FPL

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April 1, 2011

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VIA HAND DELIVERY

Ms. Ann Cole
Division of the Commission Clerk and
Administrative Services
Florida Public Service Commission
Betty Easley Conference Center
2540 Shumard Oak Boulevard, Room 110
Tallahassee, FL 32399-0850

RE: Florida Power & Light Company's 2011 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 2011-2020 Ten Year Power Plant Site Plan.

Sincerely,

Lynne R. Adams
for Jessica A. Cano

Enclosures

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

DOCUMENT NUMBER-DATE
02172 APR-1 =
FPSC-COMMISSION CLERK

Ten Year Power Plant Site Plan
2011 – 2020

FPL

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FPL

Ten Year Power Plant Site Plan

2011-2020

Submitted To:

Florida Public
Service Commission

Miami, Florida
April 2011

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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 might 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 2010 and that were on-going in the first Quarter of 2011. The forecasted information presented in this plan addresses the years 2011 through 2020.

Site Plans are long-term planning documents and should be viewed in this context. A Site Plan contains tentative information 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 2010 and early 2011.

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
	Solar	Solar
	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
Other	ESP	Electrostatic Precipitators

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Executive Summary

Florida Power & Light Company's (FPL) 2011 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 2011 - 2020 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) efforts and the significant energy efficiency contributions from the current 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 which is discussed in Chapter II. The projected impacts of FPL's DSM efforts are addressed as projected reductions to the forecasted load.

The resource plan that is presented in FPL's 2011 Site Plan contains a number of key similarities to the resource plan presented in FPL's 2010 Site Plan. On the other hand, there are specific factors that are driving changes in FPL's resource plans and which will continue to influence FPL's on-going resource planning work. A brief discussion of these similarities, factors, and changes is provided below. Additional information regarding many of these topics is presented in Chapter III.

I. Similarities to the Resource Plan Previously Presented in FPL's 2010 Site Plan:

There are six key similarities in the current resource plan presented in this document compared to the resource plan presented in the 2010 Site Plan.

Similarity # 1: A third highly efficient combined cycle (CC) generating unit at the West County Energy Center site will be added to FPL's system in 2011.

One similarity to FPL's 2010 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 in Order No. PSC-06-0555-FOF-EI. 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 in Order No. DEP 06-1755.

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 June 2011. The WCEC Unit 3 was approved by the FPSC in September 2008 in Order No. PSC-08-0591-FOF-EI and Site Certification for this unit was obtained in November 2008 in Order No. DEP 08-1204.

Similarity # 2: FPL's 2011 Site Plan continues to project that the DSM Goals imposed by FPSC for FPL will be met.

In late 2009, the FPSC imposed new DSM Goals for FPL for the years 2010 through 2019. As was the case in its 2010 Site Plan, FPL continues to project that these DSM Goals will be met.

However, there are several aspects of the new DSM Goals that are cause for concern. One issue is that, in imposing DSM Goals for FPL, the approach used by the FPSC in 2009 deviated from prior practice in ways that resulted in electric rates for FPL's customers being higher than would otherwise have been the case. In addition, this high level of DSM Goals means that FPL is becoming increasingly dependent upon DSM resources for reserves needed to maintain system reliability. This concern is mentioned again later in this Executive Summary and is discussed in more detail in Chapter III.

Similarity # 3: Generating capacity at FPL's four existing nuclear generation units will increase in the 2011 – 2013 time frame.

FPL will be adding approximately 450 MW of increased generating capacity from its existing Turkey Point and St. Lucie nuclear power plants. This increased capacity is currently scheduled to come in-service between March 2011 and January 2013. The need for these nuclear capacity "uprates" was approved by the FPSC in January 2008 in Order No. PSC-08-0021-FOF-EI. The Final Order for the Site Certification was issued in September 2008 for the St. Lucie uprates in Order No. DEP 08-0942 and in October 2008 for the Turkey Point uprates in Order No. DEP 08-1141. (There are some relatively small changes in the schedules for the increased nuclear capacity that are discussed in Chapter III.)

Similarity # 4: FPL continues to pursue licenses, permits, and approvals that would be necessary for future construction and operation of two new nuclear generating units at its Turkey Point site.

FPL is continuing its work to obtain all of the licenses, permits, and approvals that would be necessary to construct and operate two new nuclear units at its Turkey Point site in the future.

These licenses, permits, and approvals will provide FPL with the option to construct these nuclear units at Turkey Point for a time expected to be up to 20 years from the time the licenses and permits are granted, and then to operate the units. A decision regarding construction of these new units will be made once the licenses and permits are granted. (Based on the current estimated time for construction, the earliest practical deployment dates for the two new units would be beyond the 10-year reporting period for this Site Plan. Therefore, these units are not shown in this document.)

Similarity # 5: A number of existing generating units have been placed on Inactive Reserve.

In 2009, FPL began to take a number of its existing generating units out of active service and place them on Inactive Reserve status. That process is continuing in early 2011. The specific generating units that have been placed on Inactive Reserve status are discussed in Chapter III of this document. However, there are changes in regard to FPL's current plans for these units that are discussed later in this Executive Summary and in more detail in Chapter III.

Similarity # 6: The modernizations of FPL's existing Cape Canaveral and Riviera plant sites is underway and are projected to be completed in 2013 and 2014, respectively.

FPL's 2010 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 September 2008 in Order No. PSC-08-0591-FOF-EI. Site Certification was received for Cape Canaveral in October 2009 in Order No. DEP 09-1015. , Site Certification was received for Riviera in November 2009 in Order No. DEP O9-1245. These modernizations are underway and are again reflected in this Site Plan.

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

There are two primary factors that are driving the changes in FPL's 2011 resource plan compared to the resource plan presented in FPL's 2010 Site Plan. These factors, and their impacts on the resource plan, are summarized below and are addressed in more detail in Chapter III of this document.

Factor # 1: The costs of returning units from Inactive Reserve status are projected to be high.

Recent detailed evaluation of the specific costs of returning generating units from their current Inactive Reserve status, and then operating those units after they are returned to service, indicate that such costs are projected to be high. These cost projections require further analysis to determine when, and if, these units will be returned to active service.

Factor # 2: The growing number of combined cycle units on FPL's system will require that planned maintenance outages for FPL's fleet of fossil-fueled generating units be scheduled throughout the year, including Summer and Winter peak load months .

Combined cycle units are based on advanced combustion turbines whose planned maintenance outages must be strictly tied to their operating hours. Therefore, there is relatively little flexibility regarding when planned maintenance for the combined cycle units can be scheduled. This makes it more difficult to schedule planned maintenance for these units, plus all of FPL's other fossil-fueled generating units, solely in non-peak load months.

III. Resulting Changes in FPL's Resource Plan Compared to the Resource Plan Previously Presented in FPL's 2010 Site Plan:

The combined effect of the factors discussed above contribute to three significant changes in FPL's resource plan presented in this document compared to the resource plan previously presented in FPL's 2010 Site Plan. The changes are summarized below and are discussed in more detail in Chapter III.

Resulting Change # 1: FPL's 2011 Site Plan does not specify a permanent return to active service of the existing generating units placed in Inactive Reserve.

The effect of the projected high costs of returning these units to active status, and subsequently operating these units, are reflected in the resource plan that FPL presents in its 2011 Site Plan. Based on these cost projections, and the comparatively lower projected system costs of new combined cycle capacity, this resource plan does not show the permanent return to service of any of these generating units in the ten-year period addressed in this document.

FPL currently expects that three of these generating units, Cutler 5 & 6 and Sanford 3, will be retired by 2012. FPL will be examining other potential uses for these sites, including their potential use as sites for new renewable energy facilities. The four steam units at FPL's Port Everglades site will remain available to return to service at least until 2014. Two of these four steam units, Port Everglades Units 3 & 4, are currently scheduled to be returned to active service in 2012 and then return to Inactive Reserve status at least until the "modernized" units at Cape Canaveral and Riviera are in normal operation (i.e., until mid-2014). The other two steam units, Port Everglades Units 1 & 2, are currently scheduled to remain on Inactive Reserve status during this time period. The remaining unit on Inactive Reserve status, Turkey Point 2, will remain on Inactive Reserve status, but will operate as a synchronous condenser (which provides reactive power support for FPL's transmission system in Southeastern Florida) rather than as provider of electricity. This unit is capable of returning to active service in the future to provide MW and MWh. (Further discussion of the units on Inactive Reserve status is provided in Chapter III.)

FPL will continue to evaluate the relative economics of returning the Port Everglades and Turkey Point 2 units from Inactive Reserve compared to adding new combined cycle capacity at Greenfield/Brownfield sites and/or modernizing generation facilities at existing sites.

Resulting Change # 2: For planning purposes consistent with the objectives of this reporting document, the resource plan presented in this Site Plan shows the addition of two new Greenfield CC units.

With the assumption that none of the units currently in Inactive Reserve status will be permanently returned to active service during the ten-year period addressed in this document, and consistent with all other assumptions (new load forecast, DSM Goals, etc.), FPL currently projects that it will have its next resource need in 2016. Consistent with two of the objectives of this document, which are to provide a preview of what types of generating units FPL projects would be added, and when FPL projects that those additions would be made, FPL is projecting that this resource need would be met by the addition of one new CC unit similar to the new CC units being added as part of the modernizations of the Cape Canaveral and Riviera sites. An additional resource need is then projected by the year 2020. For planning purposes, FPL currently projects that this subsequent resource need would also be met by the addition of another new CC unit of the same type. No specific sites have been designated for these two new CC units and they are referred to as Greenfield CC units throughout this document.

As previously mentioned, and as part of FPL's ongoing resource planning process, FPL will continue to evaluate how best to meet future resource needs; i.e., through new CC capacity and/or the return of Inactive Reserve units to active service. These analyses will also examine the potential for modernizing additional existing power plants such as is being done at the Cape

Canaveral and Riviera sites. For example, the existing Port Everglades site is a potential site for modernization. Other existing sites may also emerge in the ongoing analyses as potential candidates for modernization. Analyses of any modernization candidates would include evaluation of numerous factors including: fuel delivery costs/issues, transmission impacts (especially in the Southeastern region of Florida as will be discussed later), system reliability issues due to the removal of existing units from active service prior to the construction of new capacity at the site, overall system economics, etc.

Resulting Change # 3: *FPL's resource plan reflects that planned maintenance must be scheduled during Summer and Winter peak months.*

Due to the previously discussed requirement that combustion turbine maintenance take place on a strict schedule based on operating hours, FPL must schedule planned maintenance during peak load months. This is reflected in this Site Plan as MWs of capacity that are projected to be out-of-service in Summer and Winter reserve margin calculations (as presented in Schedules 7.1 through 7.4 in Chapter III.) One effect of this change is that it increases FPL's projected resource needs in future years.

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

In addition to the two factors specifically described above (projected high costs of returning units in Inactive Reserve to active service and the need to schedule planned maintenance in peak load months) that are driving changes in FPL's resource plans, there are additional factors that also influence FPL's resource planning work. Among these other additional factors 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, particularly in Miami-Dade and Broward counties.

A third 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 or 2010 legislative sessions. 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 2011 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.

A fourth factor that will affect FPL's resource planning is the issue of how best to reliably obtain additional natural gas for FPL's system which is projected to continue to add more natural gas-fired generating capacity after the modernizations of Cape Canaveral and Riviera are completed.

A fifth factor or issue that will affect FPL's resource planning was previously mentioned in this Executive Summary: the extent to which FPL's reserves will become increasingly dependent upon DSM resources as opposed to generation resources. This projected imbalance in future reserves is becoming more pronounced, in part, because of higher DSM Goals requirements.

Each of these factors will continue to be examined in FPL's on-going resource planning work during the rest of 2011 and in future years.

Table ES-1 presents a current projection of major changes to specific generating units and firm capacity purchases for 2011 – 2020 in terms of Summer MW. Table ES-2 then expands upon the information presented in Table ES-1 by adding projections of Winter MW impacts, Summer reserve margins, Winter reserve margins, etc. (Although neither table specifically identifies the impacts of the new DSM Goals on FPL's resource needs and resource plan, the DSM Goals have been fully accounted for in the resource plan presented in this Site Plan.)

Table ES-1: Projected Capacity & Firm Purchase Power Changes

*Year **	*Projected Capacity & Firm Purchase Power Changes*	*Summer MW*	*Date*
2011	Riviera Unit 3 & 4 - removed for modernization	(565)	February-11
	St. Lucie Unit 2 Uprates - interim increase	17	April-11
	West County Unit # 3	1,219	June-11
	Total of MW changes to Summer reserve margin:	**671**	
2012	Inactive Reserve Unit (PE Units 3 & 4) - active service	761	January-12
	St. Lucie Unit 1 Uprates - completed	122	March-12
	Palm Beach SWA - PPA extension	55	April-12
	Oleander PPA - contract ends	(155)	May-12
	St. Lucie Unit 2 outage	(731)	June-12
	Turkey Point Unit 3 Uprates - completed	109	June-12
	Total of MW changes to Summer reserve margin:	**161**	
2013	St. Lucie Unit 2 Uprates - completed	93	October-12
	Inactive Reserve Unit (PE Units 3 & 4) - inactive status	(761)	November-12
	Turkey Point Unit 4 Uprates - completed	109	February-13
	Cape Canaveral Next Generation Clean Energy Center	1,210	June-13
	Martin 1 ESP - outage	(826)	June-13
	Total of MW changes to Summer reserve margin:	**(175)**	
2014	Martin 2 ESP - outage	(826)	March-14
	Riviera Beach Next Generation Clean Energy Center	1,212	June-14
	Total of MW changes to Summer reserve margin:	**386**	
2015	Palm Beach SWA PPA - additional	90	April-15
	Total of MW changes to Summer reserve margin:	**90**	
2016	UPS Replacement	(931)	December-15
	SJRPP	(375)	April-16
	Greenfield 3x1 Combined Cycle	1,191	June-16
	Total of MW changes to Summer reserve margin:	**(115)**	
2017	**Total of MW changes to Summer reserve margin:**	**0**	
2018	**Total of MW changes to Summer reserve margin:**	**0**	
2019	**Total of MW changes to Summer reserve margin:**	**0**	
2020	Greenfield 3x1 Combined Cycle	1,191	June-20
	Total of MW changes to Summer reserve margin:	**1,191**	

* Year shown reflects when the MW change begins to be accounted for in reserve margin calculations.

Table ES-2: Projected Capacity Changes and Reserve Margins for FPL

	Projected Capacity Changes and Reserve Margins for FPL [1]				
		Net Capacity Changes (MW)		Reserve Margin (%) After Maintenance [2]	
Year	Projected Capacity Changes	Winter [3]	Summer [4]	Winter	Summer
2011	Inactive Reserve of Existing Units - offline [8]	(775)	(1,922)		
	Riviera Plant - offline for modernization	—	(565)		
	Scherer Plant Upgrade	—	26		
	St. Lucie Unit 2 Partial Uprate [7]	—	17		
	St. Lucie Unit 2 Uprate Peak Outage [7]	(726)	—		
	West County Unit 3 [6]	—	1,219	25.7%	22.7%
2012	Changes to Existing Purchases [5]	—	(100)		
	St. Lucie Unit 1 Uprates	—	122		
	Turkey Point Unit 3 Uprates	—	109		
	Inactive Reserve of Existing Units - offline [8]	(394)	---		
	Inactive Reserve Unit (PE Units 3 & 4) - online	765	761		
	Manatee 2 ESP Peak Outage [8]	(822)	—		
	Riviera Plant - offline for modernization	(571)	---		
	Scherer Plant upgrade	26	---		
	St. Lucie Unit 1 Uprate Peak Outage [7]	(853)	---		
	St. Lucie Unit 2 Partial Uprate [7]	17	—		
	St. Lucie Unit 2 Uprate Peak Outage [7]	—	(731)		
	Turkey Point Unit 3 Uprate Peak Outage [7]	(717)	—		
	West County Unit 3 [6]	1,335	---	19.6%	23.4%
2013	Cape Canaveral Next Generation Clean Energy Center [6]	---	1,210		
	St. Lucie Unit 1 Uprates	122	---		
	St. Lucie Unit 2 Uprates	110	93		
	Turkey Point Unit 3 Uprates	109	---		
	Turkey Point Unit 4 Uprates	—	109		
	Inactive Reserve Unit (PE Units 3 & 4) - offline [9]	(765)	(761)		
	Manatee Unit 1 ESP Peak Outage [8]	(822)	---		
	Martin Unit 1 ESP Peak Outage [8]	--	(826)		
	St. Lucie Unit 2 Partial Uprate	(17)	---	24.2%	25.4%
2014	Cape Canaveral Next Generation Clean Energy Center [6]	1,355	---		
	Turkey Point Unit 4 Uprates	109	---		
	Martin Unit 1 ESP Peak Outage [8]	(832)	---		
	Martin Unit 2 ESP Peak Outage [8]	---	(826)		
	Riviera Beach Next Generation Clean Energy Center [6]	---	1,212	26.7%	24.8%
2015	Change to Existing Qualifying Facilities [5]	---	90		
	Riviera Beach Next Generation Clean Energy Center [6]	1,344	—	35.1%	25.9%
2016	Changes to Existing Purchases [5]	(841)	(1,306)		
	Change to Existing Qualifying Facilities [5]	---	---		
	Greenfield 3x1 Combined Cycle [6]	---	1,191	30.1%	23.8%
2017	Changes to Existing Purchases [5]	(383)	---		
	Greenfield 3x1 Combined Cycle [6]	1,351	---	33.8%	22.2%
2018	---	---	---	32.7%	21.6%
2019	---	—	—	31.6%	20.0%
2020	Greenfield 3x1 Combined Cycle [6]	—	1,191	30.4%	23.1%

(1) Additional information about these resulting reserve margins and capacity changes are found on Schedules 7 & 8 respectively.
(2) The Summer and Winter reserve margins reflect an additional 350 MW in summer and 550 MW in winter of units scheduled to be out during those peak periods. See Section III.C.1 in Chapter 3 for more details.
(3) Winter values are forecasted values for January of the year shown.
(4) Summer values are forecasted values for August of the year shown.
(5) 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.
(6) 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.
(7) Outages for uprate work.
(8) Outages for ESP work.
(9) A number of existing FPL power plants have been removed from service and placed on Inactive Reserve status. See Chapter 3 for a discussion of the units on Inactive Reserves.

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CHAPTER I

Description of Existing Resources

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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 4,520,328 customer accounts in thirty-five counties during 2010. These customers were served from a variety of resources including: FPL-owned fossil-fueled, renewable, 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 electrical generating facilities consist of four nuclear units, three coal units, fourteen combined cycle (CC) units, fifteen fossil steam units, forty-eight combustion gas turbines, one simple cycle combustion turbine, and two photovoltaic facilities[1]. The locations of these eighty-seven generating units are 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.

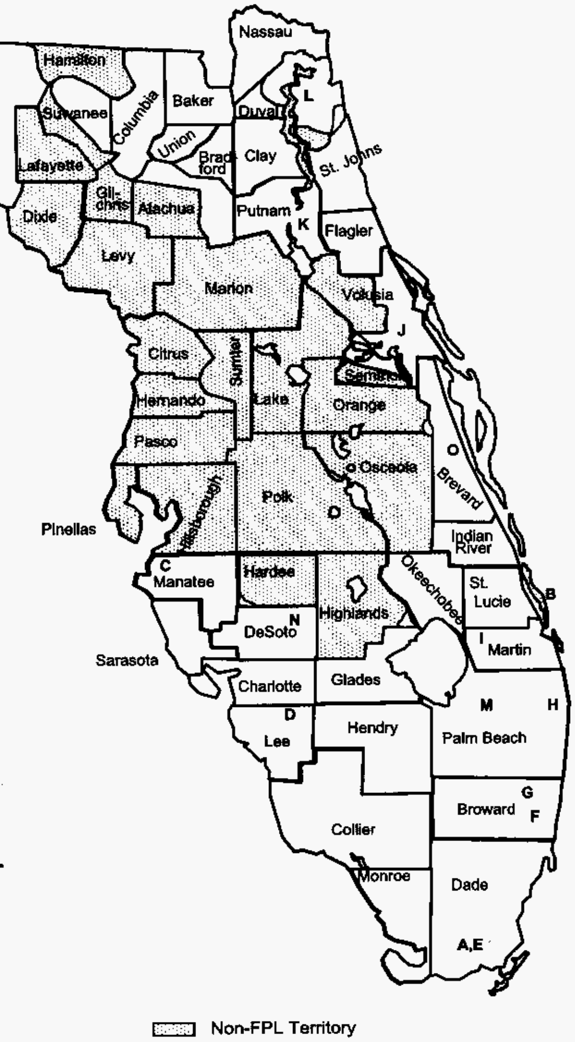
FPL's bulk transmission system is comprised of 6,721 circuit miles of transmission lines. Integration of the generation, transmission, and distribution system is achieved through FPL's 586 substations in Florida.

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.

[1] FPL also has one 75 MW solar thermal facility at its Martin plant site. This facility does not generate electricity as the other units mentioned above do. Instead, it produces steam that reduces the use of fossil fuel to produce steam.

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	1,747
E	Cutler	2	205
F	Lauderdale	2	884
G	Port Everglades	4	1,187
H	Riviera	2	565
I	Martin	5	3,695
J	Sanford	3	2,050
K	Putnam	2	498
L	SJRPP **	2	254
M	West County	2	2,438
N	DeSoto ***	1	25
O	Space Coast ***	1	10
	Scherer ****	1	646
	Gas Turbines	48	1,908
	Total System Generation =	87	23,722
	System Firm Generation =	85	23,687



* 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 and the 10 MW of Space Coast are 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, 2010)

Table I.A.1: Capacity Resource by Unit Type (as of December 31, 2010)

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 ***				
Martin	Indiantown,FL	2	Gas	938
Sanford	Lake Monroe, FL	2	Gas	1,912
Fort Myers	Fort Myers, FL	1	Gas	1,432
Manatee	Parrish,FL	1	Gas	1,111
Turkey Point	Florida City, FL	1	Gas	1,148
Lauderdale	Dania, FL	2	Gas/Oil	884
Martin	Indiantown,FL	1	Gas/Oil	1,105
Putnam	Palatka, FL	2	Gas/Oil	498
West County	Palm Beach County,FL	2	Gas/Oil	2,438
Total Combined Cycle		14		11,466
Oil/Gas Steam				
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	1,187
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		15		6,159
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
Space Coast *****	Brevard County,FL	1	Solar Energy	10
Total PV		2		35
Total System Generation as of December 31, 2010 =		87		23,722
System Firm Generation as of December 31, 2010 =		85		23,687

* 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 and the 10 MW at Space Coast are considered non-firm generating capacity.

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

Combined-Cycle

	Summer MW *									
Plant Name/ Unit No.	CT A	CT B	CT C	CT D	CT E	CT F	Steam 1	Steam 2	BOP Aux	Total Unit MW
Ft Myers 2	158	158	158	158	158	158	60	447	(20)	1,432
Lauderdale 4	161	161	---	---	---	---	125	---	(5)	442
Lauderdale 5	161	161	---	---	---	---	125	---	(5)	442
Manatee 3	162	162	162	162	---	---	483	---	(18)	1,111
Martin 3	164	164	---	---	---	---	148	---	(6)	469
Martin 4	164	164	---	---	---	---	148	---	(6)	469
Martin 8	161	161	161	161	---	---	482	---	(22)	1,105
Putnam 1	71	71	---	---	---	---	113	---	(5)	249
Putnam 2	71	71	---	---	---	---	113	---	(5)	249
Sanford 4	160	160	160	160	---	---	332	---	(13)	958
Sanford 5	159	159	159	159	---	---	330	---	(13)	954
Turkey Point 5	174	174	174	174	---	---	477	---	(26)	1,148
West County 1	250	250	250	---	---	---	495	---	(27)	1,219
West County 2	250	250	250	---	---	---	495	---	(27)	1,219

Combustion Turbines

Ft. Myers 3	158	158	---	---	---	---	---	---	(1)	315

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

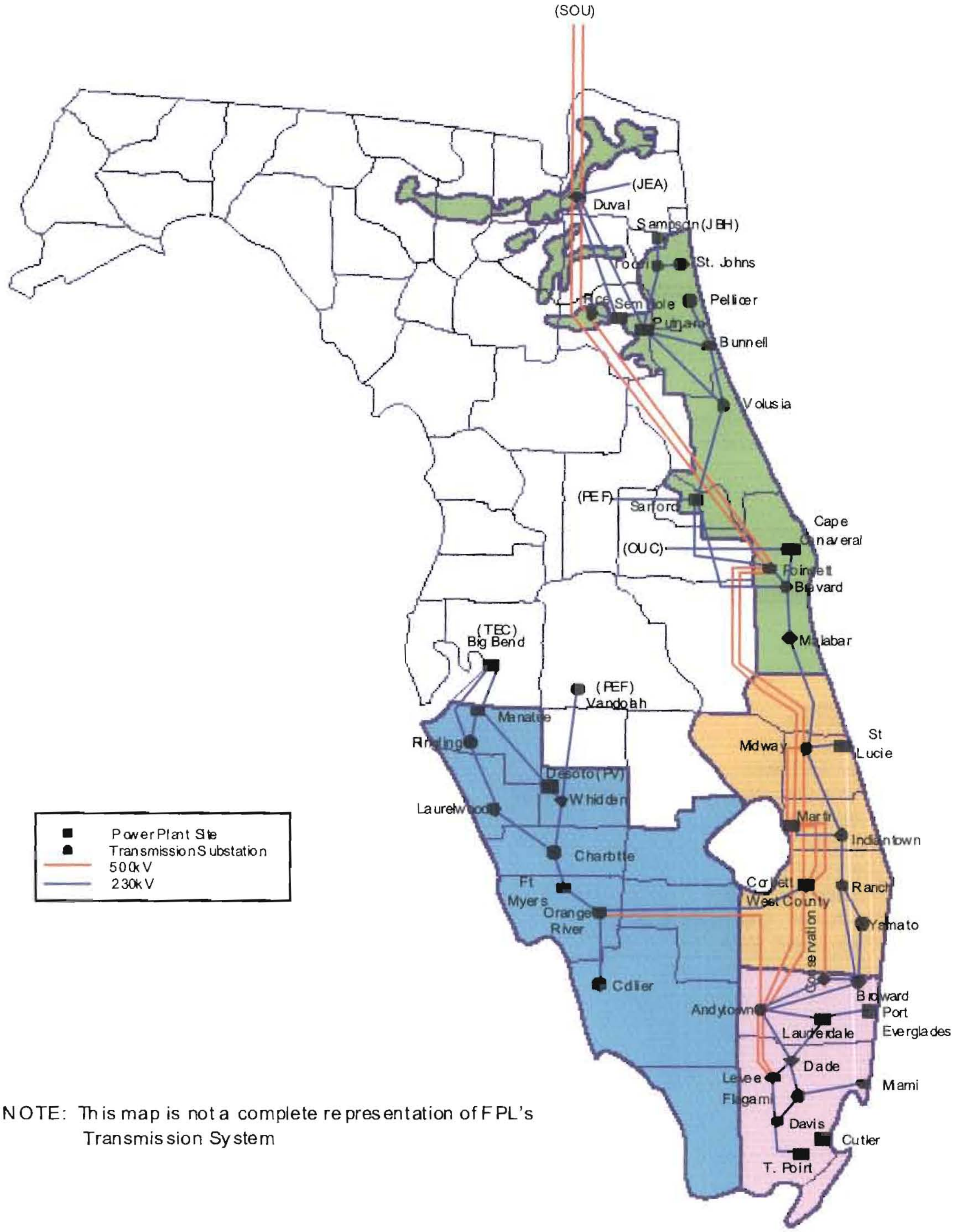
* The total MW values shown in this table may differ slightly from values shown in other tables due to rounding of per-component values.

Table 1.A.3: Purchase Power Resources by Contract (as of December 31, 2010)

	Location (City or County)	Fuel	Summer MW
I. Purchases from QF's: Cogeneration/Small Power Production Facilities			
Cedar Bay Generating Co.	Duval	Coal (Cogen)	250
Indiantown Cogen., LP	Martin	Coal (Cogen)	330
Broward South	Broward	Solid Waste	4
Broward North	Broward	Solid Waste	56
		Total:	**640**
II. Purchases from Utilities:			
UPS from Southern Company	Various in Georgia	Coal	931
SJRPP	Jacksonville, FL	Coal	375
		Total:	**1,306**
III. Other Purchases:			
Oleander (Extension)	Brevard	Gas	155
			155
	Total Net Firm Generating Capability:		**2,101**

Non-Firm Energy Purchases (MWH)

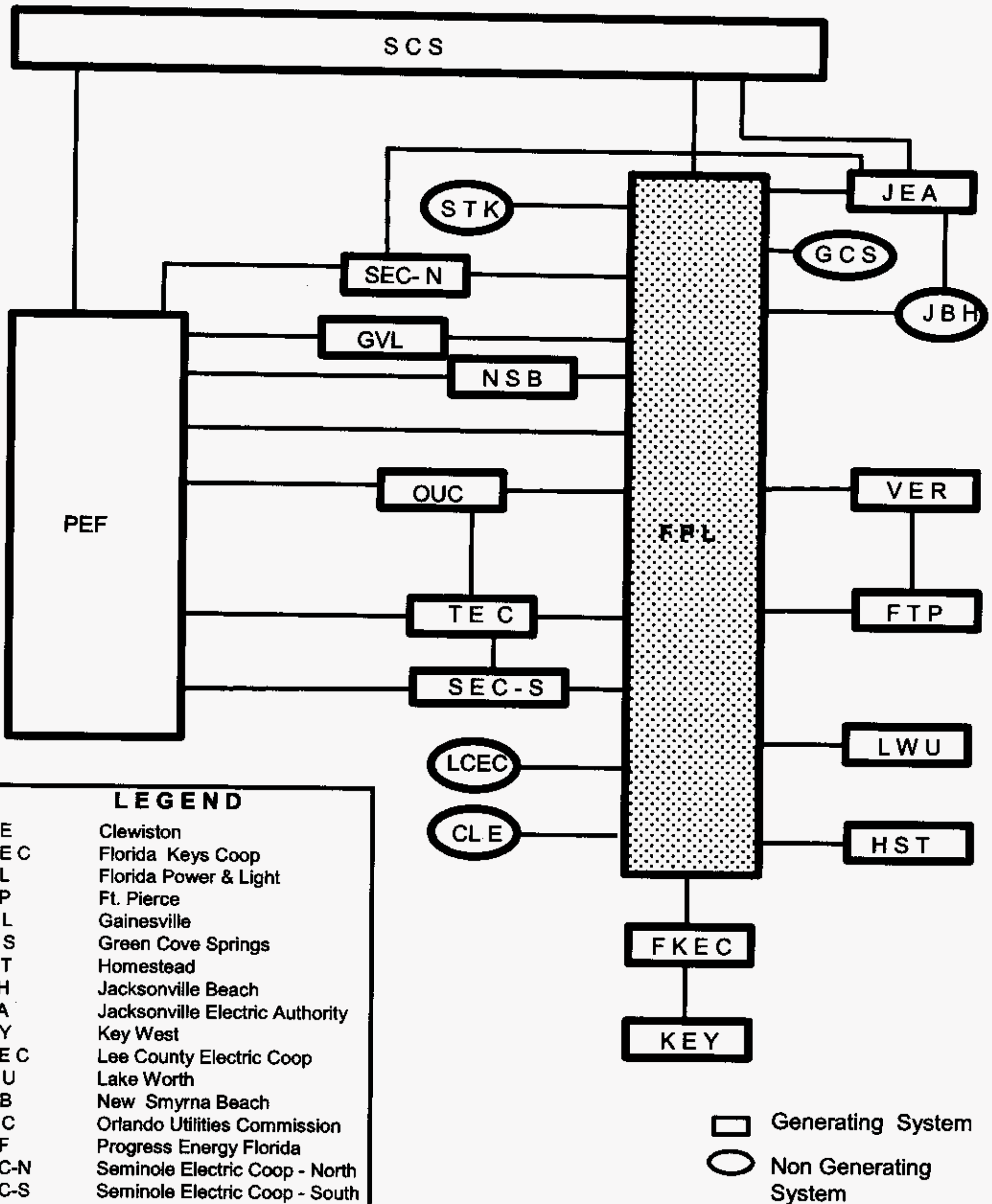
Plant Name	Location (City or County)	Fuel	Energy (MWH) Delivered to FPL in 2010
Okeelanta	Palm Beach	Bagasse/Wood	256,627
Broward South	Broward	Garbage	349,171
Tomoka Farms	Volusia	Landfill Gas	24,527
Waste Managemen t- Renewable Energy	Broward	Landfill Gas	55,438
Tropicana	Manatee	Natural Gas	43,827
Calnetix	Palm Beach	Natural Gas	0
Georgia Pacific	Putnam	Paper by-product	2,548
Rothenbach Park	Sarasota	PV	259
Customer - Owned PV & Wind	Various	PV/Wind	482
Palm Beach SWA	Palm Beach	Solid Waste	114,195



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



LEGEND	
CLE	Clewiston
FKEC	Florida Keys Coop
FPL	Florida Power & Light
FTP	Ft. Pierce
GVL	Gainesville
GCS	Green Cove Springs
HST	Homestead
JBH	Jacksonville Beach
JEA	Jacksonville Electric Authority
KEY	Key West
LCEC	Lee County Electric Coop
LWU	Lake Worth
NSB	New Smyrna Beach
OUC	Orlando Utilities Commission
PEF	Progress Energy Florida
SEC-N	Seminole Electric Coop - North
SEC-S	Seminole Electric Coop - South
SCS	Southern Companies
STK	Starke
TEC	Tampa Electric Company
VER	Vero Beach

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 from the Southern Company (Southern) 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 375 MW (Summer) and 383 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.3, 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 another firm capacity purchase contract with a non-QF, non-utility supplier. This purchase contract runs through May 2012. Table I.B.1 and I.B.2 present the Summer and Winter MW, respectively, resulting from this contract.

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	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Broward South	1/1/1993	12/31/2026	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Broward South	1/1/1995	12/31/2026	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Broward South	1/1/1997	12/31/2026	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Broward North	1/1/1993	12/31/2026	7	7	7	7	7	7	7	7	7	7
Broward North	1/1/1995	12/31/2026	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Broward North	1/1/1997	12/31/2026	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Cedar Bay Generating Co.	1/25/1994	12/31/2024	250	250	250	250	250	250	250	250	250	250
Indiantown Cogen., LP	12/22/1995	12/1/2025	330	330	330	330	330	330	330	330	330	330
Palm Beach SWA - extension	4/1/2012	4/1/2032	0	55	55	55	55	55	55	55	55	55
Palm Beach SWA - additional	4/1/2015	4/1/2032	0	0	0	0	90	90	90	90	90	90
		QF Purchases Sub Total:	**595**	**650**	**650**	**650**	**740**	**740**	**740**	**740**	**740**	**740**

II. Purchases from Utilities:

	Contract Start Date	Contract End Date	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
UPS Replacement	6/1/2010	12/31/2015	931	931	931	931	931	0	0	0	0	0
SJRPP	4/2/1982	4/1/2016 *	375	375	375	375	375	0	0	0	0	0
		Utility Purchases Sub Total:	**1,306**	**1,306**	**1,306**	**1,306**	**1,306**	**0**	**0**	**0**	**0**	**0**
		Total of QF and Utility Purchases =	**1,901**	**1,956**	**1,956**	**1,956**	**2,046**	**740**	**740**	**740**	**740**	**740**

III. Other Purchases:

	Contract Start Date	Contract End Date	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Oleander (Extension)	6/1/2007	5/31/2012	155	0	0	0	0	0	0	0	0	0
		Other Purchases Sub Total:	**155**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
		Total "Non-QF" Purchase Sub-Total =	**1,461**	**1,306**	**1,306**	**1,306**	**1,306**	**0**	**0**	**0**	**0**	**0**

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Summer Firm Capacity Purchases Total MW:	**2,056**	**1,956**	**1,956**	**1,956**	**2,046**	**740**	**740**	**740**	**740**	**740**

* Contract End Date shown does not represent the actual contract end 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	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Broward South	01/01/93	12/31/26	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Broward South	01/01/95	12/31/26	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Broward South	01/01/97	12/31/26	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Broward North	01/01/97	12/31/26	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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 - extension	4/1/2012	4/1/2032	0	0	55	55	55	55	55	55	55	55
Palm Beach SWA - additional	4/1/2015	4/1/2032	0	0	0	0	0	90	90	90	90	90
		QF Purchases Sub Total:	**595**	**595**	**650**	**650**	**650**	**740**	**740**	**740**	**740**	**740**

II. Purchases from Utilities:

	Start Date	End Date	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
UPS Replacement	06/01/10	12/31/15	931	931	931	931	931	0	0	0	0	0
SJRPP	04/02/82	4/1/2016 *	383	383	383	383	383	383	0	0	0	0
		Utility Purchases Sub Total:	**1,314**	**1,314**	**1,314**	**1,314**	**1,314**	**383**	**0**	**0**	**0**	**0**

Total of QF and Utility Purchases =	1,909	1,909	1,964	1,964	1,964	1,123	740	740	740	740

III. Other Purchases:

	Contract Start Date	Contract End Date	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Oleander (Extension)	06/01/07	05/31/12	180	180	0	0	0	0	0	0	0	0
		Other Purchases Sub Total:	**180**	**180**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

"Non-QF" Purchase Sub-Total =	1,494	1,494	1,314	1,314	1,314	383	0	0	0	0

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Winter Firm Capacity Purchases Total MW:	2,089	2,089	1,964	1,964	1,964	1,123	740	740	740	740

* Contract End Date shown does not represent the actual contract end 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 2010 from these facilities.

Table I.C.1: As-Available Energy Purchases From Non-Utility Generators in 2010

Project	County	Fuel	In-Service Date	Energy (MWH) Delivered to FPL in 2010
Okeelanta	Palm Beach	Bagasse/Wood	11/95	256,627
Broward South	Broward	Garbage	9/09	349,171
Tomoka Farms	Volusia	Landfill Gas	7/98	24,527
Waste Management - Renewable Energy	Broward	Landfill Gas	1/10	55,438
Tropicana	Manatee	Natural Gas	2/90	43,827
Calnetix	Palm Beach	Natural Gas	7/05	0
Georgia Pacific	Putnam	Paper by-product	2/94	2,548
Rothenbach Park	Sarasota	PV	10/07	259
Customer - Owned PV & Wind	Various	PV/Wind	Various	482
Palm Beach SWA	Palm Beach	Solid Waste	4/10	114,195

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 2010 have resulted in a cumulative Summer peak reduction of approximately 4,371 MW at the generator and an estimated cumulative energy saving of approximately 55,462 Gigawatt-hour (GWh) at the generator. After accounting for reserve margin requirements, FPL's DSM efforts through 2010 have eliminated the need to construct the equivalent of more than 13 new 400 MW generating units. DSM is discussed further in Chapter III.

Schedule 1

Existing Generating Facilities
As of December 31, 2010

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
								Alt.		Actual/			
						Fuel		Fuel	Commercial	Expected	Gen.Max.	Net Capability [1/]	
	Unit		Unit	Fuel		Transport		Days	In-Service	Retirement	Nameplate	Winter	Summer
Plant Name	No.	Location	Type	Pri.	Alt.	Pri.	Alt.	Use	Month/Year	Month/Year	KW	MW	MW
Cape Canaveral [2/]		Brevard County											
		19/24S/36F									0	0	0
	1		ST	FO6	NG	WA	PL	Unknown	Apr-65	Jun-10	0	0	0
	2		ST	FO6	NG	WA	PL	Unknown	May-69	Jun-10	0	0	0
Cutler [3/]		Miami Dade County											
		27/55S/40E									236,500	207	205
	5		ST	NG	No	PL	No	Unknown	Nov-54	Jan-12	75,000	69	68
	6		ST	NG	No	PL	No	Unknown	Jul-55	Jan-12	161,500	138	137
DeSoto [4/]		DeSoto County											
		27/36S/25E									25,000	25	25
	1		PV	N/A	N/A	N/A	N/A	Unknown	Oct-09	Unknown	25,000	25	25
Fort Myers		Lee County											
		35/43S/25E									2,895,890	2,552	2,395
	2		CC	NG	No	PL	No	Unknown	Jun-02	Unknown	1,775,390	1,490	1,432
	3A & B		CT	NG	FO2	PL	PL	Unknown	Jun-03	Unknown	376,380	352	315
	1-12		GT	FO2	No	PL	No	Unknown	May-74	Unknown	744,120	710	648
Lauderdale		Broward County											
		30/50S/42E									1,873,968	1,884	1,724
	4		CC	NG	FO2	PL	PL	Unknown	May-93	Unknown	526,250	483	442
	5		CC	NG	FO2	PL	PL	Unknown	Jun-93	Unknown	526,250	483	442
	1-12		GT	NG	FO2	PL	PL	Unknown	Aug-70	Unknown	410,734	459	420
	13-24		GT	NG	FO2	PL	PL	Unknown	Aug-72	Unknown	410,734	459	420
Manatee		Manatee County											
		18/33S/20E									2,951,110	2,812	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	1,168	1,111
Martin		Martin County											
		29/29S/38E									4,317,510	3,804	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	489	469
	4		CC	NG	No	PL	No	Unknown	Apr-94	Unknown	612,000	489	469
	8 [5/]		CC	NG	FO2	PL	PL	Unknown	Jun-05	Unknown	1,224,510	1,162	1,105

1/ These ratings are peak capability.
2/ The Cape Canaveral modernization project has resulted in the removal of the two steam units previously at the Canaveral site to clear the site for the introduction of a new combined cycle generating unit. This new unit is projected to go into service in June 2013.
3/ These generating units were on Inactive Reserve status as of 12/31/2010.
4/ 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.
5/ Martin 8 is also partially fueled by a 75 MW solar thermal facitility that supplies steam when adequate sunlight is available, thus reducing fossil fuel use.

