ORIGINAL

CITY OF TALLAHASSEE

ELECTRIC DEPARTMENT

CITY OF TALLAHASSEE, FLORIDA

1999 - 2008 TEN YEAR SITE PLAN

City Electric
TALLAHASSEE

THE ENERGY OF FLORIDA'S CAPITAL CITY

CITY OF TALLAHASSEE
TEN YEAR SITE PLANS FOR ELECTRICAL GENERATING FACILITIES AND ASSOCIATED TRANSMISSION LINES
1999-2008
TABLE OF CONTENTS

III. Projected Facility Requirements

IV. Proposed Plant Sites and Transmission Lines

Chapter I

Description of Existing Facilities

1.0 INTRODUCTION

The City of Tallahassee (City) owns, operates, and maintains an electric generation, transmission, and distribution system that supplies electric power in and around the corporate limits of the City. The City was incorporated in 1825 and has operated since 1919 under the same charter. The City began generating its power requirements in 1902 and the City's Electric Department presently serves approximately 90,000 customers located within a 221 square mile service territory. The Electric Department operates three generating stations with a total capacity of approximately 500 megawatts (MW).

The City has two fossil-fueled generating stations, each of which contain both steam and gas turbine electric generating facilities. The Sam O. Purdom Generating Station, located in the town of St. Marks, Florida has been in operation since 1952; and the Arvah B. Hopkins Generating Station, located on Geddie Road west of the City, has been in commercial operation since 1970. The City has also been generating electricity at the C.H. Corn Hydroelectric Station, located on Lake Talquin west of Tallahassee, since August of 1985. The City has a 1.333% undivided ownership interest in Crystal River Unit No. 3, a nuclear generating unit located in Citrus County Florida, which is jointly owned by Florida Power Corporation and eleven other electric utilities. (See Section 1.2 below for additional information about a change in the status of the City's ownership of Crystal River 3.)

1.1 SYSTEM CAPABILITY

The City maintains five points of interconnection with Florida Power Corporation (two at 69 kV, two at 115 kV, and one at 230 kV), and a 230 kV interconnection with Georgia Power Company (a subsidiary of the Southern Company).

As shown in Table 1.1 (Schedule 1), approximately 98 MW (net summer rating) of steam generation and 20 MW (net summer rating) of combustion turbine generation facilities are located at the City's Sam O. Purdom Generating Station. The Arvah B. Hopkins Generating Station includes approximately 314 MW (net summer rating) of

steam generation and 36 MW (net summer rating) of combustion turbine generation facilities. All of the City's available generating units at these sites can be fired with either oil, natural gas or both. The total capacity of the three units at the C.H. Corn Hydroelectric Station is 11 MW.

Including the City's ownership interest in Crystal River 3, the total net summer installed capability of the City is 490 MW. The corresponding winter net peak installed capability is 512 MW. Tables 1.1, 1.2, and 1.3 contain the details of the individual generating units, land use and investment, and certain environmental considerations.

1.2 CRYSTAL RIVER UNIT 3 DIVESTITURE / PURCHASED POWER AGREEMENT

On February 25, 1998, the City Commission approved subject to final negotiations by management, the divestiture of the City's 11.4 MW, or 1.333%, ownership interest in Crystal River Unit No. 3. This proposal provides for the (i) transfer of the City's Crystal River Unit No. 3 ownership interest and decommissioning trust account balance to Florida Power Corporation, and (ii) purchase by the City of replacement electric capacity and energy equal to the Crystal River Unit No. 3 interest (11.4 MW) from Florida Power.

This transaction is a one-for-one transfer and therefore will have no impact on the City's total capacity. The transaction is not currently reflected in the tables in this report, although it is expected that it will be effective July 1, 1999.

City Of Tallahassee

Schedule 1
Existing Generating Facilities
As of December 31, 1998

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)		(12)	(13)	(14)
Plant	Unit No.	Location	Unit Type	Fuel Pri	Fuel Alt	Fuel Transport Primary	Fuel Transport Alternate	Alt. Fuel Days Use	Commercial In-Service Month/Year	Expected Retirement Month/Year		Gen. Max. Nameplate (kW)	Net Capability Summer (MW)	Net Capability Winter (MW)
Sam O. Purdom	5		ST	NG	FO6	PL	WA		4/58	10/99	(1)	23,000	24	24
	6		ST	NG	FO6	PL	WA		1/61	10/99	(1)	23,000	24	24
	7		ST	NG	FO6	PL	WA		6/66	3/11		44,000	50	50
													98	98
	GT-1		GT	NG	FO2	PL	TK		12/63	3/08		12,500	10	10
	GT-2		GT	NG	FO2	PL	TK		5/64	3/09		12,500	10	10
													20	20
A. B. Hopkins	1	Leon	ST	NG	FO6	PL	TK		5/71	3/16		75,000	76	80
	2	26/1N/2W	ST	NG	FO6	PL	TK		10/77	3/22		259,250	238	248
													314	328
	GT-1		GT	NG	FO2	PL	TK		2/70	3/15		16,320	12	14
	GT-2		GT	NG	FO2	PL	TK		9/72	3/17		27,000	24	26
													36	40
Crystal River	3	Citrus Co Red Level, Florida	NP	UR	UR	TK	TK		3/77	UNKNOWN	(2)	11,872	11	11
													11	11
C. H. Corn Hydro Station	1	Leon/ Gadsden/	HY	WAT	WAT	WAT	WAT		9/85	UNKNOWN		4,440	4	4
	2		HY	WAT	WAT	WAT	WAT		8/85	UNKNOWN		4,440	4	4
	3		HY	WAT	WAT	WAT	WAT		1/86	UNKNOWN		3,430	3	3
													11	11
TOTAL SYSTEM CAPACITY AS OF DECEMBER 31, 1998												516,752	490	508

(1) Will be retired in conjunction with Purdom Unit 8 construction.
(2) See Section 1.2 for update on Crystal River Unit 3.

City Of Tallahassee

EXISTING GENERATING FACILITIES
LAND USE AND INVESTMENT

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Land Area		Plant Capital Investments in ($000)			
Plant Name	Total Acres	In Use Acres	Land	Site Improvements	Buildings & Equipment	Total
Sam O. Purdom	63	38	15	129	42,347	42,491
Arvah B. Hopkins	230	35	220	126	74,183	74,529
C. H. Corn (Jackson Bluff)	10,200	10,200	-	-	12,674	12,674
Electric System Totals [1]			235	255	129,204	129,694

[1] The totals shown represent the fixed assets of those categories as of September 30 , 1998.

City Of Tallahassee

Existing Generating Facilities
Environmental Considerations for Steam Generating Units

(1)	(2)	(3)	(4)	(5)	(6)
		Air Pollution Control Strategy			
Plant Name	Unit	PM	SOx	NOx	Cooling Type
Arvah B. Hopkins	1	None	L.S.	None	WCTM
	2	None	L.S.	B.M.	WCTM
Sam O. Purdom	5 & 6	None	L.S.	None	OTF
	7	None	L.S.	None	OTF
C. H. Corn Hydro (Jackson Bluff Hydro)		Not Applicable			

Notes:
Environmental Considerations for the regulated air pollutants particulate matter, sulfur dioxide, and/or nitrogen oxides are any formal control measures implemented during the operation of the boiler in order to meet permit limits.

WCTM	Wet cooling tower, mechanical draft
OTF	Once through fresh water
L. S.	Low Sulfur (No. 6 fuel oil with no greater than 1.0 percent sulfur content and natural gas. Use of 1.0% sulfur oil is a management decision, not a permit requirement.
B.M.	Boiler Modifications
PM	Particulate Matter
SOx	Sulfur Dioxide
NOx	Nitrogen Oxides

CHAPTER II

Forecast of Energy/Demand Requirements and Fuel Utilization

2.0 INTRODUCTION

Chapter II includes the City of Tallahassee's forecasts of (i) demand and energy requirements, (ii) energy sources and (iii) fuel requirements. This chapter explains the City's recent Load Forecast and summarizes the Demand Side Management plan filed with the Florida Public Service Commission (PSC). Based on the forecast, the energy sources and the fuel requirements have been projected.

2.1 SYSTEM DEMAND AND ENERGY REQUIREMENTS

Historical and forecasted energy consumption and customer information are presented in Tables 2.1, 2.2 and 2.3 (Schedules 2.1, 2.2, and 2.3). Figures B1 and B2 show the trend of energy consumption by customer class and the split of energy consumption by customer class. Tables 2.4 through 2.12 (Schedules 3.1.1 - 3.3.3) contain historical and forecasted peak demands and net energy for load for base, high, and low values. Table 2.13 (Schedule 4) compares actual and two-year forecasted peak demand and energy values by month for the 1998-2000 period.

2.1.1 SYSTEM LOAD FORECAST

The peak demand and energy forecasts contained in this plan are the results of an annual update of the load forecasting study performed by the City and reviewed by engineering consultants. The energy forecast is developed utilizing a methodology which the City has employed since 1980, consisting of *13 multi-variable linear regression models based on detailed examination of the system's historical* growth, usage patterns and population statistics. The same regression coefficients had been used in these models since 1992. For the 1997 forecast, however, the coefficients were completely updated to reflect the previous five years' historic data. As a result, it is expected that the accuracy of the models has been improved. These coefficients were again reviewed for the 1999 forecast. These models are used to predict number of customers and retail sales by customer class, and seasonal system peak demand. Several key regression formulas utilize econometric variables. The customer class models are aggregated to form a total system sales forecast. The effects of demand-side management programs are incorporated in this base forecast to produce the system net energy requirements.

Table 2.14 lists the econometric-based linear regression forecasting models that are used as predictors. Note that the City uses regression models with the capability of separately predicting commercial customer consumption by rate sub-class: (1) general service non-demand, (2) general service demand, and (3) general service large demand. These, along with the residential class, represent the major classes of the City's electric customers. The key explanatory variables used in each of the models are indicated by an "X" on the table. This table, along with Table 2.15 (which gives the sources of the explanatory variables), explains the details of the models used to generate the system sales forecast. In addition to these explanatory variables, a component is also included in the models which reflects the acquisition of certain Talquin Electric Cooperative (TEC) customers over the study period consistent with the territorial agreement negotiated between the City and TEC and approved by the PSC.

Since 1992, the City has used two econometric models to separately predict summer and winter peak demand. Table 2.14 also shows the key explanatory variables used in the demand models.

2.1.2 LOAD FORECAST SENSITIVITIES

By adjusting selected input variables in the load forecast models, cases of "high load growth" and "low load growth" were established. The key explanatory variables that were changed were Leon County population, Florida population, heating degree days, cooling degree days, and Tallahassee taxable sales for the energy forecast. For the peak demand forecasts, the Leon County population and maximum & minimum temperature on the peak days for the summer and winter, respectively, were changed..

Sensitivities on the peak demand forecasts are useful in planning for generating capacity needs. The graph shown in Figure B3 compares summer peak demand (multiplied by 117% for reserve margin requirements) for the three cases against the City's existing generating capacity. This graph indicates the effect of load growth variations on the timing of new resource additions. The highest probability weighting, of course, is placed on the base case assumptions, and the low and high cases are given a small likelihood of occurrence.

2.1.3 ENERGY EFFICIENCY AND DEMAND SIDE MANAGEMENT PROGRAMS

The City has a goal to improve the efficiency of customers' end-use of energy resources when such improvements provide a measurable economic and/or environmental benefit to the customers and the City utilities. On March 1, 1996 the City filed its Demand Side Management (DSM) Plan with the PSC. This plan indicated the demand and energy reductions due to conservation efforts that are expected over the period 1997-2006. The individual program measures that were selected for inclusion in the plan were identified as cost effective in Integrated Resource Planning (IRP) studies conducted by the City.

