Northwest Florida Water Management District

WATER SUPPLY PROJECTIONS 2005-2025

June 2003

Water Resources Assessment 2003-01

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT

GOVERNING BOARD

J. Russell Price, Chair
Tallahassee

Joyce Estes, Vice Chair
Eastpoint

NancyAnn M. Stuparich, Secretary/Treasurer
Pensacola

Richard P. Petermann Fort Walton Beach	L. E. McMullian, Jr. Sneads	Wayne Bodie DeFuniak Springs
Stephanie C. Bloyd Panama City Beach	Hulan S. Carter Chipley	Sharon T. Gaskin Wewahitchka

Douglas E. Barr, Executive Director

For additional information, write or call:

Northwest Florida Water Management District
81 Water Management Drive
Havana, Florida 32333
(850) 539-5999; Suncom 793-5999
FAX # (850) 539-2777

TABLE OF CONTENTS

Introduction

Introduction

This document provides a five-year update to the water supply demand projections that were prepared for the District's 1998 *District Water Supply Assessment* (Ryan *et al.*1998). The new projections have been extended to the year 2025 to assist in the determination whether additional regional supply planning is necessary. According to §373.0361, Florida Statutes, a reevaluation of the determination that initiation of regional water supply planning is not needed for specific regional water supply planning regions should occur at least every five years. This determination is made by the Governing Board, which may also initiate development of a regional water supply plan if it determines one is needed. As part of this revaluation process, it is helpful to update the water supply demand projections.

The updated projections indicate that water use in the District will increase 42 percent during the 2000–2025 planning timeframe, or an additional 132 million gallons per day (Mgal/d) (Table A). This increase is largely attributable to the 36 percent population growth projected to occur over this period (Table B) and increasing water demands of seasonal residents. Based on an updated total public supply population figure of 1,013,343 and the pumping records of 96 utilities, the District's 2000 average Public Supply per capita water use is 164 gallons per day (gal/d) (Table C). When, adjusted for drought conditions in 2000 and seasonal (non-resident) populations, based on data supplied by local agencies (e.g. Chambers of Commerce), the average per capita water use was estimated at 127 gal/d.

Table A. NWFWMD Total Water Use Observed (2000) and Projected (2025)

Water Use Category	*2000 Water Use Mgal/d*	*Percent of Total*	*2025 Water Use Mgal/d*	*Percent of Total*	*2000-2025 Increase Mgal/d*	*Percent Increase*
Public Supply	166.16	53.3%	255.01	57.5%	88.85	53.5%
Domestic SS/Small Public	21.63	6.9%	28.86	6.5%	7.23	33.4%
Commercial-Industrial SS	76.28	24.5%	99.10	22.4%	22.82	29.9%
Recreational Irrigation SS	12.06	3.9%	16.40	3.7%	4.34	36.0%
Agricultural Irrigation	30.10	9.7%	36.55	8.2%	6.45	21.4%
Power Generation	5.65	1.8%	7.42	1.7%	1.77	31.3%
Total	**311.88**	**100%**	**443.34**	**100%**	**131.46**	**42.2%**

Table B. NWFWMD Population Projections by Water Supply Planning Region

Planning Region	*2000 Population*	*Percent of Total*	*2025 Population*	*Percent of Total*	*Population Increase*	*Percent Increase*
I	294,410	24%	352,700	21%	58,290	20%
II	328,841	27%	508,600	31%	179,759	55%
III	148,217	12%	196,600	12%	48,383	33%
IV	106,330	9%	132,700	8%	26,370	25%
V	23,268	2%	28,900	2%	5,632	24%
VI	45,087	4%	50,600	3%	5,513	12%
VII	275,217	22%	390,700	23%	115,483	42%
Total	**1,221,370**	**100%**	**1,660,800**	**100%**	**439,430**	**36%**

Table C. NWFWMD Water Supply Planning Region Summary by County

	Total Average Water Use (Mgal/d)		*2000 Public Supply Per Capita (gal/d)*	*Primary Water Source*
Region I	*2000*	*2025*		
Escambia	83.93	112.34	156	Sand-and-Gravel Aquifer
Region II				
Santa Rosa	22.80	39.88	132	Floridan/Sand-and-Gravel aquifers
Okaloosa	32.56	50.31	145	
Walton	8.89	17.11	188	
Region III				
Bay	55.71	79.51	206	Deer Point Lake
Region IV				
Holmes	2.99	3.89	235	Floridan Aquifer
Washington	4.18	5.42	153	
Jackson	20.74	23.30	150	
Calhoun	4.99	7.49	178	
Liberty	1.62	2.03	141	
Region V				
Gulf	3.47	3.19	142	Floridan Aquifer/St. Joe Canal
Franklin	2.08	2.86	207	
Region VI				
Gadsden	13.68	15.28	157	Floridan Aquifer
Region VII				
Leon	43.41	64.93	179	Floridan Aquifer
Wakulla	5.22	8.72	235	
Jefferson	5.61	7.08	143	
Total	**311.88**	**443.34**	**164 (Avg.)***	

*Calculated by dividing year 2000 Public Supply water use by the population served.

Projection Methods

Water demand projections were prepared using a number of data sources including the US Geological Survey (USGS), the University of Florida Institute of Food and Agricultural Sciences (IFAS) and the Bureau of Economic and Business Research (BEBR). For Public Supply, Commercial-Industrial Self-Supply, Recreational Irrigation, Agricultural Irrigation and Power Generation water use categories, the methodologies employed in *Water Use Trends and Demand Projections in the Northwest Florida Water Management District* (US Geological Survey, Open-File Report 98-269) were used in this update. However, based on the USGS 2000 Water-use Data, one alteration in the above methodology involved employing the new statewide Domestic Self-Supply per capita average of 106 gal/d -- coupled with updated population projections -- to obtain water use projections for this water use category.

It should be noted that while the projected average daily water demands found in this document are based on currently available data, these projections may be substantially different from actual future water use due to such factors as dramatic shifts in growth rates, industry changes in the Commercial/Industrial sector (plant openings or closings; process improvements, etc.), alteration of water rate structures, changing use composition within utilities, and various other socioeconomic factors.

The per capita water use rates identified here are also particularly sensitive to variations within the customer base of water supply utilities. For example, since the per capita rates are derived by dividing total water use by the permanent population of a utility or county, the per capita rates can be inflated when a large component of a utility's customers are seasonal residents (and thus, not factored into the equation). This is quite typical for tourist and retirement area destinations as these areas often have an "equivalent" population of non-residents that exceeds their permanent population. High per capita rates are also common in small water systems found in rural areas; this difference is likely due to high residential water use rates associated with irrigation for household vegetable gardens, in combination with low water cost and supply system leaks and inefficiencies.

Effects of Drought on 2005-2025 Water Projections

The public supply water use projections contained in this document were developed through a method that relies heavily upon observed water use figures reported by water utilities. From 1998 through 2000 (and beyond), northwest Florida experienced severe drought conditions that appear to have temporarily affected water use in a measurable manner. Close examination of utility water usage has revealed that per capita rates of water consumption increased an average of nine percent District-wide during the drought years, apparently for reasons that can only be attributable to the drought conditions. The primary reason that public supply water consumption escalates in northwest Florida during drought is increased outdoor use; mostly for additional landscape irrigation needed to maintain lawns and gardens on residential and commercial sites (see Appendix A).

The increased water use during these years inflated the three most recent data points that were used to make the District's public supply water use projections. This results in long-term water supply demand projections that unavoidably included the effects of drought in the forecast rather than forecasting "average" water use conditions. The estimated drought-related public supply increase from county to county ranged from minimal to severe, with a District-wide increase of 13 Mgal/d. Additional water use data collected in the near term future that reflects more "average" or non-drought conditions will be needed to confirm these results. Thus, it is important to recognize that the projections and per capita water use estimates contained herein may be an over-estimate of expected average water demands in the future and will likely be adjusted in future updates.

REGION I: ESCAMBIA COUNTY

Overview

Water Supply Planning Region I consists of Escambia County. The region's population is concentrated in the southern portion of the county along the Perdido, Escambia and Pensacola bays, and the Gulf of Mexico. The county is fairly rural, with the majority of people residing in unincorporated areas. Although forestry is an important component of the regional economy, major employment sectors are services and retail trade with a significant amount of employment attributed to the Pensacola Naval Air Station.

Escambia County is the most industrialized area in the District and Commercial-Industrial is a major water use category. Both surface and ground water sources are used, with ground water supplying the majority of all fresh water pumped in the region. Surface water is used primarily for Power Generation and Commercial-Industrial Self-supply. Because the Floridan Aquifer is brackish and highly mineralized in Escambia County, nearly all potable ground water is withdrawn from the highly productive Sand-and-Gravel Aquifer. The local rivers and bays in the region are the receiving waters of a large watershed area that extends well outside the region into Alabama and northwest Florida. The region's estuarine water resources are almost entirely dependent upon surface water, with only minor contributions from ground water.

Region I Snapshot		
	2000	*2025*
Population	294,410	352,700
Water Use (Mgal/d)	83.93	112.34
Primary source	Sand-and-Gravel Aquifer	

The coastal area of Escambia County was included in the District's 1982 Regional Water Supply Development Plan, and Escambia County is part of both the District's Ambient Background and Very Intensive Study Area (VISA) ground water monitoring networks.

Projected Regional Water Use Through 2025

Average regional water use is projected to increase 34 percent from 83.93 Mgal/d in 2000 to 112.34 Mgal/d in 2025. Public Supply will remain the largest water use category in the region through 2025, increasing from 43.56 Mgal/d in 2000 to 57.21 Mgal/d in 2025, approximately 31 percent (Table 1.1).

Public Supply

Public Supply is the largest water use category in the region at 51 percent. In 2000, Public Supply consumed 43.56 Mgal/d; this amount is projected to increase 31 percent to 57.21 Mgal/d by 2025. Escambia County Utilities Authority is by far the region's largest public supplier, withdrawing 37.76 Mgal/d in 2000 (Table 1.1).

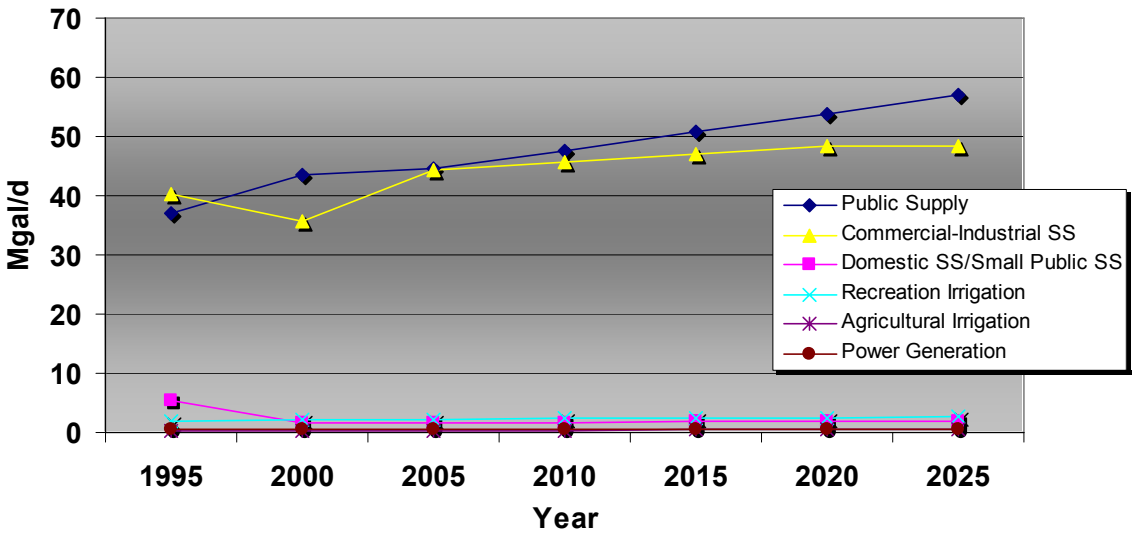
Domestic Self-Supply and Small Public Supply Systems

In 2000, Domestic Self-Supply and Small Public Supply Systems used an average of 1.60 Mgal/d or two percent of the total amount of water consumed in Region I. This amount is projected to increase to 1.92 Mgal/d in 2025.

Commercial-Industrial Self-Supplied

Commercial-Industrial water demands account for the second largest water use in the region. This category is projected to increase 39 percent from 35.77 Mgal/d in 2000 to 49.58 Mgal/d in 2025 (Figure 1.1).

Figure 1.1
Region I: Projected Water Demand 2005-2025



Recreational Irrigation

Recreational Irrigation covers water used for golf course irrigation and accounts for roughly three percent of the region's total water use. Water use in this category is projected to increase from 2.17 Mgal/d in 2000 to 2.62 Mgal/d in 2025 (21 percent).

Agricultural Irrigation

Based on data supplied by the University of Florida IFAS, Agricultural Irrigation in 2000 was modeled at 0.37 Mgal/d.; Agricultural Irrigation in Region I is anticipated to increase to 0.48 Mgal/d in 2025. Even with the projected increase, Agricultural Irrigation will still account for less than one percent of total regional water use in 2025.

Power Generation

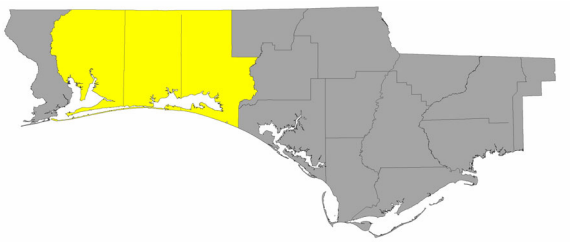
Approximately 202 Mgal/d were withdrawn for Power Generation in 2000. For planning purposes, however, water is considered consumed when it is withdrawn and either not returned or not returned in the same location where it was withdrawn. Many power plants utilize surface water for once-through cooling, returning nearly 100 percent of the water to the point of withdrawal. Water consumption in the Power Generation category is expected to increase by approximately 15 percent from 0.46 Mgal/d in 2000 to 0.53 Mgal/d in 2025.

Table 1.1 Escambia County Water Demand and Population Projections (2005 - 2025)							
Average Daily Flow (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Water Use Category							
Public Supply	36.94	43.56	44.52	47.59	50.72	53.93	57.21
Domestic SS/Small Public SS	5.37	1.60	1.66	1.73	1.79	1.86	1.92
Commercial-Industrial SS	40.28	35.77	44.42	45.75	47.12	48.26	49.58
Recreation Irrigation	1.81	2.17	2.26	2.35	2.44	2.53	2.62
Agricultural Irrigation	0.14	0.37	0.37	0.39	0.41	0.46	0.48
Power Generation	0.45	0.46	0.48	0.50	0.51	0.52	0.53
Total	**84.99**	**83.93**	**93.71**	**98.31**	**102.99**	**107.56**	**112.34**
Population Estimates							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Total population (BEBR)	282,742	294,410	305,500	317,300	329,000	341,100	352,700
Pop. Srv. Public Supply		279,294	289,815	301,009	312,108	323,587	334,591
Pop. Srv. Domestic SS		15,116	15,685	16,291	16,892	17,513	18,109
Average Daily Flow of Large Public Supply Systems (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Bratt-Davisville	0.20	0.25	0.25	0.25	0.25	0.25	0.25
Central Water Works	0.26	0.31	0.32	0.34	0.37	0.40	0.42
Century Utilities	0.51	0.48	0.57	0.62	0.65	0.68	0.69
Cottage Hill Utilities	0.33	0.37	0.39	0.41	0.44	0.48	0.51
Escambia County Utilities*	32.11	37.76	38.50	41.06	43.61	46.17	48.73
Farm Hill Utilities	0.29	0.38	0.49	0.60	0.73	0.89	1.10
Gonzalez Utilities	0.39	0.51	0.64	0.78	0.96	1.18	1.46
Molino Utilities	0.58	0.73	0.89	1.04	1.19	1.34	1.49
Peoples Water System	2.08	2.60	2.30	2.32	2.35	2.37	2.39
Walnut Hill Water Works	0.19	0.17	0.17	0.17	0.17	0.17	0.17
Total	**36.94**	**43.56**	**44.52**	**47.59**	**50.72**	**53.93**	**57.21**

*Sells water to Pensacola Beach, and the U.S. Navy (Escambia County) and Gulf Breeze and South Santa Rosa (Santa Rosa County).

