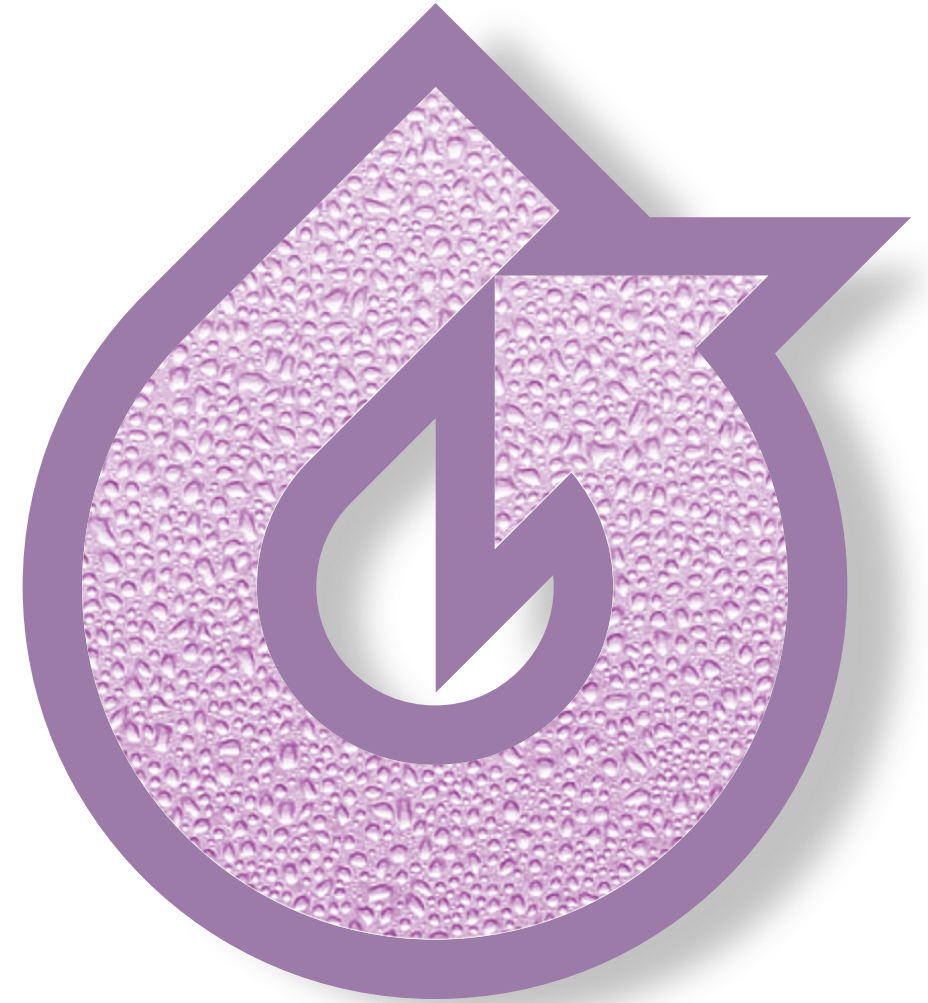




Reclaimed Water Guide

*A Compilation of Information on
Successful Reclaimed Water Systems for
Utilities to Avoid “Re-Inventing the Wheel”*



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Introduction

Florida is a water wonderland, with hundreds of miles of coastline, numerous bays, estuaries, river systems, and literally thousands of lakes.

These water features combined with Florida’s sunny climate make an ideal place for us to work and live. The rest of the nation apparently wants to live here, too — almost 6,000 new residents move to Florida each week.

This phenomenal growth is beneficial to Florida’s economy. However, it is taking a drastic toll on the state’s natural resources. Florida has a limited supply of fresh water. Each new resident and business competes for a share of this finite resource.

Florida’s traditional source of water has been ground-water. The reliance upon the Floridan aquifer to supply most of the fresh water used in central and southwest Florida has resulted in large regions experiencing saltwater intrusion, lowered lake and wetland levels, and reduced spring and river flows.

The Southwest Florida Water Management District is the agency responsible for managing and protecting the freshwater resources in a 16-county area of west central Florida. It is one of the state’s five water management

districts charged with the mission of maintaining the balance between the water needs of current and future users without damaging the environment. For this reason, the water management districts throughout the state are actively encouraging the development of alternative water supplies to meet existing and future water resource demands.

Reclaimed water is one of these alternative supplies. By utilizing reclaimed water, a community can:

- decrease the reliance on stressed groundwater supplies;
- increase the recharge of groundwater;
- reduce the discharge of waste water treatment plant (WWTP) effluent to surface waters;
- reduce saltwater intrusion into the aquifer; and
- provide a drought-proof irrigation supply.

The use of reclaimed water as a non-potable water supply has a long-proven track record.

The question is not *if* it can be done, but *how soon* will it be done?

Purpose

The purpose of this publication is to provide guidance to new, as well as established, reclaimed water systems. The examples provided are a compilation of various types and sizes of successful reclaimed water systems.

A Message from the Florida Department of Environmental Protection

Florida’s Reuse Program

Lauren Walker-Coleman

Reuse Specialist

Florida Department of Environmental Protection

Introduction

Reuse of reclaimed water has become an integral part of water resources management, wastewater management, and ecosystem management in Florida. Reuse is beneficial because it recharges ground water and reduces demands on valuable ground water suitable for drinking water. It eliminates surface water discharges that may pollute valuable surface waters, and postpones costly investment for development of new water sources and supplies.

Program Summary

The Florida Legislature has established the encouragement and promotion of water conservation and reuse of reclaimed water as formal state objectives in Subsections 373.250(1) and 403.064(1), Florida Statutes (F.S.). In response to these statutory objectives, the Florida Department of Environmental Protection (DEP), and other state agencies have implemented a comprehensive reuse program. The key components of the reuse program are listed below:

- Provisions in the state’s “Water Policy,” Chapter 62-40, Florida Administrative Code (F.A.C.), which encourage and promote reuse and water conservation by requiring reuse in the Water Resource Caution Areas designated by the water management districts.
- Water Management District rules encourage, promote, and require reuse.
- Chapter 62-610, F.A.C., which contains comprehensive rules governing reuse.
- The Antidegradation Policy in Chapters 62-4 and 62-302, F.A.C., which encourages reuse over new or expanded surface water discharges.
- Provisions in Subsections 403.064(13) and (14), F.S., which limit effluent disposal by deep well injection and surface water discharges within Water Resource Caution Areas to wells and discharges serving as

- back-ups to reuse systems, when reuse has been determined to be feasible.
- Statutory and rule requirements for preparation of reuse feasibility studies and associated “Guidelines for Preparation of Reuse Feasibility Studies”.
- Provisions in the Florida APRICOT Act, which facilitate back-up discharges for reuse projects and eliminate previous statutory barriers to reuse projects involving ground water recharge.

The Water Policy

The state’s “Water Policy,” Chapter 62-40, Florida Administrative Code (F.A.C.), serves to guide the reuse and water conservation activities and other programs of the water management districts. It promotes and encourages reuse and water conservation by requiring the water management districts to designate Water Resource Caution Areas—areas in which reuse is required (provided that reuse is feasible).

Section 403.064, F.S.

- This section contains the key statutory language dealing specifically with reuse and accomplishes the following:
- Establishes the promotion and encouragement of reuse and water conservation as formal state objectives.
 - States that reuse is considered to be “in the public interest.”
 - Concludes that reuse systems designed and operated according to DEP rules shall be considered environmentally acceptable and are not a threat to public health and safety.
 - Requires applicants for domestic wastewater permits for facilities located in Water Resource Caution Areas to prepare a reuse feasibility study.
 - Places limitations on deep well injection and other effluent disposal activities.
 - Provides statutory authority for inside uses of reclaimed water.
 - Encourages local governments to implement reuse projects.
 - Allows local governments to allocate costs of reuse systems in a reasonable manner.

- Mandates that the Public Service Commission (PSC) allow utilities implementing reuse to recover the full cost of reuse facilities.
- Requires that consumptive use permits be consistent with local reuse programs.
- Mandates that DEP ensure that permits under review are consistent with the reuse requirements of the appropriate water management district’s consumptive use permit. This applies to facilities that are located within, that serve customers located within, or that discharge within a Water Resource Caution Area, and that have responsibility for water and domestic wastewater.
- Mandates that local governments implementing reuse systems require developers to comply with the reuse program.

Antidegradation Policy

The Antidegradation Policy is contained in Chapter 62-4, F.A.C., “Permits,” and Chapter 62-302, F.A.C., “Surface Water Quality Standards.” These rules require an applicant, for a new or expanded surface water discharge, to demonstrate that the new or expanded surface water discharge is clearly in the public interest. As part of the public interest test, the applicant must evaluate the feasibility of reuse of reclaimed water in order to determine if it is economically or technologically reasonable. If so, reuse will be preferred over the surface water discharge. This has proven to be an effective means to encourage reuse of reclaimed water, while discouraging new and expanded discharges of effluent.

Reuse Feasibility Studies

There are several rules, statutes, or laws that require preparation of reuse feasibility studies. The DEP, with assistance from the water management districts and the PSC, published a guidance document entitled “Guidelines for Preparation of Reuse Feasibility Studies for Applicants Having Responsibility for Wastewater Management” in November 1991. As required by Chapter 62-610, F.A.C., these guidelines will be used by applicants for domestic wastewater permits when required by applicable rules and statutes. These guidelines can also be used by an applicant for consumptive use permits when the applicant has responsibility for both water supply and wastewater management.

The PSC has entered into a memorandum of understanding (MOU) with the five water management districts. A separate MOU between the DEP and the PSC has been implemented. Under the MOUs, the PSC will assist the water management districts and the DEP in review of reuse feasibility studies submitted by utilities subject to PSC regulation.

Historical Perspective

In 1982, the Department of Environmental Regulation (DER), a predecessor of the DEP, created Chapter 17-6, F.A.C., which dealt with domestic and industrial wastewater treatment plants, and issues related to water quality-based effluent limits. At this time, a separate document, Land Application of Domestic Wastewater Effluent in Florida, was published by the DER and was adopted by reference into Chapter 17-6, F.A.C. The term reuse was never used in the Land Application Manual and there was very little text related to public access areas.

In 1989, Chapter 17-6, F.A.C. was split into several chapters—Chapter 17-610, F.A.C. dealt with reuse of reclaimed water, Chapter 17-650, F.A.C., dealt with water quality based effluent limits (WQBELs), and Chapter 17-600, F.A.C., dealt with domestic wastewater treatment plants. Separate chapters were created for regulation of industrial wastewater facilities.

In 1993, when the DER and Department of Natural Resources (DNR) merged to form the Department of Environmental Protection, these rules were renumbered under the 62 series. Hence, the reuse rules came to be designated under Chapter 62-610, F.A.C. This chapter was revised in 1996 to make provisions for industrial uses of reclaimed water, and ground water recharge and indirect potable reuse.

Two early reuse projects that greatly impacted reuse in Florida are the St. Petersburg dual distribution system, and Tallahassee’s award-winning spray irrigation system.

St. Petersburg’s reuse system features the use of reclaimed water for irrigation of residential properties, golf courses, parks, schools, and other landscaped areas. This system, which began operation in 1977, was the first public access reuse system in Florida. Florida’s high-level disinfection criteria, which are integral to the state’s reuse rules, were derived as a result of experimental work done

by the State Virologist, Dr. Flora Mae Wellings.

Almost 2,000 acres of farmland used to grow corn, soybeans, coastal bermuda grass, and other feed and fodder crops are irrigated with reclaimed water at Southeast Farms in Tallahassee. The farm receives its reclaimed water from the Thomas P. Smith Reclamation Facility. This agricultural reuse system dates back to the mid-1960s and has been extensively studied by USGS and the University of Florida.

Rules
Chapter 62-610, F.A.C.

This chapter, entitled “Reuse of Reclaimed Water and Land Application,” governs reuse of reclaimed water and land application in Florida. This chapter was revised and refined in 1989, 1990, and 1996 to address issues such as permitting, irrigation of edible crops, industrial uses of reclaimed water, and other urban uses. An overview of Chapter 62-610, F.A.C., is provided in Table 1.

All of the systems in Table 1, except for overland flow systems, are categorized as reuse systems. Also, single-cell, continuously loaded rapid infiltration basins (RIBs) and absorption fields are not categorized as reuse systems. Provisions for limited wet weather discharges for reuse systems are contained in Rule 62-610.860, F.A.C. Under restricted conditions, the DEP can permit wet weather discharges with minimal water quality review.

Treatment and disinfection requirements contained in the reuse rules are designed to protect the public health and to provide a safe reclaimed water product. Florida’s reuse rules are consistent with the EPA’s Guidelines for Water Reuse, and Florida’s rules played a major role in the development of these national guidelines.

Rulemaking: 1993–1999

In September 1993, Florida initiated rulemaking designed to refine the reuse rules in Chapter 62-610, F.A.C. This rulemaking has been conducted in two phases. Phase I revisions served to refine the reuse rules. A new Part V of the chapter was created to address ground water recharge and indirect potable reuse. Part V simply cross-referenced applicable rules contained in other F.A.C. chapters. In addition, a new Part VII dealing with industrial uses of reclaimed water was established.

Phase I revisions became effective in January 1996. The Phase II revisions of the reuse rules focus on the following:

- Refinement of rules governing ground water recharge and indirect potable reuse.
- Refinement of requirements for use of reclaimed water in open cooling towers.
- Creation of a rule in Part III governing the use of various water supplies to augment available supplies of reclaimed water.
- Creation of a rule in Part III governing aquifer storage & recovery (ASR) of reclaimed water.
- Creation of a rule governing blending of demineralization concentrate with reclaimed water.
- Addition of monitoring requirements for protozoan pathogens.

Phase II revisions were adopted by the Environmental Regulation Commission in January 1999, and are expected to become effective during the summer of 1999.

Coordination
Reuse Technical Advisory Committee (TAC)

This committee is charged with providing technical input into DEP rulemaking. The committee members have a great deal of reuse expertise and experience. The TAC has been involved in the development of the reuse rules since the inception of Chapter 17-610, F.A.C., in 1989.

Reuse Coordinating Committee

Several state agencies are involved in reuse. The DEP coordinates the reuse program, administers the domestic wastewater permitting program, and has the primary responsibility for administering water quality programs. The water management districts are responsible for designating Water Resource Caution Areas, issuing consumptive use permits, and other water quantity issues. Water management districts may impose reuse requirements in consumptive use permits for facilities in Water Resource Caution Areas. The PSC regulates rates for investor-owned utilities located in 37 Florida counties. These utilities are able to distribute the costs of reuse facilities among water, wastewater, and reclaimed water customers. The Department of Health (DOH) serves as a technical advisor for public health issues. The DOH is also represented on the Reuse TAC. The Florida

TABLE 1: OVERVIEW OF CHAPTER 62-610, F.A.C.

Part	Contents	Treatment & Disinfection Requirements
I	General: Applicability, definitions, technical guidance, forms, engineering report, O&M requirements, & pretreatment programs.	N/A
II	Slow-Rate Land Application Systems, Restricted Public Access: Agricultural reuse involving feed, fodder, & pasture crops.	Secondary treatment & basic disinfection.
III	Slow-Rate Land Application Systems, Public Access Areas, Residential Irrigation, & Edible Crops: Irrigation of parks, golf courses, residential properties, & other landscaped areas. Includes urban uses like toilet flushing, street cleaning, construction dust control, fire protection, & decorative water features.	Secondary treatment, filtration, & high-level disinfection.
IV	Rapid-Rate Land Application Systems: Ground water recharge using rapid infiltration basins (RIBs) & absorption fields.	Secondary treatment & basic disinfection. Nitrate $\leq$ 12 mg/L. RIBs in unfavorable hydrogeologic conditions require additional treatment & disinfection.
V	Ground Water Recharge & Indirect Potable Reuse: Injection projects and augmentation of surface water supplies.	Varies with the system type. Minimum is secondary treatment, filtration, high-level disinfection & meeting drinking water standards. Some projects have TOC & TOX limits.
VI	Overland Flow Systems: A land application treatment system.	A reduced level of secondary treatment with low level disinfection.
VII	Industrial Uses: Cooling, process, & wash waters.	Secondary treatment & basic disinfection. High-level disinfection required for some cooling towers.
VIII	Permitting: Permitting, reuse/disposal classification, feasibility studies, storage lakes, protection of water quality, limited wet weather discharges,	N/A

(continued)

A Message from the Florida DEP (continued)

Department of Agriculture & Consumer Services (DACS) is involved in agricultural reuse projects. In addition, the Florida Department of Community Affairs (DCA) administers Florida’s comprehensive planning program.

Coordination among these agencies is critical to the continued success of the reuse program. In order to effectively coordinate the state’s reuse program, the DEP, the PSC, and the five water management districts formed the Reuse Coordinating Committee in 1992. Today, the DOH, DCA and DACS also sit on the committee. The DEP’s Reuse Coordinator chairs the committee consisting of representatives from all the agencies. The committee meets regularly to coordinate reuse-related activities and to promote communication between the member agencies.

The DEP issues permits for domestic wastewater treatment facilities—potential sources of reclaimed water. The water management districts issue consumptive use permits to users of water—potential users of reclaimed water. Coordination is needed to ensure that Florida takes advantage of opportunities to match potential reclaimed water sources with potential customers. As a result, representatives of the permitting programs in the six DEP districts meet regularly with their counterparts in the five water management districts to better coordinate permitting activities for reuse projects in Florida.

Reuse Conventions

The Reuse Coordinating Committee developed Reuse Conventions to promote consistency and uniformity among the water management districts in development of the District Water Management Plans required by Chapter 62-40, F.A.C. The “Reuse Conventions” were published by the Reuse Coordinating Committee in 1993. Some of the Reuse Conventions dealt with the definitions of reuse, reclaimed water, feasible, effluent, reuse feasibility study, and Water Resource Caution Areas.

DEP Permitting Activities

Provisions for permitting domestic wastewater facilities are found in Chapter 62-620, F.A.C. The standards for issuing or denying a permit are provided by Rule 62-620.320, F.A.C. Additional requirements for permitting of reclaimed water projects are contained in Part VIII of Chapter 62-610, F.A.C.

Coordination of the permitting activities of the DEP and the five water management districts is promoted by Part VIII of Chapter 62-610, F.A.C. Rule 62-610.800(10), F.A.C., requires that domestic wastewater and reuse permits issued by the DEP be consistent with the reuse requirements included in the consumptive use permits issued by the water management districts.

Before the creation of Chapter 62-610, F.A.C., the DEP permitted discrete reuse pipes and specific application sites, and specified permitted capacities for each individual site where reclaimed water was used. With the establishment of Part III of Chapter 62-610, F.A.C., a new approach to permitting these types of systems was introduced—the general service area permit. This new approach is outlined in Rules 62-610.490 and 62-610.800, F.A.C. Generally, the permit for the reuse system will be combined with the wastewater treatment plant permit. If DEP has reasonable assurances that a proposed project complies with applicable rule requirements, the DEP moves to issue the permit.

Florida’s Reuse Experience

Water reuse in Florida is rapidly growing in popularity. In 1997, there were over 425 reuse systems in Florida (DEP, 1998). These systems provided more than 440 million gallons of reclaimed water per day for various uses. Figure 1 shows the growth of reuse capacity in Florida from 1986 to 1997. If the current trend in reuse continues, the reuse capacity in the year 2020 will have grown to nearly 1400 million gallons per day! (See Figure 2)

Reuse of reclaimed water is an excellent way to conserve the valuable water resources of Florida. It is safe, sensible, and economical. Please join the state in its efforts to: *Use It Again, Florida!*

FIGURE 1
Reuse Capacity

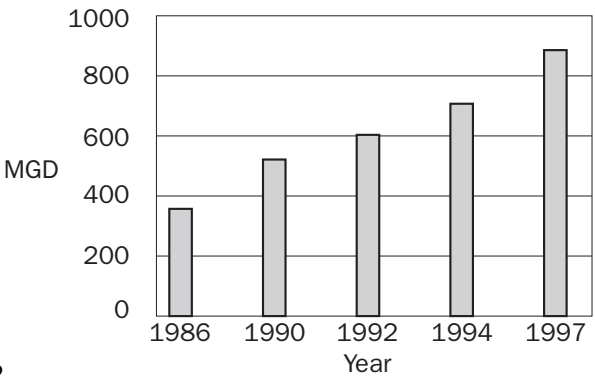
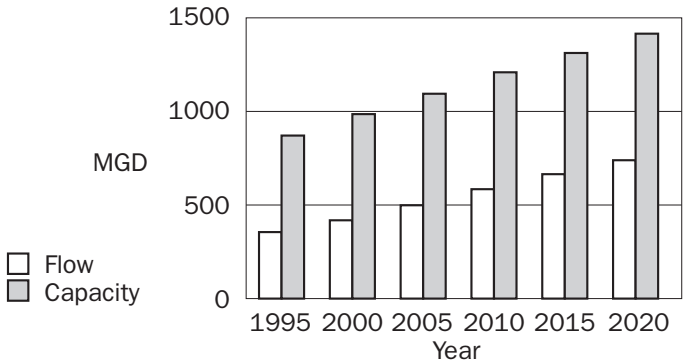


FIGURE 2
Reuse Forecasts



Contributing Systems

City of St. Petersburg
Large Public Access System
20MGD

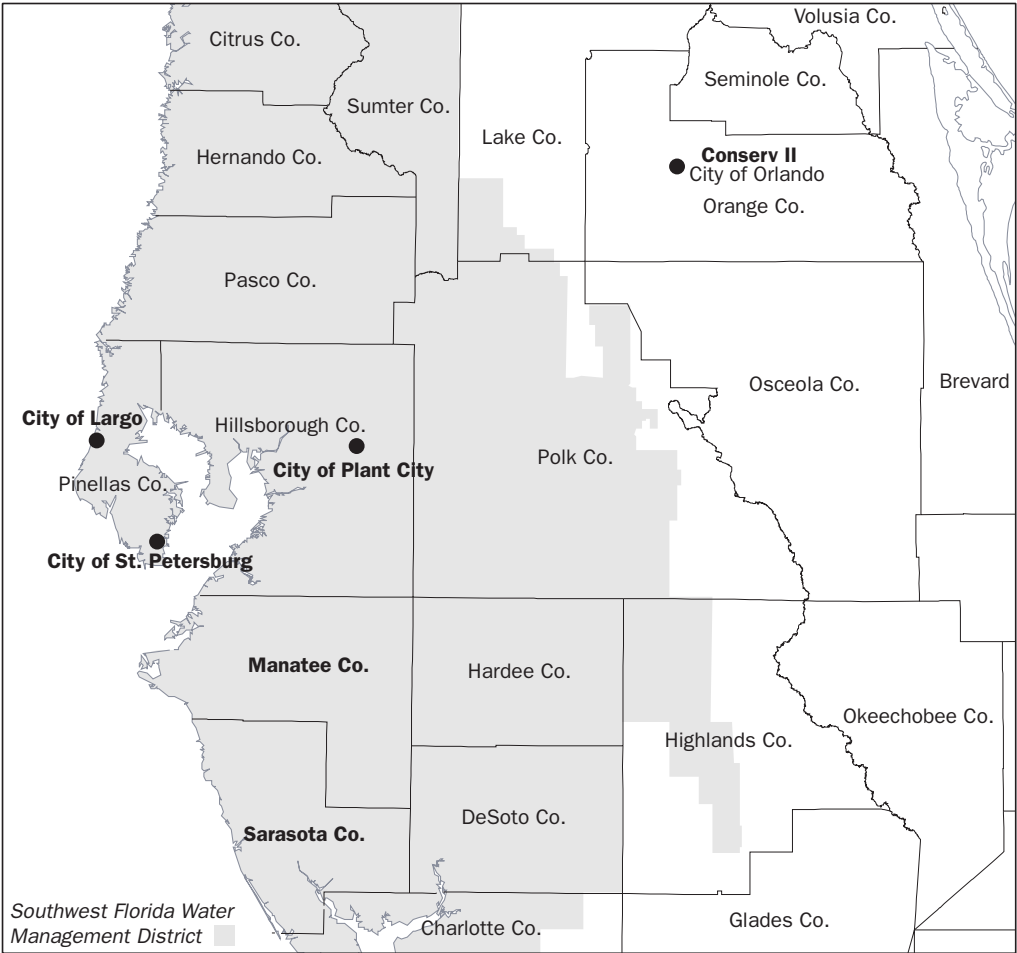
City of Largo
Medium Public Access System
7MGD

Sarasota County
Small Public Access System
5MGD

Conserv II
Large Agricultural System
28MGD

Manatee County
Medium Agricultural System
10MGD

City of Plant City
Small Agricultural System
3MGD



LOCATION OF CONTRIBUTING SYSTEMS

City of St. Petersburg
Large Public Access System
20MGD

St. Petersburg has had to deal with water and wastewater issues for more than a century. Reservoir Lake, today known as Mirror Lake, was tapped as the City’s first major water resource in 1899. By 1923, six wells had been drilled around Mirror Lake and three more around Crescent Lake; all nine combining for a daily yield of nearly 3.5 million gallons of water. St. Petersburg’s growing population soon stressed this resource to its limits and within five short years St. Petersburg was a water-scarce community. It was during this timeframe that City Fathers had the foresight to purchase well fields in the neighboring counties of Hillsborough and Pasco to ensure a supply of water for the citizens of St. Petersburg for the future.

A hundred plus years later we find ourselves in much the same dilemma! In the 1970s we were faced with making a landmark decision. A report published by the Environmental Protection Agency (EPA), rated “Tampa Bay with having the most polluted shoreline in the nation.” This was a prelude to the approval of the Wilson Grizzle Act, “mandating wastewater treatment plants discharging to Tampa Bay and its tributaries treat their wastewater to that of drinking water standards or cease discharging to surface waters altogether.” A statement was issued by Southwest Florida Water Management District (SWFWMD), “declaring St. Petersburg as a water shortage area.” As in the late 1920s, City Council in the 1970s again took prompt action to resolve these issues by developing a reclaimed water system to eliminate discharge of treated wastewater to surrounding surface waters and to reduce the demand for potable water pumped from City owned well fields in neighboring counties. This was a very bold step in the early 1970s. Up to that time, no major community in the nation had considered undertaking the development of an urban irrigation system using recycled wastewater on such a large scale.

The reclaimed water system has continued to expand and change in character since its inception in 1977, from one of an alternative mode of wastewater effluent disposal to one of a fully operational third service encompassing water treatment and distribution, wastewater collection and treatment, and reclaimed water supply. The growth in

the reclaimed water system demand since 1977 has significantly contributed to suppressing potable water demands over the past fourteen years. Significant economic and environmental benefits have been derived from the development of this form of water reclamation. Since its inception, annual demand for potable water has been stabilized while the demand for nutrient rich reclaimed water has steadily increased.

The reclaimed water system has been an economic benefit to all the City’s utility customers in that several potable water system projects have been delayed indefinitely, e.g., additional treatment units at the Cosme Water Treatment Plant, booster stations on the 48-inch water transmission main in the Safety Harbor area and the southside booster station and storage facility. The cost avoidance for these projects is in the range of \$25 to \$30 million. Persistent expansion of the reclaimed water system will continue to provide an economic benefit to utility customers because the development of new, very expensive, raw water supplies will be delayed. There is a critical shortage of available new water sources in the Tampa Bay area.

New water supplies might come in the form of desalination of brackish and/or sea water and/or the development of ground water sources in distant locations. There are many environmental and regulatory issues to be resolved before these sources of water can be “harvested” for public use. In any case, the cost of new water will be very expensive and the economic impact to utility customers will be significant.

The recycling system selected by the City incorporates using highly treated effluent primarily for landscape irrigation of public and residential areas throughout St. Petersburg. The treatment at each of the four reclamation plants consists of grit removal, mechanical aeration, clarification, filtration, disinfection, and storage of the reclaimed water before use in the designated spray irrigation areas or disposal of surplus reclaimed water by deep injection wells.

Since all four of the plants are connected by a looped reclaimed water distribution system, the loss of reclaimed water to a customer area from one WWTP can be made up from one of the other three regional plants. This ability to feed the reclaimed water distribution system from each

(continued)

Contributing Systems (continued)

plant maximizes service reliability to our reclaimed water customers.

St. Petersburg’s four regional wastewater treatment plants have a combined capability of producing 68.4 million gallons of reclaimed water for irrigation daily. The four regional facilities not only serve St. Petersburg, but provide service to adjacent communities as well. Each of the facilities is staffed with operating personnel 24 hours a day to assure the integrity of the reclaimed water being produced.

The treatment process consists of four basic steps.

Step 1. *Sand and grit removal: The process removes non-biodegradable material, reducing the amount of matter or suspended solids in the water.*

Step 2. *The biological process is an aerobic “activated sludge” process using the micro-organisms that inhabit the aeration basin to break down the biodegradable solids. The aeration period is relatively short, three to six hours. This particular type of activated sludge treatment retains the nitrogen in the ammonia phase. A longer aeration period would convert the nitrogen to nitrate but would cost more money in power. No phosphorus is removed in the process. This makes the water especially good for plants due to its fertilizer value.*

Step 3. *Clarification: This phase allows the liquid, after being churned in the aeration basin, to quietly settle, permitting the remaining suspended solids to fall to the bottom of the tank or to be skimmed from the surface of the clarifier.*

Step 4. *The final step in the process of removing suspended solids that survive the clarification process is filtration (the capture of microscopic particles that still remain in the water after clarification has been completed). Filtration produces a water which is near drinking water in clarity, but does not affect the nitrogen and phosphorus compounds.*

The water is then sanitized through a chlorination process and sent to on-site storage tanks. The removal of the suspended solids in the filters improves the effectiveness of chlorination. A measure of the bacterial quality of the water indicates that no pathogens normally survive this process. Each of the four treatment facilities have storage tanks ranging in size from 2 million to 8 million gallons, thus providing a combined storage capacity of 25 million gallons.

The initial reclaimed water distribution system

constructed in the late 1970s was limited to serving golf courses, parks, schools, and large commercial areas. Since the plants were located at the four corners of the City, the largest pipe in the system is only 42 inches in diameter, and most are less than 36 inches. In general, large-scale excavations were not necessary, a factor that contributed to the cost-effectiveness of the reclaimed water distribution system. The cost of this project was approximately \$25 million.

In 1981, the City applied for EPA grant funding to expand the reclaimed water distribution system into residential areas. A study conducted in support of the grant application identified four areas in the City where groundwater quality was deemed especially poor for irrigation. These areas were located adjacent to the coast and designated “water quality critical” because the shallow groundwater supplies were either inadequate or high concentrations of chlorides or iron were present. Many of these locations were dredge and fill sites, where expensive waterfront homes were constructed. This study led to the expansion of the reclaimed water system into residential areas. A \$10 million system expansion was completed in 1986 and served approximately 9,300 residences in the water quality critical areas.

Since 1977, more than \$100 million has been expended to upgrade and expand the four wastewater treatment plants to a capacity of 68.4 MGD and to construct almost 300 miles of reclaimed water piping.

The City’s reclaimed water system is an integral part of the puzzle as water and wastewater issues become more and more entwined. The cost to expand the reclaimed water system to its maximum usage is estimated at \$15 million, which would serve about 17,000 customers. There is a definite economic benefit to expanding this system to its maximum versus implementing surface water disposal of excess product and developing new water sources that are not groundwater dependent. As the program builds in momentum and the customer base broadens, management of the resource will be vitally important. It is not our desire to have the customer base competing for the resource.

City of Largo
Medium Public Access System
7MGD

Largo Sparkling Water System

Largo is a city of 75,000 residents, located in the fast-growing Tampa Bay area. Largo is also located in Pinellas County, the most densely populated county in Florida. The City of Largo does not own a potable water system. All potable water used by its residents is supplied by the Pinellas County Water System.

With no potable water system of its own, Largo has concentrated its environmental efforts on its “state of the art” advanced wastewater treatment facility, sludge pelletizing factory, and its “Sparkling Water” reclaimed water system.

In the 1980s, studies showed that almost 40 percent of the drinking water used by utility customers was for irrigation purposes. Largo officials recognized that water conservation steps were imperative. So in 1984 the City developed its “Sparkling Water System” to supply high quality reclaimed water for irrigation. Starting in 1987, cooperative funding from the Southwest Florida Water Management District (SWFWMD) enabled the City to greatly accelerate the expansion efforts of its system.

The City’s “Sparkling Water” reclaimed water system was designed by Quentin L. Hampton Associates, Inc., as a water conservation and reuse plan that features a reclaimed water system that conserves drinking water, improves the water quality of Tampa Bay, and, at the same time, replenishes water being withdrawn from the Floridan aquifer.

Largo’s “Sparkling Water System” is a public access reclaimed water system with residential, commercial, recreational, and industrial users. The City’s system has expanded to include seven golf courses, 80 commercial/ industrial customers, and almost 3,000 residential services. An average of five to eight MGD of the advanced wastewater treatment facility’s 12 MGD of flow is reused by Largo’s customers each day. The majority of the reclaimed water is for irrigation. However, there are several major commercial and industrial customers using Largo “Sparkling Water” for process and cooling water,

including the Pinellas County waste to energy power plant (RESCO), Honeywell, R.P. Scherer, and Home Shopping Network.

Reclaimed water, which meets more than 98 percent of the primary and secondary drinking water standards, is the product of Largo’s 18 MGD (permitted) Advanced Wastewater Treatment Facility. This reclaimed water has no smell, it does not stain and it has a very low salt content. The City’s reclaimed water is crystal clear and contains micro-nutrients which enhance some of its uses especially in the irrigation of residential and commercial green areas. The extensive (tertiary) treatment and disinfection that the wastewater receives, along with a rigorous inspection and cross-connection control program, ensure that public health and environmental quality are always protected.

Sarasota County
Small Public Access System
5MGD

Sarasota County originally consisted of a conglomerate of privately-owned, package wastewater treatment plants, lacking a regionalized, wastewater utility. In 1994, the Board of County Commissioners adopted a consolidation and acquisition plan to purchase or acquire smaller plants, decommission or modify them, and tie them into a regional water reclamation facility. Sarasota County began its reuse program in 1988 with the acquisition of the Bent Tree facility. As flows increased at the regional water reclamation facility, the reuse program was expanded to provide reuse to four additional golf courses. Two more acquisitions within the past four years brought Sarasota County into the reuse business in earnest.

The reuse program was started due to a number of factors: 1) dispose of effluent in an environmentally friendly manner, 2) extend the life of drinking water supply resources, 3) reduce the need to expand potable water treatment plants, and 4) reduce groundwater withdrawals, thereby protecting against saltwater intrusion. Encompassing both the north and south county

service areas, Sarasota County provides public access reclaimed water to 15 golf courses, numerous medians, a sod farm, three parks and over 1,000 single family homes. In addition, reuse is provided to many multi-family dwellings and common areas. Our customers are master-metered and consumption is billed through the developer or homeowner’s association.

Sarasota County has ten wastewater treatment plants. Six will contribute to the regional reuse system with at least advanced secondary treatment levels. We supply approximately 5.8 MGD into the reuse system and have a total capacity nearing 9.0 MGD. Two of the regional water reclamation facilities are in the process of being expanded to double their existing plant capacity and will be completed within one year and three years, respectively.

The majority of our water reclamation facilities pump from an isolated storage pond onsite. Because of this, we often have algae and debris entering the reuse system. About one year ago, we installed state of the art Arkal filters to alleviate the debris entering the system. These filters have proven extremely effective and, as a result, will be installed at the other major water reclamation facilities.

Conserv II
Large Agricultural System
28MGD

History
WATER CONSERV II is the largest water reuse project of its kind in the world, a combination of agricultural irrigation and rapid infiltration basins (RIBs). It is the first reuse project in Florida permitted by the Department of Environmental Protection to irrigate crops produced for human consumption with reclaimed water. The City of Orlando and Orange County are the joint owners of WATER CONSERV II.

The City of Orlando and Orange County took a liability and turned it into an asset. In the beginning, they convinced skeptical citrus growers in West Orange and South Lake counties to join the project and irrigate their crops with reclaimed water. The reclaimed water that is not needed for agricultural irrigation is discharged into RIBs for recharge of the Floridan aquifer. WATER CONSERV II, in its twelfth year of operation, is a success story.

What does the future hold for WATER CONSERV II? A series of devastating freezes in 1983, 1985, and 1989 put many citrus growers out of business and forced others to move their operations to south Florida and a potentially warmer climate. Irrigation flow rates during freezing conditions are over 11 times greater than normal daily flow rates. Are there other agricultural crops that don’t require freeze protection, yet provide a satisfactory return to the farmer? West Orange County is the County’s last citrus strong-hold; it is also one of the last major undeveloped sections of the County. Residential and commercial development seems inevitable. With all of these factors in mind, the City and County realized the need to diversify WATER CONSERV II’s user base.

Through an innovative lease agreement between the City and County and world-renowned golf educator Phil Ritson, construction began on the 911-acre Orange County National Golf Center (OCNGC) in October 1996. The 42-acre driving range opened in March 1997 and play began on the Panther Lake (south) Course in September 1997. The first 9 holes of the Crooked Cat (north) Course opened in January 1998. Several other facilities are under construction at the site. Reclaimed water is being supplied for irrigation of all of the facilities. RIBs have been built between some of the fairways and landscaped so as not to be noticed by those playing golf. When completed, the Center will use an average of 2 million gallons of reclaimed water daily for irrigation and an average of 1 million gallons of reclaimed water will be discharged daily to the RIBs for recharge of the Floridan aquifer.

As the City and County continue to increase in population, so will the amount of reclaimed water that is produced. The City and County are already looking into the future for WATER CONSERV II to ensure that it remains the premier reclaimed water project and success story that it is.

The Past

In 1979, a group known as Save Our Lake took the City of Orlando and Orange County to court in an effort to stop the discharge of effluent into Shingle Creek from the City’s McLeod Road Wastewater Treatment Facility and the County’s Sand Lake Road Wastewater Treatment Facility. Shingle Creek flows south from western Orlando into Lake Tohopekaliga (Lake Toho), a lake at the northern end of the Kissimmee chain of lakes known worldwide for its excellent bass fishing. Save Our Lake

contended that the effluent discharge was contributing to the degradation of Lake Toho and its fish habitat. The court sided with Save Our Lake and issued an injunction against the City and County to cease discharge of effluent into Shingle Creek by March 1988.

The City and County immediately set out to find a suitable alternative for the discharge of their effluent. They participated in a federally-funded regional wastewater plan called Southwest Orange County 201 Facilities Plan. The objective of the plan was to identify a cost-effective, environmentally sound solution to provide wastewater capacity for westerly Orlando and southwest Orange County through the year 2000.

Five alternatives (deep well injection, ocean outfall, Rapid Infiltration Basins [RIBs], Groundwater Conservation Program, and agricultural irrigation) were investigated. No single alternative stood out as the answer to the issue. Further study revealed that a combination of agricultural irrigation and RIBs would provide a cost-effective alternative. As a result, WATER CONSERV II was born.

Planning, design and permitting got underway almost immediately. Construction began in 1983. The project met with strong resistance from the citrus growers and residents in west Orange and southeast Lake counties. The citrus growers were not convinced that the irrigation of their groves with a product called reclaimed water would be beneficial to them. The residents joined forces as part of the NIMBY (Not In My Back Yard) group to keep the project from locating in their area. The City and County immediately began negotiations with both groups to resolve all concerns.

The citrus growers agreed to accept the reclaimed water after the City and County provided research on the effects of reclaimed water on citrus production and fruit quality. Dr. R.C.J. Koo, a leading authority on citrus irrigation at the University of Florida’s (U of F) Lake Alfred Citrus Research & Education Center, provided the citrus growers and the City and County with initial research data that showed irrigating of citrus with reclaimed water would be beneficial. The City and County also agreed to provide funding for researching the long-term effects of the irrigation of citrus with reclaimed water. The research would be coordinated through the Mid Florida Citrus Foundation (MFCF). The non-profit Foundation board would be comprised of City, County, project grower, citrus industry, and contract operator representatives. The research would be conducted by a 5-

member research team from the U of F Institute of Food and Agricultural Sciences (IFAS) Lake Alfred Citrus Research and Education Center, and the U of F Cooperative Extension Service fruit crops specialist for Orange and Lake Counties. The City and County also offered two incentives to the citrus growers for signing up with the project. First, reclaimed water would be provided to the growers free for the first 20 years and at pressures suitable for microsprinkler irrigation. Second, water would be provided during freezing conditions for enhanced cold protection.

The area residents cautiously accepted the project after assurances were provided by the City and County through an interlocal agreement between the City and County and several resolutions that were adopted by the County to address and be sensitive to concerns of the residents. The concerns focused on the safety, health, and welfare of the area residents and the need to minimize potential adverse environmental impacts, which might be caused by the project.

The City and County elected to hire a contract operator for the operation and maintenance (O&M) of the project. The contract operator would also provide liaison services between the City/County/Project and the project citrus growers and area residents. A cost-plus-fixed-fee budget for the contract operator was developed and implemented to allow the City and County to remain in control of day-to-day activities.

Construction continued into late 1986. Startup of the various phases of the project started in June and continued through late November. Commercial operation began on December 1, 1986, 15 months ahead of the March 1988 date to cease discharge into Shingle Creek.

The Present

From the beginning in December 1986 with a handful of citrus growers and a RIB system with a capacity of 15.88 mgd, WATER CONSERV II has grown into one of the largest reuse projects in the state. The project presently supplies reclaimed water to 58 citrus growers, 9 landscape and foliage nurseries, 2 tree farms, 2 landfills (one of which has a soil cement production facility), an animal shelter, the MFCF, the OCNGC, and a RIB system with a capacity of 16.90 MGD.

Reclaimed water is received from the City’s McLeod

(continued)

Contributing Systems (continued)

Road Water Reclamation Facility and the County’s South Regional Water Reclamation Facility. Daily flows have averaged 28.05 mgd for 1995, 1996, and the first 9 months of 1997. Of the 28.05 mgd, an average of 13.51 MGD has been used for agricultural irrigation with the remaining 14.54 MGD being discharged to the RIBs for recharge of the Floridan aquifer.

Research on the long-term effects of the irrigation of citrus with reclaimed water has produced data that is far greater than originally expected. It was originally anticipated that irrigating citrus at the rate of 100 inches per year would have severe detrimental effects that would result in a heavily diseased tree or even death. Research has shown just the opposite. To date, citrus irrigated with 100 inches of reclaimed water per year grew faster and produced more fruit than citrus irrigated with 16 inches or 50 inches of reclaimed water per year. A small reduction in juice solids due to the high irrigation rate is offset by the increase in fruit production. Increased weed growth is associated with the high irrigation rate in younger groves, but is easily controlled with 1 additional application of herbicide. This does not seem to be a problem in more mature groves due to the increased tree canopy size.

Other research results to date include: (a) the benefits of irrigating with reclaimed water have been consistently demonstrated since 1987; (b) no significant problems have resulted from the use of reclaimed water for citrus irrigation; (c) tree condition, crop size, and soil and leaf mineral aspects of citrus trees irrigated with reclaimed water are improved over groves irrigated with well water; and (d) some fertilizer elements required by citrus trees are present in adequate amounts in reclaimed water and can be eliminated from the fertilizer program.

In the beginning, it was anticipated that the project would build out to serve 12,000 to 15,000 acres of citrus. Devastating freezes in 1983, 1985 and 1989 put many local citrus growers out of business and forced others to move their operation to south Florida and a potentially warmer climate. During the freeze of December 24-26, 1989 temperatures as low as 18° Fahrenheit coupled with 20 mph winds killed 60% of the citrus trees in Orange County and 90% of the trees in Lake County. Groves served by WATER CONSERV II had a better survival rate than other groves in the area. The availability of reclaimed water for freeze protection played an important role in the survival of these groves.

Presently, the project provides reclaimed water for the irrigation of approximately 4,500 acres of citrus and

nurseries. Very little increase in citrus acreage is expected in the future. Almost all of the groves in the project service area have already connected to the system and expansions of the system for citrus are not planned at this time.

While there are several advantages to citrus and nursery irrigation, there is one major disadvantage. Providing water for freeze protection is very costly and requires a lot of coordination and manpower. Normal daily flows for agricultural irrigation average 13.51 MGD. Currently, flow requirements for freeze protection exceed 100,000 gpm (±150 MGD), or over 11 times the normal flow rate. In order to be able to provide the needed flow, the project has 25 16-inch wells that collectively produce ±80 MGD, 38 million gallons of storage capacity at the Distribution Center and the 2 water reclamation facilities, and a 16-inch potable water line that supplies water to the pump station wet well at each of the water reclamation facilities to produce ±20 MGD from the water reclamation facilities. Operations during freezing conditions require project personnel to change from 8-hour shifts to 12-hour shifts in order to meet O&M demands during the critical period. There is also the need for constant communication between the water reclamation facilities, the Distribution Center, the on-duty project staff, and the agricultural customers who are operating their systems for freeze protection. Telephones, cellular phones, and 2-way radios play an important role in these critical communications.

The demand for water during freezing conditions is the major factor in a recent decision by the City and County not to pursue additional agricultural customers that require water for freeze protection at this time. Costs for operating the system during freezing conditions average \$15,000 to \$20,000 per day.

Growers were skeptical at first about the concept of irrigating with reclaimed water, even with the initial assurance from Dr. Koo. Now, with 11 years of research data to backup the benefits of irrigation with reclaimed water, growers are singing its praises. The costs of operating and maintaining a pumping system (\$128.50/acre/year) have been eliminated; the effort required to secure, maintain, and renew a consumptive use permit for an irrigation well has been eliminated; there are no regulatory restrictions on the use of reclaimed water for citrus irrigation; reclaimed water is provided for freeze protection; tree growth rate and crop size are increased; and some fertilizer costs have been eliminated. All of

these add to the bottom line when a grower looks at his profit/loss statement.

The project also sponsors an annual grower meeting to present research results and information from the MFCF, keep the growers updated on the present status and future plans for the project, and receive input, recommendations and comments from the growers. A monthly memo is sent out to all growers to keep them informed of current and future issues on the project. Also included are the test results for the most recent 6-month period of the citrus irrigation reclaimed water constituent concentrations. Thirty-five constituents, from arsenic to zinc, are monitored on a weekly, monthly or quarterly basis, depending on the individual constituent.