Schedule 1

Existing Generating Facilities
As of December 31, 2010

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
								Alt.		Actual/			
						Fuel		Fuel	Commercial	Expected	Gen.Max.	Net Capability 1/	
	Unit		Unit	Fuel		Transport		Days	In-Service	Retirement	Nameplate	Winter	Summer
Plant Name	No.	Location	Type	Pri.	Alt.	Pri.	Alt.	Use	Month/Year	Month/Year	KW	MW	MW
Port Everglades		City of Hollywood											
		23/50S/42E									1,665,334	1,652	1,607
	1 2/		ST	FO6	NG	WA	PL	Unknown	Jun-60	Unknown	225,250	214	213
	2 2/		ST	FO6	NG	WA	PL	Unknown	Apr-61	Unknown	225,250	214	213
	3 2/		ST	FO6	NG	WA	PL	Unknown	Jul-64	Unknown	402,050	389	387
	4 2/		ST	FO6	NG	WA	PL	Unknown	Apr-65	Unknown	402,050	376	374
	1-12		GT	NG	FO2	PL	PL	Unknown	Aug-71	Unknown	410,734	459	420
Putnam		Putnam County											
		16/10S/27E									580,008	530	498
	1		CC	NG	FO2	PL	WA	Unknown	Apr-78	Unknown	290,004	265	249
	2		CC	NG	FO2	PL	WA	Unknown	Aug-77	Unknown	290,004	265	249
Riviera		City of Riviera Beach											
		33/42S/43E									620,840	571	565
	3		ST	FO6	NG	WA	PL	Unknown	Jun-62	Feb-11	310,420	280	277
	4		ST	FO6	NG	WA	PL	Unknown	Mar-63	Feb-11	310,420	291	288
Sanford		Volusia County											
		16/19S/30E									2,533,970	2,217	2,050
	3 2/		ST	FO6	NG	WA	PL	Unknown	May-59	Jan-12	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
Scherer 3/		Monroe, GA											
											680,368	652	646
	4		BIT	SUB	No	RR	No	Unknown	Jul-89	Unknown	680,368	652	646
Space Coast 4/		Brevard County											
		13/23S/36E											
											10,000	10	10
	1		PV	N/A	N/A	N/A	N/A	Unknown	Apr-10	Unknown	10,000	10	10

1/ These ratings are peak capability.

2/ These generating units were on Inactive Reserve status as of 12/31/2010.

3/ These ratings represent Florida Power & Light Company's share of Scherer Unit No. 4, adjusted for transmission losses.

4/ The capacity shown for the PV facility at Space Coast 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, 2010

(1) Plant Name	(2) Unit No.	(3) Location	(4) Unit Type	(5) Fuel Pri.	(6) Fuel Alt.	(7) Fuel Transport Pri.	(8) Fuel Transport Alt.	(9) Alt. Fuel Days Use	(10) Commercial In-Service Month/Year	(11) Actual/ Expected Retirement Month/Year	(12) Gen.Max. Nameplate KW	(13) Net Capability [1/] Winter MW	(14) Net Capability [1/] Summer MW
St. Johns River Power Park [2/]		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 [3/]		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		NP	UR	No	TK	No	Unknown	Jun-83	Unknown	723,775	726	714
Turkey Point		Miami Dade County 27/57S/40E									3,548,550	3,382	3,322
	1		ST	FO6	NG	WA	PL	Unknown	Apr-67	Unknown	402,050	398	396
	2 [4/]		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	1,156	1,146
West County		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, 2010 [5/] =												**24,797**	**23,722**
System Firm Generating Capacity as of December 31, 2010 [6/] =												**24,762**	**23,687**

1/ These ratings are peak capability.

2/ The net capability ratings represent Florida Power & Light Company's share of St. Johns River Park Unit No. 1 and No. 2, excluding the Jacksonville Electric Authority (JEA) share of 80%.

3/ 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.

4/ This generating unit was on Inactive Reserve status as of 12/31/2010.

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

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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 2011 that replaced the previous long-term load forecasts that were used by FPL during 2010 in much of its resource planning work and which were presented in FPL's 2010 Site Plan. These new load forecasts are utilized throughout FPL's 2011 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 Florida Legislature's Office of Economic and Demographic Research (EDR). These projections are developed, in conjunction with 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 hourly temperature 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 projected 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 profiles of temperatures are used for the Summer and Winter peak models.

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

FPL's current load forecast is generally in line with the load forecast presented in its 2010 Site Plan. There are three primary factors that are driving the current load forecast: projected population growth, a projection of gradual recovery following the economic recession in Florida, and a somewhat lower projected long-term price of electricity. The net impact of these three factors is that the current load forecast is similar to the 2010 Site Plan forecast in most years between 2011 and 2020.

The customer forecast is based on recent population projections. Population projections are derived from the EDR's February 2011 Demographic Estimating Conference. This forecast is slightly higher than the prior projection. During the recent recession, net migration into Florida fell to record lows. Historically low rates of net migration are expected to continue until around 2012 - 2013 due to the weakened housing market and other lingering effects from the recession which make it difficult for people to relocate.

As population growth recovers, a modest rebound in customer growth is projected in 2012 and 2013. However, population growth is not expected to reach the level historically experienced in Florida until 2014 - 2015. As a result of the higher than expected customer growth in 2010, the total number of customers projected in the current load forecast is above the levels projected in FPL's 2010 Site Plan.

Consistent with the economic assumptions incorporated into the 2010 Site Plan, the state's economy continues to suffer the lingering effects of an economic recession. Beginning in mid-2010, Florida began seeing an annual increase in employment for the first time in three years. Since December 2009, Florida has gained nearly 44,000 jobs. However, Florida is still a long way from recovering. Since the recession began, Florida had lost over 800,000 jobs. Foreclosures are still a problem for the state, with Florida being second only to California in the number of mortgage foreclosures. The severity of the recession and current economic conditions suggests that Florida's economic recovery will be gradual. By 2013, the state's economy is projected to resume a more historically typical rate of growth. The real price of electricity in the current forecast is somewhat lower than that utilized in last year's Site Plan. A delay in carbon pricing, combined with lower projected fuel costs, are two factors driving the relatively lower forecasted price of electricity.

Consistent with the forecast presented in FPL's 2010 Site Plan, the total growth projected for the ten-year reporting period of this document is significant. The Summer peak is projected to increase to 26,193 MW by 2020, an increase of 3,937 MW over the 2010 actual Summer peak. Likewise, NEL is projected to reach 133,121 GWH in 2020, an increase of 18,747 GWH from the actual 2010 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 2011 - 2020 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, consecutive minimum temperature days square, real price of electricity (a 12-month moving average), Florida real per capita income, a variable designed to reflect the impact of empty homes, and a dummy variable for the month of January. The impact of weather is captured by the Cooling Degree-Hours, Heating Degree-Hours, the one month lag of these variables, and the consecutive minimum temperature variable. 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 per capita 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 January is included to reflect a different usage pattern for this month. 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 per capita income, commercial real price of electricity, Cooling Degree-Hours, Heating Degree-Hours, lagged Cooling Degree-Hours, a variable designed to reflect the impact of empty homes, a dummy variable for the month of December and 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 customers. The small industrial sales model utilizes the following variables: Florida Housing Starts, Cooling Degree-Hours, Heating Degree-Hours, and an autoregressive term. The Cooling and Heating Degree-Hours are 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 population, and the industrial real price of electricity (a 24-month moving average).

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 which is multiplied by the forecasted number of customers. This class consists solely of Miami-Dade County's Metrorail system.

The forecast for street and highway sales is developed by using a trended use per customer, which is multiplied 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 in June 2014 under a long term agreement[2].

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 Progress Energy Florida. 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 through 2013, then to begin serving their entire load beginning in 2014 through 2033. This contract began in January 2010. Forecasted sales to Lee County are based on assumptions regarding their contract demand and expected load factor.

A new contract with Seminole Electric Cooperative is included in the forecast which includes delivery of 200 MW beginning in June 2014.

II.D. Net Energy for Load (NEL)

An econometric model is developed to produce a NEL per customer forecast. The inputs to the model include the real price of electricity (a 12-month moving average), and Florida real per capita income. The model also includes three weather variables: Cooling Degree Hours using a base temperature of 72 degrees, Heating Degree Days using a base of 66 degrees, and an additional heating degree variable for extreme cold weather

[2] FPL is currently evaluating the possibility of serving the Vero Beach electrical load at the time the 2011 Site Plan is being prepared. Because this possibility is still being evaluated, the load forecast presented in this Site Plan does not include this potential load.

using a base of 45 degrees. In addition, the model also includes variables for mandated energy efficiency and a variable designed to capture the impact of empty homes. Seasonal dummy variables are included for the months of February, May, July, October, 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 factors for the 2011 to 2020 time period is a reduction, on average, of 10,447 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 vehicles, beginning in 2010, which resulted in an increase of approximately 2,052 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 2011 - 2020 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 2011 to 2020 time frame is a reduction of approximately 909 MW (Summer) and 454 MW (Winter) in 2011, and approximately 2,268 MW (Summer) and 1,315 MW (Winter) by 2020. The forecast was also adjusted for additional load estimated from hybrid vehicles which resulted in an increase of approximately 261 MW in the Summer and 114 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 2011 – 2020 are presented at the end of this chapter in Schedules 3.1 and 3.2, and in Chapter III in Schedules 7.1 through 7.4.

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 per capita income, Cooling Degree-Hours in the day prior to the peak, the maximum 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, and adjusted to account for incremental loads resulting from hybrid vehicles and new wholesale contracts, 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 minimum temperature on the peak day and Heating Degree-Hours for the prior day square. The model also includes a dummy variable for winter peaks occurring on weekends and an autoregressive term. 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, and adjusted to account for incremental loads resulting from hybrid vehicles and new wholesale contracts, 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 2011 - 2020 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.

II.H. DSM

The effects of FPL's DSM energy efficiency programs implementation through 2010 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 energy efficiency 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
(Historical)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Rural & Residential			Commercial		
Year	Population	Members per Household	GWh	Average No. of Customers	Average kWh Consumption Per Customer	GWh	Average No. of Customers	Average kWh Consumption Per Customer
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	8,732,591	2.19	53,950	3,984,490	13,540	45,025	501,055	89,860
2010	8,739,209	2.18	56,343	4,004,366	14,070	44,544	503,529	88,464

Historical Values (2001 - 2010):

Col. (2) represents population only in the area served by FPL.

Col. (4) and Col. (7) represent actual energy sales including the impacts of existing conservation.
These values are at the meter.

Col. (5) and Col. (8) represent the annual average of the twelve month values.

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Rural & Residential			Commercial		
Year	Population	Members per Household	GWh	Average No. of Customers	Average kWh Consumption Per Customer	GWh	Average No. of Customers	Average kWh Consumption Per Customer
2011	8,873,003	2.20	54,364	4,033,183	13,479	44,188	504,216	87,637
2012	8,965,719	2.20	54,932	4,075,327	13,479	44,496	505,886	87,956
2013	9,106,253	2.20	56,399	4,139,206	13,626	45,134	510,436	88,423
2014	9,263,516	2.20	58,257	4,210,689	13,836	46,214	517,941	89,226
2015	9,418,816	2.20	59,326	4,281,280	13,857	47,089	526,406	89,455
2016	9,564,956	2.20	60,382	4,347,707	13,888	47,869	534,487	89,560
2017	9,700,967	2.20	61,118	4,409,530	13,860	48,660	542,273	89,733
2018	9,830,014	2.20	61,828	4,468,188	13,837	49,456	549,902	89,937
2019	9,955,509	2.20	62,480	4,525,231	13,807	50,385	557,399	90,393
2020	10,080,541	2.20	63,575	4,582,064	13,875	51,512	564,827	91,199

Projected Values (2011 - 2020):

Col. (2) represents population only in the area served by FPL.

Col. (4) and Col. (7) represent forecasted energy sales that do not include the impact of incremental conservation.
These values are at the meter.

Col. (5) and Col. (8) represent the annual average of the twelve month values.

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

(1)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Industrial			Railroads	Street &	Sales to	Sales to
		Average	Average kWh	&	Highway	Public	Ultimate
		No. of	Consumption	Railways	Lighting	Authorities	Consumers
Year	GWh	Customers	Per Customer	GWh	GWh	GWh	GWh
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	3,130	8,910	351,318	81	431	28	104,557

Historical Values (2001 - 2010):

Col. (10) and Col.(14) represent actual energy sales including the impacts of existing conservation. These values are at the meter.

Col. (11) represents the annual average of the twelve month values.

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

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

(1)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Industrial			Railroads	Street &	Sales to	Sales to
		Average	Average kWh	&	Highway	Public	Ultimate
		No. of	Consumption	Railways	Lighting	Authorities	Consumers
Year	GWh	Customers	Per Customer	GWh	GWh	GWh	GWh
2011	3,152	8,848	356,191	82	442	30	102,257
2012	3,082	9,306	331,150	91	452	30	103,083
2013	3,037	9,733	312,057	92	463	30	105,155
2014	3,018	10,054	300,163	92	475	30	108,085
2015	3,013	10,241	294,231	92	487	30	110,038
2016	3,015	10,437	288,893	92	500	30	111,888
2017	3,004	10,527	285,355	92	514	30	113,418
2018	2,992	10,516	284,534	92	529	30	114,928
2019	2,987	10,545	283,288	92	544	30	116,518
2020	2,981	10,598	281,312	92	560	30	118,749

Projected Values (2011 - 2020):

Col. (10) and Col.(14) represent forecasted energy sales that do not include the impact of incremental conservation. These values are at the meter.

Col. (11) represents the annual average of the twelve month values.

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
(Historical)

(1) Year	(17) Sales for Resale GWh	(18) Utility Use & Losses GWh	(19) Net Energy For Load GWh	(20) Average No. of Other Customers	(21) Total Average Number of Customers
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	111,303	3,439	4,499,067
2010	2,049	7,768	114,373	3,523	4,520,328

Historical Values (2001 - 2010):

Col. (19) represents actual energy sales including the impacts of existing conservation.

Col. (19) = Col. (16) + Col. (17) + Col. (18). Historical NEL includes the impacts of existing conservation and agrees to Col. (5) on schedule 3.3.

Col. (20) represents the annual average of the twelve month values.

Col. (21) = Col. (5) + Col. (8) + Col. (11) + Col. (20).

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

(1) Year	(17) Sales for Resale GWh	(18) Utility Use & Losses GWh	(19) Net Energy For Load GWh	(20) Average No. of Other Customers	(21) Total Average Number of Customers
2011	2,142	6,776	111,175	3,590	4,549,837
2012	2,142	7,292	112,517	3,672	4,594,191
2013	2,047	7,445	114,647	3,756	4,663,131
2014	4,935	8,014	121,035	3,845	4,742,529
2015	5,566	8,006	123,610	3,940	4,821,867
2016	5,599	8,106	125,593	4,041	4,896,672
2017	5,625	8,208	127,251	4,147	4,966,477
2018	5,672	8,310	128,910	4,258	5,032,864
2019	5,717	8,443	130,679	4,373	5,097,548
2020	5,770	8,601	133,121	4,493	5,161,981

Projected Values (2011 - 2020):

Col. (19) represents forecasted energy sales that do not include the impact of incremental conservation and agrees to Col. (2) on Schedule 3.3.

Col. (19) = Col. (16) + Col. (17) + Col. (18).

Col. (20) represents the annual average of the twelve month values.

Col. (21) = Col. (5) + Col. (8) + Col. (11) + Col. (20).

Schedule 3.1
History and Forecast of Summer Peak Demand (MW)
(Historical)

(1) Year	(2) Total	(3) Wholesale	(4) Retail	(5) Interruptible	(6) Res. Load Management	(7) Residential Conservation	(8) C/I Load Management	(9) C/I Conservation	(10) Net Firm Demand
2001	18,754	169	18,585	0	835	516	483	469	17,436
2002	19,219	261	18,958	0	870	576	483	506	17,866
2003	19,668	253	19,415	0	885	618	566	541	18,217
2004	20,545	258	20,287	0	895	665	586	566	19,064
2005	22,361	264	22,097	0	898	715	592	599	20,871
2006	21,819	256	21,563	0	910	770	607	634	20,302
2007	21,962	261	21,701	0	941	808	676	672	20,345
2008	21,060	181	20,879	0	966	861	734	697	19,360
2009	22,351	249	22,102	0	976	902	780	719	20,595
2010	22,256	419	21,837	0	991	982	816	747	18,720

Historical Values (2001 - 2010):

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) represent actual DSM capabilities starting from January 1988 and are annual (12-month) values except for 2010 values which are August 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" as if the load control values had definitely been exercised on the peak. Col. (10) is derived by the formula: Col. (10) = Col.(2) - Col.(6) - Col.(8).

Schedule 3.1
History and Forecast of Summer Peak Demand (MW)
(Projected)

(1) August of Year	(2) Total	(3) Wholesale	(4) Retail	(5) Interruptible	(6) Res. Load Management	(7) Residential Conservation	(8) C/I Load Management	(9) C/I Conservation	(10) Net Firm Demand
2011	21,679	383	21,295	0	1,005	79	858	39	19,697
2012	21,853	385	21,468	0	1,017	154	878	93	19,712
2013	22,155	343	21,812	0	1,023	244	896	154	19,837
2014	23,452	1,129	22,322	0	1,041	343	934	216	20,917
2015	24,172	1,136	23,037	0	1,044	442	952	272	21,462
2016	24,605	1,143	23,463	0	1,047	536	971	318	21,734
2017	25,025	1,150	23,875	0	1,050	625	989	353	22,008
2018	25,266	1,157	24,109	0	1,053	711	1,007	378	22,117
2019	25,690	1,165	24,526	0	1,056	792	1,026	397	22,419
2020	26,193	1,172	25,022	0	1,080	837	1,042	412	22,823

Projected Values (2011 - 2020):

Col. (2) - Col. (4) represent FPL's forecasted peak w/o incremental conservation, cumulative load management, or incremental load management.

Col. (5) - Col. (9) represent cumulative load management, and incremental conservation and load management. All values are projected August values. The 2011 values are based on IRP projections after the 2010 Summer peak and FPL's new DSM Goals for 2011. The projections for 2012 through 2020 are based on FPL's DSM Goals.

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
(Historical)

(1) Year	(2) Total	(3) Firm Wholesale	(4) Retail	(5) Interruptible	(6) Res. Load Management	(7) Residential Conservation	(8) C/I Load Management	(9) C/I Conservation	(10) Net Firm Demand
2001	18,199	150	18,049	0	749	500	448	196	17,002
2002	17,597	145	17,452	0	768	546	457	206	16,373
2003	20,190	246	19,944	0	802	567	453	227	18,935
2004	14,752	211	14,541	0	814	583	535	233	13,403
2005	18,108	225	17,883	0	816	600	542	240	16,750
2006	19,683	225	19,458	0	822	620	549	249	18,312
2007	16,815	223	16,592	0	849	644	579	279	15,387
2008	18,055	163	17,892	0	868	666	636	285	16,551
2009	20,081	207	19,874	0	884	687	680	291	18,517
2010	24,346	500	23,846	0	895	718	721	303	21,709

Historical Values (2001 - 2010):

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 2001 through 2010 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" as if the load control values had definitely been exercised on the peak. Col. (10) is derived by the formula: Col. (10) = Col.(2) - Col.(6) - Col.(8).

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

(1) January of Year	(2) Total	(3) Firm Wholesale	(4) Retail	(5) Interruptible	(6) Res. Load Management	(7) Residential Conservation	(8) C/I Load Management	(9) C/I Conservation	(10) Net Firm Demand
2011	21,443	376	21,067	0	911	31	754	15	19,732
2012	21,491	378	21,113	0	922	63	769	47	19,689
2013	21,683	380	21,303	0	932	104	784	89	19,774
2014	22,584	1,015	21,569	0	956	158	817	134	20,518
2015	23,048	1,222	21,826	0	959	214	832	177	20,866
2016	23,302	1,229	22,073	0	961	267	846	215	21,014
2017	23,543	1,237	22,306	0	963	314	860	244	21,161
2018	23,794	1,245	22,550	0	966	358	874	266	21,331
2019	24,044	1,252	22,792	0	968	398	889	282	21,508
2020	24,305	1,260	23,045	0	970	431	902	293	21,709

Projected Values (2011 - 2020):

Col. (2) - Col.(4) represent FPL's forecasted peak w/o incremental conservation, cumulative load management, or incremental load management.

Col. (5) - Col. (9) represent cumulative load management, and incremental conservation and load management. All values are projected January values. The 2011 values are based on IRP projections after the 2010 Winter peak and FPL's new DSM Goals for 2011. The projections for 2012 through 2020 are based on FPL's DSM Goals.

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)
(All values are "at the generator" values except for Col (8))
(Historical)

(1) Year	(2) Net Energy For Load without DSM GWh	(3) Residential Conservation GWh	(4) C/I Conservation GWh	(5) Actual Net Energy For Load GWh	(6) Sales for Resale GWh	(7) Utility Use & Losses GWh	(8) Total Billed Retail Energy Sales (GWh)	(9) Load Factor(%)
2001	101,364	1,554	1,405	98,404	970	7,222	90,212	59.9%
2002	107,380	1,682	1,499	104,199	1,233	7,443	95,523	61.9%
2003	111,784	1,773	1,619	108,393	1,511	7,386	99,496	62.9%
2004	111,659	1,872	1,693	108,093	1,531	7,467	99,095	59.9%
2005	115,065	1,970	1,793	111,301	1,506	7,498	102,296	56.8%
2006	117,116	2,078	1,901	113,137	1,569	7,909	103,659	59.2%
2007	118,518	2,138	2,066	114,315	1,499	7,401	105,415	59.4%
2008	115,379	2,249	2,126	111,004	993	7,092	102,919	60.0%
2009	115,844	2,345	2,196	111,303	1,155	7,394	102,755	56.8%
2010	119,119	2,487	2,259	114,373	2,049	7,768	109,302	61.1%

Historical Values (2001 - 2010):

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) are DSM values starting in January 1988 and are annual (12-month) values. Col. (3) and Col. (4) for 2010 are "estimated actuals" and are also annual (12-month) values. The values represent the total GWh reductions experienced each year .

Col. (5) is the actual Net Energy for Load (NEL) for years 2001 - 2010.

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.

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

(1) Year	(2) Forecasted Net Energy For Load without DSM GWh	(3) Residential Conservation GWh	(4) C/I Conservation GWh	(5) Net Energy For Load Adjusted for DSM GWh	(6) Sales for Resale GWh	(7) Utility Use & Losses GWh	(8) Forecasted Total Billed Retail Energy Sales w/o DSM GWh	(9) Load Factor(%)
2011	111,175	73	75	111,028	2,142	6,776	102,257	58.5%
2012	112,517	230	245	112,041	2,142	7,292	103,083	58.6%
2013	114,647	408	442	113,797	2,047	7,445	105,155	59.1%
2014	121,035	601	641	119,793	4,935	8,014	108,085	58.9%
2015	123,610	798	822	121,991	5,566	8,006	110,038	58.4%
2016	125,593	986	972	123,634	5,599	8,106	111,888	58.1%
2017	127,251	1,165	1,092	124,994	5,625	8,208	113,418	58.0%
2018	128,910	1,335	1,188	126,387	5,672	8,310	114,928	58.2%
2019	130,679	1,497	1,267	127,915	5,717	8,443	116,518	58.1%
2020	133,121	1,657	1,329	130,135	5,770	8,601	118,749	58.0%

Projected Values (2011 - 2020):

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 reflecting DSM signups occurring evenly thoughout each year.The effects of conservation implemented prior to 2011 are incorporated into the load forecast values in Col. (2).

Col. (5) is the forecasted Net Energy for Load (NEL) after adjusting for impacts DSM for years 2011 - 2020 using the formula:
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)
	2010 ACTUAL		2011 FORECAST		2012 FORECAST	
Month	Total Peak Demand MW	NEL GWh	Total Peak Demand MW	NEL GWh	Total Peak Demand MW	NEL GWh
JAN	24,346	9,410	21,443	8,191	21,491	8,301
FEB	16,488	7,470	17,558	7,365	17,596	7,449
MAR	17,748	8,001	17,460	8,239	17,499	8,328
APR	15,480	8,179	17,160	8,368	17,299	8,449
MAY	19,217	9,950	19,255	9,905	19,410	9,992
JUN	21,901	11,619	20,557	10,336	20,723	10,423
JUL	21,633	11,215	21,155	11,101	21,326	11,199
AUG	22,256	11,651	21,679	11,218	21,853	11,323
SEP	20,738	11,094	20,917	10,424	21,086	10,543
OCT	19,116	9,020	19,582	9,728	19,740	9,872
NOV	17,052	8,145	17,922	8,099	18,082	8,255
DEC	21,153	8,619	17,787	8,202	17,946	8,383
TOTALS		114,373		111,175		112,517

Cols. (4) - (7) do not include the impacts of cumulative load management, incremental conservation, and incremental load management 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

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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 developing the resource plan presented in this Site Plan 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.

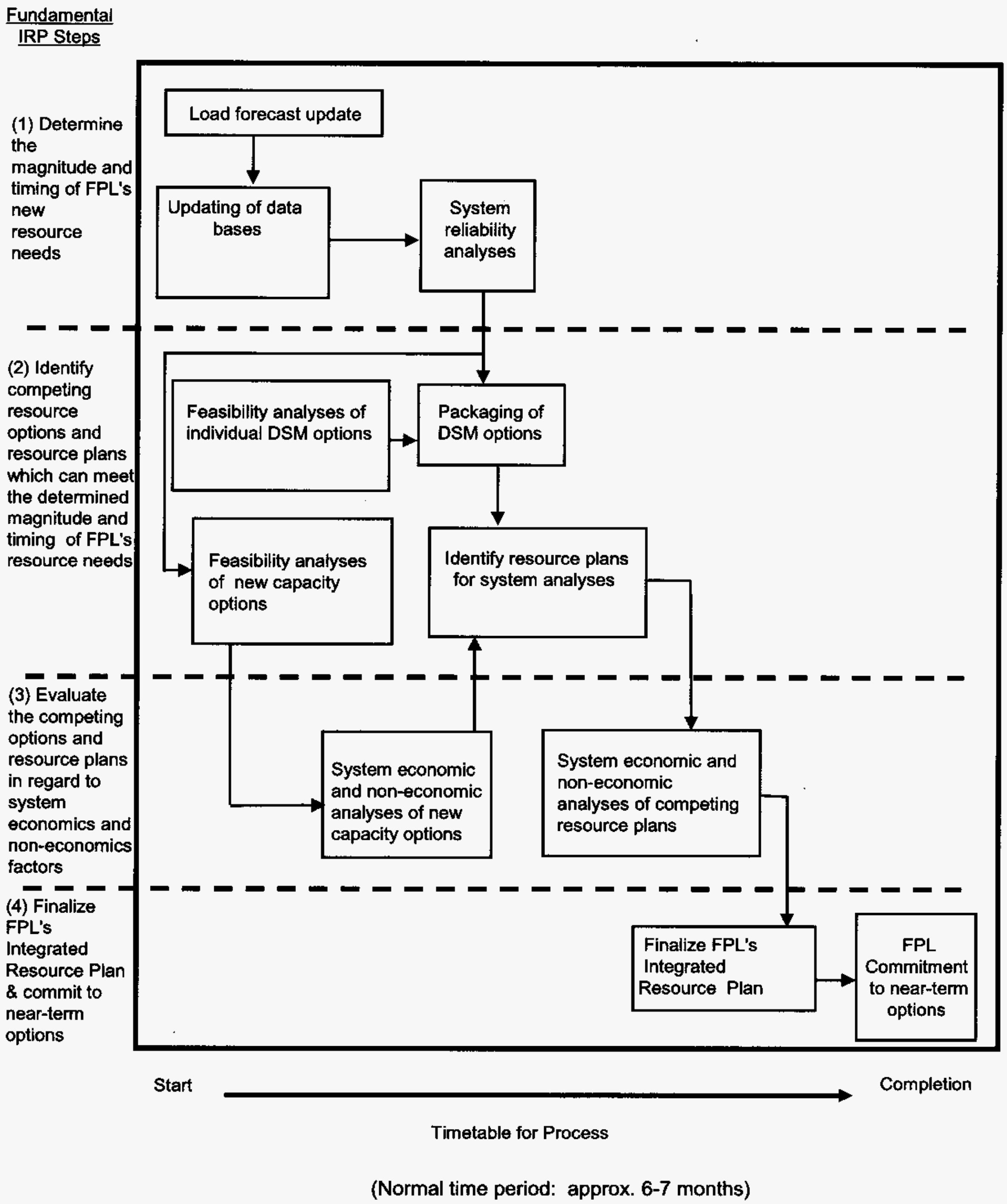

Figure III.A.1: Overview of FPL's IRP Process

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 MWs 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 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). (There is also work in progress to obtain the necessary federal and state licenses, permits, and approvals for construction and operation of two new nuclear units whose earliest practical deployment dates are outside of the 2011 – 2020 reporting period of this Site Plan.)

Several new generating unit additions will occur in the 2011 – 2020 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 June 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 and site certification was granted in November 2008.

- Two existing generating plant sites, each featuring two older fossil fuel-fired steam generating units, are in the process of being modernized by removing the existing generating units and replacing them with one new, highly efficient CC unit. The new CC 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 and 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 and it is expected to have a peak output of 1,212 MW. This new plant will be called the Riviera Beach Next Generation Clean Energy Center. These modernizations were approved by the FPSC in September 2008. The site certification application for Cape Canaveral was granted in October 2009. The site certification application for Riviera Beach was granted in November 2009.
- In addition, FPL will be adding approximately 450 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 the 2011 – 2013 time period. These capacity "uprates" were 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.

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.

The second of these assumptions involves firm capacity power purchases. FPL's current projection of firm capacity purchases is generally similar to the projection shown in FPL's 2010 Site Plan. However, FPL's current projection does include an additional 90 MW from the Palm Beach Solid Waste Authority (SWA). FPL and SWA are currently seeking FPSC approval for this capacity addition. In total, the projected 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 2011 Site Plan fully accounts for the new DSM goals.

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 then 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, preliminary economic screening analyses of new capacity options are often conducted to determine which new capacity options appear to be the most competitive on FPL's system. This preliminary analysis work can also help identify capacity size (MW) values, projected construction/permitting schedules, and operating parameters and costs. Similarly, preliminary economic screening analyses of new DSM options and/or continued growth in existing DSM options are typically conducted.

FPL typically utilizes the P-MArea production cost model and a Fixed Cost Spreadsheet, and/or the Strategist model, as well as spreadsheet analyses, to perform the preliminary economic screening of generation resource options. For the preliminary economic screening analyses of DSM resource options, FPL typically uses its DSM cost-effectiveness model which is an FPL spreadsheet model utilizing the FPSC's approved methodology for performing preliminary cost-effectiveness screening of individual DSM measures and programs. FPL also utilizes its non-linear programming model for analyzing the potential for lowering system peak loads through additional load management capacity. Then FPL typically utilizes its linear programming model to develop DSM portfolios that are subsequently used in developing resource plans for final system analyses of DSM-based resource plans.

The individual new resource options emerging from these preliminary economic screening analyses 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 projected new resource needs are met. The creation of these competing resource plans is typically carried out using spreadsheet and/or dynamic 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 final, or system, economic analyses that attempt to account for all of the impacts to the FPL system from the competing resource options/resource plans. (These system impacts are typically not accounted for in preliminary economic screening analyses.) In FPL's 2010 and early 2011 resource planning work, once the resource plans were developed, FPL utilized the P-MArea production cost model and a Fixed Cost Spreadsheet, and/or the Strategist model, to perform the system economic analyses.

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 objective generally being to minimize FPL's projected leveled system average rate (i.e., a Rate Impact Measure or RIM methodology). 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 the Southeastern Florida counties of Miami-Dade and Broward. 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 are typically used to develop the current resource plan. This plan is presented in the following section.

III.B Projected Incremental Resource Additions/Changes

FPL's projected incremental generation capacity additions/changes for 2011 through 2020 are depicted in Table III.B.1. These capacity additions/changes result from a variety of actions that primarily consist of: (i) changes to existing units (which are frequently achieved as a result of plant component replacements during major overhauls), (ii) the construction of an approved third new generating unit at the West County Energy Center (WCEC), (iii) increases in generating capacity at FPL's four existing nuclear units, (iv) the temporary return of certain generating units from Inactive Reserve status to active service, then returning these units to Inactive Reserve status, (v) changes in the amounts of purchased power being delivered under existing contracts as per the contract schedules or by entering into new purchase contracts, (vi) the projected modernizations of FPL's existing Cape Canaveral and Riviera sites by the removal of the steam generating units that were previously on the sites and the addition of one new, very fuel-efficient CC generating unit at each site, and (vii) the projected addition of new, very fuel-efficient new CC generating capacity at sites yet to be determined.[3]

[3] These new CC capacity additions may take the form of new CC units at Greenfield sites, Brownfield sites, and/or through modernizations at existing sites. These decisions have not yet been made at the time the 2011 Site Plan was being developed. For reference purposes, these additions are referred to in the 2011 Site Plan as "Greenfield CC units".

Although the DSM additions that are consistent with the DSM goals imposed by the FPSC through 2020 are not explicitly presented in this table, these DSM additions have been fully accounted for in all of FPL's resource planning work reflected in this document. In addition, the projected MW reductions from these DSM additions are reflected in the projected reserve margin values shown in the table below and in Schedules 7.1 and 7.2 presented later in this chapter.

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

Projected Capacity Changes for FPL [1]			
		Net Capacity Changes (MW)	
Year	***Projected Capacity Changes***	***Winter*** [3]	***Summer*** [4]
2011	Inactive Reserve of Existing Units - offline [8]	(775)	(1,922)
	Riviera Plant - removed for modernization	---	(565)
	Scherer Plant - Upgrade	---	26
	St. Lucie Unit 2 Uprate - Outage [7]	---	17
	St. Lucie Unit 2 - Interim Increase [7]	(726)	---
	West County Unit 3 [6]	---	1,219
2012	Changes to Existing Purchases [5]	---	(100)
	St. Lucie Unit 1 Uprates - Completed	—	122
	Turkey Point Unit 3 Uprates - Completed	—	109
	Inactive Reserve of Existing Units - offline [8]	(394)	---
	Inactive Reserve Units (PE Units 3 & 4) - active status	765	761
	Manatee 2 ESP - Outage [8]	(822)	---
	Riviera Plant - removed for modernization	(571)	---
	Scherer Plant - upgrade	26	---
	St. Lucie Unit 1 Uprate - Outage [7]	(853)	---
	St. Lucie Unit 2 - Interim Increase [7]	17	---
	St. Lucie Unit 2 Uprate - Outage [7]	---	(731)
	Turkey Point Unit 3 Uprate - Outage [7]	(717)	—
	West County Unit 3 [6]	1,335	—
2013	Cape Canaveral Next Generation Clean Energy Center [6]	—	1,210
	St. Lucie Unit 1 Uprates - Completed	122	---
	St. Lucie Unit 2 Uprates - Completed	93	93
	Turkey Point Unit 3 Uprates - Completed	109	---
	Turkey Point Unit 4 Uprates - Completed	—	109
	Inactive Reserve Unit (PE Units 3 & 4) - inactive status [9]	(765)	(761)
	Manatee Unit 1 ESP - Outage [8]	(822)	---
	Martin Unit 1 ESP - Outage [8]	--	(826)
2014	Cape Canaveral Next Generation Clean Energy Center [6]	1,355	---
	Turkey Point Unit 4 Uprates - Completed	109	---
	Martin Unit 1 ESP - Outage [8]	(832)	---
	Martin Unit 2 ESP - Outage [8]	—	(826)
	Riviera Beach Next Generation Clean Energy Center [6]	---	1,212
2015	Change to Existing Qualifying Facilities [5]	—	90
	Riviera Beach Next Generation Clean Energy Center [6]	1,344	---
2016	Changes to Existing Purchases [5]	(841)	(1,306)
	Change to Existing Qualifying Facilities [5]	—	---
	Greenfield 3x1 Combined Cycle [6]	---	1,191
2017	Changes to Existing Purchases [5]	(383)	---
	Greenfield 3x1 Combined Cycle [6]	1,351	---
2018	---	---	---
2019	---	---	---
2020	Greenfield 3x1 Combined Cycle [6]	---	1,191

(1) Additional information about these resulting reserve margins and capacity changes are found on Schedules 7 & 8 respectively.
(2) The Summer and Winter reserve margins reflect an additional 350 MW in Summer and 550 MW in Winter of unspecified average capacity scheduled to be out during those peak periods. See Chapter III for more details.
(3) Winter values are forecasted values for January of the year shown.
(4) Summer values are forecasted values for August of the year shown.
(5) 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.
(6) 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.
(7) Outages for uprate work.
(8) Outages for ESP work. (Assumes EPA final Toxics Rule requires ESPs, thus necessitating outages.)
(9) A number of existing FPL power plants have been removed from service and placed on Inactive Reserve status. See Chapter III for a discussion of the units on Inactive Reserves.

III.C Discussion of the Projected Resource Plan and Issues Impacting FPL's Resource Planning Work

As indicated in the Executive Summary, FPL's resource planning efforts in 2010 and early 2011 were influenced by a number of factors. Furthermore, these factors are expected to continue to influence FPL's resource planning work for the foreseeable future. There are 7 such factors that are of primary importance:

1) Growing difficulty in scheduling fossil-fueled power plant maintenance;
2) High projected costs of returning generating units on Inactive Reserve status to active service;
3) Securing additional natural gas (and doing so in a manner that enhances the reliability of the natural gas supply system);
4) Maintaining/enhancing fuel diversity in the FPL system;
5) Maintaining a balance between load and generating capacity in Southeastern Florida, particularly in Miami-Dade and Broward counties;
6) Growing dependence upon DSM resources to maintain FPL system reliability; and,
7) Possible establishment of "Clean Energy Standards" or another mechanism to promote large scale utilization of renewable energy.

These 7 factors, and their various impacts on FPL's resource planning efforts including the current resource plan that is presented in this Site Plan, are briefly discussed below.

1. Growing Difficulty in Scheduling Fossil-Fueled Power Plant Maintenance:

FPL's fleet of fossil generation units is increasingly made up of CC units. These units have the desirable attributes of being very fuel-efficient and operating with very low air emissions. However, the key components of each CC unit are combustion turbines (CT). The maintenance schedule for the CT components is directly tied to the CT's operating hours. When operating hour thresholds are reached, scheduled maintenance of the CTs must take place. This fact reduces flexibility in scheduling planned maintenance of CC units, and, in turn, reduces flexibility in scheduling planned maintenance of other fossil-fueled generating units on FPL's system.

FPL has historically attempted to avoid scheduling planned maintenance of its generating units during its peak load months of January and August. However, as the number of CC units on its system has increased (and will continue to increase with the addition of WCEC 3, the modernizations, etc.), this scheduling of planned maintenance outside of the peak months has become more difficult to do. Compounding this issue is the fact that the Winter peak can occur in months other than January such as December or February, and the Summer peak can occur in months other than August such as June or July. FPL already schedules planned maintenance during these other months.

Consequently, FPL will now begin scheduling planned maintenance during the months of January and August. For reserve margin projection purposes, FPL is now projecting that, on average, 550 MW will be out of service for planned maintenance during its Winter peak months and 350 MW will be out of service for planned maintenance during its Summer peak months. These projections are based on averages of currently planned maintenance in Winter peak months other than January, and on averages of currently planned maintenance in Summer peak months other than August.

This projection of scheduled planned maintenance during peak months is now reflected in Schedules 7.1 through 7.4 which present, respectively, the projected Summer and Winter reserve margins. (In practice, the actual number of MW that will be out of service on any day in January and/or August will likely vary from these average amounts.) One effect of this change is that it increases FPL's projected resource needs in future years.

2. Projected High Costs of Returning Generating Units on Inactive Reserve Status to Active Service:

In FPL's 2010 Site Plan, FPL's then-current resource plan (reflecting FPL's 2009 and early 2010 resource planning work) assumed that the generating units that were being placed on Inactive Reserve status would begin to be returned to active service as needed to maintain system reliability. No economic analyses had been done at that time to compare this option to other alternatives. FPL's recent analyses of these generating units, particularly regarding the projected high costs of returning them to active service in comparison with the net system costs of new generation options, indicate that the addition of new generation will be less costly.

In comparison with new CC capacity, FPL's ongoing analyses currently show that it is projected to be more cost-effective for FPL's customers to add new CC capacity rather than to return the Inactive Reserve units to active service. As a result, FPL currently projects the following in regard to the units currently on Inactive Reserve status:

- Sanford 3 and Cutler 5 & 6 are projected to be retired by 2012. FPL will be examining other potential uses for these sites, including their potential use as sites for new renewable energy facilities.
- Turkey Point 2 operation has been changed from a unit that provides electricity to the grid to a synchronous condenser that provides voltage support for the transmission system in Southeastern Florida. Turkey Point 2 is currently projected to continue serving in this role for the foreseeable future.
- Two of the four steam units at FPL's Port Everglades site, Port Everglades units 3 & 4, are currently scheduled to be returned to active service in 2012, then to return to Inactive Reserve status until the modernized units at Cape Canaveral and Riviera are in normal operation (i.e., until mid-2014). A decision on the future role of these two units will be made at that time or at a later date.
- The remaining units on Inactive Reserve, Port Everglades 1 & 2, will remain on Inactive Reserve status for the immediate future. A decision on their future roles will be made at a later date.