The following menu of programs is included in the DSM plan, which was implementated in fiscal year 1997:

Residential Programs	Commercial Programs
Secured Loans	Custom Loans
Homebuilder Rebates	Secured Loans
Unsecured Payment Plan Loans	Unsecured Payment Plan Loans
Information	Demonstrations
Low Income Ceiling Insulation Rebate	Information

Energy and demand reductions attributable to the above DSM efforts have been incorporated into the future load and energy forecasts. Table 2.16 displays the estimated energy savings associated with the menu of DSM programs. Table 2.17 shows similar data for demand savings. The figures on these tables reflect the cumulative annual impacts of the DSM plan on system energy and demand requirements.

2.1.4 FEECA

Pursuant to the Florida Energy Efficiency and Conservation Act ("FEECA"), Sections 366.80-366.85, Florida Statutes (1995), and Chapter 25-17, Florida Administrative Code, the PSC approved the City's conservation goals and program plan for the years 1996-2005. However effective July 1, 1996, the City no longer is a "utility" for the purposes of FEECA (see Section 81, Ch. 96-321, Laws of Fla. (1996)) and Chapter 25-17, and the City's conservation goals and plan are no longer subject to PSC

approval. Nevertheless, the City does not plan to reduce its commitment to DSM and conservation. The City intends to continue to pursue cost-effective conservation measures that promote demand reduction and offer benefits to both the City and its customers.

2.2 ENERGY SOURCES AND FUEL REQUIREMENTS

Tables 2.18 (Schedule 5), 2.19 (Schedule 6.1), and 2.20 (Schedule 6.2) present the projections of fuel consumption, energy generated by fuel type, and the percentage of generation by fuel type, respectively, for the period 1999-2008. Figure B4 displays the percentage of energy by fuel type. Presently, the City of Tallahassee uses renewable resources (hydroelectric power), residual oil, natural gas, and nuclear fueled facilities, as well as coal-by-wire purchases from the Southern Company and Entergy Power, Inc., to satisfy its energy requirements.

The projections of fuel consumption and energy generated are taken from the results of PROSCREEN II simulations based on a representative resource plan as described in Chapter III.

City Of Tallahassee

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

Base Load Forecast

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Rural & Residential					Commercial [4]		
Year	[1] Population	Members Per Household	[2] GWH	[3] Average No. of Customers	Average KWH Consumption Per Customer	[2] GWH	[3] Average No. of Customers	Average KWH Consumption Per Customer
1989	189,980	-	708	60,159	11,769	943	11,967	78,800
1990	197,388	-	767	63,555	12,068	1,044	12,954	80,593
1991	199,875	-	759	64,997	11,677	1,060	13,208	80,254
1992	203,964	-	766	66,616	11,499	1,080	13,616	79,318
1993	208,466	-	796	68,176	11,676	1,149	13,834	83,056
1994	214,131	-	799	69,907	11,429	1,205	14,277	84,401
1995	219,066	-	870	71,534	12,162	1,268	14,780	85,792
1996	223,893		893	72,998	12,231	1,316	15,142	86,908
1997	229,773		850	74,259	11,446	1,324	15,495	85,447
1998	234,777		940	75,729	12,413	1,396	15,779	88,472
1999	238,911	-	935	77,373	12,084	1,393	15,852	87,875
2000	243,136	-	963	79,075	12,178	1,440	16,146	89,186
2001	247,516	-	990	80,830	12,248	1,487	16,447	90,412
2002	251,897	-	1,018	82,586	12,327	1,536	16,748	91,712
2003	256,277	-	1,045	84,341	12,390	1,575	17,048	92,386
2004	260,657	-	1,073	86,146	12,456	1,607	17,355	92,596
2005	264,955	-	1,098	87,683	12,522	1,645	17,628	93,317
2006	269,115	-	1,123	89,126	12,600	1,683	17,889	94,080
2007	273,275	-	1,148	90,569	12,675	1,724	18,151	94,981
2008	277,435	-	1,174	92,012	12,759	1,764	18,412	95,807

[1] Leon County Population
[2] Raw Forecast, does not include effects of conservation/Load Management.
[3] Average end-of-month customers for the calendar year.
[4] Includes Traffic Control and Security Lighting use.

City Of Tallahassee

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

Base Load Forecast

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Industrial						
Year	[1] GWH	[2] Average No. of Customers	Average KWH Consumption Per Customer	Railroads and Railways GWH	Street & Highway Lighting GWH	Other Sales to Public Authorities GWH	Total Sales to Ultimate Consumers GWH
1989	-	-	-	-	11		1,662
1990	-	-	-	-	11		1,822
1991	-	-	-	-	11		1,830
1992	-	-	-	-	11		1,857
1993	-	-	-	-	11		1,956
1994	-	-	-	-	12		2,016
1995	-	-	-	-	12		2,150
1996	-	-	-	-	12		2,221
1997	-	-	-	-	12		2,186
1998	-	-	-	-	12		2,348
1999	-	-	-		13		2,341
2000	-	-	-		13		2,416
2001	-	-	-		14		2,491
2002	-	-	-		14		2,568
2003	-	-	-		14		2,634
2004	-	-	-		15		2,695
2005	-	-	-		15		2,758
2006	-	-	-		16		2,822
2007	-	-	-		16		2,888
2008					16		2,954

[1] Raw Forecast, does not include effects of conservation/Load Management.
[2] Average end-of-month customers for the calendar year.

City Of Tallahassee

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

Base Load Forecast

(1)	(2)	(3)	(4)	(5)	(6)
Year	Sales for Resale GWH	[1] Utility Use & Losses GWH	Net Energy for Load GWH [1]	Other Customers (Average No.)	[2] Total No. of Customers
1989	0	123	1,785		72,126
1990	0	81	1,903		76,509
1991	0	122	1,952		78,205
1992	0	123	1,980		80,232
1993	0	130	2,086		82,010
1994	0	134	2,150		84,184
1995	0	142	2,292		86,314
1996	0	147	2,368		88,140
1997	0	132	2,318		89,754
1998	0	128	2,476		91,508
1999	0	155	2,496		93,225
2000	0	160	2,576		95,221
2001	0	165	2,656		97,277
2002	0	170	2,738		99,334
2003	0	175	2,809		101,389
2004	0	178	2,873		103,501
2005	0	184	2,942		105,311
2006	0	187	3,009		107,015
2007	0	192	3,080		108,720
2008	0	196	3,150		110,424

[1] Raw Forecast, does not include effects of conservation/Load Management.
[2] Average number of customers for the calendar year.

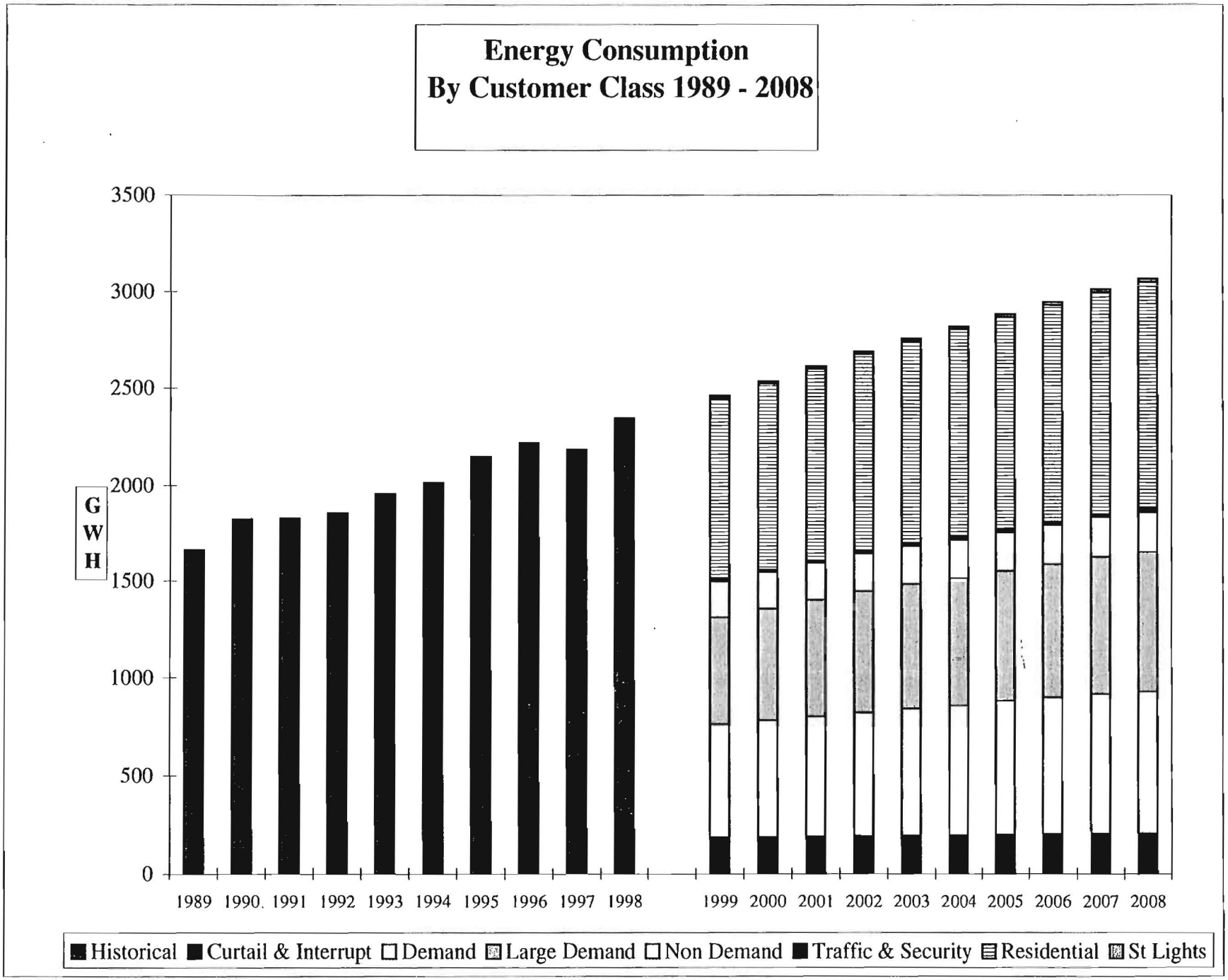
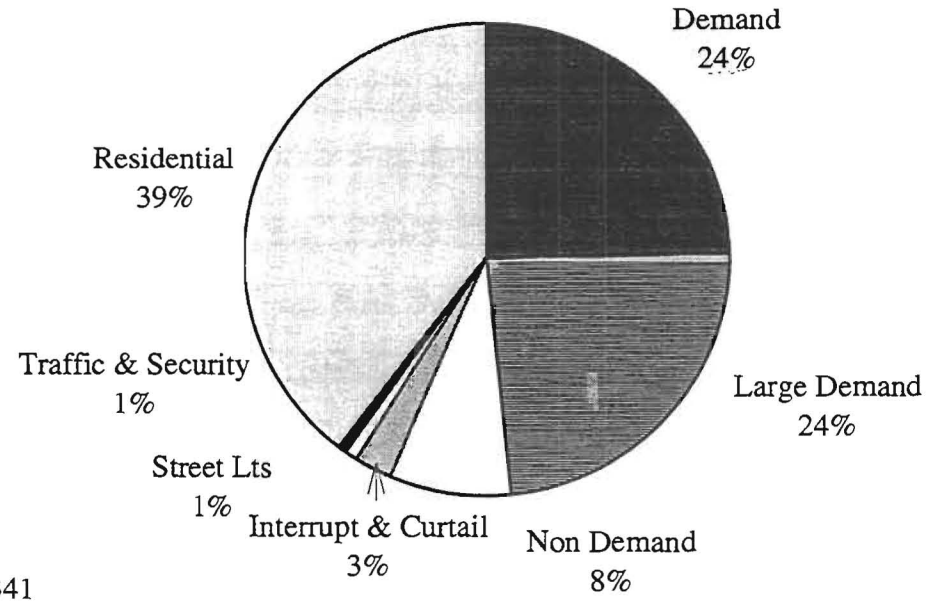