Area residents were also skeptical of accepting the project in their area at first, even with the assurances about health, safety, welfare, and protection of the environment from the County and City. After 11 years of operation with no major issues of concern, the residents seem comfortable with the project and have accepted it as part of their community. They are very concerned about the possibility of rapid growth in the area. They see the project as a protector of the rural atmosphere because they know that development will not occur on lands owned by the project for RIBs. The use of the conference room at the Distribution Center is open to the residents for meetings and functions of the local homeowner associations. The project is a member of the largest area homeowners association, The Avalon Home & Property Owners Association. Representatives of the homeowner associations are invited to meetings and functions sponsored by the project as a means of maintaining good communications and a good relationship between the project and the area residents.

After several years of operation, project growers and area residents recommended to the City and County that they look at other options for discharge of excess reclaimed water. They felt there were options other than RIBs that could get rid of the excess reclaimed water while being more pleasing to the eye and increasing the overall property value in the area. The City and County welcomed the idea and started exploring some options. The one option that stood out above the others was a golf course that had RIBs interspersed among the fairways and hidden from view with landscaping. The golf course would use reclaimed water daily for irrigation purposes and the RIBs could be used for getting rid of the excess reclaimed water. The City and County initiated a search

for the right person or group to enter into a partnership with them and build the golf course and RIBs on lands that had been purchased for expansion of the project. Within the next few months an outstanding candidate was selected.

Through an innovative lease agreement between the City and County and world-renowned golf educator Phil Ritson, construction began on the 911-acre Orange County National Golf Center in October 1996. The 42-acre driving range opened in March 1997 and play began on the 7,295-yard, 18 hold Panther Lake (south) Course in September 1997. The first 9 holes of the 10,625-yard Crook Cat (north) Course opened in January 1998, with the remaining 18 holes open in the fall of 1998. Other facilities that are under construction include the Phil Ritson Golf Institute (which includes a golf studio, student lodge, and classroom building), the clubhouse (which includes a restaurant, lounge, and pro shop), a 9-hole executive teaching course call “The Cub,” and a 36-hole national championship putting course. Future development plans include additional championship golf holes and luxury hotel accommodations.

The Phil Ritson Golf Institute will feature educational programs for elementary, middle and high school students; beginning and intermediate golfers; young golfers wanting to pursue their golf career objectives; minority golfers; physically and mentally challenged golf students; women golfers; career golfers who want to focus and fine-tune their skills; and recreational golfers. The Phil Ritson Education Foundation, a not-for-profit corporation, strives to advance learning opportunities in education focused on, but not limited to, golf and the golf industry. The Foundation supports programs which expand educational opportunities for persons who might be otherwise held back in their life’s accomplishments because of circumstances of challenges beyond their control.

Reclaimed water is being supplied for irrigation of all of the facilities. RIBs have been located throughout the site and landscaped so as not to be noticed by those playing golf. When completed, OCNGC will use an average of 2 million gallons of reclaimed water daily for irrigation and an average of 1 million gallons of reclaimed water will be discharged daily to the RIBs for recharge of the Floridan aquifer.

The Future

Orange County has become an urban county spurred by tremendous growth in the tourism industry. What does the future hold for WATER CONSERV II? As the City and County continue to increase in population, so will the amount of reclaimed water that is produced. Both have a “zero discharge” policy.

The City and County are planning for the future of WATER CONSERV II through their respective 5-year Capital Improvement Programs. The programs provide for the systematic upgrade and expansion of the project to handle increasing flows and customer use. Both water reclamation facilities are anticipating a 20% increase in average daily flows within the next 5 years.

WATER CONSERV II is and will remain the main focus for wet weather capacity for the City’s and County’s reuse programs. To meet the future wet weather capacity needs, the City and County are purchasing lands in the project area that have high recharge capabilities for the development of addition RIB sites. They are also looking for other innovative reclaimed water systems and uses that will make the existing RIB sites more efficient. The key to the success of the RIB systems is that the City and County maintain ownership control for options and discharge capabilities.

The City and County realize the importance of diversification of their customer base. They are already looking for new customers that don’t require flows for freeze protection. They are also looking for additional large volume customers and customers that can use reclaimed water shortly after rain events. Diversification of the customer base will increase reuse flows and hopefully help reduce the need for additional RIB sites and wet weather capacity.

Orange County is planning to interconnect their regional water reclamation facilities to transfer flows between facilities. This feature will be of great help on freeze nights in supplying growers with reclaimed water for freeze protection. The City already has this capability in place.

What to do after the 20-year contracts expire with respect to free reclaimed water for the agricultural customers? That is a question that the City and County are beginning to think about. The 20-year contracts gave the growers free reclaimed water for the 20-year period as an initial incentive to get them to sign up with the project. Now, in the 12th year of the contract, reclaimed water is viewed as an asset and a commodity that has a

value. Should the City and County charge the agricultural customers for the reclaimed water after the initial 20 years or should the free reclaimed water clause be continued? The agricultural customers want to see the free reclaimed water continue, of course. However, there is income for the City and County should they decide to start charging a nominal fee for the reclaimed water when the 20-year contracts expire.

The three devastating freezes in the 1980s put many citrus growers out of business and forced others to move their operations to south Florida and a potentially warmer climate. Are there other agricultural crops that don’t require freeze protection, yet provide a satisfactory return to the farmer?

Research has already shown that a wide variety of crops can be grown using reclaimed water for irrigation. U of F IFAS researchers and local county extension service agents believe that there is still room for specialized agriculture in an area that is converting to residential/commercial/light industrial development. They also believe that several crops show promise to replace citrus in the WATER CONSERV II service area and provide a satisfactory return. These crops include sand-grown sod, perennial peanut hay, forestry products grown for energy production and paper, woody ornaments, and foliage plants. If marketed right, several deciduous fruit crops can be added to the list. Information on all of these crops is available from the U of F. The key to the success of these crops is the availability of water for production, and reclaimed water is available from WATER CONSERV II. These crops also meet the City’s and County’s criteria for not needing water for freeze protection. The City and County are investigating the possibility of leasing lands that they own in the project service area for production of some of these crops. The lands were originally purchased for expansion. They would also retain the right to build RIBs on the land in strategic locations for recharge of the Floridan aquifer with excess reclaimed water. This combination would allow for agricultural irrigation and expansion of the existing RIB system on the same land.

West Orange County is the county’s last citrus stronghold; it is also one of the last major undeveloped sections of the county. Residential and commercial development seems inevitable. Citrus growers in West Orange County are already receiving inquiries and interest from investors and developers as they look for lands for future development. With low returns on citrus the last few

years and development pressure starting to increase, selling the land for development is looking more and more promising and profitable to the citrus grower. The OCNGC will be a major catalyst in this movement.

Horizon West, a grass-roots organization of property owners and business interests in West Orange County, was formed in late 1993. The organization’s goal was to work with the Orange County Board of County Commissioners through a public-private partnership for the development/ approval of a new Land Use Classification that would restore reasonable density and land use to ±45,000 acres in West Orange County. Miller-Sellen Associates was hired as a consultant to the project for development of the new Land Use Classification.

Following 18 months of development that included many planning sessions and public meetings, the Orange County Commission on June 5, 1995 adopted the Village Land Use Classification. The ±45,000 acres in West Orange County will be divided into a number of “villages,” each containing 1,000 to 3,000 acres. Each village will be subdivided into “neighborhoods” of ±500 acres each. There will be neighborhood centers and a village center in each village. The centers will be reserved for light commercial development, churches, schools, parks, etc. The Village Concept is aimed at reducing the reliance on the automobile, providing a greater variety of land uses closer to work, and creating opportunities for pedestrian, bike, and transit uses.

The Village Policies provide for permanent open space, protected greenbelts and wildlife corridors, all of which create the Village Boundaries. There will be a Town Center located near the center of the area for major commercial and light industrial activity. Orange County will provide all utilities and services for the area.

A regional facility for the treatment of wastewater and the production of reclaimed water is planned by Orange County for the Horizon West area. Reclaimed water from this facility and the reclaimed water that comes to WATER CONSERV II from the McLeod Road and South Regional water reclamation facilities will supply the Horizon West area for irrigation of residential lawns and public greenspace, and commercial and light industrial uses. Horizon West will become an integral part of the WATER CONSERV II system as its villages are developed and the transition is made from agricultural irrigation to residential, public, commercial, and light industrial reuse.

Conclusion

WATER CONSERV II is a success story. It is the premier reuse project for the City of Orlando and Orange County. Agricultural customers are singing the praises of irrigation with reclaimed water. Area residents see the project as a friendly neighbor and potential protector of the rural country atmosphere. Regulatory agencies are proud of their involvement in and support of the project. The U of F researchers and county extension personnel are delighted with the research results to date on the effects of irrigation of citrus with reclaimed water. Through systematic and strategic planning, their 5-year Capital Improvement Programs, and diversification of their customer base, the City and County are ensuring that WATER CONSERV II will remain their premier reuse project and success story for many years to come.

Manatee County

Medium Agricultural System

10MGD

Manatee County Reclaimed Water System and Manatee Agricultural Reuse Supply (MARS)

The Manatee County Reclaimed Water System was started in 1974 with one customer, the Manatee Fruit Company Farm. During the ensuing 24 years the system has grown tremendously, and is now supplying more than 10 MGD to agricultural, residential, park, and golf course customers.

The customers receive reclaimed water from three separate advanced secondary wastewater treatment plants located in the northern, the southeastern, and the southwestern parts of the county. These three regional plants will soon be interconnected into one reclaimed water system capable of producing over 28 MGD.

This system has eliminated effluent discharge into Sarasota Bay, and will reduce a substantial amount of agricultural groundwater pumping and the amount of potable water used for irrigation.

An important aspect of the master planning for the MARS reflects priority for large agricultural properties adjacent to transmission lines with extensions to serve major users in the vicinity of the transmission mains. All transmission piping has been sized to assure that the reclaimed water customers’ demand is fulfilled, and

(continued)

Contributing Systems (continued)

guarantee interconnection with regional reclaimed water sources. The area adjacent to the transmission lines has been determined to mainly include agricultural properties with the potential for greatest demand. Potential customers have been identified and have expressed interest in changing their existing water source for reclaimed water.

Aquifer storage and recovery wells will play an important role in the operation of the MARS system. Within the hydraulic analysis, flow rates to and from the ASR wells for the wastewater plants have been optimized to meet the design flow criteria.

City of Plant City

Small Agricultural System
3MGD

Prior to 1997, the City of Plant City’s Wastewater treatment plant operated as an activated sludge process in the extended aeration mode. The wastewater was discharged from retention ponds into Westside Canal, and flowed through a series of creeks to Lake Thonotosassa.

In 1993, the Southwest Florida Water Management District's (SWFWMD) Surface Water Improvement and Management Program (SWIM) group investigated the water quality of Lake Thonotosassa. The subsequent Water Quality Based Effluent Limitation (WQBEL) investigation of the lakes contributing stream led to negotiations between the Florida Department of Environmental Protection (DEP), the Hillsborough County Environmental Protection Commission (EPC), and the City of Plant City, regarding steps which could be taken to improve the quality of Lake Thonotosassa. As a result of these efforts, the City of Plant City entered into an agreement with the EPC and DEP to discontinue discharges into the lake by instituting a reclaimed water reuse program by January 1, 1997.

Since early 1997, the City has been operating its new Reclaimed Water Production Facility. The facility consists of a retention pond transfer pumping station which is located on the effluent end of the pond. The water then passes through flow measurement equipment, screens to remove any plants or fish that may have been pumped to the facility, sand filters to remove suspended solids, high level disinfection, storage, and a high service pumping station which pumps the reclaimed water through a

customer service line.

The City produces 100% reclaimed water from its Water Reclamation Facility (WRF), which is permitted for 8 million gallons per day (MGD). At present, the WRF produces an annual average of approximately 5 MGD of reclaimed water. The City’s reclaimed water is a high quality public access resource that has undergone filtration and disinfection to comply with Part III of Chapter 62-610 of the Florida Administrative Code (F.A.C.).

Current reuse customers, which consist of industry, orange groves, and farming, utilize an average of approximately 2.5 MGD. The remaining reclaimed water is dechlorinated and then discharged into East Canal, and flows through a series of creeks to the Hillsborough River. Engineering and construction plans are underway to supply additional customers to utilize the remaining available reclaimed water.

Fifty percent of the funding for the City’s engineering study and eligible portion's of construction for reclaimed water production was made available by a grant from the Southwest Florida Water Management District. The balance of funding was through Utility System Refunding Revenue Bonds as supported by the City rate payers.

Ordinances

City of St. Petersburg

Large Public Access System
20MGD

ORDINANCE NO. _____

AN ORDINANCE AMENDING CHAPTER 27, ARTICLE 111, CROSS CONNECTION CONTROL, ST. PETERSBURG CITY CODE; AMENDING THE DEFINITIONS OF "BACKFLOW PREVENTER", "CUSTOMER ", "DIRECTOR", "DUAL CHECK", "FIRE SERVICE", AND "FIXTURE ISOLATION"; ADDING A NEW DEFINITION FOR "INSPECTION"; AMENDING SECTION 27-68 (1) THE; CORRECTING CERTAIN STATUTORY REFERENCES IN SECTION 27-69; AMENDING SECTION 27-70 (b) TO REQUIRE BACKFLOW PREVENTERS ON NEW INSTALLATIONS AND ESTABLISHING PRIORITY TO RETROFIT RESIDENTIAL CUSTOMERS; AMENDING SECTION 27-70 (C) CONCERNING CORRECTIVE ACTION REQUIRED BY THE DIRECTOR; AMENDING SECTION 27-70 (E) TO PROVIDE FOR THE RECOVERY OF COSTS ASSOCIATED WITH THE MAINTENANCE OF BACKFLOW PREVENTERS; AMENDING SECTION 27-71 (C) TO PROVIDE FOR THE RECOVERY OF COSTS ASSOCIATED WITH RETROFITTING EXISTING SERVICE CONNECTIONS WITH BACKFLOW PREVENTERS; AMENDING SECTION 27-71 (D); AMENDING SECTION 27-71 (E) PROVIDING FOR THE RECOVERY OF COSTS ASSOCIATED WITH THE TESTING AND INSPECTION OF BACKFLOW PREVENTERS; AMENDING SECTION 27-71 (I) TO PROHIBIT CONNECTIONS TO POTABLE WATER SUPPLY ON CITY SIDE OF **BACKFLOW** PREVENTER; AMENDING SECTION 27-72 (B) ENFORCEMENT PROCEDURES TO ASSESS COST OF REPAIR AND ESTABLISHING AUTHORITY TO PLACE LIEN ON AFFECTED PREMISES; AMENDING SECTION 27-73 (A) TO PROVIDE FOR THE RECOVERY OF COSTS ASSOCIATED WITH THE INSTALLATION OF NEW BACKFLOW PREVENTERS; DELETING SECTION 27-73 (D) REFERRING TO SIZE AND MODEL OF BACKFLOW PREVENTERS; AMENDING SECTION 27-77 (B) TO PROVIDE FOR THE COST OF INSTALLATION OF REQUIRED BACKFLOW ASSEMBLIES; PROVIDING FOR SEVERABILITY OF PROVISIONS; PROVIDING AN EFFECTIVE DATE.

THE CITY OF ST. PETERSBURG DOES ORDAIN:

Section One. Chapter 27, St. Petersburg City Code Utilities, is hereby amended by creating a new Article III, Cross Connection Control, Sections 27-66 through 27-77 to read as follows:

Article III. CROSS CONNECTION CONTROL.

Sec. 27-66. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Air gap means a physical separation sufficient to prevent backflow between the free-flowing discharge end of the potable water system and any other system. It is physically defined as a distance equal to twice the diameter of the supply side pipe diameter but never less than one inch.

Approved means accepted by the Director as meeting an applicable specification stated or cited in this article, or as suitable for the proposed use.

Approved backflow preventer means a device that has been manufactured in full conformance with the standards established by the American Water Works Association titled "AWWA C510-89 - Standard for Double Check Valve Backflow Prevention Assembly" and "AWWA C511-89 - Standard for Reduced Pressure Principle Backflow Prevention Assembly," and have met completely the laboratory and field performance specifications of the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California established by "Specification of Backflow Prevention Assemblies" - Section 10 of the most current issue of the "Manual of Cross-Connection Control." The AWWA and FCCHR standards and specifications have been adopted by the Department. Final approval shall be evidenced by a certificate of approval issued by an approved testing laboratory certifying full compliance with *said* AWWA standards and FCCHR specifications. An approved list of qualified laboratories will be available from the Department. Backflow preventers that may be subjected to back pressure or back-siphonage that have been fully tested and have been granted a certificate of approval by an approved laboratory and are listed on that laboratories' current list of approved backflow preventers may be used without further testing or qualification.

Atmospheric vacuum breaker means a device which prevents back-siphonage by creating an atmospheric vent when there is either a negative pressure or sub-atmospheric pressure in a water system.

Auxiliary water supply means any water supply on, or available to the premises other than the City's approved public potable water supply.

Backflow means the flow of water or other liquids, mixture or substances, under positive or reduced pressure into the distribution pipes of a potable water supply from any source other than its intended source.

Backflow preventer means a device or means designed to prevent backflow or back-siphonage. Most commonly categorized as air gap, reduced pressure principle assembly , double check valve assembly, detector check assembly, pressure vacuum breaker, atmospheric vacuum breaker, hose bib vacuum breaker, and dual check.

Back-pressure means a condition in which the customer's system pressure is greater than the City's system pressure.

Back-siphonage means the flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply system from any source other than its intended source caused by the sudden reduction of pressure in the potable water supply system.

Containment means a method of backflow prevention which requires a backflow preventer at the water service connection.

Contaminant means any physical, chemical, biological, or radiological substance or matter in water.

Cross-connection means any physical arrangement whereby a public water supply is connected, directly, or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other device which contains or may contain contaminated or polluted water, sewage, or other waste, or liquid of unknown or unsafe quality which may be capable of imparting contamination or pollution to the public water supply as a result of backflow or back-siphonage. By-pass arrangements, jumper connections, removable sections, swivel or changeable devices, and other temporary or permanent devices through which or because of **which** backflow or back-siphonage could occur are considered to be cross-connections.

Customer means any person, firm or corporation, or governmental entity, using or receiving water from the City's potable water system.

Customer water system includes those parts of water system facilities beyond the point of delivery that are utilized to convey potable water to the customer's points of use.

Department means the City Department of Public Utilities.

Detector check assembly means a double check valve in the main supply line with a smaller parallel flow detection line with a meter and an independently acting double check valve.

Director means the Director, or delegated representative, in charge of the City Department of Public Utilities, who is hereby invested with the authority and responsibility for the implementation of a cross-connection control program and for the enforcement of the provisions of this article.

Ordinances

City of St. Petersburg
(continued from previous page)

Double check valve assembly means an assembly of two independently operating spring loaded check valves with tightly closing shut-off valves on each side of the check valves, plus properly located test cocks for the testing of each check valve.

Dual check means an assembly with two spring loaded, independently operating check valves, which may be fitted with shut-off valves and test cocks. This device is generally employed immediately downstream of the water meter to act as a containment device.

Fire service means a water service for a customer which is used to supply a fire protection system.

Isolation means a method of backflow prevention in which a backflow preventer is located to correct a cross-connection at an in-plant location rather than at a water service connection.

Hose bib vacuum breaker means a device which is permanently attached to a hose bib and which acts as an atmospheric vacuum breaker.

Inspection means cross-connection control assessment and evaluation of all fixtures and conduit connected to the customer's water system within the property and structure(s).

Nonpotable water means all water other than potable water.

Permit means a document issued by the Department which requires the use of backflow preventers, identifies the location for backflow preventers, and specifies maintenance requirements for backflow preventers.

Point of delivery means the terminal end of service from the public potable water system at the meter installation which shall include the backflow prevention device when the device is installed with the water meter. This is the point at which the public potable water system loses jurisdiction and sanitary control over the water at its delivery to the customer.

Pollutant means a foreign substance, that if permitted to get in the public water system, will degrade its quality so as to impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affect such water for domestic use.

Potable water means water from any source which has been approved for human consumption by the Public Health Unit.

Pressure vacuum breaker means a device containing one or two independently operating, spring loaded check valves and an independently operating spring loaded air inlet valve located on the discharge side of the check valve. Device includes tightly closing shut-off valves on each side of the check valves and properly located test cocks for the testing of the check valve.

Public Health Unit means the health authority having jurisdiction in the County.

Reclaimed water means water that has received at least secondary treatment plus filtration and is reused after flowing out of a water reclamation facility.

Reduced pressure principle backflow preventer means an assembly consisting of two independently operating approved check valves with an automatically operating differential relief valve located between the check valves, tightly closing shut-off valves on each side of the check valves plus properly located test cocks for the testing of the check valves and the relief valve.

Standard Plumbing Code means chapter 8, article VI. This includes the Standard Plumbing Code as published by the Southern Building Code Congress International, Inc., and adopted by the Pinellas County Construction and Licensing Board.

Water service connection means the point in the customer's water system beyond the sanitary control of the Department; it is generally considered to be the outlet end of the water meter and always before any unprotected branch.

Water service installation means the establishment of a new point of delivery, reuse of an existing point of delivery for a new or different customer, or the modification of an existing point of delivery from the Department's potable water system for any customer.
(Ord. reference 2090-F, Section 1 (28-73), 9-19-91)

Sec. 27-67. Intent.

The City Council **does** hereby find that it is necessary for the protection and promotion of the health, safety, and welfare of the people served by the City's water system, to adopt cross-connection control standards which establish minimum requirements for the design, construction and maintenance of connections to the public water supply.
(Ord. No. 2090-F, 1(28-70), 9-19-91)

Sec. 27-68. Purpose.

(1) To protect the public potable water supply served by the City water system from the possibility of contamination or pollution by containment at the point of the customers water service connection to the City's water system and by isolating, within its customer's water systems, such contaminants or pollutants which could backflow or back-siphon into the public water system.

(2) To promote the elimination or control of existing cross-connections, actual or potential, between a customers' in-plant potable water system and nonpotable systems.

(3) To provide for the maintenance of a continuing program of cross-connection control which will effectively prevent the contamination or pollution of all potable water systems.
(Ord. No. 2090-F, 1(28-71), 9-19-91)

Sec. 27-69. Authority

The Federal Safe Drinking Water Act of 1974, the Florida Safe Drinking Water Act (F.S. 403.850 et seq.), and F.A.C. 17-555.360 and 17-610.470, establish that the City has the primary responsibility for preventing water from unapproved sources, or any other substances, from entering the public potable water system.
(Ord. No. 2090-F, 1(28-72), 9-19-91)

Sec. 27-70. Department responsibility.

(a) The Department will operate a cross-connection control program, to include the keeping of necessary records, which fulfills the requirements of this article, and is consistent with American Water Works Association (AWWA) Manual of Water Supply Practices, M-14, 2nd Edition, and the requirements of Florida Administrative Code 17-555.360.

(b) On new water service installations, the Department will provide on site inspection and evaluation of plans in order to determine the type of backflow preventer, that will be required, and will issue a cross connection control assessment report prior to issuance of the permit. No water service connection shall be installed on the premises of any customer unless the City **potable** water system is protected as required by this article. Residential customers shall be provided with a backflow preventer as approved by the Director. Retrofit of residential customers shall be accomplished as residential meters are replaced, with highest priority given to those customers served by reclaimed water.

(c) For water service installations existing prior to the effective date of this article the Department will perform an inspection of the premises and inform the customer by letter of any required corrective action deemed necessary. The method of achieving the correction and the time allowed for the correction to be made shall be resolved by the Director and the customer. The Department shall complete inspections, other than single family residential properties, within ten years of the effective date of this ordinance from which this article is derived. Highest priority will be given to those customers presenting the highest degree of hazard to the potable water supply system.

(d) The Department will not allow any cross-connection to remain unless it is protected by an approved backflow preventer for which a permit has been issued and which will be regularly tested to ensure satisfactory operation.

Ordinances

(e) The Department shall ensure that all permitted backflow preventers are tested and repaired at least once per year. The cost for testing and repair such shall be recovered through the monthly water rate.

Sec. 27-71. Customer responsibility.

(a) The customer shall prevent contaminants and pollutants from entering the City’s water supply system from the customer’s water system. The customer shall protect the customer’s private water system against actual or potential cross-connection, backflow or back-siphonage, as required by the Standard Plumbing Code, this article, and other applicable regulations. The customer shall be responsible for the elimination or protection of all cross-connections on the customer’s premises.

(b) The customer shall follow the provisions of this article and the Department’s program.

(c) Upon written notification by the Department, the customer shall obtain any permit required for the installation of backflow preventers for new or existing water service connections; and shall pay for the installation of backflow preventers to serve the premises as provided in this article. All costs incurred for the retrofit of an existing water service connection shall be recovered through the monthly water rate. All backflow preventers installed pursuant to this article are and shall remain the property of the City.

(d) The Department shall inspect the customer’s water system and make recommendations as to the type of fixture isolation or the type of backflow preventer that should be installed on the customer’s private water system to ensure the quality of the water entering upon the property *beyond the outlet end of the* City’s backflow preventer.

(e) Backflow preventers including testable dual checks shall have certified inspections and operational tests made at least once per year. In those instances where the Director deems the hazard to be great enough, certified inspections may be required at more frequent intervals. The cost for inspection and testing shall be recovered through the monthly water rate and shall be performed by the City, the backflow preventer manufacturer’s representative or by a certified tester approved by the Director. The cost for the Backflow preventer repair, overhaul, or replacement shall be recovered through the monthly water rate whenever they are found to be defective. Records of such tests, repairs, and overhaul shall be kept and made available (copy provided) to the Director.

(f) The customer shall inform the Department of any proposed or modified cross-connections and also any existing cross-connections of which the customer is aware but has not been found by the Department.

(g) The customer shall not install a by-pass around any backflow preventer unless there is a backflow preventer of the same type on the by-pass. Customers who cannot shut down operation for testing or repair of backflow preventers must supply additional devices necessary to allow testing or repair to take place.

(h) For the purpose of making any inspection or installation of a backflow preventer, or discharging the duties imposed by this article, the Director shall have the right to enter upon the premises of any customer. Each customer, as a condition of the continued delivery to his premises of water from the City’s water system, shall be considered as having consented to entry upon his premises.

(i) No person shall connect to, operate, maintain or allow to remain any connection to the potable water system for domestic or for any purpose which is on the Department’s side of the backflow preventer. No such connections shall be permitted without the prior written approval from the director and that such installation shall also require an additional backflow preventer that meets department approval.

Sec. 27-72. Enforcement procedures.

(a) The Department shall inform the customer by letter of any failure to comply with the conditions of this article or a permit issued hereunder. The Department will allow an additional 15 days for the correction. In the event the customer fails to comply with the necessary correction within this time frame, the Department may terminate the customer’s water service until corrective action is taken or until the necessary backflow preventer is installed. In the event that the customer informs the Department of extenuating circumstances as to why the correction has not been made, a time extension may be granted by the Department not to exceed an **additional 30 days**.

(b) Delivery of water to any customer may be discontinued by the Director if any backflow preventer assembly required by this article has been removed, tampered with or bypassed. Water service shall not be resumed until conditions at the customer’s premises have been corrected to the satisfaction of the Director. All cost to repair or replace the assembly shall be borne by the customer. The customer shall have thirty days in which to effect payment of all costs incurred by the Department. Failure to satisfy these costs shall constitute a lien to be placed upon the property.

(c) If the Department determines at any time that a serious threat to the public health exists, the water service will be terminated immediately.

(d) In addition to the above procedures, the Director may cite to the County Court any customer for violation of the provisions of this article.
(Ord. No. 2090-F, 1(28-76), 9-19-91)

Sec. 27-73. Backflow preventer criteria.

(a) The Director will evaluate the hazards inherent in supplying a customer’s water system. If in the judgement of the Director an approved backflow preventer is required at the customer’s water service connection or within the customer’s water system, the Director shall give written notice to the customer of the specific locations, types, and sizes of the required devices. Backflow preventers will be sized to match meter or pipe size at the required location unless otherwise approved by the Director. The cost to install the required backflow prevention assembly shall be recovered through the monthly water rate. The Department shall schedule the installation of the backflow prevention assembly in accordance with the requirements of this article. Any required device within the customer’s water system shall be installed by the customer within 90 days of the written notice. All cost estimates provided by the Department for new water service taps will include the cost for the appropriate backflow prevention assembly in accordance with the requirements of the article.

(b) When the device is to be installed at the water service connection and must be installed on private property, the customer shall also be required to provide an easement or other license agreement for the installation of each backflow preventer. Such easement or license agreement shall not assign any responsibility to the Department for the maintenance or repair of any private water system lines, valves, or fittings installed within the easement.

(c) Failure or refusal or inability on the part of the customer to provide for the installation of required backflow preventers within 90 days shall constitute a ground for discontinuing water service to the premises until such backflow preventers have been properly installed.

(d) Wherever the following conditions exist, an approved backflow preventer shall be installed on each service line to a customer’s water system at or near the property line or immediately inside the building being served, but in all cases, before the first branch line leading off the service line;

(1) In the case of premises having an auxiliary water supply that is not or may not be of safe bacteriological or chemical quality, the public water system shall be protected against backflow from the premises by installing an approved backflow preventer in the service line, appropriate to the degree of hazard.

(2) In the case of premises on which any industrial fluids or any other objectionable substances are handled in such a fashion as to create an actual or potential hazard to the public water system, the public system shall be protected against backflow by installing an approved backflow preventer in the service line, appropriate to the degree of hazard. This shall include the handling of process waters and waters originating from the utility system that have been subject to deterioration in quality.

Ordinances

City of St. Petersburg
(continued from previous page)

(3) In the case of premises having internal cross-connections that cannot be permanently corrected and controlled, or intricate plumbing and piping arrangements or where entry to all portions of the premises is not readily accessible for inspection purposes, making it impracticable or impossible to ascertain whether or not dangerous cross-connections exist, the public water system shall be protected against backflow from the premises by installing an approved backflow preventer in the service line.

(e) The type of backflow preventer required shall depend upon the degree of hazard that exists as determined by the Director as follows:

(1) In the case of any premises where there is an auxiliary water supply and it is not subject to any of the following rules, the public water system shall be protected by an approved air gap separation or an approved reduced pressure principle backflow preventer.

(2) In the case of any premises where there is water or substance that would be objectionable but not hazardous to health, if introduced into the public water system, the public water system shall be protected by an approved double check valve assembly.

(3) In the case of any premises where there is any material dangerous to health that is handled in such a fashion as to create an actual or potential hazard to the public water system, the public water system shall be protected by an approved air gap separation or an approved reduced pressure principle backflow preventer. Examples of premises where these conditions will exist include, but are not limited to, sewage treatment plants, sewage pumping stations, chemical manufacturing plants, hospitals, mortuaries, and plating plants.

(4) In the case of any premises where there are uncontrolled cross-connections, either actual or potential, the public water system shall be protected by an approved air gap separation or an approved reduced pressure principle backflow preventer at the service connection.

(5) In the case of any premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete in-plant cross-connection survey, the public water system shall be protected against backflow from the premises by either an approved air gap separation or an approved reduced pressure principle backflow preventer on each service.

(6) In the case of any premises where, in the opinion of the Director, an undue health threat is posed because of the presence of extremely toxic substances, the Director may require an air gap separation at the service connection to protect the public water system.

(7) In the case of any premises where there is reclaimed water service for irrigation, there shall be no physical connection between the reclaimed water system and the customer's water system which is served by the public water system. Where such connections are found, disconnections shall be accomplished, and the public water system shall be protected against the possibility of future reconnection by a reduced pressure principle backflow preventer at the service connection. A dual check (3/4" or 1") or double check valve assembly (larger services) shall be required at all premises that may be served by reclaimed water.

(8) In the case where the metered use of potable water is permitted directly from a fire hydrant or other water system fixture for filling tank type vehicles (i.e., lawn maintenance and pest control), the water system shall be protected by a reduced pressure principle backflow preventer.

(9) In the case where temporary use of water is permitted directly from a fire hydrant or other water system fixture through a portable meter (i.e., construction activity), the water system shall be protected by a double check valve assembly.
(Ord. No. 2090-F, 1(28-77), 9-19-91)

Sec. 27-74. Permits

(a) The Department shall not permit a cross-connection within the public water supply system unless it is considered necessary and cannot be eliminated.

(b) Cross-connection permits required for backflow prevention devices are obtained from the Department. Permits are required for double check valve assemblies, reduced pressure principle backflow preventers and other devices that may be required for backflow prevention by fixture isolation, but are not required for dual check devices.

(c) Permits shall be renewed every five years and are non-transferable. Permits are subject to revocation and become immediately revoked if the customer should change the type of cross-connection or the degree of hazard associated with the service.
(Ord. No. 2090-F, 1(28-78), 9-19-91)

Sec. 27-75. Existing in-use backflow preventers.

(a) Any backflow preventer existing as of September 19, 1991, that is properly installed and properly functioning shall be allowed by the Department to continue in service unless the degree of hazard is such as to supersede the effectiveness of the present backflow preventer, or result in an unreasonable risk to the public health. Where the degree of hazard has increased, as in the case of a residential installation converting to a business establishment, the existing backflow preventer must be upgraded to ensure an appropriate device is installed consistent with the increased degree of hazard.

(b) All backflow preventers installed as of September 19, 1991 that do not meet the requirements of this article but were approved devices for the purpose described herein at the time of installation and that have been properly maintained, shall, except for the inspection and maintenance requirements, be excluded from the requirements of this article so long as the Director is assured that they will satisfactorily protect the public water system. Whenever the existing backflow preventer is moved from the present location, requires more than minimum maintenance, or when the Director finds that the continued use constitutes a health hazard, the unit shall be replaced by an approved backflow preventer meeting the requirements of this article.
(Ord. No. 2090-F, 1(28-79), 9-19-91)

Sec. 27-76. Records.

The Department will initiate and maintain the following:

(1) Master files on customer cross-connection tests and/or inspections.

(2) Master files on cross-connection permits.

(3) Copies of permits and permit applications.
(Ord. No. 2090-F, 1(28-80), 9-19-91)

Sec. 27-77. Installation costs.

(a) Customers of the City's water system requiring backflow assemblies within the customer's water system for fixture isolation shall install the required backflow preventers at their own expense.

(b) Existing customers of the City's water system requiring backflow preventers at the water service connection shall pay the costs associated with the purchase and installation of the required device through the monthly water rate. New customers requiring backflow preventers will pay the connection charges in effect at the time of application for water service.

Ordinances

City of Largo
Medium Public Access System
7MGD

ORDINANCE NO. 98-12

AN ORDINANCE OF THE CITY OF LARGO, FLORIDA, AMENDING AS HEREINAFTER SET FORTH CITY OF LARGO CODE CHAPTER 22 ENTITLED "UTILITIES", DIVISION 3 THEREOF ENTITLED "RATES AND CHARGES" MORE PARTICULARLY SECTION 22-42 SUB-TITLED "RECLAIMED WATER CHARGES" IN ORDER TO ELIMINATE ALL REFERENCE TO CREDIT OFFSET AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Largo, Florida has moved to the forefront in technology and responsible water conservation through development of the "Sparkling Water" System for the delivery of a safe, highly treated reclaimed water product for irrigation and other non-potable uses; and

WHEREAS, the City has expended substantial monies in upgrading its wastewater treatment plant to a water reclamation facility and implementing the "Sparkling Water" program; and

WHEREAS, the City is currently installing a reclaimed water distribution center and primary transmission mains for the "Sparkling Water" system which will deliver reclaimed water throughout the City and its utility service district; and

WHEREAS, it is ecologically beneficial to reduce the discharge of wastewater effluent into the bays surrounding the City, while at the same time protect Florida's limited drinking water supply; and

WHEREAS, the City Commission of the City of Largo, Florida has determined it necessary and advisable and in the best interest of the residents of the City of Largo, Florida to develop and implement the "Sparkling Water" reclaimed water system through appropriate policies and regulations,

NOW, THEREFORE, THE CITY OF LARGO HEREBY ORDAINS:

Section 1. City of Largo Code Chapter 22 entitled "Utilities", Division 3 thereof entitled "Rates and Charges" more particularly Section 22-42 Sub-titled "Reclaimed Water Charges" be and the same hereby amended to read as follows:

Sec. 22-42. Reclaimed water charges.

RECLAIMED WATER CHARGES

Residential Rates:	Inside City	Outside City
Monthly Usage Fee	Flat Rate: \$7 / Month 1 acre or less \$7 / Month each additional acre or portion of an acre	Flat Rate: \$8.75 / Month 1 acre or less \$8.75 / Month each additional acre or portion of an acre
Connection Fee	1" S.C. - \$ 250.00 2" S.C. - \$ 400.00 4" S.C. - \$ 650.00 6" S.C. - \$1,000.00 8" S.C. - \$1,200.00	1" S.C. - \$ 312.50 2" S.C. - \$ 500.00 4" S.C. - \$ 812.50 6" S.C. - \$1,250.00 8" S.C. - \$1,500.00
Commercial/Industrial Rates:	Inside City	Outside City
Application/Inspection Fee	\$60.00	\$75.00
Monthly Usage Fee	Metered: \$0.20/1,000 Gallons	Metered: \$0.25/1,000 Gallons
*Connection Fee	1" S.C. - \$ 250.00 2" S.C. - \$ 400.00 4" S.C. - \$ 650.00 6" S.C. - \$1,000.00 8" S.C. - \$1,200.00	1" S.C. - \$ 312.50 2" S.C. - \$ 500.00 4" S.C. - \$ 812.50 6" S.C. - \$1,250.00 8" S.C. - \$1,500.00

*Note: This fee will be waived if the service connection is installed by the Commercial/Industrial customer with the approval of the City.

General Conditions:	Residential customers receive a 50% discount on the connection fee for connection within 90 days of service availability. Residential connection fee includes a \$60 application/inspection charge by the Wastewater Management Division and a service connection consisting of a corporation stop, polyethylene service line, locking ball valve curb stop and meter box installed at the property line. The customer will be responsible for making the connection to their irrigation system. Commercial customers will be required to install, maintain, and certify calibration of their reclaimed water meter.
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Service Prerequisite:	Residential	Commercial/Industrial
	No cross connections. Irrigation system consisting of an in-ground sprinkler system, a below ground locking hose bibb assembly, or both.	No cross connections. Irrigation system consisting of an in-ground sprinkler system, a below ground locking hose bibb assembly, or both.
Backflow Prevention:	For residential properties, the City shall pay a fee to Pinellas County as established by the Pinellas County Board of County Commissioners for installation of a backflow prevention device to be installed by the County on the potable water service line to service the subject property. In the event the Pinellas County Water System determines the backflow prevention device requires replacement, it will be replaced at the customer's expense in accordance with fees established by the Pinellas County Board of County Commissioners. Commercial/Industrial customers will be required to pay a fee to Pinellas County as established by the Pinellas County Board of County Commissioners for installation and/or replacement of the backflow prevention device installed by the County on the potable water service line to service the subject property.	
Discontinuing Service - By Customer:	There will not be a fee for discontinuing reclaimed water service. A request to discontinue service must be received by the Wastewater Management Division at least seven (7) days prior to discontinuation. All current bills shall be paid by the customer prior to service being disconnected.	
Existing Service Reinstated:	Existing service may be reinstated by the customer's application for such service and the payment of any appropriate fees or other charges as contained within these policies and regulations. There will be a \$60 fee for service reinstatement.	

Ordinances

City of Largo
(continued from previous page)

Billing Format:

Residential

Reclaimed water flat rate charge added to sewer billing statement.

Commercial/Industrial

A separate bi-monthly statement is mailed to the customer.

Service Extension:

All future expansion to service areas will require a petition. Future service areas are locations which are near or adjacent to existing transmission lines and could be readily served.

A petition signed by at least 75% of the property owners will be required before any area will be considered for service. Petitioners must submit an application, prepay the connection fee and include payment with the signed petition. Property owners who sign the petition will have up to 180 days after their area is on line to tie into the "Sparkling Water" system before automatic monthly billing will be instituted in accordance with the charge established herein.

Section 2. The provisions of this ordinance shall take effect ten (10) days after final enactment.

APPROVED ON
FIRST READING January 20, 1998

PASSED AND ADOPTED ON
SECOND AND FINAL READING February 3, 1998

Thomas J. Tenen
Mayor

ATTEST:

Wanda J. Seibert
City Clerk

APPROVED AS TO FORM:
W. McClelland
City Attorney

Manatee County
Medium Agricultural System
10MGD

ORDINANCE NO. 92-28

AN ORDINANCE OF MANATEE COUNTY, FLORIDA, CREATING A RECLAIMED WATER SYSTEM FOR IRRIGATION; PROVIDING FOR DEFINITIONS; PROVIDING FOR RULES AND REGULATIONS FOR CONNECTION TO THE SYSTEM; PROVIDING AUTHORITY TO ADOPT RATES, FEES AND CHARGES; PROVIDING FOR SERVICE WITHIN MUNICIPALITIES; PROVIDING SERVICE APPLICATION AND METERING REQUIREMENTS; PROVIDING FOR CROSS CONNECTION CONTROL, CONSTRUCTION SPECIFICATIONS, MAINTENANCE RESPONSIBILITIES AND OTHER RELATED MATTERS; ADOPTING THE PROVISIONS OF CHAPTER 17-610, FLORIDA ADMINISTRATIVE CODE; PROVIDING FOR SEVERABILITY; PROVIDING FOR APPLICABILITY TO SIGNIFICANT USERS AND TO EXISTING USERS; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, potable water is a valuable resource which must be conserved; and

WHEREAS, treated wastewater is also a valuable resource which can safely be used for irrigation purposes, thereby substantially contributing to the conservation of potable water; and

WHEREAS, Manatee County has determined to establish a reclaimed water system which would make reclaimed water for irrigation widely available; and

WHEREAS, such a reclaimed water system serves a valid public purpose in helping to conserve precious potable water resources; and

WHEREAS, the establishment of such a reclaimed water system requires the enactment of certain rules and regulations, as set forth herein.

NOW, THEREFORE, BE IT ORDAINED by the Board of Commissioners of Manatee County, Florida, as follows:

Section 1. Authority and Intent.

Pursuant to authority granted the County in Chapter 63-1598, Laws of Florida, as amended, and in Section 125.01, Florida Statutes, it is the intent of the County to make reclaimed water available for irrigation purposes and other authorized uses in certain areas of the County where the County determines that the construction of a reclaimed water distribution system is practical and economical. The reclaimed water distribution

system shall be constructed in sections to provide service to designated areas as determined by the County, pursuant to the terms and conditions set forth herein. It is further the intent of the County to establish a reclaimed water system for irrigation which complies with the rules and regulations set forth by the Florida Department of Environmental Regulation, which rules appear in Chapter 17-610, Florida Administrative Code.

Section 2. Definitions.

For the purposes of this Ordinance, the definitions contained in this Section shall apply unless otherwise specifically stated.

Available shall mean that a functioning reclaimed water distribution main is located within 100 feet of the property to be serviced.

Backflow Prevention Device shall mean a device installed at the customer's potable water meter or reuse meter to prevent the flow of any contaminated fluids into the public water system or the reclaimed water system.

Board shall mean the Board of Commissioners of Manatee County, Florida.

Buffer Zone shall mean a setback distance of at least seventy-five (75) feet as more specifically set forth in Chapter 17-610, Florida Administrative Code.

County shall mean Manatee County, Florida.

Cross-Connection shall mean any physical arrangement whereby a public water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other device which contains or may contain contaminated water, sewage or other waste, or liquid of unknown or unsafe quality which may be capable of imparting contamination to the public water supply as the result of backflow. Bypass arrangements, jumper connections, removable sections, swivel or changeable devices, and other temporary or permanent devices through which or because of which backflow could occur are considered to be cross connections.

Ordinances

Manatee County

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Customer shall mean the owner(s) of the property being served, as recorded on the County ad valorem tax rolls.

Department shall mean the Manatee County Public Works Department.

Director shall mean the Director of the County Public Works Department or his/her designated representative(s).

Distribution Mains shall mean those conduits used to supply reclaimed water to service lines from the pumping station or treatment plant.

Existing Users shall mean

Manatee Fruit Co.

Manatee County Board of
County Commissioners

City of Bradenton/Manatee County
Board of County Commissioners
(G.T. Bray Park)

Bradenton Country Club, Inc.

Palma Sola Golf Club, Inc.

El Conquistador
Country Club, Inc.

Daniel P. McClure,
as Trustee (McClure Farms)

Schroeder-Manatee, Inc.

Irrigation System shall mean an underground system with permanently placed sprinkler devices or below ground hose bibs contained in a locked valve box. Above ground hose bibs (faucets) with hoses and sprinklers shall not constitute an irrigation system. Irrigation systems also include agricultural ditch and swale type systems and other conventional agricultural systems where applicable and as authorized by the Director.

Reclaimed Water shall mean water that has received at least advanced secondary treatment and is reused after flowing out of a wastewater treatment facility.

Reuse shall mean the deliberate application of reclaimed water, in compliance with Florida Department of Environmental Regulation rules, for a beneficial purpose.

Service Line shall mean that conduit for reclaimed water from the distribution main to the property line.

Significant User shall mean any person or entity whose projected use of reclaimed water, in the sole discretion of the Director exceeds a yearly average of 1/4 million gallons per day. Significant users shall not include existing users.

Section 3. Connection to System.

(a) General. Customers in designated service areas may connect to the reclaimed water system when service is available and upon submission of a proper application and compliance with all other County requirements. Service to subdivisions and multi-family complexes will be considered upon receipt by the County of a petition signed by at least 50 percent of the residents in said subdivision or complex or as otherwise directed by the Board.

(b) Irrigation Wells. Approved backflow prevention devices must be installed on any irrigation well which is directly connected to the County's reclaimed water system.

Section 4. Authority to Adopt Rates, Fees and Charges.

The Board shall have the authority, by Resolution duly adopted after a public hearing, to establish rates, fees and charges for the reclaimed water system and to provide terms and conditions for the payment and collection of same.

Section 5. Discontinuing Service by County.

The County may discontinue reclaimed water service to any customer due to a violation of the terms of this Ordinance or any other County regulations, non-payment of bills, tampering with any service, plumbing of cross-connections with another water source, or the undertaking of any other activity that may be detrimental to the system. The County has the right to cease service until the condition is corrected and all costs due the County are paid. These costs may include delinquent billings, connection charges, and payment for any damage caused to the system. Should discontinued service be restored without authorization, then the Department shall remove the service and make such additional charges as are established by Resolution.

Section 6. Interruption of Service by County.

The County reserves the right to temporarily discontinue service to any portion of, or the entire reclaimed water system, as deemed necessary by the Director. The Director shall have the authority to establish schedules which restrict the use of the reclaimed water system at certain times in order to reduce maximum pressure demands on the system and to regulate usage during periods of limited reclaimed water availability.

Section 7. Easement Dedications.