FPL's current projections indicate that the Inactive Reserve units are not the economic choice with which to meet FPL's future resource needs. FPL currently projects that it will have resource needs beginning in 2016 and increasing each year through 2020, the last year of the reporting period of this document.

For planning purposes, FPL's 2011 Site Plan shows the addition of one new "Greenfield" CC unit in 2016 and another new Greenfield CC unit in 2020. These new CC units are currently projected to be the same type of unit that is being added in the modernizations of Cape Canaveral and Riviera. These projected in-service dates are subject to change as a result of FPL's on-going resource planning work.

As mentioned previously in a footnote, FPL has not yet made a decision regarding the site for new CC capacity additions. Therefore, new CC capacity could be added at a Greenfield site, a Brownfield site, and/or at an existing site as part of a modernization similar to those currently taking place at FPL's Cape Canaveral and Riviera sites.

In regard to potential modernization of existing sites, there are a number of factors that must be analyzed including: fuel delivery costs/issues, transmission impacts (especially in the Southeastern region of Florida as will be discussed later), system reliability issues due to the removal of existing units from active service prior to construction of new capacity at the site, overall system economics, etc. FPL's analyses to-date have identified Port Everglades as a potential candidate for modernization. This site, plus other Greenfield and Brownfield sites, is being evaluated in FPL's on-going analyses. These potential sites are discussed in detail in Chapter IV.

3. Securing Additional Natural Gas:

The recent trend of increasing reliance upon natural gas to produce electricity for FPL's customers is projected to continue with the addition of WCEC 3, the Cape Canaveral modernization, and the Riviera modernization, plus the projection of new CC capacity starting in 2016. Therefore, FPL will need to secure more natural gas supply and more gas transportation capacity. The issue is how to secure these additional natural gas resources in a manner that is economical for FPL's customers and which maintains and/or enhances the reliability of natural gas supply and deliverability to FPL's generating units.

FPL has historically purchased the gas transportation capacity required for new natural gas supply from two existing natural gas pipeline companies. As more natural gas is delivered through two pipelines entering Florida, the impact of a supply disruption on either pipeline becomes more problematic. Therefore, FPL sought approval in 2009 from the FPSC for the construction of a new, third natural gas pipeline into Florida capable of serving future gas-fired generation needs for FPL and others in the state. Such a third pipeline was projected to have 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 continuing to evaluate how additional significant amounts of natural gas can best be delivered to its system in the future and FPL will be addressing this issue with the FPSC in 2011.

4. **Maintaining/Enhancing System Fuel Diversity;**

FPL is currently dependent upon using natural gas to generate 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 steadily 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, in part due to concerns over potential greenhouse gas emission legislation/regulation, 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 and renewable energy to enhance its fuel diversity, and to using natural gas more efficiently. 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 450 MW of nuclear capacity and energy for FPL's customers beginning in the 2011 - 2013 time period. In 2008, the FPSC approved the need for these uprates and authorized FPL to recover uprates-related expenditures. The schedule for this additional nuclear capacity has changed slightly from that projected in FPL's 2010 Site Plan. An "interim" capacity increase of approximately 17 MW (FPL's share) from St. Lucie 2 is now projected to become available by April 2011. No such "interim" capacity increase was projected in the 2010 Site Plan. Another projected change involves the schedule for St. Lucie 1. The completion of the uprates work is now projected to occur several months later than originally projected, primarily due to delays in federal licensing for this project. Smaller delays in the completion of the uprate projects at St. Lucie 2 and Turkey Point 3 are also now projected.

FPL is continuing its work to obtain all of the licenses, permits, and approvals that would be necessary to construct and operate two new nuclear units at its Turkey Point site in the future. These licenses, permits, and approvals will provide FPL with the option to construct these nuclear units at Turkey Point for a time expected to be up to 20 years from the time the licenses and permits are granted, and then to operate the units. A decision regarding construction of these new units will be made once the licenses and permits are granted. (Based on the current estimated time for construction, the earliest practical deployment dates for the two new units would be beyond the 10-year reporting period for this Site Plan. Therefore, these units are not shown in this document.)

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. Also 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 photovoltaic (PV) facilities. One 25 MW PV facility began commercial operation in 2009. The remaining two solar facilities, a 10 MW PV facility and a 75 MW solar thermal steam generating facility, began commercial operation in 2010. The addition of these renewable energy facilities was made possible due to enabling legislation from the Florida Legislature in 2008. FPL remains strongly supportive of Federal and/or State legislation that enables electric utilities to add renewable energy resources and authorize the utilities to recover costs for these resources.

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 modernize the existing Cape Canaveral and Riviera plant sites with new, highly efficient CC units that replace the former steam units. WCEC Unit 3 is currently projected to go in-service in 2011. The modernizations of Cape Canaveral and Riviera are currently projected to go in-service in 2013 and 2014, respectively.

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 this fuel. Furthermore, as previously discussed, FPL continues to evaluate the potential for greater diversity in the delivery of natural gas through a new, third natural gas pipeline. A third pipeline would result in a more reliable, and more economic, natural gas supply for FPL's customers.

5. Maintaining a Balance Between Load and Generation in Southeastern Florida:

In recent years, an imbalance was projected to develop between regionally installed generation and regional peak load in Southeastern Florida. With such an imbalance, a significant amount of energy required in the Southeastern Florida region during peak periods would need to be provided either by operating less efficient generating units located in Southeastern Florida out of economic dispatch, or by importing the energy 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 additional installed transmission capacity capable of delivering 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 contributes to reducing 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 2012 and 2013 and will 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 2011 - 2020 reporting period addressed in this document.

However, because of the combination of a number of factors including: (i) the projected retirement of the Cutler 5 & 6 units, (ii) placing the Port Everglades steam units (Units 1 – 4) on Inactive Reserve status for most of this reporting period, (iii) dedicating Turkey Point 2 to a transmission support role, plus (iv) projected growth in electrical demand in the region, FPL still projects that an imbalance between generation and load in the region will eventually occur. The recent WCEC unit additions, and the modernization of the Rivera site, have had the effect of effectively "shrinking" the region of concern regarding imbalance. The former area of concern included Miami-Dade County, Broward County, and parts of Palm Beach County. After these capacity additions in Palm Beach County, the region of concern regarding a load-generation imbalance for the foreseeable future now consists of Miami-Dade and Broward counties, which is south of the former area of concern.

The Southeastern Florida imbalance issue will remain a consideration in FPL's on-going resource planning work, particularly as FPL's planning analyses in future years begin to increasingly focus on the 2020-on time frame.

6. Growing Dependence Upon DSM Resources to Maintain System Reliability:

In late 2009, the FPSC imposed significantly higher DSM Goals than had been deemed appropriate in previous DSM Goals dockets. One result of the higher amounts of DSM is that it will result in higher electric rates for all of FPL's customers.

Another result is that FPL is projected to become increasingly dependent upon DSM, instead of generation resources, to maintain system reliability. In order to demonstrate this point, FPL has added two new schedules, Schedule 7.3 and 7.4, to its 2011 Site Plan. These new schedules are presented in the back portion of this chapter. Both of the new schedules use Schedule 7.1, which presents FPL's projected Summer reserve margins, as a starting point.

In Schedule 7.3, Column (14), FPL projects what a "generation-only" reserve margin would be for each year in the 10-year reporting period by making two changes in Schedule 7.1. First, the projected DSM values in Column (8) have been zeroed out to remove the projected contribution from DSM. Second, the projected additions of one Greenfield CC unit in both 2016 and 2020 have been removed. These two changes result in a projection of reserve margins that are based solely on generation resources that currently exist or which have been approved by the FPSC.

The result is a projected generation-only reserve margin in the range of approximately 11% to 12% through 2015, but which would decrease significantly thereafter. It decreases to 4.5% in 2016 and becomes negative by 2020.

In Schedule 7.4, the projected additions of the 2016 and 2020 Greenfield CC units have been added back in as indicated by the values in Column (1). The projected generation-only reserve margin for the year 2016 increases to 9.3%. Although substantially higher than the 4.5% value for 2016 projected in Schedule 7.3, the 9.3% value is also considerably lower than the 11% to 12% range for the years 2011 through 2015. In the years after 2016, the projected generation-only reserve margin steadily decreases to less than 5% by 2019. Even with the projected addition of another new CC unit in 2020, this generation-only reserve margin does increase again, but only slightly above 7%.

Therefore, FPL's projected system reserves, already dependent to a significant degree upon DSM resources, are becoming increasingly more dependent upon DSM. Stated another way, the FPL system's ability to continue to provide reliable electricity service to FPL's customers is becoming increasingly dependent upon DSM. FPL currently believes that generation-only reserves at these projected low levels may not be adequate, and FPL will continue to evaluate the appropriateness of a minimum generation-only requirement as part of its on-going resource planning work.

7. Possible Establishment of "Clean Energy Standards":

At the time this document is being prepared, neither the United States nor the State of Florida has established a "Clean Energy Standard" which would require that a certain amount of energy be supplied by "clean" energy sources. A similar "Renewable Portfolio Standard" proposal was prepared by the FPSC and sent to the Florida Legislature for their consideration, including an option to change the standard to a Clean Energy Standard, during the 2009 legislative session. However, no such legislation was enacted during either the 2009 or 2010 session. Such legislation, or other legislative initiatives regarding clean energy contributions, may occur in the future. If such legislation is enacted in 2011 or in a later year, FPL will then determine what steps need to be taken to comply with 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)

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 2010 have resulted in a cumulative Summer peak reduction of approximately 4,371 MW (Summer) at the generator and an estimated cumulative energy saving of approximately 55,462 Gigawatt Hour (GWh) at the generator. After accounting for reserve margin requirements, FPL's DSM efforts through 2010 have eliminated the need to construct more than 13 new 400 MW generating units.

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 were deemed appropriate in prior DSM Goals dockets. 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 cumulative 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

The next step in regard to FPL's DSM efforts is to obtain FPSC approval for a DSM Plan with which it proposes to meet the DSM Goals. At the time this Site Plan is being prepared, FPL has not received FPSC approval for a DSM Plan. Consequently, FPL does not yet know with certainty what its portfolio of approved DSM programs will be. FPL expects to have an approved DSM Plan later in 2011. (Assuming this is the case, FPL expects to provide a description of its approved DSM programs in its 2012 Site Plan.) Nonetheless, FPL's resource planning work in 2010 and early 2011, reflected in this document, assumed that the FPSC-approved DSM Goals would be met.

FPL has consistently been among the leading utilities nationally in DSM achievement. For example, according to the U.S. Department of Energy's 2009 data (the last year for which the DOE data was available at the time this Site Plan is being developed), FPL ranked # 2 nationally in cumulative DSM demand reduction. And, importantly, FPL has achieved these significant DSM accomplishments while seeking to lessen the DSM-based impact on electric rates for all of its customers.

In regard to DSM, FPL's intent is to meet the FPSC's DSM Goals and to continue its national leadership role in DSM consistent with efforts both to continue to lessen the DSM-based impact on electric rates for all of FPL's customers, and to ensure that FPL's system reliability does not become too dependent upon DSM resources.

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 - 16	230	759
FPL	Manatee 2/	BobWhite	30	Dec - 15	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-2016.

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-2015

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.

In regard to the existing generating units that have been placed on Inactive Reserve status, there are no projected impacts to FPL's transmission system from these units.

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 remove six wave traps. Also upgrade associated jumpers, bus work and equipment connections.
2. At St. Lucie Switchyard, replace eighteen 230 kV disconnect switches and remove six wave traps.
3. Uprate the Unit 1A and 1B main step-up transformers to 635 MVA. Unit 1B main step-up transformer is to be replaced by the uprated spare main step-up transformer. Existing Unit 1B main step-up transformer is to become the new station spare
4. Uprate the spare main step-up transformer to 635 MVA to replace Unit 2A main step-up transformer.
5. Replace the Unit 2A and Unit 2B main step-up transformer with new one rated at 635 MVA.
6. Add fiber optic 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 Riviera 138 kV Switchyard to new Riviera 138 kV Switchyard.

III.F. Renewable Resources

FPL has been the leading Florida utility in examining ways to effectively utilize renewable energy technologies to serve its customers. 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 early "green pricing" efforts.

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, and participation in the State of Florida's PV for Schools program. With resources from the FPL Group Foundation, FPL contributed 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. As part of its green pricing research efforts, 2 kw PV arrays were placed in each of 4 schools, and in the Miami Science Museum, for a total of 10 kw of PV in educational facilities. FPL's green pricing efforts also resulted in a 250 kw PV array at Rothenbach Park in Sarasota.

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 2010, approximately 1,074 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. These expenditures will be made in accordance with the solar water heater and PV aspects of FPL's DSM Plan once FPL receives approval for its Plan.

3) **<u>Supply Side Efforts – Power Purchases:</u>**

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 RFPs 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) recently agreed to extend their contract that expired March 31, 2010 for a 20-year term from April 1, 2012 through April 1, 2032. In addition, a new contract for an additional 90 MW between FPL and SWA has been signed and has been submitted to the FPSC for approval. 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 renewable energy to FPL.

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

With regard to solar projects, FPL has completed construction of three solar facilities: (i) a 75 MW steam generation solar thermal facility in Martin County (the Martin Next Generation Solar Energy Center); (ii) a 25 MW PV electric generation facility in DeSoto County (the DeSoto Next Generation Solar Energy Center); and (iii) a 10 MW PV electric generation facility in Brevard County at NASA's Kennedy Space Center (the Space Coast Next Generation Solar Energy Center). The DeSoto County project was completed in 2009 and the other two projects were completed in 2010. These three projects were completed in response to the Florida Legislature's House Bill 7135 which was signed into law by then-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 facility began commercial operation in 2010 and provides 75 MW of solar thermal capacity in an innovative way that directly displaces fossil fuel usage on the FPL system. This facility consists of solar thermal technology which generates steam that is integrated into the existing steam cycle for the Martin Unit 8 natural gas-fired CC plant. This project is 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.

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

This PV facility began commercial operation in 2009 and provides up to 25 MW of non-firm capacity and energy, making it the second largest PV facility in the U.S. The facility utilizes a tracking array that is designed to follow the sun as it traverses across the sky.

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

Located at the Kennedy Space Center, this facility is part of an innovative public/private partnership with NASA. This non-tracking PV facility began commercial operation in 2010 and provides up to 10 MW of non-firm capacity and energy.

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 225,000 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 output from these renewable facilities will be "as available", non-firm energy only. This is due to several factors. First, the Martin solar thermal facility is a "fuel-substitute" facility, not a facility that provides additional capacity and energy. The solar thermal facility displaces the use of fossil fuel to produce steam 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 legislation is enacted by the Florida legislature that enables FPL to construct and recover costs for additional solar generation. 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.

FPL remains hopeful 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 would consist 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. At the time this Site Plan is being developed, the local land use approval process has not been completed. An in-service date for the project is dependent upon a successful outcome to the local approval and permitting process.

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 Southeast National Marine Renewable Energy Center (SNMREC) 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 Bureau of Ocean Energy Management Regulation and Enforcement (BOEMRE). BOEMRE 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 biomass-related studies to determine improved vegetative management techniques for use in minimizing maintenance costs at FPL's current and future solar sites and to perform wind studies within 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 has also developed a "Living Lab" to demonstrate FPL's solar energy commitment to employees and visitors at its Juno Beach facility. FPL is evaluating multiple solar technologies and applications for the purpose of developing a renewable business model resulting in the most cost-effective and reliable uses of solar energy for FPL customers. FPL will expand the Living Lab as new solar products come to market.

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 will be added to the WCEC site in 2011. In addition, FPL is currently modernizing its existing Cape Canaveral and Riviera plant sites by removing the steam generating units previously on the sites 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 450 MW of nuclear generation capacity in the 2011 – 2013 time period. (FPL is also pursuing plans to obtain licenses, permits, and approvals to construct and operate two new nuclear units at its existing Turkey Point site that, in total, would add approximately 2,200 MW of new nuclear generating capacity. The earliest dates by which those new nuclear units could practically be deployed are outside of the ten-year reporting time frame of this document.)

In regard to utilizing renewable energy, FPL has added 110 MW of solar generating capacity 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 were placed into commercial operation 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, additional 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. (As previously discussed, 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, in part, to concerns over greenhouse gas emissions legislation/regulation.) The evaluation of the feasibility and cost-effectiveness of these, and other possible alternatives, will be part of on-going resource planning efforts.

FPL's current use of various fuels to supply energy to customers, plus a projection of this "fuel mix" through 2020 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 Fossil Fuel Cost Forecasts

Fossil fuel price forecasts, and the resulting projected price differentials between fuels, are major drivers used in evaluating alternatives for meeting future resource 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 2010 and early 2011 resource planning work, particularly in regard to nuclear cost recovery filing work.

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 2011 through 2013, the methodology used the January 14, 2011 forward curve for New York Harbor 1% sulfur heavy oil, U. S. Gulf Coast 1% sulfur heavy oil, ultra low sulfur diesel fuel oil, and Henry Hub natural gas commodity prices;

b. For the next two years (2014 and 2015), FPL used a 50/50 blend of the January 14, 2011 forward curve and the most current projections at the time from The PIRA Energy Group;

c. For the 2016 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 2011 Early Release* 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. Current demand continues to be rather stable and outputs from production facilities have been increasing steadily. The following are the current major contributors that led to some volatility in the prices for uranium:

- Hedge funds are now back in the market, now that the recent financial crisis is resolving itself. This causes more speculative demand, not tied to market fundamentals, and causes the market price to move according to news potentially affecting potential future supply/demand balance, or news regarding current suppliers.
- The large inventory from the U.S. Department of Energy (DOE) is being withheld from the market due to political pressure from suppliers. Some of this uranium finds its way into the market periodically to fund cleanup of certain Department of Energy facilities.
- The U.S. Department of Commerce (DOC) has imposed restrictions on the import of nuclear fuel from France and Russia.
- Although a limited number of new nuclear units is scheduled to start production in the US during the next 5 to 10 years, other countries, more specifically China, has announced a significant increase in construction of new units which has caused short term increase in uranium market price.

Over a 10 year horizon, FPL expects the market to be more consistent with market fundamentals The supply picture is more stable, with laws enacted to resolve 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. New and current facilities continue to add capacity to meet demands. Actual demand tends to grow over time because of the long lead time to build nuclear units. However, 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) Conversion: 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 diffusion plants, which use significant amount of electricity, can make up any gaps in supply of enrichment services now that prices for electricity have decreased. 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 causes 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 2010 and early 2011 resource planning work were performed consistent with the method then used for FPL's Fuel Clause filings, including 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.

Schedule 5
Fuel Requirements
(for FPL only)

		Actual 1/		Forecasted									
Fuel Requirements	**Units**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
(1) Nuclear	Trillion BTU	250	250	257	217	278	292	289	290	295	290	290	296
(2) Coal	1,000 TON	3,577	3,191	3,570	3,250	3,959	3,645	3,956	3,655	3,951	3,599	3,932	3,633
(3) Residual (FO6) - Total	1,000 BBL	7,489	6,754	2,489	1,455	845	712	907	1,066	1,256	1,213	1,378	1,240
(4) Steam	1,000 BBL	7,489	6,754	2,489	1,455	845	712	907	1,066	1,256	1,213	1,378	1,240
(5) Distillate (FO2) - Total	1,000 BBL	47	522	121	2	5	0	15	19	71	47	63	2
(6) Steam	1,000 BBL	0	4	0	0	0	0	0	0	0	0	0	0
(7) CC	1,000 BBL	6	194	100	2	4	0	0	0	0	0	0	0
(8) CT	1,000 BBL	40	324	21	0	1	0	15	19	71	47	63	2
(9) Natural Gas - Total	1,000 MCF	481,426	504,996	529,619	542,420	505,993	538,782	541,899	575,212	589,224	605,055	612,589	626,151
(10) Steam	1,000 MCF	81,260	56,729	40,917	27,439	13,860	11,609	13,620	16,789	19,179	18,634	21,159	19,608
(11) CC	1,000 MCF	395,703	443,108	487,142	514,015	491,405	526,628	527,571	557,375	567,865	584,757	589,172	605,395
(12) CT	1,000 MCF	4,462	5,159	1,559	966	728	544	709	1,048	2,180	1,664	2,258	1,148

1/ Source: A Schedules.
Note: Solar contributions are provided on Schedules 6.1 and 6.2.

Schedule 6.1
Energy Sources

	Energy Sources	Units	Actual 1/		Forecasted									
			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(1)	Annual Energy Interchange 2/	GWH	9,508	8,333	5,797	5,947	5,274	5,163	5,082	1,726	0	0	0	0
(2)	Nuclear	GWH	22,893	22,850	20,758	19,718	25,388	26,720	26,406	26,567	26,981	26,591	26,491	27,058
(3)	Coal	GWH	6,362	5,721	6,738	6,230	7,446	6,903	7,440	6,926	7,428	6,795	7,390	6,873
(4)	Residual(FO6) -Total	GWH	4,560	4,081	1,627	964	559	467	602	704	829	801	909	820
(5)	Steam	GWH	4,560	4,081	1,627	964	559	467	602	704	829	801	909	820
(6)	Distillate(FO2) -Total	GWH	21	279	93	2	4	0	5	6	25	15	20	1
(7)	Steam	GWH	3	2	0	0	0	0	0	0	0	0	0	0
(8)	CC	GWH	3	143	84	2	4	0	0	0	0	0	0	0
(9)	CT	GWH	15	134	9	0	0	0	5	6	25	15	20	1
(10)	Natural Gas -Total	GWH	62,728	66,771	73,272	75,939	71,971	77,352	78,200	83,199	85,127	87,616	88,496	90,766
(11)	Steam	GWH	8,705	5,041	3,984	2,711	1,365	1,134	1,347	1,655	1,894	1,838	2,087	1,935
(12)	CC	GWH	53,636	61,304	69,166	73,151	70,549	76,174	76,797	81,464	83,071	85,651	86,241	88,742
(13)	CT	GWH	387	426	123	77	57	44	56	81	163	126	169	90
(14)	Solar 3/	GWH	0	69	228	227	226	225	225	225	224	224	222	221
(15)	PV	GWH	0	69	73	73	72	71	71	71	70	70	69	69
(16)	Solar Thermal 4/	GWH	0	0	155	155	154	154	154	154	154	154	153	152
(17)	Other 5/	GWH	5,231	6,339	2,663	3,489	3,780	4,204	5,650	6,239	6,636	6,869	7,149	7,380
	Net Energy For Load 6/	GWH	111,304	114,373	111,176	112,517	114,647	121,035	123,610	125,593	127,250	128,910	130,679	133,121

1/ Source: A Schedules
2/ The projected figures are based on estimated energy purchases from SJRPP and the Southern Companies (UPS contract).
3/ Represents output from FPL's PV and solar thermal facilities.
4/ Estimated projected values.Solar thermal does not produce GWh, but produces steam that displaces fossil fuel-derived steam. Actual solar thermal contribution for 2010 was relatively small due to the fact that the facility did not begin commercial operation until late 2010. Its 2010 contribution to the Martin 8 CC GWh output is rolled into row (12) for reporting purposes. Its projected contributions for 2011 - 2020 are provided separately on row (16).
5/ Represents a forecast of energy expected to be purchased from Qualifying Facilities, Independent Power Producers, net of Economy and other Power Sales.
6/ Net Energy For Load values for the years 2011 - 2020 are also shown in Schedule 2.3.

Schedule 6.2
Energy Sources % by Fuel Type

	Energy Source	Units	Actual [1/] 2009	2010	Forecasted 2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(1)	Annual Energy Interchange [2/]	%	8.5	7.3	5.2	5.3	4.6	4.3	4.1	1.4	0.0	0.0	0.0	0.0
(2)	Nuclear	%	20.6	20.0	18.7	17.5	22.1	22.1	21.4	21.2	21.2	20.6	20.3	20.3
(3)	Coal	%	5.7	5.0	6.1	5.5	6.5	5.7	6.0	5.5	5.8	5.3	5.7	5.2
(4)	Residual (FO6) -Total	%	4.1	3.6	1.5	0.9	0.5	0.4	0.5	0.6	0.7	0.6	0.7	0.6
(5)	Steam	%	4.1	3.6	1.5	0.9	0.5	0.4	0.5	0.6	0.7	0.6	0.7	0.6
(6)	Distillate (FO2) -Total	%	0.0	0.2	0.1	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	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(9)	CT	%	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(10)	Natural Gas -Total	%	56.4	58.4	65.9	67.5	62.8	63.9	63.3	66.2	66.9	68.0	67.7	68.2
(11)	Steam	%	7.8	4.4	3.6	2.4	1.2	0.9	1.1	1.3	1.5	1.4	1.6	1.5
(12)	CC	%	48.2	53.6	62.2	65.0	61.5	62.9	62.1	64.9	65.3	66.4	66.0	66.7
(13)	CT	%	0.3	0.4	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
(14)	Solar [3/]	%	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
(15)	PV	%	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
(16)	Solar Thermal [4/]	%	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
(17)	Other [5/]	%	4.7	5.5	2.4	3.1	3.3	3.5	4.6	5.0	5.2	5.3	5.5	5.5
			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 (UPS contract).
3/ Represents output from FPL's PV and solar thermal facilities.
4/ Estimated projected values.Solar thermal does not produce GWh, but produces steam that displaces fossil fuel-derived steam. Actual solar thermal contribution for 2010 was relatively small due to the fact that the facility did not begin commercial operation until late 2010. Its 2010 contribution to the Martin 8 CC GWh output is rolled into row (12) for reporting purposes. Its projected contributions for 2011 - 2020 are provided separately on row (16).
5/ Represents a forecast of energy expected to be purchased from Qualifying Facilities, Independent Power Producers, net of Economy and other Power Sales.
6/ Net Energy For Load values for the years 2011 - 2020 are also shown in Schedule 2.3.

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 Capacity MW	Firm Capacity Import MW	Firm Capacity Export MW	Firm QF MW	Total Firm Capacity Available MW	Total Peak Demand MW	DSM MW	Firm Summer Peak Demand MW	Reserve Margin Before Maintenance MW	Reserve Margin Before Maintenance % of Peak	Scheduled Maintenance MW	Reserve Margin After Maintenance MW	Reserve Margin After Maintenance % of Peak
2011	22,462	1,461	0	595	24,518	21,679	1,981	19,698	4,819	24.5	350	4,469	22.7
2012	23,437	1,306	0	650	25,393	21,853	2,141	19,712	5,681	28.8	1,064	4,617	23.4
2013	24,105	1,306	0	650	26,061	22,155	2,317	19,838	6,223	31.4	1,176	5,047	25.4
2014	25,317	1,306	0	650	27,273	23,452	2,534	20,918	6,354	30.4	1,176	5,178	24.8
2015	25,317	1,306	0	740	27,363	24,172	2,710	21,462	5,900	27.5	350	5,550	25.9
2016	26,508	0	0	740	27,248	24,605	2,871	21,734	5,514	25.4	350	5,164	23.8
2017	26,508	0	0	740	27,248	25,025	3,016	22,009	5,239	23.8	350	4,889	22.2
2018	26,508	0	0	740	27,248	25,266	3,149	22,117	5,130	23.2	350	4,780	21.6
2019	26,508	0	0	740	27,248	25,690	3,271	22,419	4,828	21.5	350	4,478	20.0
2020	27,699	0	0	740	28,439	26,193	3,371	22,822	5,616	24.6	350	5,266	23.1

Col. (2) represents capacity additions and changes projected to be in-service by June 1st. These MWs are generally considered to be available to meet Summer peak loads which are forecasted to occur during August of the year indicated.
Col. (6) = Col.(2) + Col.(3) - Col.(4) + Col.(5).
Col. (7) reflects the 2011 load forecast without incremental DSM or cumulative load management.
Col. (8) represents cumulative load management capability, plus incremental conservation, from 1/2011-on intended for use with the 2011 load forecast.
Col. (10) = Col. (6) - Col. (9)
Col. (11) = Col.(10) / Col.(9)
Col. (12) indicates the capacity of units projected to be out-of-service for planned maintenance during the Summer peak period. This value is comprised of: (i) an assumed value of 350 MW on average of capacity that will be out-of-service for planned maintenance during the Summer months for all years; (ii) an additional 714 MW (at St. Lucie 2) of nuclear capacity that will be out-of-service during part of Summer in 2012 due to an extended planned outage as part of the capacity uprates project; and (iii) an additional 826 MW of fossil-fueled capacity that will be out-of-service in the Summer of 2013 (at Martin 1) and in the Summer of 2014 (at Martin 2) due to the installation of electrostatic precipitators.
Col. (13) = Col. (10) - Col. (12)
Col. (14) = 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 Capability MW	Firm Capacity Import MW	Firm Capacity Export MW	Firm QF MW	Total Firm Capacity Available MW	Total Peak Demand MW	DSM MW	Firm Winter Peak Demand MW	Reserve Margin Before Maintenance MW	Reserve Margin Before Maintenance % of Peak	Scheduled Maintenance MW	Reserve Margin After Maintenance MW	Reserve Margin After Maintenance % of Peak
2011	23,987	1,494	0	595	26,076	21,443	1,711	19,732	6,343	32.1	1,276	5,067	25.7
2012	24,400	1,494	0	595	26,489	21,491	1,802	19,689	6,799	34.5	2,942	3,857	19.6
2013	23,959	1,314	0	650	25,923	21,683	1,909	19,774	6,148	31.1	1,372	4,776	24.2
2014	25,423	1,314	0	650	27,387	22,584	2,065	20,519	6,868	33.5	1,382	5,486	26.7
2015	26,767	1,314	0	650	28,731	23,048	2,182	20,866	7,864	37.7	550	7,314	35.1
2016	26,767	383	0	740	27,890	23,302	2,288	21,014	6,876	32.7	550	6,326	30.1
2017	28,118	0	0	740	28,858	23,543	2,382	21,161	7,696	36.4	550	7,146	33.8
2018	28,118	0	0	740	28,858	23,794	2,464	21,330	7,527	35.3	550	6,977	32.7
2019	28,118	0	0	740	28,858	24,044	2,536	21,508	7,350	34.2	550	6,800	31.6
2020	28,118	0	0	740	28,858	24,305	2,596	21,709	7,148	32.9	550	6,598	30.4

Col. (2) represents capacity additions and changes projected to be in-service by January 1st. These MWs are generally considered to be available to meet winter peak loads which are forecasted to occur during January of the year indicated.
Col. (6) = Col.(2) + Col.(3) - Col.(4) + Col.(5).
Col. (7) reflects the 2011 load forecast without incremental DSM or cumulative load management.
Col. (8) represents cumulative load management capability, plus incremental conservation, from 1/2011-on intended for use with the 2011 load forecast.
Col. (10) = Col. (6) - Col. (9)
Col. (11) = Col.(10) / Col.(9)
Col. (12) indicates the capacity of units projected to be out-of-service for planned maintenance during the Winter peak period. This value is comprised of: (i) an assumed value of 550 MW on average of capacity that will be out-of-service for planned maintenance during the Winter months for all years; (ii) an additional 726 MW(at St. Lucie 2) of nuclear capacity that will be out-of-service in Winter of 2011 due to an extended planned outage as part of the capacity uprates project; (iii) an additional 1,570 MW (853 MW at St. Lucie 1 and 717 MW at Turkey Point 3) of nuclear capacity that will be out-of-service during part of the Winter of 2012 due to extended planned outages as part of the capacity uprates project; (iv) an additional 822 MW that will be out-of-service in the Winter of 2012 (at Manatee 2) and in the Winter of 2013 (at Manatee 1) due to the installation of electrostatic precipitators; and (v) an additional 832 MW (at Martin 1) that will be out-of-service during the Winter of 2014 due to the installation of electrostatic precipitators.
Col. (13) = Col. (10) - Col. (12)
Col. (14) = Col.(13) / Col.(9)

Schedule 7.3
Projection of Generation - Only Reserves
At Time Of Summer Peak (Assuming No 2016 or 2020 Generation Additions)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
					Total			Firm					
	Firm	Firm	Firm		Firm	Total		Summer	Reserve			Reserve	
	Installed	Capacity	Capacity	Firm	Capacity	Peak		Peak	Margin Before		Scheduled	Margin After	
August of	Capacity	Import	Export	QF	Available	Demand	DSM	Demand	Maintenance		Maintenance	Maintenance	
Year	MW	MW	MW	MW	MW	MW	MW	MW	MW	% of Peak	MW	MW	% of Peak
2011	22,462	1,461	0	595	24,518	21,679	**0**	21,679	2,839	13.1	350	2,489	**11.5**
2012	23,437	1,306	0	650	25,393	21,853	**0**	21,853	3,540	16.2	1,064	2,476	**11.3**
2013	24,105	1,306	0	650	26,061	22,155	**0**	22,155	3,906	17.6	1,176	2,730	**12.3**
2014	25,317	1,306	0	650	27,273	23,452	**0**	23,452	3,821	16.3	1,176	2,645	**11.3**
2015	25,317	1,306	0	740	27,363	24,172	**0**	24,172	3,191	13.2	350	2,841	**11.8**
2016	25,317	0	0	740	26,057	24,605	**0**	24,605	1,452	5.9	350	1,102	**4.5**
2017	25,317	0	0	740	26,057	25,025	**0**	25,025	1,032	4.1	350	682	**2.7**
2018	25,317	0	0	740	26,057	25,266	**0**	25,266	791	3.1	350	441	**1.7**
2019	25,317	0	0	740	26,057	25,690	**0**	25,690	367	1.4	350	17	**0.1**
2020	25,317	0	0	740	26,057	26,193	**0**	26,193	(137)	(0.5)	350	(487)	**(1.9)**

Col. (2) represents capacity additions and changes, **assuming no generation additions in 2016 or 2020.**
Col. (6) = Col.(2) + Col.(3) - Col.(4) + Col.(5).
Col. (7) reflects the 2011 load forecast without incremental DSM or cumulative load management.
Col. (8) shows zero contribution from DSM in order to calculate FPL's reserves that are supplied only by generation resources.
Col. (10) = Col. (6) - Col. (9)
Col. (11) = Col.(10) / Col.(9)
Col. (12) indicates the capacity of units projected to be out-of-service for planned maintenance during the Summer peak period. This value is comprised of: (i) an assumed value of 350 MW on average of capacity that will be out-of-service for planned maintenance during the Summer months for all years; (ii) an additional 714 MW (at St. Lucie 2) of nuclear capacity that will be out-of-service during part of Summer in 2012 due to an extended planned outage as part of the capacity uprates project; and (iii) an additional 826 MW of fossil-fueled capacity that will be out-of-service in the Summer of 2013 (at Martin 1) and in the Summer of 2014 (at Martin 2) due to the installation of electrostatic precipitators.
Col. (13) = Col. (10) - Col. (12)
Col. (14) = Col.(13) / Col.(9)

Schedule 7.4
Projection of Generation - Only Reserves
At Time Of Summer Peak (Assuming 2016 and 2020 CC Generation Additions)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
					Total			Firm					
	Firm	Firm	Firm		Firm	Total		Summer	Reserve			Reserve	
	Installed	Capacity	Capacity	Firm	Capacity	Peak		Peak	Margin Before		Scheduled	Margin After	
August of	Capacity	Import	Export	QF	Available	Demand	DSM	Demand	Maintenance		Maintenance	Maintenance	
Year	MW	MW	MW	MW	MW	MW	MW	MW	MW	% of Peak	MW	MW	% of Peak
2011	22,462	1,461	0	595	24,518	21,679	**0**	21,679	2,839	13.1	350	2,489	**11.5**
2012	23,437	1,306	0	650	25,393	21,853	**0**	21,853	3,540	16.2	1,064	2,476	**11.3**
2013	24,105	1,306	0	650	26,061	22,155	**0**	22,155	3,906	17.6	1,176	2,730	**12.3**
2014	25,317	1,306	0	650	27,273	23,452	**0**	23,452	3,821	16.3	1,176	2,645	**11.3**
2015	25,317	1,306	0	740	27,363	24,172	**0**	24,172	3,191	13.2	350	2,841	**11.8**
2016	26,508	0	0	740	27,248	24,605	**0**	24,605	2,643	10.7	350	2,293	**9.3**
2017	26,508	0	0	740	27,248	25,025	**0**	25,025	2,223	8.9	350	1,873	**7.5**
2018	26,508	0	0	740	27,248	25,266	**0**	25,266	1,982	7.8	350	1,632	**6.5**
2019	26,508	0	0	740	27,248	25,690	**0**	25,690	1,558	6.1	350	1,208	**4.7**
2020	27,699	0	0	740	28,439	26,193	**0**	26,193	2,246	8.6	350	1,896	**7.2**

Col. (2) represents capacity additions and changes, assuming one CC unit is added in 2016 and one CC unit is added in 2020.
Col. (6) = Col.(2) + Col.(3) - Col.(4) + Col.(5).
Col. (7) reflects the 2011 load forecast without incremental DSM or cumulative load management.
Col. (8) shows zero contribution from DSM in order to calculate FPL's reserves that are supplied only by generation resources.
Col. (10) = Col. (6) - Col. (9)
Col. (11) = Col.(10) / Col.(9)
Col. (12) indicates the capacity of units projected to be out-of-service for planned maintenance during the Summer peak period. This value is comprised of: (i) an assumed value of 350 MW on average of capacity that will be out-of-service for planned maintenance during the Summer months for all years; (ii) an additional 714 MW (at St. Lucie 2) of nuclear capacity that will be out-of-service during part of Summer in 2012 due to an extended planned outage as part of the capacity uprates project; and (iii) an additional 826 MW of fossil-fueled capacity that will be out-of-service in the Summer of 2013 (at Martin 1) and in the Summer of 2014 (at Martin 2) due to the installation of electrostatic precipitators.
Col. (13) = Col. (10) - Col. (12)
Col. (14) = Col.(13) / Col.(9)

Schedule 8
Planned And Prospective Generating Facility Additions And Changes

Plant Name	Unit No. (2)	Location (3)	Unit Type (4)	Fuel Pri. (5)	Fuel Alt. (5)	Fuel Transport Pri. (7)	Fuel Transport Alt. (8)	Const. Start Mo./Yr. (9)	Comm. In-Service Mo./Yr. (10)	Expected Retirement Mo./Yr. (11)	Gen. Max. Nameplate KW (12)	Firm Net Capability [1] Winter MW (13)	Firm Net Capability [1] Summer MW (14)	Status (15)
ADDITIONS/ CHANGES														
2011														
St. Lucie (Uprates)	2	St. Lucie County	NP	UR	No	TK	No	—	Apr-11	Unknown	723,775	—	17	OT
Riviera	3	City of Riviera Beach	ST	FO6	NG	WA	PL	Unknown	Unknown	Feb-11	310,420	—	(277)	OT
Riviera	4	City of Riviera Beach	ST	FO6	NG	WA	PL	Unknown	Unknown	Feb-11	310,420	—	(288)	OT
Scherer	4	Monroe, GA	BIT	SUB	No	RR	No	—	Jul-11	Unknown	680,368	—	26	OT
West County Energy Center	3	Palm Beach County	CC	NG	FO2	PL	PL	Jan-09	Jun-11	Unknown	1,366,800	—	1219	V
								2011 Changes/Additions w/o Inactive Reserve Total:				9	697	
Cutler	5	Miami Dade County	ST	FO6	NG	WA	PL	—	—	—	75,000	(69)	(68)	OT
Cutler	6	Miami Dade County	ST	FO6	NG	WA	PL	—	—	—	161,500	(138)	(137)	OT
Sanford	1	Volusia County	ST	FO6	NG	WA	PL	—	—	—	156,250	(140)	(138)	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
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	—	(374)	OT
Turkey Point	2	Miami Dade County	ST	FO6	NG	WA	PL	—	—	—	402,050	—	(392)	OT
								2011 Changes/Additions with Inactive Reserve Total:				(775)	(1,225)	
2012														
Riviera	3	City of Riviera Beach	ST	FO6	NG	WA	PL	Unknown	Unknown	Unknown	310,420	(280)	—	OT
Riviera	4	City of Riviera Beach	ST	FO6	NG	WA	PL	Unknown	Unknown	Unknown	310,420	(291)	—	OT
Scherer	4	Monroe, GA	BIT	SUB	No	RR	No	—	Jul-11	Unknown	680,368	26	—	OT
St. Lucie (Uprates) [2]	2	St. Lucie County	NP	UR	No	TK	No	—	See Note 2	Unknown	723,775	17	(17)	T
St. Lucie (Uprates) [2]	1	St. Lucie County	NP	UR	No	TK	No	—	Dec-11	Unknown	850,000	—	122	T
Turkey Point (Uprates) [2]	3	Miami Dade County	NP	UR	No	TK	No	—	May-12	Unknown	759,900	—	109	T
West County Energy Center	3	Palm Beach County	CC	NG	FO2	PL	PL	Jan-09	Jun-11	Unknown	1,366,800	1,335	—	V
								2012 Changes/Additions w/o Inactive Reserve Total:				807	214	
Turkey Point	2	Miami Dade County	ST	FO6	NG	WA	PL	—	—	—	402,050	(394)	—	
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	—	374	OT
								2012 Changes/Additions with Inactive Reserve Total:				413	975	
2013														
St. Lucie (Uprates) [2]	2	St. Lucie County	NP	UR	No	TK	No	—	See Note 2	Unknown	723,775	(17)	—	T
St. Lucie (Uprates) [2]	1	St. Lucie County	NP	UR	No	TK	No	—	See Note 2	Unknown	850,000	122	—	T
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]	2	St. Lucie County	NP	UR	No	TK	No	—	See Note 2	Unknown	723,775	93	93	T
Turkey Point (Uprates) [2]	3	Miami Dade County	NP	UR	No	TK	No	—	See Note 2	Unknown	759,900	109	—	T
Turkey Point (Uprates) [2]	4	Miami Dade County	NP	UR	No	TK	No	—	See Note 2	Unknown	759,900	—	109	T
								2013 Changes/Additions w/o Inactive Reserve Total:				307	1,412	
Port Everglades	3	City of Hollywood	ST	FO6	NG	WA	PL	—	—	—	402,050	(389)	(387)	OT
Port Everglades	4	City of Hollywood	ST	FO6	NG	WA	PL	—	—	—	402,050	(376)	(374)	OT
								2013 Changes/Additions with Inactive Reserve Total:				(458)	851	

(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.