REGION II: SANTA ROSA, OKALOOSA, WALTON COUNTIES

Overview



Water Supply Planning Region II is comprised of Okaloosa, Santa Rosa, and Walton counties. This region is predominantly rural with approximately 73 percent of the population residing in unincorporated areas. The greatest population concentrations are in the coastal area, which also has the region's highest growth rate. Several large public landholdings in Region II include Eglin Air Force Base (AFB), including Hurlburt AFB and the Eglin AFB reservation, which covers approximately 464,000 acres in the region's center, and the Blackwater State Forest, which covers approximately 189,370 acres in northern Okaloosa and Santa Rosa counties. The State of Florida also owns approximately 20,000 acres in southern Walton County, including the Point Washington State Forest, several state parks and recreation areas, and a state preserve. Additionally, the NWFWMD owns and manages roughly 74,000 acres within Region II in the Escambia River, Garcon Point, Yellow River, Live Oak Point and Choctawhatchee River Water Management Areas.

Retail trade and service are the major employment sectors in the region. The local importance of these employment sectors reflects the region's substantial seasonal population and tourism's notable role in the economy. In addition, a large portion of Okaloosa and Walton counties' employment can be attributed, either directly or indirectly, to Eglin AFB. Forestry is also a significant component of the economies of Santa Rosa and Walton counties.

Public Supply is the largest water use category in the region. All three counties rely primarily upon ground water from the Sand-and-Gravel and Upper Floridan aquifers. Surface water is not used to any significant degree in the region. In the coastal area, the saltwater interface limits ground water withdrawals from the Surficial Aquifer system, including the Sand-and-Gravel Aquifer.

Region II Snapshot		
	2000	*2025*
Population	328,842	508,600
Water Use (Mgal/d)	64.25	107.30
Primary source	Floridan Aquifer	

In the early 1980s, the District developed the "Regional Water Supply Development Plan" (RWSDP) for the coastal areas of northwest Florida in response to concerns of increasing water demands and dwindling supplies in coastal areas. The coastal (southern) areas of Okaloosa, Walton, and Santa Rosa counties were identified as the highest priority for needs and sources planning and the development of alternative supplies. As a result of this assessment, the southern portion of the region was designated in 1989 as a Water Resource Caution Area (WRCA) by the District pursuant to Chapter 40A-2, F.A.C. The WRCA designation subjects all non-exempt withdrawals to more rigorous scrutiny to ensure that the proposed withdrawal does not result in harm to the water resources. Permittees within a WRCA also have increased water use reporting requirements, must implement water conservation measures, and must improve water use efficiencies. They are also required to perform an evaluation of the technical, environmental, and economic feasibility of providing reclaimed water for reuse. In addition, the WRCA designation in Region II prohibits any new or expanded use of the Floridan Aquifer for nonpotable purposes. Existing nonpotable users of the Floridan Aquifer System are required to explore alternative sources.

In response to documented water supply issues in Region II, the District developed a Regional Water Supply Plan (RWSP) in 2000. Implementation of the RWSP is ongoing with current efforts focused on the development of aquifer models that will assist with resource management programs. Other regional water supply planning activities include:

- Development of inland ground water sources
- Conservation
- Reclaimed Water (Reuse)
- Desalination
- Surface Water
- Aquifer Storage and Recovery

Projected Regional Water Use Through 2025

Average regional water use is projected to increase from 64.25 Mgal/d in 2000 to 107.30 Mgal/d in 2025, an increase of approximately 67 percent (Table 2.1). Public Supply will remain the region's largest water use, projected to increase 56 percent from 49.97 Mgal/d in 2000 to 77.70 Mgal/d in 2025. Okaloosa County had the region's largest water demands in 2000, 32.56 Mgal/d (Table 2.2).

Table 2.1 Region II Observed (2000) & Projected (2005-2025)

Average Daily Flow (Mgal/d)

Water Use Category	2000	2005	2010	2015	2020	2025
Public Supply	44.97	48.87	55.09	61.84	69.38	77.70
Domestic SS/Small Public SS	2.25	2.48	2.72	2.95	3.19	3.43
Commercial-Industrial SS	10.65	13.48	14.79	15.46	16.14	16.82
Recreational Irrigation	5.79	6.24	6.78	7.32	7.86	8.49
Agricultural Irrigation	0.59	0.62	0.69	0.73	0.81	0.86
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00
Total	**64.25**	**71.69**	**80.07**	**88.30**	**97.38**	**107.30**

Table 2.2 Region II 2000 Water Use by County (Mgal/d)

	Santa Rosa	Okaloosa	Walton	Total
Public Supply	14.62	23.05	7.30	44.97
Domestic SS/Small Public SS	0.81	1.27	0.17	2.25
Commercial-Industrial SS	5.58	4.15	0.92	10.65
Recreational Irrigation	1.45	3.89	0.45	5.79
Agricultural Irrigation	0.34	0.20	0.05	0.59
Power Generation	0.00	0.00	0.00	0.00
Total	**22.80**	**32.56**	**8.89**	**64.25**

Public Supply

Public Supply is the largest water use category in Region II, accounting for an average of 64.25 Mgal/d (70 percent) of total regional water use in 2000. Okaloosa County Water and Sewer (OCWS) is the single largest public water supplier in the region, with an average withdrawal of 7.72 Mgal/d in 2000 (Table 2.4 below). The majority of Public Supply water use is within the region's coastal area, which is a popular tourist destination, and is more heavily populated than the region's northern, inland areas. Public Supply will continue to be the predominant water use category within each county (Table 2.2). Projections indicate Public Supply in Region II will increase 56 percent to 77.70 Mgal/d by 2025.

Domestic Self-Supply and Small Public Supply Systems

In 2000, Domestic Self-Supply and Small Public Supply Systems water use accounted for three percent (2.25 Mgal/d) of the total water use within Region II. This amount is projected to increase 52 percent to 3.43 Mgal/d by 2025.

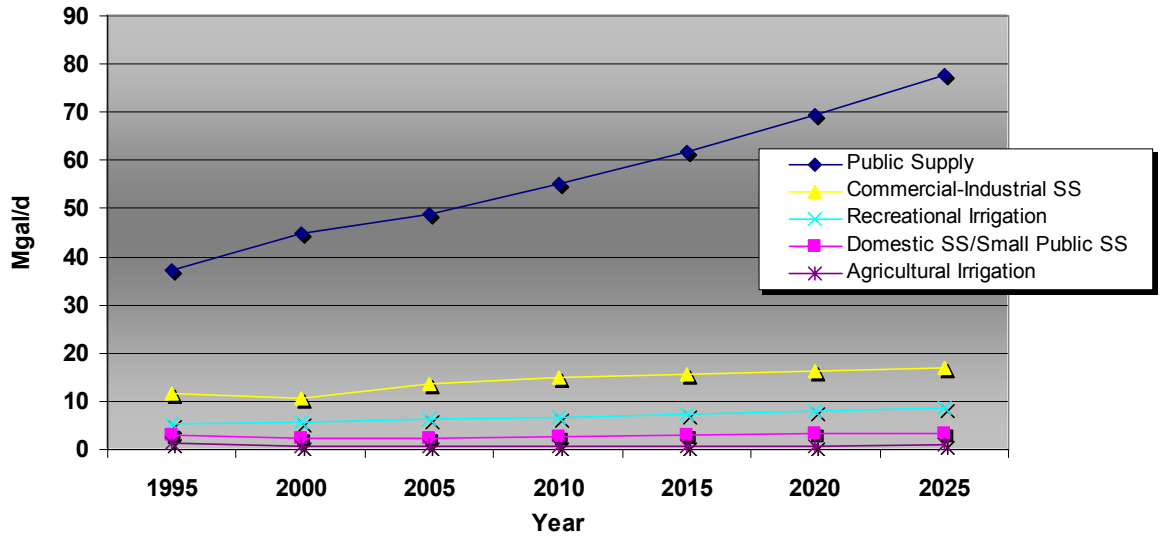
Commercial-Industrial Self-Supplied

Commercial-Industrial Self-Supplied water use accounted for an average of 10.65 Mgal/d or 17 percent of the region's total water use in 2000. The majority of this water, 5.58 Mgal/d, was used within Santa Rosa County (Table 2.2). Major Commercial-Industrial users in Region II include Eglin AFB in Okaloosa County, Air Products and Sterling Fibers (Cytec) in Santa Rosa County, and Purdue Farms (Showell) in Walton County. The Commercial-Industrial water use category is projected to increase 58 percent to 16.82 Mgal/d in 2025.

Recreational Irrigation

Recreational Irrigation water use accounted for nine percent (5.79 Mgal/d) of the region's total water use in 2000. The preponderance of this water was applied to golf courses in the region's southern portions. Since 1989, approximately 90 percent of the region's golf courses use treated wastewater effluent (reuse water) for all or part of their irrigation demands. Recreational Irrigation is projected to increase 47 percent to 8.49 Mgal/d by 2025 (Figure 2.1).

Figure 2.1
Region II: Projected Water Demand 2005-2025



Agricultural Irrigation

Based on data supplied by the University of Florida IFAS, Agricultural Irrigation in 2000 was modeled at 0.59 Mgal/d.; the majority of which took place in Okaloosa County (0.34 Mgal/d). This accounted for approximately one percent of the total average regional water use, with pasture hay (alfalfa/tame) being the region's primary user of non-reuse water for Agricultural Irrigation. The model indicates that Agricultural Irrigation will remain a small component of regional water use, 0.86 Mgal/d in 2025.

Power Generation

No water used for Power Generation within Region II.

Projected Water Use by County Through 2025

Tables 2.3, 2.4, and 2.5 illustrate projected total average water use by county through 2025. Projections show Santa Rosa County's total water use will increase by approximately 75 percent, from 22.80 Mgal/d in 2000 to 39.88 Mgal/d in 2025 (Table 2.3). Public Supply is Santa Rosa County's largest water use category, accounting for 14.62 Mgal/d in 2000 and is projected to nearly double (26.85 Mgal/d) in 2025. Okaloosa County accounts for the majority of water use in Region II, with a total average demand of 32.56 Mgal/d in 2000 projected to increase 55 percent to 50.31 Mgal/d in 2025 (Table 2.4). Water demand in Walton County, while accounting for only a small percentage of the region's total, is projected to nearly double between 2000 (8.89 Mgal/d) and 2025 (17.11 Mgal/d) (Table 2.5).

Table 2.3 Santa Rosa County Water Demand & Population Projections (2005-2025)

Average Daily Flow (Mgal/d)

Water Use Category	1995	2000	2005	2010	2015	2020	2025
Public Supply	11.74	14.62	16.45	18.81	21.24	23.91	26.85
Domestic SS/Small Public SS	0.76	0.81	0.92	1.03	1.15	1.27	1.39
Commercial-Industrial SS	6.20	5.58	6.70	7.20	7.70	8.20	8.70
Recreational Irrigation	1.54	1.45	1.63	1.81	1.99	2.17	2.44
Agricultural Irrigation	0.21	0.34	0.36	0.40	0.43	0.47	0.50
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**20.45**	**22.80**	**26.06**	**29.25**	**32.51**	**36.02**	**39.88**

Large Public Supply System Water Use

	1995	2000	2005	2010	2015	2020	2025
Total population (BEBR)	96,091	117,743	134,100	150,500	167,300	184,600	201,600
Pop. Srv. Public Supply		110,108	125,404	140,741	156,451	172,630	188,527
Pop. Srv. Domestic SS		7,635	8,696	9,759	10,849	11,970	13,073

Average Daily Flow of Large Public Supply Systems (Mgal/d)

	1995	2000	2005	2010	2015	2020	2025
Gulf Breeze†	0.79	1.07	1.36	1.59	1.81	2.04	2.27
Holly Navarre	1.48	2.02	2.33	2.50	2.58	2.62	2.64
Midway*	0.71	1.40	1.40	1.86	2.46	3.27	4.33
South Santa Rosa†	0.79	0.81	0.90	0.94	0.98	1.02	1.07
Navarre Beach**	0.38	0.28	0.30	0.30	0.30	0.30	0.30
Bagdad/Garron	0.39	0.49	0.60	0.74	0.90	1.08	1.29
Berrydale	0.21	0.19	0.23	0.26	0.29	0.33	0.37
Chumuckla	0.27	0.27	0.34	0.41	0.49	0.58	0.69
East Milton	0.77	1.10	1.42	1.73	2.04	2.35	2.63
Jay	0.28	0.21	0.27	0.27	0.28	0.29	0.29
Milton	1.98	2.15	2.34	2.56	2.78	3.02	3.27
Moore Creek/Mt. Carmel	0.31	0.35	0.35	0.39	0.42	0.46	0.50
Pace	2.72	3.39	3.65	4.17	4.69	5.20	5.72
Point Baker	0.66	0.89	0.96	1.09	1.22	1.35	1.48
Total	**11.74**	**14.62**	**16.45**	**18.81**	**21.24**	**23.91**	**26.85**

†Purchases water from Escambia County. *Sells water to Navarre Beach and South Santa Rosa. **Due to faulty meter, projected data estimated.

