Technical Publication SJ 91-5

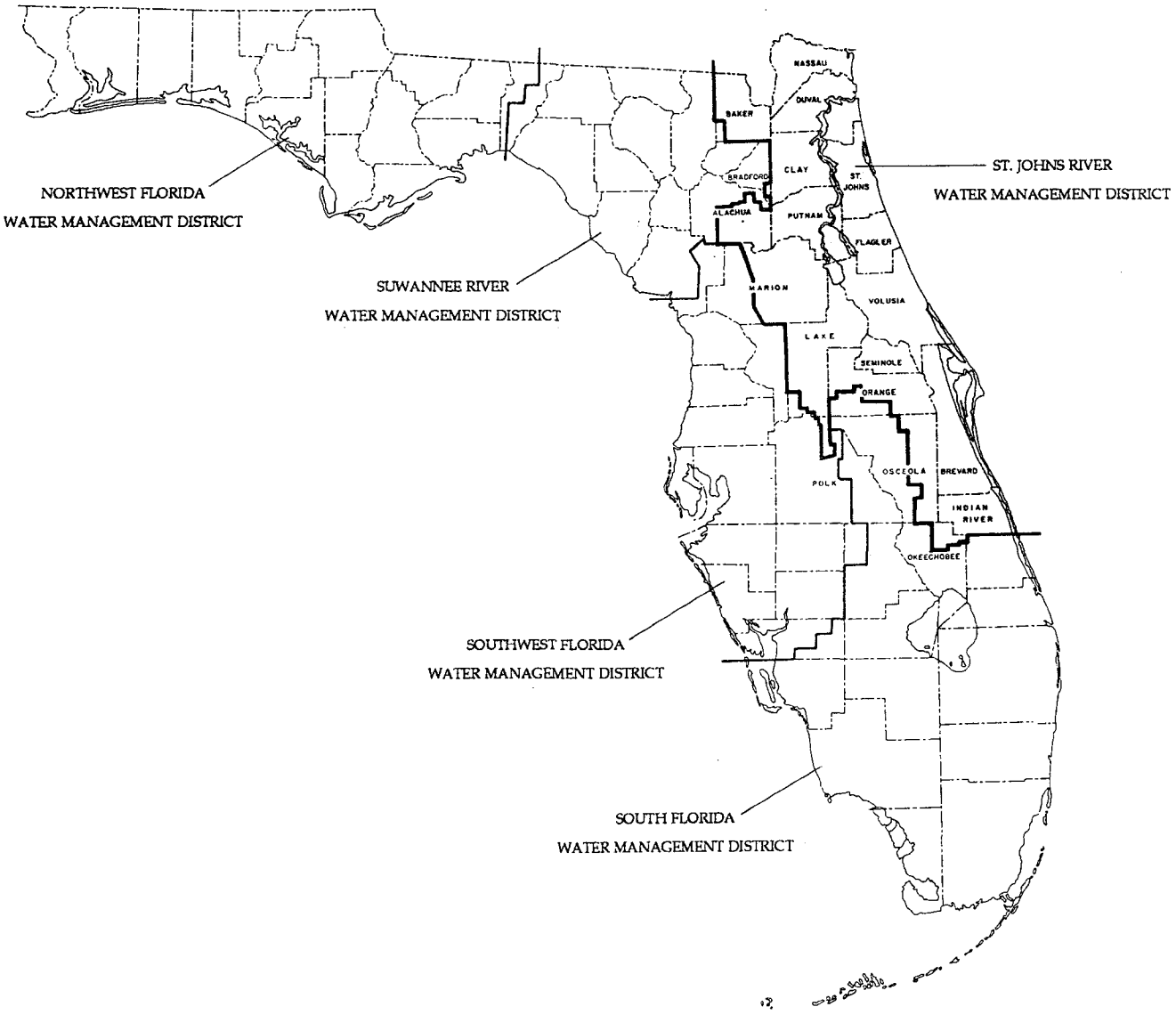
WASTEWATER TREATMENT AND REUSE INVENTORY IN THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

by

Donald Brandes, Ph. D.

St. Johns River Water Management District
Palatka, Florida

1991



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 19 counties in northeast Florida. The mission of SJRWMD is to manage water resources to ensure 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.

Copies of this report can be obtained from:

Library
St. Johns River Water Management District
P.O. Box 1429
Palatka, FL 32178-1429

Phone: (904) 329-4132

EXECUTIVE SUMMARY

This wastewater treatment and reuse inventory is expected to be useful to the St. Johns River Water Management District (SJRWMD), the Florida Department of Environmental Regulation (FDER), local utilities, and individual large-volume water users for determining the feasibility of wastewater reuse projects. The data and other information included in this document may be used to identify sources of treated wastewater for potential reuse and issues that may affect the feasibility of using those sources.

This inventory includes data for 222 wastewater treatment plants (WWTPs) with permitted capacities of 0.1 million gallons per day (mgd) or greater and located within or serving areas within the SJRWMD. The data base primarily contains 1989 information. Some data may be for 1990. All data are preliminary and should not be used for purposes that require reliability until verified. This document also includes a history of wastewater reuse, descriptions of related statutes and codes, and references.

The total permitted capacity for the inventoried WWTPs was 502 mgd. Total mean actual flow of wastewater was 55 percent of permitted capacity, or 275 mgd. Projected wastewater flow for the year 2010 is expected to rise 55 percent to 426 mgd.

Reclaimed water for reuse, by FDER definitions, was supplied by about 28 percent of the inventoried WWTPs. Reuse was the primary means of disposal for about 15 percent of the inventoried plants. About 222 mgd or 44 percent of the total permitted wastewater capacity was capable of being treated to levels suitable for reuse and transmitted to reuse sites. About 81 mgd actually went to applications that met the FDER's definition of reuse. This amount represented 30 percent of mean actual wastewater flow and 32 percent of permitted reuse design capacity.

The most common form of wastewater reuse was irrigation, accounting for about 59 percent of total reuse. Agricultural irriga-

tion accounted for the greatest part of that amount but aggregated non-golf course public area irrigation and golf course irrigation also claimed substantial amounts of reuse water. Ground water recharge was the second largest distinct category, accounting for 29 percent of total reuse.

CONTENTS

FIGURES

TABLES

1. INTRODUCTION

Wastewater reuse is defined by the Florida Department of Environmental Regulation (FDER) as the deliberate application of reclaimed water for a beneficial purpose. Specific uses acceptable to FDER are provided in Paragraph 17-40.210(15)(a) Florida Administrative Code.

The St. Johns River Water Management District (SJRWMD) and FDER encourage treated wastewater reuse. This practice can extend the usefulness of existing water supply sources and facilities and prevent degradation of the natural environment by wastewater effluent. The SJRWMD requires reuse as an alternate source of water when it is readily available and economically, environmentally, and technically feasible. The FDER has performance and technology based standards, as well as minimum sizes for plants that provide treated wastewater for reuse. These standards vary with the type of use, but applicable requirements must be met. Guidelines for studying the economic feasibility of specific wastewater reuse projects for potential providers have been prepared jointly by the FDER and the water management districts. Additional guidelines for water users are in preparation and are targeted for completion in mid-1992.

This document provides information that may be of value to water users and wastewater treatment plant (WWTP) owners or operators who are considering implementation of wastewater reuse. It contains data concerning wastewater treatment plants in the SJRWMD and general information about reuse of treated wastewater in Florida. This information may be used to evaluate the feasibility of wastewater reuse projects and assist permit applicants in becoming aware of SJRWMD and FDER requirements. The WWTP data base can also provide information about possible supply sources for water users and examples of existing facilities, which may serve as models for potential suppliers. Operators of existing facilities are often willing to share their

experiences and can provide further insights for evaluating potential reuse treatment projects.

The remaining chapters of this document provide distinct types of information of use to potential reuse water suppliers and users. Chapter 2 provides historical perspectives on wastewater reuse. Chapter 3 outlines many issues and concerns faced by suppliers and users of reclaimed water. Chapter 4 is a compendium of Florida Statutes (F.S.) and Florida Administrative Codes (F.A.C.) pertinent to wastewater treatment and reuse. Chapter 5 provides a general discussion of how these data were obtained. Chapter 6 provides definitions and sources for specific types of data. Chapter 7 summarizes major features of the data. Literature cited and other useful sources of information are provided. Actual data are presented in Appendixes A and B.

This report includes only wastewater treatment plants with permitted capacities of 0.1 million gallons per day (mgd) or greater. This threshold was chosen because FDER regulations prohibit wastewater treatment plants below this size from providing reuse water for food crops or areas open to public access.

Fifteen of the nineteen counties included in the SJRWMD have wastewater treatment plants above 0.1 mgd threshold. All available data for most of the headings listed in Chapter 6 are provided in Appendix A for wastewater treatment plants within the SJRWMD. Plant names, owners, service population, and permitted capacities are also provided in Appendix B for selected entire counties where jurisdiction is split between two or more water management districts. These include Alachua, Baker, Marion, and Orange counties. The part of Lake County outside the SJRWMD contains no permitted wastewater treatment plants. Therefore, no supplementary listing is needed. Data obtained from other districts concerning Bradford, Polk, Okeechobee, and Osceola counties (the four not included in this inventory) should be complete without supplement from the SJRWMD.

The data contained in this inventory are preliminary and may include errors and omissions. These data should not be used for

purposes requiring reliability until they are verified. Readers of this document are asked to provide corrections to the author at the SJRWMD, Policy and Planning Division.

This inventory of wastewater treatment and reuse contributes to the fulfillment of requirements of Sections 373.0391, 373.1961, 403.021, and 403.064, F.S.; and 17-40.401 and 17-40.501, F.A.C. These statutes and codes require the water management districts to provide technical assistance to local governments, designate critical water supply problem areas where consideration of wastewater reuse will be required, and prepare a district water management plan.

2. HISTORY OF WASTEWATER REUSE

Documented examples of wastewater reuse can be found spanning several centuries in Europe and the United States. These generally concerned the application of wastewater for agricultural irrigation and served the dual purposes of disposal and irrigation/fertilization.

EUROPE

Bunslau, Prussia began using an irrigation system for sewage disposal in 1559. Similar systems are known to have been in place at about the same time in Germany and Scotland. The Bunslau system operated for about 300 years. In 1857, the British Royal Commission on Sewage Disposal stated "the right way to dispose of town sewage is to apply it continuously to the land and it is only by such application that the pollution of rivers can be avoided" (Kasperson and Kasperson 1977). Edinburgh, Scotland began irrigating Crargentinny Meadows in 1650. Rugby, England connected its city sewage system with agricultural fields in 1853. "Large scale, well engineered systems were built in Berlin, Paris, Mexico City, and Melbourne, Australia during the period from 1869 to 1900" (Reed 1987).

UNITED STATES

The practice of irrigating with wastewater has been in place in the United States for about 120 years. The first major reuse system in this country was constructed in 1872 in Augusta, Maine (Reed 1987). The City of Woodland, California began using effluent water for hay and pasture irrigation in 1889. San Antonio, Texas was irrigating 3,000 acres of crops by 1900 (Kasperson and Kasperson 1977). Beginning in 1912, Bakersfield, California irrigated up to 5,100 acres of farm land (Schroeder 1987). The National Park Service has been using wastewater at the Grand

Canyon since 1928 for toilet flushing, landscape irrigation, and dust control (Lohman 1987).

FLORIDA

The practice of wastewater reuse has been in place in Florida since the 1970s. In that short time, reuse has been established as a major component of water resources management policy. The initial impetus for reuse in Florida came from legislation aimed at eliminating environmental degradation caused by sewage effluent disposal. In 1972, the Wilson-Grizzle Bill required all communities in the Tampa Bay area to cease discharging effluent into the bay unless it was treated to advanced standards.

The City of St. Petersburg, having exhausted local sources in the 1920s, had already gone to well fields in adjoining counties for fresh water supplies. Since they were now required to treat wastewater to such high standards, the city began to use the water instead of discarding it. With the aid of a federal grant, the city began construction of a dual distribution system for irrigation of public and private areas (Johnson 1984). The St. Petersburg system has since become a nationally known model reuse system.

The City of Tampa, faced with the same requirements as St. Petersburg, chose a different reuse scenario. Instead of direct reuse, Tampa decided to investigate the use of water from the Hookers Point Advanced wastewater Treatment Plant to supplement the Hillsborough River during periods of low flow and provide aquifer recharge. The high quality of the treated water also is anticipated to improve water quality status in the river (Pickard 1984).

In 1981, Orange County and the City of Orlando were faced with the combined impacts of a sewer hookup moratorium and water use restrictions. The FDER imposed the hookup moratorium to prevent further surface water quality degradation from effluent disposal. Water management districts imposed use restrictions

because of low aquifer water levels resulting from a combination of high pumpage and drought (Haven 1984). The city and county responded with the CONSERV I and II projects. CONSERV I provides secondary treated wastewater for agricultural irrigation and ground water recharge. CONSERV II involves two treatment plants and a separate distribution center. Effluent is taken from the city's McLeod Road treatment plant and the county's Sand Lake Road treatment plant to a joint distribution center, approximately 15 miles away, where it is dispersed to orange groves and rapid infiltration basins.

The cities of Altamonte Springs and Sanford have also responded to antidegradation requirements and use restrictions by upgrading treatment quality and constructing reuse systems. In these locations, wastewater for residential and public area irrigation, as well as non-irrigation uses, relieves demand from potable sources and provides additional water for future development.

Wastewater reuse is practiced at numerous other locations as well. Twenty-eight percent of the inventoried treatment plants provide some water for reuse. This water accounts for about 32 percent of all treated wastewater in the SJRWMD. Comparable amounts of wastewater reuse also occur in the South Florida and Southwest Florida water management districts.

3. ISSUES AND CONCERNS

Although there are constraints to planning and financing a wastewater reuse program, the benefits to be gained still make reuse an attractive alternative to effluent disposal. Investments made in reuse facilities have the potential to extend the economic vitality of a region by providing additional water supply and to improve quality of life by providing a healthier environment.

BENEFITS OF REUSE

The reuse of treated wastewater traditionally has been a logical solution to two problems, scarce fresh water and abundant wastewater (Schroeder 1987). Under present State of Florida policies, reuse also becomes the most economical means of effluent disposal in many locations, as antidegradation policies make it increasingly less acceptable to discharge into surface waters. Secondary treated wastewater with high nutrient levels can be used for irrigation or aquifer recharge but cannot be discharged into certain surface water bodies. Numerous other benefits may also apply. Some examples of these are described below (SFWMD 1985).

Enhanced Water Supply

High quality water may be reserved for potable use, effectively expanding the total supply.

Alternate Supplies

Reuse provides an alternate water source where local supplies have been exhausted, are in danger of damage, or are temporarily unavailable during drought periods.

Enhanced Economic Vitality

The expanded water supply and alternative sources provided by reuse increase the economic potential of an area. Additional water allows expansion of economic activities and increased development.

Wastewater Disposal Alternatives

Reuse provides a variety of positive alternatives to effluent disposal into surface water bodies and other environmentally sensitive areas, such as irrigation, cooling for power generation, and fire protection.

Balanced Water Management Program

Reuse is an essential element of a total water management program, providing the final link between the original source and eventual disposition.

Nutrient Removal

Advanced treatment or ground spreading can remove nutrients from water, making it safer to return to the environment.

Reduced Need for New Potable Water Facilities

Use of treated wastewater for non-potable purposes can relieve the need to expand potable supply and treatment facilities, thereby saving capital investments.

Reduced Need to Transport Water

The alternative supply source provided by reuse can reduce the need to transport water from a remote location to areas where local supplies have been depleted. This may also provide savings in capital investment and improve supply dependability.

Offset Cost of Wastewater Treatment

The net cost of wastewater treatment may be reduced by generating income from the sale of treated water.

Reduced Rate of Urban Sprawl

Urban sprawl problems may be slowed by providing a secure irrigation water supply for agriculture. If water is available, the farmer has the option of continuing to produce crops rather than selling his land to developers.

Free Source of Fertilizer

Unless specially treated, wastewater contains high levels of nitrogen and phosphorous, primary plant nutrients. Areas irrigated with such water have reduced need for additional fertilization. As long as runoff is controlled, the nutrients will be used by plants or absorbed in the ground, instead of being released into surface water.

CONSTRAINTS TO REUSE

Initiating and maintaining a reuse program requires attention to many details. Substantial groundwork must be done to assure success of the venture. Both providers and users must be aware of constraining issues and deal with them. The major issues affecting wastewater reuse are described below.

Economic Costs

Economic factors figure prominently into the evaluation of reuse feasibility. These may include the following (Dyer et al. 1988; Miller 1984; and SFWMD 1985):

Provider costs may include the following:

- Upgraded treatment facilities
- Additional treatment to meet quality criteria
- Distribution system
- Storage facilities
- Water quality monitoring facilities and program
- Loss of revenue generated by fresh water sales

User costs may include the following:

- On-site hookup
- Water quality monitoring facilities and program
- Additional treatment, if needed
- Re-piping for dual distribution on-site
- Steps to assure worker safety
- Changes in normal practices

Health Effects

Concern for human health has caused wastewater reuse to be highly regulated. The rules cited in Chapter 4 are frequently related to this matter. According to Oliveri (1987), "There is no such thing as zero risk." Another source (Miller 1984) lists the following means by which risk of human exposure to reclaimed water can arise:

- Accidental drinking
- Drinking water contaminated with reclaimed water
- Inadvertently ingesting at a recreation area using re-claimed water
- Being exposed to aerosols near spray irrigation or cooling tower sites (frequently or over a long term)
- Working with reclaimed wastewater
- Eating of unwashed, raw food crops that have been irrigated with reclaimed water
- Eating food crops that have been irrigated with reclaimed water containing excessive heavy metals

Legal Issues

Numerous regulations apply to wastewater reuse. In addition to dealing with the SJRWMD and FDER, potential users and suppliers may also have to deal with state, county, and local health departments; the Florida Department of Natural Resources; and the Florida Public Service Commission or a county franchising authority. Liability and property rights issues may also arise.

Institutional Obstacles

Institutional obstacles may arise from interagency conflicts, opposition from potable water purveyors, objections from neighboring communities, or jurisdiction displacements between source and use sites (Miller 1984).

Public Acceptance

Some people have strong concerns about the health and safety aspects of reusing wastewater. Others simply find the idea emotionally unacceptable. Opposition can be overcome, however, by an information program, education, and public participation. According to Mills and Asano (1987), "Public acceptance to the idea of wastewater reuse is more favorable than not. With growing awareness of the need for innovative solutions to water problems, an increasingly informed public seems willing to accept and support the use of reclaimed water -- even for drinking."

Reliability of Treatment

Reused wastewater must meet stringent quality standards. The FDER administers rules to assure the dependable quality of reused water. These rules add cost, time, and inconvenience to the process of obtaining and maintaining permits.

Availability of Potential Users and Suppliers

Reusable water must be available where needed and users must be willing to accept reclaimed water where available (SFWMD 1985).

4. FLORIDA STATUTES AND ADMINISTRATIVE CODES

This chapter describes statutes and codes pertaining to wastewater reuse. In general, Florida Statutes (F.S.) provide agency authority and set policy and Florida Administrative Codes (F.A.C.) provide specific requirements. Relevant sections of pertinent statutes and codes are discussed briefly below.

This information is provided to assist potential reclaimed water suppliers and users in identifying the statutes and codes most likely to concern them. This chapter should not be regarded as the final source of legal citations for wastewater reuse issues. New statutes and rules may be passed or additional rules may apply to a supplier or user's specific circumstances. Current Florida Statutes and Administrative Code, as well as federal and local regulations, should be consulted for complete and accurate information.

Within the present compendium, particular attention should be given to Chapters 403, F.S.; 17-40, F.A.C.; 17-302, F.A.C.; and 40C-2, F.A.C. These chapters concern two types of requirements that may a have major impact on permit applicants' decisions to supply or use reclaimed water. The first is antidegradation policies, which address the quality of discharge to surface water bodies, and the second is special considerations concerning wastewater reuse in critical water supply problem areas.

FLORIDA STATUTES

Chapter 187, F.S., State Comprehensive Plan

The State Comprehensive Plan expressly sets policies favoring wastewater reuse and recycling.

These policies, cited below, provide a basis for various other statutory provisions discussed in this chapter.

187.201 State Comprehensive Plan adopted.--
(8) WATER RESOURCES.--
(b) Policies.--
13. Identify and develop alternative methods of wastewater treatment, disposal, and reuse of wastewater to reduce degradation of water resources.
(23) AGRICULTURE.--
(b) Policies.--
5. Encourage conservation, wastewater recycling, and other appropriate measures to assure adequate water resources to meet agricultural and other beneficial needs.

Chapter 373, F.S., Water Resources

Chapter 373, Florida Water Resources Act, makes no specific reference to wastewater reuse but promotes the practice indirectly.

The following statements are compatible with promoting wastewater reuse:

373.1961 Water production.--In the performance of, and in conjunction with, its other powers and duties, the governing board of a water management district...
(1) Shall engage in planning to assist counties, municipalities, and regional water supply authorities in meeting water supply needs in such a manner as will give priority to encouraging conservation and reducing adverse environmental effects of improper or excessive withdrawals of water from concentrated areas...
(2) Shall assist counties, municipalities, and water supply authorities in meeting water supply needs in such manner as will give priority to encouraging conservation and reducing adverse environmental effects of improper and excessive withdrawals of water from concentrated areas.

Chapter 381, F.S., Public Health; General Provisions

Chapter 381 governs sewage treatment. Because of its provisions, it is not possible to initiate low cost reuse of untreated "graywater."

Paragraph 381.272(10)(a), F.S., defines two types of wastewater—"blackwater" and "graywater." Blackwater is sewage, including water flushed through toilets. Graywater is effluent from bathing and laundering. Untreated graywater is not generally a health

hazard but contains high levels of nutrients from soaps and detergents.

Paragraph 381.272(10)(c), F.S., requires essentially the same treatment facilities for both graywater and blackwater. This means that graywater becomes mixed with blackwater in the typical sewer and the cost of treating graywater becomes the same as that of blackwater. Therefore, it is not possible to initiate a low cost reuse system supplying untreated graywater.

Chapter 403, F.S., Environmental Control

Section 403.021, F.S., establishes that any wastes discharged to waters of the state must be treated to the quality necessary to protect the beneficial uses of the receiving water body. Section 403.064, F.S., encourages local wastewater reuse programs and requires them in critical water supply problem areas.

Section 403.021, F.S., and rules associated with it in Chapter 17-650, F.A.C., (Water Quality Based Effluent Limitations), may require wastewater treatment plants to treat water to reusable standards before it can be discharged into surface waters. If wastewater must be treated to high standards anyway, reuse becomes an attractive means to offset treatment costs. This may be a key factor in determining the economic feasibility of a potential reuse project.

Section 403.064, F.S., encourages development of wastewater reuse programs by local governments and requires consideration of reuse in critical water supply problem areas. This section sets requirements for WWTP and land development permitting and provides means for utilities to allocate and recover the cost of reuse facilities.

403.064 Reuse of Reclaimed Water.--

(1) The encouragement and promotion of water conservation, and reuse of reclaimed water, as defined by the department [FDER], are state objectives...

(2) After January 1, 1992, all applicants for permits to construct or operate a domestic wastewater treatment facility in a critical water supply area shall evaluate the costs and benefits of reuse of reclaimed water as part of their application for the permit...

(3) The requirements of this section for such evaluation shall apply to domestic wastewater treatment facilities located within, serving a population within, or discharging within critical water supply problem areas.

(4) Local governments may and are encouraged to implement programs for the reuse of reclaimed water...

(5) A local government that implements a reuse program under this section shall be allowed to allocate the costs in a reasonable manner.

(6) Pursuant to chapter 367, the Florida Public Service Commission shall allow entities which implement reuse projects to recover the full cost of such facilities through their rate structure.

(7) In issuing consumptive use permits, the permitting agency shall take into consideration the local reuse program.

(8) A local government shall require a developer, as a condition for obtaining a development order, to comply with the local reuse program.

FLORIDA ADMINISTRATIVE CODES

Chapter 9J-5, F.A.C., Minimum Criteria for Review of Local Government Comprehensive Plans and Determination of Compliance

Chapter 9J-5, F.A.C., does not specifically mention reuse but outlines the elements of comprehensive plans in which any planed reuse must be discussed.

Chapter 9J-5 is relevant only to county and municipal governments. County and municipal governments are required to file comprehensive plans with the Florida Department of Community Affairs. These plans concern land use, development, finance, and infrastructure.

Chapter 9J-5, F.A.C., does not specifically mention wastewater reuse. However, if reuse is to be practiced by a local government, details must be provided in at least two distinct comprehensive plan elements. These two elements are the "Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Groundwater Recharge Element," described in Section 9J-5.011, F.A.C.; and the "Conservation Element," described in Section 9J-5.013, F.A.C.

Chapter 17-3, F.A.C., Water Quality Standards

Chapter 17-3, F.A.C., provides water quality standards for all ground water.

Insofar as wastewater treatment, reuse, or disposal affect ground water, those activities are affected by these standards. The standards provided in Chapter 17-3 are too detailed and lengthy to include here.

Chapter 17-3 is referenced in Chapter 17-600, F.A.C., (Domestic Wastewater Facilities), and elsewhere. Surface water quality standards, formerly addressed in Chapter 17-3 have been transferred to Chapter 17-302, F.A.C., (Surface Water Quality Standards). Other regulations concerning surface water may also be found in Chapter 403, Part I, F.S., (Environmental Control).

Chapter 17-4, F.A.C., Permits

Chapter 17-4, F.A.C. specifies permit requirements and application procedures for all activities permitted by the FDER.

Wastewater treatment facilities and discharge or reuse arrangements must both meet appropriate requirements of Chapter 17-4. The requirements provided in this chapter are too detailed and lengthy to include here.

Chapter 17-28, F.A.C., Underground Injection Control

Chapter 17-28, F.A.C., sets standards and specifies permit requirements for underground injection wells.

The requirements of Chapter 17-28 apply to wastewater reuse or disposal if underground injection is used to provide aquifer recharge or dispose of effluent. These requirements are too lengthy and specific to include here.

Chapter 17-28 is referenced in Chapter 17-600, F.A.C., (Domestic Wastewater Facilities). Section 17-600.760, F.A.C., provides a list of all F.A.C. sections that contain provisions applicable to wastewater reuse or disposal permits.