(2) The nuclear uprates will be performed during the extended outages for each unit.

Schedule 8
Planned And Prospective Generating Facility Additions And Changes

	(2)	(3)	(4)	(5)	(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
				Fuel		Fuel Transport		Const.	Comm.	Expected	Gen. Max.	Firm Net Capability (1)		
Plant Name	Unit No.	Location	Unit Type	Pri.	Alt.	Pri.	Alt.	Start Mo./Yr.	In-Service Mo./Yr.	Retirement Mo./Yr.	Nameplate KW	Winter MW	Summer MW	Status
ADDITIONS/ CHANGES														
2014														
Turkey Point (Uprates) (2)	4	Miami Dade County	NP	UR	No	TK	No	—	See Note 2	Unknown	759,900	109	—	T
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:												1,464	1,212	
												—	—	
2014 Changes/Additions with Inactive Reserve Total:												1,464	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														
Unsited 3x1 H Combined Cycle	1	—	CC	NG	FO2	PL	PL	Jun-14	Jun-16	Unknown	Unknown	—	1,191	P
2016 Changes/Additions w/o Inactive Reserve Total:												0	1,191	
												—	—	
2016 Changes/Additions with Inactive Reserve Total:												0	1,191	
2017														
Unsited 3x1 H Combined Cycle	1	—	CC	NG	FO2	PL	PL	Jun-14	Jun-16	Unknown	Unknown	1,351	—	P
2017 Changes/Additions w/o Inactive Reserve Total:												1,351	0	
												—	—	
2017 Changes/Additions w/o Inactive Reserve Total:												1,351	0	
2018														
												—	—	
2018 Changes/Additions w/o Inactive Reserve Total:												0	0	
												—	—	
2018 Changes/Additions with Inactive Reserve Total:												0	0	
2019														
												—	—	
2019 Changes/Additions w/o Inactive Reserve Total:												0	0	
												—	—	
2019 Changes/Additions with Inactive Reserve Total:												0	0	
2020														
Unsited 3x1 H Combined Cycle	2	—	CC	NG	FO2	PL	PL	Jun-18	Jun-20	Unknown	Unknown	—	1,191	P
2016 Changes/Additions w/o Inactive Reserve Total:												0	1,191	
												—	—	
2016 Changes/Additions with Inactive Reserve Total:												0	1,191	

(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.

(2) The nuclear uprates will be performed during the extended outages for each unit.

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:** V (Under construction, more than 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):	30	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 122 MW (Incremental)
b. Winter 122 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):	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 2011 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 109 MW (Incremental)
b. Winter 109 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):	21	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 2011 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	17 MW (Interim Incremental FPL's ownership share), 110 MW (final incremental FPL's ownership share)	
b. Winter	17 MW (Interim Incremental FPL's ownership share), 110 MW (final 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:	2011 (Interim increase), 2012 (final increase)	
(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):	32	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 2011 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 109 MW (Incremental)
b. Winter 109 MW (Incremental)

(3) **Technology Type:** Nuclear

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

(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):	21	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 2011 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:** 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):	2.4%	
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):	6,484	Btu/kWh
Base Operation 75F,100%		

(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:** 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):	2.4%	
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):	6,480	Btu/kWh
Base Operation 75F,100%		

(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.

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:** Greenfield 3x1 Combined Cycle

(2). **Capacity**
a. Summer 1,191 MW
b. Winter 1,351 MW

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

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2014
b. Commercial In-service date: 2016

(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:** — Acres

(9) **Construction Status:** P (Planned Unit)

(10) **Certification Status:** ---

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

(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):	6,607	Btu/kWh
Base Operation 75F,100%		

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

Book Life (Years):	30	years
Total Installed Cost (2016 $/kW):	956	
Direct Construction Cost ($/kW):		
AFUDC Amount ($/kW):	98	
Escalation ($/kW):		
Fixed O&M ($/kW-Yr): (2016 $)	17.65	
Variable O&M ($/MWH): (2016 $)	0.50	
K Factor:	1.5136	

* $/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:**	Greenfield 3x1 Combined Cycle		
(2) **Capacity**			
a. Summer	1,191 MW		
b. Winter	1,351 MW		
(3) **Technology Type:**	Combined Cycle		
(4) **Anticipated Construction Timing**			
a. Field construction start-date:		2018	
b. Commercial In-service date:		2020	
(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:**		---	Acres
(9) **Construction Status:**		P	(Planned Unit)
(10) **Certification Status:**		---	
(11) **Status with Federal Agencies:**		---	

(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):	6,607	Btu/kWh
Base Operation 75F,100%		

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

Book Life (Years):	30	years
Total Installed Cost (2020 $/kW):	1,076	
Direct Construction Cost ($/kW):		
AFUDC Amount ($/kW):	111	
Escalation ($/kW):		
Fixed O&M ($/kW-Yr): (2020 $)	19.79	
Variable O&M ($/MWH): (2020 $)	0.55	
K Factor:	1.5136	

* $/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 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 (Completed)
(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
<u>Status Report and Specifications of Proposed Transmission Lines</u>

Cape Canaveral Next Generation Clean Energy Center (Modernization)

The Cape Canaveral Next Generation Clean Energy Center which will result from the modernization of the 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 (Modernization)

The Riviera Beach Energy Center which will result from the modernization of the Riviera Beach power plant site will require one new line and existing lines to be extended and reconfigured to accommodate the increased capacity.

(1)	Point of Origin and Termination:	Riviera – *Cedar Substation*
(2)	Number of Lines:	1
(3)	Right-of-way	Existing, FPL - Owned
(4)	Line Length:	15 miles
(5)	Voltage:	230 kV
(6)	Anticipated Construction Timing:	Start date: 2012 End date: 2014
(7)	Anticipated Capital Investment: (Trans. and Sub.)	$12,100,000
(8)	Substations:	Riviera Substation and Cedar Substation
(9)	*Participation* with Other Utilities:	None

Schedule 11.1

Existing FIRM and NON-FIRM Capacity and Energy by Primary Fuel Type
Actuals for the Year 2010

	(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	3.5%	902	3.3%	5,721	5.0%
(2)	Nuclear	2,939	11.4%	3,013	11.2%	22,850	20.0%
(3)	Residual	5,954	23.1%	6,004	22.3%	4,081	3.6%
(4)	Distillate	1,908	7.4%	2,087	7.7%	279	0.2%
(5)	Natural Gas	11,986	46.4%	12,756	47.3%	66,771	58.4%
(6)	Solar	35	0.1%	35	0.1%	69	0.1%
(7)	***FPL Existing Units Total [1]:***	***23,722***	***91.9%***	***24,797***	***91.9%***	***99,771***	***87.2%***
(8)	Renewables (Purchases)- Firm	61.0	0.2%	112.0	0.4%	1,004	0.9%
(9)	Renewables (Purchases)- Non-Firm	Not Applicable	---	Not Applicable	---	800	0.7%
(10)	***Renewable Total:***	***61.0***	***0.2%***	***112.0***	***0.4%***	***1,804***	***1.58%***
(11)	***Purchases Other :***	***2,041.0***	***7.9%***	***2,074.0***	***7.7%***	***12,798***	***11.2%***
(12)	***Total:***	***25,824.0***	***100.0%***	***26,983.0***	***100.0%***	***114,373***	***100.0%***

Note:

(1) FPL Existing Units Total values on row (7), columns (2) and (4), match the System Firm Generating Capacity values found on Schedule 1 for Summer and Winter.

(2) Net Energy for Load GWh values on row (12), column (6), matches Schedule 6.1 value for 2010.

Schedule 11.2

Existing NON-FIRM Self-Service Renewable Generation Facilities
Actuals for the Year 2010

(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 Customers (GWh)
Customer-Owned PV (0 kW to 10 kW)	4.6	5,214.7	53,476.4	146.5	**58.5**
Customer-Owned PV (> 10 kW to 100 kW)	1.6	1,775.4	17,858.8	158.2	**19.5**
Customer-Owned PV (> 100 kW to 2 MW)	2.9	3,708.4	118,662.7	177.6	**118,666.2**
Total:	**9.2**	**10,698.5**	**189,998.0**	**482.2**	**118,744.2**

Notes:

(1) There were approximately 1,074 customer-owned renewable generation facilities interconnected with FPL on December 31, 2010.

(2) The Installed Capacity value is the sum of the nameplate ratings (DC MW) for all of the customer-owned renewable generation facilities connected as of Dec. 31,2010.

(3) The Projected Annual Output value is based on NREL's PV Watts 1 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.

(4) The Annual Energy Purchased from FPL is an actual value from FPL's metered data for 2010.

(5) The Annual Energy Sold to FPL is an actual value from FPL's metered data for 2010.

(6) The Projected Annual Energy Used by Customers is a projected value that equals:
(Renewable Projected Annual output + Annual Energy Purchased from FPL) minus the Annual Energy Sold to FPL.

CHAPTER IV

Environmental and Land Use Information

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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 carbon dioxide (CO_2) emission rates in the nation. The environmental leadership of FPL and its parent company, NextEra Energy, Inc., has been heralded by many outside organizations as demonstrated by a few recent examples. In 2010, NextEra Energy, Inc. (formerly FPL Group) ranked in the top 10 among companies worldwide for innovation and, for a record fourth consecutive year, No. 1 in its industry, according to the 2010 "World's Most Admired Companies" report released by Fortune magazine. In addition to being named the most admired company in its industry, NextEra Energy, Inc. received the No. 1 ranking among its peers in the following specific areas evaluated: innovation, people management, use of corporate assets, social responsibility, quality of management, long-term investment, and quality of products and services. According to *Fortune*, America's Most Admired Companies is "the definitive report card on corporate reputations".

NextEra Energy, Inc.'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 2010. 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 534 institutional investors with $64 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.

NextEra Energy, Inc. was named to the 2010 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."

FPL was recognized in 2010 by the Southeastern Electric Exchange (SEE) for outstanding performance in constructing the largest solar photovoltaic (PV) power plant at the time in the United States: the 25 MW DeSoto Next Generation Solar Energy Center. SEE gives its Chairman's Award annually to the project it deems "best of the best" among all entrants in its 11 award categories. Capable of powering approximately 3,000 homes with renewable energy, the DeSoto PV facility was completed months ahead of schedule and more than $22 million under budget.

FPL's responsible tree care practices across its 35-county service area have been recognized for almost a decade. FPL has been the recipient of the Tree Line USA award annually from 2003 - 2010. This award is sponsored by the Arbor Day Foundation in cooperation with the National Association of State Foresters. The recognition is given to utilities that demonstrate quality tree care practices, annual worker training, and public education programs.

In October 2010, FPL won the 2010 Loggerhead Marinelife Center's "Blue Business of the Year" award. The awards were given to those who are leading the way in raising awareness and have made significant contributions to improve and protect South Florida's oceans, beaches, and wildlife. The award recognized FPL's protection and conservation of the endangered Florida manatee and fostering public and employee education and support.

The 12th Annual Sustainable Florida Best Practice Awards were announced on June 4, 2010 in Orlando, Florida. FPL was named a finalist in the large business category for the previously mentioned 25 MW DeSoto PV facility. The awards were 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 December 2009, Next Era Energy was named Power Company of the Year at the Platts 2009 Global Energy Awards. Platts, the leading global provider of information on the energy industry, received more than 200 nominations for its annual awards program. Nominations came from more than 30 countries. FPL Group was selected as Power Company of the Year from among six finalists. The specific judging criteria were financial results, operational excellence, innovation, and strategic vision.

As mentioned above, NextEra Energy, Inc. 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 NextEra Energy, Inc.'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 Statement in 1992 to clearly define its position, which it continues to stand by today. 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 2010 environmental outreach activities are noted below in Table IV.E.1. In 2009 and 2010, FPL launched web cams at four facilities in order to increase public awareness of ongoing solar projects, FPL's commitment to sea turtle rehabilitiation, 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. The "turtle cam" installed at the Loggerhead Marinelife Center in Juno Beach provides interested onlookers the opportunity to view rescued sea turtles as they are nursed back to health in the sea turtle hospital. 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. 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/turtle_cam.shtml, and,
http://www.fpl.com/environment/plant/riviera_cam.shtml.

In 2010, FPL, in partnership with the Treasured Lands Foundation, officially re-opened the Barley Barber Swamp at the Martin Power Plant for public tours. The tours began in November of 2010.

Table IV.E.1: 2010 FPL Environmental Outreach Activities

Activity	# of Participants (Approx.)
Visitors to FPL's Energy Encounter at St. Lucie	17,000
Visitors to Manatee Park	272,243
Number of visits to FPL's Environmental Website	400,000
Number of pieces of Environmental literature distributed	>60,000
Solar Schools Program (# of schools participating)	8 (6 new in 2010)
Visitors to Barley Barber Swamp	943
Number of visits to Manatee Cam Website	45,000
Number of visits to Turtle Cam Website	36,000
Number of visits to Space Coast WebCam Website	500
Number of visits to Martin WebCam Website	1,500

IV.F Preferred and Potential Sites

Based upon its projection of future resource needs, FPL has identified five (5) Preferred Sites and thirteen (13) 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 all of the remainder of FPL's existing generation sites and other Greenfield sites. FPL is also analyzing the potential for modernizing existing power plant sites such as is now being done at the Cape Canaveral and Riviera sites. For example, the existing Port Everglades site is a potential site for modernization. Other existing sites may also emerge in the ongoing analyses as potential candidates for modernization. Analyses of any modernization candidates would include evaluation of numerous factors including: fuel delivery, transmission, permitting, etc.

IV.F.1 Preferred Sites

FPL identifies five Preferred Sites in this Site Plan: the existing West County Energy Center (WCEC) site, the existing St. Lucie plant site, the existing Turkey Point plant site, the existing Cape Canaveral plant site, and the existing Riviera plant site.

The West County Energy Center site is the location for one combined cycle (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 Turkey Point site is the location for nuclear capacity uprates that FPL will make in 2012 and 2013. (Turkey Point is also the site for two new nuclear units, Turkey Point Units 6 & 7, for which FPL is pursuing licensing and permit approvals. Current projections for in-service dates these new nuclear units are beyond the 2011-2020 reporting time frame of this document). The Cape Canaveral and Riviera sites are the locations for modernizations of existing power plant sites for capacity additions in 2013 and 2014, respectively.

The five Preferred Sites are discussed below in general chronological order in regard to when the capacity additions are projected to occur.

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 further 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

The primary water source for the entire site is reclaimed (reuse) water from Palm Beach County Water Utilities Department. Reclaimed water is being used for cooling, service, and process water for Units 1 and 2 and as start-up water for Unit 3. Backup water sources include utilizing the Floridan Aquifer allocation permitted for WCEC Units 1, 2, & 3. Potable water is purchased from the Palm Beach County water municipality.

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.

Testing during construction of Exploratory Well 2 (EW-2) demonstrated the presence of a highly permeable zone (Boulder Zone) in the Oldsmar Formation below a depth of 2,790 feet below pad level (bpl) overlain by a thick confining interval (Avon Park Formation) 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 confirmed that the hydrogeology of the EW-2 site is favorable for disposal of fluids via a deep injection well system. FPL converted EW-2 to an injection well and installed a second injection well (IW-1 and IW-2, respectively). FPL conducted operational testing on the wells and applied for an operational permit. FDEP has issued a Notice of Intent to issue a Class I operational permit for the two injections wells and the associated dual-zone monitoring well.

k. Projected Water Quantities for Various Uses

The estimated annual average quantity of water required for industrial processing and cooling for all 3 units is up to 29 million gallons per day (mgd). Cooling water for the three generating units would be cycled through cooling towers.

l. Water Supply Sources by Type

WCEC Units 1 & 2, and eventually Unit 3, will use reclaimed water as the primary source of cooling water for the cooling tower with the Floridan Aquifer as backup. 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 South Florida Water Management District (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 storm water may be reused in the cooling tower whenever feasible. Storm water captured in the storm water 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 waste streams, 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 storm water 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. <u>Fuel Delivery, Storage, Waste Disposal, and Pollution Control</u>

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. <u>Air Emissions and Control Systems</u>

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. In total, the designs of the WCEC generating units incorporate features that will make the units among the most efficient and cleanest power plants in the State of Florida.

q. <u>Noise Emissions and Control Systems</u>

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. <u>Status of Applications</u>

In regard to WCEC Unit 3, a Site Certification Application (SCA) was filed in December 2007 and the unit 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 June 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 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 122 MW for St. Lucie Unit 1 and 110 MW for St. Lucie Unit 2. The difference between the two values 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 partially beginning in 2011 and in their entirety in 2012.[4]

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.

[4] FPL has also been pursuing the addition of six wind turbines at the St. Lucie plant site for a number of years. However, to-date FPL has been unable to obtain the necessary local land use approvals that would first be needed before state and federal approvals could be sought.

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.

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.

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 imbriccata*), 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.

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. The cooling system for the two generating units 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 17F abov e the ambient temperature of the intake water.

In regard to the nuclear capacity uprates, the once-through cooling system will continue to be used for the nuclear units.

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.

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

The source of cooling water for the St. Lucie Plant is the Atlantic Ocean. The once-through cooling system flow will not change as a result of the nuclear uprates. Due to the existing nature of the St. Lucie Plant, surrounding surface waters will not be adversely affected by the generation capacity addition. 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 extends 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

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.

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.

m. Water Conservation Strategies Under Consideration

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

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.

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. 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 generating 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 the 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 the nuclear capacity uprates.

In addition, the generation capacity additions will not result in an increase of CO_2 or other greenhouse gas emissions. In fact, the 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. Predicted noise levels are not expected to result in adverse noise impacts in the vicinity of the site during construction or operation.

r. **Status of Applications**

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.

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 steam 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 109 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 and early 2013.

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 2011 - 2020 reporting time frame of this document.

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 natural gas-fired combined cycle (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 projected increase in water temperature entering the cooling canal system from the units resulting from the uprates is predicted to be about 2.5F, from 106.1F to 108.6F. The associated projected ma ximum increase in water temperature returning to the units is about 0.9F, from 91.9F to 92.8F.

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 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. <u>Air Emissions and Control Systems</u>

The normal operation of Turkey Point Units 3 & 4 does not create fossil fuel-related air emissions. However, there are nine 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 generators 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. <u>Noise Emissions and Control Systems</u>

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 site previously housed two steam units (Units 1 & 2) with 788 MW (summer) of generating capacity. The units formerly occupied a portion of the 43 acres that are wholly owned by FPL. The units have been taken out of service and dismantlement of the Cape Canaveral Plant began in mid-2010 and is expected to be complete by the end of first quarter 2011.

The Cape Canaveral Plant site has been listed as a Potential Site in previous FPL Site Plans for both CC and simple cycle combustion turbine (CT) generation options. FPL is in the process of modernizing the existing Cape Canaveral Plant, to be renamed the Cape Canaveral Next Generation Clean Energy Center (CCEC), by replacing the previous two steam generating units with a single modern, highly efficient, lower-emission next-generation clean energy center using the latest CC technology.

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

A USGS map of the CCEC 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 and future land uses on the site are primarily dedicated to electrical generation; i.e., FPL's former Cape Canaveral Units 1 & 2 and the future CCEC unit. 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 continues to work closely with state and federal wildlife agencies to ensure protection of the manatees during the modernization process and upon operation of the new plant. In 2010, FPL installed a temporary heating system to warm the water for the manatees as required during manatee season. FPL will also be complying with several other manatee-related conditions of certification to ensure the protection of the manatees during the modernization work.

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 1,210 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 is projected to 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".

h. **Site Selection Criteria Process**

The Cape Canaveral Plant has been selected 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 previous steam units with a new CC unit including a significant reduction in system fuel use, a significant reduction in system air emissions, improved aesthetics at the site, and continued warm water discharge for the manatees as required during manatee season. Further, modernizing this existing facility reduces the impact on natural resources by not requiring new land, new water sources, or additional off-site transmission siting.

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 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 modernized 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 St. John's River Water Management District (SJRWMD) conditions of certification. Process and potable water for the new plant will come from the existing City of Cocoa's potable water supply. Reclaimed water will be used for irrigation.

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 will be transported to the site via a pipeline. New off-site or on-site gas compressors will be installed to raise the gas pressure of the existing pipeline for the new unit. Ultra-low sulfur light fuel oil will 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 over 90% 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. In total, 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 previous site generating capacity was made up of two 300 MW (approximate) steam generating units (Units 3 & 4) that have been taken out of service and will be dismantled in 2011. Units 1 & 2 were previously 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 combustion turbine (CT) generation options. FPL is in the process of modernizing 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 RBEC 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 previous Riviera Plant consisted 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 generating units. The site is located adjacent to the Intracoastal waterway. The site provides warm water as required for manatees during manatee season.

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 continues to work closely with state and federal wildlife agencies to ensure protection of the manatees during the modernization process and upon operation of the new plant. In 2009, FPL installed a temporary heating system to warm the water for the manatees as required during manatee season. FPL will also be complying with several other manatee-related conditions of certification to ensure the protection of the manatees during the modernization work.

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 1,212 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 is projected to 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 for 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, improved aesthetics at the site and continued warm water discharge for the manatees as required during manatee season. Further, modernizing this existing facility reduces the impact on natural resources by not requiring new land or new water sources.

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 modernized 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 authorized under SFWMD conditions of certification. 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 modernized 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 an approximately 6 mile FPL-owned pipeline, the RBEC Lateral. New gas compressors will be installed at the existing FPL 45th Street Terminal facility in Riviera Beach to raise the gas pressure of the pipeline to the appropriate level for the new 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 previous 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. Final approval for the RBEC 6 mile pipeline lateral and compressor station is expected by end of March 2011.

IV.F.2 Potential Sites for Generating Options

Thirteen (13) sites are currently identified as Potential Sites for near-term future generation additions to meet FPL's projected capacity and energy needs.[5] These sites have been identified as Potential Sites due to considerations of location to FPL load

[5] 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.

centers, space, infrastructure, and/or accessibility to fuel and transmission facilities. These sites are suitable for different capacity levels and technologies, including both renewable energy and non-renewable energy technologies for various sites.

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 and attention. Solely for the purpose of estimating water requirements for sites more suited for non-renewable energy technologies, it was assumed that either one dual-fuel (natural gas and light oil) simple cycle CT or a natural gas-fired CC unit would be constructed at these Potential Sites unless otherwise noted.

A simple cycle CT would require approximately 50 gallons per minute (gpm) for both process and cooling water (assuming a cooling tower was utilized). A CC unit would require approximately up to 150 gpm for process water and up to 7.5 million gallons per day (mgd) per unit for cooling water (assuming a cooling tower is utilized). If an existing power plant site is ultimately selected for modernization (as is the case with FPL's Cape Canaveral and Riviera sites), the water requirements discussed above for a CC unit would be approximately correct for the modernized site. If a renewable energy generating technology is ultimately selected for one of these sites, the water requirements would be significantly 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. As noted previously, FPL also considers a number of other sites as possible sites for future generation additions. These include all of the remainder of FPL's existing generation sites and other Greenfield sites.

Potential Site # 1: Babcock Ranch , Charlotte County

This site is located within the proposed Babcock Ranch Community on the north side of Tuckers 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 Preserve 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. 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 the Babcock Ranch Overlay District, and it is zoned as the Babcock Ranch Overlay Zoning District. This land use and zoning allows for solar facilities.

c. Environmental Features

FPL would anticipate mitigating for any panther and/or wetland impacts as a result of a PV project at this site.

d. Water Quantities

Minimal amounts of water would be required for a PV facility.

e. Supply Sources

Minimal water would be required for a PV facility. A small amount 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 5,177 acres for development of a photovoltaic (PV) facility.

The DeSoto site was previously selected as the site for the addition of a 25 MW PV facility, which is operational. There is also a potential to create an additional 275 MW PV generating facility which could 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. The future land use is Electric Generating Facility.

c. **Environmental Features**

There are no significant environmental features on the site.

d. **Water Quantities**

Minimal amounts of water would be required for a future expansion of the existing PV facility.

e. **Supply Sources**

Minimal water would be required at for an expanded PV facility. A small amount may be needed to occasionally clean the solar panels in the absence of sufficient rainfall and potable water will be required in the administration building and maintenance building. FPL would propose to utilize existing wells onsite to accommodate water needs.

Potential Site # 3: Florida Heartland, Glades County

This site is located within Glades County 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 use on the site is agriculture.

c. **Environmental Features**

FPL would anticipate mitigating for any wildlife and/or wetland impacts as a result of a PV project at this site.

d. **Water Quantities**

Minimal amounts of water would be required for a PV facility.

e. **Supply Sources**

Minimal water would be required for a PV facility. A small amount 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: Hendry County

FPL is currently evaluating potential sites in Hendry County for a future PV facility or fossil generation. Sites currently under investigation are approximately 1,500 acres. No specific locations have been selected at this time.

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

A USGS map of the county has been included at the end of this chapter.

b. **Land Uses**

Hendry County has predominantly agricultural land use.

c. **Environmental Features**

This information is 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 PV facility. Fossil generation would require approximately up to 150 gallons per minute (gpm) for process water and up to 7.5 million gallons per day (mgd) per unit for cooling water (assuming a cooling tower is utilized).

e. **Supply Sources**

Minimal water would be required for a PV facility. A small amount may be needed to occasionally clean the solar panels in the absence of sufficient rainfall. The supply of water for fossil generation would be dependent upon the selection of a specific site.

Potential Site # 5: Manatee Plant Site, 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 possible location for an FPL PV.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. The property is zoned Planned Development / Public Interest (PD-PI), which will allow for electrical generation.

c. **Environmental Features**

FPL would anticipate mitigating for any wildlife and/or wetland impacts as a result of a PV project at this site.

d. **Water Quantities**

Minimal amounts of water would be required for a PV facility.

e. **Supply Sources**

Minimal water would be required for a PV facility. A small amount may be needed to occasionally clean the solar panels in the absence of sufficient rainfall.

Potential Site # 6: Martin County

FPL is currently evaluating potential sites in Martin County for a future PV facility. No specific locations have been selected at this time.

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

A USGS map of the county has been included at the end of this chapter.

b. **Land Uses**

This information is not available because a specific site has not been selected at this time.

c. **Environmental Features**

This information is 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 PV facility.

e. **Supply Sources**

Minimal water would be required for a PV facility. A small amount may be needed to occasionally clean the solar panels in the absence of sufficient rainfall.

Potential Site # 7: Northeast Okeechobee County

FPL is currently evaluating potential sites in Northeast Okeechobee County for a future PV facility or fossil generation. Sites currently under investigation are approximately 1,500 acres. No specific locations have been selected at this time.

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

A USGS map of the county has been included at the end of this chapter.

b. **Land Uses**

Northeast Okeechobee County has predominantly agricultural land use.

c. **Environmental Features**

This information is not available because a specific site has not been selected at this time.

d. **Water Quantities**

As previously discussed, needed water quantities for fossil generation would be up to 150 gallons per minute (gpm) for process water and up to 7.5 million gallons per day (mgd) per unit for cooling water (assuming a cooling tower would be utilized). Needed water quantities would be significantly less for a PV facility.

e. **Supply Sources**

Existing groundwater and/or regional water supply initiatives are potential water sources.

Potential Site # 8: Palatka Site, Putnam County

FPL is currently evaluating a site adjacent to the FPL Putnam Plant in Putnam County for future fossil generation. The approximately 170 acre site was the location of the former FPL Palatka Plant which was dismantled in the 1990s.

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

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

b. **Land Uses**

The site has a land use designation of Industrial.

c. **Environmental Features**

The majority of site has been previously impacted by past power plant operations. No significant environmental features have been identified at this time.

d. **Water Quantities**

As previously discussed, needed water quantities would be up to 150 gallons per minute (gpm) for process water and up to 7.5 million gallons per day (mgd) per unit for cooling water (assuming cooling tower).

e. **Supply Sources**

The St John's River, existing groundwater, and/or regional water supply initiatives are potential water sources.

Potential Site # 9: Port Everglades Plant, Broward County

The 94-acre FPL Port Everglades plant site is located at Port Everglades in Broward County. The site has convenient access to State Road (S.R.) 84 and I-595. Rail line is located near the plant. The existing plant consists of four steam boiler generating units: two 200 MW (approximate) and two 400 MW (approximate) sized units. The four steam boilers are capable of firing residual fuel oil, natural gas, or a combination of both. The site is also home to 12 simple cycle gas turbine (GT) peaking units of 35 MW (approximate) each. The GTs are capable of firing either natural gas or liquid fuel. This site is being considered for a potential modernization.

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

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

b. **Land Uses**

The land on this site is primarily industrial. The adjacent land uses are port facilities and associated industrial activities, oil storage, cruise ships, and light commercial.

c. **Environmental Features**

The shoreline of the intake and discharge canal banks are vegetated with fringing mangrove, with some open, maintained grass areas on the side.

d. **Water Quantities**

Water quantities would be up to 150 gallons per minute (gpm) for process water and up to 7.5 million gallons per day (mgd) per unit for cooling water (assuming cooling tower).

e. **Supply Sources**

Existing groundwater or the municipal water supply could be used for industrial process and makeup water. Industrial cooling water needs could be met using the existing once-through cooling water system.

Potential Site # 10: Putnam County

FPL is currently evaluating potential sites in Putnam County for a future PV facility or fossil generation. Sites currently under investigation are approximately 2,800 acres. No specific locations have been selected at this time.

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

A USGS map of the county has been included at the end of this chapter.

b. **Land Uses**

Not available because a specific site has not been selected at this time.

c. **Environmental Features**

This information is 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 PV facility. Fossil generation would require approximately up to 150 gallons per minute (gpm) for process water and up to

7.5 million gallons per day (mgd) per unit for cooling water (assuming a cooling tower is utilized).

e. **Supply Sources**

Existing groundwater is a potential water source.

Potential Site # 11: Southwest Indian River County

FPL is currently evaluating potential sites in Southwest Indian River County for a future PV facility or fossil generation. Sites currently under investigation are approximately 1,500 acres. No specific locations have been selected at this time.

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

A USGS map of the county has been included at the end of this chapter.

b. **Land Uses**

Southwestern Indian River County has 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 for fossil generation would be up to 150 gallons per minute (gpm) for process water and up to 7.5 million gallons per day (mgd) per unit for cooling water (assuming a cooling tower is utilized). Needed water quantities would be significantly less for a PV facility.

e. **Supply Sources**

Existing groundwater is a potential water source.

Potential Site # 12: Space Coast Solar Expansion, Brevard County

The Space Coast site is located at NASA's Kennedy Space Center property in Brevard County. This site currently consists of a 10 MW PV facility with the potential to expand by another 10 MW. Also, FPL is evaluating the potential for further expansion beyond the existing site, within the Space Center property.

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**

NASA, a federal agency, has approved use of the land at the site for PV generation.

c. **Environmental Features**

There are no significant environmental features on this site.

d. **Water Quantities**

Minimal amounts of water would be required for an expansion of the PV facility.

e. **Supply Sources**

No water would be required for an expansion of 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 or would come from existing onsite wells.

Potential Site # 13: West Broward, Broward County

FPL has identified its Andytown Substation property in western unincorporated Broward County as a potential site for the addition of new fossil 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 county has been included at the end of this chapter.

b. **Land Uses**

The land uses for the site are designated as agricultural use.

c. **Environmental Features**

Extensive low-quality wetlands are present on the site. Known presence of listed species nearby, e.g. wood storks, will require further investigation.

d. **Water Quantities**

As previously discussed, needed water quantities for fossil generation would be up to 150 gallons per minute (gpm) for process water and up to 7.5 million gallons per day (mgd) per unit for cooling water (assuming a cooling tower is utilized).

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.

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Environmental and Land Use Information: Supplemental Information

Preferred Site#1: West County Energy Center

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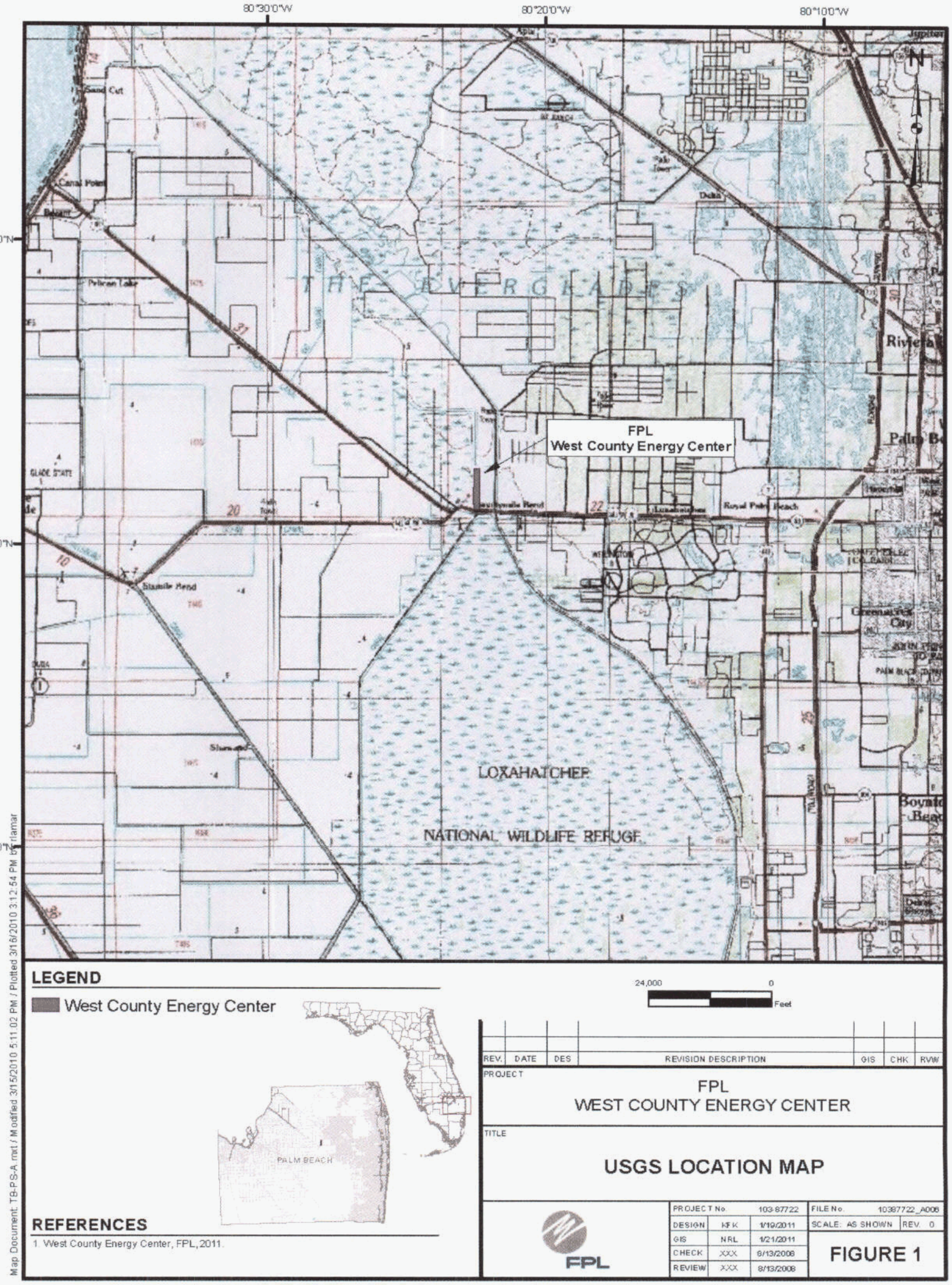
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REFERENCES
1. West County Energy Center, FPL, 2011.
REV. | DATE | DES | REVISION DESCRIPTION | GIS | CHK | RVW
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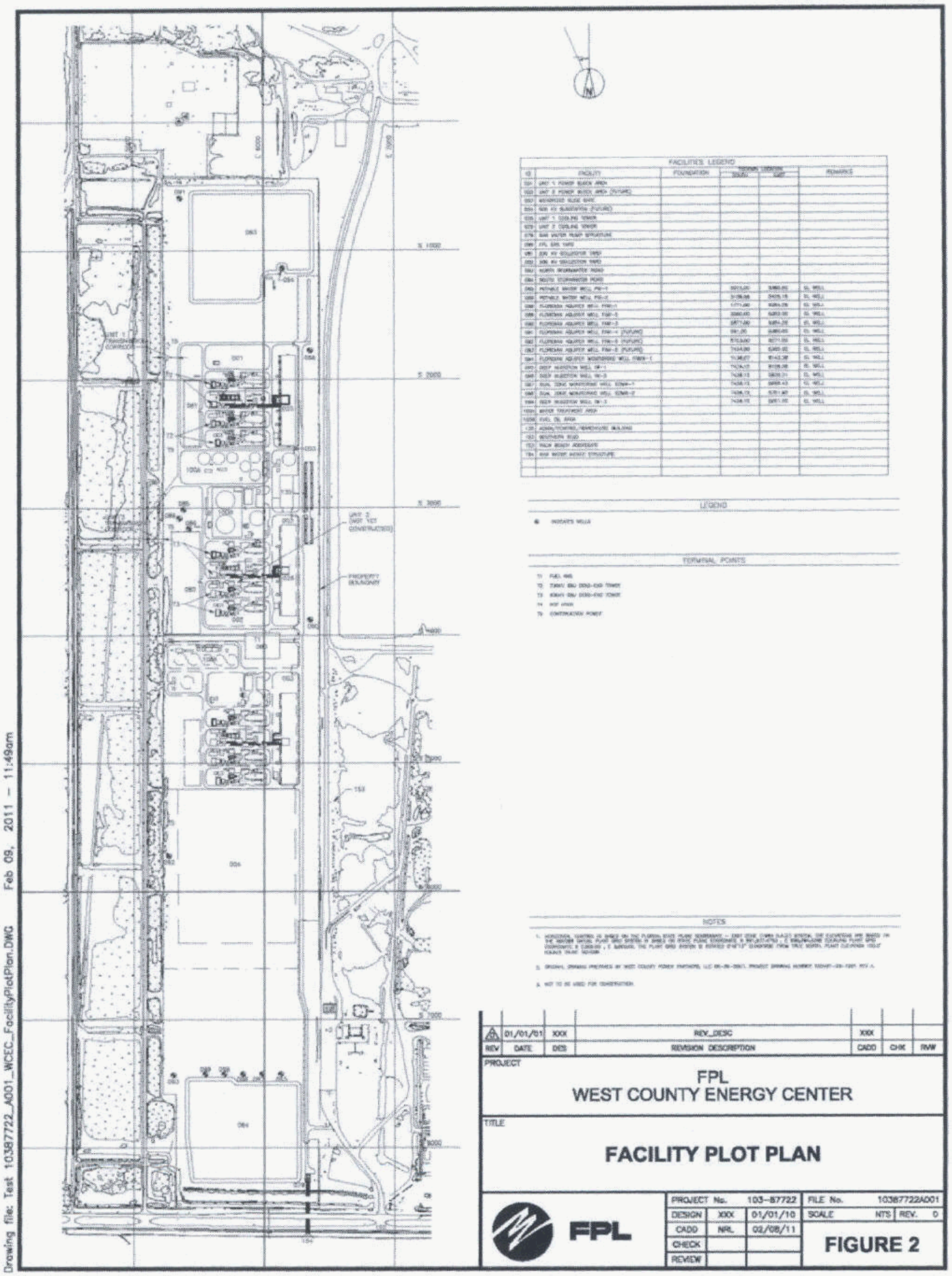

