ORIGINAL

FPL

April 1, 2005

VIA HAND DELIVERY

M. Blanca S. Bayo, Director
Division of the Commission Clerk and Administrative Services
Florida Public Service Commission
Betty Easley Conference Center
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: 2005 – 2014 Ten Year Site Plan

Dear Ms. Bayo,

In accordance with Chapter 186 (Section 186.801 – Ten Year Plans) of the Florida Statues, enclosed for filing are twenty-five (25) copies of Florida Power & Light Company's 2005 – 2014 Ten Year Power Plant Site Plan.

If you have any questions, please do not hesitate to contact me.

Sincerely,

John A. Hepokoski
Regulatory Issues Manager
(305) 552-4159

CMP _____
COM _____
CTR _____
ECR Haff
GCL _____
OPC _____
MMS _____
RCA _____
SCR _____
SEC 1
OTH 2 (Pena)

JH:ec
Enclosures

Ten Year Power Plant Site Plan
2005 - 2014

FPL®

FPL

Ten Year Power Plant Site Plan

2005-2014

Submitted To:

Florida Public
Service Commission

Miami, Florida
April, 2005

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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 includes an estimate of the utility's electric power generating needs, a projection of how those needs will be met, and a disclosure of information pertaining to the utility's preferred and potential power plant sites. This information is compiled and presented in accordance with Rules 25-22.070, 25-22.071, and 25-22.072, Florida Administrative Code (FAC).

This Ten-Year Power Plant Site Plan (Site Plan) document is based on Florida Power & Light Company's (FPL) planning analyses that were carried out in 2004 and that were completed in the first quarter of 2005. The forecasted information presented in this plan addresses the 2005–2014 time period.

Site Plans are long-term planning documents and should be viewed in this context. A Site Plan contains tentative information, especially for the latter years of the ten year time horizon, and 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 needed in the future as part of the Florida site certification process or other proceedings and filings.

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 current 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, particularly new power plants, as determined by FPL's IRP work in 2004 and early 2005.

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 under consideration.

Chapter V – Other Planning Assumptions and Information

This chapter addresses twelve "discussion items" which pertain to additional specific information which is to be 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
	NPGU	Next Planned Generating Unit
	ST	Steam Unit
Fuel Type	UR	Uranium
	BIT	Bituminous Coal
	FO2	#1, #2 or Kerosene Oil (Distillate)
	FO6	#4,#5,#6 Oil (Heavy)
	LNG	Liquified Natural Gas
	NG	Natural Gas
	NO	None
	Pet	Petroleum Coke
Fuel Transportation	NO	None
	PL	Pipeline
	RR	Railroad
	TK	Truck
	WA	Water
Unit/Site Status	OT	Other
	P	Planned Unit
	RP	Proposed for repowering
	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	CKT.	Circuit
	P.U.	Per Unit

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Executive Summary

Florida Power & Light Company's (FPL) 2005 Ten Year Power Plant Site Plan (Site Plan) addresses FPL's plans to meet its projected incremental resource needs for the 2005–2014 time period.

FPL's total generation capability is projected to significantly increase during the 2005–2014 time period as shown in Table ES.1. This table also shows the resulting projected Summer and Winter reserve margins for FPL over this ten-year time horizon.

Table ES.1 reflects FPL's planned changes to existing generation units (due to unit overhauls, etc.), scheduled changes in the delivered amount of purchased power, and the planned additions of new generating units. Although not specifically shown in this table, FPL's approved DSM Goals are assumed to be implemented on schedule.

The amount of new generating capacity that will be added is driven in part by the outcome of the Florida Public Service Commission docket No. 981890-EU. This docket ended with a stipulated agreement that resulted in FPL, along with Tampa Electric Company and Florida Power Corporation, switching from a minimum reserve margin planning criterion of 15% to one of 20% beginning with the Summer of 2004.

FPL has previously sought to partially secure needed capacity through a number of short-term and long-term firm capacity purchases from utilities and other entities. Included in the capacity additions for the 2005 through 2014 time frame are a new four-year firm purchase from Reliant's Indian River facility starting in 2006 and a five and a half-year firm purchase from Southern Company starting in 2010.

In 2005, FPL will be adding a large (1,107 Summer MW) new combined cycle (CC) unit at its existing Manatee plant site. Also in 2005, the two combustion turbines (CT's) that were added at FPL's existing Martin plant site in mid-2001 will be converted into a 1,107 Summer MW CC unit by the addition of two additional CT's, heat recovery steam generators, and associated equipment. This conversion will add another 787 Summer MW of capability above the present capability of the existing two CT's. The additions for 2005 were selected as the best options among other FPL construction alternatives and numerous proposals received in response to two Requests for Proposals (RFP's) FPL issued in August 2001 and April 2002, respectively. These two capacity additions were approved by the Florida Public Service Commission (FPSC) on November 19, 2002, and their applications for certification under the Florida Electric Power Plant Siting Act (Siting

Act) were approved by the Governor and Siting Board on April 11, 2003.

In 2007, FPL will be adding a large (1,144 Summer MW) new CC unit at its existing Turkey Point plant site. This unit was selected as the best option after comparison to other FPL construction alternatives and proposals received in response to an RFP that FPL issued in August 2003. This capacity addition was approved by the FPSC on June 18, 2004. On February 7, 2005, the Governor of Florida and Cabinet, acting as the Siting Board, approved the certification of the location, construction, and operation of the Turkey Point CC capacity addition.

FPL's 2008 capacity requirement will be met by a four-year purchase of varying capacity from Reliant's Indian River facility that starts in 2006 and continues through 2009. This purchase also has an option that would allow FPL to extend the purchase by one-year, through 2010.

FPL currently projects to meet its 2009 capacity need with the addition of a new self–build CC unit at its West County Energy Center site. FPL's 2010 capacity requirements will be met, in part, by the previously mentioned five and a half-year purchase from Southern Company. This 930 MW purchase begins in mid-2010 and continues through the end of 2015. In addition, FPL projects to meet the remainder of its 2010 capacity need and its 2011 capacity need with the addition of a second new self–build CC unit at its West County Energy Center site. These capacity addition selections will be conducted in a manner consistent with the Commission's Bid Rule through a Request for Proposal (RFP) process. Specifically, FPL intends to publish an RFP in the Summer of 2005 to solicit competitive proposals for comparison to its Next Planned Generating Unit(s) for the capacity need required in the years 2009 – 2011.

As noted on Table ES.1, the projected reserve margin for 2011 with these capacity additions is 19.7%, 75 MW under the 20% reserve margin planning standard. Should the need remain as currently forecast, FPL anticipates that it will make short-term purchases or other capacity adjustments as required to satisfy the reserve margin requirement. This situation presents itself again, to a lesser degree, in 2014.

Based on FPL's current forecast, there will be additional capacity needs of approximately 550 MW per year in the 2012 through 2014 time frame. Given the issue of fuel diversity, FPL proposes to meet that need with two supercritical pulverized coal (SCPC) units. These units will combine highly efficient and reliable supercritical pulverized coal combustion technology with advanced emissions control technology and plant design allowing for recycling of generation byproducts into useful commercial products, bringing a new generation of clean coal facilities to Florida. Current need projections for the in-service dates of the first and second units are June 2012 and June 2013,

respectively. These planned increases in electric generation capability will allow FPL to continue to maintain system reliability and integrity at a reasonable cost and maintain the economic and reliability benefits of a diverse fuel mix. The clean coal units are discussed in detail in FPL's recent *Report on Clean Coal Generation*, provided to the Commission in March of 2005. FPL plans to publish a Clean Coal RFP on or before August 2006 for the capacity need required in the years 2012-2014. Because the objective of the Clean Coal RFP is to enhance fuel diversity, the Clean Coal RFP will be restricted to proposals for clean coal generation, or other proposals that enhance fuel diversity as effectively as clean coal generation. The Clean Coal RFP is being initiated with a lead time that will support the longer construction schedule of a clean coal plant.

FPL's 2004 planning efforts have continued to address two significant issues that can affect the reliability and cost of electricity in the FPL service territory. Those two issues are: 1) the economic impact of the imbalance in southeast Florida between regional load and generating capacity located within this region and, 2) addressing fuel diversity in the FPL system. The selection of the Turkey Point CC unit to meet FPL's 2007 resource need has helped mitigate the immediate imbalance in southeast Florida through the year 2010. The purchase of additional coal-fired generation through a purchase agreement, the development of a potential clean coal generation facility, and efforts to evaluate bringing Liquefied Natural Gas (LNG) supplies to Florida, are the steps FPL is pursuing to address fuel diversity concerns. FPL's approach to these two issues will continue to be incorporated into FPL's resource planning work and other related initiatives.

Projected Capacity Changes and Reserve Margins for FPL [1]					
		Net Capacity Changes (MW)		FPL Reserve Margin (%)	
		Winter [2]	Summer [3]	Winter	Summer
2005	Changes to Existing Purchases [4]	(166)	(566)	20.9%	25.4%
	Manatee Unit #3 Combined Cycle [6]	---	1,107		
	Conversion of Martin #8 CT's to CC [6]	0	787		
	Changes to existing Units	---	12		
2006	Changes to Existing Purchases [4]	(132)	(136)	29.3%	23.1%
	New Purchases [5]	130	130		
	Manatee Unit #3 Combined Cycle [6]	1,197	---		
	Conversion of Martin #8 CT's to CC [6]	835	---		
	Changes to existing Units	240	167		
2007	Changes to Existing Purchases [4]	---	(935)	27.1%	22.1%
	Changes to New Purchases [5]	224	224		
	Turkey Point Combined Cycle #5 [6]	---	1,144		
	Changes to existing Units	(1)	(1)		
2008	Changes to Existing Purchases [4]	(1,008)	---	26.4%	20.5%
	Changes to New Purchases [5]	222	222		
	Turkey Point Combined Cycle #5 [6]	1,181	---		
2009	Changes to Existing Purchases [4]	---	(51)	21.9%	21.1%
	Changes to New Purchases [5]	(326)	(326)		
	West County Energy Center #1 Combined Cycle [6]	---	1,107		
2010	Changes to Existing Purchases [4]	(51)	(979)	23.1%	22.4%
	Changes to New Purchases [5]	(250)	680		
	West County Energy Center #1 Combined Cycle [6]	1,181	---		
	West County Energy Center #2 Combined Cycle [6]	---	1,107		
2011	Changes to Existing Purchases [4]	(94)	(45)	25.2%	19.7%
	Changes to New Purchases [5]	930	---		
	West County Energy Center #2 Combined Cycle [6]	1,181	---		
2012	Unsited Clean Coal Unit # 1 (6)	---	850	22.4%	21.0%
2013	Unsited Clean Coal Unit # 1 (6)	855	---	23.3%	22.4%
	Unsited Clean Coal Unit # 2 (6)	---	850		
2014	Unsited Clean Coal Unit # 2 (6)	855	---	24.1%	19.9%
	TOTALS =	**7,003**	**5,348**		

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

(2) Winter values are values for January of year shown.

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

(4) These are firm capacity purchases with contract that existed on 12/31/03. See Section I.B, I.D and III.A. for more details.

(5) These are firm capacity purchases with contracts executed on/after 1/01/04.

(6) All new units are scheduled to be in-service in June of the year shown. Consequently, they are included in the Summer reserve margin calculation for the in-service year and in both the Summer and Winter reserve margin calculations for subsequent years.

Table ES.1

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 million people. FPL served an average of 4,224,509 customer accounts in thirty-five counties during 2004. These customers were served from a variety of resources including: FPL-owned fossil and nuclear generating units, non-utility owned generation, demand side management, and interchange/purchased power.

I.A. FPL-Owned Resources

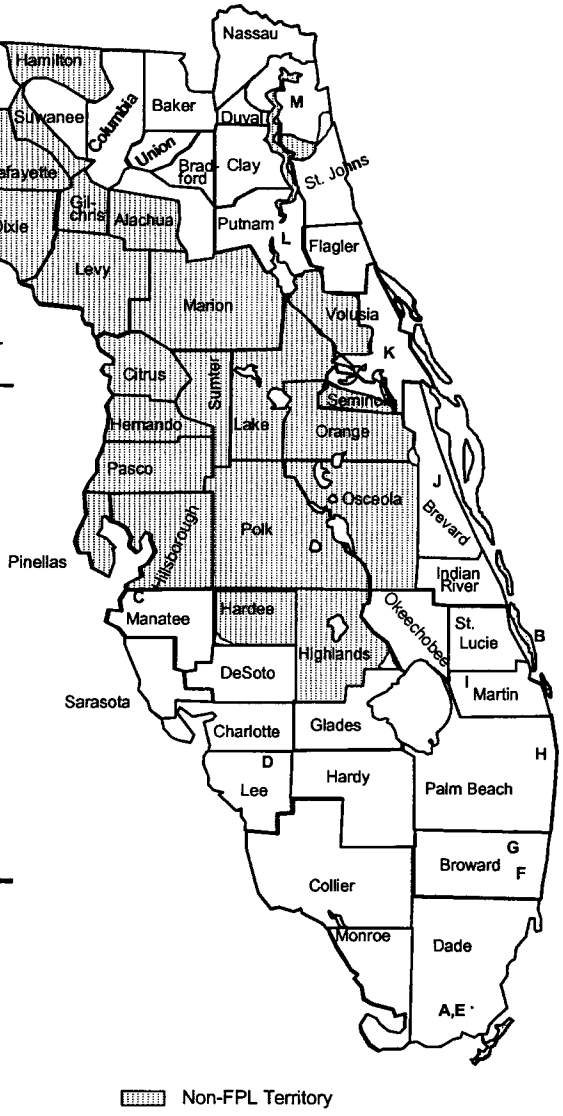
The existing FPL generating resources are located at fourteen generating sites distributed geographically around its service territory and also include partial ownership of one unit located in Georgia and two units located in Jacksonville, FL. The current generating facilities consist of four nuclear steam units, three coal units, nine combined cycle units, seventeen fossil steam units, forty-eight combustion gas turbines, two simple cycle combustion turbines, and five diesel units. The location of these units is shown on Figure I.A.1 and in Table 1.A.1.

The bulk transmission system is composed of 1,104 circuit miles of 500 Kilovolt (KV) lines (including 75 miles of 500 KV lines [two 37-1/2 mile lines] between Duval Substation and the Florida-Georgia state line, which are jointly owned with Jacksonville Electric Authority) and 2,753 circuit miles of 230 KV lines. The underlying network is composed of 1,584 circuit miles of 138 KV lines, 717 circuit miles of 115 KV lines, and 164 circuit miles of 69 KV transmission lines. Integration of the generation, transmission, and distribution system is achieved through FPL's 537 substations.

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.

Capacity Resources by Location
(as of December 31, 2004)

Location/ Map Key	Plant Name	Number of Units	Summer MW
A	Turkey Point	4	2,184
B	St. Lucie *	2	1,553
C	Manatee	2	1,591
D	Fort Myers	2	1,767
E	Cutler	2	206
F	Lauderdale	2	859
G	Port Everglades	4	1,201
H	Riviera	2	556
I	Martin	5	2,906
J	Cape Canaveral	2	801
K	Sanford	3	2,027
L	Putnam	2	498
M	SJRPP **	2	232
	Scherer ***	1	639
	Gas Turbines	48	1,908
	Internal Combustion Turbines	5	12
	FPL Generation =	**88**	**18,940**



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

Figure I.A.1

Capacity Resource by Unit Type
As of December 31, 2004

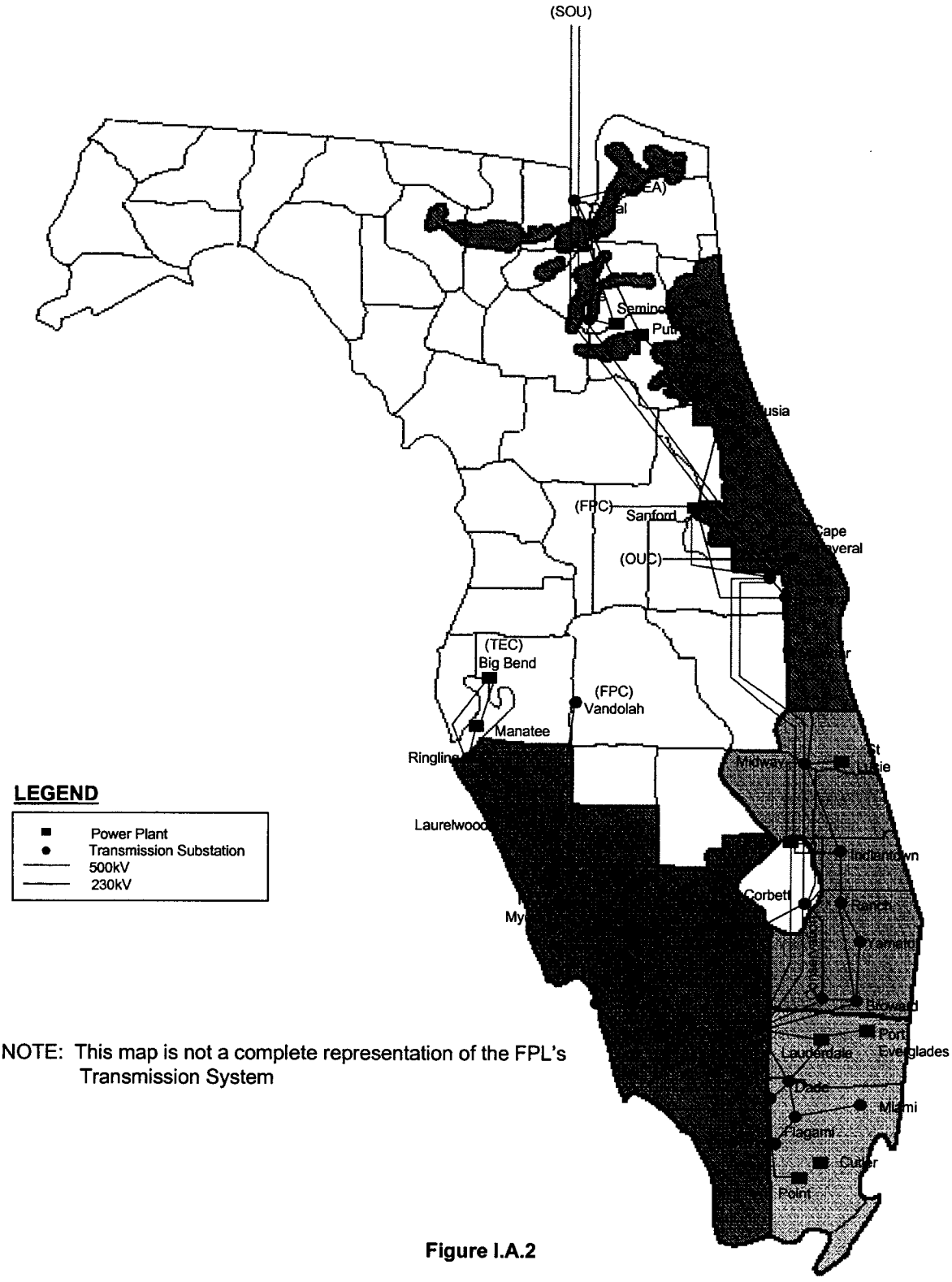
Unit Type/ Plant Name	Location	Number of Units	Fuel	Summer MW
Combined-Cycle				
Lauderdale	Dania, FL	2	Gas/Oil	859
Martin	Indiantown,FL	2	Gas	943
Sanford	Lake Monroe, FL	2	Gas	1,889
Putnam	Palatka, FL	2	Gas/Oil	498
Fort Myers	Fort Myers, FL	1	Gas	1,441
Total Combined Cycle		**9**		**5,630**
Combustion Turbines				
Martin *	Indiantown,FL	1	Gas/Oil	320
Fort Myers *	Fort Myers, FL	1	Gas/Oil	326
Total Combustion Turbines		**2**		**646**
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	232
Scherer	Monroe County, Ga	1	Coal	639
Total Coal Steam		**3**		**871**
Oil/Gas Steam				
Cape Canaveral	Cocoa, FL	2	Oil/Gas	801
Cutler	Miami, FL	2	Gas	206
Manatee	Parrish, FL	2	Oil/Gas	1,591
Martin	Indiantown,FL	2	Oil/Gas	1,643
Port Everglades	Port Everglades, FL	4	Oil/Gas	1,201
Riviera	Riviera Beach, FL	2	Oil/Gas	556
Sanford	Lake Monroe, FL	1	Oil/Gas	138
Turkey Point	Florida City, FL	2	Oil/Gas	798
Total Oil/Gas Steam		**17**		**6,934**
Gas Turbines(GT)/Diesels(IC)				
Lauderdale (GT)	Dania, FL	24	Oil/Gas	840
Port Everglades (GT)	Port Everglades, FL	12	Oil/Gas	420
Fort Myers (GT)	Fort Myers, FL	12	Oil	648
Turkey Point (IC)	Florida City, FL	5	Oil	12
Total Gas Turbines/Diesels		**53**		**1,920**
Total Units:		**88**		
Total Net Generating Capability:				**18,940**

* Each unit consists of two combustion turbines totaling approximately 300 MW.

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

Table I.A.1

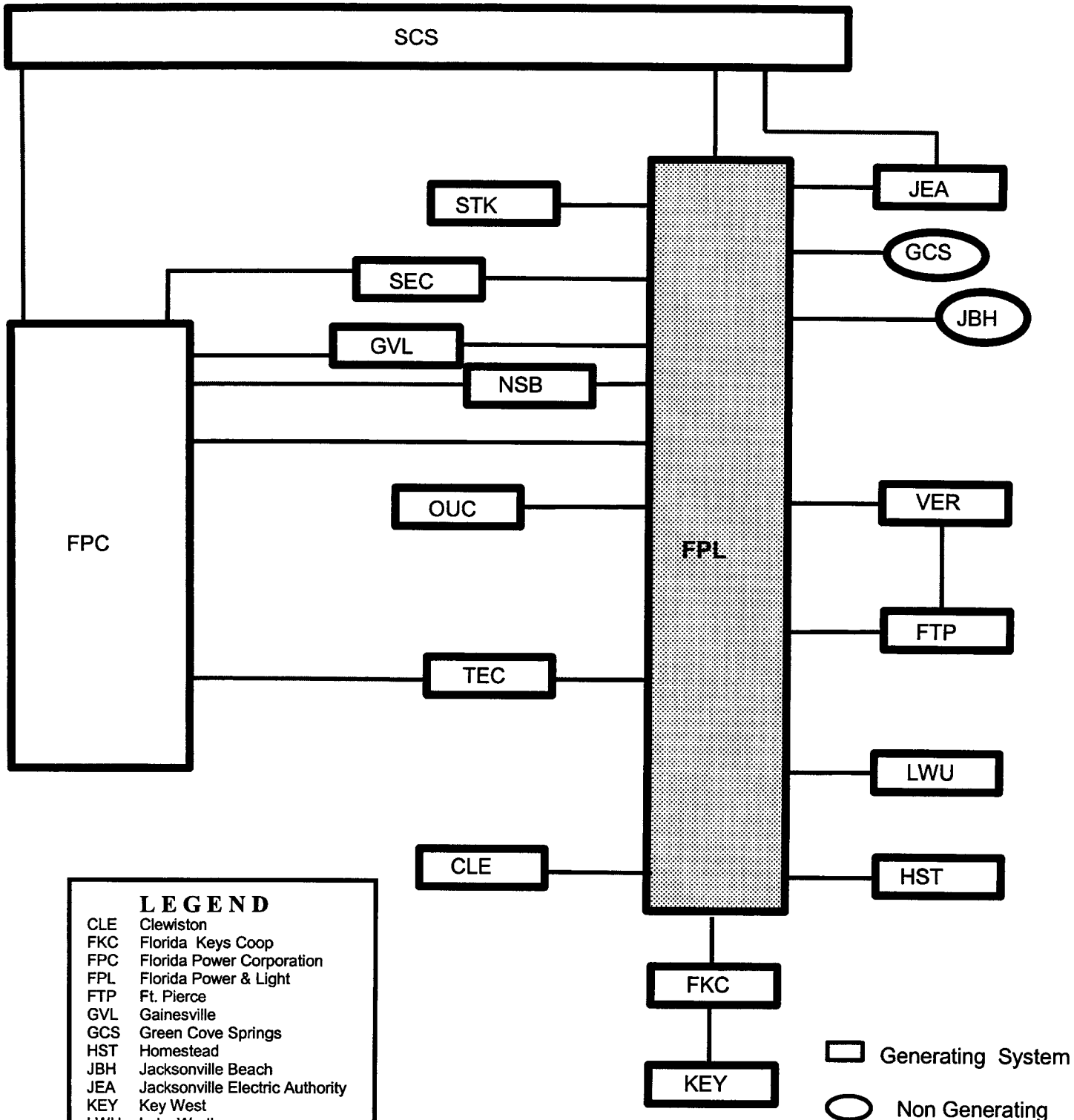
FPL Substation and Transmission System Configuration



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

Figure I.A.2

FPL Interconnection Diagram



LEGEND

CLE	Clewiston
FKC	Florida Keys Coop
FPC	Florida Power Corporation
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
LWU	Lake Worth
NSB	New Smyrna Beach
OUC	Orlando Utilities Commission
SEC	Seminole Electric Cooperative
SCS	Southern Companies
STK	Starke
TEC	Tampa Electric Company
VER	Vero Beach

Figure I.A.3

I.B Non-Utility Generation

Non-utility generation is an important part of FPL's resource mix. FPL currently has contracts with seven cogeneration/small power production facilities to purchase firm capacity and energy. A listing of these facilities appears in Table I.B.1. In addition, FPL purchases as-available (non-firm) energy from several cogeneration facilities and small power production facilities as shown in Table 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.

Florida Power & Light Company Firm Capacity and Energy Contracts with Cogeneration/Small Power Production Facilities					
Project	**County**	**Fuel**	**Capacity MW**	**In-Service Date**	**End Date**
Bio-Energy	Broward	Landfill Gas	10.0	5/1/1998	1/1/2005
Florida Crushed Stone	Hernando	Coal (PC)	110.0	4/1/1992	10/31/2005
			11.0	1/1/1994	10/31/2005
			12.0	1/1/1995	10/31/2005
			3.0	2/1/2003	10/31/2005
Broward South	Broward	Solid Waste	50.6	4/1/1991	8/1/2009
Palm Beach SWA	Palm Beach	Solid Waste	43.5	4/1/1992	3/31/2010
			4.0	6/1/2005	3/31/2010
Broward North	Broward	Solid Waste	45.0	4/1/1992	12/31/2010
Cedar Bay Generating Co.	Duval	Coal (CFB)	250.0	1/25/1994	12/31/2024
Indiantown Cogen., LP	Martin	Coal (PC)	330.0	12/22/1995	12/1/2025
Broward South	Broward	Solid Waste	1.4	1/1/1993	12/31/2026
			1.5	1/1/1995	12/31/2026
			0.6	1/1/1997	12/31/2026
Broward North	Broward	Solid Waste	7.0	1/1/1993	12/31/2026
			1.5	1/1/1995	12/31/2026
			2.5	1/1/1997	12/31/2026

Table I.B.1

As Available Energy Purchases From Non-Utility Generators in 2004				
Project	**County**	**Fuel**	**In-Service Date**	**Energy (MWH) Delivered to FPL in 2004**
US Sugar-Bryant	Palm Beach	Bagassee	2/80	3,159
Tropicana	Manatee	Natural Gas	2/90	10,072
Okeelanta	Palm Beach	Bagassee/Wood	11/95	355,734
Tomoka Farms	Volusia	Landfill Gas	7/98	20,097
Georgia Pacific	Putnam	Paper By-Product	2/94	5,134

Table I.B.2

I.C. Demand Side Management (DSM)

FPL's DSM activities continue what has been FPL's practice since 1978 of encouraging cost-effective conservation and load management. FPL's DSM efforts through 2004 have resulted in a cumulative Summer peak reduction of approximately 3,418 MW at the generator and an estimated cumulative energy saving of 29,050 GWH at the generator.

FPL's new DSM Goals for the 2005-2014 time frame were approved by the Florida Public Service Commission (Commission) on August 9, 2004. FPL's 2004 resource planning work, and the schedule for new generation additions presented in this document, are based on these approved DSM levels. FPL filed its DSM Plan (with which FPL will meet the approved DSM Goals) on November 30, 2004 with the Commission. The Commission approved FPL's DSM Plan in March 2005.

I.D. Purchased Power

Purchased power remains an important part of FPL's resource mix. FPL has a Unit Power Sales (UPS) contract to purchase 931 MW, with a minimum of 381 MW, of coal-fired generation from the Southern Company (Southern) through May, 2010. In January 2005, the Commission approved a new firm purchase contract with Southern that will result in FPL receiving 930 MW from June 2010 through the end of 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) through mid-2021 for the purchase of 381 MW (Summer) and 390 MW (Winter) of coal-fired generation from the St. John's River Power Park (SJRPP) Units No. 1 and No. 2 (FPL also has ownership interest in these units; that ownership amount is reflected in FPL's installed capacity shown on Figure I.A.1, in Table I.A.1, and on Schedule 1).

Finally, FPL has additional firm capacity purchase contracts through 2009. These firm capacity purchase contracts are with a variety of suppliers. Table I.D.1 presents the Summer and Winter MW resulting from all firm purchased power contracts through the year 2014.

FPL's Purchased Power MW [1]								
	UPS		SJRPP		Other Firm Capacity Purchases		Total	
Year	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer
2004 [2]	931	931	390	381	1,164	1,495	2,485	2,807
2005	931	931	390	381	1,008	935	2,329	2,247
2006	931	931	390	381	1,138	1,065	2,459	2,377
2007	931	931	390	381	1,362	354	2,683	1,666
2008	931	931	390	381	576	576	1,897	1,888
2009	931	931	390	381	250	250	1,571	1,562
2010	931	0	390	381	0	930	1,321	1,311
2011	0	0	390	381	930	930	1,320	1,311
2012	0	0	390	381	930	930	1,320	1,311
2013	0	0	390	381	930	930	1,320	1,311
2014	0	0	390	381	930	930	1,320	1,311

Note:

(1) Total reflects total resource entitlements resulting from existing agreements between FPL, Southern Companies, JEA, and from new firm purchase agreements.

(2) Values for 2004 are actual.