Table 2.4 Okaloosa County Water Demand & Population Projections (2005-2025)							
Average Daily Flow (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Water Use Category							
Public Supply	21.20	23.05	24.68	26.94	29.63	32.84	36.51
Domestic SS/Small Public SS	1.86	1.27	1.37	1.46	1.55	1.65	1.74
Commercial-Industrial SS	3.97	4.15	5.18	5.99	6.16	6.34	6.52
Recreational Irrigation	2.62	3.89	4.07	4.43	4.70	4.97	5.24
Agricultural Irrigation	1.23	0.20	0.21	0.24	0.25	0.28	0.30
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**30.88**	**32.56**	**35.51**	**39.06**	**42.29**	**46.08**	**50.31**
Population Estimates							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Total population (BEBR)	162,707	170,498	183,300	195,900	208,500	221,300	233,700
Pop. Srv. Public Supply		158,504	170,405	182,119	193,833	205,732	217,260
Pop. Srv. Domestic SS		11,994	12,895	13,781	14,667	15,568	16,440
Average Daily Flow of Large Public Supply Systems (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Destin	2.83	3.40	3.75	4.29	4.90	5.61	6.41
Ft. Walton Beach	3.29	3.22	3.13	3.21	3.42	3.76	4.22
Niceville	2.80	2.95	3.38	3.73	4.08	4.43	4.78
Seminole Community	0.11	0.10	0.10	0.10	0.10	0.10	0.10
Valparaiso	0.62	0.71	0.76	0.82	0.89	0.95	1.02
Mary Esther	0.77	0.64	0.69	0.68	0.67	0.66	0.65
OCWS Main Water System	5.19	5.35	5.31	5.38	5.53	5.82	6.39
OCWS Bluewater-Raintree	1.03	1.13	1.27	1.47	1.72	2.02	2.16
OCWS West	0.56	0.64	0.87	1.03	1.23	1.45	1.72
Auburn	1.11	1.24	1.43	1.67	1.95	2.27	2.66
Baker	0.16	0.22	0.25	0.31	0.37	0.45	0.54
Crestview	2.04	2.48	2.65	2.98	3.32	3.66	3.99
Holt	0.09	0.11	0.14	0.18	0.24	0.31	0.40
OCWS Mid-County	0.33	0.59	0.63	0.74	0.84	0.95	1.05
Milligan	0.14	0.14	0.17	0.19	0.20	0.22	0.23
Laural Hill	0.13	0.13	0.15	0.16	0.17	0.18	0.19
Total	**21.20**	**23.05**	**24.68**	**26.94**	**29.63**	**32.84**	**36.51**

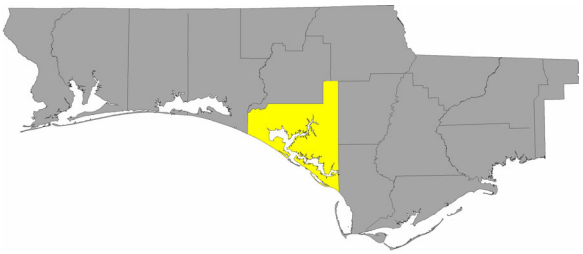
Table 2.5 Walton County Water Demand and Population Projections (2005-2025)							
Average Daily Flow (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Water Use Category							
Public Supply	4.33	7.30	7.74	9.34	10.97	12.63	14.34
Domestic SS/Small Public SS	0.52	0.17	0.20	0.22	0.25	0.28	0.30
Commercial-Industrial SS	1.60	0.92	1.60	1.60	1.60	1.60	1.60
Recreational Irrigation	1.27	0.45	0.54	0.54	0.63	0.72	0.81
Agricultural Irrigation	0.05	0.05	0.05	0.05	0.05	0.06	0.06
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**7.77**	**8.89**	**10.13**	**11.75**	**13.50**	**15.29**	**17.11**
Population Estimates							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Total population (BEBR)	33,415	40,601	47,400	53,700	60,200	66,800	73,300
Pop. Srv. Public Supply		39,024	45,559	51,614	57,862	64,205	70,453
Pop. Srv. Domestic SS		1,577	1,841	2,086	2,338	2,595	2,847
Average Daily Flow of Large Public Supply Systems (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Freeport	0.29	0.42	0.48	0.58	0.68	0.78	0.89
Inlet Beach	0.06	0.10	0.13	0.17	0.24	0.32	0.41
Regional Utilities*	0.72	2.31	2.82	3.76	4.70	5.64	6.58
North Bay Water Co.**	0.12	0.14	0.15	0.16	0.17	0.18	0.19
South Walton	1.80	2.42	2.55	2.92	3.28	3.64	4.01
Argyle	0.06	0.09	0.08	0.08	0.08	0.08	0.09
DeFuniak Springs	1.00	1.46	1.19	1.28	1.38	1.47	1.56
Mossy Head	0.08	0.16	0.16	0.21	0.26	0.34	0.43
Paxton	0.20	0.20	0.18	0.18	0.18	0.18	0.18
Total	**4.33**	**7.30**	**7.74**	**9.34**	**10.97**	**12.63**	**14.34**

*Expanded service area, purchases water from Freeport. **Formerly Smith Water Co.

REGION III: BAY COUNTY

Overview

Water Supply Planning Region III consists of Bay County. The region's population is concentrated and fastest growing along the coast of the Gulf of Mexico in the Panama City Beach area. Tyndall Air Force Base, tourism, and forestry are important parts of the regional economy, with the largest employment sectors being services and retail trade.



Deer Point Lake Reservoir, a surface water source, supplies the majority of fresh water used within the region, most of which is consumed for Commercial Industrial Self-Supply and Public Supply. The reservoir supplies potable water to over 80 percent of the region's population. Ground water pumping is being scaled back along the coast and moved to surface water withdrawals. The District currently monitors ground water in the Panama City area through its Very Intensive Study Area (VISA) network.

Region III Snapshot		
	2000	*2025*
Population	148,217	196,600
Water Use (Mgal/d)	55.71	79.51
Primary source	Deer Point Lake Reservoir	

Deer Point Lake Reservoir discharges into the North Bay portion of the St. Andrew Bay estuarine system. As is the case for all of the large estuaries in northwest Florida, the ecological health of the St. Andrew Bay system is related to continued delivery of clean, fresh water.

In recent years, the District has been active in water resource development and protection in this region, purchasing approximately 8,180 acres along the Econfina Creek corridor that are critical to water quality. Since December of 1997, the District has purchased approximately 31,400 acres in the Sand Hill Lakes area that provides vital water recharge protection for the Deer Point Lake Reservoir. With an average recharge rate of approximately 30 inches a year, this is one of the highest recharge areas in the District.

Projected Regional Water Use Through 2025

Projections indicate that average total regional water use will increase 43 percent from 55.71 Mgal/d in 2000 to 79.51 Mgal/d in 2025 (Table 3.1). Public Supply will remain the region's largest (48 percent) and fastest growing water use category through 2025 (Figure 3.1).

Public Supply

In 2000, an average of 26.64 Mgal/d was withdrawn for Public Supply in Bay County. Of this amount, approximately 20.00 Mgal/d were derived from surface water sources (Deer Point Lake Reservoir) and 6.00 Mgal/d from the Floridan Aquifer. Public Supply surface water withdrawals are projected to reach 42.86 Mgal/d by 2025 as Panama City Beach, Lynn Haven and Mexico Beach utilities cease ground water pumping activities and shift to purchasing potable water from Bay County Public Utility. Overall, Public Supply is projected to nearly double, reaching 46.14 Mgal/d by 2025 (Table 3.1).

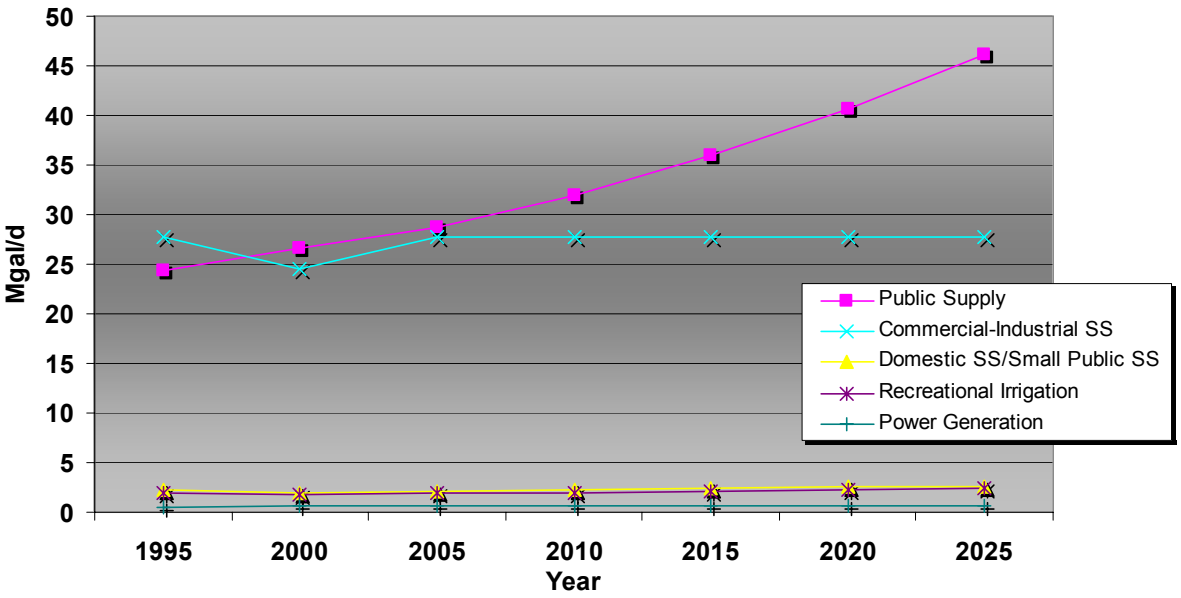
Domestic Self-Supply and Small Public Supply Systems

Domestic Self-Supply and Small Public Supply Systems accounted for approximately four percent (2.01 Mgal/d) of the region's total average water use in 2000. In 2025, this category is projected to reach 2.66 Mgal/d, an increase of 32 percent.

Commercial-Industrial Self-Supplied

Commercial-Industrial Self-Supplied water use accounted for approximately 44 percent (24.58 Mgal/d) of total average regional water use in 2000. Some of the largest water users in this category are Stone Container Corporation, Arizona Chemical Division of International Paper, and Tyndall Air Force Base. Deer Point Lake Reservoir is the source for the majority of this water. Water use in this category is projected to remain steady though 2025 at 27.69 Mgal/d (Figure 3.1).

Figure 3.1
Region III: Projected Water Demand (2005-2025)



Recreational Irrigation

Recreational Irrigation water use accounted for three percent of the region's total water use in 2000 (1.81 Mgal/d). Golf courses are the major users of water in this category, and this amount is expected to increase to 2.35 Mgal/d by 2025.

Agricultural Irrigation

Although there is some permitted Agricultural Irrigation in the region (less than 1 Mgal/d in 2000), the amount falls below the level set to be included in this assessment.

Power Generation

In 2000, Power Generation accounted for less than one percent of the region's total average water use. The region's only user of water for Power Generation is Gulf Power Company's Smith Power Plant. The Smith Power Plant withdrew approximately 265 Mgal/d in 2000. For planning purposes, however, water is considered consumed when it is withdrawn and either not returned or not returned in the same location where it was withdrawn. As the majority of the water withdrawn was used for once-through cooling and returned to North Bay, it is estimated that only 0.67 Mgal/d were actually consumed for Power Generation.

Table 3.1 Bay County Water Demand and Population Projections (2005-2025)

Average Daily Flow (Mgal/d)

Water Use Category	1995	2000	2005	2010	2015	2020	2025
Public Supply	24.32	26.64	28.69	32.00	35.93	40.60	46.14
Domestic SS/Small Public SS	2.24	2.01	2.13	2.26	2.40	2.53	2.66
Commercial-Industrial SS	27.69	24.58	27.69	27.69	27.69	27.69	27.69
Recreational Irrigation	1.90	1.81	1.90	1.99	2.17	2.26	2.35
Agricultural Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Power Generation	0.41	0.67	0.67	0.67	0.67	0.67	0.67
Total	**56.56**	**55.71**	**61.08**	**64.61**	**68.86**	**73.75**	**79.51**

Deer Point Lake Reservoir Average Daily Surface Water Withdrawals (Mgal/d)

	1995	2000	2005	2010	2015	2020	2025
Panama City Beach*	6.69	9.08	14.88	17.91	21.55	25.94	31.22
Bay Co. Public Utility	12.65	11.14	11.64	11.64	11.64	11.64	11.64
Commercial-Industrial SS	27.69	24.58	27.69	27.69	27.69	27.69	27.69
Total	**47.03**	**44.80**	**54.21**	**57.24**	**60.88**	**65.27**	**70.55**

Population Estimates

	1995	2000	2005	2010	2015	2020	2025
Total population (BEBR)	139,173	148,217	157,800	167,400	177,100	187,000	196,600
Pop. Srv. Public Supply		129,300	137,660	146,035	154,497	163,133	171,508
Pop. Srv. Domestic SS		18,917	20,140	21,365	22,603	23,867	25,092

Average Daily Flow of Large Public Supply Systems (Mgal/d)

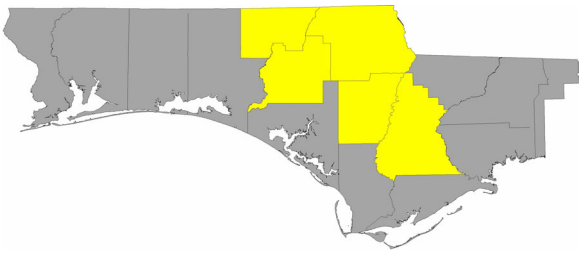
	1995	2000	2005	2010	2015	2020	2025
Panama City Beach	9.65	13.00	14.38	17.33	20.89	25.18	30.34
Bay Co. Public Utility**	12.65	11.14	11.64	11.64	11.64	11.64	11.64
Lynn Haven	1.55	1.92	2.06	2.31	2.57	2.82	3.05
Mexico Beach	0.42	0.51	0.50	0.58	0.66	0.76	0.88
Sandy Creek Utilities	0.05	0.07	0.11	0.14	0.17	0.20	0.23
Total	**24.32**	**26.64**	**28.69**	**32.00**	**35.93**	**40.60**	**46.14**

*Assumes ground water pumping will convert to surface water withdrawals by 2005, includes Mexico Beach.

**Supplies water to Callaway, Cedar Grove, Gulf Coast, Lynn Haven, Panama City, Panama City Beach, Parker, Springfield, Tyndall Air Force Base, and Arizona Chemicals (including Stone Container Corporation).

REGION IV: HOLMES, WASHINGTON, JACKSON, CALHOUN, LIBERTY COUNTIES

Overview



Water Supply Planning Region IV comprises Holmes, Washington, Jackson, Calhoun and Liberty counties. These are rural counties, with the majority of the population residing in unincorporated areas. Government, retail trade, service and manufacturing are the region's major employment sectors. The Florida Department of Health and Rehabilitative Services (HRS) and Florida Department of Transportation (FDOT) offices, as well as state correctional facilities account for a large portion of the region's government employment. A significant portion of land in the region is devoted to forestry and agriculture. Forestry is an important component of the regional economy, with lumber and wood products supplying most of the region's manufacturing jobs. Most of Liberty County lies within the Apalachicola National Forest.

Region IV Snapshot		
	2000	*2025*
Population	106,330	132,700
Water Use (Mgal/d)	34.52	42.14
Primary source	Floridan Aquifer	

Agricultural Irrigation and Domestic Self-Supply and Small Public Supply Systems account for the majority of freshwater use in Region IV. The small amount of surface water used is primarily for Agricultural Irrigation. Ground water withdrawn from the Floridan Aquifer supplies the vast majority of water used for Public Supply and for Domestic Self-Supply and Small Public Supply Systems.

Projected Regional Water Use Through 2025

Regional water use is projected to increase 22 percent from 34.52 Mgal/d in 2000, to 42.14 Mgal/d in 2025 (Table 4.1). Agricultural Irrigation will continue to be the region's largest water use category through 2025, the majority of which was consumed in Jackson County (Table 4.2).