Energy Consumption
By Customer Class 1989 - 2008
GWH
3500
3000
2500
2000
1500
1000
500
0
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Historical
Curtail & Interrupt
Demand
Large Demand
Non Demand
Traffic & Security
Residential
St Lights

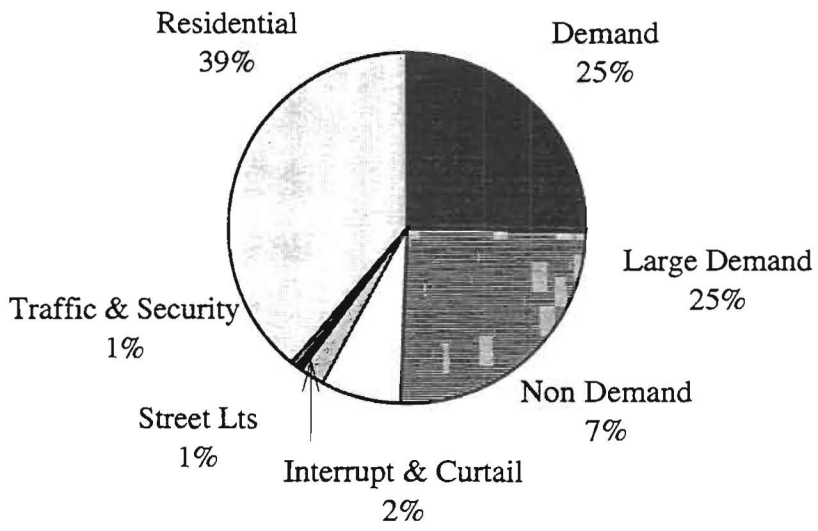
Figure B1

Energy Consumption by Customer Class - 1999



GWH = 2,341

Energy Consumption By Customer Class - 2008



GWH = 2,954

City Of Tallahassee

Schedule 3.1.1
History and Forecast of Summer Peak Demand
Base Forecast
(MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Residential Load Management	Residential Conservation	Comm./Ind Load	Comm./Ind Conservation	[1] Net Firm Demand
1989	403		403						403
1990	415		415						415
1991	412		412						412
1992	428		428						428
1993	459		459						459
1994	433		433						433
1995	497		497						497
1996	500		500						500
1997	486		486						486
1998	530		530						530
1999	510		510			1.46		0.51	508
2000	526		526			2.88		1.02	522
2001	542		542			4.30		1.59	536
2002	558		558			5.73		2.05	550
2003	570		570			7.15		2.63	560
2004	582		582			8.57		3.09	570
2005	593		593			9.99		3.66	579
2006	605		605			11.41		4.12	589
2007	616		616			11.41		4.12	600
2008	630		630			11.41		4.12	614

[1] Values include DSM Impacts.

City Of Tallahassee

Schedule 3.1.2
History and Forecast of Summer Peak Demand
High Forecast
(MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Residential Load Management	Residential Conservation	Comm./Ind Load	Comm./Ind Conservation	[1] Net Firm Demand
1989	403		403						403
1990	415		415						415
1991	412		412						412
1992	428		428						428
1993	459		459						459
1994	433		433						433
1995	497		497						497
1996	500		500						500
1997	486		486						486
1998	530		530						530
1999	520		520			1.46		0.51	518
2000	536		536			2.88		1.02	532
2001	552		552			4.30		1.59	546
2002	567		567			5.73		2.05	559
2003	580		580			7.15		2.63	570
2004	592		592			8.57		3.09	580
2005	602		602			9.99		3.66	588
2006	615		615			11.41		4.12	599
2007	626		626			11.41		4.12	610
2008	639		639			11.41		4.12	623

[1] Values include DSM Impacts.

City Of Tallahassee

Schedule 3.1.3
History and Forecast of Summer Peak Demand
Low Forecast
(MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Residential Load Management	Residential Conservation	Comm./Ind Load	Comm./Ind Conservation	[1] Net Firm Demand
1989	403		403						403
1990	415		415						415
1991	412		412						412
1992	428		428						428
1993	459		459						459
1994	433		433						433
1995	497		497						497
1996	500		500						500
1997	486		486						486
1998	530		530						530
1999	510		501			1.46		0.51	499
2000	526		517			2.88		1.02	513
2001	542		533			4.30		1.59	527
2002	558		548			5.73		2.05	540
2003	570		561			7.15		2.63	551
2004	582		573			8.57		3.09	561
2005	593		583			9.99		3.66	569
2006	605		595			11.41		4.12	579
2007	616		607			11.41		4.12	591
2008	630		621			11.41		4.12	605

[1] Values include DSM Impacts.

City Of Tallahassee

Schedule 3.2.1
History and Forecast of Winter Peak Demand
Base Forecast
(MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Residential Load Management	Residential Conservation	Comm./Ind Load	Comm./Ind Conservation	[1] Net Firm Demand
1988 -1989	374		374						374
1989 -1990	401		401						401
1990 -1991	355		355						355
1991 -1992	412		412						412
1992 -1993	390		390						390
1993 -1994	428		428						428
1994 -1995	457		457						457
1995 -1996	533		533						533
1996 -1997	431		431						431
1997 -1998	421		421						421
1998 -1999	494		494			5.29		0.50	488
1999 -2000	497		497			10.54		1.00	485
2000 -2001	517		517			15.80		1.54	500
2001 -2002	536		536			21.05		1.99	513
2002 -2003	553		553			26.30		2.53	524
2003 -2004	568		568			31.55		2.98	533
2004 -2005	583		583			36.80		3.53	543
2005 -2006	598		598			42.06		3.98	552
2006 -2007	613		613			42.06		3.98	567
2007 -2008	626		626			42.06		3.98	580

[1] Values include DSM Impacts.

City Of Tallahassee

Schedule 3.2.2
History and Forecast of Winter Peak Demand
High Forecast
(MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Residential Load Management	Residential Conservation	Comm./Ind Load	Comm./Ind Conservation	[1] Net Firm Demand
1988 -1989	374		374						374
1989 -1990	401		401						401
1990 -1991	355		355						355
1991 -1992	412		412						412
1992 -1993	390		390						390
1993 -1994	428		428						428
1994 -1995	457		457						457
1995 -1996	533		533						533
1996 -1997	431		431						431
1997 -1998	421		421						421
1998 -1999	509		509			5.29		0.50	503
1999 -2000	529		529			10.54		1.00	517
2000 -2001	549		549			15.80		1.54	532
2001 -2002	569		569			21.05		1.99	546
2002 -2003	585		585			26.30		2.53	556
2003 -2004	600		600			31.55		2.98	565
2004 -2005	615		615			36.80		3.53	575
2005 -2006	630		630			42.06		3.98	584
2006 -2007	645		645			42.06		3.98	599
2007 -2008	659		659			42.06		3.98	613

[1] Values include DSM Impacts.

City Of Tallahassee

Schedule 3.2.3
History and Forecast of Winter Peak Demand
Low Forecast
(MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Residential Load Management	Residential Conservation	Comm./Ind Load	Comm./Ind Conservation	[1] Net Firm Demand
1988 -1989	374		374						374
1989 -1990	401		401						401
1990 -1991	355		355						355
1991 -1992	412		412						412
1992 -1993	390		390						390
1993 -1994	428		428						428
1994 -1995	457		457						457
1995 -1996	533		533						533
1996 -1997	431		431						431
1997 -1998	421		421						421
1998 -1999	450		450			5.29		0.50	444
1999 -2000	470		470			10.54		1.00	458
2000 -2001	490		490			15.80		1.54	473
2001 -2002	509		509			21.05		1.99	486
2002 -2003	526		526			26.30		2.53	497
2003 -2004	541		541			31.55		2.98	506
2004 -2005	556		556			36.80		3.53	516
2005 -2006	571		571			42.06		3.98	525
2006 -2007	586		586			42.06		3.98	540
2007 -2008	599		599			42.06		3.98	553

[1] Values include DSM Impacts.

City Of Tallahassee

Schedule 3.3.1
History and Forecast of Annual Net Energy for Load
Base Forecast
(GWH)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
				[1]			[1]	[1]
Year	Total Sales	Residential Conservation	Comm./Ind Conservation	Retail Sales	Wholesale	Utility Use & Losses	Net Energy for Load	Load Factor %
1989	1,662			1,662		123	1,785	51
1990	1,822			1,822		81	1,903	52
1991	1,830			1,830		122	1,952	54
1992	1,857			1,857		123	1,980	53
1993	1,956			1,956		130	2,086	52
1994	2,016			2,016		134	2,150	57
1995	2,150			2,150		142	2,292	53
1996	2,221			2,221		147	2,368	54
1997	2,186			2,186		132	2,318	54
1998	2,349			2,349		128	2,477	53
1999	2,341	6.37	1.72	2,333		155	2,488	56
2000	2,416	12.71	3.43	2,400		159	2,559	56
2001	2,491	19.05	5.23	2,467		163	2,630	56
2002	2,568	25.40	6.75	2,535		168	2,703	56
2003	2,634	31.74	8.55	2,594		172	2,766	56
2004	2,695	38.08	10.07	2,647		175	2,822	57
2005	2,759	44.43	11.87	2,703		179	2,882	57
2006	2,822	50.77	13.39	2,758		183	2,941	57
2007	2,889	50.77	13.39	2,824		187	3,011	57
2008	2,954	50.77	13.39	2,890		191	3,081	57

City Of Tallahassee

Schedule 3.3.2
History and Forecast of Annual Net Energy for Load
High Forecast
(GWH)

(1) Year	(2) Total Sales	(3) Residential Conservation	(4) Comm./Ind Conservation	(5) [1] Retail Sales	(6) Wholesale	(7) Utility Use & Losses	(8) [1] Net Energy for Load	(9) [1] Load Factor %
1989	1,662			1,662		123	1,785	51
1990	1,822			1,822		81	1,903	52
1991	1,830			1,830		122	1,952	54
1992	1,857			1,857		123	1,980	53
1993	1,956			1,956		130	2,086	52
1994	2,016			2,016		134	2,150	57
1995	2,150			2,150		142	2,292	53
1996	2,221			2,221		147	2,368	54
1997	2,186			2,186		132	2,318	54
1998	2,348			2,348		128	2,476	53
1999	2,522	6.37	1.72	2,514		167	2,680	59
2000	2,599	12.71	3.43	2,583		171	2,754	59
2001	2,677	19.05	5.23	2,653		176	2,828	59
2002	2,759	25.40	6.75	2,727		181	2,907	59
2003	2,829	31.74	8.55	2,789		185	2,973	60
2004	2,892	38.08	10.07	2,844		188	3,032	60
2005	2,964	44.43	11.87	2,908		193	3,100	60
2006	3,030	50.77	13.39	2,966		196	3,162	60
2007	3,099	50.77	13.39	3,035		201	3,236	61
2008	3,167	50.77	13.39	3,103		206	3,308	61

[1] Values include DSM Impacts.

City Of Tallahassee

Schedule 3.3.3
History and Forecast of Annual Net Energy for Load
Low Forecast
(GWH)

(1) Year	(2) Total Sales	(3) Residential Conservation	(4) Comm./Ind Conservation	(5) [1] Retail Sales	(6) Wholesale	(7) Utility Use & Losses	(8) [1] Net Energy for Load	(9) [1] Load Factor %
1989	1,662			1,662		123	1,785	51
1990	1,822			1,822		81	1,903	52
1991	1,830			1,830		122	1,952	54
1992	1,857			1,857		123	1,980	53
1993	1,956			1,956		130	2,086	52
1994	2,016			2,016		134	2,150	57
1995	2,150			2,150		142	2,292	53
1996	2,221			2,221		147	2,368	54
1997	2,186			2,186		132	2,318	54
1998	2,348			2,348		128	2,476	53
1999	2,192	6.37	1.72	2,184		145	2,329	53
2000	2,264	12.71	3.43	2,248		149	2,397	53
2001	2,336	19.05	5.23	2,312		153	2,465	53
2002	2,409	25.40	6.75	2,377		157	2,534	54
2003	2,473	31.74	8.55	2,433		161	2,594	54
2004	2,531	38.08	10.07	2,483		164	2,647	54
2005	2,589	44.43	11.87	2,533		168	2,700	54
2006	2,651	50.76	13.39	2,587		171	2,758	54
2007	2,715	50.76	13.39	2,651		176	2,826	55
2008	2,778	50.76	13.39	2,714		180	2,894	55

[1] Values include DSM Impacts.