Table I.D.1

Schedule 1

Existing Generating Facilities
As of December 31, 2004

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
						Fuel		Alt. Fuel	Commercial	Expected	Gen.Max.	Net Capability 1/	
Plant Name	Unit No.	Location	Unit Type	Fuel Pri.	Fuel Alt.	Transport. Pri.	Transport. Alt.	Days Use	In-Service Month/Year	Retirement Month/Year	Nameplate KW	Winter MW	Summer MW
Turkey Point		Miami Dade County 27/57S/40E									2,336,475	2,259	2,196
	1		ST	FO6	NG	WA	PL	Unknown	Apr-67	Unknown	402,050	410	398
	2		ST	FO6	NG	WA	PL	Unknown	Apr-68	Unknown	402,050	403	400
	3		NP	UR	No	TK	No	Unknown	Nov-72	Unknown	760,000	717	693
	4		NP	UR	No	TK	No	Unknown	Jun-73	Unknown	760,000	717	693
	1-5		IC	FO2	No	TK	No	Unknown	Dec-67	Unknown	12,375	12	12
Cutler		Miami Dade County 27/55S/40E									236,000	212	206
	5		ST	NG	No	PL	No	Unknown	Nov-54	Unknown	74,500	70	68
	6		ST	NG	No	PL	No	Unknown	Jul-55	Unknown	161,500	142	138
Lauderdale		Broward County 30/50S/42E									1,873,968	1,947	1,699
	4		CC	NG	FO2	PL	PL	Unknown	May-93	Unknown	526,250	465	430
	5		CC	NG	FO2	PL	PL	Unknown	Jun-93	Unknown	526,250	464	429
	1-12		GT	NG	FO2	PL	PL	Unknown	Aug-70	Unknown	410,734	509	420
	13-24		GT	NG	FO2	PL	PL	Unknown	Aug-72	Unknown	410,734	509	420
Port Everglades		City of Hollywood 23/50S/42E									1,710,384	1,729	1,621
	1		ST	FO6	NG	WA	PL	Unknown	Jun-60	Unknown	247,775	220	212
	2		ST	FO6	NG	WA	PL	Unknown	Apr-61	Unknown	247,775	220	219
	3		ST	FO6	NG	WA	PL	Unknown	Jul-64	Unknown	402,050	390	385
	4		ST	FO6	NG	WA	PL	Unknown	Apr-65	Unknown	402,050	390	385
	1-12		GT	NG	FO2	PL	PL	Unknown	Aug-71	Unknown	410,734	509	420
Riviera		City of Riviera Beach 33/42S/43E									620,840	560	556
	3		ST	FO6	NG	WA	PL	Unknown	Jun-62	Unknown	310,420	274	272
	4		ST	FO6	NG	WA	PL	Unknown	Mar-63	Unknown	310,420	286	284

1/ These ratings are peak capability.

Schedule 1

Existing Generating Facilities
As of December 31, 2004

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
						Fuel		Alt.				Net Capability 1/	
Plant Name	Unit No.	Location	Unit Type	Fuel Pri.	Fuel Alt.	Transport Pri.	Transport Alt.	Fuel Days Use	Commercial In-Service Month/Year	Expected Retirement Month/Year	Gen.Max. Nameplate KW	Winter MW	Summer MW
Martin		Martin County 29/29S/38E									3,468,700	3,012	2,906
	1		ST	FO6	NG	PL	PL	Unknown	Dec-80	Unknown	934,500	830	828
	2		ST	FO6	NG	PL	PL	Unknown	Jun-81	Unknown	934,500	829	815
	3		CC	NG	No	PL	No	Unknown	Feb-94	Unknown	612,000	495	471
	4		CC	NG	No	PL	No	Unknown	Apr-94	Unknown	612,000	496	472
	8 A & B		CT	NG	FO2	PL	PL	Unknown	Jun-01	Unknown	375,700	362	320
St. Lucie		St. Lucie County 16/36S/41E									1,573,775	1,579	1,553
	1		NP	UR	No	TK	No	Unknown	May-76	Unknown	850,000	853	839
	2	2/	NP	UR	No	TK	No	Unknown	Jun-83	Unknown	723,775	726	714
Cape Canaveral		Brevard County 19/24S/36F									804,100	808	801
	1		ST	FO6	NG	WA	PL	Unknown	Apr-65	Unknown	402,050	398	394
	2		ST	FO6	NG	WA	PL	Unknown	May-69	Unknown	402,050	410	407
Sanford		Volusia County 16/19S/30E									2,534,050	2,232	2,027
	3		ST	FO6	NG	WA	PL	Unknown	May-59	Unknown	156,250	142	138
	4		CC	NG	No	PL	No	Unknown	Oct-03	Unknown	1,188,900	1,045	949
	5		CC	NG	No	PL	No	Unknown	Jun-02	Unknown	1,188,900	1,045	940
Putnam		Putnam County 16/10S/27E									580,008	572	498
	1		CC	NG	FO2	PL	WA	Unknown	Apr-78	Unknown	290,004	286	249
	2		CC	NG	FO2	PL	WA	Unknown	Aug-77	Unknown	290,004	286	249

1/ These ratings are peak capability.

2/ Total capability is 853/839 MW. Capabilities shown represent FPL's share of the unit and exclude the Orlando Utilities Commission (OUC) and Florida Municipal Power Agency (FMPA) combined portion of 14.89551%.

Schedule 1

Existing Generating Facilities
As of December 31, 2004

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
						Fuel		Alt. Fuel	Commercial	Expected	Gen.Max.	Net Capability 1/	
Plant Name	Unit No.	Location	Unit Type	Fuel Pri.	Fuel Alt.	Transport Pri.	Transport Alt.	Days Use	In-Service Month/Year	Retirement Month/Year	Nameplate KW	Winter MW	Summer MW
Fort Myers		Lee County 35/43S/25E									2,895,210	2,759	2,415
	2		CC	NG	No	PL	No	Unknown	Jun-02	Unknown	1,775,390	1,610	1,441
	3A & B		CT	NG	FO2	PL	PL	Unknown	Jun-01	Unknown	375,700	380	326
	1-12		GT	FO2	No	WA	No	Unknown	May-74	Unknown	744,120	769	648
Manatee		Manatee County 18/33S/20E									1,726,600	1,605	1,591
	1		ST	FO6	NG	WA	PL	Unknown	Oct-76	Unknown	863,300	795	788
	2		ST	FO6	NG	WA	PL	Unknown	Dec-77	Unknown	863,300	810	803
St. Johns River Power Park 2/		Duval County 12/15/28E (RPC4)									271,836	242	232
	1		BIT	et Col	BIT	WA	RR	Unknown	Mar-87	Unknown	135,918	130	127
	2		BIT	et Col	BIT	WA	RR	Unknown	May-88	Unknown	135,918	112	105
Scherer 3/		Monroe, GA									680,368	642	639
	4		BIT	BIT	FO2	RR	PL	Unknown	Jul-89	Unknown	680,368	642	639
									Total System as of December 31, 2004 =			20,158	18,940

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 Jacksonville Electric Authority (JEA) share of 80%.

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

CHAPTER II

Forecast of Electric Power Demand

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II. Forecast of Electric Power Demand

Long-term (20-year) forecasts of sales, net energy for load (NEL), and peak loads are developed on an annual basis for resource planning work at FPL. These forecasts are a key input to the models used to develop the Integrated Resource Plan. The following pages describe how forecasts are developed for each component of the long-term forecast: sales, NEL, and peak loads.

The primary drivers to develop these forecasts are demographic trends, weather, economic conditions, and prices of electricity. In addition, the resulting forecasts are an integration of economic evaluations, inputs of local economic development boards, weather assessments from the National Oceanic and Atmospheric Administration (NOAA), and inputs from FPL's own customer service planning areas. In the area of demographics, population trends by county, plus housing characteristics such as housing starts, housing size, and vintage of homes, are assessed.

Forecasts for electric usage in the residential and commercial classes include end-use information such as appliance saturation studies, efficiencies, and intensity of energy use. In addition to these inputs, residential forecasts also make use of household characteristics such as ages of members in households, number of members in households, and income distributions.

The projections for the national and Florida economy are obtained from Global Insight, an international economic consulting firm. Population projections for the counties served by FPL are obtained from the Bureau of Economic and Business Research (BEBR) of the University of Florida. In addition, FPL actively participates with local development councils and universities to obtain their assessments of the local economy, specifically in the area of expansion of new businesses and retention of the current business base. 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 the company's sales and peak demand. Weather variables are used in the forecasting models for energy sales and peak demand. There are two sets of weather variables developed and used in forecasting models:

1. Cooling and Heating Degree-Days are used to forecast energy sales.
2. Temperature data is used to forecast Summer and Winter peaks.

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

1. Impact of 2004 Hurricanes

FPL has estimated the impact of the 2004 hurricanes on its projected customer growth and resulting demand forecasts. These estimates were based, in part, on FPL's experience following Hurricane Andrew. After Hurricane Andrew, population growth declined to a level of approximately 65,000 customers per year and remained at that level for approximately six years before returning to a more robust growth rate. FPL's customer growth reached a peak in August 2004, with 120,000 customers having been added for the preceding 12 months. However, as a consequence of the three South Florida hurricanes (Charley, Frances, and Jeanne), growth significantly declined.

Before the hurricanes hit Florida in 2004, FPL was projecting an annual increase of 80,000 new customers in 2005, 82,000 new customers in 2006, and 81,000 new customers in 2007. When the impact of the 2004 hurricanes is taken into account, the resulting projections are 72,000 new customers in 2005, 75,000 in 2006, and a return to trend of 80,000 in 2007. FPL is assuming that the impact of the 2004 hurricanes will be short-lived and customer growth will return to a more normal level in a couple of years, versus the six year impact of Hurricane Andrew. This difference is primarily due to the assumption that the population growth in Florida will be fueled by larger numbers of baby-boomers retiring and moving to Florida, as well as an increasing availability of jobs.

II.A. Long-Term Sales Forecasts

Long-term forecasts of electricity sales are developed for each revenue class for the forecasting period of 2004-2023 and are adjusted to match the Net Energy for Load (NEL) forecast. The results of these sales forecasts for the years 2005-2014 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 tool MetrixND. The methodologies used to develop sales forecasts for each jurisdictional revenue class are outlined below. The first five years of the forecasts are developed using monthly models for Net Energy for Load and energy sales by class.

1. Residential Sales

Residential electric usage per customer is estimated by using a regression model which contains the real residential price of electricity, real Florida personal income, and Cooling and Heating Degree-Days as explanatory variables as well as a dummy variable for shoulder months. The price of electricity plays a role in explaining electric usage since 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 personal income. The degree of economic prosperity can, and does, affect residential electricity sales. The impact of weather is captured by the Cooling and Heating Degree-Days; in addition, a one month lagged Cooling Degree-Day is also included as an explanatory variable. Residential energy sales are forecast 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 a regression model. Commercial sales are a function of the following variables: Florida's non-agricultural employment, commercial real price of electricity, Cooling Degree-Days, and an autoregressive term. Florida's non-agricultural employment is used to capture the economic activity in FPL's service territory. The price of electricity is also included as an explanatory variable in the model because it has an impact on customer usage. Cooling Degree-Days are used to capture weather-sensitive load in the commercial sector.

3. Industrial Sales

The industrial sales forecast is also developed using a regression model. Industrial sales are a function of industrial customers, the price of electricity, Cooling Degree-Days, a dummy variable for outliers, and an autoregressive term. The price of electricity is also included as an explanatory variable in the model because it has an impact on customer

usage. The Cooling Degree-Day term is included to capture the weather-sensitive load in the industrial class.

4. Other Public Authority Sales

At present, this class consists of sports fields and one government account. The forecast for this class is based on historical knowledge of its characteristics.

5. Street & Highway Sales and Railroad & Railways Sales

The forecast for street and highway sales is developed by first assuming a constant use per customer and then multiplying that value by the number of projected customers. The forecast of sales to railroad & railways is based on historical knowledge of its characteristics. This class consists of Miami-Dade County's Metrorail system.

6. Sales for Resale

Sales for resale (wholesale) customers are composed of municipalities and/or electric cooperatives. 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 (Florida Keys), City Electric System of the Utility Board of Key West, Florida (City of Key West), Miami-Dade County, and the Florida Municipal Power Agency (FMPA). Sales to the Florida Keys are forecasted using a regression model. Forecasted sales to the City of Key West are based on assumptions regarding their contract demand and expected load factor. Miami-Dade County sells 60 MW to Progress Energy. Line losses are billed to Miami-Dade under a wholesale contract. FMPA has contracted for delivery of 75 MW from FPL through October, 2007.

7. Total Sales

Sales forecasts by revenue class are summed to produce a total sales forecast. After an estimate of annual total sales is obtained, an expansion factor is applied to generate a forecast of annual Net Energy for Load (NEL).

II.B. Net Energy for Load

An annual econometric model is developed to produce a net energy for load (NEL) forecast. The key inputs to the model are: the price of electricity, Heating and Cooling Degree-Days, Florida Non-Agricultural Employment, and an autoregressive term. The monthly model is similar, except the economic variables utilized are Florida's real personal income and a dummy variable for February. The first five years are obtained from the short-term model. Forecasts for subsequent years are generated using the growth rates from the annual model.

Once an annual NEL forecast is obtained using the above-mentioned methodology, the results are then compared for reasonableness to the NEL forecast generated using the total sales forecast. The sales by class forecasts previously discussed are then adjusted to match the annual NEL Forecast.

The forecasted NEL values for 2005–2014 are presented in Schedule 3.3 that appears at the end of this chapter.

II.C. System Peak Forecasts

The rate of absolute growth in FPL system load has been a function of an increase in the customer base, varying weather conditions, continued economic growth, changing patterns of customer behavior (including an increased stock of electricity-consuming appliances), and more efficient heating and cooling appliances. FPL developed the peak forecast models to capture these behavioral relationships.

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 2005–2014 are presented in Schedules 3.1 and 3.2 that appear at the end of this chapter, and again in Schedules 7.1 and 7.2 that appear near the end of Chapter 3.

System Summer Peak

The Summer peak forecast is developed using an econometric model. The variables included in the model are the price of electricity, Florida real personal income, and maximum peak day temperature. The econometric model uses these variables to develop

the Summer peak load per customer. The Summer peak load per customer value is multiplied by total customers to derive FPL's system Summer peak.

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 as well as for the morning of the Winter peak day. In addition, Florida real personal income is a variable used in the model. The model generates the Winter peak load per customer. The Winter peak load per customer value is multiplied by total customers to derive FPL's system Winter peak.

Monthly Peak Forecasts

Monthly peaks for the 2004-2023 period are forecasted to provide information for the scheduling of maintenance for power plants and fuel budgeting. The forecasting process is basically the same as for the monthly NEL forecast and consists of the following actions:

a. Develop the historical seasonal factor for each month by using ratios of historical monthly peaks to seasonal peaks (Summer = April-October, Winter = November-March.)

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.D. The Hourly Load Forecast

Forecasted values for system hourly load for the period 2004-2023 are produced using a System Load Forecasting "shaper" program. This model uses sixteen years of historical FPL hourly system load data to develop load shapes for weekdays, weekend days, and holidays. These daily load shapes are ranked and used with forecasted monthly peaks, NEL, and calendars in developing an hourly forecast. 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.

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Rural & Residential			Commercial		
Year	Population*	Members per Household	GWH**	Average*** No. of Customers	Average KWH Consumption Per Customer	GWH**	Average*** No. of Customers	Average KWH Consumption Per Customer
1995	6,806,351	2.20	40,556	3,097,192	13,094	30,719	374,005	82,135
1996	6,948,951	2.20	41,302	3,152,625	13,101	31,211	380,860	81,949
1997	7,105,592	2.21	41,849	3,209,298	13,040	32,942	388,906	84,703
1998	7,249,627	2.22	45,482	3,266,011	13,926	34,618	396,749	87,255
1999	7,412,744	2.22	44,187	3,332,422	13,260	35,524	404,942	87,725
2000	7,603,964	2.23	46,320	3,414,002	13,568	37,001	415,295	89,096
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	8,406,324	2.21	55,713	3,809,120	14,626	42,151	468,211	90,025
2006	8,565,263	2.21	57,848	3,875,162	14,928	43,668	477,484	91,455
2007	8,721,735	2.21	59,969	3,945,994	15,197	45,326	486,673	93,134
2008	8,876,279	2.21	62,602	4,016,456	15,586	46,854	495,521	94,556
2009	9,029,214	2.21	65,131	4,086,068	15,940	48,092	504,304	95,363
2010	9,181,121	2.21	67,221	4,155,016	16,178	49,227	513,104	95,939
2011	9,333,931	2.21	68,899	4,223,741	16,312	50,092	521,935	95,974
2012	9,486,208	2.21	70,624	4,292,229	16,454	50,937	530,740	95,973
2013	9,638,031	2.21	72,491	4,360,482	16,625	51,935	539,608	96,246
2014	9,789,447	2.21	74,460	4,429,329	16,811	53,032	548,242	96,731

* Population represents only the area served by FPL.

** Actual energy sales include the impacts of existing conservation. Forecasted energy sales do not include the impact of incremental conservation.

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

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

(1)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
		Industrial		Railroads	Street &	Other Sales to	Total**** Sales to
Year	GWH **	Average*** No. of Customers	Average KWH Consumption Per Customer	& Railways GWH	Highway Lighting GWH **	Public Authorities GWH	Ultimate Consumers GWH **
1995	3,883	15,140	256,473	84	358	648	76,248
1996	3,792	14,783	256,511	83	368	577	77,334
1997	3,894	14,761	263,803	85	383	702	79,855
1998	3,951	15,126	261,206	81	373	625	85,130
1999	3,948	16,040	246,135	79	473	465	84,676
2000	3,768	16,410	229,616	81	408	381	87,960
2001	4,091	15,445	264,875	86	419	67	90,212
2002	4,057	15,533	261,186	89	420	63	95,523
2003	4,004	17,029	235,128	93	425	64	99,496
2004	3,964	18,512	214,139	93	413	58	99,095
2005	3,982	16,590	240,050	100	418	63	102,427
2006	3,958	16,239	243,733	103	423	63	106,064
2007	3,957	16,169	244,698	106	431	63	109,852
2008	3,969	15,831	250,713	110	438	63	114,036
2009	3,968	15,442	256,973	113	446	63	117,813
2010	3,961	15,317	258,564	113	453	63	121,038
2011	3,923	15,187	258,295	113	461	63	123,550
2012	3,875	14,959	259,027	113	469	63	126,080
2013	3,838	14,826	258,880	113	476	63	128,917
2014	3,808	14,678	259,417	113	484	63	131,959

** Actual energy sales include existing conservation. Forecasted energy sales do not include the impact of incremental conservation.

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

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

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

(1)	(17)	(18)	(19)	(20)	(21)
Year	Sales for Resale GWH	Utility Use & Losses GWH	Net* Energy For Load GWH **	Average *** No. of Other Customers	Total Average***,****** Number of Customers
1995	1,437	6,276	83,961	2,459	3,488,796
1996	1,353	6,306	84,993	2,480	3,550,748
1997	1,228	5,771	86,853	2,520	3,615,485
1998	1,326	6,206	92,662	2,584	3,680,470
1999	953	5,829	91,458	2,605	3,756,009
2000	970	7,059	95,989	2,694	3,848,401
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	7,464	108,091	3,029	4,224,509
2005	1,568	7,700	111,695	3,036	4,296,957
2006	1,586	7,813	115,463	3,072	4,371,957
2007	1,558	8,068	119,477	3,121	4,451,957
2008	1,092	8,331	123,459	3,170	4,530,979
2009	1,092	8,616	127,521	3,221	4,609,035
2010	1,092	8,849	130,980	3,271	4,686,707
2011	1,092	9,031	133,674	3,321	4,764,184
2012	1,092	9,215	136,387	3,371	4,841,299
2013	1,092	9,420	139,429	3,421	4,918,337
2014	1,092	9,641	142,692	3,471	4,995,720

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

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

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

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

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
1995	16,172	435	15,737	0	465	260	406	195	15,301
1996	16,064	364	15,700	0	525	339	422	297	15,117
1997	16,613	380	16,233	0	582	440	435	343	15,596
1998	17,897	426	17,471	0	628	526	458	385	16,811
1999	17,615	169	17,446	0	673	592	452	420	16,490
2000	17,808	161	17,647	0	719	645	467	451	16,622
2001	18,754	169	18,585	0	737	697	488	481	17,529
2002	19,219	261	18,958	0	770	755	489	517	17,960
2003	19,668	253	19,415	0	781	799	577	554	18,310
2004	20,545	258	20,287	0	782	828	580	569	19,183
2005	20,614	264	20,351	0	788	87	592	40	19,108
2006	21,178	266	20,912	0	796	128	603	55	19,596
2007	21,769	269	21,500	0	807	170	615	67	20,111
2008	22,306	197	22,109	0	820	214	627	79	20,566
2009	22,884	197	22,687	0	836	261	639	90	21,058
2010	23,424	197	23,227	0	853	310	650	102	21,510
2011	23,964	197	23,767	0	871	361	662	112	21,958
2012	24,516	197	24,319	0	891	413	674	123	22,416
2013	25,059	197	24,862	0	912	467	686	133	22,861
2014	25,633	197	25,436	0	936	523	698	143	23,333

Historical Values (1995 - 2004):

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

Col. (5) - Col. (9) for 1995 through 2003 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) and Commercial /Industrial Demand Reduction (CDR). Col.(5) - Col.(9) for year 2004 are "estimated actuals" and are August values.

Col. (10) represents a HYPOTHETICAL "Net Firm Demand" 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).

Projected Values (2005 - 2014):

Col. (2) - Col.(4) represent FPL's forecasted peak w/o incremental conservation or cumulative load control. The effects of conservation implemented prior to 2004 are incorporated into the load forecast.

Col. (5) - Col. (9) represent all incremental conservation and cumulative load control. These values are projected August values and the conservation values are based on projections with a 1/2004 starting point for use with the 2004 load forecast.

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

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Firm Wholesale	Retail	Interruptible	Res. Load Management	Residential Conservation	C/I Load Management	C/I Conservation	Net Firm Demand
1995/96	18,096	698	17,398	0	512	266	406	89	17,178
1996/97	16,490	626	15,864	0	578	311	417	139	15,495
1997/98	13,060	239	12,821	0	641	369	426	151	11,993
1998/99	16,802	149	16,653	0	692	404	446	164	15,664
1999/00	17,057	142	16,915	0	741	434	438	176	15,878
2000/01	18,199	150	18,049	0	791	459	448	183	16,960
2001/02	17,597	145	17,452	0	811	500	457	196	16,329
2002/03	20,190	246	19,944	0	847	546	453	206	18,890
2003/04	14,752	211	14,541	0	857	570	532	230	13,363
2004/05	18,108	225	17,884	0	864	38	539	28	16,705
2005/06	21,336	252	21,083	0	871	60	545	35	19,825
2006/07	21,898	255	21,644	0	881	82	552	40	20,344
2007/08	22,369	182	22,187	0	894	105	559	44	20,768
2008/09	22,916	182	22,734	0	910	130	566	48	21,262
2009/10	23,466	182	23,284	0	928	156	573	52	21,758
2010/11	24,035	182	23,853	0	947	183	579	57	22,270
2011/12	24,608	182	24,426	0	968	210	586	61	22,783
2012/13	25,197	182	25,015	0	990	238	593	66	23,309
2013/14	25,798	182	25,616	0	1,014	266	600	72	23,846

Historical Values (1995/96 - 2004/05):

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 1995/96 through 2003/04 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) and Commercial/Industrial Demand Reduction (CDR).Col.(5) - Col.(9) for year 2004/05 are "estimated actuals" and are January values.

Col. (10) represents a HYPOTHETICAL "Net Firm Demand" 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).

Projected Values (2005/06- 2013/14):

Col. (2) - Col.(4) represent FPL's forecasted peak w/o incremental conservation or cumulative load control. The effects of conservation implemented prior to 2004 are incorporated into the load forecast.

Col. (5) - Col.(9) represent all incremental conservation and cumulative load control. These values are projected January values and the conservation values are based on projections with a 1/2004 starting point for use with the 2004 load forecast.

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 and Forecast of Annual Net Energy for Load - GWH: Base Case

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Year	Total	Residential Conservation	C/I Conservation	Retail	Sales for Resale GWH	Utility Use & Losses	Net Energy For Load	Load Factor(%)
1995	85,418	777	680	83,981	1,437	6,276	83,961	59.3%
1996	87,007	971	1,043	85,654	1,353	6,306	84,993	60.2%
1997	89,243	1,213	1,177	88,015	1,228	5,771	86,853	59.7%
1998	95,318	1,374	1,282	93,992	1,326	6,206	92,662	59.1%
1999	94,365	1,542	1,365	93,412	953	5,829	91,458	59.3%
2000	99,097	1,674	1,434	98,127	970	7,059	95,989	61.4%
2001	101,739	1,789	1,545	100,768	970	7,222	98,404	59.9%
2002	107,755	1,917	1,639	106,522	1,233	7,443	104,199	61.9%
2003	112,160	2,008	1,759	110,648	1,511	7,386	108,393	62.9%
2004	112,036	2,109	1,836	110,504	1,531	7,464	108,091	59.9%
2005	111,695	59	17	110,127	1,568	7,700	111,619	61.9%
2006	115,463	148	45	113,876	1,586	7,813	115,270	62.2%
2007	119,477	235	61	117,919	1,558	8,068	119,181	62.7%
2008	123,459	327	70	122,366	1,092	8,331	123,062	63.0%
2009	127,521	425	80	126,429	1,092	8,616	127,016	63.6%
2010	130,980	528	90	129,887	1,092	8,849	130,362	63.8%
2011	133,674	635	101	132,582	1,092	9,031	132,938	63.7%
2012	136,387	745	111	135,295	1,092	9,215	135,531	63.3%
2013	139,429	858	123	138,337	1,092	9,420	138,448	63.5%
2014	142,692	974	134	141,600	1,092	9,641	141,584	63.5%

Historical Values (1995 - 2004):

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. (8).

Col.(3) & Col.(4) for 1995 through 2003 are DSM values starting in January 1988 and are annual (12-month) values.Col. (3) and Col. (4) for 2004 are "estimated actuals" and are also annual (12-month) values. The values represent the total GWH reductions actually experienced each year .

Col. (5) & Col. (6) are a breakdown of Net Energy For Load in Col (2) into Retail and Wholesale .

Col. (9) is calculated using Col. (8) from this page and Col. (2), "Total", from Schedule 3.1 using the formula: Col. (9) = ((Col. (8)*1000) / ((Col.(2) * 8760)

Projected Values (2005 - 2014):

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

Col. (3) & Col. (4) are forecasted values of the reduction on sales from incremental conservation and are mid-year (6-month) values. The effects of conservation implemented prior to 2004 are incorporated into the load forecast.

Col. (5) & Col. (6) are a breakdown of Net Energy For Load in Col (2) , into Retail and Wholesale.

Col. (8) NEL projected values shown here do include the impact of conservation in Col. (3) and Col. (4). Therefore, these NEL values do not match those shown on schedule 2.3 because those values do not account for incremental conservation.

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)
	2004 ACTUAL		2005* FORECAST		2006* FORECAST	
Month	Total Peak Demand MW	NEL GWH	Total Peak Demand MW	NEL GWH	Total Peak Demand MW	NEL GWH
JAN	13,857	7,646	20,791	8,221	21,336	8,483
FEB	14,752	7,365	17,138	7,591	17,588	7,835
MAR	14,618	7,855	16,170	8,230	16,594	8,530
APR	16,529	8,063	17,161	8,572	17,631	8,878
MAY	18,936	9,138	19,039	9,454	19,560	9,771
JUN	20,250	10,991	19,814	10,401	20,356	10,736
JUL	20,545	10,634	20,193	10,833	20,746	11,183
AUG	19,836	10,594	20,614	11,010	21,178	11,364
SEP	20,531	10,049	20,010	10,717	20,557	11,065
OCT	18,635	9,369	18,618	9,601	19,127	9,931
NOV	17,358	8,495	17,678	8,617	18,144	8,928
DEC	15,871	7,893	18,047	8,447	18,522	8,760
TOTALS		108,091		111,695		115,463

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

CHAPTER III

Projection of Incremental Resource Additions

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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 1990's and has since utilized the process 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 potential new power plants, the primary subjects of this document, are determined as part of the IRP process work. This section discusses how FPL applied this process in its 2004 and early 2005 resource planning work.

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;

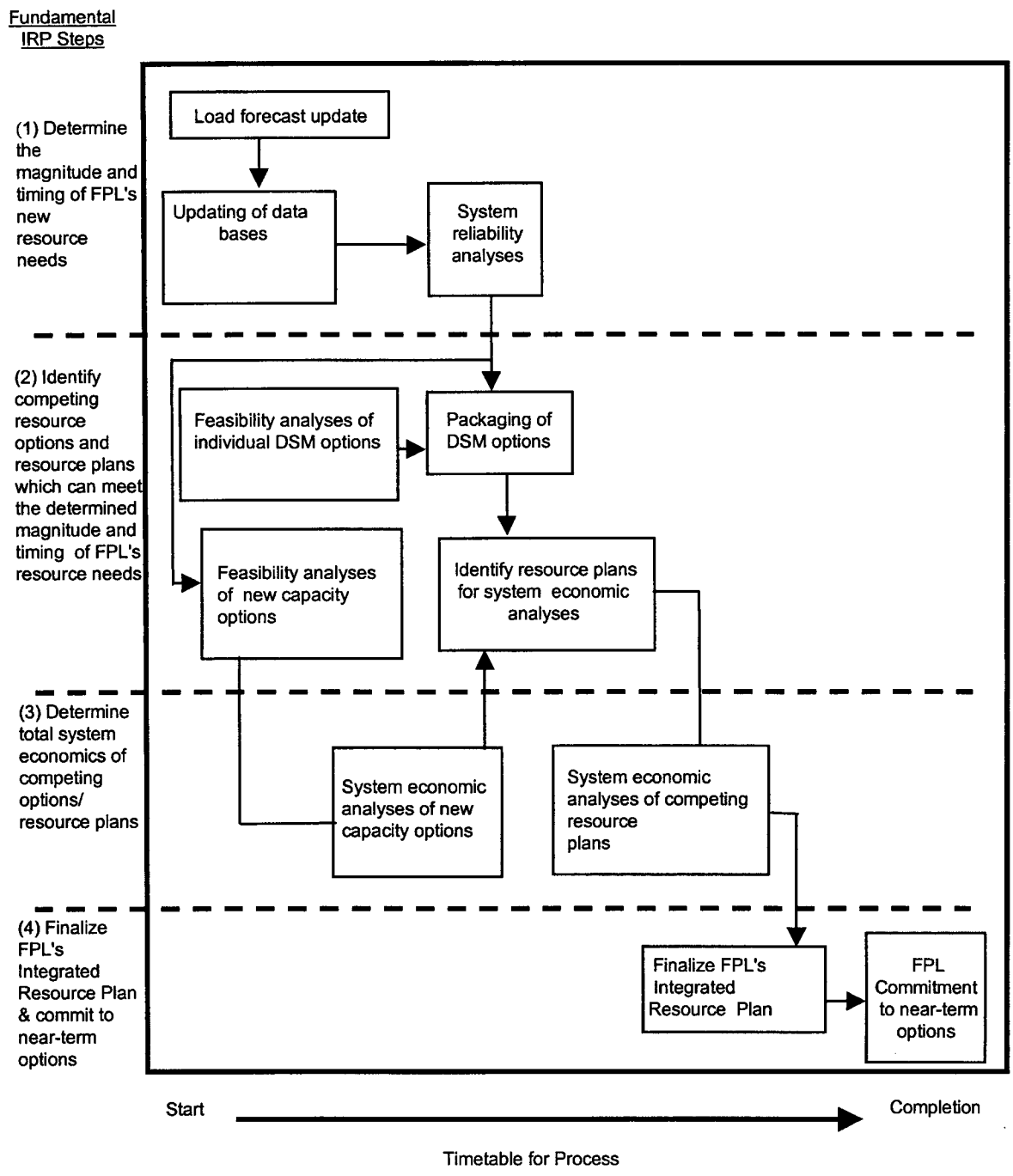
Step 2: Identify which resource options and resource plans can meet the determined magnitude and timing of FPL's resource needs (i.e., identify competing options and resource plans);

Step 3: Determine the economics for the total utility system with each of the competing options and resource plans; and,

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

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

Overview of FPL's IRP Process



(Normal time period: approx. 6-7 months)

Figure III.A.1

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

The first of these 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. Also determined in this step is when the MW are needed to meet FPL's planning criteria. This step is often referred to as a resource adequacy or reliability assessment for the utility system.

