

Annual
Water
Use
Survey

1988

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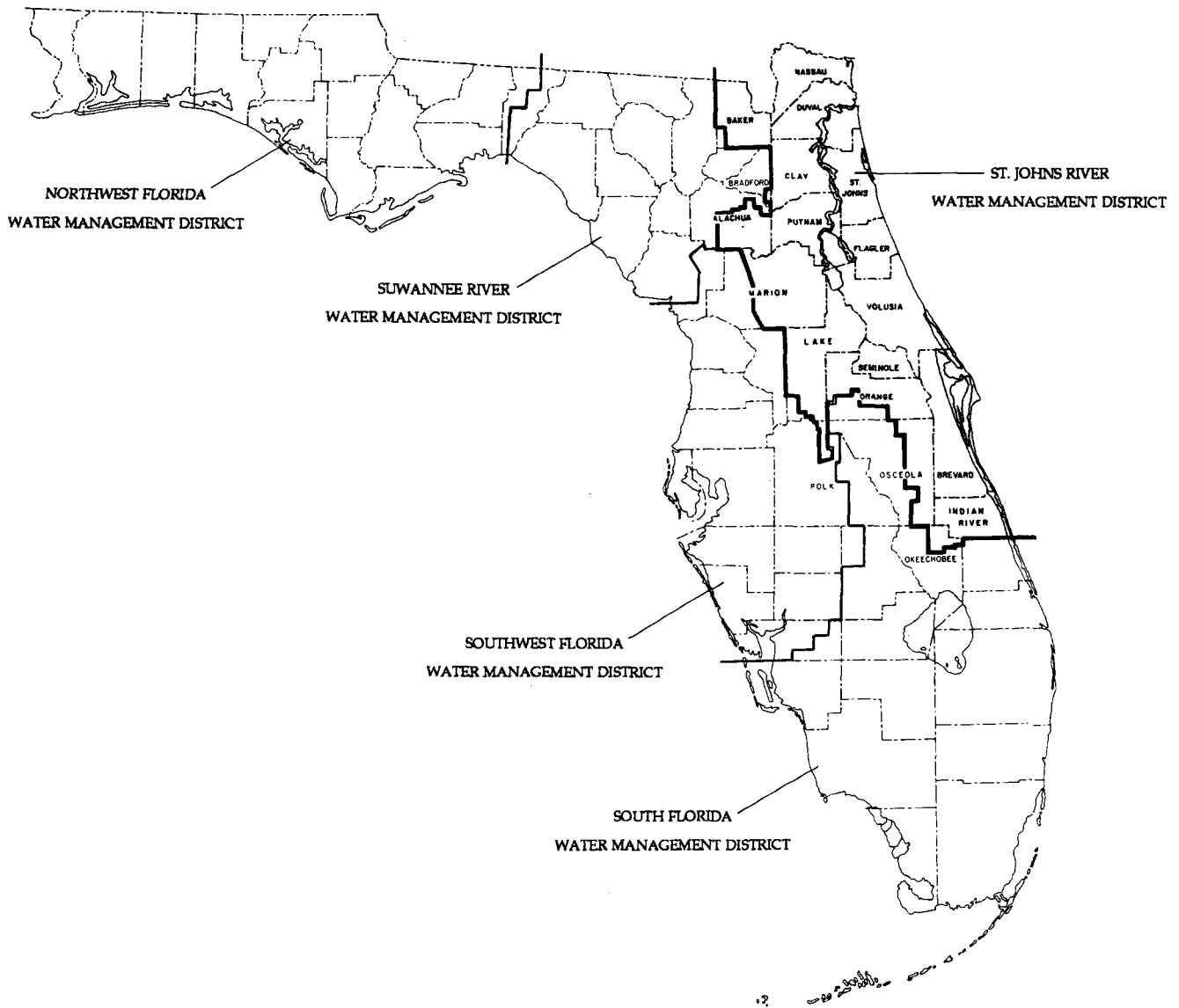
ANNUAL WATER USE SURVEY: 1988

by

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1990



THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

The St. Johns River Water Management District (SJRWMD) was created by the Florida Legislature in 1972 to be one of five water management districts in Florida. It includes all or parts of nineteen counties in northeast Florida. The mission of SJRWMD is to manage water resources to insure their continued availability while maximizing environmental and economic benefits. It accomplishes its mission through regulation; applied research; assistance to federal, state, and local governments; operation and maintenance of water control works; and land acquisition and management. Technical reports are published to disseminate information collected by SJRWMD in pursuit of its mission.

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ABSTRACT

Water use data for 1988 were collected for each county within the St. Johns River Water Management District (SJRWMD) and were compiled by the following categories: public supply, domestic self-supply, commercial/industrial self-supply, agricultural irrigation, thermoelectric power generation self-supply, heat pump/air conditioning use, and free-flowing wells. Graphs and tables present total water use for the district and water use by category. The appendix presents specific data for each county.

The total amount of water used in SJRWMD for 1988 was 3,185.14 million gallons per day (MGD), of which 1,477.08 MGD was fresh water. This amount of fresh water includes a relatively small amount of slightly saline water used for agricultural irrigation, or treated by reverse osmosis for public supply in Brevard, Indian River, and Volusia counties. The remaining 1,708.06 MGD was saline water and was all from surface water sources. Ground water accounted for 1,097.93 MGD, or about 75 percent of the total fresh water used, most of which came from the Floridan aquifer. The use of fresh ground water increased from 1,055.42 MGD in 1987 to 1,097.93 MGD in 1988. The largest amount of fresh ground water was used for agricultural irrigation (36.6 percent) followed closely by public supply (35.8 percent). Agricultural irrigation used the largest amount of fresh surface water (61 percent) and total fresh water (43 percent) in SJRWMD during 1988.

INTRODUCTION

PURPOSE AND SCOPE

This report assesses 1988 water use in the St. Johns River Water Management District (SJRWMD). This assessment addresses the quantities of water used, indicates trends in use, and provides the data required to establish water budgets and water use projections. This type of data has been published annually by SJRWMD since 1978. "Water use" in this report covers water withdrawals from ground and surface water sources and consumption by the specific categories of water users.

Water use is compiled for all of Brevard (BR), Clay (CL), Duval (DU), Flagler (FL), Indian River (IR), Nassau (NA), Putnam (PU), St. Johns (SJ), Seminole (SE), and Volusia (VO) counties and for those portions of Alachua (AL), Baker (BA), Bradford (BR), Lake (LA), Marion (MA), Okeechobee (OK), Orange (OR), Osceola (OS), and Polk (PO) counties that lie in SJRWMD (Figure 1).

Water use is compiled for the following categories: public supply, domestic self-supply, commercial/industrial self-supply (including institutional/recreational self-supply and mining), agricultural irrigation (including livestock use), self-supplied thermoelectric power generation, heat pump/air conditioning, and free-flowing wells.

In this report, the classification of water as to fresh, slightly saline, and saline is based on water quality and water use. Fresh water includes both potable and nonpotable water and is used for public and domestic supply, irrigation, commercial/industrial use, and power generation. Saline water is generally too salty for irrigation, but can be used for power generation and commercial/industrial use. Slightly saline water generally requires treatment if it is to be used for public supply use. Treatment may involve reverse osmosis (R/O) or blending with fresh water to achieve potable standards. Slightly saline water can be used for commercial/industrial and irrigation purposes without treatment. Definitions of these water types are included in the glossary.

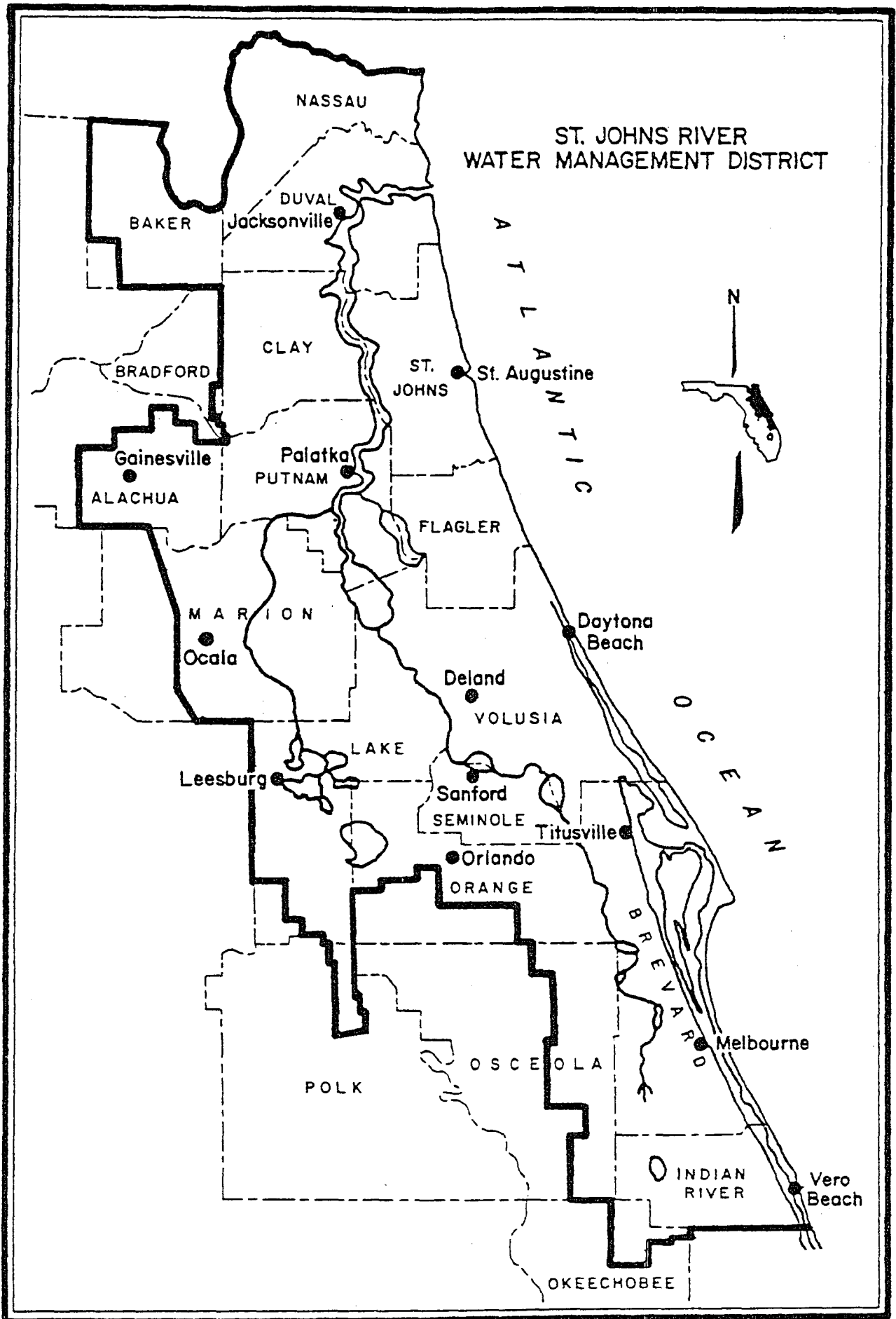


Figure 1. St. Johns River Water Management District

DATA SOURCES AND RELIABILITY

Data for public supplies, self-supplied industries, institutions, and thermoelectric power plants were collected from the records of the Department of Environmental Regulation (DER), and the Department of Health and Rehabilitative Services (HRS). Agricultural water use is estimated using the following:

- o the modified Blaney-Criddle computer irrigation model (USDA 1970);
- o the Agricultural Field Scale Irrigation Requirements Simulation model (AFSIRS) of the University of Florida (Smajstrla 1986);
- o SJRWMD Benchmark Farms data, in combination with the crop data supplied by the Institute of Food and Agricultural Sciences county extension office (IFAS);
- o U. S. Department of Agriculture (USDA) Soil Conservation Service (SCS) data;
- o USDA Agricultural Stabilization and Conservation Services (ASCS) data; and
- o SJRWMD consumptive use permit (CUP) files.

The heat pump/air conditioning figures are calculated from the Brevard County well inventory list 1975-77, the Volusia County Vol-Data File (U. S. Geological Survey 11/20/80), and the SJRWMD CUP files. Residential use is calculated for only Brevard, Volusia, and Putnam counties; however, data for the remaining 16 counties are presently being inventoried. Non-residential use data (industrial and commercial) were collected through the CUP files for all counties. Data for the free-flowing well inventory are collected by SJRWMD in accordance with the provisions of Chapter 373.207 Florida Statutes, "Abandoned Artesian Wells."

Water use data are expressed in million gallons per day (MGD). Water use values are the average annual quantities withdrawn (see glossary) and are rounded to whole numbers. The tables in this report show values in MGD and are reported to two places to the right of the decimal, or to 10,000 gallons. The accuracy of these values varies from category to category. Data for public supply uses are considered reliable to the nearest 10,000 gallons because they are derived from metered pumpage. Data for agricultural water use are considered less reliable because they are estimated.

SUMMARY OF WATER USE IN 1988

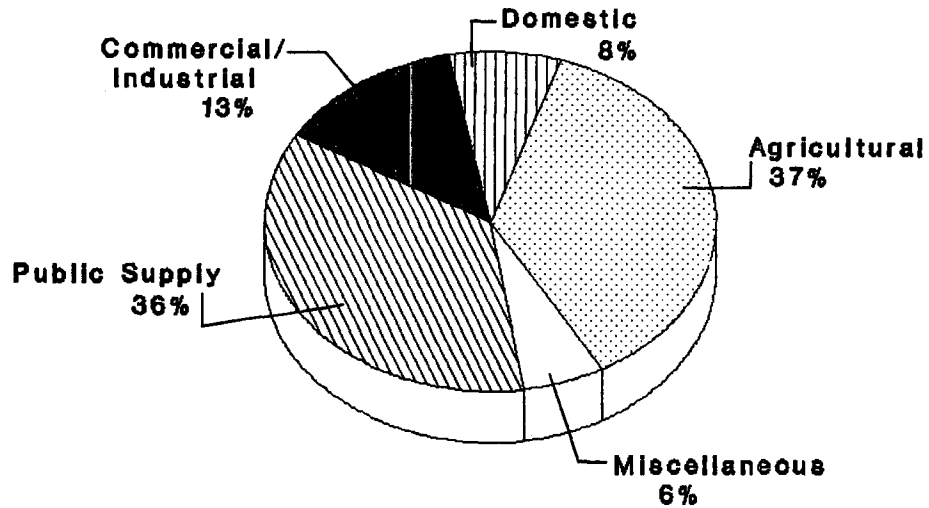
In 1988, the total amount of water used in SJRWMD was 3,185.14 MGD, of which 1,477.08 MGD, or about 46 percent, was fresh water, and 1,708.06 MGD was saline. Ground water accounted for 1,097.93 MGD, or about 75 percent, of the fresh water used, while all of the saline water use was from surface water sources. For definitions of fresh and saline water as used in this report refer to the glossary.

FRESH GROUND WATER

The largest category of fresh ground water use in SJRWMD was agricultural irrigation, using 401.41 MGD, or 36.6 percent, of the total fresh ground water (Figure 2). The second largest category of fresh ground water use was public supply, accounting for 393.14 MGD, or 35.8 percent, of the total fresh ground water used during 1988 (Figure 2). The Floridan aquifer supplied about 90 percent of the ground water used throughout SJRWMD, though the amount of water use from the intermediate and surficial aquifer systems varies from county to county (Table 1). Extremely low rainfall during April, May, and June prompted increases in public supply demand over 1987 demand. Other quantities of ground water use by category were commercial/industrial self-supply, using 146.11 MGD, or 13.3 percent, of the total ground water used, and domestic self-supply, using 86.73 MGD, or about 8 percent, of the total ground water used. Miscellaneous ground water accounted for 64.25 MGD, or about 6 percent, of the total ground water used. Miscellaneous uses include water used to run heat pumps and air conditioning units and water discharged from free-flowing wells. Thermoelectric power generation accounted for 6.29 MGD, or less than 1 percent, of the total ground water used. Fresh ground water use in SJRWMD increased from 1,055.42 MGD in 1987 to 1,097.93 MGD in 1988. The counties that exceeded 100 MGD of fresh ground water use were Duval (173.01 MGD), Brevard (156.08 MGD), and Orange (144.12 MGD) counties, totaling 473.21 MGD, or about 43 percent, of the ground water used in SJRWMD in 1988 (Table 2).

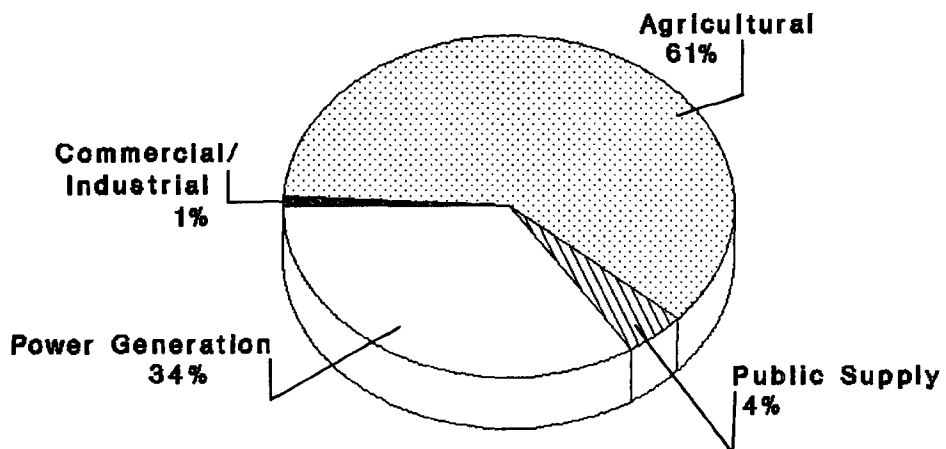
ST JOHNS RIVER WATER MANAGEMENT DISTRICT

Fresh Ground Water Use, 1988



Ground Water
Total: 1,097.93 MGD

Fresh Surface Water Use, 1988



Surface Water
Total: 379.15 MGD

Figure 2

Table 1. Aquifer withdrawals by county : 1988
 ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
 (All values in MGD)

COUNTY	TOTAL GROUND	INTERMIDATE & SURFICIAL		FLORIDAN	
ALACHUA	31.12	1.87	6%	29.25	94%
BAKER	5.90	2.83	48%	3.07	52%
BRADFORD	0.49	0.03	6%	0.46	94%
BREVARD	156.08	24.97	16%	131.11	84%
CLAY	24.36	3.41	14%	20.95	86%
DUVAL	173.01	15.57	9%	157.44	91%
FLAGLER	10.43	2.61	25%	7.82	75%
INDIAN RIVER	83.57	23.40	28%	60.17	72%
LAKE	88.00	7.04	8%	80.96	92%
MARION	33.34	6.33	19%	27.01	81%
NASSAU	42.92	3.00	7%	39.92	93%
OKEECHOBEE	8.83	0.00	0%	8.83	100%
ORANGE	144.12	2.85	2%	141.27	98%
OSCEOLA	6.79	0.00	0%	6.79	100%
POLK	11.69	0.23	2%	11.46	98%
PUTNAM	76.38	6.11	8%	70.27	92%
ST. JOHNS	45.01	6.75	15%	38.26	85%
SEMINOLE	67.35	2.02	3%	65.33	97%
VOLUSIA	88.54	5.31	6%	83.23	94%
DISTRICT TOTALS	1,097.93	114.33	10%	983.60	90%

FRESH SURFACE WATER

The major fresh surface water use category in 1988 was agricultural irrigation, which accounted for 229.51 MGD, or 60.5 percent, of the total surface water used in SJRWMD (Figure 2). Thermoelectric power generation accounted for 129.49 MGD, or 34.2 percent, of the total fresh surface water use. Public supply accounted for the remaining 20.15 MGD. Fresh surface water use increased from 353.47 MGD in 1987 to 379.15 MGD in 1988.

In 1988, Indian River County had the greatest quantity of fresh surface water use, by county (136.14 MGD), all of which was used for agricultural irrigation (Table 2). The second largest amount of fresh water was used in Volusia County (123.98 MGD), of which 117.45 MGD was used for thermoelectric power generation. Water use in these two counties accounted for 260.12 MGD, or 68.6 percent, of the total fresh surface water used in SJRWMD.

WATER USE TRENDS

Total fresh water use since 1975 has fluctuated from year to year, but generally has been increasing (Figure 3). With the exceptions of very high water use in 1981 (a drought year) and lower water use in 1985 (a wet year), this trend reflects increases in population, changes in agricultural commodities, and an increase in tourism throughout SJRWMD. A review of the last thirteen years of data indicates that water use for public supply has increased in a generally steady manner, while water use for agricultural irrigation has fluctuated primarily in response to changes in rainfall (Figure 4). Between 1987 and 1988, fresh water use increased within each category: public supply increased 2.5 percent or 8.9 MGD; domestic self-supply increased 2.0 percent or 1.0 MGD; commercial/industrial use increased 3.5 percent or 4.4 MGD; agricultural irrigation increased 8.6 percent or 49.73 MGD; and power generation increased 1.1 percent or 1.4 MGD.

ST JOHNS RIVER WATER MANAGEMENT DISTRICT
Total Fresh Water Use, 1975-1988

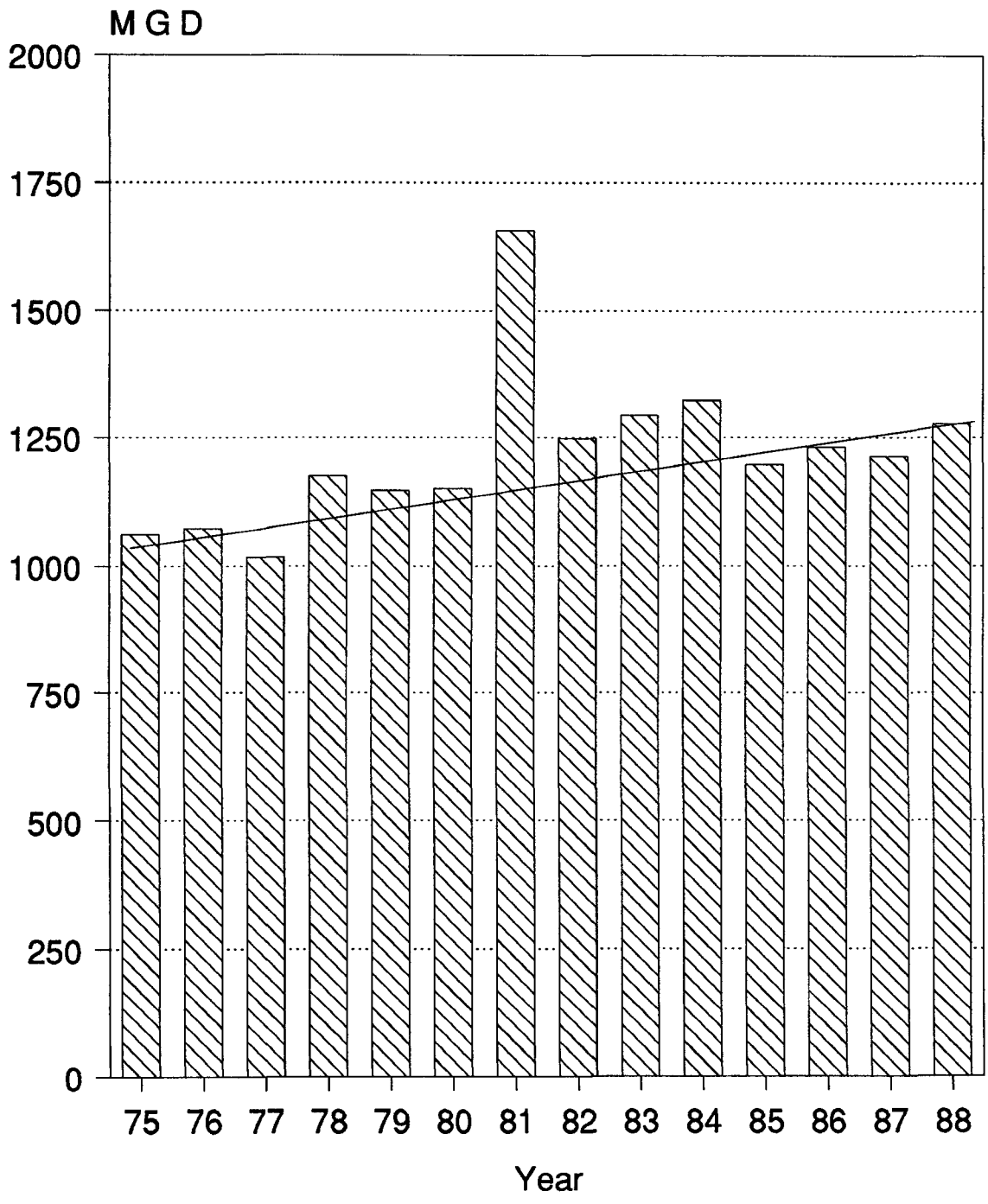


Figure 3

ST JOHNS RIVER WATER MANAGEMENT DISTRICT Fresh Water Use by Category, 1975-1988

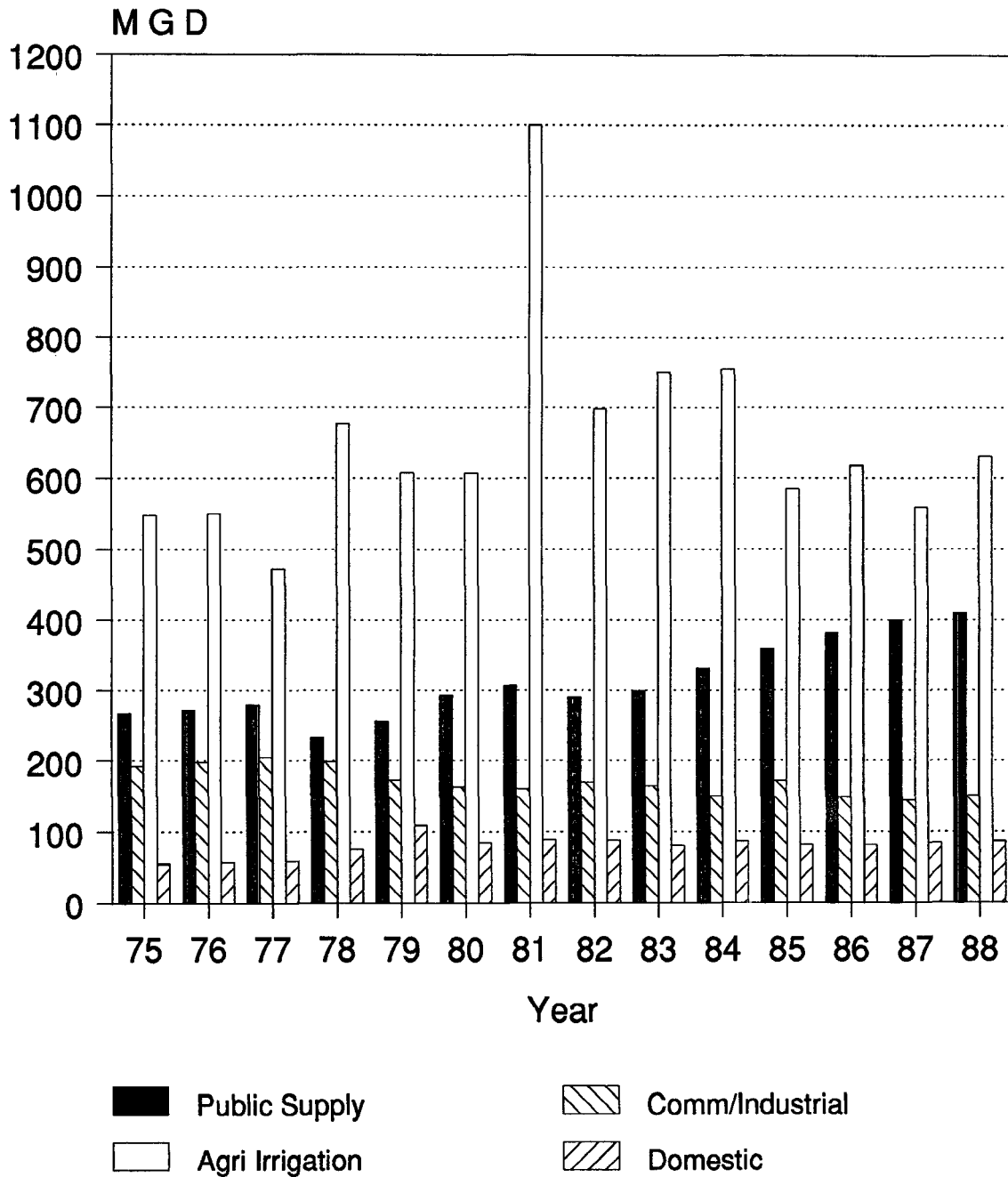


Figure 4

Note: Power Generation is not presented here

Table 2. Total water use by county : 1988
 ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
 (All values in MGD)

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
ALACHUA	31.12	0.15	31.27	0.00	0.00	0.00	0.00
BAKER	5.90	2.20	8.10	0.00	0.00	0.00	0.00
BRADFORD	0.49	0.00	0.49	0.00	0.00	0.00	0.00
BREVARD	156.08	30.80	186.88	0.00	992.39	992.39	0.64
CLAY	24.36	0.31	24.67	0.00	0.00	0.00	0.00
DUVAL	173.01	0.96	173.97	0.00	576.31	576.31	2.37
FLAGLER	10.43	0.92	11.35	0.00	0.00	0.00	0.00
INDIAN RIVER	83.57	136.14	219.71	0.00	137.98	137.98	0.00
LAKE	88.00	11.31	99.31	0.00	0.00	0.00	2.99
MARION	33.34	1.29	34.63	0.00	0.00	0.00	0.20
NASSAU	42.92	0.93	43.85	0.00	1.38	1.38	0.47
OKEECHOBEE	8.83	0.25	9.08	0.00	0.00	0.00	0.00
ORANGE	144.12	41.44	185.56	0.00	0.00	0.00	6.08
OSCEOLA	6.79	7.20	13.99	0.00	0.00	0.00	0.00
POLK	11.69	1.17	12.86	0.00	0.00	0.00	0.00
PUTNAM	76.38	17.18	93.56	0.00	0.00	0.00	0.00
ST. JOHNS	45.01	0.90	45.91	0.00	0.00	0.00	0.32
SEMINOLE	67.35	2.02	69.37	0.00	0.00	0.00	0.00
VOLUSIA	88.54	123.98	212.52	0.00	0.00	0.00	0.41
DISTRICT TOTALS	1,097.93	379.15	1,477.08	0.00	1,708.06	1,708.06	13.48
TOTAL GROUND	1,097.93						
TOTAL SURFACE		2,087.21					
DISTRICT TOTALS		3,185.14					

Note: 0.00 value means no pumpage was reported over 10,000 gallons per day.

SEASONAL FLUCTUATIONS

Water use is closely related to rainfall. The months of March, April, and May are normally dry and are also peak crop irrigation months. Irrigation demands peak during these months as well as public supply demands because water use for residential lawn irrigation increases due to the dry conditions. During the last three years, the highest monthly water use has occurred in April. During 1988, April water use accounted for about 19 percent (or 3,106 MGD) of the total annual fresh water use (Figure 5).