City Of Tallahassee

Schedule 4
Previous Year and 2-Year Forecast of Retail Peak Demand and Net Energy for Load by Month

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	1998 Actual		1999 [1] Forecast		2000 [1] Forecast	
Month	Peak Demand MW	NEL GWH	Peak Demand MW	NEL GWH	Peak Demand MW	NEL GWH
January	368	184	353	185	363	190
February	379	169	364	170	374	175
March	393	182	377	183	388	189
April	340	170	326	171	335	176
May	486	224	466	225	479	232
June	530	261	508	262	522	270
July	524	255	503	256	517	264
August	512	252	491	253	505	260
September	482	224	463	225	475	231
October	434	204	416	205	428	211
November	359	171	345	172	354	177
December	368	179	353	180	363	185
TOTAL		2,477		2,488		2,560

[1] Peak Demand and NEL include DSM impacts.

City Of Tallahassee

1999 Electric System Load Forecast

Key Explanatory Variables

Model Name	Leon County Populations	Residential Customers	Total Customers	Cooling Degree Days	Heating Degree Days	Tallahassee Per Capita Taxable Sales	Price of Electricity	State of Florida Population	Minimum Winter Peak day Temp.	Maximum Summer Peak day Temp.	Appliance Saturation	[1] R Squared
Residential Customers	X											0.989
Residential Consumption		X		X	X	X	X				X	0.921
Florida State University Consumption				X			X	X				0.930
State Capitol Consumption				X			X	X				0.892
Florida A & M University Consumption				X				X				0.926
Street Lighting Consumption	X											0.961
General Service Non-Demand Customers		X										0.958
General Service Demand Customers		X										0.927
General Service Non-Demand Consump	X			X	X	X	X					0.961
General Service Demand Consumption	X			X	X							0.990
General Service Large Demand Consur	X			X	X							0.974
Summer Peak Demand			X							X	X	0.982
Winter Peak demand									X		X	0.965

[1] R Squared, sometimes called the coefficient of determination, is a commonly used measure of goodness od fit of a linear model. If the observations fall on the model regression line, R Squared is 1. If there is no linear relationship between the dependent and independent variable, R Squared is 0. A reasonably good R Squared value could be anywhere from 0.6 to 1.

Table 2.14

1999 Electric Load Forecast
Sources of Forecast Model Input Information

Energy Model Input Data	Source
1. Leon County Population	City Planning Office
2. Talquin Customers Transferred	City Power Engineering
3. Cooling Degree Days	NOAA reports
4. Heating Degree Days	NOAA reports
5. AC Saturation Rate	Residential Utility Customer Trends
6. Heating Saturation Rate	City Utility Research
7. Real Tallahassee Taxable Sales	Department of Revenue
8. Florida Population	Governor's Office of Budget & Planning
9. State Capitol Incremental	Department of Management Services
10. FSU Incremental Additions	FSU Planning Department
11. FAMU Incremental Additions	FAMU Planning Department
12. GSLD Incremental Additions	City Utility Services
13. Other Commercial Customers	Utility Services
14. Tall. Memorial Curtailable	System Planning/ Utilities Accounting.
15. FSU 4th Meter Additions	System Planning/ Utilities Accounting.
16. State Capital Center 2 Special Accounts	Utilities Accounting
17. Customer Definitions	Utility Services
18. System Peak Historical Data	City System Planning
19. Historical Customer Projections by Class	System Planning & Customer Accounting
20. Historical Customer Class Energy	System Planning & Customer Accounting
21. GDP Forecast	Governor's Planning & Budgeting Office
22. CPI Forecast	Governor's Planning & Budgeting Office
23. Florida Taxable Sales	Governor's Planning & Budgeting Office
24. Interruptible, Traffic Light Sales, & Security Light Additions	System Planning & Customer Accounting
25. Historical Residential Real Price of Electricity	Utility Services
26. Historical Commercial Real Price Of Electricity	Utility Services

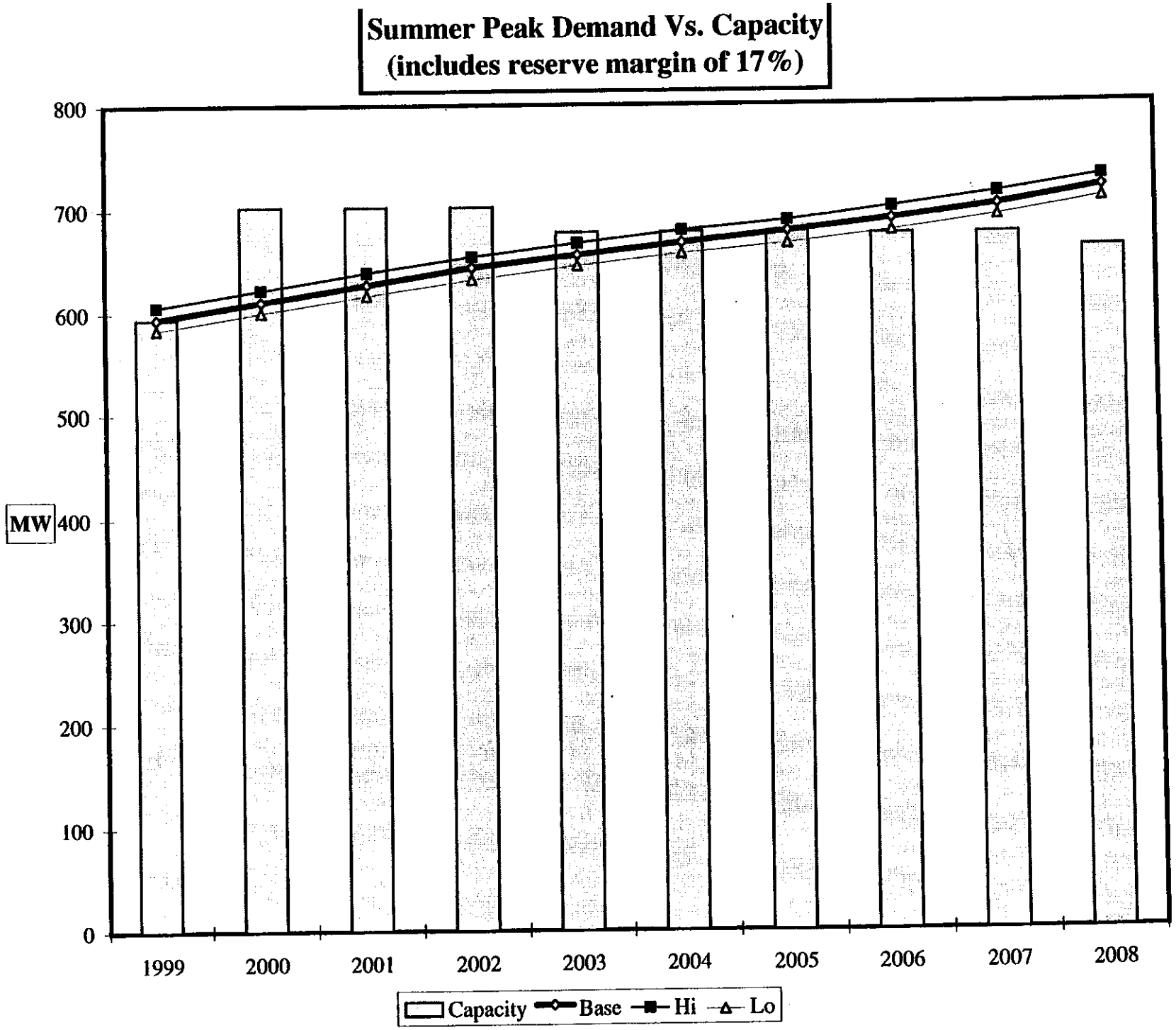

Summer Peak Demand Vs. Capacity
(includes reserve margin of 17%)
MW
800
700
600
500
400
300
200
100
0
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Capacity
Base
Hi
Lo

Figure B3

City Of Tallahassee
1999 Electric System Load Forecast

Projected Demand Side Management
Energy Reductions

Calendar Year Basis

YEAR	Residential Impact (MWH)	Commercial Impact (MWH)	Total Impact (MWH)
1999	6,365	1,715	8,080
2000	12,708	3,431	16,139
2001	19,052	5,231	24,283
2002	25,395	6,752	32,147
2003	31,738	8,552	40,290
2004	38,082	10,073	48,155
2005	44,425	11,873	56,298
2006	50,768	13,394	64,162
2007	50,768	13,394	64,162
2008	50,768	13,394	64,162

City Of Tallahassee

1999 Electric System Load Forecast

Projected Demand Side Management
Seasonal Demand Reductions

Year		Residential Energy Efficiency Impact		Commercial Energy Efficiency Impact		Demand Side Management Total	
Summer	Winter	Summer (MW)	Winter (MW)	Summer (MW)	Winter (MW)	Summer (MW)	Winter (MW)
1999	1998-1999	1.5	5.3	0.5	0.5	2	6
2000	1999-2000	2.9	10.6	1.0	1.0	4	12
2001	2000-2001	4.4	15.8	1.6	1.5	6	17
2002	2001-2002	5.8	21.0	2.0	2.0	8	23
2003	2002-2003	7.2	26.3	2.6	2.5	10	29
2004	2003-2004	8.6	31.6	3.0	3.0	12	35
2005	2004-2005	10.0	36.6	3.6	3.5	14	40
2006	2005-2006	11.5	41.6	4.1	4.0	16	46
2007	2006-2007	11.5	41.6	4.1	4.0	16	46
2008	2007-2008	11.5	41.6	4.1	4.0	16	46

City Of Tallahassee

Schedule 5
Fuel Requirements

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Fuel Requirements		Units	Actual 1997	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
(1)	Nuclear		Billion BTU	0	667	890	833	777	792	806	816	821	840	838	848
(2)	Coal		1000 Ton												
(3)	Residual	Total	1000 BBL	35	11										
(4)		Steam	1000 BBL	35	11										
(5)		CC	1000 BBL												
(6)		CT	1000 BBL												
(7)		Diesel	1000 BBL												
(8)	Distillate	Total	1000 BBL												
(9)		Steam	1000 BBL												
(10)		CC	1000 BBL												
(11)		CT	1000 BBL												
(12)		Diesel	1000 BBL												
(13)	Natural Gas	Total	1000 MCF	15,874	17,151	16,814	17,950	20,047	20,703	21,304	21,666	22,131	23,137	22,487	22,634
(14)		Steam	1000 MCF	15,600	16,590	16,661	10,640	8,023	8,494	9,146	9,159	9,525	12,282	9,629	9,720
(15)		CC	1000 MCF				7,264	12,017	12,192	12,133	12,477	12,565	10,583	12,813	12,875
(16)		CT	1000 MCF	274	561	153	46	7	17	25	30	41	272	45	39
(17)	Other (Specify)		Trillion BTU												