Step 1 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 which is used in many of the fundamental steps in resource planning. Examples of this new information include: 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) short-term, firm capacity purchase additions, and (3) long-term DSM implementation.

The first of these assumptions is based on FPL's ongoing engineering and construction activities to add near-term capacity through various projects. These construction projects include the addition of a new combined cycle (CC) unit at Manatee and the conversion of two existing CT's at Martin into a new CC unit. Both additions are scheduled to come in-service in mid-2005. The additions were approved by the Florida Public Service Commission (FPSC) in November 2002 after comparing them to 134 competing bids that were received in response to two Requests for Proposals (RFP's) that solicited bids for meeting FPL's 2005/2006 capacity needs. In addition, a new CC unit at FPL's Turkey Point site is planned to come in-service in mid-2007. FPL selected this capacity option after conducting an RFP during the last part of 2003. The addition was approved by the FPSC in June of 2004 and the Governor and Siting Board approved certification of the plant location, construction, and operation of the new CC unit in February, 2005.

The second of these assumptions involves short-term, firm capacity purchase additions. These firm capacity purchases are from a combination of utility and independent power producers. The total capacity and duration of these purchases have changed somewhat from what was presented in last year's Site Plan. These changes include a new firm purchase from Reliant's Indian River facility of up to 576 MW from 2006 through 2009, with an option to extend the purchase through 2010. In addition, in January 2005 the

FPSC approved a five and one half-year firm purchase of 930 MW from the Southern Company that was identified as a projected purchase in FPL's prior Site Plan. The annual total capacity values for these purchases are presented in Table I.D.1. These purchased capacity amounts were incorporated in FPL's recent resource planning work.

The third of these assumptions involves DSM. Since 1994, FPL's resource planning work has used the DSM MW called for in FPL's approved DSM Goals as a "given" in its analyses. This was again the case in FPL's most recent planning work, as its new DSM Goals that address the years 2005 through 2014, and that were approved by the FPSC in August 2004, were taken as a "given".

The assumptions and much of the other updated information and assumptions are then applied in the first fundamental step: the determination of the magnitude and the timing of FPL's resource needs. This determination is accomplished by system reliability analyses which are typically based on a 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. (FPL's reserve margin criterion increased from 15% to 20% starting in mid-2004 due to a voluntary agreement reached among FPL, FPC, and TECO, and accepted by the FPSC in FPSC Docket No. 981890-EU.)

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 native 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 generation resource adequacy 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 currently 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. This information is used in the second fundamental step: identifying resource options and resource plans that can meet the determined magnitude and timing of FPL's resource needs.

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

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

The individual new capacity options are then "packaged" into different resource plans which are designed to meet the system reliability criteria. In other words, resource plans are created by combining individual resource options so that the timing and magnitude of FPL's new resource needs are met. The creation of these competing resource plans is typically carried out using dynamic programming techniques. For planning purposes, only FPL construction options are typically included in these analyses.

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 were identified. These resource plans were then compared on an economic basis.

Step 3: Determining the Total System Economics:

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 comparing the system economics of these resource plans. In its 2004 resource planning work, FPL performed much of this work of combining resource options into resource plans using the EGEAS (Electric Generation Expansion Analysis System) computer model from the Electric Power Research Institute (EPRI). The EGEAS model was also used to perform much of the basic economic analyses of the resource plans. For various analyses, FPL applied the P-MArea (P-Month) production cost model to develop an additional perspective of the production costs for the various resource plans developed in the EGEAS model. The P-MArea model is the model used by FPL to develop the Fuel Cost Budget and to conduct other production cost-related analyses.

In 2004, FPL also utilized several other models in its resource planning work. For the work carried out for the DSM Goals and DSM Plan dockets, FPL used its CPF model–an FPL spreadsheet model utilizing the FPSC's approved cost-effectiveness methodology-for analyzing the cost-effectiveness of individual DSM measures/programs and its linear programming model for creating and analyzing combinations of DSM options that constitute multi-year DSM implementation plans.

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

system revenue requirement basis that includes the system capital and operating costs of the new capacity options.

Step 4: Finalizing FPL's Current Resource Plan

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

III.B Incremental Resource Additions

FPL's projected incremental generation capacity additions/changes for 2005 through 2014 are depicted in Table III.B.1 (the planned DSM additions are shown separately in Table III.C.1). These capacity additions/changes result from a variety of actions including: changes to existing units (which are frequently achieved as a result of plant component replacements during major overhauls or by unit conversion from one type of unit to another), changes in the amounts of purchased power being delivered under existing contracts as per the contract schedules or by entering into new purchase contracts, and by projected construction of new generating units.

As shown in Table III.B.1, the capacity additions are largely made up of new construction, new purchases, and proposed self-build alternatives. The new construction contribution is made up of three projects: the conversion of two CT's into a larger CC unit in 2005 at FPL's Martin site; the addition of a new CC unit in 2005 at FPL's Manatee site, and the addition of a new CC unit in 2007 at FPL's Turkey Point site. FPL has negotiated the addition of firm capacity of varying amounts through a purchase power contract with Reliant's Indian River facility during the years 2006 through 2009 and with the Southern Company during the time period from mid-2010 through 2015. FPL projects the construction of two new CC units at the proposed West County Energy Center site in Palm Beach County, one in 2009 and one in 2010, and the proposed addition of two new clean coal technology units, one each in 2012 and 2013. The issues surrounding clean coal units are discussed in more detail in FPL's recent *Report on Clean Coal Generation*, provided to the Commission in March of 2005.

The above capacity additions address the projected resource needs from FPL's reliability analyses. For 2008, FPL's projected resource need is relatively small, approximately 470 MW. For each year from 2009 through 2013, the projected annual resource need is significantly larger; in the range of approximately 550 MW to 850 MW each year.

Projected Capacity Changes and Reserve Margins for FPL [1]			
		Net Capacity Changes (MW)	
		Winter [2]	Summer [3]
2005	Changes to Existing Purchases [4]	(166)	(566)
	Manatee Unit #3 Combined Cycle [6]	---	1,107
	Conversion of Martin #8 CT's to CC [6]	0	787
	Changes to existing Units	---	12
2006	Changes to Existing Purchases [4]	(132)	(136)
	New Purchases [5]	130	130
	Manatee Unit #3 Combined Cycle [6]	1,197	---
	Conversion of Martin #8 CT's to CC [6]	835	---
	Changes to existing Units	240	167
2007	Changes to Existing Purchases [4]	---	(935)
	Changes to New Purchases [5]	224	224
	Turkey Point Combined Cycle #5 [6]	---	1,144
	Changes to existing Units	(1)	(1)
2008	Changes to Existing Purchases [4]	(1,008)	---
	Changes to New Purchases [5]	222	222
	Turkey Point Combined Cycle #5 [6]	1,181	---
2009	Changes to Existing Purchases [4]	---	(51)
	Changes to New Purchases [5]	(326)	(326)
	West County Energy Center #1 Combined Cycle [6]	---	1,107
2010	Changes to Existing Purchases [4]	(51)	(979)
	Changes to New Purchases [5]	(250)	680
	West County Energy Center #1 Combined Cycle [6]	1,181	---
	West County Energy Center #2 Combined Cycle [6]	---	1,107
2011	Changes to Existing Purchases [4]	(94)	(45)
	Changes to New Purchases [5]	930	---
	West County Energy Center #2 Combined Cycle [6]	1,181	---
2012	Unsited Clean Coal Unit # 1 [6]	---	850
2013	Unsited Clean Coal Unit # 1 [6]	855	---
	Unsited Clean Coal Unit # 2 [6]	---	850
2014	Unsited Clean Coal Unit # 2 [6]	855	---
	TOTALS =	**7,003**	**5,348**

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

(2) Winter values are values for January of year shown.

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

(4) These are firm capacity purchases with contract that existed on 12/31/03. See Section I.B, I.D and III.A. for more details.

(5) These are firm capacity purchases with contracts executed on/after 1/01/04.

(6) All new units are scheduled to be in-service in June of the year shown. Consequently, they are included in the Summer reserve margin calculation for the in-service year and in both the Summer and Winter reserve margin calculations for subsequent years.

Table III.B.1

III.C Other Results of FPL's Recent Planning Work

FPL's 2004 and early 2005 planning efforts have continued to address two issues that were identified in FPL's 2003 Site Plan. Those two issues are: (1) the need to address the imbalance between regional load and generating capacity located in southeast Florida, and (2) the desire to maintain and enhance fuel diversity in the FPL system.

1. Southeast Imbalance

There continues to be an imbalance between regionally installed generation and peak load in southeast Florida. A significant amount of energy required in the southeast region during peak periods is provided through the transmission system from plants located outside the region. Based on the forecast for continued load growth in this region, the imbalance between generation and load will increase unless additional generation capacity is periodically located within this region or additional transmission delivery capability is constructed.

FPL's prior planning work had concluded that either additional installed capacity in this region or transmission capacity capable of delivering additional electricity from outside the region would be required to address this imbalance. Delivering additional electricity from outside the region increases transmission-related costs and incurs the cost of the additional capacity.

The evaluation conducted as part of FPL's 2003 Request for Proposal (RFP) process met FPL's 2007 need by considering all cost components of FPL's next planned generating unit (NPGU) and alternative options, including transmission-related costs. The location of the NPGU and the locations of proposed units included in the alternative option combinations contributed to the transmission-related costs determined in the evaluation. The results of the RFP evaluation confirmed that because of the existing imbalance, generating units located in the southeast region contribute significantly lower transmission-related costs than do those located outside the region.

Partly because of the lower transmission-related costs resulting from its location, Turkey Point Unit # 5, was evaluated as the most cost-effective option to meet FPL's 2007 capacity need. Adding Turkey Point Unit # 5 will significantly reduce the imbalance between generation and load in southeast Florida. However, assuming no other resources are added, the imbalance will re-develop to the pre-Turkey Point Unit # 5

levels within 3 to 4 years because of the continued load growth of approximately 250-300 MW per year in this region. Therefore, the re-emergence of the southeast imbalance is expected to remain a factor in the calculation of transmission-related costs which are an integral part of the evaluation of new capacity additions. This factor has contributed to the identification in the Site Plan of two new CC units to be added in 2009 and 2010 at the proposed West County Energy Center site in Palm Beach County. The location of these proposed capacity additions would continue to mitigate this regional imbalance issue.

2. Fuel Diversity

FPL has also taken positive steps in 2004 to address the issue of fuel diversity in the FPL system. This has been accomplished in three key ways: through purchased power, proposed generation capacity additions, and pursuit of long-term Liquefied Natural Gas (LNG) supplies delivered to Florida.

First, FPL successfully negotiated and gained approval for a new purchased power agreement with Southern Company for the period 2010 to 2015. This new purchase adds 930 MW of capacity, of which 165 MW is coal-fired capacity that adds to system diversity. This purchase agreement also has strategic benefits for FPL's customers from a resource perspective in that it allows FPL to maintain access to the generation capabilities of the SERC region, which currently has a surplus of generation. This access allows FPL to purchase generation during certain periods at prices that may be lower than those of the generation assets FPL has under contract. Additionally, the time period of this purchase provides a bridge to a period where technological enhancements may offer cleaner, more efficient, and more diverse capacity alternatives than would be available in 2010.

Second, during 2004 FPL undertook a significant investigation and analysis of the benefits and risks of adding clean coal generation to the FPL system. A *Report on Clean Coal Generation* was presented to the Commission summarizing FPL's findings. These findings showed that, while there are uncertainties surrounding the costs of clean coal generation, significant cost and reliability benefits may be obtained by adding clean coal generation. The result is the proposed addition of two new supercritical pulverized coal units with advanced emission control technology, one each in 2012 and 2013. These clean coal capacity additions will help enhance FPL's fuel diversity by adding 1,700 MW of coal-based generation to the FPL system that would otherwise likely be provided by

natural gas-fired units. FPL has initiated the process necessary to pursue the addition of these units.

Finally, FPL is evaluating proposals submitted in response to FPL's RFP requesting proposals to bring LNG to the Florida natural gas system under a long-term agreement. If cost-effective, LNG supply would add an additional source of natural gas to further support FPL's recent combined cycle unit additions.

In the future FPL will continue to identify and evaluate alternatives that may maintain or enhance fuel diversity in its capacity resource mix, including purchasing power from coal-fired facilities when such power becomes available. FPL also plans to maintain the ability to utilize fuel oil at those existing units that have that capability. FPL will continue to conduct reviews of technologies that may provide substantial fuel diversity in the future, such as nuclear power. Feasible opportunities to develop projects utilizing these technologies are currently beyond the planning horizon of this Site Plan.

III.D Demand Side Management (DSM)

1. FPL's currently approved DSM programs are summarized as follows:

Residential Conservation Service: This is an energy audit program designed to assist residential customers in understanding how to make their homes more energy-efficient through the installation of conservation measures/practices.

Residential Building Envelope: This program encourages the installation of energy-efficient ceiling insulation and reflective roofs in residential dwellings that utilize whole-house electric air conditioning.

Duct System Testing and Repair: This program encourages demand and energy conservation through the identification of air leaks in whole-house air conditioning duct systems and by the repair of these leaks by qualified contractors.

Residential Air Conditioning: This is a program to encourage customers to purchase higher efficiency central cooling and heating equipment.

Residential Load Management (On-Call): This program offers load control of major appliances/household equipment to residential customers, in exchange for monthly electric bill credits.

New Construction (BuildSmart): This program encourages the design and construction of energy-efficient homes that cost-effectively reduce coincident peak demand and energy consumption.

Residential Low Income Weatherization: This program addresses the needs of low-income housing retrofits by providing monetary incentives to various housing authorities, including weatherization agency providers (WAPS), and non-weatherization agency providers (non-WAPS). These incentives are used by the housing authorities to leverage their funds to increase the overall energy efficiency of the homes they are retrofitting.

Business Energy Evaluation: This program encourages energy efficiency in both new and existing commercial/industrial facilities by identifying DSM opportunities and providing recommendations to the customer.

Commercial/Industrial Heating, Ventilating, and Air Conditioning: This program encourages the use of high-efficiency heating, ventilation, and air conditioning (HVAC) systems in commercial/industrial facilities.

Commercial/Industrial Efficient Lighting: This program encourages the installation of energy-efficient lighting measures in commercial/industrial facilities.

Business Custom Incentive: This program encourages commercial/industrial customers to implement unique energy conservation measures or projects not covered by other FPL programs.

Commercial/Industrial Load Control: This program reduces peak demand by controlling customer loads of 200 kW or greater during periods of extreme demand or capacity shortages, in exchange for monthly electric bill credits. (This program was closed to new participants in 2000).

Commercial/Industrial Demand Reduction: This program, which started in 2002, is similar to the Commercial/Industrial Load Control program mentioned above in continuing the objective to reduce peak demand by controlling customer loads of 200 kW or greater

during periods of extreme demand or capacity shortages in exchange for monthly electric bill credits.

Commercial/Industrial Building Envelope: This program encourages the installation of energy-efficient building envelope measures, such as roof/ceiling insulation and reflective roof coatings for commercial/industrial facilities.

Business On Call: This program offers load control of central air conditioning units to both small non–demand-billed and medium demand-billed commercial/industrial customers in exchange for monthly electric bill credits.

2. Research and Development

FPL continues to support research and development activities. Historically, FPL has performed extensive DSM research and development. FPL will continue such activities, not only through its Conservation Research and Development program, but also through individual research projects. These efforts will examine a wide variety of technologies that build on prior FPL research where applicable and will expand the research to new and promising technologies as they emerge.

Conservation Research and Development Program

FPL's Conservation Research and Development Program is designed to evaluate emerging conservation technologies to determine which are worthy of pursuing for program development and approval. FPL has researched a wide variety of technologies such as condenser coil cleaner and coating, ultraviolet lights for evaporator coils, Energy Recovery Ventilators (ERV), fuel cell demonstrations, CO_2 ventilation control, two-speed air handlers, and duct plenum repair. Many of the technologies examined have resulted in enhancements to existing programs or the development of new programs such as Residential New Construction, Commercial/Industrial Building Envelope, and Business On Call.

Green Power Pricing Research Project

Under this project, FPL is examining the feasibility of purchasing tradable renewable energy credits generated from new renewable resources including solar-powered technologies, biomass energy, landfill methane, wind energy, low impact hydroelectric energy, and/or other renewable sources. Residential customers who participate are

charged higher premiums for purchasing the tradable renewable energy credits associated with electric energy generated by these sources.

Development of the Green Pricing program was completed and filed with the FPSC in August 2003. As part of this process, a supply contract was put into place that allows FPL to match supply with demand for green energy. Tradable renewable energy credits are used to supply the renewable benefits required of this project. The FPSC approved the program on December 2, 2003 with program implementation the first quarter of 2004. As of year-end 2004, FPL had over 10,000 project participants.

On Call Incentive Reduction Pilot

In March 2003, FPL received FPSC approval to perform a pilot for its On Call Program. Under the pilot FPL is offering to new participants a residential load control service similar to the On Call Program at a reduced incentive level. The offering of this pilot is allowing FPL to test its market research data and gauge whether FPL can repackage its current residential load control service, minimize customer attrition, achieve current goals for residential load control, and, ultimately, change On Call incentive levels without damaging FPL system reliability.

Business Green Energy Research Project

As mentioned above, FPL currently has a R&D project addressing residential customer acceptance of green energy. In an attempt to determine business customer acceptance of green pricing rates, FPL is investigating if it is feasible to design and implement a Green Energy Program that addresses these customer segments.

FPL's Summer MW Reduction Goals for DSM *

(At the Meter)

Year	Goal Cumulative Summer MW
2005	74.0
2006	141.7
2007	211.9
2008	287.2
2009	365.9
2010	447.9
2011	532.1
2012	618.8
2013	707.9
2014	801.7

Table III.D.1

* Table III.D.1 reflects FPL's new DSM Goals for 2005–2014 as approved by the Florida Public Service Commission in June, 2004. These annual cumulative values assume a 1/1/05 starting point.

III.E Generation Additions From Independent Power Producers

As previously mentioned in Section III.A, FPL has a number of new short-term, firm capacity purchases that extend through 2009. The capacity additions supplied by these purchases are summarized in Table I.D.1. Many of these purchases are from independent power producers.

Tables I.B.1 and Table I.B.2 present the capacity contributions from cogeneration/small power production facilities which are also included in FPL's resource planning work.

III.F Transmission Plan

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

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	Collier	Orange River #3	54	12/05	230	759
FPL	St. Johns	Pringle	23	12/08	230	759

Table III.F.1

In addition, there will be transmission facilities needed to connect several of FPL's committed and projected capacity additions to the system transmission grid. These transmission facilities for the capacity additions at FPL's existing Manatee, Martin, Turkey Point, and West County Energy Center sites are described below.

Since the projected capacity additions for 2011 through 2013 are as-yet unsited, no transmission facilities information is provided. This information will be provided in future Site Plan documents once sites are selected.

III.F.1 Transmission Facilities at Manatee Unit # 3

The work required for the new capacity addition at Manatee with the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing two collector busses with 5 breakers to connect the four CT's and one steam turbine.
2. Construct two string busses to connect the collectors and main switchyard.
3. Add five main step-up transformers (4-225MVA, 1-560MVA), one for each CT and one for the steam turbine.
4. Add two breakers in Bay # 6 to connect the collector bus at the Manatee switchyard.
5. Add two breakers in Bay # 5 at the Manatee switchyard to connect the other collector bus.
6. Add relays and other protective equipment.
7. Upgrade 13-230kV circuit breakers to 2 cycle Independent Pole breakers at Manatee switchyard.
8. Upgrade the existing line terminal at Johnson to 3000 Amps.
9. Expand site and relay vault for two new line terminals at Manatee switchyard.
10. Upgrade existing breaker at Ringling Sub to 3000 amps

II. Transmission:

1. Upgrade the Calusa-Charlotte 230kV transmission line to 1875 Amps.
2. Upgrade the Johnson-Manatee 230kV transmission line to 3000 Amps.
3. Upgrade the Manatee-Ringling # 3 230kV transmission line to 3000 Amps.
4. Upgrade the Charlotte-Fort Myers # 2 230kV transmission line to 1875 Amps.

III.F.2 Transmission Facilities at Martin Unit # 8

The work required for the new capacity addition at Martin (convert the existing two CT's to a new four-on-one combined cycle unit) with the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing one collector buss with 3 breakers to connect the two CT's and one steam turbine.
2. Add one station service transformer in the existing CT yard.
3. Add three main step-up transformers (2-225 MVA, 560 MVA), one for each CT and one for the steam turbine.
4. Add two breakers in Bay # 3 to connect the collector bus in the main switchyard.
5. Add relays and other protective equipment.
6. Install phase reactors and string buss in main switchyard to limit fault current.
7. Add breaker in Bay # 7 for new Indiantown # 2 transmission line. Tap existing 69kV auto-transformer off east 230kV operating bus.
8. Add breaker in Bay # 3 at Indiantown Substation for Bridge line.
9. Create new Bay 4. Add 2 breakers for Indiantown-Martin #2 line at Indiantown Substation.
10. Create new Bay # 1 at Bridge Substation with 2 breakers. Add 2 breakers to convert station configuration from ring buss to a breaker and a half scheme.
11. Construct one string bus to connect the collector and main switchyard.

II. Transmission:

1. Construct 230kV Martin-Indiantown # 2 transmission line (Completed).
2. Construct 230kV Indiantown–Bridge # 2 transmission line (Completed).
3. Various OHGW replacements due to increased fault current.
4. Upgrade the Ranch-Homeland 230kV transmission line to 1600 Amps.

III.F.3 Transmission Facilities at Turkey Point Unit # 5

The work required for the new capacity addition at Turkey Point with the FPL grid is projected to be as follows:

II. Substation:

1. Build new collector yard containing two collector busses with 5 breakers to connect the four CT's and one steam turbine.
2. Construct two string busses to connect the collector busses and main switchyard.
3. Add five main step-up transformers (4-225MVA, 1-560 MVA), one for each CT and one for the steam turbine.
4. Add a new two breaker bay to connect the collector bus at the Turkey Point switchyard.
5. Add a second two breaker bay at the Turkey Point switchyard to connect the other collector bus.
6. Add relays and other protective equipment.
7. Expand site and relay vault for two new line terminals at Turkey Point switchyard.

II. Transmission:

1. Upgrade the Turkey Point-Galloway Tap 230kV transmission line section to 1418 Amps.
2. Upgrade the Turkey Point–McGregor-Florida City 230kV transmission line section to 1403 Amps.
3. Upgrade the Turkey Point-Miller 230kV transmission line section to 1356 Amps.
4. Upgrade the Miller-Killian 230kV transmission line section to 1315 Amps.

III.F.4 Transmission Facilities at West County Energy Center Unit # 1

The work required for the first new capacity addition projected to be added in 2009 at the West County Energy Center with the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing two collector busses with 5 breakers to connect the four CT's and one steam turbine.
2. Construct two string busses to connect the collector busses and main switchyard.
3. Add five main step-up transformers (4-225 MVA, 1-560 MVA), one for each CT and one for the steam turbine.
4. Add a new Bay #4 with 3 breakers at the Corbett 230 kV main switchyard. Connect one string buss from the collector yard and relocate the Alva 230 kV terminal from Bay #3 to new Bay #4.
5. Connect second collector string buss to Bay #3.
6. Add relays and other protective equipment.
7. Expand substation and relay vault for two new line terminals at Corbett 230 kV switchyard.

II. Transmission:

1. No upgrades expected to be necessary at this time.

III.F.5 Transmission Facilities at West County Energy Center Unit # 2

The work required for the second new capacity addition projected to be added in 2010 at West County Energy Center with the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing two collector busses with 5 breakers to connect the four CT's and one steam turbine.
2. Construct two string busses to connect the collector busses and main switchyard.
3. Add five main step-up transformers (4-225 MVA, 1-560 MVA), one for each CT and one for the steam turbine.
4. Add a new bay with 3 breakers at the Corbett 500 kV main switchyard. Connect both string busses from the collector yard.
5. Add relays and other protective equipment.
6. Expand substation and relay vault for two new line terminals at Corbett 500 kV switchyard.

II. Transmission:

1. No upgrades expected to be necessary at this time.

III.G. Renewable Resources

FPL has been the leading Florida utility in examining ways to utilize renewable energy technologies to meet its customers' current and future needs. FPL has been involved since 1976 in renewable energy research and development and in facilitating the implementation of various technologies.

FPL assisted the Florida Solar Energy Center (FSEC) in the late 1970's in demonstrating the first residential solar photovoltaic (PV) system east of the Mississippi. This PV installation at FESC's Brevard County location was in operation for over 15 years and provided valuable information about PV performance capabilities on both a daily and annual basis in Florida. 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 after the testing of this PV installation was completed.)

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

In terms of utilizing renewable energy sources to meet its customers' needs, FPL initiated the first and only 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 was ended (due to the fact that it was not cost-effective), FPL paid incentives to approximately 48,000 customers who installed solar water heaters.

In the mid-1980's, FPL introduced another renewable energy program. FPL's Passive Home 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 6 passive homes 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 Florida Public Service Commission 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 may 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.

More recently, FPL has analyzed the feasibility of encouraging utilization of PV in another, potentially much larger way. FPL's basic approach does not require all of its customers to bear PV's high cost, but allows customers who are interested in facilitating the use of renewable energy the means to do so. FPL's initial effort to implement this approach allowed customers to make voluntary contributions into a separate fund that FPL used to make PV purchases in bulk quantities. PV modules were then installed and delivered PV-generated electricity directly into the FPL grid. Thus, when sunlight is available, the PV-generated electricity displaces an equivalent amount of fossil fuel-generated electricity.

FPL's basic approach, which has been termed Green Pricing, was initially discussed with the FPSC in 1994. FPL's efforts to implement this approach were then formally presented to the FPSC as part of FPL's DSM Plan in 1995 and FPL received approval from the FPSC in 1997 to proceed. FPL began the effort in 1998 and received approximately $89,000 in contributions (that significantly exceeded the goal of $70,000). FPL purchased the PV modules and installed them at FPL's Martin Plant site.

FPL initiated two new renewable efforts in 2000. FPL's first new initiative in 2000 was the Green Energy Project. The objectives of this Project were to: determine customer interest in an on–going renewable energy program, determine their price responsiveness and views on the different renewable technologies, and identify potential renewable energy supply sources that would meet the forecasted customer demand for this type of product. FPL both conducted customer research and issued a Request for Proposals (RFP) in 2001 to solicit proposals to potentially supply energy only (MWH) from new renewable sources. This Project formed the basis for FPL's existing Green Power Pricing Research Project , and then led to FPL's Business Green Energy Research Project, that are discussed in Section III.D.2.

The second effort initiated in 2000 was FPL's Photovoltaic Research, Development, and Education Project. This demonstration project's objectives were to: increase the public awareness of roof tile PV technologies, provide data to determine the durability of this technology and its impact on FPL's electric system, collect demand and energy data to better understand the coincidence between PV roof tile system output and FPL's system peaks (as well as the total annual energy capabilities of roof tile PV systems), and assess the homeowner's financial benefits and costs of PV roof tile systems. This project was completed in 2003.

Finally, 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 developers. (Please refer to Tables I.B.1 and I.B.2).

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

1. FPL's Fuel Mix

Until the mid-1980's, FPL relied primarily on a combination of oil, natural gas, and nuclear energy to generate electricity with significant reliance on oil–fired generation. In the early 1980's 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 in 1989. Starting in 1997, petroleum coke was added to the fuel mix as a blend stock with coal at SJRPP.

The trend in recent years 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 combined cycle generating units. This planning document shows a slowing of that trend as FPL recognizes that adding natural gas-fired additions exclusively would, in the long term, create an unbalanced generation portfolio. FPL does project the addition of new gas-fired units in 2009 and 2010, which is a necessity given the longer lead times associated with the addition of coal-fired generation.

FPL's future resource planning work will remain focused on identifying and evaluating alternatives that would maintain or enhance FPL's long-term fuel diversity. These fuel diversity-enhancing alternatives may include: the purchase of power from new coal-based facilities, obtaining access to diversified sources of natural gas such as LNG, and preserving FPL's ability to utilize fuel oil at its existing units. The evaluation of the feasibility and cost-effectiveness of these, and other possible alternatives, will be an ongoing part of future planning cycles.

FPL's current use of various fuels to supply energy to customers, plus a projection of this "fuel mix" through 2014 based on the resource plan presented in this document, is presented in Schedules 5, 6.1, and 6.2 later in this chapter.

2. Fuel Price Forecasts

FPL's long-term oil price forecast assumes that worldwide demand for petroleum products will grow moderately throughout the planning horizon. Non-OPEC crude oil supply is projected to increase as new and improved drilling technology and seismic information will reduce the cost of producing crude oil and increase both recoveries from existing fields and new discoveries. However, the rate of increase in non-OPEC supply is projected to be slower than that of petroleum demand, resulting in an increase in OPEC's market share throughout the planning horizon. As OPEC gains market share, prices for crude oil and petroleum products are projected to increase.

FPL's natural gas price forecast assumes that domestic demand for natural gas will grow throughout the planning horizon, primarily due to increased requirements for electric generation. Domestic natural gas production will slowly decline as new and improved drilling technology and seismic information and resulting new finds will only reduce the projected rate of decline in the overall domestic resource base. The rate of decline in domestic natural gas production is projected to be more than offset by the anticipated increase in U.S. imports from Canada during the next decade, with the development of the MacKenzie Delta region, and the continued increase in re-gasified Liquefied Natural Gas (LNG) imports over the planning horizon. Further enhancement in domestic supply is assumed with the development and delivery of the proven natural gas reserves on the North Slope of Alaska sometime in the next decade.

As demand for natural gas in Florida grows, it is anticipated that the Gulfstream pipeline will fill existing capacity, and along with the Florida Gas Transmission (FGT) pipeline system, expand beyond current capacity to meet the growing requirements of the State of Florida. When coupled with the potential for re-gasified LNG (natural gas) imports directly into Florida, there should be sufficient natural gas deliverability for FPL's customers and the State of Florida's continued needs.

FPL issued an RFP in August 2004 for between 400,000 and 600,000 MMBTU/day of re-gasified LNG supplies, for a minimum term of fifteen (15) years and a maximum term of twenty-five (25) years, with a start date between January 1, 2007 through December 31, 2010. FPL is in the process of evaluating the proposals received in the RFP process and has set a target date of June 1, 2005 for completion of Definitive Agreements subject to a few external approvals. Although this RFP is not in response to a specific need for natural gas supplies, the potential completion of the transaction contemplated by the RFP would diversify and supplement FPL's natural gas supplies from the Gulf of Mexico region.