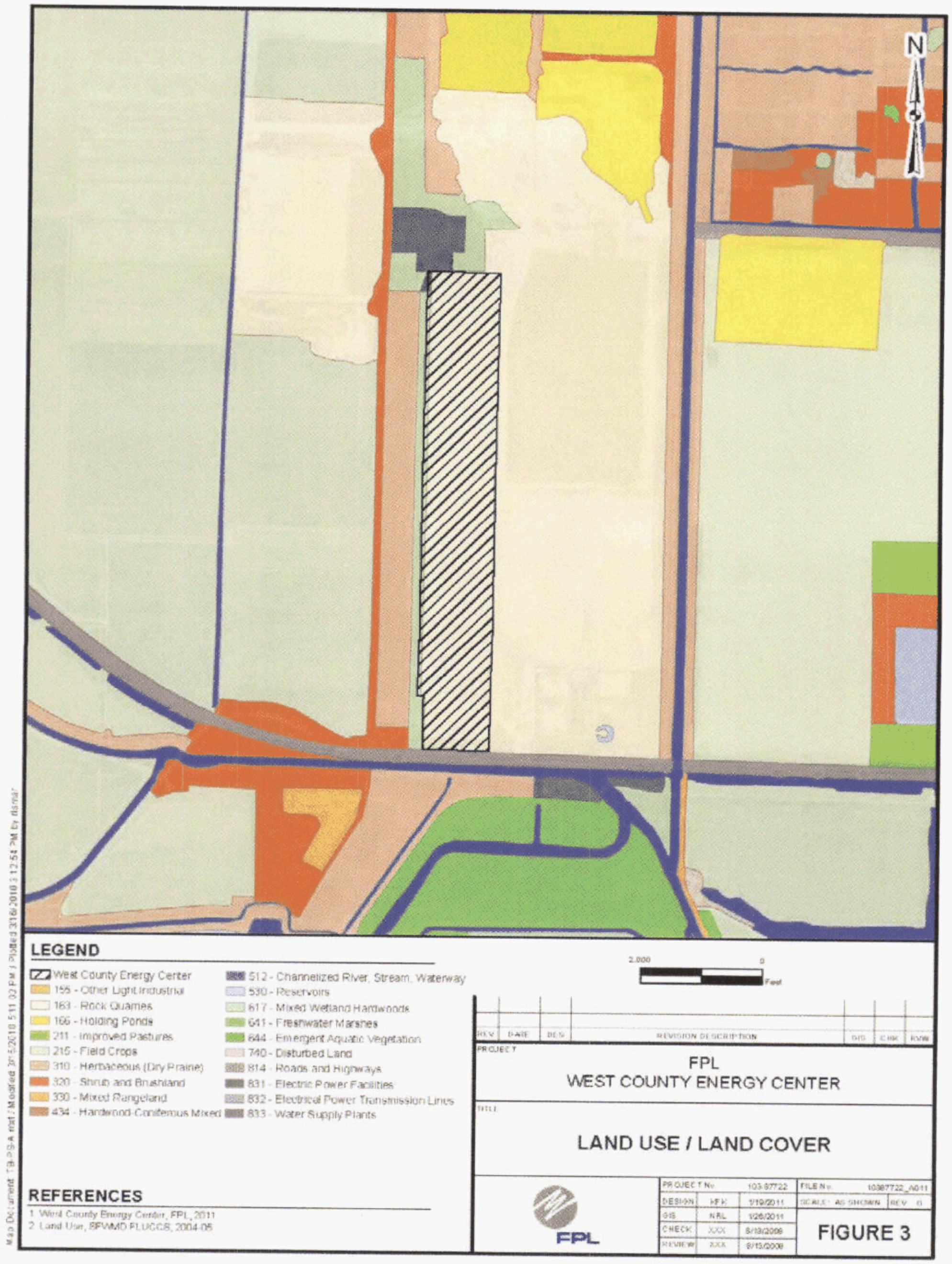
N
LEGEND
West County Energy Center
155 - Other Light Industrial
163 - Rock Quarries
166 - Holding Ponds
211 - Improved Pastures
215 - Field Crops
310 - Herbaceous (Dry Prairie)
320 - Shrub and Brushland
330 - Mixed Rangeland
434 - Hardwood-Coniferous Mixed
512 - Channelized River, Stream, Waterway
530 - Reservoirs
617 - Mixed Wetland Hardwoods
641 - Freshwater Marshes
644 - Emergent Aquatic Vegetation
740 - Disturbed Land
814 - Roads and Highways
831 - Electric Power Facilities
832 - Electrical Power Transmission Lines
833 - Water Supply Plants
REFERENCES
1. West County Energy Center, FPL, 2011
2. Land Use, SFWMD FLUCCS, 2004-05
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WEST COUNTY ENERGY CENTER
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FIGURE 3

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Environmental and Land Use Information: Supplemental Information

Preferred Site #2: St. Lucie Plant

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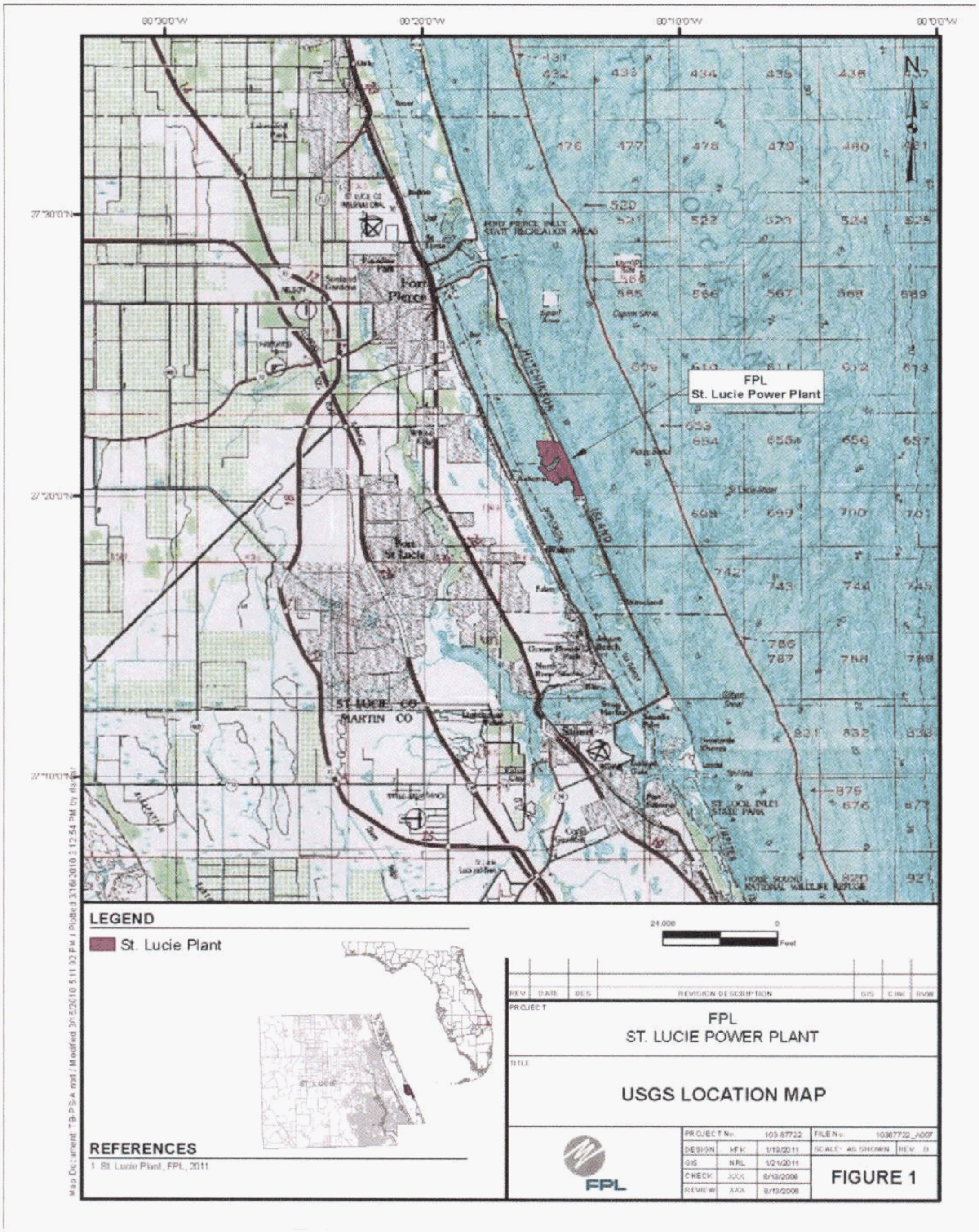
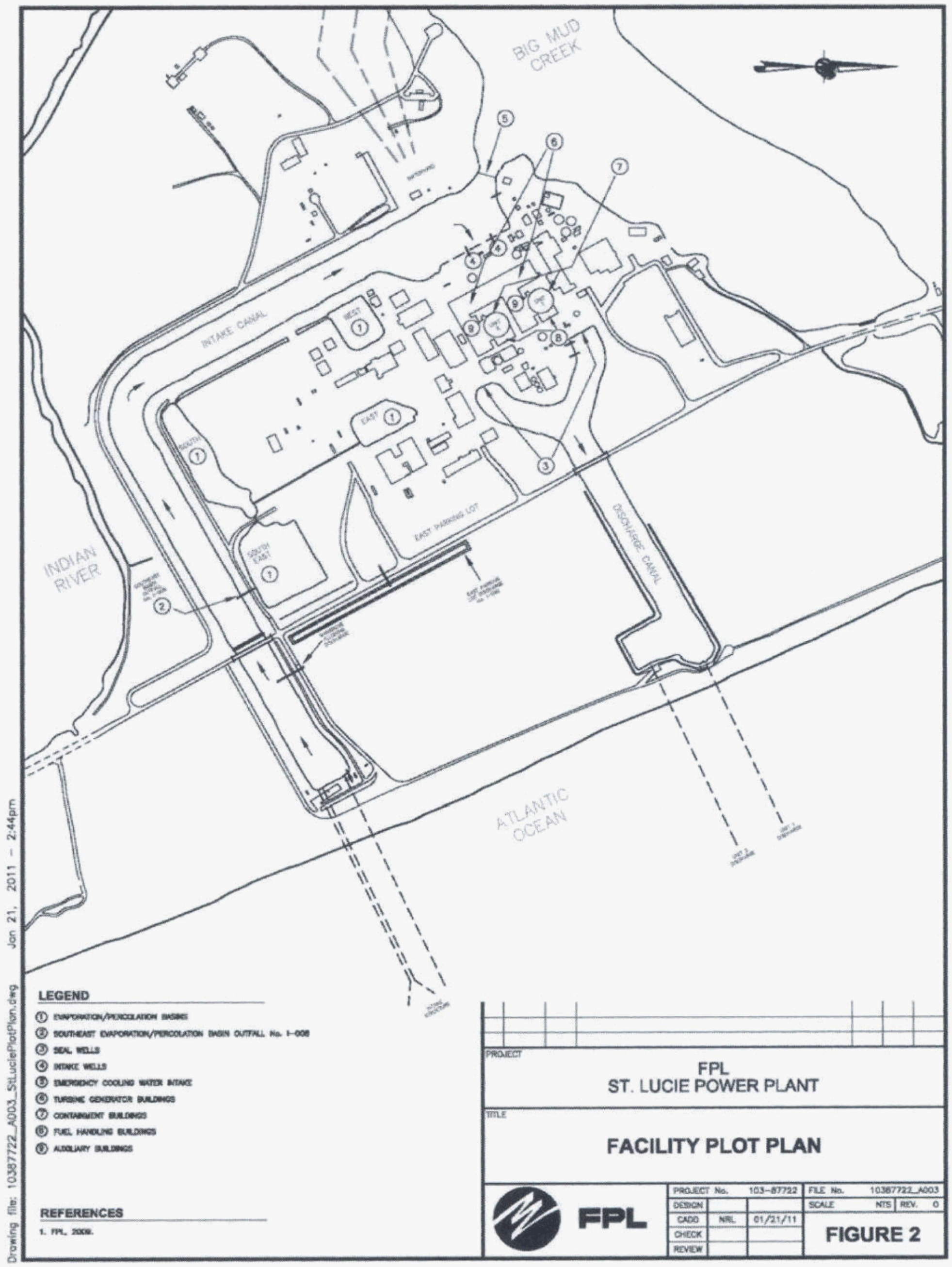


N
FPL
St. Lucie Power Plant
Fort Pierce
ST LUCIE CO
MARTIN CO
LEGEND
St. Lucie Plant
REFERENCES
1. St. Lucie Plant, FPL, 2011
FPL
ST. LUCIE POWER PLANT
USGS LOCATION MAP
FPL
FIGURE 1


BIG MUD CREEK
INTAKE CANAL
INDIAN RIVER
ATLANTIC OCEAN
DISCHARGE CANAL
EAST PARKING LOT
WEST
EAST
SOUTH
SOUTH EAST
LEGEND
① EVAPORATION/PERCOLATION BASINS
② SOUTHEAST EVAPORATION/PERCOLATION BASIN OUTFALL No. I-008
③ SEAL WELLS
④ INTAKE WELLS
⑤ EMERGENCY COOLING WATER INTAKE
⑥ TURBINE GENERATOR BUILDINGS
⑦ CONTAINMENT BUILDINGS
⑧ FUEL HANDLING BUILDINGS
⑨ AUXILIARY BUILDINGS
REFERENCES
1. FPL, 2009.
PROJECT
FPL
ST. LUCIE POWER PLANT
TITLE
FACILITY PLOT PLAN
FPL
PROJECT No. 103-87722
DESIGN
CADD NRL 01/21/11
CHECK
REVIEW
FILE No. 10387722_A003
SCALE NTS REV. 0
FIGURE 2
Drawing file: 10387722_A003_StLuciePlotPlan.dwg Jan 21, 2011 - 2:44pm


N
Big Mud Creek
LEGEND
St. Lucie Plant
111 - Fixed Single Family Units
134 - Multiple Dwelling Units, High Rise <Three stories or more>
139 - High Density Under Construction
181 - Swimming Beach
322 - Coastal Scrub
420 - Upland Hardwood Forests
422 - Brazilian Pepper
428 - Cabbage Palm
437 - Australian Pines
511 - Natural River, Stream, Waterway
512 - Channelized River, Stream, Waterway
520 - Lakes
530 - Reservoirs
541 - Embayments opening directly into the Gulf or Ocean
543 - Saltwater Ponds
571 - Atlantic Ocean
612 - Mangrove Swamps
642 - Saltwater Marshes
643 - Wet Prairies
644 - Emergent Aquatic Vegetation
831 - Electric Power Facilities
834 - Sewage Treatment
REFERENCES
1. St. Lucie Plant, FPL, 2011
2. Land Use, SFWMD FLUCCS, 2004-05
2,000
0
Feet
REV
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
ST. LUCIE POWER PLANT
TITLE
LAND USE / LAND COVER
FPL
PROJECT No. 103-87722
FILE No. 10387722_A012
DESIGN KFK 1/19/2011
SCALE: AS SHOWN
REV 0
GIS NRL 1/21/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FIGURE 3

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Environmental and Land Use Information: Supplemental Information

Preferred Site #3: Turkey Point Plant

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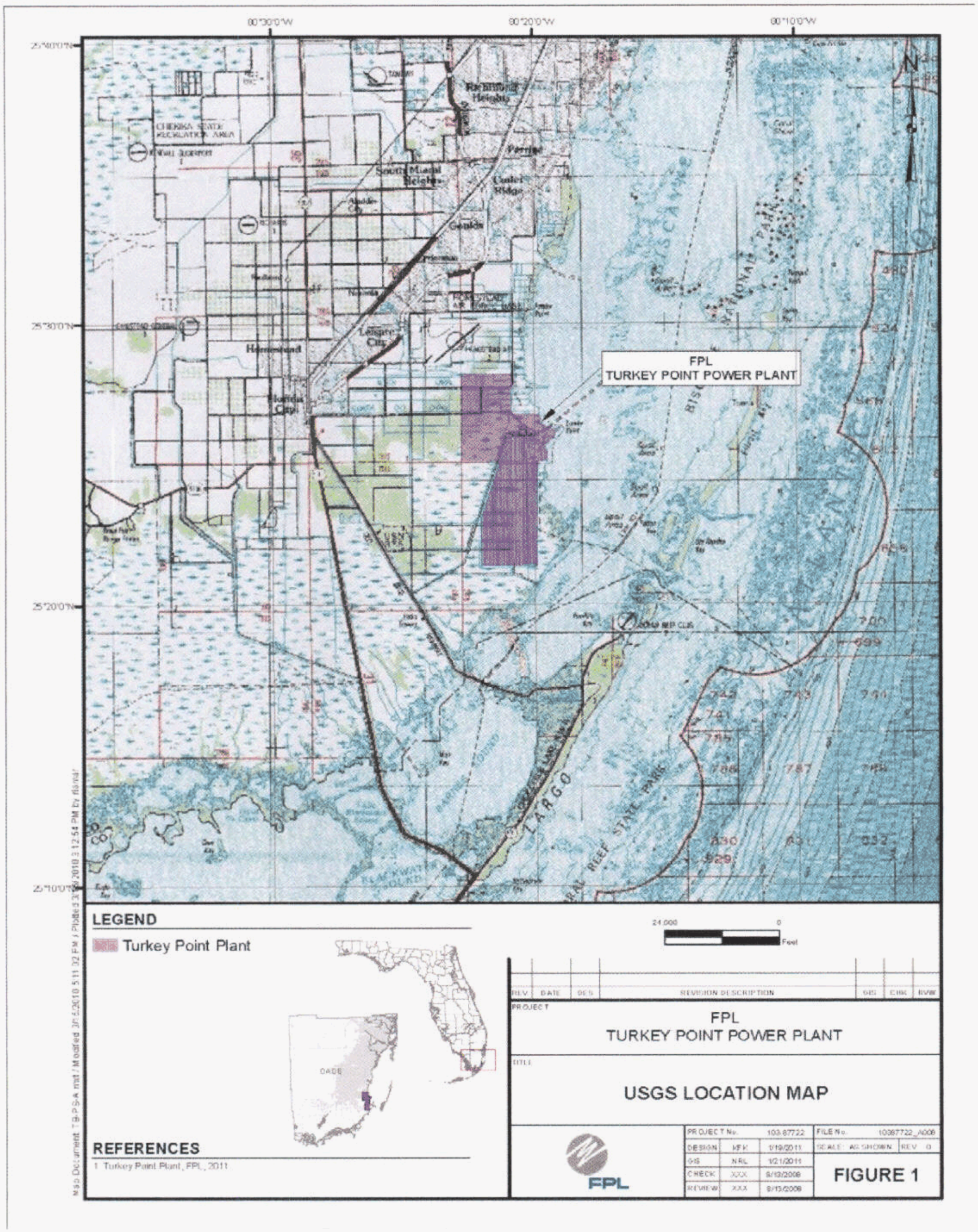
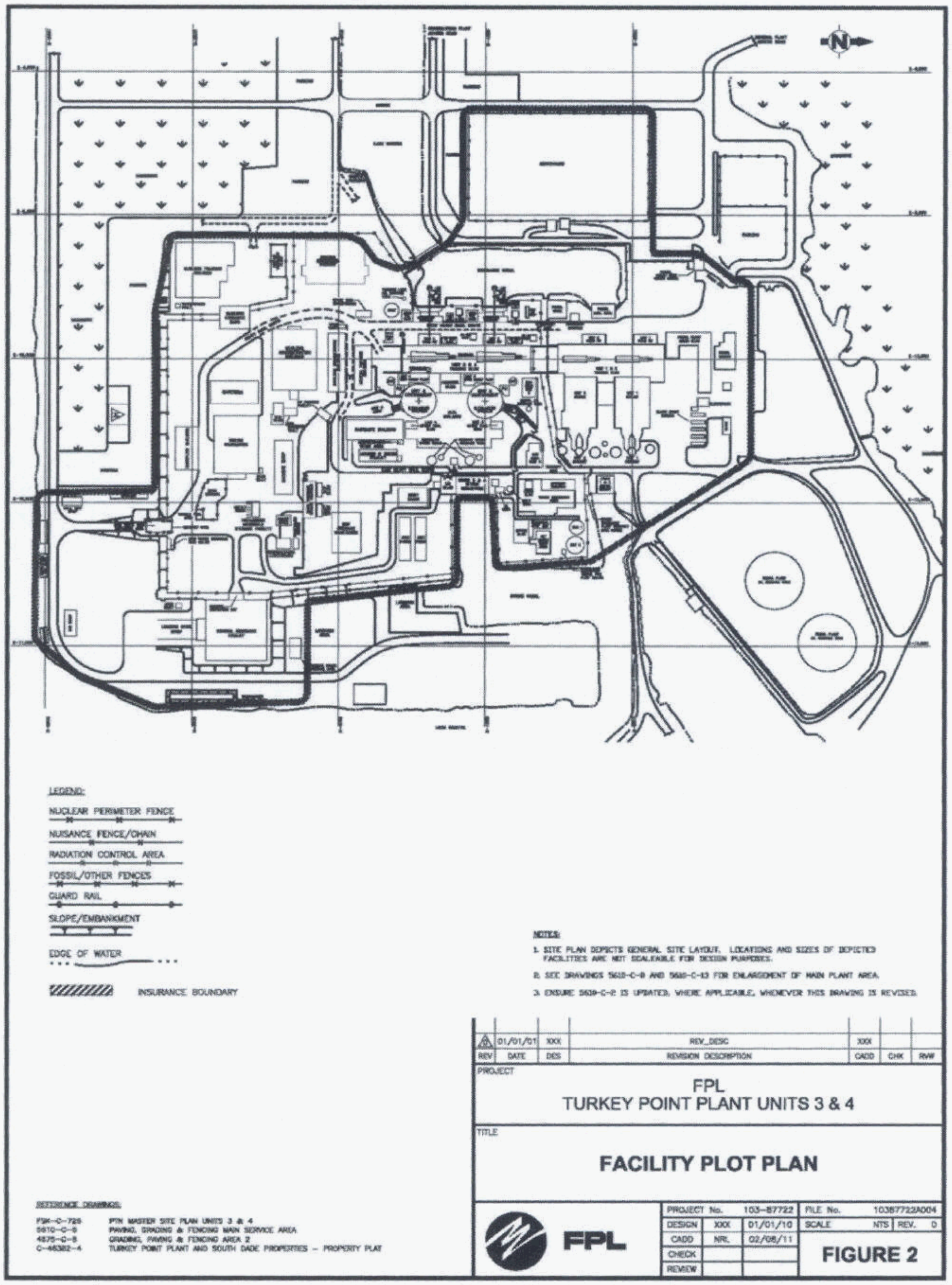
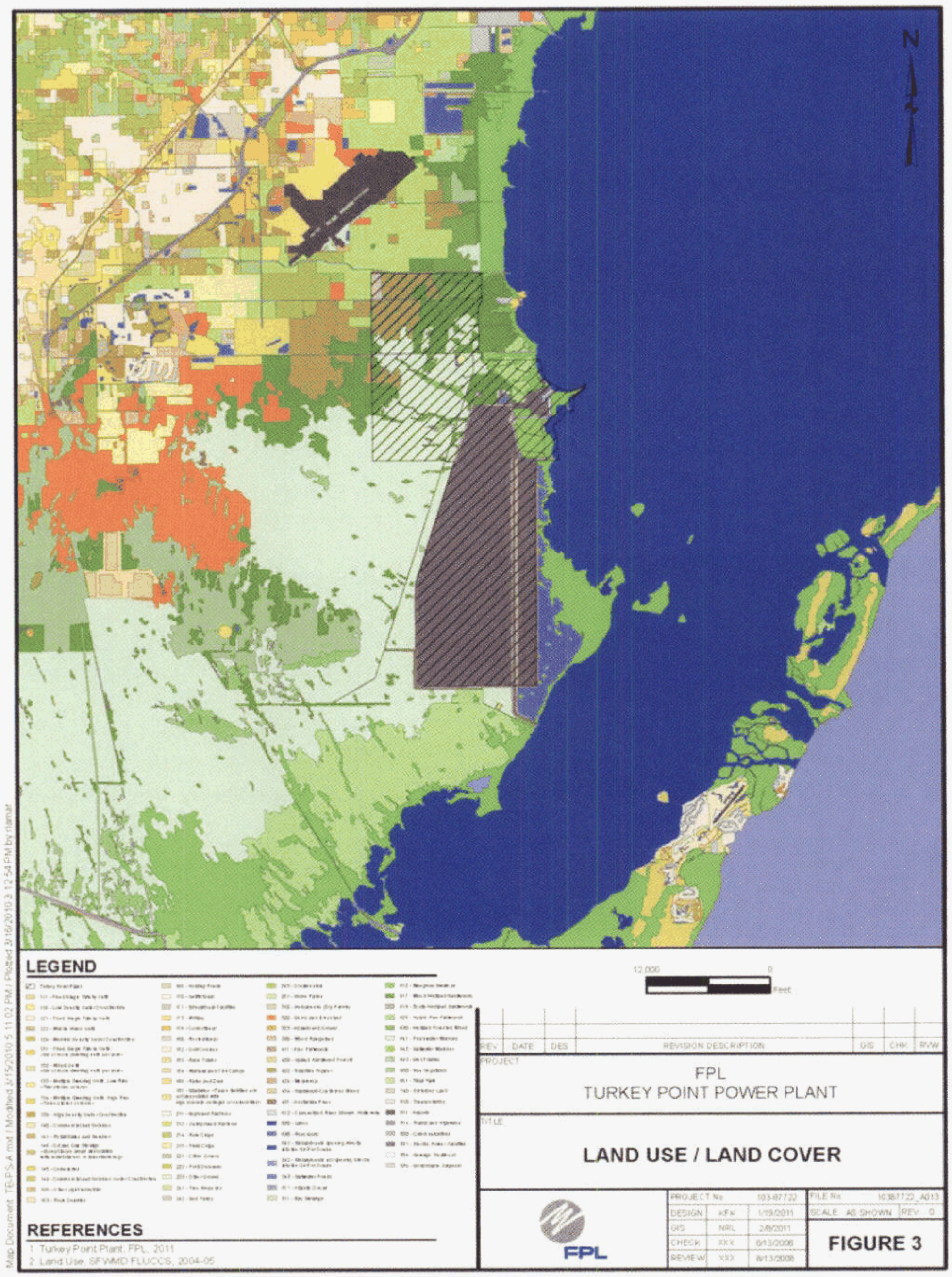

FPL
TURKEY POINT POWER PLANT
LEGEND
Turkey Point Plant
REFERENCES
1. Turkey Point Plant, FPL, 2011
FPL
TURKEY POINT POWER PLANT
USGS LOCATION MAP
FPL
FIGURE 1


LEGEND:
NUCLEAR PERIMETER FENCE
NUISANCE FENCE/CHAIN
RADIATION CONTROL AREA
FOSSIL/OTHER FENCES
GUARD RAIL
SLOPE/EMBANKMENT
EDGE OF WATER
INSURANCE BOUNDARY
NOTES:
1. SITE PLAN DEPICTS GENERAL SITE LAYOUT. LOCATIONS AND SIZES OF DEPICTED FACILITIES ARE NOT SCALEABLE FOR DESIGN PURPOSES.
2. SEE DRAWINGS 5610-C-8 AND 5610-C-13 FOR ENLARGEMENT OF MAIN PLANT AREA.
3. ENSURE 5610-C-2 IS UPDATED, WHERE APPLICABLE, WHENEVER THIS DRAWING IS REVISED.
REFERENCE DRAWINGS:
PTN MASTER SITE PLAN UNITS 3 & 4
PAVING, GRADING & FENCING MAIN SERVICE AREA
GRADING, PAVING & FENCING AREA 2
TURKEY POINT PLANT AND SOUTH DADE PROPERTIES – PROPERTY PLAT
01/01/01 XXX REV_DESC XXX
REV DATE DES REVISION DESCRIPTION CADD CHK RVW
PROJECT
FPL
TURKEY POINT PLANT UNITS 3 & 4
TITLE
FACILITY PLOT PLAN
FPL
PROJECT No. 103-87722
FILE No. 10387722A004
DESIGN XXX 01/01/10
SCALE NTS REV. 0
CADD NRL 02/08/11
CHECK
REVIEW
FIGURE 2


N
LEGEND
12,000
0
Feet
REV
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
TURKEY POINT POWER PLANT
TITLE
LAND USE / LAND COVER
FPL
PROJECT No. 103-87722
DESIGN KFK 1/19/2011
GIS NRL 2/8/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FILE No. 10387722_A013
SCALE AS SHOWN
REV 0
FIGURE 3
REFERENCES
1 Turkey Point Plant, FPL, 2011
2 Land Use, SFWMD FLUCCS, 2004-05

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Environmental and Land Use Information: Supplemental Information

Preferred Site #4: Cape Canaveral Plant

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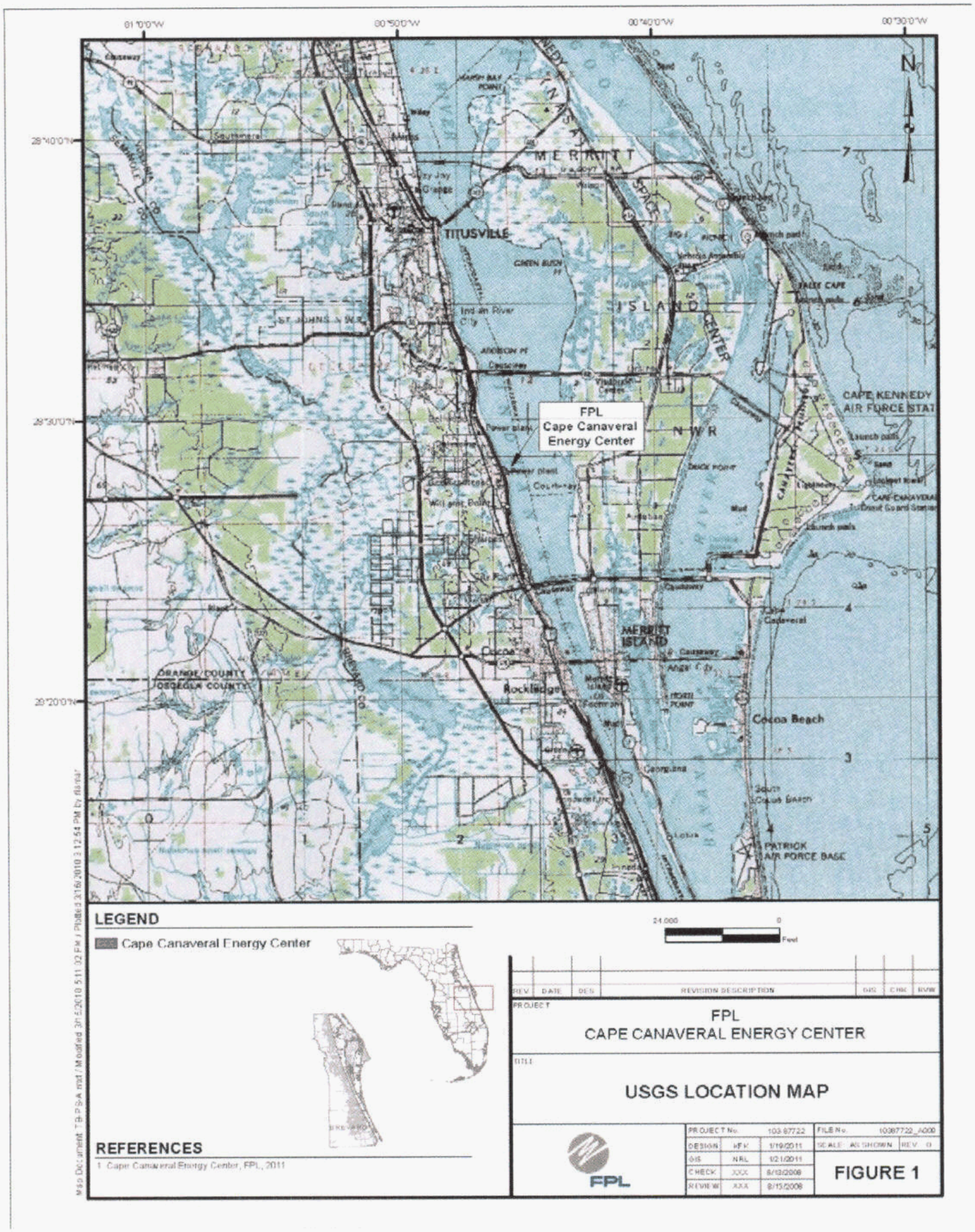
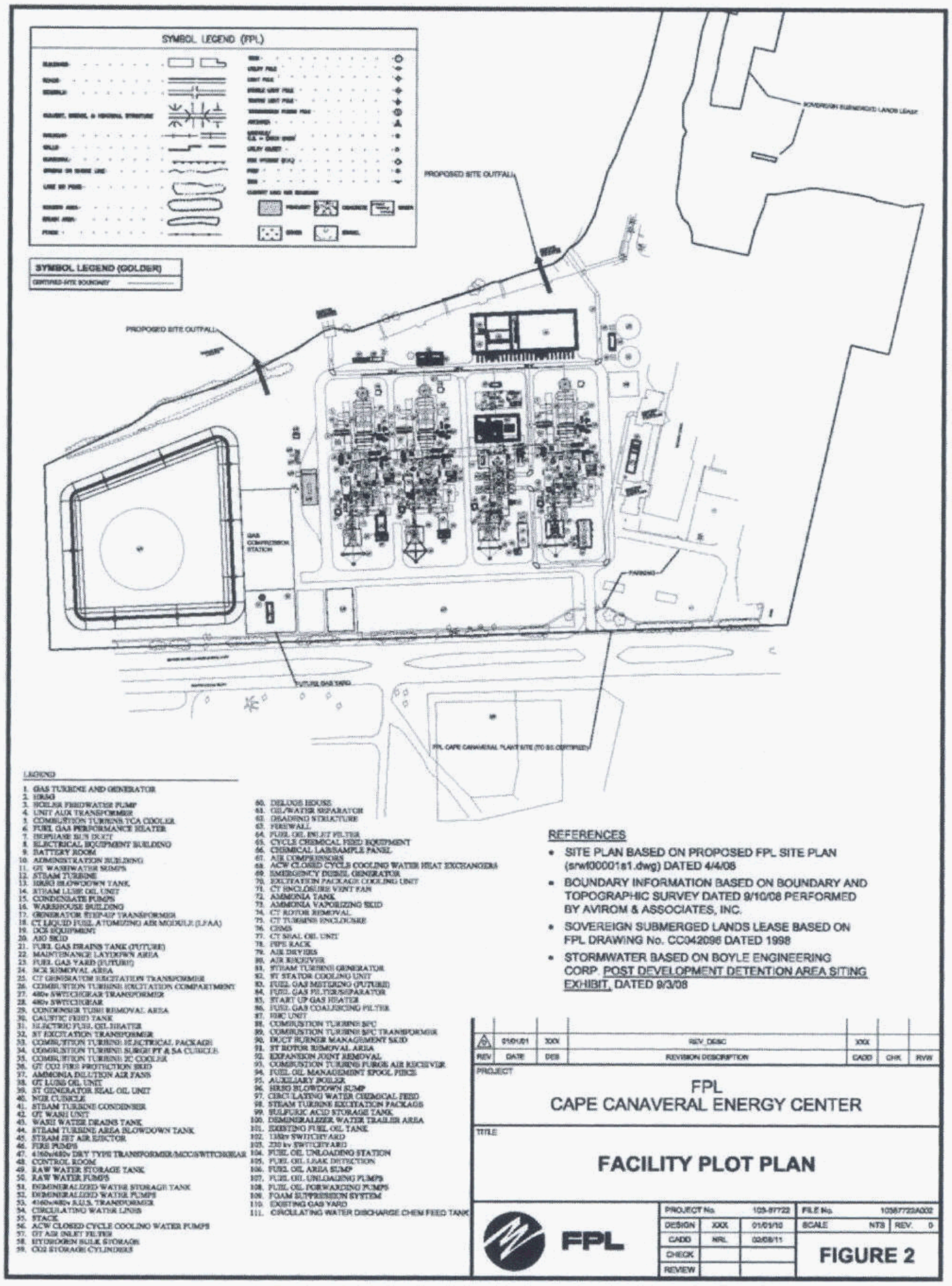
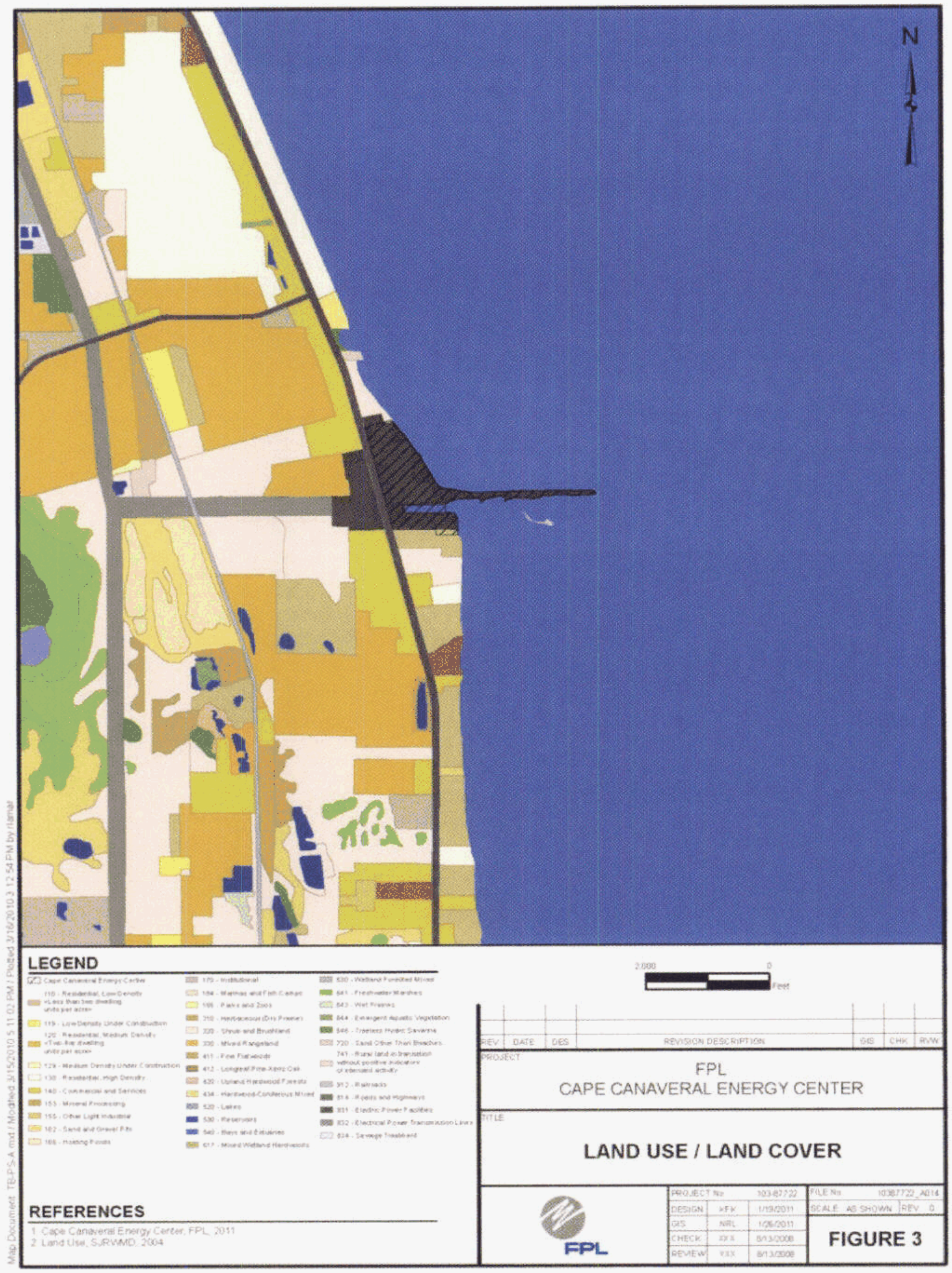


N
TITUSVILLE
MERRITT
ISLAND
N W R
FPL
Cape Canaveral
Energy Center
CAPE KENNEDY
AIR FORCE STAT
MERRITT ISLAND
ORANGE COUNTY
OSCEOLA COUNTY
Rockledge
Cocoa Beach
PATRICK
AIR FORCE BASE
LEGEND
Cape Canaveral Energy Center
REFERENCES
1 Cape Canaveral Energy Center, FPL, 2011
PROJECT
FPL
CAPE CANAVERAL ENERGY CENTER
TITLE
USGS LOCATION MAP
FPL
FIGURE 1



SYMBOL LEGEND (FPL)
SYMBOL LEGEND (GOLDER)
PROPOSED SITE OUTFALL
PROPOSED SITE OUTFALL
GAS COMPRESSOR STATION
FUTURE GAS YARD
LEGEND
REFERENCES
• SITE PLAN BASED ON PROPOSED FPL SITE PLAN (srw00001s1.dwg) DATED 4/4/08
• BOUNDARY INFORMATION BASED ON BOUNDARY AND TOPOGRAPHIC SURVEY DATED 9/10/08 PERFORMED BY AVIROM & ASSOCIATES, INC.
• SOVEREIGN SUBMERGED LANDS LEASE BASED ON FPL DRAWING No. CC042096 DATED 1998
• STORMWATER BASED ON BOYLE ENGINEERING CORP. POST DEVELOPMENT DETENTION AREA SITING EXHIBIT, DATED 9/3/08
REV
DATE
DES
REV_DESC
REVISION DESCRIPTION
CADD
CHK
RVW
PROJECT
FPL
CAPE CANAVERAL ENERGY CENTER
TITLE
FACILITY PLOT PLAN
FPL
PROJECT No.
DESIGN
CADD
CHECK
REVIEW
FILE No.
SCALE
NTS
REV.
0
FIGURE 2



N
LEGEND
Cape Canaveral Energy Center
110 - Residential, Low Density
120 - Residential, Medium Density
130 - Residential, High Density
140 - Commercial and Services
155 - Other Light Industrial
170 - Institutional
185 - Parks and Zoos
320 - Shrub and Brushland
330 - Mixed Rangeland
411 - Pine Flatwoods
520 - Lakes
530 - Reservoirs
540 - Bays and Estuaries
641 - Freshwater Marshes
643 - Wet Prairies
720 - Sand Other Than Beaches
812 - Railroads
814 - Roads and Highways
831 - Electric Power Facilities
832 - Electrical Power Transmission Lines
REFERENCES
1. Cape Canaveral Energy Center, FPL, 2011
2. Land Use, SJRWMD, 2004
2,000
0
Feet
REV
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
CAPE CANAVERAL ENERGY CENTER
TITLE
LAND USE / LAND COVER
FPL
PROJECT No 103-87722
DESIGN KFK 1/19/2011
GIS NRL 1/26/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FILE No 10387722_A014
SCALE AS SHOWN
REV 0
FIGURE 3

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Environmental and Land Use Information:

Supplemental Information

Preferred Site #5: Riviera Plant

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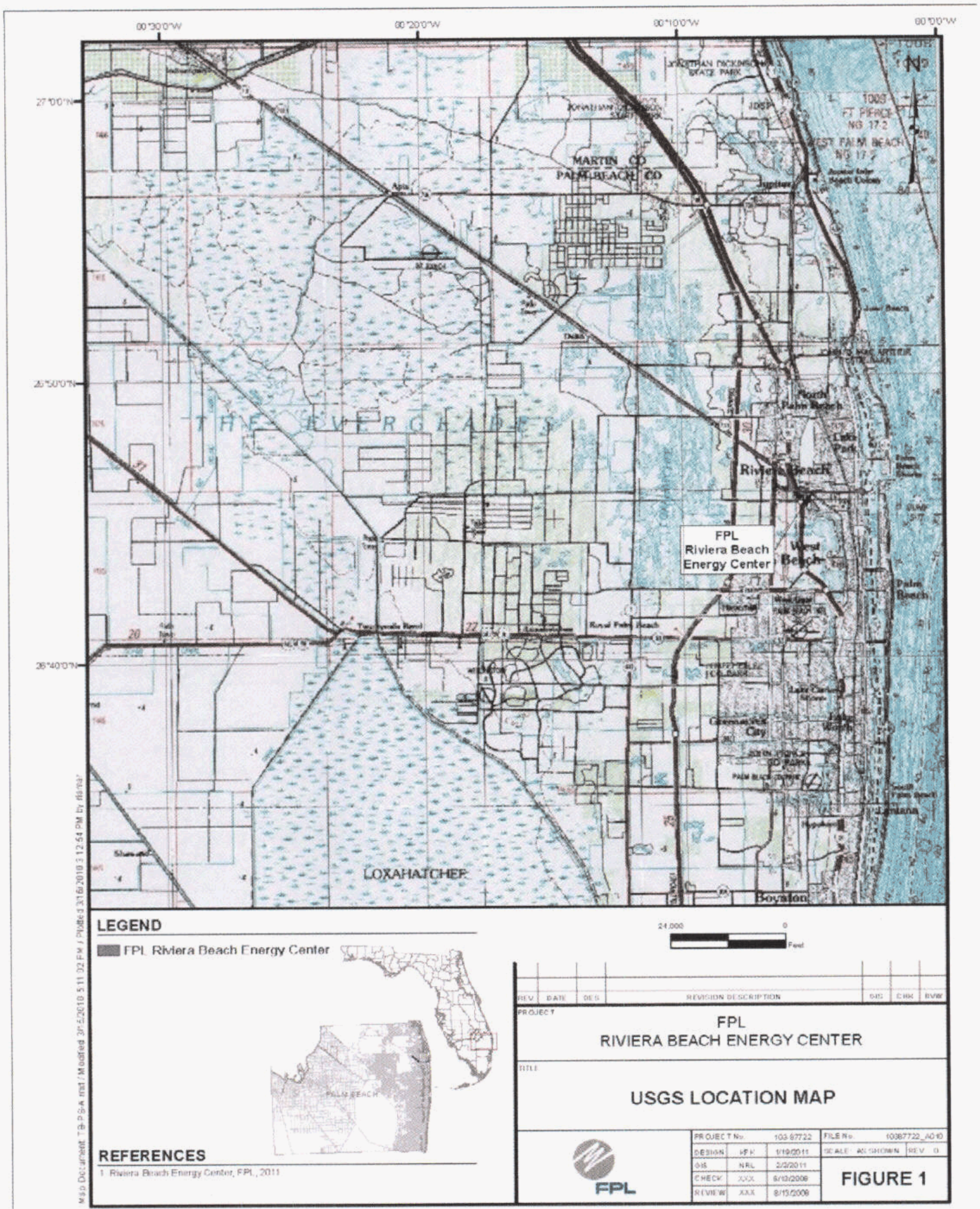
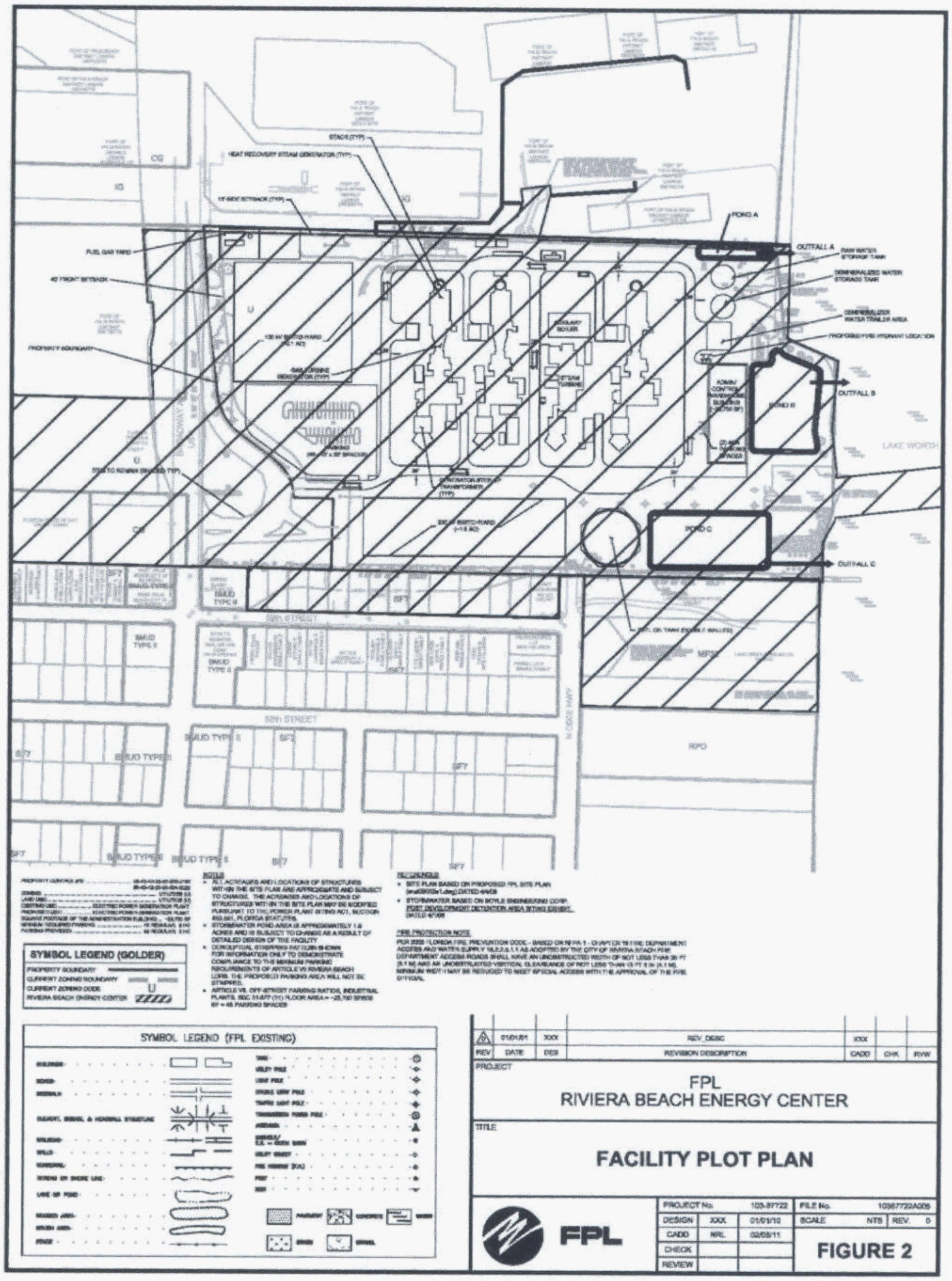
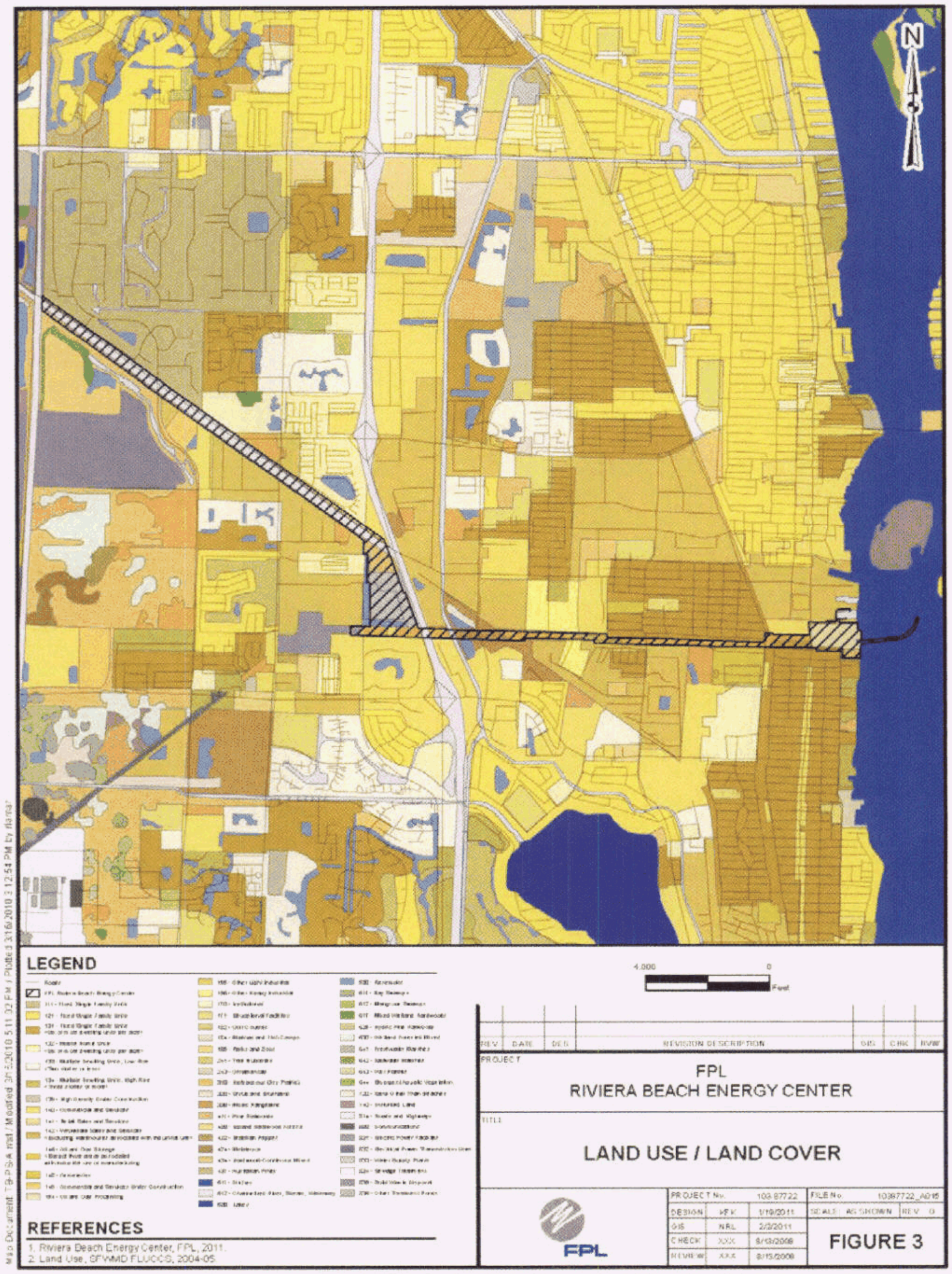


MARTIN CO
PALM BEACH CO
THE EVERGLADES
North Palm Beach
Lake Park
Riviera Beach
FPL
Riviera Beach
Energy Center
West Palm Beach
Palm Beach
Greenacres City
Royal Palm Beach
LOXAHATCHEE
Boynton
LEGEND
FPL Riviera Beach Energy Center
PALM BEACH
REFERENCES
1. Riviera Beach Energy Center, FPL, 2011
24,000
0
Feet
PROJECT
FPL
RIVIERA BEACH ENERGY CENTER
TITLE
USGS LOCATION MAP
PROJECT No. 103-87722
DESIGN KFK 1/19/2011
GIS NRL 2/2/2011
CHECK XXX 8/13/2009
REVIEW XXX 8/13/2009
FILE No. 10387722_A010
SCALE: AS SHOWN REV. 0
FPL
FIGURE 1


SYMBOL LEGEND (GOLDER)
SYMBOL LEGEND (FPL EXISTING)
PROJECT
FPL
RIVIERA BEACH ENERGY CENTER
TITLE
FACILITY PLOT PLAN
FPL
FIGURE 2


N
LEGEND
REFERENCES
1. Riviera Beach Energy Center, FPL, 2011.
2. Land Use, SFWMD FLUCCS, 2004-05.
4,000
0
Feet
REV
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
RIVIERA BEACH ENERGY CENTER
TITLE
LAND USE / LAND COVER
FPL
PROJECT No. 103 87722
FILE No. 10387722_A015
DESIGN
GIS NRL 2/3/2011
SCALE AS SHOWN
FIGURE 3

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Environmental and Land Use Information: Supplemental Information

Potential Site #1: Babcock Ranch

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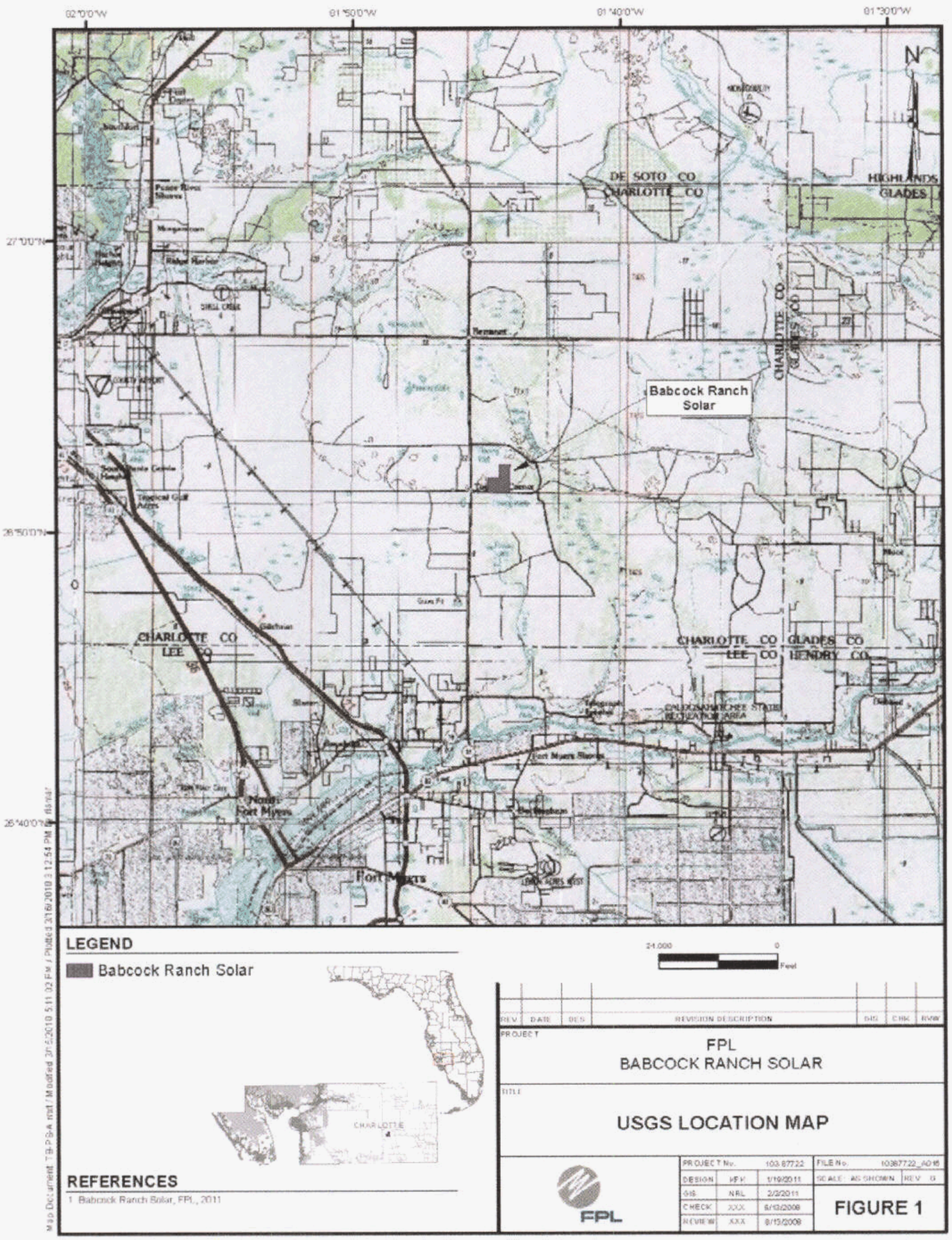
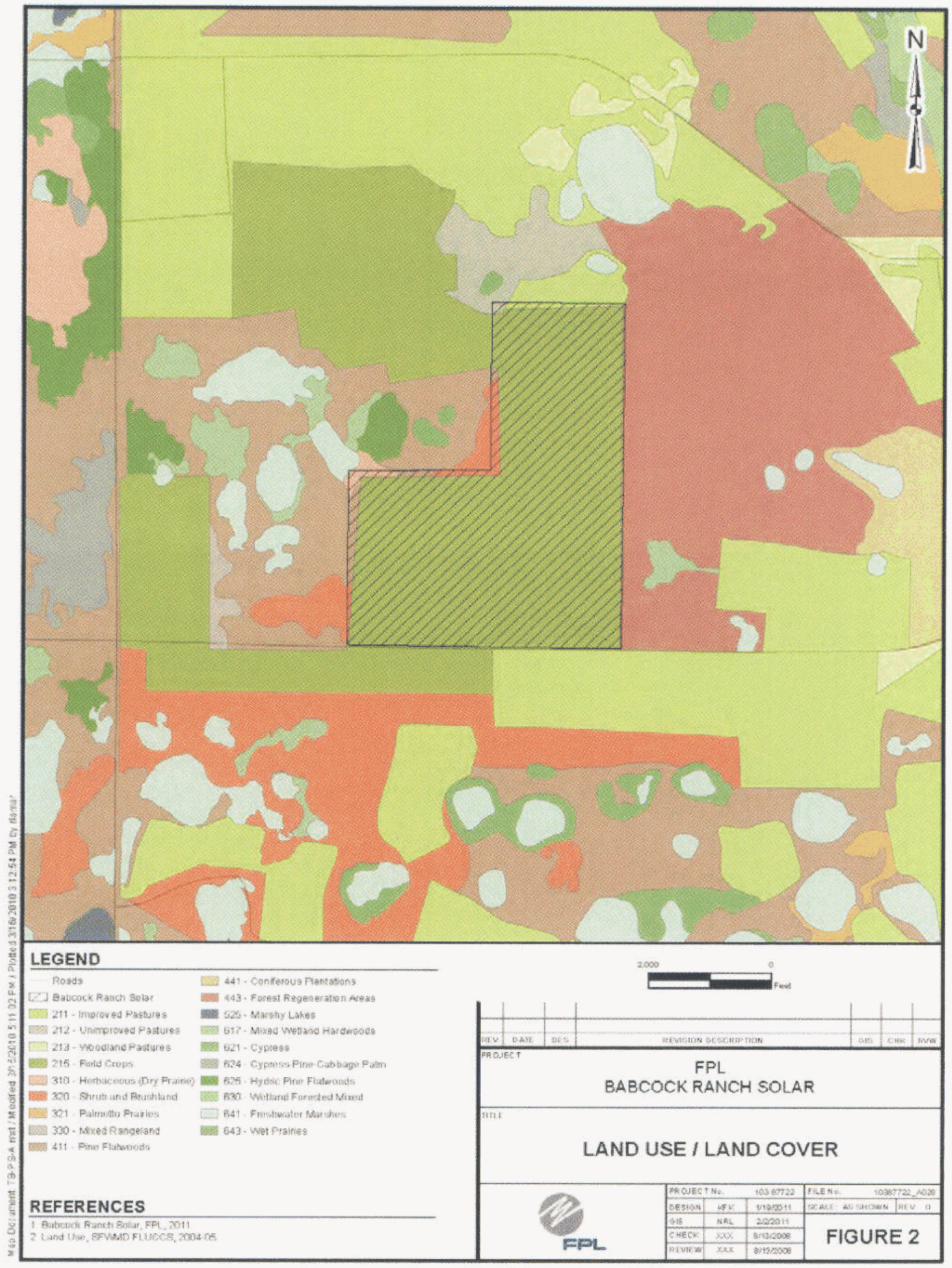


82°0'0"W
81°50'0"W
81°40'0"W
81°30'0"W
27°0'0"N
26°50'0"N
26°40'0"N
N
DE SOTO CO
CHARLOTTE CO
HIGHLANDS
GLADES
CHARLOTTE CO
GLADES CO
Babcock Ranch Solar
CHARLOTTE CO
LEE
CHARLOTTE CO GLADES CO
LEE CO HENDRY CO
North Fort Myers
Fort Myers
LEGEND
Babcock Ranch Solar
CHARLOTTE
REFERENCES
1. Babcock Ranch Solar, FPL, 2011
24,000
0
Feet
REV
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
BABCOCK RANCH SOLAR
TITLE
USGS LOCATION MAP
FPL
PROJECT No. 103-87722
FILE No. 10387722_A016
DESIGN KFK 1/19/2011
SCALE: AS SHOWN
REV 0
GIS NRL 2/2/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FIGURE 1


N
LEGEND
Roads
Babcock Ranch Solar
211 - Improved Pastures
212 - Unimproved Pastures
213 - Woodland Pastures
215 - Field Crops
310 - Herbaceous (Dry Prairie)
320 - Shrub and Brushland
321 - Palmetto Prairies
330 - Mixed Rangeland
411 - Pine Flatwoods
441 - Coniferous Plantations
443 - Forest Regeneration Areas
525 - Marshy Lakes
617 - Mixed Wetland Hardwoods
621 - Cypress
624 - Cypress-Pine-Cabbage Palm
625 - Hydric Pine Flatwoods
630 - Wetland Forested Mixed
641 - Freshwater Marshes
643 - Wet Prairies
REFERENCES
1 Babcock Ranch Solar, FPL, 2011
2 Land Use, SFWMD FLUCCS, 2004-05
2,000
0
Feet
REV
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
BABCOCK RANCH SOLAR
TITLE
LAND USE / LAND COVER
PROJECT No. 103 87722
FILE No. 10387722_A039
DESIGN
1/19/2011
SCALE: AS SHOWN
REV. 0
GIS NRL 2/2/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FPL
FIGURE 2

Environmental and Land Use Information: Supplemental Information

Potential Site #2: Desoto Solar Expansion

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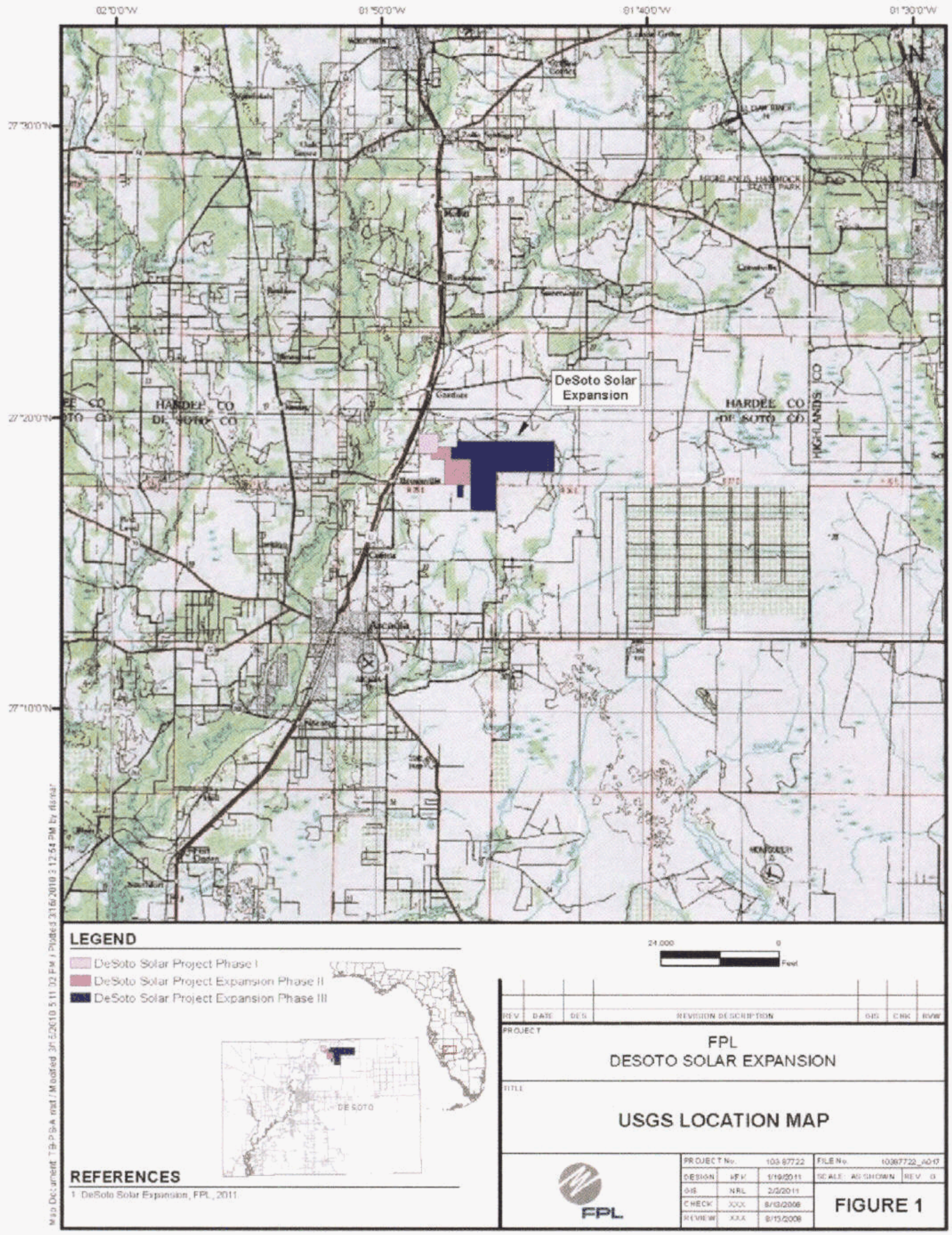
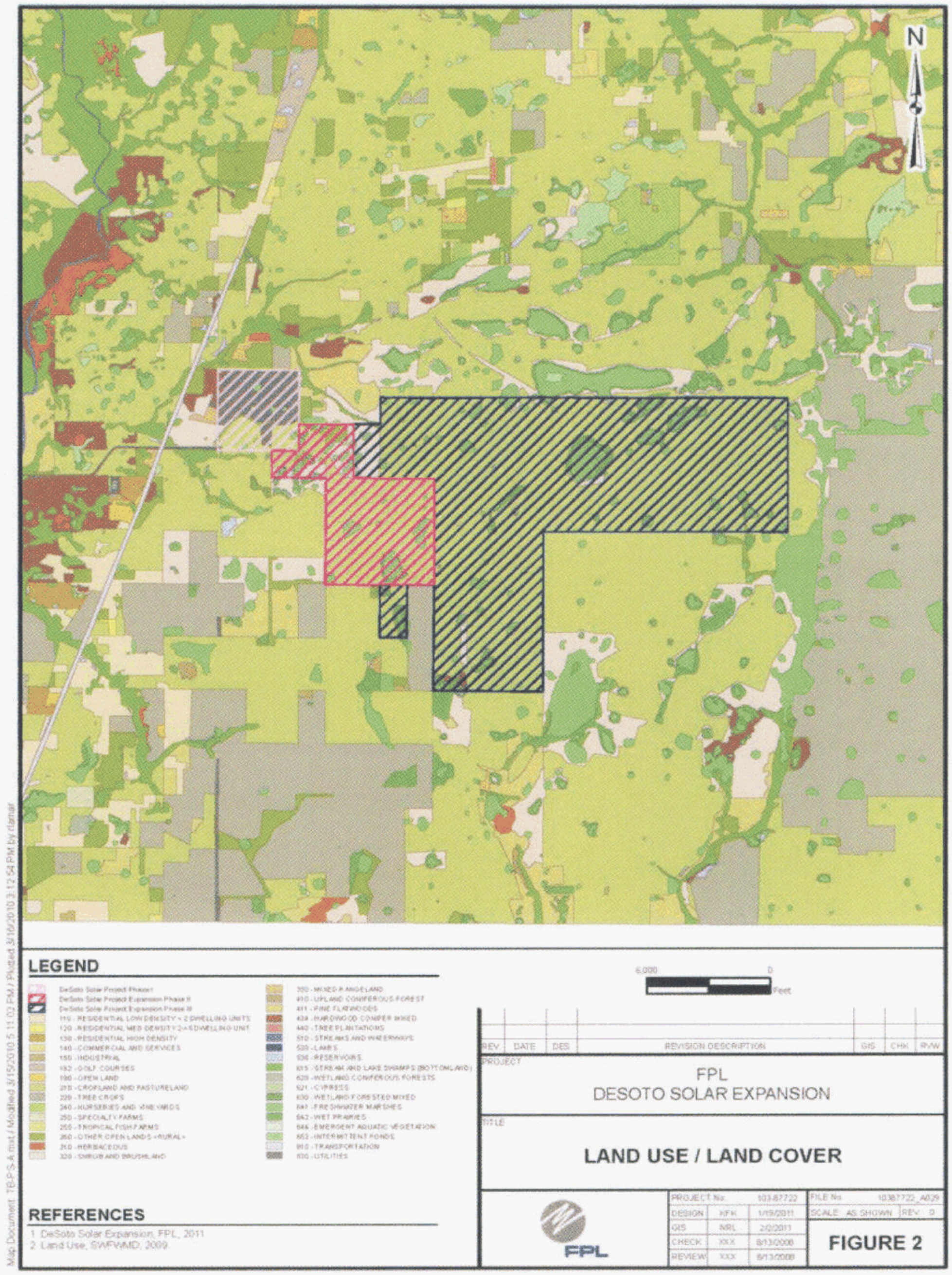

DeSoto Solar Expansion
HARDEE CO
DE SOTO CO
HIGHLANDS CO
LEGEND
DeSoto Solar Project Phase I
DeSoto Solar Project Expansion Phase II
DeSoto Solar Project Expansion Phase III
REFERENCES
1. DeSoto Solar Expansion, FPL, 2011
FPL
DESOTO SOLAR EXPANSION
USGS LOCATION MAP
FIGURE 1


N
LEGEND
REFERENCES
1. DeSoto Solar Expansion, FPL, 2011
2. Land Use, SWFWMD, 2009
6,000
0
Feet
REV
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
DESOTO SOLAR EXPANSION
TITLE
LAND USE / LAND COVER
FPL
PROJECT No. 103-87722
DESIGN KFK 1/19/2011
GIS NRL 2/2/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FILE No. 10387722_A029
SCALE: AS SHOWN
REV 0
FIGURE 2

Environmental and Land Use Information: Supplemental Information

Potential Site #3: Florida Heartland Solar

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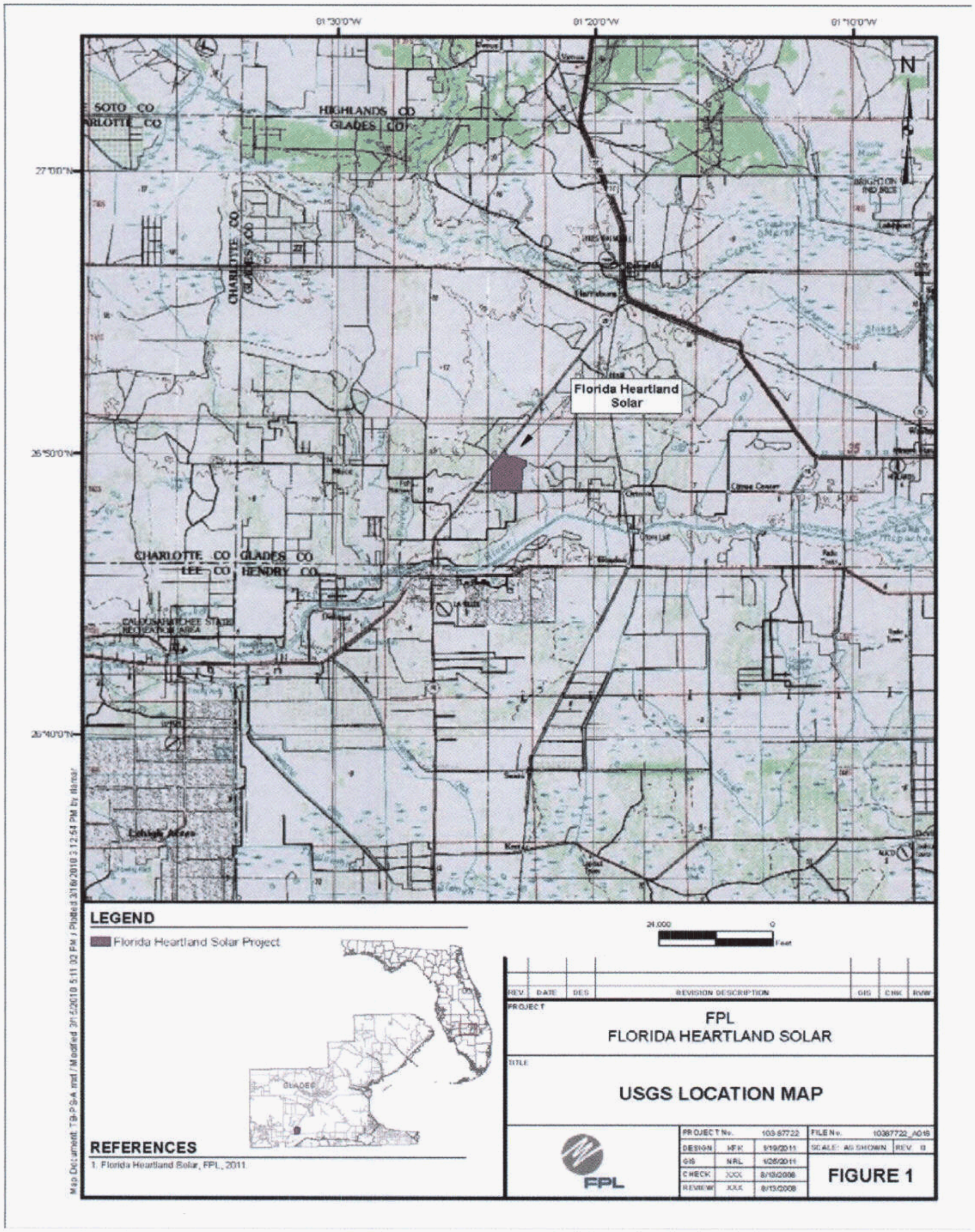
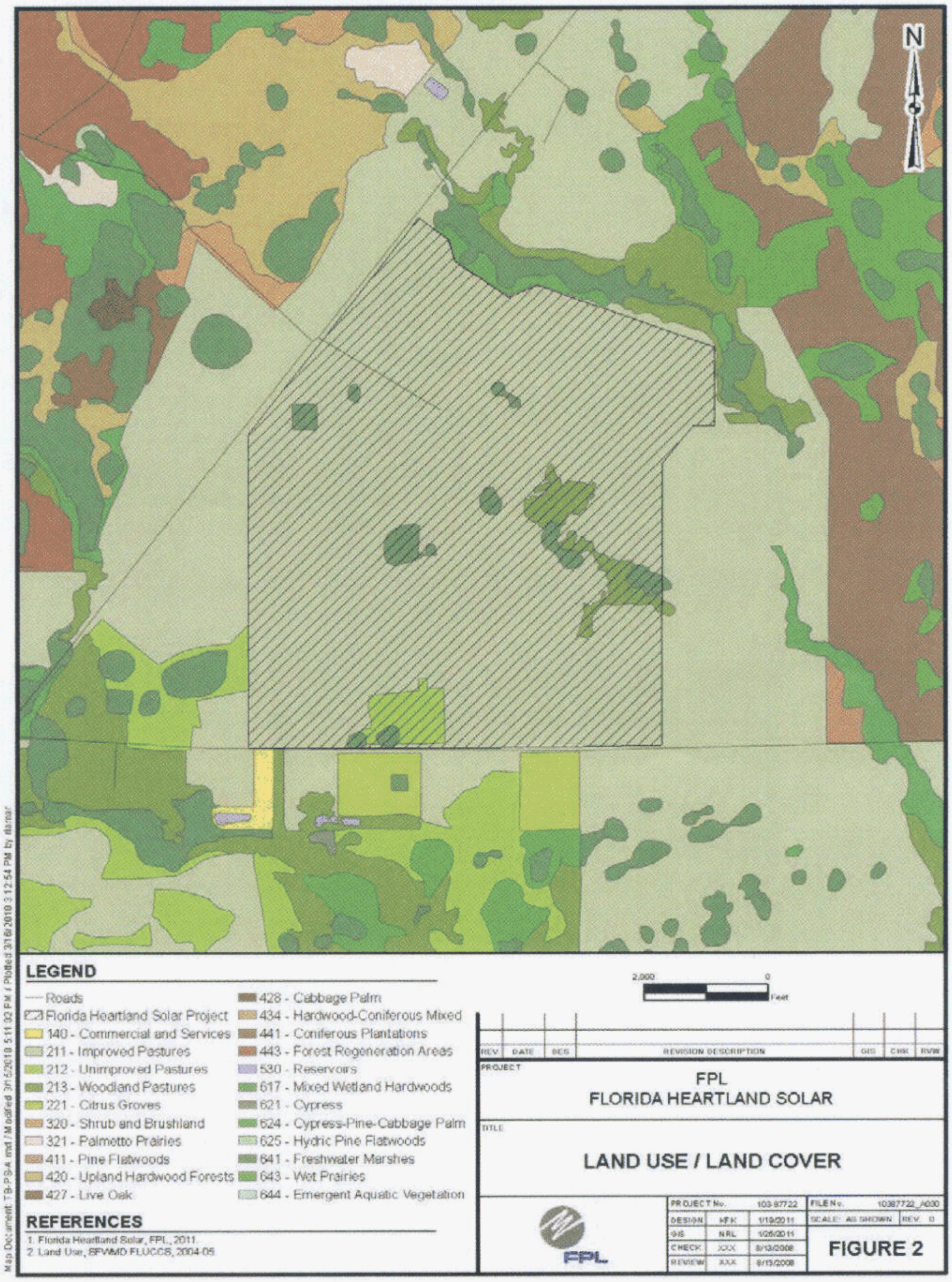

Florida Heartland Solar
HIGHLANDS CO
GLADES CO
CHARLOTTE CO
GLADES CO
LEE CO
HENDRY CO
N
LEGEND
Florida Heartland Solar Project
REFERENCES
1. Florida Heartland Solar, FPL, 2011.
PROJECT
FPL
FLORIDA HEARTLAND SOLAR
TITLE
USGS LOCATION MAP
FIGURE 1


N
LEGEND
Roads
Florida Heartland Solar Project
140 - Commercial and Services
211 - Improved Pastures
212 - Unimproved Pastures
213 - Woodland Pastures
221 - Citrus Groves
320 - Shrub and Brushland
321 - Palmetto Prairies
411 - Pine Flatwoods
420 - Upland Hardwood Forests
427 - Live Oak
428 - Cabbage Palm
434 - Hardwood-Coniferous Mixed
441 - Coniferous Plantations
443 - Forest Regeneration Areas
530 - Reservoirs
617 - Mixed Wetland Hardwoods
621 - Cypress
624 - Cypress-Pine-Cabbage Palm
625 - Hydric Pine Flatwoods
641 - Freshwater Marshes
643 - Wet Prairies
644 - Emergent Aquatic Vegetation
REFERENCES
1. Florida Heartland Solar, FPL, 2011.
2. Land Use, SFWMD FLUCCS, 2004-05
2,000
0
Feet
REV DATE DES REVISION DESCRIPTION GIS CHK RVW
PROJECT
FPL
FLORIDA HEARTLAND SOLAR
TITLE
LAND USE / LAND COVER
PROJECT No. 103-87722
FILE No. 10387722_A030
DESIGN HFK 1/19/2011
GIS NRL 1/26/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
SCALE: AS SHOWN
REV. 0
FPL
FIGURE 2

