium
- b. Alternate Fuel ---

(6) **Air Pollution and Control Strategy:** No change from existing unit

(7) **Cooling Method:** No change from existing unit

(8) **Total Site Area:** No change from existing unit

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** T (Regulatory approval received, but not under construction)

(11) **Status with Federal Agencies:** T (Regulatory approval received, but not under construction)

(12) **Projected Unit Performance Data:**

Planned Outage Factor (POF):	No change from existing unit
Forced Outage Factor (FOF):	No change from existing unit
Equivalent Availability Factor (EAF):	No change from existing unit
Resulting Capacity Factor (%):	No change from existing unit
Average Net Operating Heat Rate (ANOHR):	No change from existing unit
Base Operation 75F,100%	No change from existing unit

(13) **Projected Unit Financial Data *,****

Book Life (Years):	22	years (Matches the current operating license period.)
Total Installed Cost ($/kW): **	TBD	(See Note (1) for explanation.)
Direct Construction Cost ($/kW):	TBD	(See Note (1) for explanation.)
AFUDC Amount ($/kW):		(See Note (2) for explanation.)
Escalation ($/kW):		(See Note (3) for explanation.)
Fixed O&M ($/kW -Yr.):	There is no additional O&M impact from this project.	
Variable O&M ($/MWH):	There is no additional O&M impact from this project.	
K Factor:		(See Note (2) for explanation.)

NOTE:

(1) The projected capital cost values for the capacity uprates at each of FPL's existing nuclear units is currently being reviewed in on-going analyses as this document is being prepared. The capital cost projections that will result from these analyses are expected to be presented in FPL's May 2010 Nuclear Cost recovery filing.

(2) Not applicable due to early recovery of capital carrying costs.

(3) These costs are included in the Total Installed Cost value.

* $/kW values are based on incremental Summer capacity.

** $/incremental kW

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Cape Canaveral Next Generation Clean Energy Center

(2) **Capacity**
a. Summer 1,210 MW
b. Winter 1,355 MW

(3) **Technology Type:** Combined Cycle

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2011
b. Commercial In-service date: 2013

(5) **Fuel**
a. Primary Fuel: Natural Gas
b. Alternate Fuel: Ultra-low sulfur distillate

(6) **Air Pollution and Control Strategy:** Dry Low No_x Burners, SCR, Natural Gas, 0.0015% S. Distillate and Water Injection on Distillate

(7) **Cooling Method:** Once-through cooling water

(8) **Total Site Area:** 43 Acres

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** Permitted

(11) **Status with Federal Agencies:** Permitted

(12) **Projected Unit Performance Data:**

Planned Outage Factor (POF):	2.4%
Forced Outage Factor (FOF):	1.1%
Equivalent Availability Factor (EAF):	96.5%
Resulting Capacity Factor (%):	Approx. 90 % (First Full Year Base Operation)
Average Net Operating Heat Rate (ANOHR): Base Operation 75F,100%	6,484 Btu/kWh

(13) **Projected Unit Financial Data *,****

Book Life (Years):	30 years
Total Installed Cost (2013 $/kW):	921
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	98
Escalation ($/kW):	
Fixed O&M ($/kW-Yr): (2013 $)	13.29
Variable O&M ($/MWH): (2013 $)	0.16
K Factor:	1.484

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement.

NOTE: Total installed cost includes gas expansion, transmission interconnection and integration, escalation, and AFUDC.

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) ***Plant Name and Unit Number:*** Riviera Beach Next Generation Clean Energy Center

(2) **Capacity**
- a. Summer 1,212 MW
- b. Winter 1,344 MW

(3) **Technology Type:** Combined Cycle

(4) **Anticipated Construction Timing**
- a. Field construction start-date: 2012
- b. Commercial In-service date: 2014

(5) **Fuel**
- a. Primary Fuel: Natural Gas
- b. Alternate Fuel: Ultra-low sulfur distillate

(6) **Air Pollution and Control Strategy:** Dry Low No_x Burners, SCR, Natural Gas, 0.0015% S. Distillate and Water Injection on Distillate

(7) **Cooling Method:** *Once-through cooling water*

(8) **Total Site Area:** 33 Acres

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** Permitted

(11) **Status with Federal Agencies:** Permitted

(12) **Projected Unit Performance Data:**

Planned Outage Factor (POF):	2.4%	
Forced Outage Factor (FOF):	1.1%	
Equivalent Availability Factor (EAF):	96.5%	
Resulting Capacity Factor (%):	Approx. 90%	(First Full Year Base Operation)
Average Net Operating Heat Rate (ANOHR): Base Operation 75F,100%	6,480	Btu/kWh

(13) **Projected Unit Financial Data *,**,*****

Book Life (Years):	30	*years*
Total Installed Cost (2014 $/kW):	1,053	
Direct Construction Cost ($/kW):		
AFUDC Amount ($/kW):	121	
Escalation ($/kW):		
Fixed O&M ($/kW-Yr): (2014 $)	13.67	
Variable O&M ($/MWH): (2014 $)	0.13	
K Factor:	1.509	

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Space Center Next Generation Solar Energy Center (PV)

The new Space Center Next Generation Solar Energy Center (PV) does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

West County Energy Center Unit 3

(1)	Point of Origin and Termination:	New Sugar Substation – Corbett Substation
(2)	*Number of Lines*:	1
(3)	Right-of-way	FPL - Owned
(4)	Line Length:	1 mile
(5)	Voltage:	230 kV
(6)	Anticipated Construction Timing:	Start date: May 2009 End date: November 2010
(7)	*Anticipated Capital Investment:* (Trans. and Sub.)	$11,300,000
(8)	Substations:	New Sugar Substation and Corbett Substation
(9)	Participation with Other Utilities:	None

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

St. Lucie 1 Nuclear (Uprate)

The St. Lucie 1 Nuclear (Uprate) does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Turkey Point 3 Nuclear (Uprate)

The Turkey Point 3 Nuclear (Uprate) does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

St. Lucie 2 Nuclear (Uprate)

The St. Lucie 2 Nuclear (Uprate) does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Turkey Point 4 Nuclear (Uprate)

The Turkey Point 4 Nuclear (Uprate) does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Cape Canaveral Next Generation Clean Energy Center (Projected Modernization)

The Cape Canaveral Next Generation Clean Energy Center, that would be the result of the projected modernization of the exiting Cape Canaveral power plant site, does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Riviera Beach Next Generation Clean Energy Center (Projected Modernization)

The Riviera Beach Energy Center Modernization, that would be the result of the projected *modernization of the existing* Riviera Beach power plant site, does not require any "new" transmission lines. Several lines will be extended and reconfigured to accommodate the increased capacity.

Schedule 11.1

Existing FIRM and NON-FIRM Capacity and Energy by Primary Fuel Type
Actuals for the Year 2009

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Net (MW) Capability				NEL	Fuel Mix
	Generation by Primary Fuel	Summer (MW)	Summer (%)	Winter (MW)	Winter (%)	GWh [2]	%
(1)	Coal	900	3.3%	902	3.2%	6,362	5.7%
(2)	Nuclear	2,939	10.9%	3,013	10.6%	22,893	20.6%
(3)	Residual	6,764	25.0%	6,818	23.9%	4,560	4.1%
(4)	Distillate	1,908	7.1%	2,160	7.6%	21	0.0%
(5)	Natural Gas	11,993	44.4%	12,942	45.3%	62,728	56.4%
(6)	***FPL Existing Units Total [1]:***	***24,504***	***90.7%***	***25,835***	***90.5%***	***96,565***	***86.8%***
(7)	Renewables (Purchases)- Firm	111.0	0.4%	162.0	0.6%	1,036	0.9%
(8)	Renewables (Purchases)- Non-Firm	Not Applicable		Not Applicable		416	0.4%
(9)	***Renewable Total:***	***111.0***	***0.4%***	***162.0***	***0.6%***	***1,452***	***1.30%***
(10)	***Purchases Other :***	***2,404.0***	***8.9%***	***2,542.0***	***8.9%***	***13,288***	***11.9%***
(11)	***Total:***	***27,019.4***	***100.0%***	***28,539.0***	***100.0%***	***111,304***	***100.0%***

Note:

(1) FPL Existing Units Total should match Total System found on Schedule 1 for summer and winter.

(2) Net Energy for Load GWH should match Schedule 6.1 the actual value.

Schedule 11.2

Existing NON-FIRM Self-Service Renewable Generation Facilities
Actuals for the Year 2009

(1)	(2)	(3)	(4)	(5)	(6) = (3+4) - (5)
Type of Facility	**Installed Capacity DC (MW)**	**Renewable Projected Annual Output (MWh)**	**Annual Energy Purchased from FPL (MWh)**	**Annual Energy Sold to FPL (MWh)**	**Projected Annual Energy Used by Customer (MWh)**
Customer-Owned PV (0 kW to 10 kW)	2.525	2,095	42,634.0	30.0	44,698.9
Customer-Owned PV (> 10 kW to 100 kW)	1.085	865	12,938	54.0	13,749.1
Customer-Owned PV (> 100 kW - 2 MW)	2.846	379	29,739	0.0	30,118.5
Total	6.456	3,339.1	85,311.3	84.0	88,566.5

Notes:

(1) There were approximately 645 customer-owned operating PV facilities interconnected with FPL during 2009.
(2) The Installed Capacity value is the sum of the nameplate ratings (DC MW) for all of the customer-owned PV facilities connected as of Dec. 31,2009.
(3) The Projected Annual Output value is based on NREL's PV Watts program and the Installed Capacity value in column (2), adjusted for the date when each facility was installed and assuming each facility operated as planned.
(3) The Annual Energy Purchased from FPL is an actual value from FPL's metered data for 2009.
(4) The Annual Energy Sold to FPL is an actual value from FPL's metered data for 2009.
(5) The Projected Annual Energy Used by Customers is a projected value that equals:
(Renewable Projected Annual output + Annual Energy Purchased) minus the Annual Energy Sold to FPL.

(This page is left intentionally blank.)

CHAPTER IV

Environmental and Land Use Information

(This page is left intentionally blank.)

IV. Environmental and Land Use Information

IV.A Protection of the Environment

FPL operates in a sensitive, temperate/sub-tropical environment containing a number of distinct ecosystems with many endangered or threatened plant and animal species. FPL competes for air, land, and water resources that are necessary to meet the demand for generation, transmission, and distribution of electricity. At the same time, residents and tourists want unspoiled natural amenities, and the general public has an expectation that large corporations such as FPL will conduct their business in an environmentally responsible manner.

FPL has been recognized for many years as one of the leaders among electric utilities for its commitment to the environment. For example, FPL has one of the lowest CO_2 emission rates in the nation. The environmental leadership of FPL and its parent company, FPL Group, has been heralded by many outside organizations as demonstrated by a few recent examples. In 2009, FPL Group was ranked first among electric and gas utilities in FORTUNE® magazine's, "America's Most Admired Companies" edition. This is the third consecutive year that FPL Group scored number one in each of the eight attributes considered: innovation, people management, use of corporate assets, social responsibility, quality of management, financial soundness, long-term investments, and quality of products and services. According to *Fortune*, America's Most Admired Companies is "the definitive report card on corporate reputations".

FPL Group was named, for the fifth time, one of the Global 100 Most Sustainable Corporations in the World by Corporate Knights, Inc., a Canadian media company. Some 1,800 companies from a wide range of sectors were evaluated regarding effective management of environmental, social, and governance risks and opportunities. FPL Group was one of only three United States utility companies, or utility parent companies, to make the list of 100.

FPL Group's commitment to acknowledging the risks of climate change and effectively reducing its greenhouse gas emissions was again recognized when the company was named to the Carbon Disclosure Leadership Index for 2009. FPL Group was one of only three U.S. companies to be so named. The Carbon Disclosure Leadership Index is produced annually by the Carbon Disclosure Project (CDP), a not-for-profit organization that reports on the business risks and opportunities of climate change for investors. CDP

represents 475 institutional investors with $55 trillion in assets under management. Compiled by PricewaterhouseCoopers on behalf of CDP, the Carbon Disclosure Leadership Index highlights companies within the S&P 500 Index that excel in the area of climate change awareness and action.

FPL Group was named to the 2009 Dow Jones Sustainability Index (DJSI) of the leading companies in North America for corporate sustainability. The DJSI North America selects the top 20 percent of companies in sustainability performance from the 600 largest companies in North America. According to Dow Jones, corporate sustainability leaders achieve long-term shareholder value by "gearing their strategies and management to harness the market's potential for sustainability products and services while successfully reducing and avoiding sustainability costs and risks."

The 11th Annual Sustainable Florida Best Practice Awards were announced on June 9, 2009 in Orlando, Florida. FPL was named a finalist in the large business category for its "initiative and leadership in the voluntary development of three state-of-the-art clean, renewable, emissions-free solar energy facilities." The awards are presented by the Council for Sustainable Florida, the premier statewide organization committed to balancing the economic interests of the state with the need to be socially and environmentally responsible. The Sustainable Florida Award recognizes organizations for protecting and preserving Florida's environment for the future while building markets for Florida's business.

In 2009, FPL received the Business of the Year Award from Martin County for efforts related to the construction of three solar energy facilities in Florida, including one in Martin County.

In recognition of the company's leadership role in using low-carbon vehicles, FPL earned the 2008 National Biodiesel Board's Eye on Innovation award for the early and substantive use of biodiesel, the 2008 National Association of Fleet Administrator's Green Fleet Award, and the 2007 Council for Sustainable Florida Large Business Best Practice Award.

In May 2007, FPL Group was included on the KLD Global Climate 100SM Index for the third time since the Global Climate 100 was launched in 2005. The Global Climate 100 is designed to promote investment in public companies whose activities demonstrate the greatest potential for reducing the social and economic consequences of climate change.

The Global Climate 100 Index includes a mix of 100 global companies that demonstrate leadership in providing near-term solutions to climate change through renewable energy, alternative fuels, clean technology, and efficiency.

In 2006, FPL and the Palm Beach County-based Arthur R. Marshall Foundation joined as "partners for the environment." FPL's support included a $25,000 donation to the non-profit organization for educational and restoration programs, including the planting of native Florida wetland trees. In 2007, FPL volunteers returned to the site of the tree plantings to help take care of the growing saplings.

FPL has also been the recipient of earlier environmental awards and recognition. In 2001, FPL was awarded Edison Electric Institute's National Land Management Award for its stewardship of 25,000 acres surrounding its Turkey Point Plant. In 2001, FPL was awarded the 2001 Waste Reduction and Pollution Prevention Award from the Solid Waste Association of North America. FPL received the 2001 Program Champion Award from the Environmental Protection Agency's Wastewise Program. The Florida Department of Environmental Protection named FPL a "Partner for Ecosystem Protection" in 2001 for its emission-reducing "repowering" projects at its Fort Myers and Sanford Plants. FPL won the Council for Sustainable Florida's award in 2002 for its sea turtle conservation and education programs at its St. Lucie Plant. Finally, FPL has been recognized by numerous federal and state agencies for its innovative endangered species protection programs which include such species as manatees, crocodiles, and sea turtles.

As mentioned above, FPL Group has taken a leadership role to address climate change and the call for action for a national climate change policy. The decision to step into the forefront of this issue goes hand-in-hand with FPL Group's longtime commitment to managing operations with sensitivity to the environment.

IV.B FPL's Environmental Statement

To reaffirm its commitment to conduct business in an environmentally responsible manner, FPL developed an Environmental Commitment in 1992 to clearly define its position. This statement reflects how FPL incorporates environmental values into all aspects of its activities and serves as a framework for new environmental initiatives throughout the company. FPL's Environmental Statement is:

It is the Company's intent to continue to conduct its business in an environmentally responsible manner. Accordingly, Florida Power & Light Company will:

- Comply with the spirit and intent, as well as the letter of, environmental laws, regulations, and standards.
- Incorporate environmental protection and stewardship as an integral part of the design, construction, operation, and maintenance of our facilities.
- Encourage the wise use of energy to minimize the impact on the environment.
- Communicate effectively on environmental issues.
- Conduct periodic self-evaluations, report performance, and take appropriate actions.

IV.C Environmental Management

In order to implement the Environmental Statement, FPL established an environmental management system to direct and control the fulfillment of the organization's environmental responsibilities. A key component of the system is an Environmental Assurance Program that is discussed below. Other components include: executive management support and commitment, a dedicated environmental corporate governance program, written environmental policies and procedures, delineation of organizational responsibilities and individual accountabilities, allocation of appropriate resources for environmental compliance management (which includes reporting and corrective action when non-compliance occurs), environmental incident and/or emergency response, environmental risk assessment/management, environmental regulatory development and tracking, and environmental management information systems.

IV.D Environmental Assurance Program

FPL's Environmental Assurance Program consists of activities which are designed to evaluate environmental performance, verify compliance with corporate policy as well as legal and regulatory requirements, and communicate results to corporate management. The principal mechanism for pursuing environmental assurance is the environmental audit. An environmental audit may be defined as a management tool comprising a systematic, documented, periodic, and objective evaluation of the performance of the organization and of the specific management systems and equipment designed to protect the environment. The environmental audit's primary objectives are to facilitate

management control of environmental practices and assess compliance with existing environmental regulatory requirements and FPL policies.

IV.E Environmental Communication and Facilitation

FPL is involved in many efforts to enhance environmental protection through the facilitation of environmental awareness and in public education. Some of FPL's 2009 environmental outreach activities are noted in Table IV.E.1. In 2009 and 2010, FPL launched web cams at three facilities in order to increase public awareness of ongoing solar projects and the warm water refuge for manatees provided by power plants. The "solar cams" provide the public with a glimpse of the PV installation at the Space Coast Next Generation Solar Energy Center and the solar thermal installation at the Martin Next Generation Solar Energy Center. Additionally, the "manatee cam" provides the public a glimpse of hundreds of manatees that gather in the warm waters near the FPL Riviera Plant each Winter during the cold weather. In the first two months the manatee cam has been operational, the cam has received over 78,000 page views on-line. These web cam addresses, respectively, are:

http://www.fpl.com/environment/solar/spacecoast_cam.shtml),
(http://www.fpl.com/environment/solar/martin_cam.shtml),
http://www.fpl.com/environment/plant/riviera_cam.shtml).

In 2009 FPL also initiated efforts to recommence tours of the Barley Barber Swamp at the Martin Power Plant. Public tours are expected to begin by the end of 2010.

Table IV.E.1: 2009 FPL Environmental Outreach Activities

Activity	# of Participants (Approx.)
Visitors to FPL's Energy Encounter at St. Lucie	20,000
Visitors to Manatee Park	180,000
Number of visits to FPL's Environmental Website	103,000
Number of pieces of Environmental literature distributed	>60,000
Solar Schools Program (# of schools participating)	13

IV.F Preferred and Potential Sites

Based upon its projection of future resource needs, FPL has identified seven Preferred Sites and ten Potential Sites for future generation additions. Preferred Sites are those locations where FPL has conducted significant reviews and has either taken action, or is currently committed to take action, to site new generation capacity. Potential Sites are those sites that have attributes that support the siting of generation and are under consideration as a location for future generation. Some of these sites are currently in use as existing generation sites and some are not. The identification of a Potential Site does not indicate that FPL has made a definitive decision to pursue generation (or generation expansion in the case of an existing generation site) at that location, nor does this designation indicate that the size or technology of a generator has been determined. The Preferred Sites and Potential Sites are discussed in separate sections below.

As has been described in previous FPL Site Plans, FPL also considers a number of other sites as possible sites for future generation additions. These include the remainder of FPL's existing generation sites and other Greenfield sites.

IV.F.1 Preferred Sites

FPL identifies seven Preferred Sites in this Site Plan: the West County Energy Center (WCEC) adjacent to the existing Corbett FPL substation, the existing St. Lucie plant site, the existing Turkey Point plant site, the existing Cape Canaveral plant site, the existing Riviera plant site, and two locations for new solar power generation: Brevard County and the existing Martin plant site.

The West County Energy Center site is the location for one CC capacity addition FPL will make in 2011. The St. Lucie site is the location for nuclear capacity uprates that FPL will make in 2011 and 2012. The St. Lucie site is also the location for a proposed wind generation addition. The Turkey Point site is the location for nuclear capacity uprates that FPL will make in 2011 and 2012. (Turkey Point is also the site for two new nuclear units, Turkey Point Units 6 & 7, for which FPL is pursuing licensing approvals. Current projections for these new, nuclear units' in-service dates are beyond the 2010-2019 reporting time frame of this document.). The Cape Canaveral and Riviera sites are the locations for potential modernizations of existing power plant sites that are projected in this document. And, as previously mentioned, the other two sites, Brevard County and Martin County, are the sites for new solar energy facilities.

The seven Preferred Sites are discussed below.

Preferred Site # 1: West County Energy Center, Palm Beach County

FPL has identified the property adjacent to the existing Corbett Substation property in unincorporated western Palm Beach County as a Preferred Site for the addition of new generating capacity. The site was selected for the addition of another CC natural gas unit (Unit 3) with ultra-low sulfur light fuel oil (distillate) as a backup fuel. WCEC Units 1 & 2 were constructed on this site and went into commercial operations on August 27, 2009, and November 3, 2009, respectively. WCEC Unit 3, which began construction in March 2009, was approved by both the FPSC and the Secretary of the Florida Department of Environmental Protection (FDEP) and is anticipated to go into commercial operation in June of 2011. Unit 3 will be identical to Units 1 & 2 in regard to technology and capacity.

The existing site is accessible to both natural gas and electrical transmission through existing structures or through additional lateral connections. The facility will use natural gas as the primary fuel and state-of-the-art combustion controls.

a. U.S. Geological Survey (USGS) Map

A USGS map of the West County Energy Center (WCEC) plant site is found at the end of this chapter.

b. Proposed Facilities Layout

A map of the general layout of the WCEC generating facilities at the site is found at the end of this chapter.

c. Map of Site and Adjacent Areas

An overview map of the site and adjacent areas is also found at the end of this chapter.

d. Existing Land Uses of Site and Adjacent Areas

The site was undeveloped until February 2007 when construction of WCEC Units 1 & 2 was initiated. The site was previously dedicated to industrial (mining) and agricultural use. The site had been excavated, back-filled, and totally re-graded to an elevation of approximately 10 feet above the surrounding land surface. Prior to the initiation of power plant construction, no structures were present on the site and

vegetation was virtually non-existent. Units 1 & 2 are completed and are now in commercial operation.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

The plant site had been significantly altered by the construction and operation of a limestone mine where vegetation had been cleared and removed. The surrounding land use is predominantly sugar cane, agriculture, and limestone mining. FPL's existing Corbett substation is located north of the site. The Arthur R. Marshall Loxahatchee National Wildlife Refuge is located to the south of the site.

2. Listed Species

Construction and operation of Unit 3 at the site will not affect any rare, endangered, or threatened species. Wildlife utilization of the property is minimal as a result of the prior mining activities. Common wading birds can be observed on areas adjacent to, and occasionally within, the property. The property is adjacent to areas that have been identified as potential habitats for wood stork.

3. Natural Resources of Regional Significance Status

The construction and operation of another gas-fired CC generating facility at this location is not expected to have any adverse impacts on parks, recreation areas, or environmentally sensitive lands including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. Construction will not result in any onsite wetland impacts under federal, state, or local agency permitting criteria.

4. Other Significant Features

FPL is not aware of any other significant features of the site.

f. Design Features and Mitigation Options

The design of Unit 3 comprises the following: one 1,219 MW (Summer capacity) unit consisting of: three combustion turbines (CT), three heat recovery steam generators (HRSG), and a new steam turbine. Natural gas delivered via pipeline is the primary fuel type for this facility with ultra-low sulfur light fuel oil (distillate) serving as a backup fuel.

g. Local Government Future Land Use Designations

Local government future land use designation for the project site is "Rural Residential" according to the Palm Beach County Future Land Use Map. Designations for the area under the Palm Beach County Unified Land Development Code classified the project site and surrounding area as Special Agricultural District. The site has been granted conditional use for electrical power facilities under a General Industrial zoning district.

h. Site Selection Criteria Process

The site has been selected as a Preferred Site due to consideration of various factors including system load and economics. Environmental issues were not a deciding factor since this site does not exhibit significant environmental sensitivity or other environmental issues.

i. Water Resources

WCEC Units 1 & 2 are currently operating using water from the Floridan Aquifer for cooling, service, and process water. Potable water is purchased from the Palm Beach County water municipality.

The primary water source for the entire site will be reclaimed (reuse) water that will come from Palm Beach County Water Utilities Department once Unit 3 is complete. FPL has obtained the necessary approvals to also supply WCEC Units 1 & 2 using reclaimed water once WCEC Unit 3 is operational. Reclaimed water will be used for cooling, service, and process water. Backup water sources include utilizing the Floridan Aquifer allocation permitted for WCEC Units 1, 2, & 3.

j. Geological Features of Site and Adjacent Areas

The site is underlain by approximately 13,000 feet of sedimentary rock strata. The basement complex in this area consists of Paleozoic igneous and metamorphic rocks. Little information is known about these rocks due to their great depth.

Overlying the basement complex to the ground surface are sedimentary rocks and deposits that are primarily marine in origin. Below a depth of about 400 feet these rocks are predominantly limestone and dolomite. Above 400 feet the deposits are largely composed of sand, silt, clay, and phosphate grains. The deepest formation in Palm Beach County on which significant published data are available is the Eocene Age Avon Park. Limited information is available from wells penetrating the underlying

Oldsmar formation. The published information on the sediments comprising the formations below the Avon Park Limestone is based on projections from deep wells in Okeechobee, St. Lucie, and Palm Beach counties.

Testing during construction of Exploratory Well 2 (EW-2) demonstrated the presence of a highly permeable zone (Boulder Zone) below a depth of 2,790 feet below pad level (bpl) overlain by a thick confining interval from approximately 2,000 to 2,790 feet bpl. The base of the Underground Source of Drinking Water (USDW) was identified between the depths of 1,932 and 1,959 feet bpl through interpretation of packer tests, water quality data, and geophysical logs. Injection testing has confirmed that the hydrogeology of the EW-2 site is favorable for disposal of fluids via a deep injection well system.

k. Projected Water Quantities for Various Uses

The estimated quantity of water required for industrial processing and cooling for all 3 units is approximately 29 million gallons per day (mgd). Cooling water for the three generating units would be cycled through cooling towers. Water quantities needed for other uses such as potable water are estimated to be approximately 35,000 gallons per day (gpd) for the entire WCEC site.

l. Water Supply Sources by Type

WCEC Units 1 & 2 will use available ground water as the source of cooling water until Unit 3 comes on line. Cooling towers will act as a heat sink for the facility auxiliary cooling system. Such needs for cooling and process water will comply with the existing SFWMD regulations for consumptive water use.

WCEC Unit 3, and eventually Units 1 & 2, will use reclaimed water as the primary source of cooling water for the cooling tower. The cooling tower will also act as a heat sink for the facility auxiliary cooling system. Such needs for cooling and process water will comply with the existing SFWMD regulations for consumptive water use. In addition, reclaimed water used at WCEC must meet all relevant requirements of Chapter 62-610, F.A.C., Part III, for use in cooling towers.

m. Water Conservation Strategies Under Consideration

The use of reclaimed water is a water conservation strategy because it is a beneficial use of wastewater. Impacts on the surficial aquifer would be minimized and used only for potable water, if necessary. Water from the Floridan Aquifer will be used for

cooling purposes as a backup water source and cooling towers will be utilized. In addition, captured stormwater may be reused in the cooling tower whenever feasible. Stormwater captured in the stormwater ponds will also recharge the surficial aquifer.

n. Water Discharges and Pollution Control

Heat will be dissipated in the cooling towers. Blowdown water from the cooling towers, along with other wastestreams, will be injected into the boulder zone of the Floridan Aquifer. Non-point source discharges are not an issue since there will be none at this facility. Storm water runoff will be collected and used to recharge the surficial aquifer via a storm water management system. Design elements will be included to capture suspended sediments. In addition, captured stormwater may be reused in the cooling towers, whenever feasible. The facility will employ a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to prevent and control the inadvertent release of pollutants.

o. Fuel Delivery, Storage, Waste Disposal, and Pollution Control

The site is serviced by a new natural gas transmission pipeline that is capable of providing a sufficient quantity of gas to the entire site. Ultra-low sulfur light fuel oil (distillate) will be received by truck and stored in above-ground storage tanks to serve as backup fuel for the WCEC generating units.

p. Air Emissions and Control Systems

The use of natural gas and ultra-low sulfur light fuel oil (distillate) and combustion controls will minimize air emissions from these units and ensure compliance with applicable emission limiting standards. Using these fuels minimizes emissions of sulfur dioxide (SO_2), particulate matter, and other fuel-bound contaminants. Combustion controls similarly minimize the formation of nitrogen oxides (NO_x) and the combustor design will limit the formation of carbon monoxide and volatile organic compounds. When firing natural gas, NO_x emissions will be controlled using dry-low NO_x combustion technology and selective catalytic reduction (SCR). Water injection and SCR will be used to reduce NO_x emissions during operations when using ultra-low sulfur light fuel oil (distillate) as backup fuel. These design alternatives constitute the Best Available Control Technology for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. Taken together, the design of the WCEC generating units incorporate features that will

make them among the most efficient and cleanest power plants in the State of Florida.

q. **Noise Emissions and Control Systems**

Noise expected to be caused by construction at the site is expected to be below current noise levels for the residents nearest the site. Noise from the operation of the new unit will be within allowable levels.

r. **Status of Applications**

In regard to WCEC Unit 3, a Site Certification Application (SCA) was filed in December 2007 and received Site Certification by the Secretary of the FDEP, in lieu of the Governor and Cabinet, in November 2008. A Prevention of Significant Deterioration (PSD) air permit was filed in December 2007. The permit was issued by FDEP in July 2008. FPL initiated construction in March 2009 and anticipates an in-service date of mid-2011. WCEC Unit 3 will utilize the underground injection control (UIC) system permitted for the entire site.

Preferred Site # 2: St. Lucie Plant, St. Lucie County

FPL's St. Lucie Plant is located in St. Lucie County on Hutchinson Island on an FPL-owned 1,130-acre site. The plant site is bordered by the Atlantic Ocean to the east and the Indian River Lagoon to the west. Located on the site are two nuclear-powered generating units, St. Lucie Units 1 & 2, which have been in operation since 1976 and 1983, respectively. The St. Lucie site has been selected as a Preferred Site for the addition of two types of new generating capacity.

The first type of generating capacity addition is an increase in the capacity of the two existing nuclear generating units that is used to serve FPL's customers of approximately 103 MW for St. Lucie Unit 1 and 88 MW for St. Lucie Unit 2. This difference is due to FPL's 100% ownership share of St. Lucie 1 and its 85% ownership share of St. Lucie Unit 2. This work will involve changes to several existing main components within the existing facilities to increase their capability to produce steam for the generation of electricity. No new facilities are required as part of this capacity "uprate." This capacity uprate, along with a similar capacity uprate of FPL's existing Turkey Point nuclear units, was approved by the FPSC in January 2008. The capacity uprates at St. Lucie for the two nuclear units sited there are projected to be in-service in late 2011 and 2012.