**ST JOHNS RIVER WATER MANAGEMENT DISTRICT
Monthly Fresh Water Use, 1986-1988**

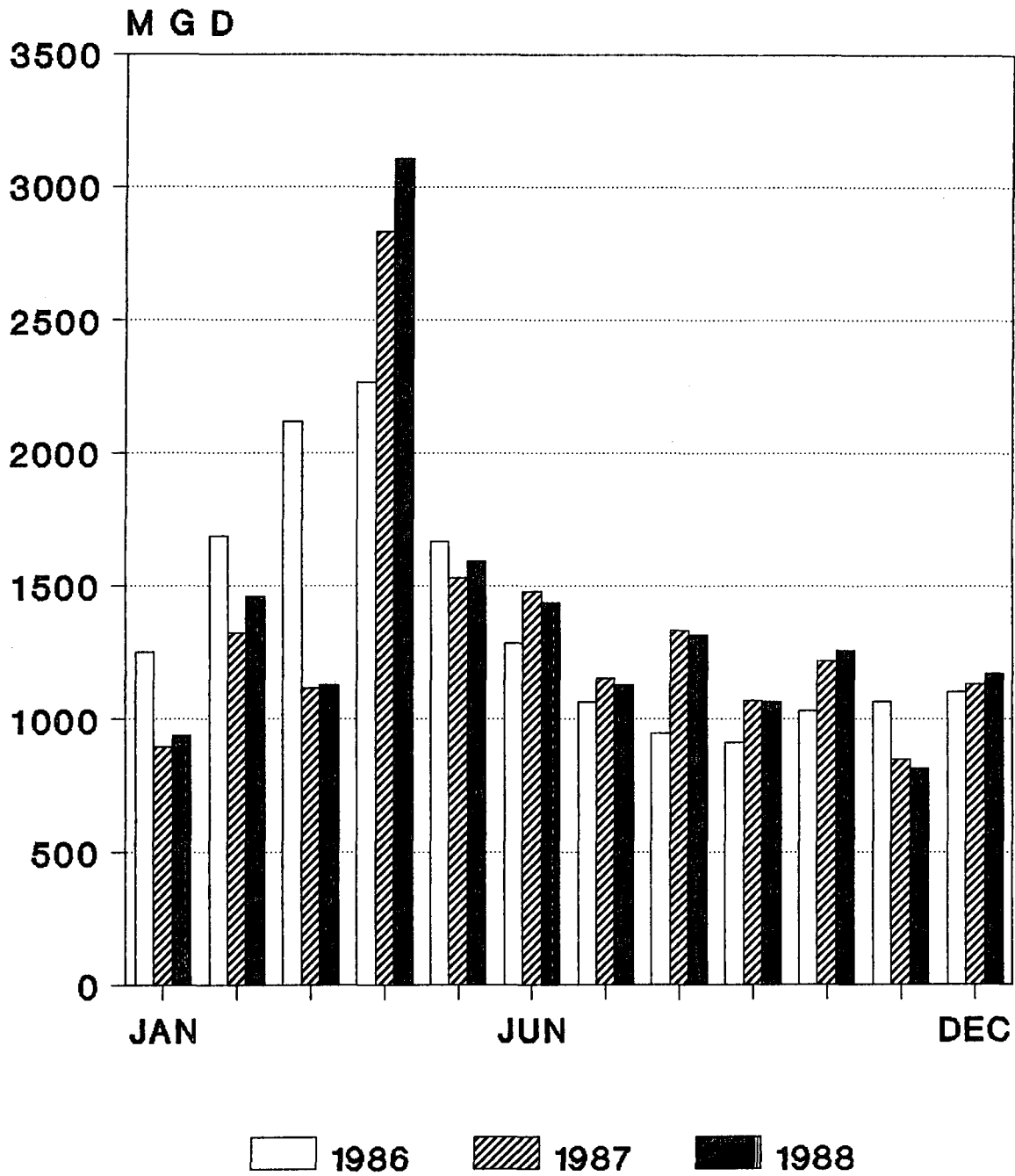


Figure 5

PUBLIC SUPPLY

METHODS AND DATA RELIABILITY

The public supply category includes water used by both government and privately owned suppliers. Systems that served 400 people or more or used more than 0.01 MGD were considered public supply systems. There were 195 systems inventoried in 1988. This accounts for the major public supply utilities in SJRWMD. Water use for smaller utilities is included in the domestic self-supply category. Water use and population data were collected using information from SJRWMD's CUP files or data supplied by DER monthly operating reports.

SUMMARY OF WATER USE

Total water use for public supply amounted to 409.29 MGD, of which 96 percent was ground water. A small fraction of that total, 3.05 MGD, was slightly saline water (see glossary) treated by reverse osmosis or blended with fresh water for use as potable water. In previous SJRWMD annual water use surveys up to 1987, slightly saline water in the public supply category was reported as saline water. For the last two years it has been reported as fresh water.

Most of the water for public supply (393.14 MGD) was fresh ground water, comprising 35.8 percent of the total fresh ground water use for 1988. Fresh water use, including surface water use, increased from 400.39 MGD in 1987 to 409.29 MGD in 1988. This increase was due to extremely low rainfall during April, May, and June. Agricultural pumpage, however, decreased due to heavy rainfall in January.

Source. Approximately 377.41 MGD of the ground water used for public supply was derived from the Floridan aquifer. The remaining 15.73 MGD was derived from the surficial or intermediate aquifers. The City of Melbourne was the only public supply utility that used surface water, which accounted for 16.15 MGD, or about 4 percent, of the total public supply water use.

Largest users. Water use for public supply, by county, was highest in Orange and Duval counties, accounting for 204.27 MGD, or more than half of the public supply water use in SJRWMD in 1988 (Table 3). Orange and Duval counties also contain the largest number of

people served by public supply systems (Figure 6) and nearly 40 percent of SJRWMD's total population. The 195 public supply systems inventoried in SJRWMD served 2,498,520 people, or 82 percent of SJRWMD's total population. Orange County lies within two water management districts. Of a total of 139.81 MGD of water used in Orange County, 110.83 MGD was used for public supply in SJRWMD and 28.98 MGD in the South Florida Water Management District (SFWMD). Orange County's total also includes 25.02 MGD for the City of Cocoa's public supply system in Brevard County. Duval County's total includes SJRWMD's single largest public supplier, the City of Jacksonville, which accounted for 66.43 MGD (this value includes Mandarin Utilities, which the City of Jacksonville acquired during 1987).

Seasonal fluctuations. In 1988, public supply in SJRWMD fluctuated from a low of 342.8 MGD in January to a high of 465.6 MGD in April (Figure 7). This fluctuation relates to seasonal differences in residential demand, primarily for lawn irrigation, and increased demands due to seasonal population changes and tourism.

Public supply water is used for commercial, industrial, irrigation, and power generation uses, as well as domestic (household) use. Public supply water was also used for fire fighting and system maintenance. Domestic uses, which include indoor and outdoor household uses, accounted for about 70 percent of the water delivered by public supply systems (Figure 8). This number was derived from information collected as part of SJRWMD's CUP process, or provided by individual utilities. The average quantity of water used per capita solely for domestic purposes in 1988 was estimated at 117 gallons per day (GPD). The average public supply per capita for SJRWMD in 1988 was 164 GPD.

**ST JOHNS RIVER WATER MANAGEMENT DISTRICT
Population Served by Public Supply, 1988**

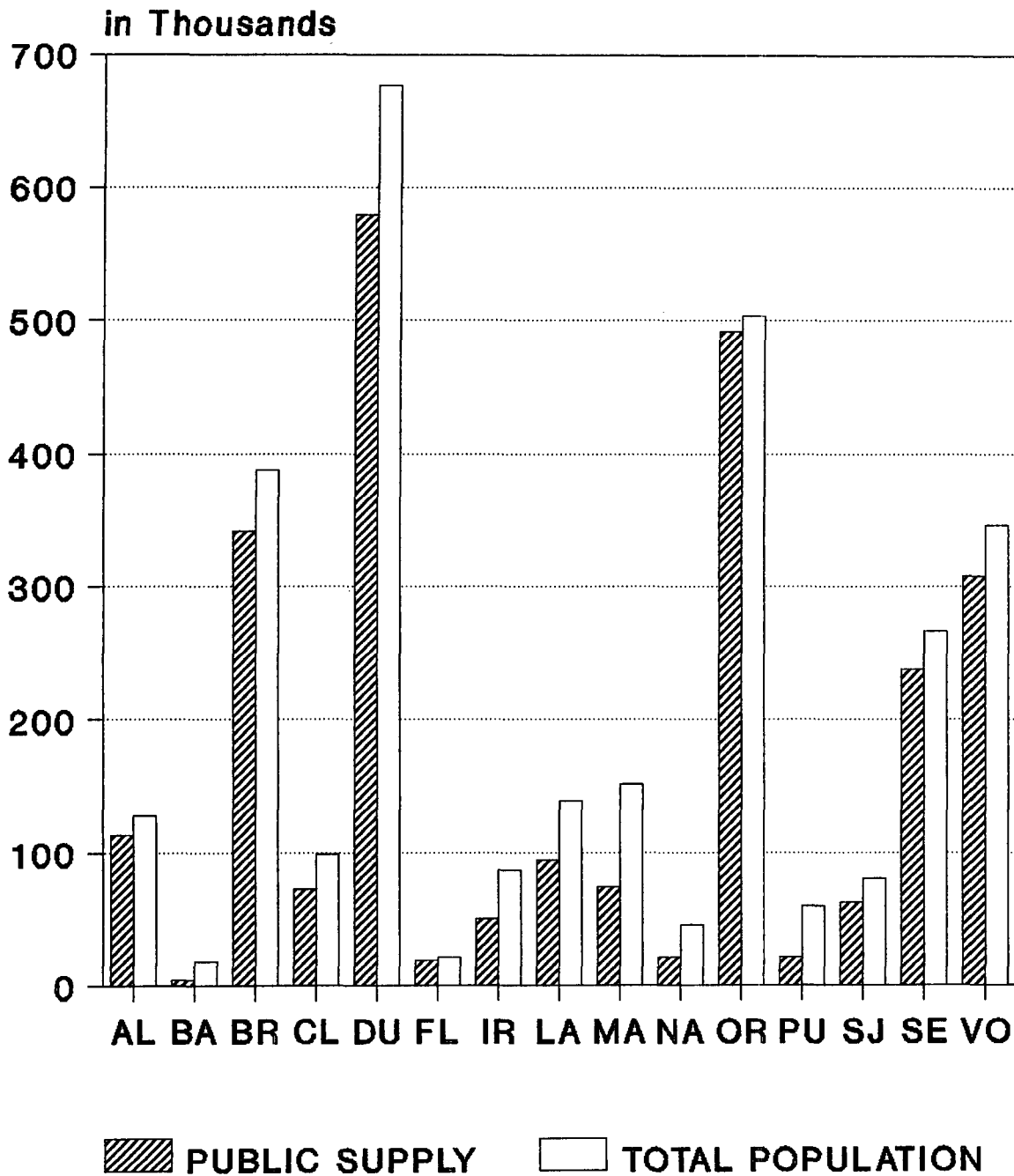


Figure 6

**ST JOHNS RIVER WATER MANAGEMENT DISTRICT
Public Supply Fresh Water Use, 1988**

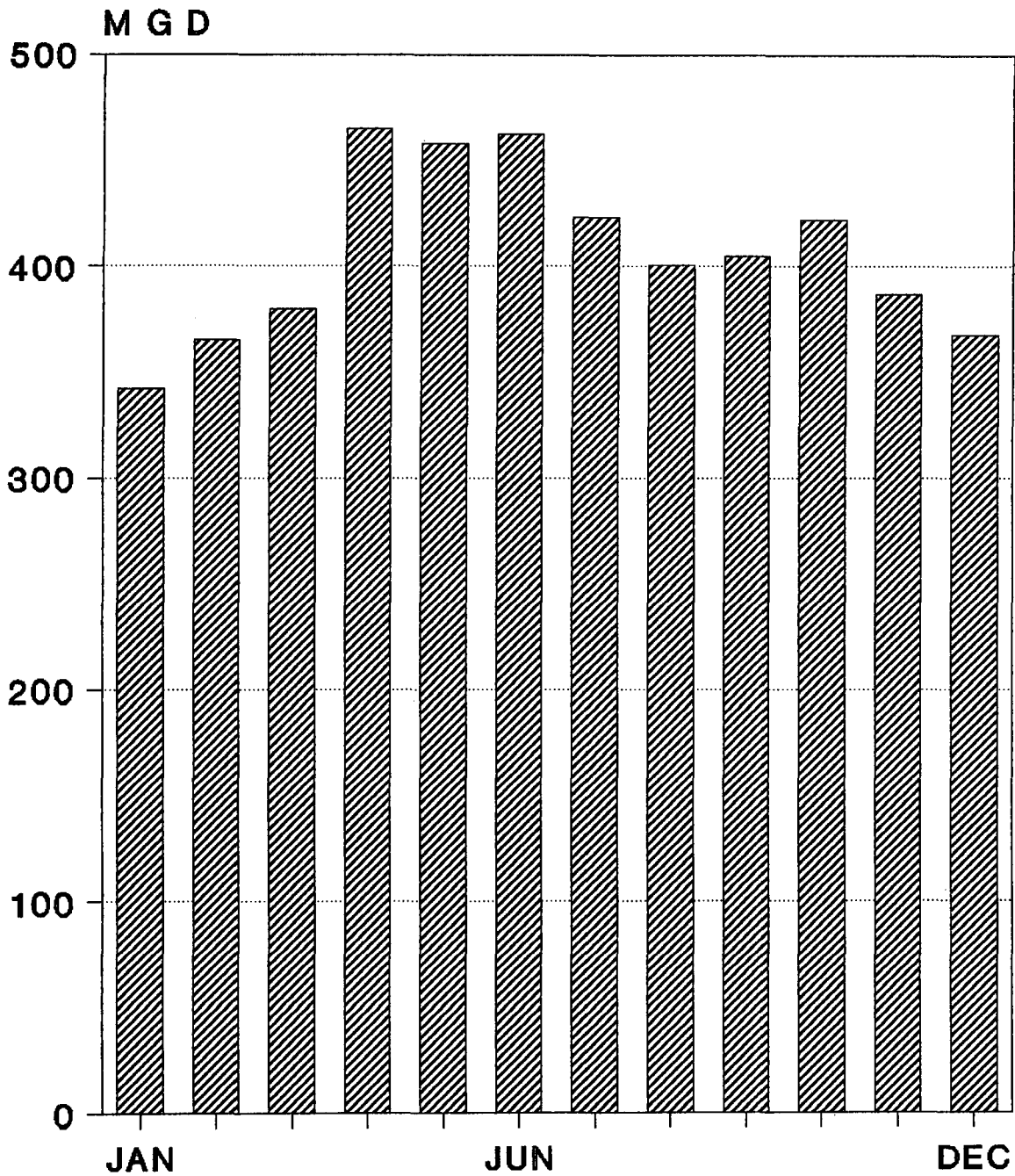
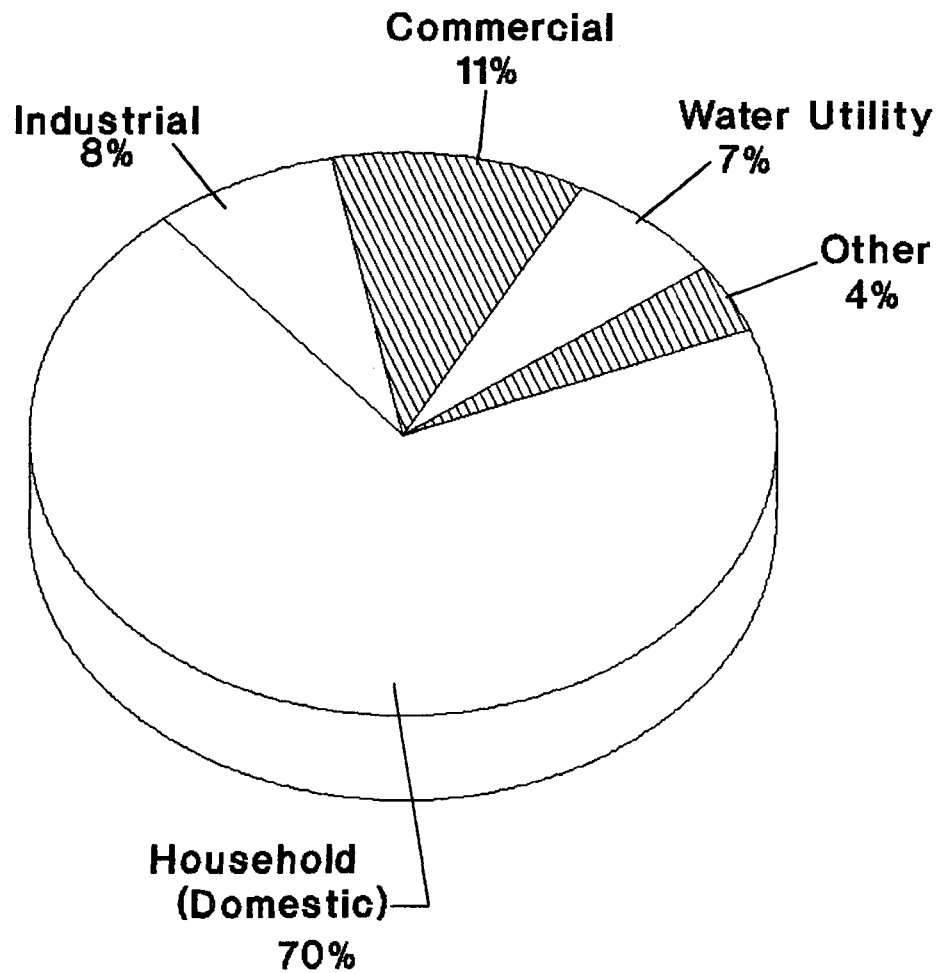


Figure 7

St Johns River Water Management District Estimated Water Use For Public Supply



• Total public supply use equaled 409.29 MGD in 1988

Figure 8

Table 3. Public supply water use by county : 1988
 ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
 (All values in MGD)

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
ALACHUA	20.53	0.00	20.53	0.00	0.00	0.00	0.00
BAKER	0.65	0.00	0.65	0.00	0.00	0.00	0.00
BRADFORD	0.20	0.00	0.20	0.00	0.00	0.00	0.00
BREVARD (a)	10.79	16.15	26.94	0.00	0.00	0.00	0.00
CLAY	10.39	0.00	10.39	0.00	0.00	0.00	0.00
DUVAL	93.44	0.00	93.44	0.00	0.00	0.00	0.00
FLAGLER	3.03	0.00	3.03	0.00	0.00	0.00	0.00
INDIAN RIVER (a)	12.28	0.00	12.28	0.00	0.00	0.00	0.00
LAKE	18.21	0.00	18.21	0.00	0.00	0.00	0.00
MARION	11.64	0.00	11.64	0.00	0.00	0.00	0.00
NASSAU	3.58	0.00	3.58	0.00	0.00	0.00	0.00
OKEECHOBEE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ORANGE	110.83	0.00	110.83	0.00	0.00	0.00	0.00
OSCEOLA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLK	0.11	0.00	0.11	0.00	0.00	0.00	0.00
PUTNAM	3.44	0.00	3.44	0.00	0.00	0.00	0.00
ST. JOHNS	7.49	0.00	7.49	0.00	0.00	0.00	0.00
SEMINOLE	42.86	0.00	42.86	0.00	0.00	0.00	0.00
VOLUSIA (a)	43.67	0.00	43.67	0.00	0.00	0.00	0.00
DISTRICT TOTALS	393.14	16.15	409.29	0.00	0.00	0.00	0.00
TOTAL GROUND	393.14						
TOTAL SURFACE		16.15					
DISTRICT TOTALS		409.29					

(a) Includes slightly saline ground water (250 to 1,000 mg/l chlorides).

Note: 0.00 value means no pumpage was reported over 10,000 gallons per day.

DOMESTIC SELF-SUPPLY

METHODS AND DATA RELIABILITY

Domestic self-supply is defined here as water provided by individual domestic wells or by small utilities (utilities supplying fewer than 400 residents, which are not inventoried under the public supply category). In 1988, an estimated 521,607 people used 86.73 MGD of domestic self-supplied water, all of which was ground water. The population served by domestic self-supply was calculated by subtracting the number of residents served by public supply systems from the total county population. A per capita water use estimate derived from public supply figures (see above), was used to calculate water use by multiplying the county per capita in GPD by the domestic self-supplied population for each county (Table 4).

SUMMARY OF WATER USE

Domestic self-supply accounted for 86.73 MGD, or about 8 percent, of the total fresh ground water used. About 69 percent of the ground water used for domestic self-supply is estimated to be withdrawn from shallow aquifers (the surficial and intermediate aquifer systems). In most of SJRWMD, these shallow aquifers can yield sufficient water for domestic uses. The remaining water (31 percent) is estimated to be from the Floridan aquifer.

In 1988, Duval County had the largest self-supplied population (96,584 people). Marion County had a self-supplied population of 77,377, and Brevard County a self-supplied population of 45,371 (Table 4).

Table 4. Domestic self-supplied population and water use by county : 1988
 ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
 (All values in MGD)

COUNTY	DOMESTIC POPULATION	GALLONS PER CAPITA	USES		TOTAL
			GROUND	SURFACE	
ALACHUA	14,185	180	2.55	0.00	2.55
BAKER	13,434	151	2.03	0.00	2.03
BRADFORD	1,360	144	0.20	0.00	0.20
BREVARD	45,371	152	6.89	0.00	6.89
CLAY	26,928	144	3.87	0.00	3.87
DUVAL	96,584	161	15.55	0.00	15.55
FLAGLER	2,603	161	0.42	0.00	0.42
INDIAN RIVER	36,895	243	8.96	0.00	8.96
LAKE	43,513	190	8.31	0.00	8.31
MARION	77,377	156	12.07	0.00	12.07
NASSAU	24,288	168	4.08	0.00	4.08
OKEECHOBEE	454	143	0.06	0.00	0.06
ORANGE	12,946	187	2.42	0.00	2.42
OSCEOLA	476	140	0.06	0.00	0.06
POLK	1,806	190	0.35	0.00	0.35
PUTNAM	39,403	161	6.34	0.00	6.34
ST. JOHNS	17,652	120	2.12	0.00	2.12
SEMINOLE	28,148	179	5.03	0.00	5.03
VOLUSIA	38,184	142	5.42	0.00	5.42
DISTRICT TOTALS	521,607	164	86.73	0.00	86.73

Note: 0.00 value means no pumpage was reported over 10,000 gallons per day.

COMMERCIAL/INDUSTRIAL SELF-SUPPLY

METHODS AND DATA RELIABILITY

This category includes many types of self-supplied systems. Commercial self-supplied use includes institutional uses; i.e., government facilities, military installations, schools, prisons, hospitals, recreational facilities, and nonmanufacturing establishments. Industrial self-supplied use includes mining, processing, and manufacturing facilities. Self-supplied systems that withdrew more than 0.01 MGD were inventoried. Water use data were collected by SJRWMD using information from CUP files, personal contacts, or data contained in DER monthly operating reports. In 1988, 39 self-supplied commercial users and 59 self-supplied industrial users were inventoried.

SUMMARY OF WATER USE

Total water use by commercial-industrial self-supplied systems was 150.11 MGD, of which 146.11 was fresh ground water. This amount accounted for 13.3 percent of the total fresh ground water used in SJRWMD in 1988. The remaining 4.0 MGD of the total was fresh surface water. An additional estimated total of 74.0 MGD was supplied by public supply systems to industrial and commercial users, respectively (Figure 8).

Industrial use accounted for the majority of water use within this category. The pulp and paper industry (in Nassau, Duval, and Putnam counties) was the largest single industrial water user in 1988 (91.57 MGD). Water use for mining (sand, limerock, etc.) accounted for 19.34 MGD. Together, pulp and paper industries and mining accounted for about 82 percent of the commercial/industrial self-supply in SJRWMD. Water used to transport materials from the mine pit to the plant and water pumped for dewatering the pit is considered a conveyance (see glossary) and is not included in estimates of use.

The mining industry is scattered throughout SJRWMD, whereas the pulp and paper industry is located in the northeastern portion of the district. The largest amount of commercial/industrial self-supplied fresh water use, by county, was used in Putnam County (47.64 MGD, or about 32 percent of the total industrial water use). Duval, Nassau, Lake, and Clay counties also used significant quantities of

commercial/ industrial self-supplied fresh water (Table 5). These four counties in addition to Putnam County accounted for 141.3 MGD, or about 94 percent, of the commercial/industrial self-supply. Commercial/ industrial self-supplied water use fluctuated 21 MGD during 1988, with the highest use in February (166.8 MGD) and the lowest use in November (145.8 MGD) (Figure 9).

Table 5. Commercial/industrial self-supplied water use by county : 1988

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
(All values in MGD)

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE(a)	TOTALS	GROUND	SURFACE	TOTALS	
ALACHUA	1.97	0.00	1.97	0.00	0.00	0.00	0.00
BAKER	0.28	0.00	0.28	0.00	0.00	0.00	0.00
BRADFORD	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BREVARD	0.19	0.00	0.19	0.00	0.00	0.00	0.00
CLAY	6.99	0.00	6.99	0.00	0.00	0.00	0.00
DUVAL	40.11	0.00	40.11	0.00	43.74	43.74	0.00
FLAGLER	0.16	0.00	0.16	0.00	0.00	0.00	0.00
INDIAN RIVER	0.27	0.00	0.27	0.00	0.00	0.00	0.00
LAKE	13.33	0.00	13.33	0.00	0.00	0.00	0.00
MARION	0.99	0.00	0.99	0.00	0.00	0.00	0.00
NASSAU	33.25	0.00	33.25	0.00	1.38	1.38	0.00
OKEECHOBEE	0.07	0.00	0.07	0.00	0.00	0.00	0.00
ORANGE	3.65	0.00	3.65	0.00	0.00	0.00	0.00
OSCEOLA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLK	0.01	0.00	0.01	0.00	0.00	0.00	0.00
PUTNAM	43.64	4.00	47.64	0.00	0.00	0.00	0.00
ST. JOHNS	0.04	0.00	0.04	0.00	0.00	0.00	0.00
SEMINOLE	0.61	0.00	0.61	0.00	0.00	0.00	0.00
VOLUSIA	0.55	0.00	0.55	0.00	0.00	0.00	0.00
DISTRICT TOTALS	146.11	4.00	150.11	0.00	45.12	45.12	0.00
TOTAL GROUND	146.11						
TOTAL SURFACE		49.12					
DISTRICT TOTALS		195.23					

(a) Surface water values do not include water used in mining for dewatering and transport.

Note: 0.00 value means no pumpage was reported over 10,000 gallon per day.

**ST JOHNS RIVER WATER MANAGEMENT DISTRICT
Comm/Industrial Fresh Water Use, 1988**

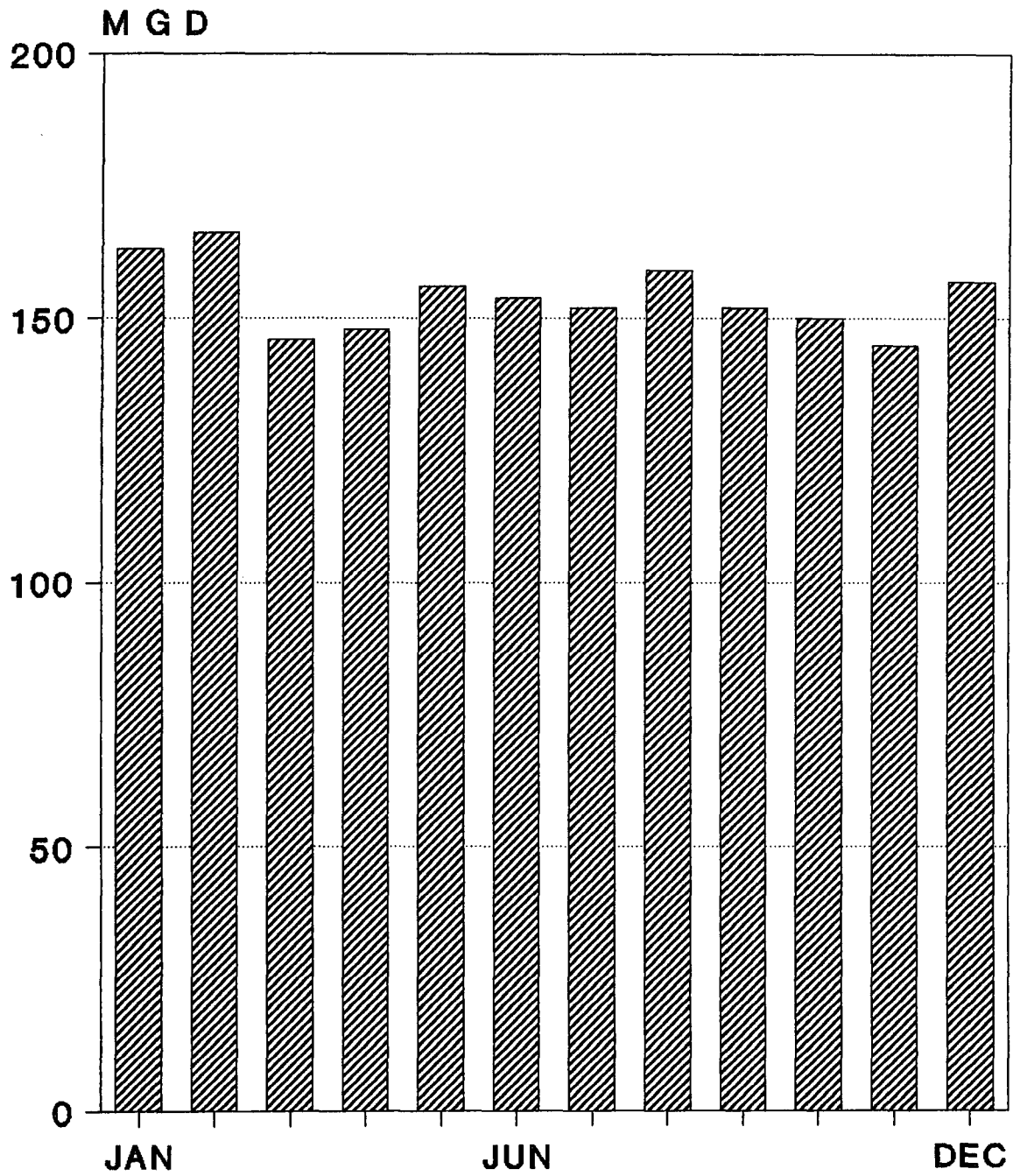


Figure 9

AGRICULTURAL IRRIGATION

METHODS AND DATA RELIABILITY

The agricultural irrigation category includes irrigation and other agricultural water uses, such as livestock watering or lake augmentation for fish farming. Water use was calculated for this category in two steps: first, the number of acres irrigated and method of irrigation was determined for each of the 29 crops within each county in SJRWMD. These data were supplied by IFAS, SJRWMD CUP files, the Florida Department of Agriculture, and the Florida Crop and Livestock Reporting Service. Secondly, the amount of supplemental irrigation water needed to grow each crop was determined, as well as the water necessary to overcome inefficiencies of the irrigation system. A variety of methods and information services were used, including the modified Blaney-Criddle irrigation model (USDA 1970), the University of Florida AFSIRS computer model (Smajstrla 1986), the statewide SCS (USDA 1982), and selected agricultural monitoring programs such as the Benchmark Farms Program of SJRWMD. Once this supplemental irrigation requirement was determined, a water use value was derived by multiplying the amount of water needed to grow that particular crop by the number of acres irrigated.