FPL's coal price forecast assumes an ample supply of domestic coal, and the availability of imported coal, to meet a gradual but steady increase in U.S. demand in the electric generation sector over the planning horizon. The coal price forecast for FPL's existing coal plants at 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. FPL's petroleum coke price forecast assumes that the

petroleum industry will continue to add cokers in the U.S., as well as in the Caribbean Basin, in order to maximize refinery production of light products. This trend will continue to result in sufficient availability of petroleum coke, at delivered prices significantly below delivered coal prices, to support a gradual, but steady growth in the demand for petroleum coke in the U.S. electric utility industry.

In order to support the proposed coal requirements in the 2012 and 2013 time period, FPL is currently exploring the opportunities for a competitive coal and petroleum coke delivery system. This effort includes the opportunity for competing rail service from Central Appalachia to Florida, a waterborne receiving facility on both the east and west coast of Florida, and competing rail service from these potential ports to the solid fuel site. A highly competitive coal and petroleum coke delivery network is essential to ensure both the lowest cost fuel supply to FPL's customers.

Schedule 5
Fuel Requirements 1/

	Fuel Requirements	Units	Actual 2/ 2003	2004	Forecasted 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
(1)	Nuclear	Trillion BTU	257	252	245	254	246	260	255	254	259	256	254	259
(2)	Coal	1,000 TON	3,402	3,319	3,397	3,455	3,597	3,523	3,670	3,430	3,670	4,852	7,503	8,404
(3)	Residual (FO6)- Total	1,000 BBL	32,103	31,250	29,627	33,005	22,926	22,702	22,373	20,586	22,087	21,289	19,735	21,941
(4)	Steam	1,000 BBL	32,103	31,250	29,627	33,005	22,926	22,702	22,373	20,586	22,087	21,289	19,735	21,941
(5)	Distillate (FO2)- Total	1,000 BBL	565	406	118	310	282	247	322	519	519	826	894	890
(6)	CC	1,000 BBL	36	86	95	183	211	195	260	235	248	226	183	193
(7)	CT	1,000 BBL	529	321	23	127	71	52	61	284	271	601	711	698
(8)	Steam	1,000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(9)	Natural Gas -Total	1,000 MCF	292,993	311,057	309,932	353,657	411,984	426,120	459,117	507,204	532,877	528,845	511,485	503,230
(10)	Steam	1,000 MCF	50,862	51,792	16,506	23,594	22,918	23,063	22,956	19,926	21,728	20,911	20,478	21,838
(11)	CC	1,000 MCF	229,681	252,692	286,056	323,989	385,511	402,359	434,867	486,602	510,224	506,404	489,241	479,163
(12)	CT	1,000 MCF	12,450	6,573	7,370	6,075	3,554	698	1,294	675	926	1,530	1,766	2,230

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

Schedule 6.1
Energy Sources

	Energy Sources	Units	Actual 1/ 2003	Actual 1/ 2004	Forecasted 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
(1)	Annual Energy Interchange 2/	GWH	10,387	10,258	10,855	11,403	10,902	11,437	10,946	10,065	8,633	8,932	8,544	8,635
(2)	Nuclear	GWH	23,524	23,013	21,935	22,804	22,008	23,279	22,884	22,809	23,212	22,950	22,810	23,212
(3)	Coal	GWH	6,625	6,315	6,676	6,569	6,700	6,688	6,892	6,536	6,891	10,469	17,486	20,117
(4)	Residual(FO6) -Total	GWH	20,305	19,709	20,445	18,922	15,220	14,939	14,895	13,782	14,816	14,263	13,228	14,699
(5)	Steam	GWH	20,305	19,709	20,445	18,922	15,220	14,939	14,895	13,782	14,816	14,263	13,228	14,699
(6)	Distillate(FO2) -Total	GWH	248	200	75	170	168	161	202	274	275	392	402	402
(7)	Steam	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(8)	CC	GWH	21	57	67	124	144	133	178	160	169	154	125	132
(9)	CT	GWH	226	143	8	46	25	28	24	114	107	238	277	271
(10)	Natural Gas -Total	GWH	37,707	40,970	43,097	48,145	56,914	59,024	63,847	71,258	74,836	74,342	71,980	70,627
(11)	Steam	GWH	4,905	4,918	1,408	2,103	2,034	2,054	2,043	1,774	1,935	1,864	1,836	1,954
(12)	CC	GWH	31,718	35,490	41,251	45,711	54,686	56,915	61,725	69,441	72,845	72,385	70,036	68,539
(13)	CT	GWH	1,084	562	438	331	194	56	80	42	57	93	108	134
(14)	Other 3/	GWH	9,597	7,625	8,478	7,211	7,229	7,490	7,304	5,590	4,226	4,131	3,945	3,837
	Net Energy For Load 4/	GWH	108,393	108,091	111,561	115,224	119,141	123,018	126,970	130,313	132,889	135,479	138,396	141,529

1/ Source: A Schedules
2/ The projected figures are based on estimated energy purchases from SJRPP and the Southern Companies.
3/ Represents a forecst of energy expected to be purchased from Qualifying Facilities, Independent Power Producers, net of Economy and other Power Sales.
4/ Net Energy For Load is also shown in Column 8 on Schedule 3.3.

Schedule 6.2
Energy Sources % by Fuel Type

	Energy Source	Units	Actual 2003	Actual 2004	Forecasted 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
(1)	Annual Energy Interchange 2/	%	9.6	9.5	9.7	9.9	9.2	9.3	8.6	7.7	6.5	6.6	6.2	6.1
(2)	Nuclear	%	21.7	21.3	19.7	19.8	18.5	18.9	18.0	17.5	17.5	16.9	16.5	16.4
(3)	Coal	%	6.1	5.8	6.0	5.7	5.6	5.4	5.4	5.0	5.2	7.7	12.6	14.2
(4)	Residual (FO6) -Total	%	18.7	18.2	18.3	16.4	12.8	12.1	11.7	10.6	11.1	10.5	9.6	10.4
(5)	Steam	%	18.7	18.2	18.3	16.4	12.8	12.1	11.7	10.6	11.1	10.5	9.6	10.4
(6)	Distillate (FO2) -Total	%	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3
(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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
(9)	CT	%	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2
(10)	Natural Gas -Total	%	34.8	37.9	38.6	41.8	47.8	48.0	50.3	54.7	56.3	54.9	52.0	49.9
(11)	Steam	%	4.5	4.5	1.3	1.8	1.7	1.7	1.6	1.4	1.5	1.4	1.3	1.4
(12)	CC	%	29.3	32.8	37.0	39.7	45.9	46.3	48.6	53.3	54.8	53.4	50.6	48.4
(13)	CT	%	1.0	0.5	0.4	0.3	0.2	0.0	0.1	0.0	0.0	0.1	0.1	0.1
(14)	Other 3/	%	8.9	7.1	7.6	6.3	6.1	6.1	5.8	4.3	3.2	3.0	2.9	2.7
			100	100	100	100	100	100	100	100	100	100	100	100

1/ Source: A Schedules.

2/ The projected figures are based on estimated energy purchases from SJRPP and the Southern Companies.

3/ Represents a forecast of energy expected to be purchased from Qualifying Facilities, Independent Power Producers, etc.

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)
Year	Total Installed 1/ Capacity MW	Firm Capacity Import MW	Firm Capacity Export MW	Firm QF MW	Total Capacity Available 2/ MW	Total Peak 3/ Demand MW	DSM 4/ MW	Firm Summer Peak Demand MW	Reserve Margin Before Maintenance 5/ MW	% of Peak	Scheduled Maintenance MW	Reserve Margin After Maintenance 6/ MW	% of Peak
2005	20,846	2,247	0	874	23,967	20,614	1,506	19,108	4,859	25.4	0	4,859	25.4
2006	21,012	2,377	0	738	24,127	21,178	1,583	19,595	4,532	23.1	0	4,532	23.1
2007	22,155	1,666	0	738	24,559	21,769	1,659	20,110	4,449	22.1	0	4,449	22.1
2008	22,155	1,888	0	738	24,781	22,306	1,740	20,566	4,215	20.5	0	4,215	20.5
2009	23,262	1,562	0	687	25,511	22,884	1,825	21,059	4,452	21.1	0	4,452	21.1
2010	24,369	1,311	0	640	26,320	23,424	1,914	21,510	4,810	22.4	0	4,810	22.4
2011	24,369	1,311	0	595	26,275	23,964	2,006	21,958	4,317	19.7	0	4,317	19.7
2012	25,219	1,311	0	595	27,125	24,516	2,100	22,416	4,709	21.0	0	4,709	21.0
2013	26,069	1,311	0	595	27,975	25,059	2,198	22,861	5,114	22.4	0	5,114	22.4
2014	26,069	1,311	0	595	27,975	25,633	2,299	23,334	4,641	19.9	0	4,641	19.9

1/ Capacity additions and changes projected to be in-service by June 1st are considered to be available to meet Summer peak loads which are forecasted to occur during August of the year indicated. All values are Summer net MW. The value shown for FPL's unit capability for the Summer of 2005 is an updated projection from the value used in FPL's 2004 analyses.

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

3/ These forecasted values reflect the Most Likely forecast without DSM.

4/ The DSM MW shown represent cumulative load management capability plus incremental conservation from 1/2004-on for use with the 2004 load forecast. They are not included in total additional resources but reduce the peak load upon which Reserve Margin calculations are based.

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

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

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Year	Total Installed 1/ Capability MW	Firm Capacity Import MW	Firm Capacity Export MW	Firm QF MW	Total Capacity Available 2/ MW	Total Peak 3/ Demand MW	DSM 4/ MW	Firm Winter Peak Demand MW	Reserve Margin Before Maintenance 5/ MW	% of Peak	Scheduled Maintenance MW	Reserve Margin After Maintenance 6/ MW	% of Peak
2004/05	20,158	2,329	0	870	23,357	20,791	1,469	19,322	4,035	20.9	0	4,035	20.9
2005/06	22,429	2,459	0	738	25,626	21,336	1,511	19,825	5,801	29.3	0	5,801	29.3
2006/07	22,428	2,683	0	738	25,849	21,898	1,555	20,344	5,505	27.1	0	5,505	27.1
2007/08	23,609	1,897	0	738	26,244	22,369	1,602	20,768	5,476	26.4	0	5,476	26.4
2008/09	23,609	1,571	0	738	25,918	22,916	1,653	21,263	4,655	21.9	0	4,655	21.9
2009/10	24,790	1,321	0	687	26,798	23,466	1,708	21,758	5,040	23.2	0	5,040	23.2
2010/11	25,971	1,320	0	595	27,886	24,035	1,766	22,270	5,616	25.2	0	5,616	25.2
2011/12	25,971	1,320	0	595	27,886	24,608	1,825	22,783	5,103	22.4	0	5,103	22.4
2012/13	26,826	1,320	0	595	28,741	25,197	1,887	23,310	5,431	23.3	0	5,431	23.3
2013/14	27,681	1,320	0	595	29,596	25,798	1,952	23,846	5,750	24.1	0	5,750	24.1

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

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

3/ These forecasted values reflect the Most Likely forecast without DSM.

4/ The DSM MW shown represent cumulative load management capability plus incremental conservation from 1/2004-on for use with the 2004 load forecast. They are not included in total additional resources but reduce the peak load upon which Reserve Margin calculations are based.

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

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

Schedule 8
Planned And Prospective Generating Facility Additions And Changes

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
				Fuel		Fuel Transport		Const.	Comm.	Expected	Gen. Max.	Net Capability		
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														
2005														
Martin Combustion Turbine	8A	Martin County	CT	NG	FO2	PL	PL	Jun-99	Jun-01	12/1/2004	187,500	---	(160)	OT
Martin Combustion Turbine	8B	Martin County	CT	NG	FO2	PL	PL	Jun-99	Jun-01	12/1/2004	187,500	---	(160)	OT
Martin CC Conversion	8	Martin County	CC	NG	No	PL	No	Jun-03	Jun-05	Unknown	1,223,000	---	1,107	V
Sanford	4	Volusia County	CC	NG	No	PL	No	Unknown	Jun-05	Unknown	1,188,900	---	3	OT
Sanford	5	Volusia County	CC	NG	No	PL	No	Unknown	Jun-05	Unknown	1,188,900	---	9	OT
Manatee	3	Manatee County	CC	NG	No	PL	No	Jun-03	Jun-05	Unknown		---	1,107	V
									2005 Changes/Additions Total:			**0**	**1,906**	
2006														
Cape Canaveral	1	Brevard County	ST	FO6	NG	WA	PL	Unknown	Jun-06	Unknown	402,050	12	13	OT
Fort Myers	3	Lee County	CT	NG	FO2	PL	PL	Unknown	Jun-06	Unknown	375,700	5	8	OT
Fort Myers	2	Lee County	CC	NG	FO2	PL	PL	Unknown	Jun-06	Unknown	1,775,390	15	---	OT
Fort Myers	CT	Lee County	CT	FO2	No	WA	No	Unknown	Jun-06	Unknown	744,120	16	---	OT
Manatee	1	Manatee County	ST	FO6	No	WA	No	Unknown	Jun-06	Unknown	863,300	26	26	OT
Manatee	2	Manatee County	ST	FO6	No	WA	No	Unknown	Jun-06	Unknown	863,300	11	11	OT
Manatee	3	Manatee County	CC	NG	No	PL	No	Jun-03	Jun-05	Unknown	1,223,000	1,197	---	V
Martin CC Conversion	8	Martin County	CC	NG	No	PL	No	Jun-03	Jun-05	Unknown	1,223,000	835	---	V
Martin	2	Martin County	ST	NG	FO6	PL	PL	Unknown	Jun-06	Unknown	934,500	---	6	OT
Martin	3	Martin County	CC	NG	No	PL	No	Unknown	Jun-06	Unknown	612,000	1	6	OT
Martin	4	Martin County	CC	NG	No	PL	No	Unknown	Jun-06	Unknown	612,000	1	6	OT
Pt Everglades	1	City of Hollywood	ST	FO6	NG	WA	PL	Unknown	Jun-06	Unknown	247,775	1	8	OT
Pt Everglades	2	City of Hollywood	ST	FO6	NG	WA	PL	Unknown	Jun-06	Unknown	247,775	1	1	OT
Pt Everglades	3	City of Hollywood	ST	FO6	NG	WA	PL	Unknown	Jun-06	Unknown	402,050	2	5	OT
Pt Everglades	4	City of Hollywood	ST	FO6	NG	WA	PL	Unknown	Jun-06	Unknown	402,050	12	15	OT
Riviera	3	City of Riviera Beach	ST	FO6	NG	WA	PL	Unknown	Jun-06	Unknown	310,420	9	9	OT
Sanford	4	Volusia County	CC	NG	No	PL	No	Unknown	Jun-05	Unknown	1,188,900	43	—	OT
Sanford	5	Volusia County	CC	NG	No	PL	No	Unknown	Jun-05	Unknown	1,188,900	43	3	OT
Scherer	4	Monroe, GA	BIT	BIT	No	RR	No	Unknown	Jun-06	Unknown	680,368	24	19	OT
St. John's River Power Park	2	Duval County	BIT	BIT	Pet Coke	RR	WA	Unknown	Jun-06	Unknown	135,918	18	22	OT
Turkey Point	1	Miami Dade County	ST	FO6	NG	WA	PL	Unknown	Jul-06	Unknown	402,050	—	9	OT
									2006 Changes/Additions Total:			**2,272**	**167**	
2007														
Pt Everglades	3	City of Hollywood	ST	FO6	NG	WA	PL	Unknown	Jun-07	Unknown	402,050	(1)	(1)	OT
Turkey Point CC	5	Miami Dade County	CC	NG	FO2	PL	PL	Jan-05	Jun-07	Unknown	1,223,000	---	1,144	P
									2007 Changes/Additions Total:			**(1)**	**1,143**	
2008														
Turkey Point CC	5	Miami Dade County	CC	NG	FO2	PL	PL	Jan-05	Jun-07	Unknown	1,223,000	1,181	---	P
									2008 Changes/Additions Total:			**1,181**	**0**	

Schedule 8
Planned And Prospective Generating Facility Additions And Changes

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
				Fuel		Fuel Transport		Const.	Comm.	Expected	Gen. Max.	Net Capability		
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														
2009														
West County Combined Cycle	1	Palm Beach County	CC	NG	FO2	PL	PL	Jan-07	Jun-09	Unknown	Unknown	---	1,107	P
									2008 Changes/Additions Total:			**0**	**1,107**	
2010														
West County Combined Cycle	1	Palm Beach County	CC	NG	FO2	PL	PL	Jan-07	Jun-09	Unknown	Unknown	1,181	---	P
West County Combined Cycle	2	Palm Beach County	CC	NG	FO2	PL	PL	Jan-08	Jun-10	Unknown	Unknown		1,107	P
									2010 Changes/Additions Total:			**1,181**	**1,107**	
2011														
West County Combined Cycle	2	Palm Beach County	CC	NG	FO2	PL	PL	Jan-08	Jun-10	Unknown	Unknown	1,181	---	P
									2011 Changes/Additions Total:			**1,181**	**0**	
2012														
Unsited Clean Coal Unit	1	Unknown	CC	NG	FO2	PL	PL	Jan-10	Jun-12	Unknown	Unknown	---	850	P
									2012 Changes/Additions Total:			**0**	**850**	
2013														
Unsited Clean Coal Unit	1	Unknown	CC	NG	FO2	PL	PL	Jan-10	Jun-12	Unknown	Unknown	855	---	P
Unsited Clean Coal Unit	2	Unknown	CC	NG	FO2	PL	PL	Jan-11	Jun-13	Unknown	Unknown	---	850	P
									2013 Changes/Additions Total:			**855**	**850**	
2014														
Unsited Clean Coal Unit	2	Unknown	CC	NG	FO2	PL	PL	Jan-11	Jun-13	Unknown	Unknown	855	---	P
									2013 Changes/Additions Total:			**855**	**0**	

Note 1: The Winter Total MW value consists of all generation additions and changes achieved by January. The Summer Total MW value consists of all generation additions and changes achieved by June. All other MW will be picked up in the following year.

Note 2: Capacity additions/changes shown for 2004 reflect changes/additions from values shown in Schedule 1.

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Martin Combustion Turbine Conversion to Combined Cycle Unit # 8

(2) **Capacity**
- a. Summer: 787 MW Incremental (1107 MW Total)
- b. Winter: 835 MW Incremental (1197 MW Total)

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

(4) **Anticipated Construction Timing**
- a. Field construction start-date: 2003
- b. Commercial In-service date: 2005

(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, 0.05% S. Distillate, & Water Injection on Distillate

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

(8) **Total Site Area:** 11,300 Acres

(9) **Construction Status:** V (Under Construction >= 50% Complete)

(10) **Certification Status:** Certified

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

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

Planned Outage Factor (POF):	2%	
Forced Outage Factor (FOF):	1%	
Equivalent Availability Factor (EAF):	97%	(Base & Duct Firing Operation)
Resulting Capacity Factor (%):	Approx. 84%	(First Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	6,850 Btu/kWh	(Base Operation)
Base Operation 75F,100%		

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

Book Life (Years):	25 years	
Total Installed Cost (In-Service Year $/kW):	584	
Direct Construction Cost ($/kW):		
AFUDC Amount ($/kW):		
Escalation ($/kW):		
Fixed O&M ($/kW -Yr.):	(2001 $kW-Yr)	9.09
Variable O&M ($/MWH):	(2001 $/MWH)	0.037
K Factor:		1.5397

* Values represent an operational combined cycle unit after the conversion is completed.

** $/kW values are based on Summer incremental 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:** Manatee Combined Cycle Unit # 3

(2) **Capacity**
a. Summer 1,107 MW
b. Winter 1,197 MW

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

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2003
b. Commercial In-service date: 2005

(5) **Fuel**
a. Primary Fuel: Natural Gas
b. Alternate Fuel: None

(6) **Air Pollution and Control Strategy:** Natural Gas, Dry Low NO_x Combustors, SCR

(7) **Cooling Method:** Cooling Pond

(8) **Total Site Area:** 9,500 Acres

(9) **Construction Status:** V (Under Construction >= 50% Complete)

(10) **Certification Status:** Certified

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

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

Planned Outage Factor (POF):	2%	
Forced Outage Factor (FOF):	1%	
Equivalent Availability Factor (EAF):	97%	(Base & Duct Firing Operation)
Resulting Capacity Factor (%):	Approx. 77%	(First Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	6,850 Btu/kWh	(Base Operation)

Base Operation 75F,100%

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

Book Life (Years):		25 years
Total Installed Cost (In-Service Year $/kW):		499
Direct Construction Cost ($/kW):		
AFUDC Amount ($/kW):		
Escalation ($/kW):		
Fixed O&M ($/kW -Yr.):	(2001 $kW-Yr)	12.96
Variable O&M ($/MWH):	(2001 $/MWH)	0.037
K Factor:		1.5397

* $/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:** Turkey Point Combined Cycle Unit # 5

(2) **Capacity**
a. Summer 1,144 MW
b. Winter 1,181 MW

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

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2005
b. Commercial In-service date: 2007

(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:** 11,000 Acres

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

(10) **Certification Status:** Certified

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

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

Planned Outage Factor (POF):	2%	
Forced Outage Factor (FOF):	1%	
Equivalent Availability Factor (EAF):	97%	(Base & Duct Firing Operation)
Resulting Capacity Factor (%):	Approx. 97%	(First Base OperationYear)
Average Net Operating Heat Rate (ANOHR):	6,835 Btu/kWh	(Base Operation)
Base Operation 75F,100%		

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

Book Life (Years):	25 years
Total Installed Cost (In-Service Year $/kW):	507
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2007 $kW-Yr)	10.06
Variable O&M ($/MWH): (2007 $/MWH)	0.13
K Factor:	1.5699

* $/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:** West County Energy Center Combined Cycle Unit # 1

(2) **Capacity** *
a. Summer 1,107 MW
b. Winter 1,181 MW

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

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2007
b. Commercial In-service date: 2009

(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:** P (Planned)

(10) **Certification Status:** P (Planned)

(11) **Status with Federal Agencies:** P (Planned)

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

Planned Outage Factor (POF):	2%	
Forced Outage Factor (FOF):	1%	
Equivalent Availability Factor (EAF):	97%	(Base & Duct Firing Operation)
Resulting Capacity Factor (%):	Approx. 97%	(First Year Base Operation)
Average Net Operating Heat Rate (ANOHR):	6,835 Btu/kWh	(Base Operation)
Base Operation 75F,100%		

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

Book Life (Years):	25 years
Total Installed Cost (In-Service Year $/kW):	571
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2009 $kW-Yr)	12.25
Variable O&M ($/MWH): (2009 $/MWH)	0.08
K Factor:	1.6010

* Output based on typical 4x1 plant similar to Martin/Manatee/Turkey Point 4x1 plants.
** $/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 escalation and AFUDC only.
Transmission interconnection, transmission integration, and gas expansion costs are not included.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** West County Energy Center Combined Cycle Unit # 2

(2) **Capacity** *
a. Summer 1,107 MW
b. Winter 1,181 MW

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

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2008
b. Commercial In-service date: 2010

(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:** P (Planned)

(10) **Certification Status:** P (Planned)

(11) **Status with Federal Agencies:** P (Planned)

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

Planned Outage Factor (POF):	2%	
Forced Outage Factor (FOF):	1%	
Equivalent Availability Factor (EAF):	97%	(Base & Duct Firing Operation)
Resulting Capacity Factor (%):	Approx. 94%	(First Year Base Operation)
Average Net Operating Heat Rate (ANOHR): Base Operation 75F,100%	6,835 Btu/kWh	(Base Operation)

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

Book Life (Years):	25 years
Total Installed Cost (In-Service Year $/kW):	561
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2010 $kW-Yr)	12.63
Variable O&M ($/MWH): (2010 $/MWH)	0.08
K Factor:	1.6013

* Output based on a typical 4x1 plant similar to Martin/Manatee/Turkey Point 4 x 1 plants.
** $/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 escalation and AFUDC only.
Transmission interconnection, transmission integration, and gas expansion costs are not included.
(Note: Costs shown are based on stand-alone construction; i.e. no synergies with Unit # 1.)

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Unsited Clean Coal Unit # 1

(2) **Capacity**
a. Summer 850 MW
b. Winter 855 MW

(3) **Technology Type:** Super Critical Steam Generator

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2008
b. Commercial In-service date: 2012

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

(6) **Air Pollution and Control Strategy:** Low No_x Burners, Over-fired Air, SCR, Baghouse
Wet Flue Gas Desulfurization, Wet Electric Static Precipatator

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

(8) **Total Site Area:** 3,000 Acres

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

(10) **Certification Status:** P (Planned)

(11) **Status with Federal Agencies:** P (Planned)

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

Planned Outage Factor (POF):	6.0%
Forced Outage Factor (FOF):	4.25%
Equivalent Availability Factor (EAF):	90%
Resulting Capacity Factor (%):	Approx. 90% (First Year Operation)
Average Net Operating Heat Rate (ANOHR):	8,600 Btu/kWh
Base Operation 75F,100%	

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

Book Life (Years):	40 years
Total Installed Cost (In-Service Year $/kW):	2,355
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2012 $kW-Yr)	38.50
Variable O&M ($/MWH): (2012$/MWH)	1.37
K Factor:	1.6727

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

NOTE: Total installed cost includes escalation and AFUDC only.
Transmission interconnection and transmission integration costs are not included.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) **Plant Name and Unit Number:** Unsited Clean Coal Unit # 2

(2) **Capacity**
a. Summer 850 MW
b. Winter 855 MW

(3) **Technology Type:** Super Critical Steam Generator

(4) **Anticipated Construction Timing**
a. Field construction start-date: 2008
b. Commercial In-service date: 2013

(5) **Fuel**
a. Primary Fuel Coal
b. Alternate Fuel N/A

(6) **Air Pollution and Control Strategy:** Low No_x Burners, Over-fired Air, SCR, Baghouse
Wet Flue Gas Desulfurization, Wet Electric Static Precipatator

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

(8) **Total Site Area:** 3,000 Acres

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

(10) **Certification Status:** P (Planned)

(11) **Status with Federal Agencies:** P (Planned)

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

Planned Outage Factor (POF):	6.0%
Forced Outage Factor (FOF):	4.25%
Equivalent Availability Factor (EAF):	90%
Resulting Capacity Factor (%):	Approx. 90% (First Year Operation)
Average Net Operating Heat Rate (ANOHR):	8,600 Btu/kWh
Base Operation 75F,100%	

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

Book Life (Years):	40 years
Total Installed Cost (In-Service Year $/kW):	1,732
Direct Construction Cost ($/kW):	
AFUDC Amount ($/kW):	
Escalation ($/kW):	
Fixed O&M ($/kW -Yr.): (2013 $kW-Yr)	28.86
Variable O&M ($/MWH): (2013 $/MWH)	1.39
K Factor:	1.6731

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

NOTE: Total installed cost includes escalation and AFUDC only.
Transmission interconnection and transmission integration costs are not included.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Martin Combustion Turbine Conversion to Combined Cycle Unit # 8

(1)	Point of Origin and Termination:	Indiantown – Martin #2
(2)	Number of Lines:	1
(3)	Right-of-way	FPL Owned & New acquisitions
(4)	Line Length:	12.9 miles
(5)	Voltage:	230 kV
(6)	Anticipated Construction Timing:	Start date: 1/5/04 End date: Complete
(7)	Anticipated Capital Investment: (Trans. and Sub.)	$11,700,000
(8)	Substations:	Martin 230kV and Indiantown
(9)	Participation with Other Utilities:	None

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(1)	Point of Origin and Termination:	Bridge – Indiantown #2
(2)	Number of Lines:	1
(3)	Right-of-way	FPL Owned
(4)	Line Length:	10.0 miles
(5)	Voltage:	230 kV
(6)	Anticipated Construction Timing:	Start date: 3/15/04 End date: Complete
(7)	Anticipated Capital Investment: (Trans. and Sub.)	$8,900,000
(8)	Substations:	Indiantown and Bridge
(9)	Participation with Other Utilities:	None

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Manatee Combined Cycle Unit # 3

The new Manatee CC unit does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Turkey Point Combined Cycle Unit # 5

The new Turkey Point CC unit does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

West County Energy Center Combined Cycle Unit # 1

The proposed new West County Energy Center CC Unit # 1 does not require any "new" transmission lines.

Schedule 10
Status Report and Specifications of Proposed Transmission Lines

West County Energy Center 2 Combined Cycle Unit # 2

The proposed new West County Energy Center CC Unit # 2 does not require any "new" transmission lines.

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 plant and animal species. Population growth in its service area is continuing, which heightens competition for air, land, and water resources that are necessary to meet the increased 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 utilities for its commitment to the environment. Many outside organizations have heralded its environmental leadership. In 2004 FPL Group earned a first place ranking among U.S. power companies, and second globally, in a report from the World Wildlife Fund for voluntary commitments to limit CO_2 emissions. This commitment was made to support initiatives to better manage utility impacts on global warming through use of greenhouse gas emission reductions and improvements in energy efficiency. The report stated that this was "primarily due to the company's leadership in developing wind energy and their commitment to dramatically improve their efficiency". FPL was also recently ranked first out of 28 major electric utilities surveyed in an environmental assessment conducted by Innovest, an independent advisory group. In recognition of its success in executing a strategy to become a clean energy provider harnessing primarily clean and renewable fuels while also boosting shareholder value, FPL Group, Inc. was named in June 2003 as the winner of the Edison Award, the electric power industry's highest honor by the Edison Electric Institute.

FPL was awarded Edison Electric Institute's National Land Management Award for its stewardship of 25,000 acres surrounding its Turkey Point Plant. FPL won the Council for Sustainable Florida's award for its sea turtle conservation and education programs at its St. Lucie Plant. In 2001, FPL was awarded the 2001 Waste Reduction and Pollution Prevention Award from the Solid Waste Association of North America. FPL received the 2001 Program Champion Award from the Environmental Protection Agency's Wastewise Program. The Florida

Department of Environmental Protection named FPL a "Partner for Ecosystem Protection" for its emission-reducing "repowering" projects at its Fort Myers and Sanford Plants. Finally, FPL has been recognized by numerous federal and state agencies for its innovative endangered species programs which include such species as manatees, crocodiles, and sea turtles.

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 the Company's position. This statement reflects how FPL incorporates environmental values into all aspects of the Company's activities and serves as a framework for new environmental initiatives throughout the Company. The FPL environmental statement further establishes a long-term direction of 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, 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/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 Company policy as well as with 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 Company 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 2004 environmental outreach activities are noted in Table IV.E.1.

Activity	# of Participants
Visitors to Energy Encounter	20,000
Visitors to Manatee Park	150,000
Number of "visits" to FPL' s Environmental Website	195,000
Number of pieces of environmental literature distributed	>110,000

Table IV.E.1

(All numbers are approximations.)

IV.F Preferred and Potential Sites

Based upon its projection of future resource needs, FPL has identified preferred and potential sites for future generation additions. These preferred and potential sites are discussed in separate sections below.

IV.F.1 Preferred Sites

FPL identifies four preferred sites in this Site Plan: the existing Martin plant site, the existing Manatee plant site, the existing Turkey Point plant site, and the West County Energy Center which is adjacent to the existing FPL Corbett substation in Palm Beach County. Three of these four sites are the locations for capacity additions that FPL is committed to make during the 2005-2007 period. The fourth site is the projected location for capacity additions FPL is proposing to make in 2009 and 2010.