Chapter 17-40, F.A.C., Water Policy

Reuse is defined and adopted as state policy in this chapter. In addition, water management districts are instructed to require reasonable reuse.

Chapter 17-40, F.A.C., provides broad statements concerning the State's approach to water management and clarifies policies expressed in Chapters 187, (State Comprehensive Plan); 373 (Water Resources); and 403 (Environmental Control), F.S. It also requires local governments to consider state water policy in their comprehensive plans.

Wastewater reuse is addressed in several places within this chapter. These include definitions of "reclaimed water" (17-40.210(13), F.A.C.) and "reuse" (17-40.210(15), F.A.C.). These definitions are repeated in Section 17-600.200, F.A.C., (Domestic Wastewater Facilities) and Section 17-610.200, F.A.C., (Reuse of Reclaimed Water & Land Application).

PART II DEFINITIONS
17-40.210 Definitions
(13) "Reclaimed water" means water that has received at least secondary treatment and is reused after flowing out of a wastewater treatment facility.
(15) "Reuse" means deliberate application of reclaimed water, in compliance with Department [FDER] and District [water management district] rules, for a beneficial purpose.
(a) Where appropriate, said uses may encompass:
1. Landscape irrigation...
2. Agricultural irrigation...
3. Aesthetic uses...
4. Ground water recharge...
5. Industrial uses...
6. Environmental enhancement...
7. Fire protection
8. Other useful purposes

Subsection 17-40.210(15) also specifies some activities that are **NOT** to be considered reuse.

17-40.210 Definitions
(15)
(b) Overland flow land application systems, rapid-rate land application systems providing continuous loading to a single percolation cell, other land application systems involving less than secondary treatment prior to application, septic tanks, and ground water disposal systems using

Class I wells injecting effluent or waste into Class G-IV water shall be excluded from the definition of reuse.

Part of the statement of general policies expressly adopts wastewater reuse as State of Florida policy, as follows:

PART III GENERAL PROVISIONS
17-40.310 General Policies. The following statement of general water policy shall provide a basis for Department [FDER] review of water management programs, rules, and plans. Water management programs, rules, and plans, where economically and environmentally feasible, not contrary to the public interest, and consistent with Florida law, shall seek to:
(4) Advocate and direct the reuse of reclaimed water as an integral part of water management programs, rules, and plans consistent with protection of public health and surface and ground water quality.

Sections 17-40.401 and 17-40.501, F.A.C., refer specifically to reuse. Section 17-40.401 requires wastewater reuse in critical water supply problem areas. Section 17-40.501 requires preparation of water management plans, which include identification of critical water supply problem areas by each water management district. FDER and water management districts are required to give special attention to applications for wastewater treatment plant operating permits and consumptive use permits within critical water supply problem areas in accordance with the following rule sections:

PART IV RESOURCE PROTECTION AND MANAGEMENT
17-40.401 Water Use and Reuse.

(5) The Districts shall designate areas that have water supply problems which have become critical or are anticipated to become critical within the next 20 years. The Districts shall identify such critical water supply problem areas during preparation of a District Plan pursuant to Rule 17-40.501 F.A.C., and shall adopt these designations by rule by November 1, 1991. A reasonable amount of reuse of reclaimed water from domestic wastewater treatment facilities shall be required within designated critical water supply problem areas unless such reuse is not economically, environmentally, or technically feasible...

(6) A reasonable amount of reuse of reclaimed water from domestic wastewater treatment facilities may be required outside of areas designated pursuant to Rule 17-40.401(5), F.A.C., as subject to critical water supply problems provided:

(a) Reclaimed water is readily available; and

(b) The District has adopted rules for reuse in those areas.

(7) The Department [FDER] encourages local governments to implement programs for reuse of reclaimed water. These rules shall not be deemed to preempt any such local reuse programs.

17-40.501 District Water Management Plans

(1) A water management plan shall be prepared by each District... The District Plan shall identify specific geographical areas that have water resource problems which have become critical or are anticipated to become critical within the next 20 years. Identification of critical water

supply problem areas needed for imposition of reuse requirements pursuant to Rule 17-40.401(5), F.A.C., may be accomplished before publication of the complete District Plan.

(2) Based on economic, environmental, and technical feasibility analyses, a course of remedial or preventive action shall be specified for each current and anticipated future critical problem.

(3) Remedial or preventive measures may include, but are not limited to...reuse of reclaimed water...

Chapter 17-302, F.A.C., Surface Water Quality Standards

Chapter 17-302, F.A.C., includes an antidegradation policy, which indirectly encourages wastewater reuse.

This policy prohibits discharges to surface water bodies when water quality would be reduced below certain levels. The higher treatment levels required to make wastewater suitable for discharging into certain water bodies sometimes brings the effluent up to reusable standards and creates reuse opportunities by providing a potential source of reusable water.

17-302.300 Antidegradation Policy for Surface Water Quality
(6) If the Department [FDER] finds that a new or existing discharge will reduce the quality of the receiving waters below the classification established for them or violate any Department [FDER] rule or standard, it shall refuse to permit the discharge.

Chapter 17-600, F.A.C., Domestic Wastewater Facilities

Chapter 17-600, F.A.C., sets standards for all wastewater treatment plants, regardless of whether reuse is practiced.

The standards provided in this chapter include effluent quality limitations for various types of outfall, found in Sections 17-600.420, Technology Based Effluent Limitations (TBELs), and 17-600.430, Water Quality Based Effluent Limitations (WQBELs), F.A.C. General standards for reuse water quality are provided in Section 17-600.530, F.A.C. Section 17-600.760 provides a summary of F.A.C. requirements, which certain permit applicants must meet.

17-600.760 Reuse or Disposal Permits. An applicant for an effluent disposal or reclaimed water reuse system construction permit shall provide, as a minimum, adequate documentation in accordance with the applicable provisions of Chapters 17-610, 17-611, 17-650 and 17-28, F.A.C., as follows:
(1) Surface waters: Chapter 17-650 F.A.C.
(2) Reuse/Land Application: Chapter 17-610, F.A.C.

(3) Wetlands: Chapter 17-611, F.A.C.
(4) Underground Injection Chapter 17-28, F.A.C.

More detailed reuse water quality standards can be found in Chapter 17-610, F.A.C., (Reuse of Reclaimed Water and Land Application).

Chapter 17-604, F.A.C., Collection Systems and Transmission Facilities

This Chapter primarily concerns wastewater collection. It provides requirements, technical guidance, and performance considerations for pipeline design and construction.

Section 17-604.420, F.A.C., briefly mentions redistribution system design by reference to Section 17-610.419, F.A.C., (Application/ Distribution Systems).

17-604.420 Reuse Distribution Systems. The design of new reclaimed water application/ distribution systems (and replacements of existing systems) shall be designed in accordance with Rule 17-610.419, F.A.C., in addition to applicable provisions of this rule.

Chapter 17-610, F.A.C., Reuse of Reclaimed Water and Land Application

Chapter 17-610 F.A.C. defines four land application reuse types as well as water quality and other standards for each type of reuse. This chapter is particularly significant to and should be studied in detail by anyone planning a reuse system.

The four land application reuse types are: (1) slow rate with restricted access, (2) slow rate with public access, residential irrigation, or edible crop irrigation, (3) rapid rate land application, and (4) absorption field systems. References to slow or rapid rates for land application reuse concern the rate at which water infiltrates the ground.

Secondary treatment is the minimum preapplication requirement for all land applications. Slow rate systems with restricted access, rapid rate systems, and absorption fields also require basic disinfection. Slow rate systems with public access and irrigation of residential areas or edible crops require high-level disinfection.

Standards for total dissolved solids, total suspended solids, and nutrients also vary with the type of land application.

More stringent or additional requirements may be placed on any reuse application as deemed necessary. Facilities providing water for use in public access areas must have a minimum capacity of 0.1 mgd. Facilities providing water for irrigation of residential areas or edible crops must have a minimum capacity of 0.5 mgd, except for under-tree citrus irrigation. Facilities providing water for under-tree irrigation of citrus crops may have a minimum capacity of 0.1 mgd.

Chapter 17-650, F.A.C., Water Quality Based Effluent Limitations

Chapter 17-650, F.A.C., specifies procedures for setting quality based limitations for surface and ground water discharges of all types of wastewater. These requirements are too detailed and lengthy to present here.

Chapter 40C-2, F.A.C., Permitting of Consumptive Uses of Water

This rule requires wastewater reuse, where feasible, as part of its conservation requirements.

Chapter 40C-2, F.A.C., is the SJRWMD's rule concerning issuance of permits for withdrawing water from natural sources. Amended sections of this rule, which became effective on July 23, 1991, include conservation requirements aimed at managing demand for potable water. Required wastewater reuse, where feasible, and use of the lowest acceptable water quality are among these. These requirements must be met by all consumptive use permit (CUP) applicants. The following conservation conditions must be met in order to obtain a CUP from the SJRWMD:

40C-2.301 Conditions for Issuance of Permits
(4)
(f) When reclaimed water is readily available it must be used in place of higher quality water sources unless the applicant demonstrates that its use is either not economically, environmentally or technically feasible.
(g) The lowest acceptable quality water source, including reclaimed water which is addressed in paragraph 40C-2.301(4)(f) above, must be utilized for each consumptive use. To use a higher

quality water source an applicant must demonstrate that the use of all lower quality water sources will not be economically, environmentally, or technically feasible...

The SJRWMD *Applicant's Handbook for Consumptive Use Permits,* associated with this rule, elaborates on the above requirements in parts 10.3 (g) and 12.4.5. The handbook also encourages reuse by extending the duration of consumptive use permits for applicants who practice reuse and provides guidelines for determining if the application falls within a Critical Water Supply Problem Area, as defined in Chapter 40C-23 F.A.C. (See parts 6.5.1 and 19 of the handbook for additional details).

Chapter 40C-23, F.A.C., Critical Water Supply Problem Areas

Chapter 40C-23, F.A.C., defines criteria and provides a procedure for water management districts to use in delineating critical water supply problem areas.

This chapter provides guidelines for accomplishing the requirements of Sections 17-40.501, F.A.C., (District Water Management Plans), concerning the identification of critical water supply problem areas. The boundaries of these areas are subject to change as hydrologic conditions change and additional information becomes available. Exact geographic boundaries of those areas will be determined periodically by the SJRWMD Governing Board and recorded in full by legal description. Maps of these areas will also be available from SJRWMD.

5. GENERAL METHODOLOGY

This chapter provides general descriptions of data sources, measures to assure data quality, and information concerning digital transfer of data. Descriptions of data fields and additional details concerning sources for specific types of data may be found in Chapter 6.

COMPILATION OF DATA BASE

Data Sources

Information in the SJRWMD wastewater reuse data base was compiled primarily from FDER records and local government comprehensive plans. Those data were to be supplemented with additional information from other agencies and local utilities.

Estimated Data

An attempt has been made to complete two data fields with estimates when no actual data were available from the sources consulted. These were "population served" and "mean flow" (1989 average daily treated sewage flow). If population was available but mean flow was not, an estimate of flow was based on an average per capita rate of 80 gallons per day (flow = population x 80). This procedure was used for 28 percent of the inventoried plants. If flow was available and population was not, the calculation was reversed (population = flow / 80). This procedure was used for 17 percent of the inventoried plants. If neither flow nor population were available, flow was estimated at 0.6 times permitted capacity and population served was then estimated from that value. This procedure was used for 5 percent of the inventoried plants. Plants with flow and/or population calculated by these means are indicated by an asterisk (*) on the tables provided in Appendix A.

Projections

Projections of wastewater flow to the year 2010 are based on population growth estimates provided by a consultant (Kimball-Lloyd 1991). These are often generalized to the county level and, therefore, may not be applicable to individual utilities. Increases in wastewater production are assumed to be proportionate to population growth, without allowance for changes in per capita rates of wastewater generation. Refinements will be made to these projections by examining the growth rates of individual utilities and possible trends in per capita generation of wastewater as time permits.

Quality Assurance

Quality assurance has included cross checking of sources and submitting segments of the resulting adjusted data base to county agencies for further checking. The counties were asked to examine the pertinent data for their areas and report any additions or corrections to the SJRWMD. Information received from these sources was inserted into the data base when it was received.

Although some quality assurance has been performed, additional verification of data remains to be done. As time permits, local government comprehensive plans will be perused more thoroughly and direct contacts will be made with local utility authorities to replace surrogate data and verify existing information. The data for individual WWTPs should not be used for purposes that require reliability until verified.

Digital Formats

The data base is maintained in a Lotus 1-2-3 Release 3.1 spreadsheet. Data are routinely updated whenever new information is obtained. Digital copies of the spreadsheet are available in Lotus or ASCII formats on 3 1/2" or 5 1/4" high density floppy diskettes.

6. DATA FIELD DESCRIPTIONS AND SPECIFIC METHODOLOGY

This chapter provides definitions and sources of all fields in the data base and serves as a key to the column headings used on tables in Appendixes A and B. Field headings are given in the order that they appear in the Lotus spreadsheet and printed tables.

In addition to the sources listed here, some county and city agencies have directly provided information for their areas. In some instances, such data may be for 1990.

Some categories of information listed on Table 1 are not included on the tables appearing in Appendix A. Such fields are either extremely incomplete or otherwise provide little useful information. All types of information in the data base are available on request in either digital or printed form.

Table 1. Explanation of data fields used in the wastewater treatment facilities data base for the St. Johns River Water Management District

Column Heading	Description / Notes	Source
County	Numeric code for sorting by county	
Plant Owner or Operator	Owner or operator name	FDER GMS 80 or 78 data base
Plant Name	Name of treatment facility	FDER GMS 80 or 78 data base
DER Permit	Florida Department of Environmental Regulation (FDER) permit number	FDER GMS 80 data base
DER Class	FDER class codes for Type I facilities.	FDER GMS 80 data base or FDER (1990a)

Plant type	Plant size, million gallons per day (mgd)			
	A	B	C	D
1	3+	0.5 - 3	0.002 - 0.5	none
2	5+	1 - 5	0.002 - 1	none
3	8+	2 - 8	0.025 - 2	0.002 - 0.025
4	10+	3 - 10	0.025 - 3	0.002 - 0.025

Latitude	Latitue of plant location	FDER GMS 80 data base
Longitude	Longitude of plant location	FDER GMS 80 data base
Population Served	Number of people receiving water from this source	FDER GMS 80 or 78 data base or estimated by methods described in Chapter 5
Permit Capacity	Quantity of total wastewater treatment permitted by FDER, in mgd	FDER GMS 80 or 78 data base

Table 1. Continued

Column Heading	Description Notes	Source
Mean Flow	Average treated flow through plant, in mgd	Pumpage records or estimated by methods described in Chapter 5
Growth Factor	Multiplier used to convert 1989 water use to 2010 water use Data are provided by a consultant and tend to be the same for entire counties. Most need refinement.	Based on projected population growth and constant per capita water use.
2010 Projected Mean Flow	Projected average total treated wastewater in the year 2010	1989 **Mean Flow** multiplied by **Growth Factor**
Plants Providing Reuse Water	Is effluent from this plant reused?	FDER (1990b), FDER GMS 78 data base, and local sources
Reuse Design Capacity	That part of plant capacity which can be delivered for reuse	FDER (1990b), FDER GMS 78 data base
Reuse Flow	That part of treated effluent that is reused, in mgd	FDER (1990b), FDER GMS 78 data base
Unused Reuse Treatment Capacity	Ability to treat additional water to reuse standards	**Reuse Design Capacity** minus **Reuse Flow**, in mgd
Additional Wastewater Available 1989 2010	Additional wastewater available in the year 1989 and the year 2010	1989 **Mean Flow** minus **Reuse Flow**; and **2010 Projected Mean Flow** minus **Reuse Flow**
Additional Projected Treatment Needed	If population-based projections for 2010 wastewater treatment needs (**2010 Projected Mean Flow**) exceed existing treatment capacity (**Permit Capacity**), the additional capacity needed appears here.	**Permit capacity** minus **2010 Projected Mean Flow**

Table 1. Continued

Column Heading	Description Notes	Source
Projected Treatment Capacity Year	If plans for expansion of treatment capacity are known, expanded capacity, in mgd, and year of completion are listed here. Local government comprehensive plans, wastewater master plans, and direct utility contacts will be consulted as time permits. This field is not included in this report but is in the data base.	FDER (1990b)
Disposal 1. 2.	Methods by which effluent is disposed 1. = primary method and 2. = alternative method FLOW = overland flow IRRIG = irrigation reuse * POND = any percolation and/or evaporation pond POWER = cooling for power generation REUSE = to distribution system RIB = rapid infiltration basin SPRAY = spray field disposal* SURF = surface water discharge WELL = deep well injection * Spray field disposal may also provide crop irrigation. It is frequently difficult to determine from the printed records which category should be applied. If irrigation of a crop is interpreted as the primary reason for spraying, the water is placed in the **IRRIG** category and considered to be reuse. If there is no known crop or whatever is raised is incidental to wastewater disposal, the practice is classified as **SPRAY**, and not considered reuse.	FDER (1990b) and FDER GMS 78 data base
1. Point of Discharge	Primary location of effluent discharge	FDER (1990b), FDER GMS 78 data base

Table 1. Continued

Column Heading	Description Notes	Source
2. Point of Discharge	Second or alternative location of discharge	FDER (1990b), FDER GMS 78 data base
Disinfection Level	Disinfection levels	Codes from FDER (1990a) Levels from FDER (1990b)
Treatment Level	Treatment Level 1 = primary; 2 = secondary; 3 = tertiary	FDER (1990b) or FDER GMS 78 data base
Projected Treatment Level Year	If plans to upgrade treatment quality are known, new quality level and year of accomplishment are listed here	FDER (1990b)
DER Reuse Codes	FDER reuse codes	FDER (1990b)
AI	Agricultural irrigation	
CI	*Commercial/industrial*	
EN	Environmental enhancement	
FP	Fire protection	
GR	Ground water recharge	
PA_1	Public area irrigation, non-golf course	
PA_2	Public area irrigation, golf course	
OT	Other	
Plan Increment	Planned increase in reuse treatment capacity	FDER (1990b)
Increment Year	Year in which planned increase is expected to come on line	FDER (1990b)

Table 1. Continued

Column Heading	Description Notes	Source
Problems	Problems associated with starting to produce reusable treated wastewater BD = breakdown CT = contract negotiations CU = locating customers FD = fluctuating demand NO = no problems OD = odor PA = public acceptance PM = permitting ST = storm waters TR = difficulty meeting required treatment	FDER (1990b)
Reuse Comments	Any additional information This field is not included in this report but is in the data base.	
K/L ID	Indicates a USGS 1:24,000 scale topographic map on which the utility service area is located. This field is not included in this report but is in the data base.	Consultant's identification number

7. DATA SUMMARIES

This chapter provides summaries and interpretations of information found in the data base. Actual data supporting these summaries appears in Appendix A.

This inventory includes 222 wastewater treatment plants with permitted capacities of 0.1 mgd or greater. The 0.1 mgd threshold was chosen because FDER regulations prohibit wastewater treatment plants below this size from providing reuse water for irrigation of food crops or areas open to the public.

The SJRWMD is comprised of all or part of nineteen counties. The entire areas of Brevard, Clay, Duval, Flagler, Indian River, Nassau, Seminole, St. Johns, and Volusia are within the SJRWMD. Parts of Alachua, Baker, Bradford, Lake, Marion, Okeechobee, Orange, Osceola, Polk, and Putnam are within the SJRWMD (40C1.0015(2), F.A.C.). The following summaries are for SJRWMD as a whole and concern only wastewater treatment plants located within or serving areas within the SJRWMD. Information about individual counties or wastewater treatment plants can be obtained from the tables in Appendixes A and B.

WASTEWATER TREATMENT UTILITIES AND PLANTS

Wastewater treatment plants of 0.1 mgd or greater are concentrated primarily in the more urbanized parts of the SJRWMD (Figure 1). Duval County, including Jacksonville, accounts for 40 plants, or 18 percent of the SJRWMD total. An additional 39 plants, or 18 percent, are found in Orange and Seminole counties, which cover the Orlando urban area (Figure 2). Data compiled by counties (Appendixes A and B), indicate that the largest wastewater treatment plants and greatest aggregate flows are also found in these areas.

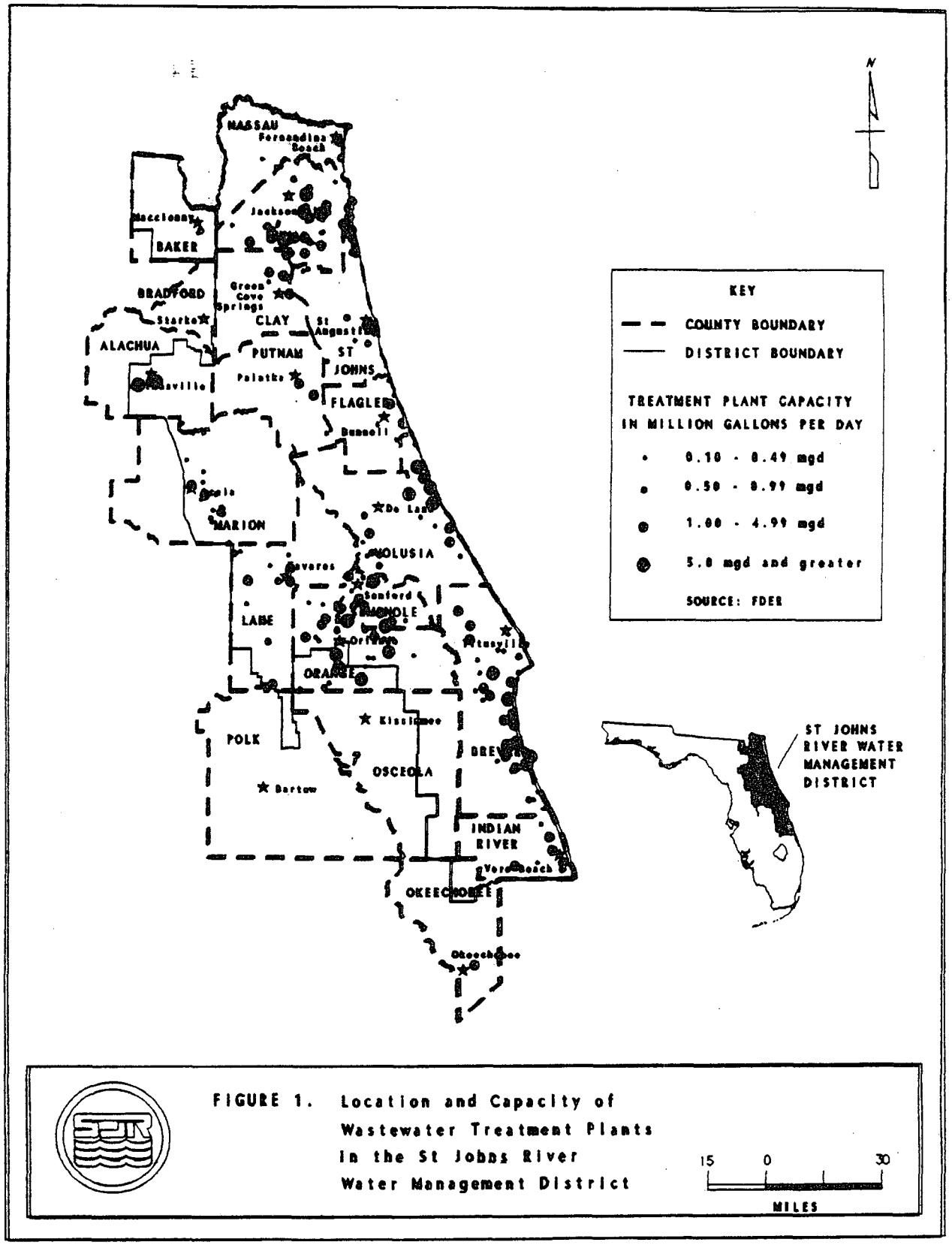
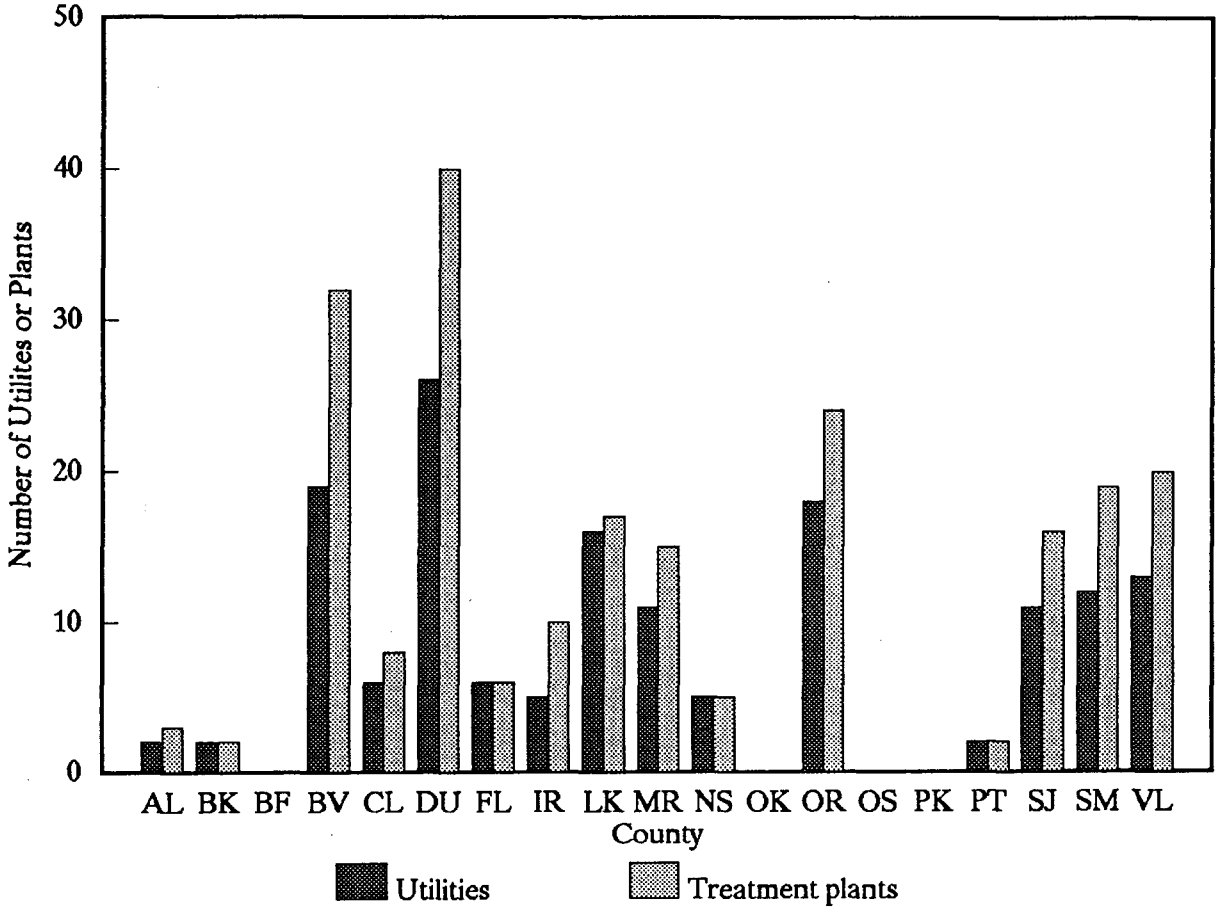


FIGURE 1. Location and Capacity of Wastewater Treatment Plants in the St Johns River Water Management District



Key to County Names

AL Alachua	DU Duval	NS Nassau	PT Putnam
BK Baker	FL Flagler	OK Okeechobee	SJ St. Johns
BF Bradford	IR Indian River	OR Orange	SM Seminole
BV Brevard	LK Lake	OS Osceola	VL Volusia
CL Clay	MR Marion	PK Polk	

Figure 2. Number of wastewater treatment utilities and plants, 1989. *Some utilities own a number of wastewater treatment plants. These utilities would actually administer any wastewater reuse.*

A single major city or county utility system may own may of the larger wastewater treatment plants in a county. In some instances, a large private utility company may own several significant plants within a single county or scattered around the SJRWMD. This is observable in the county data compilations (Appendixes A and B). In particular, Jacksonville Suburban Utilities owns various facilities in and near Duval County, and Southern States Utilities owns numerous facilities throughout the SJRWMD.