SUMMARY OF WATER USE

The most fresh ground and surface water in SJRWMD in 1988 was used for agricultural irrigation: an estimated 630.92 MGD of fresh water, or about 42 percent of the total fresh water use. Of this total, 401.41 MGD was ground water. The Floridan aquifer system was the primary source of ground water for agricultural irrigation. Agricultural irrigation also used 229.51 MGD of surface water and 12.25 MGD of reclaimed waste water, mostly in Orange and Lake counties in association with the Conserve II project. Golf courses (turf grass) accounted for 20.97 MGD of ground water, 9.82 MGD of surface water, and 2.04 MGD of reclaimed waste water.

Use by crop. Agricultural irrigation data were collected for four crop categories: vegetables, fruit, field crops, and ornamentals and grasses. Within these categories, 29 specific crops and 3 general crops were delineated (Appendix, Table A-1). Of the four major crop categories, ornamentals and grasses used the most water for irrigation in 1988, accounting for 216.7 MGD, or about 34 percent of the

agricultural water use. "Ornamentals and grasses" includes pasture land. Citrus was the single crop using the largest amount of irrigation water: 251.68 MGD or 39.8 percent of the total agricultural water use. Other crops using large amounts of irrigation water include improved pasture (105.36 MGD), ferns (33.01 MGD), and golf course turf grass (30.79 MGD). Acreage and water use for the four major crop categories and the 29 specific crops are shown in the Appendix (Table A-1 and Figure A-2).

Acreage farmed. An estimated 984,656 acres were farmed in SJRWMD, of which 405,849 acres were irrigated (not including residential acres). Of the total acreage irrigated, 270,215 acres (67 percent) were irrigated by flood systems, 79,646 acres (20 percent) by sprinkler systems, and 55,988 acres (13 percent) by low pressure/low volume systems. The number of agricultural acres increased from 403,740 acres in 1987 to 405,849 acres in 1988. Most of this increase was in Lake County and was the result of replanting freeze damaged citrus groves.

Use by county. The most water used for irrigation, by county, was used in Indian River County: 192.71 MGD or about 30 percent of the total fresh water used for irrigation. Of this amount, 136.14 MGD was surface water. The second largest amount of water used for agricultural irrigation, by county, was used in Brevard County: 115.14 MGD, of which 100.49 MGD was fresh ground water. Orange and Lake counties also used over 50.0 MGD of ground and surface water combined (Table 6). These four counties used 434.24 MGD, or about 68 percent, of the total agricultural irrigation water used in 1988.

Seasonal fluctuation. Agricultural irrigation displays the greatest seasonal variation in water use. During 1988, irrigation demand fluctuated from a high of 2,320 MGD in April to a low in November of 113 MGD (Figure 10).

Table 6. Agricultural irrigation water use by county : 1988
 ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
 (All values in MGD)

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
ALACHUA	5.00	0.15	5.15	0.00	0.00	0.00	0.00
BAKER	2.94	2.20	5.14	0.00	0.00	0.00	0.00
BRADFORD	0.09	0.00	0.09	0.00	0.00	0.00	0.00
BREVARD	100.49	14.65	115.14	0.00	0.00	0.00	0.64
CLAY	2.75	0.31	3.06	0.00	0.00	0.00	0.00
DUVAL	14.12	0.96	15.08	0.00	0.00	0.00	2.37
FLAGLER	6.81	0.92	7.73	0.00	0.00	0.00	0.00
INDIAN RIVER	56.57	136.14	192.71	0.00	0.00	0.00	0.00
LAKE	47.66	11.31	58.97	0.00	0.00	0.00	2.99
MARION	6.93	1.29	8.22	0.00	0.00	0.00	0.20
NASSAU	2.00	0.93	2.93	0.00	0.00	0.00	0.47
OKEECHOBEE	8.70	0.25	8.95	0.00	0.00	0.00	0.00
ORANGE	25.98	41.44	67.42	0.00	0.00	0.00	4.85
OSCEOLA	6.73	7.20	13.93	0.00	0.00	0.00	0.00
POLK	11.22	1.17	12.39	0.00	0.00	0.00	0.00
PUTNAM	18.77	1.14	19.91	0.00	0.00	0.00	0.00
ST. JOHNS	34.82	0.90	35.72	0.00	0.00	0.00	0.32
SEMINOLE	18.70	2.02	20.72	0.00	0.00	0.00	0.00
VOLUSIA	31.13	6.53	37.66	0.00	0.00	0.00	0.41
DISTRICT TOTALS	401.41	229.51	630.92	0.00	0.00	0.00	12.25
TOTAL GROUND	401.41						
TOTAL SURFACE		229.51					
DISTRICT TOTALS		630.92					

NOTE: 0.00 value means no pumpage was reported over 10,000 gallons per day.

**ST JOHNS RIVER WATER MANAGEMENT DISTRICT
Agricultural Fresh Water Use, 1988**

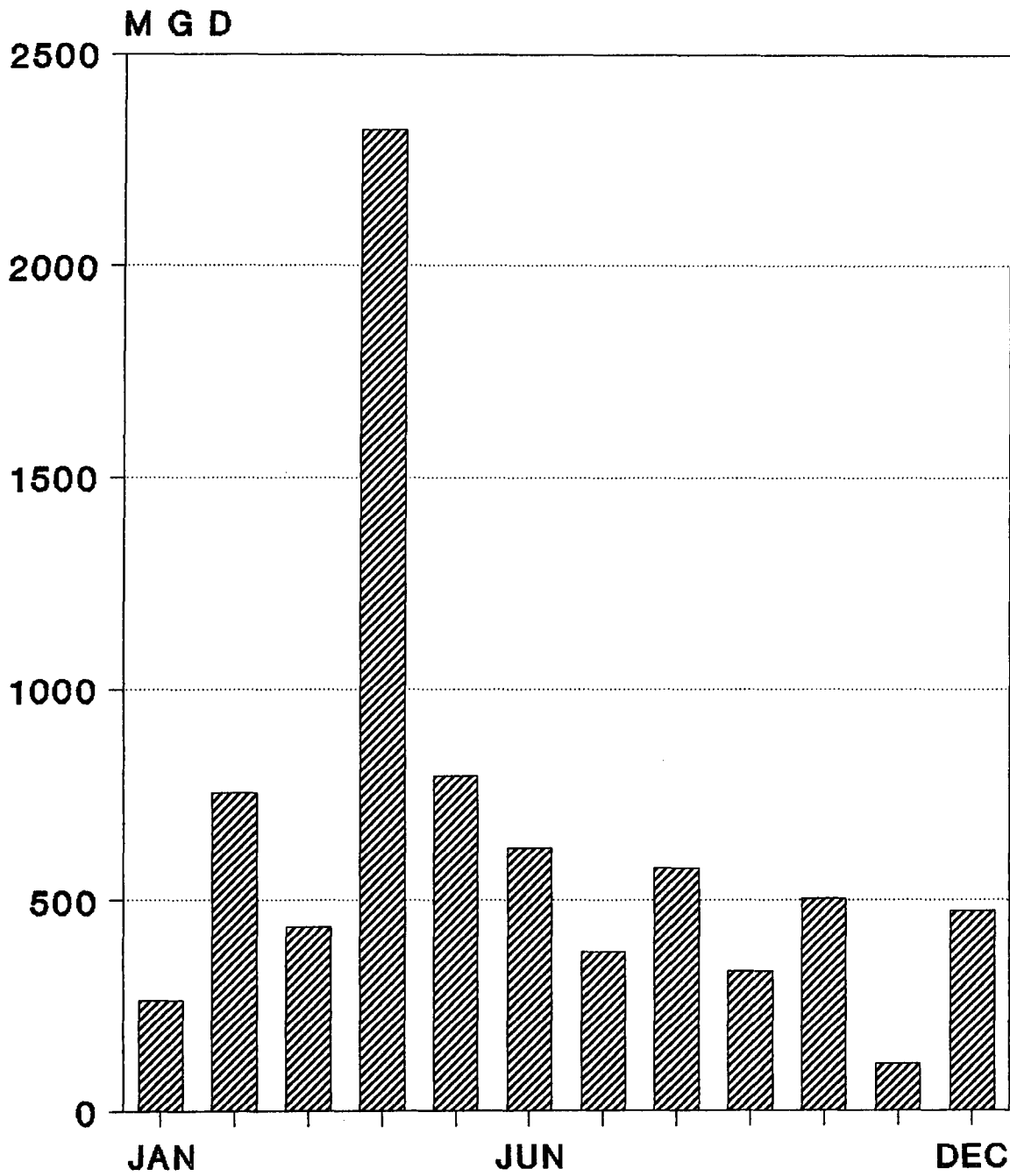


Figure 10

THERMOELECTRIC POWER GENERATION SELF-SUPPLY

METHODS AND DATA RELIABILITY

In 1988, water use data were collected for 13 self-supplied thermoelectric power plants in SJRWMD. Data were collected for fresh and saline, ground and surface water use, using information from CUP files, data supplied by the power plants, and/or DER monthly operating reports.

SUMMARY OF WATER USE

Total water use for the 13 self-supplied power plants amounted to 1,798.72 MGD, but only 135.78 MGD was fresh water. The majority of the water used by power plants was from saline surface water sources and was used for cooling. This (saline) water is used for one-time cooling, or recirculated several times before being returned to its surface source. Although a large quantity of water is withdrawn for thermoelectric power generation, an estimated 99 percent of this water is returned to its source. Only the remaining 1 percent is estimated to be consumed, primarily for boiler condenser makeup or for domestic purposes in the plant. This water is usually from ground water sources, or is purchased from a public water supply system.

The largest amount of saline water used for thermoelectric power generation was used in Brevard County (992.39 MGD), and the largest amount of fresh water used for thermoelectric power generation was used in Volusia County (117.86 MGD). Thermoelectric power generation used less than 1 percent of the total ground water used in SJRWMD in 1988. Most of this ground water was derived from the Floridan aquifer. In addition, a power plant located in east Orange County used an estimated 1.23 MGD of reclaimed waste water for cooling purposes (Table 7).

Water use for thermoelectric power generation fluctuated 20 MGD from 143 MGD in February to 123 MGD in August (Figure 11). Monthly fluctuations such as these are often a result of power plant shutdowns for maintenance or increased power demands.

Table 7. Power generation (Thermoelectric self-supplied) water use by county : 1988

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
(All values in MGD)

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
ALACHUA	0.10	0.00	0.10	0.00	0.00	0.00	0.00
BAKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BRADFORD	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BREVARD	0.23	0.00	0.23	0.00	992.39	992.39	0.00
CLAY	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DUVAL	3.81	0.00	3.81	0.00	532.57	532.57	0.00
FLAGLER	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INDIAN RIVER	0.08	0.00	0.08	0.00	137.98	137.98	0.00
LAKE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MARION	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NASSAU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OKEECHOBEE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ORANGE	0.40	0.00	0.40	0.00	0.00	0.00	1.23
OSCEOLA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POLK	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PUTNAM	1.26	12.04	13.30	0.00	0.00	0.00	0.00
ST. JOHNS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SEMINOLE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VOLUSIA	0.41	117.45	117.86	0.00	0.00	0.00	0.00
DISTRICT TOTAL	6.29	129.49	135.78	0.00	1,662.94	1,662.94	1.23
TOTAL GROUND	6.29						
TOTAL SURFACE		1,792.43					
DISTRICT TOTALS		1,798.72					

Note: 0.00 value means no pumpage was reported over 10,000 gallons per day.

**ST JOHNS RIVER WATER MANAGEMENT DISTRICT
Power Generation Fresh Water Use, 1988**

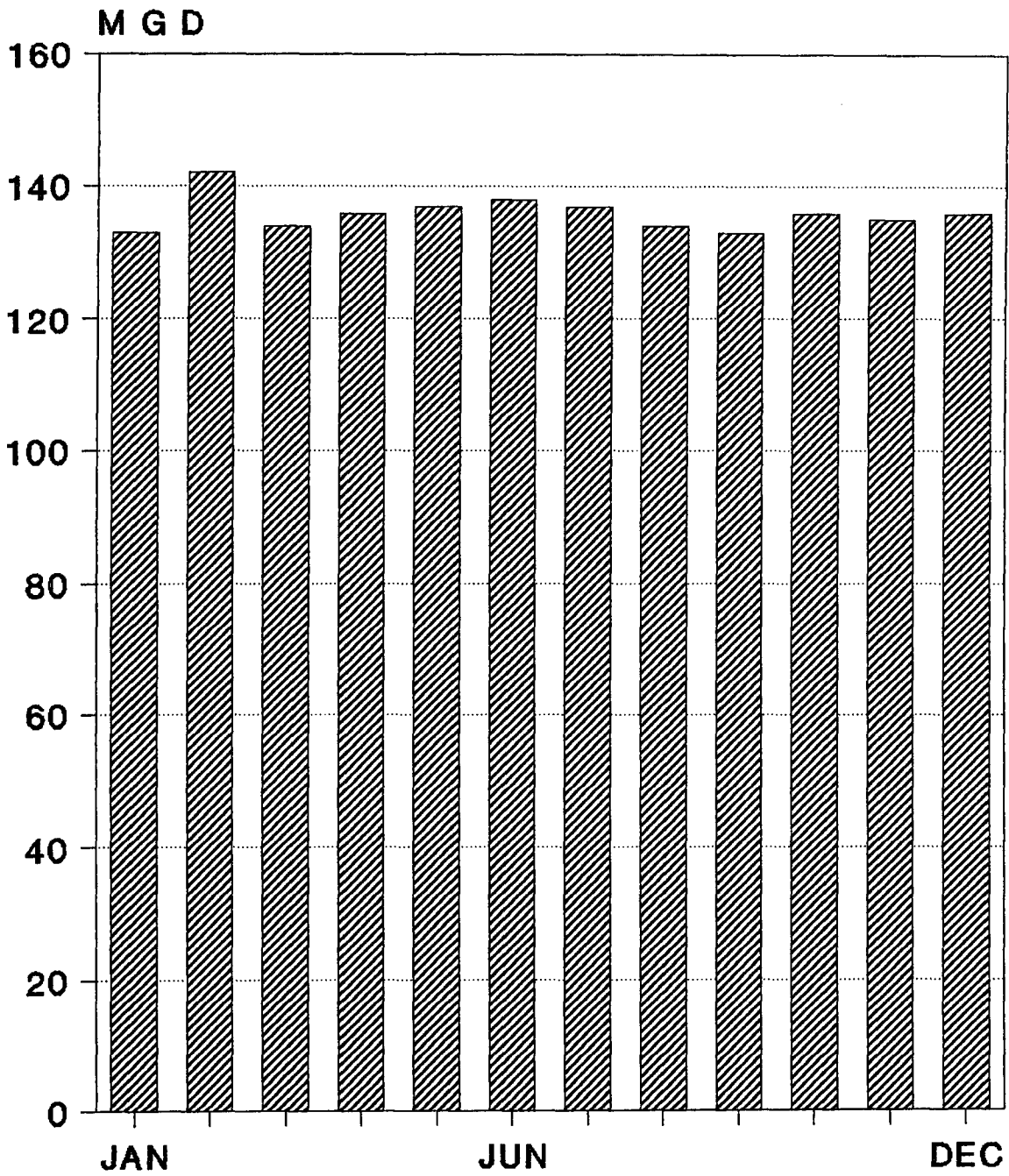


Figure 11

MISCELLANEOUS SELF-SUPPLY

METHODS AND DATA RELIABILITY

Miscellaneous water use in SJRWMD includes residential lawn irrigation and water used to operate residential heat pumps and air conditioning units. Water for miscellaneous water uses is not supplied by public systems and is not included in other water use categories.

Residential lawn irrigation includes water used for the sole purpose of irrigating residential lawns with no other domestic use involved. This use is not included in the turf grass category of agricultural irrigation. Although residential lawn irrigation exists in all counties in SJRWMD, data were available only for Brevard County. Data for this use were taken from Skipp (1988).

The miscellaneous self-supply category also includes water (from wells) for heat exchange for heating/air conditioning units. This also provides irrigation water when the unit is operating. Restrictions on this use now require return wells, but existing systems continue to discharge to the surface. Data for this use existed in only 4 out of the 19 counties in SJRWMD. The heat pump/air conditioning figures are calculated from the Brevard County well inventory list 1975-77, the Volusia County Vol-Data File (U. S. Geological Survey 11/20/80), and SJRWMD's CUP files (Skipp 1988).

SUMMARY OF WATER USE

Miscellaneous water use in SJRWMD totaled 64.25 MGD, all of which was fresh ground water. An estimated 5,590 unused abandoned artesian wells exist within SJRWMD (Healy 1978); however, many of these wells are currently being plugged as a result of SJRWMD's Abandoned Artesian Well Plugging Program, and additional wells are being inventoried. To date, 301 wells have been inventoried and 233 wells plugged since 1977 (Davis and Steele 1988). Although total water use for this category may exceed the 64.25 MGD reported, only 20.87 MGD has been inventoried.

Heat pump/air conditioning water use accounted for 38.79 MGD, and residential lawn watering for 4.59 MGD (Skipp 1988). Although the quantities of water used are not delineated by aquifer in this report,

the majority of heat pump/air conditioning wells and abandoned artesian wells tap the Floridan aquifer. The primary source for residential lawn irrigation is the shallow aquifers. Data for miscellaneous self-supplied water use are presented for only 14 of the counties in SJRWMD (Table 8).

Table 8. Miscellaneous ground water use by county : 1988
 ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
 (All values in MGD)

COUNTY	LAWN IRRIGATION	HEAT PUMPS	ABANDONED ARTESIAN WELLS	TOTAL
ALACHUA	--	0.97	--	0.97
BAKER	--	--	--	--
BRADFORD	--	--	--	--
BREVARD	4.59	22.75	10.15	37.49
CLAY	--	--	0.36	0.36
DUVAL	--	5.63	0.35	5.98
FLAGLER	--	--	0.01	0.01
INDIAN RIVER	--	--	5.41	5.41
LAKE	--	--	0.49	0.49
MARION	--	--	1.71	1.71
NASSAU	--	--	0.01	0.01
OKEECHOBEE	--	--	--	--
ORANGE	--	0.82	0.02	0.84
OSCEOLA	--	--	--	--
POLK	--	--	--	--
PUTNAM	--	2.30	0.63	2.93
ST. JOHNS	--	0.09	0.45	0.54
SEMINOLE	--	--	0.15	0.15
VOLUSIA	--	6.23	1.13	7.36
DISTRICT TOTALS	4.59	38.79	20.87	64.25

Note: -- no data available or inventoried for these counties

GLOSSARY

Definitions of some of the terms used in this report are as follows:

Abandoned artesian well. An artesian well, with or without a mechanism for controlling discharge, that allows water to flow continuously at the land surface or into other aquifers through internal flow because of improper well construction or condition. Common names include "wild flowing well," "free-flowing well," and "uncontrolled artesian well."

Aquifer. A confined, semi-confined, or unconfined reservoir of ground water. In SJRWMD, there are three major aquifers present: the Floridan, the intermediate, and the surficial. In this report, data for the intermediate and surficial aquifers are combined.

Average Annual Water Use. The total quantity of water withdrawn during the year (in gallons) divided by 365 days.

Conveyance Use. Water used for transporting materials or products through a pipe canal, conduit, or ditch from one point to another. Materials may be either raw materials or waste products, and the water may be used only once, or reused many times.

Fresh Water. Water with a total dissolved solids concentration less than or equal to 1,000 milligrams per liter (mg/l). The fresh water category includes both potable and non-potable water.

Potable Water. Water which meets the requirements of DER 17-3.091. Chloride in potable water is less than or equal to 250 mg/l and total dissolved solids concentrations are less than or equal to 500 mg/l.

Reclaimed Water. Wastewater treatment plant effluent that has been diverted or intercepted for use before it reaches a natural waterway or aquifer. Uses of reclaimed water may include irrigation of lawns, grass, or selected agricultural crops, or conveyance.

Reverse Osmosis (R/O). A process of desalination that removes chlorides or other dissolved solids from saline water to make it potable.

Saline Water. Water with a chloride concentration greater than 1,000 mg/l or a total dissolved solids concentration greater than 3,000 mg/l.

Slightly Saline Water. Water with a chloride concentration between 250 and 1,000 mg/l or a total dissolved solids concentration between 500 and 3,000 mg/l. This water is non-potable (see below) as chlorides generally fluctuate between 250 and 1,000 mg/l. Slightly saline water is either diluted with fresh water or treated by reverse osmosis (R/O) to potable standards for public supply. For other uses this water is generally not treated. In this survey, slightly saline water is included in the reported quantities of fresh water.

Supplemental Irrigation. The amount of water in addition to rainfall that is applied to produce a crop. This supplemental irrigation value (in inches) includes water required to compensate for irrigation system losses.

Water Use. Describes both the quantity of water withdrawn and how the water was used. Water use includes "withdrawals," as the term is used in previous SJRWMD annual water use surveys.

Water Withdrawals. Describes the amount of water withdrawn from a source (ground or surface, fresh, or saline). This is equivalent to "intake," "water diversion," or "pumpage," terms commonly associated with industrial, agricultural irrigation, and public supply use, respectively. Water withdrawals are considered water use for this report.

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Appendix
WATER USE DATA BY COUNTY
1988



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STATE of FLORIDA DATA - 1988

TOTAL POPULATION 12,417,606
 TOTAL LAND AREA 58,560 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 3,023,277 (24.35% of the state)
 PUBLIC SUPPLY 2,498,520 (a)(b)
 SELF-SUPPLIED 521,607
 PER CAPITA 164

LAND AREA (ACRES)
 TOTAL AREA 7,900,060 12,344 SQ. MILES
 FARMED 984,656
 IRRIGATED 405,849

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY (c)	393.14	16.15	409.29	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	86.73	0.00	86.73	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	146.11	4.00	150.11	0.00	45.12	45.12	0.00
AGRICULTURAL IRR.	401.41	229.51	630.92	0.00	0.00	0.00	12.25
POWER GENERATION	6.29	129.49	135.78	0.00	1,662.94	1,662.94	1.23
MISCELLANEOUS	64.25	0.00	64.25	0.00	0.00	0.00	0.00
	1,097.93	379.15	1,477.08	0.00	1,708.06	1,708.06	13.48
TOTAL GROUND	1,097.93						
TOTAL SURFACE		2,087.21					
DISTRICT TOTAL (d)		3,185.14					

- (a) DOES NOT INCLUDE 9,519 PEOPLE SERVED BY PUBLIC SUPPLY IN THE SJRWMD WHO LIVE IN THE SRWMD.
- (b) INCLUDES 3,150 PEOPLE SERVED BY PUBLIC SUPPLY IN THE SWFWMD WHO LIVE IN THE SJRWMD.
- (c) INCLUDES 3.05 MGD OF SLIGHTLY SALINE GROUND WATER (250 to 1000 mg/l chlorides) USED IN R/O or DILUTED FOR PUBLIC SUPPLY USE. IN PREVIOUS REPORTS THIS WATER WAS INCLUDED UNDER SALINE GROUND WATER.
- (d) REUSE AMOUNTS ARE NOT INCLUDED IN TOTALS.

S.JRWMD

ST JOHNS RIVER WATER MANAGEMENT DISTRICT Fresh Water Use by Category, 1988

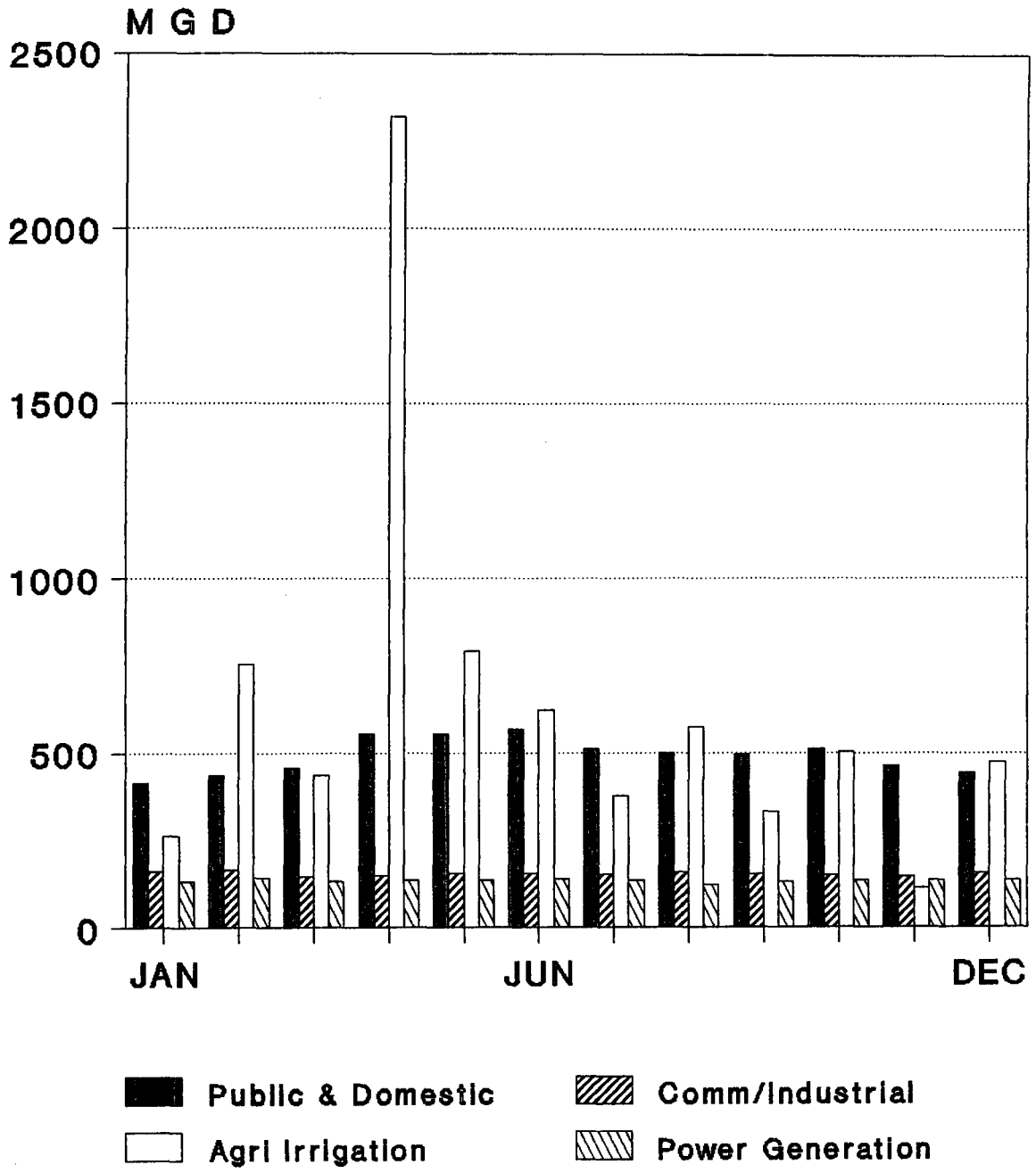


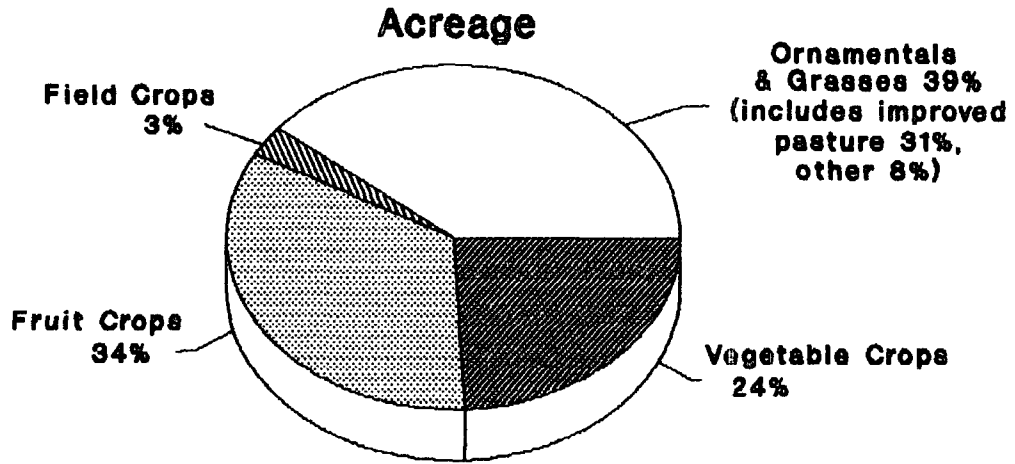
Figure A-1

TABLE A-1. ACREAGE AND WATER USE BY CROP FOR THE SJRWMD - 1988

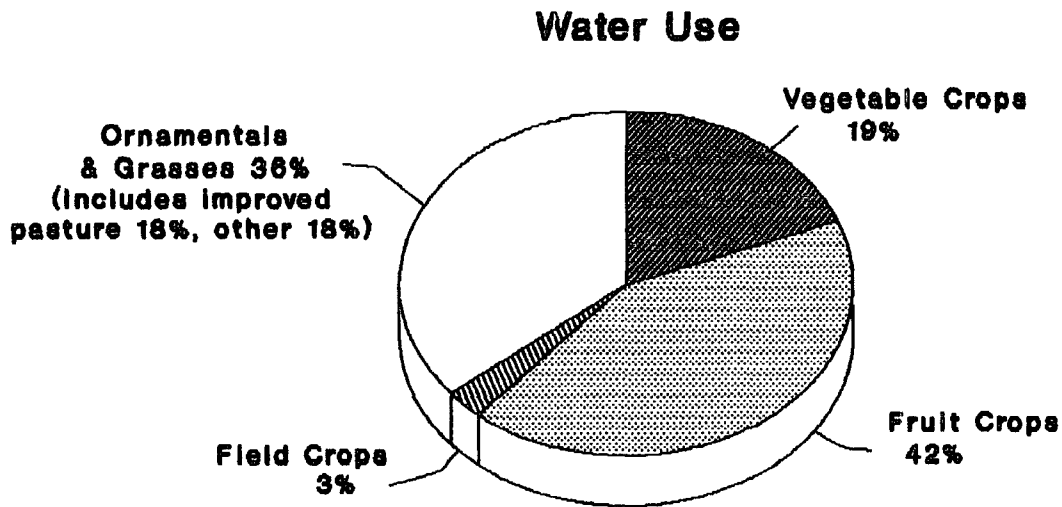
	TOTAL ACRES		WATER USE IN MGD			TOTAL
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	
VEGETABLE CROPS						
CABBAGE	8,850	8,150	8.19	0.11	0.00	8.30
CARROTS	20,200	18,050	5.65	10.56	0.00	16.21
CUCUMBERS	2,190	1,990	0.90	0.04	0.00	0.94
PEPPERS	800	600	0.34	0.00	0.00	0.34
POTATOES	26,900	26,800	31.20	0.00	0.00	31.20
TOMATOES	85	80	0.05	0.00	0.00	0.05
SWEET CORN	20,015	19,300	7.64	20.64	0.00	28.28
WATERCRESS	300	300	9.48	0.00	0.00	9.48
MISC. VEGETABLES	24,292	22,690	6.50	13.07	0.00	19.57
FRUIT CROPS						
BLUEBERRIES	705	603	0.67	0.00	0.00	0.67
CITRUS	142,793	132,685	118.53	133.15	5.28	251.68
GRAPES	235	222	0.27	0.00	0.00	0.27
PEACHES	100	95	0.16	0.00	0.00	0.16
PECANS	2,850	390	0.59	0.00	0.00	0.59
STRAWBERRIES	50	50	0.10	0.00	0.00	0.10
WATERMELLONS	3,740	3,140	2.03	0.02	0.00	2.05
MISC. FRUIT	190	180	0.15	0.00	0.00	0.15
FIELD CROPS						
FIELD CORN	23,780	8,680	9.29	3.87	0.00	13.16
PEANUTS	2,250	209	0.15	0.00	0.00	0.15
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	5,500	2,150	2.26	0.20	0.00	2.46
SOYBEANS	4,800	200	0.14	0.13	0.00	0.27
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	185	120	0.04	0.07	0.00	0.11
WHEAT	200	0	0.00	0.00	0.00	0.00
MISC. GRAINS	10,184	300	0.17	0.17	0.00	0.34
ORNAMENTALS & GRASSES						
FERNS	7,596	7,591	27.56	5.45	0.00	33.01
FLOWERS & FOLIAGE	1,889	1,889	6.46	0.47	0.00	6.93
WOODY ORNAMENTALS	3,668	2,878	22.37	3.64	0.00	26.01
IMPROVED PASTURE	642,000	126,412	85.16	20.20	2.56	105.36
SOD	5,670	5,570	5.93	3.59	2.37	9.52
TURF GRASS (GOLF)	20,349	12,273	20.97	9.82	2.04	30.79
TURF GRASS (OTHER)	2,290	2,252	4.49	0.58	0.00	5.07
MISC. AGRICULTURAL						
LIVESTOCK	0	0	9.44	3.73	0.00	13.17
FISH FARMING and AESTHETIC	0	0	14.53	0.00	0.00	14.53
	984,656	405,849	401.41	229.51	12.25	630.92
SPRINKLER ACREAGE 79,646						
LOW PRESSURE ACREAGE 55,988						
FLOOD ACREAGE 270,215						

TOTAL IRRIGATED ACREAGE	405,849					

**ST JOHNS RIVER WATER MANAGEMENT DISTRICT
Agricultural Acreage and Water Use, 1988**



Acreage
Total: 405,849 acres



Water Use
Total: 660.92 MGD

Figure A-2

ALACHUA COUNTY DATA - 1988

TOTAL POPULATION 182,940
 TOTAL LAND AREA 961 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

 POPULATION
 TOTAL 128,058
 PUBLIC SUPPLY 113,873 (a)(b)
 SELF-SUPPLIED 14,185
 PER CAPITA 180

LAND AREA (ACRES)
 TOTAL AREA 308,480 482 SQ. MILES
 FARMED 41,650
 IRRIGATED 4,123

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	20.53	0.00	20.53	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	2.55	0.00	2.55	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	1.97	0.00	1.97	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	5.00	0.15	5.15	0.00	0.00	0.00	0.00
POWER GENERATION S-S	0.10	0.00	0.10	0.00	0.00	0.00	0.00
MISCELLANEOUS	0.97	0.00	0.97	0.00	0.00	0.00	0.00
	31.12	0.15	31.27	0.00	0.00	0.00	0.00
TOTAL GROUND		31.12					
TOTAL SURFACE		0.15					
COUNTY TOTAL		31.27					

- (a) DOES NOT INCLUDE 9,519 PEOPLE SERVED BY PUBLIC SUPPLY (GAINESVILLE REGIONAL UTILITIES) IN THE SJRWMD WHO LIVE IN THE SRWMD.
 (b) DOES NOT INCLUDE 360 PEOPLE SERVED BY PUBLIC SUPPLY (MELROSE) IN THE SJRWMD WHO LIVE IN THE SRWMD.