The applicant shall dedicate land or shall grant perpetual easements to the County for reuse transmission and distribution facilities as required to provide reclaimed water service. In cases deemed appropriate, the Director may accept a license or permit in lieu of an easement.

Section 8. Permits.

The County shall obtain and fulfill, at its expense, all necessary permits and approvals for the initial construction and operation of the reclaimed water distribution facilities constituting the County's reclaimed water system. Once service is available, any additional permits or approvals required for service to any particular customer, for the customer's benefit, shall be obtained at the sole expense of said customer.

Section 9. Priorities for Extending Reclaimed Water

Service.

The Board shall determine priorities for reclaimed water line extensions within the guidelines established in the approved 201 Facilities Phasing Plan, as incorporated into the Manatee County Comprehensive Plan Capital Improvement Element and the Manatee County Capital Improvement Plan.

Section 10. Potable Water Wells.

As mandated by the Florida Department of Environmental Regulation, the County shall not provide reclaimed water service where wells are used as a source of potable water, and where buffer zone requirements cannot be maintained. It shall be unlawful and an offense against the County to install a well intended for use as a potable water supply within FDER-mandated

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Manatee County
(continued from previous page)

buffer zone requirements of existing or known proposed reuse sites.

Section 11. Right to Service.

No payment of any costs, submittal of any application or petition, or undertaking of any other act to receive reclaimed water service shall guarantee such service. The County shall have the right, at all times, to refuse to extend service on the basis of a use detrimental to the system, inadequate supply of reclaimed water, lack of payment of required fees, or for any other reason which, in the judgment of the Director, will cause the extension not to be beneficial to the County.

Section 12. Service Within Municipalities.

Reclaimed water service may be provided to properties located within the corporate limits of any municipality within the County. Such service will be extended on an actual cost basis and may include service to a governmental unit. All applications for service within any municipality shall be reviewed by the Department and such service shall be approved only if an adequate supply of treated wastewater is and will be available to meet all anticipated needs within the unincorporated areas of the County. The Director shall review and approve all service line sizes and all other necessary design components. In any event, final approval of reclaimed water service within the corporate limits of any municipality must be approved, in open session, by the Board.

Section 13. Service Application Requirements.

- (a) Reclaimed water service shall be applied for in the Utilities Department office or in the Manatee County Government Administrative Center, by completing and signing an application form.
- (b) Applications for all reclaimed water services within any City, County or State maintained rights-of-way shall include a dimensional plan showing the location of the requested service line relative to the nearest street intersection, etc., as required by the City, the County or the State Department of Transportation.

(c) Before an application for reclaimed water service will be approved, the customer must have a suitable irrigation system. The irrigation system to be provided by the customer will consist of an underground system with permanently placed sprinkler devices or below ground hose bibs contained in a locked valve box. No system with a cross-connection to the potable water system will be considered for connection to the reclaimed water system. Temporary systems will not be considered for connection. The systems shall not include above ground faucets or other devices or connections that could permit reclaimed water to be used for any purpose other than irrigation, unless such uses and systems have been approved in writing by the Director.

(d) All new irrigation systems constructed in areas where the County has determined to make reclaimed water available shall be constructed in accordance with all Federal, State and County specifications and regulations, including, specifically, the regulations contained in Title 17, Florida Administrative Code. The owner shall provide the County with a schematic drawing of the irrigation system before receiving service.

Section 14. Meter Requirements.

All reclaimed water users shall be required to utilize an appropriate sized flowmeter. All meters for the reclaimed water system will be installed and owned by the County. An estimate for the installation cost (including cost of the meter) will be prepared by the Department and submitted to the applicant for payment prior to installation.

Section 15. Cross Connection Control.

(a) In all premises where reclaimed water service is provided, the public or private potable water supply shall be protected by an approved backflow prevention device. All devices and material installed for backflow prevention must be approved by the County and must be installed in accordance with Manatee County Resolution R-87-125. Where any cross connection is found, it shall be disconnected. Before reconnection of that service, the public potable water system shall be protected against the possibility of future cross connections, and additional devices

may be required as specified by the Director and installed at the customer's expense.

(b) To determine the presence of any potential hazards to the public potable water system and for the purposes of perpetual maintenance and repair of reclaimed water system appurtenances, the County shall have the right to enter upon the premises of any customer receiving reclaimed water. Each customer of reclaimed water service shall, by application, give written consent to such entry upon his/her/its premises.

Section 16. Construction Specifications.

- (a) Pipe shall meet or exceed standards set by the American Water Works Association, the Florida Department of Environmental Regulation and the County's "Engineering Standards for Reclaimed Water Systems," whichever is stricter.
- (b) Mains in the public rights-of-way shall be located a uniform distance from the curb and the location shall be approved by the Director.
- (c) Vertical and horizontal clearances from potable water lines and sewage collection lines shall be as specified in the County's "Engineering Standards for Reclaimed Water Systems" or as specified in the applicable Florida Department of Environmental Regulation rules, whichever is stricter.
- (d) All valves and hose bibs shall be placed in approved tamper-proof boxes.
- (e) All irrigation systems must include backflow prevention devices directly downstream of the reclaimed water meter.
- (f) Where irrigation mains are to be turned over to the County, the customer shall submit such documents as are normally required for the dedication of public facilities.
- (g) "As-built" drawings shall be submitted to the Department upon completion of the irrigation system.

Section 17. Maintenance by the Customer.

The customer shall be responsible for the maintenance and repair of all irrigation lines and appurtenances on his/her/its property, unless said facilities are located within land previously dedicated to the County or land in which the County

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Manatee County
(continued from previous page)

has been issued a license or permit to operate said facilities. The County reserves the right to disconnect the service to any property when the irrigation system and appurtenances are not properly maintained or fail to meet the requirements of Chapter 17-610, Florida Administrative Code. In addition, should the customer require reclaimed water at different pressures, or different quality, or in any way different from that normally supplied by the County, he/she/it shall be responsible for the necessary devices to make these adjustments and for obtaining the approval of the Director.

Section 18. Maintenance by the County.

(a) All facilities that have been accepted by the County shall become the property of the County and will be operated, maintained and repaired by the County. No person shall perform any work nor be reimbursed for any work on the system unless written authorization from the County is received prior to the work being accomplished.

(b) The County shall make a reasonable effort to inspect and keep its facilities in good repair, but assumes no liability for any damage caused by the system that is beyond the control of normal maintenance or due to situations not previously reported to the Department. This shall include damage due to breaking of the pipes, poor quality of water caused by unauthorized or illegal entry of foreign material into the system, faulty operation of fire protection facilities, or other reasons.

Section 19. Common Service Lines.

The Director shall have the authority to approve one service line to connect two or more customers when sufficient capacity is available. In these cases, each customer shall each pay the full connection charge. Common service lines will be sized to provide adequate service to each customer serviced.

Section 20. Public Easement.

For reuse lines and appurtenances which are initially installed by a person or entity other than the County, said lines and appurtenances shall not be accepted by the County for maintenance unless the facilities are within a dedicated public

right-of-way or easement or within a licensed or permitted area and the facilities are determined by the Director to be in good working order. Any new easement or licensed or permitted area shall be adequately sized to accommodate construction and maintenance of any reuse system component. No obstruction of whatever kind shall be planted, built, or otherwise created within the limits of the easement, right-of-way or licensed or permitted area without the written permission of the Director.

Section 21. Ownership by County.

All reclaimed water facilities and appurtenances within dedicated public rights-of-way, easements or licensed or permitted areas, when constructed or accepted by the County, shall become and remain the property of the County. No applicant or customer shall by payment of any charges provided herein, or by causing any construction of facilities accepted by the County, acquire any interest or right in any of these facilities or any portion thereof, other than the privilege of having his/her/its property connected thereto for reclaimed water service in accordance with this Ordinance.

Section 22. Appeals to the Board.

Any refusal by the Director to grant service to an applicant, or any other decision made by the Director pursuant to this Ordinance, shall be appealable to the Board, in open session, for a final and binding decision.

Section 23. Adoption of Chapter 17-610, FAC.

The rules and regulations appearing in Chapter 17-610, Florida Administrative Code, as may be amended from time to time, are hereby adopted by reference as though fully set forth within this Ordinance. In the event of any variation between the provisions of Chapter 17-610, FAC, and the provisions of this Ordinance, the more strict provision shall prevail.

Section 24. Transfer of Reclaimed Water.

It shall be unlawful and an offense against the County for any person or entity to sell, barter, trade or otherwise transfer reclaimed water to any other person or entity, after having initially received said reclaimed water from the County, without written authorization from the Director.

Section 25. Conditional Repeal.

Any provisions of any County Ordinance or other County enactment which are inconsistent or in conflict with the provisions of this Ordinance are hereby repealed to the extent of any such inconsistency or conflict.

Section 26. Severability.

If any section, subsection, sentence, clause, phrase, or portion of this Ordinance is for any reason held invalid or unconstitutional by any Court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining portions hereof.

Section 27. Applicability to Significant Users and to Existing Users.

This Ordinance shall have no applicability to significant users or to existing users.

Section 28. Effective Date.

This Ordinance shall take effect immediately upon receipt of official acknowledgment from the Secretary of State of the State of Florida that the Ordinance has been filed with said Office.

PASSED AND DULY ADOPTED with a quorum present and voting this the 11th day of January, 1992.

BOARD OF COUNTY COMMISSIONERS
OF MANATEE COUNTY, FLORIDA

By: Kathy A. Smith
Chairman

ATTEST: R. B. SHORE
Clerk of Circuit Court

Ordinance 92-28

Ordinances

City of Plant City
Small Agricultural System
3MGD

ORDINANCE NO. 10-1995

AN ORDINANCE OF THE CITY OF PLANT CITY, FLORIDA, CREATING CHAPTER 44 OF THE PLANT CITY CODE BY ADDING RECLAIMED WATER REUSE; ESTABLISHING A RECLAIMED WATER SYSTEM IN THE CITY OF PLANT CITY FOR IRRIGATION AND OTHER AUTHORIZED USES; DECLARING LEGISLATIVE AUTHORITY AND INTENT; DEFINING TERMS; AUTHORIZING APPLICATIONS FOR CONNECTION TO THE SYSTEM WHEN SERVICE AVAILABLE; AUTHORIZING ESTABLISHMENT OF RATES, FEES AND CHARGES FOR RECLAIMED WATER SERVICE; AUTHORIZING DISCONTINUANCE AND INTERPRETATION OF SERVICE UNDER CERTAIN CIRCUMSTANCES; REQUIRING CUSTOMERS TO FURNISH A RECLAIMED WATER IRRIGATION PLAN; ESTABLISHING RULES AND REGULATIONS PERTAINING TO EASEMENT DEDICATIONS, GOVERNMENTAL PERMITS, PRIORITIES FOR SERVICE, RIGHT TO SERVICE, SERVICE OUTSIDE THE CITY, SERVICE APPLICATION REQUIREMENTS, FLOW METER REQUIREMENTS, CROSS-CONNECTION CONTROL, CONSTRUCTION OWNERSHIP OF FACILITIES, APPEALS TO CITY COMMISSION, USE OF RECLAIMED WATER, AND OTHER RELATED MATTERS; REPEALING ALL ORDINANCES IN CONFLICT HEREWITH; PROVIDING FOR SEVERABILITY AND PROVIDING AN EFFECTIVE DATE.

Whereas, potable water and groundwater are valuable resources which must be conserved; and

Whereas, reclaimed water is also a valuable resource which can safely be used for irrigation purposes, thereby substantially contributing to the conservation of groundwater and potable water; and

Whereas, the City of Plant City has determined to establish a reclaimed water system which would make reclaimed water available for irrigation and other recognized purposes; and

Whereas, such reclaimed water system serves a valid public purpose in helping to conserve water resources; and

Whereas, it is the intent to the City Commission that the provisions of this Chapter be consistent with the rules and regulations of the Florida Department of Environmental Protection; and

Whereas, the establishment of such a reclaimed water system requires the enactment of certain rules and regulations, as set forth herein; now, therefore

BE IT ENACTED BY THE CITY COMMISSION OF THE CITY OF PLANT CITY, FLORIDA:

Section 1. Chapter 44, Plant City Code, is hereby created to read as follows:

CHAPTER 44. RECLAIMED WATER REUSE

Sec. 44.01 Authority and Intent.

It is the intent of the City of Plant City to make reclaimed water available for irrigation purposes and other authorized uses in certain areas of the City where the City determines that the construction of a reclaimed water distribution system is feasible and economical. The reclaimed water distribution system shall be constructed in sections to provide service to designated areas as determined by the City, pursuant to the terms and conditions set forth herein. It is further the intent of the City to establish a reclaimed water system which complies with the rules and regulations set forth by the Florida Department of Environmental Protection, which rules appear in Chapter 62-610, Florida Administrative Code.

Sec. 44.02 Definitions

For the purposes of this Chapter, the definitions contained in this section shall apply unless otherwise specifically stated.

“Available” shall mean that a functioning reclaimed water distribution main is located within 100 feet of the property to be serviced.

“Backflow Prevention Device” shall mean a device installed at the customer’s potable water meter to prevent the flow of any contaminated fluids into the public water system. It shall also mean a device installed on the reclaimed water service for commercial, agricultural, and industrial customers to prevent the backflow of contaminate fluids into the reclaimed water system.

“City” shall mean the City of Plant City, Florida.

“Commission” shall mean the City Commission of the City of Plant City, Florida.

“County” shall mean Hillsborough County, Florida.

“Cross-Connection” shall mean any physical arrangement whereby a public potable water supply or reclaimed water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other devise which contains or may contain contaminated water, sewage or other waste, or liquid or unknown or unsafe quality which may be capable of imparting contamination to the public potable water supply or reclaimed water supply as the result of backflow. Bypass arrangements, jumper connections, removable sections, swivel or changeable

devices, and other temporary or permanent devices through which or because of which backflow could occur are considered to be cross-connections.

“Customer” shall mean the owner(s) of the property being served.

“Delivery Points” shall mean the points of connection of the City’s reclaimed water system to the user’s system.

“Department” shall mean the Utilities Department of the City of Plant City.

“Director” shall mean the Director of the City’s Utilities Department or his/her designated representative(s).

“Distribution Mains” shall mean those conduits used to supply reclaimed water service lines.

“Irrigation System” shall mean an underground system with permanently placed sprinkler devices or below-ground hose bibbs contained in a locked value box. Above-ground hose bibbs (faucets) with hoses and sprinklers shall not constitute an irrigation system. Irrigation systems also include agricultural ditch and swale type systems and other conventional agricultural systems where applicable and as authorized by the Director.

“Reclaimed Water” shall mean water that has received at least advanced secondary treatment and basic disinfection and is reused after flowing out of a wastewater treatment facility.

“Reuse” shall mean the deliberate application of reclaimed water, in compliance with Florida Department of Environmental Protection and Southwest Florida Water Management District rules, for a beneficial purpose.

“Service Line” shall mean that conduit for reclaimed water from the distribution main to the property line.

“Setback distances” shall mean the setback distances between the wetted site area subject to land application of reclaimed water, and surface waters and potable water supply wells, as required by the provisions of Chapter 62-610, Florida Administration Code, Rule 610.471.

Sec. 44.03 Connection to System.

Customers in designated service areas may connect to the reclaimed water system when service is available and upon submission of a proper application and compliance with all other City requirements. Service to subdivisions and multifamily complexes will be considered upon receipt by the City of a petition signed by at least fifty (50) percent of the residents in said subdivision or complex or as otherwise directed by the Commission.

Ordinances

City of Plant City

(continued from previous page)

Sec. 44.04 Authority to Adopt Rates, Fees and Charges.

The Commission shall have the authority to establish rates, fees and charges for the reclaimed water system and to provide terms and conditions for the payment and collection of same.

Sec. 44.05 Discontinuing Services by City.

The City may discontinue reclaimed water service to any customer due to a violation of the terms of this Chapter or any other City regulation, non-payment of bills, tampering with any service, plumbing of cross-connections with another water source, or the undertaking of any other activity that may be detrimental to the system. The City has the right to cease service until the condition is corrected and all costs due the City are paid. These costs may include delinquent billings, connection charges, and payment for any damages caused to the system. Should discontinued service be restored without authorization, then the Department shall remove the service and make such additional charges as are established by Resolution or Ordinance.

Sec. 44.06 Interruption of Service by City.

The City reserves the right to temporarily discontinue service to any portion of, or the entire reclaimed water system, as deemed necessary by the Director. The Director shall have the authority to establish schedules which restrict the use of the reclaimed water system at certain times in order to reduce maximum demands on the system and to regulate usage during periods of limited reclaimed water availability.

Sec. 44.07 Easement Dedications.

An applicant for reclaimed water service to a site which does not have public access shall grant perpetual easements to the City for reclaimed water distribution facilities as required to provide reclaimed water service. Said easements shall be in a form acceptable to the City Attorney.

Sec. 44.08 Permits.

The City shall obtain and fulfill, at its expense, all necessary permits and approvals for the construction and operation of the reclaimed water distribution mains constituting the City's reclaimed water system. Once service is available, any additional permits or approvals required for service to any particular customer, for the customer's benefit, shall be obtained at the sole expense of said customer.

Sec. 44.09 Priorities for Extending Reclaimed Water Service.

The Department shall determine priorities for reclaimed water distribution pipelines and their extensions.

Sec. 44.10 Potable Water Wells.

As mandated by the Florida Department of Environmental Protection, the City shall not provide reclaimed water service to sites where wells are used as a source of potable water, and where setback distances cannot be maintained. It shall be unlawful and an offense against the City to install a well intended for use as a potable water supply within the setback distances of existing or known proposed reuse sites.

Sec. 44.11 Right to Service.

No payment of any costs, submittal of any application or petition, or undertaking of any other act to receive reclaimed water service shall guarantee such service. The City shall have the right, at all times, to refuse to extend service on the basis of a use detrimental to the system, inadequate supply of reclaimed water, lack of payment of required fees, or for any other reason which, in the judgment of the Director, will cause the extension not to be beneficial to the City.

Sec. 44.12 Service Outside the City.

Reclaimed water service may be provided to properties located outside the corporate limits of the City within the County. Such service will be extended on an actual cost basis and may include service to a governmental unit. All applications for service outside the City shall be reviewed by the Department and such service shall be approved only if an adequate supply of reclaimed water is and will be available to meet all anticipated needs. The Director shall review and approve all service line sizes and all other necessary design components. In any event, final approval of reclaimed water service outside the corporate limits of the City must be approved by the Commission.

Sec. 44.13 Service Application Requirements.

(a) Reclaimed water service shall be applied for in the Wastewater Treatment Department by completing and signing an application form.

(b) Applications for all reclaimed water services within any City, County or State maintained rights-of-way shall include a dimensional plan showing the location of the requested service line and delivery point relative to the nearest street intersection, etc., as required by the City, the County or the State Department of Transportation.

(c) Before an application for reclaimed water service will be approved, the customer must have a suitable irrigation system. The irrigation system to be provided by the customer shall consist of an underground system with permanently placed sprinkler devices or below-grown hose bibbs contained in a locked value box. No system with a cross-connection to the potable water system will be considered for connection to the reclaimed water system. Temporary systems will not be considered for connection. The systems shall not include above-ground faucets or other devices or connections that could permit

reclaimed water to be used for any purpose other than irrigation, unless such uses and systems have been approved in writing by the Director.

(d) All new irrigation systems constructed in areas where the City has determined to make reclaimed water available shall be constructed in accordance with Chapter 62-610, Florida Administrative Code. The customer shall provide the City with an Irrigation System Plan Consisting of a schematic drawing of the irrigation system before receiving service.

Sec. 44.14 Meter Requirements.

All reclaimed water users shall be required to utilize an appropriate sized flowmeter. All meters for the reclaimed water system will be installed and owned by the City. An estimate for the installation cost (including cost of the meter) will be prepared by the Department and submitted to the applicant for payment prior to installation.

Sec. 44.15 Cross-Connection Control.

(a) In all premises where reclaimed water service is provided, the public or private potable water supply shall be protected by an approved backflow prevention device, in accordance with Section 115.011, Plant City Code.

(b) All reclaimed water services serving commercial or industrial customers shall have a double check valve assembly approved by the City's Utilities Director.

(c) Reclaimed water customers shall bear all costs of installation, testing and maintenance of the protection device in accordance with Section 115.011(f), Plant City Code.

Sec. 44.16 Construction Specifications.

(a) Pipe, including color and labeling, shall meet or exceed standards set by the Florida Department of Environmental Protection and standards of the American Water Works Association.

(b) Mains in the public right-of-ways shall be located a uniform distance from the curb and the location shall be approved by the Director.

(c) Vertical and horizontal clearances from potable water lines and sewage collection lines shall be as specified in the applicable Florida Department of Environmental Protection rules.

(d) All valves and outlets shall be placed in appropriately tagged or labeled to warn the public and employees that the water is not intended for drinking.

(e) Where irrigation mains are to be turned over to the City, the customer shall submit such documents as are normally required for the dedication of public facilities.

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City of Plant City
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(f) "As-built" drawings shall be submitted to the Department upon completion of the Irrigation system.

Sec. 44.17 Maintenance by the Customer.

The customer shall be responsible for the maintenance and repair of all irrigation lines and appurtenances on his/her/its property, unless said facilities are located within land previously conveyed to the City or land in which the City has issued a license or permit to operate said facilities. The City reserves the right to disconnect the service to any property when the irrigation system appurtenances are not properly maintained or fail to meet the requirements of Chapter 62-610, Florida Administrative Code. In addition, should the customer require reclaimed water at different pressures, or different quality, or in any way different from that normally supplied by the City, he/she/it shall be responsible for the necessary devices to make these adjustments and for obtaining the approval of the Director.

Sec. 44.18 Maintenance by the City.

- (a) All facilities that have been accepted by the City shall become the property of the City and will be operated, maintained and repaired by the City. No person shall perform any work nor be reimbursed for any work or the system unless written authorization from the City is received prior to the work being accomplished.
- (b) The City shall make a reasonable effort to inspect and keep its facilities in good repair, but assumes no liability for any damage caused by the system that is beyond the control of normal maintenance or due to situations not previously reported to the Department. This shall include damage due to breaking of the pipes, poor quality of water caused by unauthorized or illegal entry of foreign material into the system, faulty operation of fire protection facilities, or other reasons.

Sec. 44.19 Common Service Lines.

The Director shall have the authority to approve one service line to connect two or more customers when sufficient capacity is available. In these cases, each customer shall each pay the full connection charge. Common service lines will be sized to provide adequate service to each customer serviced.

Sec. 44.20 Public Easement.

For reclaimed water lines and appurtenances which are initially installed by a person or entity other than the City, said lines and appurtenances shall not be accepted by the City for maintenance unless the facilities are within a dedicated public right-of-way or easement and the facilities are determined by the Director to be in good working order. Any new easements or licensed or permitted area shall be adequately sized to accommodate construction and maintenance of any reclaimed water system component. No obstruction of whatever kind shall be

planted, built, or otherwise created within the limits of the easement, right-of-way or licensed or permitted area without the written permission of the Director.

Sec. 44.21 Ownership by City.

All reclaimed water facilities and appurtenances within dedicated public rights-of-way or easements when constructed or accepted by the City shall become and remain the property of the City. No applicant or customer shall by payment of any charges provided herein, or by causing any construction of facilities accepted by the City, acquire any interest or right in any of these facilities or any portion thereof, other than the privilege of having his/her/its property connected thereto for reclaimed water service in accordance with this Chapter.

Sec 44.22. Appeals to the Commission.

Any refusal by the Director to grant service to an applicant, or any other decision made by the Director pursuant to this Chapter, shall be appealable to the Commission. However, said appeal must be filed with the City Clerk within 30 days of the date of the decision of the Director.

Sec. 44.23 Transfer of Reclaimed Water.

It shall be unlawful and an offense against the City for any person or entity to sell, barter, trade or otherwise transfer reclaimed water to any other person or entity, after having initially received said reclaimed water from the City, without written authorization from the Director.

Sec. 44.24 Penalties.

Every person convicted of a violation of any particular provision of this chapter shall be punished by a fine of not more than five hundred dollars (\$500.00) or by imprisonment for not more than ninety (90) days, or by both such fine and imprisonment. Each act of violation and every day upon which any such violation shall occur shall constitute a separate offense. In addition, said provisions may be enforced by the City in accordance with Chapter 131, Plant City Code. As provided in Section 1.06, Plant City Code, in addition to the above penalties, the city may enjoin or abate any violation of this Chapter by appropriate legal action.

Section 2. All ordinances or parts of ordinances in conflict with this Ordinance are hereby repealed.

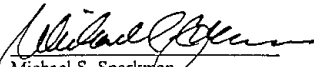
Section 3. If any section, sentence, clause, part, or provision of this Ordinance is held to be invalid by a court of competent jurisdiction, the remainder of this ordinance shall not be affected thereby, but shall remain in full force and effect.

Section 4. This Ordinance shall take effect upon its passage and publication as provided by law.

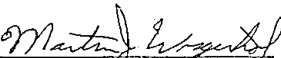
Read for first reading on March 27, 1995.

Read for second reading on April 10, 1995.

Certified as to passage on April 10, 1995.


Michael S. Sparkman
Mayor-Commissioner

ATTEST:


Martin J. Wisgerhof
City Clerk

Approved as to form and correctness:


Kenneth W. Buchman
City Attorney

Policies and Regulations

City of St. Petersburg

Large Public Access System
20MGD

I. INTRODUCTION

The City of St. Petersburg established an urban reuse system in 1977. This system provides reclaimed water meeting state requirements for public access use for irrigation and other non-potable water demands. The reclaimed water system is an integral part of the City's utility system and provides benefits to both the potable water and wastewater utilities. The potable system benefits by reducing the use of high quality potable water for non-potable uses. This results in a lower annual average and lower peak potable water demand. Further, the use of high quality potable water where a lower quality water is appropriate and available is contrary to the City's policies of water conservation. The wastewater utility benefit as the reclaimed water system provides for the disposal of more than half of the total wastewater flow in a manner encouraged and supported by state agencies and the general public. By maintaining an urban reuse program the City significantly reduces the volume of reclaimed water which must be "disposed of" by means that do not promote or encourage conservation of water resources in the City.

It is the intent of the City to continue reclaiming wastewater in a manner that is environmentally sound and economically feasible. The City is committed to supporting the existing urban reuse system and its expansion under the conditions defined in Section II. The rates associated with reclaimed water service are provided in the St. Petersburg City Code, Chapter 27, Section 27-101 through Section 27-153.

II. DEFINITIONS

ADMINISTRATOR - shall mean the individual responsible for the Public Works Administration of the City of St. Petersburg, Florida or his designee.

AIR GAP - shall mean a physical separation sufficient to prevent backflow or back-siphonage between the free flowing discharge end of the reclaimed water system and any other system, physically defined as a distance equal to twice the diameter of the supply side pipe diameter but not less than 1-inch.

APPLICATION - shall mean an application for reclaimed water and Hold Harmless Agreement.

AUXILIARY WATER SUPPLY - any water supply other than reclaimed water produced at the City of St. Petersburg's four wastewater reclamation facilities.

BILLING - shall mean the charge made for reclaimed water service. The charge may be made a separate invoice or may be included on the monthly utility bill.

CITY - shall mean the City of St. Petersburg, Florida.

CROSS-CONNECTION - shall mean any physical arrangement whereby a public water supply is connected, directly, or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage, reservoir, plumbing fixture, or other devices which contains or may contain contaminated or polluted water, sewage, or other waste or liquid of unknown or unsafe quality which may be capable of importing contamination pollution to the public water supply as a result of backflow or back-siphonage. By-pass arrangements, jumper connections, removable sections, swivel or changeable devices, and other temporary or permanent devices through which or because of which backflow or back-siphonage could occur are considered to be cross-connections.

CRITICAL WATER QUALITY AREAS - shall mean areas where groundwater quality is not suitable for irrigation and there is a high demand for irrigation water on the potable water system.

CUSTOMER - shall mean the applicant or user of the reclaimed water service.

DEPARTMENT - shall mean the Public Utilities of the Public Works of the City of St. Petersburg.

DIRECTOR OF PUBLIC UTILITIES - (also referred to as the DIRECTOR) shall mean the individual responsible for the technical and operational activities of the Public Utilities Department of the Public Works Division of the City of St. Petersburg, Florida or his designee.

DISCONTINUATION OF SERVICE - shall mean discontinuation of those conduits used to supply reclaimed water to service lines from transmission lines.

DOUBLE CHECK - shall mean an assembly of two independently operating spring loaded check valves with tightly closing shut off valves on each side of the check valve assembly plus properly located test cocks for the testing of each check valve.

DUAL CHECK VALVE ASSEMBLIES - shall mean an assembly of two operating spring loaded check valves.

FDEP - shall mean the Florida Department of Environmental Protection.

HOSE CONNECTION - shall mean a device which can be connected to the service conduit providing reclaimed water by a special Quick Coupler Assembly provided by the City.

IRRIGATION SYSTEM - shall mean an underground network of inter-connecting pipe with permanently placed sprinkler devices installed intermittently along the pipe system.

LOCK BOX - shall mean service box or compartment containing a Hose Connection Assembly which shall be clearly labeled as being of nonpotable quality.

MASTER CONTROL VALVE - shall mean the manually operated valve which controls total reclaimed water flow to the customer's property located at the point where the reclaimed service line crosses the property line.

MAYOR - shall mean the Mayor of the City of St. Petersburg, Florida or his designee.

PUD - shall mean Planned Unit Development.

PVC - shall mean polyvinyl chloride pipe.

RATES - shall mean those charges which will be made in advance on a monthly, bi-monthly, or quarterly basis and are subject to change as approved by the City Council from time to time in relation to the costs of providing service.

RECLAIMED WATER - shall mean non-potable water provided through a separate distribution system meeting FDEP'S requirements for public access use given in Chapter, 62-610, Part III of the Florida Administrative Code (FAC).

CAMLOCK RECLAIMED WATER HOSE - shall mean a color coded hose with an inside diameter of 3/4" with a special connection on one end and has been pressure tested to 150 psi.

REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY - shall mean any assembly consisting of two independently operating approved check valves with an automatically operating differential relief valve located between the check valves, tightly closed shut off valves on each side of the reduced pressure device plus properly located test cocks for testing of the test assembly and relief valve.

SERVICE LINE - shall mean that conduit for reclaimed water from the distribution main to the property line.

TRANSMISSION MAINS - also referred to as trunk mains shall mean those conduits used to supply reclaimed water from the pumping station or treatment plant to the distribution mains.

III. AUTHORITY

- A. The City Council shall have the authority by resolution to establish reasonable policies and regulations concerning the use of reclaimed water. The City Council shall have the authority by ordinance, duly adopted after public hearing, to establish rates, fees and charged for the reclaimed water system and to provide terms and conditions for payment and collection of same.

Policies and Regulations

City of St. Petersburg
(continued from previous page)

IV. RECLAIMED WATER SERVICE

A. City Service

Reclaimed water service shall be provided for properties located within the City of St. Petersburg which comply with the provisions for such service as set forth in this section subject to availability.

B. Outside City Service

Reclaimed water service may be provided to properties located outside of the City of St. Petersburg. Service inside the City will be the first priority as defined in Section V of this document. Outside of the City, service will be extended on an actual cost basis plus a 25% surcharge. This surcharge may be waived when service is extended to another governmental unit.

All applicants for service outside of the City in areas not served by City potable water service shall be reviewed by the Administrator who shall make recommendations concerning such service. A recommendation to extend service will be made if an adequate supply of reclaimed water is and will be available to meet all the anticipated needs in the City. The Director shall review and approve, or reject, all service line sizes and all other necessary design components based on the City's design standards for reclaimed water systems. Final approval for service must be obtained from the City Council.

C. Availability of Service

The existence of a Reclaimed Water main adjacent to or near the premises of an applicant for the service does not necessarily mean that service is available to that location. The Director shall make a determination of reclaimed water availability based on total system demand, specific transmission/distribution capabilities within the subject project area, and the estimated cost of providing reclaimed water service to the subject project area.

No service taps will be made to reclaimed water transmission mains larger than 24 inches in diameter unless specifically approved by the Director. Service in areas where only transmission mains exist will require installation of a distribution main, or approval on a case-by-case basis by the Director for a service tap.

V. EXTENDING RECLAIMED WATER SERVICE

A. Priorities

Extensions to the existing piping network shall proceed with these priorities with Number 1 representing the highest priority, Number 7 the lowest priority:

1. Small lots (less than 1/4 acre) users in critical water quality areas with the City.
2. Major volume users (golf courses, parks, schools, etc.) in critical water quality areas within the City.
3. Major volume users adjacent to the existing system (direct connections) within the City.
4. Major volume users elsewhere within the City.
5. Small lot users adjacent to the existing system within the City.
6. Users outside of the City limits served by the City's potable water system.
7. Users outside of the City limits not served by the City's potable water system.

B. Petition for Distribution Main Extension

To request service, a property owner(s) shall petition the Mayor on an appropriate form obtainable from the Reclaimed Water Section of the Public Utilities Division. This initial petition shall represent an expression of interest by the property owners and not a binding commitment.

Upon receipt of a petition from property owners of 30% of the project area, the City shall:

1. Prepare a preliminary estimate of the cost to extend a pipeline to the area of the interested property owners.

The Mayor shall then prepare a customer cost packet consisting of:

- a. Formal petition cost estimate;
- b. Voluntary Lien Agreement; and
- c. Hold Harmless Agreement (application for reclaimed water service).

2. If the estimated cost is agreeable to the property owner, the property owner shall execute a Voluntary Lien Agreement and return to the Reclaimed Water Section. Upon the receipt of a valid Voluntary Lien Agreement and the Hold Harmless Agreement representing a 30% of the project area, the following action shall be taken.
3. The Mayor shall request the legal department to prepare an ordering resolution for action by the City Council.
4. Upon passage of the ordering resolution, the Mayor shall request the Department to design a reclaimed water system for the approved project area.
5. After the bids are taken, the Mayor shall advise the property owners of any anticipated increase in the cost of extending the pipeline.
6. Should the cost to extend the reclaimed water line exceed 10% of the projected estimated cost, the property owner shall have the right to re-negotiate the Voluntary Lien Agreement prior to the construction of the project.
7. Should the City not be able to re-negotiate the revised cost to construct the approved project with the property owners of record, the project will then be tabled for a period of one year before the cost estimate expires.
8. The Mayor shall then ask the council to approve the bids and authorize the approval of the project.

After the pipeline has been built and the contractor paid, the Mayor shall calculate the cost and send individual bills to the property owners as enumerated to in the Voluntary Lien Agreement. The bill shall be paid in accordance with the St. Petersburg City Code, Chapter 27, Section 27-101 through Section 27-153.

The assessment for each property owner for extending the pipeline shall be calculated on the basis of capital cost to construct, less any State or Federal aid received. Refer to the St. Petersburg City Code, Chapter 27, Section 27-101 through Section 27-153 for details on calculating the charges. Customers not receiving reclaimed water in areas where a reclaimed water distribution systems is in place may connect to the system at any time under the provisions of Part IV and Part VI of these Policies and Regulations. The cost will be in accordance with the St. Petersburg City Code, Chapter 27, Section 27-101 through Section 27-153.

Policies and Regulations

City of St. Petersburg
(continued from previous page)

VI. APPLICATION FOR RECLAIMED WATER SERVICE

A. Application for Connection to Adjoining Reclaimed Water Distribution Main

Reclaimed water service shall be applied for in the Reclaimed Water Office by completing and signing the Application (Attachment A). It is the City's intent to identify all non-potable water demands within a property requesting reclaimed water service and investigate the feasibility of using reclaimed water in-place of the existing sources where appropriate.

Applications for commercial reclaimed water service shall be accompanied by a letter of intent describing the non-potable uses requested by the applicant, site plan and/or construction plans showing the proposed service and/or main diameter and location.

Single family sites shall complete the application providing service size and location. The service location shall be at least ten feet from any potable water meter. In unusual circumstances where a ten foot separation cannot be maintained (for example: site configuration, or location of existing utilities), with prior approval of the Director, the service location may be less than ten feet but in no case closer than five feet from any potable water meter.

The City will attempt to the best of its ability to deliver an adequate supply of reclaimed water of good quality at all times. However, no guarantees can be provided due to circumstances beyond the City's control. Therefore, the customer will be required to complete a Hold Harmless Agreement as part of the application prior to the connection. The Director shall have the authority to establish schedules which restrict the use of reclaimed water at certain times, including but not limited to, periods of shortages in reclaimed water availability in order to reduce peak demands on the system.

B. Location

Application for construction of all reclaimed water services within the County or State maintained right-of-ways shall include a dimensional plan showing the location of the requested service line relative to the nearest street intersection, etc., as required by the State Department of Transportation and/or the Pinellas County Commission.

C. Service Application Prerequisite - Customer Responsibility

The City shall tentatively approve a customers Hold Harmless Agreement for reclaimed water service prior to the installation of a suitable irrigation system and/or hose connection.

1. The irrigation system shall be provided by the customer.
2. The hose connections and appurtenances shall be provided by the City and consist of a hose connection assembly, Cam Lock color coded 3/4" rubber hose and a Lock Box labeled and color coded.
3. The customer may purchase and install up to two hose connection assemblies and appurtenances for below grade installation on each property where reclaimed water service has been approved.
4. The customer shall be responsible for scheduling an inspection of the Hose Connection Assembly upon completion of the unit/s installation.
5. The customer shall not tamper with or modify or connect any unauthorized hose, fitting or fixtures to the Hose Connection Assembly.
6. The customer shall sign a Restricted Use Agreement with the City prior to purchase of the Hose Connection Assembly and appurtenances.
7. The customer shall restrict the use of the Hose Connection Assembly to irrigation of turf grass, shrubbery, ornamental plants, trees, bedding materials, potted plants, controlled containment areas such as greenhouse used for the purpose of cultivating ornamental plant vegetation and ornamental plant germination beds.
8. The customer shall not allow the reclaimed water to enter the dwelling unit/s for toilet flushing or other household uses.
9. The customer shall be responsible for disconnecting and storing when not in use, the Cam Lock Hose and securing the Lock Box to ensure no entry.
10. The customer shall not allow the reclaimed water to be used for: consumption human or animal, interconnecting with another water source, sprinkling of edible crops (gardens) body contact recreation, use through hose bibbs, faucets, quick couplers, etc., filling of swimming pools, sharing a common reclaimed service or connection between properties, augmenting lake or pond levels, filling of decorative pools or fountains, supplying air cooling systems (a/c units), or washing of equipment such as cars, boats, driveways, roofs, structures, etc.

D. Information

Applicants accepted for reclaimed water service shall receive a brochure summarizing the appropriate uses of reclaimed water as well as those uses that are prohibited and shall agree to abide by the City's Reclaimed Water Policies and Regulations as a condition of reclaimed water service.

E. Permit

All applicants requesting a hose connection assembly shall be required to obtain a reclaimed water permit prior to the purchase of the assembly.

VII. WATER USE REQUIREMENT

A. Appropriate Uses of Reclaimed Water

Reclaimed water is well suited to many water uses not requiring drinking water quality. The most common use of reclaimed water is for urban irrigation. Other uses where non-potable quality is acceptable will be considered by the Director.

B. Maintenance by the Customer

The property owner and/or customer shall be responsible for the maintenance of all facilities associated with the use of reclaimed water, including irrigation lines, hose connection assemblies, cam lock hose, lock box and appurtenances on the private property served by the City. The customer shall install a master control valve to isolate the customers reuse system. The Director may require additional valves to assist in cross-connection control inspections of complex systems. The City reserves the right to disconnect the service to any property that does not maintain their system. The system pressure is expected, but not guaranteed, to vary between 55 psi and 87 psi. Should the customer require reclaimed water at different pressures, or different quality, or in any way different from that normally supplies by the City, the customer shall be responsible for the necessary devices to make these adjustments and for obtaining approval by the Director for such devices. New irrigation systems shall be designed, or existing systems shall be adjusted and/or modified, to reduce over-spray and runoff and minimize misting.

Policies and Regulations

City of St. Petersburg
(continued from previous page)

C. Cross-Connection Control

At all properties where reclaimed water service is provided, the public potable water supply shall be protected by an approved backflow prevention device or an air gap of not less than two times the diameter of the supply pipe or no less than 1-inch. The purpose of these devices is to prevent contamination of the City's potable water system. All devices and materials installed for cross-connection control must be approved by the Director of Public Utilities. In all premises where there is reclaimed water or other auxiliary water supplies, there shall be no physical connection unless expressly authorized in accordance with the City's Cross-Connection Control Program, the St. Petersburg City Code, Chapter 27, Section 27-66 through 27-80. Where such a cross-connection is found, it shall be disconnected. Before re-connection of that service, the public potable water system shall be protected against the possibility of future cross-connections, and additional devices may be required as specified by the Director and installed at the customer's expense. For properties where access is restricted, or for properties with a history of cross-connection control problems, the Directory may require the installation of an approved reduced pressure principle backflow device at the customer's expense.

D. Inspections

To determine the presence of any potential hazards to the public potable water system, the Pinellas County Health Department and/or the City shall have the right to enter upon the premises of any customer. Each customer of reclaimed water service shall, by application, give prior written consent to such entry upon the private property.

E. Inspection Procedures

The City has established an inspection program. Where reclaimed water is readily available for service or a ready-to-serve condition exists, the City shall perform an effective onsite inspection of each property as provided for in the individual user agreements to minimize the potential for illegal connection or unauthorized use of reclaimed water.

The purpose of onsite inspection of irrigation systems that deliver reclaimed water to areas that are intended to be accessible to the public such as: residential lawns, golf courses, cemeteries, parks, schools, landscaped areas and highway medians, public access areas that may included private property that is not open to the public at large but is intended for frequent use by many persons is to ensure no tampering or unauthorized modification or use of the irrigation delivery system has occurred.

The City shall reserve the right of intermittent inspection of customer sites without prior notification.

Upon completion of inspection, the inspector shall prepare an onsite inspection report as to the findings. A copy of this report shall be left at the premises for customers review.

In the event an unauthorized condition is found to exist, service shall be discontinued until such time as the infraction has been corrected.

Prior to reactivating a service which has been discontinued due to infraction of the City code, the occupant and or property owner or their designee will notify the Reclaimed Water Office to schedule a reinspection of the site and facilities.

Should conduits transporting reclaimed water be found entering a structure, the inspector shall have the authority under the provisions of Section VII, paragraph D of these Policies and Regulations to enter the structure to evaluate the extent of use of the reclaimed water within the facility. Failure to permit entry shall constitute immediate discontinuance of service as provided for under the St. Petersburg City Code, Chapter 27, Section 27-146 through Section-27-153.

Discontinuance of service shall not preclude the City from taking any civil remedies or prosecution that may be appropriate due to the violation of the Policies and Regulations of the reclaimed water system.

F. PUD'S (Planned Unit Development)

Where reclaimed water facilities are installed as part of the construction of a PUD, onsite potable and reclaimed water facilities shall conform to the City's identification requirements. One set of plans and specifications as signed and sealed by a Registered Engineer for the potable and reclaimed water distribution system shall be submitted to the City for review for compliance with federal, state and local regulations and policies. Authorized City personnel shall be given access to the site prior to, during, and post construction for the purpose of verifying compliance with Part III Chapter, 62-610, of the Florida Administrative Code. Failure to grant access to City personnel shall be cause for discontinuing reclaimed water service.

G. Restrictions on Potable and Auxiliary Water

Where reclaimed water distribution lines have been installed and the Director has determined reclaimed water is available, the installation of a second potable meter for the purpose of irrigating with potable water shall be prohibited.

H. Transfer of Reclaimed Water

It shall be unlawful for any person, entity, or customer to sell, barter, trade or otherwise transfer reclaimed water to any other person or entity without written authorization from the Director.

I. Billing

Rates and fees associated with the reclaimed water system are established in the St. Petersburg City Code, Chapter 27, Section 27-101 through Section 27-153.

VIII. DISCONTINUING AND REINSTATING SERVICE

A. Discontinuing Service - By City

The City may discontinue reclaimed water service to any customer due to an infraction of these Policies and Regulations, or for any reason that may be detrimental to the system. The City has the right to cease service until the condition is corrected and all costs due the City are paid. These costs may include delinquent billings, connection charges, and payment for any damage caused to the system. Should a discontinued service be turned on without authorization, then the Department shall remove the service and make an additional charge as established by the current St. Petersburg City Code, Chapter 27, Section 27-101 through Section 27-153.

B. Discontinuing Service - By Customer

A request to discontinue service must be received by the Department at least two days prior to discontinuation. Billing procedures for discontinuing service by the customer are given in the Code.

C. Existing Service Reinstated

Existing services may be reinstated by a customer's application for reinstatement. The payment of any appropriate fees or other charges as contained within the Code.

Policies and Regulations

D. Service Interruption

The City reserves the right to temporarily interrupt service to any portion of, or the entire, reclaimed water system, as deemed necessary by the Director.

E. Appeal Process

The appeals procedure provides an orderly method by which a customer's dispute over the reclaimed water service discontinuance due to City code violation is fairly and impartially reviewed.

Procedure:

1. If a customer disputes the discontinuance of the reclaimed water service, his first contact is usually with the Reclaimed Water Office. Most questions and complaints are answered at this level.
2. If the customer is dissatisfied with the answers received, he/she is referred to the Reclaimed Water Coordinator who will review the documentation specific to the site and respond accordingly.
3. If the customer wishes to appeal the decisions of the Reclaimed Water Coordinator, he/she shall submit in writing to the Mayor's office, a request to appear before the Utility Billing Review Committee (UBRC) as outlined in Chapter 27, Section 27-147, paragraph 6, of the St. Petersburg City Code. The letter should outline the issue in dispute.

If the issue solely involves a delinquency of amount owed the City, the UBRC will hold, prior to discontinuance of service, a pre-discontinuance hearing.

Where the reason for discontinuance of service is due to a violation of the Policies and Regulations governing the reclaimed water system, or where the violation endangers the public health or safety of the public or the customer, the reclaimed water service shall be subject to immediate discontinuance without prior written notice in accordance with Chapter 27, Section 27-146 through Section 27-153 of the St. Petersburg City Codes.

Policy:

The UBRC shall permit a customer to present evidence on his/her behalf relevant to the action taken by the Public Utilities Reclaimed Water Section in response to a violation of the Policies and Regulations governing the reclaimed water system or concerning nonpayment of service charges.

Procedure:

The UBRC consists of Administrator of Public Works, Budget and Management Director, Finance Director, Director of General Services or their designees.