The capacity additions at the Martin, Manatee, and Turkey Point sites have been approved by the FPSC. The Martin and Manatee capacity additions will come in-service in mid-2005 and the Turkey Point capacity addition will come in-service in mid-2007. The discussion of capacity additions at the West County Energy Center represent FPL's current projection of how it will meet its capacity needs for 2009 and 2010.

The four preferred sites are discussed below.

Preferred Site # 1: Manatee Plant, Manatee County

The site is located in unincorporated north central Manatee County approximately 2.5 miles south of the Hillsborough-Manatee County line. It is 5 miles east of Parrish, Florida and is approximately 5 miles east of U.S. Highway 301 and 9.5 miles east of Interstate 75 (I-75). State Road (SR) 62 is about 0.5 miles south of the site. Saffold Road marks the eastern boundary of the site.

FPL's Manatee Plant occupies a portion of the approximately 9,500 acre Manatee Site which is wholly owned by FPL. The site includes a 4,000 acre cooling pond including the dike area. The existing approximately 1,590 MW (Summer) of generating capacity is made up of two steam units (Units # 1 and # 2) which have

been in-service since 1976 and 1977 respectively. These units burn both fuel oil (residual) with a maximum sulfur content of 1 percent and natural gas. Natural gas may be fired singly or in combination with fuel oil. A recent agreement between FPL and Gulfstream Natural Gas Systems (Gulfstream), and the nearby Florida Gas Transmission (FGT) system, provides two natural gas sources for these units.

Additional generating capacity is being added to the site for operation beginning in 2005 to meet projected FPL system capacity needs. One unit consisting of four new combustion turbines (CT's), four new heat recovery steam generators (HRSG's), and a new steam turbine generator are scheduled for in-service operation beginning in June 2005. The four new CT's, HRSG's, and steam turbine will ultimately be operating in combined cycle (CC) configuration. This new CC unit will add 1,107 MW (Summer) and 1,197 MW (Winter) capability to the site. This new CC Unit will be designated as Manatee Unit # 3.

Unit # 3 is located west of the existing generating Units # 1 and # 2. The location of the new combined cycle Unit # 3 at the Manatee Plant site and the selection of the highly efficient combined cycle technology (firing natural gas) will maximize the beneficial use of the site while minimizing environmental and land use impacts otherwise associated with the development of a new generating plant of this capacity. The Manatee site has been previously listed as a preferred or potential site in FPL Site Plans and continues to be a potential site for future capacity additions, if needed in the future.

a. and b. U.S. Geological Survey (USGS) Map and Proposed Facilities Layout

A map indicating the Manatee plant site showing the general layout of the facilities and a map indicating the land use of the site are 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

A major portion of the site consists of a 4,000 acre cooling pond. Manatee Units # 1 and # 2 will not be affected by the addition of Unit # 3. The area for Unit # 3 is expected to comprise approximately 73 acres. The site and surrounding land uses are almost exclusively agriculture with the exception of the Willow Shores residential area located northwest of the Manatee Plant site. Individual homes are located in the larger of two out parcels within the Manatee Plant site along SR 62 at the northeast corner of the site. The vast majority of the Manatee Plant site was re-designated from Agricultural/Rural to Major Public/Semi Public (1) (P/SP) land use category by the Manatee County Commission on November 19, 2002 with the approval of Ordinance 02-13. Electric generating plants are specifically allowed in the P/SP category in accordance with the Manatee County Local Government Comprehensive Plan and Land Development Regulation Act, Chapter 163, Part II, Florida Statutes (FS).

e. General Environmental Features On and In the Site Vicinity

1. Natural Environment

There are no incorporated areas within 5 miles of the Manatee Plant site. Unincorporated communities in the area include Willow, located about 2 miles north of the Manatee Plant; Parrish, located about 5 miles southwest of the plant; and, in Hillsborough County, Sundance, located 3 miles northwest of the plant; Sun City Center, located 7 miles north of the plant; and Wimauma, located 8 miles northeast of the plant.

The Manatee Plant site includes areas of improved pasture with forested land southeast of the project area. This forested area is comprised of flat woods and oak habitat. The western side of the Manatee Plant site is currently used for agriculture. There are also wetlands to the southeast containing wet pine flat woods mixed with dry pine flat woods. There will not be any disturbance of existing wetlands associated with this project.

2. Listed Species

Construction and operation of the new Unit # 3 at the site is not expected to affect any rare, endangered, or threatened species. The majority of the site is cleared, grassed, and periodically mowed. The project area has been significantly altered by the construction and operation of the existing plant facilities, and, as a result, wildlife utilization of this area is minimal. Common wading birds utilizing the plant site outside of the project area include the great blue heron, little blue heron, great egret, snowy egret, and the white ibis. Typical mammals found in the habitats surrounding the project area are common bobcat, raccoon, deer, feral hog, opossum, armadillo, skunk, and gray squirrel. Avian species observed in the vicinity of the project include bald eagles, a variety of songbirds, red-shouldered hawks, and marsh hawks.

3. Natural Resources of Regional Significance Status

There are no county, State or Federal designated areas located within one mile of the plant site. The construction and operation of Manatee Unit # 3 is not expected to have any adverse impacts on parks, recreation areas, or environmentally sensitive lands that are associated with the Little Manatee River within a 5-mile radius of the project site. These lands include: Little Manatee River State Recreation Area, Little Manatee River State Canoe Trail, Florida Gulf Coast Railroad Museum, Cockroach Bay Aquatic Preserve, Critical Manatee Habitat, South Hillsborough Wildlife Corridor, Hillsborough County Environmental Lands Acquisition and Protection Program Parcels, and Save Our River-Little Manatee River.

4. Other Significant Features

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

f. Design Features and Mitigation Options

Manatee Unit # 3 consists of the addition of four new combustion turbines, four HRSG's, and one new steam turbine generator in combined cycle mode in a 4x1 configuration. Manatee Unit # 3 is scheduled to begin operation in mid-2005. Natural gas, delivered via pipeline, will be the sole fuel for this unit.

Mitigation aspects of Manatee Unit # 3 include: the capture and reuse of plant process water and rainwater, the use of combustion technology that is very efficient and low in air pollutant emissions, plus pollution control technology (dry-low NO_x burners and selected catalytic reduction equipment).

g. Local Government Future Land Use Designations

As mentioned above, the Local Government Future Land Use Plan is consistent with the existing Designated uses of the Manatee Plant Site as major portions of the site are designated as Major Public/Semi Public (1) – P/PS/. Electric generating plants are specifically allowed in this land use category.

h. Site Selection Criteria and Process

The Manatee plant site was selected due to consideration of various factors including system load and economics. The availability of a natural gas pipeline was also a major factor in the selection of the Manatee site for the new 4x1 CC unit. Environmental issues were not a deciding factor since this site does not exhibit significant environmental sensitivity or other environmental issues.

i. Water Resources

The available surface water source is the Little Manatee River which supplies makeup water for the 4,000-acre cooling pond. Plant process and service water requirements are currently supplied by the cooling pond. There are three wells in the Floridan Aquifer that are reserved for standby purposes.

j. Geological Features of Site and Adjacent Areas

Manatee County has three physiographic provinces: the Gulf Coast Lowlands, the DeSoto Plains, and the Polk Upland. The Manatee Plant is situated on the boundary of the DeSoto Plains and the Gulf Coast Lowland provinces. The geology underlying the Manatee Plant consists of unconsolidated sediments comprised of sand, clay silt, marl shell, limestone, and phosphorite (terrace deposits) from the Pleistocene age to recent. Undifferentiated deposits comprised of sand and clay are generally described to be less than 25 feet thick. Underlying the differentiated materials are the Miocene Hawthorn Formation, the Tampa Member, the Suwanee Limestone of the Oligocene age, the Ocala Limestone of the Eocene Age, the Avon Park Formation, the Oldsmar Formation of the Eocene age, and the Cedar Key Formation of the Paleocene age.

The major hydro-geologic units that exist in the vicinity of the site include, in descending order: the surficial aquifer system, the intermediate aquifer system, and the Upper Floridan aquifer. The surficial aquifer system is generally unconfined in Manatee County and consists of Quaternary deposits of predominately marine and non-marine quartz sand, clayey sand, shell, shelly marl, phosphorite, and occasional stringersmarl and limestone. In the vicinity of the site the surficial sediments are approximately 25 feet thick.

k. Projected Water Quantities for Various Uses

The estimated additional quantity of water for industrial processing is estimated to be 150 gallons per minute (gpm) and provides plant process and service water. FPL operates on-site water treatment systems for each of these uses. Water quantities for other uses such as irrigation and potable water are estimated to be approximately 5 gpm.

l. Water Supply Sources by Type

Manatee Unit # 3 will utilize the existing on-site cooling pond as its source of cooling water. The cooling pond operates as a "closed cycle" system; any makeup water is provided from the Little Manatee River to replace net evaporation and seepage losses from the pond. These makeup needs are

within the existing agreement between FPL and the Southwest Florida Water Management District (SWFWMD). There are three wells currently on reserve (stand-by) that are in the Floridan Aquifer.

m. Water Conservation Strategies Under Consideration

Available water including non-contact storm water, treated industrial wastewater, treated sanitary wastewater, and recovered service water are captured and returned to the cooling pond. Storm water from the equipment areas is also treated and returned to the cooling pond.

n. Water Discharges and Pollution Control

The Manatee Plant utilizes a Best Management Practices (BMP) plan and a Spill Prevention, Control, and Countermeasure (SPCC) plan to assist in the control of inadvertent release of pollutants. Storm water runoff is collected and routed to detention ponds. Construction activities are managed so that equipment maintenance and fueling are performed in designated areas so that, in the event of a spill or release of any contaminant, impacts to any surface water or the cooling pond are minimized.

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

The site is already serviced by fuel delivery services and facilities for residual, low sulfur (1 percent) fuel oil and, most recently, natural gas as an alternate fuel for existing Units # 1 and # 2. The Unit # 3 addition will be fueled solely by natural gas that could be supplied by either Gulfstream or FGT as previously discussed.

p. Air Emissions and Control Systems

The addition of natural gas as a permitted fuel for existing Units # 1 and # 2 is expected to lower overall emissions during periods when natural gas, instead of fuel oil, is used. In addition, a NO_x reduction technology, re-burn, has been approved for installation on Units # 1 and # 2 and are being installed.

The use of natural gas and combustion controls will minimize air emissions from Unit # 3 and ensure compliance with applicable emission limiting standards. Using natural gas minimizes emissions of sulfur dioxide (SO_2), particulate matter, and other fuel-bound contaminates. Combustion controls similarly minimize the formation of carbon monoxide and volatile organic compounds. NO_x emissions will be controlled using dry-low NO_x combustion technology and selective catalytic reduction (SCR). These design alternatives constitute the Best Available Control Technology for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. The design of Manatee Unit # 3 incorporates features that will make it one of the most efficient and cleanest power plants in the State of Florida.

q. Noise Emissions and Control Systems

Noise emissions from the project are not anticipated to be significantly different from the current levels at the existing plant. Similar natural gas-fired facilities in Broward and Martin Counties have been constructed and operated without exceeding allowable noise levels.

r. Status of Applications

FPL filed the Site Certification Application (SCA) for Manatee Unit # 3 with the Florida Department of Environmental Protection (FDEP) on February 20, 2002 and received approval and Site Certification by the Governor and Cabinet in April 2003. FPL acquired all permits needed and commenced construction in May 2003. Modifications to operating permits will be pursued as necessary.

Preferred Site # 2: Martin Plant, Martin County

The Martin site is located approximately 40 miles northwest of West Palm Beach, 5 miles east of Lake Okeechobee, and 7 miles northwest of Indiantown in Martin County, Florida. The site is bounded on the west by the Florida East Coast Railway (FEC) and the adjacent South Florida Water Management District

(SFWMD) L-65 Canal, on the south by the St. Lucie Canal (C-44 or Okeechobee Waterway), and on the northeast by SR 710 and the adjacent CSX Railroad. The Martin site was identified in 1987 as a preferred location for development of coal gasification/combined cycle electric generation facilities and subsequent FPL Site Plans have continued to identify this site as a preferred site.

The existing 2,900 (approximate) MW (Summer) of generating capacity at FPL's Martin site occupies a portion of the approximately 11,300 acres that are wholly owned by FPL. The generating capacity is made up of two steam units (Units # 1 and # 2), plus two combined cycle units (Units # 3 and # 4), and two combustion turbine units (Units # 8a and # 8b) that are being converted to combined cycle through the construction of two additional combustion turbines (Units # 8c and # 8d), four Heat Recovery Steam Generators (HRSG's), and a steam turbine. The new combined cycle unit will be named Martin Unit # 8. The site includes a 6,800 acre cooling pond (6,500 acres of water surface and 300 acres of dike area) and approximately 300 acres for the existing power plant units and related facilities.

Martin Unit # 8 is scheduled to be in-service in mid-2005 and will add approximately 790 MW of capacity. The Martin site has been previously approved for the development of solid fuel generating units and has also been listed as a preferred or potential site in previous FPL Site Plans for combined cycle and simple cycle generation options. The Martin site continues to be a potential option for additional generating units when needed in the future.

a. and b. U.S. Geological Survey (USGS) Map and Proposed Facilities Layout

A USGS map of the Martin plant site, plus a map of the general layout of the proposed generating facilities at the site, are 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

A major portion of the site consists of a 6,800-acre cooling pond. The existing power plant facilities are located on approximately 300 acres. To the east of the power plant there is an area of mixed pine flat wood with a scattering of small wetlands. To the north of the cooling pond there is a 1,200-acre area which has been set aside as a mitigation area. There is a peninsula of wetland forest on the West Side of the reservoir that is named the Barley Barber Swamp. The Barley Barber Swap encompasses 400 acres and is preserved as a natural area. There is also a 10-kilowatt (kW) photovoltaic energy facility at the south end of this site.

e. General Environmental Features On and In the Site Vicinity

1. Natural Environment

As noted above, the Barley Barber Swamp is located on the site. There is also a 1,200-acre mitigation area in the northern area of the site where wetlands and uplands have been preserved. Along the south and west sides of the cooling pond is an area where the vegetation has been maintained in its natural state in order to serve as a wildlife corridor. There are pine flat woods and small-scattered wetlands to the east of the plant.

2. Listed Species

Construction and operation of a new unit at the site is not expected to affect any rare, endangered, or threatened species. There are two active Bald Eagle (*Haliaeetus leucocephalus*: Federal- and State-listed as Threatened) nests that have been on the site for many years. The Florida Natural Areas Inventory (FNAI) database notes a record of Eastern Indigo Snakes (*Drymachon coralis coupert*, which are Federal- and State-listed as threatened) in the Barley Barber Swamp. A number of other Bald Eagle nests and sightings of Eastern Indigo Snakes are reported by the FNAI database within a two-mile radius of the site. Infrequent sightings of Florida Panther have been made in the vicinity of the site area.

3. Natural Resources of Regional Significance Status

The Treasure Coast Regional Planning Council lists the "FPL Preserve", including the Barley Barber Swamp, as a Significant Regional Facility. Natural communities such as uplands and wetlands are also generically listed as Resources of Regional Significance.

4. Other Significant Features

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

f. Design Features and Mitigation Options

Martin Unit # 8 consists of the addition of two new CT's, four new HRSG's, and a new steam turbine to the two existing CT's, resulting in a 4x1 configuration combined cycle unit. This unit is scheduled to be in-service in mid-2005. Natural gas delivered via pipeline is the primary fuel type for this unit (with light oil serving as a backup fuel). Natural gas-fired facilities are among the cleanest, most efficient technologies currently available.

Mitigation aspects of Martin Unit # 8 include the capture and reuse of plant process water and rainwater, plus the use of cooling towers.

g. Local Government Future Land Use Designations

Local government future land use designation for the site is "Public Utilities". Designations for the surrounding area are primarily "Agricultural". There are also limited areas of "Agricultural Ranchette", "Industrial", and a small "Commercial" area designation. To the southeast of the property, fronting on the St. Lucie Canal, is an area designated for "Public Conservation".

h. Site Selection Criteria and Process

The Martin plant site has been selected 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

Surface water resources currently used at the Martin facility include the cooling pond which takes its water from the St. Lucie canal. The available ground water resource is the surficial aquifer system which is used as a source of potable and service water. Both of these sources will be used.

j. Geological Features of Site and Adjacent Areas

FPL's Martin 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 about which little is known due to their great depth.

Overlying the basement complex to the ground surface are sedimentary rocks and deposits that are primarily marine bin 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, or clay. The deepest formation in Martin County on which significant published data are available is the Eocene Age Avon Park. Limited information is available from wells penetrating the underlying Lake City formation. The published information on the sediments comprising the formations below the Avon Park Limestone in western Martin County is based on projections from deep wells in Okeechobee, St. Lucie, and Palm Beach Counties.

k. Projected Water Quantities for Various Uses

The estimated additional quantity of water required for industrial processing is 130 gallons per minute (gpm) for uses such as process water and service water. FPL operates on-site water treatment systems for each of these uses. Cooling water for Unit # 8 will be cycled through the addition of cooling towers. Makeup water for the pond is taken from the St. Lucie canal. The current makeup water quantity to the cooling pond (approximately 4,800 gpm) is expected to be adequate for the operation of Unit # 8. Water quantities needed for other uses such as irrigation and potable water are estimated to be approximately 5 gpm.

l. Water Supply Sources by Type

Martin Unit # 8 will utilize the existing on-site cooling pond as the source of cooling water for the cooling towers and as a heat sink for the dissipation of cooling water heat. The cooling towers will also act as a heat sink for the Unit # 8 process water. The cooling pond operates as a "closed cycle" system in which heated water from the generating units loses its heat as it is circulated within the pond and back around to the plant intake. Water is also collected in a seepage ditch surrounding the cooling pond and is then pumped back into the cooling pond. Makeup water to the pond is withdrawn from the St. Lucie canal as needed to replace net evaporation and seepage losses from the pond. Such needs will comply with the existing agreement between FPL and the South Florida Water Management District (SFWMD) regarding allocation of cooling water to the pond and with SFWMD's regulations for consumptive water use.

The existing water treatment system at the plant, which provides treated water for use in the Unit # 1 and # 2 boilers, as well as for the HRSG's associated with Units # 3 and # 4, will be used to provide treated water for Unit # 8.

m. Water Conservation Strategies Under Consideration

The entire plant site captures and reuses process water whenever feasible and manages storm water in such a manner so as to recharge the surficial aquifer.

n. Water Discharges and Pollution Control

Heated water discharges will be dissipated in the cooling tower and cooling pond. Non-point source discharges are not an issue since there are none at this facility. Industrial discharges will be minimized by treating and recycling equipment wash water, boiler blowdown water, and equipment area runoff. Storm water runoff is collected and used to recharge the surficial aquifer via a storm water management system. Design elements have been included to capture suspended sediments. Facility permits mandate various sampling and testing activities that provide indications of any pollutant discharges. 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

The site is already serviced by multiple fuel delivery facilities including the installation of a new pipeline. Gulfstream has constructed the new pipeline which provides an alternative fuel supply to the existing Florida Gas Transmission natural gas pipeline. The site is also served by an oil pipeline that serves the existing steam boilers. Distillate is received by truck and stored in above-ground storage tanks. An additional above-ground storage tank was constructed to serve the backup distillate fuel needs of Unit # 8.

p. Air Emissions and Control Systems

FPL's Unit # 8 is subject to "New Source Review" under Federal and State Prevention of Significant Deterioration (PSD) regulations. This review requires these units to meet New Source Performance Standards (NSPS) and that Best Available Control Technology (BACT) be selected to control emissions of those pollutants emitted in excess of applicable PSD significant emission rates. The primary purpose of BACT analysis is to minimize the allowable increases in air pollutants taking into account energy, environmental, and economic impacts. This process provides for the potential for future economic growth without significantly degrading air quality.

The use of natural gas as the primary fuel, plus combustion controls, will minimize air emissions from Unit # 8 and ensure compliance with applicable emission limiting standards. Using natural gas minimizes emissions of sulfur dioxide (SO_2), particulate matter, and other fuel-bound contaminates. Combustion controls similarly minimize the formation of carbon monoxide and volatile organic compounds. NO_x emissions will be controlled using dry-low NO_x combustion technology and selective catalytic reduction (SCR). These design alternatives constitute the Best Available Control Technology for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. The design of Unit # 8 incorporates features that will make it one of the most efficient and cleanest power plants in the State of Florida.

q. Noise Emissions and Control Systems

Noise emissions from the project are not anticipated to be significantly different from the current levels at the existing plant. Similar natural gas-fired facilities in Broward and Martin Counties have been constructed and operated without exceeding allowable noise levels

r. Status of Applications

An SCA was filed in December 1989 for the construction and operation of the Martin Coal Gasification/Combined Cycle project under the Florida Electrical Power Plant Siting Act. In order to convert the two CT's from simple cycle to (4X1) CC configuration (Unit # 8), a modification to the Site Certification was required. FPL filed the SCA modification on February 1, 2002 with the FDEP. Approval and Site Certification was issued by the Governor and Cabinet in April 2003. FPL acquired all construction permits and commenced construction in May 2003. Modifications to operating permits will be pursued as necessary.

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 and two conventional boiler, fossil units, the cooling canals, an FPL-maintained natural wildlife area, and wetlands that have been set aside as the Everglades Mitigation Bank (EMB).

Units # 1 and # 2 are fossil fuel generating plants with approximate generating capacity of 400 MW each. Unit # 1 was completed in 1967 and Unit # 2 in 1968. Turkey Point also has five diesel peaking units that in total produce approximately 12 MW. These units are primarily used to provide emergency power, but occasionally run during the Summer to provide power during peak load demands.

The location of the new Turkey Point Unit # 5, a "4x1" combined cycle electrical generating unit, is within the existing FPL Turkey Point facility property. The location for Unit # 5 is adjacent to the existing fossil Units # 1 and # 2, and includes the existing parking lot and storage areas immediately northwest of Units # 1 and # 2 as well as mangrove wetlands north of the facility.

a. and b. U.S. Geological Survey (USGS) Map and Proposed Facilities Layout

A USGS map of the Turkey Point plant site, plus a map of the general layout of the proposed generating facilities at the site, are 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

A major portion of the site consists of a self-contained cooling canal system that supplies water to condense steam used by the existing units' turbine generators. The canal system consists of 36 interconnected canals each five miles long, 200 feet wide, and four feet deep. The remaining developed area of the site is where the two fossil steam generating units and 5 diesel generators are located. South of, and adjacent to, the fossil plant are the two nuclear generating units. Further to the south, wetlands have been set aside as part of the Everglades Mitigation Bank in an effort to restore these areas to historical plant communities and hydrological function.

e. General Environmental Features On and In the Site Vicinity

1. Natural Environment

The majority of the site is undeveloped dwarf red mangrove swamp, tidally inundated with waters from Biscayne Bay. Along with the dominant red mangroves, buttonwood is a common canopy component, along with occasional white mangrove. Only a few individual black mangroves were observed within the Site. Biscayne Bay is a shallow, subtropical bay supporting sea grasses, sponges, coral reefs, and a variety of marine life.

2. Listed Species

The construction and operation of Unit # 5 is not expected to adversely affect any rare, endangered, or threatened species. Listed species known to occur 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), brown pelican (Pelicanus occidentalis), 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, endangered 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. A project-specific crocodile management plan has been developed for construction of Unit # 5.

3. Natural Resources of Regional Significance Status

Significant features in the vicinity of 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, comprised of several miles of shoreline north of the Turkey Point facility extending offshore approximately 12 nautical miles. Biscayne National Park contains 180,000 acres, approximately 95% of which is open water interspersed with over 40 keys. The Biscayne National Park headquarters is located approximately 2 miles north of the Turkey Point plant, 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 Unit # 5 will consist of four new CT's, four new HRSG's, and a new steam turbine, resulting in a 4x1 configuration CC unit. This unit is scheduled to be in-service in mid-2007. Natural gas delivered via the existing pipeline is the primary fuel type for this unit (with ultra low sulfur light oil serving as a backup fuel). Natural gas-fired facilities are among the cleanest, most efficient technologies currently available.

Mitigation aspects of Turkey Point Unit # 5 related to unavoidable wetland impacts of construction include; on-site hydrologic improvements to enhance existing wetlands, restoration and preservation of areas overgrown with exotic plant species, creation of an on-site lagoon, transfer of some mangrove dominated lands to South Florida Water Management District and Biscayne National Park, and also the purchase of mitigation credits from the EMB which is in the same drainage basin. The capture and reuse of plant process water and rainwater, plus the use of cooling towers will minimize thermal discharges to the cooling canals.

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 and Process

For the past several years, a number of FPL's existing power plant sites have been considered as potentially suitable sites for new or repowered generation. The Turkey Point plant site has been selected as a preferred site due to consideration of various factors including system load, an imbalance in the south Florida region between load and generating capacity, and economics. Environmental issues are an important factor at this site. However, the other deciding factors outweigh them. FPL will minimize environmental impacts and mitigate where impacts are unavoidable.

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i. Water Resources

Unique to Turkey Point Plant is the self-contained cooling canal system that supplies water to condense steam used by the existing plant's turbine generators. Although the canal system provides sufficient cooling water for the existing units, there is insufficient cooling capacity for the new unit. Sufficient cooling water for the new unit can be obtained from the Floridan Aquifer that lies beneath the plant site and lies deep beneath the surficial Biscayne Aquifer. The Floridan Aquifer contains an ample supple of water which will be acceptable quality and quantity for plant cooling water needs.

j. Geological Features of Site and Adjacent Areas

FPL's Turkey Point site is underlain by approximately 13,000 feet of sedimentary rock strata. The strata that extends to approximately 500 feet forms the Biscayne Aquifer. The basement complex in this area consists of Paleozoic igneous and metamorphic rocks about which little is known due to their great depth.

Overlying the basement complex to the ground surface are sedimentary rocks and deposits that are primarily of marine 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, or clay. The Tamiami formation is named for deposits composed principally of white cream-colored calcareous sandstone, sandy limestone, and beds and pockets of quartz sand. In the Turkey Point area, the Key Largo limestone is present.

The Floridan Aquifer, located approximately 1,100 feet below the land surface, is a confined aquifer. The Floridan Aquifer system is composed entirely of carbonate rocks, except for minor evaporates. The water in the carbonate rock aquifer is more highly mineralized.

k. Projected Water Quantities for Various Uses

The additional quantity of water for industrial processing is estimated to be 150 gallons per minute (gpm) for plant process and service water. Water for this type of use would be supplied by an existing county water system. FPL will construct a dedicated water treatment facility specifically for Unit # 5. Cooling water for new Unit # 5 will be processed through cooling towers. FPL proposes to use water from the Floridan Aquifer as the source of make-up water used by the cooling towers. The estimated makeup water quantity to the cooling towers is approximately 9,600 gpm.

l. Water Supply Sources by Type

Unit # 5 will utilize cooling towers for the dissipation of heat from the cooling water. The Floridan Aquifer will supply the makeup water for the cooling towers. A dedicated new water treatment system will be constructed at the site to serve Unit # 5.

m. Water Conservation Strategies Under Consideration

A plan to treat and recycle equipment wash water, boiler blowdown, and equipment area runoff for use as service water would reduce ground water consumption. FPL anticipates this site will be designed and classified as a wastewater zero discharge site following the completion of Unit # 5.

n. Water Discharges and Pollution Control

Heated water discharges for the existing Turkey Point units are dissipated using the existing once-through cooling water system and the cooling canal system. Unit # 5 cooling water will be processed through a cooling tower which will dissipate the heat prior to discharge to the cooling canal system. Non-point source discharges are collected and reused. Treating and recycling equipment wash water, boiler blow-down, and equipment area runoff helps to minimize industrial discharges. Storm water runoff is collected and used to recharge the surficial aquifer via a storm water management system. Design elements have been included to capture suspended sediments. Various facility permits mandate various sampling and testing activities which provide indication of any pollutant discharges.

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

The site is already serviced by multiple fuel delivery facilities. There is currently a pipeline that supplies natural gas to the facility. The facility also has oil capabilities through on-site storage tanks and accessibility to barge deliveries. Unit # 5 will utilize the existing natural gas pipeline with the addition of compression system(s). A dedicated above-ground storage tank for the ultra-low sulfur distillate backup fuel will also be added. Supply of ultra low sulfur distillate fuel for the new tanks will be made by use of truck deliveries.

p. Air Emissions and Control Systems

The use of natural gas and ultra low sulfur distillate as fuels, plus combustion controls, will minimize air emissions from these units and ensure compliance with applicable emission limiting standards. Using natural gas and ultra low sulfur distillate as 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 NOx combustion technology and selective catalytic reduction (SCR). Water injection and SCR will be used to reduce NOx emissions during operations when using the ultra low sulfur distillate as backup fuel. These design alternatives constitute the Best Available Control Technology for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. Taken together, the design of Turkey Point Unit # 5 will incorporate features that will make it one of the most efficient and cleanest power plants in the State of Florida.

q. Noise Emissions and Control Systems

A field survey and impact assessment of noise expected to be caused by unit construction at the site indicated that construction noise would be below current noise levels for the residents nearest the site. Noise from the operation of the new unit will also be within allowable levels. Similar natural gas-fired facilities in Broward and Martin counties have been constructed and operated without exceeding allowable noise levels.

r. Status of Applications

The Governor and Cabinet approved certification of the plant on February 7, 2005. Following this certification, the Prevention of Significant Deterioration (PSD) air permit and the Dredge and Fill permits were granted by the respective reviewing agencies. Construction will commence in the Spring 2005 with an anticipated in–service date of mid-2007.

Preferred Site # 4: West County Energy Center, Palm Beach County

FPL has identified the property adjacent to the existing FPL Corbett Substation property in unincorporated western Palm Beach County as a preferred site for the addition of new generating capacity. The preferred site was evaluated for the addition of a new combined cycle natural gas power plant project with ultra low sulfur distillate as a backup fuel. The existing site is an area accessible to both natural gas and electrical transmission through existing structures or through additional lateral connections. The proposed facility would use natural gas as the primary fuel and state-of-the-art combustion controls.

a. and b. U.S. Geological Survey (USGS) Map and Proposed Facilities Layout

A USGS map of the West County Energy Center site, plus a map of the general layout of the proposed generating facilities at the site, are 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 land on the site is currently inactive but was previously dedicated to industrial and agricultural use. The site has been excavated, back-filled, and totally re-graded to an elevation approximately 10 ft. above surrounding land surface. No structures are present on the site and vegetation is virtually non-existent.

e. General Environmental Features On and In the Site Vicinity

1. Natural Environment

The majority of the plant site has been significantly altered by the construction and operation of a limestone mine where vegetation had been cleared and removed. Most of the remaining site property has been previously altered through development for agricultural use and rock mining. The surrounding land use is predominantly sugar cane agriculture and limestone mining. The FPL 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 new units at the site is not expected to affect any rare, endangered, or threatened species. Wildlife utilization of the property is minimal as a result of the 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 habitat for wood stork.