City Of Tallahassee

Schedule 6.1
Energy Sources

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Energy Sources		Units	Actual 1997	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
(1)	Annual Firm Interchange		GWH	821	805	637	244	23	9				69	69	149
(2)	Nuclear		GWH		89	85	79	74	76	77	78	78	80	80	81
(3)	Residual	Total	GWH	20	6										
(4)		Steam	GWH	20	6										
(5)		CC	GWH												
(6)		CT	GWH												
(7)		Diesel	GWH												
(8)	Distillate	Total	GWH												
(9)		Steam	GWH												
(10)		CC	GWH												
(11)		CT	GWH												
(12)		Diesel	GWH												
(13)	Natural Gas	Total	GWH	1,449	1,560	1,741	2,211	2,508	2,593	2,664	2,719	2,779	2,767	2,837	2,826
(14)		Steam	GWH	1,435	1,529	1,730	1,117	830	889	898	937	1,247	1016	1066	1097
(15)		CC	GWH			-	1,091	1,677	1,703	1,764	1,780	1,529	1731	1768	1726
(16)		CT	GWH	14	31	11	3	1	1	2	2	3	20	3	3
(17)	Other (Hydro)		GWH	29	17	25	25	25	25	25	25	25	25	25	25
(18)	Net Energy for Load		GWH	2,319	2,477	2,488	2,559	2,630	2,703	2,766	2,822	2,882	2,941	3,011	3,081

Notes:

1) Values for 1997 and 1998 include economy interchange

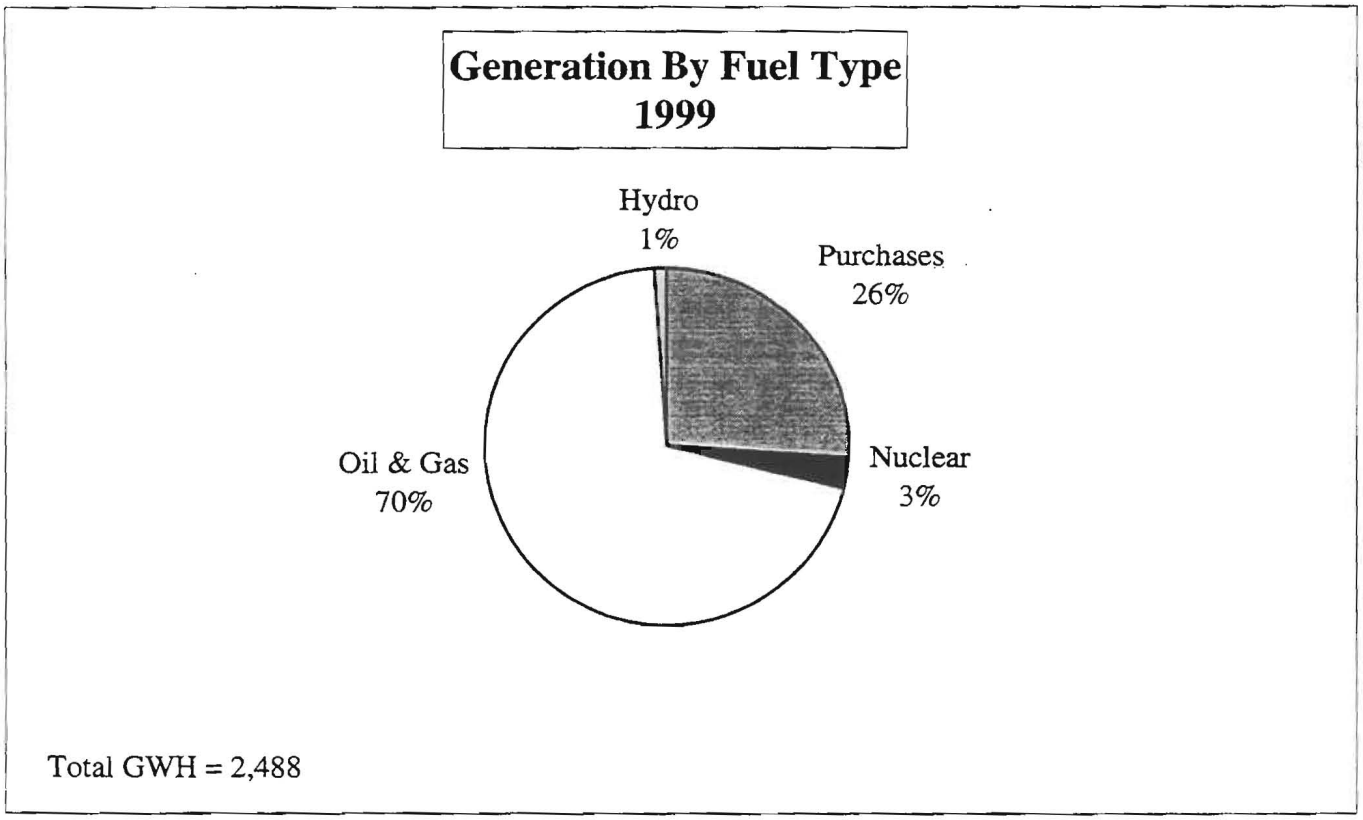
(2) Values for the perod 1999-2008 do not include economy interchange

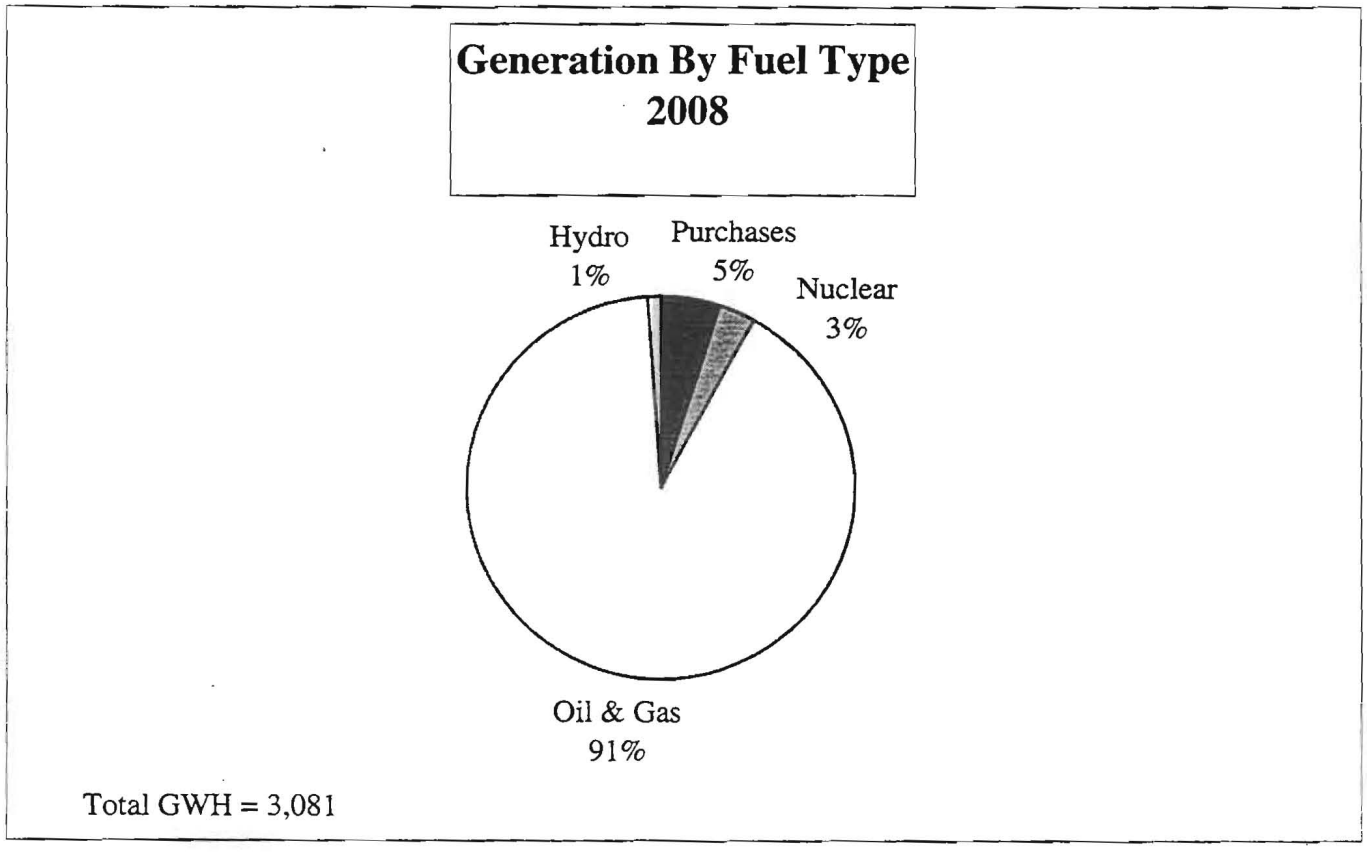
City Of Tallahassee

Schedule 6.2
Energy Sources

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Energy Sources		Units	Actual 1997	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
(1)	Annual Firm Interchange		%	35	32	26	10	1	0	0	0	0	2	2	5
(2)	Nuclear		%	0	4	3	3	3	3	3	3	3	3	3	3
(3)	Residual	Total	%	1	1										
(4)		Steam	%	1	1										
(5)		CC	%												
(6)		CT	%												
(7)		Diesel	%												
(8)	Distillate	Total	%												
(9)		Steam	%												
(10)		CC	%												
(11)		CT	%												
(12)		Diesel	%												
(13)	Natural Gas	Total	%	63	62	70	86	95	96	96	96	96	94	94	91
(14)		Steam	%	63	62	70	44	33	32	33	43	43	35	35	36
(15)		CC	%				42	62	64	63	53	53	59	59	55
(16)		CT	%												
(17)	Other (Hydro)		%	1	1	1	1	1	1	1	1	1	1	1	1
(18)	Net Energy for Load		%	100	100	100	100	100	100	100	100	100	100	100	100

Notes:
(1) Values for 1997 and 1998 include economy interchange
(2) Values for the period 1999-2008 do not include economy interchange


Generation By Fuel Type
1999
Hydro
1%
Purchases
26%
Nuclear
3%
Oil & Gas
70%
Total GWH = 2,488


Generation By Fuel Type
2008
Hydro
1%
Purchases
5%
Nuclear
3%
Oil & Gas
91%
Total GWH = 3,081

Chapter III

Projected Facility Requirements

3.0 INTRODUCTION

The review and approval by the City Commission of the electric utility's recommended resource plan is guided by the objectives in the City's Energy Policy:

> It is the policy of the City of Tallahassee to provide a reliable, economically-competitive energy system which meets citizens' energy needs and reduces total energy requirements. These requirements will be reduced through energy conservation, public education, and appropriate technologies. The energy system will protect and improve the quality of life and the environment.

3.1 PROJECTED RESOURCE REQUIREMENTS

Through its planning efforts, the City recognized that additional resources will be required during the 1999-2008 Ten Year Site Plan time frame to maintain a reliable electric system. The termination of a 75MW purchased power contract with the Southern Company, in combination with continued load growth, results in a year 2000 shortfall of about 96 MW, assuming a 17% reserve margin criterion (as determined in a recent reliability study.) The cumulative shortfall (considering only existing resources) during the reporting period covered by this Ten Year Site Plan is shown in the table below:

Cumulative Capacity Shortfall (17% Reserve Margin)	
Year	***MW***
2000	*96*
2001	*113*
2002	*154*
2003	*190*
2004	*202*
2005	*211*
2006	*247*
2007	*260*
2008	*286*

To meet the large capacity shortfall that is anticipated in the summer of 2000, over the past five years, the City engaged in a comprehensive integrated resource planning and procurement process with the intent of acquiring a resource that could reliably meet the City's needs at the lowest cost to its customers. This planning and procurement process included a Needs Determination hearing with the Florida Public Service Commission, Site Certification, and a market power cost study. The result of this process was the decision to build a 233 MW (summer rating) gas combined-cycle unit (Purdom Unit 8) and retire Purdom units 5 & 6. The new combined-cycle unit is currently under construction and is expected to be on line by May 2000. (See Table 3.3 for details on these facility changes.)