ALACHUA

Fresh Water Use in Alachua County, 1988

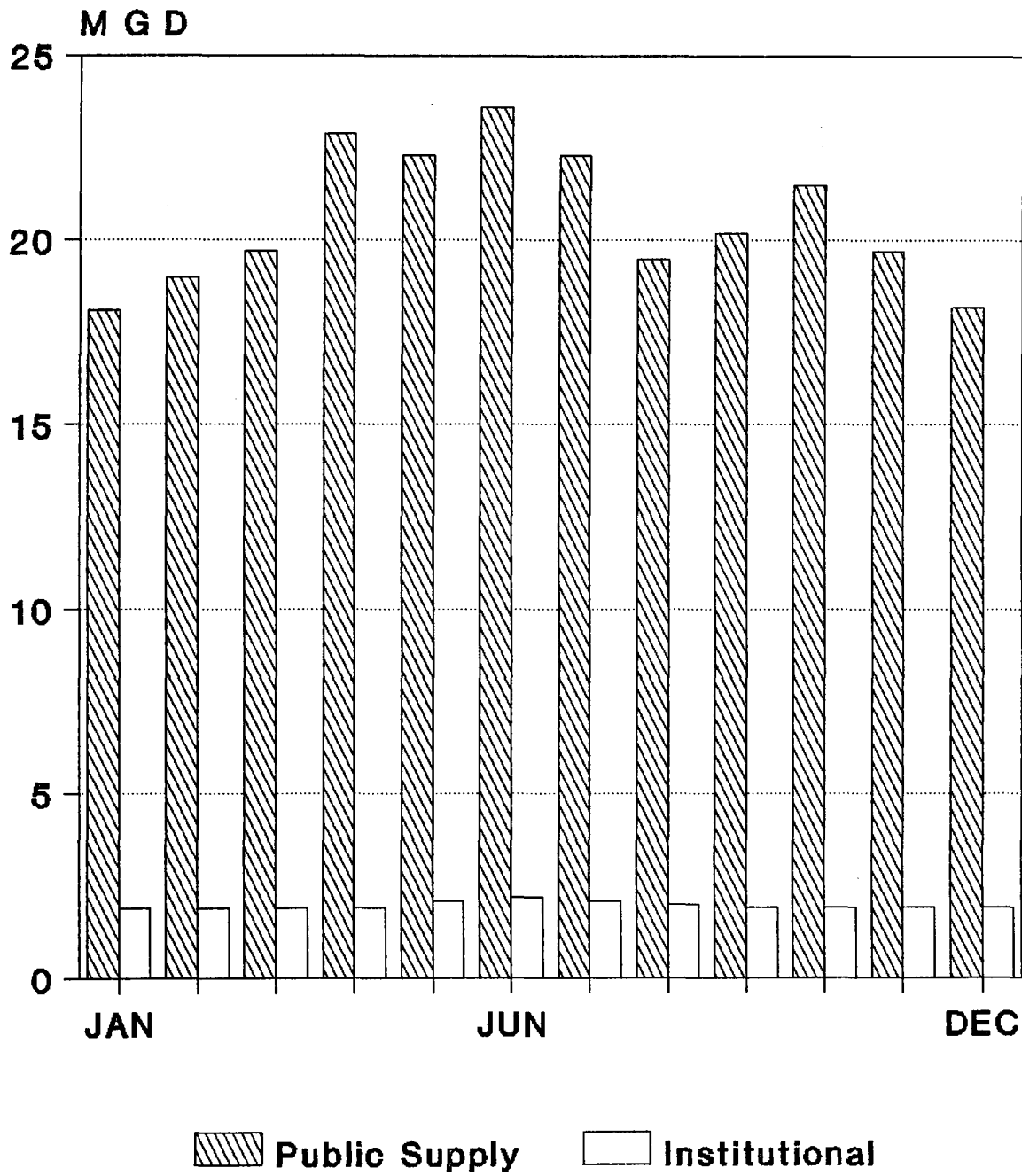


Figure A-3

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN ALACHUA COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL (MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
ARREDONDO VILLAGE/ESTATES	PUBLIC SUPPLY	1,345	0.070	0.000	FLORIDAN AQF.
GAINESVILLE REGIONAL UTILITIES	PUBLIC SUPPLY	118,983	19.990	0.000	FLORIDAN AQF.
HAWTHORNE - CITY OF	PUBLIC SUPPLY	1,280	0.285	0.000	FLORIDAN AQF.
KINCAID HILLS S/D	PUBLIC SUPPLY	1,000	0.112	0.000	FLORIDAN AQF.
MICANOPIY - TOWN OF	PUBLIC SUPPLY	784	0.072	0.000	FLORIDAN AQF.
GAINESVILLE REGIONAL UTILITIES	POWER GEN.		0.103	0.000	FLORIDAN AQF.
SUNLAND CENTER	INSTITUTIONAL		0.267	0.000	FLORIDAN AQF.
UNIVERSITY OF FLORIDA	INSTITUTIONAL		1.703	0.000	FLORIDAN AQF.

ALACHUA COUNTY (SJR)

ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	0	0	0.00	0.00	0.00	0.00
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	300	200	0.12	0.00	0.00	0.12
PEPPERS	250	250	0.15	0.00	0.00	0.15
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	75	50	0.05	0.00	0.00	0.05
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	750	750	0.45	0.00	0.00	0.45
FRUIT CROPS						
BLUEBERRIES	385	350	0.40	0.00	0.00	0.40
CITRUS	0	0	0.00	0.00	0.00	0.00
GRAPES	30	30	0.04	0.00	0.00	0.04
PEACHES	15	15	0.03	0.00	0.00	0.03
PECANS	2,600	300	0.44	0.00	0.00	0.44
STRAWBERRIES	5	5	0.01	0.00	0.00	0.01
WATERMELONS	500	400	0.26	0.00	0.00	0.26
MISC. FRUIT	90	80	0.05	0.00	0.00	0.05
FIELD CROPS						
FIELD CORN	1,200	100	0.12	0.00	0.00	0.12
PEANUTS	200	75	0.05	0.00	0.00	0.05
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	0	0	0.00	0.00	0.00	0.00
SOYBEANS	4,000	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	200	0	0.00	0.00	0.00	0.00
MISC. GRAINS	1,500	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	0	0	0.00	0.00	0.00	0.00
FLOWERS & FOLIAGE	4	4	0.02	0.00	0.00	0.02
WOODY ORNAMENTALS	60	50	0.39	0.07	0.00	0.46
IMPROVED PASTURE	28,500	680	0.56	0.00	0.00	0.56
SOD	100	50	0.07	0.00	0.00	0.07
TURF GRASS (GOLF)	480	328	0.70	0.08	0.00	0.78
TURF GRASS (OTHER)	406	406	0.91	0.00	0.00	0.91
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.16	0.00	0.00	0.16
FISH FARMING	0	0	0.02	0.00	0.00	0.02
	41,650	4,123	5.00	0.15	0.00	5.15
SPRINKLER ACREAGE	3,593					
LOW PRESSURE ACREAGE	480					
FLOOD ACREAGE	50					
TOTAL IRRIGATED ACREAGE		4,123				

BAKER COUNTY DATA - 1988

TOTAL POPULATION 18,683
 TOTAL LAND AREA 588 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 17,749
 PUBLIC SUPPLY 4,315
 SELF-SUPPLIED 13,434
 PER CAPITA 151

LAND AREA (ACRES)
 TOTAL AREA 343,040 536 SQ. MILES
 FARMED 14,000
 IRRIGATED 660

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	0.65	0.00	0.65	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	2.03	0.00	2.03	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	0.28	0.00	0.28	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	2.94	2.20	5.14	0.00	0.00	0.00	0.00
POWER GENERATION S-S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5.90	2.20	8.10	0.00	0.00	0.00	0.00
TOTAL GROUND	5.90						
TOTAL SURFACE		2.20					
COUNTY TOTAL		8.10					

Fresh Water Use in Baker County, 1988

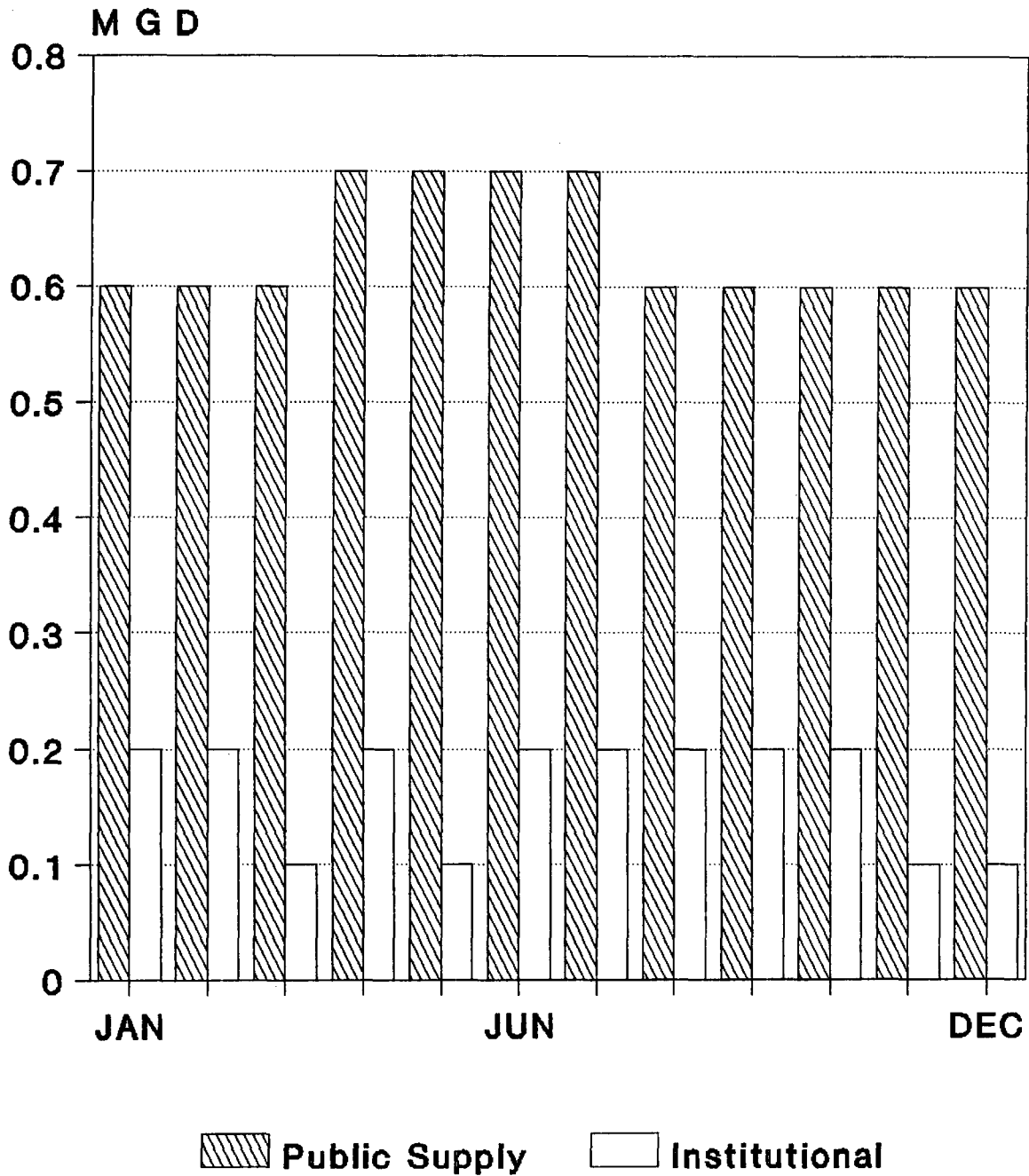


Figure A-4

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN BAKER COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL(MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
MACCLENNY - CITY OF	PUBLIC SUPPLY	4,185	0.632	0.000	FLORIDAN AQF.
MACCLENNY S/D	PUBLIC SUPPLY	130	0.020	0.000	FLORIDAN AQF.
NORTHEAST FLA. STATE HOSPITAL	INSTITUTIONAL		0.159	0.000	FLORIDAN AQF.
WIREMILL INC.	INDUSTRIAL		0.129	0.000	FLORIDAN AQF.

BAKER COUNTY ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	0	0	0.00	0.00	0.00	0.00
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	100	0	0.00	0.00	0.00	0.00
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	100	0	0.00	0.00	0.00	0.00
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	522	100	0.06	0.00	0.00	0.06
FRUIT CROPS						
BLUEBERRIES	25	0	0.00	0.00	0.00	0.00
CITRUS	0	0	0.00	0.00	0.00	0.00
GRAPES	0	0	0.00	0.00	0.00	0.00
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	50	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	400	0	0.00	0.00	0.00	0.00
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	600	0	0.00	0.00	0.00	0.00
PEANUTS	50	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	0	0	0.00	0.00	0.00	0.00
SOYBEANS	600	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	145	80	0.00	0.07	0.00	0.07
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	1,584	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	0	0	0.00	0.00	0.00	0.00
FLOWERS & FOLIAGE	0	0	0.00	0.00	0.00	0.00
WOODY ORNAMENTALS	1,200	420	2.32	1.54	0.00	3.86
IMPROVED PASTURE	8,500	0	0.00	0.00	0.00	0.00
SOD	0	0	0.00	0.00	0.00	0.00
TURF GRASS (GOLF)	124	60	0.15	0.00	0.00	0.15
TURF GRASS (OTHER)	0	0	0.00	0.00	0.00	0.00
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.41	0.59	0.00	1.00
FISH FARMING	0	0	0.00	0.00	0.00	0.00
	14,000	660	2.94	2.20	0.00	5.14
SPRINKLER ACREAGE 660						
LOW PRESSURE ACREAGE 0						
FLOOD ACREAGE 0						

TOTAL IRRIGATED ACREAGE 660						

BRADFORD COUNTY DATA - 1988

TOTAL POPULATION 24,297
 TOTAL LAND AREA 305 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 1,700
 PUBLIC SUPPLY 340
 SELF-SUPPLIED 1,360
 PER CAPITA 144 (a)

LAND AREA (ACRES)
 TOTAL AREA 3,840 6 SQ. MILES
 FARMED 50
 IRRIGATED 40

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	0.20	0.00	0.20	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	0.20	0.00	0.20	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	0.09	0.00	0.09	0.00	0.00	0.00	0.00
POWER GENERATION S-S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.49	0.00	0.49	0.00	0.00	0.00	0.00
TOTAL GROUND		0.49					
TOTAL SURFACE		0.00					
COUNTY TOTAL		0.49					

(a) USED CLAY COUNTY PER CAPITA DUE TO ITS PROXIMITY TO BRADFORD COUNTY.

BRADFORD

THE PUBLIC SUPPLY IN BRADFORD COUNTY
WITHIN THE ST. JOHNS RIVER WATER
MANAGEMENT DISTRICT FOR 1988 WAS TOO
SMALL TO DEPICT.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN BRADFORD COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL(MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
SOUTHERN STATES UTILITIES	PUBLIC SUPPLY	340	0.202	0.000	FLORIDAN AQF.

BRADFORD COUNTY (SJR)

ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	0	0	0.00	0.00	0.00	0.00
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	0	0	0.00	0.00	0.00	0.00
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	0	0	0.00	0.00	0.00	0.00
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	0	0	0.00	0.00	0.00	0.00
FRUIT CROPS						
BLUEBERRIES	0	0	0.00	0.00	0.00	0.00
CITRUS	0	0	0.00	0.00	0.00	0.00
GRAPES	0	0	0.00	0.00	0.00	0.00
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	0	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	0	0	0.00	0.00	0.00	0.00
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	0	0	0.00	0.00	0.00	0.00
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	0	0	0.00	0.00	0.00	0.00
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	0	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	0	0	0.00	0.00	0.00	0.00
FLOWERS & FOLIAGE	0	0	0.00	0.00	0.00	0.00
WOODY ORNAMENTALS	0	0	0.00	0.00	0.00	0.00
IMPROVED PASTURE	0	0	0.00	0.00	0.00	0.00
SOD	0	0	0.00	0.00	0.00	0.00
TURF GRASS (GOLF)	40	30	0.07	0.00	0.00	0.07
TURF GRASS (OTHER)	10	10	0.02	0.00	0.00	0.02
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.00	0.00	0.00	0.00
FISH FARMING	0	0	0.00	0.00	0.00	0.00
=====						
	50	40	0.09	0.00	0.00	0.09
SPRINKLER ACREAGE	40					
LOW PRESSURE ACREAGE	0					
FLOOD ACREAGE	0					

TOTAL IRRIGATED ACREAGE	40					

BREVARD COUNTY DATA - 1988

TOTAL POPULATION 387,635
 TOTAL LAND AREA 1,310 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 387,635
 PUBLIC SUPPLY 342,264
 SELF-SUPPLIED 45,371
 PER CAPITA 152

LAND AREA (ACRES)
 TOTAL AREA 636,800 1,310 SQ. MILES
 FARMED 151,766
 IRRIGATED 105,198

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY (a)(b)	10.79	16.15	26.94	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	6.89	0.00	6.89	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	0.19	0.00	0.19	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	100.49	14.65	115.14	0.00	0.00	0.00	0.64
POWER GENERATION S-S	0.23	0.00	0.23	0.00	992.39	992.39	0.00
MISCELLANEOUS	37.49	0.00	37.49	0.00	0.00	0.00	0.00
	156.08	30.80	186.88	0.00	992.39	992.39	0.64
TOTAL GROUND		156.08					
TOTAL SURFACE		1,023.19					
COUNTY TOTAL (c)		1,179.27					

(a) INCLUDES 0.17 MGD of SLIGHTLY SALINE GROUND WATER (250 to 1000 mg/l chlorides) USED IN R/O or DILUTED FOR PUBLIC SUPPLY USE.

(b) DOES NOT INCLUDE 25.02 MGD OF WATER WITHDRAWN IN ORANGE COUNTY FOR PUBLIC SUPPLY USE IN BREVARD COUNTY.

(c) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

BREVARD

Fresh Water Use in Brevard County, 1988

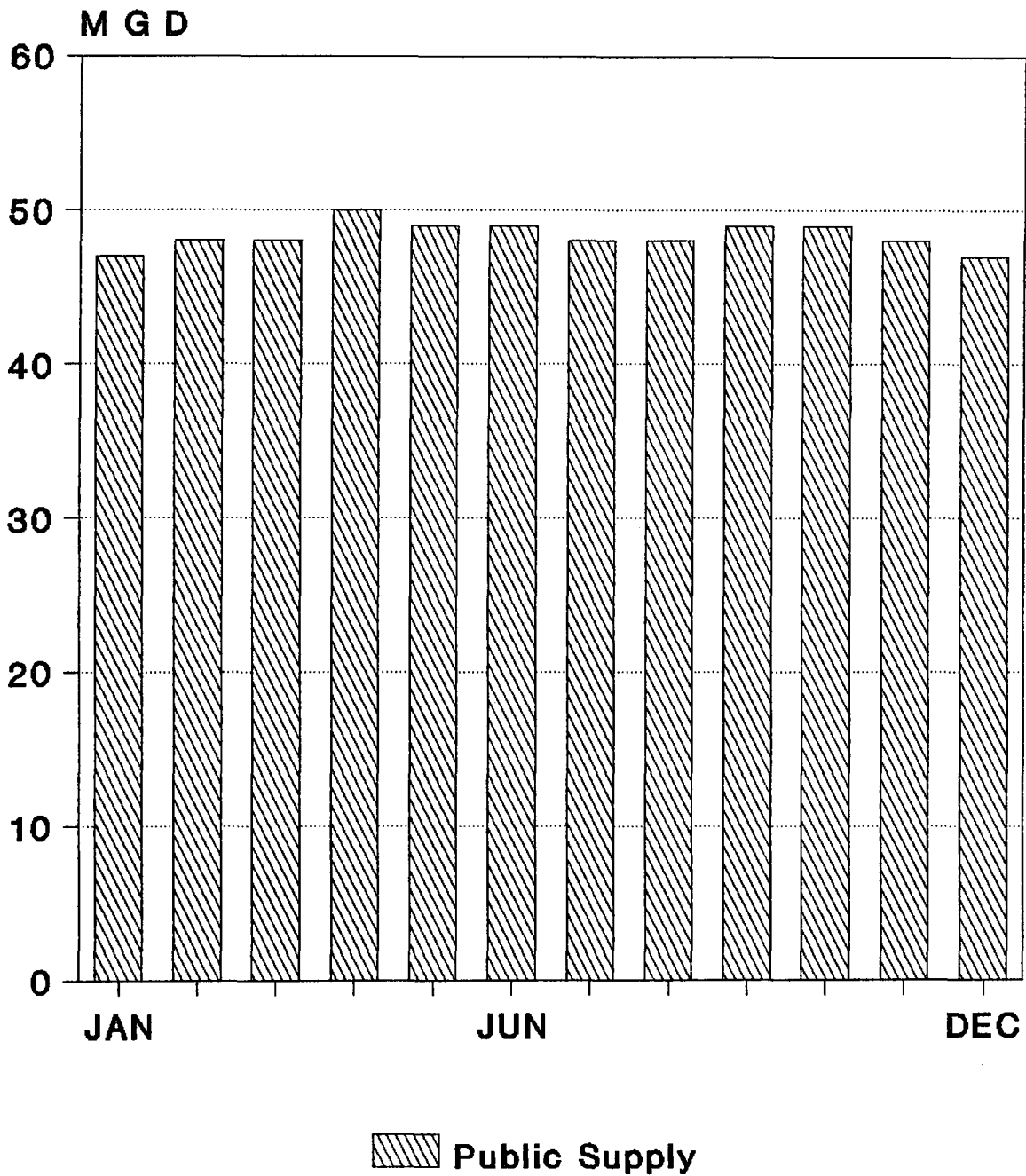


Figure A-5

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN BREVARD COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL (MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
AQUARINA UTILITIES	PUBLIC SUPPLY	170	0.020	0.000	FLORIDAN AQF. (R/O)
AVATAR (BAREFOOT BAY) UTILITY	PUBLIC SUPPLY	5,751	0.614	0.000	SURFICIAL AQF.
COCOA WATER UTILITIES	PUBLIC SUPPLY	129,006	25.020	0.000	FLORIDAN AQF.
GDU - PALM BAY	PUBLIC SUPPLY	29,071	3.926	0.000	SURFICIAL & FLORIDAN AQF.
MELBOURNE - CITY OF	PUBLIC SUPPLY	130,090	0.000	16.156	LAKE WASHINGTON
N. BREVARD UTILITIES (MIMS)	PUBLIC SUPPLY	6,000	0.608	0.000	SURFICIAL AQF.
S. BREVARD UTILITIES (SUNNYLAND)	PUBLIC SUPPLY	430	0.043	0.000	FLORIDAN AQF. (R/O)
TITUSVILLE - CITY OF	PUBLIC SUPPLY	41,746	5.580	0.000	FLORIDAN AQF.
FLORIDA DOT - I95 REST FAC.	INSTITUTIONAL		0.016	0.000	SURFICIAL AQF.
FLORIDA POWER & LIGHT	POWER GEN.		0.155	638.792	SURFICIAL AQF. & INDIAN RIVER
HARRIS CORP.	INDUSTRIAL		0.106	0.000	SURFICIAL AQF.
ORLANDO UTILITIES COMMISSION	POWER GEN.		0.080	353.601	SURFICIAL AQF. & INDIAN RIVER
UNION CARBIDE INC.	INDUSTRIAL		0.074	0.000	SURFICIAL AQF.