The second type of generating capacity addition is the proposed installation of FPL wind generation turbines at the plant site. In 2007, FPL began the St. Lucie County land use approval process, and soon after applied for the necessary federal and state permitting. However, a decision by the state and federal agencies on the St. Lucie Wind project's permitting won't be finalized until the local land use approval process is completed. The in-service date will depend on the approval and permitting process. Six wind turbines are being proposed that, in total, would have a maximum output of approximately 13.8 MW.

a. U.S. Geological Survey (USGS) Map

A USGS map of the FPL St. Lucie Nuclear site is found at the end of this chapter.

b. Proposed Facilities Layout

A map of the general layout of the proposed generating facilities at the site is found at the end of this chapter.

c. Map of Site and Adjacent Areas

An overview map of the site and adjacent areas is also found at the end of this chapter.

d. Existing Land Uses of Site and Adjacent Areas

St. Lucie Units 1 & 2 are pressurized water reactors, each having two steam generators. The prominent structures, enclosed facilities, and equipment associated with St. Lucie Units 1 & 2 include the containment building, the turbine generator building, the auxiliary building, and the fuel handling building.

Prominent features beyond the power block area include the intake and discharge canals, switchyard, spent-fuel storage facilities, technical and administrative support facilities, and public education facilities (the Energy Encounter and the College of Turtle Knowledge). Significant features surrounding the St. Lucie Units 1 & 2 are predominately undeveloped land and water bodies including; Big Mud Creek, the Atlantic Ocean, Herman's Bay, and Indian River Lagoon.

In regard to the nuclear capacity uprates, the only changes will be modifications to the existing power generation facilities within the power block area, modifications to the switchyard facilities, and modifications to the transmission lines from St. Lucie to Midway substation. None of the other existing facilities at the plant will change as a

result of the uprates. No changes to the nuclear power generation facilities are projected as a result of the proposed wind turbine additions.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

FPL's St. Lucie Plant is located in St. Lucie County on Hutchinson Island on an FPL-owned 1,130-acre site. The St. Lucie Plant includes the reactor buildings, turbine buildings, access/security building, auxiliary building, maintenance facilities, and miscellaneous warehouses and other buildings associated with the operation of Units 1 & 2. The site includes adjacent undeveloped mangrove areas. As a result of the approved capacity uprates, the site characteristics will not change.

The proposed wind turbines would also be located on the FPL-owned site. Impacts to the site characteristics are projected to be minimal from the proposed wind turbines.

2. Listed Species

Some listed species known to occur in the area of the plant location are Atlantic sturgeon, smalltooth sawfish, loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas)*, leatherback sea turtle (*Dermochelys coriacea*), hawksbill sea turtle (*Eretmochelys imbricccata*), gopher tortoise (*Gopherus polyphemus*), kemp's ridley sea turtle (*Lepidochelys kempi*), wood stork (*Mycteria americana*), black skimmer (*Rynchops niger*), and least tern (*Sterna antillarum*).

In regard to the nuclear capacity uprates, neither the development work, nor the continued operation of the two nuclear units after the uprate work has been completed, are expected to adversely affect any rare, endangered, or threatened species. No changes in wildlife populations at the adjacent undeveloped areas are anticipated, including listed species. Noise and lighting impacts will not change and it is expected that wildlife will continue to use the undeveloped areas within the St. Lucie Plant boundary.

In regard to the wind turbines, some changes to the adjacent undeveloped areas are anticipated. Noise and lighting impacts will not change and the wind turbines

are not anticipated to deter the continued use by wildlife of the undeveloped areas within the St. Lucie Plant boundary or any adjacent areas.

3. **Natural Resources of Regional Significance Status**

Significant features surrounding the St. Lucie Units 1 & 2 are predominately undeveloped land and water bodies including; Big Mud Creek, the Atlantic Ocean, Herman's Bay, and Indian River Lagoon.

4. **Other Significant Features**

FPL is not aware of any other significant features of the site.

f. **Design Features and Mitigation Options**

The source of cooling water for the St. Lucie Plant is the Atlantic Ocean. It is a once-through system. The effects of the discharge of cooling water via these discharge structures were evaluated and mixing zones were established to allow compliance with thermal water quality standards as a part of the Plant's NPDES (Permit No. FL0002208). These mixing zones include the volume of water beyond the discharge structures, at the edge of which the water temperature is no greater than 17°F above the ambient temperature of the intake water.

In regard to the nuclear capacity uprates, the once-through system will continue to be used for the nuclear units. In regard to the wind turbines, no water will be required.

g. **Local Government Future Land Use Designations**

St. Lucie Units 1 & 2 are located in unincorporated St. Lucie County, Florida. The County has adopted a comprehensive plan, which is updated on a periodic basis. The County Comprehensive Plan incorporates a map that depicts the future land use categories of all property falling within the unincorporated portions of the County. The St. Lucie Plant has a Future Land Use category of Transportation/Utilities (T/U) according to the St. Lucie County Future Land Use Map. The T/U category is described in the St. Lucie County Comprehensive Plan Future Land Use Element Future Land Use.

In regard to the wind turbines, FPL has submitted an application to St. Lucie County to rezone the land that would serve as the footprint of the turbines to the T/U category.

h. **Site Selection Criteria Process**

The site has been selected as a Preferred Site for the nuclear capacity uprates because it is an existing nuclear plant site and, therefore, offers the opportunity for increased nuclear capacity. The site has been selected as a Preferred Site for the wind turbines because of the available wind resource at that location.

i. **Water Resources**

The source of cooling water for the St. Lucie Plant is the Atlantic Ocean. The once-through system flow will not change as a result of the nuclear uprates. No water will be required to operate the wind turbines. Due to the existing nature of the St. Lucie Plant, surrounding surface waters will not be adversely affected by either of the generation capacity additions. Stormwater will be handled by the existing facilities and no new areas will be impacted. Wetlands, groundwater, and nearby surface waters will not be impacted.

j. **Geological Features of Site and Adjacent Areas**

Beneath the land surface, there is a peat layer 4 to 6 feet thick. Below this layer is the Anastasia Formation, a sedimentary rock formation composed of clay lenses, sandy limestone, and silty fine to medium sand with fragmented shells. This highly permeable stratum extends 35 to 90 feet below mean sea level (msl). Underlying this stratum there is a semi-permeable zone, The Hawthorn Formation, consisting of slightly clayey and very fine silt which extends 600 feet below msl.

The original surficial deposits at the St. Lucie Plant were excavated to a depth of 60 feet and backfilled with Category I or II fill. The fill is underlain by the Anastasia formation, a sequence of partially cemented sand and sandy limestone, which extend to an average depth of about 145 feet. The Anastasia is underlain to a depth of about 600 to 700 feet by the partially cemented and indurated sands, clays, and sandy limestones of The Hawthorn Formation. Underlying these surface strata are about 13,000 feet of Jurassic through Tertiary Formations, primarily carbonate rocks. These formations have a relatively gentle slope to the southeast.

k. **Projected Water Quantities for Various Uses**

In regard to the nuclear capacity uprates, no change is expected in the quantity or characteristics of industrial wastewaters generated by the facility. Therefore, no change in that compliance achievement status is expected. The capacity uprates will not cause any changes in hydrologic or water quality conditions due to diversion,

interception, or additions to surface water flow. The St. Lucie Plant does not directly withdraw groundwater under its current operations and it will not withdraw groundwater after the capacity uprates work is completed. The use of water supplied by the City of Fort Pierce, which does withdraw groundwater, will remain unchanged and there will be no changes to the groundwater discharges. There will be no quality, quantity, or hydrological changes, either by withdrawal or discharge to a drinking water source. Therefore, there will be no impacts on drinking water.

The wind turbines will not require water for operations and will not cause any changes in the hydrologic or water quality conditions due to diversion, interception, or additions to surface water flow.

l. **Water Supply Sources by Type**

The source of cooling water for the St. Lucie Plant is the Atlantic Ocean. General plant service water, fire protection water, process water, and potable water are obtained from City of Fort Pierce. Process water uses include demineralizer regeneration, steam cycle makeup, and general service water use for washdowns.

The existing St. Lucie Plant water use is projected to be unchanged as a result of the nuclear capacity uprates. The wind turbines will not require water for operations.

m. **Water Conservation Strategies Under Consideration**

The existing water resources will not change as a result of the nuclear capacity uprates. The wind turbines will not require water for operations.

n. **Water Discharges and Pollution Control**

St. Lucie Units 1 & 2 use once-through cooling water from the Atlantic Ocean to remove heat from the main (turbine) condensers via the Circulating Water System (CWS), and to remove heat from other auxiliary equipment via the Auxiliary Equipment Cooling Water System (AECWS). The great majority of this cooling water is used for the CWS.

Under emergency conditions, water can be withdrawn from Big Mud Creek via the Emergency Intake Canal through two 54-inch pipe assemblies in the barrier wall that separates the Creek from the Canal. FPL does not use this intake during normal operations, but does test this system quarterly.

The facility employs a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to control the inadvertent release of pollutants. The wind turbines will not require water for operations. Consequently, there will be no water discharge as a result of these turbines.

o. Fuel Delivery, Storage, Waste Disposal, and Pollution Control

St. Lucie Units 1 & 2 are licensed for uranium-dioxide fuel that is slightly enriched uranium-235. The uranium-dioxide fuel is in the form of pellets contained in Zircaloy tubes with welded end plugs to confine radionuclides. The tubes are fabricated into assemblies designed for loading into the reactor core. Each reactor core includes 217 fuel assemblies.

FPL currently replaces approximately one-third of the fuel assemblies in each reactor at intervals of approximately 18 months. FPL operates the reactors such that the average fuel usage by the reactors is approximately 47,000 megawatt-days per metric ton uranium. In regard to the nuclear capacity uprates, more nuclear fuel will be used due to the increased capacity of each generating unit. No changes in the fuel-handling facilities are required. The addition of the wind turbines will have no fuel-related impact; i.e., no impacts from fuel delivery, storage, waste, or pollution control. Used fuel assemblies are stored in the onsite Nuclear Regulatory Commission (NRC) approved spent fuel storage facilities. Following completion of the uprates, approximately 11 percent more nuclear fuel will be used to increase the capacity of each unit. No changes in the fuel-handling facilities are required.

Diesel fuel is used in a number of emergency generators that include four main plant generators, two building generators, and various general purpose diesel engines. The main plant emergency generators will not be changed as a result of either of the two types of generation capacity additions. These emergency generators are for standby use only and are tested to assure reliability and for maintenance. Diesel fuel is delivered to the St. Lucie Plant by truck as needed, and stored in tanks with secondary containment.

p. Air Emissions and Control Systems

The St. Lucie Plant is classified as a minor source of air pollution, since FDEP has issued a Federally Enforceable State Operating Permit (FESOP) to keep emissions less than 100 tons per year for any air pollutant regulated under the Clean Air Act.

The applicable units at the St. Lucie Plant consist of eight large main plant diesel engines, two smaller diesel engines, and various general-purpose diesel engines. The air emissions from these engines are limited by the use of 0.05-percent sulfur diesel fuel and good combustion practices. Best Available Control Technology (BACT) is not applicable to these existing emission units.

Nitrogen oxide (NO_x) emissions from the operation of the diesel engines comprise the limiting pollutant for these diesel units at the St Lucie Plant. The FDEP FESOP limits NO_x emissions to 99.4 tons, which includes fuel use limits on the large main plant emergency diesel engines of 97,000 gallons in any 12-month consecutive period and the smaller building and general purpose diesel engines of 190,000 gallons in any 12-month consecutive period. Also, the Plant may choose to combine the diesel units' fuel-tracking, which then limits the NO_x totals for a 12-month consecutive period to a maximum of 80 tons. There will be no change in the operation or emissions of the diesel engines resulting from either the nuclear capacity uprates or the wind turbines.

In addition, neither of these types of generation capacity additions will result in an increase of carbon dioxide (CO_2) or other greenhouse gas emissions. In fact, both of these increases in generation capacity are projected to result in decreased FPL system-wide emissions of CO_2.

q. Noise Emissions and Control Systems

A field survey and impact assessment of noise expected to be caused by construction activities at the site was conducted for both types of generation capacity additions. Predicted noise levels are not expected to result in adverse noise impacts in the vicinity of the site during construction or operation of either generating capacity additions.

r. Status of Applications

In regard to the nuclear capacity uprates, a Site Certification Application (SCA) under the Florida Electrical Power Plant Siting Act was filed in December 2007 and a final order issued in September 2008. The FPSC voted to approve the need for the St. Lucie (and Turkey Point) nuclear capacity uprates and the final order approving the need for these capacity additions was issued in January 2008. In regard to the wind turbines, a Site Certification Application is not required. Individual permit applications were submitted for an Environmental Resource Permit (ERP) and the Army Corps of

Engineers Permits in May 2008 and the Coastal Construction Control Line in July 2008. In September of 2007, FPL submitted an application to St. Lucie County for a Conditional Use, Rezoning, and Height Amendment. The local approvals process is ongoing. However, the state and federal permitting process is on hold awaiting completion of local permitting.

Preferred Site # 3: Turkey Point Plant, Miami-Dade County

The Turkey Point Plant site is located on the west side of Biscayne Bay, 25 miles south of Miami. The site is directly on the shoreline of Biscayne Bay and is geographically located approximately 9 miles east of Florida City on Palm Drive. Public access to the plant site is limited due to the nuclear units located there. The land surrounding the site is owned by FPL and acts as a buffer zone. The site is comprised of two nuclear units (Units 3 & 4), two natural gas/oil conventional boiler units (Units 1 & 2), one CC natural gas unit (Unit 5), nine small diesel generators, the cooling canals, an FPL-maintained natural wildlife area, and wetlands that have been set aside as the Everglades Mitigation Bank (EMB).

Turkey Point Units 3 & 4 have been in operation since 1972 and 1973, respectively. The Turkey Point site has been selected as a Preferred Site for the increase in the capacity of its two existing nuclear generating units by approximately 103 MW each. This work will involve changes to several existing main components within the existing facilities to increase their capability to produce steam for the generation of electricity. No new or expanded facilities are required as part of this capacity "uprate." This capacity uprate, along with a similar capacity uprate of FPL's existing St. Lucie nuclear units, was approved by the FPSC in January 2008. The capacity uprates at Turkey Point are projected to be in-service in 2012.

As previously mentioned, FPL is pursuing licensing for two new nuclear units at the Turkey Point site. Each of these two units would provide 1,100 MW of capacity. Current projections for the in-service dates of these two units, Turkey Point Units 6 & 7, are beyond the 2010-2019 reporting time frame of this document. At the time this document is being prepared, FPL is evaluating what the revised in-service dates for Turkey Point 6& 7 should be for planning purposes. FPL will address those revised in-service dates for planning purposes in its May 3, 2010 cost recovery filing to the FPSC.

a. U.S. Geological Survey (USGS) Map

A USGS map of the Turkey Point plant site is found at the end of this chapter.

b. Proposed Facilities Layout

A map of the general layout of the Turkey Point Units 3 and 4 generating facility at the site is found at the end of this chapter.

c. Map of Site and Adjacent Areas

An overview map of the site and adjacent areas is also found at the end of this chapter.

d. Existing Land Uses of Site and Adjacent Areas

The five existing power generation units and support facilities occupy approximately 150 acres of the 11,000-acre Turkey Point Plant site. Support facilities include service buildings, an administration building, fuel oil tanks, water treatment facilities, circulating water intake and outfall structures, wastewater treatment basins, and a system substation. The cooling canal system occupies approximately 5,900 acres. The two 400-megawatt (MW) (nominal) fossil fuel-fired steam electric generation units at the Turkey Point Plant have been in service since 1967 (Unit 1) and 1968 (Unit 2). These units currently burn residual fuel oil and/or natural gas with a maximum equivalent sulfur content of 1 percent. The two 700-MW (nominal) nuclear units have been in service since 1972 (Unit 3) and 1973 (Unit 4). Turkey Point Units 3 and 4 are pressurized water reactor (PWR) units. Turkey Point Unit 5 is a nominal 1,150-MW CC unit that began operation in 2007. Significant features in the vicinity of the site include Biscayne National Park, the Miami-Dade County Homestead Bayfront Park, and the Everglades National Park.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

The prominent structures and enclosed facilities and equipment associated with Units 3 & 4 include: the containment building, which contains the nuclear steam supply system, including the reactor, steam generators, reactor coolant pumps, and related equipment; the turbine generator building, where the turbine generator and associated main condensers are located; the auxiliary building, which contains waste management facilities, engineered safety components, and other facilities; and the fuel handling building, where the spent fuel storage pool and storage facilities for new fuel are located. Prominent features beyond the power block area include the intake system, cooling canal system, switchyard, spent fuel storage facilities, and technical and administrative support facilities.

2. **Listed Species**

The construction during the uprating of the units, and operation of the units after the capacity uprating is completed, are not expected to adversely affect any rare, endangered, or threatened species. Listed species known to occur at the site and in the nearby Biscayne National Park that could potentially utilize the site include the peregrine falcon *(Falco peregrinus)*, wood stork *(Mycteria americana)*, American crocodile *(Crocodylus acutus)*, mangrove rivulus *(Rivulus marmoratus)*, roseate spoonbill (*Ajaja ajaja)*, limpkin *(Aramus guarauna),* little blue heron *(Egretta caerulea),* snowy egret *(Egretta thula),* American oystercatcher *(Haematopus palliates),* least tern *(Sterna antillarum)*, the white ibis *(Eudocimus albus)*, and bald eagle *(Haliaeetus leucocephalus).* No bald eagle nests are known to exist in the vicinity of the site. The federally listed, threatened American Crocodile thrives at the Turkey Point site, primarily in and around the southern end of the cooling canals which lie south of the project area. The entire site is considered crocodile habitat due to the mobility of the species and use of the site for foraging, traversing, and basking. FPL manages a program for the conservation and enhancement of the American crocodile and is attributed with survival improvement and the downlisting of the American Crocodile from endangered to threatened.

3. **Natural Resources of Regional Significance Status**

Significant features in the vicinity on the site include Biscayne National Park, the Miami-Dade County Homestead Bayfront Park, and the Everglades National Park. The portion of Biscayne Bay adjacent to the site is included within the Biscayne National Park. Biscayne National Park contains 180,000 acres, approximately 95 percent of which is open water interspersed with more than 40 keys. The Biscayne National Park headquarters is located approximately 2 miles north of the Turkey Point plant and is adjacent to the Miami-Dade County Homestead Bayfront Park which contains a marina and day-use recreational facilities.

4. **Other Significant Features**

FPL is not aware of any other significant features of the site.

f. **Design Features and Mitigation Options**

Turkey Point Units 3 & 4 uses cooling water from a closed-cycle cooling canal system to remove heat from the main (turbine) condensers, and to remove heat from other auxiliary equipment. The existing cooling canals will accommodate the increase in heat load that is associated with the increased capacity from the uprates. The maximum predicted increase in water temperature entering the cooling canal system from the units resulting from the uprates is predicted to be about 2.5°F, from 106.1°F to 108.6°F. The associated maximum increase in water temperature returning to the units is about 0.9°F, from 91.9°F to 92.8°F.

g. Local Government future Land Use Designations

Local government future land use plan designates most of the site as IU-3 "Industrial, Unlimited Manufacturing District." There are also areas designated GU – "Interim District." Designations for the surrounding area are primarily GU – "Interim District."

h. Site Selection Criteria Process

The site has been selected as a Preferred Site for the nuclear capacity uprates because it is an existing nuclear plant site and, therefore, offers the opportunity for increased nuclear capacity.

i. Water Resources

Unique to the Turkey Point plant site is the self-contained cooling canal system that supplies water to condense steam used by the plant's turbine generators. The canal system consists of 36 interconnected canals. The cooling canals occupy an area approximately two miles wide by five miles long (5,900 acres), approximately four feet deep. The system performs the same function as a giant radiator. The water is circulated through the canals in a two-day journey, ending at the plant's intake pumps.

j. Geological Features of Site and Adjacent Areas

The Turkey Point Plant lies upon the Floridian Plateau, a partly-submerged peninsula of the continental shelf. The peninsula is underlain by approximately 4,000 to 15,000 feet of sedimentary rocks consisting of limestone and associated formations that range in age from Paleozoic to Recent. Little is known about the basement complex of Paleozoic igneous and metamorphic rocks due to their great depth.

Generally in Miami-Dade County, the surficial aquifer (Biscayne Aquifer) consists of a wedge-shaped system of porous clastic and carbonate sedimentary materials,

primarily limestone and sand deposits of the Miocene to late Quaternary age. The Biscayne Aquifer is thickest along the eastern coast and varies in thickness from 80 to 200 feet thick. The surficial aquifer is typically composed of Pamlico Sand, Miami Limestone (Oolite), the Fort Thompson and Anastasia Formations (lateral equivalents), Caloosahatchee Marl, and the Tamiami formation. The lower confining layers below the surficial aquifer range in thickness from 350 to 600 feet and are composed of the Hawthorn Group. Beneath the Hawthorn Group, the Floridan Aquifer System ranges from 2,800 to 3,400 feet thick and consists of Suwannee Limestone, Avon Park Limestone, and the Oldsmar Formations.

k. Projected Water Quantities for Various Uses

The addition of nuclear generating capacity as a result of the uprates will not cause any changes in the quantity or characteristics of industrial wastewaters generated by the facility; therefore, no change in that compliance achievement status is expected. The uprates will not cause any changes in hydrologic or water quality conditions due to diversion, interception, or additions to surface water flow. The Turkey Point Plant does not directly withdraw groundwater under its current operations and it will not do so after the capacity uprates. Locally, groundwater is present beneath the site in the surficial or Biscayne Aquifer and in deeper aquifer zones that are part of the Floridan Aquifer System. There will be no effects on those deeper aquifer zones from the capacity uprates.

l. Water Supply Sources and Type

The source of cooling water for Turkey Point Units 3 & 4 is the cooling canal system. There will be no increase in the amount of water withdrawn as a result of the capacity uprates. General plant service water, fire protection water, process water, and potable water are obtained from Miami-Dade County. Process water uses include demineralizer regeneration, steam cycle makeup, and general service water use for washdowns. The water use for the facility will not change as a result of the capacity uprates.

m. Water Conservation Strategies

The existing water resources will not change as a result of the uprates.

n. Water Discharges and Pollution Control

Heated water discharges are dissipated using the existing closed cooling water system and the cooling canal system.

The facility employs a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to prevent and control the inadvertent release of pollutants.

o. **Fuel Delivery, Storage, Waste Disposal, and Pollution Control**

Turkey Point Units 3 & 4 utilize uranium-dioxide fuel that is slightly enriched uranium-235. The uranium-dioxide fuel is in the form of pellets contained in Zircaloy tubes with welded end plugs to confine radionuclides. The tubes are fabricated into assemblies designed for loading into the reactor core. Used fuel assemblies are stored in the onsite NRC-approved spent fuel storage facilities.

FPL currently replaces approximately one-third of the fuel assemblies in each reactor at refueling intervals of approximately 18 months. FPL operates the reactors such that the average fuel usage by the reactors is approximately 45,000 megawatt-days per metric ton of uranium. Following completion of the uprates, more nuclear fuel will be used to increase the capacity of each unit. No changes in the fuel handling facilities are required. Following completion of the uprates, approximately 11 percent more nuclear fuel will be used to increase the capacity of each unit. No changes in the fuel-handling facilities are required.

Diesel fuel is used in a number of emergency generators that include four main emergency generators, five smaller emergency generators and various general purpose diesel engines. The emergency generators will not be changed as a result of the capacity uprates. These emergency generators are for stand-by use only and only operated for testing purposes to assure reliability and for maintenance. Diesel fuel for the emergency generators is delivered to the Turkey Point Plant by truck as needed, and stored in tanks with secondary containment.

p. **Air Emissions and Control Systems**

The normal operation of Turkey Point Units 3 & 4 does not create fossil fuel-related air emissions. However, there are 9 emergency generators associated with Units 3 & 4. Four of these nine emergency generators are main plant emergency generators which are rated at 2.5 MW each. The remaining five are smaller emergency generators which are associated with the security system. In addition, various general purpose diesels are used as needed for Units 3 & 4.

Turkey Point Plant Units 3 & 4's associated emergency generators and diesel engines, together with Units 1, 2, & 5, are classified as a major source of air pollution. FDEP has issued a separate Title V Air Operating Permit for the Turkey Point Nuclear Plant (Permit Number 0250003-004-AV). There are no operating limits for the emergency generators or diesel engines. Emergency diesel generators are limited to ultra-low sulfur distillate (0.0015% sulfur). NOx emissions are regulated under Reasonably Available Control Technology (RACT) requirements in Rule 62-296.570(4)(b)7 F.A.C., which limit NO_x emissions to 4.75 lb/MMBtu. The use of 0.05 percent sulfur diesel fuel and good combustion practices serve to keep NO_x emissions under this limit.

q. Noise Emissions and Control Systems

A field survey and impact assessment of noise expected to be caused by activities associated with the uprates was conducted. Predicted noise levels are not expected to result in adverse noise impacts in the vicinity of the site.

r. Status of Applications

A Site Certification Application (SCA) under the Florida Electrical Power Plant Siting Act was filed in January 2008 and a final order was issued in October 2008. The FPSC voted to approve the need for the Turkey Point (and St. Lucie) uprates and the final order approving the need for this additional nuclear capacity was issued in January 2008.

Preferred Site # 4: Cape Canaveral Plant, Brevard County

This site is located on the existing FPL Cape Canaveral Plant property in unincorporated Brevard County. The site is bound to the east by the Indian River Lagoon and on the west by a four lane highway (US. 1). The city of Port St. Johns is located less than a mile away. A rail line is located near the plant.

The existing 788 MW (summer) of generating capacity at FPL's Cape Canaveral site occupies a portion of the 43 acres that are wholly owned by FPL. The generating capacity is made up of steam units (Units 1 & 2).

The Cape Canaveral Plant site has been listed as a Potential Site in previous FPL Site Plans for both CC and simple cycle generation options. FPL is proposing, for resource planning purposes, to modernize the existing Cape Canaveral Plant, to be renamed the

Cape Canaveral Next Generation Clean Energy Center (CCEC), by replacing the existing generating units with a modern, highly efficient, lower-emission next-generation clean energy center using the latest CC technology. The existing two (2) steam units will first be dismantled and removed from the site and will be replaced by a single new CC unit.

a. Geological Survey (USGS) Map

A USGS map of the Cape Canaveral Plant site is found at the end of this chapter.

b. Proposed Facilities Layout

A map of the general layout of the CCEC generating facilities at the site is found at the end of this chapter.

c. Map of Site and Adjacent Areas

An overview map of the site and adjacent areas is also found at the end of this chapter.

d. Existing Land Uses of Site and Adjacent Areas

The existing land uses on the site are primarily dedicated to electrical generation; i.e., FPL's existing Cape Canaveral Units 1 & 2. The existing land uses that are adjacent to the site consist of single- and multi-family residences to the south and southwest, commercial property to the northwest, utility systems to the west, and a private medical/office facility to the north.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

The natural environment surrounding the site includes the Indian River Lagoon to the east and upland scrub, pine and hardwoods to the north and south. Vegetation with the approximately 45-acre offsite construction laydown and parking area (located west of U.S. Highway 1) consists of open land, upland scrub, pine, hardwoods along with exotic plant species.

2. Listed Species

No adverse impacts to federally or state-listed terrestrial plants and animals are expected in association with construction at the Site, due to the existing developed nature of the Site and lack of suitable onsite habitat for listed species. Federal- or state-listed terrestrial plants and animals inhabiting the offsite

construction laydown and parking area are limited to the state-listed gopher tortoise and the state- and federally-listed scrub jay. The warm water discharges from the plant attract manatees, an endangered species. FPL is working closely with state and federal wildlife agencies to ensure protection of the manatees during the modernization process and upon operation of the new plant. FPL will be complying with several manatee related conditions of certification to ensure the protection of the manatees during this time.

3. **Natural Resources of Regional Significance Status**

The construction and operation of a natural gas-fired CC generating facility at this location is consistent with the existing use at the site and is not expected to have any adverse impacts on parks, recreation areas, or environmentally sensitive lands.

4. **Other Significant Features**

FPL is not aware of any other significant features of the site.

f. Design Features and Mitigation Options

The design option is to replace the existing steam generating units (Units 1 & 2) with one new 1,219 MW (approximate) CC unit consisting of three new combustion turbines (CT), three new heat recovery steam generators (HRSG), and a new steam turbine. The new CC unit would be in-service in mid-2013. Natural gas delivered via pipeline is the primary fuel type for this unit with ultra-low sulfur light oil serving as a backup fuel.

g. Local Government Future Land Use Designations

Local government future land use designation for the site is "Public Utilities" and the area has been rezoned to GML-U. Designations for the surrounding area are primarily "Community Commercial" and "Residential". The Indian River Lagoon is to the east of the site.

h. Site Selection Criteria Process

The Cape Canaveral Plant has been selected as a preferred site for a site modernization due to consideration of various factors including system load and economics. Environmental issues were not a deciding factor since this site does not exhibit significant environmental sensitivity or other environmental issues. However, there are environmental benefits of replacing the existing steam units with a new CC

unit including a significant reduction in system air emissions and improved aesthetics at the site.

i. **Water Resources**

Condenser cooling for the steam cycle portion of the new plant and auxiliary cooling will come from the existing cooling water intake system. Process, potable, and irrigation water for the new plant will come from the existing City of Cocoa's potable water supply.

j. **Geological Features of Site and Adjacent Areas**

FPL's Cape Canaveral Plant is located on the Atlantic Coastal Ridge and is at an approximate elevation of 12 feet above mean sea level (msl). The land consists primarily of fine to medium sand that parallels the coast. There is a lack of shell as it was deposited during a time of transgression. The base of the sedimentary rocks is made up of a thick, primarily carbonate sequence deposited during the Jurassic age through the Pleistocene age. Starting in the Miocene age and continuing through the Holocene age, siliciclastic sedimentation became more predominant. The basement rocks in this area consist of low-grade metamorphic and igneous intrusives, which occur several thousand feet below land surface and are Precambrian, Paleozoic, and Mesozoic in age.

k. **Projected Water Quantities for Various Uses**

The estimated quantity of water required for processing is approximately 0.232 million gallons per day (mgd) for uses such as process water and service water. Approximately 619 million gallons per day (mgd) of cooling water would be cycled through the once-through cooling water system. Potable water demand is expected to average .001 mgd.

l. **Water Supply Sources by Type**

The new plant will continue to use the Indian River Lagoon water as the source of once-through cooling water. Such needs for cooling water will comply with the existing St. John's River Water Management District (SJRWMD) Consumptive Use Permit (CUP). Process, potable, and irrigation water for the new plant will come from the existing City of Cocoa's potable water supply.

m. **Water Conservation Strategies Under Consideration**

No additional water sources will be required as a result of the modernization project.

n. **Water Discharges and Pollution Control**

The modernized site will utilize portions of the existing once-through cooling water systems for heat dissipation. The heat recovery steam generator blowdown will be mixed with the cooling water flow before discharge. Reverse osmosis (R/O) reject will be mixed with the plant's once-through cooling water system. Stormwater runoff will be collected and routed to stormwater ponds. The facility will employ a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to prevent and control the inadvertent release of pollutants.

o. **Fuel Delivery, Storage, Waste Disposal, and Pollution Control**

Natural gas for the new unit would be transported to the site via a pipeline. New on-site gas compressors may be installed to raise the gas pressure of the existing pipeline for the new unit. Ultra-low sulfur light fuel oil would be received by truck or barge from Port Canaveral and stored in an existing above-ground storage tank.

p. **Air Emissions and Control Systems**

The emission rates of CCEC would decrease by almost 100-fold from the existing Cape Canaveral Plant, resulting in substantial annual emissions reductions and increased air quality benefits. The use of natural gas and ultra-low sulfur light fuel oil and combustion controls would minimize air emissions from the unit and ensure compliance with applicable emission limiting standards. Using these fuels minimizes emissions of sulfur dioxide (SO_2), particulate matter, and other fuel-bound contaminates. Combustion controls similarly minimize the formation of nitrogen oxides (NO_x) and the combustor design will limit the formation of carbon monoxide and volatile organic compounds. When firing natural gas, NO_x emissions will be controlled using dry-low NO_x combustion technology and selective catalytic reduction (SCR). Water injection and SCR will be used to reduce NO_x emissions during operations when using ultra-low sulfur light fuel oil as backup fuel. These design alternatives are equivalent to the Best Available Control Technology for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. Taken together, the design of the new CCEC plant will incorporate features that would make it among the most efficient and cleanest power plants in the State of Florida.

q. **Noise Emissions and Control Systems**

Noise from the operation of the new unit will be within allowable levels.

r. **Status of Applications**

The FPSC voted to approve the need for the modernization project and the need order was issued in September 2008. The project received final state certification on October 9, 2009, through the issuance of a final order signed by the Secretary of the DEP.