Note that after the addition of Purdom Unit 8, there may still be minor shortfalls for the years 2006, 2007, and 2008 (about 14, 28, and 54 MW, respectively.) These shortfalls may be met with short term operating solutions (such as peak-season purchases from other systems) or long-term acquisitions (such as new plant construction or multi-year power purchases).

3.2 PLANNING PROCESS / THE NEED STUDY

On December 20, 1996, the City filed a Petition to Determine Need for Electrical Power Plant with the Florida Public Service Commission. As part of this filing, the City prepared the Purdom Unit 8 Need Study. This study described the planning process employed by the City in its selection of a resource plan which includes the addition of a 233 MW Gas Combined Cycle unit at the Purdom Station in the year 2000. The following is an excerpt from the Need Study:

> In late 1993, the City recognized that an opportunity would exist at the termination of the Southern Company contract to reduce the cost of supplying power to its customers. Improvements in generating technology made it clear that a new gas-fired generator could be installed and operated for significantly less than the price being paid for purchased power. The City began the process of screening various generating technologies and other resources for evaluation in an Integrated Resource Planning ("IRP") study.
>
> The City's Initial IRP Study, completed in May, 1995, showed that the optimal resource type for meeting the year 2000 need would be a

combination of demand side management programs and a long-term base-load-type supply resource, most likely using gas-fired combined-cycle technology. In order to determine the most cost-effective alternative for meeting the year 2000 need, the City conducted a competitive Request for Proposals (RFP) process in parallel with the development and evaluation of self-build options.

On August 31, 1995, the City released an RFP for the supply of electric capacity and energy. This RFP solicited proposals for purchased power and/or generating projects in amounts from 10 MW to 250 MW. Including five external proposals, and two alternatives proposed by the City, a total of 1,410 MW was submitted in response to the request for up to 250 MW of supply-side resources. All of these proposals included gas-fired capacity, and some also included options for additional purchased power.

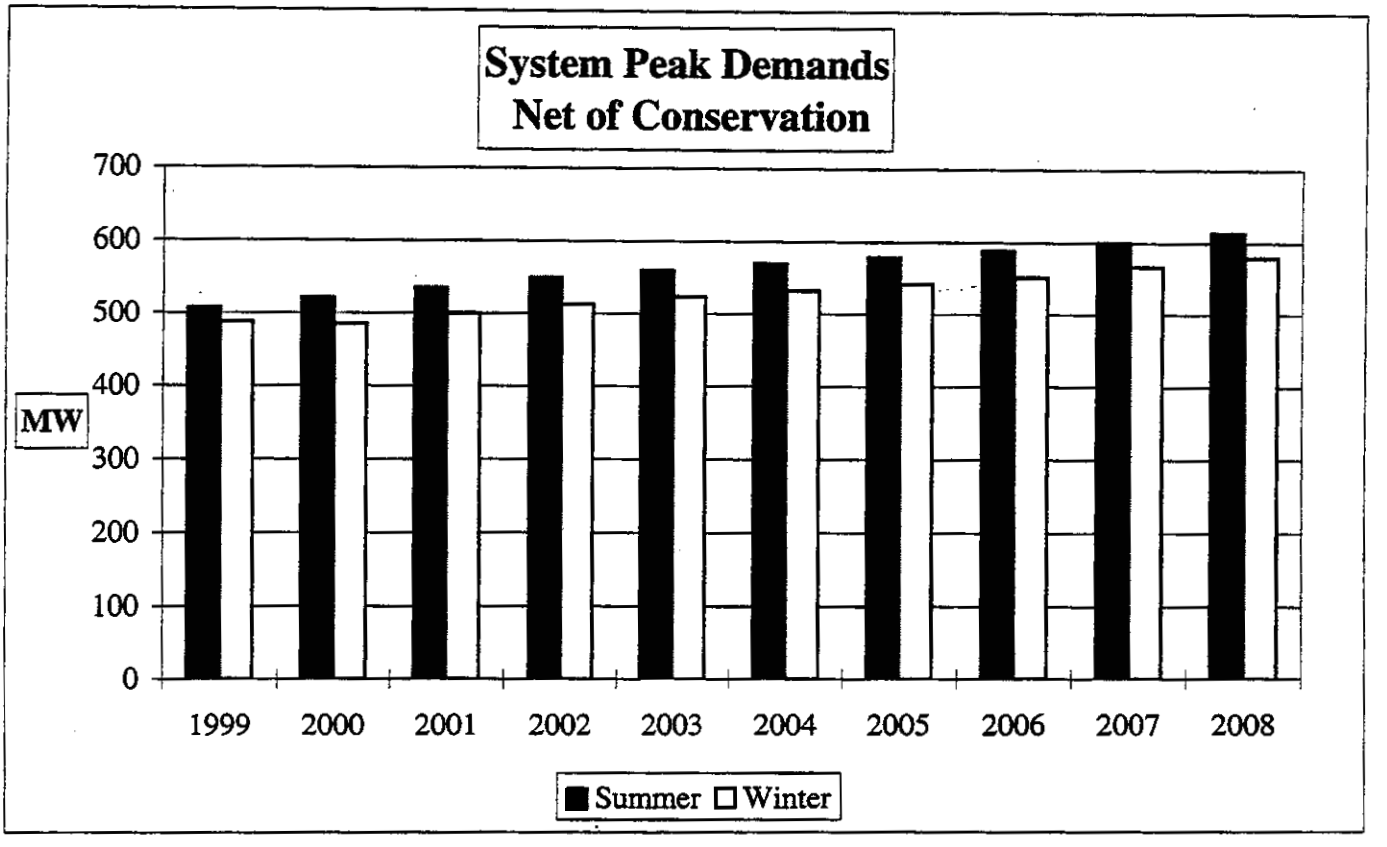
After an extensive evaluation process, the City selected the Purdom Unit 8 alternative as the best economic choice for meeting the year 2000 need for power. This unit has a guaranteed heat rate of 7,040 Btu/kWh at an ambient temperature of 95 degrees F. The total construction cost of Purdom Unit 8 is approximately $434/kW exclusive of contingency, capitalized interest, and transmission upgrades (and based on a rating of 251,054 kW at ISO conditions). Under base case planning assumptions, the resource plan including Purdom Unit 8 produces savings of approximately $91 million in present worth of revenue requirements (PWRR) over a 20-year period compared to the next best alternative identified through the RFP process. The Purdom Unit 8 plan also performs best under a wide range of alternative future scenarios.

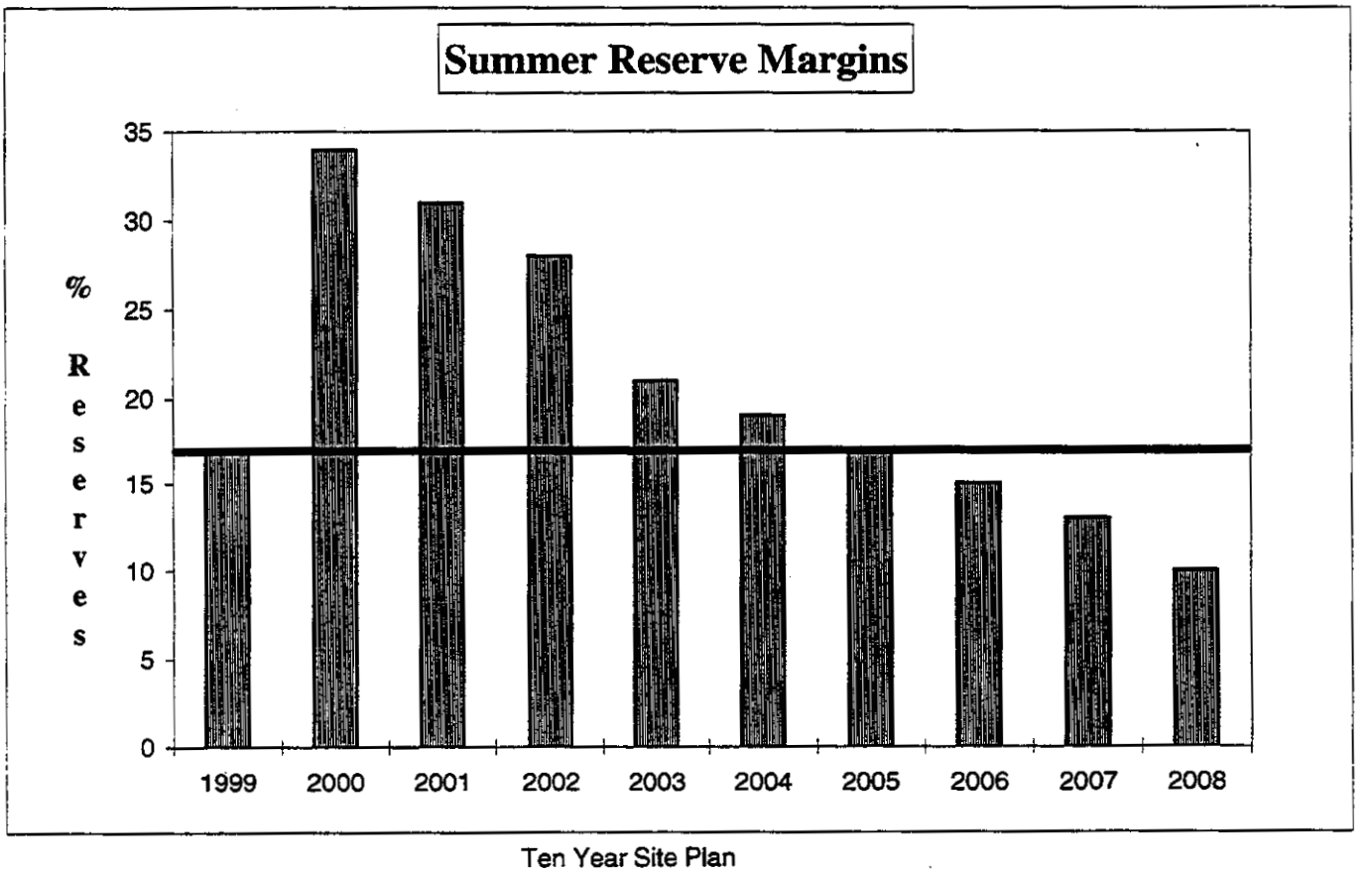
In addition, the Need Study discusses the load forecast, DSM plan, reliability considerations, potential consequences of delay of the project, consistency with statewide need, and the environmental benefits of Purdom Unit 8.

Following hearings, the Florida Public Service Commission announced, in an order issued June 9, 1997, that the City's petition for determination of need for Purdom Unit 8 should be granted. Since that date, the City has completed a study of the power markets which verified the economics of Purdom Unit 8. On April 28, 1998, the City received approval from the Governor and Cabinet of the Site Certification Application.

Tables 3.1 and 3.2 (Schedules 7.1 and 7.2) provide information on the resources and reserve margins during the next ten years for the City's system. The City plans it

system to maintain a generating capacity margin at least 17% greater than the projected base case peak demand. Based on the plan discussed above, the City has specified its planned capacity additions, retirements and changes on Table 3.3 (Schedule 8). These capacity resources have been incorporated into the City's dispatch simulation model in order to provide information related to fuel consumption and energy mix (see Tables 2.18, 2.19 and 2.20). Figure C compares seasonal net peak load and the corresponding system reserve margin. Table 3.4 provides the City's generation expansion plan, including the addition of Purdom Unit 8 in 2000.