The customer requesting the appeal must submit a written request addressed to the Mayor's office. The Mayor shall refer the customers request to the Administrative Service Officer of Utility Accounts Division. The customer shall be notified in writing of the date, time and place of the hearing. The hearing shall be conducted informally and all testimony shall be heard in accordance with Section 27-148, paragraph B, of the St. Petersburg City Code. The Utility Accounts Division shall ensure that the committee is provided with all necessary documentation relevant to the case. A member from the concerned department will be made available to answer any questions the committee might have.

Any customer who is found to be in violation of any City ordinance, codes, regulations or policy governing the reclaimed water systems shall be subject to immediate discontinuance of reclaimed water service. Discontinuance may be imposed for a period of up to or in excess of one year, and in certain instances where a violation has occurred such as to constitute a major threat to the integrity of the reclaimed water systems or to the health and safety of the public or the customer, such discontinuance may be permanent. Any person requesting a reconsideration of a decision to terminate the reclaimed water service shall make such request in writing to the Mayor's office for a hearing before the Mayor or designee.

The hearing procedures shall be promulgated so as to afford the customer the opportunity to be heard, to present evidence, to call, question and cross-examine witnesses. After hearing all testimony the committee will weigh all testimony presented and render a decision by majority vote of the committee members. The decision is then prepared in written form to be signed by the committee chairman and forwarded to the Mayor who will either approve or disapprove the recommendation.

The Mayor shall return this recommendation to the Utility Accounts Division indicating his approval or disapproval.

Customers who have appealed will then be notified in writing of the Mayor's decision. A decision considering the termination of reclaimed water service shall not preclude the City from proceeding with any civil remedies in process or prosecution that may be appropriate due to violation of the policies and regulations governing the reclaimed water system.

IX. RECLAIMED WATER FACILITIES

A. Public Easement Requirement

No reclaimed water facilities that are to be dedicated for City ownership will be installed under the provisions outlined herein and accepted by the City for maintenance unless it is in a dedicated public right-of-way or dedicated public easement. All new easements shall have a minimum width of twenty-five (25) feet. No obstruction of whatever kind shall be planted, built or otherwise created within the limits of the easement or right-of-way without prior written permission of the Mayor.

B. Ownership

All reclaimed water facilities and appurtenances when constructed or accepted by the City shall become and remain the property of the City. Where reclaimed water mains are dedicated to the City, the customer shall submit such documents as are typically required for the dedication of public facilities. No person shall be payment of any charges, or by causing any construction of facilities accepted by the City, acquire any interest or right in any of these facilities, or any portion of these facilities, other than the privilege of having their property connected for reclaimed water services in accordance with this document and any amendments.

C. Identification

All pipes and above ground cross-connection control devices accepted into existing systems shall be adequately identified by appropriate system color. The color may be characteristic of the pipe material, added after manufacture of the pipe by a coloring agent, or permanently attached by means of an adhesive-backed tape. There shall be a minimum of three colored stripes per length of pipe (located at 10 o'clock, 12 o'clock and 2 o'clock when the pipe is installed) each a minimum of two inches wide. The identifying colors shall be:

Potable Reclaimed water	Blue In accordance with applicable federal, state and local color code requirements.
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Policies and Regulations

City of St. Petersburg
(continued from previous page)

D. Minimum Sized Reclaimed Water Mains

The minimum size of mains installed in the City shall be four inches in diameter, with the following exceptions:

(a) Two-Inch Mains

Mains two inches in diameter will only be allowed by approval of the Director, and in no case will be allowed for any extension serving more than ten domestic customers on a cul-de-sac or twenty domestic customers on a line that is looped. Two-inch mains shall be connected at each end to a main four inches or larger in diameter. A two-inch main shall be looped to a main four inches or larger in diameter in a cul-de-sac.

(b) Service Lines

Service line pipe size shall be required by the type or size of the property served, but shall in no case be less than three-fourths (3/4) inch in diameter.

E. Extension Approvals

Reclaimed Water Extensions for improvements shall be accepted by the City upon the appropriate approval of the Director of Public Utilities. Applications for construction of reclaimed water extensions shall be submitted to the Reclaimed Water Office prior to construction.

F. Right to Refuse Service

No payment of any costs, submittal of any petition, or any other act to receive reclaimed water service shall guarantee reclaimed water service. The City shall have the right, at all times, to refuse to extend service on the basis of a use detrimental to the system, inadequate supply of reclaimed water, lack of payment of required fees.

G. Fire Protection

Hydrants shall be installed on mains constructed within the City at such locations as deemed appropriate by the Director for purposes of flushing the reclaimed water system to maintain water quality and may be used as an auxiliary source of water for fire protection. The pressure and/or volume of reclaimed water through a reclaimed water hydrant is not guaranteed.

H. Extent of City Maintenance

All facilities that have been accepted by the City shall become the property of the City and will be operated and maintained by the City. No person shall do any work nor be reimbursed for any work, or in connection with any work on the system, unless written authorization from the City is received prior to the work being accomplished.

The City shall make a reasonable effort to inspect and keep its facilities in good repair, but assumes no liability for any damage caused by the system that is beyond the control of normal maintenance or due to situations not previously reported to the Department. This shall include damage due to breaking of pipes and poor quality of water caused by unauthorized or illegal entry of foreign material into the system.

I. Common Service Lines

The Director may approve one service line to connect two or more customers when sufficient capacity is available. In these cases property owners shall each pay the full connection charge. Common service lines will be sized to provide adequate service to each customer serviced.

J. Separation

Horizontal and vertical separation requirements between reclaimed water transmission/distribution piping from potable water mains and sewage force mains shall be in accordance with all applicable federal, state and local regulations and policies.

K. Sources of Non-potable Water

The primary source of non-potable water will be derived from the City's four water reclamation facilities. However, the City reserves the right to supplement the non-potable system with other sources of water meeting current FDER requirements as a means of eliminating or mitigating shortfalls in reclaimed water.

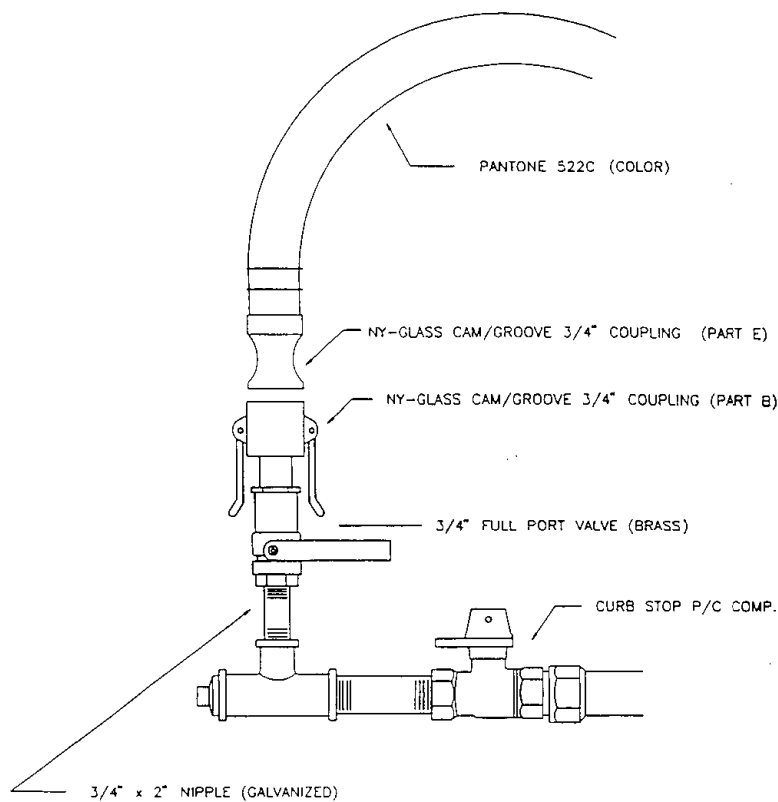
X. LOCK BOX AND HOSE CONNECTION MATERIAL SPECIFICATIONS

MATERIAL DESCRIPTION	FITTING MATERIAL	OTHER
Lockable Meter Box	Plastic	Labeled/color coded Pantone 522C with key
Hose 150 PSI Rating	Rubber	Color Coded Pantone 522C
Male Hose Nipple 3/4"	Brass	
Center Punch Clamps 1 1/4"	Stainless x 2	
NY Glass cam/groove 3/4" coupling	Galvanized	Part E #075
NY Glass cam/groove 3/4" coupling	Galvanized	Part B #075
Valve full port 3/4' single handle FPT/FPT	Brass	
Nipple 3/4" x 2"	Galvanized	
Nipple 3/4" x 3"	Galvanized	
Tee 3/4" FPT	Galvanized	
Plug 3/4"	Galvanized	
90 degree 3/4" FPT	Galvanized	
Slip/FPT	PVC Schedule 40	

Policies and Regulations

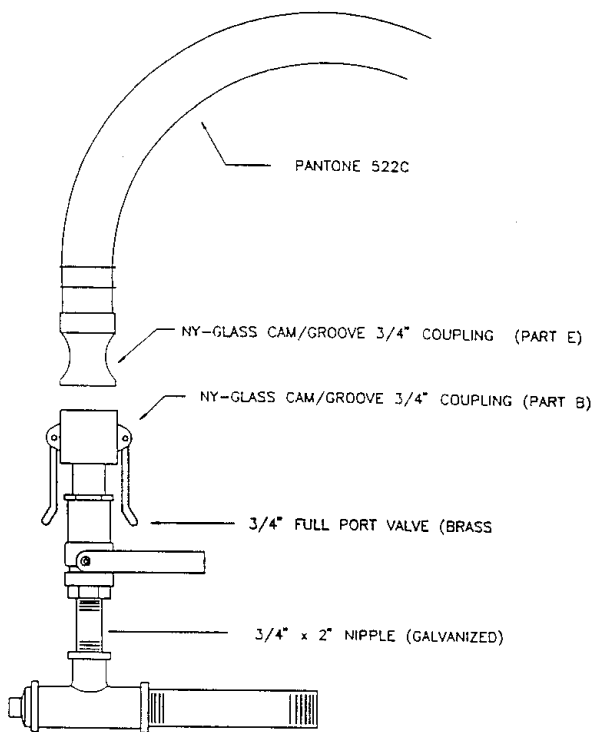
City of St. Petersburg
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A. PROPERTY LINE ASSEMBLY



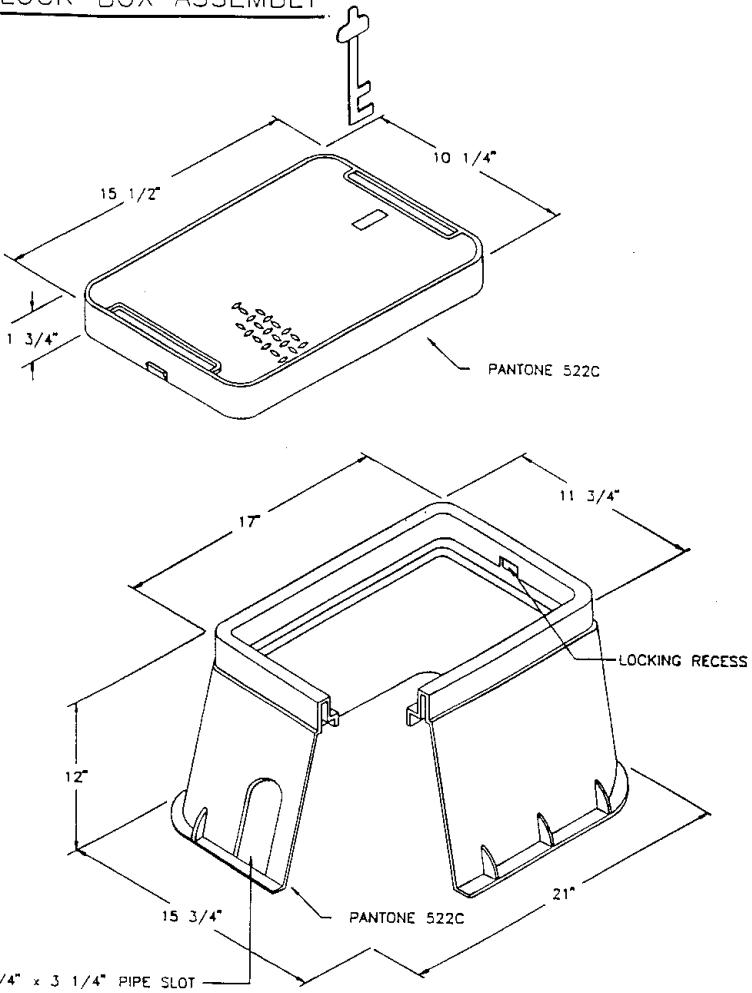
CITY OF ST. PETERSBURG PUBLIC UTILITIES DEPARTMENT		
REVISIONS:	DRAWN BY: K.A.D.	RECLAIMED HOSE CONNECTION
	DATE: 9-7-94	
	SCALE: 1" = 30'	
PROJ.#	CONT.#	

B. INYARD ASSEMBLY



CITY OF ST. PETERSBURG PUBLIC UTILITIES DEPARTMENT		
REVISIONS:	DRAWN BY: K.A.D.	RECLAIMED HOSE CONNECTION
	DATE: 9-7-94	
	SCALE: 1" = 30'	
PROJ.#	CONT.#	

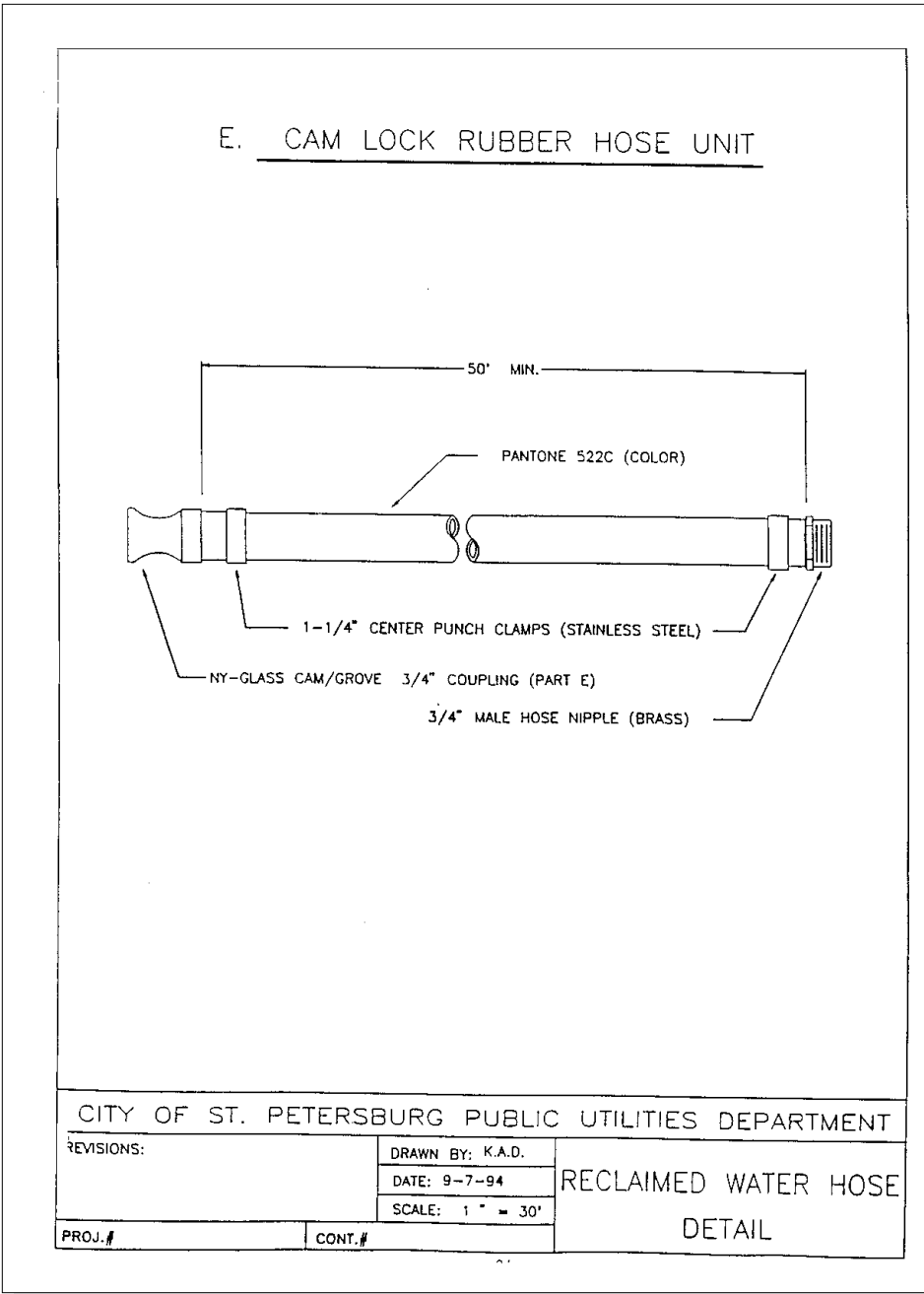
D. LOCK BOX ASSEMBLY



CITY OF ST. PETERSBURG PUBLIC UTILITIES DEPARTMENT		
REVISIONS:	DRAWN BY: k.a.d.	RECLAIMED HOSE CONNECTION LOCK BOX
	DATE:	
	SCALE: 1" = 30'	
PROJ.#	CONT.#	

Policies and Regulations

City of St. Petersburg
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City of Largo
Medium Public Access System
7MGD

I. DEFINITION

BACKFLOW PREVENTION - either a reduced pressure backflow prevention device, a double check valve assembly, a dual check valve, or other device, approved by the State of Florida Department of Environmental Protection, which protects the Pinellas County Drinking Water System at the service connection by isolating within the customers' premises actual or potential pollution or contamination through cross-connection.

BILLING - the charge made for reclaimed water service. The charge may be made on a separate invoice or may be included on the bi-monthly bill.

CITY - shall mean the City of Largo.

COUNTY - shall mean Pinellas County, a political subdivision of the State of Florida.

CROSS-CONNECTION - any physical connection or arrangement which could allow the movement of fluids between the drinking water system and any other piping system, such as the reclaimed water system.

CUSTOMER - shall mean the actual user of the reclaimed water.

D.I.P. - shall mean ductile iron pipe.

ENVIRONMENTAL SERVICES DIRECTOR - (also referred to as the DIRECTOR) shall mean the individual responsible for the technical and operational activities of the Environmental Services Department of the City of Largo, Florida.

DISCONTINUATION OF SERVICE - shall mean cessation of a service or an appropriate method to insure that no service can be received.

DISTRIBUTION MAINS - shall mean those conduits used to supply reclaimed water to service lines from transmission lines.

DIVISION - shall mean the Wastewater Management Division of the Environmental Services Department of the City of Largo, Florida.

HOSE BIB - shall mean a manually operated water spigot. (Reclaimed water hose bibbs must be located in approved locking vaults).

IRRIGATION CONTROL VALVE - shall mean the manually operated shut off valve which controls total reclaimed water flow to the customer's property located at the point where the reclaimed service lines crosses the property line.

PRESSURE REDUCING VALVE - shall mean a hydraulically operated single seated and controlled by a direct-acting spring loaded, diaphragm valve to reduce the reclaimed water supply pressure of 80-110 psi to a desired constant downstream pressure regardless of a changing flow rate or varying inlet pressure.

PVC - polyvinyl chloride pipe.

RATES - shall mean those charges assessed on a metered consumption basis or flat rate and which are subject to change as approved by the City Commission from time to time in relation to the costs of providing service.

RECLAIMED WATER - shall mean water that has received a level of treatment as required by Florida Department of Environmental Protection, and is reused after flowing out of a wastewater treatment facility.

RECLAIMED WATER COORDINATOR - shall mean the individual responsible for the technical and operational activities of the "Sparkling Water" reclaimed program.

SERVICE LINE - shall mean that conduit for reclaimed water from the distribution main to the property line.

TRUNK MAIN - shall mean those conduits used to supply reclaimed water from the pumping station or treatment plant to the distribution mains.

WYE STRAINER - shall mean a 20 mesh screen housed in an brass body with a self-cleaning blow-off outlet.

Policies and Regulations

City of Largo

(continued from previous page)

II. GENERAL PROCEDURES

- A.

City Service

Reclaimed water service may be provided for properties located within the City of Largo which comply with the provisions for such service as set forth in this section. Reclaimed water may be available to properties within the City as the distribution system is extended.

All applications for service shall be reviewed by the Reclaimed Water Coordinator who shall approve such service only if an adequate supply of treated wastewater is and will be available to meet all the anticipated needs. The Reclaimed Water Coordinator shall review and technically approve all service line sizes and all other necessary design components.
- B.

Outside City Service

Reclaimed water service may be provided to properties located outside of the City of Largo. Inside City service will be the first priority. A 25% surcharge will be charged to all unincorporated properties served by the City. At the City's option and convenience, service to such properties strategically located along transmission routes may be provided on an individual basis.
- C.

Availability of Service

The existence of a reclaimed water main adjacent to or near the premises of an applicant for the service does not necessarily mean that service is available to that location.
- D.

Public Easement Requirement

No facilities will be installed under the provisions outlined herein and accepted by the City for maintenance unless it is in a dedicated public right-of- way or dedicated public easement. Any new easement shall have a minimum width of ten (10) feet. No obstruction of whatever kind shall be planted, built or otherwise created within the limits of the easement or right-of-way without written permission of the Reclaimed Water Coordinator.
- E.

Ownership

All reclaimed water facilities and appurtenances, other than on-site plumbing, when constructed or accepted by the City, shall become and remain the property of the City. No person shall by payment of any charges provided herein, or by causing any construction of facilities accepted by the City,acquire any interest or right in any of these facilities, or any portion thereof, other than the privilege of having their property connected thereto for reclaimed water service in accordance with this manual and any amendments thereof.

- F.

Identification

All pipes and above ground appurtenances installed shall be adequately identified by color **AND** marking tape as to which system it is being added.

The approved identification standards for the following types of pipe material are:

Ductile Iron - shall be identified by wrapping all ductile iron pipe with purple colored polyethylene encasement.

Plastic Pipe - shall be identified by a purple color which has been added during manufacturing of the pipe by a coloring agent.

In addition, 3" wide purple metallic detect-a-tape labeled "Caution - Reclaimed Water Line Below" shall be installed 12" below finished grade above ALL reclaimed water lines installed.

All reclaimed water valves and outlets shall be appropriately tagged or labeled to warn the public and employees that the water is not intended for drinking. All piping, pipelines, valves and outlets shall be color coded, or otherwise marked, to differentiate reclaimed water from domestic or other water. All valve box covers shall be square, marked "Largo Reclaimed Water" and painted purple.
- G.

Minimum Sized Reclaimed Water Mains

The minimum size of mains installed shall be four (4) inches in diameter.
- H.

Service Lines

Service lines shall be as required by the property served, but shall in no case be less than one (1) inch in diameter. Sizes of service lines required by an applicant are subject to approval by the Reclaimed Water Coordinator.
- I.

Extension Approvals

Reclaimed water extensions for improvements shall be accepted by the City upon the appropriate approval of the Reclaimed Water Coordinator. Applications for reclaimed water extensions shall be submitted to the Wastewater Management Division of the Environmental Services Department of the City prior to construction.

- J.

Right to Refuse Service

No payment of any costs, submittal of any petition or any other act to receive reclaimed water service shall guarantee such service. The City shall have the right, at all times, to refuse to extend service on the basis of a use detrimental to the system, inadequate supply of reclaimed water, lack of payment of required fees, or for any other reason which, in the judgement of the Reclaimed Water Coordinator, will cause the extension not to be to the benefit of the City.
- K.

Fire Protection

Hydrants may be installed on mains constructed within the City at such locations as deemed appropriate by the Reclaimed Water Coordinator. Where such hydrants are installed on the reclaimed system, these hydrants are to be used for secondary fire fighting services and are intended to supplement certified potable fire protection systems. All fire hydrants installed on the reclaimed water system shall be painted purple and protected by a hydrant lock. Approved products are: "McGard Intimidator".
- L.

Process Use

Reclaimed water service may be provided to commercial and industrial customers as a source of water for cooling and process applications. All applications for service shall be reviewed by the Reclaimed Water Coordinator who shall approve such service. All reclaimed water from cooling and/or process use must be discharged to the sanitary sewer and must meet all City, State and Federal discharge regulations. A sewer charge for processing of said discharge will be applied in addition to the cost of the reclaimed water.
- M.

Extent of City Maintenance

All facilities that have been accepted by the City shall become the property of the City and will be operated and maintained by the City. No person shall do any work nor be reimbursed for any work, or in connection with any work, on the system unless written authorization from the City is received prior to the work being accomplished. The City shall make a reasonable effort to inspect and keep its facilities in good repair, but assumes no liability for any damage caused by the system that is beyond the control of normal maintenance or due to situations not previously reported to the Division. This shall include damage due to breaking of pipes, poor quality of water caused by unauthorized or illegal entry of foreign material into the system, faulty operation of fire protection facilities or other reasons.

Policies and Regulations

City of Largo
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N.	Maintenance by the Customer The property owner and/or customer shall be responsible for the maintenance of all plumbing facilities, including water meters, gate valves, irrigation lines and appurtenances, on the property served by the City. The City reserves the right to disconnect the service to any property that does not maintain their system. In addition, should the customer require reclaimed water at different pressures, or different quality, or in any way different from that normally supplied by the City, he or she shall be responsible for the necessary devices to make these adjustments and for obtaining approval by the Reclaimed Water Coordinator. Such devices and the repair thereof, shall be the sole responsibility of the property owner and/or customer.
O.	Common Service Lines The Reclaimed Water Coordinator has the authority to approve one service line to connect two or more customers when sufficient capacity is available. Common service lines will be sized to provide adequate service to each customer services.
P.	Delinquent Accounts A customer's account will become delinquent fifteen (15) days after the date the billing is mailed, and it is further assumed that a billing mailed to the address of the customer, as shown in the records, will constitute a rendered billing. The person not paying such billing will be considered delinquent and reclaimed water service, regardless of location, that is being supplied to the customer may be discontinued until such billing is paid in full along with the appropriate connection charges, if any.
Q.	Discontinuing Service - By City The City may discontinue reclaimed water to any customer due to an infraction of these procedures and regulations, non-payment of bills, for tampering with any service, for plumbing cross-connections with another water source, or for any reason that may be detrimental to the system. Should a discontinued service be turned on without authorization, then the Division shall remove the service and make an additional charge as established by current City ordinance.
R.	Discontinuing Service - By Customer There will not be a fee for discontinuing reclaimed water service, A request to discontinue service must be received by the Division at least seven (7) days prior to discontinuation. All current bills shall be paid by the customer including a bill for the use during the period in which service is discontinued.
S.	Existing Service Reinstated Existing services may be reinstated by the customer's application for such service and the payment of any appropriate fees or other charges as contained within these policies and regulations. There will be a fee for service reinstatement
6	

T.	Service Interruption The City reserves the right to temporarily discontinue service to any portion of, or to the entire reclaimed water system, as deemed necessary by the Reclaimed Water Coordinator, caused by such matters as Acts of God, plant failure, or the inability of the City to meet water quality requirements. The City shall not be liable for any damages or loss suffered by the property owner and/or customer.
U.	Run-Off Control The property owner and or/customer shall be responsible for the operation of their irrigation system to ensure that neither ponding nor run-off from the spray site occurs as a result of the spray irrigation of the reclaimed water. The property owner and/or customer shall operate their irrigation system at all times in a prudent manner and shall curtail irrigation during storm weather conditions.
V.	Unauthorized Work on Reclaimed Water System No person, unless expressly authorized in writing by the Director or his designee, shall tamper with, work on, or in any way alter or damage any City reclaimed water facility. Such "tampering" or "work" shall include but is not limited to opening or closing valves, or causing any water to flow from the system.
W.	Set Back Distances Set back distances from edge of wetted reclaimed water irrigation areas to potable water supply wells shall comply with regulations of the Florida Department of Environmental Protection and other agencies having jurisdiction. Other set back distances as required by the Florida Department of Environmental Protection shall apply.
X.	Inspection To insure that the City's regulations and procedures are being observed, the City reserves the right and privilege, but not the duty, of inspecting, removing and/or securing any or all devices installed by the customer which connect to or control the reclaimed water. Each reclaimed water customer shall, through their initial application for reclaimed water service, give prior written consent to entry upon their premises, and there by waives any other written notice for such inspection, although attempts will be made to limit such inspection to daylight hours. Failure of the City to obtain such a written waiver shall not affect the City's right to proceed with the inspection. Refusing to permit an authorized City representative or Pinellas County Health Department or other appropriate county representative to enter onto the premises for the purpose of inspecting the customer's reclaimed water system pursuant to these regulations and procedures shall be grounds for immediate discontinuation of reclaimed water service by the City to the subject premises.
7	

Y.	Reinspection In the event the customer fails the initial inspection, one reinspection will be provided at no charge. All subsequent reinspections will require the filing of a reinspection application. There will be a fee for each reinspection.
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City of Largo

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III. EXTENDING RECLAIMED WATER SERVICE

A. Petition for Distribution Main Extension
No applications for individual residential service will be accepted by the City. All applications for residential service shall be made by submitting a written request to the City from Homeowners or Property Owners Associations and upon receipt of a petition from seventy-five percent (75%) of the property owners in an area requesting reclaimed water service.

To request service, the customers or property owners shall petition the City by expressing their interest in obtaining service in writing to the Environmental Services Director. This petition shall represent a request for service by the property owner and is a binding commitment to tie into the system when and if the system is installed. All property owners who sign the petition will have up to one hundred and eighty (180) days after their area is on line to tie into the reclaimed water system before automatic monthly billing will be instituted in accordance with City ordinance.

Upon receipt of a petition from seventy-five percent (75%) of the property owners in an area, the City may:

- 1. Prepare a preliminary estimate of the cost to extend a pipeline to the area of the interested property owners.
- 2. If the estimated cost is agreeable to the City Commission, the City Manager, upon request from the Environmental Services Director, may direct the Environmental Services Department to prepare resolution for action by the City Commission.
- 3. Upon passage of the resolution by the City Commission, the City Manager shall prepare the contract documents for extending the pipeline, advertise for bids and take bids.
- 4. The City Manager shall then ask the City Commission to approve the bids and authorize the approval of the contract

B. Credit Offset Method
The extension of reclaimed water service to a customer located in an area where service is not available, may be provided by a credit offset method with City Commission approval.

The credit offset method consists of the following.

- 1. The property owner shall construct at their own expense, an extension of the reclaimed water distribution system to transport the water to their property.
- 2. The City will provide a credit for water used against the cost of installation of the distribution system.

3. Once the credit for the cost of installation of the distribution system is issued, ownership of the distribution line will revert to the City. After the credit for the cost of installation of the distribution system is exhausted, the customer will be billed for the actual amount of water used at the prevailing rate.

4. At no time shall the City be responsible for reimbursing the property owner for the cost of installation of the distribution system except for issuing a credit for water used against the cost of installation of the system as stated in #2 above.

IV. OBTAINING RECLAIMED WATER SERVICE

A. Application for Connection to Adjoining Reclaimed Water Distribution Main
Reclaimed water service shall be applied for in the Engineering Division office located at the corner of Cleveland Ave. at 4th St. by completing and signing an application form. A connection fee must be prepaid and payment must accompany the signed application form.

The City will attempt to the best ability to deliver an adequate supply of reclaimed water of good quality at all times. However, no guarantees can be provided due to circumstances beyond its control. Therefore, the customer will be required to complete a Hold Harmless Agreement as part of the application prior to the connection.

B. Service Application Prerequisite - Customer Responsibility
Before an application for reclaimed water service will be approved, the customer must have a suitable irrigation system. The irrigation system to be provided by the customer will consist of an underground system with permanently placed sprinkler devices, a below ground locking hose bibb assembly or both. No system with a cross-connection to the potable water system or other source of water will be considered for connection to the reclaimed water system. All reclaimed systems including services and materials used for cross-connection control must be approved in writing by the Reclaimed Water Coordinator. Temporary systems will not be considered for connection. The system shall not include devices, faucets or other connections that could permit the reclaimed water to be used for any purpose other than irrigation.

C. Irrigation Control Valve
All connections to the reclaimed water systems shall have a brass irrigation control valve (gate valve or ball valve) installed after the City's master control valve. For residential customers the irrigation control valve is to be located prior to the wye strainer and/or pressure reducing valve, as required, and after the City's master control valve. All irrigation control valves are to be installed in the City's purple meter box located at the property line.

Policies and Regulations

City of Largo
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D.	Cross-Connection Control In all premises where reclaimed water service is provided, the public drinking water supply shall be protected by an approved backflow prevention device. All devices and materials installed for cross connection must be in accordance with requirements of The Florida Department of Environmental Protection and/or Pinellas County and shall be installed by Pinellas County Utilities. In all premises where there is reclaimed water or other auxiliary water supply, there shall be no physical connection between such non-drinking supply and the customer's drinking water system. Where such a cross-connection is found, it shall be disconnected. Before re-connection of service, the public drinking water system shall be protected against the possibility of future cross-connection as defined previously in this section. Additional devices may be required as specified by the Pinellas County Director of Utilities and installed at the customer's expense. The back flow prevention device shall be replaced or rehabilitated at five (5) year intervals by the County at the customer's expense. To determine the presence of any potential hazards to the public drinking water system, the Pinellas County Health Department and/or other appropriate City or County Department shall have the right to enter upon the premises of any customer at any time, upon giving appropriate notice and showing proper credentials, although attempts will be made to limit such inspection to daylight hours. Each customer of reclaimed water service shall, by application, give prior written consent to such entry upon his premises.
E.	Wye Strainer It is recommended but not required, that all residential customers install a brass wye stainer with a self-cleaning blow off outlet. The wye strainer is to be located in a separate box (painted purple) and installed on the service line between the irrigation control valve and pressure reducing valve (if used). Screen size shall be 20 mesh.
F.	Pressure Reducing Valve The operating pressure of the reclaimed water system is 90-110-psi, therefore it is recommended but not required, that all residential customers install a brass pressure reducing valve. The pressure reducing valve is to be located in a separate box (painted purple) and installed on the service line downstream of the wye strainer (if used). The pressure reducing valve may be located in the same box with the wye strainer.
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G.	Reclaimed Water Hose Bibb Shall be allowed in a City approved below ground locking vault. Note: all city specifications must be met prior to service turn on.
H.	Hand Watering by Hose Bibb When in use, the sprinkler device shall not be left unattended. When not in use, the hose must be disconnected and the vault locked. Failure to follow these regulations may result in the properties service being locked out and or discontinued.
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V. RECLAIMED WATER CHARGES	
The cost and charges for reclaimed water are divided into four (4) categories: A. Capital Cost Recovery B. Assessment and Connection C. Operation and Maintenance D. Backflow Prevention Fee	
A	Capital Cost Recovery Capital costs are those costs associated with providing trunk and distribution mains from the wastewater treatment facility to the point of delivery, up to, but not including the connection. Capital costs are recovered from the credit offset method, Federal or State Aid, Local & City Taxes and from the Sanitary Sewer connection fee fund.
B.	Assessment and Connection Costs Assessment and connection costs are those costs directly associated with connecting the customer's premises to the reclaimed water distribution main. The assessment will require an inspection of the property and facilities as defined in the City's Reclaimed Water Policies and Regulations to ensure compliance of said regulations. There will be a charge for the assessment/inspection. The property owner will be required to make the necessary service line connections from the distribution system to the premises, at the property owners expense. There will be a service connection fee to connect the property owners service system to the City's distribution system.
C.	Operation and Maintenance Costs Operation and maintenance costs are ongoing cost for labor, materials, electricity and other expenses of the system. Charges for these ongoing cost will be made on a metered water consumption basis for non residential customers and on a flat rate basis for residential customers.
D.	Fee for Installation or Replacement of Backflow Prevention Devices on Drinking Water Service Lines in Largo Residential Reclaimed Service Areas The City of Largo shall pay a fee to Pinellas County as established by the Pinellas County Board of County Commissioners for installation of a 3/4" backflow prevention device to be installed by the County on the drinking water service line to serve the single family residential property. In the event the Pinellas County Utilities determines the backflow prevention device requires replacement, it will be replaced at the customer's expense in accordance with fees established by the Pinellas County Board of County Commissioners.
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City of Largo

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VI. HEARING PROCEDURES

- A. Notice**
The following notice shall be required to be sent by the City in cases of discontinuance of service.
- 1. Pre-discontinuance Hearing**
In cases where a pre-discontinuance hearing is required the Notice shall be sent to the customer at least seven (7) days prior to any proposed discontinuance.
- 2. Post-discontinuance Hearing**
In cases where a post-discontinuance hearing is required the notice shall be sent to the customer within seven (7) days of the discontinuance of service.
- 3. Form of Notice**
- a. The date of the intended or actual service discontinuance.
 - b. The reason for the proposed or actual discontinuance.
 - c. That in cases involving delinquency of bills, the customer has the opportunity either to pay the amount or dispute the charge with a representative from the city.
 - d. That in all cases, the customer has the right to dispute the reasons for the discontinuance.
 - e. Where and to whom either pay or to dispute.
 - f. That if a request for a conference on the dispute is made within five (5) days, a conference will be scheduled. In cases of a pre-discontinuance hearing, the notice will state that the service will be maintained until the dispute is resolved. Failure to request a conference will constitute a waiver by the customer of any right to a hearing.

- B. Notice of Conference**
If a request for an informal conference is made, and an appointment is requested, the City will send out a notice concerning the following:
- 1. The time and location of the informal conference.
 - 2. The name of the person before whom the conference will be held.
 - 3. In cases of a pre-discontinuance hearing, that services will be maintained until the dispute is resolved, but not to exceed five (5) days from the date of the notice, unless the City needs a greater amount of time to investigate and hear the dispute, during which time services will continue.
 - 4. That the request will be dismissed if the customer does not appear without good cause.
 - 5. Where the customer's records can be reviewed during normal business hours.
 - 6. The right of a customer to explain his or her side of the story, to present evidence, to call witnesses and to ask questions of witnesses of the City.
 - 7. That the person may bring somebody to assist him or her at the conference.
- C. Conduct of the Conference**
The conference will follow the provisions described in subsection (b) (6). In addition, the conference will include the following:
- 1. A decision will be issued, based solely upon information contained in the record, either at the time of the conference or within five (5) days by mail to the customer.
 - 2. The decision will contain notification that reconsideration can be requested of the City Manager or his designated agent; and that in cases of pre-discontinuance hearing, if this time is done within one (1) day, services will be maintained until the complaint can be resolved.
 - 3. The decision will contain a statement that if reconsideration is not requested five (5) days, the conference decision will be final.
 - 4. The customer can either contact the person at the address indicated to schedule the reconsideration, or may arrange it through the person with whom he or she held the conference.
 - 5. If the request made is for a deferred payment plan, the manner and method of repayment.

- D. Reconsideration Process**
The City Manager, or a person designated by him, will review the decision and make a final determination as to the validity of a customer's complaint. The reviewer will do the following:
- 1. Review the record and accept other evidence if he or she deems it appropriate.
 - 2. In cases of a pre-discontinuance hearing, provide for the maintenance of service until the decision is made if the request for reconsideration was filed within one (1) day of the conference decision.
 - 3. Issue a decision. In cases or pre-discontinuance hearing where the decision is unfavorable to the customer, the decision shall indicate that he or she must pay within two (2) working days or discontinuance will take place. The reconsideration decision shall be issued within thirty (30) days of the customer's request for reconsideration.

Policies and Regulations

City of Largo
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RESIDENTIAL RECLAIMED WATER
PRE-INSPECTION CHECK LIST

1.

A brass 1 inch shoulder nipple and a brass 1 inch gate valve must be installed at the City's service connection (Note: This must be installed in the City's purple meter box). All above ground piping including sprinkler stand pipes must be painted purple for their entire length.
2.

An optional brass "Y" strainer and brass pressure reducing valve (if used) should be installed in a separate box (painted purple) located on the homeowner's property.
3.

You must disconnect and cap below ground your present irrigation service line before connecting to the reclaimed water. A minimum of 3' separation between pipe ends is required if previous source was drinking water. The disconnection must be visible for our personnel to inspect.
4.

A below ground irrigation system (sprinkler system and/or hose bibb assembly) is required. Only a single source of water is allowed for irrigation. For example, if a customer requests reclaimed water then only reclaimed water may be used to supply the irrigation system. The only variance is that a single completely separate line with one zone (from the potable system or well) may be installed to supply water to vegetable gardens or exotic plants. This separate zone may not be dedicated to sprinkle any part of the lawn.
5.

A hose bibb is allowed on the reclaimed irrigation system if it is an approved below ground locking assembly. All existing hose connections on the sprinkler system are to be eliminated and must be cut and capped below ground.
6.

No direct irrigation of vegetable gardens with reclaimed water unless bubbler or drip irrigation is used. Soaker (semi-permeable) hoses are allowed to be used in conjunction with the reclaimed water only if the following criteria are met:

a.

The pipe supplying the hose is painted purple at the point of connection.

b.

The soaker hose is permanently secured to the supply pipe. No threaded connections are allowed.

c.

The soaker hose must be completely installed below ground.
7.

Sprinkler heads must be adjusted to eliminate over-spray to non-turf areas. No ponding or run-off is allowed. All zones must be fully operational. (All flushing and testing of system with potable or well water must be done prior to inspection).
8.

The contractor or owner must be present during the inspection to make the final reclaimed connection and operate each zone of the sprinkler system for the inspector.
9.

No unauthorized use of the reclaimed water is allowed. Reclaimed water is to be used for lawn irrigation only. The filling of swimming pools, car washing, drinking, use in residential air conditioners, etc. is not allowed. Reclaimed water may not be piped into any building. No cross connection with any source of water is permitted.
10.

A well and pump may remain only if there is a single hose connection in the immediate area of the pump discharge for well water.
11.

No connection to the reclaimed water shall be made until the County and City inspectors are present.
12.

In the event the customer fails inspection, one re-inspection will be provided at no charge. All subsequent re-inspections will require the filing of a re-inspection application fee payment.

CALL 587-6718 WITH ANY QUESTIONS

FORM # _____

RECLAIMED WATER REINSPECTION APPLICATION

PERMIT # _____ DATE _____

HOME OWNER'S NAME _____

ADDRESS OF PROPERTY _____

HOME TELEPHONE # _____ WORK TELEPHONE # _____

CONTRACTOR'S NAME _____

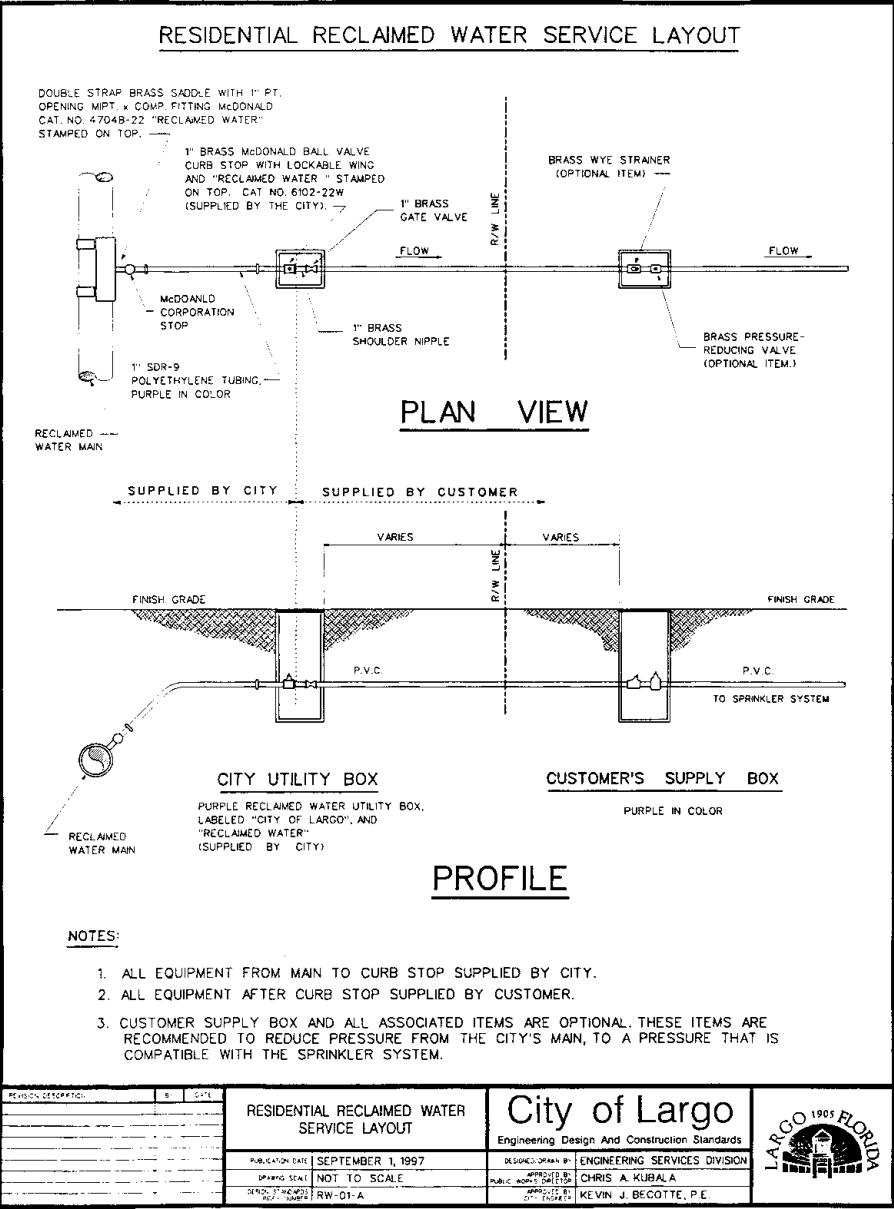
CONTRACTOR'S TELEPHONE # _____

CONTRACTOR CONTACT PERSON _____

This will acknowledge receipt of \$ _____ from _____
in prepayment of a reinspection charge of \$60.00.

Payment Received by _____

Date Received _____



Policies and Regulations

Sarasota County

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Single family home on-site systems.

Single family home on-site systems shall be a standard in-ground landscape irrigation system. The in-ground system may be controlled either manually by manually operated zone valves or automatically by a timer and related zone valves. The system shall not draw more than twenty (20) gallons per minute and can run no longer than three (3) hours per day on specified watering dates, if such restrictions are in force.

Commercial, multi-family and common areas.