Preferred Site # 5: Riviera Plant, Palm Beach County

This site is located on the existing FPL Riviera Plant property primarily within Riviera Beach, Palm Beach County (with a small portion of the Site in West Palm Beach). The site is bound to the east by the Lake Worth Lagoon (Intracoastal Waterway) and on the west by a four lane highway (US. 1). The site has barge access via the Port of Palm Beach. A rail line is located near the plant.

The current site generating capacity is made up of two (2) operational 300 MW (approximate) steam generating units (Units 3 & 4). Units 1 & 2 have been retired and dismantled and are no longer on the plant site.

The Riviera Plant site has been listed as a Potential Site in previous FPL Site Plans for both CC and simple cycle generation options. FPL is proposing, for resource planning purposes, to modernize the existing Riviera Plant, to be renamed the Riviera Beach Next Generation Clean Energy Center (RBEC), by replacing the existing generating units with a modern, highly efficient, lower-emission next-generation clean energy center using the latest CC technology. The existing two steam units will first be removed from the site and will be replaced by a single new CC unit.

a. **U.S. Geological Survey (USGS) Map**

A USGS map of the Riviera site is found at the end of this chapter.

b. **Proposed Facilities Layout**

A general layout of the RBEC generating facilities is found at the end of this chapter.

c. **Map of Site and Adjacent Areas**

An overview map of the site and adjacent areas is also found at the end of this chapter.

d. **Existing Land Uses of Site and Adjacent Areas**

The existing Riviera Plant currently consists of two 300 MW (approximate) units with conventional dual-fuel fired steam boilers and steam turbine units. The plant site includes minimal vegetation and a landscape buffer area south of the power plant. Adjacent land uses include port facilities and associated industrial activities, as well as light commercial and residential development.

e. **General Environment Features On and In the Site Vicinity**

1. **Natural Environment**

The majority of the site is comprised of facilities related to electric power generation for the existing Riviera Plant. The site is located on the Intracoastal waterway which provides warm water refugia for manatees during cold winter days.

2. **Listed Species**

No adverse impacts to federally or state-listed terrestrial plants and animals are expected in association with construction at the Site, due to the existing developed nature of the Site and lack of suitable onsite habitat for listed species. The warm water discharges from the plant attract manatees, an endangered species. FPL is working closely with state and federal wildlife agencies to ensure protection of the manatees during the modernization process and upon operation of the new plant. FPL will be complying with several manatee related conditions of certification to ensure the protection of the manatees during this time.

3. **Natural Resources of Regional Significance Status**

The construction and operation of a natural gas-fired CC generating facility at this location is consistent with the existing use at the site and is not expected to have any adverse impacts on parks, recreation areas, or environmentally sensitive lands.

4. **Other Significant Features**

FPL is not aware of any other significant features of the site.

f. **Design Features and Mitigation Options**

The design option is to replace the existing units (Units 3 & 4) with one new 1,219 MW (approximate) unit consisting of three new combustion turbines (CT), three new

heat recovery steam generators (HRSG), and a new steam turbine. The new CC unit would be in service in mid-2014. Natural gas delivered via pipeline is the primary fuel type for the unit with ultra-low sulfur light oil serving as a backup fuel.

g. Local Government Future Land Use Designations

Local government future land use designation for the site is "Utility". The Port of Palm Beach is to the north of the site. Designation to the west of the site is "Commercial". To the south of the site is "Residential" and is in the City of West Palm Beach.

h. Site Selection Criteria Process

The Riviera plant has been selected as a Preferred Site to consideration of various factors including system load and economics. Environmental issues were not a deciding factor since this site does not exhibit significant environmental sensitivity or other environmental issues. However, there are environmental benefits of replacing the existing steam units with a new CC unit including a significant reduction in system air emissions and improved aesthetics at the site.

i. Water Resources

Water from the Lake Worth Lagoon (Intracoastal waterway) is currently used for once-through cooling water. The new plant will utilize portions of the existing once through cooling water intake and discharge structures. Water for cooling pump seals and irrigation will come from three onsite surficial aquifer wells. Process and potable water for the converted plant will come from the existing City of Riviera Beach potable water supply.

j. Geological Features of Site and Adjacent Areas

FPL's Riviera Plant site is underlain by the surficial aquifer system. The Surficial aquifer system in eastern Palm Beach County is primarily composed of sand, sandstone, shell, silt, calcareous clay (marl), and limestone deposited during the Pleistocene and Pliocene Epochs. The sediments forming the aquifer system are the Pamlico Sand, Fort Thompson Formation (Pleistocene) and the Caloosahatchee Marl (Pleistocene and Pliocene). Permeable sediments in the upper part of the Tamiami Formation (Pliocene) are also part of the aquifer system. The sediments in the eastern portion of the county are appreciably more permeable than in the west due to better sorting and less silt and clay content.

The surficial aquifer is underlain by at least 600 feet the Hawthorn formation (confining unit). The Floridan Aquifer System underlies the Hawthorn formation.

k. Projected Water Quantities for Various Uses

The estimated quantity of water required for processing is approximately 0.232 million gallons per day (mgd) for uses such as process water and service water. Approximately 600 mgd of cooling water would be cycled through the once-through cooling water system. Potable water demand is expected to average .001 mgd.

l. Water Supply Sources by Type

The new plant will continue to use the Lake Worth Lagoon water as the source of once-through cooling water. Water for cooling pump seals and irrigation will come from on-site surficial aquifer wells currently permitted by SFWMD. Process and potable water for the new plant will come from the existing City of Riviera Beach's potable water supply.

m. Water Conservation Strategies Under Consideration

No additional water sources will be required as a result of the modernization project.

n. Water Discharges and Pollution Control

The new plant will utilize portions of the existing once-through cooling water system for heat dissipation. The heat recovery steam generator blowdown will be mixed with the cooling water flow before discharge. Reverse osmosis (R/O) reject will be mixed with the plant's once-through cooling water system prior to discharge. Stormwater runoff will be collected and routed to stormwater ponds. The facility will employ a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to prevent and control the inadvertent release of pollutants.

o. Fuel Delivery, Storage, Waste Disposal, and Pollution Control

Natural gas for the new unit would be transported to the site via a pipeline. New gas compressors may be installed to raise the gas pressure of the existing pipeline to the appropriate level for the converted unit. Ultra-low sulfur light fuel oil would be received by truck, pipeline or barge and stored in a new above-ground storage tank.

p. **Air Emissions and Control Systems**

The regulated air emissions at the new plant would be more than 90 percent lower than the existing Riviera Plant's emissions are, resulting in significant annual emissions reductions and air quality benefits. The use of natural gas and ultra-low sulfur light fuel oil and combustion controls would minimize air emissions from the unit and ensure compliance with applicable emission limiting standards. Using these fuels minimizes emissions of sulfur dioxide (SO_2), particulate matter, and other fuel-bound contaminates. Combustion controls similarly minimize the formation of nitrogen oxides (NO_x) and the combustor design will limit the formation of carbon monoxide and volatile organic compounds. When firing natural gas, NO_x emissions will be controlled using dry-low NO_x combustion technology and selective catalytic reduction (SCR). Water injection and SCR will be used to reduce NO_x emissions during operations when using ultra-low sulfur light fuel oil as backup fuel. These design alternatives are equivalent to the Best Available Control Technology for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. Taken together, the design of RBEC would incorporate features that will make it among the most efficient and cleanest power plants in the State of Florida.

q. **Noise Emissions and Control Systems**

Noise expected to be caused by unit construction at the site is expected to be below current noise levels for the residents nearest the site.

r. **Status of Applications**

The FPSC voted to approve the need for the modernization project and the need order was issued in September 2008. The project received final state certification on November 24, 2009, through the issuance of a final order signed by the Secretary of the DEP.

Preferred Site #6: Space Coast Next Generation Solar Energy Center, Brevard County

The Space Coast site is located at Section 13, Township 23 South, and Range 36 East, North of North Courtenay Parkway. FPL is leasing approximately 60 acres from Kennedy Space Center in Brevard County. This Space Coast site has been selected as a Preferred Site for the addition of a 10 MW PV generation facility. The Space Coast Next Generation Solar Energy Center is expected to be in operation by the end of 2010. This

Site has the potential to expand by another 10 MW. Also, FPL is evaluating the potential for expansion beyond the existing site.

a. U.S. Geological Survey (USGS) Map

A USGS map of the Space Coast Next Generation Solar Energy Center plant site is found at the end of this chapter.

b. Proposed Facilities Layout

A map of the general layout of the Space Coast Next Generation Solar Energy Center generating facility is found at the end of this chapter.

c. Map of Site and Adjacent Areas

An overview map of the site and adjacent areas is also found at the end of this chapter.

d. Existing Land Uses of Site and Adjacent Areas

The site is inactive. The site was previously dedicated to agricultural use as citrus groves. There are no structures on the site and the majority of the vegetation is citrus grove.

e. General Environment Features On and In the Site Vicinity

1. **Natural Environment**

   The surrounding land use is predominantly agriculture. FPL was able to design the PV facility to avoid most of the impacts to natural wetlands.

2. **Listed Species**

   Wildlife resources at the site were evaluated in February 2008 through pedestrian surveys. There were no listed species observed.

3. **Natural Resources of Regional Significance Status**

   The construction and operation of a PV generating facility at this location is not expected to have any adverse impacts on parks or recreation areas. Construction will result in minimal wetland impacts under federal, state, or local agency permitting criteria.

4. **Other Significant Features**

FPL is not aware of any other significant features of the site.

f. **Design Features and Mitigation Options**

The design consists of 10 MW of PV technology. No mitigating options are deemed necessary at the site.

g. **Local Government future Land Use Designations**

Future land use designation for the site is Spaceport Management as designated by the Brevard County Future Land Use Map.

h. **Site Selection Criteria Process**

The site has been selected as a Preferred Site for the installation of a PV technology due to consideration of various factors including its suitability for a PV facility of this magnitude and the cooperation of the Kennedy Space Center.

i. **Water Resource**

No water will be required at the PV facility except the small amount that may be needed to occasionally clean the solar panels in the absence of sufficient rainfall. Any such water would be brought to the site by truck.

j. **Geological Features of the Site and Adjacent Areas**

The surface and near-surface deposits of east-central Florida range from surficial unconsolidated sands to well indurated limestones and dolomites at depth. In ascending order the four main geologic units present in east-central Florida are: (i) Eocene limestones; (ii) Lower and Middle Miocene compact silt and clays; (iii) Upper Miocene and Pliocene silty and clayey sands; and (iv) Pleistocene and Recent age sands with interbedded shell layers.

k. **Projected Water Quantities for Various Uses**

The projected water use for the PV facility is expected to be minimal with water being used occasionally only to clean the PV panels.

l. **Water Supply Sources and Type**

At this time, it is expected that natural rainfall will be sufficient to keep the solar panels clean. In the event that additional water is required, a small amount of water may be occasionally trucked in to clean the PV panels.

m. **Water Conservation Strategies**

FPL constructed this PV facility knowing it would not use water for operation and would only need a minimal amount for cleaning the PV panels.

n. **Water Discharges and Pollution Control**

There will not be any water discharges or pollution as a result of this facility

o. **Fuel Delivery, Storage, Waste Disposal, and Pollution Control**

The facility will use the sun for fuel. Therefore, there will not be any fuel delivery, storage, waste, or pollution at this site.

p. **Air Emissions and Control Systems**

No air emissions will be emitted from this facility.

q. **Noise Emissions and Control Systems**

Noise expected during construction is expected to be below noise levels allowed by Brevard County. No noise will be emitted from this facility during operation.

r. **Status of Applications**

FPL received an Environmental Resource Permit (ERP) from the St. Johns Water Management District in April 2009 and a U.S. Army Corps of Engineers permit in December 2008 for the 10 MW site. .

Preferred Site #7: Martin Next Generation Solar Energy Center, Martin County

The Martin Next Generation Solar Energy Center (MSEC) is located on the existing FPL Martin Plant site in unincorporated Martin County, Florida. The Martin Plant site is located in southwestern Martin County about 40 miles northwest of West Palm Beach and about 1.3 miles east of Lake Okeechobee (Figure 2.1-1). The Martin Plant site is bounded by State Road (SR) 710 and a CSX Railroad line (east and north), a Florida East Coast Railway line and SFWMD L-65 Canal (west), and the St. Lucie Waterway (south).The MSEC Project will be constructed in an approximately 600-acre area (Project Area) within FPL's existing 11,300-acre Martin Plant site. The land surrounding the site is owned by FPL and acts as a buffer zone.

The site has been selected as a Preferred Site for the addition of approximately 75 MW of solar thermal generation. The facility will produce steam that will replace steam that

would otherwise have been produced by burning natural gas in one of the existing CC units at the site, Martin Unit 8. The Martin Next Generation Solar Energy Center is expected to be in operation by the end of 2010.

There also is potential for an additional 75 MW of photovoltaic or solar thermal on the Martin Plant Property in the future. Adjacent farmlands are also being considered for additional photovoltaic facilities.

a. U.S. Geological Survey (USGS) Map

A USGS map of the Martin Next Generation Solar Energy Center plant site is found at the end of this chapter.

b. Proposed Facilities Layout

A map of the general layout of the Martin Next Generation Solar Energy Center generating facility is found at the end of this chapter.

c. Map of Site and Adjacent Areas

An overview map of the site and adjacent areas is also found at the end of this chapter.

d. Existing Land Uses of Site and Adjacent Areas

Total acreage for the existing Martin Plant site is approximately 11,300 acres, which represents land owned by FPL. The Martin Plant site consists of a 6,800-acre cooling pond (6,500 acres of water surface and 300 acres of embankment) and approximately 400 acres for existing Units 1 through 4, Unit 8, and associated facilities. Units 1 & 2 are nominal 800-MW steam electric generating units that use natural gas and low-sulfur residual oil. Units 3 & 4 are nominal 500-MW natural gas-fired CC units. Unit 8 is a natural gas fired 4-on-1 CC unit with a nominal capacity of 1,100 MW that began operation in 2005. Light oil is used as backup in Unit 8. The other onsite facilities include water and wastewater treatment facilities, residual and light fuel oil storage, switchyards and transmission lines, offices, warehouses, maintenance buildings, and other miscellaneous uses.

Adjacent areas include agricultural uses such as croplands, pastures, and groves account for much of the land use and cover within 5 miles of the Martin Plant site. Three types of wetlands, forested freshwater, non-forested freshwater, and mixed forested and forested freshwater also account for a great deal of nearby land use.

e. General Environment Features On and In the Site Vicinity

1. Natural Environment

The portions of the Martin Plant site that will be affected by the construction of the MSEC are about 550 acres that will be utilized for solar arrays and construction facilities. The solar arrays will be located east of the existing Unit 8. Activities associated with construction will occupy about 100 acres. This will include construction laydown, parking, and trailers. These areas will be cleared of any vegetation. The area for the heat exchangers will be near Unit 8 and this area has been previously impacted by the construction of Units 3, 4, and 8.

2. Listed Species

Threatened and endangered species within the project area are limited to avian species and gopher tortoise. No listed species of plants were identified within the MSEC project area. Due to the presence of large areas of similar habitat both within the Northwest Mitigation Area and areas north of the existing transmission line right-of-way (ROW) adjacent to the project area, and the highly mobile nature of protected avian species, no significant adverse impacts to federally or state listed animals are expected. Creation of wood stork foraging ponds and sandhill crane habitat within the Northwest Mitigation Area provides suitable habitat to offset the loss of shallow hydroperiod wetlands within the project area.

Gopher tortoises are classified as threatened by the Florida Fish and Wildlife Conservation Commission (FFWCC), but are not listed federally by the U.S. Fish and Wildlife Service (USFWS). Gopher tortoise burrows were observed in the palmetto prairie and woodland pasture. Other listed species are known to utilize gopher tortoise burrows (commensal species), including the Eastern indigo snake (*Drymarchon corais couperi*; federally and state threatened), gopher frog (*Rana capito*; state species of special concern), and Florida mouse (*Podomys floridanus*; state species of special concern). A permit was obtained to relocate the gopher tortoises and any commensal species. Construction and operation at the site is not expected to affect any rare, endangered, or threatened species.

3. Natural Resources of Regional Significance Status

The construction and operation of a solar thermal facility at this location is not expected to have any adverse impacts on parks or recreation areas.

Construction will result in minimal wetland impacts under federal, state, or local agency permitting criteria.

4. **Other Significant Features**

The Florida Department of State, Division of Historical Resources, has determined that no significant archaeological or historical sites are recorded or are likely to be present within the project area. As a result no construction impacts on historic properties listed or eligible for listing in the National Register of Historic Places, or otherwise of historical or archaeological value, are anticipated.

f. Design Features and Mitigation Options

The design consists of approximately 75 MW of solar thermal technology. FPL has already undertaken an extensive wetland mitigation program on a 1,130-acre parcel northwest of the existing Martin Plant generating units. That mitigation program was deemed successful by the SFWMD in 2001. All wetland impacts associated with the MSEC have been fully mitigated through this now-successful wetland and upland mitigation effort.

g. Local Government future Land Use Designations

The Martin Plant site that includes Units 1 & 2 was developed prior to the county's adoption of a future land use map. In 1982, at the time of the original land use plan map adoption, the portion of the Martin Plant site surrounding the existing units was designated Industrial. The Electric Utility Element of the Comprehensive Plan acknowledged FPL's then current plans to construct two integrated coal gasification combined cycle (IGCC) plants at the Martin Plant site and encouraged the facilities to be developed under the industrial planned unit development [PUD(i)] zoning designation. In September 1988, FPL requested a comprehensive plan land use amendment to industrial for the licensing of the Martin Coal Gasification/Combined Cycle (CG/CC) Project Area and a rezoning of that area to PUD(i). In August 1989, the Martin County Board of County Commissioners (BOCC) approved the comprehensive plan amendment and the rezoning request. In June 2008, with the BOCC approval of the rezoning, a PUD Zoning Agreement was executed between Martin County and FPL in which development standards and special conditions were addressed. Most of the special conditions were addressed during earlier phases of developing the Martin Plant site. An amendment of the PUD Zoning Agreement was requested by FPL to allow renewable energy facilities to be located within the PUD

area. Subsequent to the certification of the CG/CC project, which includes the area of the MSEC, Martin County has amended its future land use element and map to designate 7,300 acres in the Martin Plant site as Public Utilities – Major Public Power Generation Facilities.

h. **Site Selection Criteria Process**

The site has been selected as a Preferred Site due to consideration of various factors including available land area and proximity to an existing generating unit (Martin Unit 8) to which the steam generated by the solar thermal facility could be fed.

i. **Water Resource**

There will be no water used at the solar thermal facility except the small amount needed to occasionally clean the solar mirrors. The additional water needed for mirror cleaning is already within the previously approved allocation of water for the Martin Plant site.

j. **Geological Features of the Site and Adjacent Areas**

Borings drilled in the area just east of the existing Unit 8 show that the predominant soil type is sand from the ground surface [approximately 30 feet above mean sea level (ft-msl)] to −70 ft-msl (negative number denotes feet below sea level). The sands vary in color from light to dark gray and brown. Clayey sand and sandy clay seams from a few inches to several feet in thickness are generally found at 10 ft-msl. A thin layer of greenish-gray sandy clay was found in the borings at approximately −25 ft-msl. The Pamlico and Anastasia Formations extend from the ground surface (20 to 30 ft-msl) to an average of −3 ft-msl. These strata consist of fine sands and silty sands with shell fragments. Thin beds of limestone and cemented sand occur sporadically at depths ranging from 2 to 4.5 ft-msl in localized areas; this zone may represent the boundary between the Pamlico and Anastasia Formations. In areas where the cemented sands and limestone are absent, it is not possible to differentiate the two formations.

The underlying Caloosahatchee Group extends to an average −80 ft-msl. This formation can be subdivided into two units, namely an upper limestone interbedded with sand and shell present to an average −12 ft-msl, and a lower unit of silty sand with shell fragments and shell beds to −80 ft-msl. The Tamiami Formation underlies the Caloosahatchee from −105 ft-msl to −150 ft-msl. This formation consists of silty sand varying with depth to clayey sand from −72 ft-msl. The color of the formation also varies from gray in the sands to predominantly green in the clayey zone.

The top of the Hawthorn Group occurs at approximately −105 ft-msl to −150 ft-msl. These elevations are based on the logs of test wells and exploratory borings drilled in the area. The Hawthorn, approximately 550 ft thick, consists predominantly of greenish clay with subordinate amounts of shell, limestone, silt, and sand. Major limestone zones generally occur near the base of the formation. Due to very low vertical permeability, the Hawthorn acts as a confining bed overlying the Floridan Aquifer.

k. Projected Water Quantities for Various Uses

Washing mirrors requires about 50 gallons per 120 mirrors (i.e., a 50 meter section). Based on the amount of mirrors for the MSEC, about 75,000 gallons per washing will be required. This amount of water is estimated to be no more than about 2 million gallons per year for cleaning mirrors.

l. Water Supply Sources and Type

The plant water use for MSEC can be accommodated by the current authorization for water in the Conditions of Certification (PA89-27L). The amount of water required by the MSEC is estimated to not exceed about 2 million gallons per year for cleaning mirrors, or an annual average of about 5 gallons per minute (gpm). The usage will be intermittent, with maximum usage of about 75,000 gallons every 1 or 2 weeks during periods without rain and depending upon the reflectivity of the mirrors. The source of water for the MSEC is the existing demineralized water system.

m. Water Conservation Strategies

FPL plans to construct this solar thermal facility knowing it will use very little water for operation.

n. Water Discharges and Pollution Control

There will not be any water discharges or pollution as a result of this facility.

o. Fuel Delivery, Storage, Waste Disposal, and Pollution Control

The facility will use the sun for fuel. Therefore, there will not be any fuel delivery, storage, waste, or pollution at the site from the operation of the solar thermal facility.

p. Air Emissions and Control Systems

There will be no SO_2, NO_x, or CO_2 emissions from the solar thermal facility and its operation will result in reductions of FPL system emissions for all three types of emissions.

There will be minor amounts of volatile organic compounds (VOCs) released from the expansion tanks as a result of decomposition products of heat transfer fluids (HTF). Based on reported values from FPL Energy SEGS facilities in California, the VOC emissions from the MSEC will be about 0.8 tons per year (TPY). This amount would classify these emissions as insignificant activities and the amount is well below the threshold requiring permitting under FDEP rules in 62-210.300, F.A.C. A generic exemption is that emissions of any regulated pollutant be less than 5 TPY. The 5 TPY applies to the "potential-to-emit" for the emission unit, which would be 8,760 hours/year unless restricted as an enforceable permit condition in a permit. The exemption covers the requirement to obtain construction permits required pursuant to Rule 62-210.300(1), F.A.C.

q. Noise Emissions and Control Systems

Noise during construction is expected to be below noise level allowed by Martin County. There will not be any noise from the solar thermal facility during operation.

r. Status of Applications

FPL submitted an application for a Site Certification Modification for the Martin Next Generation Solar Energy Center to the FDEP in May 2008. FPL received the site certification modification approval in August 2008.

IV.F.2 Potential Sites for Generating Options

Ten (10) sites are currently identified as Potential Sites for near-term future generation additions to meet FPL's capacity and energy needs.[4]

These sites have been identified as Potential Sites due to considerations of location to FPL load centers, space, infrastructure, and/or accessibility to fuel and transmission facilities. These sites are suitable for different capacity levels and technologies.

Each of these Potential Sites offer a range of considerations relative to engineering and/or costs associated with the construction and operation of feasible technologies. In addition, each Potential Site has different characteristics that will require further definition

[4] As has been described in previous FPL Site Plans, FPL also considers a number of other sites as possible sites for future generation additions. These include the remainder of FPL's existing generation sites and other greenfield sites. Greenfield sites that FPL currently does not own, or for which FPL has not currently secured the necessary rights to, are not specifically identified as Potential Sites in order to protect the economic interests of FPL and its customers.

and attention. Solely for the purpose of estimating water requirements for each site, it was assumed that either one dual-fuel (natural gas and light oil) simple cycle combustion turbine (CT) or a natural gas-fired CC unit would be constructed at the Potential Sites unless otherwise noted. A simple cycle CT would require approximately 50 gallons per minute (gpm) for both process and cooling water (assuming air cooling). A CC unit would require approximately 150 gpm for service and process water and approximately 14 million gallons per day (mgd) for cooling water depending upon the water source and associated water quality. If an existing power plant site is ultimately selected for converting an existing unit(s), the water requirements discussed above for a CC unit would be approximately correct for the converted unit. If a renewable energy generating technology, such as photovoltaic or solar thermal, is ultimately selected for one of these sites, the water requirements would be less than those for CT or CC facilities.

Permits are presently considered to be obtainable for each of these sites. No significant environmental constraints are currently known for any of these sites. The Potential Sites briefly discussed below are presented in alphabetical order. At this time, FPL considers each site to be equally viable.

Potential Site # 1: Babcock Ranch , Charlotte County

This site is located within the Babcock Ranch Community on the north side of Truckers Grade, approximately 10.5 miles north of the intersection of SR-80 and SR-31 and 1.1 miles east of SR-31. The project is bordered on the north by the Babcock Ranch Reserve owned by the State of Florida. The site is within the SFWMD and, therefore, the drainage would be in accordance with the SFWMD Basis of Review. Permitting of the surface water management system would be through the Florida Department of Environmental Protection (FDEP) - South District based on a pre-application meeting. This site is a possibility for an FPL photovoltaic (PV) facility.

a. U.S. Geological Survey (USGS) Map

A map of this site is found at the end of this chapter.

b. Land Uses

Existing Land Use on the site is agricultural. FPL would attempt to re-zone the property to PD-P1 which will allow for electrical generation.

c. **Environmental Features**

FPL anticipates mitigating for any panther and/or wetland impacts as a result of the project.

d. **Water Quantities**

Minimal amounts of water would be required for a PV facility.

e. **Supply Sources**

No water will be required at the PV facility except the small amount that may be needed to occasionally clean the solar panels in the absence of sufficient rainfall. Any such water would be brought to the site by truck.

Potential Site # 2: DeSoto Solar Expansion, DeSoto County

The DeSoto site is located at 4051 Northeast Karson Street approximately 0.3 miles east of US 17 and immediately north of Bobay Road in Arcadia, Florida. The site is located in Sections 26, 27, & 35, Township 36 South, and Range 25 East. FPL owns an approximate 13,000 acre parcel in DeSoto County. FPL has designated approximately 1,523 acres for development of a photovoltaic (PV) facility. The land surrounding the site is owned by FPL and acts as a buffer zone.

The DeSoto site was previously selected as the site for the addition of a 25 MW PV facility, which is currently operational. There is also a potential to create an additional 275 MW PV generating facility which would be implemented in phases on the additional land.

a. **U.S. Geological Survey (USGS) Map**

A map of this site is found at the end of this chapter.

b. **Land Uses**

Existing Land Use on the site is agricultural.

c. **Environmental Features**

There are no significant environmental features on the site.

d. **Water Quantities**

Minimal amounts of water would be required for a PV facility.

e. **Supply Sources**

No water will be required at the PV facility except the small amount that may be needed to occasionally clean the solar panels in the absence of sufficient rainfall. Any such water would be brought to the site by truck.

Potential Site # 3: Florida Heartland Solar, Glades County

This site is located within Glades County, Florida off of SR 78. This site is a possibility for an FPL PV facility.

a. **U.S. Geological Survey (USGS) Map**

A map of this site is found at the end of this chapter.

b. **Land Uses**

The existing land uses on the site is agriculture.

c. **Environmental Features**

FPL anticipates mitigating for any panther and/or wetland impacts as a result of the project.

d. **Water Quantities**

Minimal amounts of water would be required for a PV facility.

e. **Supply Sources**

No water will be required at the PV facility except the small amount that may be needed to occasionally clean the solar panels in the absence of sufficient rainfall. Any such water would be brought to the site by truck.

Potential Site # 4: Fort Myers Plant, Lee County

FPL's existing 460-acre Fort Myers property is located just east of Interstate 75 in Lee County and is adjacent to the Caloosahatchee River. The existing facilities on the site include one 1,440 MW (approximate) CC unit, 12 gas turbines, each with an approximate capacity of 54 MW, and two combustion turbines, each with an approximate capacity of 160 MW.

a. **U.S. Geological Survey (USGS) Map**

A USGS map of the Fort Myers plant site is found at the end of this chapter.

b. **Land Uses**

The land on the site is currently dedicated to industrial use with surrounding grassy and landscaped areas. Much of the site has been used in recent years for direct plant construction activities. The adjacent land uses include light commercial and retail to the east of the property, plus some residential areas located toward the west.

c. **Environmental Features**

Mixed scrub with some hardwoods can be found to the east and further south. The Caloosahatchee River is designated as critical habitat for manatees.

d. **Water Quantities**

As previously discussed, needed water quantities would be up to 150 gallons per minute (gpm) for both process and cooling water (assuming air cooling) and up to 14 million gallons per day (mgd) for cooling water.

e. **Supply Sources**

The available water source is the Caloosahatchee River and the available groundwater source is the sandstone aquifer. FPL is aware that the Caloosahatchee River provides habitat for a variety of listed species. Prior to definitive site selection, FPL will take into account impingement and entrainment impacts as well as potential water quality impacts as a result of any new generating unit addition.