System Peak Demands
Net of Conservation
MW
700
600
500
400
300
200
100
0
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Summer
Winter


Summer Reserve Margins
% Reserves
35
30
25
20
15
10
5
0
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008

City Of Tallahassee

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)
	Total Installed Capacity	Firm Capacity Import	Firm Capacity Export	QF	Total Capacity Available	System Firm Summer Peak Demand	Reserve Margin Before Maintenance		Scheduled Maintenance	Reserve Margin After Maintenance	
MW	MW	MW	MW	MW	MW	MW	MW	% OF PK	MW	MW	% OF PK
1999	490	104	0	0	594	508	86	17	0	86	17
2000	677	25	0	0	702	522	180	34	0	71	34
2001	677	25	0	0	702	536	166	31	0	166	31
2002	677	0	0	0	677	550	127	23	0	152	23
2003	677	0	0	0	677	560	117	21	0	117	21
2004	677	0	0	0	677	570	107	19	0	107	19
2005	677	0	0	0	677	579	98	17	0	98	17
2006	677	0	0	0	677	589	88	15	0	88	15
2007	677	0	0	0	677	600	77	13	0	77	13
2008	667	0	0	0	667	614	53	9	0	53	9

City Of Tallahassee

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)
MW	Total Installed Capacity MW	Firm Capacity Import MW	Firm Capacity Export MW	QF MW	Total Capacity Available MW	System Firm Winter Peak Demand MW	Reserve Margin Before Maintenance MW	Reserve Margin Before Maintenance % OF PK	Scheduled Maintenance MW	Reserve Margin After Maintenance MW	Reserve Margin After Maintenance % OF PK
1998/99	512	104	0	0	616	488	128	26	0	128	26
1999/00	466	104	0	0	570	485	85	18	0	85	18
2000/01	730	25	0	0	755	500	255	51	0	255	51
2001/02	730	25	0	0	755	513	242	47	0	242	47
2002/03	730	0	0	0	730	524	206	39	0	206	39
2003/04	730	0	0	0	730	533	197	37	0	197	37
2004/05	730	0	0	0	730	543	187	34	0	187	34
2005/06	730	0	0	0	730	552	178	32	0	178	32
2006/07	730	0	0	0	730	567	163	29	0	163	29
2007/08	730	0	0	0	730	580	150	26	0	150	26

City Of Tallahassee

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 Transportation		Const.	Commercial	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	Summer MW	Winter MW	Status
Purdom [1]	8	Wakulla Co.	CC	NG	FO2	PL	TK	N/A	5/15/00		259,800	233	262	P
Purdom [2]	5	"	ST	NG	FO6	PL	TK			10/1/99	25,000	-23	-24	P
Purdom [2]	6	"	ST	NG	FO6	PL	TK			10/1/99	25,000	-23	-24	P

Notes: [1] Unit No. 8 is currently under construction.

[2] The early retirement of Purdom units 5 & 6 are to be retired in conjunction with the construction of Purdom Unit 8. *The official retirement is coincident with the commercial in-service date of Purdom Unit 8. However, Unit 5 and 6 will effectively be taken out of service on 10/1/99* as part of the Unit 8 Construction Plan.

Abbreviations:
- CC = Combined Cycle
- GT = Gas Turbine
- PRI = Primary Fuel
- ALT = Alternate Fuel
- NG = Natural Gas
- FO2 = *No. 2 Fuel Oil*
- PL = Pipeline
- TK = Truck
- P = Planned
- kW = kilowatts
- MW = Megawatts

City Of Tallahassee

GENERATION EXPANSION PLAN

Year	Load Fcst & Adj. Fcst Peak Demand	DSM (1)	Net Peak DMD	Existing Capacity Net		Firm Imports		Resource Additions (Cumulative)	Total Capacity	Res %	New Resources
1999	510	2	508	490		104			594	17	
2000	526	4	522	442		25		233	700	34	
2001	542	6	536	442		25		233	700	31	
2002	558	8	550	442	(2)	0		233	675	23	(3)
2003	570	10	560	442	(2)	0		233	675	21	(3)
2004	582	12	570	442	(2)	0		233	675	18	(3)
2005	593	14	579	442	(2)	0		233	675	17	(3)
2006	605	16	589	442	(2)	14	(4)	233	689	17	(3)
2007	616	16	600	442	(2)	28	(4)	233	703	17	(3)
2008	630	16	614	432	(2)	54	(4)	233	719	17	(3)

NOTES:

(1) DSM = Demand Side Management

(2) Purdom units 5 & 6 will be retired prior to the installation of Purdom No. 8 in Oct. 1999.
The official retirement is coincident with the commercial in-service date of Purdom Unit 8.
However, Unit 5 and 6 will effectively be taken out of service on 10/1/99 as part of the Unit 8 Construction Plan.

(3) New Resource assumed to be Purdom No. 8 having a 233 MW summer capacity. (Unit No. 8 selection is currently under construction)

(4) Peak Season Purchases will be made to compensate for minor capacity shortfalls in the years 2006-2008 to maintain a 17% reserve margin.

Chapter IV

Proposed Plant Sites and Transmission Lines

4.1 PROPOSED PLANT SITE

As identified in Chapter III, the Need Study, the subsequent order from the Florida Public Service Commission, and finally the market power cost study indicated that the least-cost generation expansion plan includes the development of a 233 MW (summer rating) gas-fired combined-cycle plant at the Purdom Generating Station in St. Marks, Florida. This section will describe that proposed plant, its site, and related transmission improvements.

4.1.1 DESCRIPTION OF NEW POWER PLANT

The proposed power plant (currently under construction, and to be designated "Purdom Unit 8") is comprised of an advanced technology gas turbine in a combined-cycle configuration. In this configuration, the City will enjoy the highest efficiency available in a large central station facility. The unit has a guaranteed summer rating of 232,900 kW and 7,040 btu/kWh at 95°F, 50% Relative Humidity, and at the Higher Heating Value (HHV) of gas. With the addition of this unit, the City will be able to retire Purdom Units 5 & 6 early, and reduce the utilization of Purdom Unit 7. As a result of these early retirements and reduced utilization, the City's electrical demand will be met at a reduced cost and with a significantly improved environmental profile. This alternative is expected to provide the following benefits:

Financial Benefits:

- The addition of Unit 8 will make a significant improvement in system efficiency. Unit 8 has an average heat rate of 6,960 btu/kWh, which is 39% better than the City's fiscal year 1994 average annual heat rate of 11,400 btu/kWh.
- The project utilizes existing facilities in lieu of developing a new site.
- The debt service payments for 233 MW are lower than the capacity payments historically paid by the City for 100 MW of coal-fired capacity from Southern Company.
- The City's wholesale competitiveness will be improved through higher efficiency.

Environmental Benefits:

- A "zero discharge" water treatment plant will be installed to significantly improve the environmental impact on the St. Marks River. This treatment facility will allow elimination of the existing low volume waste (LVW) discharge and metal cleaning waste (MCW) discharge. The zero discharge treatment plant will also allow all of the City of St. Marks sewage treatment plant effluent to be used as make-up to the Unit 8 cooling tower. This will eliminate an existing waste stream discharge to the St. Marks River.
- Thermal discharge to the St. Marks River will be reduced through the early retirement of Units 5 & 6. There is no additional thermal discharge from Unit 8 due to the use of a cooling tower and the zero discharge facility.
- Best Available Control Technology (BACT) for NOx control will be used.
- Natural gas will be utilized as the primary fuel. Clean, low sulfur (0.05%) #2 fuel oil will only be used as the backup fuel. The current expectation is that utilization of #2 fuel oil will be less than 1,000 hours annually.
- There will be a net reduction in permitted air emissions through retirement of Units 5 & 6, and reduced utilization of Unit 7 coupled with the excellent performance of Unit 8. NOx and SO2 emissions from Unit 8 are expected to be at or below the actual NOx and SO2 emissions from the Purdom Plant in the past 2 years. There will be some increase in actual amounts for other pollutants but the ambient air quality impacts will be below the allowable standards.
- Groundwater withdrawal from the existing Purdom wells will be eliminated.
- The project utilizes existing transmission rights-of-way and voltages, and thereby does not require acquisition and clearing of additional rights-of-way.

St. Marks Community Benefits:

- The St. Marks River environment will be improved through the elimination of the Purdom LVW and MCW discharges, of thermal discharge from Units 5 & 6, and of the discharge of the City of St. Marks sewage treatment plant to the river.
- Aesthetics along the St. Marks River will be improved.
- The project will utilize the City of St. Marks potable water system for supplemental process water.
- The project makes the existing water high tank available to the City of St. Marks for additional storage.

4.1.2 PLANT SITE

The new power plant is being constructed at the Purdom Generating Station in St. Marks, Florida, approximately 25 miles south of Tallahassee, in Wakulla County. This generating station currently consists of three steam electric units and two gas combustion turbine units. Steam Units No. 5 and 6 are rated at 24 MW each and Unit 7 is rated at 50 MW. The three steam units can burn either natural gas or No. 6 fuel oil. The two gas turbines are rated at 10 MW each, and are used for peaking. They can burn either gas or No. 2 fuel oil.

Purdom Unit 8 will be a 233 MW (summer rating) gas combined cycle unit, which is expected to be primarily base-loaded. Concurrent with the installation of Unit 8, Units 5 and 6 will be decommissioned. Unit 7 and the gas turbines will remain in operation. Specifications for the proposed plant are shown on Table 4.1 (Schedule 9).

A site map is included as Figure D1. Unit 8 will be located west of the Unit 6 & 7 Discharge Canal, to the south of the Plant access road. The combustion turbine-generator (CT-G) and heat recovery steam generator (HRSG) will be oriented north-south and adjacent to the discharge canal. The steam turbine-generator (ST-G) will be west of the CT-G. The existing warehouse will be relocated and the cooling tower will be located where the warehouse is presently. To fit the 225 MW alternative, the existing gas yard will be relocated. A new Plant access road will be constructed along the west, south, and east perimeter of the new Unit 8. This site layout is consistent with the special development zone requirements of the St. Marks Land Development Code and avoids impacts to all existing on-site environmental features.

4.1.3 TRANSMISSION UPGRADES

The project utilizes existing transmission rights-of-way and voltages, and thereby does not require acquisition and clearing of additional rights-of-way. Specifications for the proposed directly-associated transmission lines are shown on Table 4.2 (Schedule 10). In order to reliably carry the additional power in certain contingency situations from the Purdom site north to the City's service territory, the upgrading of the following transmission lines will be necessary:

Existing Line	Miles	Existing Conductor	Required Upgrade
Purdom - Sub 5	15	4/0 copper	477 ACSR
Purdom - Switch	15.6	4/0 copper	477 ACSR

4.2 TRANSMISSION LINE ADDITIONS

A study of the transmission system has identified a number of system improvements and additions that will be required to reliably serve future load. The attached transmission system map (Figure D2), shows the planned transmission additions covered by this Ten Year Site Plan.

The City plans several new substations on the east side of its system. These are intended to serve future load in this rapidly-growing area. The new substations (14, 17, 18) will be connected with 115 kV transmission, which is the standard voltage throughout the City's service territory. When complete, the area will be served by two reliable "loops" between substations 7 and 9, and between substations 9 and 5. The anticipated in-service dates for these new substations and lines are shown in Figure D2.

Other improvements to the transmission system will take the form of line upgrades. Specifically, the upgrade of the lines out of the Purdom Station (as described in section 4.1.3) will be timed to be in-service prior to the May 2000 commission date for Purdom Unit 8.