Environmental and Land Use Information: Supplemental Information

Potential Site # 4: Hendry County

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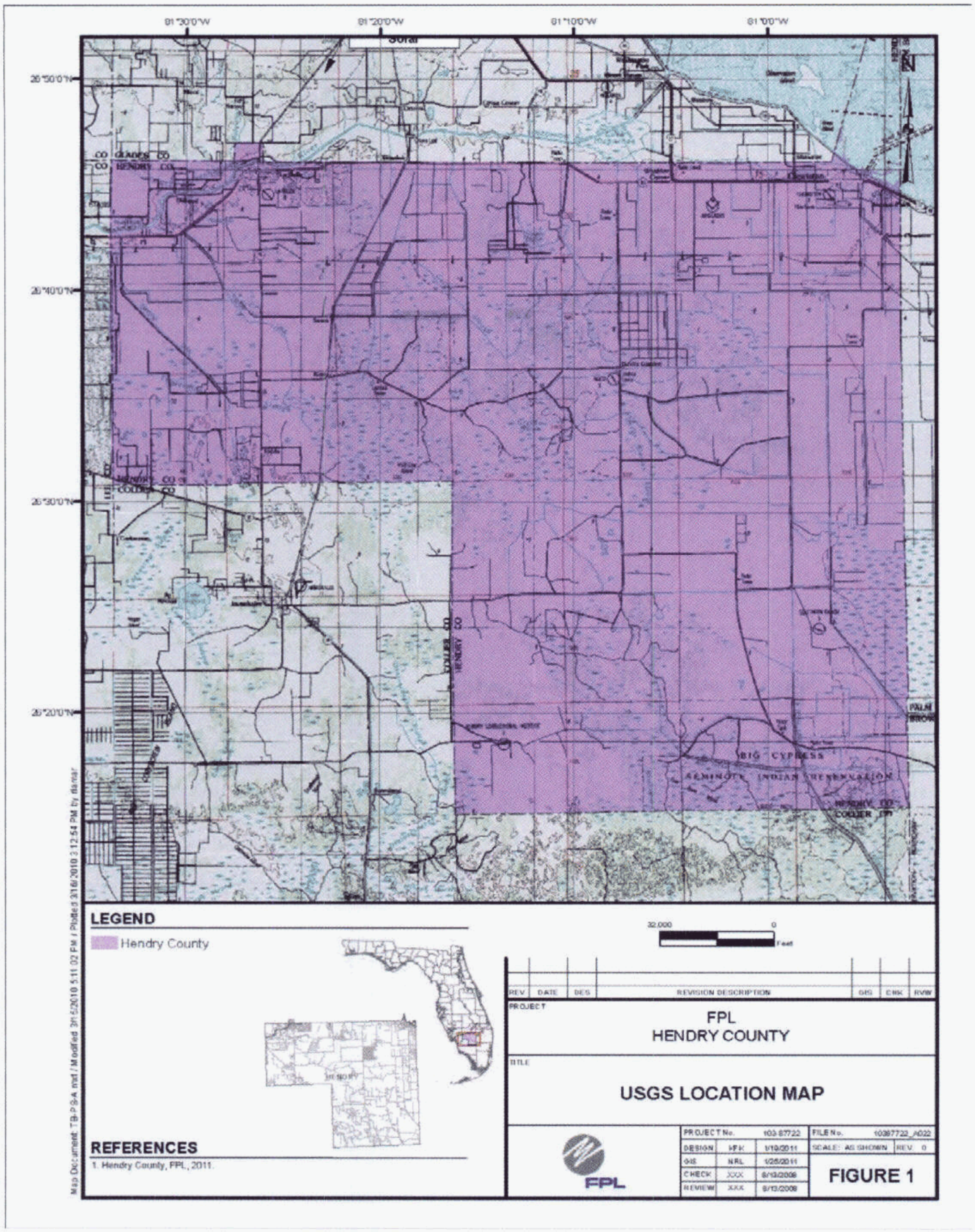
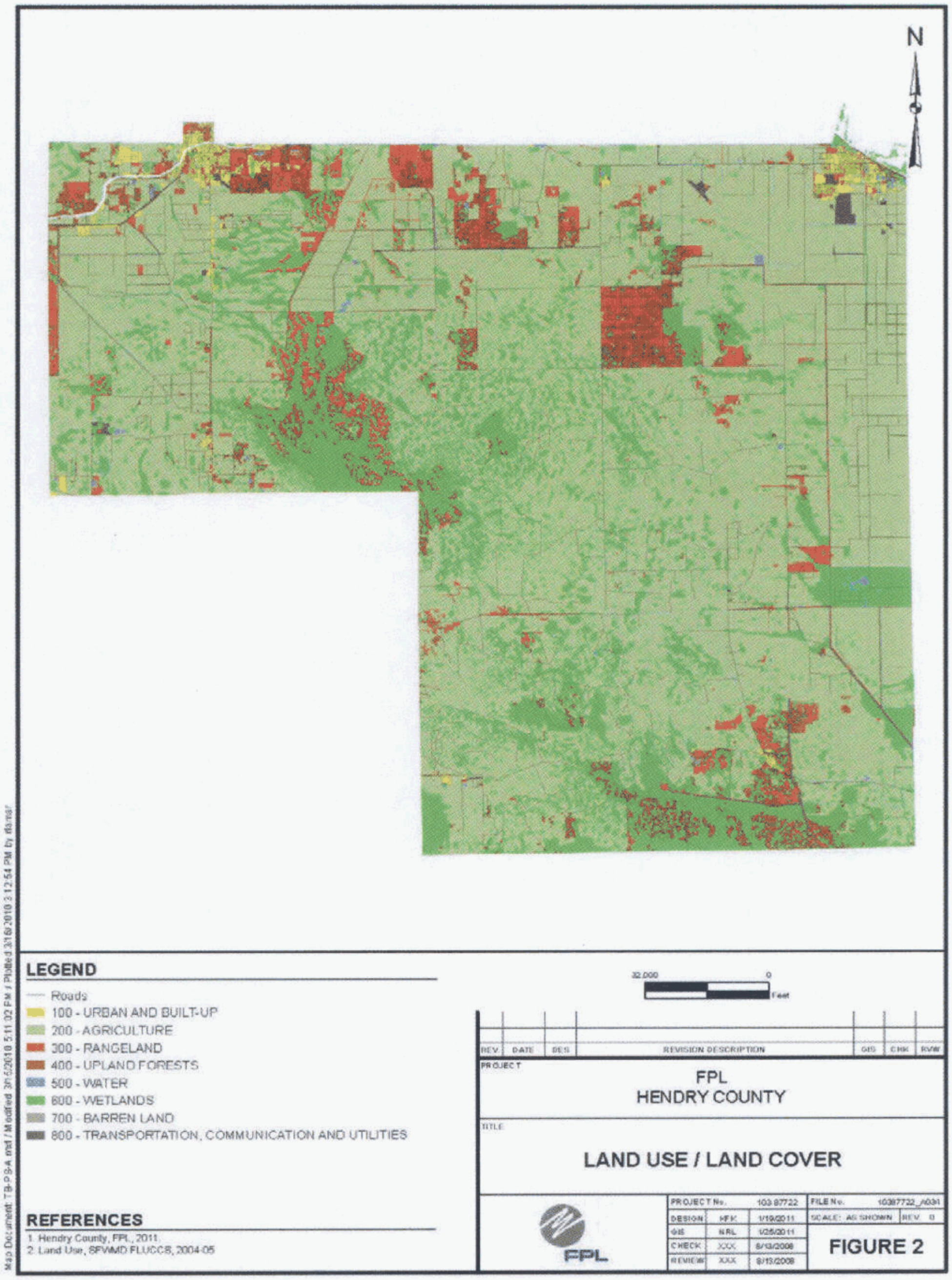

LEGEND
Hendry County
REFERENCES
1. Hendry County, FPL, 2011.
FPL
HENDRY COUNTY
USGS LOCATION MAP
FIGURE 1


N
LEGEND
Roads
100 - URBAN AND BUILT-UP
200 - AGRICULTURE
300 - RANGELAND
400 - UPLAND FORESTS
500 - WATER
600 - WETLANDS
700 - BARREN LAND
800 - TRANSPORTATION, COMMUNICATION AND UTILITIES
REFERENCES
1. Hendry County, FPL, 2011.
2. Land Use, SFWMD FLUCCS, 2004-05
32,000 0 Feet
REV. DATE DES REVISION DESCRIPTION GIS CHK RVW
PROJECT
FPL
HENDRY COUNTY
TITLE
LAND USE / LAND COVER
FPL
PROJECT No. 103 87722
DESIGN HFK 1/19/2011
GIS NRL 1/26/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FILE No. 10387722_A031
SCALE: AS SHOWN REV. 0
FIGURE 2

Environmental and Land Use Information: Supplemental Information

Potential Site #5: Manatee Plant Site

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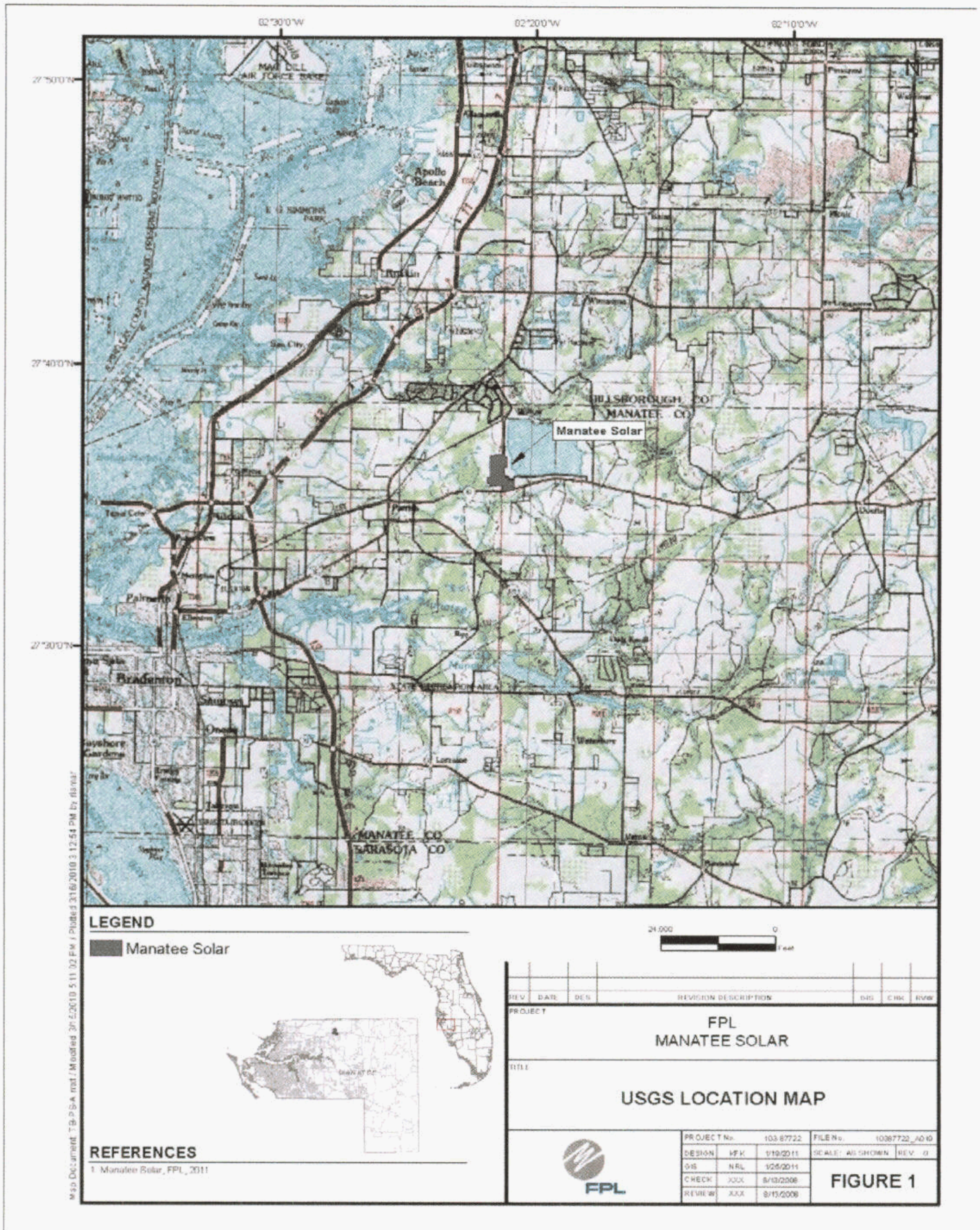
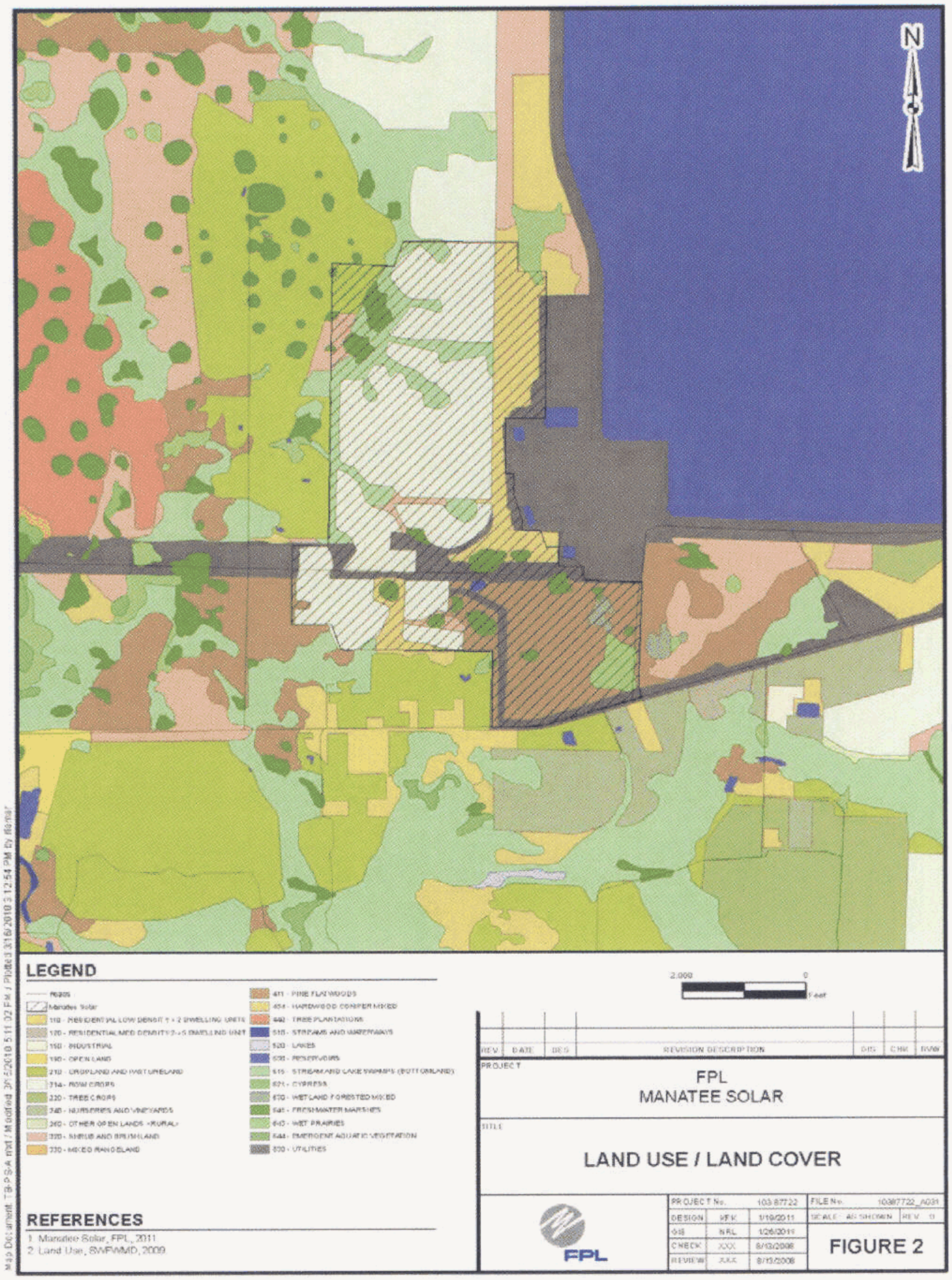

82°30'0"W
82°20'0"W
82°10'0"W
27°50'0"N
27°40'0"N
27°30'0"N
MAC DILL AIR FORCE BASE
Apollo Beach
HILLSBOROUGH CO
MANATEE CO
Manatee Solar
Palmetto
Bradenton
Bayshore Gardens
MANATEE CO
SARASOTA CO
LEGEND
Manatee Solar
REFERENCES
1. Manatee Solar, FPL, 2011
24,000
0
Feet
REV
DATE
DES
REVISION DESCRIPTION
CHK
RVW
PROJECT
FPL
MANATEE SOLAR
TITLE
USGS LOCATION MAP
PROJECT No. 103-87722
FILE No. 10387722_A010
DESIGN KFK 1/19/2011
SCALE: AS SHOWN
REV. 0
GIS NRL 1/26/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FIGURE 1
FPL


N
LEGEND
Roads
Manatee Solar
110 - RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS
120 - RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT
150 - INDUSTRIAL
190 - OPEN LAND
210 - CROPLAND AND PASTURELAND
214 - ROW CROPS
220 - TREE CROPS
240 - NURSERIES AND VINEYARDS
260 - OTHER OPEN LANDS <RURAL>
320 - SHRUB AND BRUSHLAND
330 - MIXED RANGELAND
411 - PINE FLATWOODS
434 - HARDWOOD CONIFER MIXED
440 - TREE PLANTATIONS
510 - STREAMS AND WATERWAYS
520 - LAKES
530 - RESERVOIRS
615 - STREAM AND LAKE SWAMPS (BOTTOMLAND)
621 - CYPRESS
630 - WETLAND FORESTED MIXED
641 - FRESHWATER MARSHES
643 - WET PRAIRIES
644 - EMERGENT AQUATIC VEGETATION
830 - UTILITIES
REFERENCES
1. Manatee Solar, FPL, 2011
2. Land Use, SWFWMD, 2009
2,000
0
Feet
REV
DATE
DES
REVISION DESCRIPTION
DIG
CHK
RVW
PROJECT
FPL
MANATEE SOLAR
TITLE
LAND USE / LAND COVER
FPL
PROJECT No. 103-87722
DESIGN KFK 1/19/2011
GIS NRL 1/26/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FILE No. 10387722_A031
SCALE: AS SHOWN
REV. 0
FIGURE 2

Environmental and Land Use Information: Supplemental Information

Potential Site #6: Martin County

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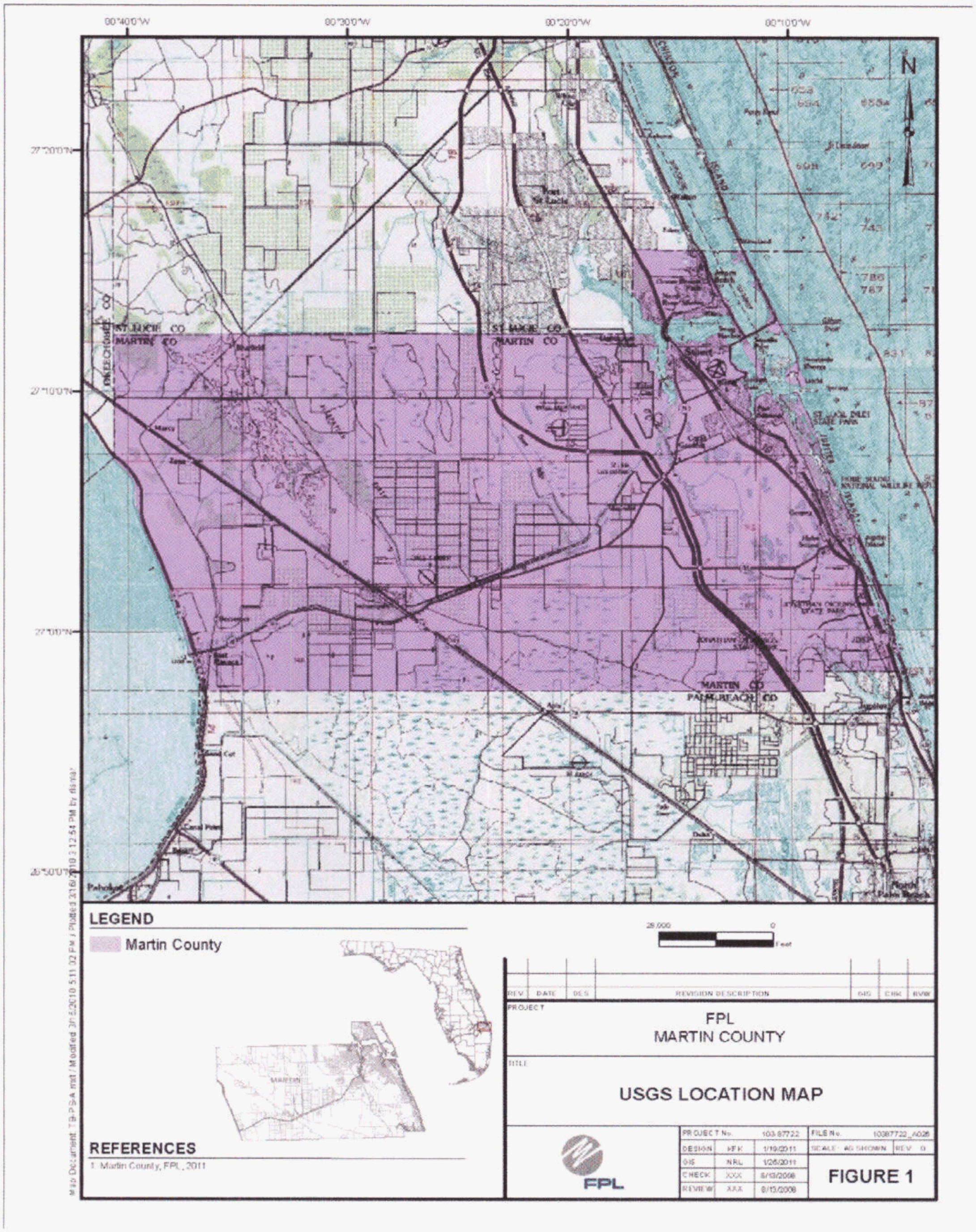
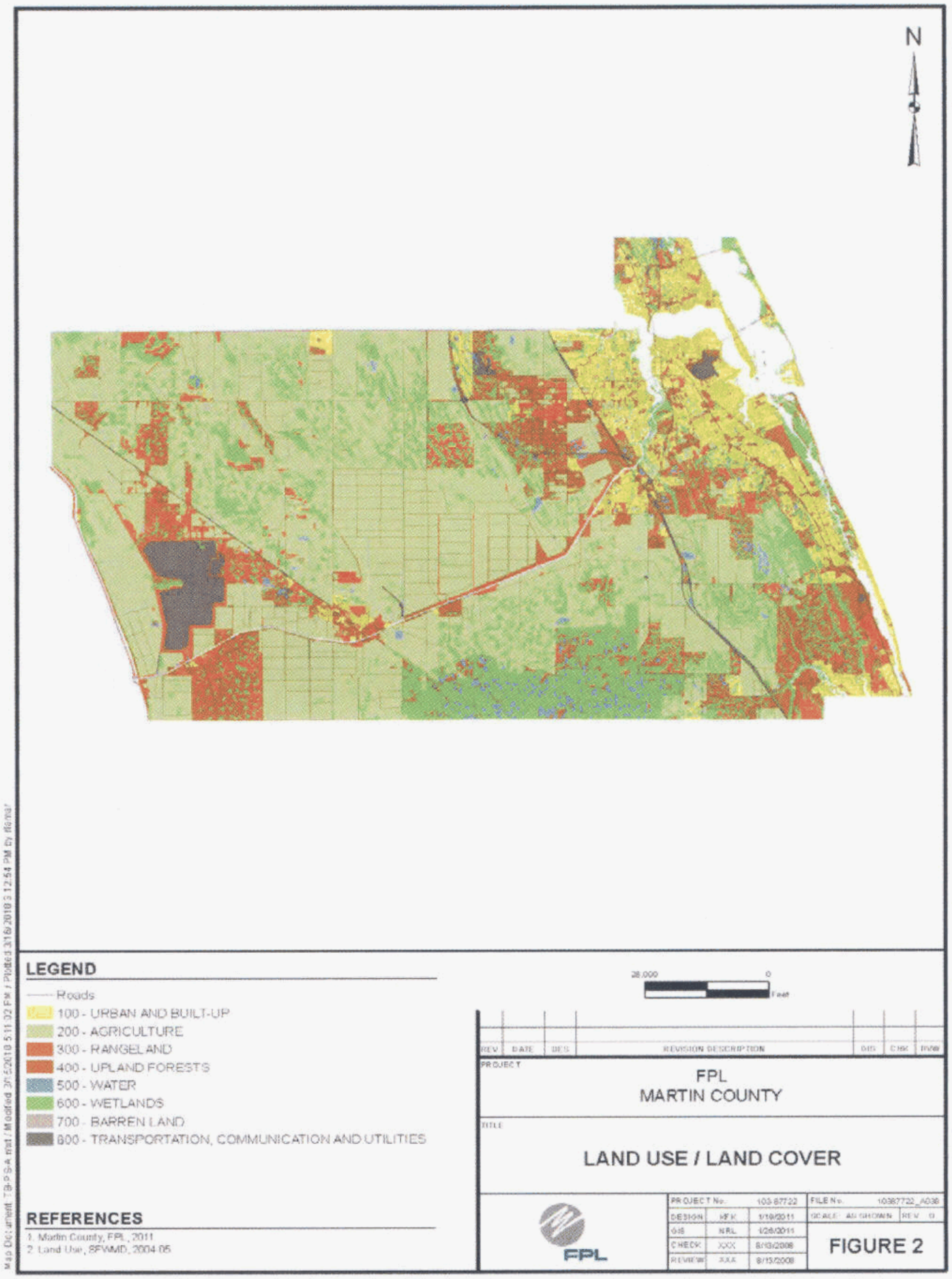


N
ST LUCIE CO
MARTIN CO
PALM BEACH CO
LEGEND
Martin County
REFERENCES
1. Martin County, FPL, 2011
PROJECT
FPL
MARTIN COUNTY
TITLE
USGS LOCATION MAP
FPL
FIGURE 1


N
LEGEND
Roads
100 - URBAN AND BUILT-UP
200 - AGRICULTURE
300 - RANGELAND
400 - UPLAND FORESTS
500 - WATER
600 - WETLANDS
700 - BARREN LAND
800 - TRANSPORTATION, COMMUNICATION AND UTILITIES
REFERENCES
1. Martin County, FPL, 2011
2. Land Use, SFWMD, 2004-05
0
Feet
REV
DATE
DES
REVISION DESCRIPTION
CHK
RVW
PROJECT
FPL
MARTIN COUNTY
TITLE
LAND USE / LAND COVER
PROJECT No. 103-87722
DESIGN
1/19/2011
NRL
1/26/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
SCALE AS SHOWN
REV 0
FPL
FIGURE 2

Environmental and Land Use Information: Supplemental Information

Potential Site #7: Northeast Okeechobee County

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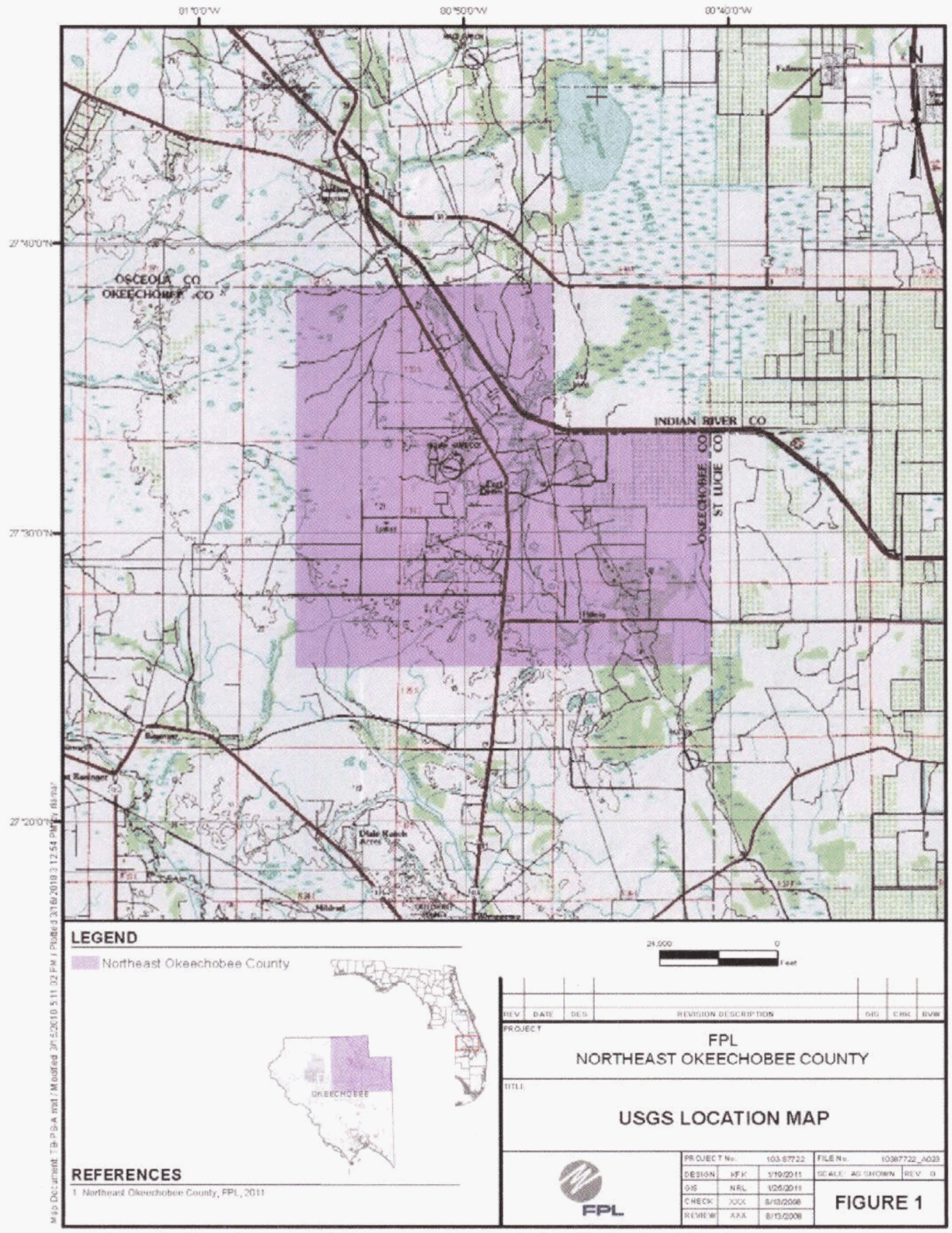
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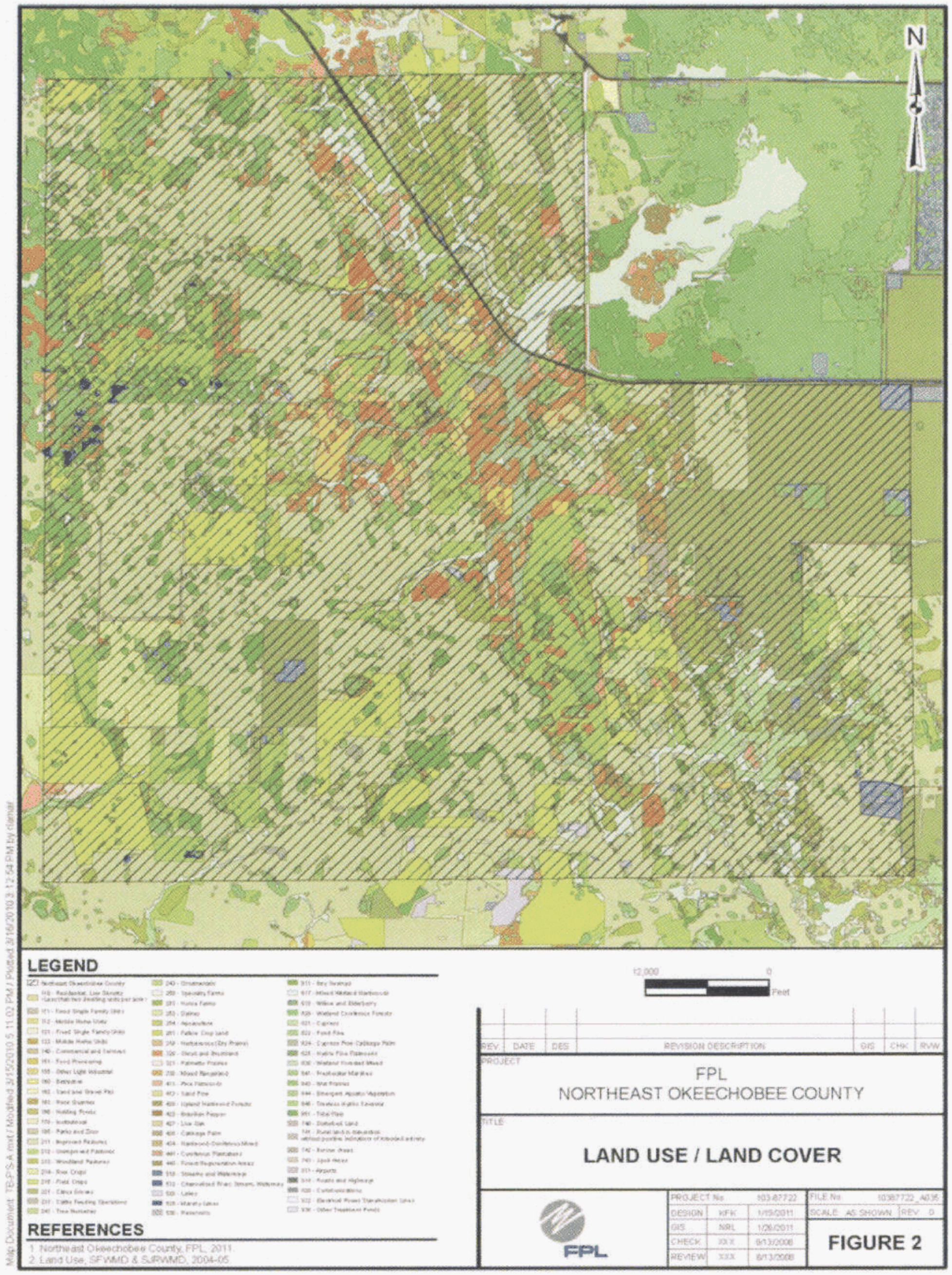
80°50'0"W
80°40'0"W
27°40'0"N
27°30'0"N
27°20'0"N
OSCEOLA CO
OKEECHOBEE CO
INDIAN RIVER CO
OKEECHOBEE CO
ST LUCIE CO
LEGEND
Northeast Okeechobee County
REFERENCES
1. Northeast Okeechobee County, FPL, 2011
24,000
0
Feet
REV
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
NORTHEAST OKEECHOBEE COUNTY
TITLE
USGS LOCATION MAP
PROJECT No. 103-87722
FILE No. 10387722_A023
DESIGN KFK 1/19/2011
SCALE: AS SHOWN
REV 0
GIS NRL 1/26/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FIGURE 1
FPL


N
LEGEND
REFERENCES
1. Northeast Okeechobee County, FPL, 2011
2. Land Use, SFWMD & SJRWMD, 2004-05
12,000
0
Feet
REV.
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
NORTHEAST OKEECHOBEE COUNTY
TITLE
LAND USE / LAND COVER
FPL
PROJECT No. 103-87722
DESIGN KFK 1/19/2011
GIS NRL 1/26/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FILE No. 10387722_A035
SCALE AS SHOWN
REV. 0
FIGURE 2

Environmental and Land Use Information: Supplemental Information

Potential Site #8: Palatka Site

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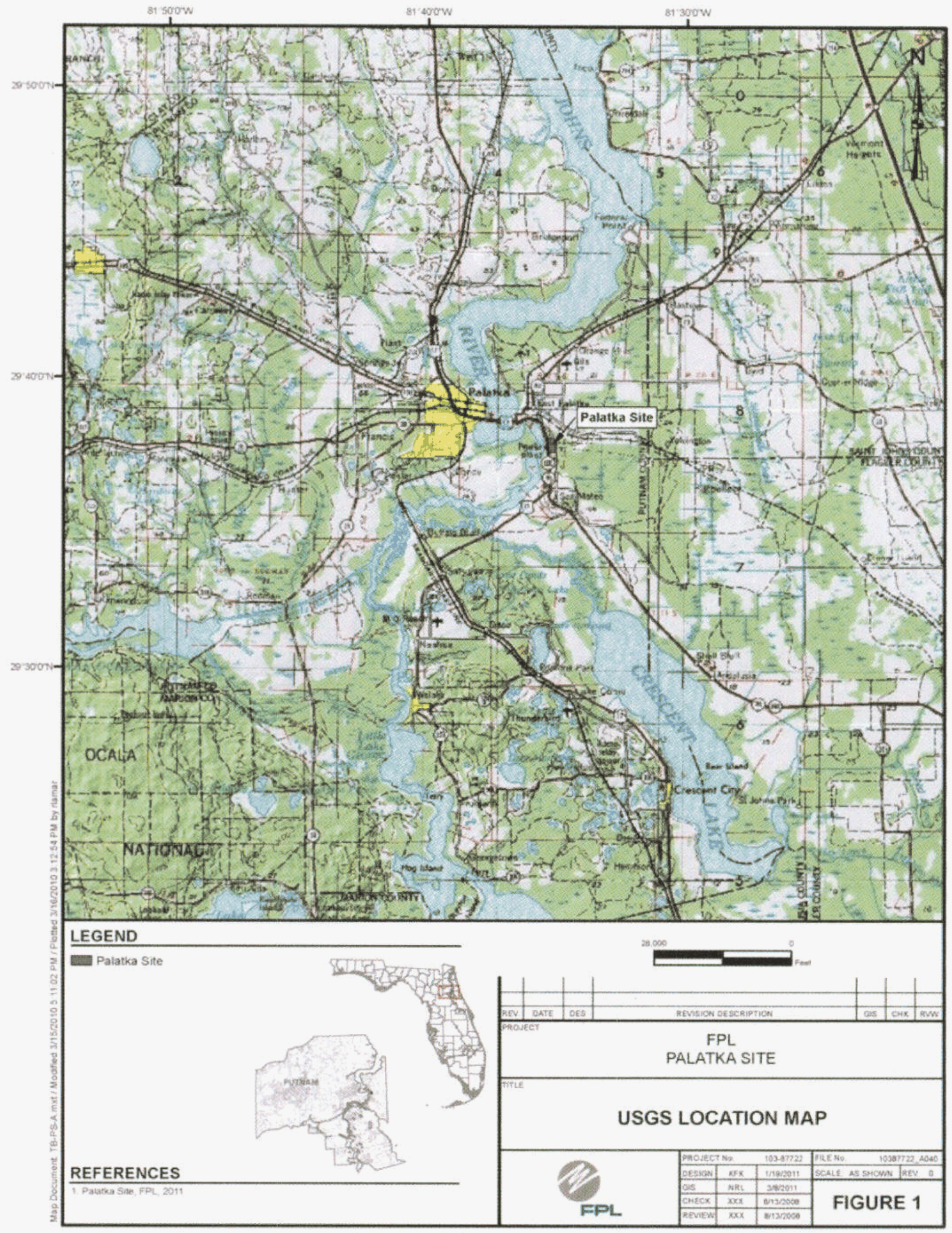
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81°30'0"W
29°50'0"N
29°40'0"N
29°30'0"N
N
Palatka
Palatka Site
JOHNS
RIVER
CRESCENT
LAKE
OCALA
NATIONAL
Crescent City
LEGEND
Palatka Site
REFERENCES
1. Palatka Site, FPL, 2011
28,000
0
Feet
REV
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
PALATKA SITE
TITLE
USGS LOCATION MAP
PROJECT No. 103-87722
FILE No. 10387722_A040
DESIGN KFK 1/19/2011
SCALE AS SHOWN
REV 0
GIS NRL 3/8/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FPL
FIGURE 1

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Environmental and Land Use Information: Supplemental Information

Potential Site #9: Port Everglades Plant

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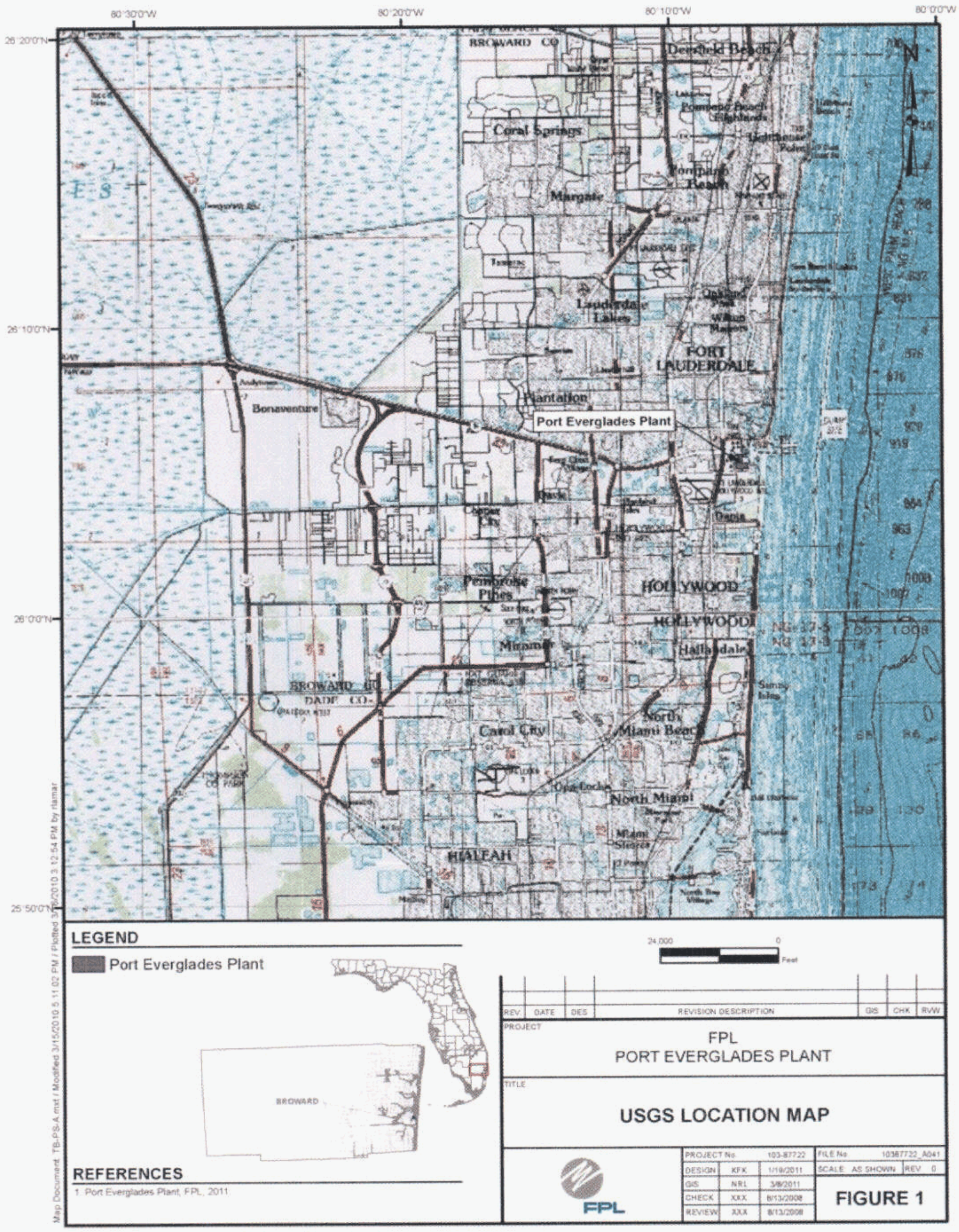
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80°10'0"W
80°0'0"W
26°20'0"N
26°10'0"N
26°0'0"N
25°50'0"N
BROWARD CO
Deerfield Beach
Coral Springs
Margate
Pompano Beach
Lauderdale Lakes
FORT LAUDERDALE
Plantation
Bonaventure
Port Everglades Plant
HOLLYWOOD
Pembroke Pines
Miramar
Hallandale
BROWARD CO
DADE CO
Carol City
North Miami Beach
North Miami
HIALEAH
LEGEND
Port Everglades Plant
BROWARD
REFERENCES
1. Port Everglades Plant, FPL, 2011
PROJECT
FPL
PORT EVERGLADES PLANT
TITLE
USGS LOCATION MAP
FPL
FIGURE 1

(This page is left intentionally blank.)