Potential Site # 5: Hendry County

FPL is currently evaluating potential sites in Hendry County for a future photovoltaic facility for up to 100 MW. Sites currently under investigation are approximately 1500 acres. No specific locations have been selected at this time.

a. **U.S. Geological Survey (USGS) Map**

Not available because a specific site has not been selected at this time.

b. **Land Uses**

Hendry County is predominantly agricultural land use.

c. **Environmental Features**

Not available because a specific site has not been selected at this time.

d. **Water Quantities**

Minimal amounts of water would be required for a photovoltaic facility.

e. **Supply Sources**

No water will be required at the PV facility except the small amount that may be needed to occasionally clean the solar panels in the absence of sufficient rainfall. Any such water would be brought to the site by truck.

Potential Site # 6: Lauderdale Plant, Broward County

The Lauderdale site is located in Eastern Broward County approximately 5 miles inland from Dania Beach and less than 2 miles west of Ft. Lauderdale International Airport. The site is bounded on the south by Dania Cutoff Canal, on the east by S.W. 30th Avenue, and on the North by I-595.

The existing approximately 1,700 MW of generating capacity at FPL's Lauderdale site occupies a portion of the approximately 210 acres that are wholly owned by FPL. The generating capacity is made up of two CC units (Units 4 & 5), and 24 simple cycle gas turbine (GT) units.

a. **U.S. Geological Survey (USGS) Map**

A USGS map of the site is found at the end of this chapter.

b. **Land Uses**

The existing power plant facilities are located on approximately 130 acres. The existing site has been in use since the 1920s and is adjacent to a county resource recovery project.

c. **Environmental Features**

To the north of the power plant is an area of mixed uplands with a scattering of small wetlands. Manatees are known to inhabit the waters nearby the plant.

d. **Water Quantities**

As previously discussed, needed water quantities would be up to 150 gallons per minute (gpm) for both process and cooling water (assuming air cooling) and up to 14 million gallons per day (mgd) for cooling water.

e. **Supply Sources**

Existing groundwater or the municipal water supply are potential water sources. FPL will also consider the potential for alternative water development options at this site.

Potential Site # 7: Manatee Plant, Manatee County

The existing FPL Manatee Plant 9,500-acre site is located in unincorporated north-central Manatee County. The existing power generating facilities are located in all or portions of Sections 18 and 19 of Township 33S, Range 20-E. The plant site lies approximately 5 miles east of Parrish, Florida. It is approximately 5 miles east of U.S. 301 and 9.5 miles east of Interstate Highway 75 (I-75). The existing plant is approximately 2.5 miles south of the Hillsborough-Manatee County line; a portion of the north property boundary of the plant site abuts the county line. State Road 62 (SR 62) is about 0.7 mile south of the plant, with the plant entrance road going north from that highway. This site is a possibility for an FPL PV or solar thermal facility.

a. **U.S. Geological Survey (USGS) Map**

A map of the site is found at the end of this chapter.

b. **Land Uses**

Existing Land use on the site is agricultural. FPL is attempting to rezone the property to PD-PI which will allow for electrical generation.

c. **Environmental Features**

FPL anticipates mitigating for any gopher tortoise and/or wetland impacts as a result of the project.

d. **Water Quantities**

Minimal amounts of water would be required for a solar thermal facility.

e. **Supply Sources**

The existing water supply could be used for the water required to clean the mirrors for a solar thermal facility.

Potential Site # 8: Northeast Okeechobee County

This site is located within Okeechobee County, Florida. The northeastern portion of Okeechobee County has been identified as an area with the potential to provide a project site that requires strategic consideration. Further assessments of NE Okeechobee County are anticipated to determine suitability of a specific site.

a. **U.S. Geological Survey (USGS) Map**

Not available because a specific site has not been selected at this time.

b. **Land Uses**

Northeast Okeechobee County is predominantly agricultural land use.

c. **Environmental Features**

Not available because a specific site has not been selected at this time.

d. **Water Quantities**

As previously discussed, needed water quantities would be up to 150 gallons per minute (gpm) for both process and cooling water (assuming air cooling) and up to 14 million gallons per day (mgd) for cooling water.

e. **Supply Sources**

Existing groundwater is a potential water source.

Potential Site # 9: Southwest Indian River County

This site is located within Indian River County, Florida. The southwestern portion of Indian River County has been identified as an area with the potential to provide a project site that requires strategic consideration. Further assessments of SW Indian River County are anticipated to determine suitability of a specific site.

a. **U.S. Geological Survey (USGS) Map**

Not available because a specific site has not been selected at this time.

b. **Land Uses**

Southwestern Indian River County is predominantly agricultural land use.

c. **Environmental Features**

Not available because a specific site has not been selected at this time.

d. **Water Quantities**

As previously discussed, needed water quantities would be up to 150 gallons per minute (gpm) for both process and cooling water (assuming air cooling) and up to 14 million gallons per day (mgd) for cooling water.

e. **Supply Sources**

Existing groundwater is a potential water source.

Potential Site # 10: West Broward, Broward County

FPL has identified the Andytown Substation property in western unincorporated Broward County as a potential site for the addition of new generating capacity and FPL refers to this potential site as the West Broward site. Current facilities on-site include an electric substation. The existing site is an area accessible to both natural gas and electrical transmission through existing structures or through additional lateral connections.

a. **U.S. Geological Survey (USGS) Map**

A USGS map of the site has been included at the end of this chapter.

b. **Land Uses**

The land uses for the site were designated as agricultural use.

c. **Environmental Features**

Extensive low-quality wetlands are present on the site. Construction and operation of a new facility on this site would not be expected to adversely affect any rare, endangered, or threatened species.

d. **Water Quantities**

As previously discussed, needed water quantities would be up to 150 gallons per minute (gpm) for both process and cooling water (assuming air cooling) and up to 14 million gallons per day (mgd) for cooling water.

e. **Supply Sources**

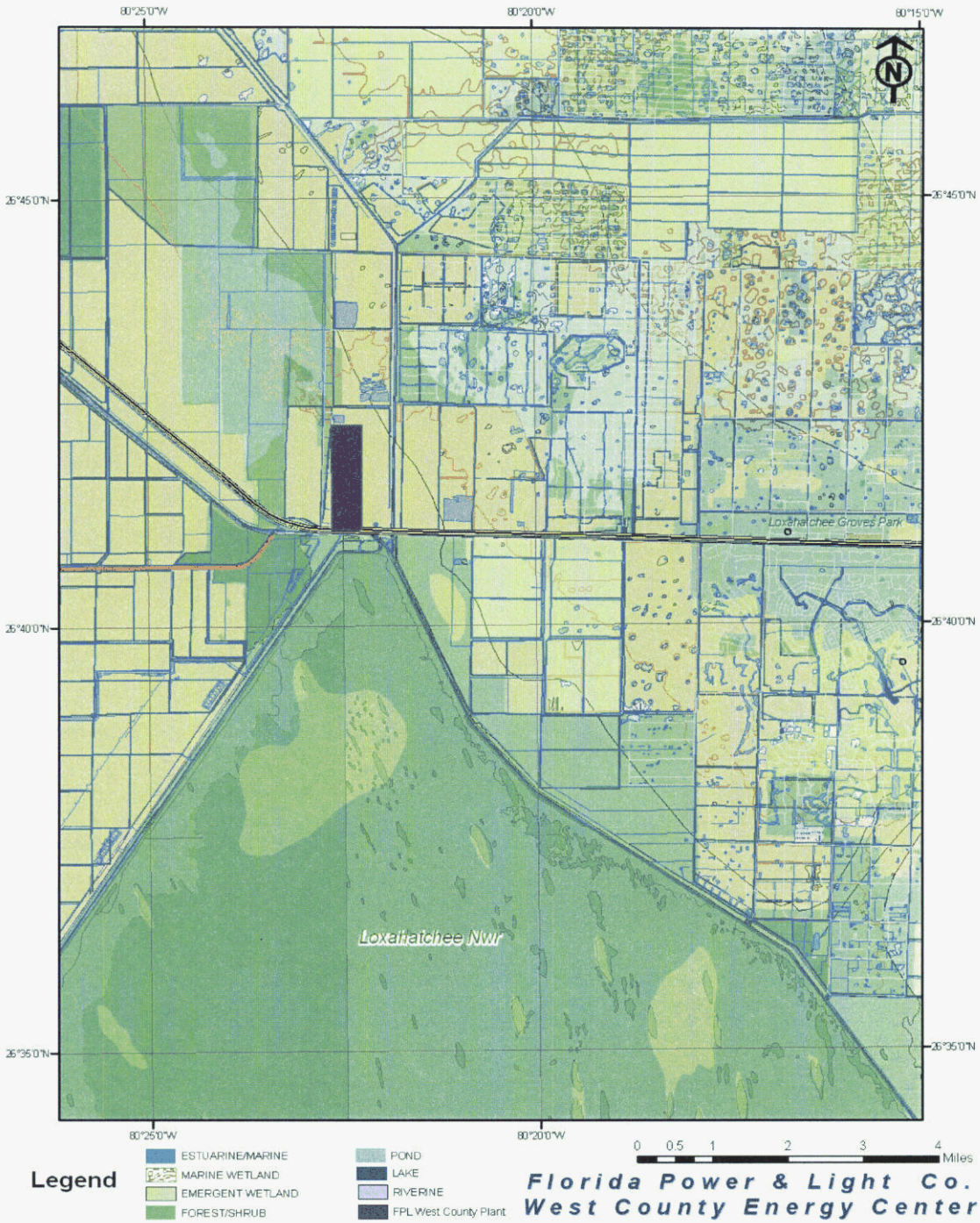
Groundwater from the shallow aquifer or a local source of reclaimed (reuse) water has been identified as potential water sources. The Floridan Aquifer has also been identified as a potential cooling water source. FPL will also consider the potential for alternative water development options at this site.

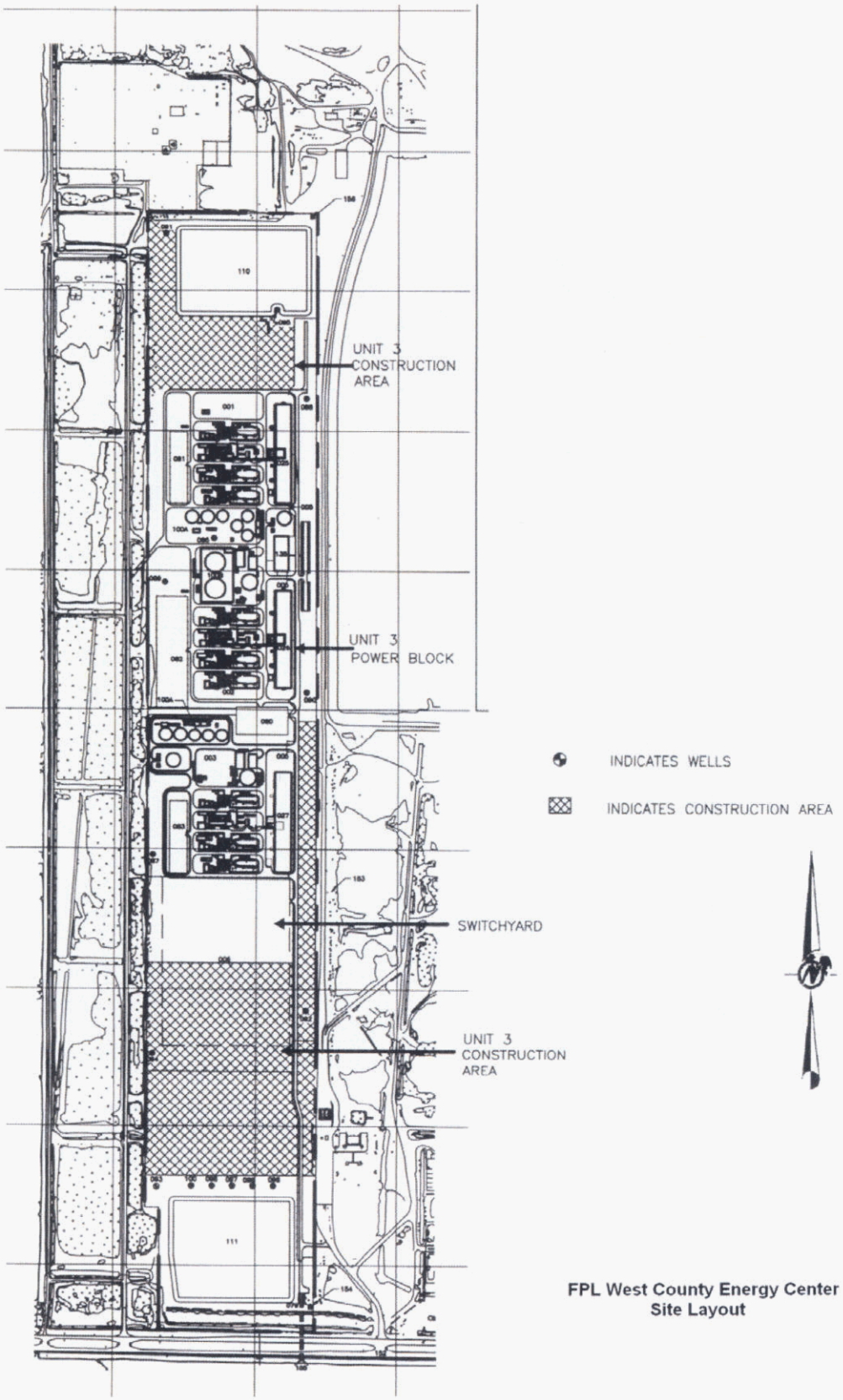
(This page is left intentionally blank.)

Environmental and Land Use Information: Supplemental Information

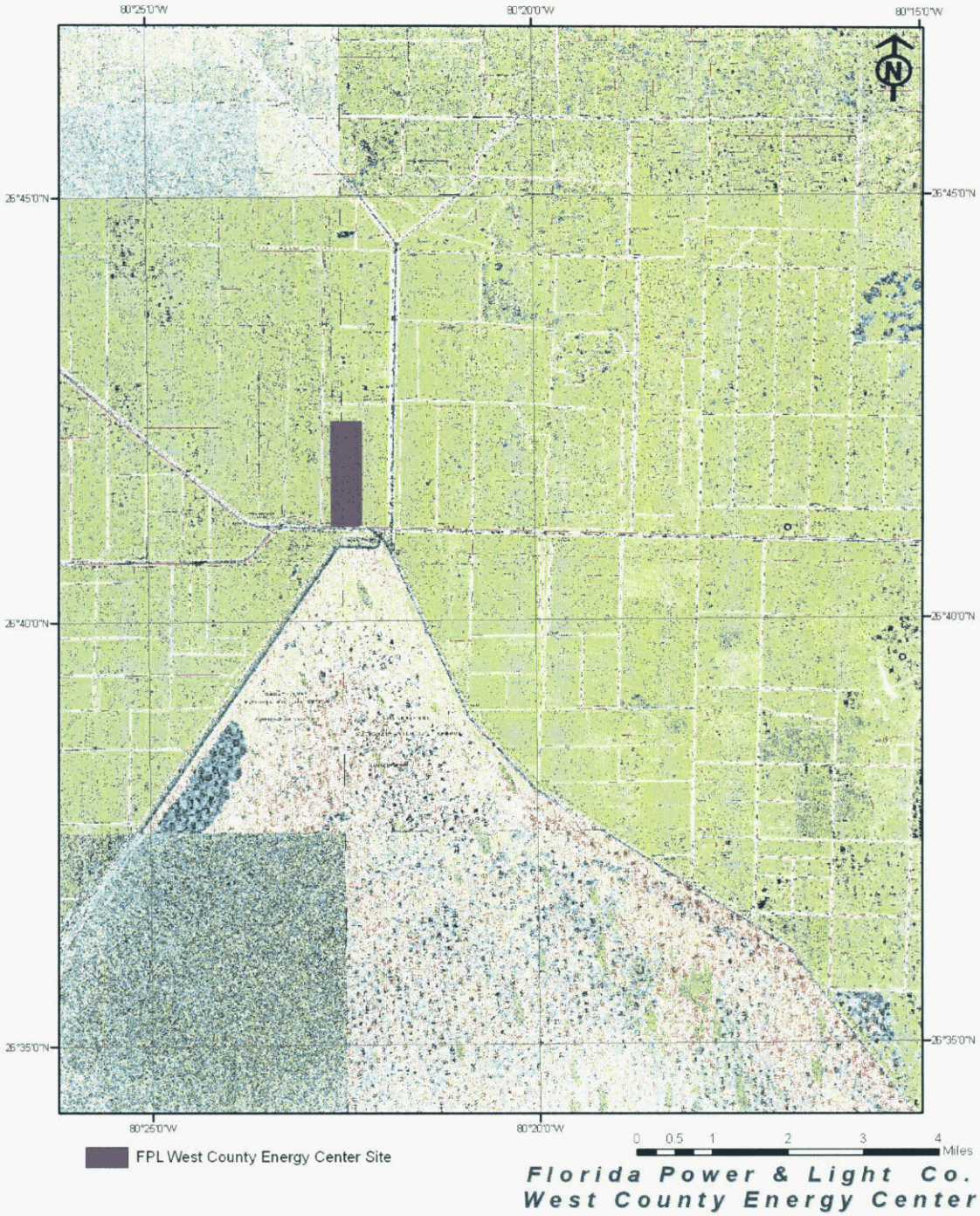
Preferred Site#1: West County Energy Center

(This page is left intentionally blank.)


80°25'0"W
80°20'0"W
80°15'0"W
26°45'0"N
26°40'0"N
26°35'0"N
N
Loxahatchee Groves Park
Loxahatchee Nwr
0 0.5 1 2 3 4
Miles
Legend
ESTUARINE/MARINE
MARINE WETLAND
EMERGENT WETLAND
FOREST/SHRUB
POND
LAKE
RIVERINE
FPL West County Plant
Florida Power & Light Co.
West County Energy Center



FPL West County Energy Center
Site Layout


80°25'0"W
80°20'0"W
80°15'0"W
26°45'0"N
26°40'0"N
26°35'0"N
N
0 0.5 1 2 3 4
Miles
FPL West County Energy Center Site
Florida Power & Light Co.
West County Energy Center

(This page is left intentionally blank.)

Environmental and Land Use Information: Supplemental Information

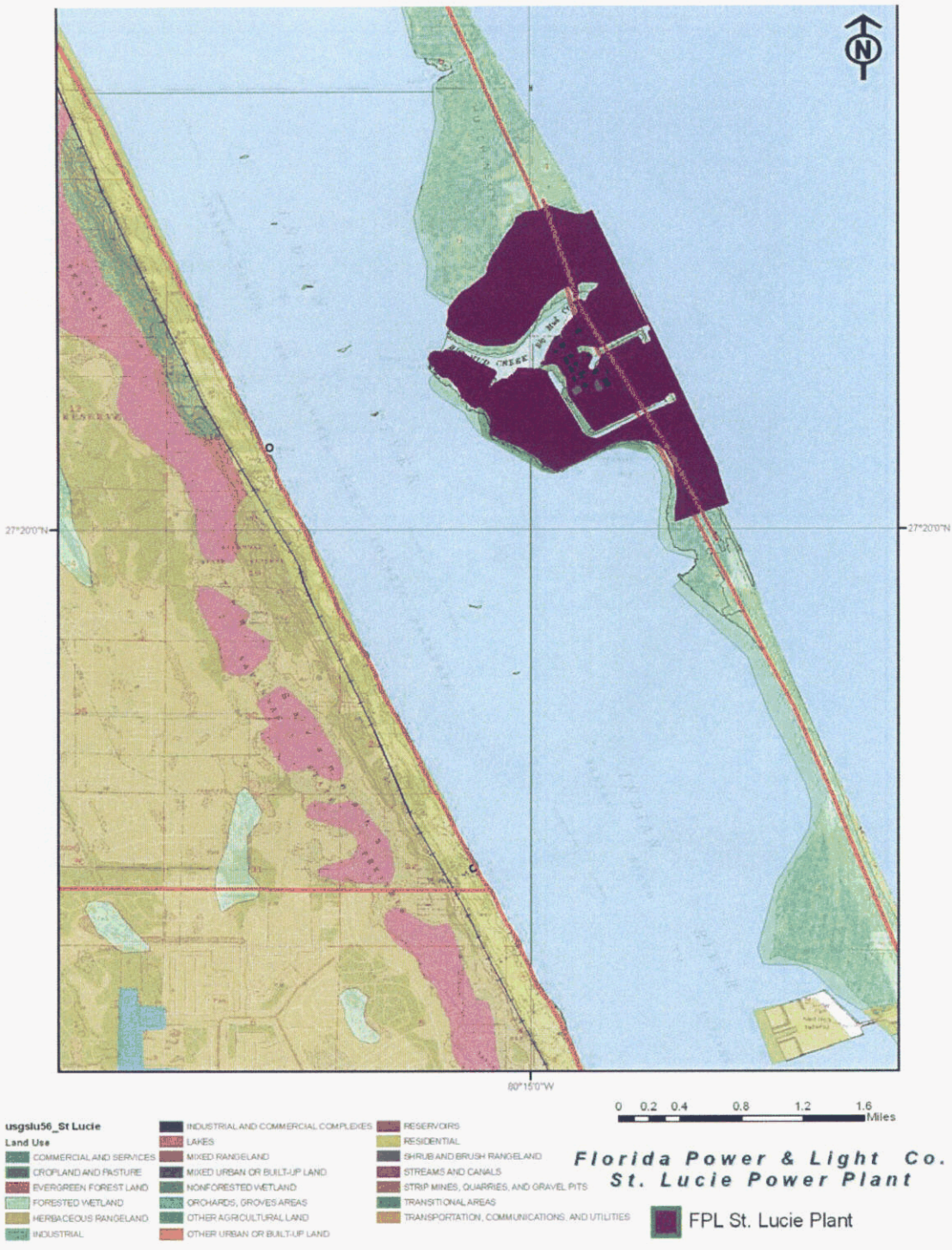
Preferred Site #2: St. Lucie Plant

(This page is left intentionally blank.)

St. Lucie Site Layout

0 0.5 1 2 3 4 Miles

Florida Power & Light Co.
St. Lucie Power Plant


27°20'0"N
27°20'0"N
80°15'0"W
0 0.2 0.4 0.8 1.2 1.6
Miles
usgslu56_St Lucie
Land Use
COMMERCIAL AND SERVICES
CROPLAND AND PASTURE
EVERGREEN FOREST LAND
FORESTED WETLAND
HERBACEOUS RANGELAND
INDUSTRIAL
INDUSTRIAL AND COMMERCIAL COMPLEXES
LAKES
MIXED RANGELAND
MIXED URBAN OR BUILT-UP LAND
NONFORESTED WETLAND
ORCHARDS, GROVES AREAS
OTHER AGRICULTURAL LAND
OTHER URBAN OR BUILT-UP LAND
RESERVOIRS
RESIDENTIAL
SHRUB AND BRUSH RANGELAND
STREAMS AND CANALS
STRIP MINES, QUARRIES, AND GRAVEL PITS
TRANSITIONAL AREAS
TRANSPORTATION, COMMUNICATIONS, AND UTILITIES
Florida Power & Light Co.
St. Lucie Power Plant
FPL St. Lucie Plant

Legend FPL St. Lucie Plant

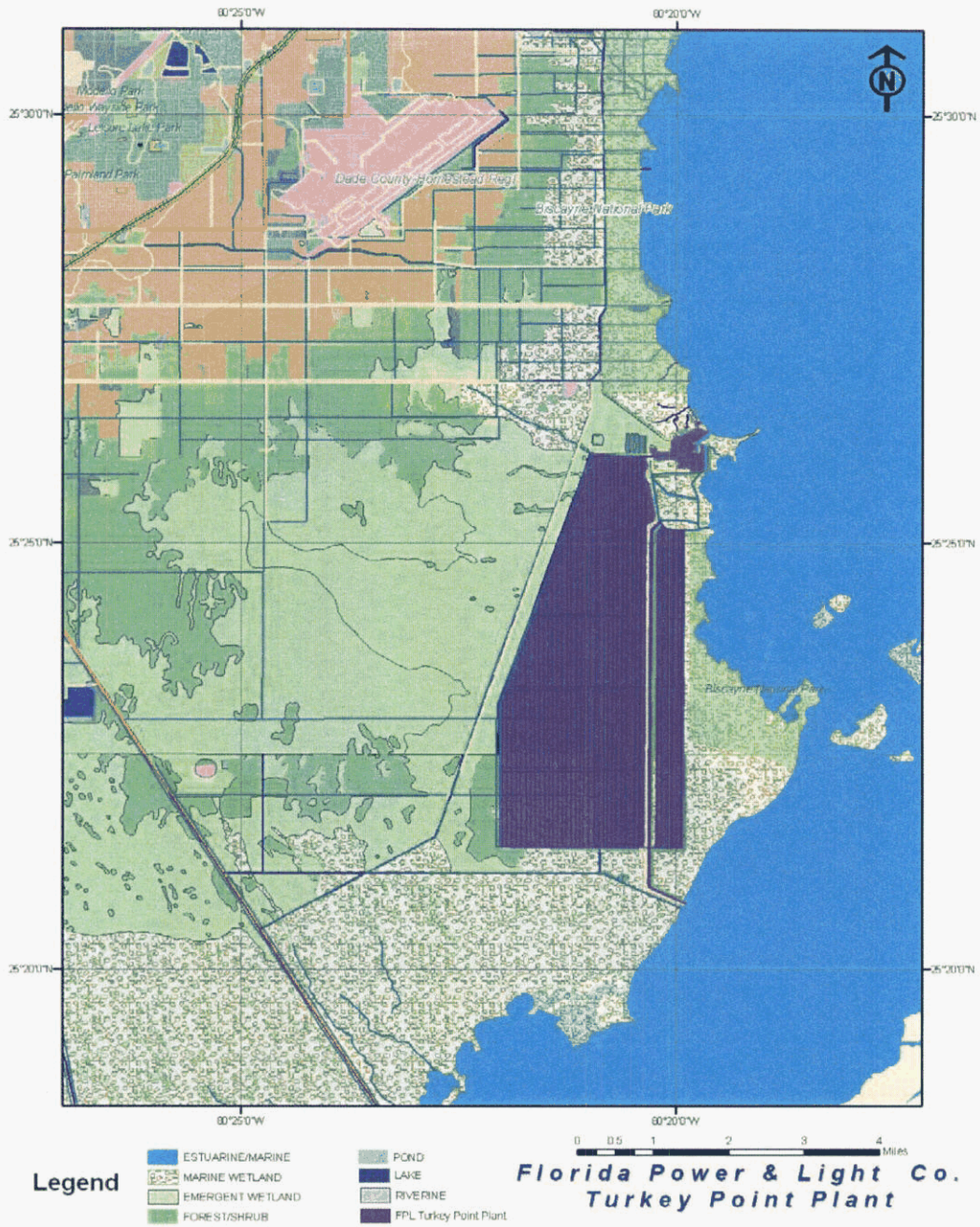
Florida Power & Light Co.
St. Lucie Power Plant

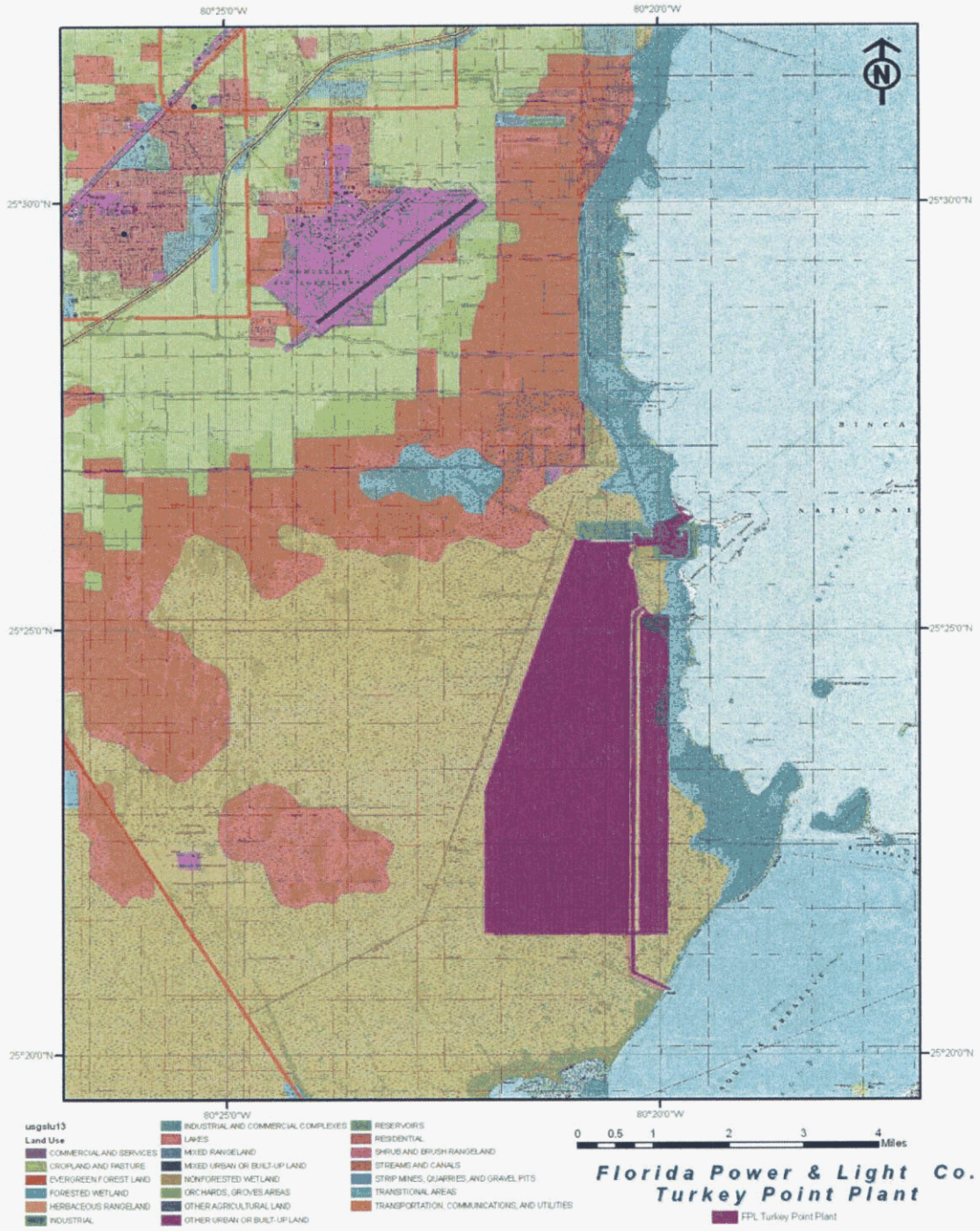
(This page is left intentionally blank.)