BREVARD COUNTY ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	0	0	0.00	0.00	0.00	0.00
CARROTS	4,000	4,000	3.46	0.00	0.00	3.46
CUCUMBERS	0	0	0.00	0.00	0.00	0.00
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	300	300	0.35	0.00	0.00	0.35
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	500	500	0.86	0.00	0.00	0.86
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	0	0	0.00	0.00	0.00	0.00
FRUIT CROPS						
BLUEBERRIES	0	0	0.00	0.00	0.00	0.00
CITRUS	18,000	11,641	20.31	7.90	0.00	28.21
GRAPES	0	0	0.00	0.00	0.00	0.00
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	0	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	200	200	0.12	0.02	0.00	0.14
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	2,000	2,000	3.26	0.00	0.00	3.26
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	1,800	1,800	2.05	0.00	0.00	2.05
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	0	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	1	1	0.00	0.00	0.00	0.00
FLOWERS & FOLIAGE	10	10	0.04	0.00	0.00	0.04
WOODY ORNAMENTALS	190	190	1.74	0.00	0.00	1.74
IMPROVED PASTURE	121,700	81,860	63.97	3.02	0.00	66.99
SOD	1,000	1,000	0.96	1.43	0.00	2.39
TURF GRASS (GOLF)	1,692	1,323	1.37	2.26	0.64	3.63
TURF GRASS (OTHER)	373	373	0.89	0.02	0.00	0.91
MISC. AGRICULTURAL						
LIVESTOCK	0	0	1.09	0.00	0.00	1.09
FISH FARMING	0	0	0.02	0.00	0.00	0.02
=====						
	151,766	105,198	100.49	14.65	0.64	115.14
SPRINKLER ACREAGE	6,850					
LOW PRESSURE ACREAGE	1,134					
FLOOD ACREAGE	97,214					

TOTAL IRRIGATED ACREAGE	105,198					

CLAY COUNTY DATA - 1988

TOTAL POPULATION 99,171
 TOTAL LAND AREA 644 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 99,171
 PUBLIC SUPPLY 72,243
 SELF-SUPPLIED 26,928
 PER CAPITA 144

LAND AREA (ACRES)
 TOTAL AREA 411,520 643 SQ. MILES
 FARMED 44,241
 IRRIGATED 749

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	10.39	0.00	10.39	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	3.87	0.00	3.87	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	6.99	0.00	6.99	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	2.75	0.31	3.06	0.00	0.00	0.00	0.00
POWER GENERATION S-S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	0.36	0.00	0.36	0.00	0.00	0.00	0.00
	24.36	0.31	24.67	0.00	0.00	0.00	0.00
TOTAL GROUND		24.36					
TOTAL SURFACE		0.31					
COUNTY TOTAL		24.67					

Fresh Water Use in Clay County, 1988

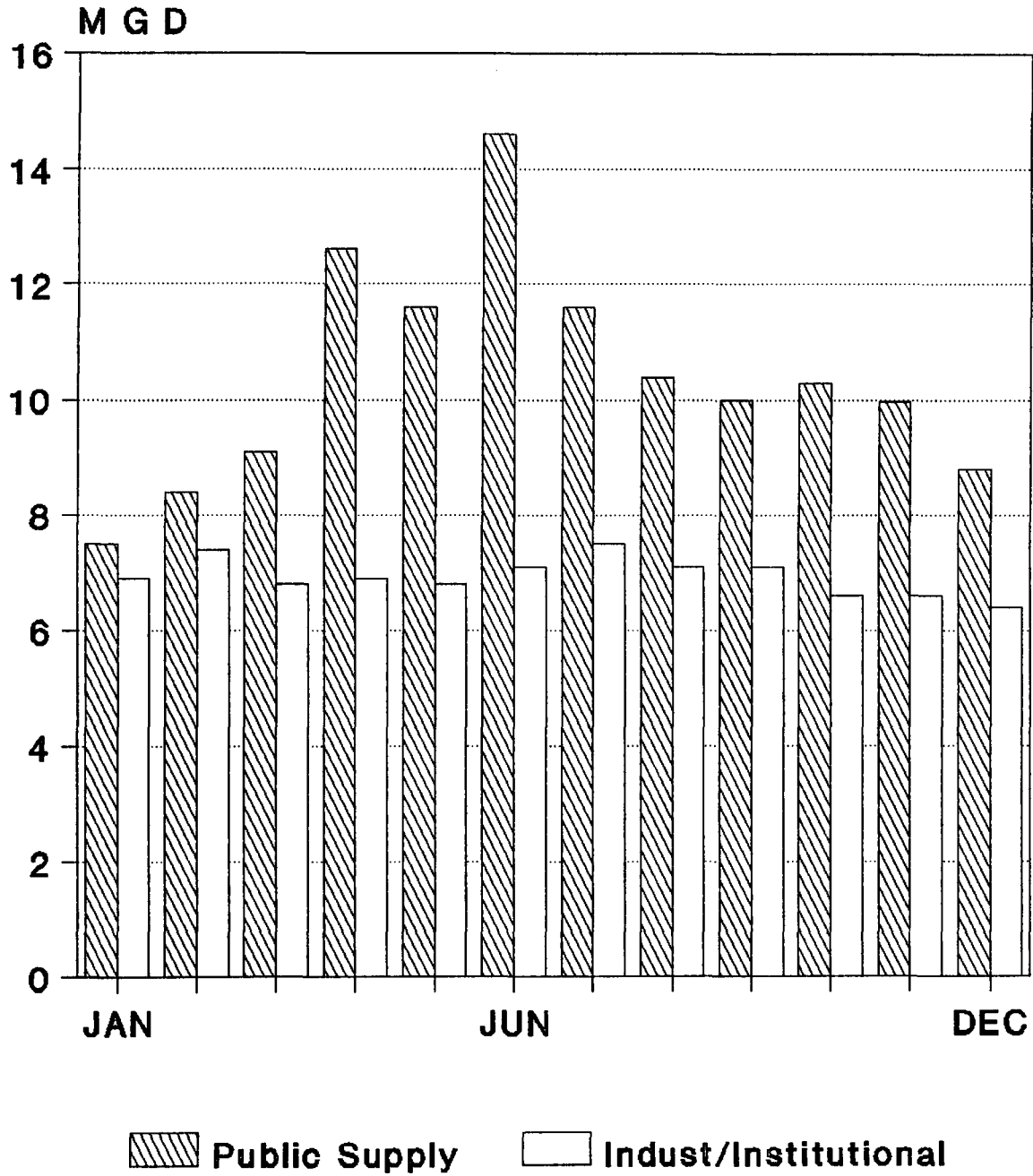


Figure A-6

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN CLAY COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL(MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
CLAY UTILITY CO.	PUBLIC SUPPLY	7,823	0.774	0.000	FLORIDAN AQF.
DUVAL UTILITY CO.	PUBLIC SUPPLY	259	0.049	0.000	FLORIDAN AQF.
GREEN COVE SPRINGS - CITY OF	PUBLIC SUPPLY	4,398	0.818	0.000	FLORIDAN AQF.
KEYSTONE HEIGHTS - CITY OF	PUBLIC SUPPLY	2,670	0.322	0.000	FLORIDAN AQF.
KINGSLEY SERVICE CO.	PUBLIC SUPPLY	43,909	6.497	0.000	FLORIDAN AQF.
LAKE ASBURY UTILITIES	PUBLIC SUPPLY	1,566	0.186	0.000	FLORIDAN AQF.
MAGNOLIA SPRINGS UTILITIES	PUBLIC SUPPLY	800	0.089	0.000	FLORIDAN AQF.
ORANGE PARK - TOWN OF	PUBLIC SUPPLY	9,642	1.438	0.000	FLORIDAN AQF.
PENNEY RETIREMENT COM.	PUBLIC SUPPLY	223	0.076	0.000	FLORIDAN AQF.
PENNEY FARMS - TOWN OF	PUBLIC SUPPLY	453	0.087	0.000	FLORIDAN AQF.
THE RAVINES VILLAGE & RESORT	PUBLIC SUPPLY	500	0.057	0.000	FLORIDAN AQF.
ASSOCIATED MINERALS	INDUSTRIAL		1.759	0.000	FLORIDAN AQF.
CAMP BLANDING MILITARY BASE	INSTITUTIONAL		0.537	0.000	FLORIDAN AQF.
E.I. DUPONT DE NEMOURS MINERALS	INDUSTRIAL		2.292	0.000	FLORIDAN AQF.
FLORIDA ROCK - KEYSTONE MINE	INDUSTRIAL		1.934	0.000	FLORIDAN AQF.
J-M MANUFACTURING CO.	INDUSTRIAL		0.147	0.000	FLORIDAN AQF.
REYNOLDS INDUSTRIAL PARK	INDUSTRIAL		0.323	0.000	FLORIDAN AQF.

CLAY COUNTY ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			TOTAL
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	
VEGETABLE CROPS						
CABBAGE	0	0	0.00	0.00	0.00	0.00
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	0	0	0.00	0.00	0.00	0.00
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	0	0	0.00	0.00	0.00	0.00
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	200	60	0.04	0.00	0.00	0.04
FRUIT CROPS						
BLUEBERRIES	15	13	0.02	0.00	0.00	0.02
CITRUS	0	0	0.00	0.00	0.00	0.00
GRAPES	0	0	0.00	0.00	0.00	0.00
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	0	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	0	0	0.00	0.00	0.00	0.00
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	500	0	0.00	0.00	0.00	0.00
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	0	0	0.00	0.00	0.00	0.00
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	2,800	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	0	0	0.00	0.00	0.00	0.00
FLOWERS & FOLIAGE	50	50	0.20	0.00	0.00	0.20
WOODY ORNAMENTALS	0	0	0.00	0.00	0.00	0.00
IMPROVED PASTURE	40,000	100	0.12	0.00	0.00	0.12
SOD	0	0	0.00	0.00	0.00	0.00
TURF GRASS (GOLF)	530	380	0.63	0.31	0.00	0.94
TURF GRASS (OTHER)	146	146	0.31	0.00	0.00	0.31
MISC. AGRICULTURAL						
LIVESTOCK	0	0	1.43	0.00	0.00	1.43
FISH FARMING	0	0	0.00	0.00	0.00	0.00

	44,241	749	2.75	0.31	0.00	3.06
SPRINKLER ACREAGE	636					
LOW PRESSURE ACREAGE	3					
FLOOD ACREAGE	110					

TOTAL IRRIGATED ACREAGE	749					

DUVAL COUNTY DATA - 1988

TOTAL POPULATION 677,007
 TOTAL LAND AREA 840 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 677,007
 PUBLIC SUPPLY 580,423
 SELF-SUPPLIED 96,584
 PER CAPITA 161

LAND AREA (ACRES)
 TOTAL AREA 537,600 840 SQ. MILES
 FARMED 16,439
 IRRIGATED 2,965

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	93.44	0.00	93.44	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	15.55	0.00	15.55	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	40.11	0.00	40.11	0.00	43.74	43.74	0.00
AGRICULTURAL IRR.	14.12	0.96	15.08	0.00	0.00	0.00	2.37
POWER GENERATION S-S	3.81	0.00	3.81	0.00	532.57	532.57	0.00
MISCELLANEOUS	5.98	0.00	5.98	0.00	0.00	0.00	0.00
	173.01	0.96	173.97	0.00	576.31	576.31	2.37
TOTAL GROUND	173.01						
TOTAL SURFACE		577.27					
COUNTY TOTAL (a)		750.28					

(a) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

Fresh Water Use in Duval County, 1988

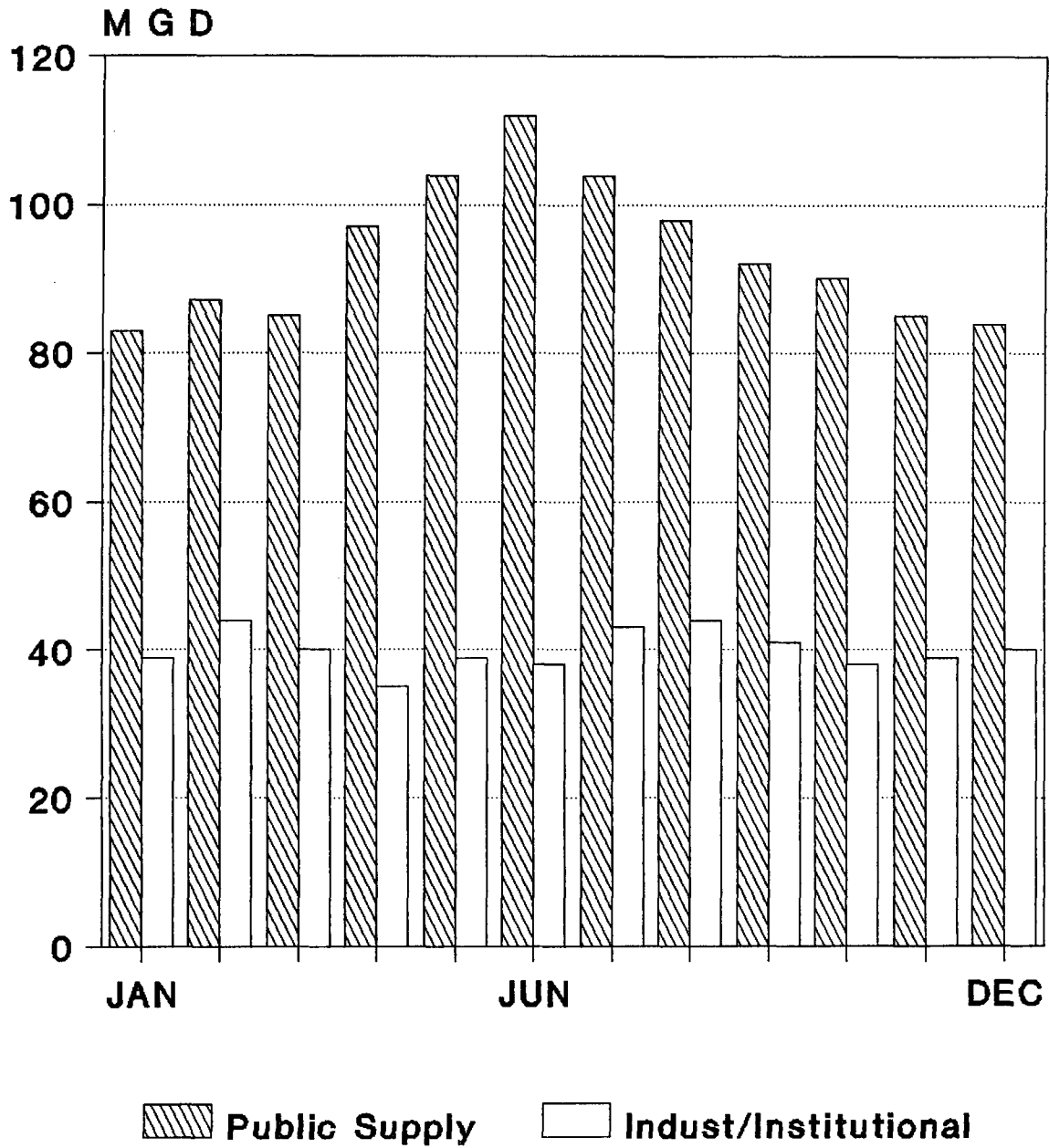


Figure A-7

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN DUVAL COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL (MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
ATLANTIC BEACH - CITY OF	PUBLIC SUPPLY	13,254	2.627	0.000	FLORIDAN AQF.
BEAUCLERC UTILITIES	PUBLIC SUPPLY	6,670	0.753	0.000	FLORIDAN AQF.
BALDWIN - CITY OF	PUBLIC SUPPLY	1,763	0.242	0.000	FLORIDAN AQF.
CANAL UTILITIES	PUBLIC SUPPLY	6,900	1.806	0.000	FLORIDAN AQF.
COLONY MHP	PUBLIC SUPPLY	962	0.132	0.000	FLORIDAN AQF.
COMMERCIAL UTILITIES	PUBLIC SUPPLY	1,200	0.114	0.000	FLORIDAN AQF.
DUVAL UTILITY CO.	PUBLIC SUPPLY	2,383	0.394	0.000	FLORIDAN AQF.
HARBOR VIEW S/D	PUBLIC SUPPLY	2,100	0.195	0.000	FLORIDAN AQF.
JACKSONVILLE BEACH - CITY OF	PUBLIC SUPPLY	19,152	3.292	0.000	FLORIDAN AQF.
JACKSONVILLE - CITY OF (a)	PUBLIC SUPPLY	406,938	66.433	0.000	FLORIDAN AQF.
JACKSONVILLE SUBURBAN UTILITIES	PUBLIC SUPPLY	75,132	10.078	0.000	FLORIDAN AQF.
LAMPLIGHTER MHP	PUBLIC SUPPLY	735	0.149	0.000	FLORIDAN AQF.
LONDONTOWNE APARTMENTS	PUBLIC SUPPLY	1,125	0.132	0.000	FLORIDAN AQF.
NEIGHBORHOOD UTILITIES	PUBLIC SUPPLY	543	0.044	0.000	FLORIDAN AQF.
NEPTUNE BEACH - CITY OF	PUBLIC SUPPLY	6,577	1.242	0.000	FLORIDAN AQF.
NORMANDY ESTATES MHP	PUBLIC SUPPLY	500	0.115	0.000	FLORIDAN AQF.
NORMANDY VILLAGE UTILITIES	PUBLIC SUPPLY	2,922	0.428	0.000	FLORIDAN AQF.
ORTEGA UTILITIES	PUBLIC SUPPLY	4,423	0.964	0.000	FLORIDAN AQF.
REGENCY UTILITIES	PUBLIC SUPPLY	4,900	0.766	0.000	FLORIDAN AQF.
SHADOWROCK UTILITIES	PUBLIC SUPPLY	1,250	0.221	0.000	FLORIDAN AQF.
SOUTHERN GULF UTILITIES	PUBLIC SUPPLY	2,900	0.243	0.000	FLORIDAN AQF.
SOUTHERN STATES UTILITIES	PUBLIC SUPPLY	10,076	1.785	0.000	FLORIDAN AQF.
SOUTHSIDE UTILITIES	PUBLIC SUPPLY	7,243	1.160	0.000	FLORIDAN AQF.
WONDERWOOD MHP	PUBLIC SUPPLY	775	0.129	0.000	FLORIDAN AQF.
CASTLETON BEVERAGE CO.	INDUSTRIAL		0.132	0.000	FLORIDAN AQF.
CECIL FIELD NAS	INSTITUTIONAL		1.135	0.000	FLORIDAN AQF.
CELOTEX GYPSUM CO.	INDUSTRIAL		0.095	0.000	FLORIDAN AQF.
DUVAL CORRECTIONAL FAC.	INSTITUTIONAL		0.015	0.000	FLORIDAN AQF.
EASTPORT POWER PLANT	POWER GEN.		2.218	0.000	FLORIDAN AQF.
FLORIDA DOT - I10 REST FAC.	INSTITUTIONAL		0.012	0.000	FLORIDAN AQF.
FLORIDA WIRE & CABLE CO.	INDUSTRIAL		0.047	0.000	FLORIDAN AQF.
GATE-MARITIME INC.	INDUSTRIAL		0.048	0.000	FLORIDAN AQF.
JACKSONVILLE ELECTRIC AUTHORITY	POWER GEN.		1.588	532.574	FLORIDAN AQF. & ST. JOHNS RIVER
JACKSONVILLE INT. AIRPORT	INSTITUTIONAL		0.215	0.000	FLORIDAN AQF.
SEMINOLE KRAFT PAPER CO.	INDUSTRIAL		18.482	41.430	FLORIDAN AQF. & ST. JOHNS RIVER
JACKSONVILLE NAS	INSTITUTIONAL		2.329	0.000	FLORIDAN AQF.
JACKSONVILLE PORT AUTHORITY	INDUSTRIAL		0.082	0.000	FLORIDAN AQF.
JACKSONVILLE SHIPYARD	INDUSTRIAL		0.213	2.311	FLORIDAN AQF. & ST. JOHNS RIVER
JACKSONVILLE UNIVERSITY	INSTITUTIONAL		0.350	0.000	FLORIDAN AQF.
JACKSONVILLE ZOO	INSTITUTIONAL		0.904	0.000	FLORIDAN AQF.
JEFFERSON-SMURFIT INC. (ALTON)	INDUSTRIAL		7.989	0.000	FLORIDAN AQF.
MAYPORT NAS	INSTITUTIONAL		2.265	0.000	FLORIDAN AQF.
REICHOLD CHEMICAL CO.	INDUSTRIAL		0.414	0.000	FLORIDAN AQF.
SCM ORGANIC CHEMICAL CO.	INDUSTRIAL		1.942	0.000	FLORIDAN AQF.
SIMPLEX MAN. CO.	INDUSTRIAL		0.054	0.000	FLORIDAN AQF.
SWISHER & SON MAN. CO.	INDUSTRIAL		0.117	0.000	FLORIDAN AQF.
UNION CAMP INC.	INDUSTRIAL		2.915	0.000	FLORIDAN AQF.
U.S. GYPSUM	INDUSTRIAL		0.356	0.000	FLORIDAN AQF.

(a) INCLUDES ARGYLE FOREST, MANDARIN, and MAYPORT.

DUVAL COUNTY ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	0	0	0.00	0.00	0.00	0.00
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	0	0	0.00	0.00	0.00	0.00
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	0	0	0.00	0.00	0.00	0.00
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	200	10	0.01	0.00	0.00	0.01
FRUIT CROPS						
BLUEBERRIES	15	10	0.01	0.00	0.00	0.01
CITRUS	0	0	0.00	0.00	0.00	0.00
GRAPES	10	7	0.01	0.00	0.00	0.01
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	0	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	0	0	0.00	0.00	0.00	0.00
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	200	0	0.00	0.00	0.00	0.00
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	0	0	0.00	0.00	0.00	0.00
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	0	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	0	0	0.00	0.00	0.00	0.00
FLOWERS & FOLIAGE	15	15	0.05	0.00	0.00	0.05
WOODY ORNAMENTALS	57	60	0.54	0.00	0.00	0.54
IMPROVED PASTURE	12,000	500	0.37	0.06	0.00	0.43
SOD	800	800	0.25	0.04	2.37	0.29
TURF GRASS (GOLF)	2,992	1,413	3.42	0.86	0.00	4.28
TURF GRASS (OTHER)	150	150	0.32	0.00	0.00	0.32
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.71	0.00	0.00	0.71
AESTHETIC/WILDLIFE	0	0	8.43	0.00	0.00	8.43
=====						
	16,439	2,965	14.12	0.96	2.37	15.08
SPRINKLER ACREAGE	2,891					
LOW PRESSURE ACREAGE	34					
FLOOD ACREAGE	40					

TOTAL IRRIGATED ACREAGE	2,965					

FLAGLER COUNTY DATA - 1988

TOTAL POPULATION 21,428
 TOTAL LAND AREA 504 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 21,428
 PUBLIC SUPPLY 18,825
 SELF-SUPPLIED 2,603
 PER CAPITA 161

LAND AREA (ACRES)
 TOTAL AREA 322,560 504 SQ. MILES
 FARMED 24,340
 IRRIGATED 6,785

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	3.03	0.00	3.03	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	0.42	0.00	0.42	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	0.16	0.00	0.16	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	6.81	0.92	7.73	0.00	0.00	0.00	0.00
POWER GENERATION S-S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	0.01	0.00	0.01	0.00	0.00	0.00	0.00
	10.43	0.92	11.35	0.00	0.00	0.00	0.00
TOTAL GROUND		10.43					
TOTAL SURFACE		0.92					
COUNTY TOTAL		11.35					

Fresh Water Use in Flagler County, 1988

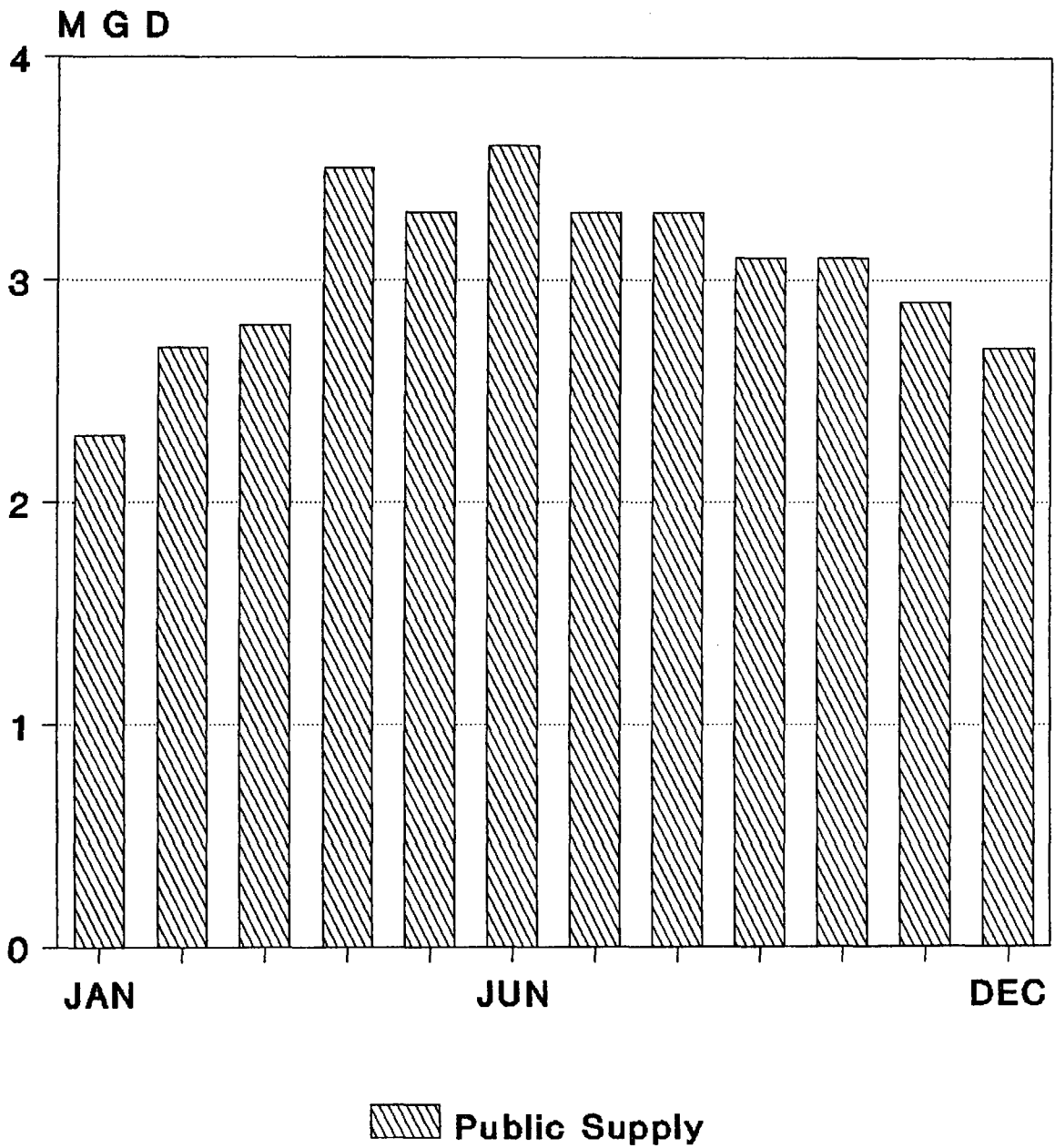


Figure A-8

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN FLAGLER COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL(MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
BEVERLY BEACH UTILITY	PUBLIC SUPPLY	434	0.032	0.000	FLORIDAN AQF.
BUNNELL - CITY OF	PUBLIC SUPPLY	2,149	0.336	0.000	FLORIDAN AQF.
FLAGLER BEACH - CITY OF	PUBLIC SUPPLY	3,418	0.502	0.000	FLORIDAN AQF.
PALM COAST UTILITIES	PUBLIC SUPPLY	12,500	2.128	0.000	SURFICIAL AQF.
PLANTATION BAY	PUBLIC SUPPLY	324	0.056	0.000	FLORIDAN AQF.
BULOW KOA	INSTITUTIONAL		0.070	0.000	FLORIDAN AQF.
HOLIDAY TRAVEL PARK	INSTITUTIONAL		0.010	0.000	FLORIDAN AQF.
MARINELAND	INSTITUTIONAL		0.047	0.000	FLORIDAN AQF.
RINKER CEMENT	INDUSTRIAL		0.030	0.000	FLORIDAN AQF.

FLAGLER COUNTY

ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	2,000	1,800	1.53	0.00	0.00	1.53
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	0	0	0.00	0.00	0.00	0.00
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	2,200	2,200	2.56	0.00	0.00	2.56
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	0	0	0.00	0.00	0.00	0.00
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	1,000	1,000	0.87	0.00	0.00	0.87
FRUIT CROPS						
BLUEBERRIES	0	0	0.00	0.00	0.00	0.00
CITRUS	0	0	0.00	0.00	0.00	0.00
GRAPES	0	0	0.00	0.00	0.00	0.00
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	0	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	100	100	0.06	0.00	0.00	0.06
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	400	400	0.58	0.00	0.00	0.58
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	1,500	0	0.00	0.00	0.00	0.00
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	0	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	0	0	0.00	0.00	0.00	0.00
FLOWERS & FOLIAGE	0	0	0.00	0.00	0.00	0.00
WOODY ORNAMENTALS	5	5	0.05	0.00	0.00	0.05
IMPROVED PASTURE	16,500	695	0.82	0.00	0.00	0.82
SOD	200	150	0.22	0.00	0.00	0.22
TURF GRASS (GOLF)	362	362	0.10	0.76	0.00	0.86
TURF GRASS (OTHER)	73	73	0.01	0.15	0.00	0.16
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.01	0.01	0.00	0.02
FISH FARMING	0	0	0.00	0.00	0.00	0.00

	24,340	6,785	6.81	0.92	0.00	7.73
SPRINKLER ACREAGE	2,385					
LOW PRESSURE ACREAGE	0					
FLOOD ACREAGE	4,400					

TOTAL IRRIGATED ACREAGE	6,785					

INDIAN RIVER COUNTY DATA - 1988

TOTAL POPULATION 87,512
 TOTAL LAND AREA 549 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 87,512
 PUBLIC SUPPLY 50,617
 SELF-SUPPLIED 36,895
 PER CAPITA 243

LAND AREA (ACRES)
 TOTAL AREA 351,360 549 SQ. MILES
 FARMED 140,941
 IRRIGATED 95,474

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY (a)	12.28	0.00	12.28	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	8.96	0.00	8.96	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	0.27	0.00	0.27	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	56.57	136.14	192.71	0.00	0.00	0.00	0.00
POWER GENERATION S-S	0.08	0.00	0.08	0.00	137.98	137.98	0.00
MISCELLANEOUS	5.41	0.00	5.41	0.00	0.00	0.00	0.00
	83.57	136.14	219.71	0.00	137.98	137.98	0.00
TOTAL GROUND	83.57						
TOTAL SURFACE		274.12					
COUNTY TOTAL		357.69					

(a) INCLUDES 2.82 MGD of SLIGHTLY SALINE GROUND WATER (250 to 1000 mg/L chlorides) USED IN R/O or DILUTED FOR PUBLIC SUPPLY USE.