Table 4.1 Region IV Observed (2000) & Projected (2005-2025)

Average Daily Flow (Mgal/d)

Water Use Category	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Public Supply	5.95	6.28	6.66	7.05	7.41	7.76
Domestic SS/Small Public SS	7.37	7.82	8.16	8.50	8.87	9.20
Commercial-Industrial SS	2.02	2.10	2.10	2.10	2.10	2.10
Recreational Irrigation	0.69	0.69	0.69	0.82	0.89	0.89
Agricultural Irrigation	17.67	16.39	17.70	18.45	20.64	21.38
Power Generation	0.82	0.82	0.82	0.82	0.82	0.82
Total	**34.52**	**34.10**	**36.13**	**37.74**	**40.73**	**42.14**

Table 4.2 Region IV 2000 Water Use by County (Mgal/d)						
	Holmes	*Washington*	*Jackson*	*Calhoun*	*Liberty*	**Total**
Public Supply	1.39	1.11	2.35	0.75	0.35	5.95
Domestic SS/Small Public SS	1.35	1.42	3.22	0.93	0.45	7.37
Commercial-Industrial SS	0.00	0.22	1.50	0.00	0.30	2.02
Recreational Irrigation	0.25	0.19	0.25	0.00	0.00	0.69
Agricultural Irrigation	0.00	1.24	13.12	3.31	0.00	17.67
Power Generation	0.00	0.00	0.30	0.00	0.52	0.82
Total	**2.99**	**4.18**	**20.74**	**4.99**	**1.62**	**34.52**

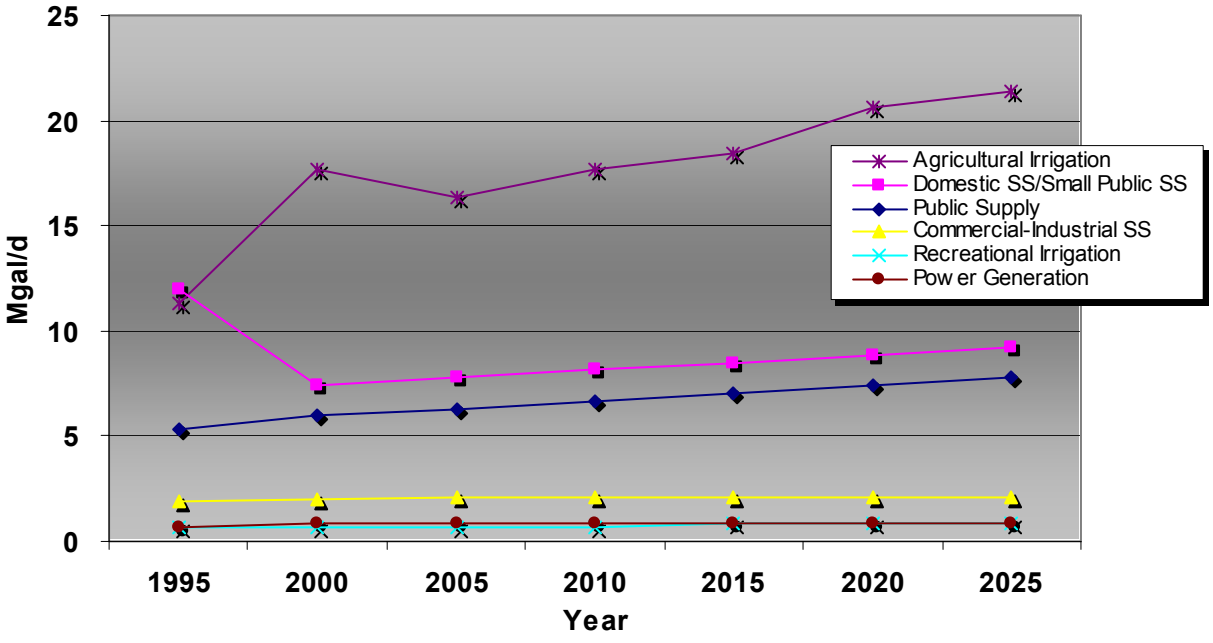
Public Supply

Public Supply water use within Region IV is relatively low due to the region's bucolic locale. In 2000, Public Supply accounted for 5.95 Mgal/d or 17 percent of total average regional water use. Marianna, in Jackson County, is the largest public supplier in the region pumping approximately 1.21 Mgal/d in 2000. Regional Public Supply projections indicate that water use will increase approximately 30 percent from 5.95 Mgal/d in 2000 to 7.76 Mgal/d in 2025 (Table 4.1). Jackson County will to continue to account for the majority of Public Supply water use in Region IV.

Domestic Self-Supply and Small Public Supply Systems

Domestic Self-Supply and Small Public Supply Systems constitute 21 percent of the region's total water use; will increase approximately 25 percent from 7.37 Mgal/d in 2000 to 9.20 Mgal/d in 2025 (Figure 4.1).

Figure 4.1



Commercial-Industrial Self-Supplied

In 2000, approximately six percent (2.02 Mgal/d) of the total average regional water use went to Commercial-Industrial. The largest water user in this category was the Florida Department of Corrections in Jackson County. Commercial-Industrial water use is anticipated to remain constant at roughly 2.10 Mgal/d through 2025 (Figure 4.1), with the Florida Department of Corrections expected to remain the major water user in this category.

Recreational Irrigation

In 2000, approximately 0.69 Mgal/d were used for Recreational Irrigation. The majority of this water was used to irrigate golf courses in Holmes, Jackson and Washington counties. Recreational Irrigation is anticipated to reach 0.82 Mgal/d by 2025.

Agricultural Irrigation

Agricultural Irrigation is the major water use category in Region IV, accounting for approximately 52 percent of total average regional water use in 2000 (17.67 Mgal/d), with the majority of Agricultural Irrigation occurring in Jackson County. A significant amount of the region's land is devoted to growing field crops, with peanuts, cotton, corn and soybeans being the dominant categories. Based on data supplied by the University of Florida IFAS, water use in this category is expected to increase 21 percent to 21.38 Mgal/d by 2025. Jackson County will continue to account for a majority of the region's Agricultural Irrigation water use.

Power Generation

In 2000, Power Generation accounted for two percent of the region's average water use. The Scholtz Power Plant in Jackson County withdrew an average of 90 Mgal/d, the majority of which was used for direct, once-through cooling and returned to the Apalachicola River. For planning purposes, water is considered consumed when it is withdrawn and either not returned or not returned in the same location where it was withdrawn. Of this amount, approximately 0.82 Mgal/d in 2000 was considered consumed in Region IV. Projections indicate that this amount will remain steady through 2025.

Projected Water Use by County Through 2025

Tables 4.3 through 4.7 illustrate projected total average water use by county through 2025. Projections show Holmes County's total water use will increase by approximately 30 percent, from 2.99 Mgal/d in 2000 to 3.89 Mgal/d in 2025 (Table 4.3). In Washington County, water use is roughly trisected among Public Supply, Domestic Self-Supply and Agricultural Irrigation (Table 4.4), overall water use is projected to increase 30 percent from 4.18 in 2000 to 5.42 in 2025. Jackson County accounts for the majority of water used in Region IV with Agricultural Irrigation the largest category by far. Water use in Jackson County is projected to increase 12 percent, from 20.74 Mgal/d in 2000 to 23.30 Mgal/d by 2025 (Table 4.5). Calhoun County (Table 4.6) is projected to increase from 4.99 Mgal/d in 2000 to 7.49 Mgal/d in 2025 (50 percent). In Liberty County (Table 4.7), water use is projected to increase 25 percent from 1.62 Mgal/d in 2000 to 2.03 Mgal/d in 2025.

Table 4.3 Holmes County Water Demand & Population Projections (2005-2025)

Average Daily Flow (Mgal/d)

Water Use Category	1995	2000	2005	2010	2015	2020	2025
Public Supply	1.18	1.39	1.45	1.57	1.69	1.80	1.90
Domestic SS/Small Public SS	3.52	1.35	1.41	1.47	1.53	1.60	1.65
Commercial-Industrial SS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Recreational Irrigation	0.25	0.25	0.25	0.25	0.32	0.32	0.32
Agricultural Irrigation	0.00	0.00	0.00	0.02	0.02	0.02	0.02
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**4.95**	**2.99**	**3.11**	**3.31**	**3.56**	**3.74**	**3.89**

Population Estimates

	1995	2000	2005	2010	2015	2020	2025
Total population (BEBR)	17,385	18,564	19,400	20,300	21,100	22,000	22,800
Pop. Sev. PS		5,860	6,124	6,408	6,661	6,945	7,197
Pop. Sev. Domestic SS		12,704	13,276	13,892	14,439	15,055	15,603

Average Daily Flow of Large Public Supply Systems (Mgal/d)

	1995	2000	2005	2010	2015	2020	2025
Bonifay	0.94	1.04	1.14	1.24	1.33	1.41	1.48
Ponce de Leon	0.07	0.08	0.08	0.08	0.09	0.09	0.09
Dogwood	0.05	0.11	0.08	0.10	0.12	0.14	0.17
Esto	0.03	0.06	0.05	0.05	0.05	0.05	0.05
Norma	0.05	0.06	0.06	0.06	0.06	0.07	0.07
Westville	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Total	**1.18**	**1.39**	**1.45**	**1.57**	**1.69**	**1.80**	**1.90**

Table 4.4 Washington County Water Demand & Population Projections (2005-2025)							
Average Daily Flow (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Water Use Category							
Public Supply	1.11	1.11	1.14	1.16	1.18	1.19	1.21
Domestic SS/Small Public SS	1.95	1.42	1.53	1.62	1.71	1.81	1.90
Commercial-Industrial SS	0.11	0.22	0.25	0.25	0.25	0.25	0.25
Recreational Irrigation	0.19	0.19	0.19	0.19	0.25	0.25	0.25
Agricultural Irrigation	0.89	1.24	1.32	1.45	1.56	1.70	1.82
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**4.25**	**4.18**	**4.43**	**4.67**	**4.95**	**5.20**	**5.42**
Population Estimates							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Total population (BEBR)	19,010	20,973	22,600	23,900	25,300	26,700	28,000
Pop. Srv. Public Supply		7,565	8,152	8,621	9,126	9,631	10,100
Pop. Srv. Domestic SS		13,408	14,448	15,279	16,174	17,069	17,900
Average Daily Flow of Large Public Supply Systems (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Florida Water Services	0.16	0.17	0.17	0.17	0.17	0.17	0.17
Caryville	0.08	0.09	0.09	0.09	0.10	0.10	0.10
Chipley	0.74	0.72	0.75	0.76	0.76	0.77	0.78
Vernon	0.13	0.13	0.13	0.14	0.15	0.15	0.16
Total	**1.11**	**1.11**	**1.14**	**1.16**	**1.18**	**1.19**	**1.21**

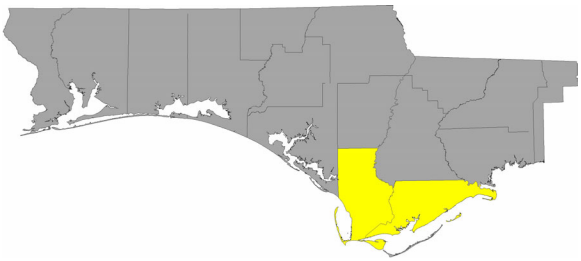
Table 4.5 Jackson County Water Demand & Population Projections (2005-2025)							
Average Daily Flow (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Water Use Category							
Public Supply	2.20	2.35	2.35	2.39	2.45	2.49	2.55
Domestic SS/Small Public SS	4.68	3.22	3.41	3.53	3.65	3.77	3.89
Commercial-Industrial SS	1.55	1.50	1.55	1.55	1.55	1.55	1.55
Recreational Irrigation	0.25	0.25	0.25	0.25	0.25	0.32	0.32
Agricultural Irrigation	8.30	13.12	11.54	12.37	12.72	14.38	14.70
Power Generation	0.29	0.30	0.30	0.30	0.30	0.30	0.30
Total	**17.27**	**20.74**	**19.40**	**20.39**	**20.92**	**22.81**	**23.30**
Population Estimates							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Total population (BEBR)	46,577	46,755	49,500	51,200	52,900	54,700	56,400
Pop. Srv. Public Supply		16,348	17,308	17,902	18,497	19,126	19,720
Pop. Srv. Domestic SS		30,407	32,192	33,298	34,403	35,574	36,680
Average Daily Flow of Large Public Supply Systems (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Cottondale	0.15	0.14	0.16	0.16	0.17	0.18	0.19
Graceville	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Grand Ridge	0.09	0.15	0.13	0.14	0.16	0.18	0.20
Greenwood	0.08	0.11	0.10	0.11	0.11	0.11	0.12
Malone	0.07	0.09	0.11	0.12	0.14	0.15	0.17
Marianna	1.18	1.21	1.22	1.23	1.24	1.24	1.24
Sneads	0.25	0.27	0.25	0.25	0.25	0.25	0.25
Total	**2.20**	**2.35**	**2.35**	**2.39**	**2.45**	**2.49**	**2.55**

Table 4.6 Calhoun County Water Demand & Population Projections (2005-2025)							
Average Daily Flow (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Water Use Category							
Public Supply	0.59	0.75	0.93	1.08	1.22	1.37	1.49
Domestic SS/Small Public SS	1.15	0.93	0.98	1.02	1.07	1.12	1.16
Commercial-Industrial SS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Recreational Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agricultural Irrigation	2.09	3.31	3.53	3.86	4.15	4.54	4.85
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**3.83**	**4.99**	**5.44**	**5.96**	**6.44**	**7.03**	**7.49**
Population Estimates							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Total population (BEBR)	11,988	13,017	13,700	14,300	14,900	15,600	16,200
Pop. Srv. Public Supply		4,224	4,446	4,640	4,835	5,062	5,257
Pop. Srv. Domestic SS		8,793	9,254	9,660	10,065	10,538	10,943
Average Daily Flow of Large Public Supply Systems (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Blountstown	0.49	0.64	0.79	0.91	1.03	1.15	1.25
Altha	0.10	0.11	0.14	0.17	0.19	0.22	0.24
Total	**0.59**	**0.75**	**0.93**	**1.08**	**1.22**	**1.37**	**1.49**

Table 4.7 Liberty County Water Demand & Population Projections (2005-2025)							
Average Daily Flow (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Water Use Category							
Public Supply	0.29	0.35	0.41	0.46	0.51	0.56	0.61
Domestic SS/Small Public SS	0.70	0.45	0.49	0.51	0.54	0.57	0.60
Commercial-Industrial SS	0.24	0.30	0.30	0.30	0.30	0.30	0.30
Recreational Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agricultural Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Power Generation	0.39	0.52	0.52	0.52	0.52	0.52	0.52
Total	**1.62**	**1.62**	**1.72**	**1.79**	**1.87**	**1.95**	**2.03**
Population Estimates							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Total population (BEBR)	6,873	7,021	7,600	8,000	8,400	8,900	9,300
Pop. Srv. Public Supply		2,764	2,992	3,149	3,307	3,504	3,661
Pop. Srv. Domestic SS		4,257	4,608	4,851	5,093	5,396	5,639
Average Daily Flow of Large Public Supply Systems (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Bristol	0.22	0.29	0.33	0.38	0.43	0.48	0.53
Hosford-Telogia	0.07	0.06	0.08	0.08	0.08	0.08	0.08
Total	**0.29**	**0.35**	**0.41**	**0.46**	**0.51**	**0.56**	**0.61**

REGION V: GULF & FRANKLIN COUNTIES

Overview



Water Supply Planning Region V is comprised of Gulf and Franklin counties. The region is predominantly rural, with approximately 50 percent of the population residing in unincorporated areas. Population and growth are concentrated in the region's coastal areas with tourism and seasonal visitors representing almost 25 percent of Franklin County's total population. The region's economy is highly dependent upon natural resources, with leading economic activities being forestry, paper production, farming, seafood processing, commercial and sport fishing. The majority of Gulf County residents were formerly employed in manufacturing associated with paper products and allied companies (this has now shifted to government and service industries), while the majority of people in Franklin County are employed in the service sector.

Region V Snapshot		
	2000	*2025*
Population	23,268	28,900
Water Use (Mgal/d)	5.55	6.05
Primary source	Floridan Aquifer/St. Joe Canal	

The Apalachicola River has the largest flow of all Florida's rivers. The water supply needs of the Apalachicola River and Bay are currently being negotiated through the Apalachicola-Chattahoochee-Flint River Basin Compact, which was enacted by the US Congress and the states of Florida, Alabama and Georgia. Almost all of the water for these systems is derived from a large watershed area, with headwaters that extend well into the foothills of the Appalachian Mountains north of Atlanta, Georgia.

Formerly, the majority of water consumed in the region occurred through surface water withdrawals for Commercial-Industrial uses in Gulf County. At present, the Chipola River (via the Port St. Joe Canal) supplies the majority of Public Supply needs in Gulf County. Franklin County depends upon the Floridan Aquifer for potable supplies, and the Surficial Aquifer is often used for Domestic Self-Supply and Small Public Supply Systems on the barrier islands.

Projected Regional Water Use Through 2025

Average regional water use is projected to grow from 5.55 Mgal/d in 2000 to 6.05 Mgal/d in 2025, a nine percent increase (Table 5.1). Public Supply will remain the region's largest water use category through 2025, with a projected 41 percent increase from 3.39 Mgal/d in 2000 to 4.79 Mgal/d in 2025.