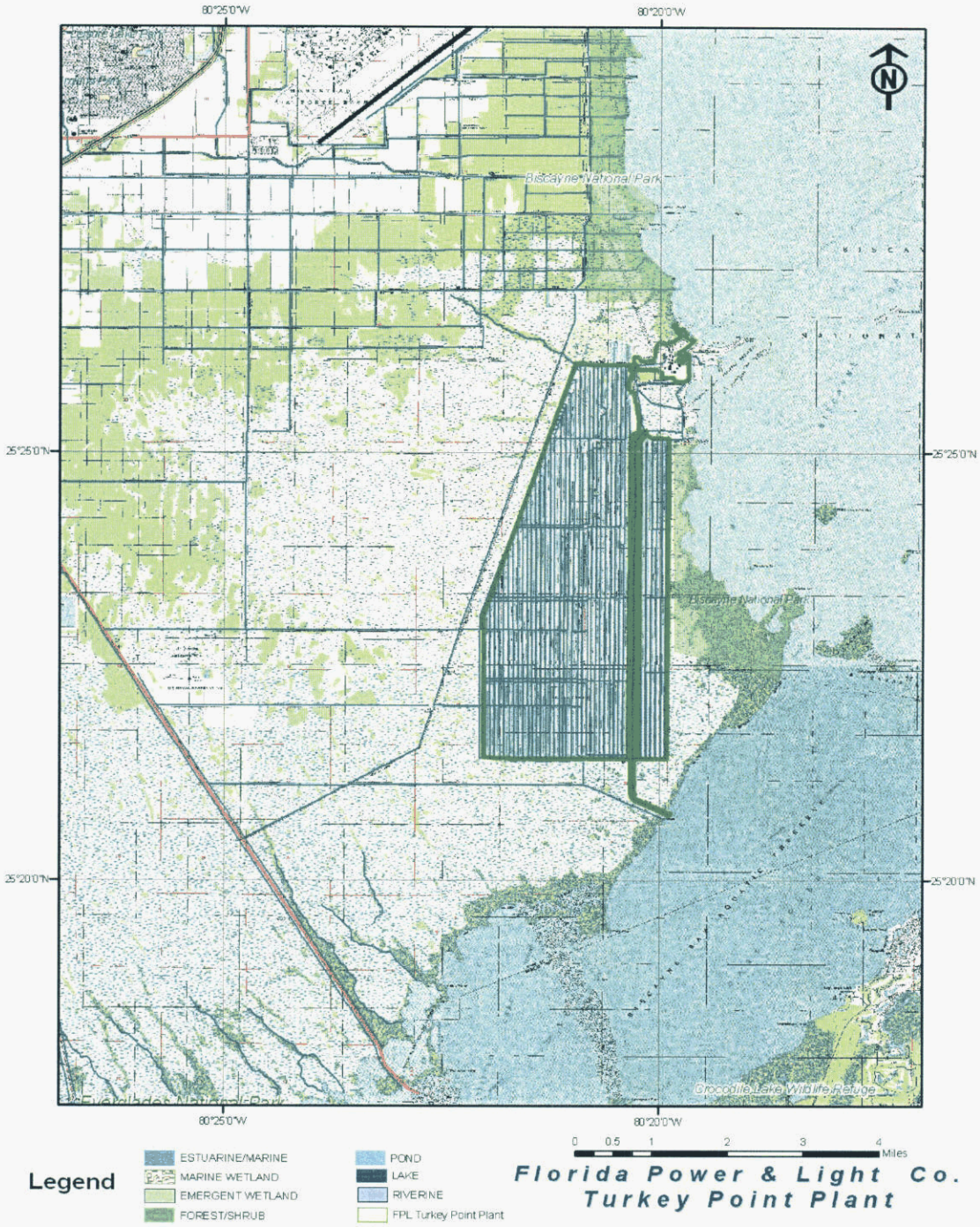
Environmental and Land Use Information: Supplemental Information

Preferred Site #3: Turkey Point Plant

(This page is left intentionally blank.)


80°25'0"W
80°20'0"W
25°30'0"N
25°25'0"N
25°20'0"N
Modello Park
Leisure Lakes Park
Palmland Park
Dade County Homestead Reg'l
Biscayne National Park
Legend
ESTUARINE/MARINE
MARINE WETLAND
EMERGENT WETLAND
FOREST/SHRUB
POND
LAKE
RIVERINE
FPL Turkey Point Plant
0 0.5 1 2 3 4 Miles
Florida Power & Light Co.
Turkey Point Plant


80°25'0"W
80°20'0"W
25°30'0"N
25°25'0"N
25°20'0"N
usgslu13
Land Use
COMMERCIAL AND SERVICES
CROPLAND AND PASTURE
EVERGREEN FOREST LAND
FORESTED WETLAND
HERBACEOUS RANGELAND
INDUSTRIAL
INDUSTRIAL AND COMMERCIAL COMPLEXES
LAKES
MIXED RANGELAND
MIXED URBAN OR BUILT-UP LAND
NONFORESTED WETLAND
ORCHARDS, GROVES AREAS
OTHER AGRICULTURAL LAND
OTHER URBAN OR BUILT-UP LAND
RESERVOIRS
RESIDENTIAL
SHRUB AND BRUSH RANGELAND
STREAMS AND CANALS
STRIP MINES, QUARRIES, AND GRAVEL PITS
TRANSITIONAL AREAS
TRANSPORTATION, COMMUNICATIONS, AND UTILITIES
0 0.5 1 2 3 4
Miles
Florida Power & Light Co.
Turkey Point Plant
FPL Turkey Point Plant

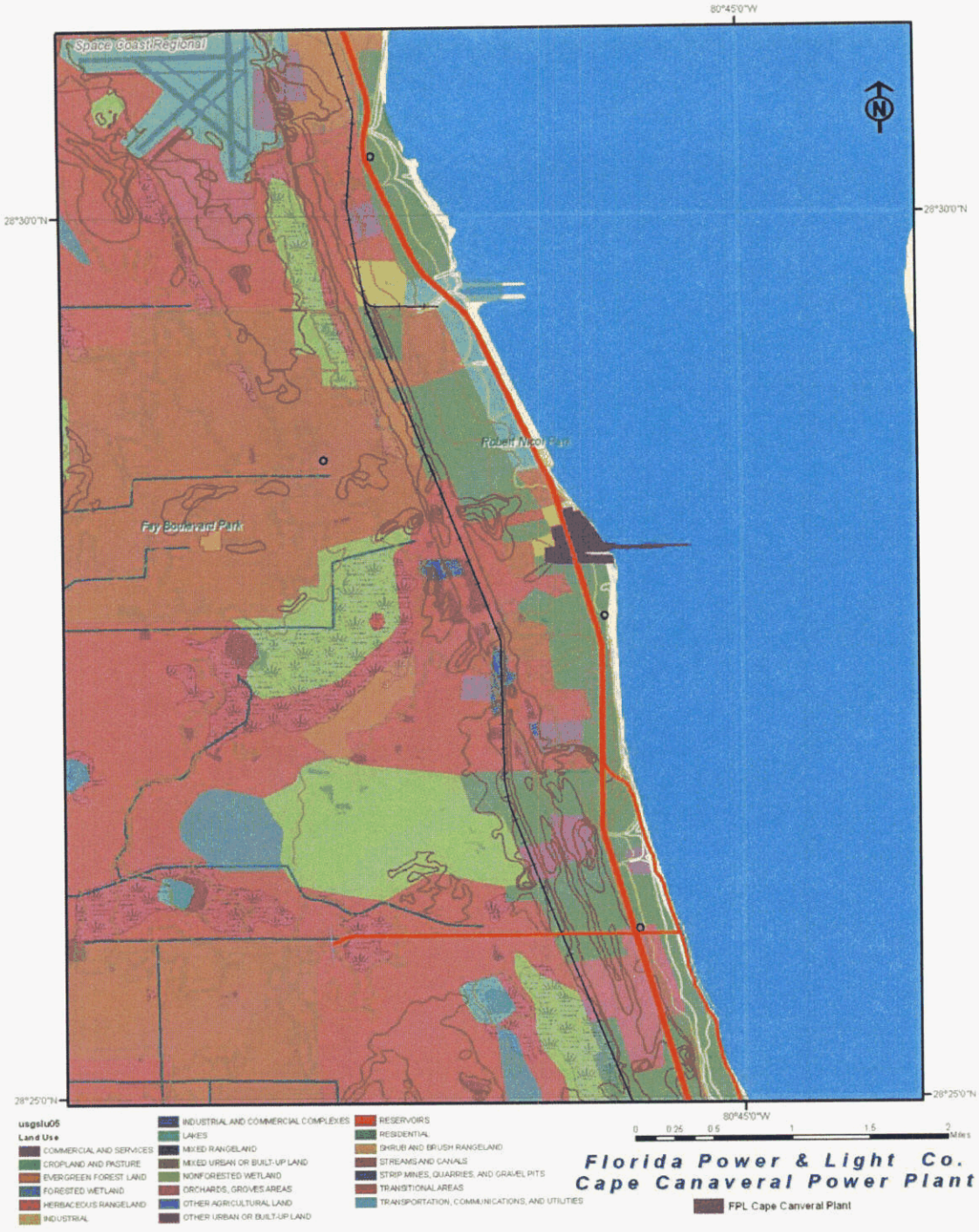

80°25'0"W
80°20'0"W
25°25'0"N
25°20'0"N
Biscayne National Park
Everglades National Park
Crocodile Lake Wildlife Refuge
N
0 0.5 1 2 3 4 Miles
Legend
ESTUARINE/MARINE
MARINE WETLAND
EMERGENT WETLAND
FOREST/SHRUB
POND
LAKE
RIVERINE
FPL Turkey Point Plant
Florida Power & Light Co.
Turkey Point Plant

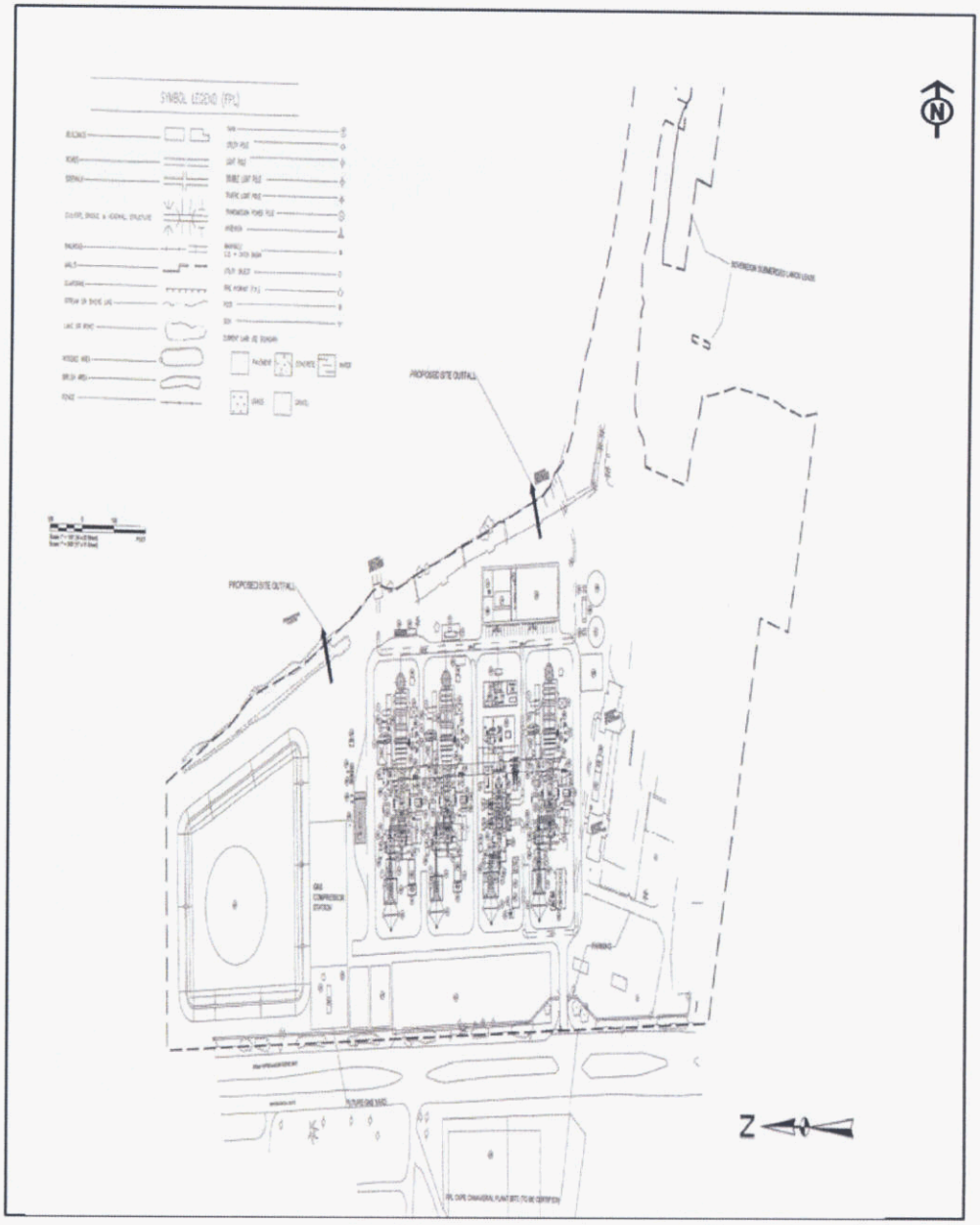
(This page is left intentionally blank.)

Environmental and Land Use Information: Supplemental Information

Preferred Site #4: Cape Canaveral Plant

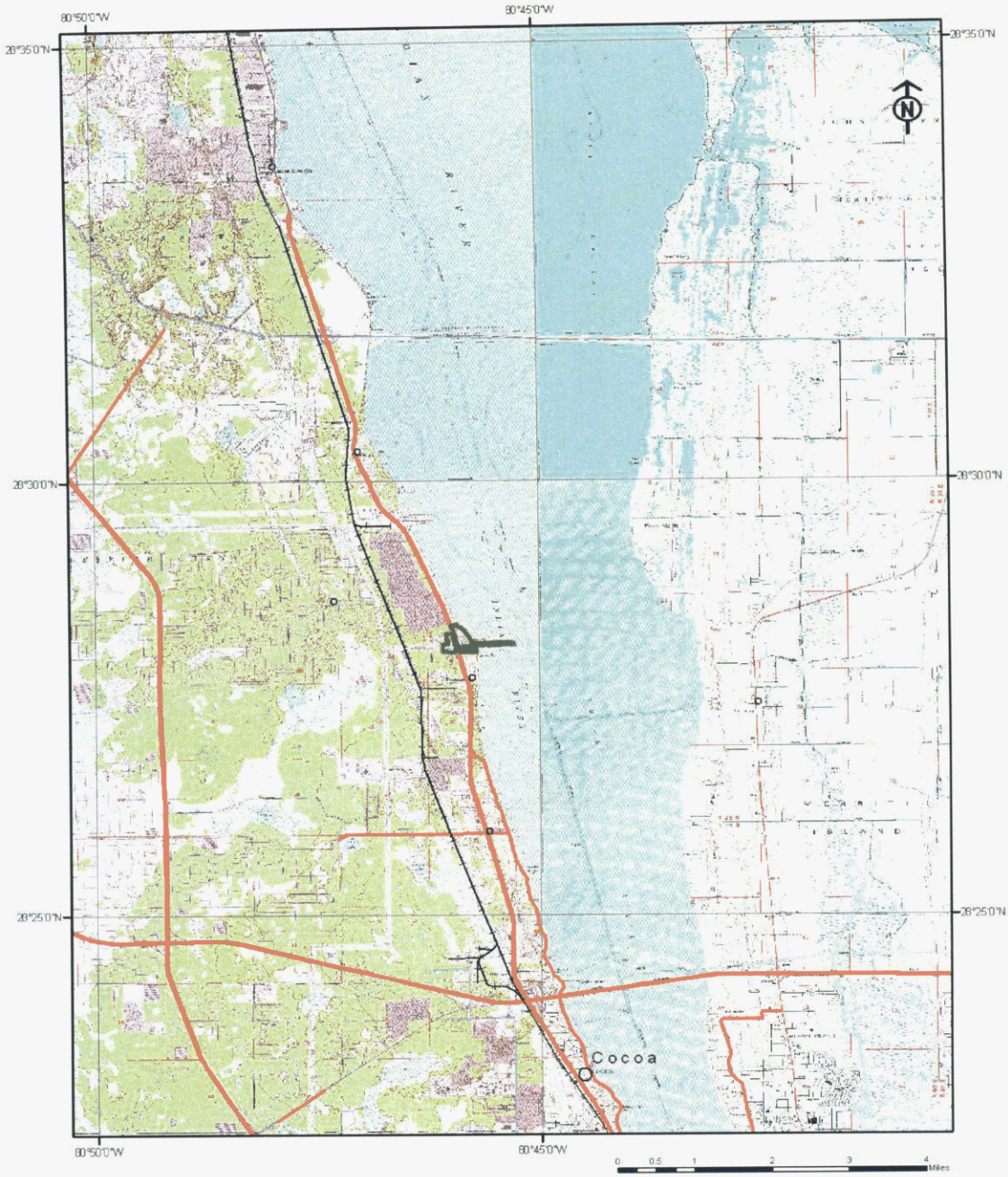
(This page is left intentionally blank.)


80°45'0"W
28°30'0"N
28°25'0"N
Space Coast Regional
Fay Boulevard Park
Robert Nicol Park
usgslu05
Land Use
COMMERCIAL AND SERVICES
CROPLAND AND PASTURE
EVERGREEN FOREST LAND
FORESTED WETLAND
HERBACEOUS RANGELAND
INDUSTRIAL
INDUSTRIAL AND COMMERCIAL COMPLEXES
LAKES
MIXED RANGELAND
MIXED URBAN OR BUILT-UP LAND
NONFORESTED WETLAND
ORCHARDS, GROVES AREAS
OTHER AGRICULTURAL LAND
OTHER URBAN OR BUILT-UP LAND
RESERVOIRS
RESIDENTIAL
SHRUB AND BRUSH RANGELAND
STREAMS AND CANALS
STRIP MINES, QUARRIES, AND GRAVEL PITS
TRANSITIONAL AREAS
TRANSPORTATION, COMMUNICATIONS, AND UTILITIES
0 0.25 0.5 1 1.5 2 Miles
Florida Power & Light Co.
Cape Canaveral Power Plant
FPL Cape Canveral Plant



Cape Canaveral Plant
Facility Layout

Florida Power & Light Co.
Cape Canaveral Power Plant



Legend FPL Cape Canveral Plant

Florida Power & Light Co.
Cape Canaveral Power Plant

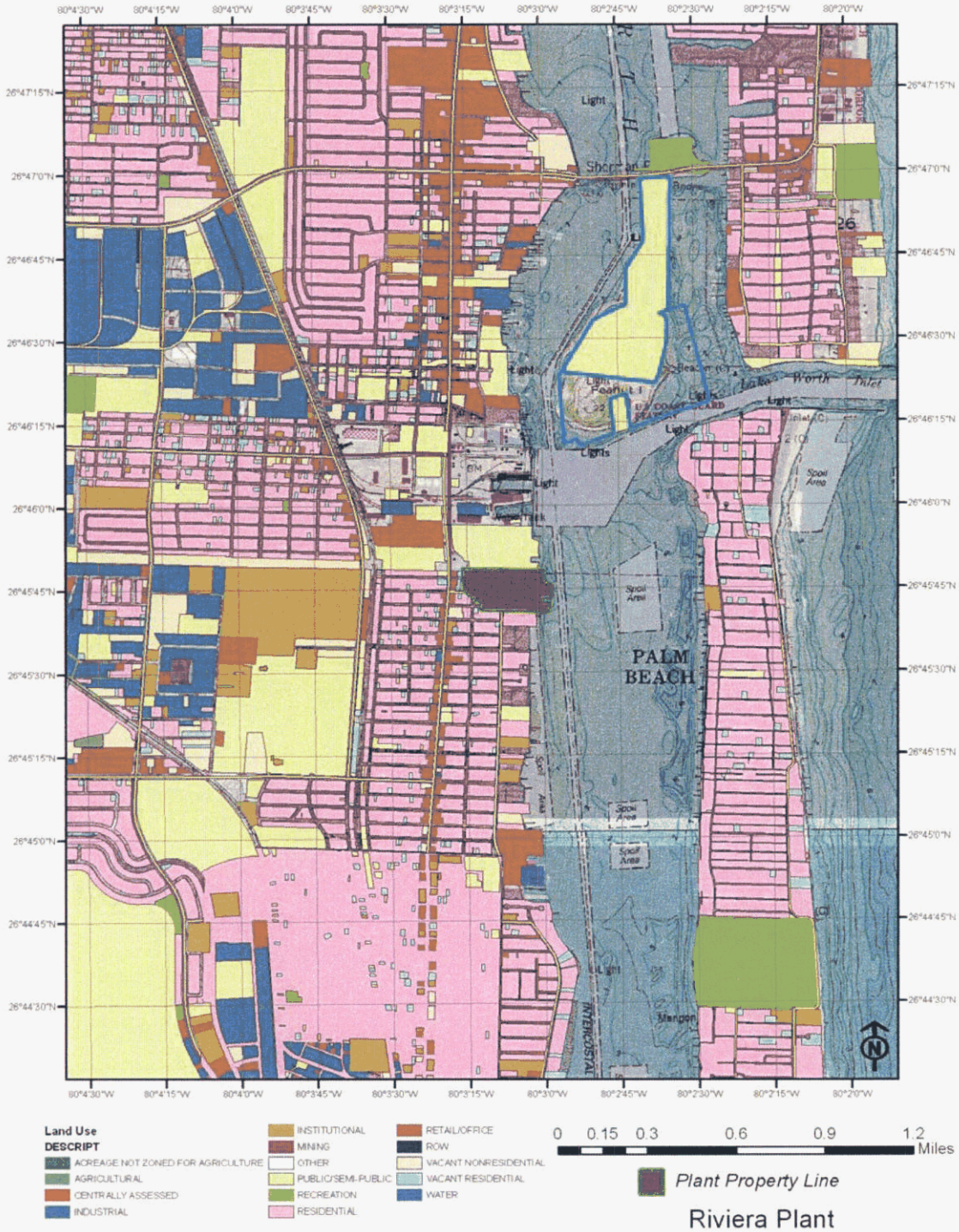
(This page is left intentionally blank.)

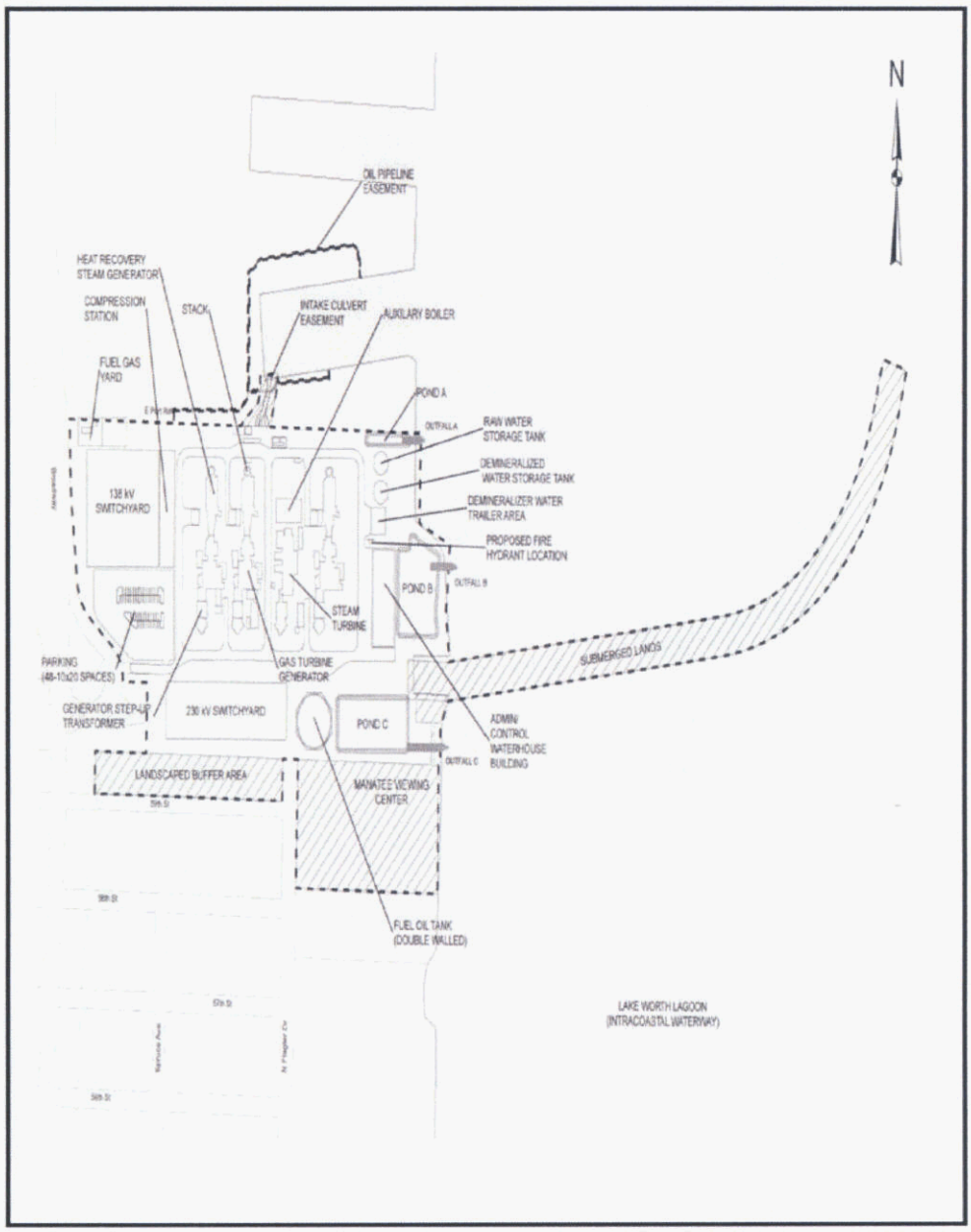
Environmental and Land Use Information:

Supplemental Information

Preferred Site #5: Riviera Plant

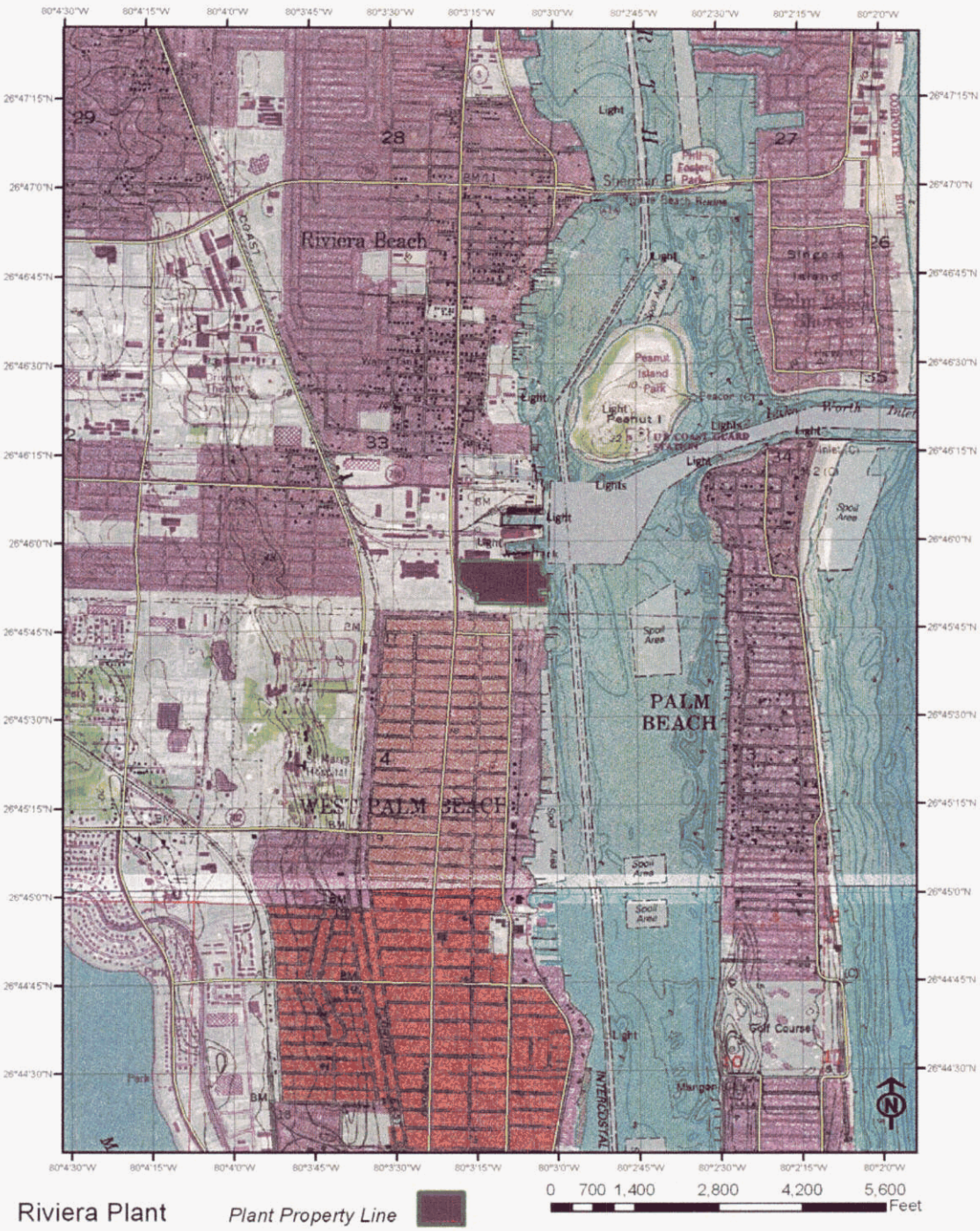
This page is left intentionally blank.)