Fresh Water Use in Indian River County 1988

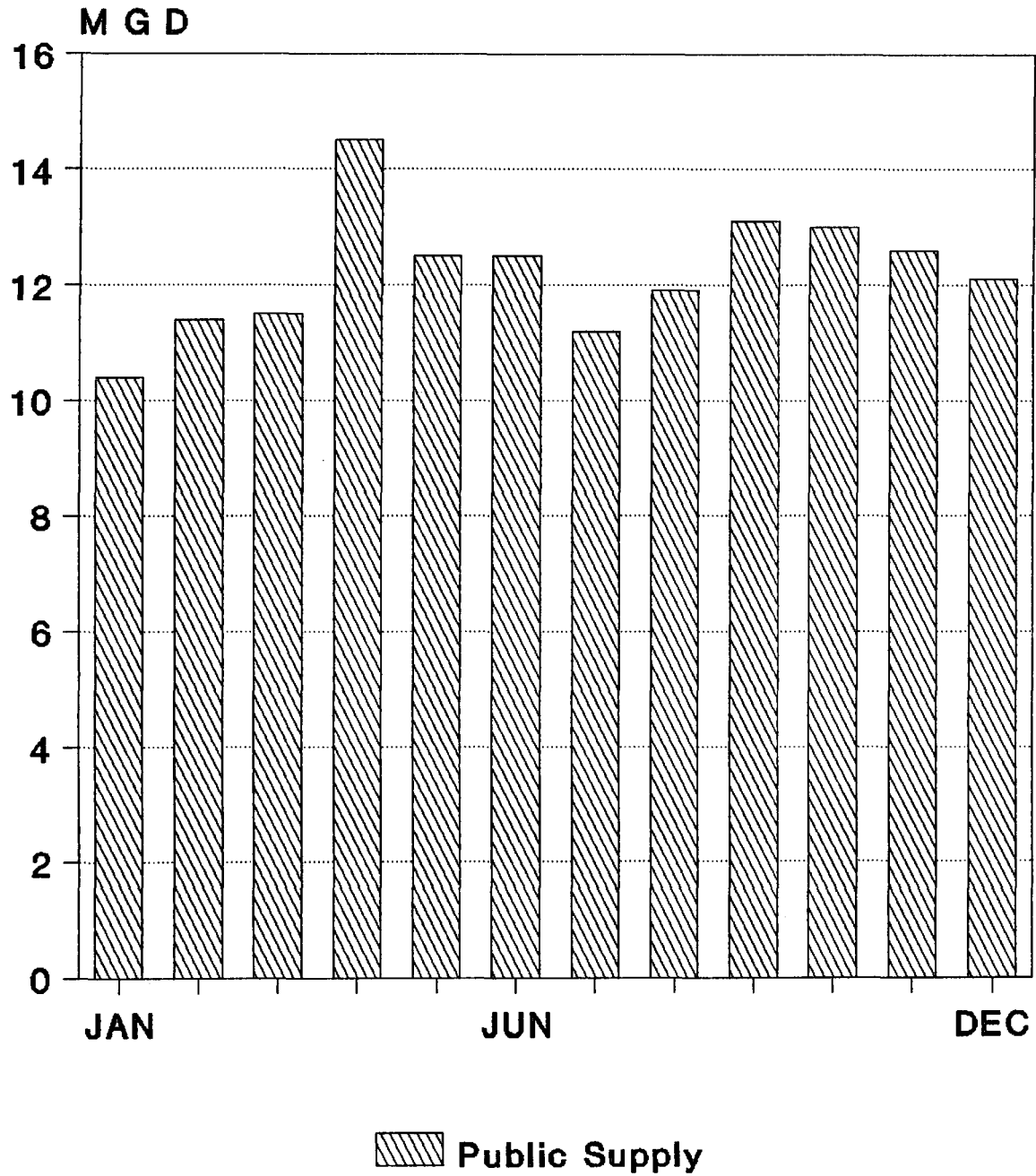


Figure A-9

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN INDIAN RIVER COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL(MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
BENT PINES UTILITIES	PUBLIC SUPPLY	400	0.029	0.000	SURFICIAL AQF.
GDU - VERO HIGHLANDS/SHORES	PUBLIC SUPPLY	2,328	0.000	0.000	INDIAN RIVER CO. UTILITIES
GDU - SEBASTIAN HIGHLANDS	PUBLIC SUPPLY	2,219	0.259	0.000	FLORIDAN AQF.
HERITAGE VILLAGE	PUBLIC SUPPLY	654	0.071	0.000	FLORIDAN AQF. (R/O)
INDIAN RIVER COUNTY UTILITIES	PUBLIC SUPPLY	16,055	1.466	0.000	FLORIDAN AQF. (R/O)
LAKWOOD VILLAGE	PUBLIC SUPPLY	1,095	0.098	0.000	SURFICIAL AQF.
MARSH ISLAND UTILITIES	PUBLIC SUPPLY	88	0.012	0.000	FLORIDAN AQF. (R/O)
NORTH BEACH UTILITIES	PUBLIC SUPPLY	1,131	0.332	0.000	FLORIDAN AQF. (R/O)
PELICAN POINTE UTILITIES	PUBLIC SUPPLY	375	0.032	0.000	FLORIDAN AQF.
VERO BEACH - CITY OF	PUBLIC SUPPLY	24,140	9.736	0.000	SURFICIAL & FLORIDAN AQF.
VILLAGE GREEN MHP	PUBLIC SUPPLY	1,432	0.187	0.000	FLORIDAN AQF. (R/O)
WHISPERING PALMS MHP	PUBLIC SUPPLY	700	0.061	0.000	FLORIDAN AQF. (R/O)
HERCULES INC.	INDUSTRIAL		0.121	0.000	SURFICIAL AQF.
INDIAN RIVER CORRECTIONAL FAC.	INSTITUTIONAL		0.027	0.000	SURFICIAL AQF.
OCEAN SPRAY PROCESSING PLANT	INDUSTRIAL		0.091	0.000	SURFICIAL & FLORIDAN AQF.
SEBASTIAN MEDICAL CENTER	INSTITUTIONAL		0.033	0.000	SURFICIAL AQF.
VERO BEACH MUN. POWER PLANT	POWER GEN.		0.084	137.980	FLORIDAN AQF. & INDIAN RIVER

INDIAN RIVER COUNTY

ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	150	150	0.16	0.00	0.00	0.16
CARROTS	300	50	0.05	0.00	0.00	0.05
CUCUMBERS	0	0	0.00	0.00	0.00	0.00
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	10	5	0.01	0.00	0.00	0.01
SWEET CORN	650	360	0.31	0.31	0.00	0.62
WATERCRESS	150	150	1.67	0.00	0.00	1.67
MISC. VEGETABLES	2,020	2,020	1.01	1.02	0.00	2.03
FRUIT CROPS						
BLUEBERRIES	0	0	0.00	0.00	0.00	0.00
CITRUS	65,162	65,162	39.58	118.72	0.00	158.30
GRAPES	0	0	0.00	0.00	0.00	0.00
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	0	0	0.00	0.00	0.00	0.00
STRAWBERRIES	40	40	0.08	0.00	0.00	0.08
WATERMELONS	0	0	0.00	0.00	0.00	0.00
MISC. FRUIT	100	100	0.10	0.00	0.00	0.10
FIELD CROPS						
FIELD CORN	7,100	2,000	0.00	3.26	0.00	3.26
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	0	0	0.00	0.00	0.00	0.00
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	300	300	0.17	0.17	0.00	0.34
ORNAMENTALS & GRASSES						
FERNS	0	0	0.00	0.00	0.00	0.00
FLOWERS & FOLIAGE	0	0	0.00	0.00	0.00	0.00
WOODY ORNAMENTALS	60	60	0.00	0.55	0.00	0.55
IMPROVED PASTURE	62,208	22,747	9.30	9.31	0.00	18.61
SOD	1,000	1,000	0.96	1.43	0.00	2.39
TURF GRASS (GOLF)	1,637	1,276	2.76	1.36	0.00	4.12
TURF GRASS (OTHER)	54	54	0.12	0.01	0.00	0.13
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.22	0.00	0.00	0.22
FISH FARMING	0	0	0.07	0.00	0.00	0.07
	140,941	95,474	56.57	136.14	0.00	192.71
SPRINKLER ACREAGE	2,105					
LOW PRESSURE ACREAGE	26,965					
FLOOD ACREAGE	66,404					
TOTAL IRRIGATED ACREAGE	95,474					

LAKE COUNTY DATA - 1988

TOTAL POPULATION 140,783
 TOTAL LAND AREA 1,163 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 139,234
 PUBLIC SUPPLY 95,721
 SELF-SUPPLIED 43,513
 PER CAPITA 190

LAND AREA (ACRES)
 TOTAL AREA 677,760 1,059 SQ. MILES
 FARMED 92,389
 IRRIGATED 41,803

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	18.21	0.00	18.21	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	8.31	0.00	8.31	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	13.33	0.00	13.33	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	47.66	11.31	58.97	0.00	0.00	0.00	2.99
POWER GENERATION S-S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	0.49	0.00	0.49	0.00	0.00	0.00	0.00
	88.00	11.31	99.31	0.00	0.00	0.00	2.99
TOTAL GROUND		88.00					
TOTAL SURFACE		11.31					
COUNTY TOTAL (a)		99.31					

(a) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

Fresh Water Use in Lake County, 1988

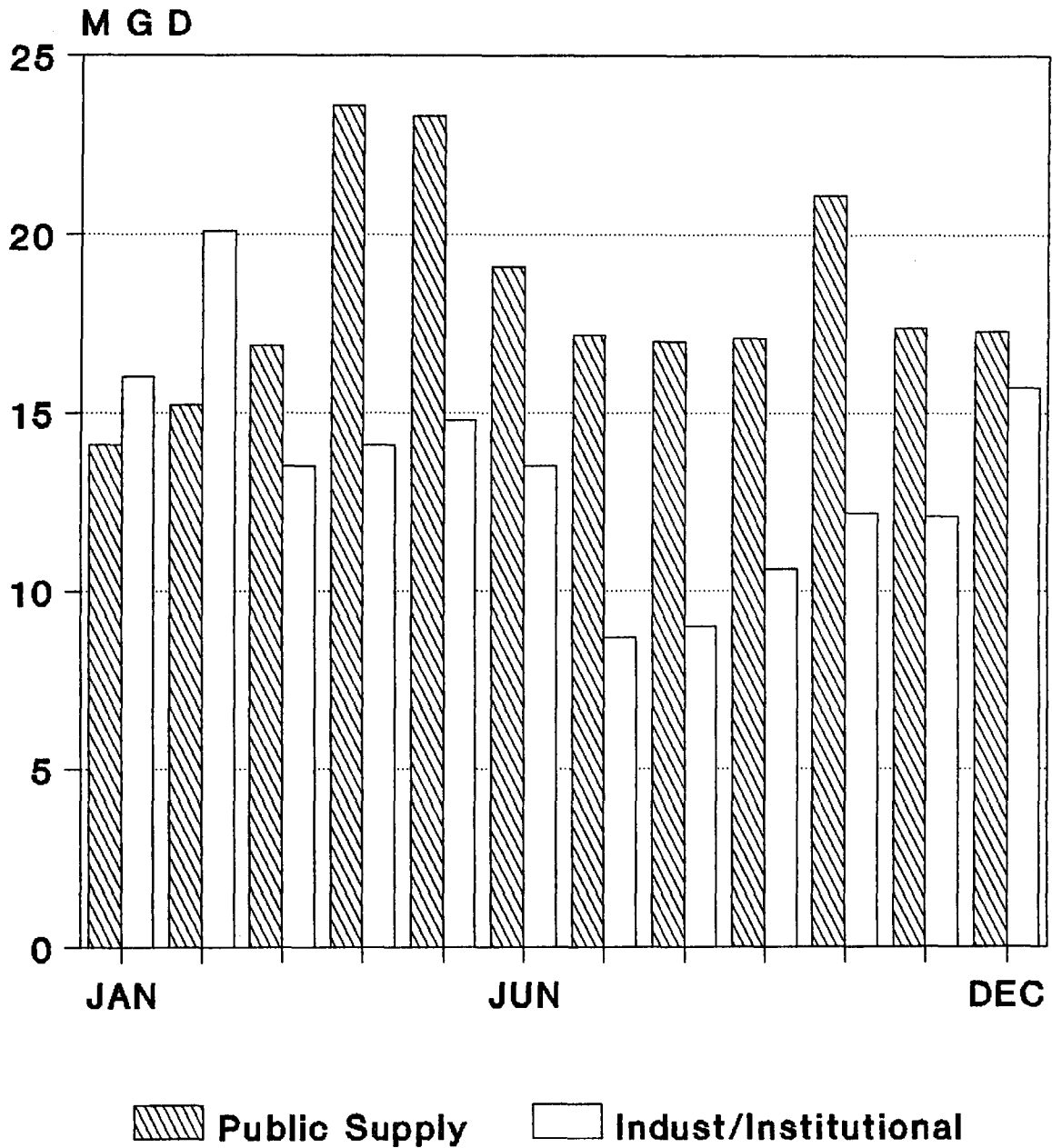


Figure A-10

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN LAKE COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION	WITHDRAWAL(MGD)		WITHDRAWAL SOURCE
		SERVED	GROUND	SURFACE	
ASTOR/ASTOR PARK WATER ASSOC.	PUBLIC SUPPLY	3,000	0.237	0.000	FLORIDAN AQF.
BRITTANY ESTATES	PUBLIC SUPPLY	216	0.074	0.000	FLORIDAN AQF.
CLERMONT - CITY OF	PUBLIC SUPPLY	6,527	1.423	0.000	FLORIDAN AQF.
DEANZA - MID FLORIDA LAKES	PUBLIC SUPPLY	2,755	0.715	0.000	FLORIDAN AQF.
EUSTIS - CITY OF	PUBLIC SUPPLY	17,423	2.902	0.000	FLORIDAN AQF.
FRUITLAND PARK - CITY OF	PUBLIC SUPPLY	2,787	0.446	0.000	FLORIDAN AQF.
GROVELAND - CITY OF	PUBLIC SUPPLY	2,178	0.284	0.000	FLORIDAN AQF.
HAWTHORNE S/D	PUBLIC SUPPLY	2,815	0.467	0.000	FLORIDAN AQF.
HOWEY-IN-THE-HILLS - TOWN OF	PUBLIC SUPPLY	670	0.312	0.000	FLORIDAN AQF.
LAKE COUNTY UTILITIES	PUBLIC SUPPLY	550	0.067	0.000	FLORIDAN AQF.
LAKEVIEW TERRACE CENTER	PUBLIC SUPPLY	300	0.036	0.000	FLORIDAN AQF.
LEESBURG - CITY OF	PUBLIC SUPPLY	21,127	3.920	0.000	FLORIDAN AQF.
MASCOTTE - TOWN OF	PUBLIC SUPPLY	1,750	0.172	0.000	FLORIDAN AQF.
MINNEOLA - CITY OF	PUBLIC SUPPLY	1,375	0.190	0.000	FLORIDAN AQF.
MOLAKAI PARK WATER SYSTEM	PUBLIC SUPPLY	550	0.038	0.000	FLORIDAN AQF.
MONTVERDE - TOWN OF	PUBLIC SUPPLY	505	0.121	0.000	FLORIDAN AQF.
MOUNT DORA - CITY OF	PUBLIC SUPPLY	9,600	2.340	0.000	FLORIDAN AQF.
ORANGE BLOSSOM GARDENS MHP	PUBLIC SUPPLY	5,925	1.436	0.000	FLORIDAN AQF.
SILVER LAKE ESTATES UTILITY	PUBLIC SUPPLY	1,180	0.566	0.000	FLORIDAN AQF.
SOUTH UMATILLA W.A.	PUBLIC SUPPLY	375	0.049	0.000	FLORIDAN AQF.
SOUTHERN STATES UTILITIES	PUBLIC SUPPLY	2,376	0.273	0.000	FLORIDAN AQF.
SUNLAKE ESTATES	PUBLIC SUPPLY	600	0.201	0.000	FLORIDAN AQF.
TAVARES - CITY OF	PUBLIC SUPPLY	7,318	1.155	0.000	FLORIDAN AQF.
UMATILLA - CITY OF	PUBLIC SUPPLY	2,505	0.474	0.000	FLORIDAN AQF.
UTILITIES INC. OF FLORIDA	PUBLIC SUPPLY	340	0.109	0.000	FLORIDAN AQF.
WATER OAK ESTATES	PUBLIC SUPPLY	974	0.210	0.000	FLORIDAN AQF.
B & W CANNING - GROVELAND PLANT	INDUSTRIAL		0.968	0.000	FLORIDAN AQF.
COCA COLA - LEESBURG PLANT	INDUSTRIAL		1.780	0.000	FLORIDAN AQF.
EUSTIS SAND CO.	INDUSTRIAL		1.180	0.000	FLORIDAN AQF.
FLORIDA CRUSHED STONE - TULLEY	INDUSTRIAL		2.178	0.000	FLORIDAN AQF.
FLORIDA ROCK - LAKE CO. MINE	INDUSTRIAL		0.866	0.000	FLORIDAN AQF.
GOLDEN GEM - UMATILLA PLANT	INDUSTRIAL		4.280	0.000	FLORIDAN AQF.
GROVELAND ACADEMY	INSTITUTIONAL		0.011	0.000	FLORIDAN AQF.
LAKE CORRECTION FAC.	INSTITUTIONAL		0.111	0.000	FLORIDAN AQF.
SILVER SAND CO. - CLERMONT MINE	INDUSTRIAL		1.234	0.000	FLORIDAN AQF.
SILVER SPRINGS CITRUS PLANT	INDUSTRIAL		0.704	0.000	FLORIDAN AQF.
SUNDOR BRANDS PROC. CO.	INDUSTRIAL		0.021	0.000	FLORIDAN AQF.

LAKE COUNTY (SJR)

ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	200	200	0.10	0.11	0.00	0.21
CARROTS	2,400	2,400	1.09	1.09	0.00	2.18
CUCUMBERS	200	200	0.03	0.04	0.00	0.07
PEPPERS	50	50	0.02	0.00	0.00	0.02
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	5,000	5,000	4.37	2.91	0.00	7.28
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	1,800	1,800	0.81	0.54	0.00	1.35
FRUIT CROPS						
BLUEBERRIES	55	55	0.06	0.00	0.00	0.06
CITRUS	26,228	26,228	26.98	4.03	0.43	31.01
GRAPES	100	100	0.12	0.00	0.00	0.12
PEACHES	10	10	0.01	0.00	0.00	0.01
PECANS	80	80	0.13	0.00	0.00	0.13
STRAWBERRIES	5	5	0.01	0.00	0.00	0.01
WATERMELONS	500	500	0.34	0.00	0.00	0.34
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	2,000	500	0.39	0.39	0.00	0.78
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	300	150	0.07	0.07	0.00	0.14
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	0	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	500	500	2.06	0.11	0.00	2.17
FLOWERS & FOLIAGE	120	120	0.43	0.00	0.00	0.43
WOODY ORNAMENTALS	880	880	7.61	0.40	0.00	8.01
IMPROVED PASTURE	50,000	1,886	1.48	0.06	2.56	1.54
SOD	250	250	0.07	0.45	0.00	0.52
TURF GRASS (GOLF)	1,591	769	1.00	0.82	0.00	1.82
TURF GRASS (OTHER)	120	120	0.23	0.04	0.00	0.27
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.25	0.25	0.00	0.50
FISH FARMING	0	0	0.00	0.00	0.00	0.00
	92,389	41,803	47.66	11.31	2.99	58.97
SPRINKLER ACREAGE	18,874					
LOW PRESSURE ACREAGE	13,429					
FLOOD ACREAGE	9,500					
TOTAL IRRIGATED ACREAGE	41,803					

MARION COUNTY DATA - 1988

TOTAL POPULATION 182,329
 TOTAL LAND AREA 1,652 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 152,062
 PUBLIC SUPPLY 74,685
 SELF-SUPPLIED 77,377
 PER CAPITA 156

LAND AREA (ACRES)
 TOTAL AREA 764,160 1,194 SQ. MILES
 FARMED 72,984
 IRRIGATED 6,488

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	11.64	0.00	11.64	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	12.07	0.00	12.07	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	0.99	0.00	0.99	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	6.93	1.29	8.22	0.00	0.00	0.00	0.20
POWER GENERATION S-S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	1.71	0.00	1.71	0.00	0.00	0.00	0.00
	33.34	1.29	34.63	0.00	0.00	0.00	0.20
TOTAL GROUND		33.34					
TOTAL SURFACE		1.29					
COUNTY TOTAL (a)		34.63					

(a) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

Fresh Water Use in Marion County, 1988

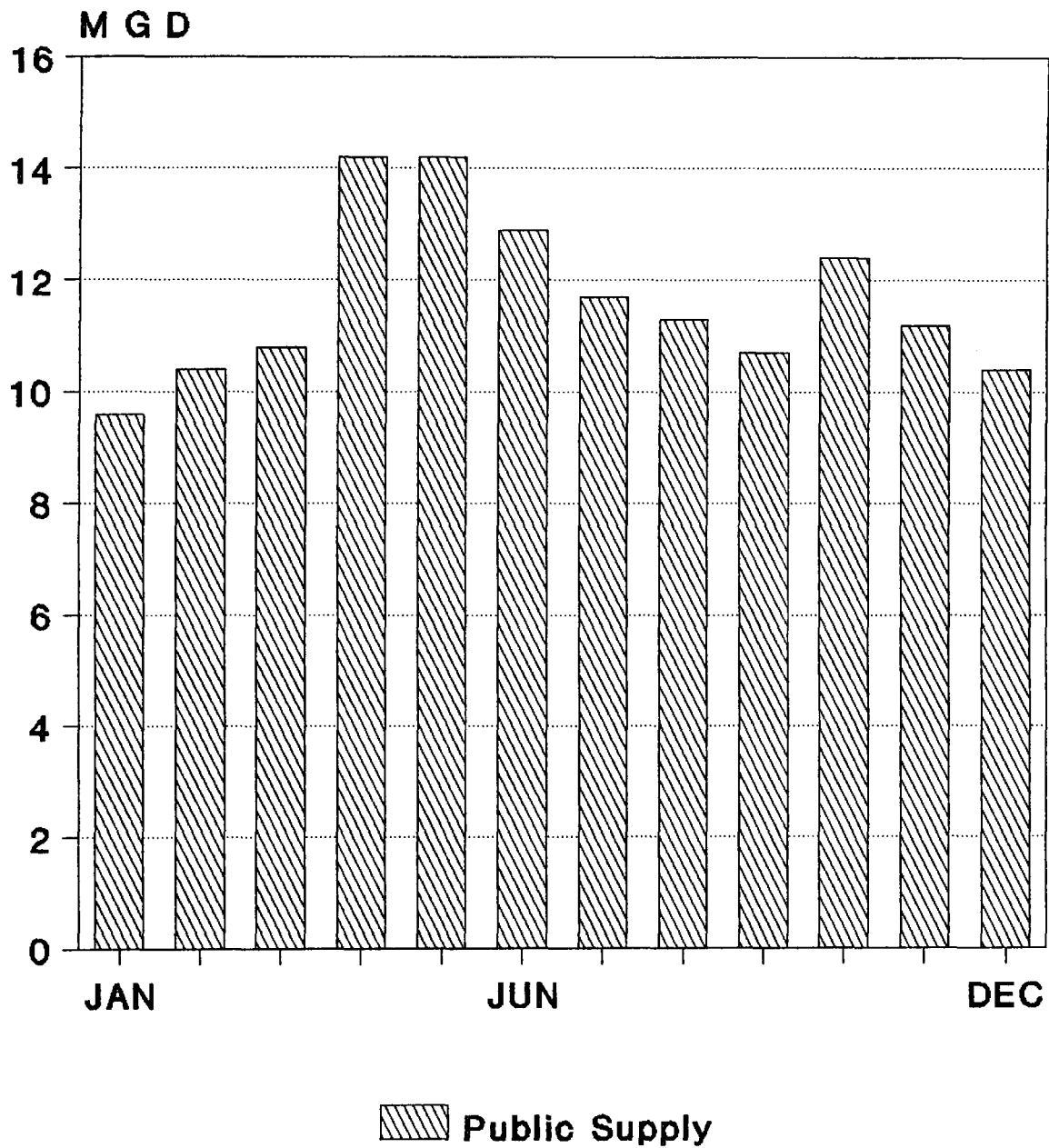


Figure A-11

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN MARION COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL (MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
BELLEVIEW - CITY OF	PUBLIC SUPPLY	4,581	0.552	0.000	FLORIDAN AQF.
GDU - SILVER SPRINGS SHORES	PUBLIC SUPPLY	9,781	1.499	0.000	FLORIDAN AQF.
MACO DEVELOPMENT CO.	PUBLIC SUPPLY	530	0.105	0.000	FLORIDAN AQF.
MARION UTILITIES	PUBLIC SUPPLY	3,034	0.342	0.000	FLORIDAN AQF.
McINTOSH - CITY OF	PUBLIC SUPPLY	512	0.104	0.000	FLORIDAN AQF.
OCALA - CITY OF	PUBLIC SUPPLY	48,338	8.021	0.000	FLORIDAN AQF.
OCALA EAST VILLAS	PUBLIC SUPPLY	580	0.123	0.000	FLORIDAN AQF.
OCALA OAKS UTILITIES	PUBLIC SUPPLY	1,898	0.251	0.000	FLORIDAN AQF.
SUNSHINE UTILITIES	PUBLIC SUPPLY	3,306	0.372	0.000	FLORIDAN AQF.
SOUTHERN STATES UTILITIES	PUBLIC SUPPLY	1,275	0.143	0.000	FLORIDAN AQF.
TRADEWINDS UTILITIES	PUBLIC SUPPLY	850	0.134	0.000	FLORIDAN AQF.
CERTIFIED GROCERS INC.	INDUSTRIAL		0.041	0.000	FLORIDAN AQF.
FLORIDA ROCK - MARION MINE	INDUSTRIAL		0.370	0.000	FLORIDAN AQF.
GOLDEN FLAKE INC - Ocala PLANT	INDUSTRIAL		(a)	0.000	FLORIDAN AQF.
HCA - GRANT CENTER HOSPITAL	INSTITUTIONAL		0.008	0.000	FLORIDAN AQF.
H.S. CAMP & SONS INC.	INDUSTRIAL		0.002	0.000	FLORIDAN AQF.
MARION CORRECTIONAL FAC.	INSTITUTIONAL		0.229	0.000	FLORIDAN AQF.
SILVER SPRINGS INC.	INSTITUTIONAL		0.340	0.000	FLORIDAN AQF.

(a) DATA NOT AVAILABLE

MARION COUNTY (SJR)

ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	0	0	0.00	0.00	0.00	0.00
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	70	70	0.04	0.00	0.00	0.04
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	50	50	0.06	0.00	0.00	0.06
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	1,700	940	0.57	0.00	0.00	0.57
FRUIT CROPS						
BLUEBERRIES	60	60	0.07	0.00	0.00	0.07
CITRUS	1,210	1,210	1.22	0.08	0.00	1.30
GRAPES	70	60	0.07	0.00	0.00	0.07
PEACHES	5	0	0.00	0.00	0.00	0.00
PECANS	10	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	1,450	1,350	0.86	0.00	0.00	0.86
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	3,000	350	0.27	0.19	0.00	0.46
PEANUTS	2,000	134	0.10	0.00	0.00	0.10
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	300	0	0.00	0.00	0.00	0.00
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	1,500	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	20	15	0.05	0.02	0.00	0.07
FLOWERS & FOLIAGE	14	14	0.06	0.00	0.00	0.06
WOODY ORNAMENTALS	52	52	0.39	0.09	0.00	0.48
IMPROVED PASTURE	59,230	940	0.46	0.31	0.00	0.77
SOD	660	660	0.98	0.00	0.00	0.98
TURF GRASS (GOLF)	1,500	500	0.68	0.50	0.20	1.18
TURF GRASS (OTHER)	83	83	0.19	0.00	0.00	0.19
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.86	0.10	0.00	0.96
FISH FARMING	0	0	0.00	0.00	0.00	0.00
	72,984	6,488	6.93	1.29	0.20	8.22
SPRINKLER ACREAGE	5,983					
LOW PRESSURE ACREAGE	505					
FLOOD ACREAGE	0					
TOTAL IRRIGATED ACREAGE	6,488					

NASSAU COUNTY DATA - 1988

TOTAL POPULATION 45,609
 TOTAL LAND AREA 671 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 45,609
 PUBLIC SUPPLY 21,321
 SELF-SUPPLIED 24,288
 PER CAPITA 168

LAND AREA (ACRES)
 TOTAL AREA 429,440 671 SQ. MILES
 FARMED 7,406
 IRRIGATED 770

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	3.58	0.00	3.58	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	4.08	0.00	4.08	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	33.25	0.00	33.25	0.00	1.38	1.38	0.00
AGRICULTURAL IRR.	2.00	0.93	2.93	0.00	0.00	0.00	0.47
POWER GENERATION S-S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	0.01	0.00	0.01	0.00	0.00	0.00	0.00
	42.92	0.93	43.85	0.00	1.38	1.38	0.47
TOTAL GROUND		42.92					
TOTAL SURFACE		2.31					
COUNTY TOTAL (a)		45.23					

(a) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

Fresh Water Use in Nassau County, 1988

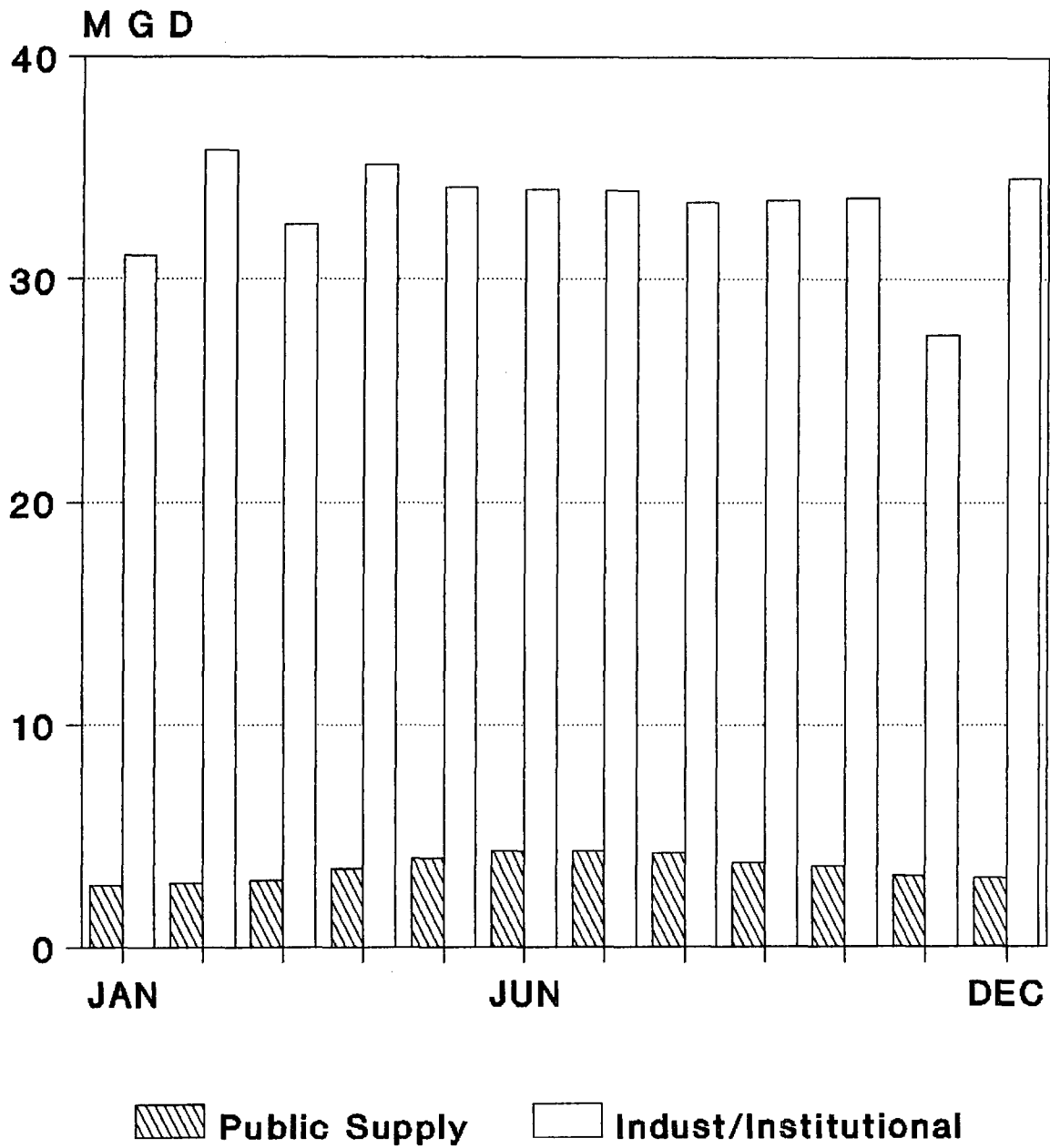


Figure A-12

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN NASSAU COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL (MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
CALLAHAN - TOWN OF	PUBLIC SUPPLY	1,128	0.164	0.000	FLORIDAN AQF.
EASTWOOD OAKS	PUBLIC SUPPLY	365	0.037	0.000	FLORIDAN AQF.
FLA. PUBLIC UT.- FERNANDINA BCH.	PUBLIC SUPPLY	12,366	2.638	0.000	FLORIDAN AQF.
HILLIARD - TOWN OF	PUBLIC SUPPLY	2,183	0.177	0.000	FLORIDAN AQF.
MARSH COVE APT.	PUBLIC SUPPLY	200	0.031	0.000	FLORIDAN AQF.
SOUTHERN STATES UT.(AMELIA IS.)	PUBLIC SUPPLY	5,079	0.533	0.000	FLORIDAN AQF.
CONTAINER CORP. OF AMERICA	INDUSTRIAL		13.720	0.000	FLORIDAN AQF.
FLORIDA DOT - I95 WELCOME CEN.	INSTITUTIONAL		0.028	0.000	FLORIDAN AQF.
ITT RAYONIER INC.	INDUSTRIAL		19.409	1.388	FLORIDAN AQF. & AMELIA RIVER
NASSAU CORRECTIONAL FAC.	INSTITUTIONAL		0.013	0.000	FLORIDAN AQF.
TERMINAL PAPER CO.	INDUSTRIAL		0.080	0.000	FLORIDAN AQF.