Environmental and Land Use Information: Supplemental Information

Potential Site #10: Putnam County

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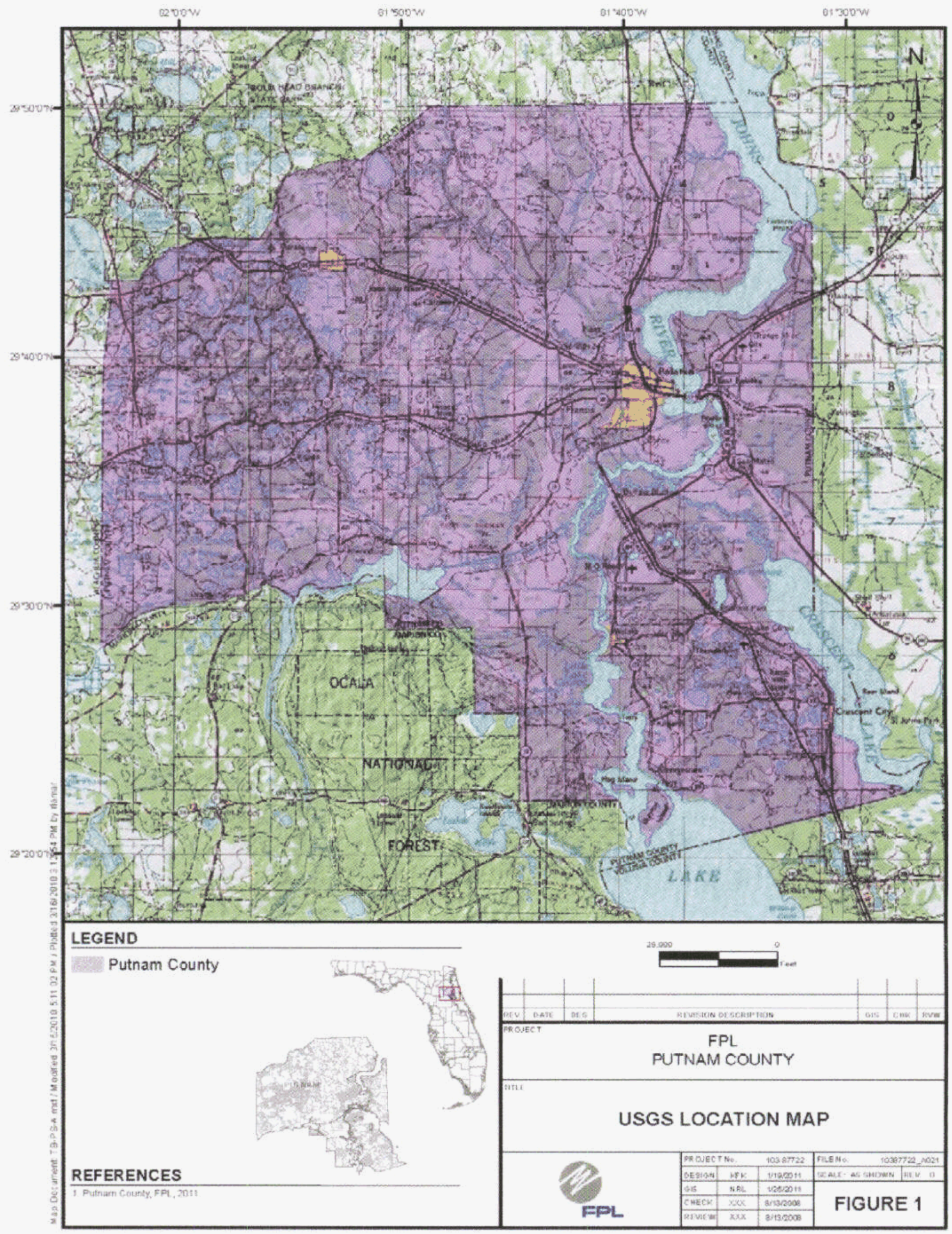
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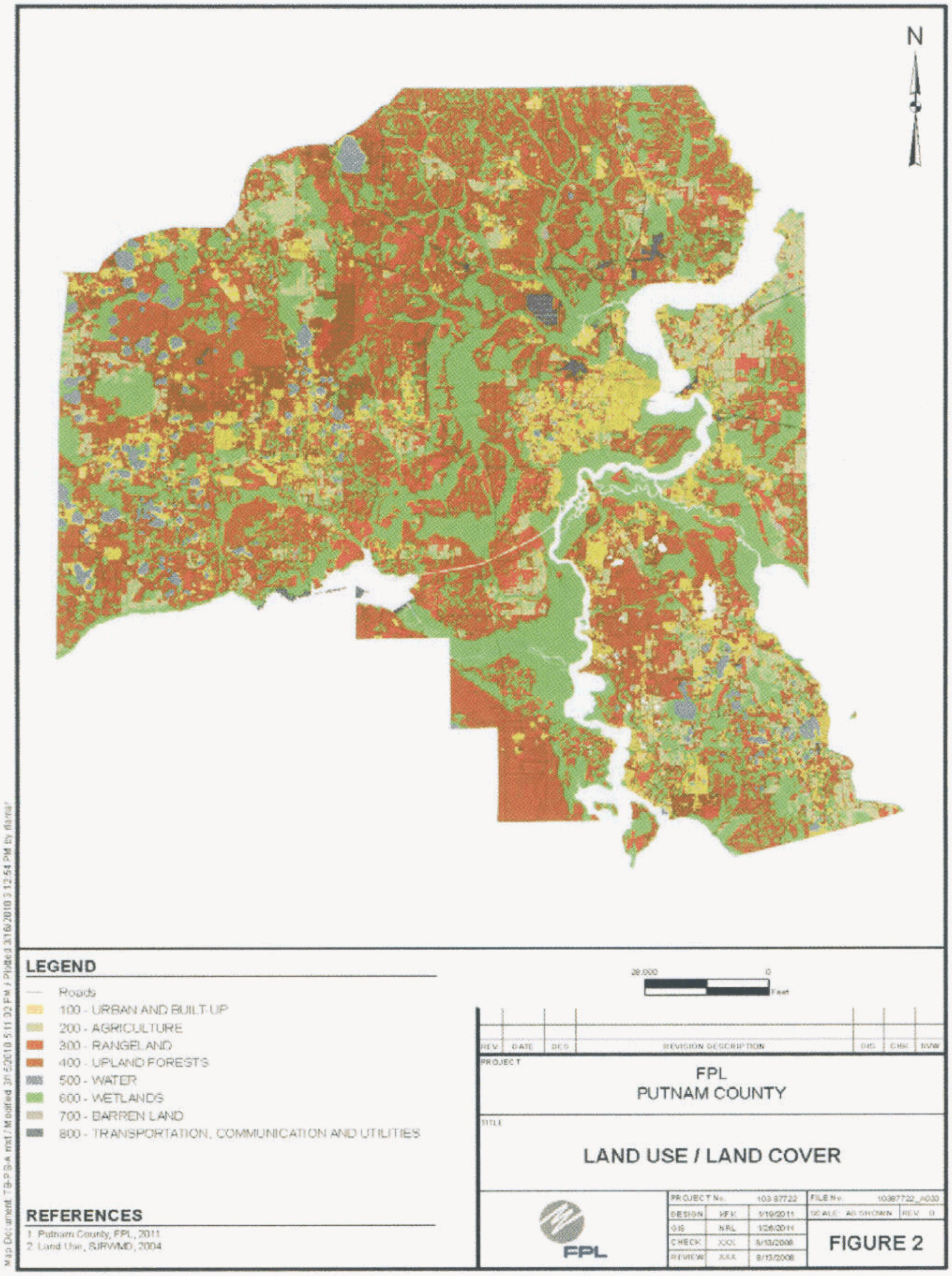
29°50'0"N
29°40'0"N
29°30'0"N
29°20'0"N
N
OCALA
NATIONAL
FOREST
LAKE
RIVER
CRESCENT
PUTNAM COUNTY
VOLUSIA COUNTY
LEGEND
Putnam County
REFERENCES
1. Putnam County, FPL, 2011
REV
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
PUTNAM COUNTY
TITLE
USGS LOCATION MAP
PROJECT No. 103 87722
FILE No. 10387722_A021
DESIGN HFK 1/19/2011
SCALE: AS SHOWN
REV 0
GIS NRL 1/26/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FIGURE 1
FPL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LEGEND
Roads
100 - URBAN AND BUILT-UP
200 - AGRICULTURE
300 - RANGELAND
400 - UPLAND FORESTS
500 - WATER
600 - WETLANDS
700 - BARREN LAND
800 - TRANSPORTATION, COMMUNICATION AND UTILITIES
REFERENCES
1. Putnam County, FPL, 2011
2. Land Use, SJRWMD, 2004
REV DATE DES REVISION DESCRIPTION GIS CHK RVW
PROJECT
FPL
PUTNAM COUNTY
TITLE
LAND USE / LAND COVER
FPL
PROJECT No. 103 87722
FILE No. 10387722_A030
DESIGN KFK 1/19/2011
SCALE: AS SHOWN REV. 0
GIS NRL 1/26/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FIGURE 2

Environmental and Land Use Information: Supplemental Information

Potential Site #11: Southwest Indian River County

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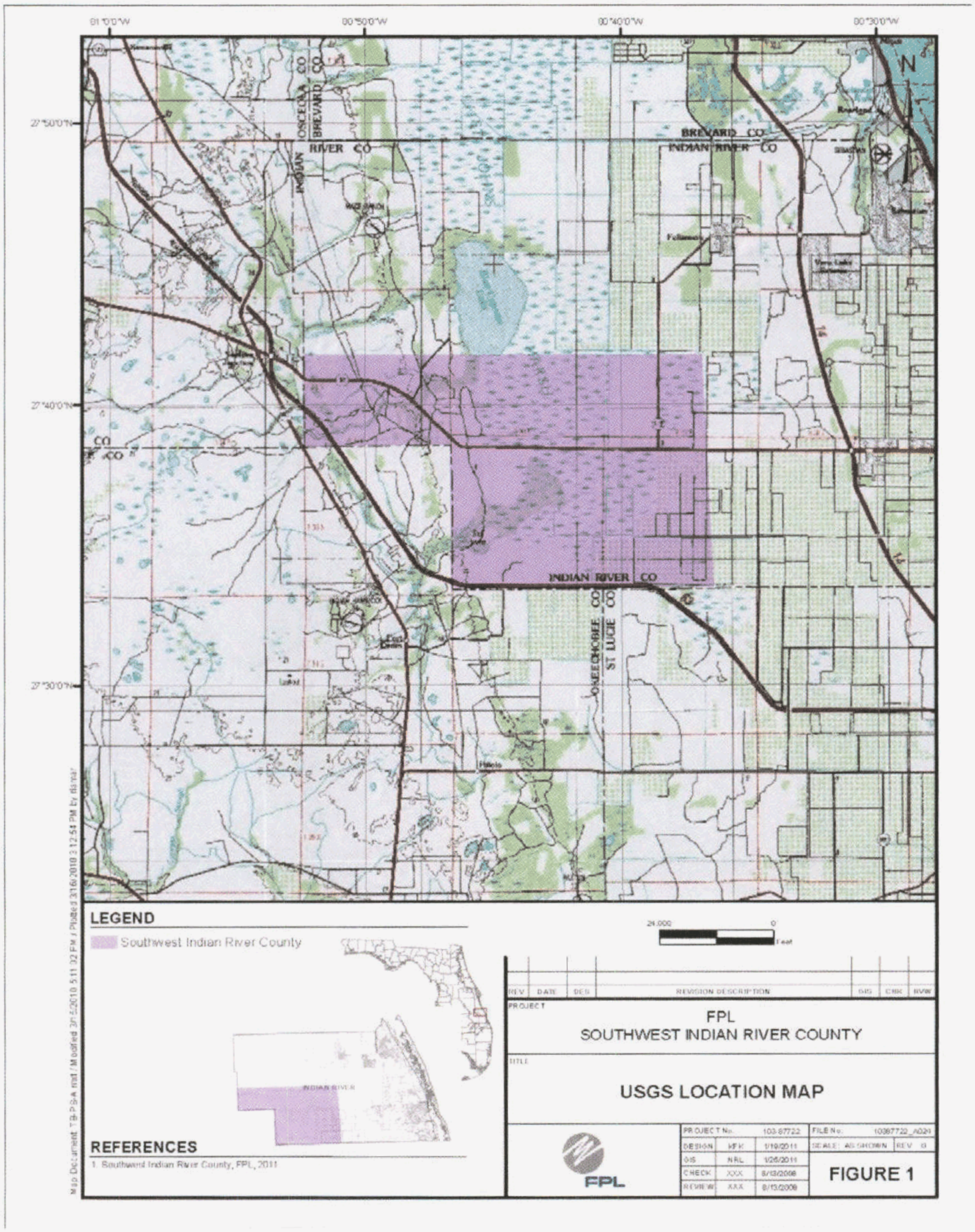
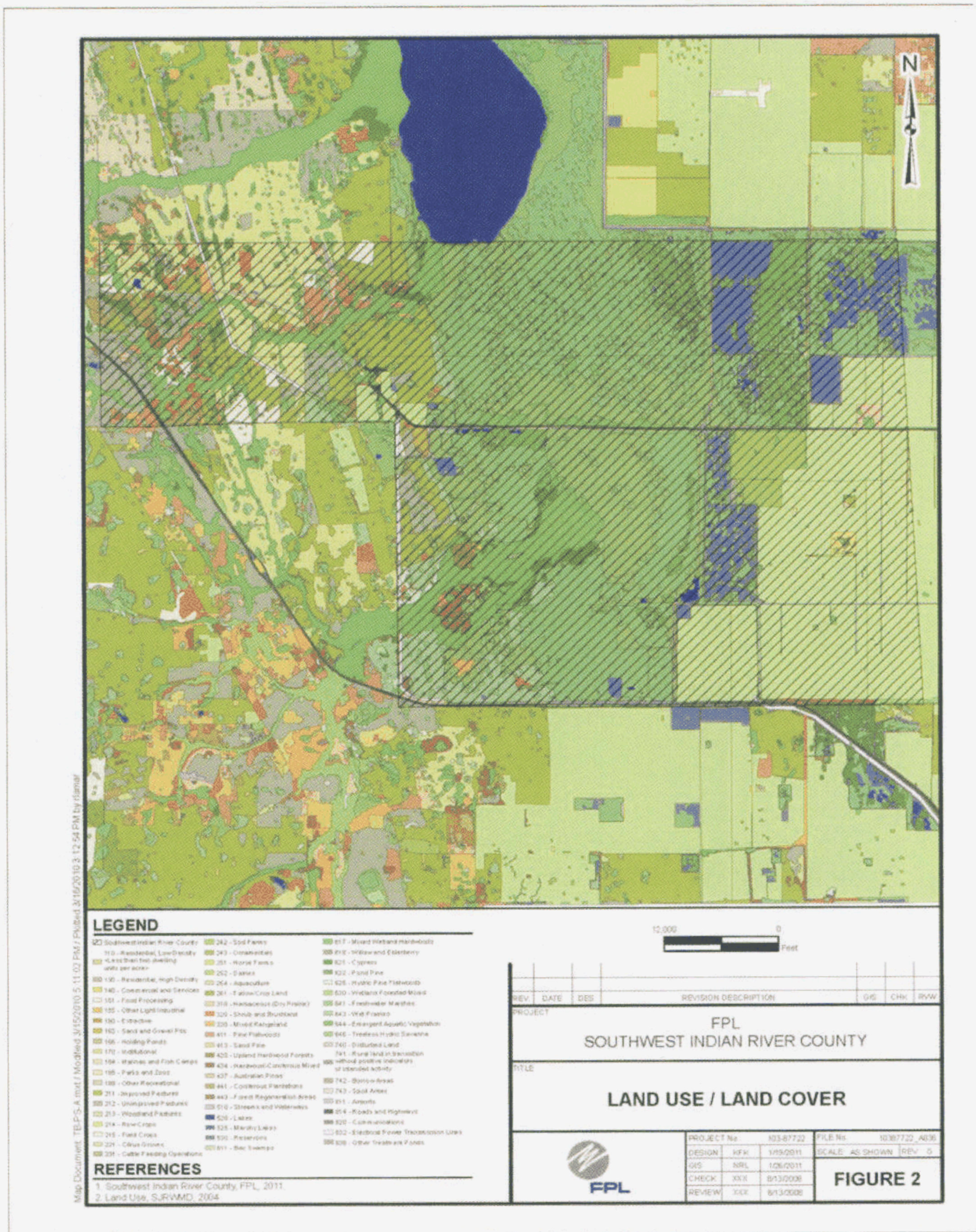


BREVARD CO
INDIAN RIVER CO
OSCEOLA CO
BREVARD CO
INDIAN RIVER CO
INDIAN RIVER CO
OKEECHOBEE CO
ST LUCIE CO
N
LEGEND
Southwest Indian River County
REFERENCES
1. Southwest Indian River County, FPL, 2011
FPL
SOUTHWEST INDIAN RIVER COUNTY
USGS LOCATION MAP
FIGURE 1


N
LEGEND
REFERENCES
1. Southwest Indian River County, FPL, 2011
2. Land Use, SJRWMD, 2004
Feet
REV. DATE DES REVISION DESCRIPTION GIS CHK RVW
PROJECT
FPL
SOUTHWEST INDIAN RIVER COUNTY
TITLE
LAND USE / LAND COVER
FPL
FIGURE 2

Environmental and Land Use Information: Supplemental Information

Potential Site #12: Space Coast Solar Expansion

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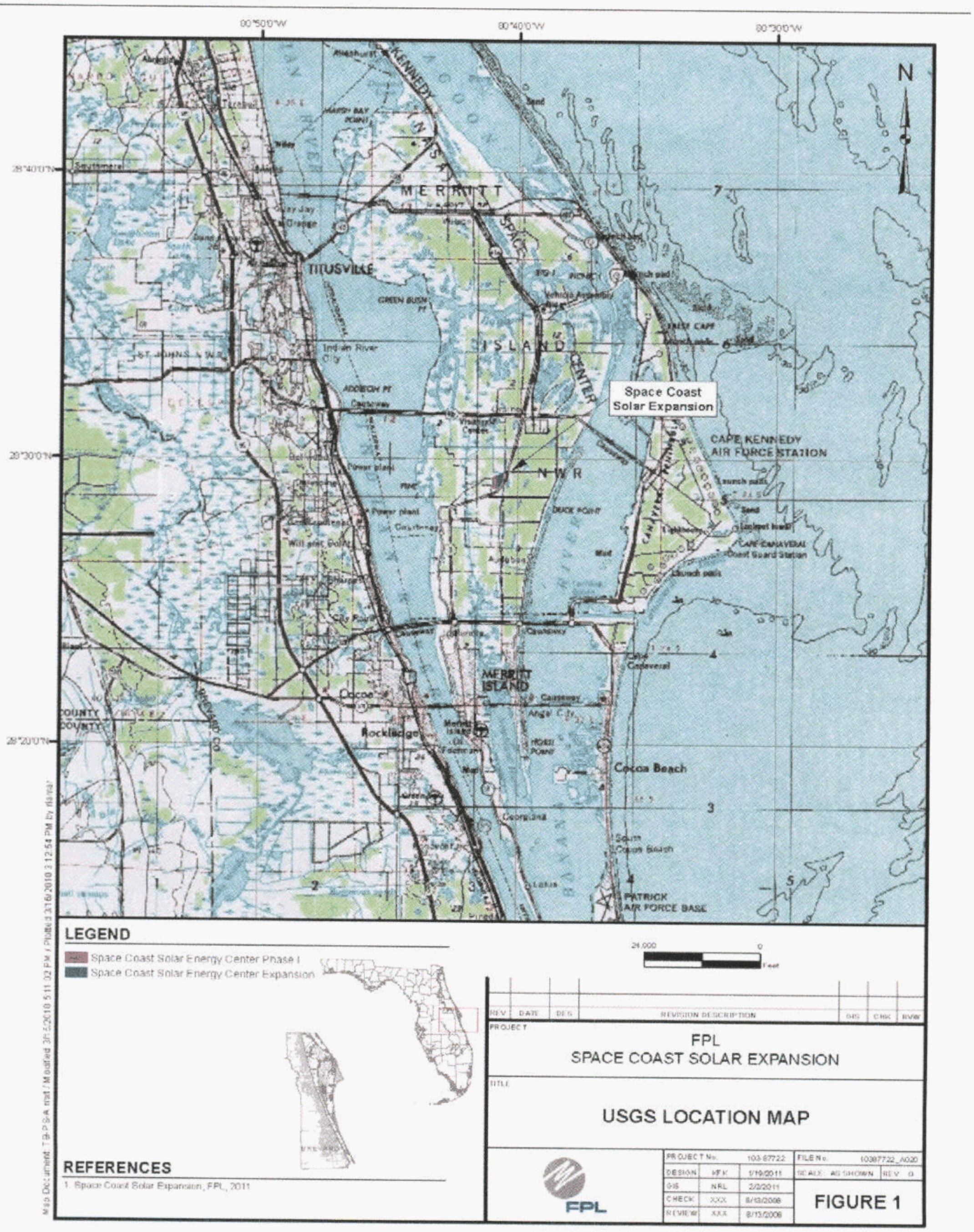
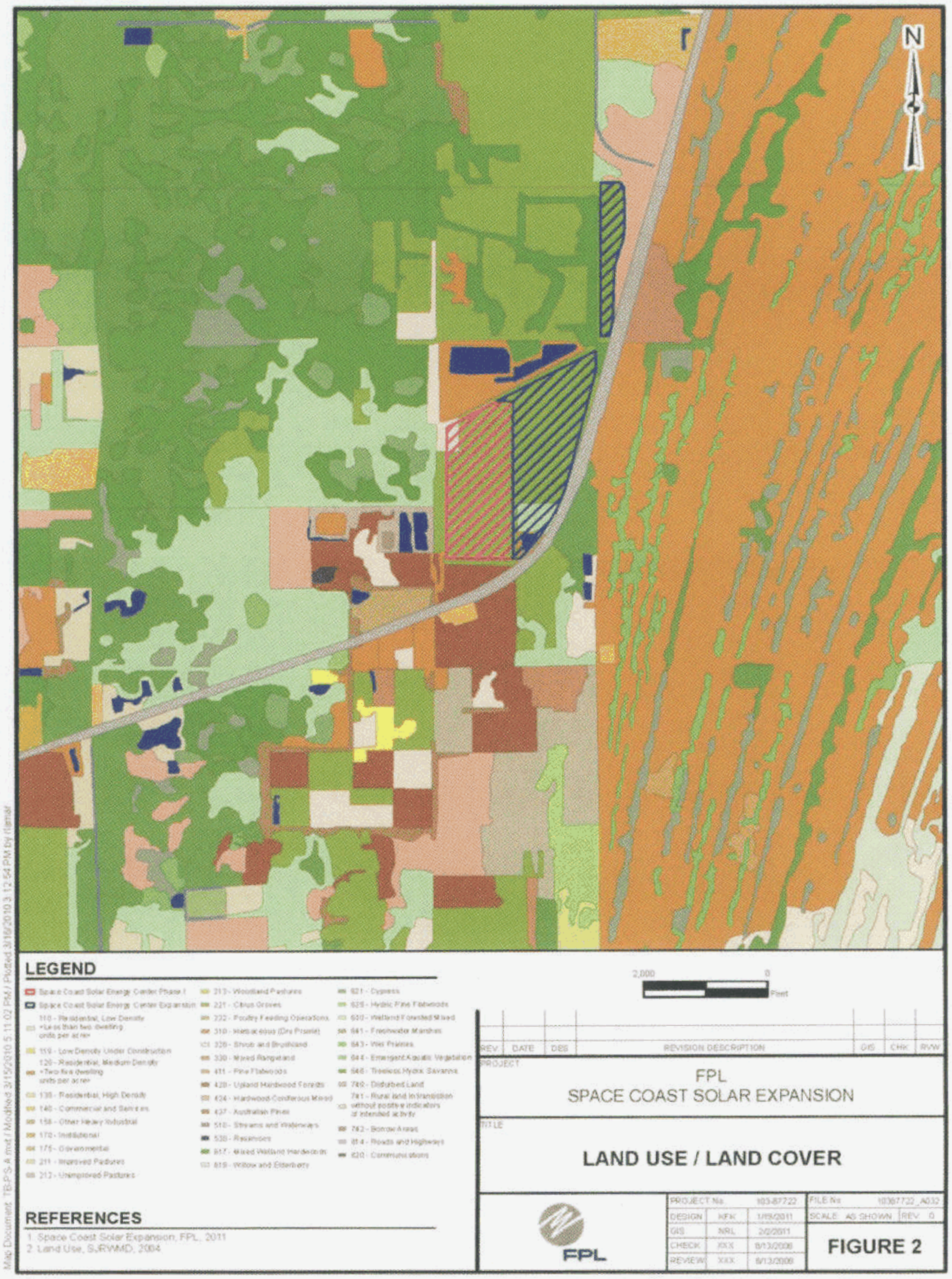

80°50'0"W
80°40'0"W
80°30'0"W
28°40'0"N
28°30'0"N
28°20'0"N
N
TITUSVILLE
MERRITT
ISLAND
KENNEDY
SPACE
CENTER
N W R
Indian River City
Space Coast Solar Expansion
CAPE KENNEDY AIR FORCE STATION
MERRITT ISLAND
Cocoa
Rockledge
Cocoa Beach
PATRICK AIR FORCE BASE
LEGEND
Space Coast Solar Energy Center Phase I
Space Coast Solar Energy Center Expansion
REFERENCES
1. Space Coast Solar Expansion, FPL, 2011
24,000
0
Feet
REV
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
SPACE COAST SOLAR EXPANSION
TITLE
USGS LOCATION MAP
FPL
PROJECT No. 103-87722
FILE No. 10387722_A020
DESIGN KFK 1/19/2011
SCALE: AS SHOWN
REV 0
GIS NRL 2/2/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FIGURE 1


N
LEGEND
Space Coast Solar Energy Center Phase I
Space Coast Solar Energy Center Expansion
110 - Residential, Low Density <Less than two dwelling units per acre>
159 - Low Density Under Construction
120 - Residential, Medium Density <Two-five dwelling units per acre>
130 - Residential, High Density
140 - Commercial and Services
158 - Other Heavy Industrial
170 - Institutional
175 - Governmental
211 - Improved Pastures
212 - Unimproved Pastures
213 - Woodland Pastures
221 - Citrus Groves
232 - Poultry Feeding Operations
310 - Herbaceous (Dry Prairie)
320 - Shrub and Brushland
330 - Mixed Rangeland
411 - Pine Flatwoods
420 - Upland Hardwood Forests
434 - Hardwood-Coniferous Mixed
437 - Australian Pines
510 - Streams and Waterways
530 - Reservoirs
617 - Mixed Wetland Hardwoods
618 - Willow and Elderberry
621 - Cypress
625 - Hydric Pine Flatwoods
630 - Wetland Forested Mixed
641 - Freshwater Marshes
643 - Wet Prairies
644 - Emergent Aquatic Vegetation
646 - Treeless Hydric Savanna
740 - Disturbed Land
741 - Rural land in transition without positive indicators of intended activity
742 - Borrow Areas
814 - Roads and Highways
820 - Communications
REFERENCES
1. Space Coast Solar Expansion, FPL, 2011
2. Land Use, SJRWMD, 2004
2,000
0
Feet
REV.
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
SPACE COAST SOLAR EXPANSION
TITLE
LAND USE / LAND COVER
FPL
PROJECT No. 103-87722
FILE No. 10387722_A032
DESIGN KFK 1/19/2011
SCALE AS SHOWN
REV. 0
GIS NRL 2/2/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FIGURE 2

Environmental and Land Use Information: Supplemental Information

Potential Site #13: West Broward

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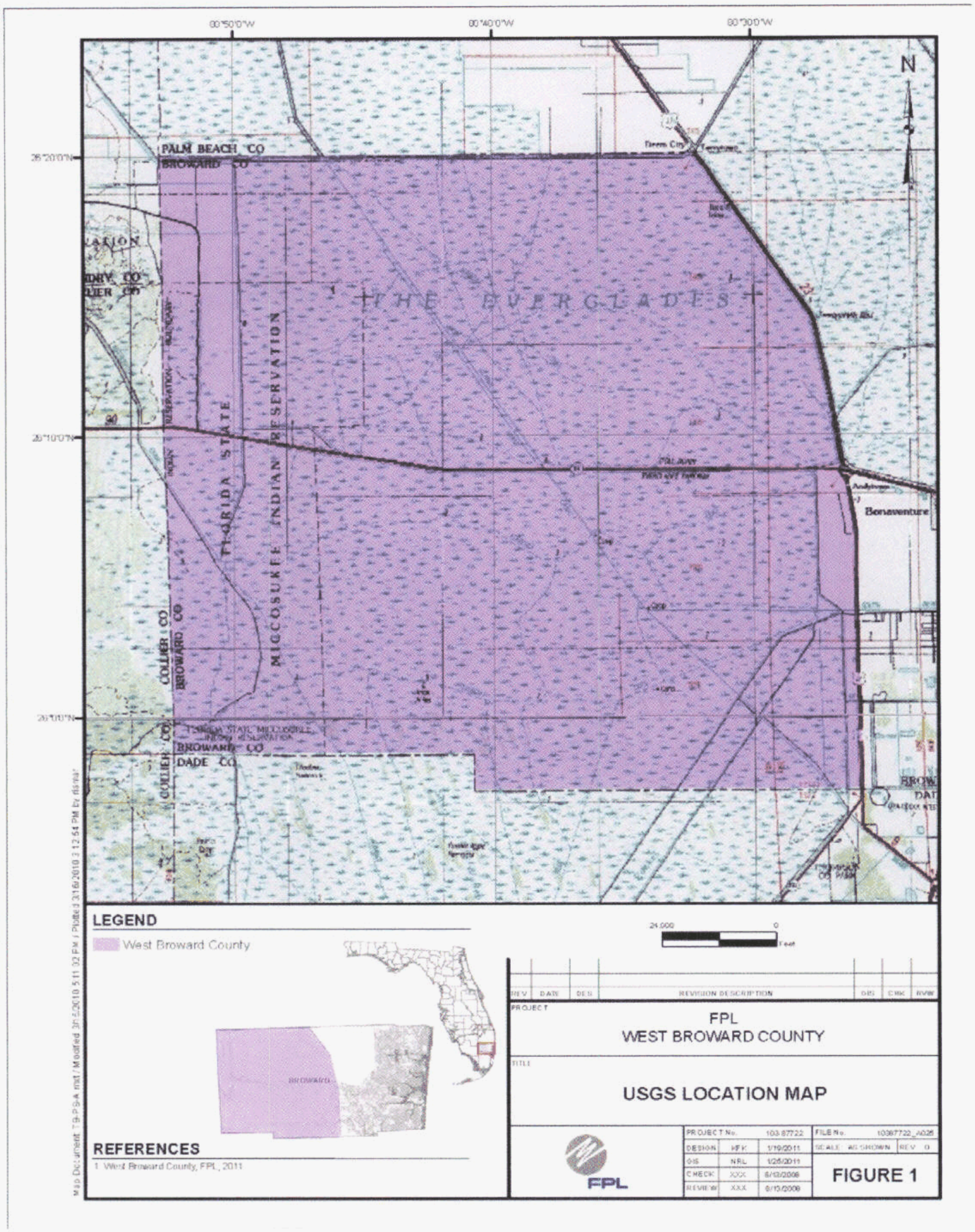
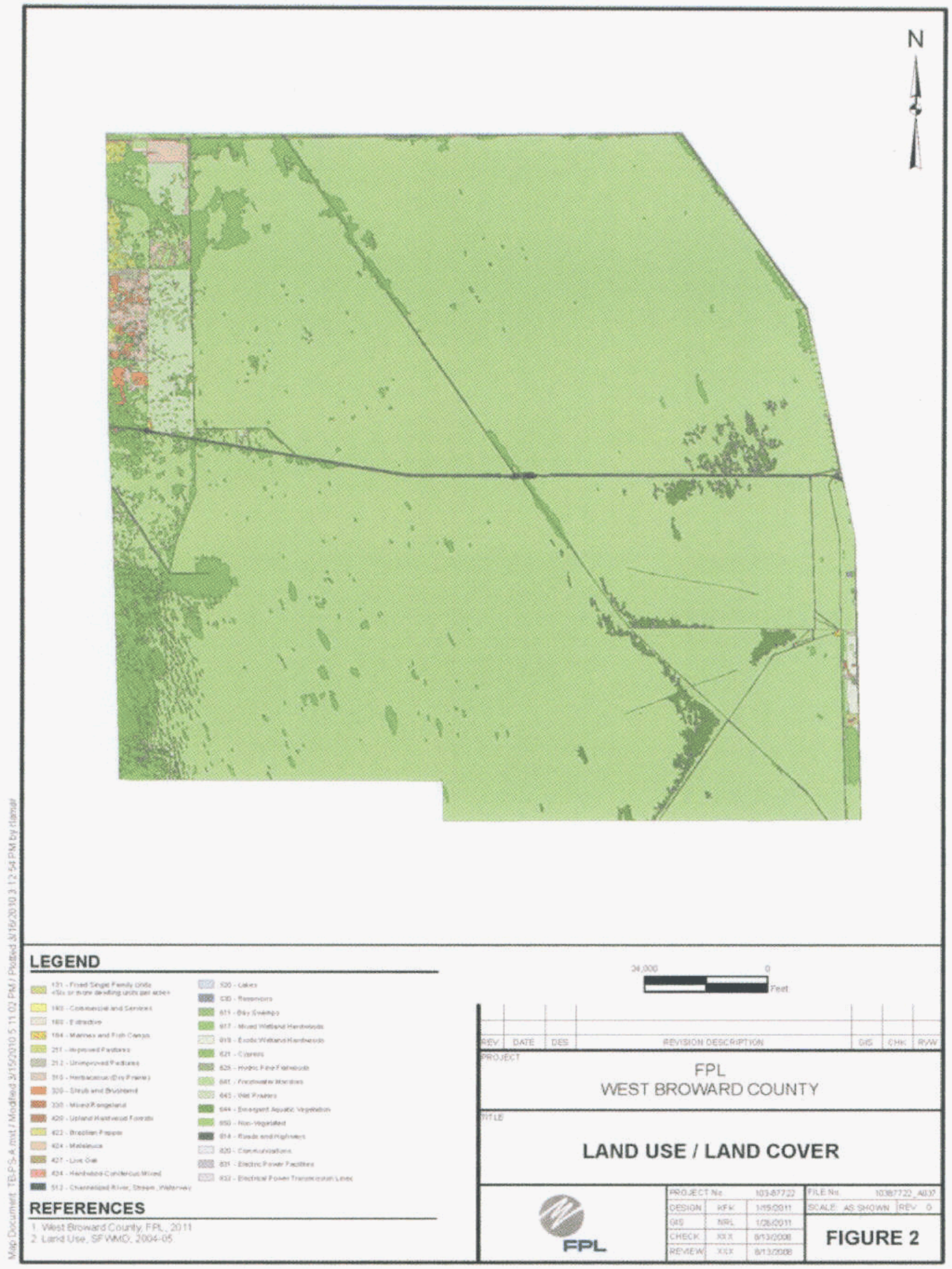


N
PALM BEACH CO
BROWARD CO
THE EVERGLADES
FLORIDA STATE
MICCOSUKEE INDIAN RESERVATION
COLLIER CO
BROWARD CO
DADE CO
Bonaventure
LEGEND
West Broward County
REFERENCES
1. West Broward County, FPL, 2011
24,000
0
Feet
REV
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
WEST BROWARD COUNTY
TITLE
USGS LOCATION MAP
FPL
PROJECT No. 103-87722
DESIGN KFK 1/19/2011
GIS NRL 1/26/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FILE No. 10387722_A026
SCALE AS SHOWN
REV 0
FIGURE 1


N
Feet
LEGEND
REFERENCES
1. West Broward County, FPL, 2011
2. Land Use, SFWMD, 2004-05
REV
DATE
DES
REVISION DESCRIPTION
GIS
CHK
RVW
PROJECT
FPL
WEST BROWARD COUNTY
TITLE
LAND USE / LAND COVER
FPL
PROJECT No. 103-87722
DESIGN RFK 1/15/2011
GIS NRL 1/26/2011
CHECK XXX 8/13/2008
REVIEW XXX 8/13/2008
FILE No. 10387722_A037
SCALE: AS SHOWN
REV 0
FIGURE 2

CHAPTER V

Other Planning Assumptions & Information

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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 (Miami-Dade and Broward counties) 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.[6]

The load forecast that is presented in FPL's 2011 Site Plan was developed in February 2011. FPL has not performed sensitivity analyses on forecasts that differ from this recently developed load forecast.

[6] 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 electric rate basis approach and the lowest system revenue requirements basis approach, yield identical results in terms of which resource options are more economic. 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 cost, and three environmental compliance cost, forecasts in its 2010 nuclear cost recovery filings. FPL utilized one fuel cost forecast, and one environmental compliance cost forecast in its DSM Plan analysis work in 2010 and early 2011.

The high and low fuel cost forecasts are derived from a calculation of the historical volatility of the 12-month forward price for one year ahead. From this range of volatility, a reasonable value from the high end of the range is applied to the medium cost fuel cost forecast to develop a high cost fuel cost forecast. Similarly, a reasonable value from the low end of the range is applied to the medium cost fuel cost forecast to develop a low cost fuel cost forecast.

The use of varying high and low fuel cost forecasts did not affect the generation expansion plan used in any of FPL's 2010 planning efforts.

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 2011 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 2010 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. However, as discussed briefly in the Executive Summary, and again in more detail in Chapter III, FPL is now projecting that it will begin to perform planned maintenance of its fossil-fueled generating units during the peak months of January and August. Please refer to Chapter III for this discussion.

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 currently 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 2010 resource planning work, FPL used several sets of financial assumptions. Two sets of these assumptions were initially used in FPL's 2010 resource planning work. The first set consisted of: (i) a capital structure of 44.8% debt and 55.2% equity; (ii) a 6.48% cost of debt; (iii) a 10.0% return on equity; and (iv) an after-tax discount rate of 7.30%. A second set of data with the same debt-to-equity ratio and cost of debt, but with an 11.75% return on equity and an after-tax discount rate of 8.27%, was also used.

Later in 2010, FPL adjusted its financial assumptions and used new two sets of financial assumptions. The first set consisted of: i) a capital structure of 40.88% debt and 59.12% equity; (ii) a 6.51% cost of debt; (iii) a 10.0% return on equity; and (iv) an after-tax discount rate of 7.55%. Again, a second set of data with the same debt-to-equity ratio and cost of debt, but with an 11.75% return on equity and an after-tax discount rate of 8.58%, was used.

Going forward in 2011, FPL has again adjusted its financial assumptions. The base case financial assumptions are currently projected to be: i) a capital structure of 40.88% debt and 59.12% equity; (ii) a 5.50% cost of debt; (iii) a 10.0% return on equity; and (iv) an after-tax discount rate of 7.29%. For certain analyses, such as sensitivity analyses for FPL's two nuclear projects, a second set of financial assumptions may be used. This second set of data is currently projected to consist of the same debt-to-equity ratio and cost of debt as just described, but with an 11.75% return on equity and an after-tax discount rate of 8.33%.

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 objective generally being to minimize FPL's projected levelized system average electric 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 resource 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 currently 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. As discussed briefly in the Executive Summary, and in more detail in Chapter III, FPL will be examining the extent to which its system reserves are projected to be dependent upon DSM resources and generation resources in its 2011 resource planning work. The results of this examination could require in a change to FPL's reliability criteria.

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 these 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 current field-metered data, are updated at regular intervals. 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 and Chapter III provide a discussion of a variety of system concerns/issues that influence FPL's resource planning process. Please see those chapters for a discussion of those concerns/issues.

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, assuming all else equal, 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/or 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 Unit 3. This generation construction project was 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 this new combined cycle (CC) unit in a Determination of Need docket.

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 recent 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 the years 2016 through 2020 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.

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(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 completed by December 2016. 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 2015) 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 Bob White Substation (also shown on Table III.E.1 in Chapter III). The construction of this line, scheduled to be completed in 2015, is necessary to serve existing and future customers in the Manatee and Sarasota areas in a reliable and effective manner.

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