80°4'30"W
80°4'15"W
80°4'0"W
80°3'45"W
80°3'30"W
80°3'15"W
80°3'0"W
80°2'45"W
80°2'30"W
80°2'15"W
80°2'0"W
26°47'15"N
26°47'0"N
26°46'45"N
26°46'30"N
26°46'15"N
26°46'0"N
26°45'45"N
26°45'30"N
26°45'15"N
26°45'0"N
26°44'45"N
26°44'30"N
PALM BEACH
Lake Worth Inlet
INTERCOSTAL
Spoil Area
Light
Land Use
DESCRIPT
ACREAGE NOT ZONED FOR AGRICULTURE
AGRICULTURAL
CENTRALLY ASSESSED
INDUSTRIAL
INSTITUTIONAL
MINING
OTHER
PUBLIC/SEMI-PUBLIC
RECREATION
RESIDENTIAL
RETAIL/OFFICE
ROW
VACANT NONRESIDENTIAL
VACANT RESIDENTIAL
WATER
0 0.15 0.3 0.6 0.9 1.2
Miles
Plant Property Line
Riviera Plant



Riviera Plant Facility Layout

Florida Power & Light Co.
Riviera Plant



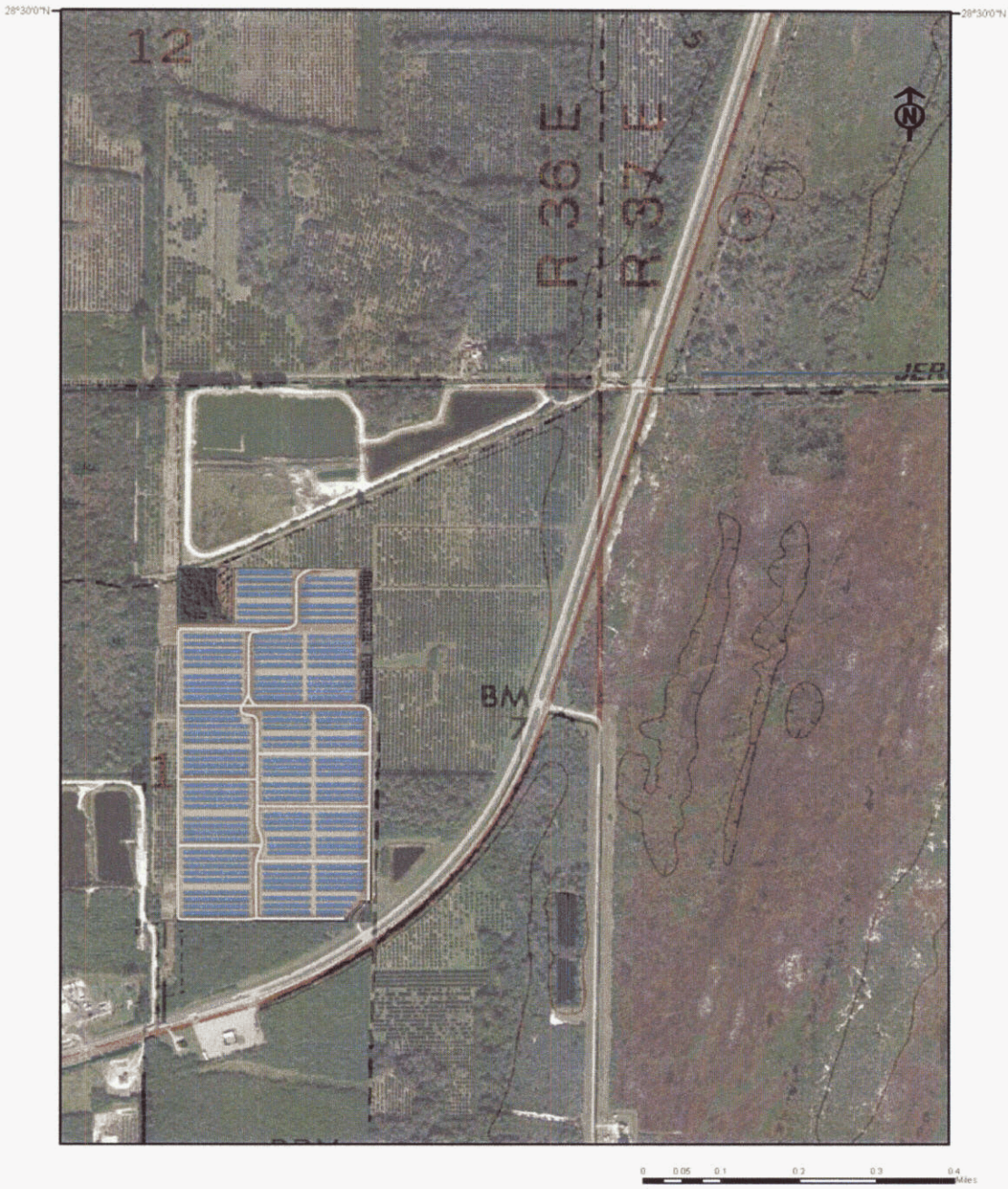
Riviera Plant *Plant Property Line*

This page is left intentionally blank.)

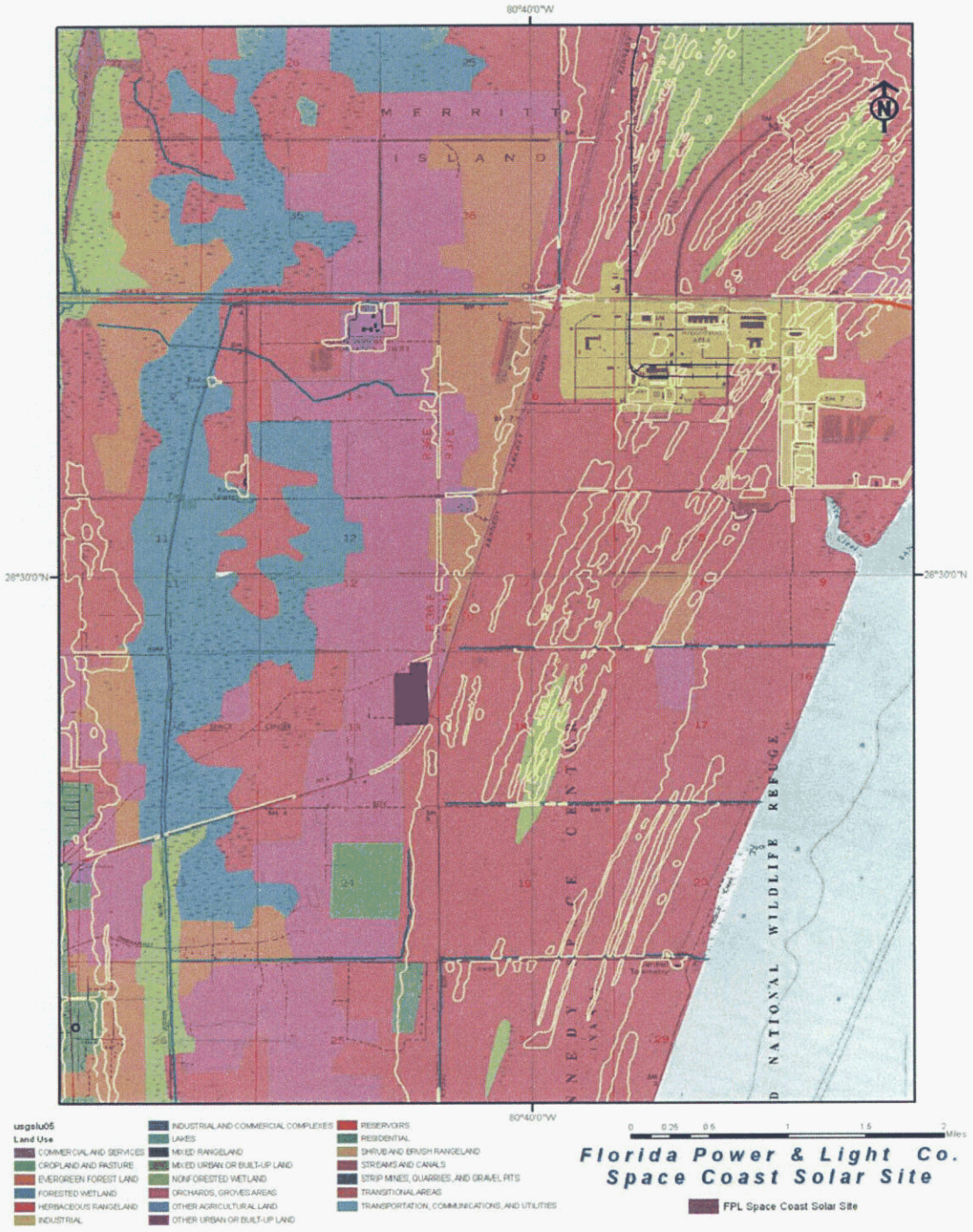
Environmental and Land Use Information: Supplemental Information

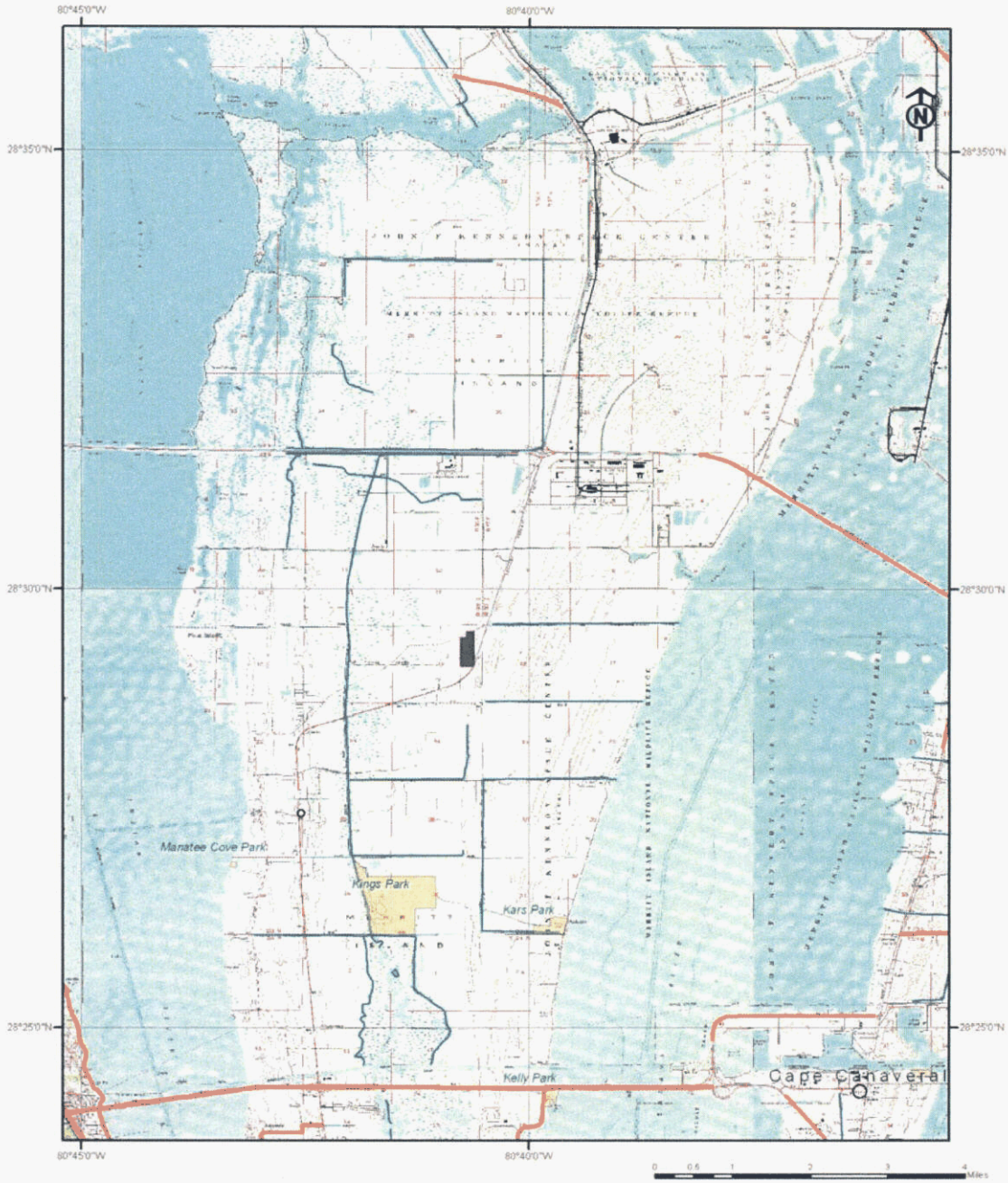
Preferred Site #6: Space Coast Next Generating Solar Energy Center

(This page is left intentionally blank.)



FPL Space Coast Solar Site Layout


80°40'0"W
28°30'0"N
MERRITT
ISLAND
NATIONAL WILDLIFE REFUGE
usgslu05
Land Use
COMMERCIAL AND SERVICES
CROPLAND AND PASTURE
EVERGREEN FOREST LAND
FORESTED WETLAND
HERBACEOUS RANGELAND
INDUSTRIAL
INDUSTRIAL AND COMMERCIAL COMPLEXES
LAKES
MIXED RANGELAND
MIXED URBAN OR BUILT-UP LAND
NONFORESTED WETLAND
ORCHARDS, GROVES AREAS
OTHER AGRICULTURAL LAND
OTHER URBAN OR BUILT-UP LAND
RESERVOIRS
RESIDENTIAL
SHRUB AND BRUSH RANGELAND
STREAMS AND CANALS
STRIP MINES, QUARRIES, AND GRAVEL PITS
TRANSITIONAL AREAS
TRANSPORTATION, COMMUNICATIONS, AND UTILITIES
0 0.25 0.5 1 1.5 2 Miles
Florida Power & Light Co.
Space Coast Solar Site
FPL Space Coast Solar Site



FPL Space Coast Solar Site

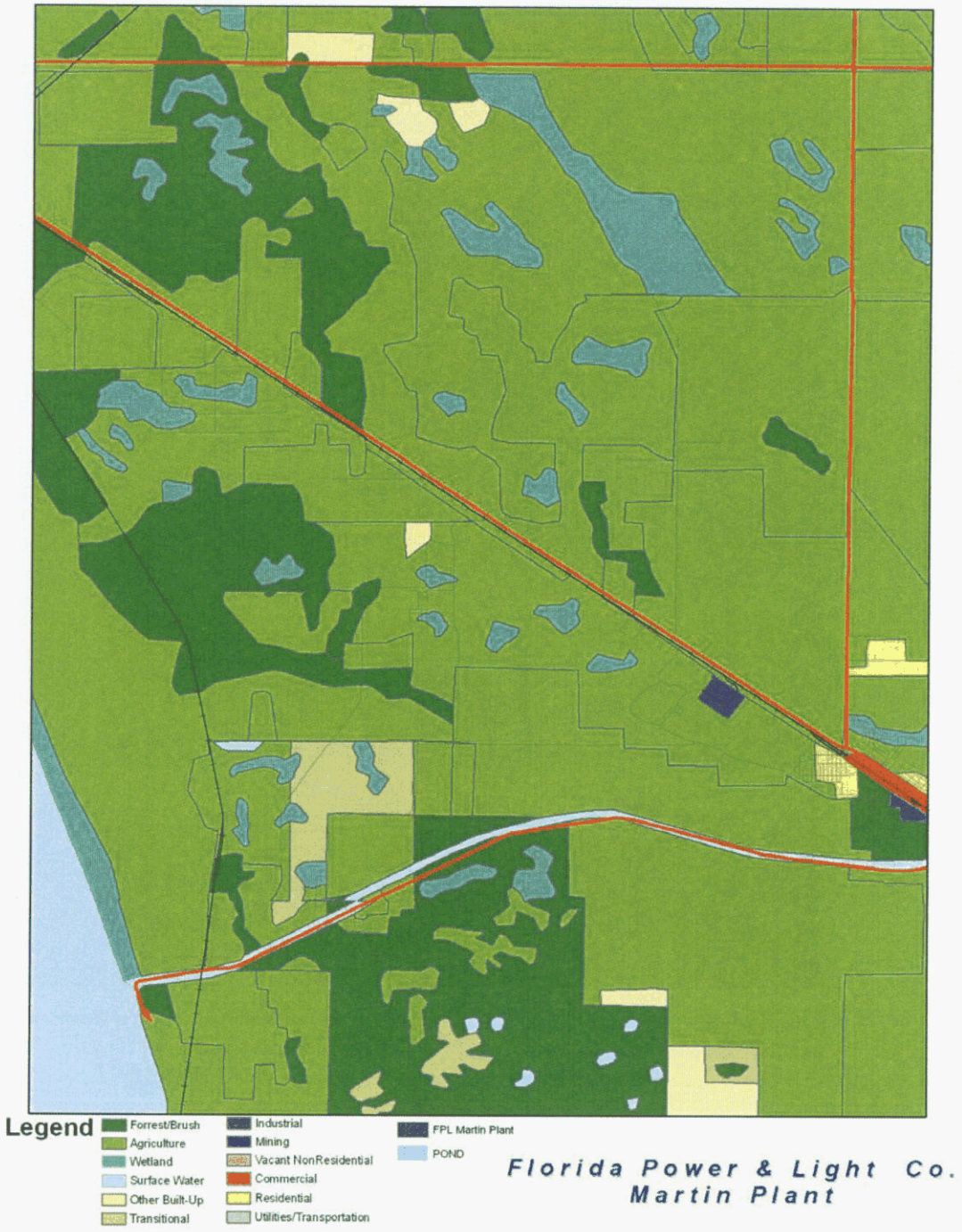
Florida Power & Light Co.
Space Coast Solar Site

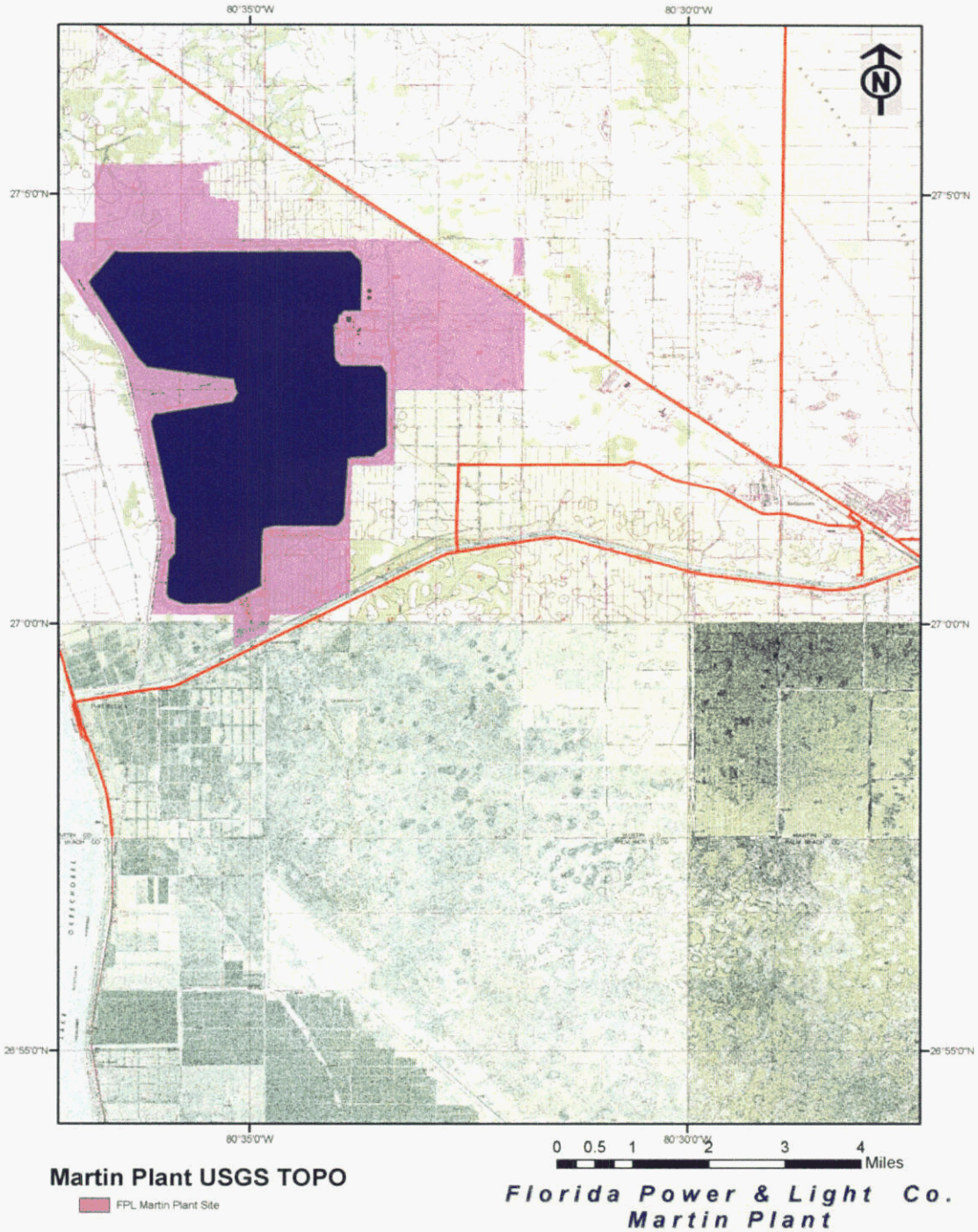
(This page is left intentionally blank.)

Environmental and Land Use Information: Supplemental Information Preferred Site #7: Martin Next Generation Solar Energy Center

(This page is left intentionally blank.)


N
0 0.125 0.25 0.5 0.75 1
Miles
Martin Plant
Facility Layout
FPL Martin Plant Site
Facility Structures
Solar Thermal Plant
Florida Power & Light Co.
Martin Plant


Legend
Forrest/Brush
Agriculture
Wetland
Surface Water
Other Built-Up
Transitional
Industrial
Mining
Vacant NonResidential
Commercial
Residential
Utilities/Transportation
FPL Martin Plant
POND
Florida Power & Light Co.
Martin Plant

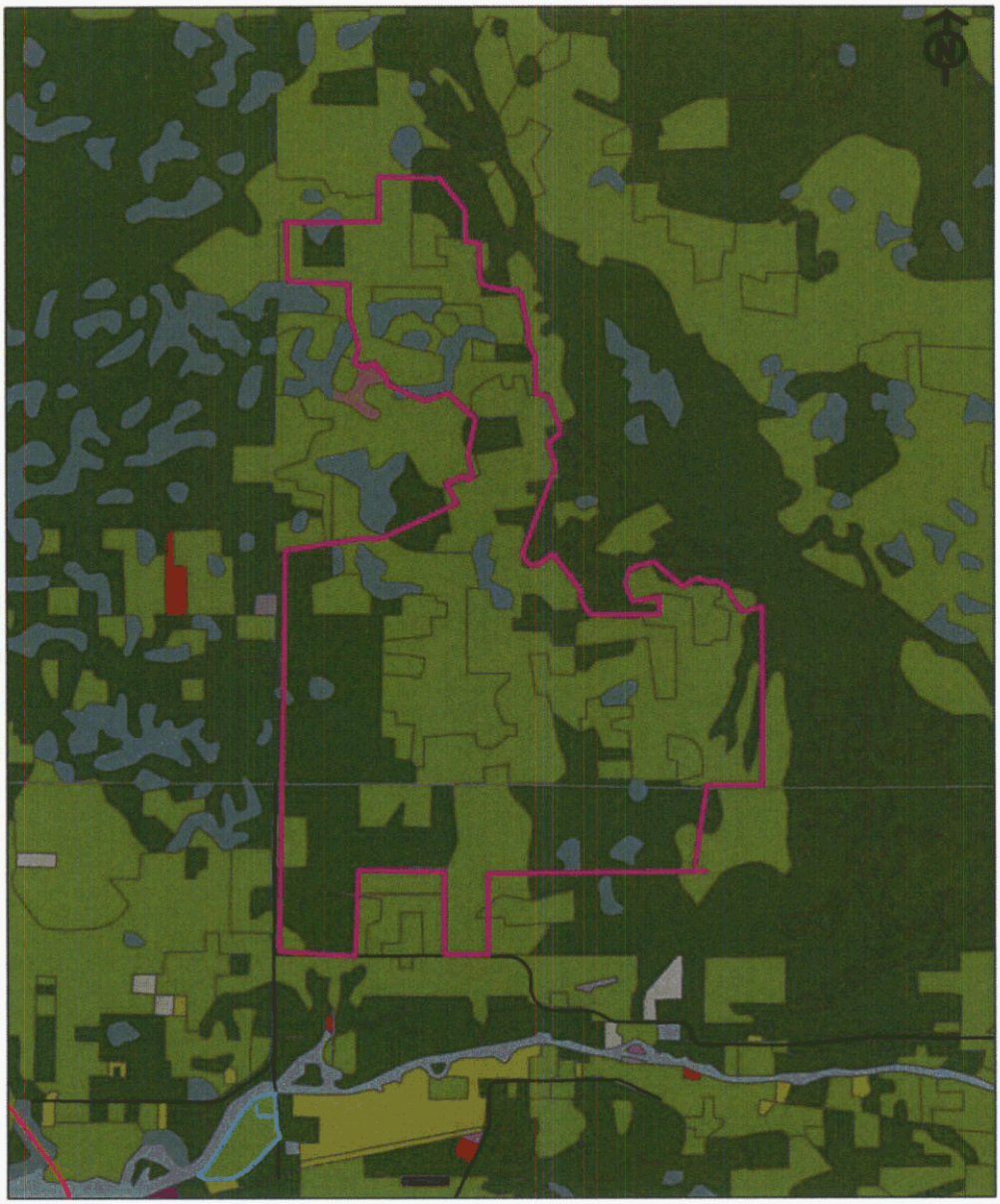

80°35'0"W
80°30'0"W
27°5'0"N
27°0'0"N
26°55'0"N
N
0 0.5 1 2 3 4
Miles
Martin Plant USGS TOPO
FPL Martin Plant Site
Florida Power & Light Co.
Martin Plant

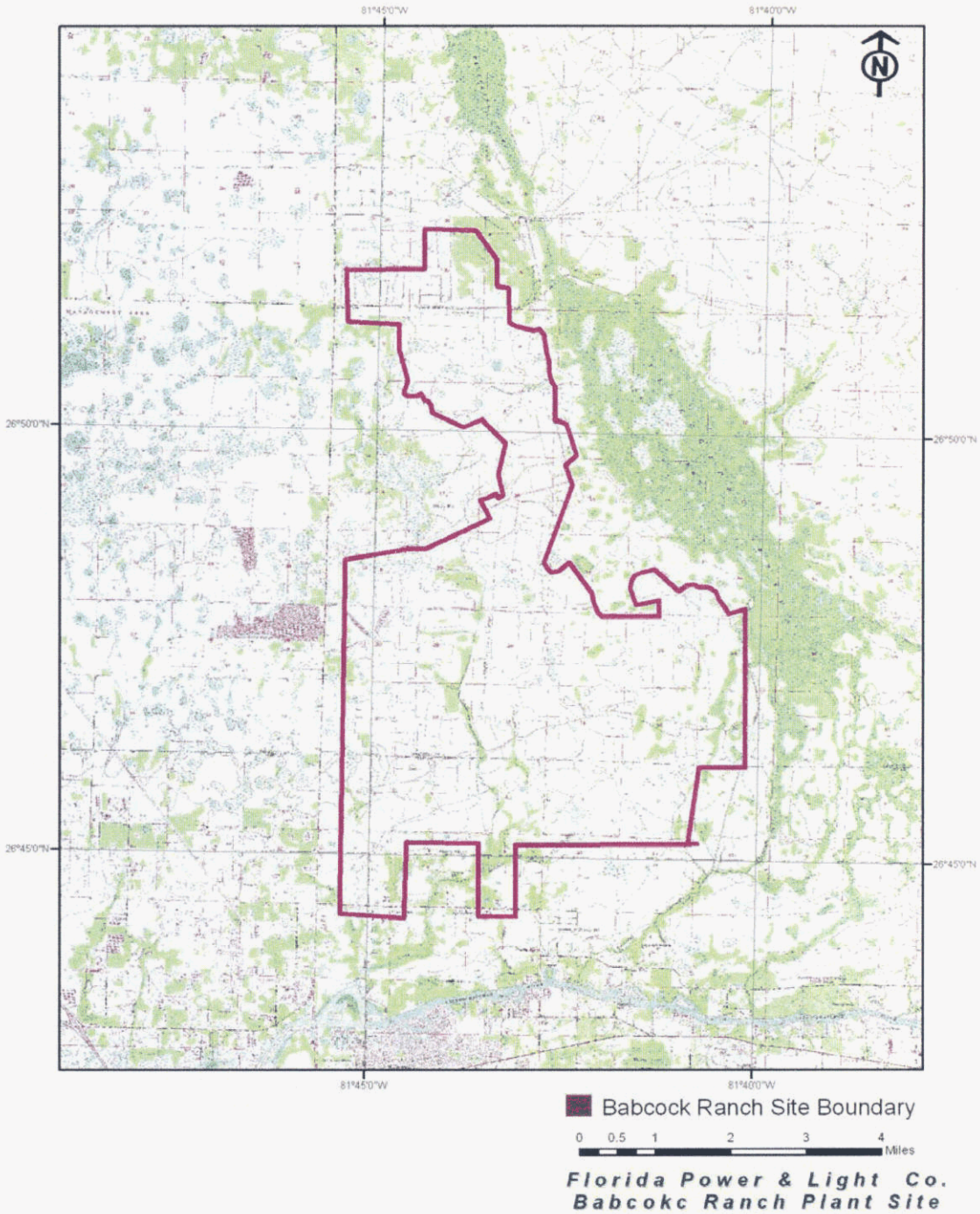
(This page is left intentionally blank.)

Environmental and Land Use Information: Supplemental Information

Potential Site #1: Babcock Ranch

(This page is left intentionally blank.)