Most WWTPs are relatively small (Figure 3). Estimating from FDER records, the number of plants in the SJRWMD falling below the 0.10 mgd threshold appears to be greater than the total included in this inventory. Of the 222 inventoried plants, 42 percent have a permitted capacity of less than 0.50 mgd. Plants in the 0.50 to 0.99 mgd range account for 17 percent of the total. Only 10 percent have permitted capacities of 5.00 mgd or greater. The largest permitted capacity for the inventoried plants was 52 mgd.

Wastewater Treatment Plant Capacity and Flow

The total permitted capacity for the inventoried wastewater treatment plants was 502 mgd (Table 2). Total mean flow for SJRWMD was 55 percent of that amount, or 275 mgd. The mean flow per plant, however, was about 60 percent. Projected wastewater flow for the year 2010 is expected to rise 55 percent to 426 mgd. Current capacities and flows are illustrated in Figure 4 for the whole District and Figure 5 for separate counties. Most individual utilities already have adequate capacity to handle the expected average flows (Appendix A), but many may not be able to handle associated peak flows with current facilities.

Wastewater Disposal Methods

Most wastewater treatment plants in SJRWMD either dispose of effluent into evaporation/percolation ponds (39 percent) or discharge it into surface waters (38 percent) as their main form of

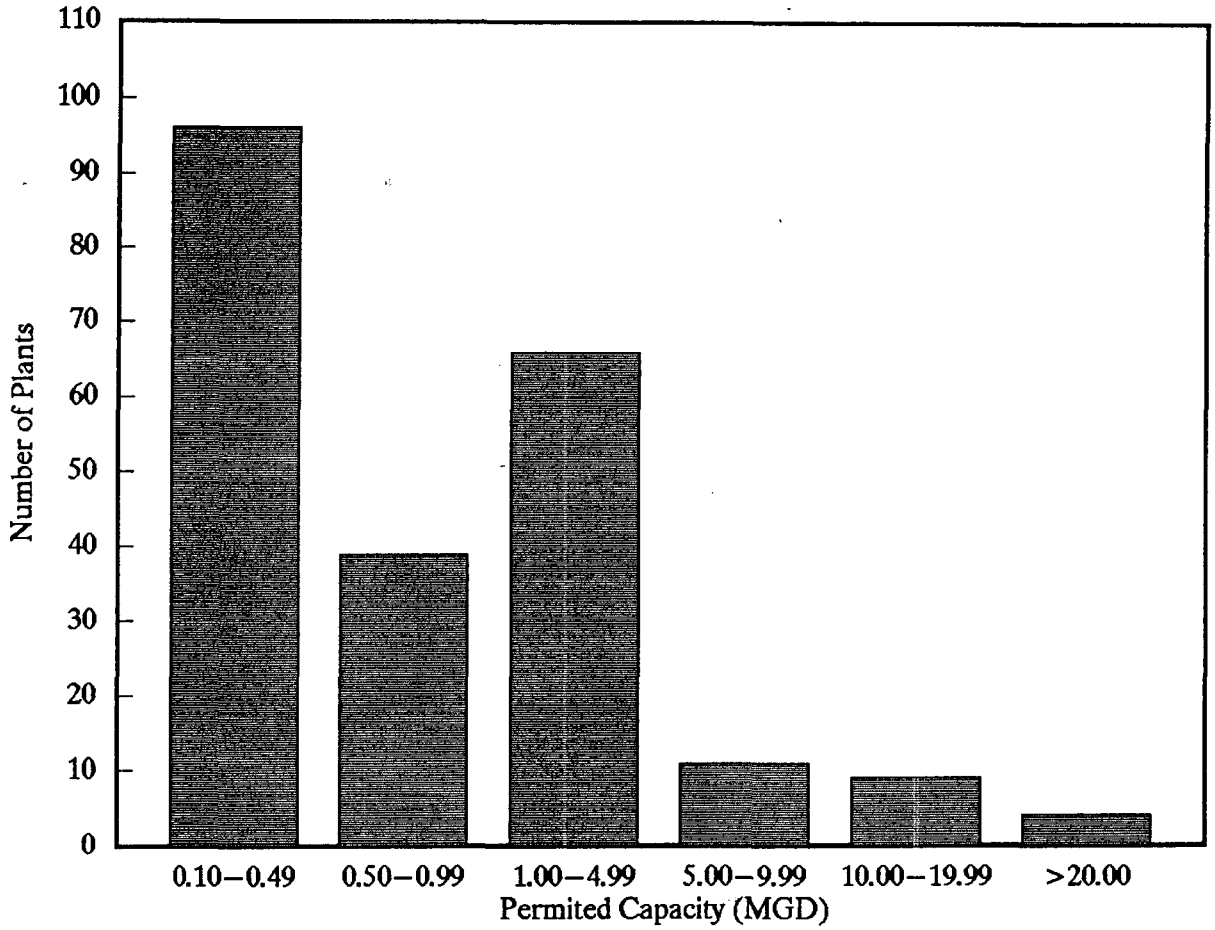


Figure 3. Number of wastewater treatment plants by capacity, St. Johns River Water Management District, 1989. *This report only discusses plants with capacity of at least 0.1 million gallons per day.*

Table 2. Wastewater treatment capacity and flow for plants with permitted capacity of 0.1 million gallons per day or greater, 1989

County	Population Served	Permit Capacity	Mean Flow	2010 Projected Mean Flow	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Reuse Excess Capacity	Additional Waste Water Available	
									1989	2010
Alachua*	161,600	20.600	13.450	19.126	0	0.000	0.000	0.000	13.450	19.126
Baker*	4,800	0.936	0.732	1.008	0	0.000	0.000	0.000	0.732	1.008
Bradford*	0	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000
Brevard	328,536	65.861	35.249	53.578	9	25.250	10.548	14.702	24.701	43.030
Clay	77,954	11.970	7.616	13.450	0	0.000	0.000	0.000	7.616	13.450
Duval	822,390	121.505	86.270	131.530	1	2.000	1.000	1.000	85.270	130.530
Flagler	33,464	3.897	2.977	4.906	3	2.275	1.705	0.570	1.272	3.201
Indian River	65,228	11.230	4.653	16.080	5	8.710	4.017	4.693	0.636	12.063
Lake*	73,404	11.790	7.812	13.111	6	8.550	5.650	2.900	2.162	7.461
Marion*	89,379	10.532	7.082	10.144	3	6.700	4.403	2.297	2.679	5.741
Nassau	22,205	2.947	2.419	3.967	2	0.760	0.406	0.354	2.013	3.561
Okeechobee*	0	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000
Orange*	747,206	85.825	40.953	57.847	13	74.300	27.709	46.591	13.244	30.138
Osceola*	0	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000
Polk*	0	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000
Putnam	13,600	3.250	2.035	2.916	0	0.000	0.000	0.000	0.000	0.000
St. Johns	118,248	18.650	7.504	10.925	5	2.720	1.903	0.817	5.601	9.022
Seminole	565,793	76.449	26.283	39.776	9	69.443	19.770	49.673	6.513	20.006
Volusia	374,494	57.017	29.512	47.314	6	17.330	4.044	13.286	25.467	43.270
SJRWMD	3,498,298	502.459	274.547	425.677	62	218.038	81.156	136.882	191.356	341.605

*Indicates data are for only that part of the county within the St. Johns River Water Management District (SJRWMD). Selected data for entire counties are available in Appendix B.

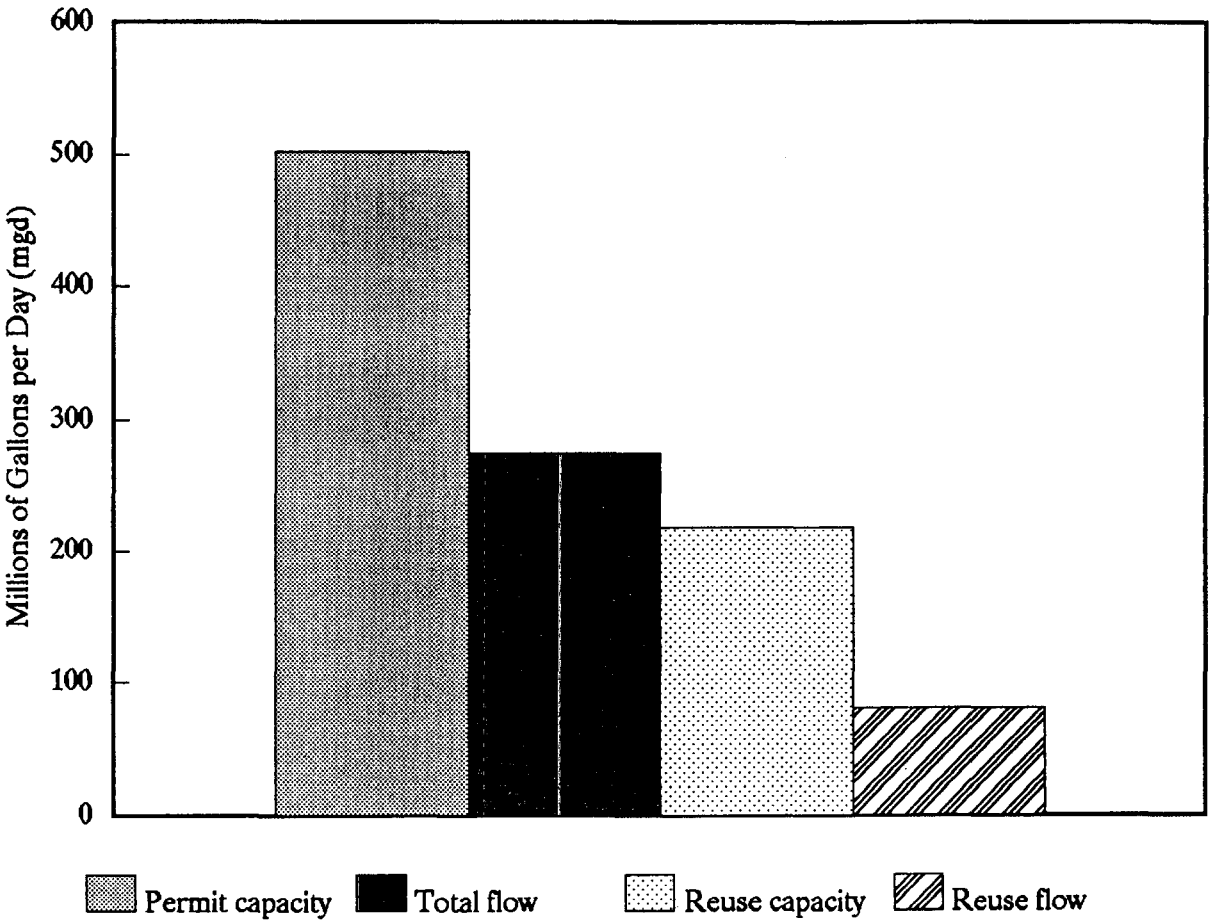
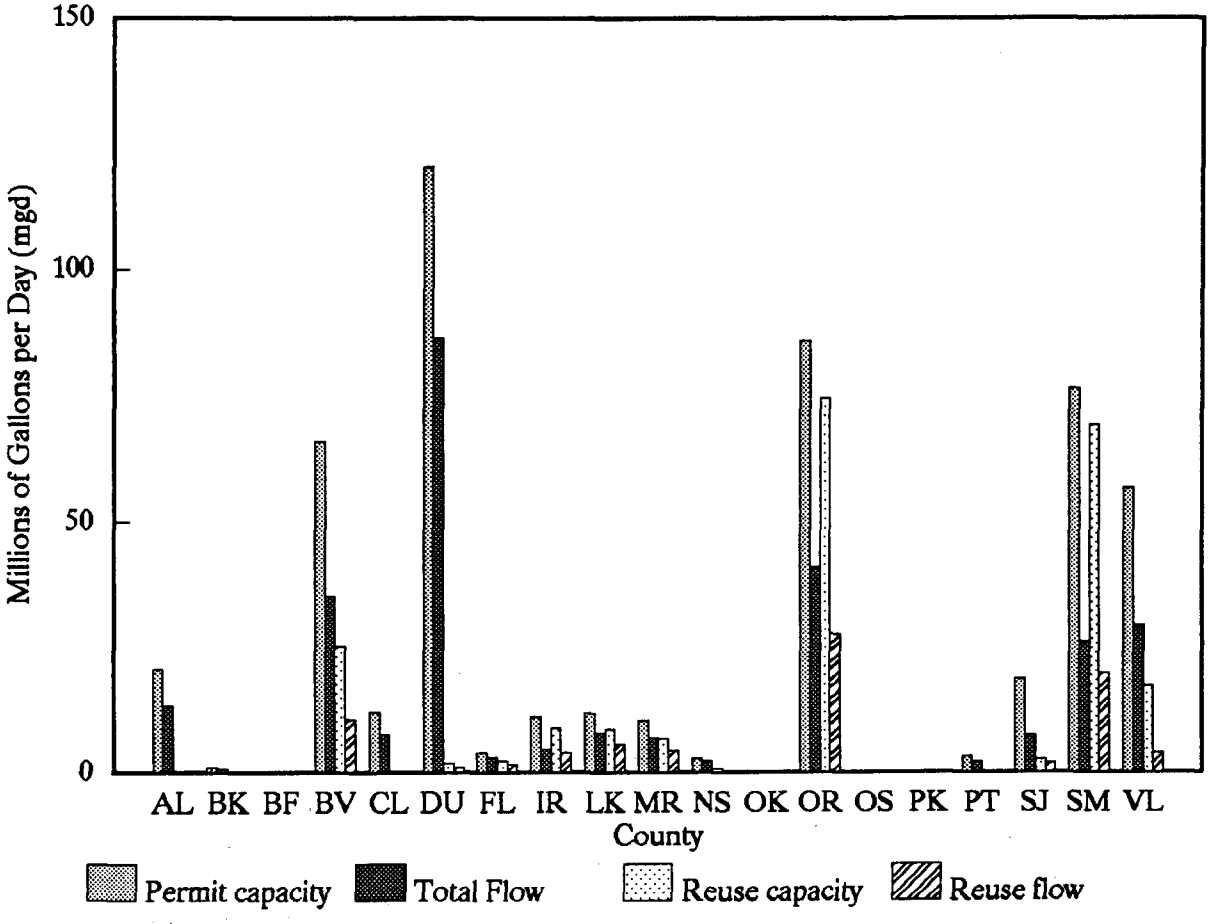


Figure 4. Wastewater treatment plant capacity and flow, St. Johns River Water Management District, 1989



Key to County Names

AL Alachua	DU Duval	NS Nassau	PT Putnam
BK Baker	FL Flagler	OK Okeechobee	SJ St. Johns
BF Bradford	IR Indian River	OR Orange	SM Seminole
BV Brevard	LK Lake	OS Osceola	VL Volusia
CL Clay	MR Marion	PK Polk	

Figure 5. Wastewater treatment plant capacity and flow, by county, 1989

disposal (Figure 6). Reuse, by FDER definitions, is the primary means of disposal for about 15 percent of the inventoried plants.

Wastewater disposal methods vary geographically across the SJRWMD. This is partly the result of FDER antidegradation policies. Many treatment plants in the southern portion of the SJRWMD are now prohibited from discharging effluent into surface waters unless it is treated to advanced standards. Wastewater reuse is most likely to be practiced in these areas. Surface water discharge, however, is the primary disposal means in Duval and other counties adjacent to the St. Johns River, north of Lake George. Secondary treated wastewater effluent can still be discharged to surface water bodies in this area. These regional differences are apparent from the county data compilations appearing in Appendix A.

WASTEWATER REUSE

Reclaimed water for reuse was supplied by about 28 percent of the inventoried WWTPs. About 222 mgd or 44 percent of the total permitted capacity was capable of being treated to levels suitable for reuse and transmitted to reuse sites (Table 2). About 81 mgd actually went to applications that met the FDER's definition of reuse. This amount represented 30 percent of mean flow and 32 percent of permitted reuse design capacity.

The most common form of wastewater reuse was irrigation (golf course, non-golf course, and agricultural), accounting for about 59 percent of total reuse (Figure 7 and Table 3). Agricultural irrigation accounted for the greatest part of that amount but aggregated non-golf course public area irrigation and golf course irrigation also claimed substantial amounts of reuse water. Ground water recharge was the second largest distinct category, accounting for 29 percent of total reuse. Concentrations of reuse types varied greatly from one part of the SJRWMD to another (Figure 8).

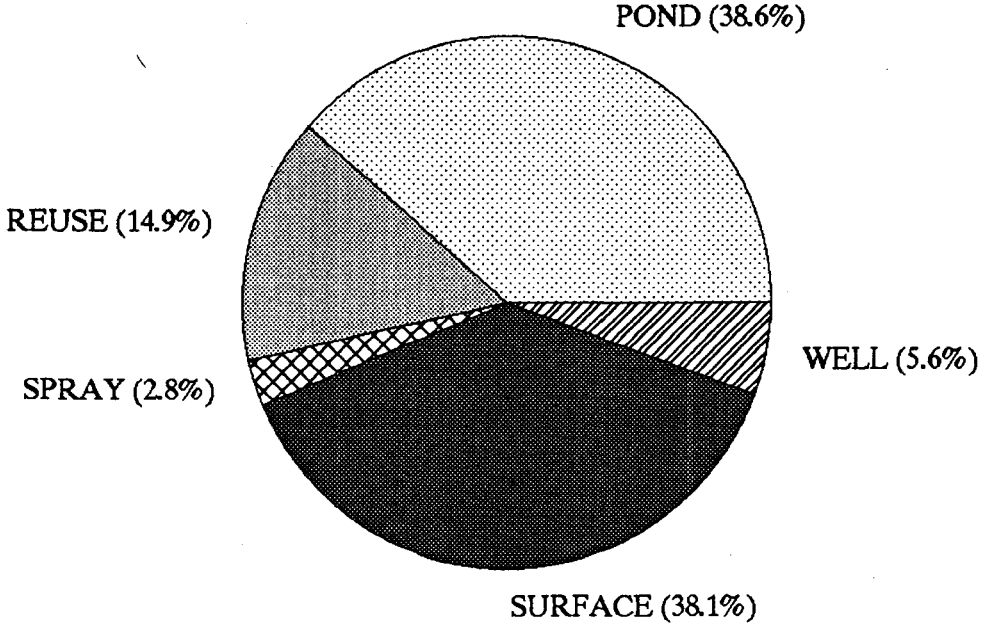


Figure 6. Percentage of wastewater plants by main type of disposal, St. Johns River Water Management District, 1989

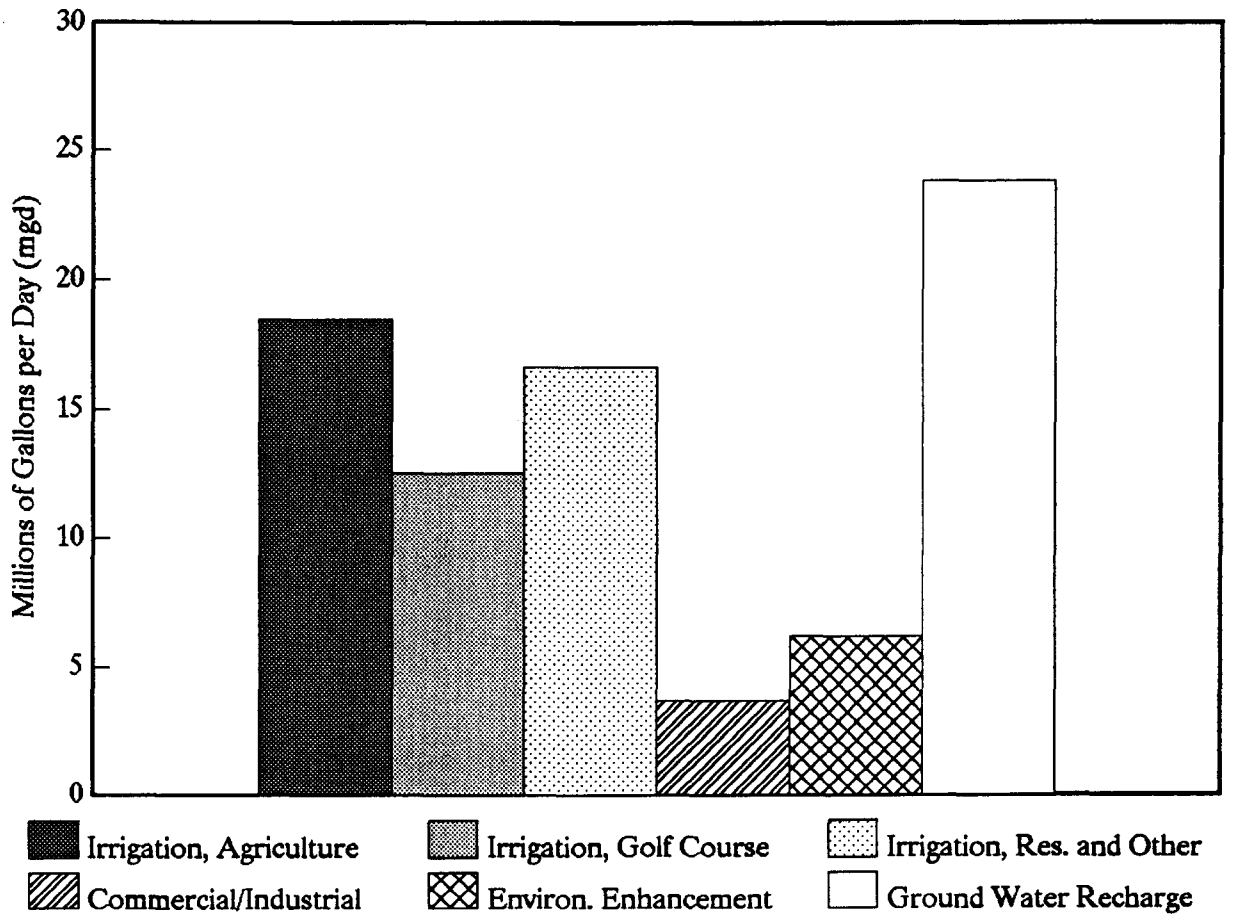
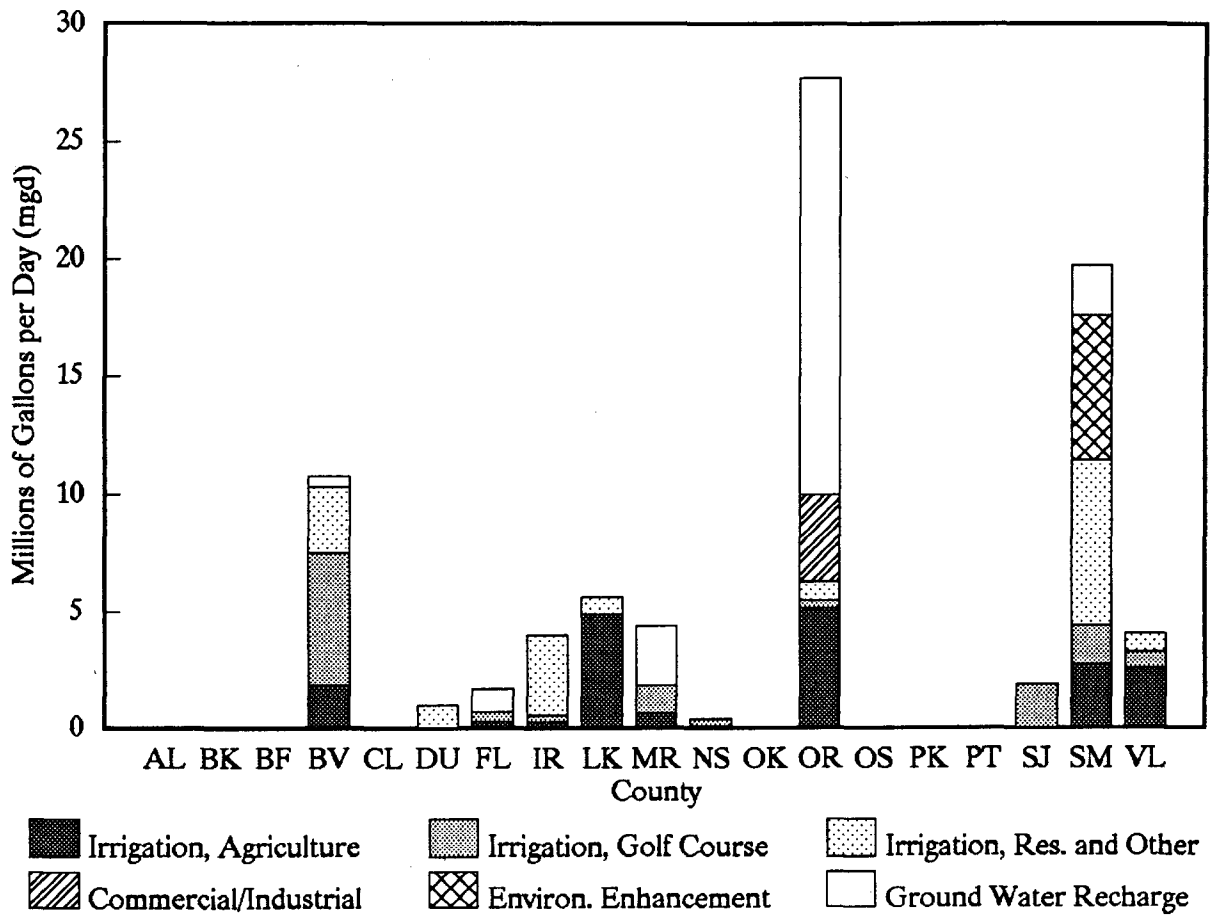


Figure 7. Wastewater reuse in the St. Johns River Water Management District, 1989. *The most common form of wastewater reuse was irrigation.*

Table 3. Wastewater reuse, 1989 (in million gallons per day)

FDER* Reuse Codes	AI	CI	EN	FP	GR	PA (Irrigation of Public Access Areas)		OT
County	Agricultural Irrigation	Commercial/ Industrial	Environmental Enhancement	Fire Protection	Ground Water Recharge	Non-Golf Course	Golf Course	Other
Alachua**	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Baker**	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Bradford**	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Brevard	1.825	0.000	0.000	0.000	0.450	2.810	5.703	0.010
Clay	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Duval	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000
Flagler	0.300	0.000	0.000	0.000	1.000	0.000	0.405	0.000
Indian River	0.300	0.000	0.000	0.000	0.000	3.455	0.262	0.000
Lake**	4.913	0.000	0.000	0.000	0.000	0.736	0.000	0.001
Marion**	0.640	0.000	0.000	0.000	2.538	0.000	1.200	0.025
Nassau	0.106	0.000	0.000	0.000	0.000	0.000	0.300	0.000
Okeechobee**	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Orange**	5.119	3.700	0.000	0.000	17.709	0.809	0.351	0.005
Osceola**	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Polk**	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Putnam	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
St. Johns	0.000	0.000	0.000	0.000	0.000	0.000	1.903	0.000
Seminole	2.700	0.000	6.177	0.000	2.133	7.064	1.691	0.005
Volusia	2.558	0.000	0.000	0.000	0.000	0.786	0.700	0.000
SJRWMD	18.461	3.700	6.177	0.000	23.830	16.010	12.515	0.046

*Florida Department of Environmental Regulation
**Indicates data are for only that part of the county in the St. Johns River Water Management District (SJRWMD).