Table 5.1 Region V Observed (2000) Projected (2005-2025)

Average Daily Flow (Mgal/d)

Water Use Category	2000	2005	2010	2015	2020	2025
Public Supply	3.39	3.64	3.93	4.22	4.52	4.79
Domestic SS/Small Public SS	0.39	0.44	0.46	0.47	0.48	0.49
Commercial-Industrial SS	1.55	0.55	0.55	0.55	0.55	0.55
Recreational Irrigation	0.22	0.22	0.22	0.22	0.22	0.22
Agricultural Irrigation	0.00	0.00	0.00	0.00	0.00	0.00
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00
Total	**5.55**	**4.85**	**5.16**	**5.46**	**5.77**	**6.05**

Table 5.2 Region V 2000 Water Use by County (Mgal/d)			
	Gulf	Franklin	**Total**
Public Supply	1.47	1.92	3.39
Domestic SS/Small Public SS	0.32	0.07	0.39
Commercial-Industrial SS	1.55	0.00	1.55
Recreational Irrigation	0.13	0.09	0.22
Agricultural Irrigation	0.00	0.00	0.00
Power Generation	0.00	0.00	0.00
Total	**3.47**	**2.08**	**5.55**

Public Supply

Public Supply water use accounted for an average 3.39 Mgal/d or 61 percent of the region's total average water use in 2000. The majority of Public Supply water was used along the region's coastal areas, with the largest public supplier being the City of Port St. Joe (1.08 Mgal/d). The projected regional total will reach 4.79 Mgal/d by 2025.

Domestic Self-Supply and Small Public Supply Systems

In 2000, Domestic Self-Supply and Small Public Supply Systems water use accounted for 0.39 Mgal/d or seven percent of the region's total water use. The majority of water use in this category occurs around the St. Joseph Bay, in Gulf County. This category is projected to increase to 0.49 Mgal/d in 2025.

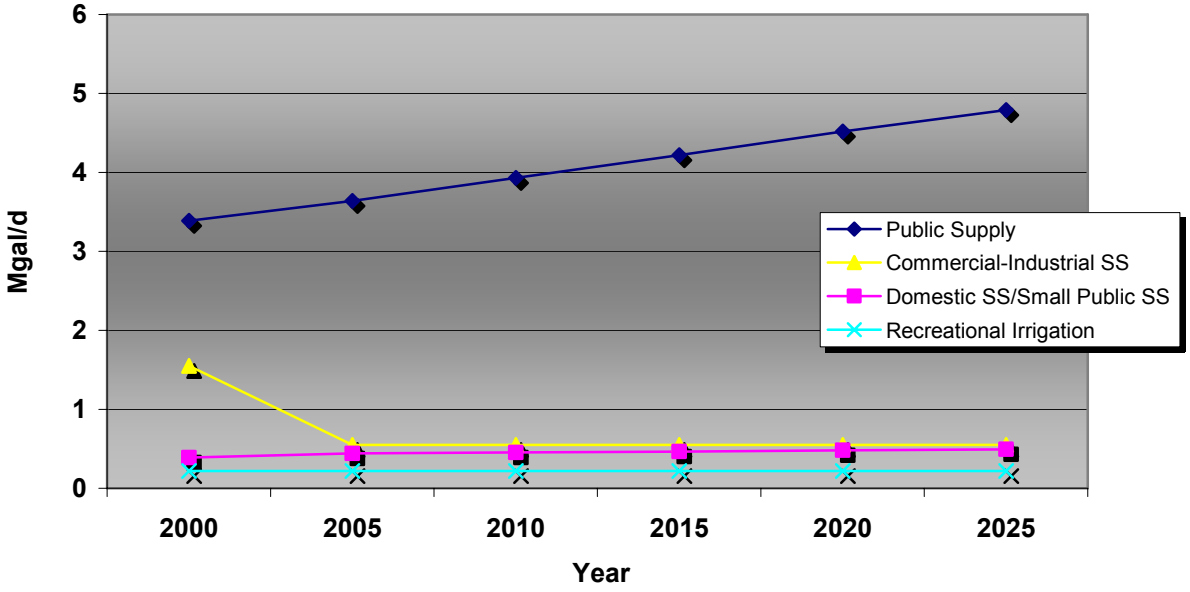
Commercial-Industrial Self-Supplied

Formerly, Commercial-Industrial Self-Supplied was the largest water use within Region V. This water use category accounted for an average of 28.70 Mgal/d or 89 percent of the region's total water use in 1995, however, with the closing of the Florida Coast Paper Mill in the City of Port St. Joe, this water consumption has dropped off dramatically. All water users in this category are located in Gulf County (Table 5.2), with approximately 1.00 Mgal/d of the 2000 total amount (1.55 Mgal/d) being used for one-time plant and equipment cleanup in conjunction with plant decommissioning procedures. Water use in this category is projected to drop to 0.55 Mgal/d by 2005 and remain at that level through 2025.

Recreational Irrigation

Recreational Irrigation accounted for an average of 0.22 Mgal/d (four percent) of the region's total water use and is projected to remain constant through 2025. The St. Joe Bay Country Club, in Gulf County, is the largest water user in this category in Region V (Figure 5.1). The St. James Bay Golf Course (Franklin County) started irrigating in 2002 using Floridan Aquifer water, but will convert to reuse when such water becomes available.

Figure 5.1
Region V Projected Water Demand (2005-2025)



Agricultural Irrigation

Although there is some permitted Agricultural Irrigation in the region, the amount of water used is minimal, and is not expected to increase, thus not included in this projection.

Power Generation

No water used for Power Generation within Region V.

Projected Water Use by County Through 2025

Tables 5.3 and 5.4 illustrate projected total average water use by county through 2025. Gulf County accounts for a slight majority of water use in Region V with a total average demand of 3.47 Mgal/d in 2000, projected to decrease eight percent to 3.19 Mgal/d in 2025 (Table 5.3). Projections show Franklin County's total water use will increase approximately 0.80 Mgal/d, from 2000 to 2025 (2.08 to 2.86 Mgal/d) (Table5.4).

Table 5.3 Gulf County Water Demand & Population Projections (2005-2025)

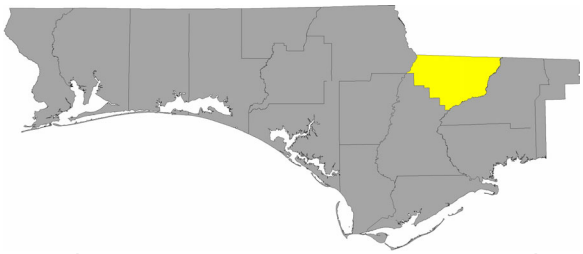
Average Daily Flow (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Water Use Category							
Public Supply	1.28	1.47	1.57	1.69	1.83	1.97	2.10
Domestic SS/Small Public SS	0.34	0.32	0.37	0.38	0.39	0.40	0.41
Commercial-Industrial SS	28.70	1.55	0.55	0.55	0.55	0.55	0.55
Recreational Irrigation	0.18	0.13	0.13	0.13	0.13	0.13	0.13
Agricultural Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**30.50**	**3.47**	**2.62**	**2.75**	**2.90**	**3.05**	**3.19**
Population Estimates							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Total population (BEBR)	13,271	13,332	15,400	15,900	16,300	16,800	17,300
Pop. Srv. Public Supply		10,338	11,942	12,329	12,639	13,027	13,415
Pop. Srv. Domestic SS		2,994	3,458	3,571	3,661	3,773	3,885
Average Daily Flow of Large Public Supply Systems (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Lighthouse Utilities	0.11	0.20	0.20	0.24	0.28	0.32	0.36
Port St. Joe	1.04	1.08	1.17	1.22	1.28	1.35	1.41
Wewahitchka	0.13	0.19	0.20	0.23	0.27	0.30	0.33
Total	**1.28**	**1.47**	**1.57**	**1.69**	**1.83**	**1.97**	**2.10**

Table 5.4 Franklin County Water Demand & Population Projections (2005-2025)							
Average Daily Flow (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Water Use Category							
Public Supply	1.74	1.92	2.07	2.24	2.39	2.55	2.69
Domestic SS/Small Public SS	0.03	0.07	0.07	0.08	0.08	0.08	0.08
Commercial-Industrial SS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Recreational Irrigation	0.00	0.09	0.09	0.09	0.09	0.09	0.09
Agricultural Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.77**	**2.08**	**2.23**	**2.41**	**2.56**	**2.72**	**2.86**
Population Estimates							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Total population (BEBR)	9,926	9,936	10,200	10,600	10,900	11,300	11,600
Pop. Srv. Public Supply		9,258	9,504	9,877	10,156	10,529	10,808
Pop. Srv. Domestic SS		678	696	723	744	771	792
Average Daily Flow of Large Public Supply Systems (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Alligator Point	0.12	0.12	0.12	0.13	0.14	0.15	0.16
Apalachicola	0.70	0.66	0.74	0.77	0.79	0.82	0.84
Carrabelle*	0.17	0.24	0.24	0.24	0.24	0.24	0.24
Eastpoint	0.21	0.25	0.28	0.30	0.31	0.32	0.32
Lanark Village**	0.20	0.08	0.11	0.11	0.11	0.11	0.11
St. George Island	0.34	0.57	0.58	0.69	0.80	0.91	1.02
Total	**1.74**	**1.92**	**2.07**	**2.24**	**2.39**	**2.55**	**2.69**

*Expanded Service area in 99-00. **Conservation measures enacted 1997, which resulted in significant water use reduction.

REGION VI: GADSDEN COUNTY

Overview



Water Supply Planning Region VI consists of Gadsden County. The region is relatively rural, with over half of the population residing in unincorporated areas, and has projected low regional population growth. Agriculture is the primary component of the region's economy and Agricultural Irrigation is the region's largest water use category. Forestry is a major economic activity, while dominant agricultural crops include vegetables, nurseries, cotton and sod. The largest employment sectors are government, agriculture and retail trade.

Although ground water provides approximately half of all the water used within Region VI, ground water availability is limited in most of the region due to low water yielding properties of the Floridan Aquifer in this area. Ground water is the only source for Commercial-Industrial and Domestic Self-Supply. The majority of the region's surface water is used for Agricultural Irrigation; the largest public supply system, the City of Quincy, shifted to ground water sources near Mt. Pleasant in 2001-2002 and no longer withdraws from Quincy Creek.

Region VI Snapshot		
	2000	*2025*
Population	45,087	50,600
Water Use (Mgal/d)	13.68	15.28
Primary source	Floridan Aquifer	

Because Agricultural Irrigation demand upon surface water in the Telogia Creek Basin has stressed this limited resource, the District has designated this area as a Water Resource Caution Area (WRCA) under Chapter 40A-2, F.A.C. The WRCA designation subjects all non-exempt withdrawals to more rigorous scrutiny to ensure that the proposed withdrawal does not result in unacceptable impacts to the resource. Permittees within a WRCA also have increased water use reporting requirements, must implement water conservation measures and must improve water use efficiencies. They are also required to perform an evaluation of the technical, environmental and economic feasibility of utilizing reclaimed water for all nonpotable water uses.

Projected Regional Water Use Through 2025

Average regional water use is projected to increase 12 percent from 13.68 Mgal/d in 2000 to 15.28 Mgal/d in 2025. Agricultural Irrigation will remain the region's largest water use category through 2025, increasing nine percent from 6.40 Mgal/d in 2000 to 7.00 Mgal/d in 2025 (Table 6.1).

Public Supply

In 2000, Public Supply water use accounted for approximately 30 percent (4.32 Mgal/d) of average regional water use. Projections indicate that demand will increase approximately 14 percent to an average of 4.91 Mgal/d in 2025. The City of Quincy is the largest public supplier in the region, with an average withdrawal of 1.60 Mgal/d in 2000 (Table 6.1).

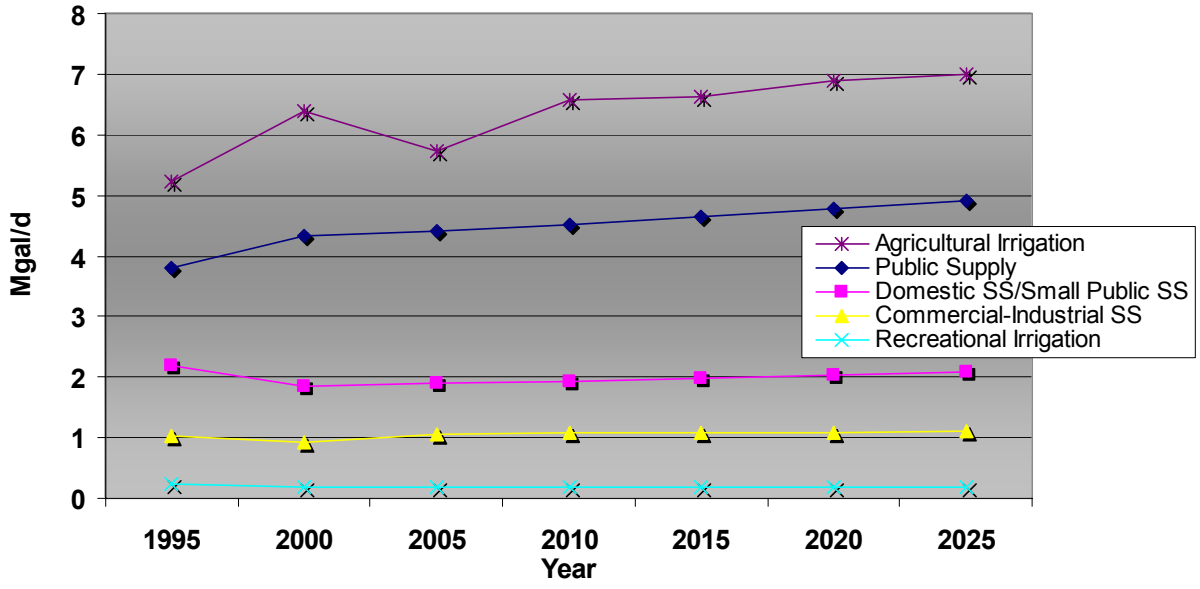
Domestic Self-Supply and Small Public Supply Systems

Water use by Domestic Self-Supply and Small Public Supply Systems accounted for approximately 18 percent of the region's water use (1.85 Mgal/d) in 2000. This water use category is projected to increase approximately 12 percent to 2.08 Mgal/d in 2025.

Commercial-Industrial Self-Supplied

The Commercial-Industrial Self-Supplied category accounted for eight percent (0.92 Mgal/d) of Region VI's water use in 2000. The larger permitted Commercial-Industrial water users within the region include the Florida Department of Corrections, the Florida Department of Transportation's I-10 Rest Area and Quincy Farms, a mushroom processing facility. Commercial-Industrial Self-Supplied water use is projected to increase approximately 20 percent to 1.10 Mgal/d by 2025 (Figure 6.1).

Figure 6.1
Region VI Projected Water Demand (2005-2025)



Recreational Irrigation

In 2000, Recreational Irrigation accounted for two percent of regional water use (0.19 Mgal/d); this figure is projected to hold constant through 2025.

Agricultural Irrigation

Agricultural Irrigation is the largest water user within the region accounting for 6.40 Mgal/d (42 percent) in 2000. Based on data supplied by the University of Florida IFAS, Agricultural Irrigation is projected to remain the largest water use category in Gadsden County, increasing nine percent to 7.00 Mgal/d in 2025.

Power Generation

No water used for Power Generation in Region VI.