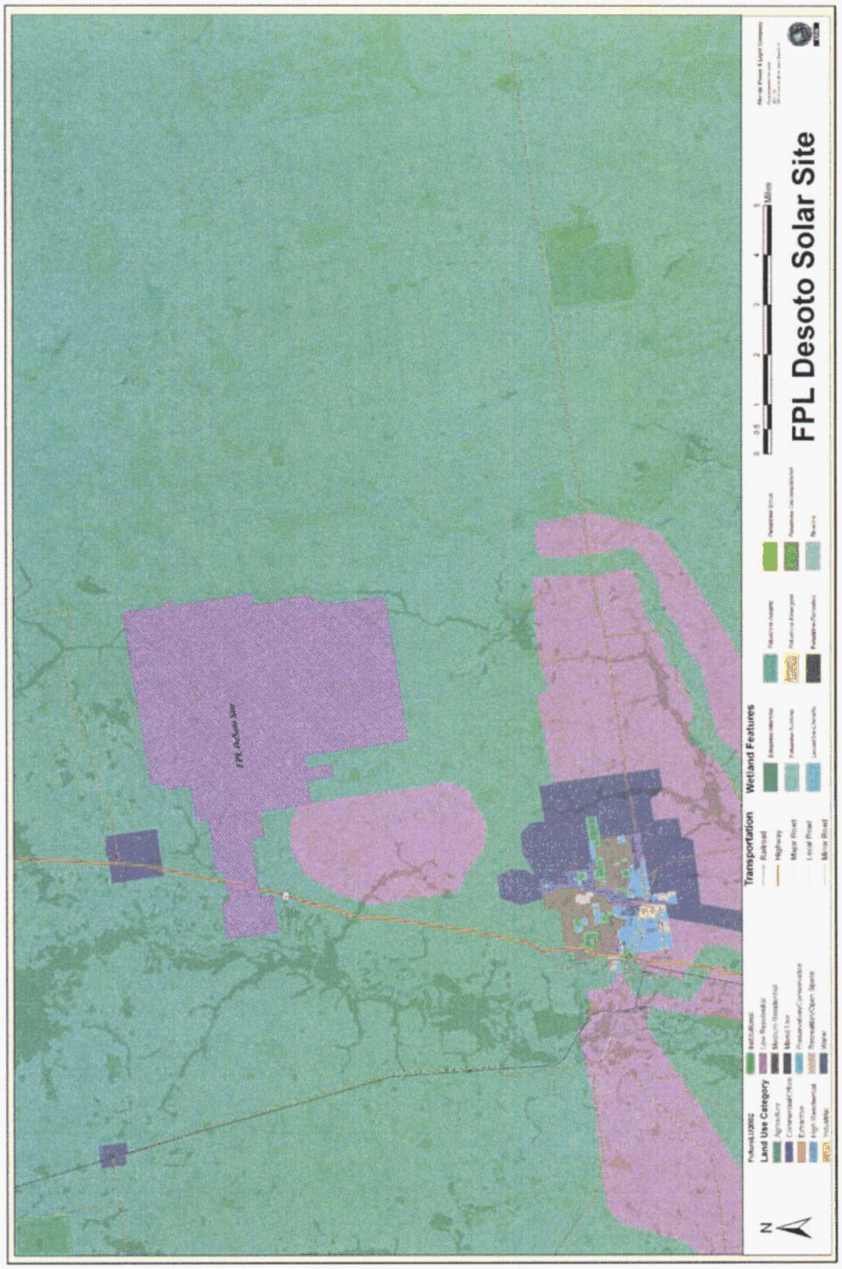

N
Legend
Forrest/Brush
Agriculture
Wetland
Surface Water
Other Built-Up
Transitional
Industrial
Mining
Vacant NonResidential
Commercial
Residential
Utilities/Transportation
Babcock Ranch Site Boundary
0 850 1,700 3,400 5,100 6,800
Miles
Florida Power & Light Co.
Babcock Ranch Plant Site

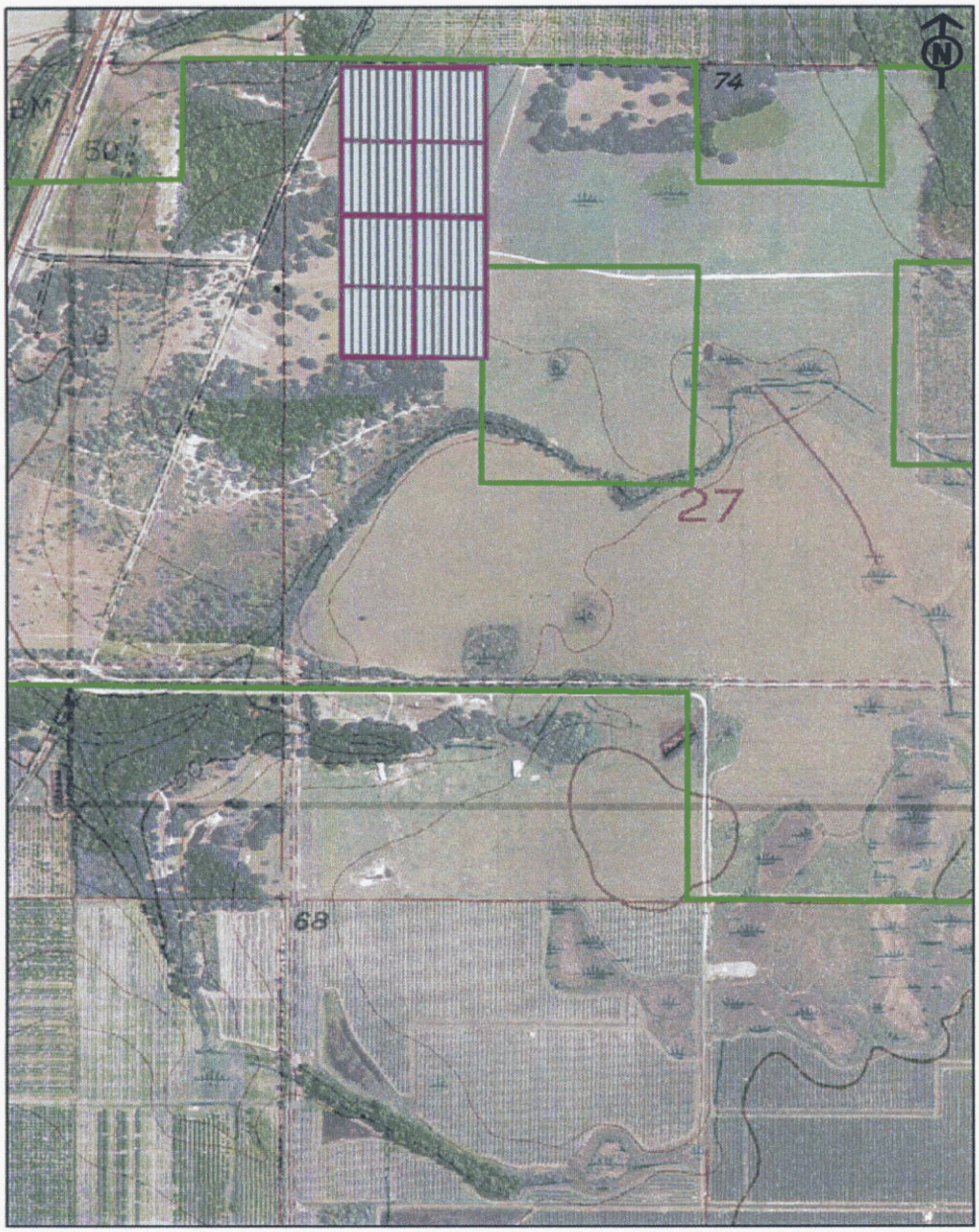

81°45'0"W
81°40'0"W
26°50'0"N
26°45'0"N
N
Babcock Ranch Site Boundary
0 0.5 1 2 3 4
Miles
Florida Power & Light Co.
Babcokc Ranch Plant Site

Environmental and Land Use Information: Supplemental Information

Potential Site #2: Desoto Solar Expansion

(This page is left intentionally blank.)


FPL Desoto Solar Site
Transportation
Wetland Features
Land Use Category
Miles



FPL Desoto Site Boundary
Solar Site Layout

0 0.04 0.08 0.16 0.24 0.32
Miles

Florida Power & Light Co.
Desoto Solar Site Layout

Environmental and Land Use Information: Supplemental Information

Potential Site #3: Florida Heartland Solar

(This page is left intentionally blank.)

Florida Heartland Solar
Glades County

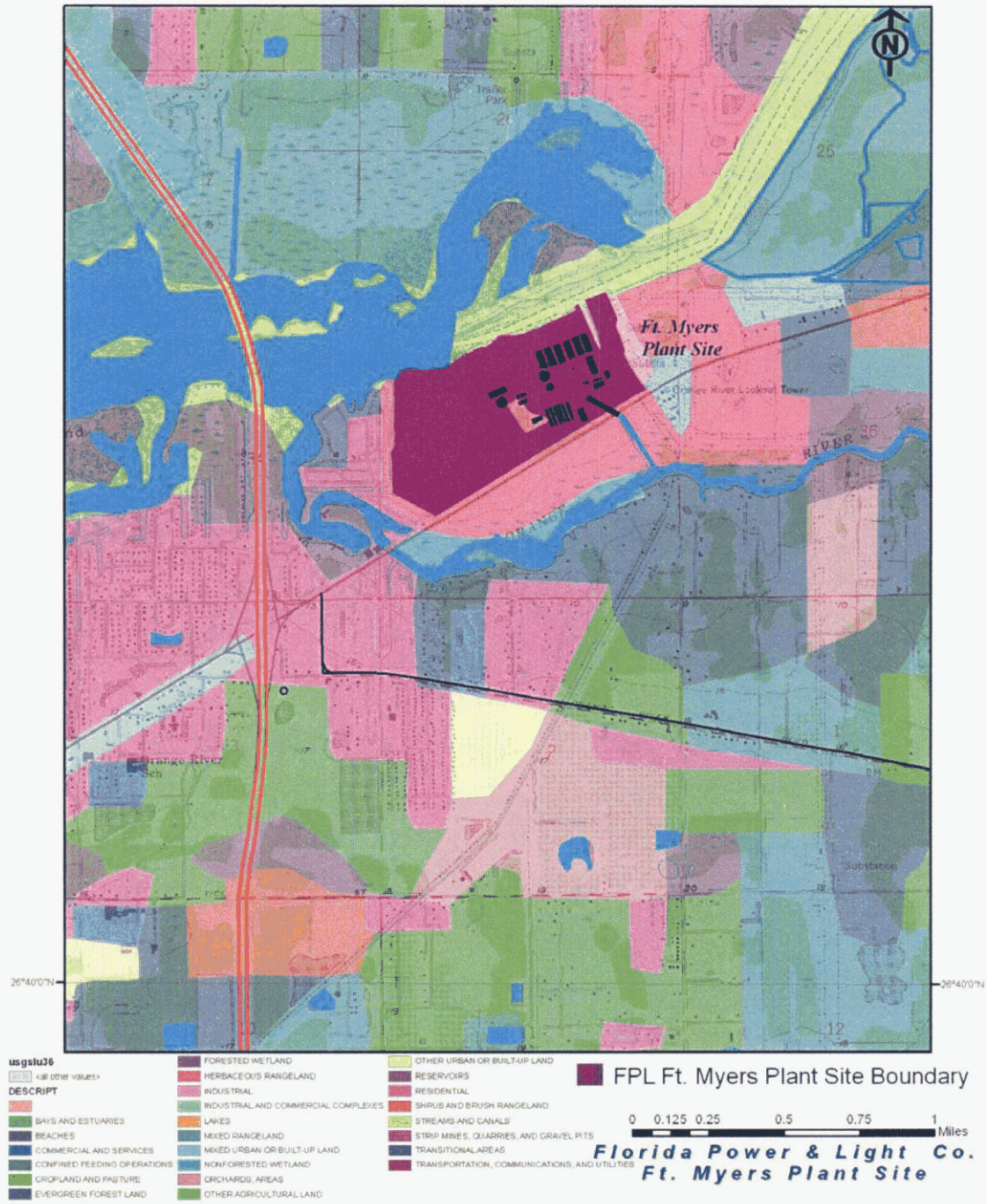
Florida Power & Light Co.

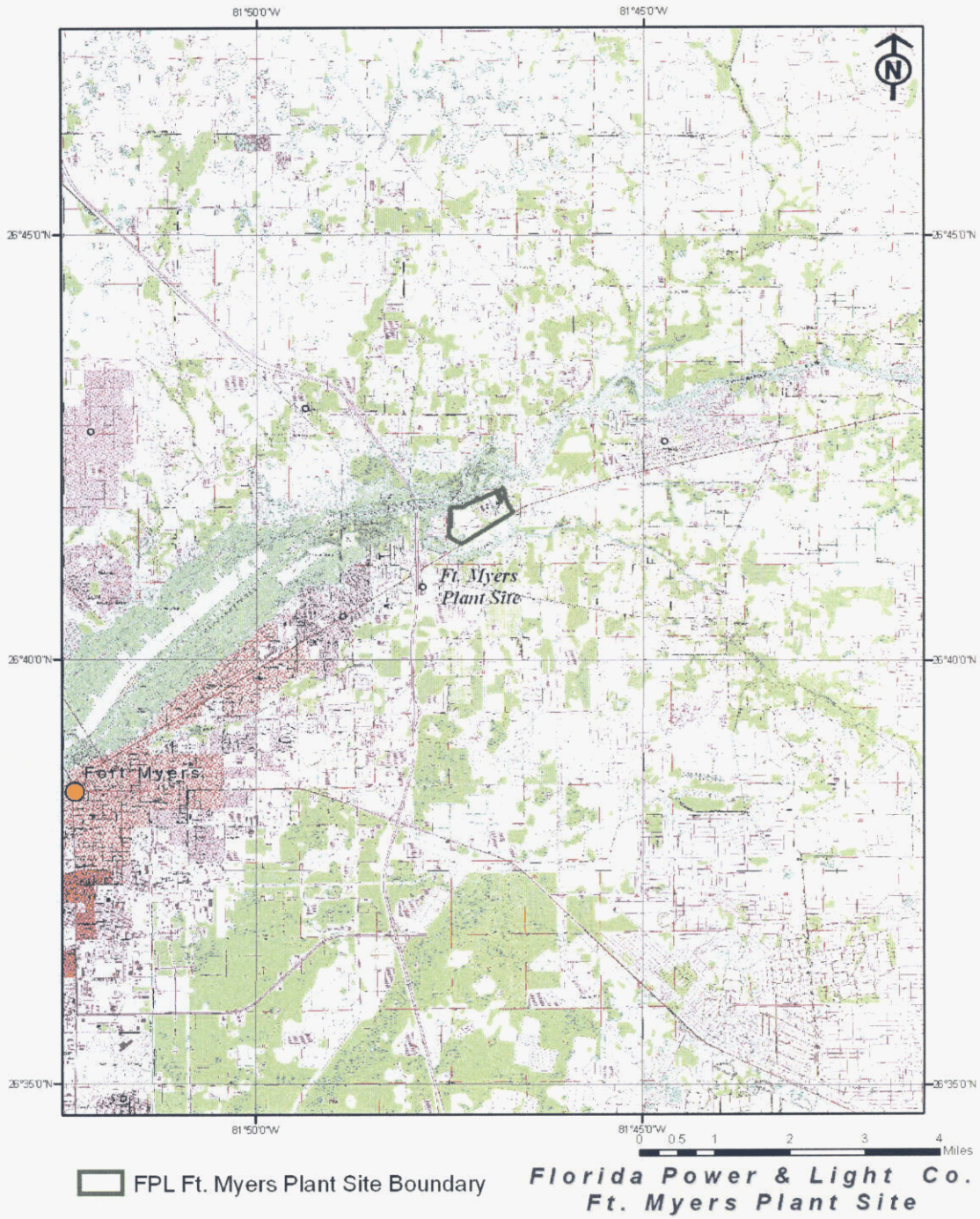
(This page is left intentionally blank.)

Environmental and Land Use Information: Supplemental Information

Potential Site # 4: Ft. Myers Plant

(This page is left intentionally blank.)

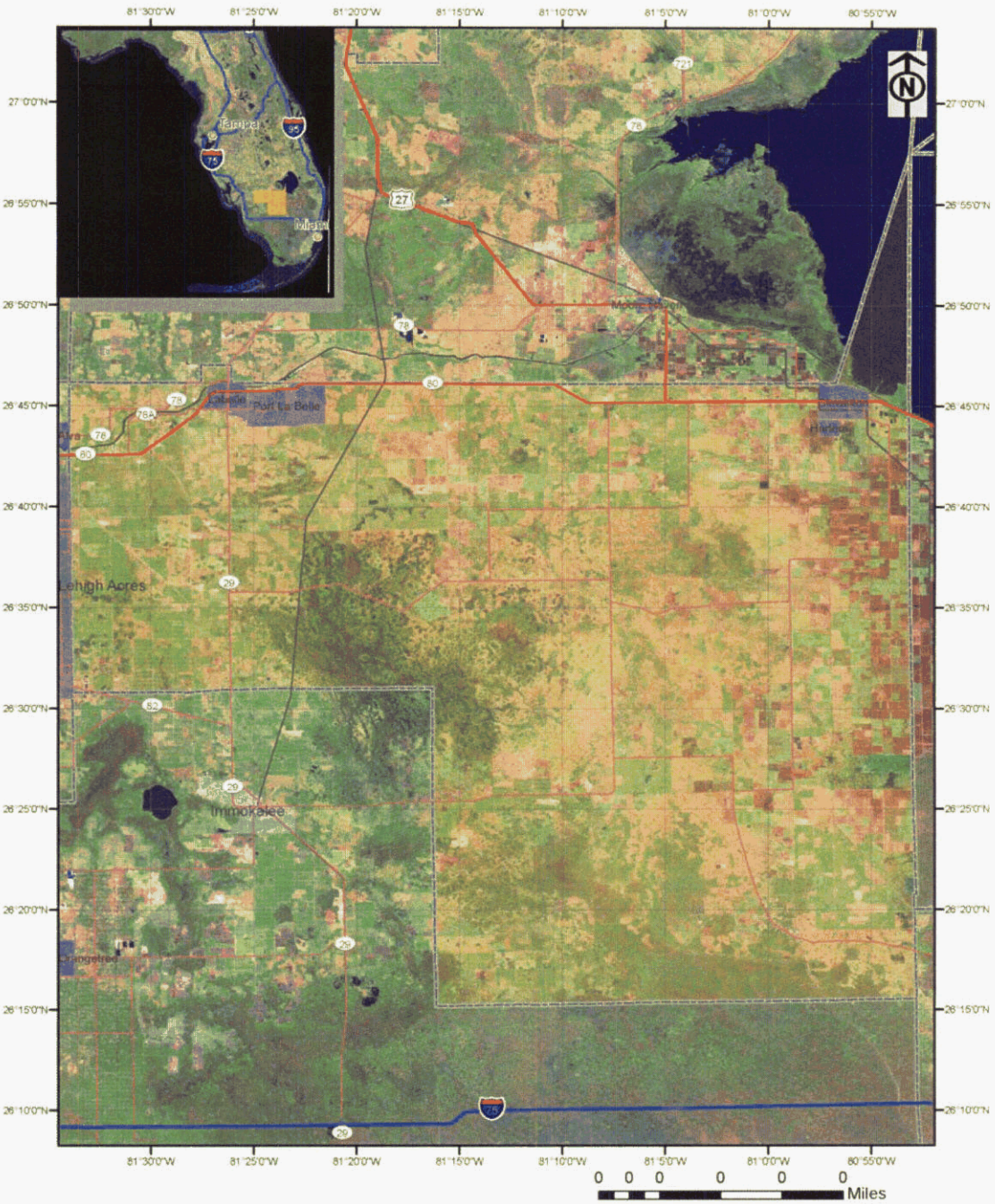

Ft. Myers
Plant Site
Orange River Lookout Tower
RIVER
Orange River
26°40'0"N
usgslu36
<all other values>
DESCRIPT
BAYS AND ESTUARIES
BEACHES
COMMERCIAL AND SERVICES
CONFINED FEEDING OPERATIONS
CROPLAND AND PASTURE
EVERGREEN FOREST LAND
FORESTED WETLAND
HERBACEOUS RANGELAND
INDUSTRIAL
INDUSTRIAL AND COMMERCIAL COMPLEXES
LAKES
MIXED RANGELAND
MIXED URBAN OR BUILT-UP LAND
NONFORESTED WETLAND
ORCHARDS, AREAS
OTHER AGRICULTURAL LAND
OTHER URBAN OR BUILT-UP LAND
RESERVOIRS
RESIDENTIAL
SHRUB AND BRUSH RANGELAND
STREAMS AND CANALS
STRIP MINES, QUARRIES, AND GRAVEL PITS
TRANSITIONAL AREAS
TRANSPORTATION, COMMUNICATIONS, AND UTILITIES
FPL Ft. Myers Plant Site Boundary
0 0.125 0.25 0.5 0.75 1
Miles
Florida Power & Light Co.
Ft. Myers Plant Site


81°50'0"W
81°45'0"W
26°45'0"N
26°40'0"N
26°35'0"N
Ft. Myers
Plant Site
Fort Myers
0 0.5 1 2 3 4
Miles
FPL Ft. Myers Plant Site Boundary
Florida Power & Light Co.
Ft. Myers Plant Site

Environmental and Land Use Information: Supplemental Information

Potential Site #5: Hendry County

(This page is left intentionally blank.)



Hendry County Florida

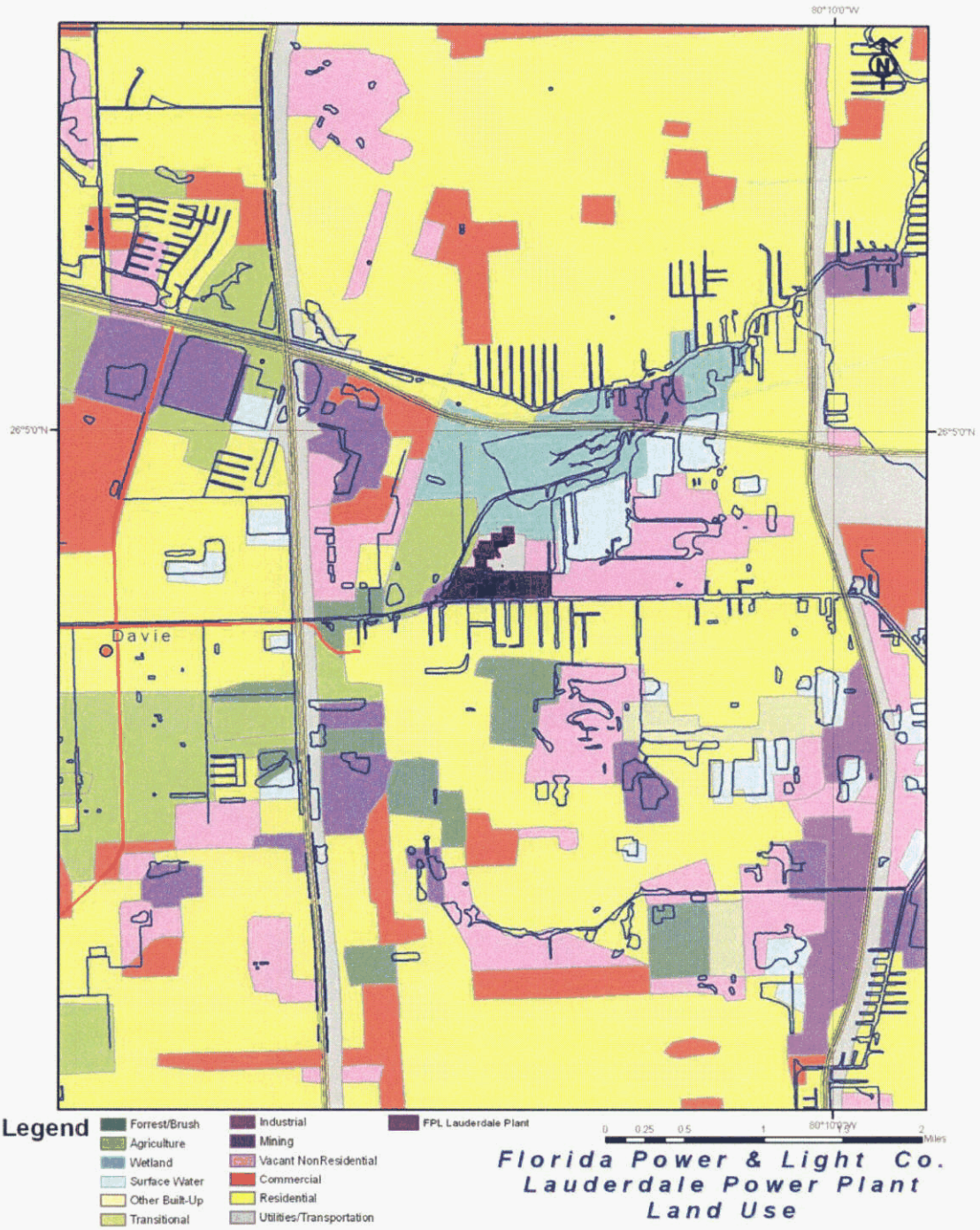
Florida Power & Light Co.

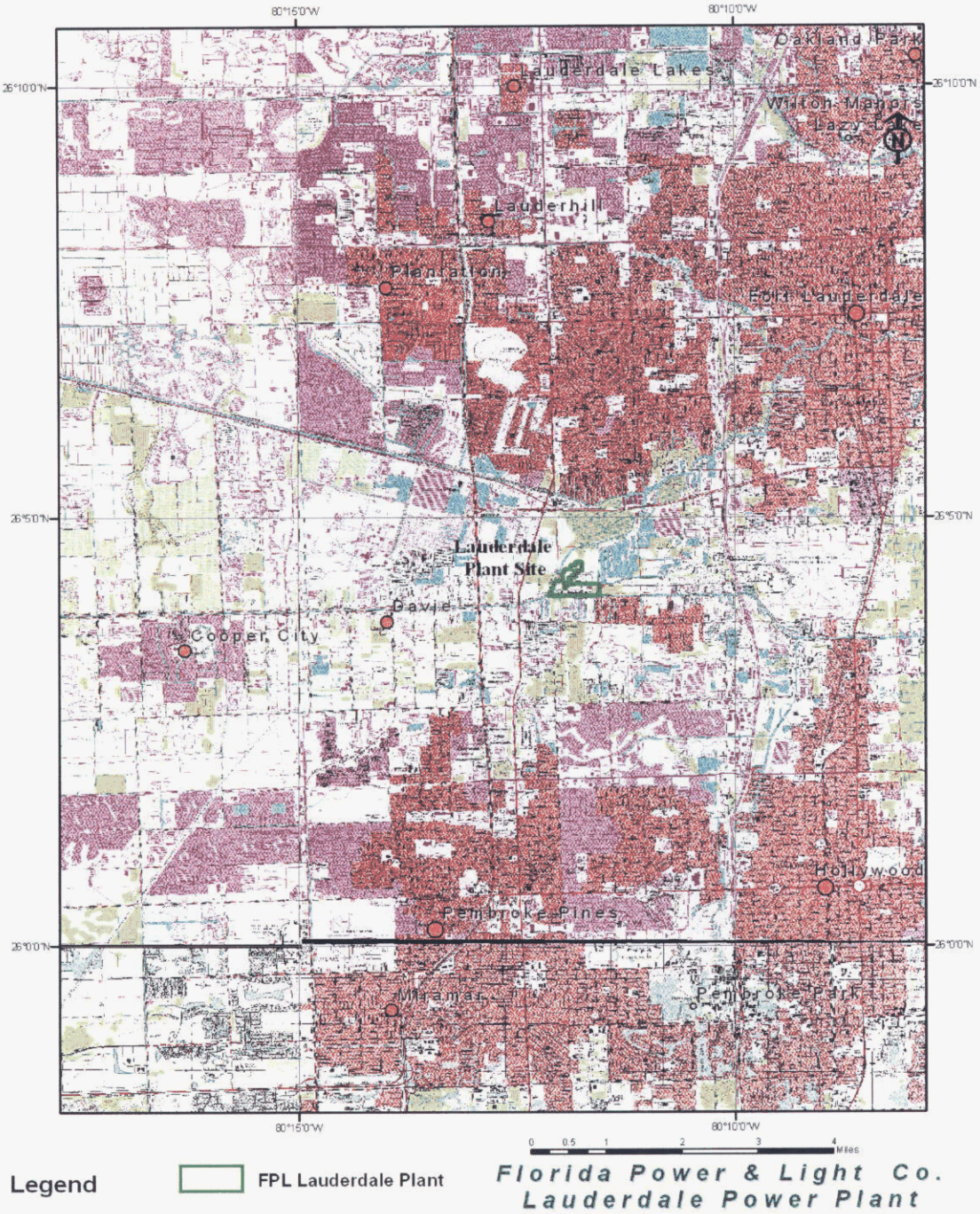
(This page is left intentionally blank.)

Environmental and Land Use Information: Supplemental Information

Potential Site #6: Lauderdale Plant

(This page is left intentionally blank.)

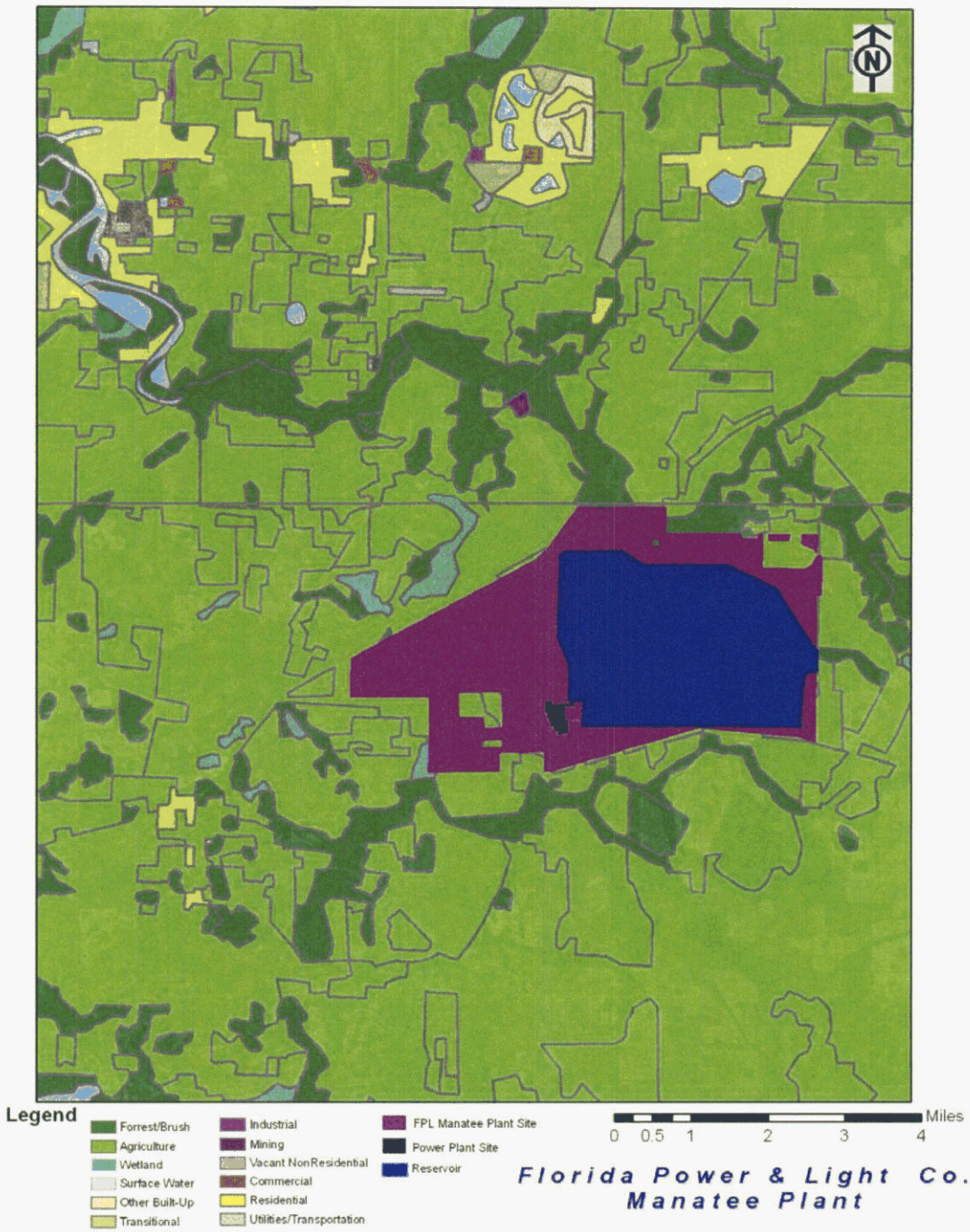

80°10'0"W
26°5'0"N
Davie
Legend
Forrest/Brush
Agriculture
Wetland
Surface Water
Other Built-Up
Transitional
Industrial
Mining
Vacant NonResidential
Commercial
Residential
Utilities/Transportation
FPL Lauderdale Plant
0 0.25 0.5 1 2 Miles
Florida Power & Light Co.
Lauderdale Power Plant
Land Use

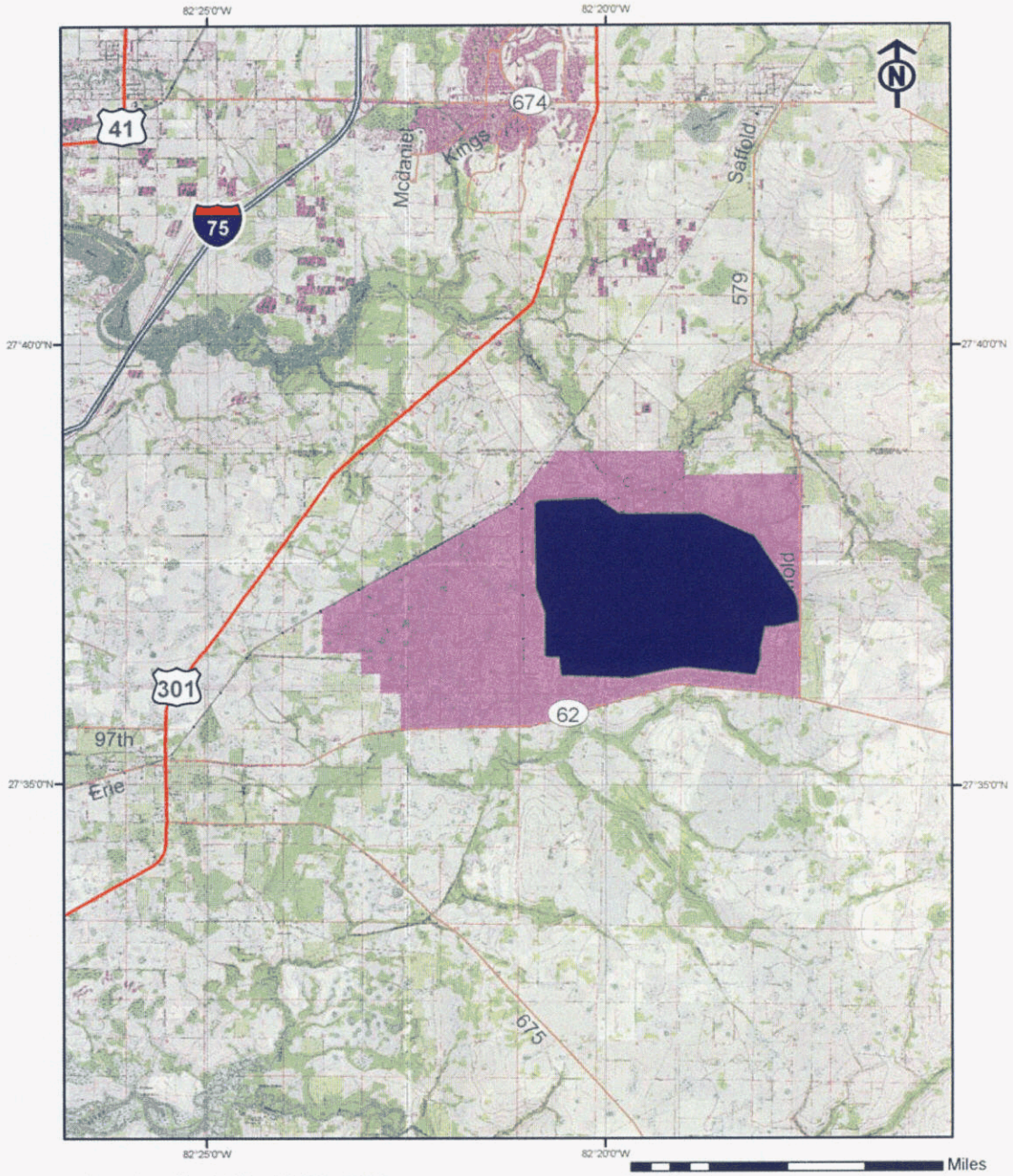

80°15'0"W
80°10'0"W
26°10'0"N
26°5'0"N
26°0'0"N
Oakland Park
Lauderdale Lakes
Wilton Manors
Lazy Lake
Lauderhill
Plantation
Fort Lauderdale
Lauderdale Plant Site
Davie
Cooper City
Hollywood
Pembroke Pines
Miramar
Pembroke Park
0 0.5 1 2 3 4 Miles
Legend
FPL Lauderdale Plant
Florida Power & Light Co.
Lauderdale Power Plant

Environmental and Land Use Information: Supplemental Information

Potential Site #7: Manatee Plant

(This page is left intentionally blank.)