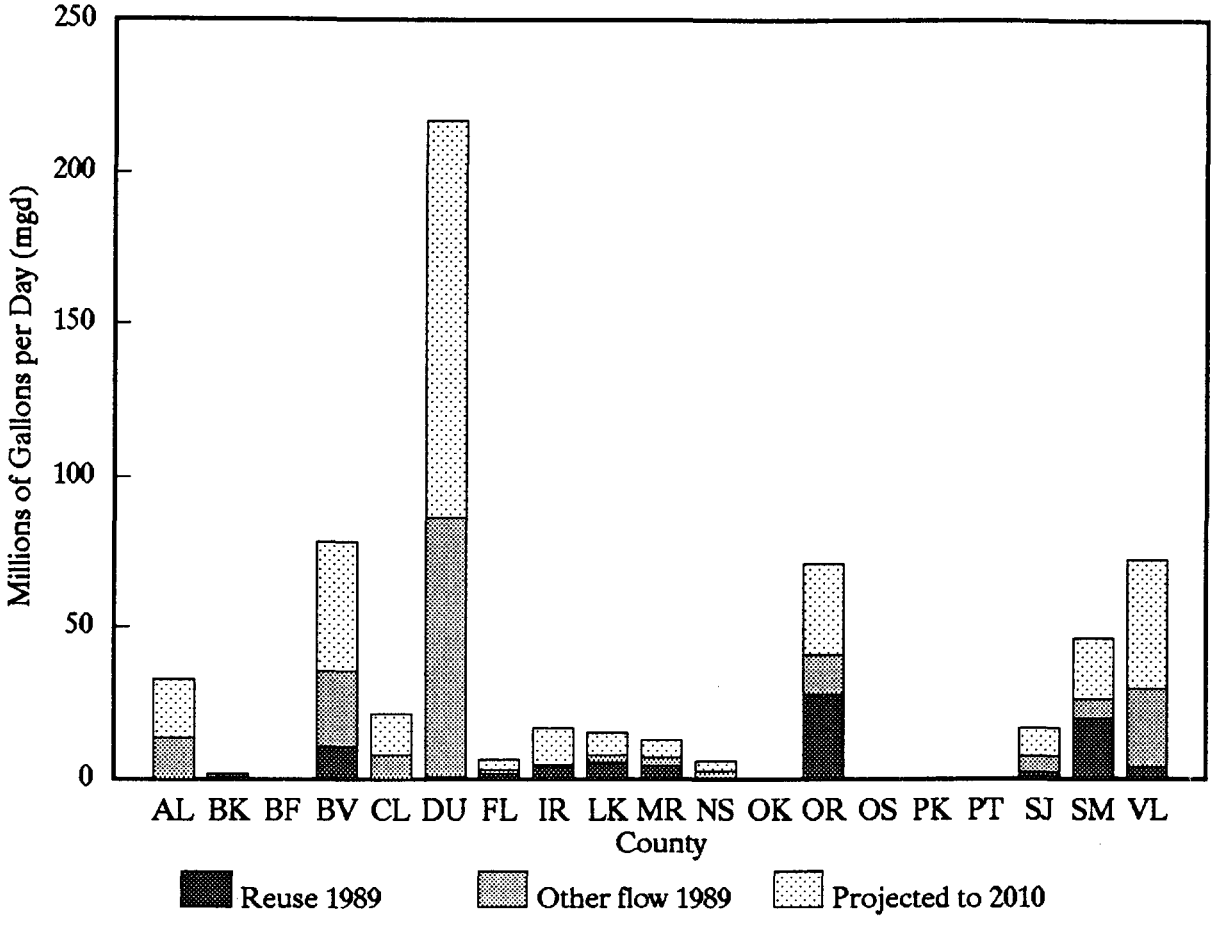


Key to County Names

AL Alachua	DU Duval	NS Nassau	PT Putnam
BK Baker	FL Flagler	OK Okeechobee	SJ St. Johns
BF Bradford	IR Indian River	OR Orange	SM Seminole
BV Brevard	LK Lake	OS Osceola	VL Volusia
CL Clay	MR Marion	PK Polk	

Figure 8 Wastewater reuse by county, 1989

If the entire current flow of treated wastewater (275 mgd) could be directed to reuse, the amount of water currently available for such applications would be over three times the amount cur-rently reused (81 mgd). The projected increase in total treated flow by the year 2010 (426 mgd) could provide five times the present level of reuse, if all plants were equipped to treat wastewater to the required standards. In some counties where actual reuse currently accounts for very small portions of the total volume of treated wastewater, the proportionate increase in reuse could be much greater (Figure 9 and Table 2).



Key to County Names

AL Alachua	DU Duval	NS Nassau	PT Putnam
BK Baker	FL Flagler	OK Okeechobee	SJ St. Johns
BF Bradford	IR Indian River	OR Orange	SM Seminole
BV Brevard	LK Lake	OS Osceola	VL Volusia
CL Clay	MR Marion	PK Polk	

Figure 9. Reuse flow (1989) and potential flow (2010) in the St. Johns River Water Management District

LITERATURE CITED

Dyer, Riddle, Mills & Precourt, Inc. 1988. *Wastewater reuse economic feasibility assessment model.* For St. Johns River Water Management District. Orlando, Fla.

FDER. 1990a. *Ground Water Management System Codes List.* Tallahassee, Fla.: Florida Department of Environmental Regulation.

_____. 1990b. *Reuse Inventory.* Tallahassee, Fla.: Florida Department of Environmental Regulation.

Haven, R. 1984. "Case history: The Orlando experience." In *Reuse and the protection of Florida's waters: The dilemma--The challenge.* Technical Proceedings of Special Seminar No. 1. Orlando, Fla: CH2MHILL, Inc.

Johnson, W. 1984. "St. Petersburg--Experience with a duel water system." In *Reuse and the protection of Florida's waters: The dilemma--The challenge.* Technical Proceedings of Special Seminar No. 1. Orlando, Fla: CH2MHILL, Inc.

Kasperson, R. E. and J. X. Kasperson, eds. 1977. *Water reuse and the cities.* Hanover, N. H.: Clark University Press.

Kimball-Lloyd, Inc. 1991. *Delineation of public water supply service areas and wastewater treatment plants: Water use projections.* Vero Beach, Fla.

Lohman, L. 1987. Awareness and trust: Key to public acceptance of water reuse. *Journal of Freshwater* 10:12-13.

Miller, K. J. 1984. *Water reuse symposium III proceedings.* San Diego, Calif: American Water Works Association.

Mills, R. A. and T. Asano. 1987. The economic benefits of using reclaimed water. *Journal of Freshwater* 10:14-15.

Oliveri, V. P. 1987. Water reuse and public health. *Journal of Freshwater* 10:10-11.

Pickard, D. 1984. "Waste water reuse options--A case study of Tampa." In *Reuse and the protection of Florida's waters: The dilemma--The challenge.* Technical Proceedings of Special Seminar No. 1. Orlando, Fla: CH2MHILL, Inc.

Reed, S. C. 1987. Water reuse past and present: It's been common sense for centuries. *Journal of Freshwater* 10:8-9.

Schroeder, E. H. 1987. Irrigating with waste water: A benefit to cities and agriculture. *Journal of Freshwater* 10:18-19.

SFWMD. 1985. *Water reclamation program (proposed) task list.* West Palm Beach, Fla.: South Florida Water Management District.

SJRWMD. 1991. *Applicant's handbook for consumptive use permits.* Palatka, Fla.: St. Johns River Water Management District.

SUPPLEMENTARY BIBLIOGRAPHY

Adamek, C. 1985. Watering lawns with effluent. *Bio Cycle* (October 1985).

Adams, B. P., D. J. Sample, and C. L. Woehlcke. 1984. *An evaluation of wastewater reuse and policy options for the South Florida Water Management District.* Technical Publication 84-6. West Palm Beach, Fla.: South Florida Water Management District

Allhands, M. N. and A. R. Overman. 1991. *Growth and nutrient removal by corn.* Presented at Florida Society of Agricultural Engineers, Water Reuse Seminar, Jacksonville, Fla., April 11, 1991.

Anon. 1981. *Abstracts of papers and poster presentations, water reuse symposium II.* Washington, D.C.

Anon. 1981. *Water reuse symposium II proceedings.* Washington, D.C.

Arber, R. 1986. "State of the art potable water reuse" In *Implementation of water reuse seminar proceedings.* Denver, Colo.: American Water Works Association.

AWWA. 1976. *Duel distribution seminar proceedings.* New Orleans, La.: American Water Works Association.

_____. 1983. *Duel water systems.* Manual 24. Denver, Colo.: American Water Works Association.

_____. 1984. *Water reuse symposium III proceedings.* San Diego, Calif.: American Water Works Association.

_____. 1986. *Implementation of water reuse seminar proceedings.* Denver, Colo.: American Water Works Association.

_____. 1987. *Bibliography on reuse (Waste water) (1983-1987).* Information Services Department. Denver, Colo.: American Water Works Association.

_____. 1987. *Water reuse symposium IV proceedings.* Denver, Colo.: American Water Works Association.

Argo, D. G. 1987. Water factory 21: Putting reclaimed water to the test. *Journal of Freshwater* 10:28-29.

Bailey, H. E. C. Forrest, and L. Snow, eds. 1991. *Water supply & water reuse: 1991 & beyond.* American Water Resources Association, Proceedings of meeting June 2-6, 1991. San Diego, Calif.

Baldwin, L. B. and D. A. Comer. 1986. *Utilizing treated sewage for irrigation of urban landscapes.* Cooperative Extension Service, Institute of Food and Agricultural Sciences, Circular 714. Gainesville, Fla.: University of Florida.

Black, Crow, and Eidsness, Inc. 1973. *Wastewater reclamation at St. Croix, U.S. Virgin Islands, second interim report.* For Environmental Protection Agency.

Blanton, M. 1988. *Layperson's guide to water reclamation.* Sacramento, Calif.: Water Education Foundation.

Brevard County. 1983. *South beaches wastewater reuse.* Merritt Island, Fla.: Brevard County Water Resources Department.

_____. 1985. *Brevard County water conservation and reuse plan.* Merritt Island, Fla.: Brevard County Water Resources Department.

Camp, Dresser, & McKee, Inc., Consultants. 1989. *Effluent reuse feasibility study and master plan for urban reuse.* For Manatee County Public Works Department and Southwest Florida Water Management District. Clearwater, Fla.

Campbell, D. 1985. *Environmental evaluation of agriculture reuse: A short literature review.* Division of Environmental Sciences, Department of Water Resources, Palatka, Fla.: St. Johns River Water Management District.

Cecil, L. K. 1977. In *Water renovation and reuse.* edited by H. H. Shuval. New York, N.Y.: Academic Press

CH2MHILL, Inc. 1984. *Reuse and the protection of Florida's waters: The dilemma--The challenge.* Technical Proceedings of Special Seminar No. 1. Orlando, Fla.

_____. 1985. *City of West Melbourne water reuse plan (draft).* For the City of West Melbourne. Orlando, Fla.

Dean, R. B. and E. Lund. 1981. *Water reuse problems and solutions.* London, U.K.: Academic Press.

Dryden, F. D. 1987. America's water needs: How to stretch limited supply. *Journal of Freshwater* 10:4-5.

Duckstein, L. and C. C. Kisiel. 1977. In *Water renovation and reuse,* edited by H. H. Shuval. New York, N.Y.: Academic Press.

Dworkin, D. 1977. Evaluating the economic feasibility of water reuse for urban water supply: A simulation model. In *Water reuse and the cities,* edited by R. Kasperson and J. Kasperson. Worcester, Mass.: Clark University Press.

Foster, K. E. and K. J. DeCook. 1986. Impacts of residential water reuse in the Tucson area. *Water Resources Bulletin* 22(5):753-757.

Foster, K. E., M. M. Karpiscak, and R. G. Brittain. 1988. Casa Del Aqua: A residential water conservation and reuse project in Tucson, Arizona. *Water Resources Bulletin* 24(6):-1201-1205.

Fuhrman, R. 1975. *AWWA seminar on reuse proceedings.* Minneapolis, Minn.: American Water Works Association

Grobmyer, W. P., W. J. Wilson, J. F. Hancock, and M. L. Kurtz. 1983. Reusing cooling water in an electric power plant. *Journal of the American Water Works Association* 75(3):119-123.

Huff, M. D. and M. McKenzie-Arenberg. 1980. *Lower St. Johns and St. Marys ground water basin resource availability inventory.* Technical Publication SJ 90-8. Palatka, Fla.: St. Johns River Water Management District,

Kaplovsky, J. A. 1984. *Overview of renovated wastewater reuse technology and factors affecting the feasibility of reuse within the South Florida Water Management District.* For South Florida Water Management District. West Palm Beach, Fla.

Knepper & Willard, Inc. Engineers. 1986. *Recovered water as a resource in south central Pasco County.* For West Coast Regional Water Supply Authority. Clearwater, Fla.

Knight, R. 1984. "Wetlands--A Natural Land Treatment Alternative". In *Reuse and the protection of Florida's waters: The dilemma--The challenge.* Technical Proceedings of Special Seminar No. 1. Orlando, Fla.: CH2MHILL, Inc.

Lannon, J. 1984. "Are AWT plants a part of Florida's future?" In *Reuse and the protection of Florida's waters: The dilemma--The challenge.* Technical Proceedings of Special Seminar No. 1. Orlando, Fla.: CH2MHILL, Inc.

Manges, H. L. and L. Moa. 1978. *Harvesting runoff from precipitation on irrigated lands.* St. Joseph, Mich.: American Society of Agricultural Engineers.

Marcous, A. B. 1990. Project APRICOT blooms in Altamonte Springs. *Quality Cities* 63(11):46-50.

McKenzie-Arenberg, M. 1989. *Volusia ground water basin resource availability inventory.* Technical Publication SJ 89-4. Palatka, Fla.: St. Johns River Water Management District.

McKenzie-Arenberg, M. and G. Szell. 1980. *Middle St. Johns ground water basin resource availability inventory.* Technical Publication SJ 90-11. Palatka, Fla.: St. Johns River Water Management District.

McKenzie-Arenberg, M. and D. J. Toth. 1990. *Upper St. Johns ground water basin resource availability inventory.* Technical Publication SJ 90-10. Palatka, Fla.: St. Johns River Water Management District.

Morrisette, M. 1987. Doing laundry with less water. *Journal of Freshwater* 10:23.

_____. 1987. Water reuse in St. Petersburg: A 10-year success story. *Journal of Freshwater* 10:25-26.

Murphy, R. C. 1987. Project APRICOT: A Florida community plans ahead. *Journal of Freshwater* 10:27-28.

Overman, A. 1984. "Land treatment of wastewater--An integral part of groundwater protection. In *Reuse and the protection of Florida's waters: The dilemma--The challenge.* Technical Proceedings of Special Seminar No. 1. Orlando, Fla.: CH2MHILL, Inc.

Overman, A. R. and M. N. Allhands. 1991. *Growth and nutrient removal by bermuda grass.* Presented at Florida Society of Agricultural Engineers, Water Reuse Seminar, Jacksonville, Fla., April 11, 1991.

Panel on Quality Criteria for Water Reuse. 1982. *Quality criteria for water reuse.* Board of Toxicology and Environmental Health Hazards, Commission on Life Sciences, National Research Council. Washington, D.C.: National Academy Press.

Parnell, J. R. 1988. *Potable water conservation, excerpt from final report of project greenleaf.* Public Utilities Department. St. Petersburg, Fla.: City of St. Petersburg.

Pyne, D. 1984. "Aquifer storage and recovery--A practical system for recovery." In *Reuse and the protection of Florida's waters: The dilemma--The challenge.* Technical Proceedings of Special Seminar No. 1. Orlando, Fla.: CH2MHILL, Inc.

Schroeder, E. H. 1987. Reclaimed water: A future supply for Denver. *Journal of Freshwater* 10:30-31.

Schroeder, L. 1987. Baltimore and Bethlehem steel: A 45-year partnership in resource reuse. *Journal of Freshwater* 10:20-22.

_____. 1987. Rethinking water reuse. *Journal of Freshwater* 10:6-7.

SFWMD. 1985. *Water reclamation options for the SFWMD.* Presentation to the South Florida Water Management District Governing Board, May 9, 1985.

Shuval, H. H. 1977. *Water renovation and reuse.* New York, N.Y.: Academic Press.

SJRWMD. 1985. *Reuse and conservation rule technical advisory committee December 10, 1985 reference materials.* Palatka, Fla.: St. Johns River Water Management District.

_____. 1986. *Reuse and conservation rule technical advisory committee January 7, 1986 reference materials.* Palatka, Fla.: St. Johns River Water Management District.

Starr, A. L. and R. R. Carriker. 1979. *Rural Community wastewater systems: A working bibliography.* Staff Paper 125. Food and Resource Economics Department, Institute of Food and Agricultural Sciences. Gainesville, Fla.: University of Florida.

Steward, J. 1985. *An environmental evaluation of direct water reuse in the St. Johns River Water Management District.* Technical Publication SJ 85-2. Palatka, Fla.: St. Johns River Water Management District.

Texas Water Resources Institute. 1975. Municipal effluent boom to irrigation. *Texas Water Resources* 1(10):1-4.

Thabaraj, G. J. 1985. *Wastewater reuse—Regulatory issues and constraints,* Interoffice Memorandum. Tallahassee, Fla.: Florida Department of Environmental Regulation.

Thabaraj, G. J. and H. L. Rhodes. 1985. *Wastewater reuse in Florida - A resource management perspective.* Tallahassee, Fla.: Florida Department of Environmental Regulation.

Thomas, R. E. 1987. Assessing the future of water reuse. *Journal of Freshwater* 10:30.

Twachtmann, D. 1990. Florida's water reuse program...Use it again, Florida! *Quality Cities* 63(11):3-5.

Westerhoff, G. P. and J. Berkun. 1987. *Water reuse symposium IV proceedings.* Denver, Colo.: American Water Works Association.

United States Environmental Protection Agency. 1985. *Environmental impact statement, southwest Orange County, Florida wastewater management.* Atlanta, Ga.

APPENDIX A: WASTEWATER TREATMENT PLANTS IN THE SJRWMD

This appendix includes most of the data contained in the wastewater reuse inventory data base. These data are preliminary and may contain errors and omissions. They should not be used for purposes that require reliability until verified. All wastewater capacity, flow, and reuse quantities are given in millions of gallons per day (mgd). The initial data base was compiled using 1989 data. Some values obtained from local sources may be for 1990.

Chapter 5 provides a general discussion of how these data were obtained. Chapter 6 provides definitions and sources for each type of data. Chapter 7 provides summaries and interpretations of selected aspects of these data.

This appendix provides data for 15 individual counties. Four of the 19 counties included in the SJRWMD have no wastewater treatment plants above the 0.1 mgd threshold in that part of the county within the SJRWMD. Therefore, no data are presented for those counties. Where counties cross jurisdictional boundaries between water management districts, only WWTPs within or servicing the SJRWMD are listed.

Plants with flow and/or population calculated are indicated by an asterisk (*) on the tables provided in Appendix A (see Chapter 5).

Table A1.1 Alachua County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Gainesville Regional Utilities (GRU)	GRU STP #1 & #2	DC01-144287	4B	293803	821933	55,000	7.500	4.626	1.422	6.578
GRU	GRU STP #5 Kanapaha	DO01-146101	1A	293706	822442	66,600	10.000	7.270	1.422	10.338
University of Forida (UF)	UF Lake Alice DIW	DO01-087230	2B	293802	822100	40,000	3.100	1.554	1.422	2.210
Summary by Size of Plant						Population Served	Permit Capacity	Mean Flow		2010 Projected Mean Flow
0.100 - 0.499 mgd						0	0.000	0.00		0.000
0.500 - 0.999 mgd						0	0.000	0.00		0.000
1.000 mgd and greater						161,600	20.600	13.45		19.126
Total						161,600	20.600	13.45		19.126

Table A1.2 Alachua County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additonal Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
GRU	GRU STP #1 & #2	0			0.000	4.626	6.578		Surf		Creek	
GRU	GRU STP #5 Kanapaha	0			0.000	7.270	10.338	0.338	Well			
UF	UF Lake Alice DIW	0			0.000	1.554	2.210		Surf		Lake Alice	

Summary by Size of Plant	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capactiy	1989	2010	Additional Projected Treatment Needed
0.100 - 0.499 mgd	0	0.000	0.000	0.000	0.000	0.000	0.000
0.500 - 0.999 mgd	0	0.000	0.000	0.000	0.000	0.000	0.000
1.000 mgd and greater	0	0.000	0.000	0.000	13.450	19.126	0.338
Total	0	0.000	0.000	0.000	13.450	19.126	0.338

Table A1.3 Alachua County

Plant Owner or Operator	Plant Name	Disin-fection Level	Treat-ment Level	Projected Treatment		DER reuse codes*								Plan Incre-ment	Incre-ment Year	Prob-lems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
GRU	GRU STP #1 & #2		2													
GRU	GRU STP #5 Kanapaha		3													
UF	UF Lake Alice DWI		2													
Summary by Size of Plant						AI	CI	EN	FP	GR	PA_1	PA_2	OT			
0.100 - 0.499 mgd						0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
0.500 - 0.999 mgd						0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
1.000 mgd and greater						0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Total						0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			

*AI Agricultural irrigation
CI Commercial/industrial
EN Environmental enhancement
FP Fire protection
GR Ground water recharge
PA_1 Public area irrigation, non-golf course
PA_2 Public area irrigaiton, golf course
OT Other

Table A2.1 Baker County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Macclenny, City of	City of Macclenny	DC02-124182	2C	301610	820730	2,500	0.636	0.561	1.305	0.732
Northeast Florida State Hospital (NEFSH)	NEFSH	DO02-123210	1C	301533	820817	2,300	0.300	0.171	1.611	0.275
Summary by Size of Plant						Population Served	Permit Capacity	Mean Flow		2010 Projected Mean Flow
0.100 - 0.499 mgd						2,300	0.300	0.171		0.275
0.500 - 0.999 mgd						2,500	0.636	0.561		0.732
1.000 mgd and greater						*0*	*0.000*	*0.000*		*0.000*
Total						4800	0.936	0.732		1.008

Table A2.2 Baker County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Macclenny, City of	City of Macclenny	0			0.000	0.561	0.732	0.096	Spray	Flow	On site	
NEFSH	NEFSH	0			0.000	0.171	0.275		Pond	Flow	Canal to Pottsburg Creek	

Summary by Size of Plant	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	1989	2010	Additional Projected Treatment Needed
0.100 - 0.499 mgd	0	0.000	0.000	0.000	0.171	0.275	0.000
0.500 - 0.999 mgd	0	0.000	0.000	0.000	0.561	0.732	0.096
1.000 mgd and greater	0	0.000	0.000	0.000	0.000	0.000	0.000
Total	0	0.000	0.000	0.000	0.732	1.008	0.096

Table A2.3 Baker County

Plant Owner or Operator	Plant Name	Disin-fection Lev	Treat-ment Level	Projected Treatment		DER reuse codes*								Plan Incre-ment	Incre-ment Year	Prob-lems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Macclenny, City of	City of Mac-clenny		2													
NEFSH	NEFSH		2													
Summary by Size of Plant						AI	CI	EN	FP	GR	PA_1	PA_2	OT			
0.100 - 0.499 mgd						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
0.500 - 0.999 mgd						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
1.000 mgd and greater						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Total						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

*AI Agricultural irrigation
CI Commercial/industrial
EN Environmental enhancement
FP Fire protection
GR Ground water recharge
PA_1 Public area irrigation, non-golf course
PA_2 Public area irrigaiton, golf course
OT Other

Table A3.1 Brevard County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Aquarina Dev Inc	Aquarina Beach Comm STP	DO05-113294	2C	275530	802930	2,250 *	0.300	0.180*	1.520	0.274
Brevard County Utility	BCUD/South Central Reg@	DO05-129392	2B	281340	804525	5,000	1.000	0.771	1.520	1.172
Brevard County Utility	BCUD/Port St John STP	DO05-179386	2C	282848	804655	2,513 *	0.250	0.201	1.520	0.306
Brevard County Utility	BCUD/South Patrick	DO05-143076	3B	281215	803612	13,500	2.000	1.798	1.520	2.733
Brevard County Utility	BCUD/Indian Harbor Beach	DO05-154057	*	280825	803552	5,500	2.500	1.659	1.520	2.522
Brevard County Utility	BCUD/North Brevard Reg	DO05-136018	2B	284105	805225	3,450 *	1.000	0.276	1.520	0.420
Brevard County Utility	BCUD/Merritt Is	DC05-162488	3B	282533	804222	52,000	6.000	2.378	1.520	3.615
Brevard County Utility	BCUD/South Beaches	DO05-129390	3B	280229	803240	17,500	6.000	2.504	1.520	3.806
Brevard County Utility	BCUD/South Central REG	DC05-144643	2B	271200	804730	22,500 *	3.000	1.800*	1.520	2.736
Cape Canaveral, City of	Cape Canaveral STP	DO05-179388	1B	282322	803704	5,300	1.800	1.030	1.520	1.566
Cocoa, City of	City of Cocoa STP	DO05-171439	2B	282145	804454	4,764	4.500	2.306	1.520	3.505
Cocoa Beach, City of	City of Cocoa Beach STP	DO05-118221	2A	281903	803802	12,000	6.000	3.210	1.520	4.879
Conn Gen Dev Co	Snug Harbor Village STP	DO05-102325	2C	275332	803041	500	0.100	0.040*	1.520	0.061
Florida Cities Water Co.	Barefoot Bay STP	DC05-163763	3C	275330	803200	2,200	0.900	0.372	1.520	0.565
Gar-Con Dev Inc	South Shores STP	DO05-130610	3C	275759	803037	1,000	0.100	0.080*	1.520	0.122
General Dev Util	Port Malabar STP & DIW	UO05-147576	2B	280135	803557	12,309	4.000	1.410	1.520	2.143
J F Kennedy Space Ctr	Kennedy Space Ctr #4 VAB	DO05-115961	2C	283520	803804	4,514	0.200	0.181*	1.520	0.274
J F Kennedy Space Ctr	Kennedy Space Ctr #10 W	DO05-130755	2C	283119	804103	750 *	0.100	0.060*	1.520	0.091
J F Kennedy Space Ctr	Kennedy Indust STP #1	DO05-143505	3C	283100	803915	4,500	0.375	0.262	1.520	0.398
Lakes of Melbourne	Lakes of Melbourne MHP	DO05-182261	3C	280320	804102	1,235	0.130	0.099*	1.520	0.150

@ BCUD/South Central Regional was formerly known as BCUD/Suntree. It now includes wastewater formerly treated at BCUD Silver Pines and BCUD West Cocoa.