NASSAU COUNTY ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	0	0	0.00	0.00	0.00	0.00
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	0	0	0.00	0.00	0.00	0.00
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	0	0	0.00	0.00	0.00	0.00
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	100	50	0.03	0.00	0.00	0.03
FRUIT CROPS						
BLUEBERRIES	30	15	0.02	0.00	0.00	0.02
CITRUS	0	0	0.00	0.00	0.00	0.00
GRAPES	0	0	0.00	0.00	0.00	0.00
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	0	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	0	0	0.00	0.00	0.00	0.00
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	500	50	0.06	0.00	0.00	0.06
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	1,000	0	0.00	0.00	0.00	0.00
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	40	40	0.04	0.00	0.00	0.04
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	0	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	0	0	0.00	0.00	0.00	0.00
FLOWERS & FOLIAGE	20	20	0.08	0.00	0.00	0.08
WOODY ORNAMENTALS	3	0	0.00	0.00	0.00	0.00
IMPROVED PASTURE	5,000	0	0.00	0.00	0.00	0.00
SOD	0	0	0.00	0.00	0.00	0.00
TURF GRASS (GOLF)	645	565	0.79	0.13	0.47	0.92
TURF GRASS (OTHER)	68	30	0.15	0.00	0.00	0.15
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.81	0.80	0.00	1.61
FISH FARMING	0	0	0.02	0.00	0.00	0.02
=====						
	7,406	770	2.00	0.93	0.47	2.93
SPRINKLER ACREAGE	770					
LOW PRESSURE ACREAGE	0					
FLOOD ACREAGE	0					

TOTAL IRRIGATED ACREAGE	770					

OKEECHOBEE COUNTY DATA - 1988

TOTAL POPULATION 28,762
 TOTAL LAND AREA 780 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 454
 PUBLIC SUPPLY 0
 SELF-SUPPLIED 454
 PER CAPITA 143 (a)

LAND AREA (ACRES)
 TOTAL AREA 65,920 103 SQ. MILES
 FARMED 24,468
 IRRIGATED 7,250

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	0.06	0.00	0.06	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	0.07	0.00	0.07	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	8.70	0.25	8.95	0.00	0.00	0.00	0.00
POWER GENERATION S-S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	8.83	0.25	9.08	0.00	0.00	0.00	0.00
TOTAL GROUND		8.83					
TOTAL SURFACE		0.25					
COUNTY TOTAL		9.08					

(a) USED THE 1985 TOTAL COUNTY'S PER CAPITA (MARELLA 1988).

**THE COMMERCIAL/INDUSTRIAL PUMPAGE IN
OKEECHOBEE COUNTY WITHIN THE ST. JOHNS
RIVER WATER MANAGEMENT DISTRICT FOR 1988
WAS TO SMALL TO DEPICT.**

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN OKEECHOBEE COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL (MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
FLORIDA DOT - FT. DRUM PLAZA	INSTITUTIONAL		0.072	0.000	FLORIDAN AQF.

OKEECHOBEE COUNTY (SJR)

ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	0	0	0.00	0.00	0.00	0.00
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	0	0	0.00	0.00	0.00	0.00
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	0	0	0.00	0.00	0.00	0.00
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	0	0	0.00	0.00	0.00	0.00
FRUIT CROPS						
BLUEBERRIES	0	0	0.00	0.00	0.00	0.00
CITRUS	4,468	4,468	4.60	0.00	0.00	4.60
GRAPES	0	0	0.00	0.00	0.00	0.00
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	0	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	0	0	0.00	0.00	0.00	0.00
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	0	0	0.00	0.00	0.00	0.00
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	0	0	0.00	0.00	0.00	0.00
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	0	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	0	0	0.00	0.00	0.00	0.00
FLOWERS & FOLIAGE	0	0	0.00	0.00	0.00	0.00
WOODY ORNAMENTALS	0	0	0.00	0.00	0.00	0.00
IMPROVED PASTURE	20,000	2,782	3.42	0.00	0.00	3.42
SOD	0	0	0.00	0.00	0.00	0.00
TURF GRASS (GOLF)	0	0	0.00	0.00	0.00	0.00
TURF GRASS (OTHER)	0	0	0.00	0.00	0.00	0.00
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.50	0.25	0.00	0.75
FISH FARMING	0	0	0.18	0.00	0.00	0.18
=====						
	24,468	7,250	8.70	0.25	0.00	8.95
=====						
SPRINKLER ACREAGE	0					
LOW PRESSURE ACREAGE	4,468					
FLOOD ACREAGE	2,782					

TOTAL IRRIGATED ACREAGE	7,250					

ORANGE COUNTY DATA - 1988

TOTAL POPULATION 623,425
 TOTAL LAND AREA 1,003 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 504,974
 PUBLIC SUPPLY 492,028
 SELF-SUPPLIED 12,946
 PER CAPITA 187

LAND AREA (ACRES)
 TOTAL AREA 476,160 744 SQ. MILES
 FARMED 79,398
 IRRIGATED 57,642

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY (a)	110.83	0.00	110.83	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	2.42	0.00	2.42	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	3.65	0.00	3.65	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	25.98	41.44	67.42	0.00	0.00	0.00	4.85
POWER GENERATION S-S	0.40	0.00	0.40	0.00	0.00	0.00	1.23
MISCELLANEOUS	0.84	0.00	0.84	0.00	0.00	0.00	0.00
	144.12	41.44	185.56	0.00	0.00	0.00	6.08
TOTAL GROUND		144.12					
TOTAL SURFACE		41.44					
COUNTY TOTAL (b)		185.56					

(a) INCLUDES 25.02 MGD OF WATER WITHDRAWN IN ORANGE COUNTY FOR PUBLIC SUPPLY USE IN BREVARD COUNTY.
 (b) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

Fresh Water Use in Orange County, 1988

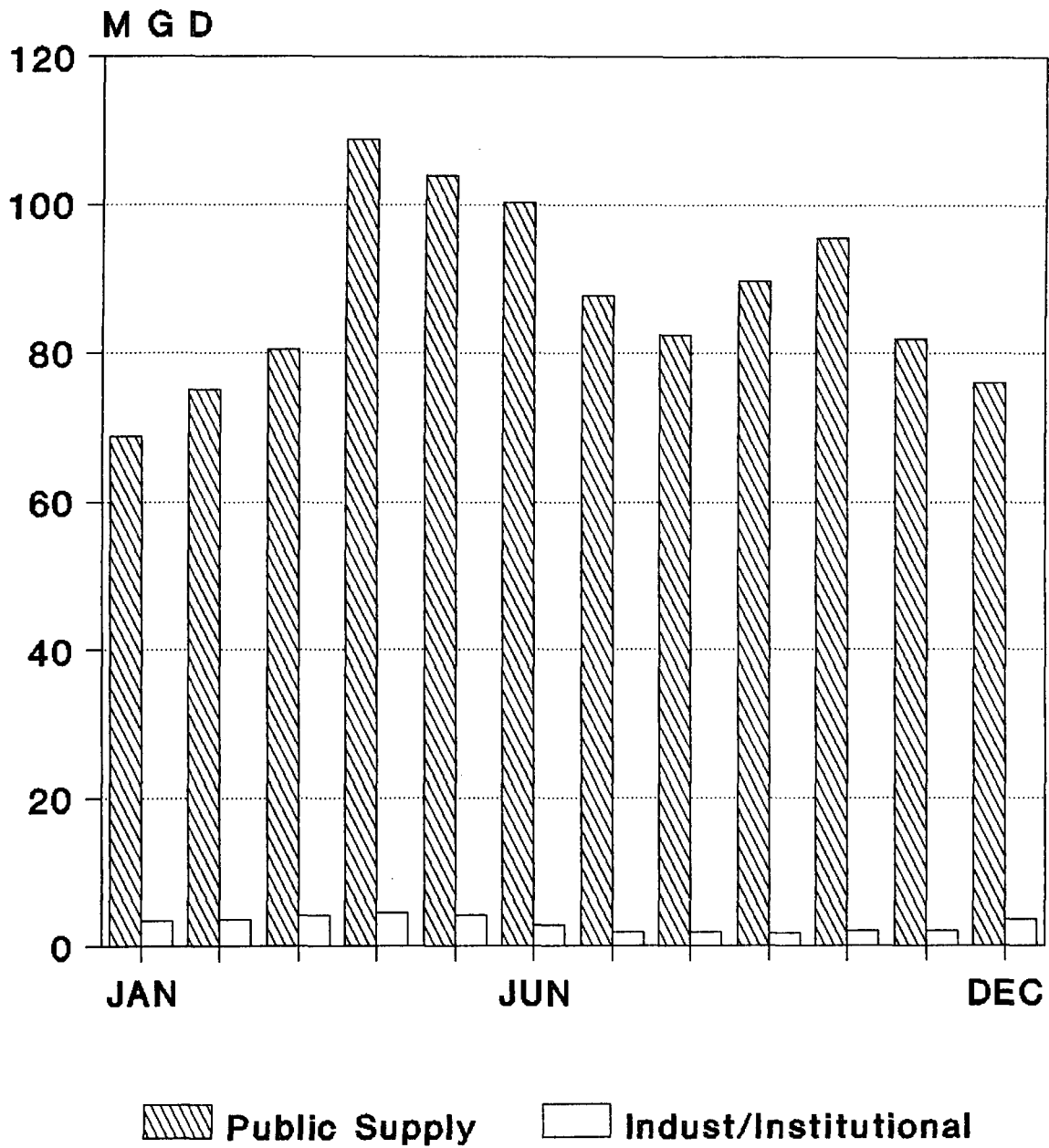


Figure A-13

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN ORANGE COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL (MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
APOPKA - CITY OF	PUBLIC SUPPLY	21,150	4.140	0.000	FLORIDAN AQF.
EATONVILLE - TOWN OF	PUBLIC SUPPLY	2,668	0.603	0.000	FLORIDAN AQF.
ECON UTILITIES - WEDGEFIELD	PUBLIC SUPPLY	914	0.133	0.000	FLORIDAN AQF.
MAITLAND - CITY OF	PUBLIC SUPPLY	10,319	2.868	0.000	FLORIDAN AQF.
OAKLAND - TOWN OF	PUBLIC SUPPLY	705	0.147	0.000	FLORIDAN AQF.
OCOEE - CITY OF	PUBLIC SUPPLY	11,765	2.124	0.000	FLORIDAN AQF.
ORANGE COUNTY PUBLIC UTILITIES	PUBLIC SUPPLY	87,585	19.762	0.000	FLORIDAN AQF.
SJRWMD PORTION OF OCPU		73,277	12.761	0.000	
ORLANDO UTILITIES COMMISSION	PUBLIC SUPPLY	367,821	67.665	0.000	FLORIDAN AQF.
SJRWMD PORTION OF OUC		266,670	46.960	0.000	
ROCK SPRINGS MHP	PUBLIC SUPPLY	1,240	0.197	0.000	FLORIDAN AQF.
SHADOW HILLS MHP	PUBLIC SUPPLY	1,280	0.194	0.000	FLORIDAN AQF.
SOUTHERN STATES UTILITIES	PUBLIC SUPPLY	6,183	0.735	0.000	FLORIDAN AQF.
STARLIGHT RANCH MHP	PUBLIC SUPPLY	1,560	0.165	0.000	FLORIDAN AQF.
TANGERINE - TOWN OF	PUBLIC SUPPLY	414	0.134	0.000	FLORIDAN AQF.
UTILITIES INC. OF FLORIDA	PUBLIC SUPPLY	955	0.120	0.000	FLORIDAN AQF.
WINTER GARDEN - CITY OF	PUBLIC SUPPLY	11,547	1.437	0.000	FLORIDAN AQF.
WINTER PARK - CITY OF	PUBLIC SUPPLY	78,500	12.447	0.000	FLORIDAN AQF.
ZELLWOOD STATION UTILITIES	PUBLIC SUPPLY	1,981	0.476	0.000	FLORIDAN AQF.
ZELLWOOD WATER ASSOC.	PUBLIC SUPPLY	900	0.172	0.000	FLORIDAN AQF.
COCA COLA - PLYMOUTH PLANT	INDUSTRIAL		0.105	0.000	FLORIDAN AQF.
LUST & LONG CO.	INDUSTRIAL		0.089	0.000	FLORIDAN AQF.
OUC - STANTON PLANT	POWER GEN.		0.400	1.236	FLORIDAN AQF. & RETENTION POND (a)
RALSTON PURINA - ZELLWOOD FARMS	INDUSTRIAL		0.151	0.000	FLORIDAN AQF.
SOUTHERN FRUIT DISTRIBUTORS	INDUSTRIAL		0.132	0.000	FLORIDAN AQF.
SUN RESORT INC.	INSTITUTIONAL		0.172	0.000	FLORIDAN AQF.
UNIVERSITY OF CENTRAL FLORIDA	INSTITUTIONAL		0.734	0.000	FLORIDAN AQF.
WINTER GARDEN CITRUS PLANT	INDUSTRIAL		1.867	0.000	FLORIDAN AQF.

(a) RETENTION POND IS SUPPLIED WATER FROM WASTEWATER TREATMENT PLANT DISCHARGE. THIS SURFACE WATER IS CONSIDERED REUSE.

ORANGE COUNTY (SJR)

ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	1,200	800	0.85	0.00	0.00	0.85
CARROTS	13,500	11,600	1.05	9.47	0.00	10.52
CUCUMBERS	1,020	1,020	0.41	0.00	0.00	0.41
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	75	75	0.04	0.00	0.00	0.04
SWEET CORN	13,600	13,300	1.93	17.42	0.00	19.35
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	14,100	14,100	1.28	11.51	0.00	12.79
FRUIT CROPS						
BLUEBERRIES	0	0	0.00	0.00	0.00	0.00
CITRUS	13,230	13,230	9.70	1.09	4.85	10.79
GRAPES	0	0	0.00	0.00	0.00	0.00
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	0	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	150	150	0.10	0.00	0.00	0.10
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	200	200	0.26	0.00	0.00	0.26
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	200	200	0.14	0.13	0.00	0.27
SOYBEANS	200	200	0.14	0.13	0.00	0.27
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	0	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	40	40	0.17	0.00	0.00	0.17
FLOWERS & FOLIAGE	581	581	1.88	0.47	0.00	2.35
WOODY ORNAMENTALS	576	576	4.72	0.52	0.00	5.24
IMPROVED PASTURE	18,562	0	0.00	0.00	0.00	0.00
SOD	200	200	0.21	0.24	0.00	0.45
TURF GRASS (GOLF)	1,533	939	1.95	0.34	0.00	2.29
TURF GRASS (OTHER)	381	381	0.66	0.12	0.00	0.78
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.37	0.00	0.00	0.37
FISH FARMING	0	0	0.12	0.00	0.00	0.12
	79,348	57,592	25.98	41.44	4.85	67.42
SPRINKLER ACREAGE	9,442					
LOW PRESSURE ACREAGE	6,730					
FLOOD ACREAGE	41,420					
TOTAL IRRIGATED ACREAGE	57,592					

OSCEOLA COUNTY DATA - 1988

TOTAL POPULATION 94,041
 TOTAL LAND AREA 1,467 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION

TOTAL 476
 PUBLIC SUPPLY 0
 SELF-SUPPLIED 476
 PER CAPITA 140 (a)

LAND AREA (ACRES)

TOTAL AREA 346,880 542 SQ. MILES
 FARMED 126,950
 IRRIGATED 12,330

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	0.06	0.00	0.06	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	6.73	7.20	13.93	0.00	0.00	0.00	0.00
POWER GENERATION S-S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6.79	7.20	13.99	0.00	0.00	0.00	0.00
TOTAL GROUND		6.79					
TOTAL SURFACE		7.20					
COUNTY TOTAL		13.99					

(a) USED THE 1985 TOTAL COUNTY'S PER CAPITA (MARELLA 1988).

**NO PUBLIC SUPPLY OR COMMERCIAL/INDUSTRIAL
PUMPAGE IN OSCEOLA COUNTY WITHIN THE
ST. JOHNS RIVER WATER MANAGEMENT
DISTRICT WAS INVENTORIED FOR 1988.**

NO INDIVIDUAL WATER USERS WERE INVENTORIED
WITHIN THE ST. JOHNS RIVER WATER
MANAGEMENT DISTRICT PORTION OF OSCEOLA
COUNTY FOR 1988.

OSCEOLA COUNTY (SJR)

ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	0	0	0.00	0.00	0.00	0.00
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	0	0	0.00	0.00	0.00	0.00
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	0	0	0.00	0.00	0.00	0.00
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	0	0	0.00	0.00	0.00	0.00
FRUIT CROPS						
BLUEBERRIES	0	0	0.00	0.00	0.00	0.00
CITRUS	1,150	1,150	2.92	0.00	0.00	2.92
GRAPES	0	0	0.00	0.00	0.00	0.00
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	0	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	0	0	0.00	0.00	0.00	0.00
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	0	0	0.00	0.00	0.00	0.00
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	0	0	0.00	0.00	0.00	0.00
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	0	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	0	0	0.00	0.00	0.00	0.00
FLOWERS & FOLIAGE	0	0	0.00	0.00	0.00	0.00
WOODY ORNAMENTALS	0	0	0.00	0.00	0.00	0.00
IMPROVED PASTURE	125,800	11,180	2.02	7.14	0.00	9.16
SOD	0	0	0.00	0.00	0.00	0.00
TURF GRASS (GOLF)	0	0	0.00	0.00	0.00	0.00
TURF GRASS (OTHER)	0	0	0.00	0.00	0.00	0.00
MISC. AGRICULTURAL						
LIVESTOCK	0	0	1.79	0.06	0.00	1.85
FISH FARMING	0	0	0.00	0.00	0.00	0.00
	126,950	12,330	6.73	7.20	0.00	13.93
SPRINKLER ACREAGE	150					
LOW PRESSURE ACREAGE	230					
FLOOD ACREAGE	11,950					
TOTAL IRRIGATED ACREAGE	12,330					

POLK COUNTY DATA - 1988

TOTAL POPULATION 400,426
 TOTAL LAND AREA 2,048 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 5,806
 PUBLIC SUPPLY 850 (a)
 SELF-SUPPLIED 1,806
 PER CAPITA 190 (b)

LAND AREA (ACRES)
 TOTAL AREA 40,320 63 SQ. MILES
 FARMED 15,985
 IRRIGATED 7,385

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	0.11	0.00	0.11	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	0.35	0.00	0.35	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	0.01	0.00	0.01	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	11.22	1.17	12.39	0.00	0.00	0.00	0.00
POWER GENERATION S-S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	11.69	1.17	12.86	0.00	0.00	0.00	0.00
TOTAL GROUND		11.69					
TOTAL SURFACE		1.17					
COUNTY TOTAL		12.86					

- (a) DOES NOT INCLUDE 3,150 POPULATION SERVED BY A PUBLIC SUPPLY IN THE SWFWMD WHO LIVE IN THE SJRWMD.
 (b) USED LAKE COUNTY PER CAPITA DUE TO ITS PROXIMITY TO POLK COUNTY.

THE PUBLIC SUPPLY AND COMMERCIAL/
INDUSTRIAL PUMPAGE IN POLK COUNTY WITHIN
THE ST. JOHNS RIVER WATER MANAGEMENT
DISTRICT FOR 1988 WAS TOO SMALL
TO DEPICT.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN POLK COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL(MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
OAK HARBOR SUBDIVISION	PUBLIC SUPPLY	450	0.041	0.000	FLORIDAN AQF.
POLK COUNTY UTILITIES	PUBLIC SUPPLY	400	0.073	0.000	FLORIDAN AQF.
B. C. COOK & SONS CITRUS PLANT	INDUSTRIAL		0.002	0.000	FLORIDAN AQF.

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	0	0	0.00	0.00	0.00	0.00
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	0	0	0.00	0.00	0.00	0.00
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	0	0	0.00	0.00	0.00	0.00
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	0	0	0.00	0.00	0.00	0.00
FRUIT CROPS						
BLUEBERRIES	0	0	0.00	0.00	0.00	0.00
CITRUS	10,430	6,730	10.03	1.11	0.00	11.14
GRAPES	0	0	0.00	0.00	0.00	0.00
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	0	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	0	0	0.00	0.00	0.00	0.00
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	1,000	500	0.65	0.00	0.00	0.65
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	0	0	0.00	0.00	0.00	0.00
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	0	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	0	0	0.00	0.00	0.00	0.00
FLOWERS & FOLIAGE	5	5	0.02	0.00	0.00	0.02
WOODY ORNAMENTALS	50	50	0.46	0.00	0.00	0.46
IMPROVED PASTURE	4,500	100	0.06	0.06	0.00	0.12
SOD	0	0	0.00	0.00	0.00	0.00
TURF GRASS (GOLF)	0	0	0.00	0.00	0.00	0.00
TURF GRASS (OTHER)	0	0	0.00	0.00	0.00	0.00
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.00	0.00	0.00	0.00
FISH FARMING	0	0	0.00	0.00	0.00	0.00
	15,985	7,385	11.22	1.17	0.00	12.39
SPRINKLER ACREAGE	6,540					
LOW PRESSURE ACREAGE	745					
FLOOD ACREAGE	100					
TOTAL IRRIGATED ACREAGE	7,385					

PUTNAM COUNTY DATA - 1988

TOTAL POPULATION 60,717
 TOTAL LAND AREA 879 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 60,717
 PUBLIC SUPPLY 21,314 (a)
 SELF-SUPPLIED 39,403
 PER CAPITA 161

LAND AREA (ACRES)
 TOTAL AREA 652,460 (b) 879 SQ. MILES
 FARMED 52,716
 IRRIGATED 10,857

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	3.44	0.00	3.44	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	6.34	0.00	6.34	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	43.64	4.00	47.64	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	18.77	1.14	19.91	0.00	0.00	0.00	0.00
POWER GENERATION S-S	1.26	12.04	13.30	0.00	0.00	0.00	0.00
MISCELLANEOUS	2.93	0.00	2.93	0.00	0.00	0.00	0.00
	76.38	17.18	93.56	0.00	0.00	0.00	0.00
TOTAL GROUND		76.38					
TOTAL SURFACE		17.18					
COUNTY TOTAL		93.56					

(a) DOES NOT INCLUDE 360 PEOPLE SERVED BY PUBLIC SUPPLY (MELROSE) IN THE SJRWMD WHO LIVE IN THE SRWMD.
 (b) APPROXIMATELY 100 ACRES OF PUTNAM COUNTY IS LOCATED IN THE SRWMD.

Fresh Water Use in Putnam County, 1988

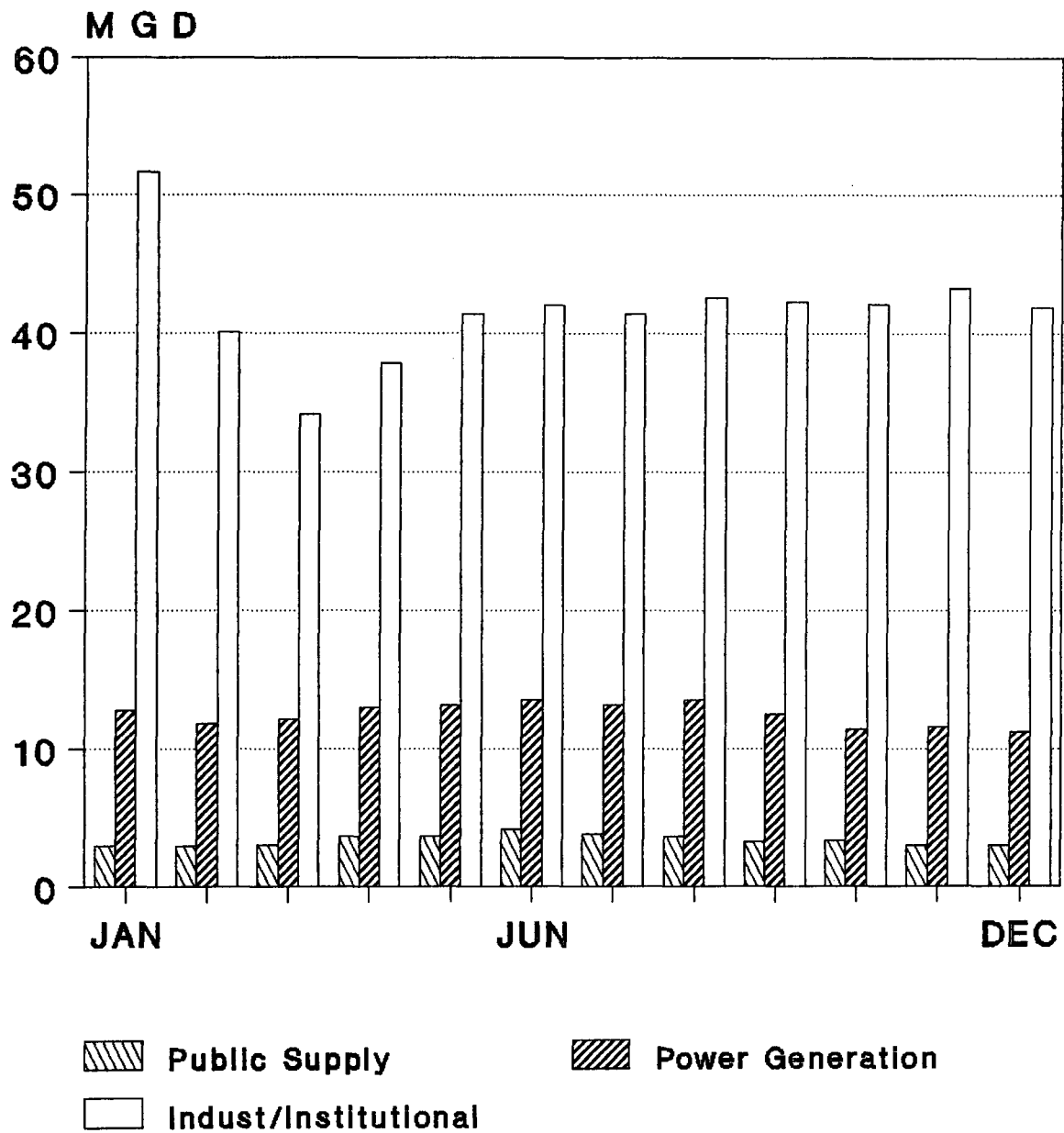


Figure A-14

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN PUTNAM COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL (MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
CRESCENT - CITY OF	PUBLIC SUPPLY	2,456	0.346	0.000	FLORIDAN AQF.
INTERLACHEN - TOWN OF	PUBLIC SUPPLY	1,051	0.095	0.000	FLORIDAN AQF.
LAKE COMO WATER ASSOC.	PUBLIC SUPPLY	320	0.016	0.000	FLORIDAN AQF.
MELROSE WATER ASSOC.	PUBLIC SUPPLY	719	0.071	0.000	FLORIDAN AQF.
PALATKA - CITY OF	PUBLIC SUPPLY	14,068	2.715	0.000	FLORIDAN AQF.
SOUTHERN STATES UTILITIES	PUBLIC SUPPLY	2,700	0.200	0.000	FLORIDAN AQF.
FELDSPAR CORP.- EDGAR MINE	INDUSTRIAL		8.005	0.000	FLORIDAN AQF.
FLORIDA POWER & LIGHT - PUTNAM	POWER GEN.		0.954	1.838	FLORIDAN AQF. & ST. JOHNS RIVER
FLORIDA ROCK - GRANDIN MINE	INDUSTRIAL		2.656	0.000	FLORIDAN AQF.
FLORIDA ROCK - KEUKA MINE	INDUSTRIAL		0.782	0.000	FLORIDAN AQF.
GEORGIA PACIFIC - PALATKA PLANT	INDUSTRIAL		31.970	4.000	FLORIDAN AQF. & SIMMS/ETONIA CREEK
GEORGIA PACIFIC - HAWTHORNE PLT.	INDUSTRIAL		0.190	0.000	FLORIDAN AQF.
PUTNAM CORRECTIONAL FAC. (FDOC)	INSTITUTIONAL		0.041	0.000	FLORIDAN AQF.
SEMINOLE ELECTRIC CORP.	POWER GEN.		0.310	10.200	FLORIDAN AQF. & ST. JOHNS RIVER

PUTNAM COUNTY

ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	2,800	2,800	2.99	0.00	0.00	2.99
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	0	0	0.00	0.00	0.00	0.00
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	4,400	4,400	5.12	0.00	0.00	5.12
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	0	0	0.00	0.00	0.00	0.00
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	200	200	0.23	0.00	0.00	0.23
FRUIT CROPS						
BLUEBERRIES	100	80	0.06	0.00	0.00	0.06
CITRUS	95	46	0.05	0.00	0.00	0.05
GRAPES	10	10	0.01	0.00	0.00	0.01
PEACHES	70	70	0.12	0.00	0.00	0.12
PECANS	100	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	200	200	0.13	0.00	0.00	0.13
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	3,000	500	0.69	0.03	0.00	0.72
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	400	0	0.00	0.00	0.00	0.00
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	2,500	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	1,050	1,050	3.66	0.91	0.00	4.57
FLOWERS & FOLIAGE	250	250	0.45	0.00	0.00	0.45
WOODY ORNAMENTALS	100	100	0.92	0.00	0.00	0.92
IMPROVED PASTURE	37,000	830	0.64	0.04	0.00	0.68
SOD	220	220	0.35	0.00	0.00	0.35
TURF GRASS (GOLF)	196	76	0.19	0.00	0.00	0.19
TURF GRASS (OTHER)	25	25	0.05	0.00	0.00	0.05
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.25	0.16	0.00	0.41
FISH FARMING	0	0	2.86	0.00	0.00	2.86
<hr/>						
	52,716	10,857	18.77	1.14	0.00	19.91
<hr/>						
SPRINKLER ACREAGE	2,627					
LOW PRESSURE ACREAGE	80					
FLOOD ACREAGE	8,150					
<hr/>						
TOTAL IRRIGATED ACREAGE	10,857					

ST. JOHNS COUNTY DATA - 1988

TOTAL POPULATION 80,278
 TOTAL LAND AREA 660 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 80,278
 PUBLIC SUPPLY 62,626
 SELF-SUPPLIED 17,652
 PER CAPITA 120

LAND AREA (ACRES)
 TOTAL AREA 422,400 660 SQ. MILES
 FARMED 30,782
 IRRIGATED 26,001

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	7.49	0.00	7.49	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	2.12	0.00	2.12	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	0.04	0.00	0.04	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	34.82	0.90	35.72	0.00	0.00	0.00	0.32
POWER GENERATION S-S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	0.54	0.00	0.54	0.00	0.00	0.00	0.00
	45.01	0.90	45.91	0.00	0.00	0.00	0.32
TOTAL GROUND	45.01						
TOTAL SURFACE		0.90					
COUNTY TOTAL (a)	45.91						