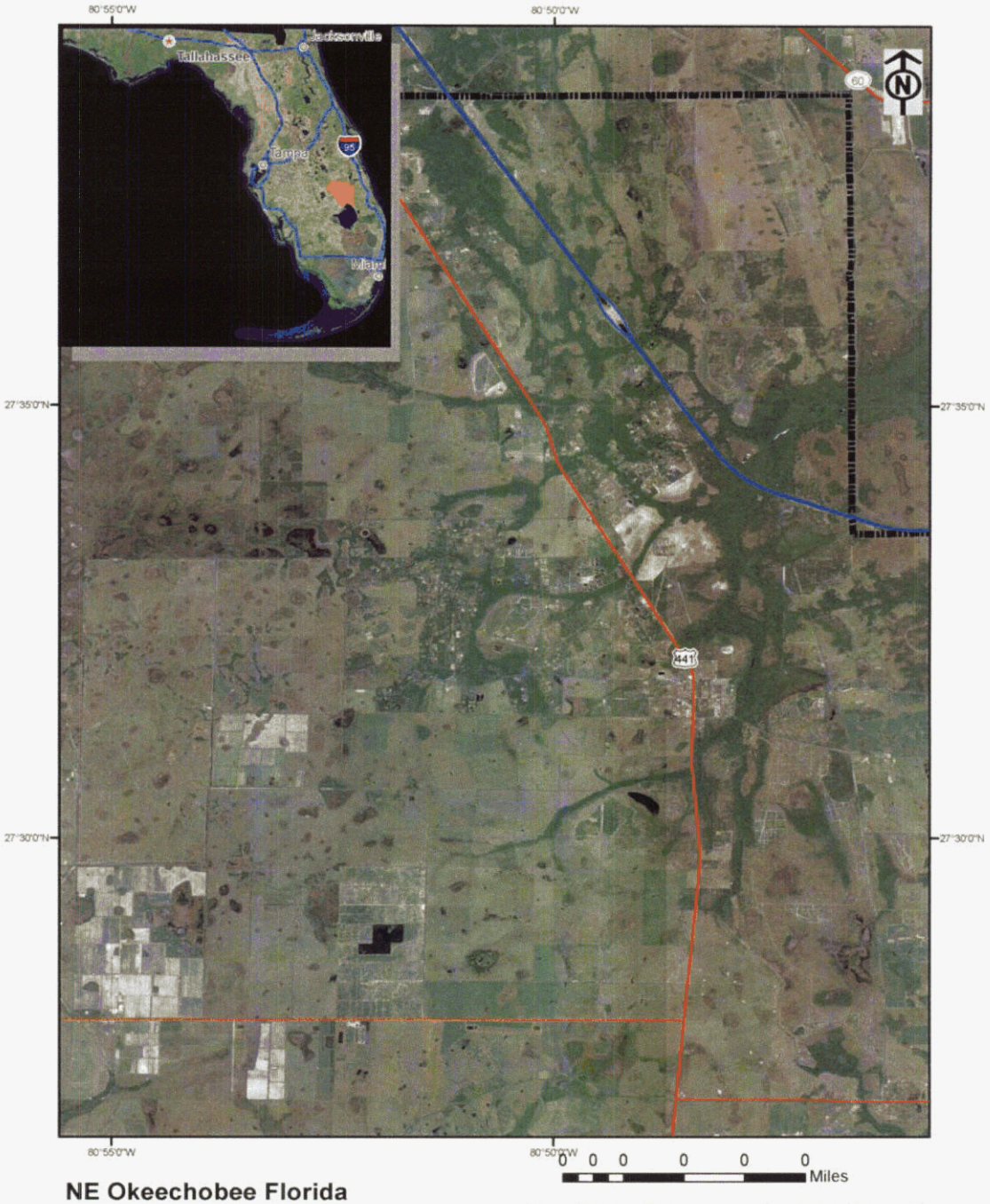

N
Legend
Forrest/Brush
Agriculture
Wetland
Surface Water
Other Built-Up
Transitional
Industrial
Mining
Vacant NonResidential
Commercial
Residential
Utilities/Transportation
FPL Manatee Plant Site
Power Plant Site
Reservoir
Miles
0 0.5 1 2 3 4
Florida Power & Light Co.
Manatee Plant


82°25'0"W
82°20'0"W
27°40'0"N
27°35'0"N
41
75
301
674
62
579
675
Mcdaniel
Kings
Saffold
97th
Erie
N
Miles
0 0.5 1 2 3 4
Manatee Plant Site USGS TOPO
FPL Manatee Plant Site
Florida Power & Light Co.
Manatee Plant

Environmental and Land Use Information: Supplemental Information

Potential Site #8: Northeast Okeechobee County

(This page is left intentionally blank.)



NE Okeechobee Florida

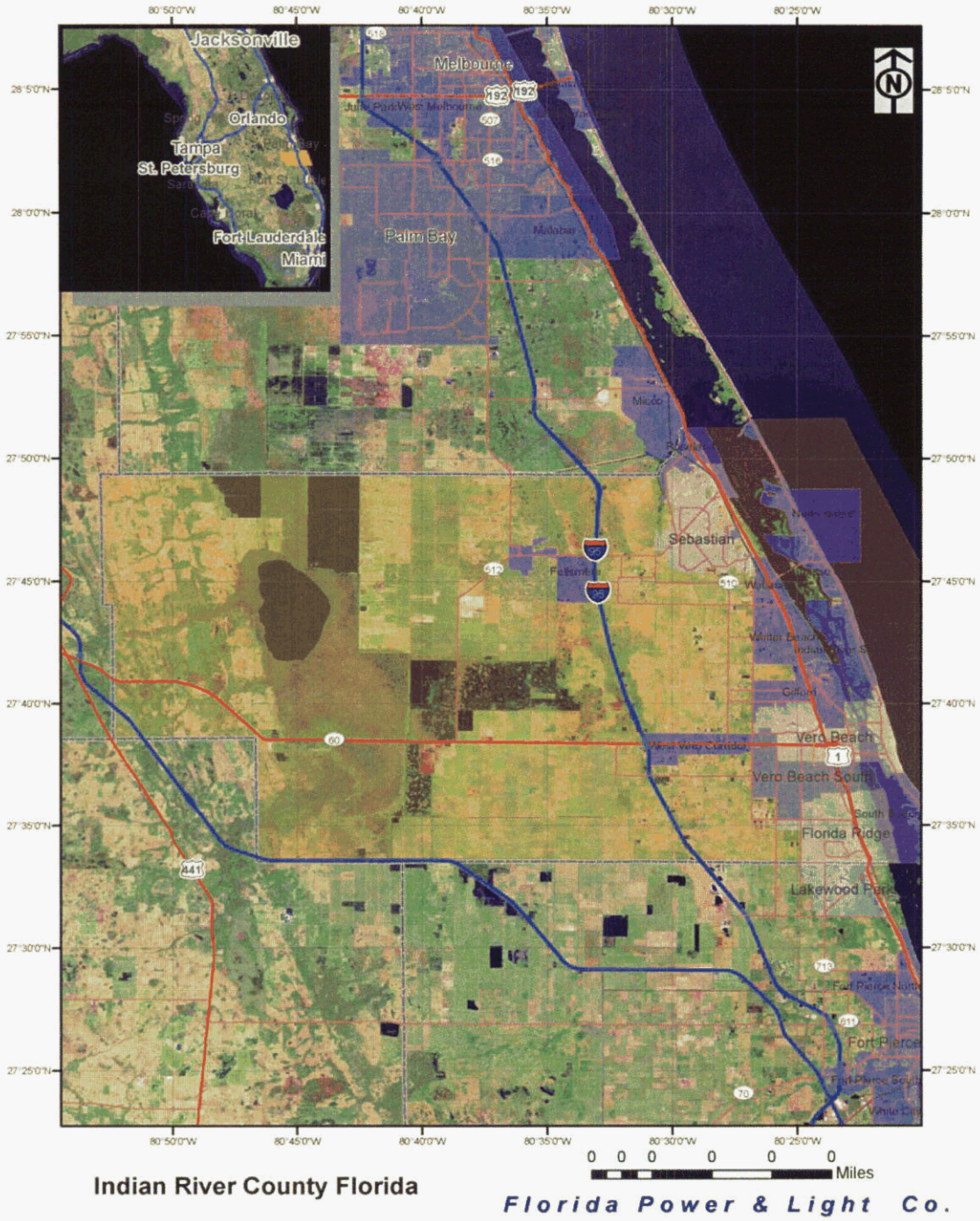
Florida Power & Light Co.

(This page is left intentionally blank.)

Environmental and Land Use Information: Supplemental Information

Potential Site #9: Southwest Indian River County

(This page is left intentionally blank.)



Indian River County Florida

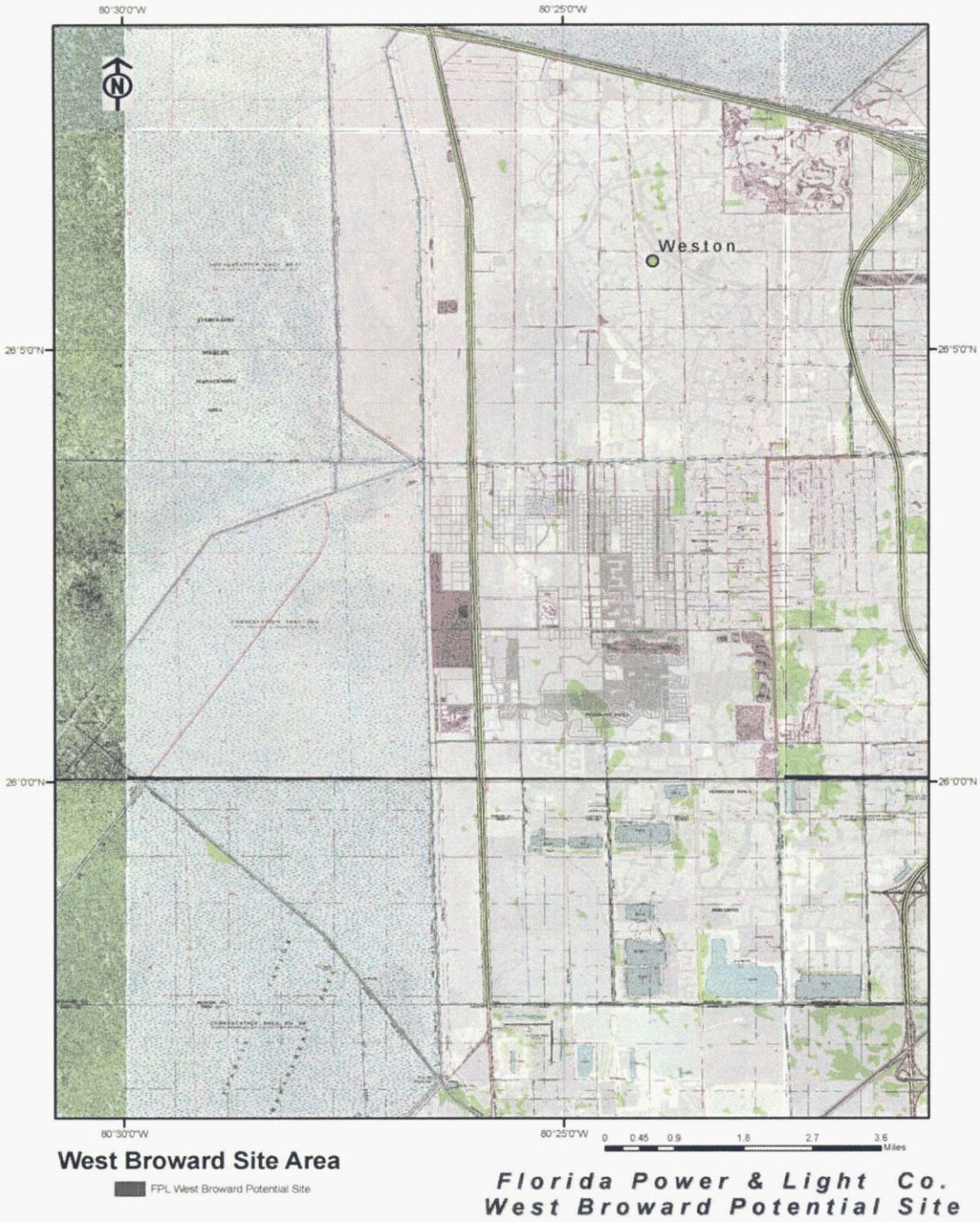
Florida Power & Light Co.

(This page is left intentionally blank.)

Environmental and Land Use Information: Supplemental Information

Potential Site #10: West Broward

(This page is left intentionally blank.)


80°30'0"W
80°25'0"W
Weston
26°5'0"N
26°0'0"N
0 0.45 0.9 1.8 2.7 3.6
Miles
West Broward Site Area
FPL West Broward Potential Site
Florida Power & Light Co.
West Broward Potential Site

(This page is left intentionally blank.)

CHAPTER V

Other Planning Assumptions & Information

(This page is left intentionally blank.)

Introduction

The Florida Public Service Commission (FPSC), in Docket No. 960111-EU, specified certain information that was to be included in an electric utility's Ten Year Power Plant Site Plan filing. Among this specified information was a group of 12 items listed under a heading entitled "Other Planning Assumptions and Information". These 12 items basically concern specific aspects of a utility's resource planning work. The FPSC requested a discussion or a description of each of these items.

These 12 items are addressed individually below as separate "Discussion Items".

Discussion Item # 1: Describe how any transmission constraints were modeled and explain the impacts on the plan. Discuss any plans for alleviating any transmission constraints.

FPL's resource planning work considers two types of transmission limitations/constraints: external limitations and internal limitations. External limitations deal with FPL's ties to its neighboring systems. Internal limitations deal with the flow of electricity within the FPL system.

The external limitations are important since they affect the development of assumptions for the amount of external assistance that is available to the FPL system as well as the amount and price of economy energy purchases. Therefore, these external limitations are incorporated both in the reliability analysis and economic analysis aspects of resource planning. The amount of external assistance which is assumed to be available is based on the projected transfer capability to FPL from outside its system as well as historical levels of available assistance. In the loss of load probability (LOLP) portion of its reliability analyses, FPL models this amount of external assistance as an additional generator within FPL's system which provides capacity in all but the peak load months. The assumed amount and price of economy energy are based on historical values and projections from production costing models.

Internal transmission limitations are addressed by identifying potential geographic locations for potential new units that minimize adverse impacts to the flow of electricity within FPL's system. The internal transmission limitations are also addressed by developing the direct costs for siting new units at different locations and by evaluating the cost impacts created by the new unit/unit location combination on the operation of existing units in the FPL system.

Both of these site- and system-related transmission costs are developed for each different unit/unit location option or groups of options. In addition, transfer limits for capacity and energy that can be imported into the Southeastern region of FPL's system are also developed for use in FPL's production costing analyses. (A further discussion of the Southeastern Florida region and the need to maintain a regional balance between generation and transmission contributions is found in Chapter III.)

FPL's annual transmission planning work determines transmission additions needed to address limitations and to maintain/enhance system reliability. FPL's planned transmission facilities to interconnect and integrate FPL's resource plans and those that must be certified under the Transmission Line Siting Act are presented in Chapter III.

Discussion Item # 2: Discuss the extent to which the overall economics of the plan were analyzed. Discuss how the plan is determined to be cost-effective. Discuss any changes in the generation expansion plan as a result of sensitivity tests to the base case load forecast.

FPL typically performs economic analyses of competing resource plans using as an economic criterion FPL's levelized system average electric rates (i.e., a Rate Impact Measure or RIM approach). In addition, for analyses in which DSM levels are not changed, FPL uses the equivalent criterion of the cumulative present value of revenue requirements for the FPL system.[4]
The load forecast that is presented in FPL's 2010 Site Plan was developed in February 2010. FPL has not performed sensitivity analyses on forecasts that differ from this recently developed load forecast.

[4] FPL's basic approach in its resource planning work is to base decisions on a lowest electric rate basis. However, when DSM levels are considered a "given" in the analysis (i.e., when only new generating options are considered), the lowest rate basis and the lowest system revenue requirements basis are identical. In such cases FPL evaluates options on the simpler – to – calculate (but equivalent) lowest system revenue requirements basis.

Discussion Item # 3: Explain and discuss the assumptions used to derive the base case fuel forecast. Explain the extent to which the utility tested the sensitivity of the base case plan to high and low fuel price scenarios. If high and low fuel price sensitivities were performed, explain the changes made to the base case fuel price forecast to generate the sensitivities. If high and low fuel price scenarios were performed as part of the planning process, discuss the resulting changes, if any, in the generation expansion plan under the high and low fuel price scenario. If high and low fuel price sensitivities were not evaluated, describe how the base case plan is tested for sensitivity to varying fuel prices.

The basic assumptions FPL used in deriving its fuel price forecasts are discussed in Chapter III of this document. FPL used three fuel and four environmental compliance cost forecasts in the 2009 nuclear cost recovery filings. FPL utilized one of these fuel cost forecasts, and one of these environmental compliance cost forecasts in its DSM Goals analyses.

The resource plan presented in this Site Plan is based, in part, on those prior analyses. For that reason, this resource plan, with the recently developed February 2010 load forecast, has not been further tested for different fuel cost forecasts.

Discussion Item # 4: Describe how the sensitivity of the plan was tested with respect to holding the differential between oil/gas and coal constant over the planning horizon.

As described above in the answer to Discussion Item # 3, FPL used up to three fuel cost forecasts in its 2009 resource planning analyses. While these forecasts did not represent a constant cost differential between oil/gas and coal, a variety of fuel cost differentials were represented in these forecasts.

Discussion Item # 5: Describe how generating unit performance was modeled in the planning process.

The performance of existing generating units on FPL's system was modeled using current projections for scheduled outages, unplanned outages, capacity output ratings, and heat rate information. Schedule 1 in Chapter I, and Schedule 8 in Chapter III, present the current and projected capacity output ratings of FPL's existing units. The values used for outages and

heat rates are generally consistent with the values FPL has used in planning studies in recent years.

In regard to new unit performance, FPL utilized current projections for the capital costs, fixed and variable operating & maintenance costs, capital replacement costs, construction schedules, heat rates, and capacity ratings for all construction options in its resource planning work. A summary of this information for the new capacity options FPL projects to add over the planning horizon is presented on the Schedule 9 forms in Chapter III.

Discussion Item # 6: Describe and discuss the financial assumptions used in the planning process. Discuss how the sensitivity of the plan was tested with respect to varying financial assumptions.

In its 2009 resource planning work, FPL used the following financial assumptions: (i) a capital structure of 44.2% debt and 55.8% equity; (ii) a 7.03% cost of debt; (iii) a 12.5% return on equity; and (iv) an after-tax discount rate of 8.89%. In this work, FPL performed no sensitivity analyses that used varying financial assumptions.

In its new resource planning analysis work in 2010, financial assumptions such as these will change due to the outcome of FPL's recent base rate case.

Discussion Item # 7: Describe in detail the electric utility's Integrated Resource Planning process. Discuss whether the optimization was based on revenue requirements, rates, or total resource cost.

FPL's integrated resource planning (IRP) process is described in detail in Chapter III of this document.

The standard basis for comparing the economics of competing resource plans in FPL's basic IRP process is the impact of the plans on FPL's electricity rate levels with the intent of minimizing FPL's levelized system average rate (i.e., a Rate Impact Measure or RIM approach). As discussed in response to Discussion Item # 2, both the electricity rate perspective and the cumulative present value of system revenue requirement perspective are identical when DSM levels are unchanged between competing plans. Therefore, in planning work in which DSM levels were unchanged, the equivalent cumulative present value of revenue requirements perspective was utilized.

Discussion Item # 8: Define and discuss the electric utility's generation and transmission reliability criteria.

FPL uses two system reliability criteria in its resource planning work that addresses generation, purchase, and DSM options. One of these is a minimum 20% Summer and Winter reserve margin. The other reliability criterion is a maximum of 0.1 days per year loss-of-load-probability (LOLP). These reliability criteria are discussed in Chapter III of this document.

In regard to transmission reliability analysis work, FPL has adopted transmission planning criteria that are consistent with the planning criteria established by the Florida Reliability Coordinating Council (FRCC). The FRCC has adopted transmission planning criteria that are consistent with the Reliability Standards established by the North American Electric Reliability Council (NERC). The *NERC Reliability Standards* are available on the internet site (http://www.nerc.com/).

In addition, FPL has developed a *Facility Connection Requirements* (FCR) document as well as a *Facility Rating Methodology* document that are also available on the internet under the FPL OATT Documents directory at https://www.oatioasis.com/FPL/index.html.

Generally, FPL limits its transmission facilities to 100% of the applicable thermal rating. The normal and contingency voltage criteria for FPL stations are provided below:

	Normal/Contingency	
Voltage Level (kV)	Vmin (p.u.)	Vmax (p.u.)
69, 115, 138	0.95/0.95	1.05/1.07
230	0.95/0.95	1.06/1.07
500	0.95/0.95	1.07/1.09
Turkey Point (*)	1.01/1.01	1.06/1.06
St. Lucie (*)	1.00/1.00	1.06/1.06

(*) Voltage range criteria for FPL's Nuclear Power Plants

There may be isolated cases for which FPL may have determined that it is acceptable to deviate from the general criteria stated above. There are several factors that could influence this criteria, such as the overall number of potential customers that may be impacted, the probability of an outage actually occurring, or transmission system performance, as well as others.

Discussion Item # 9: Discuss how the electric utility verifies the durability of energy savings for its DSM programs.

The impact of FPL's DSM programs on demand and energy consumption is revised periodically. Engineering models, calibrated with field-metered data, are updated when significant efficiency changes occur in the marketplace. Participation trends are tracked for all of the FPL DSM programs in order to adjust impacts each year for changes in the mix of efficiency measures being installed by program participants.

Survey data is collected from non-participants in order to establish the baseline efficiency. Participant data is compared against non-participant data to establish the demand and energy saving benefits of the utility program versus what would be installed in the absence of the program. For these DSM measures which involve the utilization of load management, FPL conducts periodic tests of the load control equipment to ensure that it is functioning correctly.

Discussion Item # 10: Discuss how strategic concerns are incorporated in the planning process.

The Executive Summary chapter provides a discussion of two system concerns that are typically addressed in FPL's resource planning work: (1) maintaining/enhancing fuel diversity in the FPL system, and (2) maintaining a balance between load and generating capacity in Southeastern Florida. In addition, two other relatively recent items will also influence FPL's resource planning efforts. One of these items is the Executive Orders directive issued in 2007 by Governor Crist calling for reduction in greenhouse gas emissions and greater contribution from renewable energy sources. As previously discussed in both the Executive Summary chapter and Chapter III, FPL's resource planning has already taken positive steps in regard to both of these issues. The other item that could affect FPL's resource planning is the possibility of the establishment of a Florida standard for renewable energy, or clean energy, contributions to a utility system. A Renewable Portfolio Standard (RPS) proposal was prepared by the FPSC, and then sent to the Florida Legislature for consideration, with a possible change to a Clean Portfolio Standard (CPS), during the 2009 legislative session. However, no RPS or CPS legislation was enacted during the 2009 legislative session. RPS or CPS legislation, or other legislative initiatives regarding renewable or clean energy contributions, may occur in the future. If such legislation is enacted in 2010 or later years, FPL will then determine what steps need to be taken to address the legislation. Such steps

would then be discussed in FPL's Site Plan in the year following the enactment of such legislation.

In addition to these system concerns/issues, there are other strategic factors FPL typically considers when choosing between resource options. These include the following: (1) technology risk; (2) environmental risk, and (3) site feasibility. The consideration of these factors may include both economic and non-economic aspects.

Technology risk is an assessment of the relative maturity of competing technologies. For example, a prototype technology, which has not achieved general commercial acceptance, has a higher risk than a technology in wide use and, therefore, is less desirable.

Environmental risk is an assessment of the relative environmental acceptability of different generating technologies and their associated environmental impacts on the FPL system, including environmental compliance costs. Technologies regarded as more acceptable from an environmental perspective for a plan are those which minimize environmental impacts for the FPL system as a whole through highly efficient fuel use and state of the art controls.

Site feasibility assesses a wide range of economic, regulatory, and environmental factors related to successfully developing and operating the specified technology at the site in question. Projects that are more acceptable have sites with few barriers to successful development.

All of these factors play a part in FPL's planning and decisions, including its decisions to construct capacity or to purchase power.

Discussion Item # 11: Describe the procurement process the electric utility intends to utilize to acquire the additional supply-side resources identified in the electric utility's ten-year site plan.

As has been previously discussed in prior FPL Site Plans, elements of FPL's recent and future capacity additions include the construction of new generating capacity at the West County Energy Center (WCEC) site, WCEC Units 1, 2, & 3. These generation construction projects were selected after evaluating competing bids received in response to Requests for Proposals (RFP) issued by FPL. The FPSC subsequently approved FPL's decision to construct these new combined cycle (CC) units in Determination of Need dockets.

In regard to the Modernization projects at FPL's existing Cape Canaveral and Riviera plants, these projects were also evaluated using the competing bids received in response to the RFP issued for WCEC Unit 3. In addition, bids from competing vendors were also evaluated for FPL's new solar thermal and PV projects.

The nuclear capacity additions, both the nuclear uprates and the new nuclear units, do not lend themselves to an RFP approach involving bids from third parties who would build new nuclear generation capacity. In addition, nuclear capacity additions are exempted from the Commission's Bid Rule by section 403.519 (4) (c). For these nuclear projects, FPL's procurement activities were conducted to ensure the best combination of quality and cost for the delivered products.

Construction capacity addition decisions for non-nuclear generation for years beyond those presented in this document are expected to be conducted in a manner consistent with the Commission's Bid Rule.

Identification of self-build options, beyond those units already approved by the FPSC and Governor and Siting Board or units for which FPL may be then seeking approval, in future FPL Site Plans will not be an indication that FPL has pre-judged any capacity solicitation it may conduct. The identification of future generating units is required of FPL in its Site Plan filings and represents those alternatives that appear to be FPL's best, most cost-effective self-build options at the time. FPL reserves the right to refine its planning analyses and to identify other self-build options. Such refined analyses have the potential to yield a variety of self-build options, some of which might not require an RFP. If an RFP is issued for Supply options, FPL reserves the right to choose the best alternative for its customers, even if that option is not an FPL self-build option.

Discussion Item # 12: Provide the transmission construction and upgrade plans for electric utility system lines that must be certified under the Transmission Line Siting Act (403.52 – 403.536, F. S.) during the planning horizon. Also, provide the rationale for any new or upgraded line.

(1) FPL has identified the need for a new 230kV transmission line that required certification under the Transmission Line Siting Act which was issued in April 2006. The new line is to be completed in two phases connecting FPL's St. Johns Substation to FPL's Pringle Substation (also shown on Table III.E.1 in Chapter III). Phase 1 was completed in May 2009 and consisted of a new line connecting Pringle

to a new Pellicer Substation. Phase 2 is planned to connect St. Johns to Pellicer and is scheduled to be complete by December 2013. The construction of this line is necessary to serve existing and future customers in the Flagler and St. Johns areas in a reliable and effective manner.

(2) FPL has identified the need for a new 230kV transmission line (by December 2012) that required certification under the Transmission Line Siting Act which was issued on November 2008. The new line will connect FPL's Manatee Substation to FPL's proposed BobWhite Substation (also shown on Table III.E.1 in Chapter III). The construction of this line is necessary to serve existing and future customers in the Manatee and Sarasota areas in a reliable and effective manner.

(This page is intentionally left blank.)