Table A3.1 Continued

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Melbourne, City of	Melbourne/Grant St	DC05-123994	2A	280424	803736	47,950	5.800	3.323	1.520	5.051
Melbourne, City of	Melbourne David B Lee	DO05-158382	2A	280715	803805	26,350	7.500	3.203	1.520	4.869
Palm Bay, City of	Palm Bay STP	DC05-159047	3B	280100	803639	3,125 *	0.500	0.250	1.520	0.380
Rockledge, City of	City of Rockledge WWTP	DC05-169130	2B	281945	804303	11,500	2.300	1.632	1.520	2.481
T K C B Inc	Sun Lake Estates STP	DC05-117304	3C	282533	804608	500	0.206	0.026	1.520	0.040
Titusville, City of	Titusville North WWTP	DO05-165149	1B	283724	804856	16,700	2.800	2.357	1.520	3.583
Titusville, City of	Titusville South WWTP	DO05-147197	2B	283357	804901	24,096	2.000	1.486	1.520	2.259
US Air Force	Cape Canaveral Main STP	DO05-187095	4C	282942	803503	3,500	0.500	0.168	1.520	0.255
US Air Force	Patrick AFB Main STP North	DO05-184326	2B	281246	803635	3,500	1.000	0.838	1.520	1.274
US Air Force	Trident STP/Effluent	DO05-187278	1C	282540	803508	30	0.100	0.002*	1.520	0.004
US Air Force	Patrick AFB Capehart South	DO05-184970	2B	281504	803645	5,000	1.000	0.400*	1.520	0.608
W Melbourne, City of	City of W. Melbourne	DO05-185503	2B	280432	803838	13,000	1.900	0.947	1.520	1.439
Summary by Size of Plant						Population Served	Permit Capacity	Mean Flow		2010 Projected Mean Flow
0.100 - 0.499 mgd						17,792	1.861	1.131		1.719
0.500 - 0.999 mgd						8,825	1.900	0.790		1.201
1.000 mgd and greater						301,919	62.100	33.328		50.659
Total						328,536	65.861	35.249		53.578

Table A3.2 Brevard County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Aquarina Devs Inc	Aquarina Beach Comm STP	0			0.000	0.180	0.274		?			
Brevard County Utility	BCUD/South Central Reg @	0			0.000	0.771	1.172	0.172	Pond			
Brevard County Utility	BCUD/Port St John STP	1	0.250	0.201	0.049	0.000	0.105	0.056	Pond	Spray	Well at South Beaches	
Brevard County Utility	BCUD/South Patrick	0			0.000	1.798	2.733	0.733	Well		South Beaches STP	
Brevard County Utility	BCUD/Indian Harbor Beach	0			0.000	1.659	2.522	0.022	Well			
Brevard County Utility	BCUD/N Brevard Reg	1	1.000	0.276	0.724	0.000	0.144		Pond	Irrig.	Irrig. Plant Grounds	.025 Irri Plant Gr
Brevard County Utility	BCUD/Merritt Is	0			0.000	2.378	3.615		Well	Irrig.	Irrig. on site	
Brevard County Utility	BCUD/South Beaches	1	6.000	1.208	4.792	1.296	2.598		Well	Irrig.	Golf Course	Lawns
Brevard County Utility	BCUD/South Central Reg	1	3.000	1.800	1.200	0.000	0.936		Irrig.		Sod Farm	
Cape Canaveral, City of	Cape Canaveral STP	0			0.000	1.030	1.566		Surf		Banana River	
Cocoa, City of	City of Cocoa STP	0			0.000	2.306	3.505		Surf		Banana River	
Cocoa Beach, City of	City of Cocoa Beach STP	1	6.000	3.210	2.790	0.000	1.669		Surf	Irrig.	Banana River	Golf Course
Conn Gen Dev Co	Snug Harbor Village STP	0			0.000	0.040	0.061		Pond			
Florida Cities Water Co	Barefoot Bay STP	0			0.000	0.372	0.565		Pond	Spray		
Gar-Con Dev Inc	South Shores STP	0			0.000	0.080	0.122	0.022	Drain			
General Dev Util	Port Malabar STP & DIW	0			0.000	1.410	2.143		Well			
J F Kennedy Space Ctr	Kennedy Space Ctr #4 VAB	0			0.000	0.181	0.274	0.074	Pond			
J F Kennedy Space Ctr	Kennedy Space Ctr #10 W	0			0.000	0.060	0.091		Pond			
J F Kennedy Space Ctr	Kennedy Indust STP #1	0			0.000	0.262	0.398	0.023	Flow	Perc		
Lakes of Melbourne	Lakes of Melbourne MHP	0			0.000	0.099	0.150	0.020	Pond			
Melbourne, City of	Melbourne/Grant St	1			0.000	3.323	5.051		Well	Irrig.		Golf Course

@ BCUD/South Central Regional was formerly known as BCUD/Suntree. It now includes wastewater formerly treated at BCUD Silver Pines and BCUD West Cocoa.

Table A3.2 Continued

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Melbourne, City of	Melbourne David B Lee	1	7.500	3.203	4.297	0.000	1.666		Well	Surf		
Palm Bay, City of	Palm Bay STP	1	0.500	0.250	0.250	0.000	0.130		Irrig.		Golf Course	
Rockledge, City of	City of Rockledge WWTP	0			0.000	1.632	2.481	0.181	Surf		Indian River	
T K C B Inc	Sun Lake Estates STP	0			0.000	0.026	0.040		Pond			
Titusville, City of	Titusville N WWTP	0			0.000	2.357	3.583	0.783	Surf		Indian River	
Titusville, City of	Titusville South WWTP	0			0.000	1.486	2.259	0.259	Surf		Indian River	
US Air Force	Cape Canaveral Main STP	0			0.000	0.168	0.255		Well		Well at STP	
US Air Force	Patrict AFB Main STP N	0			0.000	0.838	1.274	0.274	Surf		Banana River	
US Air Force	Trident STP/Effluent	0			0.000	0.002	0.004		Pond			
US Air Force	Patrick AFB Capehart S	1	1.000	0.400	0.600	0.000	0.208		Irrig.	Surf	Golf Course	Banana River
W Melbourne, City of	City of W Melbourne	0			0.000	0.947	1.439		Well			

Summary by Size of Plant	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	1989	2010	Additional Projected Treatment Needed
0.100 - 0.499 mgd	1	0.250	0.201	0.049	0.930	1.518	0.195
0.500 - 0.999 mgd	1	0.500	0.250	0.250	0.540	0.951	0.000
1.000 mgd and greater	7	24.500	10.097	14.403	23.231	40.562	2.422
Total	9	25.250	10.548	14.702	24.701	43.030	2.617

Table A3.3 Brevard County

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Aquarina Dev Inc	Aquarina Beach Comm STP	High														
Brevard County Utility	BCUD/Port St. John STP	Basic	2							0.200			0.001			No
Brevard County Utility	BCUD/South Central Reg @		2													
Brevard County Utility	BCUD/North Brevard Reg	Basic	2			0.025				0.250			0.001			No
Brevard County Utility	BCUD/Indian Harbor Beach		2													
Brevard County Utility	BCUD/South Beaches	High	2									1.200	0.008			FD
Brevard County Utility	BCUD/Merritt Is		2													
Brevard County Utility	BCUD/South Central REG	High	2			1.800										No
Cape Canaveral, City of	Cape Canaveral STP		2													
Cocoa Beach, City of	City of Cocoa Beach STP	High	3								2.810	0.400				No
Cocoa, City of	City of Cocoa STP		2													
Conn Gen Dev Co	Snug Harbor Village STP		2													
Florida Cities Water Co	Barefoot Bay STP		2													
Gar-Con Dev Inc	South Shores STP		2													
General Dev Util	Port Malabar STP & DIW		2													
J F Kennedy Space Ctr	Kennedy Space Ctr #10 W		2													
J F Kennedy Space Crt	Kennedy Indust STP #1		2													
J F Kennedy Space Ctr	Kennedy Space Ctr #4 VAB		2													
Lakes of Melbourne	Lakes of Melbourne MHP		2													
Melbourne, City of	Melbourne/Grant St		2									0.250				
Melbourne, City of	Melbourne David B Lee	High	2									3.203				No
Palm Bay, City of	Palm Bay STP	High	2									0.250				No

@ BCUD/South Central Regional was formerly known as BCUD/Suntree. It now includes wastewater formerly treated at BCUD Silver Pines and BCUD West Cocoa.
FD = Fluctuating demand

Table A3.3 Continued

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Rockledge, City of	City of Rockledge WWTP		2													
T K C B Inc	Sun Lake Estates STP		2													
Titusville, City of	Titusville North WWTP		2													
US Air Force	Cape Canaveral Main STP		2													
US Air Force	Trident STP/Effluent		2													
US Air Force	Patrick AFB Capehart South		2									0.400				
US Air Force	Patrick AFB Main STP N		2													
W Melbourne, City of	City of W Melbourne		2													
Summary by Size of Plant						AI	CI	EN	FP	GR	PA_1	PA_2	OT			
0.100 - 0.499 mgd						0.000	0.000	0.000	0.000	0.200	0.000	0.000	0.001			
0.500 - 0.999 mgd						0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000			
1.000 mgd and greater						1.825	0.000	0.000	0.000	0.250	2.810	5.453	0.009			
Total						1.825	0.000	0.000	0.000	0.450	2.810	5.703	0.010			

*AI Agricultural irrigation
CI Commercial/industrial
EN Environmental enhancement
FP Fire protection
GR Ground water recharge
PA_1 Public area irrigation, non-golf course
PA_2 Public area irrigation, golf course
OT Other

Table A4.1 Clay County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Clay Co. Utilities	Clay Utilities Ridaught Landing	DT10-134866	2B	300545	814729	12,500	1.000	0.419	1.766	0.740
Col John C. Bridges	Camp Blanding	DO10-125688	3C	295640	825720	5,000	0.900	0.664	1.766	1.173
Green Cove Spgs, City	Green Cove Spgs STP	DO10-127714	2C	300025	814130	10,038*	1.200	0.803	1.766	1.418
Kingsley Serv Co	Fleming Is Sys #2	DC10-142361	3B	300506	814323	11,250*	1.500	0.900*	1.766	1.589
Kingsley Serv Co	Kingsley Service Co	DC10-124884	3B	301040	814146	19,000	4.000	3.386	1.766	5.980
Kingsley Serv Co	Fleming Is Sys, Fleming Oak	DO10-139744	2C	300430	814215	2,300	0.720	0.185	1.766	0.327
Orange Pk, Town Of	Orange Pk Dechlor	DC10-181013	2B	301015	814237	16,366	2.500	1.139	1.766	2.011
Ron Avery	Meadow Lk Subdivision	DC10-135659	3C	300324	814732	1,500	0.150	0.120*	1.766	0.212
Summary by Size of Plant						Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
0.100 - 0.499 mgd						1,500	0.150	0.120		0.212
0.500 - 0.999 mgd						7,300	1.620	0.849		1.499
1.000 mgd and greater						69,154	9.200	6.228		10.999
Total						77,954	11.970	7.616		13.450

Table A4.2 Clay County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Clay Co. Utilities	Clay Utilities Ridaught Landing	0			0.000	0.419	0.740		Pond			
Col John C. Bridges	Camp Blanding	0			0.000	0.664	1.173	0.273	Surf		S Fork Black Creek	
Green Cove Spgs, City	Green Cove Spgs STP	0			0.000	0.803	1.418	0.218	Surf		St Johns River	
Kingsley Serv Co	Fleming Is Sys #2	0			0.000	0.900	1.589	0.089	Surf		St Johns River	
Kingsley Serv Co.	Kingsley Serv Co	0			0.000	3.386	5.980	1.980	Surf		St Johns River	
Kingsley Serv Co	Fleming Is Sys, Fleming Oak	0			0.000	0.185	0.327		Surf		St. Johns River	
Orange Pk, Town of	Orange Pk Dechlor	0			0.000	1.139	2.011		Surf		St Johns River	
Ron Avery	Meadow Lk Subdivision	0			0.000	0.120	0.212	0.062	Surf		St Johns River	

Summary by Size of Plant	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	1989	2010	Additional Projected Treatment Needed				
0.100 - 0.499 mgd	0	0.000	0.000	0.000	0.120	0.212	0.062				
0.500 - 0.999 mgd	0	0.000	0.000	0.000	0.849	1.499	0.273				
1.000 mgd and greater	0	0.000	0.000	0.000	6.228	10.999	2.287				
Total	0	0.000	0.000	0.000	7.616	13.450	2.622				

Table A4.3 Clay County

Plant Owner or Operator	Plant Name	Disin-fection Level	Treat-ment Level	Projected Treatment		DER reuse codes*								Plan Incre-ment	Incre-ment Year	Prob-lems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Clay Co. Utilities	Clay Co Utilities Ridaught Landing		3													
Col John C. Bridges	Camp Blanding		2													
Green Cove Spgs, City	Green Cove Spgs STP		2													
Kingsley Serv Co	Fleming Is Sys #2		2													
Kingsley Serv Co	Kingsley Serv Co		2													
Kingsley Serv Co	Fleming Is Sys, Fleming Oak		2													
Orange Pk, Town of	Orange Pk Dechlor		2													
Ron Avery	Meadow Lk Sub-division		2													
Summary by Size of Plant						AI	CI	EN	FP	GR	PA_1	PA_2	OT			
0.100 - 0.499 mgd						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
0.500 - 0.999 mgd						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
1.000 mgd and greater						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Total						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

*AI Agricultural irrigation
CI Commercial/industrial
EN Environmental enhancement
FP Fire protection
GR Ground water recharge
PA_1 Public area irrigation, non-golf course
PA_2 Public area irrigation, golf course
OT Other

Table A5.1 Duval County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Atlantic Bch, City of	Atlantic Bch Donner Rd	DO16-147946	2B	302007	812432	9,000	2.000	1.525	1.525	2.326
Atlantic Utilities	Ortega Hills Subdivision	DO16-163819	2C	301306	814248	2,500	0.250	0.200*	1.525	0.305
Atlantic Bch, City of	Buccaneer Wat & Sew Dis	DO16-140538	3B	302213	812442	9,075*	1.000	0.726	1.525	1.107
Baldwin, Town of	Baldwin Main St	DO16-170729	2C	301740	815830	1,320	0.200	0.106*	1.225	0.129
Beauderc Utilities	Brierwood Subdivision	DO16-59667	2C	301341	813555	12,800	0.780	0.495	1.525	0.755
Chas Thompson Props	Regency Village Apts	DT16-162195	2C	301908	813218	1,250	0.100	0.100*	1.525	0.153
Countrywide Prks V Inc	Paradise Village MHP	DC16-106326	2C	301718	814900	1,500	0.100	0.120*	1.525	0.183
Donald W Culver	Countryside Village, Jacksonville	DT16-148075	2C	301617	813159	1,500	0.150	0.120*	1.525	0.183
El Agua Utilities	Isle of Palms S	DO16-162840	2C	301630	812546	720	0.500	0.306	1.525	0.467
Elroy Grace	Community Utilities, Grace	DO16-004573	2C	301825	814500	1,890	0.300	0.237	1.525	0.361
Jack C Demetree	Villa Del Rio, Ortgega Arms	DO16-177466	3C	301507	814306	1,638*	0.250	0.131	1.525	0.200
Jacksonville, City of	Jacksonville Buckman St STP @	DO16-135538	2A	302108	813742	350,000	52.500	42.400*	1.525	64.660
Jacksonville Suburban Utilities	Royal Lakes Subdivision	DC16-160073	2B	301250	813240	13,000	2.400	1.917	1.525	2.923
Jacksonville Suburban Utilities	Holly Oaks Subdivision	DO16-148356	2C	302122	813120	4,700*	1.000	0.376	1.525	0.573
Jacksonville Suburban Utilities	Jacksonville Hts WWTP	DO16-143957	2B	301425	814705	12,600	2.500	1.403	1.525	2.140
Jacksonville Suburban Utilities	San Jose Subdivision	DT16-143159	2B	301450	813723	19,600	2.200	2.326	1.525	3.547
Jacksonville Bch, City of	Jacksonville Bch STP	DO16-150770	2B	301642	812351	15,500	3.000	2.894	1.525	4.413
Jacksonville, City of	Jacksonville Arlington E #4 @	DO16-115752	2A	302044	813230	100,000	10.000	6.500	1.525	9.913
Jacksonville, City of	Jacksonville SW DIST @	DO16-155085	2A	301350	814310	50,000	10.000	6.800	1.525	10.370
Jacksonville, City of	Jacksonville Mandarin Subdivision @	DO16-130872	2B	301050	813720	40,000	5.000	3.600	1.525	5.490
Jacksonville Suburban Utilities	Monterey Subdivision	DO16-170728	3B	301945	813610	23,213*	3.000	1.857	1.525	2.832
Jacksonville, City of	Jacksonville Dist II WWTP @	DO16-158450	2A	302532	813707	30,225*	10.000	2.418	1.525	3.687
Jacksonville, City of	Holiday Harbor Subdivision @	DO16-137673	2B	301815	812615	12,500*	1.200	1.000	1.525	1.525
Jacksonville Pt Auth	JPA Intl Airport	DO16-151152	2C	302910	814044	5,000	0.500	0.400*	1.525	0.610

@ Permit capacity and flow data were provided by the City of Jacksonville

Table A5.1 Continued

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Jacksonville University	Jacksonville Univ	DO16-126606	2B	302055	813634	2,000	0.200	0.160*	1.525	0.244
Jacksonville Suburban Utilities	University Park Subdivision	DO16-105832	2C	302225	813702	7,500	0.750	0.600*	1.525	0.915
M F Dawes	Colonial Pt Apts	DT16-127580	2C	301842	813636	1,000	0.100	0.080*	1.525	0.122
Mark Dennis	Londontown Apts	DO16-56631	3C	301742	814515	1,500	0.150	0.120*	1.525	0.183
Neptune Beach	Neptune Beach STP	DC16-122872	2C	301854	812515	12,275*	0.750	0.982	1.525	1.498
Normandy Village Utilities	Normandy Village STP	DC16-113135	3C	301640	814630	3,500	0.400	0.293	1.525	0.447
Ortega Utilities	Ortega Utilities, Blanding	DC16-121013	3C	301226	814407	8,238*	0.350	0.659	1.525	1.005
Ortega Utilities	Ortega Utilities, Airport	DC16-143730	2C	302841	812845	690	0.175	0.055*	1.525	0.084
Robert Underwood, Pres	Normandy Est MHP	DT16-136397	2C	301727	814803	839	0.750	0.067*	1.525	0.102
Shadowrock Utilities	Springtree Village STP	DO16-143733	2C	301556	814727	1,486	0.450	0.179	1.525	0.273
Southern States Utilities	Woodmere Subdivision	DC16-144990	3C	302712	813610	5,000	0.500	0.529	1.525	0.807
Southern States Utilities	Beacon Hills STP	DO16-132425	2B	302255	813114	9,713*	1.800	0.777	1.525	1.185
Southside Utilities	Deerwood Subdivision	FLOO-24350	2C	301555	813237	2,000	0.200	0.160*	1.525	0.244
US Navy Jacksonville	USNAS Jacksonville	DC16-174583	2B	301429	814033	20,500*	3.000	1.640	1.525	2.501
US Navy Mayport	US Navy Mayport	DT16-154280	2B	302349	812351	17,670	1.800	1.296	1.525	1.976
US Navy Cecil Field	US Navy Cecil Field	DT16-102205	2B	301324	815312	8,950*	1.200	0.716	1.525	1.092

Summary by Size of Plant		Population Served	Permit Capacity	Mean Flow		2010 Projected Mean Flow
0.100 - 0.499 mgd		30,525	2.925	2.541		3.843
0.500 - 0.999 mgd		45,620	4.980	3.558		5.426
1.000 mgd and greater		746,245	113.600	80.171		122.261
Total		822,390	121.505	86.270		131.530

@ Permit capacity and flow data were provided by the City of Jacksonville

Table A5.2 Duval County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Atlantic Bch, City of	Atlantic Bch-Donner Rd	1	2.000	1.000	1.000	0.525	1.326	0.326	Surf		St Johns River	Irrig Hanna Pk
Atlantic Utilities	Ortega Hills Subdivision	0			0.000	0.200	0.305	0.055	Surf		Ortega River/St Johns	
Atlantic Bch, City of	Buccaneer Wat & Sew Dis	0			0.000	0.726	1.107	0.107	Surf		St Johns River	
Baldwin, Town of	Baldwin Main St	0			0.000	0.106	0.129		Pond			
Beauclerc Utilities	Brierwood Subdivision	0			0.000	0.495	0.755		Surf		Ditch/Goodby's Lake	
Chas Thompson Props	Regency Village Apts	0			0.000	0.100	0.153	0.053	Surf		Jones Creek/St Johns	
Countywide Prts V Inc	Paradise Village MHP	0			0.000	0.120	0.183	0.083	Surf		McGirts Creek/St Johns	
Donald W Culver	Countryside Vil of Jacksonville	0			0.000	0.120	0.183	0.033	Surf		Mill Dam Creek/St Johns	
El Agua Utilities	Isle of Palms S	0			0.000	0.306	0.467		Surf		San Pablo Creek/St Johns	
Elroy Grace	Community Utilities, Grace	0			0.000	0.237	0.361	0.061	Surf		Cedar Creek/St Johns	
Jack C Demetree	Villa Del Rio, Ortega Arms	0			0.000	0.131	0.200		Surf		Ortega River/St Johns	
Jacksonville, City of	Jacksonville Buckman St STP @	0			0.000	42.400	64.660		Surf		St Johns River	
Jacksonville Suburban Utilities	Royal Lakes Subdivision	0			0.000	1.917	2.923	0.523	Surf		Pottsburg Creek/St Johns	
Jacksonville Suburban Utilities	Holly Oaks S/E	0			0.000	0.376	0.573		Surf		Cowhead Creek/St Johns	
Jacksonville Suburban Utilities	Jacksonville Hts WWTP	0			0.000	1.403	2.140		Surf		Fishing Creek/St Johns	
Jacksonville Suburban Utilities	San Jose Subdivision	0			0.000	2.326	3.547	1.347	Surf		St Johns River	
Jacksonville Bch, City of	Jacksonville Bch STP	0			0.000	2.894	4.413	1.413	Surf		St Johns River	