3. Natural Resources of Regional Significance Status

The construction and operation of a gas-fired combined cycle generating facility at the site 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 which lies south of the proposed location. It is not anticipated that construction will result in 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 current design option is to construct two new 1,100 MW (approximate) units each consisting of four new CT's, four new HRSG's, and a new steam turbine. The site has sufficient capacity to construct an additional 1,100 MW unit in the future if needed. The first and second units are planned to be placed into service in mid-2009 and mid-2010, respectively. Natural gas delivered via pipeline is the primary fuel type for this unit with ultra low sulfur 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 and 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. This site is considered permittable.

i. Water Resources

The existing adjacent surface water canal, reservoir, and available ground water resources are potential sources for potable and service water for the proposed units. Use of water from the upper and/or lower Floridan Aquifer is also considered a feasible alternative as potential backup sources of water for operation of the proposed units.

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 about which little is known due to their great depth.

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

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

k. Projected Water Quantities for Various Uses

The estimated quantity of water required for industrial processing is 300 gallons per day (gpd) for uses such as process water and service water. Approximately 25 million gallons per day (mgd) in total of cooling water for the two proposed units would be cycled through the addition of cooling towers. Water quantities needed for other uses such as irrigation and potable water are estimated to be approximately 5 gpm.

l. Water Supply Sources by Type

The proposed units will use available surface or ground water as the source of service water and makeup water for the cooling towers. Potable water needs will be met through the use of the surficial aquifer.

m. Water Conservation Strategies Under Consideration

Impacts on the surficial aquifer would be minimized and used only for potable water. The plant site will capture and reuse process water whenever feasible and manage stormwater in such a manner so as to recharge the surficial aquifer.

n. Water Discharges and Pollution Control

Heated water discharges will be dissipated in the cooling towers. Blow down from the cooling towers 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. Industrial discharges will be minimized by treating and recycling equipment wash water, boiler blowdown water, and equipment area runoff. 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. The facility will employ 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

The site is not located near an existing natural gas transmission pipeline that is capable of providing a sufficient quantity of gas. Upgrades of existing pipelines and/or lateral connections to other pipelines will be necessary for supply of natural gas. Ultra low sulfur distillate would be received by truck and stored in above-ground storage tanks to serve as backup fuel for the new units.

p. Air Emissions and Control Systems

The use of natural gas and ultra low sulfur distillate as fuels, plus combustion controls, will minimize air emissions from these units and ensure compliance with applicable emission limiting standards. Using natural gas and ultra low sulfur distillate as 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 distillate as backup fuel. These design alternatives constitute the Best Available Control Technology for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. Taken together, the design of the West County Energy Center units will incorporate features that will make them among the most efficient and cleanest power plants in the State of Florida.

q. Noise Emissions and Control Systems

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

r. Status of Applications

An SCA will be filed in 2005 for the construction and operation of the West County Energy Center project under the Florida Electrical Power Plant Siting Act. A PSD permit application and an underground injection control permit application will also be submitted to the FDEP at the same time.

IV.F.2 Potential Sites for Generating Options

Seven (7) sites are identified as "Potential Sites" for near-term future generation additions to meet FPL's capacity needs.[1]

These sites have been identified as Potential Sites due to considerations of location to FPL load centers, space, infrastructure, and/or accessibility to fuel and transmission facilities. These sites are suitable for different capacity levels and technologies.

Each of these potential sites offer advantages and disadvantages relative to engineering considerations and/or costs associated with the construction and operation of feasible technologies. In addition, each potential site has different characteristics that could require further definition and attention. For discussion purposes, it was assumed that natural gas-fired technologies would be the likely capacity additions at the Potential Sites unless otherwise indicated.

Permits are presently considered to be obtainable for all of these sites, assuming measures can be taken to mitigate any particular site-specific environmental

[1] 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.

concerns that may arise. No significant environmental constraints are currently known for any of these 7 sites. The Potential Sites briefly discussed below are presented in alphabetical order. At this time FPL considers each site to be equally viable.

Potential Site # 1: Andytown Substation , Broward County

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

b. and c. Land Uses and Environmental Features

The land uses for the site are designated as industrial or agricultural use. The site identification process included screening of potential sites to determine potential wetland impacts and impacts to endangered or threatened species. Extensive low-quality wetlands are adjacent to the site. FPL would expect to mitigate any impacts from construction of a power plant at this site. Construction and operation of a new facility on this site is not expected to adversely affect any rare, endangered, or threatened species.

d. and e. Water Quantities and Supply Sources

Surface water sources are not available at the site. Groundwater from the shallow aquifer or a local source of gray water have been identified as potential water sources. The Floridan Aquifer has been identified as a potential cooling water source. It has been estimated that sufficient water is available for generation technologies that might be considered for the site.

Potential Site # 2: Cape Canaveral Plant, Brevard County

This potential site is located on the FPL Cape Canaveral Plant property in unincorporated Brevard County. The city of Port St. Johns is located less than a mile away. The site has direct access to a four-lane highway (US 1). A rail line is located near the plant. The existing facility consists of two 400 MW (approximate) steam boiler type generating units.

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

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

b. and c. Land Uses and Environmental Features

This site is located on the Indian River. The land is primarily dedicated to industrial use with surrounding grassy areas and a few acres of remnant pine forest. The land adjacent to the site is dedicated to light commercial and residential use. There are no significant environmental features on the site.

d. and e. Water Quantities and Supply Sources

It is expected that industrial cooling water needs could be met using the current 550,000 gpm once-through cooling water quantity. For industrial process water, FPL would use existing on-site wells or local gray water. It has been estimated that sufficient water is available for generation technologies that might be considered at the site.

Potential Site # 3: Desoto County Site

This site is an undeveloped site located on a 13,500 acre property in unincorporated Desoto County. The site is adjacent to portions of the Peace River. There are no current facilities on the site. The City of Arcadia is located southwest of the Desoto site.

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

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

b. and c. Land Uses and Environmental Features

The land on the site is currently dedicated to agricultural use (sod farming, cattle grazing, and truck crops). Developed portions of the adjacent properties are primarily agricultural (sod farms, citrus groves, and cattle grazing). Undeveloped portions include mixed scrub with some hardwoods and a few isolated wetlands.

d. and e. Water Quantities and Supply Sources

The primary water source would either be groundwater from the upper and lower Floridan Aquifer or if available and practicable, a local source of gray water. Other facility water uses may include irrigation, potable use, etc., which could be supplied from shallower wells using the surficial aquifer. It has been estimated that sufficient water is available for generation technologies that might be considered for the site.

Potential Site # 4: Fort Myers Plant Site, Lee County

This potential site is located on FPL's existing 460-acre Fort Myers property. Located on the site is one 1,400 MW (approximate) combined cycle unit, Unit # 2, and 12 gas turbines each with a capacity of approximately 54 MW. Two additional simple cycle peaking units have been recently completed at the site in 2003.

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

A USGS map of the Fort Myers plant site is found at the end of this chapter.

b. and c. Land Uses and Environmental Features

The land on the site is currently dedicated to industrial use with surrounding grassy and landscaped areas. Much of the site has recently been used for direct construction activities. The adjacent land uses include light commercial and retail to the east of the property, and some residential areas located toward the west. Mixed scrub with some hardwoods can be found to the east and further south.

d. and e. Water Quantities and Supply Sources

The available water source is the Caloosahatchee River and the available groundwater source is the Sandstone Aquifer. It has been estimated that sufficient water is available for generation technologies that might be considered for the site.

Potential Site # 5: Port Everglades Plant, Broward County

This site is located on the 94-acre FPL Port Everglades plant site in Port Everglades, Broward County. The site has convenient access to State Road (SR) 84 and Interstate 595. A 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 also is home to twelve simple cycle gas turbine (GT) peaking units of 30 MW (approximate) each. The GT's are part of the Gas Turbine Power Park that is made up of 24 GT's at the Lauderdale Plant site and the twelve GTs at the Port Everglades site. The GT's are capable of firing either natural gas or liquid fuel.

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

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

b. and c. Land Uses and Environmental Features

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.

d. and e. Water Quantities and Supply Sources

FPL expects to use the existing municipal water supply for industrial process and makeup water. Cooling water would be drawn from the Intra-Coastal Waterway and cooling towers would be constructed. It has been estimated that sufficient water is available for generation technologies that might be considered for the site.

Potential Site # 6: Riviera Plant, Palm Beach County

This site is located on the FPL Riviera Plant property in Riviera Beach, Palm Beach County. The site has direct access to a four-lane highway, US 1, and barge access is available. A rail line is located near the plant. The facility currently houses two operational 300 MW (approximate) steam boiler generating units and one retired 50 MW generating unit.

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

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

b. and c. Land Uses and Environmental Features

The land on the site is primarily covered by the existing generation facilities with some open, maintained grass areas. There is a small manatee viewing area on the site, which is operated seasonally by FPL. Adjacent land uses include port facilities and associated industrial activities, as well as light commercial and residential development. The site is located on the Intra-Coastal Waterway near the Lake Worth Inlet.

d. and e. Water Quantities and Supply Sources

The existing municipal water supply would be used for industrial processing water and FPL would continue to use Lake Worth as a source of water for once-through cooling water. It has been estimated that sufficient water is available for generation technologies that might be considered for the site.

Potential Site # 7: Southwest St. Lucie County Site

This site is an undeveloped site located in the southwest corner of St. Lucie County. A rail line, a natural gas pipeline, and electrical transmission lines are located near the site. The site is considered as suitable for the construction and operation of electrical generating facilities using a variety of technologies utilizing solid, liquid, or natural gas fuels.

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

A USGS map of the Southwest St. Lucie County site is found at the end of this chapter.

b. and c. Land Uses and Environmental Features

The land on the site is currently dedicated to agricultural use. Most of the site is currently in use for agricultural purposes. Developed portions of the adjacent properties are primarily agricultural (cattle grazing). Undeveloped portions include mixed scrub with some hardwoods and some wetlands.

d. and e. Water Quantities and Supply Sources

Nearby surface water are available for use at this site. Additional water sources include groundwater from the shallow aquifer, the deeper Floridan Aquifer, or if available and practicable, a local source of gray water. It has been estimated that sufficient water is available for generation technologies that might be considered for the site.

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Environmental and Land Use Information:

Supplemental Information

Preferred Site: Manatee

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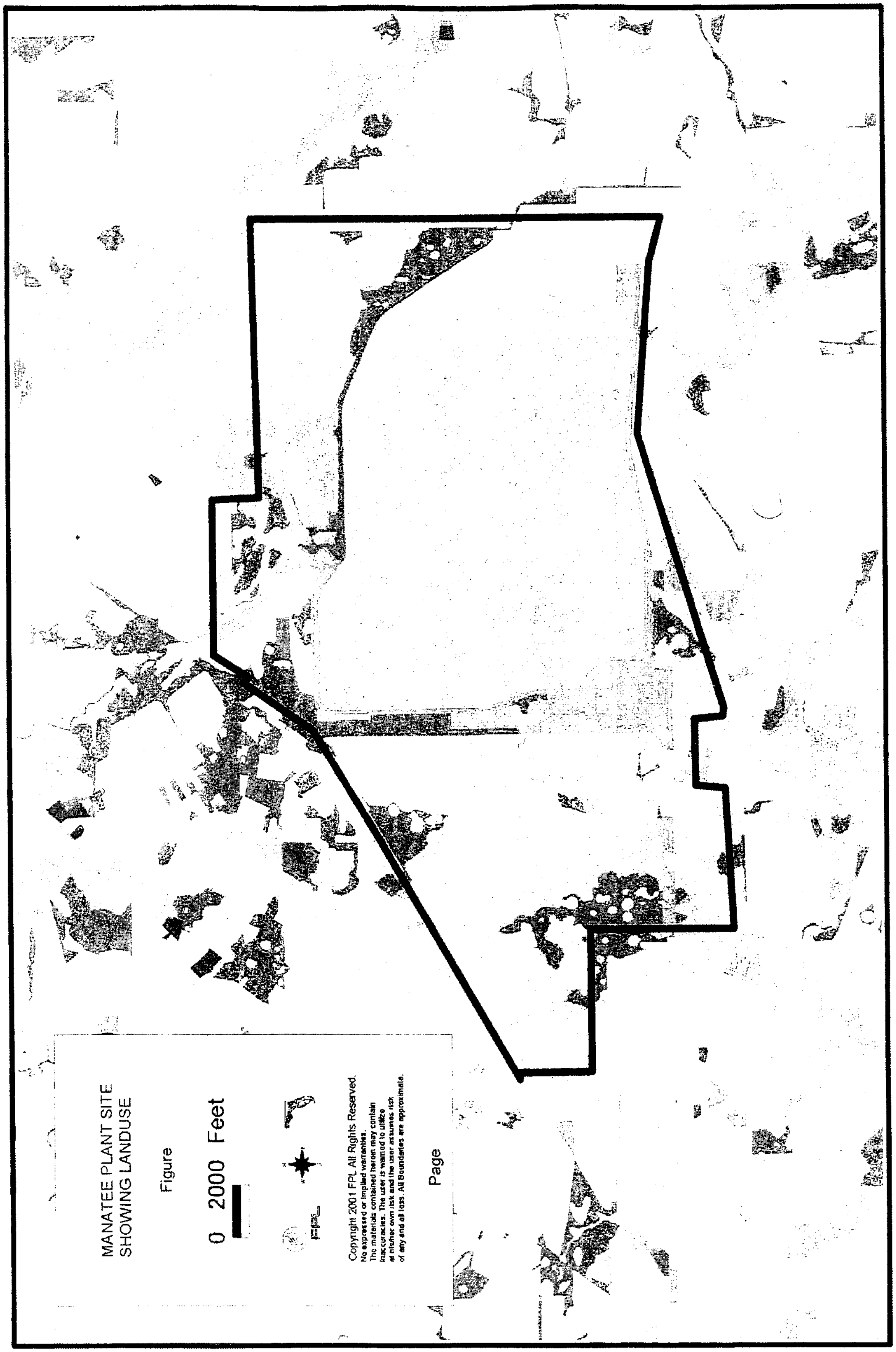
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Page

LEGEND FOR LANDUSE MAPS

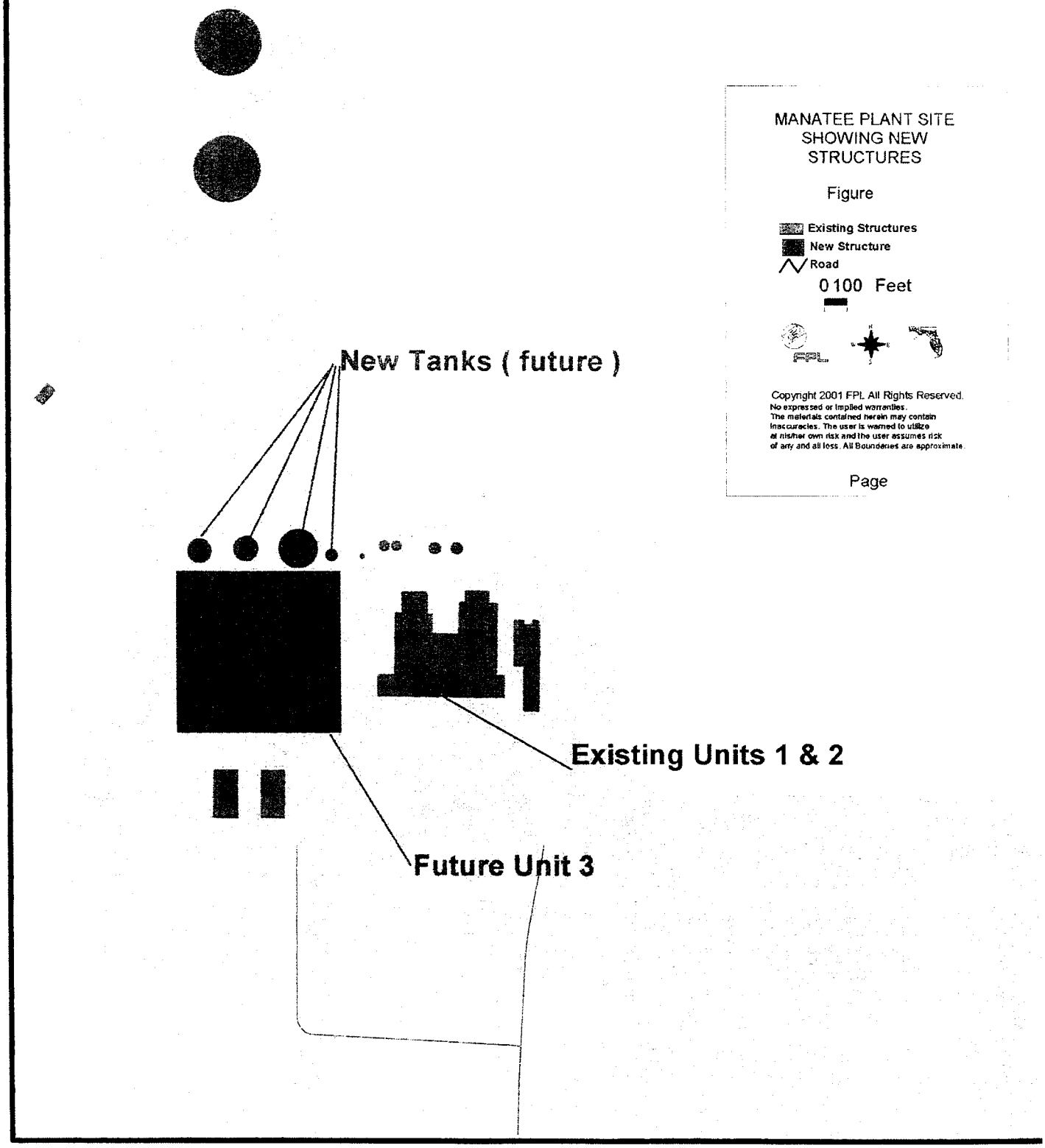
Plant Site Boundary

Level 3 Landuse Categories 1995

- Residential Low Density
- Residential Medium Density
- Residential High Density
- Commercial and Services
- Industrial
- Extractive
- Institutional
- Recreational
- Open Land
- Cropland and Pastureland
- Tree Crops
- Feeding Operations
- Nurseries and Vineyards
- Specialty Farms
- Other Open Lands <Rural>
- Herbaceous
- Shrub and Brushland
- Mixed Rangeland
- Upland Coniferous Forests
- Upland Hardwood Forests
- Tree Plantations
- Streams and Waterways
- Lakes
- Reservoirs
- Bays and Estuaries
- Major Springs
- Slough Waters
- Oceans Seas and Gulfs
- Wetland Hardwood Forests
- Wetland Coniferous Forests
- Wetland Forested Mixed
- Vegetated Non-Forested Wetlands
- Non-Vegetated
- Wetland Shrub
- Beaches OtherThan Swimming Beaches
- Sand Other Than Beaches
- Exposed Rock
- Disturbed Lands
- Riverine Sandbars
- Transportation
- Communications
- Utilities
- Vegetation-Sea Grass

Figure

Page


MANATEE PLANT SITE
SHOWING NEW
STRUCTURES
Figure
Existing Structures
New Structure
Road
0 100 Feet
FPL
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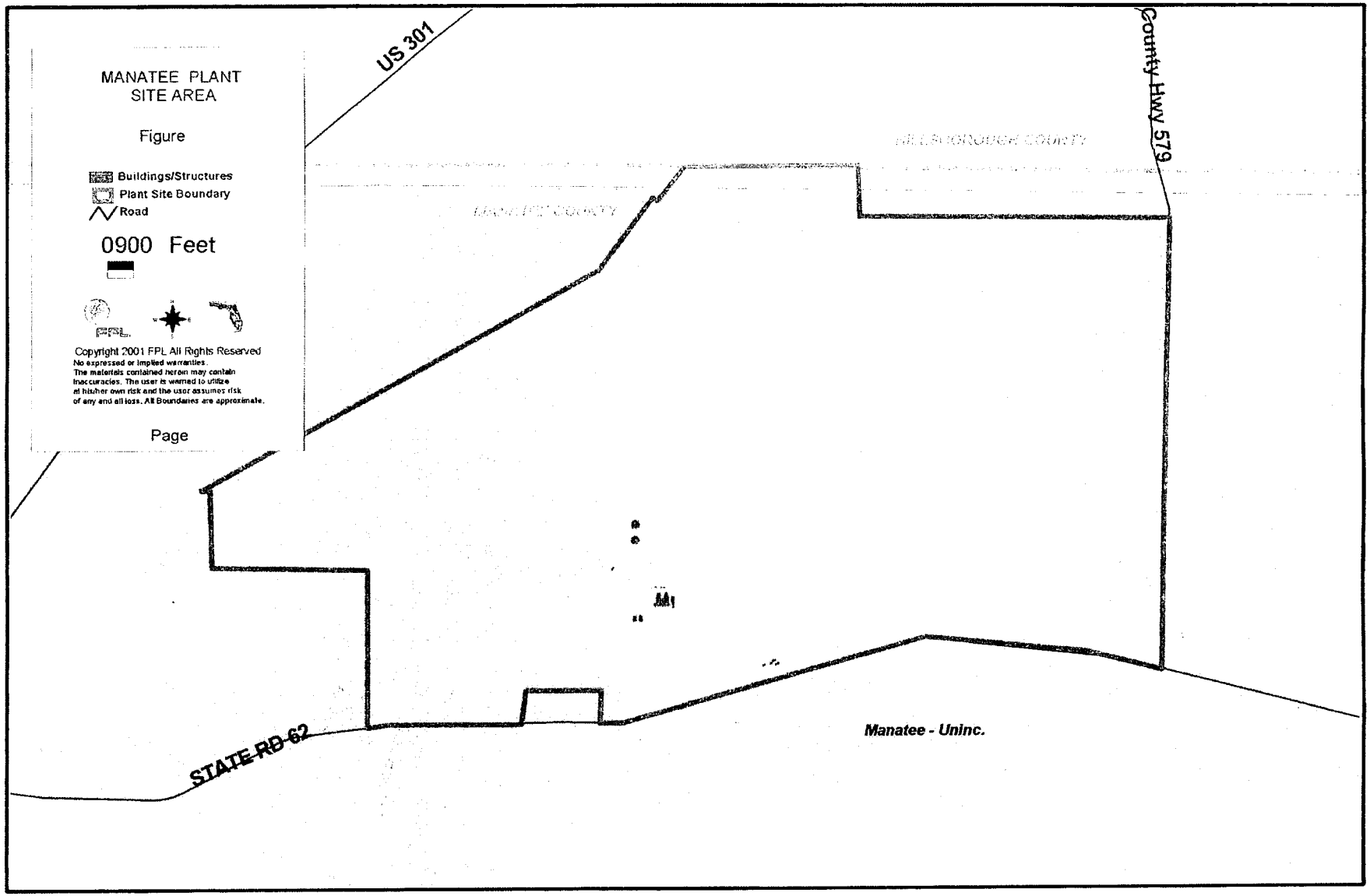
Page
New Tanks (future)
Existing Units 1 & 2
Future Unit 3


MANATEE PLANT
SITE AREA
Figure
Buildings/Structures
Plant Site Boundary
Road
0900 Feet
FPL
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Page
US 301
County Hwy 579
HILLSBOROUGH COUNTY
MANATEE COUNTY
STATE RD 62
Manatee - Uninc.

Environmental and Land Use Information:

Supplemental Information

Preferred Site: Martin

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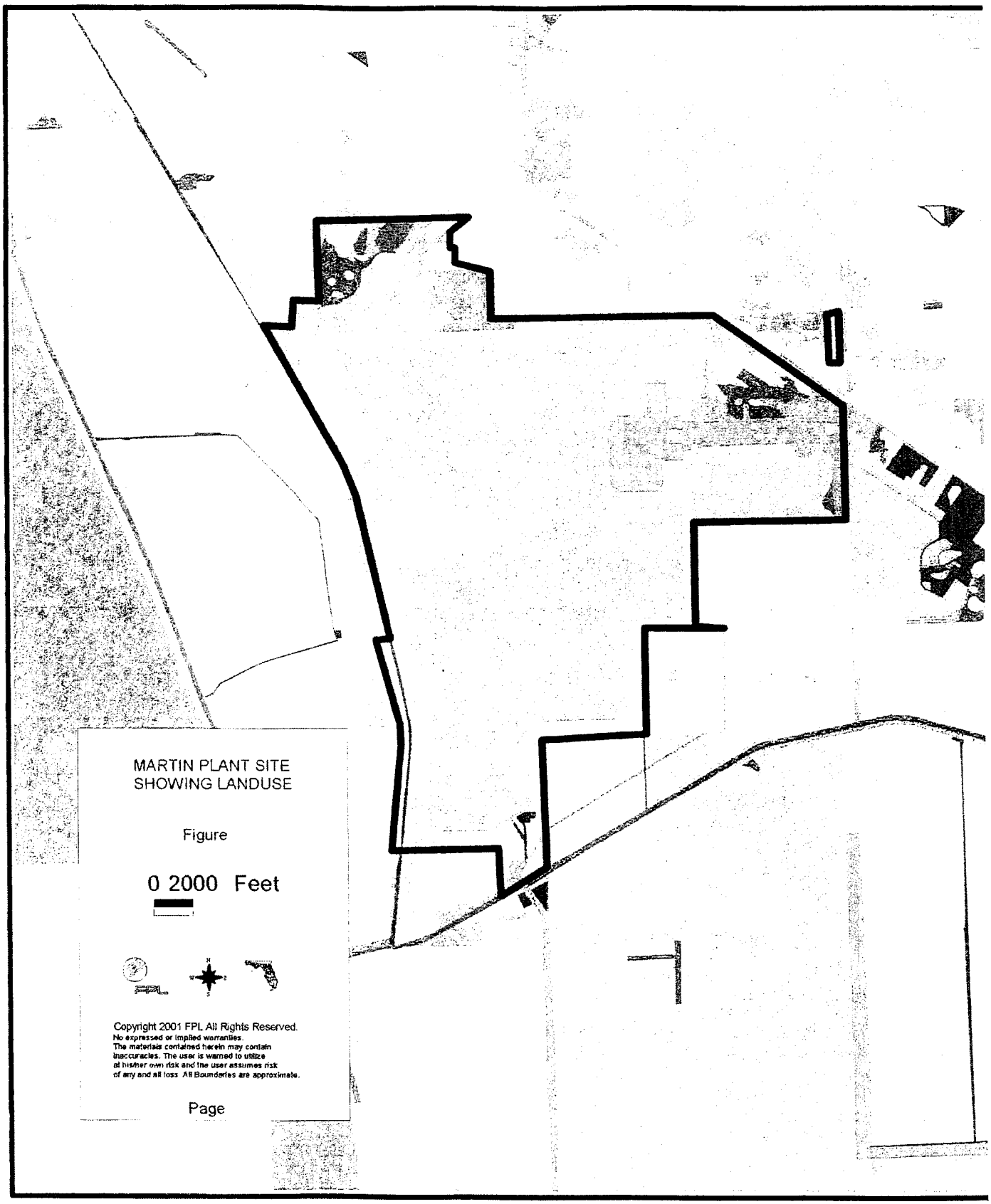
MARTIN PLANT SITE
SHOWING LANDUSE
Figure
0 2000 Feet
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Page

LEGEND FOR LANDUSE MAPS

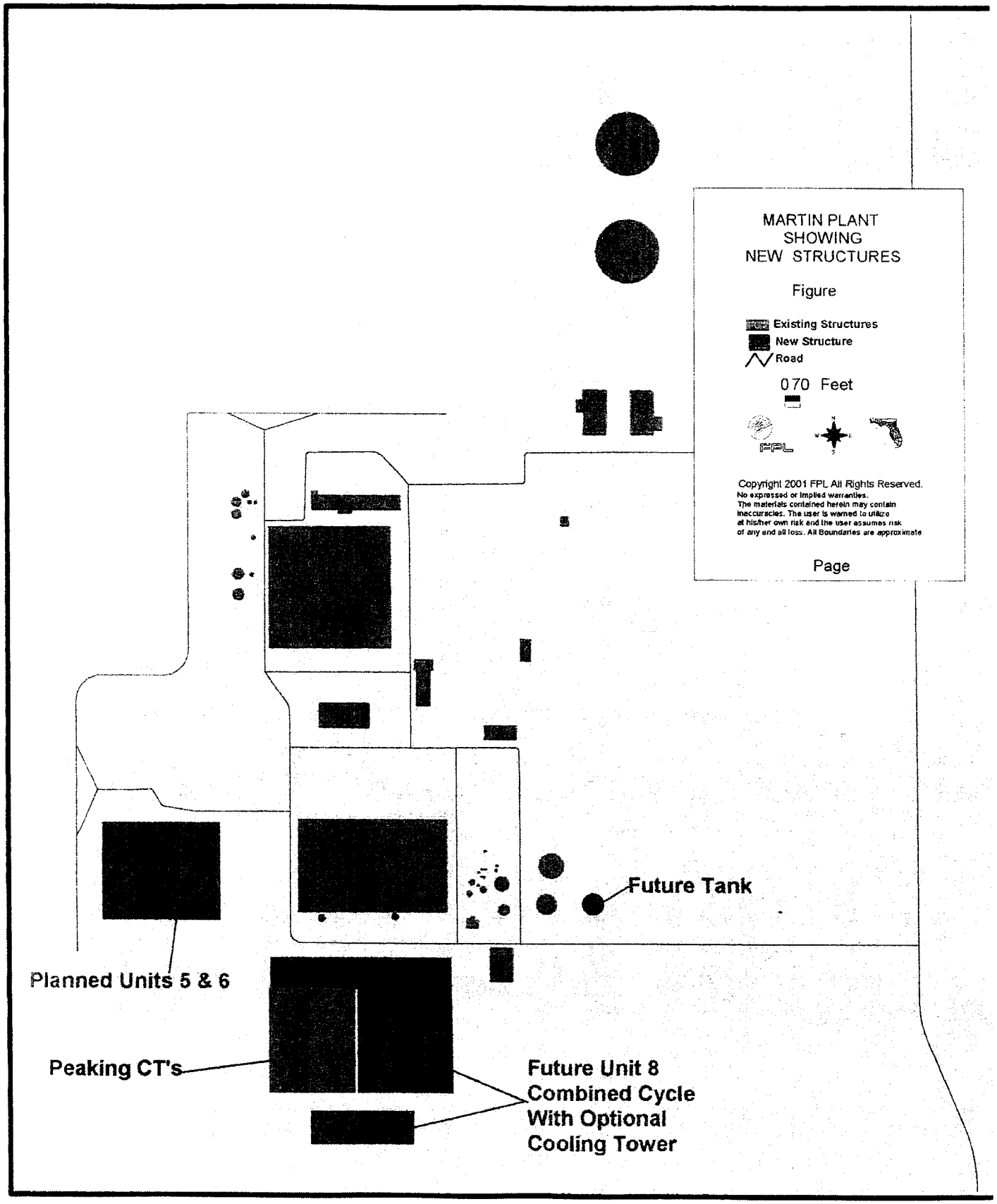
Plant Site Boundary

Level 3 Landuse Categories 1995

- Residential Low Density
- Residential Medium Density
- Residential High Density
- Commercial and Services
- Industrial
- Extractive
- Institutional
- Recreational
- Open Land
- Cropland and Pastureland
- Tree Crops
- Feeding Operations
- Nurseries and Vineyards
- Specialty Farms
- Other Open Lands <Rural>
- Herbaceous
- Shrub and Brushland
- Mixed Rangeland
- Upland Coniferous Forests
- Upland Hardwood Forests
- Tree Plantations
- Streams and Waterways
- Lakes
- Reservoirs
- Bays and Estuaries
- Major Springs
- Slough Waters
- Oceans Seas and Gulfs
- Wetland Hardwood Forests
- Wetland Coniferous Forests
- Wetland Forested Mixed
- Vegetated Non-Forested Wetlands
- Non-Vegetated
- Wetland Shrub
- Beaches OtherThan Swimming Beaches
- Sand Other Than Beaches
- Exposed Rock
- Disturbed Lands
- Riverine Sandbars
- Transportation
- Communications
- Utilities
- Vegetation-Sea Grass