Commercial, multi-family and common area on-site systems for these types of users will be a standard in-ground landscape irrigation system. The system will be zoned and will be controlled by a timer. Low trajectory or drip type systems are recommended but they are not mandatory. Signs as approved and/or provided by the utility will be placed in conspicuous locations within the landscaped areas of the developments notifying the public that the area is irrigated with reclaimed water.

Proper maintenance.

Proper maintenance of all on-site facilities, including irrigation lines, spray heads and appurtenances on the property served is the responsibility of the customer/owner. Failure to maintain the on-site system in a proper manner, will be construed as just cause for the utility to discontinue service until such time as the utility is satisfied that the required maintenance has been performed.

Source of Reclaimed Water.

The source of reclaimed water is the utility's wastewater treatment plant which can produce only a limited quantity of reclaimed water and even this volume is dependent upon the seasonal inflow of wastewater to the plant. The utility will carefully monitor the number of connections being made to the system so as not to overtax its capacity, however, at the same time, it is the desire of the utility and intent of the program to provide the service to the maximum number of customers. During an extended dry period, it may be necessary to limit a customer's water use or under extreme conditions to temporarily discontinue service.

Residential Application for Reclaimed Water.

The applicant for residential service must state the type of irrigation system which will be used and include a layout of the system with his reclaimed water use agreement for approval by the utility. A single residential service will consist of a corporation stop at the distribution main, the service pipe, curb stop, meter and meter box at the property line. The service connection will be equipped with a shut-off valve inside the meter box, a meter box, a curb stop and a meter idler (spool piece). Inside the property, the customer shall install a shutoff valve for his use in repairing, extending, and maintaining the on-site system. The customer shall install a backflow prevention device on the potable water supply before the reuse system can be placed in operation.

Commercial Application for Reclaimed Water Service.

Commercial applications for reclaimed water service to the public, commercial, office, industrial, or multi-family developments will be accompanied by a detailed site plan showing the size and location of the service connection to the distribution main, the layout of the primary delivery mains within the development, and the location and type or irrigation devices to be installed in the irrigation system. The maximum and minimum steady-state demand for reclaimed water that the irrigation will require to function properly must also be provided. The irrigation system will be standard in-ground types with permanently placed sprinkler devices. The service connection will be equipped with a shut-off valve just inside the public right-of-way, a meter, and a customer shutoff valve on the customer side of the meter. The size of the service connection and meter will be determined by the engineer or landscape architect based on the maximum steady-state demand of the irrigation system. Advisory signs indicating the area is irrigated with reclaimed water will be placed in conspicuous locations throughout the landscaped areas.

Easement Requirements.

No utility owned facilities will be installed under the provisions outlined herein and accepted by the utility for maintenance unless located in a dedicated easement or a dedicated public right-of-way. Any new easement will have a minimum width of twenty feet. No obstruction of whatever kind shall be planted, built or otherwise created within the limits of the easement or right-of-way without written permission of the utility.

Pipe Identification and Sizing.

All above and below ground pipes and above ground meters accepted into a new or existing reclaimed water system shall be adequately identified and purple in color. For smaller on-site piping where purple pipe may not be available, it will be acceptable to wrap pipe for identification purposes.

The minimum size of distribution mains shall be four inches in diameter. The utility may require larger diameter mains for long lines that are not connected to other mains at intervals close enough for proper mutual support.

Pipeline Separation.

Reclaimed water lines will have a minimum separation of at least five feet from the potable water line except in easements or right-of-ways that will not allow the minimum separation, then a minimum of five feet shall be maintained. Reclaimed water meter services shall be separated from potable water meter services by a distance of at least ten feet. In unusual circumstances, with prior approval from the utility, the meter service location may be less than ten feet but no closer than five feet.

Fire Hydrant Installation (Special Approval Required).

Reclaimed water may be used to provide water to fire hydrants. Fire hydrants will be uniquely color coded for reclaimed water. Tamper proof hold down nuts shall be utilized and the hydrant will be capable or being opened only by a special wrench. Fire hydrants supplied by reclaimed water must be connected to a minimum six inch reclaimed water distribution main and may not be connected to any potable water source.

Materials and Installation Procedures (Distribution Lines).

All materials and construction practices for reclaimed water lines shall be in accordance with the latest applicable Sarasota County Code. All specifications for piping, metering devices, pumping stations, storage facilities, and other appurtenances shall be identical to those specified by this guide. Valves shall be installed at intervals so that no break or repair will necessitate shutting down a length of pipe greater than five hundred feet in commercial and industrial subdivisions or greater than one thousand feet in single family residential subdivisions. In all other areas valves shall be installed at intervals not to exceed one thousand feet. With the exception of individual service lines, all underground piping will be installed with a minimum 36" of cover and shall be designed to be compatible with the utility's force main system. All reclaimed water lines shall be extended along the entire length of the property frontage and shall be connected to other mains at intervals close enough to provide mutual support.

Residential On-Site Irrigation System Design & Installation.

Reclaimed water irrigation systems for residential (single family) units must meet the following guidelines:

A static pressure of 50 PSI and residual pressure of 30 PSI will be maintained for reuse water supply lines. The irrigation system contractor should de-rate line pressure by 10% allowing for a design pressure of 45 PSI. A 5/8 x 3/4" meter may be provided for each irrigated lot, if required.

Any and all permits related to the installation, repairs or renovations of irrigation systems shall be acquired in accordance with Sarasota County Ordinance 93-105. The Irrigation Contractor or engineer of record shall be responsible for any and all inspections pertaining to the system installation.

The irrigation system design shall include coverage of all easement areas particular to each parcel of property. The contractor will endeavor to provide coverage to each parcel of property. The contractor will endeavor to provide coverage to greenbelt and or lake bank areas where applicable. The system will be designed so as not to "throw-over" sidewalks or driveways.

The irrigation system shall have a master gate valve installed after the re-use meter but before the system main line. The system main line shall be SCH 160 "purple pipe" or SCH 160 white with a metallic marking tape installed 2" above the main line. Marking tape shall be purple in color and read "reuse" or "non-potable." The system section valves shall be purple if possible. All section valves are to have a minimum 6" diameter valve box. All valve box lids shall be purple and/or the

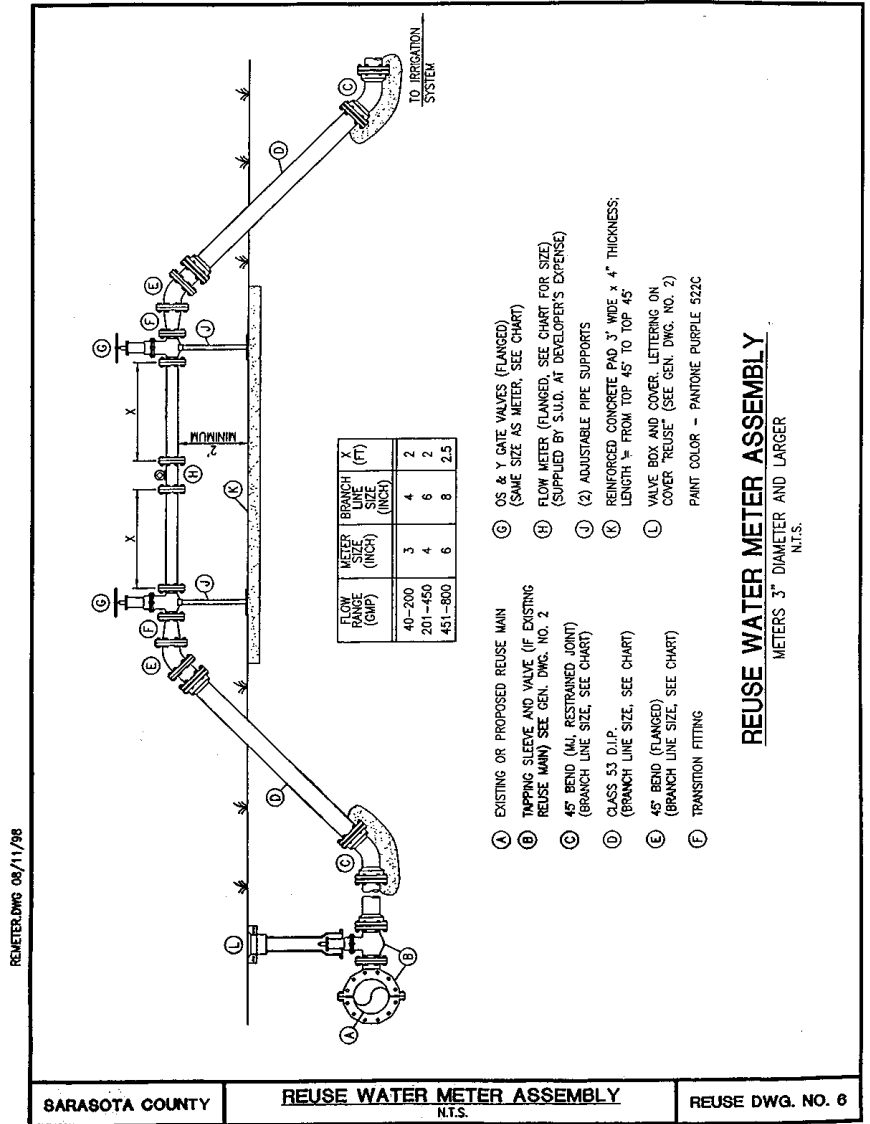
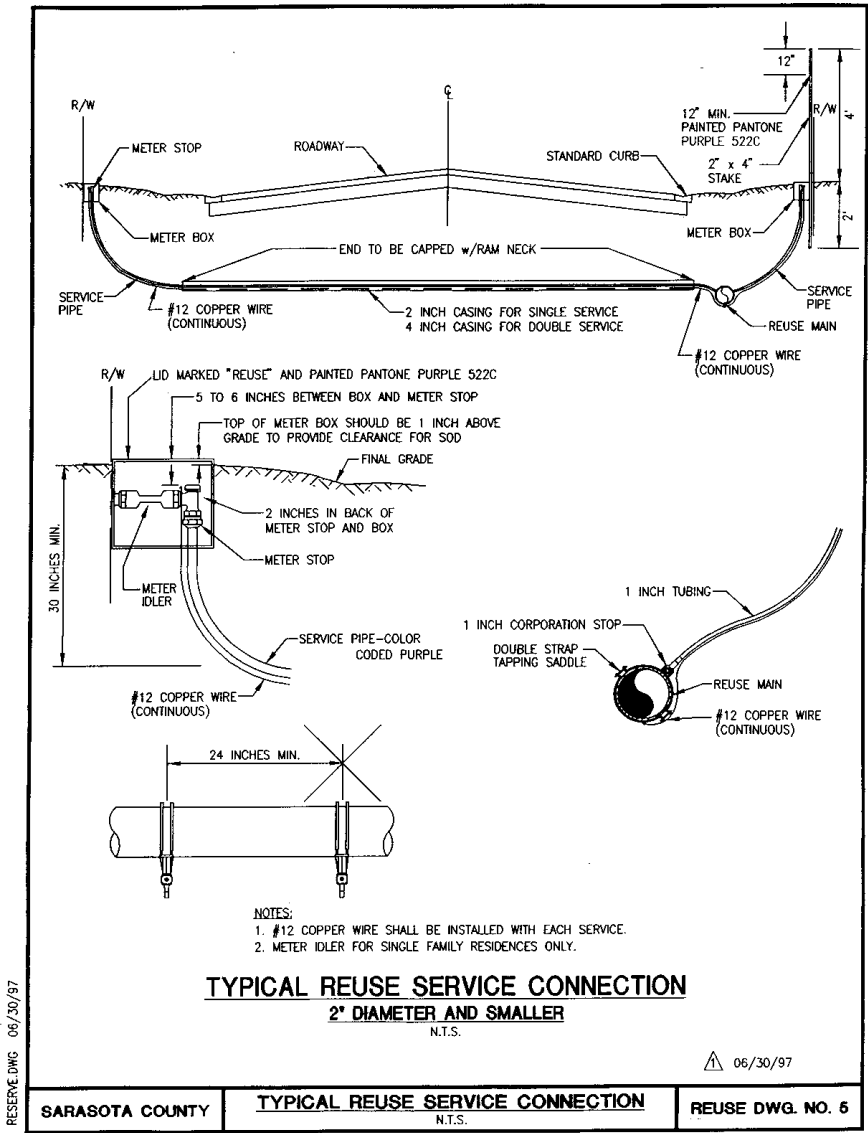
Policies and Regulations

Sarasota County
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lid shall state “reuse.” Hose bibs or quick coupler valves will not be allowed. All lines crossing driveways shall be contained within PVC sleeves installed prior to paving. All pop-up heads in turf shall be minimum 4" pop-ups. All heads to have "Funny pipe" or flex PVC swing joints. All pop-up assemblies in planting beds to be painted flat black and shall be positioned so as not to present a hazard to pedestrian or vehicular traffic. All heads to have purple caps or nozzles or some form of purple marking indicating re-use.

All 24 volt wiring used in the system shall be direct burial with weather-proof splices made within a valve box or separate splice box. Irrigation contractor shall make every effort to separate landscape beds coverage from turf coverage. All irrigation system layouts shall be done according to an approved landscape plan. Irrigation plans shall be submitted to Sarasota County Utilities Department, under Code requirements and a registered engineer shall approve the irrigation design prior to installation.

Retrofitted irrigation systems (those converting to reuse) shall replace spray heads and other devices with purple tops as replacements for maintenance are installed. The system main valve and/or time clock(s) should be tagged "This system uses reclaimed water."



Policies and Regulations

Manatee County
Medium Agricultural System
10MGD

RESOLUTION R-97-135

RATES, FEES, AND CHARGES FOR POTABLE WATER, RECLAIMED WATER, AND WASTEWATER SERVICES OF THE MANATEE COUNTY PUBLIC WORKS DEPARTMENT

A RESOLUTION OF MANATEE COUNTY REVISING THE SCHEDULES FOR CERTAIN POTABLE WATER, RECLAIMED WATER, & WASTEWATER RATES, FEES, AND OTHER CHARGES FOR THE USE OF THE SERVICES FURNISHED OR TO BE FURNISHED BY THE MANATEE COUNTY PUBLIC WORKS DEPARTMENT; PROVIDING DEFINITIONS AND CUSTOMER CLASSIFICATIONS; PROVIDING POTABLE WATER, RECLAIMED WATER, AND WASTEWATER RATES, FEES AND CHARGES; PROVIDING FOR FACILITY INVESTMENT FEES; PROVIDING FOR CUSTOMER CHARGES; PROVIDING FOR CONNECTION AND CONSUMPTION CHARGES; PROVIDING FOR WHOLESALE WATER AND WASTEWATER CHARGES; PROVIDING FOR WATER AND WASTEWATER LINE EXTENSIONS AND CHARGES; PROVIDING FOR FEES AND CHARGES FOR FIRE LINES, FIRE HYDRANTS, AND SPRINKLER SYSTEMS; PROVIDING FOR TESTING AND INSPECTION SERVICE CHARGES; PROVIDING FOR DEPOSITS, DELINQUENCY CHARGES FOR NON-PAYMENT, AND CHARGES FOR TURN-ON AND TURN-OFF OF SERVICE; PROVIDING FOR ENFORCEMENT AND PENALTIES; PROVIDING FOR RESCISSION OF ALL PREVIOUSLY ADOPTED RATES, FEES, AND CHARGES; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the County of Manatee, a political subdivision of the State of Florida, is the owner and operator of the County Water System, the County Reclaimed Water System, and the County Wastewater System, under the auspices of the Manatee County Public Works Department, pursuant to the provisions of Chapter 63-1598, Laws of Florida, as amended, and other applicable provisions of law, together with Resolutions duly adopted by the Board of County Commissioners (the Board); and

WHEREAS, pursuant to provisions of law, it is incumbent upon the Board to fix rates, fees, and other charges for the use of and for the services furnished by the County Water System, the County Reclaimed Water System, and the County Wastewater System that are just and equitable to all classes of customers served and properties benefitted; and

WHEREAS, studies have been performed for tne County Water, Reclaimed Water, and Wastewater Systems and rates, fees, and other charges have been proposed to reasonably recover the cost of serving the various classes of customers and properties benefitted thereby; and

WHEREAS, the Board gave notice that a public hearing upon the schedules of proposed revised rates, fees, and charges would be held in



MANATEE COUNTY PUBLIC WORKS DEPARTMENT

RECLAIMED WATER USE REQUIREMENTS

FACILITIES & USE OF RECLAIMED WATER SHALL BE CONSTRUCTED, OPERATED AND MAINTAINED IN STRICT CONFORMANCE WITH THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, CHAPTER 17-610, F.A.C., AND MANATEE COUNTY GOVERNMENT ORDINANCE 92-28.

COPIES OF STATE AND LOCAL RULES AFFECTING OPERATIONS MAY BE REVIEWED AT MANATEE COUNTY PUBLIC WORKS DEPT.

ANY RECLAIMED WATER MISUSE, UNAUTHORIZED DISCHARGE, OR NON-COMPLIANCE WITH ALL APPLICABLE REGULATIONS SHALL BE IMMEDIATELY REPORTED TO THE RECLAIMED WATER SECTION AT 795-3407.

Direct discharge from a re-use area to area surface waters is not allowed. Surface discharge shall be considered a violation and shall immediately be reported to the MCPWD at 795-3407. The owner shall ensure that neither ponding nor run-off from the site occurs as a result of the spray irrigation of the reclaimed water. The Department considers ponding to be any residual which remains on the surface sufficient time to be exposed to rainfall or mix with stormwater runoff or otherwise be environmentally objectionable due to odor or public health criteria. The Reclaim Water system is being operated in accordance with a permit from the Florida Department of Environmental Protection. Any change to the reclaimed water irrigation system shall be submitted in writing to the Public Works Department, Reclaimed Water Section for review and acceptance prior to implementation.	Reclaimed Water Uses <u>Not Permitted</u> - No Consumption of Reclaimed Water. (Human or Animal) - No Connection to a Dwelling for Toilet Flushing or Other Household Use. - No Inter-connection with Another Water Source. - No Use for Body-Contact Recreation. - No Use Through Unauthorized Above Ground Hose Bibbs, Faucets, Quick Couplers or Hoses. - No Filling of Swimming Pools. - No Sharing a Common Reclaimed Service or Connection Between Properties. - No Augmenting Lake or Pond Levels. - No Washing of Cars, Boats, Driveways, Structures, or Equipment.
---	---

Following the Rules

Where Reclaimed Water is used, all of the "Uses Not Permitted" listed above are violations of County Ordinance or Policies and are subject to financial penalties as well as interruption or loss of service. Reclaimed Water regulations will be enforced.

Lenox E. (Len) Bramble
Director, Public Works Dept.

Date

This notice must be posted in a prominent location. (readily accessible near a telephone)

REV. 4/8/98

Prepared by: MCPWD - Mapping RECLEDR2.DWG

the Chambers of the Board of County Commissioners, Bradenton, Florida, on November 4, 1997 and said Notice of Public Hearing to consider this Resolution R-97-135 was duly published in The Bradenton Herald, a newspaper of general circulation in Manatee County, Florida, and proof of said publication has been filed with the Board; and

WHEREAS, the Board finds that it is necessary, expedient and in the best interest of the County of Manatee, Florida, the Manatee County Public Works Department, and the owners and holders of bonds issued to finance the construction of the Manatee County Public Utilities facilities, to revise or change the schedule or schedules of certain rates, fees, and other charges for the use of the services furnished or to be furnished by the Manatee County Public Works Department,

NOW, THEREFORE BE IT RESOLVED by the Manatee County Board of County Commissioners as follows:

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Southwest Florida Water Management District
Reclaimed Water Guide

Policies and Regulations

Manatee County
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RESOLUTION R-97-135
ARTICLE I
DEFINITIONS
1.01 BOARD: The Board of County Commissioners of Manatee County, Florida.
1.02 CONNECTION FEES: The fees established for connection of the County's distribution/collection/metering system to the customer's property line.
1.03 CONSUMPTION, QUANTITY OR FLOW CHARGE: The cost of treating and distributing potable water or reclaimed water or the cost of collecting and treating wastewater and disposal of effluent and sludge.
1.04 CONTRACT: A written legally executed agreement binding two or more parties to certain terms and conditions.
1.05 COUNTY: Manatee County, Florida.
1.06 CROSS CONNECTION: Any physical arrangement whereby a public water supply is connected directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other waste material of unknown or unsafe quality, which may be capable of imparting contamination to the public water supply as a result of backflow. . Bypass arrangements, jumper connections, changeable devices or other devices through which or because of which backflow could occur are considered to be cross connections.
1.07 CUSTOMER:
(a) Retail: The property owner, the owner as recorded on the ad valorem tax rolls, renter, or lessee and as such, is responsible for all fees and charges for potable water, reclaimed water and wastewater service;
(b) Wholesale: The municipal or county government purchasing water for resale or supplying wastewater for treatment.
1.08 CUSTOMER CHARGE: A service charge made up of debt service associated with the system capacity that must be available to supply service on demand and other fixed costs such as

Policies and Regulations

Manatee County
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- billing, metering, and payment in lieu of taxes.
- 1.09 DIRECTOR. The Director of the Manatee County Public Works Department, or his/her duly designated representative.
- 1.10 DWELLING UNIT. One or more rooms in a residential or commercial building which are used or intended for use as a living facility for no more than one family and generally including provisions for living, sleeping, eating, cooking, and/or sanitation. A hotel or motel room is considered a dwelling unit.
- 1.11 EXISTING STRUCTURE. Any structure for which a Certificate of Occupancy or Temporary Certificate of Occupancy has been issued.
- 1.12 FACILITY INVESTMENT FEE (FIF). The dollar investment, or the capital cost, of the facilities necessary to collect or distribute and treat the volume purchased by a typical customer in each class of customer. The FIF approximates the customer's proportional share of the total capital costs of facilities serving all customers. It is not transferable from one property to another.
- 1.13 LINE FEE. The fee established as the customer's share of the capital cost for providing distribution/collection lines between the treatment/transmission system and the customer's point of connection.
- 1.14 MASTER METER. A single meter serving two (2) or more units within a facility such as but not limited to a multi-family residential or a multi-unit commercial facility. This includes, without limitation, condominiums, apartments, mobile home parks, hotels, motels, travel trailer parks, shopping centers and office buildings.
- 1.15 MASTER METER UNITS. The number of units served by a master meter, including, in addition to individual dwelling or commercial units, common recreation or service units, such as swimming pools with sanitary facilities and, laundry rooms, recreational halls, and offices with or without sanitary

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- facilities. Units which are individually metered by Manatee County are not included in the unit count for a master meter.
- 1.16 MCPWD. The Manatee County Public Works Department.
- 1.17 MGD. Million gallons per day.
- 1.18 PRIVATE SYSTEMS. Those water or wastewater systems not owned by the County. This definition does not apply to wholesale customers.
- 1.19 PROPERTY. Improved or unimproved real property.
- 1.20 RAW WATER. Untreated water.
- 1.21 RECLAIMED WATER. Wastewater that has been purified to meet or exceed all state and federal regulations for use in residential, recreational, and agricultural irrigation.
- 1.22 RESERVE CAPACITY. A portion of the total capacity of the system which, through payment of an appropriate fee, has been set aside for the exclusive use of the applicant.
- 1.23 USER. The owner, lessee, tenant, occupant, or other person, business, or corporation receiving water, reclaimed water, and/or wastewater service.
- 1.24 WELL CREDIT. The volume of water permitted by the Southwest Florida Water Management District (SWFWMD) to be pumped from a groundwater well which is transferred to Manatee County under the SWFWMD Well Credit Transfer Program or any other contractual arrangement which transfers permitted groundwater withdrawal quantities to Manatee County.
- 1.25 WELL CREDIT TRANSFEROR. Any reclaimed water system customer who has transferred all his/her/its permitted groundwater withdrawal quantities to Manatee County under the Southwest Florida Water Management District (SWFWMD) Well Credit Transfer Program or other contractual agreement which is acceptable to SWFWMD and the Board.
- 1.26 HISTORICAL USE. Shall have the same meaning as in Southwest Florida Water Management District rules.

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ARTICLE II
CUSTOMER & SERVICE CLASSIFICATIONS

- There are two (2) basic classes of customers: (1) retail and (2) wholesale.
- 2.01 RETAIL SERVICE CLASSIFICATIONS
 - (a) Residential, Single Family. All residences, including mobile homes containing one dwelling unit, individually metered and not connected in any manner to a commercial establishment.
 - (b) Residential, Multi-Family. All residential structures containing two or more dwelling units. Included are hotels, motels, existing duplexes served by one meter and condominiums, apartments and mobile home parks and travel trailer parks served by individual or master meters.
 - (c) Commercial. Includes, but is not limited to, rooming houses, retail and wholesale sales operations, office buildings, shopping centers, warehouses, bakeries, vending operations, laundries, retirement/rest/nursing homes, restaurants, hospitals, schools, churches, government facilities and other related service operations.
 - (d) Metered Irrigation Service. A class of service which provides a residential or commercial customer with a potable water meter for the sole purpose of watering lawns, shrubbery and gardens, and for swimming pools. When an irrigation meter is installed, approved backflow prevention is required. No impact shall be made upon the sanitary sewer system as a result of this service.
 - (e) Industrial. All manufacturing, agricultural, chemical and food processing plants.
 - (f) Public Fire Protection. Public fire hydrants and other devices used to supply water to meet general fire fighting requirements.

Policies and Regulations

Manatee County
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Table with 2 columns: Resolution Number, Description. Row 1: 2.02, WHOLESALE SERVICE. Row 2: 3.01, INDIVIDUAL METERS REQUIRED. Row 3: 3.02, METER ACCESSIBILITY.

Table with 2 columns: Resolution Number, Description. Row 1: 3.03, BUILDING PERMIT REQUIRED. Row 2: 3.04, ACCOUNTS. Row 3: 3.05, BACKFLOW PREVENTION.

Table with 2 columns: Resolution Number, Description. Row 1: 3.06, CROSS CONNECTIONS & INTERCONNECTIONS PROHIBITED. Row 2: 3.07, ANNUAL REVIEW. Row 3: 3.08, CUSTOMER NOTIFICATION. Row 4: 3.09, RESTRICTED USE OF FIF. Row 5: 4.01, GENERAL.

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4.02 FACILITY INVESTMENT FEES

- (a) GENERAL. FIF's for water service and FIF's for wastewater service are hereby established according to either the actual meter size or a 5/8" x 3/4" meter size, for each dwelling unit, whichever is greater.
(1) Meter Size. The size of service shall be based on calculations certified in writing by a professional engineer registered in the State of Florida or as determined and approved by MCPWD.
(2) FIF In Addition. The FIF is in addition to all other service charges.
(3) Non-Transferable. The FIF is not transferable to real property at a location other than that for which it was paid.
(4) Applicable FIF. The FIF to be charged shall be the FIF in effect at the time of connection. FIF payments will not be accepted without the existence of a valid building permit. The FIF for reinstallation of meters pulled for vacant or uninhabitable properties shall be the difference between the FIF in effect at the reinstallation and the FIF in effect when the meter was pulled.

(b) RETAIL FIF BY METER SIZE.

METER SIZE IN INCHES	BASE FIF POTABLE WATER	BASE FIF WASTEWATER
5/8" X 3/4"	\$ 986	\$ 1,300
3/4"	1,627	2,145
1"	2,465	3,250
1/2"	4,930	6,500
2"	7,888	10,400
3"	15,776	20,800
4"	24,650	32,500

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6"	49,300	65,000
8"	78,880	104,000
10"	113,390	149,500

- (1) No Facility Investment Fee will be charged for a fire line where such fire line is not the initial MCPWD water service at the site. If water service is not provided by MCPWD at the site, Facility Investment Fees will be charged on any fire line service installation.
(2) Combined Residential Fire Lines. In the interest of promoting residential fire protection, single family residential and fire line services can be combined. MCPWD will provide meter upsizing of one line size for the 5/8" x 3/4" and 3/4" service at no added Facility Investment Fee, and no additional deposit, when such upsizing results from fire sprinkler installation. This does not extend to irrigation/ fire line combinations. Connection charges on such meters will continue to be charged at full meter size. No combined residential service/fire line water meters of more than 1" will be accepted.

(c) RETAIL FIF - BY CUSTOMER CLASSIFICATION.

CLASSIFICATION	POTABLE WATER FIF	WASTEWATER FIF
(1) Residential, Single Family & Mobile Home	Meter Size	Meter Size
(2) Residential, Multi-Family, including duplex*	\$986 per unit or meter size FIF, whichever is greater	\$1300 per unit or meter size FIF, whichever is greater
(3) Combined* Commercial & Residential	\$986/resid. unit & applicable meter FIF for commercial	\$1300/resid. unit & applicable meter FIF for commercial
(4) Motel/Hotel	\$740 per room	\$975 per room
(5) Travel Trailer	\$493 per space	\$650 per space

RESOLUTION R-97-135

- (6) Industrial & Commercial Meter Size FIF Meter Size FIF
(7) Combined Commercial and Motel or Hotel* \$740 per room plus appropriate FIF for commercial \$975 per room plus appropriate FIF for commercial
* Must be separately metered.

(d) WHOLESALE FIF.

- (1) Present wholesale customers have the following average daily reserve capacities on a monthly basis:

	WATER	WASTEWATER
Bradenton	0.50 MGD	-0-
Sarasota County	15.00 MGD	-0-
Palmetto	2.00 MGD	-0-
Longboat Key	2.50 MGD	2.26 MGD

- (2) Wholesale water customers may apply for capacities above their reserved capacities. If granted, a capacity fee of \$3,030,000 per million gallons per day of capacity will be charged. Wholesale water customers may also apply for short term capacity commitments. Payment schedules or manner of payment can be negotiated within the actual wholesale water contract. If such schedules are tied to actual facilities construction, then that component of the capacity fee which is attributable to said facilities will be deducted.

- (3) Wholesale wastewater customers may apply for additional wholesale wastewater capacity. If granted, such capacities may be obtained for a fee of \$2,480,000 per million gallons per day of capacity when the wholesale customer provides and is responsible for the pump stations and force mains that deliver wastewater to the treatment facility. If MCPWD must provide the pump stations and force mains, the FIF is \$4,810,000 per million

Policies and Regulations

Manatee County
(continued from previous page)

R-87-125

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF MANATEE COUNTY, FLORIDA, ADOPTING THE MANATEE COUNTY CROSS CONNECTION AND BACKFLOW PREVENTION CODE; PROVIDING FOR SEVERABILITY AND PROVIDING AN EFFECTIVE DATE

WHEREAS, The Board of County Commissioners of Manatee County, Florida, previously adopted on January 24, 1985, Resolution R-85-26 adopting the 1982 Edition of the Standard Plumbing Code, including Appendix D as well as certain local amendments thereto, as the Manatee County Plumbing Code; and

WHEREAS, the Board of County Commissioners of Manatee County, Florida, pursuant to Chapter 63-1600, Laws of Florida, and Chapter 125.56, Florida Statutes (1985), has held a public hearing to consider the adoption of the Cross Connection and Backflow Prevention Code; and

WHEREAS, the Board of County Commissioners determines that local conditions justify more stringent requirements than those specified in certain areas of Appendix D of the Standard Plumbing Code; and

WHEREAS, the Board of County Commissioners of Manatee County, Florida, desires to adopt the Cross Connection and Backflow Prevention Code as the adoption of such Code would be in the best interest of Manatee County in order to protect the health, safety and welfare of its residents.

NOW, THEREFORE, BE IT RESOLVED by the Board of County Commissioners of Manatee County, Florida, as follows:

- 1. That a new Cross Connection and Backflow Prevention Code for Manatee County, Florida, is hereby adopted, as it appears in Exhibit A, attached hereto and incorporated by reference herein.
- 2. That a copy of the aforesaid Code thereto shall be kept with the Clerk of the Circuit Court in and for Manatee County, Florida.
- 3. This Resolution shall become effective on the 20th day of July, 1987, and shall apply to all projects for which construction permits have not been issued on the effective date hereof.

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- 4. If any part, section, subsection, or other portion of this ordinance, or any application thereof to any person or circumstance is declared to be void, unconstitutional or invalid for any reason, such part, section, subsection, or other portion shall be severable, and the remaining provisions of this ordinance, and all applications thereof not having been declared void, unconstitutional or invalid, shall remain in full force and effect

ADOPTED, with a quorum present and voting, this 14th day of June, 1987.

BOARD OF COUNTY COMMISSIONERS
OF MANATEE COUNTY, FLORIDA
BY Edward W. Chaney
Chairman Date

ATTEST: R. B. SHORE
Clerk of the Circuit Court



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EXHIBIT "A"

MANATEE COUNTY CROSS CONNECTION AND BACKFLOW PREVENTION CODE

101 - GENERAL

101.1 INTENT - It is the intent of this Code to recognize that there are varying degrees of hazard to potable water within the water main and water supply systems, and it is the intent to apply the principle that the degree of protection should be commensurate with the degree of hazard.

101.2 PURPOSE -

- The purpose of this Code is:
1. To protect the public water main against actual or potential cross connection, backflow and back-siphonage by isolating, within the premise or private property, contamination or pollution that has occurred or may occur because of some undiscovered or unauthorized cross connection on the premise or private property.
- 2. To protect the water supply system within the premise or private property against actual or potential cross connections, backflow and back-siphonage by requiring such air gaps, vacuum breakers, backflow preventers, reduced pressure principle backflow preventers and special devices as required by this Code or other applicable regulations.
- 3. To eliminate cross connections, backflow and back-siphonage of any other source of water or process water used for any purpose whatsoever which may jeopardize the safety of the water supply or which may endanger the health and welfare of the general public.
- 4. To establish a cross connection, backflow and back-siphonage control program.

101.3 - CONTROL

Cross connection, backflow and back-siphonage control requires cooperation between water purveyors, the public health officer, the Building Official and the consumer. The responsibilities and duties of each shall be as set forth in this Code, and other applicable regulations. Where circumstances do not make feasible or necessary the establishment of a control committee, or the participation in enforcement by the public health officer or the water purveyor, the local governing body may provide the Building Official with other means to administer and enforce the control program.

102 - RESPONSIBILITIES

102.1 - ENFORCEMENT

The Building Official shall enforce the provisions of this Code so as to insure the potability of the consumer's water supply, from the point of entrance of the public water supply to the extremities of the consumer's water system. The Building Official has primary enforcing responsibility of new installations, alterations, or repairs of water supply systems. He shall provide the Health Officer and the Water Purveyor with the assistance required to enforce the provisions of this Code on existing water supply systems.

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Policies and Regulations

Manatee County

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102.2 - WATER PURVEYOR

The Water Purveyor is primarily responsible for the prevention of contamination and pollution of the public water mains. Such responsibility begins at the point of origin of the public water supply and includes adequate treatment facilities and water mains, and ends at the point of entrance to the consumer's water system, provided adequate backflow and back-siphonage protection is maintained on all water supply systems directly connected to the Water Purveyor's public system. The Water Purveyor has secondary supervisory responsibility to the Plumbing official for new installations, alteration, or repairs of water supply systems and has secondary supervisory responsibility to the Health Officer for existing water supply systems.

102.3 - HEALTH OFFICER

The Health Officer, when administrative head of water quality control, is responsible for supervising the prevention of contamination and pollution of the public water main, all water supply systems and all water sources. Such responsibility extends from the point of origin of the public water supply to and including all extremities of the consumer's supply and its actual use. The Health Officer has prime supervisory responsibility for administration and enforcement of those portions of the Cross Connection, Backflow and Back-Siphonage Control Program applicable to existing water supply systems and water sources. The Health Officer has secondary supervisory responsibility to the Water Purveyor for the public water system.

102.4 - CONSUMER

The consumer has the prime responsibility of preventing contaminants and pollutants from entering the water supply system, and from entering the public water main or water source from his water supply system. The Consumer shall protect his water supply system against actual or potential cross connection, backflow or back-siphonage, as required by this Code, and other applicable regulations. He shall assure that all protective devices are tested and maintained in the working condition required. He shall assure the necessary plumbing permits are obtained for new water supply system installations, and for alterations or repair to existing systems, as required by this Code.

103 - DEFINITIONS

Definitions contained in Chapter 2 of the Standard Plumbing Code shall also apply, except where the following special definitions shall apply:

Approved Backflow Prevention Device - shall mean an assembly that has been manufactured in full conformance with the standards established by this code and, have met completely the laboratory and field performance specification of the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California and are currently listed on their listing of approved devices.

Back-Siphonage Backflow - a reversal of the normal direction of flow in the pipeline due to a negative pressure (vacuum) being created in the supply line with the backflow source subject to atmospheric pressure.

Backflow Preventer - a device to prevent backflow. As there are two conditions of backflow, the device should be identified by the conditions which it is designed to prevent. (See Back Pressure Backflow Preventer, Backflow Preventer - Reduced Pressure Type, Back-Siphonage Backflow Preventer).

Back Pressure Backflow Preventer - a device to prevent backflow due to a general condition in which the pressure in the system becomes greater than the supply pressure, the system being above atmospheric pressure. (See Double Check Valve Assembly).

Backflow Preventer, Reduced Pressure Type - a device having dual check valves force-loaded, or biased, to a normally closed position, a chamber or zone between the check valves in which pressure is normally lower than the supply pressure, a relief or vent valve force loaded to a normally open position located in the zone to automatically open a passage between the zone and the atmosphere should the zone pressure, for any reason, tend to equalize with or exceed the supply pressure.

Back-Siphonage Backflow Preventer, General - a device or combination of devices for preventing back-siphonage in a water supply line.

Certified Tester/Inspector - the individual performing the actual test or inspection of backflow prevention device. Maybe a licensed plumber, plumbing inspector, fire system inspector, health department inspector, or water department technician holding a certificate for device being tested. Currently approved certification agencies shall be as follows;

TRECO Center, 2900 S.W. 63rd Blvd, Gainesville, Fl 32608
NETTI, University Station Box 13264, Gainesville, Fl 32604

Consumer - any person, firm or corporation using or receiving water from the public water system.

Contaminants - any foreign materials solid or liquid, not common to the potable water supply and which make it unfit or undesirable for human or animal consumption.

Contamination - the admission of contaminants into the potable water supply.

Cross Connection - any connection by means of which contaminants of any kind can be caused to enter the potable water supply system.

Double Check Valve Assembly - An assembly composed of two single, independently acting, check valves, including tightly closing shut-off valves located at each end of the assembly. A valve that is drip-tight in the normal direction of flow when the inlet pressure is one p.s.i. and the outlet pressure is zero. The check valve shall permit no leakage in a direction reverse to the normal flow. The closure element (e.g., clapper) shall be internally weighted or otherwise internally loaded to promote rapid and positive closure and suitable connections for testing the watertightness of each check valve.

Water Purveyor - the owner or operator of the public potable water system supplying an approved water supply to the public. As used herein, the terms Water Purveyor and Municipal Water Authority may be used synonymously.

104 - REGULATIONS

104.1 - Protection against contamination

104.1.1 - No water service connections to any premises shall be installed or maintained unless the potable water and water supply are protected against actual or potential contamination of pollution in the manner required.

104.1.2 - In the event of contamination or pollution of a potable water system, the Consumer shall notify immediately the Building Official, the Health Officer or the Water Purveyor in order that appropriate measures may be taken to overcome the contamination or pollution.

104.2 - Cross-Connection Hazards and Required Protections

104.2.1 - Type of Backflow Protection Required - An approved backflow prevention device of the type designated shall be installed on each water service connection to the following types of facilities. This list is presented as a minimum guideline and should not be construed as being complete. The type of backflow protection for unlisted facilities will be determined on a case by case basis by the water purveyor, plumbing official or health official. Abbreviations used are as follows:

A.G. - Air Gap Separation
R.P. - Reduced Pressure Principle Backflow Preventer
D.C.V.A. - Double Check Valve Assembly
P.V.B. - Pressure Vacuum Breaker
A.V.B. - Atmospheric Vacuum Breaker

TYPE OF FACILITY MINIMUM TYPE OF PROTECTION

Breweries, Distilleries, Bottling Plants D.C.V.A.
Car Wash with recycling system and/or Wax Eductor R.P.
Chemical Plants R.P.

Dairies D.C.V.A.
Dentist Office R.P.
Fertilizer Plants R.P.

Film Laboratory or Processing Plant R.P.
Food or Beverage Plant D.C.V.A.
Hospitals, Clinics, Medical Buildings *R.P.

(Parallel)
Irrigation Systems D.C.V.A.orP.V.B.
Laboratories R.P.

Laundries and Dry Cleaning Plants D.C.V.A.
Machine Tool Plants (Health or System Hazard) **R.P.
Machine Tool Plants (Pollutional Hazard) **D.C.V.A

Metal Processing Plant (Health or System Hazard) **R.P.
Metal Processing Plant (Pollutional Hazard) **D.C.V.A.
Metal Plating Plant R.P.

Morgues or Mortuaries R.P.
Nursing Homes R.P.
Packing Houses or Rendering Plants R.P.

Paper Products Plant R.P.
Pesticides (Exterminating Companies) ***P.V.B. Overhead
Fill

Petroleum Processing Plant R.P.
Petroleum Storage Yard (Health or System Hazard) **R.P.
Petroleum Storage Yard (Pollutional Hazard) **D.C.V.A.

Pharmaceutical or Cosmetic Plant R.P.
Piers, Docks or Waterfront Facilities R.P.
Power Plants R.P.

Radioactive Material Plants R.P.
Restaurants, with Soap Eductors and/or Industrial Type Disposal R.P.

Sand and Gravel Plants D.C.V.A.
Schools and Laboratories R.P.
Swimming Pools with Piped Fill Line A.G. at Pool

Sewage Treatment Plants R.P.
Sewage Pumping Stations R.V.B.
Tall Buildings over three stories *R.P.

Veterinary Establishments R.P.
In addition to and including those types of facilities listed above, and approved backflow prevention device of type designated shall be installed on each domestic water service connection to any premises containing the following real or potential hazards.

Minimum Type of Protection
Premises having an auxiliary water system not connected to public water system R.P.

Premises having a water storage tank, reservoir, pond, or similar appurtenance R.P.

Premises having a steam boiler, cooling system, or hot water heating system where chemical water conditioners are used R.P.

Policies and Regulations

Manatee County

(continued from previous page)

Premises having submerged inlets to equipment R.P.
Premises having self-draining yard hydrants, R.P.
fountains, hose boxes or similar devices
presenting a health or system hazard
(i.e., chemical storage plants, tank
farms, bulk storage yards)
Premises having self-draining yard hydrants, D.C.V.A.
fountains hose boxes or similar devices
presenting a pollutional hazard (i.e., parks,
play fields, cemeteries)
Others specified by the Water Services Division

*Installations Requiring Continuous Service: Parallel
Installation

All backflow prevention devices with test cocks are required
to be tested with a minimum frequency of once per year.
Testing requires a water shutdown usually lasting five (5)
to twenty (20) minutes. For facilities that require an
uninterrupted supply of water, and when it is not possible
to provide water service from two separate meters,
provisions shall be made for a "parallel installation" of
backflow prevention devices.

Multi-story buildings which have a number of flushmeters may
have to be manually reset.

During testing one device is left on while the other is
being tested. Usually the two devices are sized one device
size smaller than the service line, e.g. one 2 inch device
or two 1½ inch devices, one 8 inch device or two 6 inch
devices.

An unprotected bypass around a backflow preventer for use
when the device is in need of testing, repair, or
replacement is not allowed.

**Health Hazard; System Hazard; Pollutional Hazard

"Health hazard" means any condition, device, or practice in
a water system or its operation that creates, or may create,
a danger to the health and well-being of users. The word
"severe" as used to qualify "health hazard" means a hazard
to health of the user that could reasonably be expected to
result in significant morbidity or death. "System hazard"
means a condition posing an actual or potential threat of
damage to the physical properties of the public water system
or a potable consumer's water system. "Pollutional hazard"
means a condition through which an aesthetically
objectionable or degrading material not dangerous to health
may enter the public water system or a potable consumer's
water system.

***Exterminating Companies

All tanks, tank trucks and spraying apparatus used to convey
pesticides in an exterminating process are required to use
only designated-protected potable water fill locations.
Filling with potable at unspecified locations or private
residences is prohibited. All filling locations will
consist of over-head piping arrangements with correctly
installed pressure vacuum breakers. If for any reason an
overhead piping arrangement cannot be used, a reduce
pressure zone backflow preventer must be installed on the
fill line. All filling locations must be approved by the
Water Purveyor or Health Official.

NOTE: Any device, equipment or situation not covered by
this cross-connection policy where water is connected or
used, which may constitute a potential health hazard will be
handled at the discretion of the water purveyor or his
authorized agent.

104.1.4 - Type of Backflow Protection Required - Fire
Protection Services - An approved backflow prevention
device of the type designated shall be installed on each
fire protection service to any premises where the fire
protection system contains any of the following components
unless the Water Services Division determines that no real
or potential health pollutional, or system hazard to the
public water system exists. Fire systems may be divided
into six (6) general classes. The following are typical:

- | | | |
|---------|--|---------|
| | Minimum Type of Protection | |
| Class 1 | a closed automatic fire system without | None |
| | pumper connection, i.e., a system having | |
| | 20 heads or less; | |
| Class 2 | a closed automatic fire system with pumper | D.C.V.A |
| | connection; | |
| Class 3 | a closed automatic fire system with pumper | R.P. |
| | connection and an auxiliary water supply | |
| | on or available to the premises; or an | |
| | auxiliary water supply which may be located | |
| | within 1700 feet of the pumper connection | |
| Class 4 | a closed automatic fire system with a closed | R.P. |
| | pressure tank supply (this class may have a | |
| | jockey pump interconnected with the domestic | |
| | water supply and/or an air compressor connection); | |
| Class 5 | a closed automatic sprinkler system | R.P. |
| | interconnected with an auxiliary water system | |
| Class 6 | fire system used for the combined purposes of | |
| | supplying the automatic sprinklers, hose lines, | |
| | fire hydrants and standpipes and of being used for | |
| | industrial purposes. | R.P. |
| | (A) Self-draining Fire Hydrants on premises | |
| | presenting a health for system hazard | |
| | (i.e., Chemical Plants, Petroleum Storage | |
| | Plants, Bulk Storage Yards, Stock Yards, | |
| | Sewer Plants, or similar facilities where | |
| | ground seepage of toxic materials may occur | |
| | D.C.V.A. | |
| | (B) Self-draining Fire Hydrants on premises | |
| | present a pollutional hazard (i.e., | |
| | Apartment House, Office Complex, Fabricating | |
| | Plants, or similar facilities where ground | |
| | seepage of pollutional but not toxic | |
| | materials may occur | |

104.2 - Duties and Inspections

104.2.1 - The Building Official, the Health Officer, the
Water Purveyor, or their authorized representative shall
have the right to enter any building, structure or premises
to perform any duty imposed upon him by the Code.