Table 6.1 Gadsden County Water Demand and Population Projections (2005-2025)							
Average Daily Flow (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Water Use Category							
Public Supply	3.80	4.32	4.40	4.52	4.65	4.79	4.91
Domestic SS/Small Public SS	2.20	1.85	1.89	1.94	1.99	2.03	2.08
Commercial-Industrial SS	1.02	0.92	1.06	1.07	1.08	1.09	1.10
Recreational Irrigation	0.25	0.19	0.19	0.19	0.19	0.19	0.19
Agricultural Irrigation	5.24	6.40	5.74	6.57	6.64	6.88	7.00
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**12.51**	**13.68**	**13.28**	**14.29**	**14.55**	**14.98**	**15.28**
Population Estimates							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Total population (BEBR)	44,734	45,087	46,100	47,200	48,400	49,500	50,600
Pop. Srv. Public Supply		27,632	28,253	28,927	29,662	30,337	31,011
Pop. Srv. Domestic SS		17,455	17,847	18,273	18,738	19,163	19,589
Average Daily Flow of Large Public Supply Systems (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Greensboro	0.08	0.08	0.09	0.10	0.11	0.13	0.14
Gretna	0.25	0.33	0.40	0.45	0.50	0.55	0.59
Quincy	1.44	1.60	1.54	1.60	1.67	1.74	1.81
Talquin-Gadsden Regional	0.54	1.22	1.22	1.22	1.22	1.22	1.22
Chattahoochee	0.91	0.52	0.61	0.61	0.61	0.61	0.61
Havana	0.58	0.57	0.54	0.54	0.54	0.54	0.54
Total	**3.80**	**4.32**	**4.40**	**4.52**	**4.65**	**4.79**	**4.91**

REGION VII: LEON, WAKULLA, JEFFERSON COUNTIES

Overview

Water Supply Planning Region VII is comprised of Leon, Wakulla and Jefferson counties. The region's largest water use categories are Public Supply in Leon and Wakulla counties and Agricultural Irrigation in Jefferson County. With the exception of the Tallahassee metropolitan area, Region VII is relatively rural, a result of large public landholdings such as the St. Marks National Wildlife Refuge and the Apalachicola National Forest and large private ownerships such as the plantations in northern Leon and Jefferson counties and timber company landholdings throughout the southern portion of the region.

Region VII Snapshot		
	2000	*2025*
Population	275,217	390,700
Water Use (Mgal/d)	54.24	80.45
Primary source	Floridan Aquifer	

The City of Tallahassee, one of the largest metropolitan areas within the NWFWMD, is the state capital and home to two state universities and a community college. As such, the city is the center of economic activity and population distribution in the region. The dominant employers within the region are government, retail trade and service sectors, with many residents commuting to Tallahassee for work. Due to the region's relatively stable economy and lack of significant tourism, there is minimal seasonal fluctuation in population and the corresponding Public Supply water use. With the exception of the Purdom Power Plant in the Town of St. Marks (Wakulla County), virtually all water used in the region is withdrawn from the Upper Floridan Aquifer, a relatively prolific source of good quality water in this area. The Floridan Aquifer sustains the springs that feed the St. Marks and Wakulla rivers and Apalachee Bay, important natural systems that require continued delivery of clean, fresh water.

Projected Regional Water Use Through 2025

Average regional water use is projected to grow from 54.24 Mgal/d in 2000, to 80.75 Mgal/d in 2025, a 49 percent increase (Table 7.1). Public Supply in Leon County will continue to be the largest water use category, 34.61 Mgal/d in 2000 (Table 7.2).

Table 7.1 Region VII Observed (2000) & Projected (2005-2025)

Average Daily Flow (Mgal/d)

Water Use Category	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Public Supply	37.33	39.32	43.70	48.14	52.17	56.50
Domestic SS/Small Public SS	6.16	6.76	7.35	7.94	8.55	9.08
Commercial-Industrial SS	0.79	1.13	1.18	1.21	1.23	1.26
Recreational Irrigation	1.19	1.25	1.41	1.47	1.60	1.66
Agricultural Irrigation	5.07	5.14	5.71	6.02	6.48	6.85
Power Generation	3.70	4.04	4.38	4.72	5.06	5.40
Total	**54.24**	**57.64**	**63.73**	**69.50**	**75.09**	**80.75**

Table 7.2 Region VII 2000 Water Use by County (Mgal/d)				
	Leon	*Wakulla*	*Jefferson*	**Total**
Public Supply	34.61	2.02	0.70	37.33
Domestic SS/Small Public SS	4.29	1.44	0.43	6.16
Commercial-Industrial SS	0.12	0.62	0.05	0.79
Recreational Irrigation	0.95	0.18	0.06	1.19
Agricultural Irrigation	0.70	0.00	4.37	5.07
Power Generation	2.74	0.96	0.00	3.70
Total	**43.41**	**5.22**	**5.61**	**54.24**

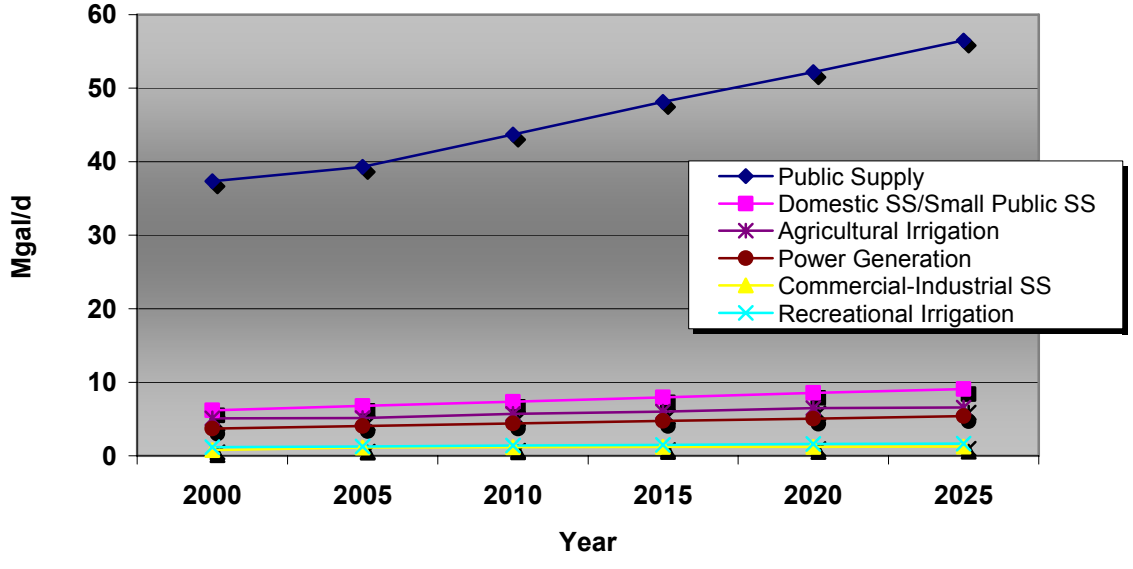
Public Supply

In 2000, Public Supply accounted for approximately 70 percent (37.33 Mgal/d) of the region's water use. The City of Tallahassee, within Leon County, is the region's largest public supplier, with an average withdrawal of 31.86 Mgal/d in 2000. Projections indicate that Public Supply will continue to be the predominant water use category in Region VII, increasing 51 percent to 56.50 Mgal/d in 2025 (Table 7.1).

Domestic Self-Supply and Small Public Supply Systems

Domestic Self-Supply and Small Public Supply Systems accounted for approximately 11 percent (6.16 Mgal/d) of the region's water use in 2000; the majority of water use in this category occurred in Leon County (4.29 Mgal/d). Water use in this category is projected to increase 47 percent to 9.08 Mgal/d by 2025 (Figure 7.1).

Figure 7.1
Region VII Projected Water Demand (2005-2025)



Commercial-Industrial Self-Supplied

Commercial-Industrial Self-Supplied water use accounted for 0.79 Mgal/d in 2000, and is projected to increase approximately 60 percent to 1.26 Mgal/d by 2025.

Recreational Irrigation

Recreational Irrigation includes water used for golf course irrigation and accounts for two percent of the region's total water use. Water use in this category is projected to increase by approximately 40 percent from 1.19 Mgal/d in 2000 to 1.66 Mgal/d in 2025.

Agricultural Irrigation

Based on data supplied by the University of Florida IFAS, water used for Agricultural Irrigation in Region VII is anticipated to increase 35 percent from 5.07 Mgal/d in 2000 to 6.85 Mgal/d in 2025.

Power Generation

Water withdrawn for Power Generation in Region VII was 57.09 Mgal/d in 2000, of which 4.04 Mgal/d was considered consumed. For planning purposes, water is considered consumed when it is withdrawn and either not returned to the resource or not returned in the same location where it was withdrawn. Many power plants utilize surface water for once-through cooling, returning virtually all of the water to the point of withdrawal. Although water withdrawn for Power Generation is expected to decrease in Region VII, water consumption is anticipated to increase to 5.40 Mgal/d by 2025 (34 percent). This projected increase is due to the Purdom Power Plant reconfiguring its operational procedures (Figure 7.1).

Projected Water Use by County Through 2025

Tables 7.3, 7.4, and 7.5 illustrate projected total average water use by county through 2025. Leon County accounts for the majority of water use in Region VII with an average total demand of 43.41 Mgal/d in 2000 projected to increase 50 percent to 64.93 Mgal/d by 2025 (Table 7.3). Projections show Wakulla County's total water use will increase by approximately 67 percent, from 5.22 Mgal/d in 2000 to 8.72 Mgal/d in 2025 (Table 7.4). Jefferson County Public Supply water use is projected to remain relatively stable at an average of 0.70 Mgal/d through 2025 (Table 7.5). Overall, Jefferson County's water demand is expected to grow from 5.61 Mgal/d in 2000 to 7.08 Mgal/d in 2025 (26 percent).

Table 7.3 Leon County Water Demand & Population Projections (2005- 2025)

Average Daily Flow (Mgal/d)

	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Water Use Category							
Public Supply	27.60	34.61	36.60	40.52	44.50	48.07	51.92
Domestic SS/Small Public SS	4.61	4.29	4.64	4.99	5.34	5.70	5.99
Commercial-Industrial SS	0.23	0.12	0.23	0.23	0.23	0.23	0.23
Recreational Irrigation	0.95	0.95	1.01	1.08	1.14	1.27	1.33
Agricultural Irrigation	1.01	0.70	0.75	0.82	0.88	0.96	1.03
Power Generation	2.64	2.74	3.08	3.42	3.76	4.10	4.44
Total	**37.04**	**43.41**	**46.31**	**51.06**	**55.85**	**60.33**	**64.93**

Population Estimates

	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Total population (BEBR)	217,533	239,452	258,900	278,300	297,800	317,700	333,900
Pop. Srv. Public Supply		198,937	215,094	231,212	247,413	263,946	277,405
Pop. Srv. Domestic SS		40,515	43,806	47,088	50,387	53,754	56,495

Average Daily Flow of Large Public Supply Systems (Mgal/d)

	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Tallahassee	25.32	31.86	32.70	35.93	39.16	42.39	45.62
Bradfordville Regional	0.79	1.34	2.22	2.69	3.16	3.16	3.63
Meadows at Woodrun	0.32	0.42	0.59	0.81	1.09	1.43	1.58
Lake Jackson Area W/S	1.17	0.99	1.09	1.09	1.09	1.09	1.09
Total	**27.60**	**34.61**	**36.60**	**40.52**	**44.50**	**48.07**	**51.92**

Table 7.4 Wakulla County Water Demand & Population Projections (2005-2025)							
Average Daily Flow (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Water Use Category							
Public Supply	1.05	2.02	2.03	2.48	2.94	3.39	3.87
Domestic SS/Small Public SS	0.93	1.44	1.69	1.92	2.16	2.40	2.64
Commercial-Industrial SS	0.63	0.62	0.85	0.90	0.93	0.95	0.98
Recreational Irrigation	0.10	0.18	0.18	0.27	0.27	0.27	0.27
Agricultural Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Power Generation	0.29	0.96	0.96	0.96	0.96	0.96	0.96
Total	**3.00**	**5.22**	**5.71**	**6.53**	**7.26**	**7.97**	**8.72**
Large Public Supply System Water Use							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Total population (BEBR)	17,005	22,863	26,800	30,500	34,300	38,200	42,000
Pop. Srv. Public Supply		9,285	10,884	12,386	13,930	15,514	17,057
Pop. Srv. Domestic SS		13,578	15,916	18,114	20,370	22,686	24,943
Average Daily Flow of Large Public Supply Systems (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Gulf Coast	0.28	0.72	0.66	0.80	0.94	1.08	1.22
Panacea Area	0.23	0.26	0.31	0.37	0.43	0.50	0.59
St. Marks	0.10	0.11	0.15	0.18	0.21	0.23	0.26
Sopchoppy	0.44	0.93	0.91	1.13	1.36	1.58	1.80
Total	**1.05**	**2.02**	**2.03**	**2.48**	**2.94**	**3.39**	**3.87**

Table 7.5 Jefferson County Water Demand & Population Projections (2005-2025)							
Average Daily Flow (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Water Use Category							
Public Supply	0.70	0.70	0.69	0.70	0.70	0.71	0.71
Domestic SS/Small Public SS	1.28	0.43	0.43	0.43	0.44	0.44	0.45
Commercial-Industrial SS	0.23	0.05	0.05	0.05	0.05	0.05	0.05
Recreational Irrigation	0.19	0.06	0.06	0.06	0.06	0.06	0.06
Agricultural Irrigation	4.24	4.37	4.39	4.89	5.14	5.52	5.81
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**6.64**	**5.61**	**5.62**	**6.13**	**6.39**	**6.78**	**7.08**
Population Estimates							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Total population (BEBR)	13,509	12,902	13,600	13,900	14,200	14,500	14,800
District Pop. Srv. Public Supply		4,902	4,951	5,001	5,051	5,101	5,152
District Pop. Srv. Domestic SS		4,021	4,062	4,102	4,143	4,185	4,227
Average Daily Flow of Large Public Supply Systems (Mgal/d)							
	1995	*2000*	*2005*	*2010*	*2015*	*2020*	*2025*
Monticello	0.70	0.70	0.69	0.70	0.70	0.71	0.71
Total	**0.70**	**0.70**	**0.69**	**0.70**	**0.70**	**0.71**	**0.71**

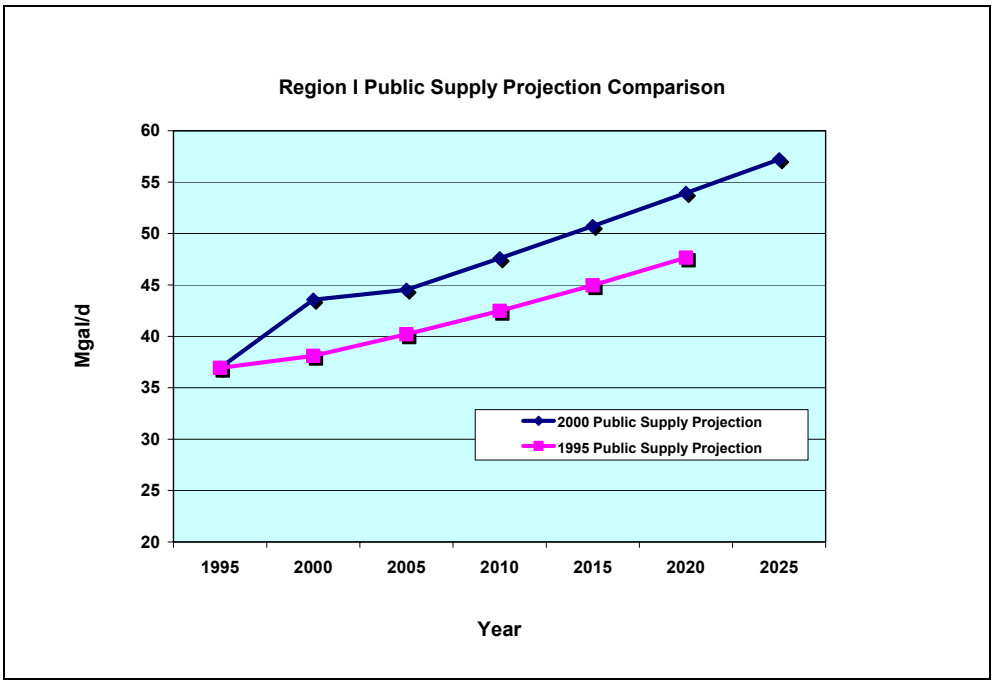
Drought & Tourism Effects on Public Supply Demand