@ Permit capacity and flow data were provided by the City of Jacksonville

Table 5.2 Continued

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Jacksonville, City of	Jacksonville Arlington E #4 @	0			0.000	6.500	9.913		Surf		St Johns River	
Jacksonville, City of	Jacksonville SW DIST @	0			0.000	6.800	10.370		Surf		St Johns River	
Jacksonville, City of	Jacksonville Mandarin Subdivision @	0			0.000	3.600	5.490	0.490	Surf		St Johns River	
Jacksonville Suburban Utilities	Monterey Subdivision	0			0.000	1.857	2.832		Surf		Cowhead Creek/St Johns	
Jacksonville, city of	Jacksonville Dist II WWTP @	0			0.000	2.418	3.687		Surf		St Johns River	
Jacksonville, City of	Holiday Harbor Subdivision @	0			0.000	1.000	1.525	0.325	Surf		Hog Pen Creek/ICW/St Johns	
Jacksonville Pt Auth	JPA Intl Airport	0			0.000	0.400	0.610	0.110	Surf		Cedar Creek/St Johns	
Jacksonville University	Jacksonville Univ	0			0.000	0.160	0.244	0.044	Surf		St Johns River	
Jacksonville Suburban Utilities	University Park Subdivision	0			0.000	0.600	0.915	0.165	Surf		St Johns River	
M F Dawes	Colonial Pt Apts	0			0.000	0.080	0.122	0.022	Surf		Lt Pottsburg Creek	
Mark Dennis	Londontown Apts	0			0.000	0.120	0.183	0.033	Surf		Cedar Creek/St Johns	
Neptune Beach, City of	Neputne Beach STP	0			0.000	0.982	1.498	0.748	Surf		Intracoastal	
Normandy Village Utilities	Normandy Village STP	0			0.000	0.293	0.447	0.047	Surf		Wills Br/St Johns	
Ortega Utilities	Ortega Utilities, Airport	0			0.000	0.055	0.084		Surf		Lt Cedar Creek/St Johns	
Ortega Utilities	Ortega Utilities, Blanding	0			0.000	0.659	1.005	0.655	Surf		Ortega/St Johns	
Robert Underwood, Pres	Normandy Est MHP	0			0.000	0.067	0.102		Surf		Wills Br/St Johns	
Shadowrock Utilities	Springtree Village STP	0			0.000	0.179	0.273		Pond			

@ Permit capacity and flow data were provided by the City of Jacksonville

Table 5.2 Continued

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Southern States Utilities	Beacon Hills STP	0			0.000	0.777	1.185		Surf		St Johns River	
Southern States Utilities	Woodmere Subdivision	0			0.000	0.529	0.807	0.307	Surf		Fairfield Br/St Johns	
Southside Utilities	Deerwood Subdivision	0			0.000	0.160	0.244	0.044	Surf		Puncheon Br/St Johns	
US Navy Jacksonville	USNAS Jacksonville	0			0.000	1.640	2.501		Surf		St Johns River	
US Navy Mayport	US Navy Mayport	0			0.000	1.296	1.976	0.176	Surf		St Johns River	
US Navy Cecil Field	US Navy Cecil Field	0			0.000	0.716	1.092		Surf		Rowell Creek/St Johns	

Summary by Size of Plant	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	1989	2010	Additional Projected Treatment Needed
0.100 - 0.499 mgd	0	0.000	0.000	0.000	2.541	3.843	1.129
0.500 - 0.999 mgd	0	0.000	0.000	0.000	3.558	5.426	1.329
1.000 mgd and greater	1	2.000	1.000	1.000	79.171	121.261	4.708
Total	1	2.000	1.000	1.000	85.270	130.530	7.167

@ Permit capacity and flow data were provided by the City of Jacksonville

Table A5.3 Duval County

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Atlantic Bch, City of	Atlantic Bch-Donner Rd		2								1.00					
Atlantic Utilities	Ortega Hills Subdivision		2													
Atlantic Bch, City of	Buccaneer Wat & Sew Dis		2													
Baldwin, Town of	Baldwin Main St		2													
Beauclerc Utilities	Brierwood Subdivision		2													
Chas Thompson Props	Regency Village Apts		2													
Countrywide Prks V Inc	Paradise Village MHP		2													
Donald W Culver	Countryside Village of Jacksonville		2													
El Agua Utilities	Isle of Palms S		2													
Elroy Grace	Community Utilities, Grace		2													
Jack C Demetree	Villa Del Rio, Ortega Arms		2													
Jacksonville, City of	Jacksonville Buckman ST STP @		2													
Jacksonville Suburban Utilities	Royal Lakes Subdivision		2													
Jacksonville Suburban Utilities	Holly Oaks Subdivision		2													
Jacksonville Suburban Utilities	Jacksonville Hts WWTP		2													
Jacksonville Suburban Utilities	San Jose Subdivision		2													
Jacksonville Bch, City of	Jacksonville Bch STP		2													

@ Permit capacity and flow data were provided by the City of Jacksonville

Table A5.3 Continued

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Jacksonville, City of	Jacksonville Arlington E #4 @		2													
Jacksonville, City of	Jacksonville SW DIST @		2													
Jacksonville, City of	Jacksonville Mandarin Subdivision @		2													
Jacksonville Suburban Utilities	Monterey Subdivision		2													
Jacksonville, City of	Jacksonville Dist II WWTP @		2													
Jacksonville, City of	Holiday Harbor Subdivision @		2													
Jacksonville Pt Auth	JPA Intl Airport		2													
Jacksonville University	Jacksonville Univ		2													
Jacksonville Suburban Utilities	University Park Subdivision		2													
M F Dawes	Colonial Pt Apts		2													
Mark Dennis	Londontown Apts		2													
Neptune Bch, City of	Neptune Bch STP		2													
Normandy Village Utilities	Normandy Village STP		2													
Ortega Utilities	Ortega Utilities, Airport		2													
Ortega Utilities	Ortega Utilities, BLlanding		2													
Robert Underwood, Pres	Normandy Est MHP		2													
Shadowrock Utilities	Springtree Village STP		2													
Southern States Utilities	Beacon Hills STP		2													

@ Permit capacity and flow data were provided by the City of Jacksonville

Table A5.3 Continued

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Southern States Utilities	Woodmere Subdivision		2													
Southside Utilities	Deerwood Subdivision		2													
US Navy Jacksonville	USNAS Jacksonville		2													
US Navy Mayport	US Navy Mayport		2													
US Navy Cecil Field	US Navy Cecil Field		2													
Summary by Size of Plant						AI	CI	EN	FP	GR	PA_1	PA_2	OT			
0.100 - 0.499 mgd						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
0.500 - 0.999 mgd						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
1.000 mgd and greater						0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00			
Total						0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00			

*AI Agricultural irrigation
CI Commercial/industrial
EN Environmental enhancement
FP Fire protection
GR Ground water recharge
PA_1 Public area irrigation, non-golf course
PA_2 Public area irrigation, golf course
OT Other

@ Permit capacity and flow data were provided by the City of Jacksonville

Table A6.1 Flagler County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Bunnell, City of	City of Bunnell	DT18-48829	2C	292750	811546	3,000	0.300	0.220	1.630	0.359
Dunes Community	Hammock Dunes Ph 1	DO18-182181	3C	293504	811111	1,814	0.200	0.145*	1.630	0.237
Flagler Bch, City of	City of Flagler Bch	DO18-151015	2B	292820	810833	6,500	1.000	0.474	1.742	0.826
James Gardner	Matanzas Shores STP	DO18-162192	3C	293847	811239	2,900	0.322	0.232*	1.630	0.378
Jerry S. Johnson	Plantation Bay	DO18-128818	3C	292406	811023	3,250*	0.475	0.260	1.630	0.424
Palm Coast Subdivision	Palm Coast Subdivision	DO18-158616	3C	293258	811225	16,000	1.600	1.646	1.630	2.683

Summary by Size of Plant		Population Served	Permit Capacity	Mean Flow		2010 Projected Mean Flow
0.100 - 0.499 mgd		10,964	1.297	0.857		1.397
0.500 - 0.999 mgd		0	0.000	0.000		0.000
1.000 mgd and greater		22,500	2.600	2.120		3.509
Total		33,464	3.897	2.977		4.906

Table A6.2 Flagler County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatmnt Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Bunnell, City of	City of Bunnell	0			0.000	0.220	0.359	0.059	Surf		Creek	
Dunes Community	Hammock Dunes Ph 1	1	0.200	0.145	0.055	0.000	0.091	0.037	Irrig		Golf Course	
Flagler Bch, City of	City of Flagler Bch	0			0.000	0.474	0.826		Surf		Intracoastal Waterway	
James Gardner	Matanzas Shores STP	0			0.000	0.232	0.378	0.056	Pond			
Jerry S. Johnson	Plantation Bay	1	0.475	0.260	0.215	0.000	0.164		Irrig		Golf Course	City Parks/ property
Palm Coast Subdivision	Palm Coast Subdivision	1	1.600	1.300	0.300	0.346	1.383	1.083	Pond	Irrig		

Summary by Size of Plant	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	1989	2010	Additional Projected Treatment Needed
0.100 - 0.499 mgd	2	0.675	0.405	0.270	0.452	0.992	0.151
0.500 - 0.999 mgd	0	0.000	0.000	0.000	0.000	0.000	0.000
1.000 mgd and greater	1	1.600	1.300	0.300	0.820	2.209	1.083
Total	3	2.275	1.705	0.570	1.272	3.201	1.234

Table A6.3 Flagler County

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Bunnell, City of	City of Bunnell		2													
Dunes Community	Hammock Dunes Ph 1		2									0.145				
Flagler Bch, City of	City of Flagler Bch		1													
James Gardner	Matanzas Shores STP		2													
Jerry S. Johnson	Plantation Bay	High	2									0.260				NO
Palm Coast Subdivision	Palm Coast Subdivision	Basic	2			0.300				1.000				3.200	90	NO

Summary by Size of Plant	AI	CI	EN	FP	GR	PA_1	PA_2	OT
0.100 - 0.499 mgd	0.000	0.000	0.000	0.000	0.000	0.000	0.405	0.000
0.500 - 0.999 mgd	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.000 mgd and greater	0.300	0.000	0.000	0.000	1.000	0.000	0.000	0.000
Total	0.300	0.000	0.000	0.000	1.000	0.000	0.405	0.000

*AI Agricultural irrigation
CI Commercial/industrial
EN Environmental enhancement
FP Fire protection
GR Ground water recharge
PA_1 Public area irrigation, non-golf course
PA_2 Public area irrigation, golf course
OT Other

Table A7.1 Indian River County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Countryside of Vero Beach	Countryside of Vero Beach !	DO31-114173	3C	273745	802944	1,200	0.120	0.096*	!	!
General Development Utility (GDU)	Sebastian Highlands WWTP	DO31-153322	3C	274725	802838	3,000	0.300	0.067	1.519	0.102
GDU	Vero Beach Highlands WWTP	DO31-178145	2C	273330	802240	2,938*	0.450	0.235	1.519	0.357
Heritage Village	Heritage Village MHP !	DO31-2648	3C	273715	802955	400	0.100	0.096	!	!
Indian River County (IRC) Utility	Laurelwood !	DT31-158740	3C	273652	802433	675	0.100	0.086	!	!
IRC Utility	IRC/West Reg	DC31-151803	2B	273657	803604	3,950*	2.000	0.316	@	3.200
IRC Utility	IRC Gifford	DC31-154993	2B	274045	802530	3,650	2.000	0.262	@	4.100
IRC Utility	IRC/North Reg	DC31-155597	3C	274405	802619	7,500*	1.000	0.600*	@	3.000
IRC Utility	Vista Royale (VR) Gardens	DO31-141722	3C	273615	802240	800	0.150	0.064*	1.519	0.097
IRC Utility	IRC/Sea Oaks	DO31-137587	3C	274431	802300	3,140	0.210	0.035	@	0.700
IRC Utility	VR Condominiums	DO31-111834	2C	273600	802242	3,800	0.500	0.158	1.519	0.240
Vero Beach, City of	Vero Beach WWTP	DO31-106836	2B	273740	802235	35,250*	4.500	2.820	1.519	4.284

Summary by Size of Plant		Population Served	Permit Capacity	Mean Flow		2010 Projected Mean Flow
0.100 - 0.499 mgd		12,153	1.430	0.679		1.256
0.500 - 0.999 mgd		3,800	0.500	0.158		0.240
1.000 mgd and greater		50,350	9.500	3.998		14.584
Total		65,228	11.230	4.653		16.080

! To be phased out by 2010
@ 2010 projected flow obtained from Indian River County, not from Kimball-Lloyd multiplier

Table A7.2 Indian River County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Countryside of Vero Beach	Countryside of Vero Beach !	0			0.000	0.096	!		Pond			
GDU	Sebastian Highlands WWTP	0			0.000	0.067	0.102		Pond			
GDU	Vero Beach Highlands WWTP	0			0.000	0.235	0.357		Pond			
Heritage Village	Heritage Village MHP !	0			0.000	0.000	!		Pond			
IRC Utility	VR Condominiums	0			0.000	0.158	0.240		Pond		Mosquito Impoundment	
IRC Utility	IRC/West Reg	1	1.000	0.300	0.700	0.016	2.900		Reuse		Citrus Sodfarms etc.	
IRC Utility	IRC Gifford	1	2.000	0.262	1.738	0.000	3.838		Irrig.			
IRC Utility	IRC/North Reg	1	1.000	0.600	0.400	0.000	2.400		Irrig.			
IRC Utility	Lauralwood !	0			0.000	0.000	!		Pond			
IRC Utility	VR Gardens	0			0.000	0.064	0.097		Pond		Mosquito Impoundment	
IRC Utility	IRC/Sea Oaks	1	0.210	0.035	0.175	0.000	0.665		Irrig.			
Vero Beach, City of	Vero Beach WWTP	1	4.500	2.820	1.680	0.000	1.464		Irrig.			

Summary by Size of Plant	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	1989	2010	Additional Projected Treatment Needed
0.100 - 0.499 mgd	1	0.210	0.035	0.175	0.462	1.221	0.000
0.500 - 0.999 mgd	0	0.000	0.000	0.000	0.158	0.240	0.000
1.000 mgd and greater	4	8.500	3.982	4.518	0.016	10.60	0.000
Total	5	8.710	4.017	4.693	0.636	12.063	0.000

! To be phased out by 2010

Table A7.3 Indian River County

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Countryside of Vero Beach	Countryside of Vero Beach !		2													
GDU	Sebastian Highlands WWTP		2													
GDU	Vero Beach Highlands WWTP		2													
Heritage Village	Heritage Village MHP !															
IRC Utility	VR Condominiums		2													
IRC Utility	IRC/West Reg	High	2			0.300										No
IRC Utility	IRC Gifford	High	2									0.262				BD, TR
IRC Utility	IRC/North Reg	High	2								0.600					
IRC Utility	Lauralwood !															
IRC Utility	VR Gardens		2													
IRC Utility	IRC/Sea Oaks	High	2								0.035					No
Vero Beach, City of	Vero Beach WWTP		2								2.820					
Summary by Size of Plant						AI	CI	EN	FP	GR	PA_1	PA_2	OT			
0.100 - 0.499 mgd						0.000	0.000	0.000	0.000	0.000	0.035	0.000	0.000			
0.500 - 0.999 mgd						0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
1.000 mgd and greater						0.300	0.000	0.000	0.000	0.000	3.420	0.262	0.000			
Total						0.300	0.000	0.000	0.000	0.000	3.455	0.262	0.000			

*AI Agricultural irrigation EN Environmental enhancement GR Ground water recharge PA_2 Public area irrigation, golf course
CI Commercial/industrial FP Fire protection PA_1 Public area irrigation, non-golf course OT Other

! To be phased out by 2010

88 Table A8.1 Lake County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
American Sunlake LTD Part	Sun Lake Estates STP	DO35-117989	2C	285681	814654	1,000	0.150	0.080	1.686	0.135
Clerbrook MHP	Clerbrook RV Resorts	DO35-P00327	3C	283810	814730	600	0.120	0.052	1.686	0.088
Clermont, City of	Clermont WWTP	DO35-156301	2C	283308	814636	95,000	0.950	0.517	1.686	0.872
De Anza Mid-Florida Lakes	Mid-Florida Lakes STP	DO35-178843	3C	285215	814612	1,000	0.180	0.080	1.686	0.135
Eustis, City of	Eustis Main STP	DO35-127453	4C	285130	814035	9,858	1.800	1.165	1.562	1.820
John Boll	Oak Springs MHP STP	DO35-174669	2C	284723	813152	1,150	0.150	0.092	1.686	0.155
Lady Lake, Town of	Lady Lake STP	DC35-169947	3C	285521	815623	5,466	0.500	0.437	1.686	0.737
Lakewood Devs.	Plantation at Leesburg	DO35-148272	3C	284241	815243	960	0.200	0.096	1.686	0.162
Leesburg, City of	Leesburg WWTP	DO35-119222	2B	284829	815230	11,000	3.500	2.650	1.587	4.206
Mount Dora, City of	Mount Dora STP	DO35-128448	1B	284824	814025	15,000	1.500	0.736	2.375	1.748
Southern States Utilities	Sunshine Parkway STP	DC35-174231	4C	283837	814752	1,125	0.250	0.090	1.352	0.122
Tavares, City of	Tavares/ Woodlea Road	DO35-181556	3B	282230	814500	7,000	1.000	0.457	1.686	0.771

Table A8.1 Continued

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Tavares, City of	Tavares STP	D035-126572	2C	284819	814354	5,500	0.750	0.741	1.686	1.249
Thousand Trails Inc.	Thousand Trails STP	DO35-156299	3B	284730	814020	700	0.140	0.070	1.686	0.118
Umatilla, City of	Umatilla WWTP	DO35-129721	2C	285458	814101	3,000	0.300	0.145	1.352	0.196
Water Oak Utilites, Inc.	Water Oak STP	DO35-158597	3C	285548	815446	3,054	0.200	0.244	1.352	0.330
Wekiva Falls Resort	Wekiva Falls Campground	DO35-117409	3C	284734	812503	1,991	0.100	0.159	1.686	0.269

Summary by Size of Plant		Population Served	Permit Capacity	Mean Flow		2010 Projected Mean Flow
0.100 - 0.499 mgd		14,580	1.790	1.109		1.709
0.500 - 0.999 mgd		15,966	2.200	1.695		2.858
1.000 mgd and greater		42,858	7.800	5.008		8.544
Total		73,404	11.790	7.812		13.111

Table A8.2 Lake County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Rese Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
American Sunlake Ltd Part	Sun Lake Estates STP	0			0.000	0.080	0.135		Pond			
Clerbrook MHP	Clerbrook RV Resorts	0			0.000	0.052	0.088		Pond	Spray		
Clermont, City of	Clermont WWTP	1	0.950	0.517	0.433	0.000	0.355		Spray			
De Anza Mid-Florida Lakes	Mid-Florida Lakes STP	0			0.000	0.080	0.135		Pond	Spray		
Eustis, City of	Eustis Main STP	1	1.800	1.165	0.635	0.000	0.655	0.020	Irrig.	Evap.	Citrus Grove	4 Schools
John Boll	Oak Springs MHP STP	0			0.000	0.092	0.155	0.005	Pond			
Lady Lake, Town of	Lady Lake STP	1	0.500	0.437	0.063	0.000	0.300	0.237	Irrig.	Spray	Spray Field/STP	
Lakewood Devs.	Plantation at Leesburg	0			0.000	0.096	0.162		Pond			
Leesburg, City of	Leesburg WWTP	1	3.500	2.650	0.850	0.000	1.556	0.706	Pond	Spray	Spray Field/STP	
Mount Dora, City of	Mount Dora STP	1	1.500	0.736	0.764	0.000	1.012	0.248	Irrig.	Spray		
Southern States Utilities	Sunshine Parkway STP	0			0.000	0.090	0.122		Surf		?	Holding pond at STP

Table A8.2 Continued

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Rese Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Tavares, City of	Tavares/ Woodlea Road	0			0.000	0.457	0.771		Pond		5 Ponds at STP	
Tavares, City of	Tavares STP	0			0.000	0.741	1.249	0.499	Pond		2 Ponds at STP	
Thousand Trails Inc.	Thousand Trails STP	0			0.000	0.070	0.118		Pond			
Umatilla, City of	Umatilla WWTP	1	0.300	0.145	0.155	0.000	0.051		Irrig.		at STP	Excess to Recharge
Water Oak Utilities, Inc.	Water Oak STP	0			0.000	0.244	0.330	0.130	Pond	Spray	Spray Field	
Wekiva Falls Resort	Wekiva Falls Campground	0			0.000	0.159	0.269	0.169	Pond			

Summary by Size of Plant	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	1989	2010	Additional Projected Treatment Needed
0.100 - 0.499 mgd	1	0.300	0.145	0.155	0.964	1.564	0.304
0.500 - 0.999 mgd	2	1.450	0.954	0.496	0.741	1.904	0.737
1.000 mgd and greater	3	6.800	4.551	2.249	0.457	3.993	0.973
Total	6	8.550	5.650	2.900	2.162	7.461	2.014

Table A8.3 Lake County

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
American Sunlake Ltd Part	Sun Lake Estates STP		2													
Clerbrook MHP	Clerbrook RV Resorts		2													
Clermont, City of	Clermont WWTP	Basic	2			0.517										No
De Anza Mid-Florida Lakes	Mid-Florida lakes STP		2													
Eustis, City of	Eustis Main STP	Basic	2			1.165										PA
John Boll	Oak Springs MHP STP		2													
Lady Lake, Town of	Lady Lake STP		2			0.437										
Lakewood Devs.	Plantation at Leesburg		2													
Leesburg, City of	Leesburg WWTP	Medium	2			2.650								5.500	94	No
Mount Dora, City of	Mount Dora STP	High	2								0.736					No
Southern States Utilities	Sunshine parkway STP		2													
Tavares, City of	Tavares/Woodlea Road		2													
Tavares, City of	Tavares STP		2													
Thousand Trails Inc.	Thousand Trails STP		2													

Table A8.3 Continued

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Umatilla, City of	Umatilla WWTP	Medium	2			0.144							0.001			No
Water Oak Utilities, Inc.	Water Oak STP		2													
Wekiva Falls Resort	Wekiva Falls Campground		2													
Summary by Size of Plant						AI	CI	EN	FP	GR	PA_1	PA_2	OT			
0.100 - 0.499 mgd						0.144	0.000	0.000	0.000	0.000	0.000	0.000	0.001			
0.500 - 0.999 mgd						0.954	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
1.000 mgd and greater						3.815	0.000	0.000	0.000	0.000	0.736	0.000	0.000			
Total						4.913	0.000	0.000	0.000	0.000	0.736	0.000	0.001			

*AI Agricultural irrigation
CI *Commercial/industrial*
EN Environmental enhancement
FP Fire protection
GR Ground water recharge
PA_1 Public area irrigation, non-golf course
PA_2 Public area irrigation, golf course
OT Other

Table A9.1 Marion County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Angeles Real Estate Management	Rolling Greens MHP	DO42-177213	2B	291005	820200	2,263*	0.250	0.181	1.352	0.245
Belleview, City of	Belleview Baseline	DC42-123093	3C	290409	820332	3,000	0.300	0.278	1.352	0.376
Belleview, City of	Belleview STP 1	DC42-181298	2C	290306	820310	5,500	0.230	0.440*	1.352	0.595
Belleview, City of	Belleview STP 2A	DO42-115101	3C	290410	820314	2,000	0.350	0.160*	1.352	0.216
Belleview, City of	Belleview STP 3	DO42-115102	3C	290410	820314	1,500	0.300	0.120*	1.352	0.162
Certified Grocers of Florida	Certified Grocers STP	DO42-175833	3C	290607	820251	1,500*	0.200	0.120*	1.352	0.162
Florida Department of Corrections	Marion Correctional Institute STP	DC42-163782	3C	291831	821034	2,067	0.440	0.272	1.352	0.368
General Development Utilities (GDU)	Silver Springs Shores (SSS) A-4	DO42-149364	3C	290522	820009	1,000	0.600	0.080*	1.352	0.108
GDU	SSS A-3	DO42-149364	2C	290630	820015	12,000	0.800	0.640	1.352	0.865
GDU	SSS Central	DC42-113962	2C	290530	820045	8,000	0.800	0.640*	1.352	0.865
Ocala, City of	City of Ocala STP #1	DC42-161371	1B	291214	820857	15,000	2.400	1.307	1.499	1.959

Table A9.1 Continued

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Ocala, City of	City of Ocala STP #2	DT42-139914	2B	290950	820515	32,038*	3.500	2.563	1.499	3.842
Parkemore Management Corp.	Spanish Oaks MHP STP	DT42-175114	3C	291305	820547	930	0.100	0.074*	1.352	0.101
Southern States Utilities	Citrus Park Sub-division	DO42-161926	2C	290844	820613	450	0.100	0.036*	1.352	0.049
Steeplechase Utilities, Inc.	Steeplechase STP	DC42-157946	3C	285805	815805	1,462	0.150	0.117*	1.352	0.158
Tradewinds Utilities, Inc.	Land Fair STP	DO42-179138	3C	291538	820545	1,120	0.112	0.090*	1.352	0.121

Summary by Size of Plant		Population Served	Permit Capacity	Mean Flow		2010 Projected Mean Flow
0.100 - 0.499 mgd		21,342	2.432	1.852		2.504
0.500 - 0.999 mgd		21,000	2.200	1.360		1.839
1.000 mgd and greater		47,038	5.900	3.870		5.801
Total		89,379	10.532	7.082		10.144

Table A9.2 Marion County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Angeles Real Estate Management	Rolling Greens MHP	0			0.000	0.181	0.245		Pond			
Belleview, City of	Belleview Baseline	0			0.000	0.278	0.376	0.076	Spray			
Belleview, City of	Belleview STP 1	0			0.000	0.440	0.595	0.365	Pond			
Belleview, City of	Belleview STP 2A	0			0.000	0.160	0.216		Pond			
Belleview, City of	Belleview STP 3	0			0.000	0.120	0.162		Pond			
Certified Grocers of Florida	Certified Grocers STP	0			0.000	0.120	0.162		Pond			
Florida Department of Corrections	Marion Correctional Institute STP	0			0.000	0.272	0.368		Spray			
GDU	SSS A-4	0			0.000	0.080	0.108		Pond			
GDU	SSS A-3	0			0.000	0.640	0.865	0.065	Pond			
GDU	SSS Central	1	0.800	0.640	0.160	0.000	0.225	0.065	Pond	Irrig.		
Ocala, City of	City of Ocala STP #1	1	2.400	1.200	1.200	0.107	0.759		Pond	Irrig.		Golf course
Ocala, City of	City of Ocala STP #2	1	3.500	2.563	0.937	0.000	1.279	0.342	Well			