104.2.2 - Nothing herein shall relieve the Consumer of the
responsibility for conducting, or causing to be conducted,
periodic surveys of water use practices on his premises to
determine whether there are actual or potential cross
connections in the Consumer's water system through which
contaminants or pollutants could flow back into a public
water system or a potable Consumer's water system.

104.2.3 - It shall be the duty of the Building Official,
the Health Officer and the Water Purveyor to cause
inspections to be made of all properties containing potable
water systems and where cross connection, backflow and back-
siphonage is deemed possible. On request the Consumer shall
furnish to the inspection agency any pertinent information
regarding the water supply system on such property.

104.2.4 - The Building Official, the Health Officer, the
Water Purveyor or their authorized representative shall
notify the Consumer of the preventive actions required. The
Consumer has the right of appeal to the Code Enforcement
Board.

Petitions, Permits and Contracts

City of St. Petersburg
Large Public Access System
20MGD

PETITION FOR RECLAIMED WATER MAIN EXTENSION

STEP 1:

Property owners shall petition the City on an appropriate form. This initial petition shall represent an expression of interest by the property owners and not a binding commitment.

STEP 2:

A petitioning body must obtain no less than 50% of the property owners in an area.

STEP 3:

Forward the petition packet to the Reclaimed Water Office, 290 16 Street North, St. Petersburg, Florida 33705, for review and preliminary evaluation.

STEP 4:

If the preliminary evaluation meets the 50% criteria, a cost estimate will be developed. Preliminary cost estimates shall be forwarded to the area representative for cost approval and counter signature as indicated in the sample below.

STEP 5:

However, should the packet be less than 50% of a given area, the City shall return it to the area representative for further petitioning.

SAMPLE

PETITION FOR RECLAIMED WATER

WE THE UNDERSIGNED, WHO ARE OWNERS OF PROPERTIES IN
THE CITY OF ST. PETERSBURG,
ARE PETITIONING FOR RECLAIMED WATER SERVICE FROM THE CITY

STATEMENT

I, the undersigned, wish to be considered for Reclaimed Water Service to my property located at the address below. I understand that I will be assessed for extension of the system and fully and freely agree to that assessment for the cost of extension of the reclaimed water system on a per square foot basis.

I further understand that this assessment will be in addition to the applicable connection charges and the monthly charges for use based on size of area.

Upon receipt of a valid petition by the City, individual cost estimates will then be prepared for the properties as addressed on the petition. The formal typed petition will then be returned to the property owner for cost approval and signature.

PROPERTY OWNERS REQUESTING RECLAIMED WATER SERVICE

Print/type each property owner(s) name, address, and phone number	Date	Estimated Assessment Charge	Property owner(s) signature approving estimated assessment	Date
John Doe 555 30 Ave N 321-1111	1/2/97		John Doe	1/2/97

petition.exe

PETITION FOR RECLAIMED WATER

WE THE UNDERSIGNED, WHO ARE OWNERS OF PROPERTIES IN
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ARE PETITIONING FOR RECLAIMED WATER SERVICE FROM THE CITY

STATEMENT

I, the undersigned, wish to be considered for Reclaimed Water Service to my property located at the address below. I understand that I will be assessed for extension of the system and fully and freely agree to that assessment for the cost of extension of the reclaimed water system on a per square foot basis.

I further understand that this assessment will be in addition to the applicable connection fee charges and the monthly charges for use based on size of area.

Upon receipt of a valid petition by the City, individual cost estimates will then be prepared for the properties as addressed on the petition. The formal typed petition will then be returned to the property owner for cost approval and signature.

PROPERTY OWNERS REQUESTING RECLAIMED WATER SERVICE

Print/type each property owner(s) name, address, and phone number	Date	Estimated Assessment Charge	Property owner(s) signature approving estimated assessment	Date

APPLICATION FOR RECLAIMED WATER
RESTRICTED USE PERMIT

NAME _____ DATE REQUESTED _____

SERVICE ADDRESS _____

PROPERTY DESCRIPTION: LOT _____ BLOCK _____ SUBDIVISION _____

PROPERTY AREA _____ () ACRES

SERVICE SIZE _____

SERVICE REQUESTED: _____ LOCK BOX HOSE CONNECTION _____ IRRIGATION _____ OTHER _____

I _____, have read and understand the City's policy for Reclaimed Water Service. I further understand that the use of the Hose Connection Assembly is strictly regulated by state regulation and City policy. It is further agreed that the City shall have the right to enter the premises at _____ to inspect the reclaimed water piping system and fittings to discontinue reclaimed water service should any infraction exist as described in this agreement. It is further understood that the City reserves the right to pursue civil remedies that may be available as outlined in this agreement. This _____ day of _____, 199__.

I, the Applicant have read and understand the City's Policies and Procedures for Reclaimed Water Service and agree to restrict use of reclaimed water for the purpose(s) described in this application. It is further agreed that the owner shall be responsible for the conduct of other occupants) of the aforementioned property. It is understood and agreed that the City may discontinue reclaimed water service due to an infraction of the City's Policies and Procedures and that such infraction(s) of the Policies and Procedures may result in civil or criminal prosecution, and/or discontinuation of the reclaimed water service. I understand that due to the chemical composition of reclaimed water, that it may not be compatible for irrigation of certain susceptible vegetation, and I agree that the City will not be held liable for damages that may occur to vegetation or damages which may occur due to uses of reclaimed water for purposes not included in this application, and agree to defend and hold harmless the City from all claims and judgments arising therefrom against the City by any person.

It is understood and agreed that the owner of the described premises shall be responsible for prompt payment to the City of St. Petersburg, Florida for all city utilities furnished by the City to the described premises in accordance with Public Utilities Rules and Regulations.

It is further agreed that in the event the owner or other occupant shall permit any bill rendered by the City of St. Petersburg for service furnished to these premises to become delinquent, the City shall have the right to take and apply the prepayment to the delinquent account, with any part of the prepayment remaining to be refunded to the customer of record.

It is further agreed that taking and application of the prepayment does not relieve the property owner of his obligation to the City in the event charges for services are in excess of the amount of the prepayment.

It is further agreed that the City shall have the right to enter the above premises to inspect the reclaimed water piping and fittings, including hose connections, to discontinue City utilities for nonpayment of service charges, for tampering with the service (includes meter and appurtenances), for cross-connections with another service or water source, or for any other reason that may be detrimental to the City system.

Signed: _____ Date: _____

Initial Approval-Department _____ Date: _____

Assessment Approval _____ Date _____

This will acknowledge receipt of \$ _____, from _____, in payment of a connection charge for a _____ inch service in the amount of \$ _____, and Reclaimed Water Inspection in the amount of \$ _____.

CITY OF ST. PETERSBURG, FLORIDA

Payment Received By: _____

Terms of Agreement Accepted

Customer _____ (Not valid unless receipt is acknowledged)

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Southwest Florida Water Management District
Reclaimed Water Guide

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City of St. Petersburg
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City of St. Petersburg
(continued from previous page)

The Property Owner(s) understand that a notice of the actual assessment amount will be sent to the mailing address set out above and that the Property Owner(s) may pay the amount indicated

(SEAL)

Construction of the system in your neighborhood will not be planned until 75% of property owners have obtained a Reclaimed Water Construction Permit. Automatic billing (currently \$7 per month per acre or less) will not begin until 180 days after your neighborhood is on line. It is your responsibility to connect your irrigation system to the City's curbside service line. All homeowners who sign the petition will be billed regardless of connection to the system.

Petitions, Permits and Contracts

City of Largo

(continued from previous page)

RECLAIMED WATER CONNECTION APPLICATION / PERMIT

RECLAIMED WATER PERMIT # (INTERNAL USE ONLY)

NAME DATE SERVICE ADDRESS ZIP OWNERS ADDRESS ZIP PINELLAS COUNTY WATER ACCT. NO. TELEPHONE NO. EMERGENCY TELEPHONE NO. PROPERTY AREA(ACRES) SYSTEM TO BE INSTALLED BY: HOMEOWNER OR CONTRACTOR (CIRCLE ONE) CONTRACTOR NAME CONTRACTOR PHONE NO. CONTRACTOR LICENSE TYPE OF SERVICE REQUESTED: [] INSIDE CITY LIMITS [] SINGLE FAMILY RESIDENTIAL [] OUTSIDE CITY LIMITS [] MULTI-FAMILY RESIDENTIAL (DUPLEX)

I, the Applicant, have read and understand the City's Policies and Regulations for Reclaimed Water Service and agree to restrict use of reclaimed water for the purpose(s) described in this application. I understand that due to the chemical composition of reclaimed water that it is not suitable for consumption and may not be compatible for irrigation of certain susceptible vegetation, and I agree that the City will not be held liable for damages which may occur due to interruption of service as stated in the City's Policies and Regulations or due to uses of reclaimed water for purposes not included in the application, and agree to defend and hold harmless the City from all claims and judgments arising therefrom against the City by any person.

It is understood and agreed that the owner of the described premises shall be responsible for prompt payment to the City of Largo, Florida for all City utilities furnished by the City to the described premises in accordance with Public Utilities Rules and Regulations. It is further agreed that the City's acceptance of an application and prepayment does not relieve the property owner of his obligation to the City in the event charges for services are in excess of the amount of the prepayment. Nor does the taking of the prepayment guarantee that reclaimed water service will be provided. It is further agreed that the City shall have the right to enter the above premises at any time to inspect the reclaimed water piping and fittings, to discontinue City utilities for nonpayment of service charges, for tampering with the service, for cross-connections with another service or water source, or for any other reason that may be detrimental to the City system.

Terms of Agreement Accepted:

Customer: Date:

This will acknowledge receipt of \$, in prepayment of an inspection/permit fee for reclaimed water service

CITY OF LARGO , FLORIDA

Payment Received by: Date:

BUILDING DIV. USE ONLY:

PARCEL NO. BUILDING DIV. PERMIT NO.

Sarasota County

Small Public Access System

5MGD

Customer #

RECLAIMED WATER USE AGREEMENT

FOR GOLF COURSES, COMMON AREAS, APARTMENTS AND SINGLE FAMILY HOMES

THIS RECLAIMED WATER USE AGREEMENT, is made and entered into this day of 199 by and between a (individual, partnership or corporation, whose mailing address is (hereinafter referred to as "CUSTOMER") and Sarasota County, a political subdivision of the State of Florida (hereinafter referred to as "COUNTY").

WITNESSETH:

WHEREAS, CUSTOMER has the legal authority to enter into this agreement with respect to certain real property located in Sarasota County, Florida, known as the (golf course, subdivision, complex) and to grant the easements required hereunder; and

WHEREAS, CUSTOMER either has developed, or is in the process of developing, an area (hereinafter called "DEVELOPMENT AREA") on said real property, as more particularly shown on the map attached hereto as Exhibit "A", and by this reference made a part hereof; and

WHEREAS, a legal description of the DEVELOPMENT AREA is attached hereto as Exhibit "B", and by this reference made a part hereof; and

WHEREAS, there presently exists, or will exist, on said real property holding or percolation ponds or land sites designed for the receipt, storage, and use of reclaimed water from wastewater treatment plants (hereinafter called the "CUSTOMER'S APPLICATION SYSTEM"), as more particularly shown on Exhibit "C", attached hereto and by this reference made part hereof; and

WHEREAS, COUNTY currently provides, or is authorized to provide, sewer utility service to certain real property located in Sarasota County, Florida, granted by the Board of County Commissioners of Sarasota County, Florida under Ordinance No. 72-30, as amended, and Resolution No. 96-042 and subsequent amendments (hereinafter referred to as the "BOARD"); and

WHEREAS, COUNTY desires to have a method of and a place for the reuse of reclaimed water from its present and future wastewater treatment plants by utilizing the

CUSTOMER'S APPLICATION SYSTEM and any extensions, improvements, replacements or additions to the CUSTOMER'S APPLICATION SYSTEM that CUSTOMER may elect to construct or develop; and

WHEREAS, COUNTY desires to use reclaimed water as a conservation effort for irrigation purposes to conserve the supply of potable water pursuant to the provisions of its Reuse Master Plan; and

WHEREAS, CUSTOMER desires to obtain a source of non-potable water with which it can irrigate its DEVELOPMENT AREA; and

WHEREAS, both CUSTOMER and COUNTY have a desire to advance the cause of water conservation as being an activity in the public interest within the areas of their operations; and

WHEREAS, Sarasota County Resolution No. 93-234 authorized the Director of the Sarasota County Utilities Department to enter into, and execute, customer agreements for the use of reclaimed water; and

WHEREAS, CUSTOMER and COUNTY desire to reduce to writing their agreement which will permit the reuse of reclaimed water from COUNTY'S present and future wastewater treatment plants and provide CUSTOMER with a source of non-potable water with which it can irrigate its DEVELOPMENT AREA;

NOW, THEREFORE, in consideration of the mutual undertakings and agreements herein contained and assumed, and other good and valuable consideration, receipt of which is hereby acknowledged, CUSTOMER and COUNTY hereby covenant and agree as follows:

1. **Delivery and Storage of Reclaimed Water.** CUSTOMER hereby grants to COUNTY the right for a period of ten (10) years (commencing on the date reclaimed water is first delivered to CUSTOMER) to deliver not more than hundred thousand () gallons per day (hereinafter called "GPD") through CUSTOMER'S APPLICATION SYSTEM for application over approximately acres. COUNTY will deliver the reclaimed water from its present and future wastewater treatment plants to the CUSTOMER'S APPLICATION SYSTEM at a point on or near a boundary of the DEVELOPMENT AREA (hereinafter called "POINT OF DELIVERY"), via a reclaimed water delivery system. The term of this Agreement will be extended automatically for renewal terms of ten (10) years unless this Agreement is terminated by either party hereto at least one (1) year prior to the date any such renewal term would commence. The actual amount of reclaimed water to be delivered by COUNTY shall be determined in the sole discretion of COUNTY. The above described limitations on the delivery of reclaimed water by COUNTY and the amount of reclaimed water actually delivered by COUNTY shall be determined on the basis of an annual average daily flow of reclaimed water. CUSTOMER

Petitions, Permits and Contracts

Sarasota County

(continued from previous page)

shall install flow meters approved by COUNTY at the POINT OF DELIVERY to measure the amount of reclaimed water delivered (hereinafter referred to as "MASTER METER") to CUSTOMER.

2. **Application of Reclaimed Water.** CUSTOMER hereby agrees to apply to the DEVELOPMENT AREA the amount of reclaimed water delivered by COUNTY to the CUSTOMER'S APPLICATION SYSTEM pursuant to Paragraph 1 above, and to appropriately use this reclaimed water preferentially in lieu of any other water sources including groundwater. CUSTOMER further agrees not to resell or transfer such reclaimed water or to allow it to be used for potable water uses. CUSTOMER agrees that it shall comply with all rules, regulations and permit conditions of all governmental agencies exercising jurisdiction over the use of reclaimed water for the DEVELOPMENT AREA and the SERVICE AREA of COUNTY and the terms and conditions of the Reclaimed Water Policies and Regulations of COUNTY, as may be amended from time to time. CUSTOMER agrees that COUNTY is entitled and empowered to take any and all actions including, but not limited to, terminating reclaimed water utility service to the DEVELOPMENT AREA, and any and all other locations where COUNTY supplies CUSTOMER or its assigns with reclaimed water utility service, when COUNTY, in its sole discretion, determines such actions are necessary to enforce such rules, regulations and permit conditions. Piping and fixtures used for reclaimed water shall be purple in color (Panton 522C) and/or clearly labeled as being for non-potable water. Cross connections between reclaimed water lines and potable water lines are strictly prohibited by Sarasota County Cross Connection Control Ordinance No. 89-19 as may be amended from time to time.

CUSTOMER represents and warrants that it will not apply or deliver any reclaimed water received from COUNTY to applications or real property not specified herein. In the event of a dispute between the parties as to whether CUSTOMER may apply or deliver reclaimed water received from COUNTY to a specific portion of the DEVELOPMENT AREA, decisions of the COUNTY shall be conclusive.

3. **Standards for Reclaimed Water.** This Agreement shall not create any express or implied warranties; provided, however, that the reclaimed water delivered by COUNTY to the CUSTOMER'S APPLICATION SYSTEM, shall, at all times, meet all rules, regulations and permit conditions of all governmental agencies exercising jurisdiction over the use of reclaimed water for the irrigation of the DEVELOPMENT AREA within the SERVICE AREA of COUNTY.

4. **Construction, Ownership, Operation and Maintenance of the Reclaimed Water Delivery System Extension.** The COUNTY'S reclaimed water delivery system shall connect to the CUSTOMER'S APPLICATION SYSTEM at the POINT OF DELIVERY as shown on Exhibit "C." The additional pumping stations, mains, lines and other facilities necessary to transport reclaimed water from COUNTY'S wastewater treatment plants and its existing reclaimed water delivery system to the POINT OF DELIVERY (hereinafter referred to as the "RECLAIMED WATER DELIVERY SYSTEM EXTENSION") are set forth on Exhibit "D", attached hereto and by this reference made a part thereof. COUNTY, at its

own expense, shall own, operate and maintain the RECLAIMED WATER DELIVERY SYSTEM EXTENSION. CUSTOMER shall, in accordance with the terms of this Agreement, cause to be constructed and conveyed to COUNTY hereunder, free and clear of all encumbrances and at no cost to COUNTY, the RECLAIMED WATER DELIVERY SYSTEM EXTENSION. CUSTOMER shall submit to COUNTY plans and specifications for the RECLAIMED WATER DELIVERY SYSTEM EXTENSION prepared by CUSTOMER'S engineers, who shall be registered Professional Engineers. Plans and specifications shall be consistent with the applicable provisions of the COUNTY'S Uniform Water, Wastewater and Reuse System Code, adopted by Ordinance No. 95-068, as the same may be amended from time to time, and shall be approved in writing by COUNTY prior to CUSTOMER'S undertaking any construction. All construction of the RECLAIMED WATER DELIVERY SYSTEM EXTENSION shall be completed by contractors competent to perform such work. COUNTY shall have the right to refuse to accept title to the RECLAIMED WATER DELIVERY SYSTEM EXTENSION or deliver reclaimed water to the CUSTOMER'S APPLICATION SYSTEM until the RECLAIMED WATER DELIVERY SYSTEM EXTENSION has passed certain tests, including, without limitation, pressure tests, and valve tests, arranged and witnessed by COUNTY or its representatives, to determine whether the RECLAIMED WATER DELIVERY SYSTEM EXTENSION is constructed in accordance with the approved engineering plans and specifications. CUSTOMER agrees to pay all costs of such tests and all costs of leak location and repair deemed necessary by COUNTY as a result of any such tests. Following conveyance by CUSTOMER, the RECLAIMED WATER DELIVERY SYSTEM EXTENSION shall at all times remain the sole, complete and exclusive property of, and under the control of, COUNTY, and CUSTOMER shall have no right, or claim in or to, the RECLAIMED WATER DELIVERY SYSTEM EXTENSION. CUSTOMER shall cause all such plans and specifications to be designed and such construction to be performed in a manner that complies with all rules, regulations and permit conditions of all governmental agencies exercising jurisdiction over the use of reclaimed water for the DEVELOPMENT AREA and the SERVICE AREA of COUNTY and the terms and conditions of the Reclaimed Water Policies and Regulations of COUNTY, as may be amended from time to time. The final acceptance of the RECLAIMED WATER DELIVERY SYSTEM EXTENSION shall occur at such time as CUSTOMER has fulfilled all of the terms and conditions hereof, and all engineering tests and evaluations have been completed and approved by COUNTY (hereinafter called the "FINAL ACCEPTANCE").

5. **Warranty and Security.** CUSTOMER represents and warrants that the RECLAIMED WATER DELIVERY SYSTEM EXTENSION will be constructed and installed in accordance with the plans and specifications approved in writing by COUNTY pursuant to Paragraph 4 of this Agreement, and indemnifies and holds COUNTY harmless from and against, and agrees to reimburse COUNTY for, all costs, damages, expenses and losses, including, without limitation, incidental and consequential damages, resulting from any defects in the RECLAIMED WATER DELIVERY SYSTEM EXTENSION including, without limitation, defects in material and workmanship, that are discovered or arise within a period of one (1) year following the date of FINAL ACCEPTANCE by COUNTY of the RECLAIMED WATER DELIVERY SYSTEM EXTENSION. As security for CUSTOMER'S

performance of this warranty and simultaneously with the conveyance of the RECLAIMED WATER DELIVERY SYSTEM EXTENSION, CUSTOMER shall deliver to COUNTY a Performance Bond or other form of warranty acceptable to County to remain in full force and effect for a period of not less than one (1) year from the date of FINAL ACCEPTANCE.

6. **Construction, Ownership, Operation and Maintenance of the Customer's Application System.** CUSTOMER shall, in accordance with the terms of this Agreement and at no cost to COUNTY, construct, own, operate and maintain the CUSTOMER'S APPLICATION SYSTEM generally described on Exhibit "C," in a manner that complies with all rules, regulations and permit conditions of all governmental agencies exercising jurisdiction over the use of reclaimed water for irrigation of the DEVELOPMENT AREA, and the terms and conditions of the Reclaimed Water Policies and Regulations of COUNTY, as may be amended from time to time, and in a manner sufficient to permit COUNTY to deliver the quantities of reclaimed water set forth in Paragraph 1 above. All pumping stations, mains, lines and other facilities necessary to transport reclaimed water from the POINT OF DELIVERY, to and through the DEVELOPMENT AREA, shall be part of the CUSTOMER'S APPLICATION SYSTEM and shall at all times remain the sole, complete and exclusive property of, and under the control of CUSTOMER. CUSTOMER hereby grants to COUNTY the right at all reasonable times to enter the DEVELOPMENT AREA to inspect the construction, operation and maintenance of the CUSTOMER'S APPLICATION SYSTEM and to conduct tests of the system as COUNTY deems may be necessary. In the event that monitoring wells are required by any regulatory agencies within the DEVELOPMENT AREA, such wells will be installed, maintained and tested by COUNTY as required by regulatory agencies. CUSTOMER agrees to exert its best efforts to prevent the contamination of these wells by leaching or runoff which would adversely impact the monitor wells.

In the event that COUNTY, in its sole discretion, determines that all or any portion of CUSTOMER'S APPLICATION SYSTEM requires testing, maintenance, repair or replacement, COUNTY shall notify CUSTOMER in writing at the address set forth above or at such other address as CUSTOMER shall furnish to COUNTY from time to time in writing. Within ten (10) working days of the date of notification to CUSTOMER, CUSTOMER shall commence testing, maintenance, repair or replacement of all or such portion of CUSTOMER'S APPLICATION SYSTEM and shall diligently carry out such work so that it is completed within thirty (30) working days thereafter unless the work is of such a nature or extent that it cannot reasonably be completed within thirty (30) working days, in which case it shall be completed as expeditiously as possible. A failure of CUSTOMER to begin or complete the work within the time periods set forth herein shall constitute a default under the terms of this Agreement. Notwithstanding the above, in the event CUSTOMER fails to begin or complete the work within the time periods set forth herein, COUNTY shall have the right, but not the obligation, to enter upon the DEVELOPMENT AREA and complete such work to CUSTOMER'S APPLICATION SYSTEM as COUNTY, in its sole discretion deems necessary, all at CUSTOMER'S expense. All costs and expenses paid by COUNTY in connection with such work shall be immediately due and payable by CUSTOMER to COUNTY without notice or demand and shall bear interest from

Petitions, Permits and Contracts

Sarasota County

(continued from previous page)

the date of each advance at the highest rate of interest allowed by law, until such sums are fully paid to COUNTY.

CUSTOMER shall maintain a set of record drawings of the CUSTOMER'S APPLICATION SYSTEM and a set of all other operation and maintenance records and documents. In addition, CUSTOMER shall supply a set of record drawings to the Sarasota County Utilities Department for permanent record.

7. **Rates, Fees and Charges.** Within fifteen (15) calendar days of receipt of invoice, CUSTOMER shall pay to COUNTY all charges for the delivery of reclaimed water to the DEVELOPMENT AREA. The amount of the reclaimed water delivered shall be determined by COUNTY by use of the MASTER METER. The rate to be charged by COUNTY under this Agreement for reclaimed water shall be in accordance with the terms and provisions of COUNTY'S rates adopted pursuant to Resolution 96-042 and subsequent resolutions establishing rates for reclaimed water. The parties further acknowledge that COUNTY may charge a late charge, a reconnection fee and other fees and charges pursuant to Resolution No. 96-042 or subsequent resolutions establishing rates for reclaimed water. COUNTY reserves the right to adjust or establish said delivery charge, late charge, and other charges in a lawful manner, when COUNTY deems appropriate. Failure of CUSTOMER to make and pay timely the above charges shall constitute a default under this Agreement.

8. **Metering.** CUSTOMER and COUNTY agree that the MASTER METER and any other metering, or other devices installed to measure and control the amount of reclaimed water delivered to the CUSTOMER'S APPLICATION SYSTEM and the POINT OF DELIVERY:

- a. Shall be purchased from the Sarasota County Utilities Department and installed at CUSTOMER'S sole expense;
- b. Shall be installed at the POINT OF DELIVERY and all other places required by COUNTY;
- c. Shall be flow meters and other devices of standard make and type approved by COUNTY for which replacement parts and service are reasonably available;
- d. Shall be installed so as to be readily accessible for both reading and testing, access for which shall be provided to COUNTY and its personnel;
- e. Shall be adequately maintained by COUNTY, which shall include providing to CUSTOMER certifications by qualified personnel of COUNTY of said facilities prepared in accordance with the standard practices of the American Waterworks Association as set forth in Manual M-6 of the American Waterworks Association and shall be tested not more than once a year and not less than every five years;

f. Shall be tested for accuracy when requested by COUNTY or CUSTOMER, and test results shall be provided to both parties. If the test is requested by CUSTOMER and the meter is found to be operating properly and recording reclaimed water flows within the applicable COUNTY limits, the cost of such testing shall be paid by CUSTOMER. Otherwise, the cost of such testing shall be paid by COUNTY.

9. **General Conditions Precedent to Receiving Service.** Prior to COUNTY'S accepting the RECLAIMED WATER DELIVERY SYSTEM EXTENSION and commencing the delivery of reclaimed water to the CUSTOMER'S APPLICATION SYSTEM, CUSTOMER shall comply with all terms of this Agreement and shall:

- a. Provide to COUNTY an accounting of the actual cost of the RECLAIMED WATER DELIVERY SYSTEM EXTENSION, together with copies of all paid bills and releases of lien received by CUSTOMER or its agents, in connection with the construction of the RECLAIMED WATER DELIVERY SYSTEM EXTENSION;
- b. Furnish COUNTY with a mylar sepia copy of the as-built drawings of the RECLAIMED WATER DELIVERY SYSTEM EXTENSION and the CUSTOMER'S APPLICATION SYSTEM in a form acceptable to COUNTY and certified by CUSTOMER'S engineer, showing specific locations of all facilities, including all lines, mains, valves, and fittings within the RECLAIMED WATER DELIVERY SYSTEM EXTENSION and the CUSTOMER'S APPLICATION SYSTEM;
- c. Furnish, in form and substance acceptable to COUNTY, all of the following relating to the RECLAIMED WATER DELIVERY SYSTEM EXTENSION:

(I) All permits and governmental approvals obtained by CUSTOMER, its contractors or agents;

(ii) Engineer's certifications;

(iii) Bill of Sale conveying all lines, mains, and other portions of the RECLAIMED WATER DELIVERY SYSTEM EXTENSION to COUNTY with general warranties of title and in accordance with Paragraph 4 hereof;

(iv) Easements pursuant to Paragraph 20 hereof;

(v) Performance Bond pursuant to Paragraph 5, hereof;

d. Furnish, in form and substance acceptable to COUNTY, all of the following relating to the CUSTOMER'S APPLICATION SYSTEM:

(I) All permits and governmental approvals obtained by CUSTOMER, its contractors or agents;

(ii) Engineers' certifications; and

(iii) Easements pursuant to Paragraph 20 hereof; and

e. Pay all rates, fees, charges and other amounts due to be paid to COUNTY as herein provided.

10. **County's Right of Termination of Service.** COUNTY shall have the right to temporarily discontinue service, the right to terminate service to the DEVELOPMENT AREA, and the right to terminate this Agreement in the event that CUSTOMER defaults or fails to comply with any of the terms and conditions of this Agreement in a timely manner.

11. **Limitation of Liability of County.** COUNTY shall not be liable or responsible to CUSTOMER or any other person as a result of damage or injury to property or person, which said damage or injury was caused or created by Force Majeure. The term "Force Majeure" as employed herein shall be acts of God, strikes, lockouts, or other industrial disturbances, acts of public enemy, wars, blockades, riots, acts of Armed Forces, epidemics, delays by carriers, inability to obtain materials or right-of-way on reasonable terms, acts of public authorities, acts of vandals or other third parties, or any other causes whether or not of the same kind as enumerated herein. Further, in no event shall COUNTY be liable to CUSTOMER, to any other CUSTOMER, or to any other person for any consequential, incidental or punitive damages as a result of damage or injury to property or person, regardless of whether said damage or injury was the result of acts of, or within the control of, COUNTY or others.

12. **Approval by Governmental or Regulatory Agencies.** COUNTY'S obligations under this Agreement are contingent upon its obtaining all necessary approvals and permits from all governmental agencies exercising jurisdiction over reclaimed water. CUSTOMER hereby assumes the risk of loss as a result of the denial or withdrawal of the approval and permits of any governmental agencies exercising jurisdiction over reclaimed water or caused by any act or refusal to act of any regulatory agency that affects the ability of COUNTY to provide reclaimed water to CUSTOMER not within the sole control of COUNTY and which, by the exercise of due diligence, COUNTY is unable to overcome.

13. **Regulation by Governmental or Regulatory Authority.** The parties recognize and agree that the terms and provisions on Resolution No. 96-042 as amended or restated shall be deemed to have been expressly incorporated herein by reference, and that, in the event of any express conflicts between said Resolution and any portions of this Agreement regarding matters specifically addressed in both, then said Resolution shall in

Petitions, Permits and Contracts

Sarasota County
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all instances prevail. CUSTOMER acknowledges, by its execution hereof, its review of a copy of said Resolution in effect on the date of execution of this Agreement. The parties further agree and recognize that certain rates, fees, amounts and other charges collected, and rules, regulations and operating procedures followed, by COUNTY are subject to continuing approval and modification by the BOARD or other governmental or regulatory authorities. CUSTOMER hereby agrees that it will pay to COUNTY all rates, fees, amounts and other charges in accordance with, and be bound by all other provisions of, Resolution 96-042 as amended or restated approved by COUNTY as being applicable at the time that services are provided or other actions are taken by COUNTY. CUSTOMER further agrees that it will comply with all rules, regulations and permit conditions of COUNTY or other governmental or regulatory authorities as being applicable at the time that actions are to be taken by CUSTOMER or COUNTY.

14. Reclaimed Water Policies and Regulations of County. The parties agree that the terms and provisions of the Reclaimed Water Policies and Regulations of COUNTY ("Sarasota County's Regulations") shall be deemed to have been expressly incorporated herein by reference, and that, in the event of any express conflicts between COUNTY'S Regulations and any portions of this Agreement regarding any matters specifically addressed in both, then COUNTY'S Regulations shall in all instances prevail. CUSTOMER acknowledges by its execution hereof, that it has reviewed the COUNTY'S Regulations in effect on the date of execution of this Agreement. The parties further agree that COUNTY may, in its sole discretion, alter and amend said Regulations and that such alteration and amendments shall apply to this Agreement. CUSTOMER hereby agrees that it will be bound by all provisions of COUNTY'S Regulations, as may be amended from time to time.

15. No Prohibition of Further Extension. This Agreement shall not prohibit or prevent COUNTY from extending COUNTY'S RECLAIMED WATER DELIVERY SYSTEM in or to areas not referred to herein to serve other developers or CUSTOMERS.

16. Customer's Liability For Damage to County's Reclaimed Water Delivery System and Treatment Facilities. COUNTY is relying on the use of CUSTOMER'S APPLICATION SYSTEM, as it may be extended, improved, replaced or added to, and the DEVELOPMENT AREA for a method of and a place for disposing of reclaimed water from COUNTY'S present and future wastewater treatment plants. CUSTOMER shall be liable for all damage, loss or claims of whatever nature to COUNTY'S present and future wastewater treatment plants and all pumping stations, mains, lines and other facilities necessary to transport reclaimed water from COUNTY'S wastewater treatment plants to the POINT OF DELIVERY, including the RECLAIMED WATER DELIVERY SYSTEM EXTENSION, (hereinafter called "COUNTY'S RECLAIMED WATER DELIVERY SYSTEM AND TREATMENT FACILITIES") caused, in whole or part, by CUSTOMER'S failure to maintain or operate the CUSTOMER'S APPLICATION SYSTEM in compliance with all rules, regulations and permit conditions of all governmental agencies exercising jurisdiction over the use of reclaimed water for the DEVELOPMENT AREA and the SERVICE AREA of COUNTY.

17. Construction of the Customer's Application System. CUSTOMER agrees that construction of the CUSTOMER'S APPLICATION SYSTEM shall begin within _____ () working days after the execution of this Agreement, and CUSTOMER agrees that said construction shall not cease for a continuing period of more than _____ () working days until said construction is completed. Should CUSTOMER not complete said construction within said period of time, then any obligations or duties of COUNTY arising out of or prescribed by this Agreement shall be null, void and unenforceable.

18. Notice of Connection of Extensions. CUSTOMER shall give COUNTY written notice that CUSTOMER is connecting either: (1) the CUSTOMER'S APPLICATION SYSTEM to the RECLAIMED WATER DELIVERY SYSTEM EXTENSION; or (2) the RECLAIMED WATER DELIVERY SYSTEM EXTENSION to the existing reclaimed water delivery system no less than ten (10) working days prior to said connection, for purposes of inspection. If CUSTOMER fails to give said written notice, COUNTY may require CUSTOMER to uncover and expose said connection for inspection, at the sole cost of CUSTOMER.

19. Notice of Transfer of Customer's Property. CUSTOMER agrees to provide proper written notification to COUNTY of the actual date of the transfer of the DEVELOPMENT AREA, or any portion thereof, or of CUSTOMER'S rights in regards to the receipt of reclaimed water, or any portion thereof, from CUSTOMER to any third party. CUSTOMER shall remain responsible for all costs and expenses, including delivery and consumption charges which are incurred prior to COUNTY'S receipt of written notification of any transfer.

20. Grant of Easement Rights. At no cost to COUNTY, CUSTOMER hereby grants to COUNTY, its successors and assigns, the exclusive, perpetual right, privilege and easement to construct, reconstruct, operate, maintain, repair, replace, improve, alter, remove, relocate, read, connect and inspect the RECLAIMED WATER DELIVERY SYSTEM EXTENSION, the CUSTOMER's APPLICATION SYSTEM, the MASTER METER, mains, lines, pumping stations and appurtenance equipment over, across and under the DEVELOPMENT AREA, as described on Exhibit "B", in connection with the transportation and delivery of reclaimed water to the CUSTOMER'S APPLICATION SYSTEM and the right of ingress and egress with respect to such easements. The easements shall also allow COUNTY to serve further extensions described in Paragraph 16 hereof. CUSTOMER shall execute any deeds of conveyance in a recordable form approved by COUNTY reflecting such a grant of easement in the event COUNTY requests such deeds.

21. County's Exclusive Right to Provide Reclaimed Water. CUSTOMER hereby agrees that it will not contract or otherwise agree with any person other than COUNTY for the disposal, delivery, or application of reclaimed water on or to the DEVELOPMENT AREA.

22. Disclaimer of Warranties.

a. **Express Warranties.** COUNTY disclaims all express warranties. The COUNTY does not represent or warrant that the reclaimed water delivered to CUSTOMER shall increase the productivity of the DEVELOPMENT AREA or result in any changes to the land, crops or vegetation. Further, the use of any plans, specifications, water quality analysis or treated wastewater samples during the negotiations leading to this Agreement serve to merely indicate the general quality of reclaimed water which will be delivered to CUSTOMER. Such plans, specifications, water quality analysis or treated wastewater samples create no warranty that the reclaimed water delivered by County will conform to these items.

b. **Implied Warranties.** COUNTY disclaims any implied warranties of merchantability or fitness of the reclaimed water delivered under this Agreement for any purposes.

23. Disclaimer of Third Party Beneficiaries. This Agreement is solely for the benefit of the formal parties hereto and no right or cause of action shall accrue upon or by reason hereof, to or for the benefit of any third party not a formal party hereto.

24. Land Use Approvals. This Agreement shall not be construed as a basis for granting or assuring or indicating, or denying, refusing to grant or preventing any future grant of land use or zoning approvals, permissions, variances, special exceptions, or rights with respect to the real property in the irrigated area.

25. Assignment by County.

a. COUNTY, after reasonable advance written notice to CUSTOMER, shall have the right to terminate this Agreement if performance is prevented by third-party litigation, inability to issue or market bonds or any other event beyond the control of the COUNTY.

b. COUNTY shall have the right to transfer all or any part of the treatment or distribution facilities to another public utility and to assign all or any part of its rights and obligations under this Agreement to another public utility who shall be bound by and accept, and be exclusively responsible for all applicable terms and conditions of this Agreement.

26. Miscellaneous.

a. This Agreement supersedes all previous agreements or representations either oral or written heretofore in effect between CUSTOMER and COUNTY and made with

Petitions, Permits and Contracts

Sarasota County
(continued from previous page)

respect to the matters contained herein.

b. The provisions of this Agreement shall not be construed as establishing the amount of rates, fees, charges, or other payments made by CUSTOMERS or any other CUSTOMER, or the acceptance thereof on the part of COUNTY for other extensions that may be required hereafter by CUSTOMER and that are not the subject of this Agreement.

c. CUSTOMER shall indemnify COUNTY and hold COUNTY harmless from any and all claims, actions, losses, liability, suits, proceedings, costs, expenses, and damages arising from the application of reclaimed water on the DEVELOPMENT AREA. Such costs and expenses shall include, but not be limited to, reasonable attorney's fees and the cost of any litigation including appellate proceedings.

d. The signature of any persons to this Agreement shall be deemed a representation that the signatory has the power and authority to bind any person, corporation, partnership or other business entity for which the signatory purports to act.

e. The facts set forth in the recitals above are true and correct to the best of the information, belief and knowledge of the parties hereto.

f. This Agreement was made and executed in Sarasota County, Florida, and shall be interpreted, construed and enforced in accordance with the laws of the State of Florida.

g. The headings used in the paragraphs of this Agreement are solely for the convenience of the parties and the parties agree that they shall be disregarded in the construction of this Agreement.

h. This Agreement shall inure to the benefit of and be binding upon the respective representatives, successors and assigns of the parties hereto. Any agreement, limitation duty, responsibility or other obligation imposed on CUSTOMER by this Agreement is a covenant running with the land described on Exhibit "B" and shall become the agreement, limitation, duty, responsibility, or obligation of all successors or assigns of CUSTOMER and each subsequent owner of all or a portion of the DEVELOPMENT AREA and each reclaimed water CUSTOMER of COUNTY who now or hereafter rents, owns or uses all or a portion of the DEVELOPMENT AREA.

i. This Agreement shall not be assigned by CUSTOMER without the prior written consent of COUNTY; provided, however, that such assignment shall not relieve the CUSTOMER of any limitation, duty, responsibility or other obligation imposed on CUSTOMER by this Agreement until such time as COUNTY approves the assignment.

j. This Agreement shall not be amended except by subsequent written agreement executed by CUSTOMER and COUNTY.

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k. CUSTOMER agrees that it shall cause any existing or future declaration of covenants and restrictions or similar documents which affect all or a portion of the DEVELOPMENT AREA to provide that this Agreement is a covenant running with the land for the land in the DEVELOPMENT AREA. CUSTOMER further agrees that it shall cause any party which undertakes the care and maintenance of the DEVELOPMENT AREA to agree in writing to be bound by all agreements, limitations, duties, responsibilities or other obligations imposed on CUSTOMER by this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year first above written.

Signed, sealed and delivered in the presence of:

CUSTOMER

Print: _____

Print: _____

COUNTY

SARASOTA COUNTY, FLORIDA,
a political subdivision of the State of Florida

By: Utilities Department

By: _____
Edward Goscicki
Utilities Director

Print: _____

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STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 19__ by _____, as _____ of _____, a _____ corporation, on behalf of the corporation. He/she is personally known to me or has produced _____ as identification.

(SEAL)

Notary Public, State of Florida

Print, Type or Stamp Name of Notary Public

Commission No. _____

STATE OF FLORIDA
COUNTY OF SARASOTA

The foregoing instrument was acknowledged before me this _____ day of _____, 1997 by EDWARD GOSCICKI, as director of the Utilities Department, SARASOTA COUNTY, FLORIDA, a political subdivision of the State of Florida. He is personally known to me or has produced _____ as identification.

(SEAL)

Notary Public, State of Florida

Print, Type or Stamp Name of Notary Public

Commission No. _____

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Petitions, Permits and Contracts

Sarasota County
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SARASOTA COUNTY UTILITIES DEPARTMENT
CROSS CONNECTION CONTROL QUESTIONNAIRE
Ordinance 89-19

Existing Residence [] Proposed Residence []

BUILDING PERMIT APPLICATION NUMBER(S):

8SO _____ W/O# _____

8SO _____ SUBD _____

On April 4, 1989 the Sarasota Board of County Commissioners adopted Ordinance 89-19 implementing a cross connection control program for all water connections within the unincorporated areas of Sarasota County, Florida. In order to adequately enforce these requirements the Utilities Department must have the information below completed to the best of your ability for all instances where this office will be setting the water meter.

(1) Is there or will there be another source of water to or on your property other than the metered water service connection? (i.e., well, lake, pond, swimming pool, reclaimed water, etc.)

YES [] NO []

If yes, complete the following:

WELL [] SWIMMING POOL [] LAKE [] REUSE WATER [] OTHER: _____

(2) Is there or will there be an underground irrigation system on the property?

YES [] NO []

If yes, what source of water will be used?

REUSE WATER [] POTABLE WATER [] WELL [] OTHER: _____

(3) How many stories will this residence have? (Circle One) 1 2 3

DATA FURNISHED BY: _____

Print Name Title/Company Name

SIGNATURE: _____ DATE: _____ PHONE: _____

ANY YES ANSWERS MEANS A BACK FLOW PREVENTER IS REQUIRED!

FOR OFFICE USE ONLY:

Account Number Address

INSPECTOR (BACKFLOW) DATE COMMENTS

INSPECTOR (WATER METER) DATE COMMENTS

INSPECTOR (SEWER SERVICE) DATE COMMENTS

CCC.FRM Rev. 04/97

Account Number _____ - _____ - _____ Work Order No. _____

SARASOTA COUNTY UTILITIES DEPARTMENT
APPLICATION FOR REUSE WATER UTILITY SERVICE
(PAGE 1 OF 2)

Type of Service: Single family [] Commercial [] Multi-Family [] Other [] _____

Date of Application: _____

Applicant Name or Business Name: _____

Service Address: _____

Street Name City State Zip Code

Billing Name: _____

Billing Address: _____

Street Name City State Zip Code

Telephone #: _____

Description: _____
(type of usage)

Acreage of Property to be Irrigated: _____ acres

Maximum Gallons per Day Required: _____ gallons per day*

Size of Meter to be Installed: _____ **

*Utility is not required to deliver a minimum amount of reclaimed water to any customer and cannot guarantee customer a certain amount of reclaimed water. Utility has the right to shut-down the system or discontinue reclaimed water delivery at the Utility's sole discretion due to low water flows or upset plant conditions

**Meter must be ordered and purchased through the Sarasota County Utilities Department.

SARASOTA COUNTY UTILITIES DEPARTMENT
APPLICATION FOR REUSE WATER UTILITY SERVICE
(PAGE 2 OF 2)

Amount Due from Customer
(payable to Sarasota County
Utilities Department before meter is set):

Meter Size _____ \$ _____

Security Deposit _____

Meter Set Fee _____

Other _____

Total Due: \$ _____

Applicant's Signature: _____ Date: _____

1) Applicant hereby agrees to abide by the Sarasota County Utilities Department Rules & Regulations, Reclaimed Water Policies & Procedures and any Ordinances pertaining to reclaimed water or cross connection control. Failure to abide by any of the above will result in disconnecting the customer's application system from the reclaimed water system. Applicant hereby acknowledges that he/she has received a copy of the Sarasota County Utilities Department Reclaimed Water Policies and Procedures.

2) Applicant hereby understands that the current rate for reclaimed water is \$0.10/1,000 gallons under Resolution 96-042 and subsequent amendments. This rate is subject to review by the Board of County Commissioners and will be adjusted accordingly on each customer's reuse bill.

3) Applicant hereby agrees to complete a Cross Connection Control questionnaire along with this application. Customers using reclaimed water for irrigation must have a backflow prevention device on the potable water supply.

4) Applicant hereby agrees to allow Sarasota County Utilities Department personnel on their property to obtain meter readings and any maintenance repairs necessary.

FOR OFFICE USE ONLY:

Work Order Info: L/S S/S Set _____ Meter RP LP Special Instructions: _____

Date Work Order to be Issued: _____

Receipt No. _____ Date Paid: _____ Deposit Amount: \$ _____

Petitions, Permits and Contracts

Conserv II
Large Agricultural System
28MGD

RECLAIMED WATER APPLICATION

APPLICANT -- DO NOT WRITE IN GRAY AREAS. FOR OFFICE USE ONLY.

TREATMENT PLANT SERVICE AREA

DATE RECEIVED:

Conserv IConserv IIRon Bridge

FILE #

PLAN #

Size & Location of Main Service Connection

** APPLICANT INFORMATION FOLLOWS**

Applicant Name
Street Number
Street Name
City Name
State
Zip Code
Phone # ()

OWNER INFORMATION FOLLOWS

Owner Name
Street Number
Street Name
City Name
State
Zip Code
Phone # ()

Contact Person (Owner or Applicant)

Development Name

Development Location

TYPE OF SERVICE REQUESTED

IrrigationOther

Amount of Irrigable Area (Acres)
Average Application Rate (gpd)

Reclaimed Water Use Agreement Rec'd
Plans Received
Plans Returned
Plans Resubmitted
Plans Approved
Assigned Time Allocation

INSPECTION REPORT

ACCEPTED
REJECTED

Comments:
DEVELOPER/OWNER

Meter Required: Yes No
DateINSPECTOR

This Instrument Prepared By
And Return To:
Jon H. Somsen, Esq.
City of Orlando
Office of Legal Affairs
400 South Orange Avenue
Orlando, Florida 32801

DRAFT

AGREEMENT FOR THE DELIVERY AND
USE OF RECLAIMED WATER

THIS AGREEMENT is made and entered into on the day of , 19 , between the CITY OF ORLANDO, FLORIDA, a municipal corporation organized and existing under the laws of the State of Florida, hereinafter referred to as "Supplier" and , a corporation, hereinafter referred to as "Owner" for the property located at .