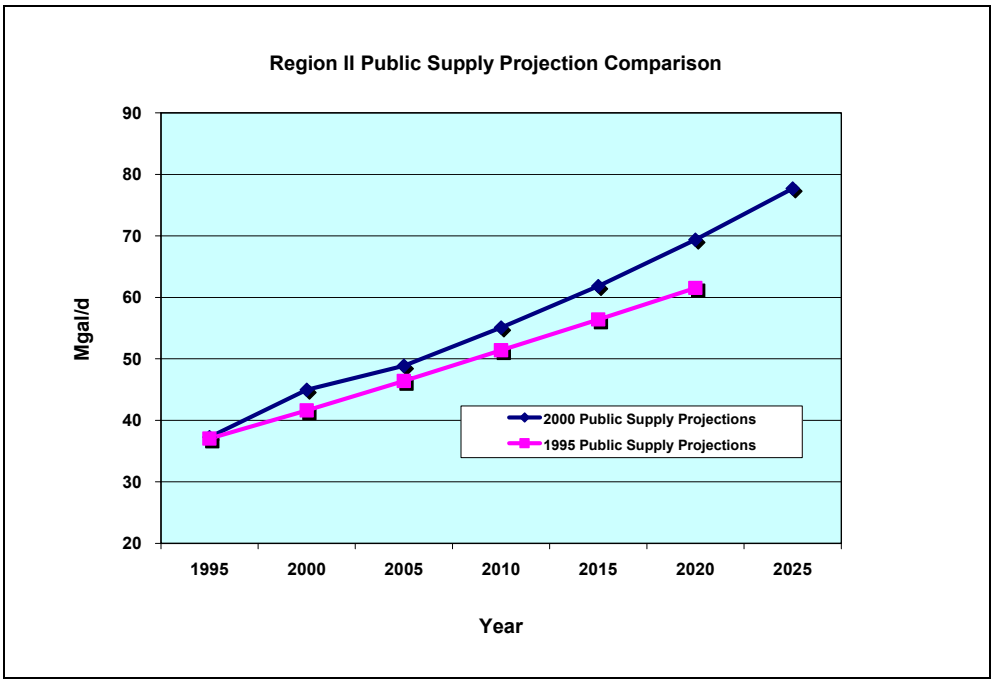
This appendix explains and describes supporting data used to evaluate drought and seasonal effects of tourism on the water use data and demand forecasts provided in this report. It is important information to be aware of when using this for water supply planning purposes.

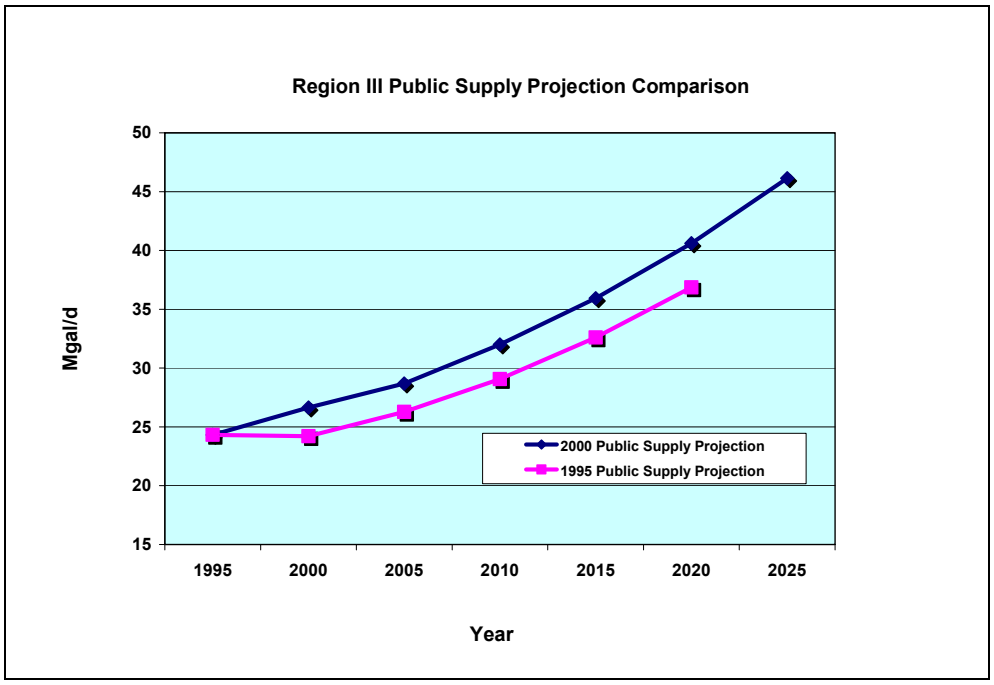
Comparison of Public Supply Projections 1995-2000

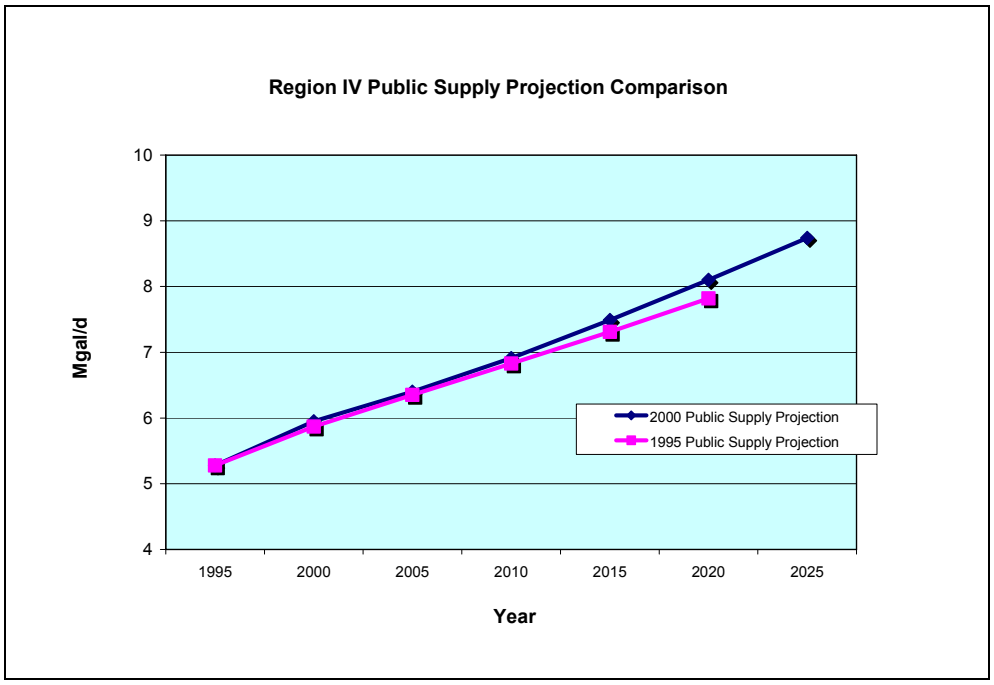
As part of the water demand projection update, the public water supply demand projections made in 1998 using 1995 data were compared to the updated projections using year 2000 water demand data. This analysis revealed the apparent effects of the extreme drought (greater than 1 in 10 year drought condition) in the updated demand projections. The graphs below illustrate the differences found. Another use of these analyses are to check the accuracy of previous demand projections and to monitor for possible changes in the forecasted conditions for water supply planning purposes.

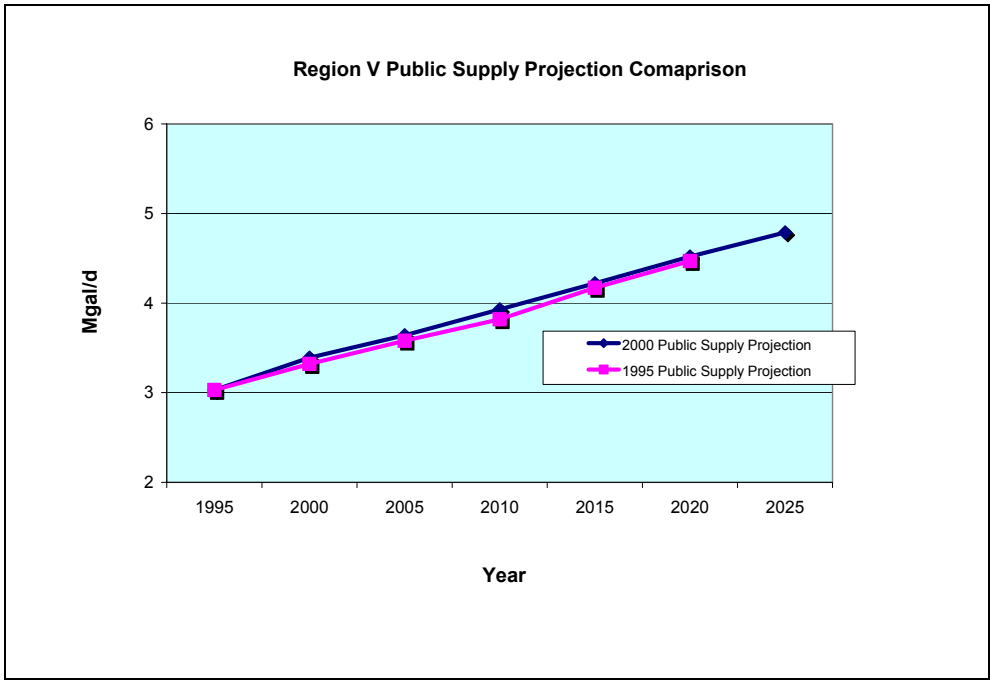
.

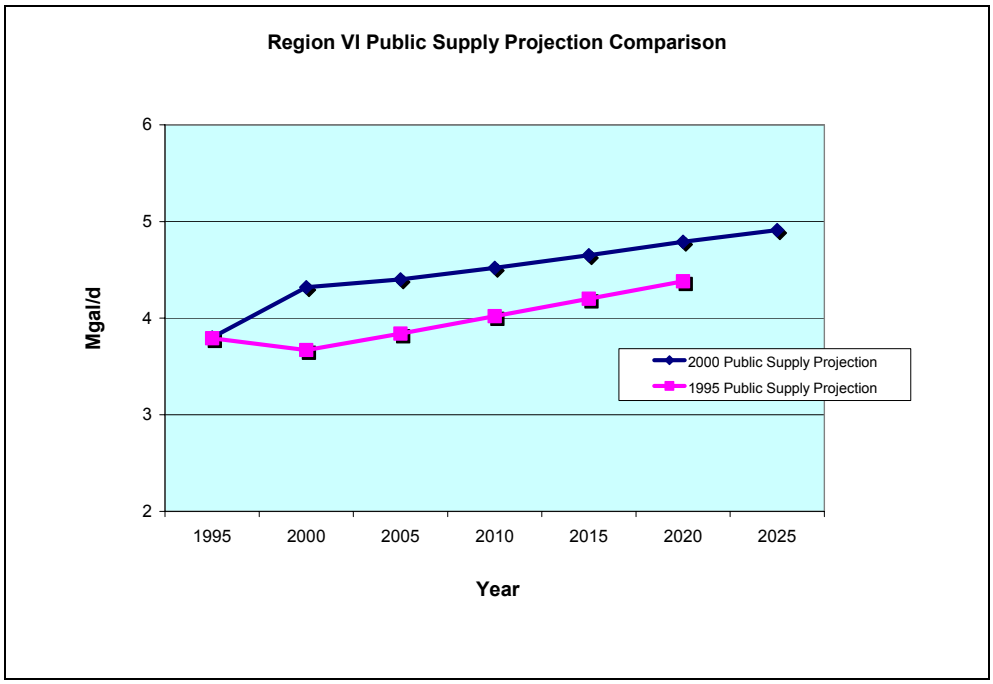



Region II Public Supply Projection Comparison
90
80
70
60
50
40
30
20
Mgal/d
1995
2000
2005
2010
2015
2020
2025
Year
2000 Public Supply Projections
1995 Public Supply Projections


Region III Public Supply Projection Comparison
50
45
40
35
30
25
20
15
Mgal/d
1995
2000
2005
2010
2015
2020
2025
Year
2000 Public Supply Projection
1995 Public Supply Projection


Region IV Public Supply Projection Comparison
Mgal/d
10
9
8
7
6
5
4
1995
2000
2005
2010
2015
2020
2025
Year
2000 Public Supply Projection
1995 Public Supply Projection


Region V Public Supply Projection Comaprison
Mgal/d
6
5
4
3
2
1995
2000
2005
2010
2015
2020
2025
Year
2000 Public Supply Projection
1995 Public Supply Projection


Region VI Public Supply Projection Comparison
Mgal/d
6
5
4
3
2
1995
2000
2005
2010
2015
2020
2025
Year
2000 Public Supply Projection
1995 Public Supply Projection

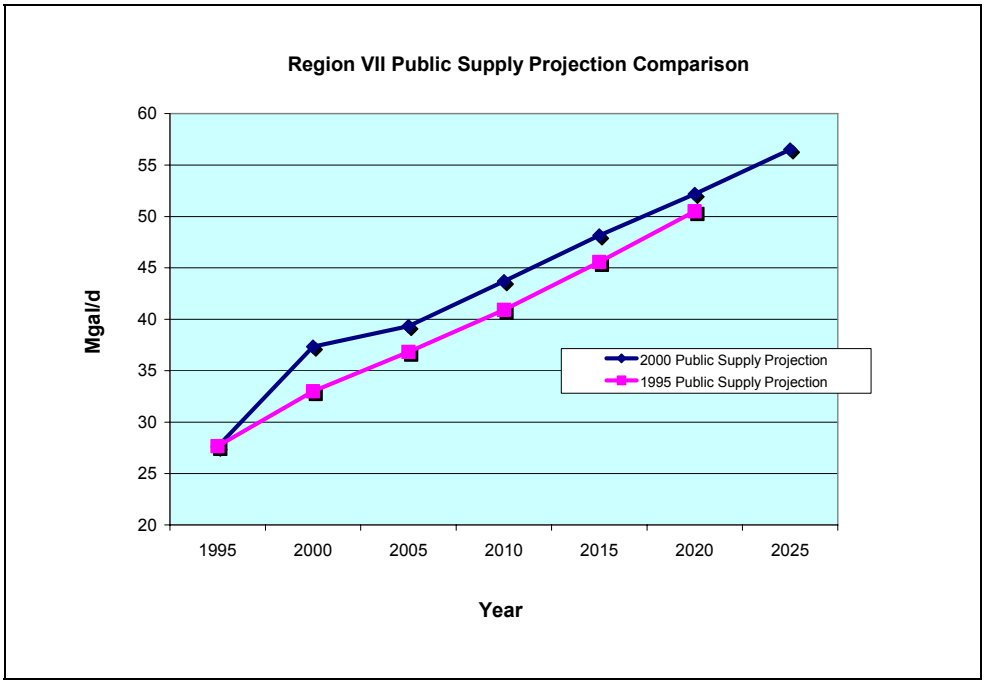

Region VII Public Supply Projection Comparison
Mgal/d
60
55
50
45
40
35
30
25
20
1995
2000
2005
2010
2015
2020
2025
Year
2000 Public Supply Projection
1995 Public Supply Projection

Table A.1 Effects of Drought on Public Supply Water Use 1995-2000

County	1995 Public Supply Water Use Mgal/d	1995 Population Served	2000 Public Supply Water Use Mgal/d	2000 Population Served	2000 Per Capita gpc/d	1995 Per Capita gpc/d	Per Capita Change 1995-2000 gpc/d	Drought Increase Mgal/d*
Region I								
Escambia	36.94	246,878	43.56	279,294	156	150	6.00	1.67
Region II								
Santa Rosa	11.50	90,247	14.54	110,108	132	127	5.10	0.56
Okaloosa	21.18	149,665	23.05	158,504	145	142	3.40	0.54
Walton	4.35	29,799	7.35	39,024	188	146	42.30	1.65
Region III								
Bay	24.32	127,562	26.64	129,300	206	191	15.00	1.94
Region IV								
Holmes	1.01	3,817	1.38	5,860	236	264	-28.50	-0.17
Washington	1.10	6,875	1.11	7,565	147	160	-13.30	-0.10
Jackson	2.19	14,870	2.46	16,348	151	147	3.50	0.06
Calhoun	0.68	4,455	0.75	4,224	178	153	24.60	0.10
Liberty	0.29	2,020	0.35	2,764	127	145	-18.40	-0.05
Region V								
Gulf	1.29	10,108	1.47	10,338	142	127	15.20	0.16
Franklin	1.74	9,926	1.92	9,258	207	175	32.40	0.30
Region VI								
Gadsden	3.79	29,619	4.32	27,632	156	128	28.30	0.78
Region VII								
Leon	27.66	186,440	34.61	198,937	174	148	26.00	5.17
Wakulla	1.05	9,013	2.02	9,285	218	116	101.60	0.94
Jefferson	0.70	4,788	0.70	4,902	143	147	-4.20	-0.02
District-wide	**139.79**	**926,082**	**166.23**	**1,013,343**	**164**	**151**	**13.04**	**13.22**

*Estimated drought increase uses Per Capita Change 1995-2000 mutiliplied by year 2000 Population Served.