City Of Tallahassee

Schedule 9

Status Report and Specifications of Proposed Generating Facilities

(1)	Plant Name and Unit Number:	Purdom Unit 8
(2)	Capacity	
	a.) Summer:	233 @ 95F
	b.) Winter:	262 @ 40F
(3)	Technology Type:	Combined Cycle
(4)	Anticipated Construction Timing	
	a.) Field Construction start - date:	10/3/98 start engineering 3/31/98
	b.) Commercial in-service date:	5/15/00
(5)	Fuel	
	a.) Primary fuel:	Natural Gas
	b.) Alternate fuel:	No. 2 Diesel Fuel
(6)	Air Pollution Control Strategy:	Natural Gas -- Dry Low Nox Combustor Technology Diesel -- Water Injection
(7)	Cooling Status:	Cooling Tower
(8)	Total Site Area: [1]	63 acres
(9)	Construction Status:	Planned
(10)	Certification Status:	Application Approved (3/28/98)
(11)	Status with Federal Agencies:	N/A
(12)	Projected Unit Performance Data	
	Planned Outage Factor (POF):	Varies (See Note 4 Below)
	Forced Outage Factor:	5.0%
	Equivalent Availability Factor (EAF):	
	Resulting Capacity Factor (%):	
	Average Net Operating Heat Rate (ANOHR):	7,040 95F (HHV) 6,940 40F (HHV)
(13)	Projected Unit Financial Data	
	Book Life (Years)	30
	Total Installed Cost (In-Service Year $/kW)	$ 121,359,572
	Direct Construction Cost ($/kW): [2]	$434/kW
	AFUDC Amount ($/kW):	$45.91/kW
	Escalation ($/kW):	
	Fixed O & M ($kW-Yr):	
	Variable O & M ($/MWH):	
	K Factor:	

[1] The site will be shared with 3 existing units. (Includes developed and undeveloped land)
[2] $/kW is based on a rating of 251,054 kw at ISO conditions
[3] Includes capitalized interest and contingency funds

[4] Scheduled Outage Information
- o Unit scheduled outages are on a 6 year schedule
  - o combustor inspection -- years 1, 2, 4, 5 -- 5-7 days
  - o hot gas path -- year 3 -- 14 days
  - o major inspection -- year 6 -- 30 days

City Of Tallahassee

Schedule 10
Status Report and Specifications of Proposed Directly Associated Transmission Lines

(1)	Point of Origin and Termination:	Upgrade Purdom Plant to Tallahassee Switching Station and Purdom Plant to Substation No. 5
(2)	Number of Lines:	2
(3)	Right-of -Way:	N/A
(4)	Line Length:	N/A
(5)	Voltage:	N/A
(6)	Anticipated Capital Timing:	After 3/31/98
(7)	Anticipated Capital Investment:	$1,300,000 (For transmission line upgrades only)
(8)	Substations:	Switching Station and Substation No. 5
(9)	Participation with Other Utilities:	N/A

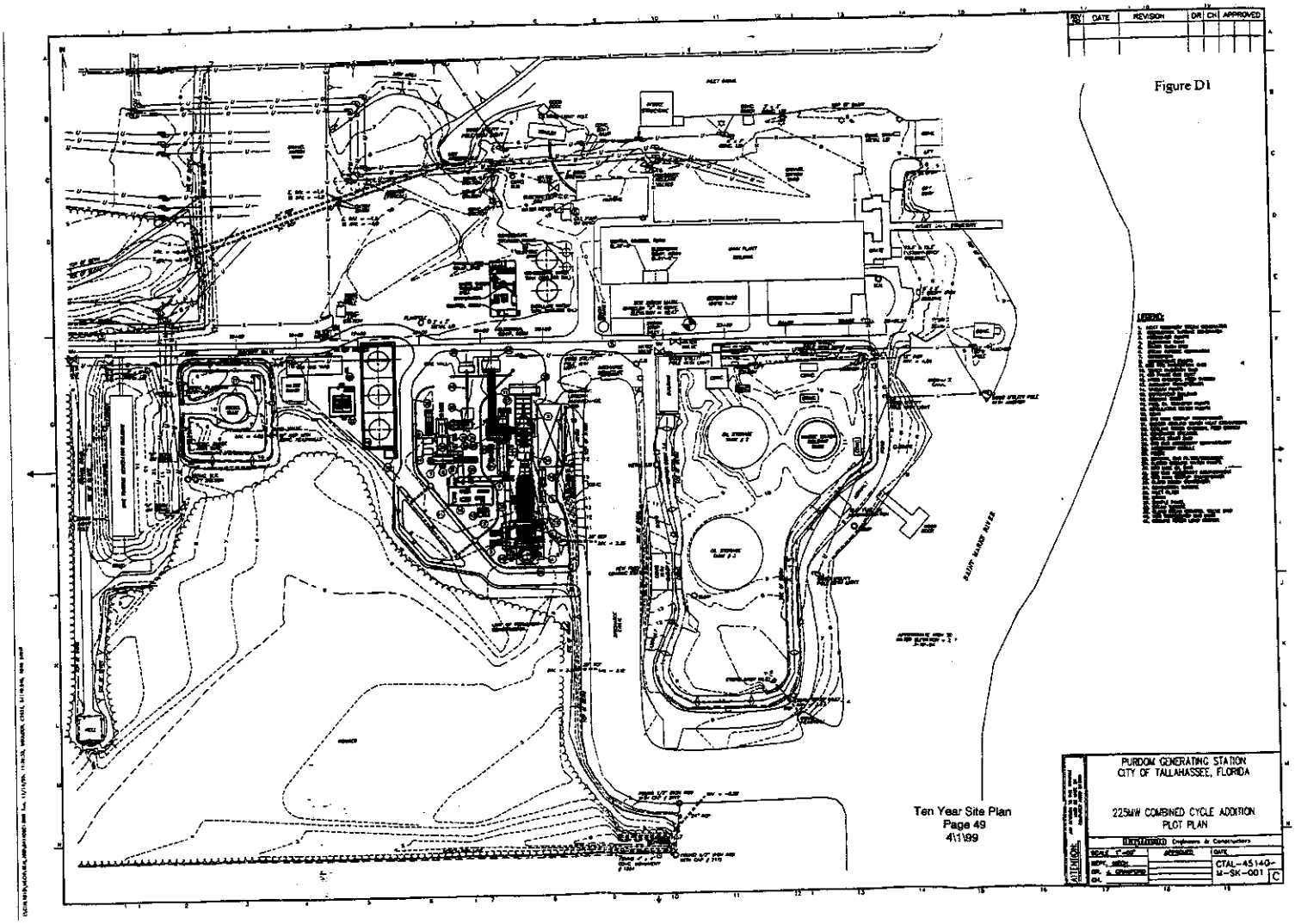
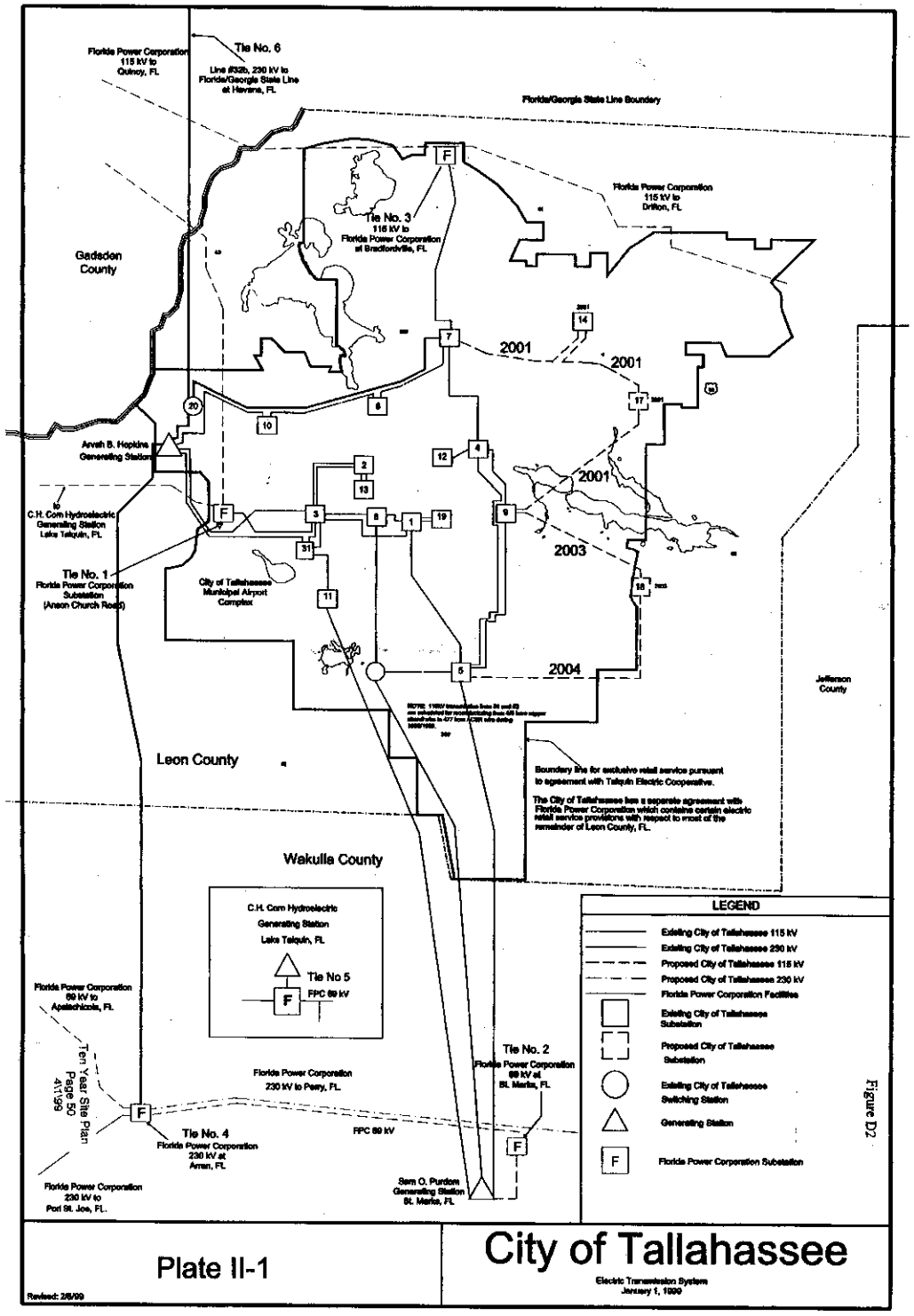


Figure D1

Ten Year Site Plan
Page 49
4/1/99


Florida Power Corporation
115 kV to
Quincy, FL
Tie No. 6
Line #32b, 230 kV to
Florida/Georgia State Line
at Havana, FL
Florida/Georgia State Line Boundary
Florida Power Corporation
115 kV to
Drifton, FL
Tie No. 3
115 kV to
Florida Power Corporation
at Bradfordville, FL
Gadsden
County
2001
2001
2001
2003
2004
Arvah B. Hopkins
Generating Station
to
C.H. Corn Hydroelectric
Generating Station
Lake Talquin, FL
Tie No. 1
Florida Power Corporation
Substation
(Anson Church Road)
City of Tallahassee
Municipal Airport
Complex
Jefferson
County
Leon County
Boundary line for exclusive retail service pursuant
to agreement with Talquin Electric Cooperative.
The City of Tallahassee has a separate agreement with
Florida Power Corporation which contains certain electric
retail service provisions with respect to most of the
remainder of Leon County, FL.
Wakulla County
C.H. Corn Hydroelectric
Generating Station
Lake Talquin, FL
Tie No 5
FPC 69 kV
Florida Power Corporation
69 kV to
Apalachicola, FL
Florida Power Corporation
230 kV to Perry, FL.
Tie No. 2
Florida Power Corporation
69 kV at
St. Marks, FL
Tie No. 4
Florida Power Corporation
230 kV at
Arran, FL
FPC 69 kV
Florida Power Corporation
230 kV to
Port St. Joe, FL.
Sam O. Purdom
Generating Station
St. Marks, FL
LEGEND
Existing City of Tallahassee 115 kV
Existing City of Tallahassee 230 kV
Proposed City of Tallahassee 115 kV
Proposed City of Tallahassee 230 kV
Florida Power Corporation Facilities
Existing City of Tallahassee
Substation
Proposed City of Tallahassee
Substation
Existing City of Tallahassee
Switching Station
Generating Station
Florida Power Corporation Substation
Ten Year Site Plan
Page 50
4/1/99
Figure D2
Plate II-1
City of Tallahassee
Electric Transmission System
January 1, 1999
Revised: 2/8/99