Table A9.2 Continued

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Parkemore Management Corp.	Spanish Oaks MHP STP	0			0.000	0.074	0.101	0.001	Pond			
Southern States Utilities	Citrus Park Subdivision	0			0.000	0.036	0.049		Pond	Spray		
Steeplechase Utilities, Inc.	Steeplechase STP	0			0.000	0.117	0.158	0.008	Pond			
Tradewinds Utilities, Inc.	Land Fair STP	0			0.000	0.090	0.121	0.009	Pond			

Summary by Size of Plant	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	1989	2010	Additional Projected Treatment Needed
0.100 - 0.499 mgd	0	0.000	0.000	0.000	1.852	2.504	0.459
0.500 - 0.999 mgd	1	0.800	0.640	0.160	0.720	1.199	0.131
1.000 mgd and greater	2	5.900	3.763	2.137	0.107	2.038	0.342
Total	3	6.700	4.403	2.297	2.679	5.741	0.931

Table A9.3 Marion County

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Angeles Real Estate Management	Rolling Greens MHP		2													
Belleview, City of	Belleview Baseline		2													
Belleview, City of	Belleview STP 1	Basic	2													
Belleview, City of	Belleview STP 3		2													
Belleview, City of	Belleview STP 2A		2													
Certified Grocers of Florida	Certified Grocers STP		2													
Florida Department of Corrections	Marion Correctional Institute STP		2	2	1992											
GDU	SSS A-4		2													
GDU	SSS A-3		2													
GDU	SSS Central		2			0.640										
Ocala, City of	City of Ocala STP #1	Basic	2									1.200				NO
Ocala, City of	City of Ocala STP #2	Basic	2							2.538			0.025			NO
Parkemore Management Corp.	Spanish Oaks MHP STP		2													
Southern States Utilities	Citrus Park Subdivision		2													

Table A9.3 Continued

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Steeplechase Utilities, Inc.	Steeplechase STP		2													
Tradewinds Utilities, Inc.	Land Fair STP		2													
Summary by Size of Plant						AI	CI	EN	FP	GR	PA_1	PA_2	OT			
0.100 - 0.499 mgd						0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
0.500 - 0.999 mgd						0.640	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
1.000 mgd and greater						0.000	0.000	0.000	0.000	2.538	0.000	1.200	0.025			
Total						0.640	0.000	0.000	0.000	2.538	0.000	1.200	0.025			

*AI Agricultural irrigation
CI Commercial/industrial
EN Environmental enhancement
FP Fire protection
GR Ground water recharge
PA_1 Public area irrigation, non-golf course
PA_2 Public area irrigation, golf course
OT Other

Table A10.1 Nassau County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Callahan, City of	Callahan STP	DC45-116791	3C	303411	815000	3,000	0.300	0.181	1.437	0.260
Fernandina Beach, City of	City of Fernandina Beach	DC45-160071	2B	303901	812747	10,000	1.700	1.613	1.666	2.687
Hilliard, Town of	Hilliard STP	DO45-169084	2C	304156	815458	1,330	0.160	0.106 *	1.452	0.154
Southern (SSU) States Utilities	SSU, Amelia Island	DO45-124913	2B	303438	812715	6,000	0.600	0.369	1.666	0.615
Sun Ray (SRU) Utilities	SRU	DO45-153410	3C	303644	823306	1,875	0.187	0.150 *	1.666	0.250

Summary by Size of Plant		Population Served	Permit Capacity	Mean Flow		2010 Projected Mean Flow
0.100 - 0.499 mgd		6,205	0.647	0.437		0.664
0.500 - 0.999 mgd		6,000	0.600	0.369		0.615
1.000 mgd and greater		10,000	1.700	1.613		2.687
Total		22,205	2.947	2.419		3.967

Table A10.2 Nassau County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Callahan, City of	Callahan STP	0			0.000	0.181	0.260		Surf		Alligator Creek	Long Point Golf
Fernandina Beach, City of	City of Fernandina Beach	0			0.000	1.613	2.687	0.987	Surf		Amelia River	
Hilliard, Town of	Hilliard STP	1	0.160	0.106	0.054	0.000	0.048		Irrig.			
SRU	SRU	0			0.000	0.150	0.250	0.063	Pond			
SSU	SSU, Amelia Island	1	0.600	0.300	0.300	0.069	0.315	0.015	Spray			

Summary by Size of Plant	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	1989	2010	Additional Projected Treatment Needed
0.100 - 0.499 mgd	1	0.160	0.106	0.054	0.331	0.558	0.063
0.500 - 0.999 mgd	1	0.600	0.300	0.300	0.069	0.315	0.015
1.000 mgd and greater	0	0.000	0.000	0.000	1.613	2.687	0.987
Total	2	0.760	0.406	0.354	2.013	3.561	1.065

Table A10.3 Nassau County

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Callahan, City of	Callahan STP		2													
Fernandina Beach, City of	City of Fernandina Beach		2													
Hilliard, Town of	Hilliard STP	Basic	2			0.106										NO
SRU	SRU		2													
SSU	SSU, Amelia Island	High	2									0.300				NO
Summary by Size of Plant						AI	CI	EN	FP	GR	PA_1	PA_2	OT			
0.100 - 0.499 mgd						0.106	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
0.500 - 0.999 mgd						0.000	0.00	0.00	0.00	0.00	0.00	0.30	0.00			
1.000 mgd and greater						0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Total						0.106	0.00	0.00	0.00	0.00	0.00	0.30	0.00			

*AI Agricultural irrigation
CI Commercial/industrial
EN Environmental enhancement
FP Fire protection
GR Ground water recharge
PA_1 Public area irrigation, non-golf course
PA_2 Public area irrigation, golf course
OT Other

Table A11.1 Orange County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Angeles Real Est Mgmt	Zellwood STA Grassmere	DO48-109798	2C	284302	813508	1,300	0.300	0.086	1.349	0.116
Apopka, City of	Apopka STP	DO48-144720	2B	283906	813015	4,400	4.000	0.819	2.900	2.375
Econ Utilities Corp	Wedgefield Subdivision STP	DO48-168873	2C	283000	810500	768	0.200	0.061*	1.349	0.083
Fairways MHP Vill	Fairways MHP Vill STP	DO48-106546	2C	283400	811045	200	0.150	0.016*	1.349	0.022
Gulfstream Harbor Sales	Gulfstream MHP STP	DC48-131634	3C	282908	811629	1,000	0.100	0.080*	1.349	0.108
John Day	Star Light Ranch MHP	DO48-146558	2C	282919	811800	900*	0.120	0.072*	1.349	0.097
Kirkland Mgmt Inc	Sheraton Orlando Arprt	DO48-114949	3C	282710	811854	975*	0.130	0.078*	1.349	0.105
Ocoee, City of	Ocoee STP #2	DO48-155285	2B	293459	813420	10,000	2.000	0.362	2.441	0.884
Ocoee, City of	Ocoee STP #4	DC48-113164	2B	293459	813419	10,000	1.000	0.800*	2.441	1.953
Ocoee, City of	Ocoee STP #1	DO48-176066	2C	283336	813206	1,088*	0.200	0.087	2.441	0.212
Orange Cnty Pub Utilities	OCPUD/Easterly Subreg @	DO48-179466	1A	283046	811205	190,000	13.500!	6.000	1.349	8.094
Orange Cnty Pub Utilities	OCPUD/Meadow Woods Subdivision	DO48-133138	2B	283614	812656	10,000	0.500	0.244	1.349	0.329
Orange Cnty Pub Utilities	OCPUD/Sand Lk Rd (SFWMD) @#	DO48-154808	1A	282652	812624	248,000	23.000	14.000	1.349	18.886
Orange Cnty Pub Utilities	OCPUD/NW Serv Area @	DC48-126751	3B	283744	813119	22,000	3.000	2.000	1.349	2.698
Orlando, City of	CONSERV I (SFWMD) #	DO48-162794	1A	282402	811950	31,500	7.500	2.520*	1.349	3.399

! According to FDER, design capacity is 19 mgd. Permit capacity of 13.5 mgd was supplied by Orange County.
@ Permit capacity, flow, and reuse data for OCPUD Easterly, Northwest, and Sand Lake Road were supplied by Orange County.
# CONSERV I Sand Lake Road, and McLeod Road are in the SFWMD but are included here because they collect part of their wastewater from SJRWMD and could provide reuse water to SJRWMD.

Table A11.1 Continued

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Orlando, City of	Orlando McLeod Rd (SFWMD) #	DO48-167589	1A	283010	812711	154,000	25.000	11.000	1.349	14.839
Park Manor Water Wks	Park Manor Est WWTP	DO48-135851	1C	283359	811331	4,900	0.350	0.252	1.349	0.340
Reeco Properties Inc	Rock Spr MHP STP	DO48-P01863	2C	284241	813100	1,200	0.150	0.096*	1.349	0.130
Southern States Utilities	Palms MHP STP	DT48-172261	3C	283427	813259	750*	0.100	0.060*	1.349	0.081
Southern States Utilities	Univ Shores STP #2	DO48-114829	2B	283445	811616	5,000	1.000	0.409	1.349	0.552
Southern States Utilities	Univ Shores AWT #1	DO48-168974	1C	283445	811618	2,750	0.275	0.174	1.349	0.235
Univ of Central Fla	Univ of Cent Fla STP	DO48-186679	2C	283700	811300	20,000	0.500	0.175	1.349	0.236
Winter Garden, City of	Winter Garden WWTP	DO48-111729	1B	283435	813555	20,000	2.000	1.044	1.349	1.408
Winter Park, City of	Winter Park WWTP	DO48-124888	2C	283623	811857	6,475*	0.750	0.518	1.285	0.666

Summary by Size of Plant		Population Served	Permit Capacity	Mean Flow		2010 Projected Mean Flow
0.100 - 0.499 mgd		15,831	2.075	1.062		1.528
0.500 - 0.999 mgd		30,000	1.000	0.419		0.565
1.000 mgd and greater		701,375	82.750	39.472		55.754
Total		747,206	85.825	40.953		57.847

! According to FDER, design capacity is 19 mgd. Permit capacity of 13.5 mgd was supplied by Orange County.
@ Permit capacity, flow, and reuse data for OCPUD Easterly, Northwest, and Sand Lake Road were supplied by Orange County.
# CONSERV I Sand Lake Road, and McLeod Road are in the SFWMD but are included here because they collect part of their wastewater from SJRWMD and could provide reuse water to SJRWMD.

Table A11.2 Orange County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Angeles Real Est Mgmt	Zellwood STA Grassmere	0			0.000	0.086	0.116		Pond			
Apopka, City of	Apopka STP	1	2.000	0.819	1.181	0.000	1.556		Irrig	Rib	Bronson Citrus Grove	
Econ Utilities Corp	Wedgefield Subdivision STP	1	0.200	0.061	0.139	0.000	0.022		Pond	Irrig		Golf Course
Fairways MHP Vill	Fairways MHP Vill STP	1	0.150	0.016	0.134	0.000	0.006		Irrig		Golf Course	
Gulfstream Harbor Sales	Gulfstream MHP STP	0			0.000	0.080	0.108	0.008	Pond			
John Day	Star Light Ranch MHP	0			0.000	0.072	0.097		Pond			
Kirkland Mgmt Inc	Sheraton Orlando Arprt	0			0.000	0.078	0.105		Pond	Spray		
Ocoee, City of	Ocoee STP #2	1	1.000	0.350	0.650	0.012	0.534		Pond	Spray		
Ocoee, City of	Ocoee STP #4	0			0.000	0.800	1.953	0.953	Pond			
Ocoee, City of	Ocoee STP #1	0			0.000	0.087	0.212	0.012	Pond			
Orange Cnty Pub Utilities	OCPUD/Easterly Subreg @	1	9.700	3.700	6.000	2.300	4.394		Power	Wetland		
Orange Cnty Pub Utilities	OCPUD/NW Serv Area @	1	3.000	2.000	1.000	0.000	0.698		Rib			
Orange Cnty Pub Utilities	OCPUD/Sand Lk Rd (SFWMD) @#	1	23.000	6.000	17.000	8.000	12.886		Rib	Irrig	Ribs, CONSERV II, SFWMD	Orange Groves SFWMD
Orange Cnty Pub Utilities	OCPUD/Meadow Woods Subdivision	1	0.500	0.244	0.256	0.000	0.085		Pond	Irrig		
Orlando, City of	Orlando McLeod Rd (SFWMD) #	1	25.000	11.000	14.000	0.000	3.839		Rib	Irrig	Ribs, CONSERV II, SFWMD	Orange Groves SFWMD

! According to FDER, design capacity is 19 mgd. Permit capacity of 13.5 mgd was supplied by Orange County.

@ Permit capacity, flow, and reuse data for OCPUD Easterly, Northwest, and Sand Lake Road were supplied by Orange County.

CONSERV I Sand Lake Road, and McLeod Road are in the SFWMD but are included here because they collect part of their wastewater from SJRWMD and could provide reuse water to SJRWMD.

Table A11.2 Continued

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Orlando, City of	CONSERV I (SFWMD) #	1	7.500	2.520	4.980	0.000	0.879		Pond	Irrig		
Park Manor Water Wks	Park Manor Est WWTP	0			0.000	0.252	0.340		Surf		Econlock-hatchee River	
Reeco Prop Inc	Rock Spr MHP STP	0			0.000	0.096	0.130		Pond			
Southern States Utilities	Univ Shores AWT #1	0			0.000	0.174	0.235		Surf		Ltl Econlock-hatchee River	
Southern States Utilities	Palms MHP STP	0			0.000	0.060	0.081		Pond			
Southern States Utilities	Univ Shores STP #2	1	1.000	0.409	0.591	0.000	0.143		Pond	Irrig		Cemetery, etc.
Univ of Central Fla	Univ Central Fla STP	1	0.500	0.175	0.325	0.000	0.061		Rib	Irrig		
Winter Garden, City of	Winter Garden WWTP	0			0.000	1.044	1.408		Surf		Lake Apopka	
Winter Park, Ctiy of	Winter Park WWTP	1	0.750	0.415	0.335	0.103	0.251		Irrig		Golf Course	Cemetery
Summary by Size of Plant		Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	1989	2010	Additional Projected Treatment Needed				
0.100 - 0.499 mgd		2	0.350	0.077	0.273	0.985	1.451	0.020				
0.500 - 0.999 mgd		3	1.000	0.419	0.581	0.000	0.146	0.000				
1.000 mgd and greater		8	72.950	27.213	45.737	12.259	28.541	0.953				
Total		13	74.300	27.709	46.591	13.244	30.138	0.973				

! According to FDER, design capacity is 19 mgd. Permit capacity of 13.5 mgd was supplied by Orange County.

@ Permit capacity, flow, and reuse data for OCPUD Easterly, Northwest, and Sand Lake Road were supplied by Orange County.

CONSERV I Sand Lake Road, and McLeod Road are in the SFWMD but are included here because they collect part of their wastewater from SJRWMD and could provide reuse water to SJRWMD.

Table A11.3 Orange County

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	I Yr	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Angeles Real Est Mgmt	Zellwood STA Grassmere		2													
Apopka, City of	Apopka STP	Medium	2			0.819										NO
Econ Utilities Corp	Wedgefield Subdivision STP	High	2									0.061				
Fairways MHP Vill	Fairways MHP Vill STP		2													
Gulfstream Harbor Sales	Gulfstream MHP STP		2													
John Day	Star Light Ranch MHP		2													
Kirkland Mgmt Inc	Sheraton Orlando Arprt		2													
Ocoee, City of	Ocoee STP #2	Medium	2							0.350						NO
Ocoee, City of	OcoeeSTP #4		2													
Ocoee, City of	Ocoee STP #1		2													
Orange Cnty Pub Utilities	OCPUD/Easterly Subreg @	High	3	3	0		3.700							4.300	?	
Orange Cnty Pub Utilities	OCPUD/NW Serv Area @	Basic	2		0					2.000						NO
Orange Cnty Pub Utilities	OCPUD/Sand Lk Rd (SFWMD) @#	High	2			2.000				4.000						NO
Orange Cnty Pub Utilities	OCPUD/Meadow Woods Subdivision	High	3	3	0	0.100				0.044		0.100				NO
Orlando, City of	Orlando McLeod Rd (SFWMD) #	High	2			2.000				9.000						NO
Orlando, City of	CONSERV I (SFWMD) #	Basic	2			0.200				2.315			0.005			FD
Park Manor Water Wks	Park Manor Est WWTP		2													

! According to FDER, design capacity is 19 mgd. Permit capacity of 13.5 mgd was supplied by Orange County.

@ Permit capacity, flow, and reuse data for OCPUD Easterly, Northwest, and Sand Lake Road were supplied by Orange County.

CONSERV I Sand Lake Road, and McLeod Road are in the SFWMD but are included here because they collect part of their wastewater from SJRWMD and could provide reuse water to SJRWMD.

Table A11.3 Continued

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	1 Yr	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Reeco Propertie Inc	Rock Spr MHP STP		2													
Southern States Utilities	Univ Shores AWT #1	High	3													
Southern States Utilities	Palms MHP STP		2													
Southern States Utilities	Univ Shores STP #2		2								0.409					
Univ of Central Fla	Univ of Cent Fla STP	High	3								0.175					PA
Winter Garden, City of	Winter Garden WWTP	High	3													
Winter Park, City of	Winter Park WWTP	High	2								0.225	0.190				NO
Summary by Size of Plant						AI	CI	EN	FP	GR	PA_1	PA_2	OT			
0.100 - 0.499 mgd						0.000	0.000	0.000	0.000	0.000	0.000	0.061	0.000			
0.500 - 0.999 mgd						0.100	0.000	0.000	0.000	0.044	0.175	0.100	0.000			
1.000 mgd and greater						5.019	3.700	2.300	0.000	15.409	0.634	0.190	0.005			
Total						5.119	3.700	2.300	0.000	15.453	0.809	0.351	0.005			

*AI Agricultural irrigation
CI Commercial/industrial
EN Environmental enhancement
FP Fire protection
GR Ground water recharge
PA_1 Public area irrigation, non-golf course
PA_2 Public area irrigation, golf course
OT Other

! According to FDER, design capacity is 19 mgd. Permit capacity of 13.5 mgd was supplied by Orange County.
@ Permit capacity, flow, and reuse data for OCPUD Easterly, Northwest, and Sand Lake Road were supplied by Orange County.
# CONSERV I Sand Lake Road, and McLeod Road are in the SFWMD but are included here because they collect part of their wastewater from SJRWMD and could provide reuse water to SJRWMD.

Table A12.1 Putnam County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons or per day greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Crescent City, City of	Crescent City	DC54-140464	3C	292532	813028	1,100	0.250	0.075	1.433	0.107
Palatka, City of	Palatka	DO54-150260	2B	293755	813832	12,500	3.000	1.960	1.433	2.809
Summary by Size of Plant						Population Served	Permit Capacity	Mean Flow		2010 Projected Mean Flow
0.100 - 0.499 mgd						1,100	0.250	0.075		0.107
0.500 - 0.999 mgd						0	0.000	0.000		0.000
1.000 mgd and greater						12,500	3.000	1.960		2.809
Total						13,600	3.250	2.035		2.916

Table A12.2 Putnam County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Crescent City, City of	Crescent City	0			0.000	0.075	0.107		Surface		St. Johns River	
Palatka, City of	Palatka	0			0.000	1.960	2.809		Surface		St. Johns River	

Summary by Size of Plant	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	1989	2010	Additional Projected Treatment Needed				
0.100 - 0.499 mgd	0	0.000	0.000	0.000	0.000	0.000	0.000				
0.500 - 0.999 mgd	0	0.000	0.000	0.000	0.000	0.000	0.000				
1.000 mgd and greater	0	0.000	0.000	0.000	0.000	0.000	0.000				
Total	0	0.000	0.000	0.000	0.000	0.000	0.000				

Table A12.3 Putnam County

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Crescent City, City of	Crescent City		2													
Palatka, City of	Palatka		2													
Summary by Size of Plant						AI	CI	EN	FP	GR	PA	PA	OT			
0.100 - 0.499 mgd						0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
0.500 - 0.999 mgd						0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
1.000 mgd and greater						0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Total						0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			

*AI Agricultural irrigation
CI Commercial/industrial
EN Environmental enhancement
FP Fire protection
GR Ground water recharge
PA_1 Public area irrigation, non-golf course
PA_2 Public area irrigation, golf course
OT Other

Table A13.1 St. Johns County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Anastasia Sanitary Dist	Anastasia Sanitary Dist WWTP	DO55-156799	2B	295117	811659	11,000	2.000	0.969	1.456	1.411
Grady Snowden	Wesley Manor Ret Village	DO55-183704	3C	300650	813622	630	0.100	0.050*	1.456	0.073
H R James	Sawgrass STP	DO55-127624	2C	301040	812238	5,000	0.700	0.323	1.456	0.470
Hastings, Town of	Hastings STP	DT55-096258	3C	294330	813030	1,000	0.100	0.080*	1.456	0.116
Jacksonville Suburban Utilities	Ponce De Leon STP	DC55-167124	3C	285815	811945	4,000	0.400	0.007	1.456	0.010
Jose R Peralta	Julington Cr STP	DO55-139705	2C	300619	813740	1,000	0.200	0.080*	1.456	0.116
Ponte Vedra Utilities Inc	Ponte Vedra STP	DO55-185100	2C	301424	812321	5,000	0.500	0.318	1.456	0.463
Southern States Utilities	St. Augustine Shores Utilities	DO55-155601	3C	294756	811851	12,903	0.500	0.243	1.456	0.354
St. Augustine, City of	St. Augustine #1	DO55-143398	2B	295235	811845	15,700	5.000	1.256*	1.456	1.829
St Augustine, City of	St. Augustine #2	DO55-73463	2B	295150	811729	15,000	1.500	0.521	1.456	0.758
St Augustine, City of	St. Augustine #4	+,*				27,513*	5.000	2.201	1.456	3.205
St Johns Cnty	Mainland WWTP	DC55-149739	3C	294841	812239	2,500	0.250	0.200*	1.456	0.291

Table A13.1 Continued

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
St Johns Cnty	St Johns Cnty SR16	X	XA	295430	812500	4,545	0.500	0.364*	1.456	0.529
St Johns Service Co	Inlet Bch	DO55-150171	2C	301248	812308	5,000	0.500	0.204	1.456	0.297
St Johns Service Co	Marsh Landing/P V Lks	DO55-150173	3C	301430	812355	2,457	0.500	0.324	1.456	0.472
St Johns Service Co	Players Club S STP	DO55-150174	3C	301104	812343	5,000	0.900	0.364	1.456	0.530
Summary by Size of Plant						Population Served	Permit Capacity	Mean Flow		2010 Projected Mean Flow
0.100 - 0.499 mgd						9,130	1.050	0.417		0.608
0.500 - 0.999 mgd						39,905	4.100	2.140		3.115
1.000 mgd and greater						69,213	13.500	4.947		7.202
Total						118,248	18.650	7.504		10.925

Table A13.2 St. Johns County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Anastasia Sanitary Dist	Anast Sani Dist WWTP	1	1.000	0.969	0.031	0.000	0.442		Irrig	Surf		Matanzas River
Grady Snowden	Wesley Manor Ret Village	0			0.000	0.050	0.073		Surf		Julington Creek	
H R James	Sawgrass STP	0			0.000	0.323	0.470		Pond	Spray		
Hastings, Town of	Hastings STP	0			0.000	0.080	0.116	0.016	Pond	Surf		Cracker Creek
Jacksonville Suburban Utilities	Ponce De Leon STP	0			0.000	0.007	0.010		Pond			
Jose R Peralta	Julington Creek STP	0			0.000	0.080	0.116		Pond			
Ponte Vedra Utilities Inc	Ponte Vedra STP	0			0.000	0.318	0.463		Pond	Spray		
Southern States Utilities	St. Augustine Shores Utilities	1	0.220	0.220	0.000	0.023	0.134		Irrig			
St Augustine, City of	St. Augustine #1	0			0.000	1.256	1.829		Surf		Matanzas River	
St Augustine, City of	St. Augustine #2	0			0.000	0.521	0.758		Surf		Matanzas River	
St Augustine, City of	St. Augustine #4	0			0.000	2.201	3.205		Surf		Matanzas River	
St Johns Cnty	Mainland WWTP	0			0.000	0.200	0.291	0.041	Spray			
St Johns Cnty	St Johns Cnty SR16	0			0.000	0.364	0.529	0.029	Surf		Wetlands	

Table A13.3 St. Johns County

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	1 Yr	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Anastasia Sanitary Dist	Anast Sani Dist WWTP	High	2									0.969				NO
Grady Snowden	Wesley Manor Ret Village		2													
H R James	Sawgrass STP	High	2													PM
Hastings, Town of	Hastings STP		2													
Jacksonville Suburban Utilities	Ponce De Leon STP		2													
Jose R Peralta	Julington Creek STP		2													
Ponte Vedra Utilities Inc	Ponte Vedra STP		2													
Southern States Utilities	St. Augustine Shores Utilities	High	2									0.220				NO
St Augustine, City of	St. Augustine #1		2													
St Augustine, City of	St. Augustine #2		2													
St Augustine, City of	St. Augustine #4		2													

Table A13.3 Continued

Plant Owner or Operator	Plant Name	Disin-fection Level	Treat-ment Level	Projected Treatment		DER reuse codes*								Plan Incre-ment	Incre-ment Year	Prob-lems
				Level	I Yr	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
St Johns Cnty	Mainland WWTP		2													
St Johns Cnty	St Johns Cnty SR16		2													
St Johns Service Co	Inlet Bch	High	2									0.204				NO
St Johns Service Co	Marsh Land-ing/P V Lks	High	2									0.310		0.700	91	NO
St Johns Service Co	Players Club S STP	High	2									0.200		0.750	92	NO

Summary by Size of Plant		AI	CI	EN	FP	GR	PA_1	PA_2	OT	
0.100 - 0.499 mgd		0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	
0.500 - 0.999 mgd		0.00	0.00	0.00	0.00	0.00	0.00	0.934	0.00	
1.000 mgd and greater		0.00	0.00	0.00	0.00	0.00	0.00	0.969	0.00	
Total		0.00	0.00	0.00	0.00	0.00	0.00	1.903	0.00	