BASIS FOR THE AGREEMENT

The Supplier operates and maintains a publicly owned water reclamation facility known as the Water Conserv II Water Reclamation Facility, which is producing reclaimed water which may be used for irrigation purposes. The governing council of the Supplier has approved this Agreement and has authorized its execution by the undersigned representatives.

The property, hereinafter referred to as the "Property," to receive reclaimed irrigation water is approximately acres of land which is described in Exhibit "A", attached and made a part hereof by reference. It is warranted that the undersigned representative has authority to bind the Owner. The Owner shall not request more reclaimed water than can be beneficially used for irrigation or other approved purposes.

Both parties understand that the Supplier will rely upon this Agreement in the design, construction and operation of the distribution system for delivery of reclaimed water to the Owner.

TERMS AND CONDITIONS

In consideration of the commitment of the Supplier to deliver reclaimed water to the Owner and the commitment of the Owner to receive and beneficially use this water for irrigation or other approved purposes, the parties agree to the following terms and conditions.

1. TERM OF THE AGREEMENT

(a) The Supplier shall deliver and the Owner shall accept and use reclaimed water produced by the Supplier as herein provided for a term of twenty (20) years from the date of execution of this Agreement.

2. USE OF RECLAIMED WATER: OWNER'S IRRIGATION SYSTEM

(a) The Owner shall use reclaimed water delivered by the Supplier for irrigation purposes within the Property, and any other approved use upon providing the Supplier ninety (90) days prior written notice describing such intended use; however, such use of the reclaimed water shall be consistent with current and future rules and regulations of the Supplier, Florida Department of Environmental Protection ("FDEP"), the applicable water management district and other governmental or regulatory agencies having jurisdiction over the Property or the use of reclaimed water. In no event will the Owner allow the discharge of reclaimed water directly into surface waters of the state of Florida without written authorization from the FDEP. The Owner is not currently required to obtain a FDEP permit in order to utilize the reclaimed water for irrigation or any other purpose that is consistent with applicable rules and regulations. The Owner shall follow all operating practice restrictions as outlined in Exhibit "B".

(b) The Owner agrees to install or modify irrigation systems on appropriate portions of the Property, to the extent Owner deems necessary so that reclaimed water will be received and used in accordance with the provisions of Section 3 below. The Owner shall be solely responsible for the ownership, operation and maintenance of all portions of the irrigation system located within the boundaries of the Property.

3. VOLUME OF WATER: DELIVERY SCHEDULE

(a) The Supplier will use its best efforts to deliver and the Owner shall accept and use a volume of approximately gallons of reclaimed water per year during the term of this Agreement in consistent monthly quantities. The Supplier will provide a meter for installation by the Owner at the point of delivery so that the volume of reclaimed water delivered may be monitored. The Owner shall be responsible for installing the City-furnished meter and providing and installing the necessary pipe, valves, strainer, fittings, drains, cover, box and appurtenances necessary to connect the Owner's irrigation system to the reclaimed water system, such installation to be in accordance with the construction detail shown in Exhibit "C" attached and made a part hereof by reference. Except to the extent of adverse conditions as provided in Section 4 below, the Supplier shall deliver reclaimed water at a minimum pressure of 50 psi. This water shall be delivered to a point on the Property as agreed to by both parties. The Supplier shall begin delivering reclaimed water to the Property within days from the date of this Agreement. The Supplier shall consult with all owners entering into like agreements in order to establish among them a mutually beneficial delivery schedule for the quantity of water to be delivered to each owner. Reasonable efforts will be made by the Supplier to accommodate the

Southwest Florida Water Management District
Reclaimed Water Guide

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Petitions, Permits and Contracts

Conserv II

(continued from previous page)

irrigation systems and practices of all owners; however, the Supplier reserves the right to assign an irrigation schedule, if necessary, to accommodate the needs of all owners.

(b) In the event the Owner demonstrates to Supplier that the volume of water described in Paragraph 3(a) can be expected to be detrimental to the Property, then this volume may be revised to such lesser volume as the Owner demonstrates will be compatible with the current uses of the land.

4. DELIVERY OF RECLAIMED WATER UNDER ADVERSE CONDITIONS

(a) Both parties recognize that adverse weather conditions or unforeseen circumstances may necessitate modification of the normal delivery schedule established by the Supplier. The Owner shall have the right to restrict or refuse the use of the reclaimed water to be delivered in the event of adverse weather conditions or unforeseen circumstances.

(b) Both parties also recognize that adverse weather conditions or unforeseen circumstances may result in a need for reclaimed water greater than the volume set forth in Paragraph 3(a). The Owner shall have the right to draw additional water, subject to availability as determined by the Supplier. During any period in which more than one Owner exercises the right to draw additional reclaimed water, the Supplier will furnish water under such pressure as the transmission and delivery systems are capable of producing. During these events, the Supplier shall not be obligated to provide the minimum pressure described in Paragraph 3(a) above.

(c) If the Supplier's transmission or distribution system fails for reasons or events beyond the Supplier's control, or when Supplier performs maintenance or repairs the system, then delivery of reclaimed water under the requirements of this Agreement may be temporarily interrupted or limited in quantity.

(d) If for any reason during the term of the Agreement local, regional, state or federal governments or agencies shall fail to issue necessary permits, grant necessary approvals, or shall require any change in the operation of the treatment, transmission and distribution systems or the application and use of reclaimed water by the Owner, then to the extent that such requirements shall affect the ability of any party to perform any of the terms of this Agreement, the affected party shall be excused from the performance thereof and a new agreement shall be negotiated, if possible, by the parties hereto in conformity with such permits, approvals, or requirements.

5. CHARGE FOR RECLAIMED WATER USE

The Supplier is in the process of developing an ordinance which governs the use of reclaimed water in the Supplier's service area. The Supplier, as part of the ordinance, may develop a rate structure for the sale of reclaimed water to system customers. At such a time as the rate structure is implemented, the Supplier shall charge the Owner for the delivery of reclaimed water in accordance with such rate structure.

6. NOTICES

All notices required or authorized under this Agreement shall be given in writing and shall be served by mail or by hand delivery to the parties at the addresses listed below:

OWNER:

SUPPLIER: Director of Environmental Services
City of Orlando
5100 L.B. McLeod Road
Orlando, Florida 32811

7. INSPECTION

The Supplier shall have the right, upon reasonable notice to the Owner, to enter upon the Property, during regular hours, to review and inspect the Owner's operating practices as they relate to this Agreement.

8. TRANSFER OR ASSIGNMENT

(a) The Supplier may assign its rights and obligations, in whole or in part, under this Agreement, without the consent of the Owner, to an entity which assumes such rights and obligations, provided Supplier delivers at least thirty (30) days prior written notice of such assignment and assumption to Owner.

(b) The Owner's right to sell, transfer or encumber the land described in Exhibit "A" shall not be restricted by this Agreement, except that written notice of any proposed sale or transfer must be given to the Supplier at the address noted in Section 6, at least thirty (30) days prior to the sale or transfer. Any subsequent party in interest shall be required to utilize the allocation of reclaimed water described in paragraph 3(a). The buyer or transferee must execute and deliver to the Supplier, prior to the sale or transfer, an acknowledgment and acceptance of the prior Owner's commitment under the same terms and conditions of this Agreement. The terms and conditions of this Agreement shall constitute a covenant that runs with the land.

9. INDEMNITY FOR THIRD PARTY CLAIMS

(a) So long as the Owner shall use reclaimed water under the terms and conditions of this Agreement and subject to the extent permitted by Section 768.28, Florida Statutes, the Supplier, to the extent permitted by law, shall indemnify the Owner and hold the Owner harmless from any and all claims, actions, suits, proceedings, costs, expenses, including, but not limited to, attorneys' fees (and fees on appeal), damages and liabilities arising out of the claims by third parties residing on or using land adjacent to or in close proximity to the Property, that the use of reclaimed water has resulted in adverse human health effects. The Supplier's indemnification obligation shall be conditioned upon the Owner giving notice to the Supplier within 72 hours of any claim or information suggesting that a claim may be made.

(b) The Supplier shall be indemnified by the Owner from any and all claims, demands, actions, suits, proceedings, costs, expenses, damages and liabilities, including attorneys' fees (and fees on appeal) arising out of, or relating to, the Owner's failure to comply with the terms of this Agreement, as well as failure to utilize the reclaimed water in accordance with the operating practice restrictions set forth in Exhibit "B".

(c) This Agreement is solely for the benefit of the formal parties hereto and no right or cause of action shall accrue upon, to or for the benefit of any third party not a formal party hereto.

10. SEVERABILITY

If any part of this Agreement is found invalid or unenforceable by any court, such invalidity or unenforceability shall not affect the other parts of this Agreement if the rights and obligations of the parties contained therein are not materially prejudiced and if the intentions of the parties can continue to be effectuated. To that end, this Agreement is declared severable.

11. NON-WAIVER

The failure of either party to insist upon the other party's compliance with its obligations under this Agreement in any one or more instances shall not operate to release such other party from its duties to comply with such obligations in all other instances.

12. APPLICABLE LAW AND VENUE

This Agreement and the provisions contained herein shall be construed, controlled, and interpreted according to the laws of the state of Florida. Venue for any litigation between the parties shall be in the courts of Orange County, Florida.

Petitions, Permits and Contracts

Conserv II
(continued from previous page)

13. CONSENT AND SUBORDINATION

All holders of a mortgage, lien or other applicable encumbrance upon the Property shall execute a Consent and Subordination to this Agreement. Such Consent and Subordination shall be attached hereto as Exhibit "D."

14. EXHIBITS AND ADDENDUMS

This Agreement incorporates the following exhibits which are specially made a part hereto:

- Exhibit A - Property Description
- Exhibit B - Operating Practice Restrictions
- Exhibit C - Installation Detail
- Exhibit D - Consent and Subordination

15. RECORDING

This Agreement, including the Exhibits thereto, shall be recorded in the Public Records of Orange County, Florida. The Owner shall bear the costs of such recording.

THIS WRITTEN AGREEMENT constitutes the entire agreement between the parties and has been entered into voluntarily and with independent advice and legal counsel and has been executed by the authorized representative of each party on the date written above.

CITY OF ORLANDO, FLORIDA

Mayor

ATTEST:

Grace A. Chewning, City Clerk

(SEAL)

WITNESSES:

APPROVED AS TO FORM AND LEGALITY
for the use and reliance of the
City of Orlando, Florida, only.

, 19

(Print or Type Name)

Assistant City Attorney
Orlando, Florida

(Print or Type Name)

STATE OF FLORIDA }
COUNTY OF ORANGE }

PERSONALLY APPEARED before me, the undersigned authority,
, and Grace A. Chewning, personally known to me, and known by me to be the
and City Clerk, respectively, and acknowledged before me that they executed the foregoing
instrument on behalf of the City of Orlando, Florida, as its true act and deed, and that they were
duly authorized to do so.

WITNESS my hand and official seal this day of , 19

NOTARY PUBLIC
Print Name:
My Commission Expires:

[COMPANY NAME]

WITNESSES:

By:

(Print or Type Name)

(Print or Type Name)

(Title)

(Print or Type Name)

STATE OF }

COUNTY OF }

PERSONALLY APPEARED before me, the undersigned authority,
[] well known to me or [] who has produced
as
identification, and known by me to be the
of the corporation named
above, and acknowledged before me that he/she executed the foregoing instrument on behalf of
said corporation as its true act and deed, and that he/she was duly authorized to do so.

WITNESS my hand and official seal this day of , 19

NOTARY PUBLIC
Print Name:
My Commission Expires:

Petitions, Permits and Contracts

Conserv II

(continued from previous page)

EXHIBIT "B"

Operating Practice Restrictions

The intent of this Exhibit is to identify and define practices for the use of reclaimed water for irrigation which protect human health and the environment.

1. The Supplier shall furnish Owner with appropriate warning signs to be posted around the site to describe the nature of the water and its non-potability. The signs shall be posted in accordance with FDEP regulations.
2. The Owner will also take all reasonable precautions, including signs, labeling, and color-coding to clearly identify reclaimed water systems to prevent inadvertent human consumption. The signs, labeling, and color-coding shall be in accordance with applicable FDEP regulations.
3. No cross-connections shall be made between the reclaimed irrigation water system and a potable water system or any well. Should a well be on the property as a backup system there shall be a physical air gap (minimum 2 times pipe diameter) separating the reclaimed system from the groundwater system (the well).
4. A buffer of 75 feet shall be maintained between the edge of the wetted area of the reclaimed water application site and any potable water supply well.
5. The use of reclaimed water shall be consistent with all FDEP and other applicable regulatory agency rules.
6. The Owner shall operate the irrigation system such that reclaimed water does not discharge off-site, either directly or through a stormwater drainage system.
7. The Owner shall use the reclaimed water and operate its irrigation system in accordance with the rules and regulations, as they exist now and as they may be amended or implemented in the future, of the Supplier, FDEP, the applicable water management district, and other governmental or regulatory agencies having jurisdiction.
8. The Owner shall have and maintain a Reduced Pressure Zone (RPZ) Principle back flow preventer at the point of service of the potable water system.

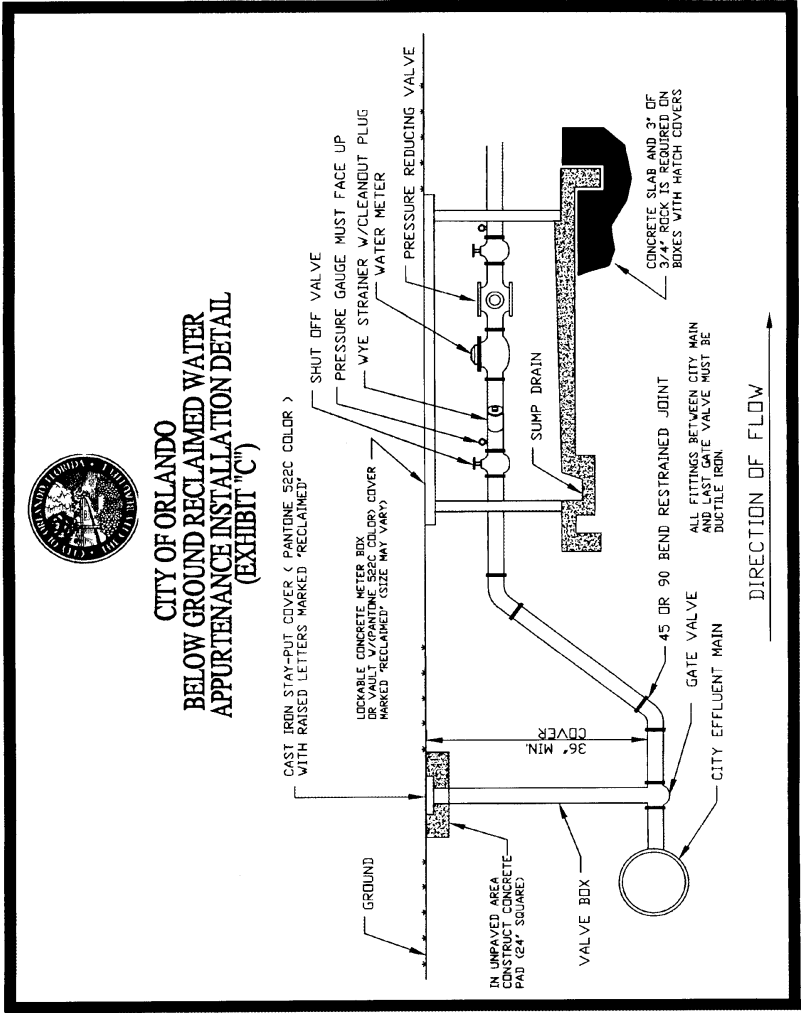


EXHIBIT "D"

Consent and Subordination

The undersigned hereby certifies that it is the holder of a mortgage, lien or other encumbrance upon certain land in Orange County, Florida, more particularly described as:

In consideration of the sum of Ten and No/100 Dollars (\$10.00) and other valuable consideration and by execution of this Consent and Subordination the undersigned consents to the Agreement for the Delivery and Use of Reclaimed Water ("Agreement") entered into by the City of Orlando as "Supplier," and _____, as "Owner," and agrees that its mortgage, lien, or other encumbrance, which is recorded in Official Records Book _____, Page _____, of the Public Records of Orange County, Florida, shall be subordinate and subject to the terms, covenants, conditions and agreements set forth in said Agreement.

IN WITNESS WHEREOF, the undersigned has caused these presents to be executed by its undersigned officer this ____ day of _____, 19 ____.

Witnesses: _____ MORTGAGEE:
1) _____ By: _____
Print Name: _____ Print Name: _____
Title: _____

2) _____
Print Name: _____

Petitions, Permits and Contracts

Conserv II
(continued from previous page)

STATE OF
COUNTY OF

PERSONALLY APPEARED before me, the undersigned authority,
well known to me or who has produced
as identification,
and known by me to be the
of the mortgagee named above, and
acknowledged before me that he/she executed the foregoing instrument on behalf of said
mortgagee as its true act and deed, and that he/she was duly authorized to do so.

WITNESS my hand and official seal this
day of
, 19.

NOTARY PUBLIC
Print Name:

My Commission Expires:

Manatee County
Medium Agricultural System
10MGD

AGREEMENT FOR THE DELIVERY AND USE
OF RECLAIMED IRRIGATION WATER

THIS AGREEMENT entered into between MANATEE COUNTY, a
political subdivision of the State of Florida, with a mailing
address of P.O. Box 1000, Bradenton, FL 34206, hereinafter called
"COUNTY", and
, with a mailing
address of
, a Florida
Corporation, hereinafter called "PROPERTY OWNER".

WITNESSETH:

WHEREAS, COUNTY maintains and operates a County-wide
Wastewater Collection and Treatment System which is capable of
producing reclaimed water which may be used for productive and
beneficial purposes for agricultural and urban irrigation in
accordance with local, state and federal guidelines; and,

WHEREAS, COUNTY agrees to deliver reclaimed water and PROPERTY
OWNER agrees to receive and beneficially use this reclaimed water
for the purposes set forth in this Agreement; and,

WHEREAS, local governments are encouraged to implement
programs for the use of reclaimed water by the State of Florida;
and,

WHEREAS, COUNTY is currently designated as part of a water use
caution area by the Southwest Florida Water Management District and
there is a recognized groundwater supply problem which will make it
difficult or impossible to obtain new or additional quantities of
groundwater; and,

WHEREAS, COUNTY has determined to assist its citizens who
utilize large quantities of groundwater by making available
reclaimed water as an alternative source of water supply; and

WHEREAS, COUNTY operates a reclaimed water program approved by
the Department of Environmental Protection.

NOW THEREFORE, based upon the foregoing, the parties agree to
the following terms and conditions:

1. TERM OF AGREEMENT, COSTS AND METERING

COUNTY shall deliver and PROPERTY OWNER shall accept and use
reclaimed water to fulfill their irrigation needs, produced by
COUNTY at the Southwest Regional Treatment Plant (SWRTP), Southeast
Regional Treatment Plant (SERTP), North Regional Treatment Plant
(NRTP) or other equivalent facilities unless the flow is
unavailable. Such water shall be delivered to location(s) at the
right-of-way (ROW) line for use on property, hereinafter the
"delivery point", as described in Exhibit "A". COUNTY shall
perform its obligations of delivery of reclaimed water and PROPERTY
OWNER shall perform its obligation of acceptance of such water as
herein provided.

- a) This Agreement shall be effective for a time period of
five (5) years ending on
- b) The connection cost, Monthly Retail Customer charge and
consumption charge shall be in accordance with the
Manatee County Rate Resolution R97-135, and are subject
to periodic revision as the Rate Resolution is modified,
except as specifically agreed to herein:

(1) The PROPERTY OWNER currently utilizes groundwater
for its irrigation needs in the amount of
million gallons a day. By execution of this
document, the PROPERTY OWNER transfers its right,
title and interest in its groundwater use to the

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(continued from previous page)

COUNTY in exchange for _____ million gallons of reclaimed water a day at a consumption charge of _____ per thousand gallons. The consumption charge of _____ per thousand gallons will remain in effect as long as the COUNTY can utilize the groundwater for its potable needs. The Southwest Florida Water Management District has proposed a method of obtaining a "Groundwater Withdrawal Credit Permit" for a supplier of reclaimed water who displaces groundwater usage. The parties acknowledge that the reason for a discounted consumption charge is based on the ability to use this existing permitted quantity of groundwater. Should a Groundwater Withdrawal Credit Permit be issued to the COUNTY, it shall be the property of the COUNTY and shall be irrevocable by the PROPERTY OWNER, during the period of this agreement, unless a permanent loss of the use of reclaimed water occurs. Until the Credit Permit is issued to the COUNTY, by SWFWMD, or another method of relinquishing the quantity of groundwater to the County occurs, all consumption of the reclaimed water will be based on _____ per thousand gallons, invoiced on a monthly basis. Any

- reclaimed water consumption which exceeds the amount of _____ million gallons per day will be charged at the rate of _____ per thousand gallons on a monthly basis.
- (2) The connection fee shall be in accordance with "Reclaimed Water Connection Fee" established in Manatee County Rate Resolution R97-135, Section 4.03, as may be amended.
 - (3) The Monthly Retail Customer charge shall be in accordance with the Reclaimed Water Monthly Retail Customer charge established in Manatee County Rate Resolution R97-135, Section 5.01, as may be amended.
 - (4) This Agreement is based on one (1) meter to serve PROPERTY OWNER. If additional meters are requested and installed to service the same PROPERTY OWNER, each meter installation shall be subject to the individual rates and charges delineated under paragraphs (1), (2) and (3) above.
 - (5) The PROPERTY OWNER shall be entitled to a credit for the water purchased between _____ and the execution of this agreement for the difference

- between the amount charged and the rates established pursuant to this agreement.
- (6) It is the intent of the PROPERTY OWNER and THE COUNTY that the groundwater permit for _____ remain as Standby Quantities for the use of the PROPERTY OWNER in the event of the temporary unavailability of reclaimed water. At all other times the groundwater quantities available under the PROPERTY OWNER'S water use permit shall be available for use by the COUNTY.
 - (7) The property owner acknowledges that the County has other large users of reclaimed water, which currently have contracts with the County. The County will supply its reclaimed water customers based on their contract priority and their beneficial use of the water should a shortfall of supply occur.
- 2. USE OF RECLAIMED WATER; RESPONSIBILITY FOR IRRIGATION SYSTEM**
- (a) PROPERTY OWNER shall use reclaimed water delivered by the COUNTY for irrigation or for other non-potable purposes in any manner determined by PROPERTY OWNER, except that use, application and discharge of reclaimed water shall comply with local, state, and federal regulations.

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(b) PROPERTY OWNER shall be solely responsible for the operation and maintenance of all portions of the distribution and irrigation system located within the subject property boundaries specified in Exhibit "A", attached herewith.

3. WATER QUALITY

COUNTY agrees that reclaimed water delivered under this Agreement shall meet or exceed the requirements of Chapter 62-610, Part III, Florida Administrative Code and the standards set forth in Exhibit "B".

4. VOLUME OF DELIVERY

The normal operating pressure range for the reclaimed water system is between 45 psi and 65 psi. The County will make every effort to deliver reclaimed water at a minimum pressure of 35 psi. Should the PROPERTY OWNER wish to alter the reclaimed water operating delivery pressure, it shall be the PROPERTY OWNER'S sole responsibility to furnish and install a pressure reducing valve or booster pump on the property side of the meter service. Reclaimed water shall be delivered by the COUNTY to only one delivery point as mutually determined by the COUNTY and the PROPERTY OWNER. PROPERTY OWNER will be responsible for distribution on its property beyond said point. PROPERTY OWNER hereby provides a license to the COUNTY to enter on PROPERTY OWNER'S property for the purposes of access to monitoring wells, for meter reading, for any required

maintenance, for inspection, and to determine compliance of the use of reclaimed water or the distribution system. The COUNTY will, at its expense, construct, operate, and maintain the transmission lines to the delivery point. PROPERTY OWNER shall not request more reclaimed water than can be beneficially used by the PROPERTY OWNER.

5. DELIVERY OF RECLAIMED WATER UNDER ADVERSE CONDITIONS

Unforeseen circumstances may necessitate modification of normal delivery of reclaimed water. If COUNTY'S transmission system or PROPERTY OWNER'S distribution system fails for reasons or events beyond either party's control; then, delivery of reclaimed water under this Agreement may be interrupted or limited in quantity. The COUNTY and PROPERTY OWNER shall make all reasonable efforts to make prompt repairs to its respective system. Each party shall be obligated to the other to provide immediate oral notice of such failures so that alternate systems may be put into operation as soon as possible. Nothing in this agreement shall require the interconnection of the SW RTP, SERTP or NRTP to provide additional flow to the PROPERTY OWNER.

6. TEMPORARY SUSPENSION OF DELIVERY

The COUNTY may suspend delivery of reclaimed water should the quality of the reclaimed water exceed any of the parameters for water quality shown on Exhibit B. Nothing in this Agreement shall

prevent the "PROPERTY OWNER" from keeping a permitted backup supply to replace this reclaimed water should it become unavailable for whatever reason.

7. OPERATION AND MAINTENANCE PRACTICES

PROPERTY OWNER will apply reclaimed water in accordance with all appropriate local, state, and federal rules and regulations. Irrigation practices are to be limited to those areas identified in Exhibit "A" of the Agreement.

Reclaimed water irrigation systems shall protect human health and the environment; which includes, but is not limited to, the following:

(a) The COUNTY shall provide to the PROPERTY OWNER two (2) Reclaimed Water advisory signs. The signs shall be installed and properly maintained by PROPERTY OWNER around sites utilizing reclaimed water to designate the nature of the water and its non-potability. The specific location, type, and number of signs (which may exceed the two signs provided by the County) shall be determined by the COUNTY in compliance with applicable rules and the following criteria:

- Property access points
- Along Road frontage
- Along Adjoining residential usage
- For (Spanish) speaking employees - Use sign in Spanish
- Employee staging areas
- For Golf Courses - Sign at first and tenth tee

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Any necessary replacement of signs will be at Property Owner's expense.

In addition, a notice depicting the Manatee County Reclaimed Water use requirements will be provided by the County and posted by the property owners in the club house or other general area for public viewing.

(b) PROPERTY OWNER will take reasonable precautions to clearly identify reclaimed water irrigation systems to prevent inadvertent human consumption.

(c) PROPERTY OWNER shall ensure that no cross-connections are made between the reclaimed water system and other water systems, which includes the installation of backflow prevention devices on the potable water system; and on existing wells that are to remain connected for either potable water usage or for irrigation system purposes. The installation of backflow devices shall adhere to the Manatee County Cross Connection and Backflow Ordinance R-87-125, as amended. The PROPERTY OWNER shall be responsible for purchasing and installing the required backflow preventing devices.

(d) PROPERTY OWNER shall take reasonable precautions to inform its employees, agents, residents, and invitees of the reclaimed water system, to prevent inadvertent human consumption. An information placard shall be provided by the COUNTY for the

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PROPERTY OWNER to be placed in a conspicuous place of general circulation, i.e. Golf Course Clubhouse lobby or common facility.

In addition, if applicable, the PROPERTY OWNER shall inform all existing residents and new residents regarding the proper use of reclaimed water.

(e) All costs for operating and maintaining PROPERTY OWNER's irrigation distribution system shall be paid by PROPERTY OWNER.

8. MONITORING

(a) The PROPERTY OWNER shall give its approval to COUNTY to conduct soil borings and locate monitoring wells on the property in areas agreeable to PROPERTY OWNER so as not to interfere with PROPERTY OWNER'S operations. These monitoring wells shall be installed and sampled at periodic intervals by the COUNTY, at its option.

(b) COUNTY shall be responsible for all permits to install monitoring wells and responsible for abandonment of the well should it no longer be necessary for monitoring.

9. EXCUSE FROM PERFORMANCE BY GOVERNMENTAL ACTS

If for any reason during the term of this Agreement, governmental agencies shall fail to issue necessary permits, grant necessary approvals, or shall require any change in the operation of the treatment, transmission and distribution systems or the application and use of reclaimed water by the PROPERTY OWNER, then

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to the extent that such requirements shall affect the ability of any party to perform any of the terms of this Agreement, the affected party shall be excused from performance thereof and this Agreement shall be amended by the parties hereto in conformity with such permits, approvals, or requirements. If continued performance of the Agreement is not possible, the Agreement shall be terminated.

10. TERMINATION OF AGREEMENT

The COUNTY shall have the right to terminate this Agreement upon thirty (30) days notice if PROPERTY OWNER revokes the COUNTY'S license providing entry on the property or violates the terms of this Agreement. Failure to exercise this right shall not constitute a waiver by the COUNTY of its right to terminate this Agreement upon subsequent breaches. During this thirty (30) day period, PROPERTY OWNER may petition the Board of County Commissioners for a hearing to provide evidence to the COUNTY as to why they could not perform. If such a petition is filed, termination of the Agreement cannot occur until the hearing is held before the Board of County Commissioners and a decision is rendered. The Board of County Commissioners shall decide whether PROPERTY OWNER has violated this Agreement. Should the Agreement be terminated by action of this paragraph, by expiration, or mutual agreement, PROPERTY OWNER grants the COUNTY access to the PROPERTY

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OWNER'S site to remove any improvements the COUNTY installed pursuant to this Agreement. The PROPERTY OWNER shall have the right to terminate this AGREEMENT upon thirty (30) days notice if the COUNTY materially breaches this AGREEMENT or if a permanent loss of the use of reclaimed water occurs.

11. DISCLAIMER OR REPRESENTATION AND WARRANTIES

COUNTY does not represent or warrant that the reclaimed water delivered shall increase the productivity of the land described in Exhibit "A" nor result in changes of any kind to the land, crops or vegetation.

12. NOTICES

All notices required or authorized under this Agreement shall be given in writing and shall be delivered by U.S. Mail or by hand delivery to the party or parties, addressed as follows:

Property Owner	Address
	City State Zip
Chairman Manatee County Board of County Commissioners	P.O. Box 1000 Bradenton, Florida 34206
with copy to:	
Director Manatee County Public Works Department	P.O. Box 1000 Bradenton, Florida 34206

13. INSPECTION

The COUNTY shall have the right when reasonably necessary to allow COUNTY employees or agents to enter upon the subject property to review and inspect PROPERTY OWNER'S operating practices, to inspect meters, irrigation equipment, monitoring wells, potential cross connections, flowage, and the like, as they relate to this Agreement.

14. TRANSFER OF RECLAIMED WATER

PROPERTY OWNER shall not sell, barter, trade or otherwise transfer reclaimed water to any other person or entity, after having initially received said reclaimed water from the COUNTY, without written authorization from the COUNTY.

15. HOLD HARMLESS

The PROPERTY OWNER shall hold the COUNTY, its agents, employees, assigns, contractors or subcontractors harmless for any damage caused by the COUNTY's inability to deliver water to the delivery point or for damage which occurs as a result of the quality of the reclaimed water so long as it meets the standards outlined in paragraph 3.

16. DISCLAIMER OF THIRD PARTY BENEFICIARIES

This Agreement is solely for the benefit of the parties hereto and no right or cause of action shall accrue to, by reason hereof, or for the benefit of any third party not a party hereto.

17. SEVERABILITY

If any part of this Agreement or any application thereof to any person or circumstance is declared invalid for any reason, then such part, section, subsection, or other portion, or the prescribed application thereof, shall be severable and the remaining provisions of this Agreement, and all applications thereof not having been declared invalid, shall remain in effect.

18. APPLICABLE LAW

This Agreement shall be construed according to the laws of Florida and any action regarding this Agreement shall be filed in the Twelfth Judicial Circuit in and for Manatee County.

19. EXHIBITS AND ADDENDUM

This Agreement incorporates the following exhibits and addendum which are specifically made a part hereof.

Exhibit "A" - Legal Description of Property and
Map of the Property
Exhibit "B" - Reclaimed Water Quality Parameters

THIS WRITING (with Exhibits "A" and "B") constitutes the entire Agreement between the parties and has been entered into voluntarily and with independent advice and legal counsel and has been executed by the authorized representative of each party on the date written

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(continued from previous page)

below. Modifications to and waivers of the provisions herein shall be made only in writing by the parties hereto.

SIGNED AND SEALED this _____ day of _____, 19____.

BOARD OF COUNTY COMMISSIONERS OF MANATEE COUNTY, FLORIDA

BY: _____ Chairman

ATTEST: R. B. SHORE Clerk of the Circuit Court

BY: _____ Authorized Signature

_____ Type Or Print Name

STATE OF FLORIDA
COUNTY OF MANATEE

Sworn to and subscribed to before me on _____ 1999, by _____ who is personally known to me or who produced _____ (type of identification) as identification.

Notary Public

Printed Name of Notary public

My Commission expires _____

MANATEE COUNTY PUBLIC WORKS DEPARTMENT
APPLICATION FOR RECLAIMED WATER AND SITE INSPECTION

NAME _____ Date Requested _____

SERVICE ADDRESS _____ Telephone # _____

CITY _____, FL ZIP _____ PROP AREA (_____ sq. ft.) (_____ acres)

PROPERTY DESCRIPTION: LOT _____ BLOCK _____ SUBDIVISION _____

SECTION _____ TOWNSHIP _____ RANGE _____
(Obtain information from tax bill or deed)

REQUESTED SERVICE SIZE & LOCATION: (Circle One)
5/8" 3/4" 1" 1 1/2" 2" 3" 4" 6" 8"

TYPE OF SERVICE REQUESTED:
☐ IRRIGATION ☐ OTHER (Explain)

(Sketch)
Show NORTH arrow & nearest intersection

I, the Applicant, have read and understand the County's Policies and Procedures for Reclaimed Water Service and agree to restrict use of reclaimed water for the purpose(s) described in this application. I understand that due to the chemical composition of reclaimed water, that it may not be compatible for irrigation of certain susceptible vegetation, and I agree that the County will not be held liable for damages that may occur to vegetation or for damages which may occur due to uses of reclaimed water for purposes not included in this application, and agree to defend and hold harmless the County from all claims and judgments arising therefrom against the County by any person.

Signed: _____ Date: _____

1. DO YOU WANT TO RECEIVE RECLAIMED WATER? YES _____ NO _____

2. DO YOU HAVE AN EXISTING IN GROUND IRRIGATION SYSTEM? YES _____ NO _____

3. DO YOU HAVE A BACKFLOW PREVENTER ON YOUR POTABLE WATER SUPPLY? YES _____ NO _____

4. DO YOU HAVE AN AUTOMATIC INSECTICIDE _____ OR FERTILIZATION UNIT _____ IN YOUR IRRIGATION SYSTEM? YES _____ NO _____

5. SOURCE OF EXISTING IRRIGATION WATER (check one)
SEPARATE IRRIGATION METER _____ GROUND WELL _____
PRINCIPAL POTABLE WATER LINE _____ LAKE (NO WELL) _____ NONE _____

a. IF GROUND WELL: PIPE SIZE _____ NO. OF PUMPS _____ PUMP SIZES _____

b. IF METERED, GIVE APPROX. VOLUME _____ GPD, ETC.

Inspection Report	Meter Required	Attended Seminar	Approvals
☐ Accepted ☐ Rejected	Yes No	Date: _____	Initials Date
Comments: _____			_____ _____ _____

MCPWD/RECLAIMED WATER FORM #94-1 (2/1/94)

THIS IS A CORRECTIVE DOCUMENT

PARAMETER LIMITS			
PARAMETER	UNIT	6 MO. RUNNING AVG.	MAXIMUM ALLOWABLE
		MAXIMUM ALLOWABLE	CONCENTRATIONS
Alkalinity (bicarbonate)	mg/l	180	225
Fluoride	mg/l	1.0	1.0
Chloride	mg/l	300	350
Nitrite	mg/l	1.0	2.0
Nitrate	mg/l	7.0	10.0
Ammonia Nitrogen	mg/l	8.0	10.0
Total Nitrogen	mg/l	15.0	20.0
Sulfate	mg/l	150	180
Total Phosphate	mg/l	2.0	2.5
Hardness	mg/l	400	700
Oil & Grease	mg/l	5.0	10.0
Turbidity	NTU	6.0	10.0
TDS	mg/l	900	110
TSS	mg/l	5.0	7.5
BOD	mg/l	4.5	7.0
Aluminum	ug/l	0.5	1.0
Antimony	ug/l	3.0	5.0
Arsenic	ug/l	5.0	10.0
Barium (total)	mg/l	0.005	0.02
Beryllium	ug/l	0.5	1.0
Cadmium	ug/l	1.0	10.0
Calcium	mg/l	60.0	80.0
Chromium	ug/l	3.0	10.0
Copper (total)	mg/l	0.1	0.3
Iron (total)	mg/l	1.0	5.0
Lead (total)	ug/l	3.0	5.0
Magnesium	mg/l	30.0	50.0
Manganese (total)	mg/l	5.0	10.0
Mercury	ug/l	0.2	0.4
Nickel (total)	mg/l	0.2	0.5
Potassium	mg/l	25.0	30.0
Selenium	ug/l	10.0	20.0
Sodium	mg/l	110	160
Vanadium (dissolved)	ug/l	2.0	10.0
Zinc (total)	mg/l	0.5	1.0
Boron	mg/l	0.75	1.0
Cobalt	mg/l	0.05	0.1
Lithium	mg/l	0.75	1.25
Molybdenum	mg/l	0.005	0.02
pH		5.0 - 8.5	5.0 - 9.0

EXHIBIT (B)

Petitions, Permits and Contracts

City of Plant City
Small Agricultural System
3MGD



CITY OF PLANT CITY

RECLAIMED WATER SERVICE



APPLICATION FOR RECLAIMED WATER SERVICE

NAME: _____ DATE: _____

PHONE NUMBERS: HOME _____ BUSINESS _____

SERVICE ADDRESS: _____

PROPERTY DESCRIPTION: LOT _____ BLOCK _____ SUBDIVISION _____

PROPERTY AREA: _____

INTENDED USE FOR RECLAIMED _____

☐ IRRIGATION

☐ INDUSTRIAL USE

☐ POND RECHARGE

☐ OTHER PLEASE SPECIFY _____

ESTIMATED USAGE: Average(gallons per day) _____ Maximum _____ GPM

SERVICE SIZE REQUESTED _____

LOCATION SERVICE CONNECTION _____

I, _____, have read and understand the City of Plant City's policy for Reclaimed Water Service. It is agreed that the City shall have the right to enter the premises at _____ to inspect the reclaimed water piping system and fittings, and to discontinue reclaimed water service should any infraction exist as described in this agreement. This _____ day of _____ 19 _____.

I, the Applicant have read and understand the City's Policies and Procedures for Reclaimed Water Service and agree to restrict use of reclaimed water to the purpose(s) described in this application. It is further agreed that the owner shall be responsible for the conduct of other occupant(s) of the aforementioned property. It is understood and agreed that the City may discontinue reclaimed water service due to an infraction of the City's Policies and Procedures and that such infraction(s) of the Policies and Procedures may result in civil or criminal prosecution, and/or discontinuation of the reclaimed water service. I understand that due to the chemical composition of reclaimed water, that it may not be compatible for irrigation of certain susceptible vegetation, and I agree that the City will not be held liable for damages that may occur to vegetation or damages which may occur due to uses of reclaimed water for purposes not included in this application, and agree to defend and hold harmless the City from all claims and judgments arising therefrom against the City by any person.

It is understood and agreed that the owner of the described premises shall be responsible for prompt payment to the City of Plant City, Florida for all city utilities furnished by the City to the described premises in accordance with Public Utilities Rules and Regulations.

It is further agreed that the City of Plant City shall have the right to enter the above premises to inspect the reclaimed water piping and fittings, including hose connections, and to discontinue City utilities for nonpayment of service charges, for tampering with the service (includes meter and appurtenances), for cross-connection with another service of water source, or for any other reason that may be detrimental to the City system.

SIGNED: _____ DATE: _____

APPLICANT

CITY MANAGER APPROVAL _____ DATE: _____

RECLAIMED WATER SUPPLY CONTRACT

THIS CONTRACT is entered into this ____ day of _____, _____, by and between the CITY OF PLANT CITY, a municipal corporation of the State of Florida ("CITY"), and _____ ("USER").

WITNESSETH:

WHEREAS, the CITY operates a publicly owned treatment works capable of producing reclaimed water, which is suitable for irrigation and other applications in accordance with local, state and federal guidelines;

WHEREAS, the CITY desires to supply reclaimed water to USER for reuse purposes;

WHEREAS, the USER has indicated to the CITY its willingness to receive reclaimed water;

WHEREAS, the CITY has agreed to supply reclaimed water to the USER, subject to the conditions contained hereinafter;

NOW, THEREFORE, in consideration of the foregoing premises, which shall be deemed an integral part of this Contract, and of the mutual covenants and agreements set forth in this Contract, the CITY and the USER, intending to be legally bound thereby, agree as follows:

1. DEFINITIONS. Certain terms having specific definitions are used in this Contract. These terms and their definitions are as follows:

1.1 Delivery Point. The point of connection to the Reclaimed Water System is the point of acceptance of the Reclaimed Water by the USER for the intended reuse. Delivery point is shown on the attached map.

- 1 -

1.2 Environmental Permits. All licenses, permits or other approvals from any government or governmental agency, whether federal, state or local, necessary or convenient for the use of the Reclaimed Water including but not limited to any construction or operation permit from the United States Environmental Protection Agency, the United States Army Corps of Engineers, the Florida Department of Environmental Protection, the Environmental Protection Commission of Hillsborough County, the Florida Department of Health and Rehabilitative Services, the Southwest Florida Water Management District and Hillsborough County.

1.3 Reuse Site. That real property on which the USER may choose to reuse the reclaimed water. Reuse site shown on attached map.

1.4 Reclaimed Water. The treated effluent produced by the CITY's wastewater treatment plant, which is transported by the CITY to the Delivery Point.

2. DELIVERY OF RECLAIMED WATER. Reclaimed Water shall be delivered by the CITY to the USER as follows:

2.1 Reclaimed Water Delivery by the CITY. The CITY intends to and will endeavor to maintain a continuous, uninterruptible delivery of reclaimed water to USER. The CITY will provide one point of delivery to the Reclaimed Water System for the USER. Reclaimed water delivery may be reduced, interrupted, or terminated by the CITY for any reason, not withstanding any provision herein to the contrary.

2.2 Reclaimed Water Acceptance by the USER. Reclaimed water is to be used for real property irrigation, the fire protection system, and public toilet flushing. Reclaimed water usage may be reduced or terminated by USER for any reason, not withstanding any provision herein to the contrary.

- 2 -

Petitions, Permits and Contracts

City of Plant City
(continued from previous page)

2.3 Reclaimed Water Quality. CITY shall achieve the following reclaimed water quality:

All reclaimed water delivered under this Agreement shall conform to the applicable water quality standards specified in Florida Administrative Code (FAC) Chapter 62-610, Part III; Reuse; Slow-Rate Land Application Systems, Public Access Areas, Residential Irrigation and Edible Crops and the permit issued by the Florida Department of Environmental Protection (FDEP) pursuant thereto reuse reclaimed water under this Agreement. CITY shall monitor water quality in accordance with said regulations and permit and will promptly notify USER when the reclaimed water does not meet the quality standards or has a significant potential of failing to meet the quality standards. Should USER desire to monitor water quality and upon USER’s written request, CITY shall grant USER reasonable access to its wastewater treatment plant for the collection of reclaimed water samples. CITY shall not be responsible for injury or damages incurred by USER, its employees, servants, representatives and agents while on CITY’s property unless same arises for CITY’s gross negligence.

2.4 User Charges. CITY agrees to deliver reclaimed water to USER. USER agrees to pay CITY per 1,000 gallons of reclaimed water utilized.

2.5 Delivery System Costs. The USER shall pay for all additional devices as required by CITY, such as, but not limited too, a cross connection and a metering device.

3. **ADDITIONAL REPRESENTATIONS AND WARRANTIES OF THE CITY.**
The CITY hereby represents and warrants to the USER as follows:

3.1 Reclaimed Water Monitoring. The CITY shall monitor the quantity and quality of Reclaimed Water delivered by it to the USER. The CITY shall install, operate, maintain, examine, test and service any such monitoring devices and equipment so as to ensure maximum accuracy. The

CITY shall maintain complete and accurate records of its Reclaimed Water measurements. The monitoring devices and records shall be available for inspection by the USER upon reasonable notice.

3.2 Operation and Maintenance of Delivery System. The CITY shall operate and maintain all portions of the delivery system up to the Delivery Point so as to fulfill its obligation under this Contract.

3.3 Environmental Permits. The CITY shall obtain and maintain any and all Environmental Permits necessary for the production of Reclaimed Water and its delivery to the Delivery Point.

3.4 Reuse Credits. The CITY, not USER, shall be the beneficiary of any reuse credits, relative to consumptive use permitting, that may be granted by the Southwest Florida Water Management District.

4. **ADDITIONAL REPRESENTATIONS AND WARRANTIES OF THE USER.**
The USER hereby represents and warrants to the CITY as of the date of this contract, as follows:

4.1 Ownership of Reuse Site. The USER owns fee simple interest in the Reuse Site, has good and marketable title to the Reuse Site. The USER shall provide the CITY with a construction and maintenance easement for all pipelines and appurtenances located on the USER property from the property line to the Delivery Point.

4.2 Use of the Reclaimed Water. The USER shall use the Reclaimed Water delivered by the CITY in accordance with all applicable federal, state and local regulations at the Reuse Site.

4.3 Operation and Maintenance of Distribution System. The USER shall construct, operate and maintain all portions of the on-site piping system which exists or which it creates located on the Reuse Site after the Delivery Point, so as to fulfill its obligations under this Contract.

4.4 Sale of Reclaimed Water. The USER shall not sell the Reclaimed Water to third parties.

5. **TRANSFER OF USER’S COMMITMENT.** The USER hereby covenants with the CITY as follows:

5.1 Sale of Reuse Site. The USER’s right to sell, transfer or encumber the Reuse Site shall not be restricted by this Contract. This contract may be assigned at the option of USER, upon sale or transfer of the Reuse Site provided that the intended use and associated charges comply with section 2.4 User Charges.