Table A.2 Permitted & 2025 Demand Projections for Public Supply by Region

Region	County	Current Permitted Average Daily Rate	2000 Public Supply Water Use	2025 Projected Public Supply Water Use
REGION I				
	Escambia	**51.56**	**43.56**	**57.21**
REGION II				
	Walton	14.66	14.54	26.85
	Okaloosa	35.91	23.05	36.51
	Santa Rosa	22.38	7.35	14.34
	Total	**72.95**	**44.94**	**77.70**
REGION III				
	Bay	**73.06**	**26.64**	**46.14**
REGION IV				
	Calhoun	0.94	0.75	1.49
	Holmes	1.52	1.38	1.9
	Jackson	3.45	2.46	2.55
	Liberty	0.38	0.35	0.61
	Washington	1.90	1.11	1.21
	Total	**8.19**	**6.05**	**7.76**
REGION V				
	Franklin	2.07	1.92	2.68
	Gulf	2.32	1.47	2.10
	Total	**4.39**	**3.39**	**4.78**
REGION VI				
	Gadsden	**5.37**	**4.32**	**4.91**
REGION VII				
	Jefferson	0.73	0.70	0.71
	Leon	36.70	34.61	51.92
	Wakulla	2.37	2.02	3.87
	Total	**37.43**	**35.31**	**52.63**
	District Totals	**252.95**	**164.21**	**251.13**

Table A.3 NWFWMD Permitted Public Suppliers (>0.1 Mgal/d) by Region

Water Suppliers Pumping over 0.1 Mgal/d	CUP #	Permitted Average Daily Rate	Permitted Maximum Daily Rate	Permitted Maximum Monthly Rate
Bratt-Davisville Water System, Inc.	19870030	304,000	486,000	14,580,000
Central Water Works, Inc.	19920037	435,000	1,044,000	16,095,000
Century	19830005	571,000	1,027,000	20,941,000
Cottage Hill Water Works, Incorporated	19940061	490,000	980,000	18,600,000
Escambia County Utilities Authority	19830083	44,700,000	76,120,000	2,132,000,000
Farm Hill Utilities, Inc.	19850145	580,000	1,230,000	22,170,000
Gonzalez Utilities Association Inc.	19840081	739,000	1,200,000	29,000,000
Molino Utilities, Inc.	19830002	800,000	2,100,000	34,900,000
Peoples Water Service Company of Florida	19830018	2,740,000	4,860,000	97,000,000
Walnut Hill Water Works	19920036	204,000	446,000	13,590,000
Region I Total		***51,563,000***	***89,493,000***	***2,398,876,000***
DeFuniak Springs	19830030	1,375,000	2,400,000	53,000,000
Florida Community Services Corp.	19870059	2,000,000	3,420,000	87,420,000
Freeport	19840104	2,330,000	2,710,000	79,150,000
Inlet Beach Water System, Inc.	19841953	140,000	330,000	6,300,000
Mossyhead Water Works, Inc.	19860127	340,000	512,000	14,500,000
Paxton Water System	19950071	265,000	440,000	
Perdue Farms Incorporated	19840037	1,020,000	1,890,000	28,000,000
South Walton Utility Company, Inc.	19840010	2,350,000	5,000,000	120,000,000
South Walton Utility Company, Inc.	19980046	4,840,000	4,840,000	150,040,000
Subtotal		**14,660,000**	**21,542,000**	**538,410,000**
Auburn Water System, Inc.	19830078	1,400,000	2,840,000	60,000,000
Baker Water Systems, Inc.	19910141	245,000	460,000	
City of Valparaiso	20000065	750,000	1,424,000	36,000,000
Corrections	19840118	240,000	417,000	12,792,000
Crestview	19830023	3,710,000	5,570,000	150,000,000
Destin Water Users, Inc.	19830102	3,460,000	5,870,000	146,290,000
Eglin Air Force Base	19850076	174,000	806,400	
Eglin Air Force Base	19850079	2,040,000	3,180,000	
Eglin Air Force Base	19850080	3,390,000	6,080,000	
Fort Walton Beach	19842473	4,078,000	5,959,000	147,700,000
Holt Water Works	19841586	130,000	230,000	
Hurlburt Field	19842711	740,000	1,630,000	31,000,000
Laurel Hill	19850236	170,000	308,000	6,200,000
Mary Esther	19830020	720,000	1,040,000	26,000,000
Milligan Water System, Inc.	19900033	155,000	380,000	6,557,000
Niceville	19840110	3,030,000	5,350,000	123,408,000
Okaloosa County Water & Sewer	19850027	1,200,000	2,000,000	48,000,000
Okaloosa County Water & Sewer	19840092	5,750,000	8,630,000	207,000,000
Okaloosa County Water & Sewer	19840112	3,610,000	6,300,000	150,700,000
Okaloosa County Water & Sewer System	19830075	810,000	1,400,000	34,000,000
Seminole Community Center, Inc.	19860020	113,000	243,000	5,300,000
Subtotal		**35,915,000**	**60,117,400**	**1,190,947,000**
Bagdad-Garcon Point Water Sys., Inc	19850116	587,000	998,000	26,000,000
Berrydale Water System, Inc.	19850120	349,000	1,020,000	23,100,000
Chumuckla Water System, Inc.	19920110	439,000	1,010,000	19,100,000
East Milton Water System, Inc.	19840127	1,690,000	2,860,000	65,900,000
Fairpoint Regional Utility System	20010037	6,080,000	8,040,000	209,210,000
Holley-Navarre Water System, Inc.	19842631	2,200,000	4,400,000	99,000,000
Jay	19970064	290,000	650,000	13,000,000
Midway Water System, Inc.	19830036	2,520,000	4,280,000	105,460,000
Milton	19842715	2,710,000	5,720,000	117,200,000
Moore Creek-Mt. Carmel Utilities, Inc.	19830100	515,000	1,030,000	
Pace Water System, Inc.	19830046	4,110,000	8,220,000	164,310,000
Point Baker Water Systems, Inc.	19840007	890,000	1,910,000	
Subtotal		**22,380,000**	**40,138,000**	**842,280,000**
Region II Total		**72,955,000**	**121,797,400**	**2,571,637,000**

Table A.3 NWFWMD Permitted Public Suppliers (>0.1 Mgal/d) by Region

Water Suppliers Pumping over 0.1 Mgal/d	CUP #	Permitted Average Daily Rate	Permitted Maximum Daily Rate	Permitted Maximum Monthly Rate
Alligator Point Water Resources District	19840008	152,000	600,000	6,854,000
Apalachicola	19860066	730,000	1,314,000	28,500,000
Carrabelle	19840039	211,000	401,000	8,200,000
Eastpoint Water & Sewer District	19980008	342,000	770,000	12,300,000
Lanark Village Water & Sewer District	19830101	124,000	265,000	5,320,000
Water Management Services, Inc.	19830074	517,000	1,090,000	24,000,000
Subtotal		**2,076,000**	**4,440,000**	**85,174,000**
Department of Corrections	19910045	400,000	711,000	14,220,000
Lighthouse Utilities Company, Inc.	19830085	350,000	864,000	15,000,000
Port St. Joe	19830039	1,280,000	1,700,000	39,000,000
Wewahitchka	19840045	291,000	437,000	
Subtotal		**2,321,000**	**3,712,000**	**68,220,000**
Region V Total		***4,397,000***	***8,152,000***	***153,394,000***
Chattahoochee	19830027	705,000	1,440,000	26,000,000
Gretna	20010007	352,000	585,000	15,400,000
Florida State Hospital	19860220	1,270,000	3,000,000	50,900,000
Quincy	19830021	1,930,000	3,620,000	73,000,000
Talquin Electric Cooperative, Inc.	19840059	1,620,000	3,500,000	68,200,000
Region VI Total		**5,877,000**	**12,145,000**	**233,500,000**
Federal Correctional Institution	20000007	210,000	360,000	8,830,000
Tallahassee	19830061	33,700,000	59,310,000	1,415,400,000
Talquin Electric Cooperative, Inc.	20000011	1,800,000	5,520,000	100,200,000
Talquin Electric Cooperative, Inc.	20010012	245,000	440,000	14,700,000
Talquin Electric Cooperative, Inc.	19840043	194,040	415,800	
Talquin Electric Cooperative, Inc.	19842687	122,780	230,400	
Talquin Electric Cooperative, Inc.	19842690	104,460	297,600	
Talquin Electric Cooperative,Inc.	19830010	326,000	734,000	
Subtotal		**36,702,280**	**67,307,800**	**1,539,130,000**
Panacea Area Water System, Inc.	19850113	274,000	558,000	10,600,000
Sopchoppy	20030034	950,000	1,825,000	40,000,000
Talquin Electric Cooperative, Inc.	19840060	578,000	1,326,000	25,600,000
Winco Utilities, Inc.	20030006	572,000	1,100,000	21,000,000
Subtotal		**2,374,000**	**4,809,000**	**97,200,000**
Region VII Total		***39,076,280***	***72,116,800***	***1,636,330,000***
DISTRICT TOTAL		**263,377,780**	**408,520,700**	**7,477,616,000**

Table A.3 NWFWMD Permitted Public Suppliers (>0.1 Mgal/d) by Region

County	Water Suppliers Pumping over 0.1 Mgal/d	CUP #	Permitted Average Daily Rate	Permitted Maximum Daily Rate	Permitted Maximum Monthly Rate
REGION V					
Franklin	Alligator Point Water Resources District	19840008	152,000	600,000	6,854,000
	Apalachicola	19860066	730,000	1,314,000	28,500,000
	Carrabelle	19840039	211,000	401,000	8,200,000
	Eastpoint Water & Sewer District	19980008	342,000	770,000	12,300,000
	Lanark Village Water & Sewer District	19830101	124,000	265,000	5,320,000
	Water Management Services, Inc.	19830074	517,000	1,090,000	24,000,000
	Subtotal		**2,076,000**	**4,440,000**	**85,174,000**
Gulf	Department of Corrections	19910045	400,000	711,000	14,220,000
	Lighthouse Utilities Company, Inc.	19830085	350,000	864,000	15,000,000
	Port St. Joe	19830039	1,280,000	1,700,000	39,000,000
	Wewahitchka	19840045	291,000	437,000	
	Subtotal		**2,321,000**	**3,712,000**	**68,220,000**
	Region V Total		***4,397,000***	***8,152,000***	***153,394,000***
REGION VI					
Gadsden	Chattahoochee	19830027	705,000	1,440,000	26,000,000
	Gretna	20010007	352,000	585,000	15,400,000
	Florida State Hospital	19860220	1,270,000	3,000,000	50,900,000
	Quincy	19830021	1,930,000	3,620,000	73,000,000
	Talquin Electric Cooperative, Inc.	19840059	1,620,000	3,500,000	68,200,000
	Region VI Total		**5,877,000**	**12,145,000**	**233,500,000**
REGION VII					
Leon	Federal Correctional Institution	20000007	210,000	360,000	8,830,000
	Tallahassee	19830061	33,700,000	59,310,000	1,415,400,000
	Talquin Electric Cooperative, Inc.	20000011	1,800,000	5,520,000	100,200,000
	Talquin Electric Cooperative, Inc.	20010012	245,000	440,000	14,700,000
	Talquin Electric Cooperative, Inc.	19840043	194,040	415,800	
	Talquin Electric Cooperative, Inc.	19842687	122,780	230,400	
	Talquin Electric Cooperative, Inc.	19842690	104,460	297,600	
	Talquin Electric Cooperative,Inc.	19830010	326,000	734,000	
	Subtotal		**36,702,280**	**67,307,800**	**1,539,130,000**
Wakulla	Panacea Area Water System, Inc.	19850113	274,000	558,000	10,600,000
	Sopchoppy	20030034	950,000	1,825,000	40,000,000
	Talquin Electric Cooperative, Inc.	19840060	578,000	1,326,000	25,600,000
	Winco Utilities, Inc.	20030006	572,000	1,100,000	21,000,000
	Subtotal		**2,374,000**	**4,809,000**	**97,200,000**
	Region VII Total		***39,076,280***	***72,116,800***	***1,636,330,000***
	DISTRICT TOTAL		**263,377,780**	**408,520,700**	**7,477,616,000**

Table A.4 Tourism Estimates Northwest Florida in 2002

County	Estimated Annual Visitors by County	Average Length of Stay (Days)[1]	Source[2]
Bay	6,000,000	No Data Available	Panama City Beach Convention & Visitors Bureau
Calhoun	No Data Available	No Data Available	
Escambia	1,500,000	3.95	Pensacola Visitor Information Center
Franklin	150,000	No Data Available	The Coastal Connection
Gadsden	No Data Available	No Data Available	
Gulf	653,000	No Data Available	Gulf County Chamber of Commerce
Holmes	40,000-50,000	2	Chamber of Commerce
Jackson	No Data Available	No Data Available	
Jefferson	No Data Available	No Data Available	
Leon	2,300,000	2-3	Tallahassee Area Visitor Information Center
Liberty	No Data Available	No Data Available	
Okaloosa	5,800,000 - 9,200,000	8	Destin/Ft. Walton Beach Tourism Center
Santa Rosa	200,000	4	Santa Rosa County Tourism Development Council
Wakulla	180,000	No Data Available	Wakulla Springs Park Ranger
Walton	499,000	7-12	Beaches of South Walton Tourism and Development Council
Washington	No Data Available	No Data Available	

1 Estimates are derived from Local Option Tourist Development Tax Revenues 2 Personal Communications

Table A.5 Tourism Water Use Analysis

District Total Annual Visitors Estimate[1]	Average Length of Stay (Days)[2]	People Days	District Annualized Estimate of Visitation (People/Year)
13,749,000	5.07	69,776,175	191,167

[1] Used maximum values reported and assumed most visitors reside outside Northwest Florida
[2] Used maximum values reported. Average length of stay derived from Local Option Tourist Development Tax Revenues.