Figure

Page


MARTIN PLANT
SHOWING
NEW STRUCTURES
Figure
Existing Structures
New Structure
Road
0 70 Feet
FPL
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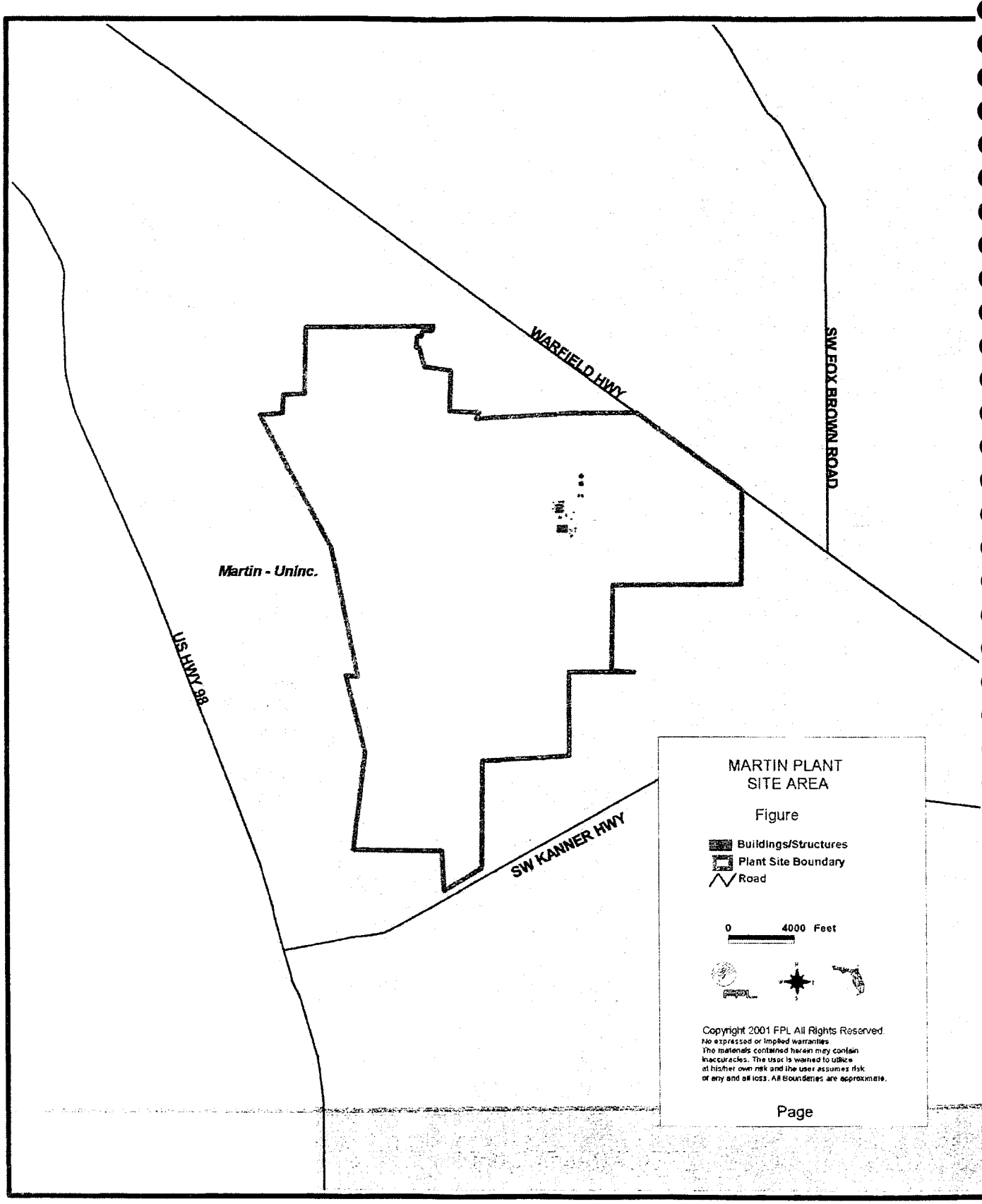
Page
Future Tank
Planned Units 5 & 6
Peaking CT's
Future Unit 8
Combined Cycle
With Optional
Cooling Tower


WARFIELD HWY
SW FOX BROWN ROAD
Martin - Uninc.
US HWY 98
SW KANNER HWY
MARTIN PLANT
SITE AREA
Figure
Buildings/Structures
Plant Site Boundary
Road
0 4000 Feet
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Page

Environmental and Land Use Information:

Supplemental Information

Preferred Site: Turkey Point

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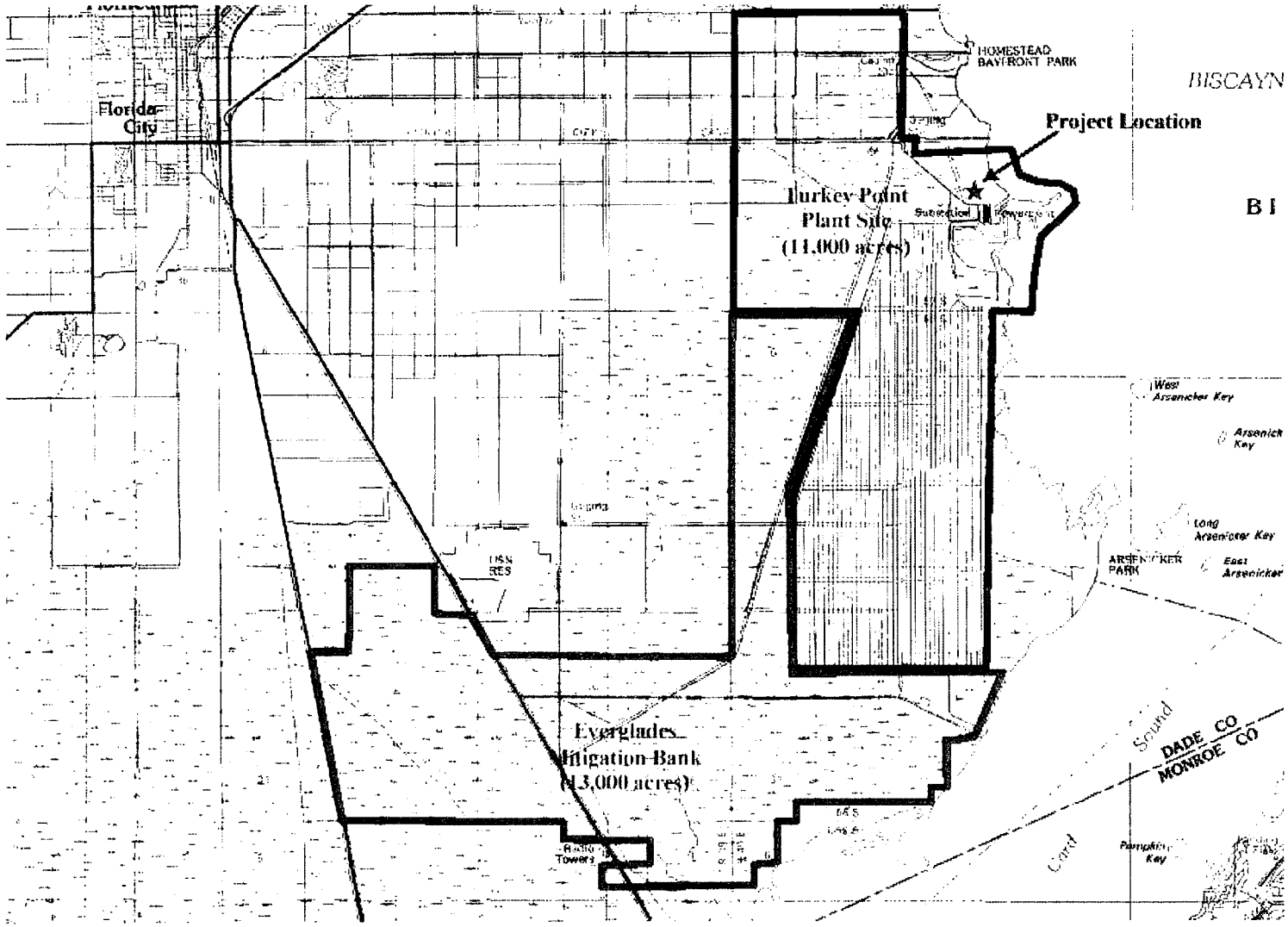
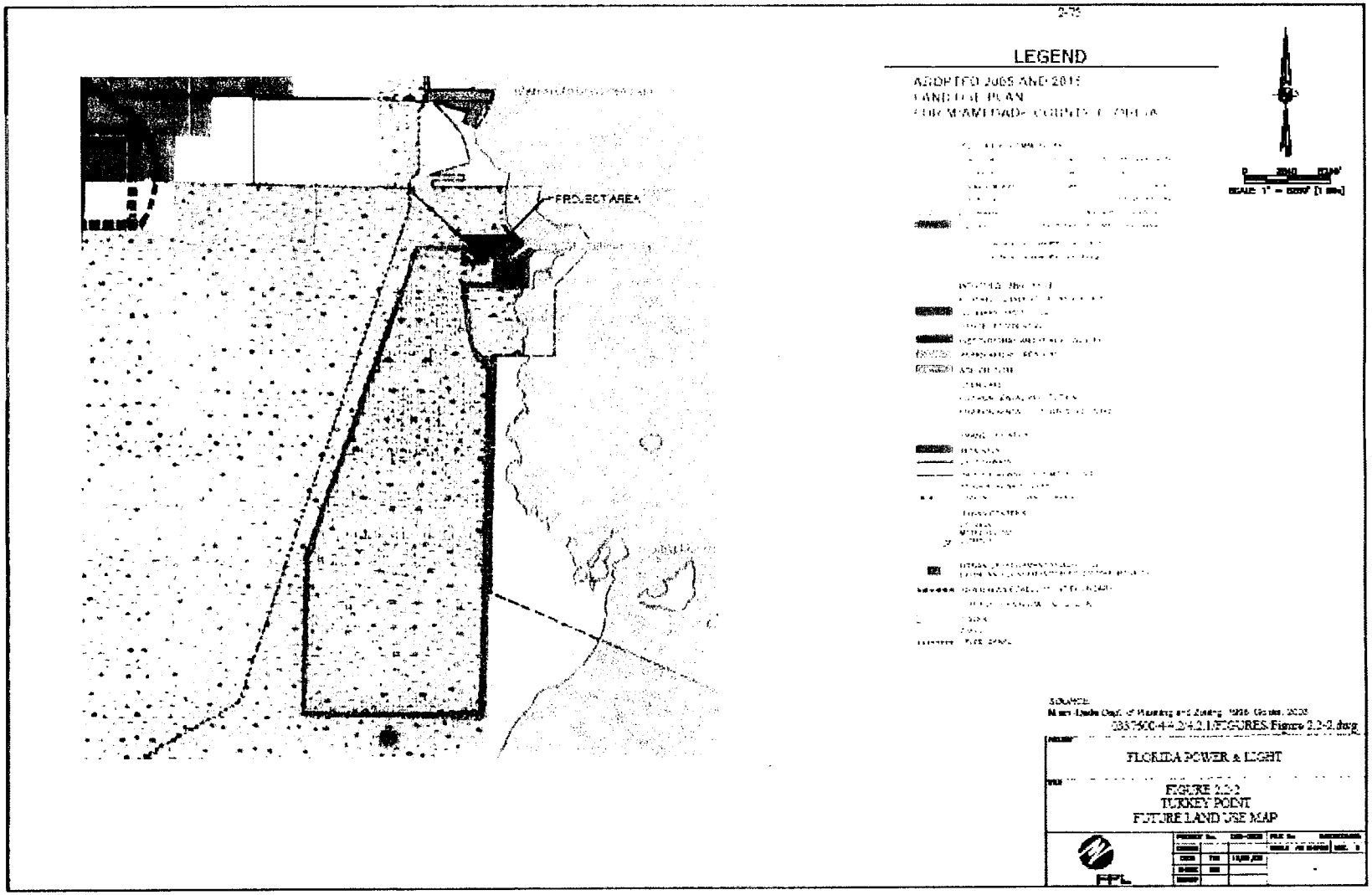
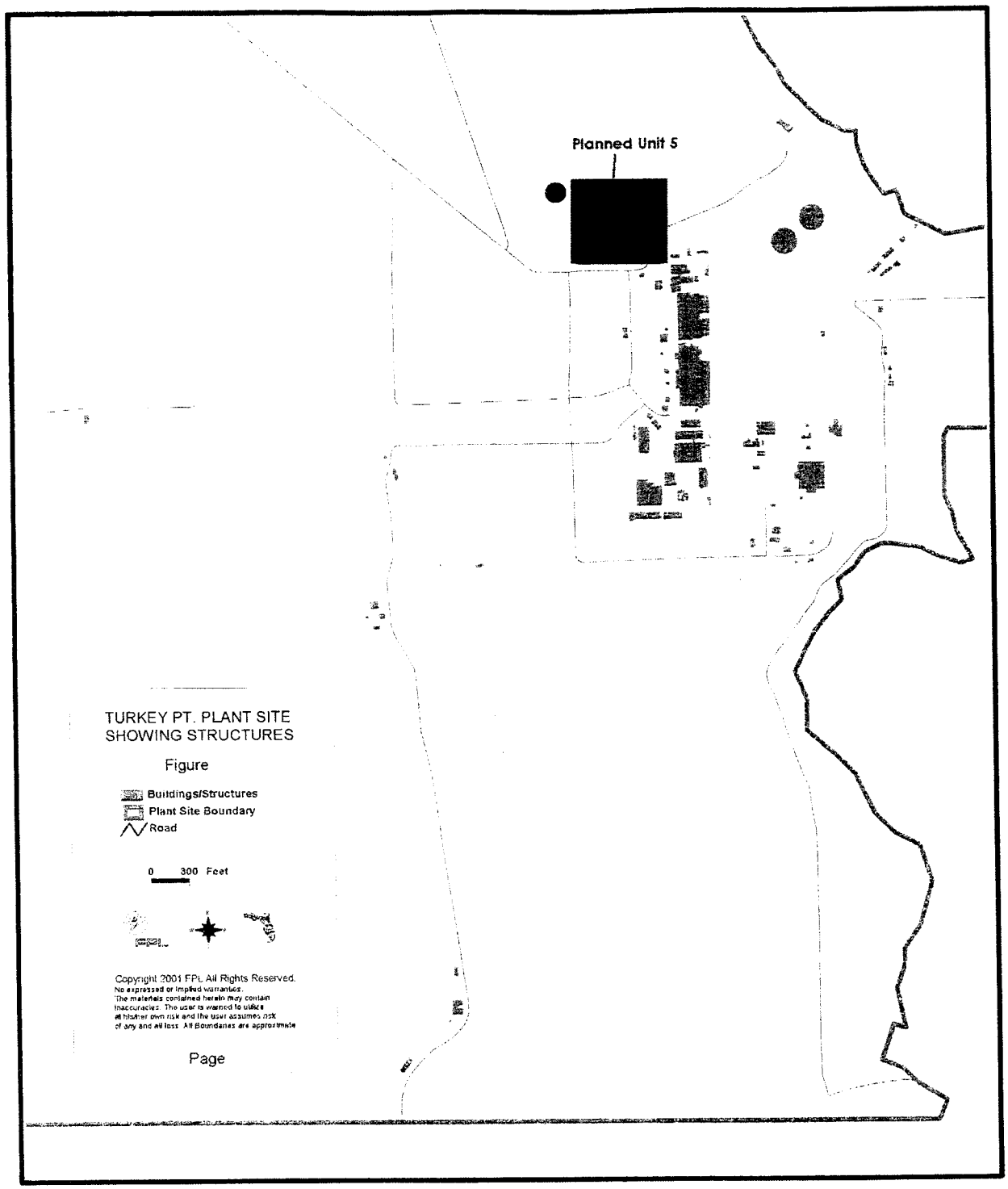

Florida City
HOMESTEAD BAYFRONT PARK
BISCAYN
Project Location
Turkey Point Plant Site (11,000 acres)
Everglades Mitigation Bank (13,000 acres)
West Arsenicker Key
Arsenicker Key
Long Arsenicker Key
East Arsenicker
ARSENICKER PARK
DADE CO
MONROE CO
Sound
Card
Pumpkin Key


2-75
LEGEND
PROJECT AREA
FLORIDA POWER & LIGHT
FIGURE 2.2-2
TURKEY POINT
FUTURE LAND USE MAP


Planned Unit 5
TURKEY PT. PLANT SITE
SHOWING STRUCTURES
Figure
Buildings/Structures
Plant Site Boundary
Road
0 300 Feet
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Page

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Environmental and Land Use Information:

Supplemental Information

Preferred Site: West County Energy Center

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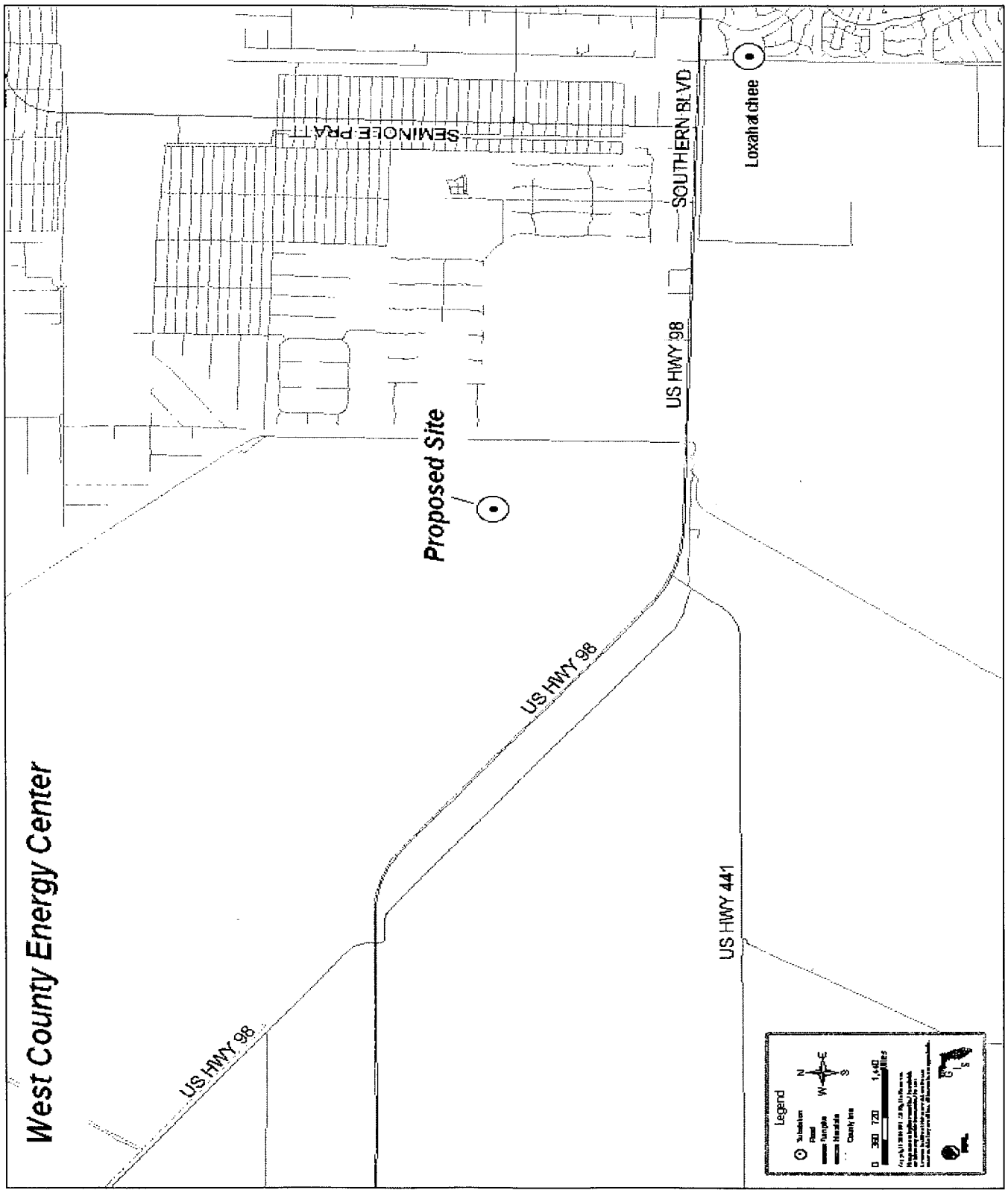
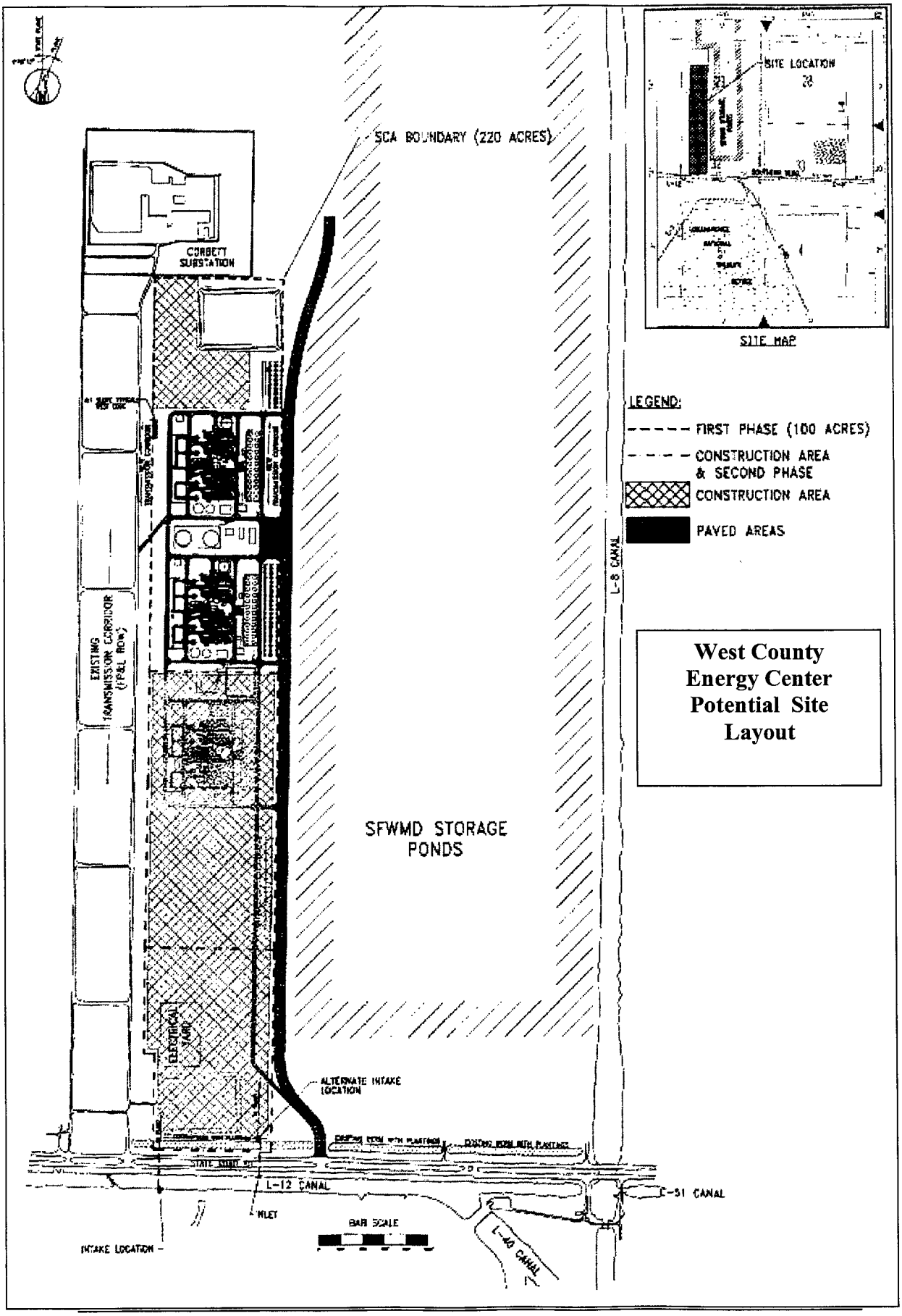

West County Energy Center
Proposed Site
SEMINOLE PRATT
SOUTHERN BLVD
US HWY 98
US HWY 98
US HWY 98
US HWY 441
Loxahatchee
Legend


SCA BOUNDARY (220 ACRES)
CORBETT SUBSTATION
EXISTING TRANSMISSION CORRIDOR (FP&L ROW)
ELECTRICAL YARD
SFWMD STORAGE PONDS
L-8 CANAL
ALTERNATE INTAKE LOCATION
L-12 CANAL
C-51 CANAL
L-40 CANAL
INLET
INTAKE LOCATION
BAR SCALE
SITE LOCATION
SITE MAP
LEGEND:
FIRST PHASE (100 ACRES)
CONSTRUCTION AREA & SECOND PHASE
CONSTRUCTION AREA
PAVED AREAS
West County Energy Center Potential Site Layout

Environmental and Land Use Information:

Supplemental Information

Potential Site: Andytown

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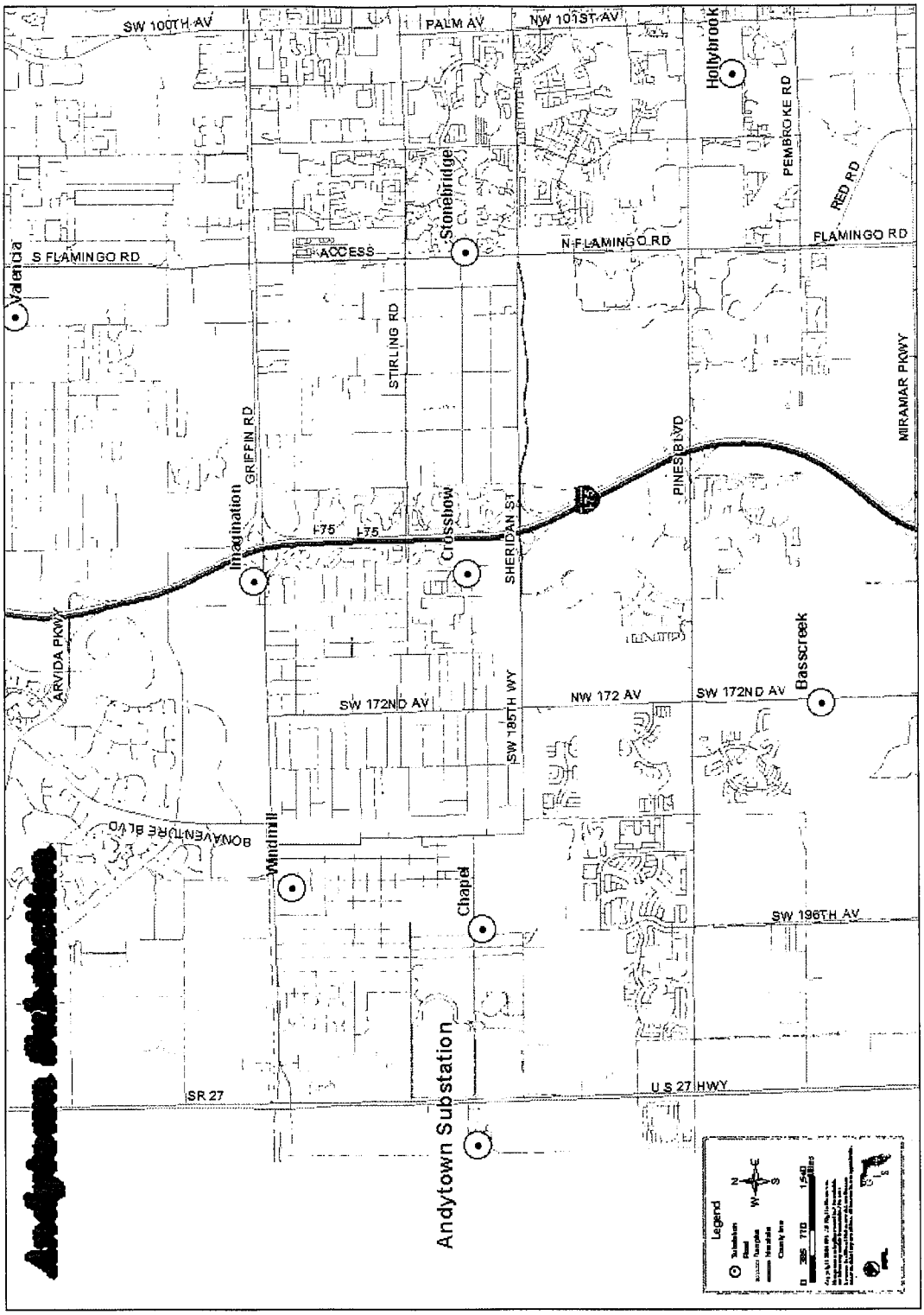
SW 100TH AV
PALM AV
NW 101ST AV
Hollybrook
PEMBROKE RD
RED RD
Stonebridge
ACCESS
N FLAMINGO RD
FLAMINGO RD
S FLAMINGO RD
Valencia
STIRLING RD
GRIFFIN RD
MIRAMAR PKWY
PINES BLVD
Imagination
I-75
Crossbow
SHERIDAN ST
ARVIDA PKWY
SW 172ND AV
NW 172 AV
SW 172ND AV
Basscreek
SW 185TH WY
BONAVENTURE BLVD
Windmill
Chapel
SW 196TH AV
SR 27
Andytown Substation
U.S 27 HWY
Legend

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Environmental and Land Use Information:

Supplemental Information

Potential Site: Cape Canaveral

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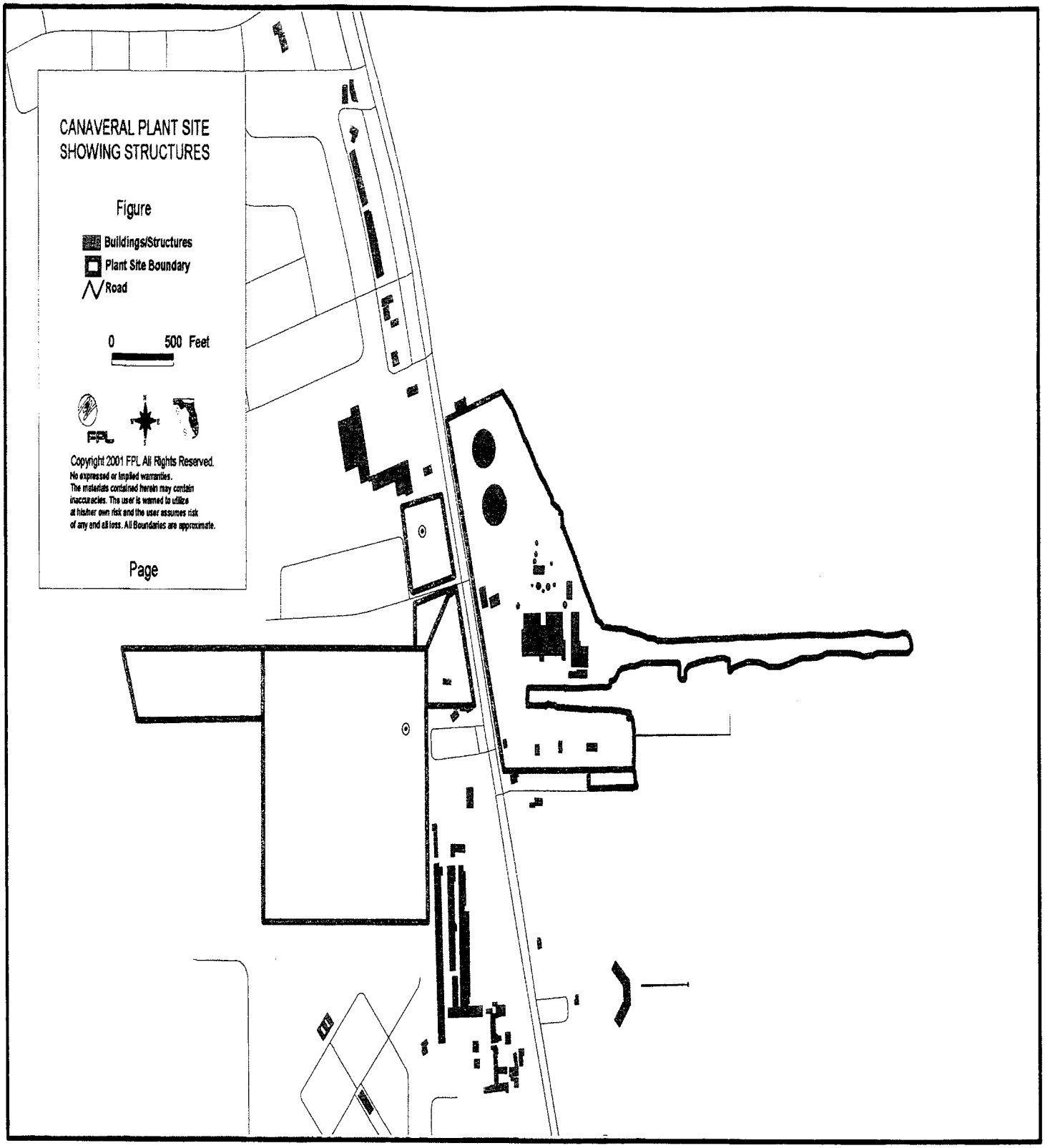
CANAVERAL PLANT SITE
SHOWING STRUCTURES
Figure
Buildings/Structures
Plant Site Boundary
Road
0
500 Feet
FPL
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Page

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Environmental and Land Use Information:

Supplemental Information

Potential Site: Desoto

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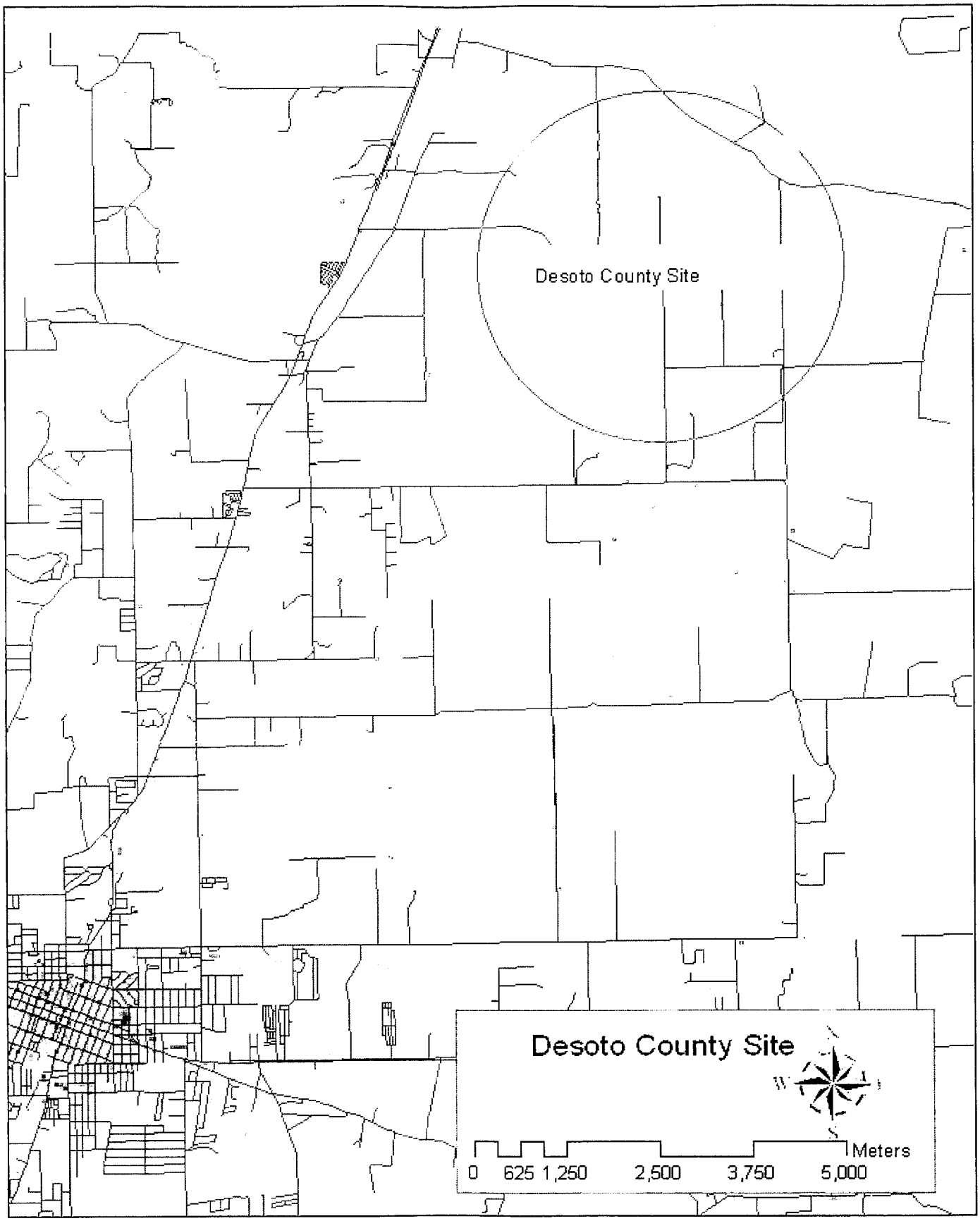
Desoto County Site
Desoto County Site
Meters
0 625 1,250 2,500 3,750 5,000

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Environmental and Land Use Information:

Supplemental Information

Potential Site: Ft. Myers

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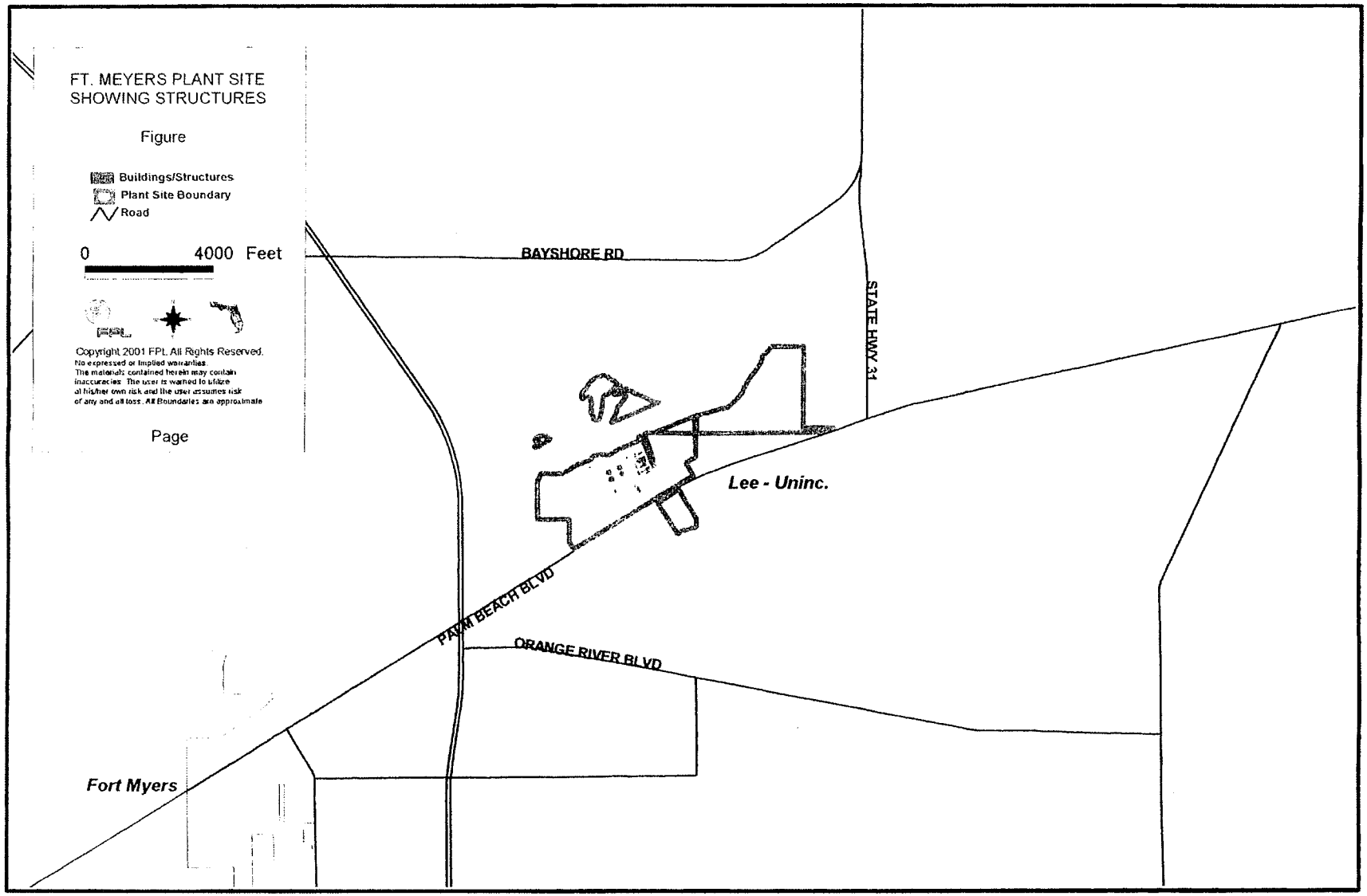
FT. MEYERS PLANT SITE
SHOWING STRUCTURES
Figure
Buildings/Structures
Plant Site Boundary
Road
0
4000 Feet
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Page
BAYSHORE RD
STATE HWY 31
Lee - Uninc.
PALM BEACH BLVD
ORANGE RIVER BLVD
Fort Myers

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Environmental and Land Use Information:

Supplemental Information

Potential Site: Port Everglades

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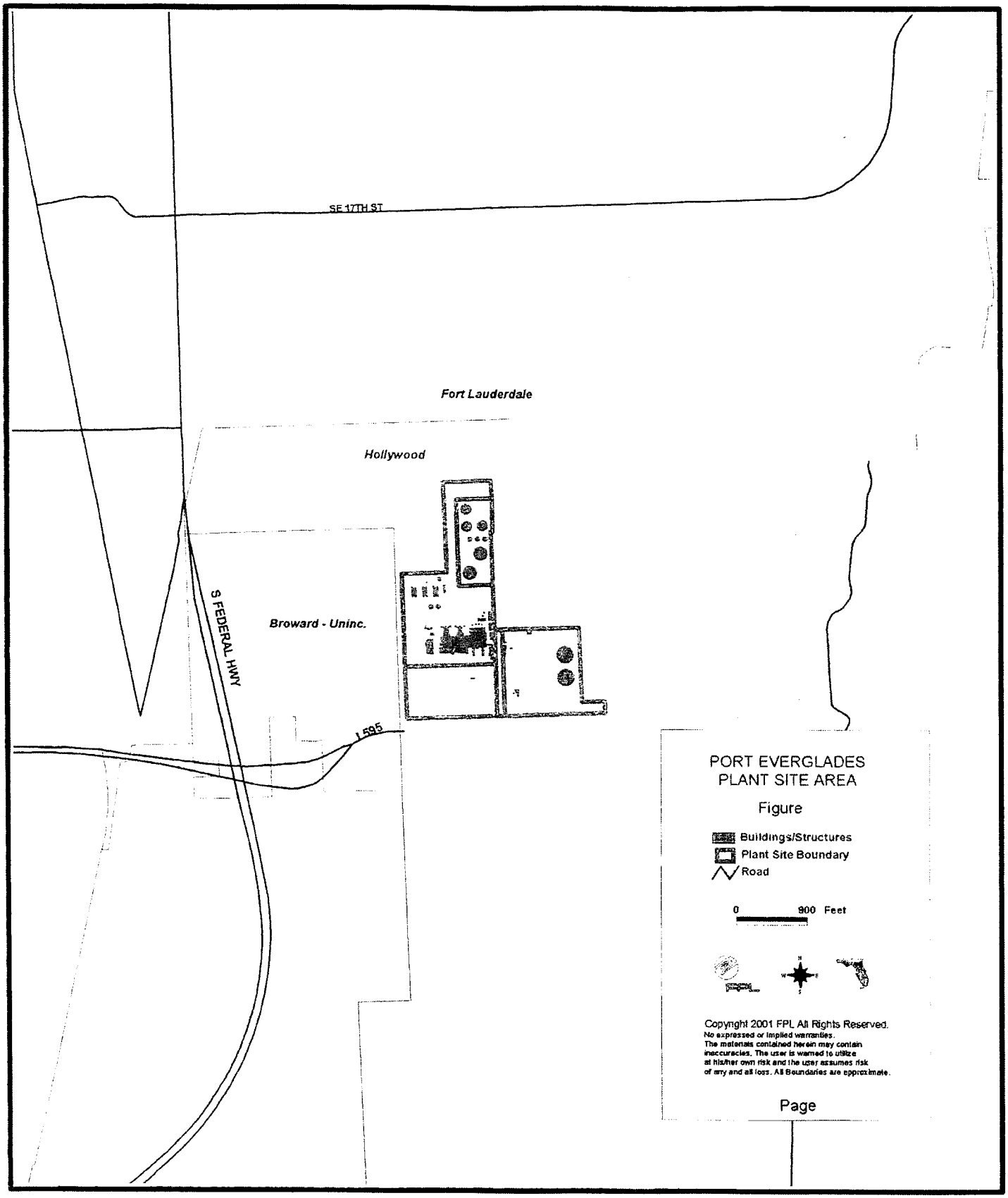
SE 17TH ST
Fort Lauderdale
Hollywood
Broward - Uninc.
S FEDERAL HWY
I 595
PORT EVERGLADES
PLANT SITE AREA
Figure
Buildings/Structures
Plant Site Boundary
Road
0
900 Feet
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Page

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Environmental and Land Use Information:

Supplemental Information

Potential Site: Riviera Plant

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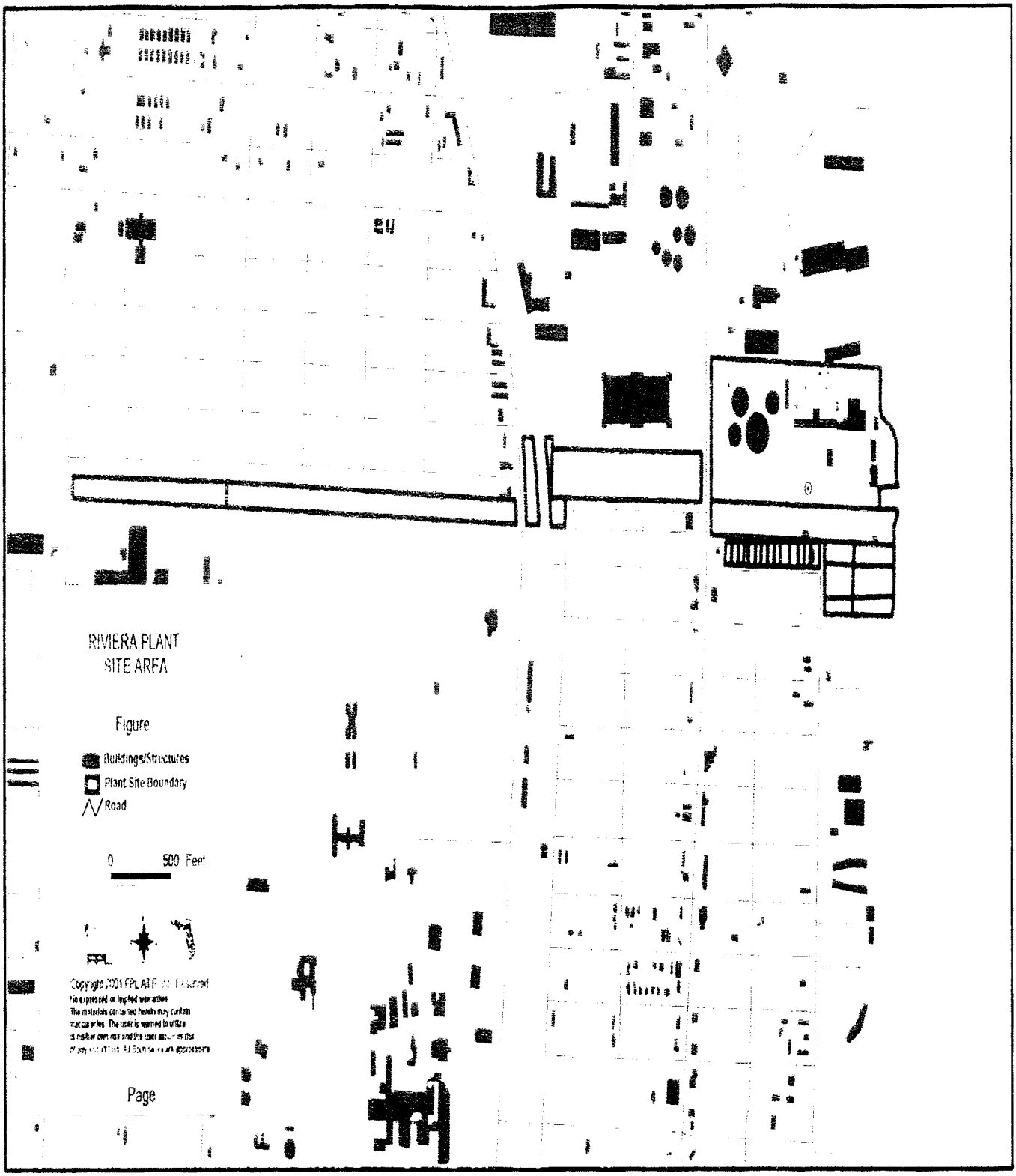
RIVIERA PLANT
SITE AREA
Figure
Buildings/Structures
Plant Site Boundary
Road
0
500 Feet
FPL
Page

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Environmental and Land Use Information:

Supplemental Information

Preferred Site: Southwest St. Lucie County Greenfield Site

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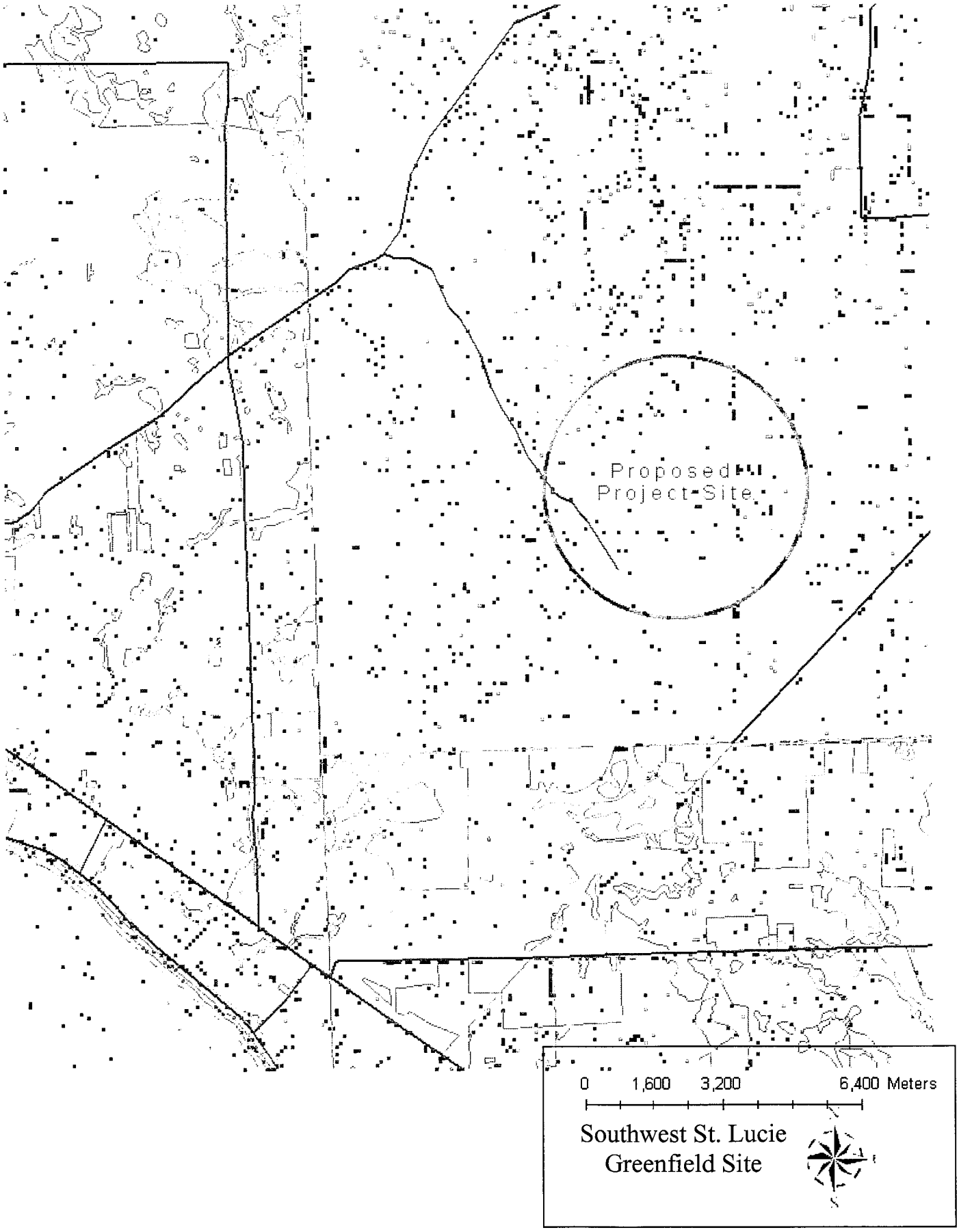
Proposed
Project Site
0
1,600
3,200
6,400 Meters
Southwest St. Lucie
Greenfield Site

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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 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 which is available to the FPL system and 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 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 may not adversely impact such limitations. 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 site- and system-related transmission costs are developed for each different unit/unit location option or groups of options.

FPL's annual transmission planning work determines transmission additions needed to address limitations and to maintain/enhance system reliability. FPL's transmission plans are presented in Section III.E.

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.
[2]

No sensitivity case analyses based on different load forecasts were carried out during FPL's most recent planning work. This is due to the fact that the construction options projected for the earliest need years of 2009 and 2010 are combustion turbine-based combined cycle (CC) technology. If higher–than–projected loads begin to appear, the combustion turbine components of the CC options could be placed in service early in simple cycle mode. FPL believed that this fact qualitatively enables it to be able to address higher-than-projected loads. If lower-than-projected loads appear, these additions can be delayed.

[2] 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, the lowest rate basis and the lowest system revenue requirements basis are identical. In such cases (as in FPL's current resource planning work), 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 base case or "Most Likely" fuel price forecast are discussed in Chapter III of this document.

FPL also conducted an analysis of the comparative economics of a plan that included coal-fired generation compared to an all gas-fired plan. In this study FPL utilized high, low, and expected or "most likely" fuel cost forecasts to explore the relative system fuel cost differences between a clean coal plan and a plan that included all gas-fired generation additions. This approach allowed FPL to examine the relative economics of these two different types of plans with fuel cost forecasts that varied the price difference between coal and natural gas. The results of the analyses using these different fuel cost values for coal-fired and gas-fired options is detailed in FPL's *Report on Clean Coal Generation*, presented to the Commission on March 10, 2005.

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 three fuel forecasts in the comparative economic analysis of clean coal generation. FPL held the coal prices constant, based on the most likely coal price forecast, and developed three natural gas price forecasts (high, low, and expected). The low gas price sensitivity, when compared to the coal price forecast, results in an essentially fixed differential between natural gas prices and coal prices.

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 and Schedule 8 present the current and projected capacity output ratings of FPL's existing units. The values used for outages and heat rates are generally consistent with the values FPL has used in planning studies in recent years.

In regard to new unit performance, FPL utilized current projections for the capital costs, fixed and variable operating & maintenance costs, capital replacement costs, construction schedules, heat rates, and capacity ratings for all construction options which were considered in the resource planning work. A summary of this information for the new capacity options FPL projects to add over the planning horizon is presented on the Schedule 9 forms

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.

The key financial assumptions used in FPL's most recent resource planning work were a 45% debt and 55% equity FPL capital structure, projected debt cost of 7.1%, and an equity return of 12.0%. These assumptions resulted in a weighted average cost of capital of 9.8% and an after-tax discount rate of 8.57%. FPL did not test the sensitivity of its resource plan to varying financial assumptions.

Discussion Item # 7: Describe in detail the electric utility's Integrated Resource Planning process. Discuss whether the optimization was based on revenue requirements, rates, or total resource cost.

FPL's integrated resource planning (IRP) process is described in detail in Chapter III of this document.

The standard basis for comparing the economics of competing resource plans in FPL's basic IRP process is the impact of the plans on FPL's electricity rate levels with the intent of minimizing FPL's levelized system average rate (i.e., a Rate Impact Measure or RIM approach). However, in its most recent planning work, FPL utilized both a levelized system average rate perspective for its DSM Goals and DSM Plan work and the equivalent present

value of system revenue requirements perspective when evaluating options that did not result in changes to system DSM levels. (As discussed in response to Discussion Item # 2, both the electricity rate perspective and the cumulative present value of system revenue requirement perspective are identical when DSM levels are unchanged between competing plans.)

Discussion Item # 8: Define and discuss the electric utility's generation and transmission reliability criteria.

FPL uses two system reliability criteria in its resource planning work. One of these is a minimum 20% Summer and Winter reserve margin. The other reliability criterion is a maximum of 0.1 days per year loss-of-load-probability (LOLP). These reliability criteria are discussed in Chapter III of this document.

In regard to transmission reliability, 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 planning criteria established by the North American Electric Reliability Council (NERC) in its *Planning Standards*. FPL has applied these planning criteria in a manner consistent with prudent utility practice. The *NERC Planning Standards* are available on the internet (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 (http://floasis.siemens-asp.com/OASIS/FPL/INFO.HTM).

The normal voltage criteria for FPL stations is given below:

Voltage Level (kV)	Vmin (p.u.)	Vmax (p.u.)
69, 115, 138	0.95	1.05
230	0.95	1.06
500	0.95	1.07

There may be isolated cases for which FPL may determine it prudent to deviate from the general criteria stated above. The overall potential impact on customers and the probability of

an outage actually occurring, as well as other factors would influence the decision in such cases.

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 are revised periodically. Engineering models, calibrated with field-metered data, are updated when significant efficiency changes occur in the marketplace. Participation trends are tracked for all of the FPL DSM programs in order to adjust impacts each year for changes in the mix of efficiency measures being installed by program participants.

Survey data is collected from non-participants in order to establish the baseline efficiency. Participant data is compared against non-participant data to establish the demand and energy saving benefits of the utility program versus what would be installed in the absence of the program. Finally, FPL is careful to claim only program savings for the average life of the installed efficiency measure. 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.

Among the strategic or non-price factors FPL typically considers when choosing between resource options are the following: (1) fuel diversity; (2) technology risk; (3) environmental risk and (4) site feasibility.

Fuel diversity relates to two concepts, the diversity of sources of fuel (e.g., coal vs. oil vs. natural gas), and the diversity of supply for a single fuel source (for example alternative pipeline suppliers for natural gas). All other factors being equal, supply options that increase diversity in fuel source and/or supply would be favored over those that do not.

Technology risk is an assessment of the relative maturity of competing technologies. For example, a prototype technology which has not achieved general commercial acceptance has a higher risk than a technology in wide use and, therefore, is less desirable.

Environmental risk is an assessment of the relative environmental acceptability of different generating technologies and their associated environmental impacts. Technologies regarded as more acceptable from an environmental perspective for a plan are those which minimize environmental impacts through highly efficient fuel use and state of the art controls (e.g. clean coal technologies versus conventional pulverized coal).

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, elements of FPL's capacity additions include the construction of new generating capacity at three existing sites: Martin, Manatee, and Turkey Point. These three generation construction projects were selected after evaluating competing bids received in response to three Request for Proposals (RFP's) issued by FPL in mid-2001, mid-2002, and mid-2003 respectively. The decision to construct new combined cycle units at FPL's existing Martin and Manatee sites was subsequently approved by the Florida Public Service Commission (FPSC) in late 2002. The FPSC approved FPL's decision to construct the new combined cycle unit at FPL's existing Turkey Point site in June 2004.

FPL plans to meet its 2008 need with a new short-term purchase agreement from Reliant's Indian River facility. In addition, a 2010–2015 purchase agreement with Southern Company was acquired and has been approved by the FPSC in January 2005.

The construction capacity additions projected in this document for 2009 and beyond will be conducted in a manner consistent with the Commissions Bid Rule through a Request for Proposal (RFP) process. Specifically, FPL intends to publish an RFP in the Summer of 2005 to solicit competitive proposals for comparison to its Next Planned Generating Unit(s) for the capacity need required in the years 2009-2011. In addition, FPL plans to publish a Clean

Coal RFP on or before August 2006 for the capacity need required in the years 2012-2014. It is anticipated that since this Clean Coal RFP is being initiated with a lead time that will support the longer construction schedule of a clean coal plant, this RFP would be restricted to proposals that provide fuel diversity comparable to that of a large coal-fired facility.

Identification of self-build options for 2009 and beyond in FPL's Site Plan is not an indication that FPL has pre-judged any capacity solicitation it may conduct. The identification of future capacity units is required of FPL and represents those alternatives that appear to be FPL's best, most cost-effective self-build options at this 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-side resources, 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.

FPL plans to construct a new transmission line (by December 2005) that is presently being certified under the Transmission Line Siting Act (403.52–403.536, F.S.). The new line will connect FPL's Orange River Substation to FPL's Collier Substation (as shown on Table III.F.1). The certification process for this new line should be completed by the summer of 2004. The construction of this line is necessary to serve existing and future customers in the Collier and Lee County areas in a reliable and effective manner. Additionally, FPL has identified the need for a new 230kV transmission line (by December 2008) that requires certification under the Transmission Line Siting Act (403.52–403.536, F.S.). The new line will connect FPL's St. Johns Substation to FPL's proposed Pringle Substation (also shown on Table III.F.1). 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.