(a) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

Fresh Water Use in St Johns County, 1988

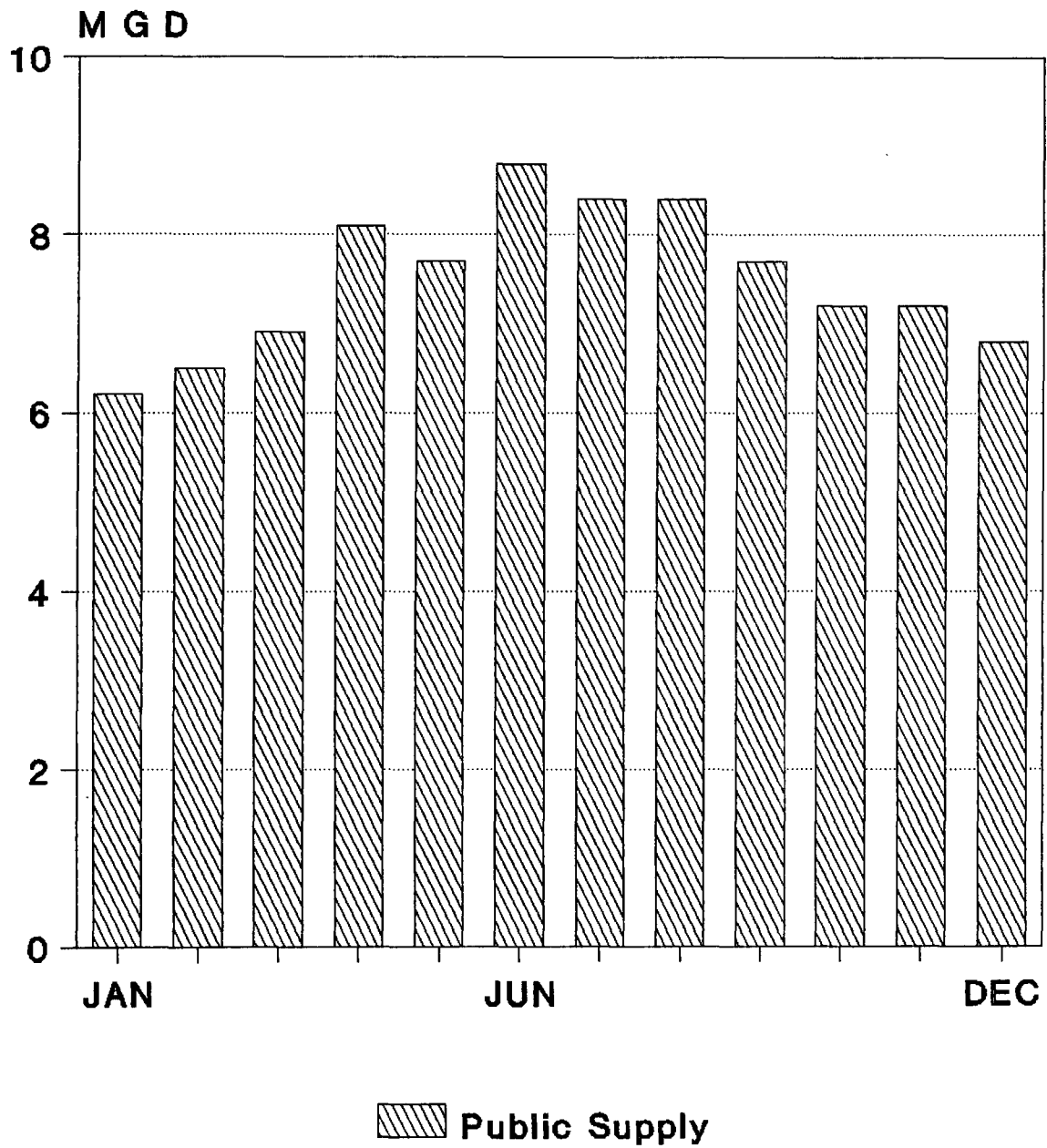


Figure A-15

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN ST. JOHNS COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL(MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
ANASTASIA/MAINLAND WATER SYSTEM	PUBLIC SUPPLY	16,883	1.980	0.000	SURFICIAL & FLORIDAN AQF.
FOUNTAIN CONDOMINIUMS	PUBLIC SUPPLY	392	0.043	0.000	FLORIDAN AQF.
FRUIT COVE OAKS S/D	PUBLIC SUPPLY	450	0.064	0.000	FLORIDAN AQF.
GDU - JULINGTON CREEK S/D	PUBLIC SUPPLY	160	0.041	0.000	FLORIDAN AQF.
HASTINGS - CITY OF	PUBLIC SUPPLY	605	0.084	0.000	SURFICIAL & FLORIDAN AQF.
INTERCOASTAL UTILITIES	PUBLIC SUPPLY	3,235	0.554	0.000	FLORIDAN AQF.
NORTH BEACH WATER SYSTEM	PUBLIC SUPPLY	1,020	0.196	0.000	FLORIDAN AQF.
PALM VALLEY WATER SYSTEM	PUBLIC SUPPLY	478	0.025	0.000	FLORIDAN AQF.
PONCE DeLEON UT. - GOODWIN BEACH	PUBLIC SUPPLY	280	0.036	0.000	FLORIDAN AQF.
PONTE VEDRA UTILITIES	PUBLIC SUPPLY	6,850	0.846	0.000	FLORIDAN AQF.
S. PONTE VEDRA BEACH UTILITIES	PUBLIC SUPPLY	796	0.161	0.000	FLORIDAN AQF.
ST. AUGUSTINE - CITY OF	PUBLIC SUPPLY	16,657	1.687	0.000	SURFICIAL & FLORIDAN AQF.
ST. AUGUSTINE SHORES UTILITIES	PUBLIC SUPPLY	5,664	0.436	0.000	SURFICIAL AQF.
ST. JOHNS NORTH UTILITY	PUBLIC SUPPLY	335	0.061	0.000	FLORIDAN AQF.
ST. JOHNS SERVICE CO.	PUBLIC SUPPLY	8,421	1.206	0.000	FLORIDAN AQF.
WESLEY MANOR WATER SYSTEM	PUBLIC SUPPLY	400	0.069	0.000	FLORIDAN AQF.
BORDON/WISE POTATO CHIP PLANT	INDUSTRIAL		0.016	0.000	FLORIDAN AQF.
FLORIDA DOT - I95 REST FAC.	INSTITUTIONAL		0.007	0.000	FLORIDAN AQF.
G & M UNION 76 TRUCK STOP	COMMERCIAL		0.018	0.000	FLORIDAN AQF.

ST. JOHNS COUNTY

ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	1,300	1,300	1.39	0.00	0.00	1.39
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	0	0	0.00	0.00	0.00	0.00
PEPPERS	0	0	0.00	0.00	0.00	0.00
POTATOES	20,000	19,900	23.17	0.00	0.00	23.17
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	0	0	0.00	0.00	0.00	0.00
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	500	500	0.57	0.00	0.00	0.57
FRUIT CROPS						
BLUEBERRIES	5	5	0.01	0.00	0.00	0.01
CITRUS	0	0	0.00	0.00	0.00	0.00
GRAPES	5	5	0.01	0.00	0.00	0.01
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	0	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	0	0	0.00	0.00	0.00	0.00
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	2,000	2,000	2.89	0.00	0.00	2.89
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	0	0	0.00	0.00	0.00	0.00
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	0	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	5	5	0.02	0.00	0.00	0.02
FLOWERS & FOLIAGE	60	60	0.18	0.00	0.00	0.18
WOODY ORNAMENTALS	75	75	0.69	0.00	0.00	0.69
IMPROVED PASTURE	5,500	1,000	1.23	0.00	0.00	1.23
SOD	120	120	0.19	0.00	0.00	0.19
TURF GRASS (GOLF)	1,192	1,011	1.37	0.80	0.32	2.17
TURF GRASS (OTHER)	20	20	0.04	0.00	0.00	0.04
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.25	0.10	0.00	0.35
AESTHETIC/WILDLIFE	0	0	2.81	0.00	0.00	2.81
	30,782	26,001	34.82	0.90	0.32	35.72
SPRINKLER ACREAGE	1,251					
LOW PRESSURE ACREAGE	30					
FLOOD ACREAGE	24,720					
TOTAL IRRIGATED ACREAGE	26,001					

SEMINOLE COUNTY DATA - 1988

TOTAL POPULATION 267,108
 TOTAL LAND AREA 352 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 267,108
 PUBLIC SUPPLY 238,960
 SELF-SUPPLIED 28,148
 PER CAPITA 179

LAND AREA (ACRES)
 TOTAL AREA 225,280 352 SQ. MILES
 FARMED 15,126
 IRRIGATED 7,179

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY	42.86	0.00	42.86	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	5.03	0.00	5.03	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	0.61	0.00	0.61	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	18.70	2.02	20.72	0.00	0.00	0.00	0.00
POWER GENERATION S-S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS	0.15	0.00	0.15	0.00	0.00	0.00	0.00
	67.35	2.02	69.37	0.00	0.00	0.00	0.00
TOTAL GROUND		67.35					
TOTAL SURFACE		2.02					
COUNTY TOTAL		69.37					

Fresh Water Use in Seminole County, 1988

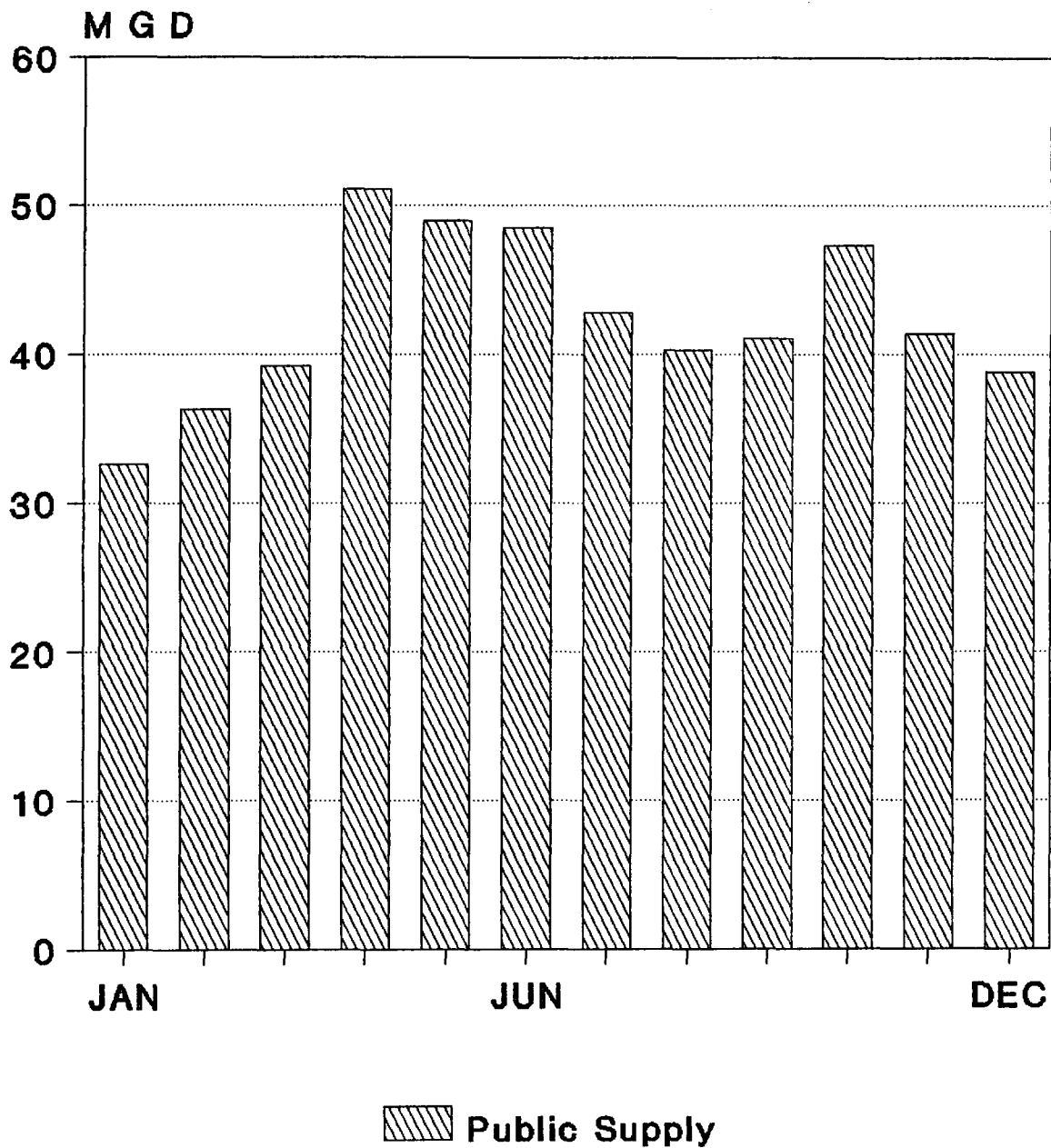


Figure A-16

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN SEMINOLE COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL(MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
ALTAMONTE SPRINGS - CITY OF	PUBLIC SUPPLY	35,892	7.932	0.000	FLORIDAN AQF.
CASSELBERRY - CITY OF	PUBLIC SUPPLY	36,045	4.810	0.000	FLORIDAN AQF.
CENTRAL FIVE UTILITIES INC.	PUBLIC SUPPLY	5,440	1.085	0.000	FLORIDAN AQF.
INDIAN CREEK - SEMINOLE PINES	PUBLIC SUPPLY	294	0.047	0.000	FLORIDAN AQF.
LAKE HARNEY WATER ASSOC.	PUBLIC SUPPLY	440	0.030	0.000	FLORIDAN AQF.
LAKE MARY - CITY OF	PUBLIC SUPPLY	(a)	0.000	0.000	
LONGWOOD - CITY OF	PUBLIC SUPPLY	13,588	2.024	0.000	FLORIDAN AQF.
LUTHERAN HAVEN WATER SYSTEM	PUBLIC SUPPLY	435	0.040	0.000	FLORIDAN AQF.
MULLET LAKE WATER ASSOC.	PUBLIC SUPPLY	550	0.037	0.000	FLORIDAN AQF.
OVIEDO - CITY OF	PUBLIC SUPPLY	7,586	1.153	0.000	FLORIDAN AQF.
PALM VENTURES MHP	PUBLIC SUPPLY	687	0.156	0.000	FLORIDAN AQF.
SANFORD - CITY OF	PUBLIC SUPPLY	29,580	5.017	0.000	FLORIDAN AQF.
SANLANDO UTILITIES	PUBLIC SUPPLY	34,937	9.005	0.000	FLORIDAN AQF.
SEMINOLE COUNTY WATER & SEWER	PUBLIC SUPPLY	34,635	6.393	0.000	FLORIDAN AQF.
SEMINOLE UTILITIES INC.	PUBLIC SUPPLY	8,591	1.756	0.000	FLORIDAN AQF.
SOUTHERN STATES UTILITIES	PUBLIC SUPPLY	9,069	1.275	0.000	FLORIDAN AQF.
UTILITIES INC. OF FLORIDA	PUBLIC SUPPLY	7,629	0.909	0.000	FLORIDAN AQF.
WINTER SPRINGS - CITY OF	PUBLIC SUPPLY	13,562	1.203	0.000	FLORIDAN AQF.
COCA COLA - FOREST CITY PLANT	INDUSTRIAL		0.000	0.000	PLANT CLOSED IN 1987
DEEP SOUTH PROCESSING PLANT	INDUSTRIAL		0.341	0.000	FLORIDAN AQF.
I-4 INDUSTRIAL PARK	INDUSTRIAL		0.130	0.000	FLORIDAN AQF.
IRON BRIDGE FAC.	INSTITUTIONAL		0.026	0.000	FLORIDAN AQF.
LAKE SYLVAN PARK	INSTITUTIONAL		0.033	0.000	FLORIDAN AQF.
UNITED TECHNOLOGY INC	INDUSTRIAL		0.081	0.000	FLORIDAN AQF.

(a) DATA NOT AVAILABLE

SEMINOLE COUNTY ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	700	600	0.64	0.00	0.00	0.64
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	300	300	0.12	0.00	0.00	0.12
PEPPERS	300	200	0.08	0.00	0.00	0.08
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	40	40	0.06	0.00	0.00	0.06
WATERCRESS	150	150	7.81	0.00	0.00	7.81
MISC. VEGETABLES	1,000	960	0.39	0.00	0.00	0.39
FRUIT CROPS						
BLUEBERRIES	5	5	0.01	0.00	0.00	0.01
CITRUS	1,440	1,440	1.64	0.09	0.00	1.73
GRAPES	0	0	0.00	0.00	0.00	0.00
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	0	0	0.00	0.00	0.00	0.00
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	40	40	0.03	0.00	0.00	0.03
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	80	80	0.12	0.00	0.00	0.12
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	0	0	0.00	0.00	0.00	0.00
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	0	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	20	20	0.09	0.00	0.00	0.09
FLOWERS & FOLIAGE	560	560	2.23	0.00	0.00	2.23
WOODY ORNAMENTALS	160	160	0.98	0.19	0.00	1.17
IMPROVED PASTURE	7,000	490	0.40	0.00	0.00	0.40
SOD	320	320	0.48	0.00	0.00	0.48
TURF GRASS (GOLF)	2,875	1,678	3.27	0.82	0.00	4.09
TURF GRASS (OTHER)	136	136	0.27	0.01	0.00	0.28
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.08	0.91	0.00	0.99
FISH FARMING	0	0	0.00	0.00	0.00	0.00
	15,126	7,179	18.70	2.02	0.00	20.72
SPRINKLER ACREAGE	4,349					
LOW PRESSURE ACREAGE	455					
FLOOD ACREAGE	2,375					
TOTAL IRRIGATED ACREAGE	7,179					

VOLUSIA COUNTY DATA - 1988

TOTAL POPULATION 346,299
 TOTAL LAND AREA 1,207 SQ. MILES

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT'S PORTION :

POPULATION
 TOTAL 346,299
 PUBLIC SUPPLY 308,115
 SELF-SUPPLIED 38,184
 PER CAPITA 142

LAND AREA (ACRES)
 TOTAL AREA 772,480 1,207 SQ. MILES
 FARMED 33,075
 IRRIGATED 12,200

1988 WATER WITHDRAWALS (MGD) by CATEGORY

	FRESH WATER			SALINE WATER			REUSE
	GROUND	SURFACE	TOTALS	GROUND	SURFACE	TOTALS	
PUBLIC SUPPLY (a)(b)	43.67	0.00	43.67	0.00	0.00	0.00	0.00
DOMESTIC SELF-SUPPLY	5.42	0.00	5.42	0.00	0.00	0.00	0.00
COM/IND. SELF-SUPPLY	0.55	0.00	0.55	0.00	0.00	0.00	0.00
AGRICULTURAL IRR.	31.13	6.53	37.66	0.00	0.00	0.00	0.41
POWER GENERATION	0.41	117.45	117.86	0.00	0.00	0.00	0.00
MISCELLANEOUS	7.36	0.00	7.36	0.00	0.00	0.00	0.00
	88.54	123.98	212.52	0.00	0.00	0.00	0.41
TOTAL GROUND	88.54						
TOTAL SURFACE		123.98					
COUNTY TOTAL		212.52					

(a) INCLUDES 0.06 MGD of SLIGHTLY SALINE GROUND WATER (250 to 1000 mg/l chlorides) USED IN R/O or DILUTED FOR PUBLIC SUPPLY USE.

(b) REUSE AMOUNTS ARE NOT INCLUDED IN TOTAL.

Fresh Water Use in Volusia County, 1988

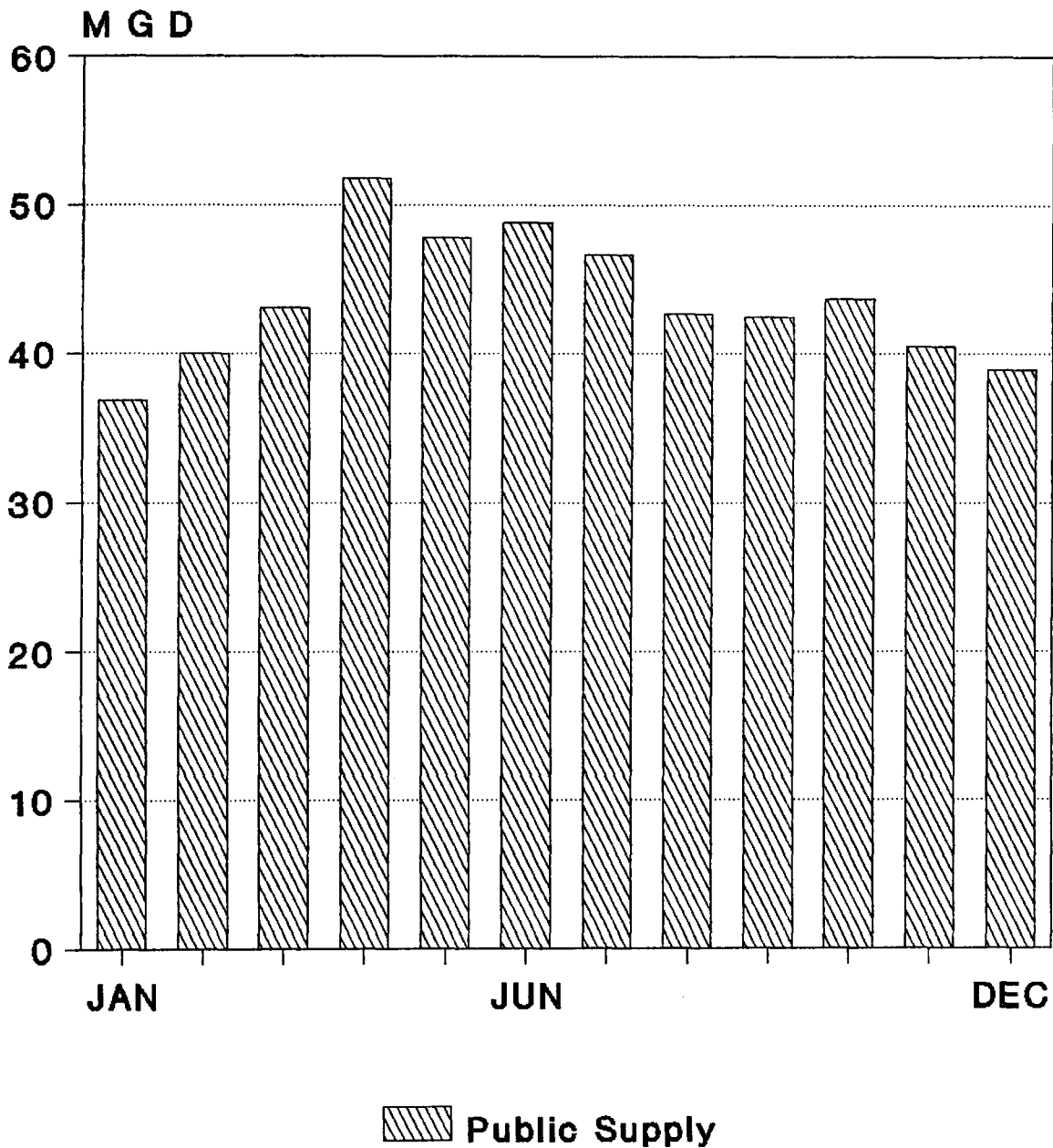


Figure A-17

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

1988 INDIVIDUAL WATER USERS IN VOLUSIA COUNTY

USER UTILITY/FACILITY	USE TYPE	POPULATION SERVED	WITHDRAWAL(MGD)		WITHDRAWAL SOURCE
			GROUND	SURFACE	
CASSADAGA WATER ASSOC.	PUBLIC SUPPLY	270	0.025	0.000	FLORIDAN AQF.
DAYTONA BEACH - CITY OF	PUBLIC SUPPLY	82,162	13.170	0.000	FLORIDAN AQF.
DELAND - CITY OF	PUBLIC SUPPLY	36,990	5.056	0.000	FLORIDAN AQF.
DELTONA UTILITIES	PUBLIC SUPPLY	37,354	7.261	0.000	FLORIDAN AQF.
EDGEWATER - CITY OF	PUBLIC SUPPLY	12,461	1.535	0.000	FLORIDAN AQF.
HIGHLAND COUNTRY ESTATES	PUBLIC SUPPLY	515	0.054	0.000	FLORIDAN AQF.
HOLLY HILL - CITY OF	PUBLIC SUPPLY	12,292	1.120	0.000	FLORIDAN AQF.
JOHN KNOX VILLAGE	PUBLIC SUPPLY	700	0.047	0.000	FLORIDAN AQF.
KINGSTON SHORES WATER ASSOC.	PUBLIC SUPPLY	250	0.025	0.000	FLORIDAN AQF. (R/O)
LAKE BERESFORD WATER ASSOC.	PUBLIC SUPPLY	938	0.160	0.000	FLORIDAN AQF.
LAKE HELEN - CITY OF	PUBLIC SUPPLY	2,434	0.222	0.000	FLORIDAN AQF.
NEW SMYRNA BEACH - CITY OF	PUBLIC SUPPLY	25,575	3.851	0.000	FLORIDAN AQF.
ORANGE CITY COUNTRY VILLAGE	PUBLIC SUPPLY	1,400	0.140	0.000	FLORIDAN AQF.
ORANGE CITY	PUBLIC SUPPLY	3,954	0.507	0.000	FLORIDAN AQF.
ORMOND BEACH - CITY OF	PUBLIC SUPPLY	40,250	4.600	0.000	FLORIDAN AQF.
PORT ORANGE - CITY OF	PUBLIC SUPPLY	38,829	4.366	0.000	FLORIDAN AQF.
SPRUCE CREEK UTILITIES	PUBLIC SUPPLY	1,640	0.324	0.000	FLORIDAN AQF.
TERRA MARIE VILLAGE W.A.	PUBLIC SUPPLY	200	0.014	0.000	FLORIDAN AQF.
TOMOKA WATER ASSOC.	PUBLIC SUPPLY	323	0.039	0.000	FLORIDAN AQF.
SUGAR MILL UTILITY CO.	PUBLIC SUPPLY	1,224	0.096	0.000	FLORIDAN AQF.
TYMBER CREEK UTILITIES	PUBLIC SUPPLY	784	0.091	0.000	FLORIDAN AQF.
VOLUSIA COUNTY WATER DEPT.	PUBLIC SUPPLY	7,860	0.980	0.000	FLORIDAN AQF.
ARDMORE FARMS	INDUSTRIAL		0.015	0.000	FLORIDAN AQF.
FLORIDA DNR - STATE PARK FAC.	INSTITUTIONAL		0.021	0.000	FLORIDAN AQF.
FLORIDA DOT - I95 REST FAC.	INSTITUTIONAL		0.010	0.000	FLORIDAN AQF.
FLORIDA POWER & LIGHT - SANFORD	POWER GEN.		0.315	1.454	FLORIDAN AQF. & ST. JOHNS RIVER
FLORIDA POWER CORP. - LK. MONROE	POWER GEN.		0.094	116.000	FLORIDAN AQF. & LAKE MONROE
HARMAC MANUFACTURING CO.	INDUSTRIAL		0.009	0.000	FLORIDAN AQF.
KAMPERS KOVE KOA	INSTITUTIONAL		0.032	0.000	FLORIDAN AQF.
ORANGE CITY INDUSTRIAL PARK	INDUSTRIAL		(a)	0.000	VOLUSIA COUNTY WATER DEPT.
SHERWOOD MEDICAL MAN. CO.	INDUSTRIAL		0.156	0.000	FLORIDAN AQF.
T.G. LEE - LIFESTYLE DIV.	INDUSTRIAL		0.107	0.000	FLORIDAN AQF.
TOMOKA STATE FACILITY (FDOC)	INSTITUTIONAL		(a)	0.000	FLORIDAN AQF.
VOLUSIA COUNTY AGRICULTURAL CEN.	INSTITUTIONAL		0.008	0.000	FLORIDAN AQF.
VOLUSIA COUNTY GOV. COMPLEX	INSTITUTIONAL		0.197	0.000	FLORIDAN AQF.

(a) DATA NOT AVAILABLE

VOLUSIA COUNTY ACREAGE AND WATER USE BY CROP FOR 1988

	TOTAL ACRES		WATER USE IN MGD			
	FARMED	IRRIGATED	GROUND	SURFACE	RECLAIMED	TOTAL
VEGETABLE CROPS						
CABBAGE	500	500	0.53	0.00	0.00	0.53
CARROTS	0	0	0.00	0.00	0.00	0.00
CUCUMBERS	200	200	0.18	0.00	0.00	0.18
PEPPERS	200	100	0.09	0.00	0.00	0.09
POTATOES	0	0	0.00	0.00	0.00	0.00
TOMATOES	0	0	0.00	0.00	0.00	0.00
SWEET CORN	0	0	0.00	0.00	0.00	0.00
WATERCRESS	0	0	0.00	0.00	0.00	0.00
MISC. VEGETABLES	200	200	0.18	0.00	0.00	0.18
FRUIT CROPS						
BLUEBERRIES	10	10	0.01	0.00	0.00	0.01
CITRUS	1,380	1,380	1.50	0.13	0.00	1.63
GRAPES	10	10	0.01	0.00	0.00	0.01
PEACHES	0	0	0.00	0.00	0.00	0.00
PECANS	10	10	0.02	0.00	0.00	0.02
STRAWBERRIES	0	0	0.00	0.00	0.00	0.00
WATERMELONS	200	200	0.13	0.00	0.00	0.13
MISC. FRUIT	0	0	0.00	0.00	0.00	0.00
FIELD CROPS						
FIELD CORN	0	0	0.00	0.00	0.00	0.00
PEANUTS	0	0	0.00	0.00	0.00	0.00
RICE	0	0	0.00	0.00	0.00	0.00
SORGHUM	0	0	0.00	0.00	0.00	0.00
SOYBEANS	0	0	0.00	0.00	0.00	0.00
SUGAR CANE	0	0	0.00	0.00	0.00	0.00
TOBACCO	0	0	0.00	0.00	0.00	0.00
WHEAT	0	0	0.00	0.00	0.00	0.00
MISC. GRAINS	0	0	0.00	0.00	0.00	0.00
ORNAMENTALS & GRASSES						
FERNS	5,960	5,960	21.51	4.41	0.00	25.92
FLOWERS & FOLIAGE	200	200	0.82	0.00	0.00	0.82
WOODY ORNAMENTALS	200	200	1.56	0.28	0.00	1.84
IMPROVED PASTURE	20,000	622	0.31	0.20	0.00	0.51
SOD	800	800	1.19	0.00	0.00	1.19
TURF GRASS (GOLF)	2,960	1,563	2.52	0.78	0.41	3.30
TURF GRASS (OTHER)	245	245	0.32	0.23	0.00	0.55
MISC. AGRICULTURAL						
LIVESTOCK	0	0	0.25	0.50	0.00	0.75
FISH FARMING	0	0	0.00	0.00	0.00	0.00
	33,075	12,200	31.13	6.53	0.41	37.66
SPRINKLER ACREAGE 10,500						
LOW PRESSURE ACREAGE 700						
FLOOD ACREAGE 1,000						

TOTAL IRRIGATED ACREAGE 12,200						