*AI Agricultural irrigation
CI Commercial/industrial
EN Environmental enhancement
FP Fire protection
GR Ground water recharge
PA_1 Public area irrigation, non-golf course
PA_2 Public area irrigation, golf course
OT Other

Table A13.2 Continued

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
St Johns Service Co	Inlet Bch	1	0.500	0.204	0.296	0.000	0.093		Irrig		Golf Course	Sawgrass Golf Course
St Johns Service Co	Marsh Landing/P V Lks	1	0.500	0.310	0.190	0.014	0.162		Pond	Spray		
St Johns Service Co	Players Club S STP	1	0.500	0.200	0.300	0.164	0.330		Pond	Irrig	Players Club Golf	

Summary by Size of Plant	Plants Providing Reuse Water	Reuse Deisgn Capacity	Reuse Flow	Unused Reuse Treatment Capacity	1989	2010	Additional Projected Treatment Needed
0.100 - 0.499 mgd	0	0.000	0.000	0.000	0.417	0.608	0.058
0.500 - 0.999 mgd	4	1.720	0.934	0.786	1.206	2.181	0.029
1.000 mgd and greater	1	1.000	0.969	0.031	3.978	6.233	0.000
Total	5	2.720	1.903	0.817	5.601	9.022	0.087

Table A14.1 Seminole County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Alafaya Utilities Inc	Alafaya PUD STP	DO59-175856	2B	283824	811116	12,000	2.400	0.584	1.338	0.781
Altamonte Springs, City	Altamonte Spring Reg	DO59-178763	1A	283833	812359	125,000	12.500	6.200	1.655	10.261
Casselberry, City of	Casselberry WWTP	DO59-152435	2C	284114	811852	3,167	0.643	0.519	1.127	0.585
Longwood Utilities Inc	Shadow Hills STP	DO59-115460	2C	284254	812143	6,000	0.500	0.510	1.706	0.870
Orlando City Env Serv	Orlando/Iron Brdg Rd Reg	DO59-183046	1A	283720	811310	270,000	40.000	6.177	1.387	8.567
Palm Valley Assoc	Palm Val MHP STP	DC59-145528	2C	283720	811145	1,409	0.126	0.113*	1.339	0.151
Sanford, City of	Sanford WWTP	DC59-126839	2A	284826	811645	36,000	6.000	5.030	1.723	8.667
Sanlando Utilities	Wekiva Hunt Club STP	DC59-164029	1B	284142	812558	21,963*	2.900	1.757	1.213	2.131
Sanlando Utilities Corp	Woodlands Des Pinar	DO59-163138	2C	284215	812229	4,340	0.500	0.441	1.213	0.535
Seminole County Env Serv	Seminole County Greenwood Lakes	DO59-177580	3B	284400	812049	35,000	3.500	0.976	1.655	1.615
Seminole County Env Serv	Seminole County Heathrow	DO59-148744	2C	284600	812300	4,000	0.400	0.045	1.655	0.074
Seminole County Env Serv	Seminole County Lynnwood	DO59-182458	2C	283945	812650	850	0.100	0.068*	1.655	0.113
Seminole County Env Serv	Seminole County NW	DC59-130577	2C	284950	812344	22,500	2.500	1.800*	1.655	2.979
Seminole County Env Serv	I-4 Indust Pk STP	DO59-109821	3C	284927	811940	530	0.100	0.042*	1.655	0.070

Table A14.1 Continued

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Southern States Utilities	Chuluota STP	DT59-131768	4C	283846	810730	1,000	0.100	0.080*	1.361	0.109
Utilities Inc	Lincoln Hts Sub-divisin	DO59-111843	2C	284736	811811	795	0.120	0.064*	1.356	0.086
Utilities Inc	Weathersfield Sub-divisin	DO59-110597	3C	283930	812230	3,206	0.360	0.204	1.356	0.277
Winter Springs, City of	Tuscawilla Sub-divisin STP	DO59-154780	2B	284035	811438	7,000	2.200	0.791	1.138	0.900
Winter Springs, City of	Winter Spring STP	DO59-149775	2B	284231	811912	11,033	1.500	0.883*	1.138	1.004

Summary by Size of Plant		Population Served	Permit Capacity	Mean Flow		2010 Projected Mean Flow
0.100 - 0.499 mgd		11,790	1.306	0.616		0.880
0.500 - 0.999 mgd		13,507	1.643	1.470		1.990
1.000 mgd and greater		540,496	73.500	24.198		36.907
Total		565,793	76.449	26.283		39.776

Table A14.2 Seminole County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Alafaya Utilities Inc	Alafaya PUD STP	1	2.400	0.584	1.816	0.000	0.197		Irrig	Pond		
Altamonte Springs, City	Altamonte Spring Reg	1	12.500	3.500	9.000	2.700	6.761		Surf	Irrig		
Casselberry, City of	Casselberry WWTP	1	0.643	0.355	0.288	0.164	0.230		Irrig			
Longwood Utilities Inc	Shadow Hills STP	0			0.000	0.510	0.870	0.370	Pond			
Orlando City Env Serv	Orlando/Iron Brdg Rd Reg	1	40.000	6.177	33.823	0.000	2.390		Irrig	Rib		
Palm Valley Assoc	Palm Val MHP STP	0			0.000	0.113	0.151	0.025	Pond	Drain		
Sanford, City of	Sanford WWTP	1	6.000	5.030	0.970	0.000	3.637	2.667	Irrig			
Sanlando Utilities	Wekiva Hunt Club STP	0			0.000	1.757	2.131		Surf		Sweetwater Creek	
Sanlando Utilities Corp	Woodlands Des Pinar	0			0.000	0.441	0.535	0.035	Pond	Spray		
Seminole County Env Serv	Seminole County Greenwood Lakes	1	1.700	0.650	1.050	0.326	0.965		Pond			
Seminole County Env Serv	Seminole County Heathrow	0			0.000	0.045	0.074		Pond			
Seminole County Env Serv	Seminole County Lynnwood	0			0.000	0.068	0.113	0.013	Pond			

Table A14.2 Continued

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Seminole County Env Serv	Seminole County NW	1	2.500	1.800	0.700	0.000	1.179	0.479	Rib			
Seminole County Env Serv	I-4 Indust Pk STP	0			0.000	0.042	0.070		Surf		Smith Canal/ St Johns River	
Southern States util	Chuluota STP	0			0.000	0.080	0.109	0.009	Pond			
Utilities Inc	Lincoln Hts Subdivisin	0			0.000	0.064	0.086		Surf		Canal to St Johns River	
Utilities Inc	Weathersfield Subdivisin	0			0.000	0.204	0.277		Pond	Surf		Little Wekiva River
Winter Springs, City of	Tuscawilla Subdivisin STP	1	2.200	0.791	1.409	0.000	0.109		Irrig	Pond	Golf Course	
Winter Springs, City of	Winter Spring STP	1	1.500	0.883	0.617	0.000	0.121		Irrig	Pond		

Summary by Size of Plant	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	1989	2010	Additional Projected Treatment Needed
0.100 - 0.499 mgd	0	0.000	0.000	0.000	0.616	0.880	0.046
0.500 - 0.999 mgd	1	0.643	0.355	0.288	1.115	1.635	0.405
1.000 mgd and greater	8	68.800	19.415	49.385	4.783	17.492	3.146
Total	9	69.443	19.770	49.673	6.513	20.006	3.597

Table A14.3 Seminole County

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER Reuse Codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Alafaya Utilities Inc	Alafaya PUD STP	High	2								0.384	0.200				NO
Altamonte Springs, City	Altamonte Spring Reg	Medium	2								3.500					NO
Casselberry, City of	Casselberry WWTP	High	2									0.350	0.005			NO
Longwood Utilities Inc	Shadow Hills STP		2													
Orlando City Env Serv	Orlando/Iron Brdg Rd Reg	High	2					6.177								NO
Palm Valley Assoc	Palm Val MHP STP		2													
Sanford, City of	Sanford WWTP	High	2			2.500					2.530					NO
Sanlando Utilities	Wekiva Hunt Club STP		2													
Sanlando Utilities Corp	Woodlands Des Pinar		2													
Seminole County Env Serv	Seminole County Greenwood Lakes		2								0.650					
Seminole County Env Serv	Seminole County Heathrow		2													
Seminole County Env Serv	Seminole County Lynnwood		2													
Seminole County Env Serv	Seminole County NW		2							1.800						

Table A14.3 Continued

Plant Owner or Operator	Plant Name	Disin-fection Level	Treat-ment Level	Projected Treatment		DER Reuse Codes*								Plan Incre-ment	Incre-ment Year	Prob-lems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Seminole County Env Serv	I-4 Indust Pk STP		2													
Southern States util	Chuluota STP		2													
Utilities Inc	Lincoln Hts Sub-divisin		2													
Utilities Inc	Weathersfield Subdivisin		2													
Winter Springs, City of	Tuscawilla Sub-divisin STP	High	2									0.791				NO
Winter Springs, City of	Winter Spring STP	High	2			0.200				0.333		0.350				NO
Summary by Size of Plant						AI	CI	EN	FP	GR	PA_1	PA_2	OT			
0.100 - 0.499 mgd						0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
0.500 - 0.999 mgd						0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.005			
1.000 mgd and greater						2.700	0.000	6.177	0.000	2.133	7.065	1.341	0.000			
Total						2.700	0.000	6.177	0.000	2.133	7.065	1.691	0.005			

*AI Agricultural irrigation
CI Commercial/industrial
EN Environmental enhancement
FP Fire protection
GR Ground water recharge
PA_1 Public area irrigation, non-golf course
PA_2 Public area irrigation, golf course
OT Other

Table A15.1 Volusia County wastewater treatment facilities in the St. Johns River Water Management District with permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Daytona Beach, City of	Daytona Beach Bethune PT	DC64-181442	2A	291205	810031	97,817	12.000	7.825*	1.629	12.748
Daytona Beach, City of	Daytona Beach CONSERV Project 2	DC64-134696	1A	291037	810644	1,575*	0.210	0.126*	1.629	0.205
Daytona Beach, City of	Daytona Beach Westside Reg.	DC64-181488	2A	291031	810641	100,000	10.000	6.020	1.629	9.807
De Land, City of	De Land Regional WWTP	DO64-158644	2B	290034	811756	16,000	4.000	2.452	1.495	3.666
De Land, City of	De Land/Brandy Trails	DO64-176493	3C	290502	811930	3,150	0.630	0.106	1.495	0.158
Deltona Utilities Consultant	Deltona Utilities	DC64-177248	2C	285227	811507	11,858	0.900	0.887	1.581	1.402
Edgewater, City of	Edgewater STP	DO64-175057	3C	285826	805455	4,956	2.250	0.396*	1.581	0.627
Holly Hill, City of	Holly Hill STP	DT64-141611	1B	291426	810240	9,829	2.400	0.786*	1.581	1.243
North Peninsula Utilities Corp.	Seabridge Subdivision STP	DO64-158640	2C	292300	810500	545	0.151	0.044*	1.581	0.069
New Smyrna Beach, City of	New Smyrna Beach WWTP	DO64-103760	2B	290150	805503	17,500	4.000	1.982	1.581	3.134
Ormond Beach, City of	Breakaway Trails	DC64-171892	2C	291500	810704	3,000	0.300	0.240*	1.799	0.432
Ormond Beach, City of	Ormond Beach WWTP	DC64-141350	1A	291720	810426	36,400	6.000	3.036	1.799	5.462
Port Orange, City of	Port Orange WWTP	DO64-152779	1A	290812	805949	60,000	12.000	4.583	1.470	6.737

Table A15.1 Continued

Plant Owner or Operator	Plant Name	DER Permit	DER Class	Latitude	Longitude	Population Served	Permit Capacity	Mean Flow	Growth Factor	2010 Projected Mean Flow
Southern States Utilities	Sugar Mill Country Club	DO64-134622	2C	290224	805906	300	0.270	0.117	1.582	0.185
Terra Mar Village Water Authority	Terra Mar Village STP	DO64-153781	3D	285448	805150	100	0.100	0.008*	1.581	0.013
Tymber Creek, Inc.	Tymber Creek Sub-division STP	DC64-174293	2C	291554	810738	414	0.131	0.033*	1.581	0.052
Volusia County Utilities	Volusia County Deltona North	DC64-169687	3C	285510	811510	3,750*	0.500	0.300*	1.581	0.474
Volusia County Utilities	Volusia County Four Townes	DO64-161860	3C	285545	811710	3,450*	0.600	0.276	1.581	0.436
Volusia County Utilities	Volusia County Spruce Creek	DO64-151483	3C	290443	810318	3,500	0.350	0.187	1.581	0.296
Volusia County Utilities	Volusia County Terra Alta	DO64-128074	3C	285448	811835	350	0.225	0.107	1.581	0.169
Summary by Size of Plant						Population Served	Permit Capacity	Mean Flow		2010 Projected Mean Flow
0.100 - 0.499 mgd						13,534	2.237	1.162		1.895
0.500 - 0.999 mgd						23,414	4.380	1.665		2.624
1.000 mgd and greater						337,546	50.400	26.685		42.795
Total						374,494	57.017	29.512		47.314

Table A15.2 Volusia County

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Daytona Beach, City of	Daytona Beach Bethune PT	0			0.000	7.825	12.748	0.748	Surf		Halifax River	
Daytona Beach, City of	Daytona Beach CONSERV Project 2	0			0.000	0.126	0.205		X			
Daytona Beach, City of	Daytona Beach Westside Reg.	1	10.000	0.700	9.300	5.320	9.107		Irrig.	Surface		Halifax River
De Land, City of	De Land Regional WWTP	1	4.000	2.452	1.548	0.000	1.214		Irrig.	Surface		St. Johns River
De Land, City of	De Land/ Brandy Trails	1	0.630	0.106	0.524	0.000	0.052		Irrig.	Pond		
Deltona Utilities Consultant	Deltona Utilities	0			0.000	0.887	1.402	0.502	Pond	Spray, Irrig.		
Edgewater, City of	Edgewater STP	1	2.250	0.396	1.854	0.000	0.230		Irrig.	Surface		
Holly Hill, City of	Holly Hill STP	0			0.000	0.786	1.243		Surf		Halifax River	
North Peninsula Utilities Corp.	Seabridge Subdivision STP	0			0.000	0.044	0.069		Pond			
New Smyrna Beach, City of	New Smyrna Beach WWTP	0			0.000	1.982	3.134		Surf		Indian River	
Ormond Beach, City of	Breakaway Trails	1	0.300	0.240	0.060	0.000	0.192	0.132	Reuse			
Ormond Beach, City of	Ormond Beach WWTP	0			0.000	3.036	5.462		Surf		Halifax River	

Table A15.2 Continued

Plant Owner or Operator	Plant Name	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	Additional Wastewater Available		Additional Projected Treatment Needed	Disposal		1. Point of Discharge	2. Point of Discharge
						1989	2010		1.	2.		
Port Orange, City of	Port Orange WWTP	1	0.150	0.150	0.000	4.433	6.587		Surf	Irrig.	Halifax River	
Southern States Utilities	Sugar Mill Country Club	0			0.000	0.117	0.185		Pond			
Terra Mar Village Water Authority	Terra Mar Village STP	0			0.000	0.008	0.013		Pond			
Tymber Creek, Inc.	Tymber Creek Subdivision STP	0			0.000	0.033	0.052		Pond			
Volusia County Utilities	Volusia County Deltona North	0			0.000	0.300	0.474		Pond			
Volusia County Utilities	Volusia County Four Townes	0			0.000	0.276	0.436		Pond			
Volusia County Utilities	Volusia County Spruce Creek	0			0.000	0.187	0.296		Pond			
Volusia County Utilities	Volusia County Terra Alta	0			0.000	0.107	0.169		Pond			

Summary by Size of Plant	Plants Providing Reuse Water	Reuse Design Capacity	Reuse Flow	Unused Reuse Treatment Capacity	1989	2010	Additional Projected Treatment Needed
0.100 - 0.499 mgd	1	0.300	0.240	0.060	0.922	1.655	0.132
0.500 - 0.999 mgd	2	2.880	0.502	2.378	1.163	2.122	0.502
1.000 mgd and greater	3	14.150	3.302	10.848	23.383	39.493	0.748
Total	6	17.330	4.044	13.286	25.467	43.270	1.382

Table A15.3 Volusia County

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Daytona Beach, City of	Daytona Beach Bethune PT		2													
Daytona Beach, City of	Daytona Beach CONSERV Project 2	High	2													
Daytona Beach, City of	Daytona Beach Westside Reg.	High	2									0.700				No
De Land, City of	De Land Regional WWTP	Medium	2	3	2010	2.452										No
De Land, City of	De Land/ Brandy Trails		2	2	0	0.106										
Deltona Utilities Consultant	Deltona Utilities		2													
Edgewater, City of	Edgewater STP	High	3								0.396					
Holly Hill, City of	Holly Hill STP		2													
North Peninsula Utilities Corp.	Seabridge Subdivision STP		2													
New Smyrna Beach, City of	New Smyrna Beach WWTP		2	3	92											
Ormond Beach, City of	Breakaway Trails	High	2								0.240					
Ormond Beach, City of	Ormond Beach WWTP		2													
Port Orange, City of	Port Orange WWTP	High	2								0.150					No

Table A15.3 Continued

Plant Owner or Operator	Plant Name	Disinfection Level	Treatment Level	Projected Treatment		DER reuse codes*								Plan Increment	Increment Year	Problems
				Level	Year	AI	CI	EN	FP	GR	PA_1	PA_2	OT			
Southern States Utilities	Sugar Mill Country Club		2													
Terra Mar Village Water Authority	Terra Mar Village STP		2													
Tymber Creek, Inc.	Tymber Creek Subdivision STP		2													
Volusia County Utilities	Volusia County Deltona North		2													
Volusia County Utilities	Volusia County Four Townes		2													
Volusia County Utilities	Volusia County Spruce Creek		2													
Volusia County Utilities	Volusia County Terra Alta		2													
Summary by Size of Plant						AI	CI	EN	FP	GR	PA_1	PA_2	OT			
0.100 - 0.499 mgd						0.000	0.000	0.000	0.000	0.000	0.240	0.000	0.000			
0.500 - 0.999 mgd						0.106	0.000	0.000	0.000	0.000	0.396	0.000	0.000			
1.000 mgd and greater						2.452	0.000	0.000	0.000	0.000	0.150	0.700	0.000			
Total						2.558	0.000	0.000	0.000	0.000	0.786	0.700	0.000			

*AI Agricultural irrigation
CI Commercial/industrial
EN Environmental enhancement
FP Fire protection
GR Ground water recharge
PA_1 Public area irrigation, non-golf course
PA_2 Public area irrigation, golf course
OT Other

APPENDIX B: WASTEWATER TREATMENT PLANTS IN COUNTIES WITH SPLIT WATER MANAGEMENT DISTRICT JURISDICTION

This appendix provides selected information about all WWTPs above the 0.1 mgd threshold in selected counties where jurisdiction is split between two or more water management districts. Plant names, owners, service population, and permitted capacities are provided for such counties. These include Alachua, Baker, Marion, and Orange counties.

Portions of Bradford, Lake, Polk, Okeechobee, and Osceola counties are also split between the SJRWMD and other districts. The part of Lake County outside the SJRWMD contains no permitted wastewater treatment plants. Therefore, no supplementary listing is needed. The parts of Bradford, Polk, Okeechobee, and Osceola counties within the SJRWMD contain no wastewater treatment plants above the 0.1 mgd threshold. Therefore, any data obtained from other districts concerning those counties should be complete without supplement from the SJRWMD.

Table B1. Alachua County supplement for the whole county: 1989 wastewater treatment facilities in the county with a permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	Number of Plants	Population Served	Outside SJRWMD*	Permitted Capacity
Waldo, City of	Waldo STP		790	yes	0.100
Gainesville Regional Utility (GRU)	RUB STP #4 Northwood		3,000	yes	0.300
Turkey Creek Inc.	Norwood Hope, Turkey Creek		3,500	yes	0.350
Newberry, City of	Newberry STP		3,870	yes	0.415
University of Florida (UF)	UF Lake Alice DIW		40,000		3.100
GRU	GRU STP #1 & #2		55,000		7.500
GRU	GRU STP #5 Kanapaha		66,600		10.000
0.100 - 0.499 mgd		4	11,160		1.165
0.500 - 0.999 mgd		0	0		0.000
1.000 mgd and greater		3	161,600		20.600
Total		7	172,760		21.765

*St. Johns River Water Management District

Table B2. Baker County supplement for the whole county: 1989 wastewater treatment facilities in the county with a permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	Number of Plants	Population Served	Outside SJRWMD*	Permitted Capacity
Florida, State of	Baker Correctional Institution		1,280	yes	0.190
Northeast Florida State Hospital (NEFSH)	NEFSH		2,300		0.300
Macclenny, City of	City of Macclenny		2,500		0.636
0.100 - 0.499 mgd		2	3,580		0.490
0.500 - 0.999 mgd		1	2,500		0.636
1.000 mgd and greater		0	0		0.000
Total		3	6,080		1.126

*St. Johns River Water Management District

Table B3. Marion County supplement for the whole county: 1989 wastewater treatment facilities in the county with a permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	Number of Plants	Population Served	Outside SJRWMD*	Permitted Capacity
Southern States Utilities	Citrus Park Sub-division		450		0.100
Parkemore Manage-ment Corporation	Spanish Oaks MHP STP		930		0.100
Tradewinds Utilities Inc.	Land Fair STP		1,120		0.112
Steeplechase Utili-ties Inc.	Steeplechase STP		1,462		0.150
Certified Grocers of Florida	Certified Grocers STP		0		0.200
Southern States Utilities	Marion Oaks S/D		2,067	yes	0.200
Belleview, City of	Belleview STP 1		5,500		0.230
Dunnellon, City of	Dunnellon STP		1,146	yes	0.250
Sidney Colen, & Associates	On Top of the World		NA	yes	0.250
Angeles Real Estate Management	Rolling Greens MHP		0		0.250
Belleview, City of	Belleview Base-line		3,000		0.300
Belleview, City of	Belleview STP 3		1,500		0.300
Belleview, City of	Belleview STP 2A		2,000		0.350
Rainbow Springs Corp.	Rainbow Springs Utilities		NA	yes	0.436
Florida Department of Corrections	Marion Correc-tional Institution STP		2,067		0.440
DECCA	Oak Run		NA	yes	0.500
General Develop-ment Utilities	Silver Springs Shores A-4		1,000		0.600
General Develop-ment Utilities	Silver Springs Shores A-3		12,000		0.800
General Develop-ment Utilities	Silver Springs Shores Central		8,000		0.800

Table B3. Continued

Plant Owner or Operator	Plant Name	Number of Plants	Population Served	Outside SJRWMD*	Permitted Capacity
Ocala, City of	City of Ocala STP #1		15,000		2.400
Ocala, City of	City of Ocala STP #2		0		3.500
0.100 - 0.499 mgd		15	21,242		3.668
0.500 - 0.999 mgd		1	0		0.500
1.000 mgd and greater		5	36,000		8.100
Total		21	57,242		12.268

*St. Johns River Water Management District

Table B4. Orange County supplement for the whole county: 1989 wastewater treatment facilities in the county with a permitted capacity of 0.1 million gallons per day or greater

Plant Owner or Operator	Plant Name	Number of Plants	Population Served	Outside SJRWMD*	Permitted Capacity
Gulfstream Harbor Sales	Gulfstream MHP STP		1,000		0.100
Southern States Utilities	Palms MHP STP		0		0.100
John Day	Star Light Ranch MHP		0		0.120
Kirkland Management Inc.	Sheraton Orlando Airport		0		0.130
Fairways MHP Village	Fairways MHP Village STP		200		0.150
Reeco Properties Inc.	Rock Springs MHP STP		1,200		0.150
Ocoee, City of	Ocoee STP #1		0		0.200
Econ Utilities Corp.	Wedgefield Subdivision STP		768		0.200
Orange Lake Country Club	Orange Lake Country Club Villas		2,500	yes	0.250
Southern States Utilities	University Shores AWT #1		2,750		0.275
Angeles Real Estate Management	Zellwood STA Grassmere		1,300		0.300
Lake Nona Corp.	Lake Nona PUD STP		3,300		0.330
Vista Center Property Owners	Camino Real PUD STP		3,500	yes	0.350
Park Manor Water Works	Park Manor Estates WWTP		4,900		0.350
Marriott Orlando World Center	Marriott Hotel STP		3,595	yes	0.495
Orange County Public Utilities	Orange County PUD/ Meadow Woods Subdivision		10,000		0.500
University of Central Florida	University of Central Florida STP		20,000		0.500
Orange County Public Utilities	Orange County PUD/ Vistana STP		7,000	yes	0.700
Winter Park, City of	Winter Park WWTP		0		0.750

Table B4. Continued

Plant Owner or Operator	Plant Name	Number of Plants	Population Served	Outside SJRWMD*	Permitted Capacity
Orange County Public Utilities	Orange County PUD/ Cyress Walk Subregion		4,900	yes	1.000
Ocoee, City of	Ocoee STP #4		10,000		1.000
Southern States Utilities	University Shores STP #2		5,000		1.000
Orange County Public Utilities	Orange County PUD/ South Central		18,000	yes	1.800
Ocoee, City of	Ocoee STP #2		10,000		2.000
Winter Garden, City of	Winter Garden WWTP		20,000		2.000
Orange County Public Utilities	Orange County PUD/ NW Service Area		22,000		3.000
Apopka, City of	Apopka STP		4,400		4.000
Orlando, City of	CONSERV I (Orlando)		31,500	yes	7.500
Reedy Creek Improvement District (RCID)	RCID STP/Rib Site		NA	yes	10.000
Orange County Public Utilities	Orange County PUD/ Easterly Subregion		190,000		19.000
Orange County Public Utilities	Orange County PUD/ Sand Lake Road (SFWMD**)		248,000	yes	23.000
Orlando, City of	Orlando McLeod Road (SFWMD)		154,000	yes	25.000
0.100 - 0.499 mgd		15	25,013		3.500
0.500 - 0.999 mgd		4	37,000		2.450
1.000 mgd and greater		13	717,800		100.300
Total		32	779,813		106.250

*St. Johns River Water Management District
**South Florida Water Management District