6. **DISCLAIMER OF WARRANTIES.** The CITY disclaims all warranties as follows:

6.1 Express Warranties. The CITY does not represent nor warrant that the Reclaimed Water delivered to the USER pursuant to this Contract shall increase the productivity or efficiency of the Reuse Site.

7. **ASSIGNMENT.** Except as otherwise specified in Section 5 of this Contract, no assignment, delegation, transfer or novation of this Contract or any part thereof shall be made, unless approved by both the CITY and the USER, which consent shall not be unreasonably withheld.

8. **NOTICES.** Any notices or other writings permitted or required to be delivered pursuant to this Contract shall be delivered to the CITY and to the USER at the following respective addresses:

CITY

CITY MANAGER
City of Plant City
P. O. Box C

USER

Petitions, Permits and Contracts

City of Plant City
(continued from previous page)

Plant City, Florida 33564-9003

with copy to:

Mr. Kenneth W. Buchman
City Attorney
212 North Collins Street
Plant City, Florida 33566

9. INSPECTION. The CITY shall have the right, upon reasonable notice to the USER, to enter the Reuse Site to review and inspect the USER's operating practices as they relate to this Contract. The CITY also reserves the right to inspect, evaluate and otherwise establish if the USER has complied with the terms and conditions of this Contract.

10. DISCLAIMER OF THIRD PARTY BENEFICIARIES. This Contract is solely for the benefit of the CITY and the USER, its successors or assigns, and no right or cause of action shall accrue upon or by reason hereof, or for the benefit of any other person.

11. AMENDMENT. This Contract may only be amended by a writing duly executed by the CITY and the USER or its successors or assigns.

12. CONSTRUCTION. This Contract shall be governed by and construed in accordance with the laws of the State of Florida.

13. SEVERABILITY. If any part, section, subsection or other portion of this Contract or any application thereof to any person or circumstances is declared void, unconstitutional or invalid for any reason, such part, section, subsection or other portion or the prescribed application thereof shall be severable, and the remaining provisions of the Contract and all applications thereof not having been declared void, unconstitutional or invalid shall remain in full force and effect. The CITY and the USER declare that no invalid or prescribed provision or application was an inducement to the

execution of this Contract, and that it would have executed this Contract regardless of the invalid or prescribed provision or application.

14. SUCCESSORS OR ASSIGNS. This Contract shall inure to the benefit of and shall be binding upon the CITY's and USER's successors or assigns.

15. DISPUTE RESOLUTION. In the event that a dispute arises regarding the rights or responsibilities of either the CITY or the USER under this Agreement, the CITY and the USER hereby agree to attempt to resolve the dispute amicably rather than by litigation; provided, however, nothing contained herein shall be construed to prevent either party from initiating legal action in court.

16. ENTIRE AGREEMENT. This Contract constitutes the entire agreement between the CITY and the USER has been entered into voluntarily and with independent advice and legal counsel and has been executed by authorized representatives of each party on the date first written above.

17. RECORDING. This Contract shall be recorded in the public records of Hillsborough County, Florida.

18. TERM. The Term of this Contract shall begin on the date of execution and continue thereafter for a period of five (5) years after the date of execution.

IN WITNESS WHEREOF, the CITY and the USER have executed this Contract on _____, 1997.

WITNESSES: BY: _____

(Print) (Print)
as
(Print) (Address)

STATE OF FLORIDA
COUNTY OF HILLSBOROUGH

The foregoing instrument was acknowledged before me this _____ day of _____ by _____ is personally known to me or provided Florida Driver's License as identification.

Notary Public
State of Florida
My commission expires: _____
Commission No. _____

Witnesses: CITY OF PLANT CITY, FLORIDA
a Municipal Corporation
By: Randy Larson
(Print)

Public Information and Notification

City of St. Petersburg
Large Public Access System
20MGD



Quick Facts About Services and Rates

- Water
- Wastewater
- Garbage
- Reclaimed Water
- Storm Water Management Utility
- Deposits



Revised November 1996



Reclaimed Water

**EFFECTIVE JANUARY 1, 1990
PER MONTH
(Not available in all areas)**

Unmetered service
One acre or less \$ 10.36
Each addl. acre \$ 5.92
Metered service
Per 1,000 gallons \$.30
(\$10.36 minimum)
Plus 10% tax within city limits.

Rates outside city limits are 125% of city rates.



Storm Water Management Utility

**EFFECTIVE JANUARY 1, 1990
PER MONTH
(Within city limits only)**

Single Family Residence \$ 4.50
All Other Properties are charged a multiple of the
above rate based on the amount of each property's
impervious surface.



Deposits

EFFECTIVE SEPTEMBER 22, 1994

New customers of the City's utility system and some existing customers are required to pay a deposit before service will be provided. The deposit amount will vary depending upon water meter size, number of living units, and types of services required. After 25 months, the City will refund single family residential deposits the deposit, providing the customer has not been in arrears, paid with a check refused by a bank, been disconnected for non-payment, tampered with the meter, or used services in a fraudulent or unauthorized manner. Deposits on multi-family and commercial accounts shall be held for the life of the account.

Interest on deposits is accrued monthly and credited once a year to the customer's account.

DEPOSITS AMOUNTS:

Water:

Meter Size	Single-family Residential	Multi-family Residential and Commercial
5/8 x 3/4".....	\$ 25.00	\$ 35.00 per living unit
1".....	\$ 60.00	\$ 85.00 per account
1 1/2".....	\$ 130.00	\$ 185.00 per account

Sewer:

Meter Size	Single-family Residential	Multi-family Residential and Commercial
5/8 x 3/4".....	\$ 35.00	\$ 50.00 per living unit
1".....	\$ 90.00	\$ 125.00 per account
1 1/2".....	\$ 200.00	\$ 280.00 per account

For larger meter sizes, call Utility Accounts at 893-7341.

Sanitation:

Curbside or alley service:
Single-family residential \$35.00
Multi-family residential \$35.00 per living unit
Commercial and Special Residential Service:
Two times the estimated monthly charge for the type of service to be provided.

Reclaimed Water:

Two times the flat monthly charge based on the amount of acreage served

Storm Water Management Utility:

Two times the flat monthly charge based on the property being served.
All of the above deposits for service outside St. Petersburg city limits are 125% of city rates.

Other Information

HOW TO OBTAIN SERVICE

A new customer to the City of St. Petersburg's utilities should contact the City's Utility Accounts Division at 325 Central Avenue, phone 893-7341. A refundable deposit must be paid before service can be furnished. In addition, a \$15 non-refundable new account charge will be applied to the first bill provided the property is already connected to the City's water system.

If the water meter to the premises has been removed, the property owner is responsible for paying a \$180 reactivation fee.

If service to the premises requires installation of a new tap, then the City's fee for a new connection will apply. Connection fees vary depending on meter size and location. Contact Utility Accounts at 893-7341 for more information.

STANDBY SERVICE

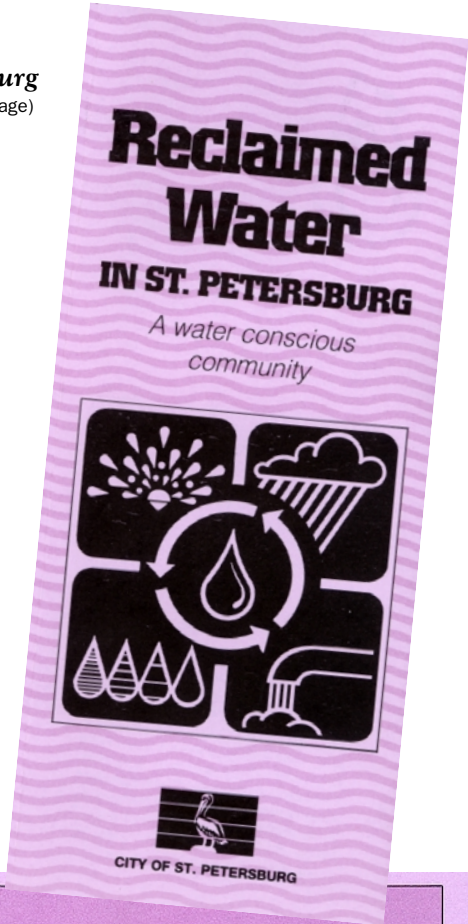
Seasonal residents who are leaving the City for more than two months may want to have their account put in standby status. Providing no water is used on the premises, only minimum water and sewer charges, a storm water management utility charge, and a standby sanitation charge will be applied monthly to their accounts. Standby status is available for full billing periods only.

A customer may request standby status by calling Utility Accounts at 893-7341. A \$5 service charge will apply each time an account enters or leaves standby status.

Owners of rental property can also take advantage of standby service to minimize utility charges while their property is vacant. For more information on standby service, please call Utility Accounts at 893-7341.

Public Information and Notification

City of St. Petersburg
(continued from previous page)



A FEW WATERING TIPS

How much water is enough? Efficient watering wets only the turfgrass root zone, does not saturate the soil and does not run off. Here's a simple watering schedule: apply 1/2 to 3/4 inches of water 2 or 3 times weekly in the summer and every 10 to 14 days in the winter. If it rains, sprinkling should be suspended according to rainfall amount.

Check the Vital Signs

Your lawn won't speak, but will give off silent screams when it has too much or too little water. When out in the yard, check the vital signs. Look for areas that show signs of:

- excessive moisture
- standing water, or
- yellowing of leaf areas

One way to reduce root rot is to reduce the amount of water you apply during rainy periods, permitting the soil to dry.

Excessive rainfall, combined with a heavy watering schedule, can displace the small pockets of air between the soil particles, not allowing excess water to penetrate the soil surface. If these conditions exist for an extended time, plant roots remove all oxygen from the water in the soil and the roots cannot breathe.

The root dies from lack of oxygen, leading to fungal root rot which eventually kills the plant.

Resume Watering When the lawn begins to show these signs of stress:

- slight wilting
- leaf blades folded in half or curled
- footprints remaining in the grass longer, or
- gray spots in the lawn

Mulching and Landscaping

The use of mulch, rock and ground cover can reduce your usable outdoor living space as well as add beauty and character to the landscape. Careful selection and proper application of these materials can:

- reduce maintenance time
- conserve water, and
- provide color contrast to landscaping



Protecting Our Ground Water Resources

Urbanization in and around environmentally sensitive ground water basins makes it necessary to pursue stricter water withdrawal policies. As the demand for fresh water increases in Florida and around the globe, the challenge to develop alternative water sources to satisfy future needs has become critical.

Developing Alternatives

Over the past two decades, science and technology have been striving to develop economical ways to approach fresh water scarcity issues. Reclamation and reuse is now recognized as an outstanding trendsetter in water management and a proven method of conserving fresh water supplies.

What is Reclaimed Water?

Reclaimed water is the final product of a multiple-stage advanced treatment program which eliminates pathogens (solids, organics and viruses) and still retains nitrogen and phosphorus elements that work as fertilizers to enhance ornamental plant and turf grass growth. This treatment process produces a water product ideal for lawn sprinkling, but not suitable for human or animal consumption, primarily due to the chemical salts (or nutrients) that remain in the water.

ected with little or no modifications. Reclaimed water is a nutrient-rich by-product of a biological treatment process. Due to its origin and composition, the use of reclaimed water is restricted by federal, state and local ordinances.

Uses NOT Permitted

- NO Consumption of reclaimed water. (Human or animal)
- NO Connection to a dwelling for toilet flushing or other household use.
- NO Inter-connection with another water source.
- NO Sprinkling of edible crops. (Gardens)
- NO Use for body-contact recreation.
- NO Use through hose bibs, faucets, quick couplers or hoses, etc.
- NO Filling of swimming pools.
- NO Sharing a common reclaimed service or connection between properties.
- NO Augmenting lake or pond levels.
- NO Filling of decorative pools or fountains.
- NO Supplying air cooling systems. (A/C units)
- NO Washing of equipment such as cars, boats, driveways, structures, etc.

Permitting for Special Uses

To use reclaimed water for purposes other than sprinkling of landscape, plants or turf grass, you must submit a request for evaluation and approval to: Reclaimed Water Section, Public Utilities Department, 290 16th Street N., St. Petersburg, FL 33705.

Nutrient Elements That Remain in Reclaimed Water

(pH levels range from 6.8 to 7.2).
Aluminum • Chromium • Lead • Molybdenum • Zinc • Phosphorus • Boron • Copper • Magnesium • Nickel • Sodium • Calcium • Iron • Manganese • Potassium • Nitrogen

Where Our Water Goes

Water-use studies reveal that in many communities, up to 50 percent of the water that flows through our water meters each month is used to maintain landscape and turf grass. This trend is changing in St. Petersburg since much of the demand for irrigation water is satisfied with the reclaimed water program.

Reuse Conserves Our Water Resources

Since the mid-1980's, demand for the nutrient-rich reclaimed water has greatly increased, while annual demand for potable water in St. Petersburg has remained steady – thanks to the availability of reclaimed water.

Things You Should Know About Using Reclaimed Water

Sprinkling with reclaimed water is not much different from sprinkling with well or tap water. Please keep in mind that this resource is regulated. To take advantage of the program, you must already have, or be willing to install a sprinkler system. Existing sprinkler systems can be con-

Approved Cam Lock Hose Connection Assembly

Up to two (2) Cam Lock Hose Connection Assemblies will be allowed per single family property. The Assembly shall be purchased through the Field Operations Reclaimed Water Office. The Assembly and Apurtenances have been color coded and meet all State and Local Codes. All Assemblies will be installed below grade and inspected by a qualified Reclaimed Water Inspector.

Following the Rules

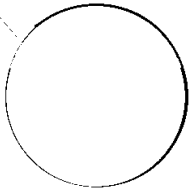
Where reclaimed water is used, all of the "USES NOT PERMITTED" are violations of city ordinance or policies and are subject to financial penalties as well as interruption or loss of service. Violations will be enforced.

Reclaimed Water is a Resource - Use it Wisely!

Sprinkling with reclaimed water is a smart alternative to using well water or potable water. Proper use by all customers will help ensure the safe and continued availability of this resource.

For More Information

on availability, uses, costs and plant selections, please call or write to:
City of St. Petersburg
RECLAIMED WATER SECTION
Public Utilities Department
290 16th Street N.
St. Petersburg, FL 33705
(813) 892-5111



CITY OF ST. PETERSBURG
Reclaimed Water and
Cross Connection Control Program

Address _____ File# _____

- | | |
|---|---------------------------|
| 1. ___ Initial Inspection | 5. ___ Customer request |
| 2. ___ Final Inspection | 6. ___ Re-Inspection |
| 3. ___ Spot Inspection | 7. ___ Customer Complaint |
| 4. ___ Request Lockoff | 8. ___ Unlock and Turn on |
| 9. ___ Unable to complete the inspection due to limited access of the property. Please call: (813) 892-5111 to schedule a time to complete this required inspection within 10 working days of this notice, to avoid any interruption in your reclaimed water service. Your assistance in this matter will be greatly appreciated. | |

INSPECTION REPORT

Active Account	Yes	No	Ready - to - serve	Yes	No
Sprinkler System	Yes	No	Hose Bibb(s)	Yes	No
Cross Connection	Yes	No	Private Valve	Yes	No
Illegal Connection	Yes	No	Multi Connection	Yes	No
Cooling Tower(s)	Yes	No	Residential A/C	Yes	No
Property Posted	Yes	No	Type Posting		
Other, explain					

Curb Color Coded	Yes	No	Re-Mark Curb	Yes	No
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WATER SAMPLING

Water Sample(s)	Yes	No	Number	1	2	3	4
Field Evaluation	Yes	No	Number	1	2	3	4
Sample(s) Health Dept.	Yes	No	Number	1	2	3	4
Sample(s) City Lab	Yes	No	Number	1	2	3	4
Results Water Analysis Chloride :							
Results Water Analysis Chlorine :							

CROSS CONNECTION CONTROL EVALUATION

Type Check Valve	Size	Manufacture			
Test	Check One	Check two	Rebuild	Replace	

CODE VIOLATION(S) YES NO

ILLEGAL
We have found a violation of City Code , Section _____
_____ on your property involving reclaimed water.
For your own safety and that of public health, please contact _____ at _____
for more information. Thank You.

FIELD INSPECTOR _____

Date _____ Time _____

Public Information and Notification

City of Largo
Medium Public Access System
7MGD

Dear Resident:

Reclaimed water for irrigation is now available in your neighborhood.

The City of Largo will provide Residential customers a 50% discount on the connection fee for connection to the Reclaimed Water System within 90 days of this notice.

Please read the attached brochure for information on the Reclaimed Water System including fees and how to obtain service.

Thank you
City of Largo
Environmental Services Department

NOTICE

RECLAIMED WATER SERVICE
BOX LOCATIONS HAVE BEEN
MARKED ON YOUR CURB.
THE PURPLE PAINT STRIPE
DENOTES WHERE RECLAIMED
WATER SERVICE WILL BE
PROVIDED TO YOUR PROPERTY.

IF YOU HAVE ANY QUESTIONS
PLEASE CALL

THE CITY OF LARGO
RECLAIMED WATER OFFICE
586-7417





LARGO RECLAIMED WATER NEWSLETTER

A WATER CONSERVATION PROJECT

ISSUE I

1997



GARDENING TIPS

During the summer rainy season (June-Sept.) lawns need only occasional supplemental watering. Please adjust your irrigation timers.



DID YOU KNOW?

Largo’s reclaimed water system is nicknamed “Sparkling Water System” Because Largo Reclaimed Water is crystal clear and does not stain or smell.



CONSTRUCTION UPDATE

Largo Reclaimed Water is now available in the following subdivisions and areas: El De Oro East, Brookside, Northwest Largo, Del Robles, Keene Park, Lake Palms, Venetian Gardens, El De Oro West, Acacia, Carlton Estates, Kensington Oaks, and the Anona Heights area.

Construction has started on Largo’s 10 million gallon reclaimed water storage facility. This new tank and pumping station will enable Largo to expand reclaimed water service to new areas.



KIDS CORNER

Reclaimed Reggie says
“Plants use reclaimed water but people Should Never Drink It!”





WATER FACTS

An average of only 10 inches (18.5%) of the rain Florida receives each year becomes part of the underground water supply.

FOR INFORMATION ON
LARGO RECLAIMED WATER
CALL 587-6718



PRINTED ON RECYCLED PAPER

Public Information and Notification

City of Largo
(continued from previous page)

CITY OF LARGO
ENVIRONMENTAL SERVICES DEPARTMENT

RECLAIMED WATER PROGRAM
RECLAIMED WATER LEAK CONTROL

Date / / Time:
Name and Telephone Number of Person Reporting Leak:
Address of Leak:
Homeowners Name and Permit Number:

Homeowners Problems:
[] Leaking Gate Valve:
[] Broken PVC Pipe on Sprinkler System:
[] Over Watering (please adjust timer)
[] Other
[] Homeowner's Gate Valve Off/On. (circle one)
[] City's Reclaimed Water Curb Stop Valve Off/On. (circle one)

Please call (813) 587-6718, Ext 4111 if there are any questions, also contact our office when repairs are complete.

FIELD INSPECTOR:
DATE: TIME:

CITY OF LARGO
ENVIRONMENTAL SERVICES DEPARTMENT

Reclaimed Water and
Cross Connection Control Program

PURPOSE
1. Initial Inspection
2. Final Inspection
3. Spot Inspection
4. Request Lockoff
9. Unable to complete the inspection do to limited access of the property.
10. Please call: (813) 587-6718 to schedule a time to complete this required inspection within 10 working days of this notice.

INSPECTION REPORT
Active Account Yes No
Sprinkler System Yes No
Cross Connection Yes No
Illegal Connection Yes No
Run/Off Overspray Yes No
Property Posted Yes No
Address
Homeowners Name and Permit #
Other Explain
Curb Color Coded Yes No
Re-Mark Curb Yes No

CROSS CONNECTION CONTROL EVALUATION
Backflow Preventor Installed On Potable System Yes No

CODE VIOLATION (S)
Yes No Remarks:
FIELD INSPECTOR
Date Time



THE CITY OF LARGO
"RECLAIMED WATER" PROGRAM
P.O. BOX 296
LARGO, FL 33779-0296

PLACE
STAMP
HERE

and drinking water. In addition, reclaimed water is odorless and will not stain concrete, unlike well water supplies.

Third, irrigating with reclaimed water helps you save the environment, by reducing the amount of wastewater discharge to rivers and oceans; and through recharging the ground water supply.

HOW DO YOU GET RESIDENTIAL RECLAIMED WATER SERVICE?

There are five (5) easy steps to obtain reclaimed water service for irrigation (once service lines are installed in your area).

To participate in the "Reclaimed Water" program

1. Call, write or visit the Engineering Division, City Hall 225 1st Avenue S.W. Largo, FL 33770 (813) 587-6713 (8-12) (1-4) Monday - Friday

2. Receive an information package including a reclaimed water application and policies and regulations.

3. Fill out application, pay connection fee and return to the Engineering Division.

4. Complete service connection installation and arrange for a Reclaimed Water inspection by contacting City of Largo Engineering Division, (813) 587-6713 (8-12) (1-4) Monday - Friday.

5. Obtain reclaimed water service upon correction of any deficiencies and passing final inspection.

For Commercial Reclaimed Service Please Contact:

Reclaimed Water Coordinator
"Reclaimed Water" Program
City of Largo
P.O. Box 296
Largo, FL 33779-0296
(813) 587-6718, Extension 4111

USE IT AGAIN FLORIDA!

Save With
Reclaimed Water



City of Largo
Environmental Services Department
"Reclaimed Water" Program

WHAT IS THE "RECLAIMED WATER" PROGRAM?
The "Reclaimed Water" program is a service from from the City of Largo's Environmental Services Department. This program will provide safe nutrient rich reclaimed water to utility customers for irrigation.

WHAT IS RECLAIMED WATER?
Reclaimed water is wastewater that has been treated and transformed into a product that meets standards normally applied to drinking water. The reclaimed water will be delivered to homes and businesses through an underground distribution system entirely separate from the drinking water.

WHY RECLAIMED WATER?
When various engineering studies showed that more than 50% of the drinking water used in then State of Florida was for irrigation purposes, City officials recognized that water conservation was of utmost importance. Rapid growth in Florida was putting pressure on a finite resource, water.

The encouragement and promotion of water conservation and use of reclaimed water are State objectives. Water reuse in Florida is not optional anymore. We can't afford to use our water just once.

Connecting to the "Reclaimed Water" system will allow you to be a practicing conservationist of an important resource. Conserving water and preserving the local environment show foresight in planning for a better tomorrow.

USE IT AGAIN FLORIDA! This is what the City of Largo's "Reclaimed Water" system is all about.

HOW CAN RECLAIMED WATER BE USED?
In the City of Largo, reclaimed water will primarily be used for irrigation for green space on residential properties, commercial businesses, parks and schools. It is not appropriate for the City's reclaimed water to be used for drinking and bathing water or filling swimming pools. It may not be piped into any building used for residential purposes.

Irrigation of edible crops that will be peeled, skinned, cooked or thermally processed before consumption is allowed. All other must be irrigated indirectly.

You must disconnect your irrigation system from your present water supply source before connecting to reclaimed water.

IS RECLAIMED WATER SAFE?
Reclaimed water is the result of wastewater which has been highly treated and disinfected. In meeting its required unrestricted public access quality, reclaimed water must meet strict standards of quality established by The Florida Department of Environmental Protection (FDEP). The "Reclaimed Water" system is monitored 24 hours a day by City personnel to ensure consistent quality standards are met. Testing is performed at the laboratory on site at the plant, as well as by independent research centers.

Physical contact with the water is not known to have any negative effects. Therefore, being accidentally splashed or sprayed by reclaimed water should not cause reason for alarm. However, remember that: 1) reclaimed water is primarily used for irrigation and is not for consumption or sanitary purposes; 2) irrigation should occur at a time when human or animal contact is least likely; 3) the effectiveness of any program relies on people and equipment.

HOW DOES RECLAIMED WATER BENEFIT YOU
The City of Largo's "Reclaimed Water" system helps you in many ways.

First, by reducing current and future demand for fresh water used for irrigation, reclaimed water helps you save water, while conserving the Floridan Aquifer, our primary fresh water source.

Second, reclaimed water helps you save money. After the initial investment for an irrigation system, application/connection fee and back-flow prevention device, the charge for reclaimed water should significantly reduce your monthly water bills. Additional savings come from reducing a property's fertilizer needs, due to reclaimed waters' high nutrient content (supplemental fertilizing will still be needed); and by delaying for many years the costs to develop new fresh water sources and to upgrade wastewater treatment facilities.

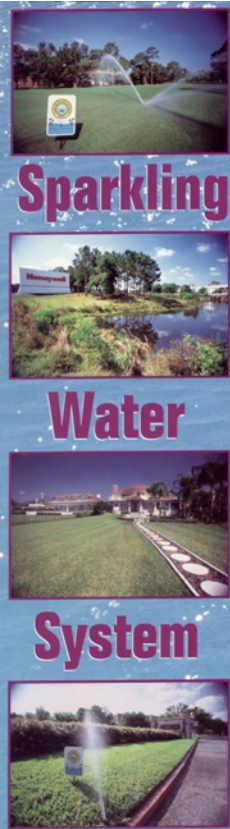
Well water irrigators will save on pump costs for operation, maintenance and repair. Under drought conditions, reclaimed water irrigation is not subject to water restrictions which apply to well

YES! I would like more information on participation in the city of Largo's "Reclaimed Water" Program!

Name:
Address:
Zip
Home Telephone
Work Telephone

Public Information and Notification

City of Largo
(continued from previous page)

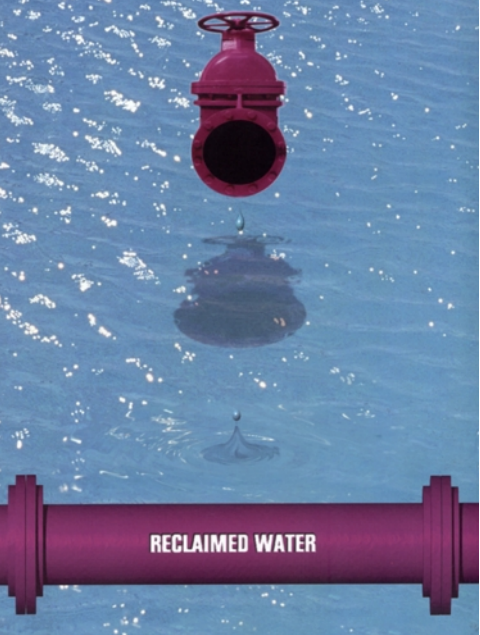


**Sparkling
Water
System**

CITY OF LARGO



LARGO RECLAIMED WATER
P.O. Box 296
Largo, FL 33779-0296
813-587-6718, Extension 4111



RECLAIMED WATER

A FINITE RESOURCE

Water is without a doubt, our most vital natural resource. Without it, life is impossible. But fresh, clean water is not so plentiful. Since water is a finite resource with infinite demands on its application in daily life, Florida has embarked on the use of reclaimed water over the last 20 years. There are now over 350 reclaimed water projects in Florida.

About 80 percent of the more than 14 million people in Florida live near the coast, and population growth continues to center on coastal areas. Near the coast, ground water supplies are limited, shallow and vulnerable to overdraft, contamination and salt water intrusion.

While beneficial to Florida's economy, growth is taking a toll on the state's natural resources. The effect of the population boom on our primary source of drinking water — the Floridan Aquifer — is substantial. The time has come to take very seriously the value of water as our renewable gift and to do whatever is necessary to conserve this precious resource on which our lives depend.

As Florida's population continues to grow by about 6,000 persons each week, the demand for fresh, clean water also increases — a fact which will lead to more widespread, severe and prolonged water shortages. In addition, Florida does not have large, rapidly flowing streams to assimilate large discharges of wastewater generated by its growing population. In a state that depends upon the high quality of its surface waters for an important tourist industry, and as a drawing card for growth, development and a high quality of life, protection of these surface waters is critical.

To protect these water resources, advanced treatment facilities have been built to handle increasing volumes of wastewater and to produce reclaimed water. With increasingly limited opportunities to discharge treated wastewater into surface waters, more and more communities are turning to the use of reclaimed water as a way to manage their waste effluent.

Against this backdrop, use of reclaimed water and water conservation have become the cornerstones of Florida's long-term water resources management strategy. We can conserve water supplies and recharge aquifers by using reclaimed water.



Reclaimed Water Flows Through This Fountain in Carillon Business Park

Largo Central Park is a Customer

Cover Photos (Top to Bottom):
Equinox Senior Center
Honeywell and Home Shopping Network
Residential Customers
Carillon Business Park

THE LARGO STORY

Reclaimed water, which meets over 95 percent of the standards for drinking water, is the product of Largo's advanced wastewater treatment facility. It has no smell, it does not stain and it has a very low salt content. The city's reclaimed water is crystal clear and contains micronutrients which enhance some of its uses especially in irrigation of residential and commercial green areas.

Reuse involves taking what we once considered to be wastewater, giving it this advanced degree of treatment and using the resulting high-quality reclaimed water for new and beneficial uses. The extensive (tertiary) treatment and disinfection that the wastewater receives, ensure that public health and environmental quality are always protected.

The City of Largo is committed to implementing programs which preserve and improve the quality of life of its residents. The city's "Sparkling Water System" is a water conservation and reuse plan that features a reclaimed water system that conserves drinking water, improves the quality of Tampa Bay, and at the same time, replenishes water being withdrawn from the Floridan Aquifer. Largo's reclaimed water system was designed by Quentin L. Hampton Associates, Inc., consulting engineers of Port Orange, Florida.

In the mid-1980s, studies showed that more than 50 percent of the drinking water used by utility customers was for irrigation purposes. Largo officials recognized that water conservation steps were imperative. So with cooperative funding from the Southwest Florida Water Management District (SWFWMD), the city developed its "Sparkling Water System" to supply high-quality reclaimed water.

Largo's reclaimed water currently is delivered to customers through a system covering a 40-square-mile service area. The system is entirely separate from the drinking water system. The majority of the reclaimed water is used for irrigation by residences, businesses and area golf courses.

In addition, there are several major commercial customers that use the city's "Sparkling Water" for process water, including Pinellas County Resource Recovery Plant (RESCO), Honeywell and Home Shopping Network.

Since the "Sparkling Water System" became operational in the mid 1980s, Largo has substantially decreased drinking water use in its service areas.

As one of the most progressive reclaimed water systems in the nation, the Largo "Sparkling Water" program was presented with an EXSL award for significant achievement and innovation by the National Center for Public Productivity (NCPP), as well as being recognized as the best reclaimed water system in Florida by the American Water Works Association. For the NCPP award, Largo's system was chosen from over 300 national entries. Because of this recognition, Largo's program will be used as a national model for other cities to follow. Upon completion, Largo's reclaimed water system will be one of the most comprehensive programs of its kind in the United States.



Lab Technician Using Gas Analyser



This Storage Tank at The Southwest Facility Holds Over 5 Million Gallons of Largo Reclaimed Water



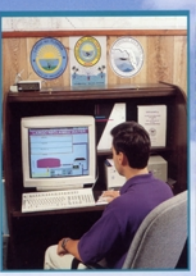
Southwest Pumping Facility



East Bay Country Club



The Home Shopping Network



Largo's Reclaimed Water System is Reclaimed and Treated by Southwest Water Management District

RECLAIMED WATER

Reclaimed water benefits the people and community of Largo in several ways. Reclaimed water reduces demands on drinking water. It also reduces discharges to vulnerable surface waters. The use of reclaimed water also recharges ground water. It allows multiple uses of land for agriculture and can provide aesthetic value and enhancement of property values.

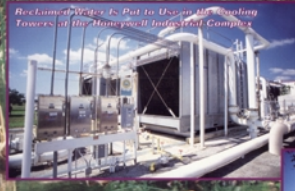
Reclaimed water contains the nutrients nitrogen and phosphorus. Drinking water and well water do not. Largo reclaimed water also has a very low salt content (does not harm foliage). Reclaimed water is delivered at a higher pressure (80 - 110 psi) than drinking or well water, thereby providing better spray coverage during irrigation.

Data show that drinking water consumption and consequently water bills, per residence, are lowered by an average of 170,000 gallons per year (or approximately \$340.00) due to discontinued use of drinking water for irrigation. Additional savings come from reducing a property's fertilizer needs, due to reclaimed water's nutrient content. Supplemental fertilizing will still be needed, however.

Where water use restrictions are in effect, reclaimed water for irrigation is allowed even during severe dry spells. Another plus is that reclaimed water does not cause iron stains on homes, driveways, walls, sidewalks or patios. Two of the best reasons for using reclaimed water are the knowledge that you are a conservationist, committed to preserving this valuable natural resource, and by using reclaimed water, homeowners and businesses help preserve the ecological integrity of Tampa Bay by reducing the discharge of effluent into this fragile ecosystem.

Through its "Sparkling Water System", the City of Largo promotes conservation of water — a precious and endangered resource — our renewable gift.

Interested in learning more about Largo's Reclaimed Water Program? Call or write to the address on the back of this brochure.



Reclaimed Water, Put to Use in the Landscaping of the Home Shopping Network



Water Assembly in the View of Largo

MAKES SENSE



Exposing the Groundwater for Contaminated Reclaimed Water Usage

Public Information and Notification

City of Largo
(continued from previous page)

LARGO PUBLIC NOTIFICATION

PRIOR TO CONSTRUCTION

1. Reclaimed water surveys mailed to target areas.
2. Reclaimed water articles in local and neighborhood newspapers.
3. Reclaimed water presentations to homeowner associations.
4. Reclaimed water newsletter mailed alone or in utility bill to target areas.
5. Door to door solicitation in the target areas.
6. Reclaimed water signs posted announcing future service.
7. Reclaimed water reminder post cards mailed to target areas.
8. Reclaimed water door hangers posted.

DURING CONSTRUCTION

1. Contractor door hangers posted (*prior to excavation*).
2. Reclaimed water articles in local and neighborhood newspapers.
3. Reclaimed water project signs posted.
4. Reclaimed water presentations on local cable television programs.
5. Reclaimed water door hangers posted (*prior to excavation*).

AFTER PROJECT COMPLETION

1. Reclaimed water service available signs posted
2. Reclaimed water articles in local and neighborhood newspapers.
3. Local television news segments.
4. Reclaimed water presentations on local cable television programs.
5. Reclaimed water flyers mailed in utility bills.
6. Reclaimed water door hangers posted.
7. Door to door notification of service availability.
8. Reclaimed water presentations at community events.
9. Reclaimed water brochures delivered door to door.



SPARKLING WATER SYSTEM A RECLAIMED WATER PROJECT



RECLAIMED WATER USE EXPANDS

The City of Largo's reclaimed water system is the result of Cooperative Funding by the Southwest Florida Water Management District and The City of Largo. We are happy to announce that through this partnership, reclaimed water is now available in many areas of Largo.

Largo's state of the art reclaimed system consists of many miles of pipe, a 10 million, a 5 million and a 3 million gallon storage tank and three automated pumping stations.

WATER CONSERVATION: PRIORITY #1

Increasing population, water wasting habits and below average rainfall have taken their toll on Florida's fresh water supply. Water levels in the Floridan Aquifer have dropped so low that permanent water restrictions have been mandated by the Southwest Florida Water Management District. Water is a finite resource. It is precious and it must be conserved.

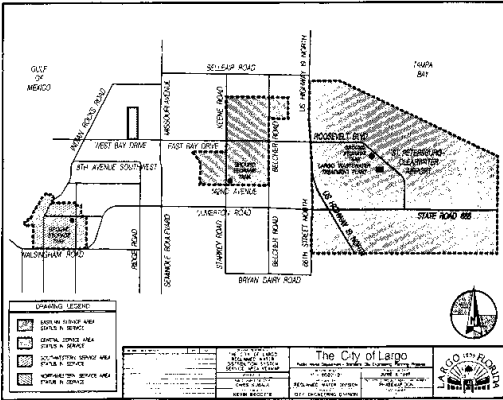
The City of Largo's solution to the water conservation problem involves using an alternate source of water for non-essential purposes such as irrigation. The City's reclaimed water system conserves drinking water, decreases effluent discharge into Tampa Bay and replenishes water being withdrawn from the Floridan Aquifer. At completion, the Sparkling Water system will be one of the most comprehensive reclaimed water systems of its kind in the nation.

WHEN WILL RECLAIMED WATER BE AVAILABLE IN MY AREA?

There are many phases of the installation of the reclaimed water distribution system. Availability of service will depend on the area where your property is located. Refer to the map for areas where reclaimed water service is currently available.

THINGS YOU SHOULD KNOW ABOUT USING RECLAIMED WATER

Sprinkling with reclaimed water is not much different from sprinkling with well or tap water. Please keep in mind that this resource is regulated. To take advantage of the program, you must have an in-ground irrigation system consisting of a sprinkler system or locking hose bibb assembly or both. Existing sprinkler systems can be connected with little or no modifications. The City of Largo's reclaimed water is compatible with most plants and vegetation. Reclaimed water pressure averages between 80-90 psi. Reclaimed water is a nutrient rich by-product of a biological treatment process. Due to its origin and composition, the use of reclaimed water is regulated by federal, state and local ordinances.



USES NOT PERMITTED

- NO consumption of reclaimed water (human or animal)
- NO connection to a dwelling for toilet flushing or other household use
- NO inter-connection with another water source
- NO direct sprinkling of vegetable gardens (bubbler or drip irrigation is allowed)
- NO use for body-contact recreation
- NO filling of swimming pools
- NO sharing a common reclaimed service or connection between properties
- NO augmenting lake or pond levels
- NO supplying air cooling systems (a/c units)
- NO washing of equipment such as cars, boats, driveways, structures, etc.

RECLAIMED WATER IS A RESOURCE . . . USE IT WISELY!

Sprinkling with reclaimed water is a smart alternative to using well water or tap water. Proper use by all customers will ensure the safe and continued availability of this resource.

"Protect and Reuse Water".
For a Better Tomorrow.

FOR MORE INFORMATION
Please call or write:
City of Largo
RECLAIMED WATER OFFICE
P.O. Box 286
Largo, FL 33779-0296
587-6718

Public Information and Notification

Sarasota County

Small Public Access System
5MGD

Reclaimed Water for Irrigation User's Guide

What is reclaimed water?

When wastewater is processed at a modern waste treatment plant the water which comes from the treatment process is normally of a very high quality. This quality level is monitored continuously by the plant operator and by the county and the state. The water supplied for reuse through irrigation systems must meet the specifications of the county and state for this purpose. This water has been supplied to golf courses, parks and other public access areas for many years. It is also now being made available to individual private homes in order to save the homeowner from the expense of using potable water for irrigation and to avoid the proliferation of small private wells in the area.

What are the benefits of using reclaimed water?

The benefits to the homeowner are mainly found in terms of cost savings since the reclaimed water is most often a replacement for potable water, which is becoming increasingly expensive. For the providers of drinking water, such as the county, the benefits come in terms of taking the irrigation water load off their central water treatment plant and thereby freeing plant treatment capacity to serve additional potable water demand or allowing for the delay in the construction of additional capacity.

Sarasota County is in an area designated as a Water Use Caution Area which means that there is a concerted effort being made on all fronts to conserve groundwater resources so that they will be available in the future to service growth in the area and to keep water from being rationed or otherwise restricted. In addition, the preservation of the groundwater aquifers helps to keep saltwater from intruding into the fresh water sources upon which we depend for our drinking water.

What are the restrictions on the use of reclaimed water?

While reclaimed water is perfectly safe and adequate for many uses there are some uses for which it is not approved. Primarily these are uses where the water would or could be ingested. For this reason the water is not to be used for drinking water, to fill swimming pools, or for connections above ground where a hose might be connected and thereby give access to this water to children or to others who might not be aware that this is not drinking water.

Reclaimed water is approved for connection only to in-ground irrigation systems and/or hose bibs which are below ground and secured from casual usage. In addition, the system must be connected to the irrigation system in such a way that it cannot be cross-connected to the home's indoor water system. These restrictions on usage are built into the connection when the reclaimed water system is installed to your home and you should be sure that no system alterations are made which override these built-in safeguards.

Who owns and manages the reclaimed water system?

Reclaimed water is delivered to your homeowners association from the Central County Utilities treatment plant and received through a single master meter by the homeowners association. The distribution of this water within the development area where you live is managed and controlled by your homeowners association. They maintain and own the distribution system. Central County Utilities has an obligation to deliver water of the specified quality to the association but does not have an obligation to deliver any certain quantity of water to them during any particular period. The reason for this is that Central County Utilities has only minimal control over the amount of water they receive for processing and therefore limited control over the amount of water it can disburse to its reuse water outlets. The amount of wastewater treated by the Central County Utilities plant varies throughout the year as does the demand for reclaimed water from the treatment plant. Central County Utilities has made a very large investment in storage facilities to allow the utility to provide reclaimed water during the seasons when it is required but the timing of these requirements and the availability of resources is far from a perfect match. The utility makes every effort not to promise more reuse water than can be reliably delivered.

What if I do not wish to use reclaimed water for irrigation?

Aside from the fact that the use of reclaimed water for irrigation is very desirable from a conservation standpoint, the connection of homes to such a system is much less expensive when they are first constructed and your developer may insist that this connection is made and included in the cost of your home. Once such a connection is made, the economics for using reclaimed water are very persuasive. These economics and the permitting by the various regulatory agencies involved in allocating water within the area are probably going to make it prohibitive to use any other source of water for irrigation. Of course, it is possible to design lawns and plantings which do not require irrigation and, in this case, there may not be any need for a connection to the reclaimed water system.

SARASOTA COUNTY UTILITIES
DEPARTMENT



PUBLIC NOTICE TO REUSE CUSTOMERS

What's Happening?

Recent dry weather conditions are causing extreme demand on our reuse system.

What is Utilities Doing About It?

In an effort to serve you during extreme dry weather conditions, at the end of April the Utilities Department shut-down the reclaimed water supply to golf courses located within the Central County service area.

This means the daily reuse flow is reserved for our non-golf course users that have no other source of irrigation. This will continue until our typical wet weather season resumes.

What can you do?

Please irrigate your lawn and landscape at the recommended ½ inch per application, twice per week, during this dry period. By conserving water resources, you will be helping to provide an adequate reclaimed water supply for you and your neighbors. Watering restrictions allow all addresses ending in odd numbers to water on Wednesday and Sunday; even addresses may water on Tuesday and Saturday. Irrigation is not allowed from 10 a.m to 4 p.m. Your assistance is needed and appreciated.

What is the long-term solution?

The Utilities Department currently has several projects scheduled to be completed over the next year. This will provide additional flows to the reuse system. We do not expect to have these problems by the next dry weather season.

If you would like to speak to a representative of the Utilities Department contact Lori Dull, Reuse Water Coordinator 316-1526

SARASOTA COUNTY
UTILITIES
DEPARTMENT



PUBLIC NOTICE TO REUSE CUSTOMERS

Update on Reuse

Continuing dry weather conditions are causing extreme demand on our reuse system. Recently we asked you to limit irrigation of lawn and landscape to twice a week. Watering restrictions allow all addresses ending in:

- **Odd numbers to water on Wednesday and Sunday**
- **Even numbers to water on Tuesday and Saturday**

We thank all of you who have complied with this request. However, we need everyone to cooperate during this extended dry spell.

Voluntary compliance by all neighbors will help ensure that there are supplies for everyone. Sufficient reclaimed water is available provided you abide by these watering guidelines.

If all homeowners follow these guidelines, it will not be necessary to increase conservation measures, such as limiting the availability of water by rotating the supply among customers.

Questions? Call the Sarasota County Utilities Customer Service 378-6859

Public Information and Notification

Conserv II
Large Agricultural System
28MGD

City of Orlando's

WATER CONSERV II

Water Reclamation Facility



SERVING ORLANDO WITH INNOVATION, RESPONSIVENESS
KNOWLEDGE, COURTESY & PROFESSIONALISM.

Facility Overview

Description of the Water Conserv II Facility

Introduction

The Water Conserv II (WCII) Water Reclamation Facility provides service to a majority of the southwest section of Orlando. WCII has a design capacity of 25 million gallons per day (mgd) and is designed to service a population of approximately 250,000 people. This volume of flow is equal to processing about 454,500 55 gallon drums every day! The WCII facility was built to protect the Central Florida environment, especially in Orange County, with its "Zero Discharge" policy requiring effluent reuse/recharge. The highly treated effluent is pumped nearly 20 miles to Southwest Orange and East Lake Counties for irrigation of 10,000 acres of citrus groves, the Orange County National Golf Center, and recharge of the Floridan aquifer through a series of Rapid Infiltration Basins. The benefit of the Water Conserv II plant, as well as each of the City of Orlando's Water Reclamation facilities, is equal to its goal ... to preserve the environment and to protect public health. This is also in harmony with the City of Orlando's mission ... "Serving Orlando with Innovation, Responsiveness, Knowledge, Courtesy and Professionalism."

The facility's design incorporates an advanced secondary treatment process, energy conservation, resource recovery, odor control, computerized process control and effluent reuse/recharge.

Water Conserv II is designated by the Florida Department of Environmental Protection as a Class A, Level 1 facility. The main liquid process stream includes influent pumping, screenings and grit removal, primary clarification, activated sludge process with fine bubble diffusion, secondary clarification, effluent filtration, high level disinfection with chlorine, reuse water transmission pumping, and flow measurement at various locations throughout the facility. The main solids process stream includes sludge thickening by gravity belt thickener, sludge conditioning/stabilization by anaerobic digestion, sludge dewatering by belt filter presses, and hauling of dewatered sludge to land application sites.

... Page 1

The treatment facility incorporates several unique features that are summarized below:

- The facility has two identical treatment trains that consist of screenings and grit removal, primary sedimentation, activated sludge with fine bubble aeration allowing for carbonaceous BOD removal, nitrification and partial denitrification, and secondary clarification. The effluent is filtered and chlorinated prior to being pumped to the distribution center for reuse by citrus irrigation.
- A co-generation system produces electricity from gas powered generators by utilizing methane gas from the anaerobic digestion process. Hot water from the cooling jackets of the engine-generators is recovered and used to heat the anaerobic digesters.
- The primary clarifiers and effluent equalization tanks are covered to control odors. Odorous air is drawn from within the domes of the primary clarifiers and serves as the air supply for the aeration blowers. The air from the blowers is diffused via fine bubble diffusers in the aeration tanks.
- The plant process control system features local manual control, a central control station and satellite control stations for monitoring, data logging and computerized process control for various areas of the plant. Monitoring information is displayed on screens in the Operations Control Room.

Facility Flow Pattern Description

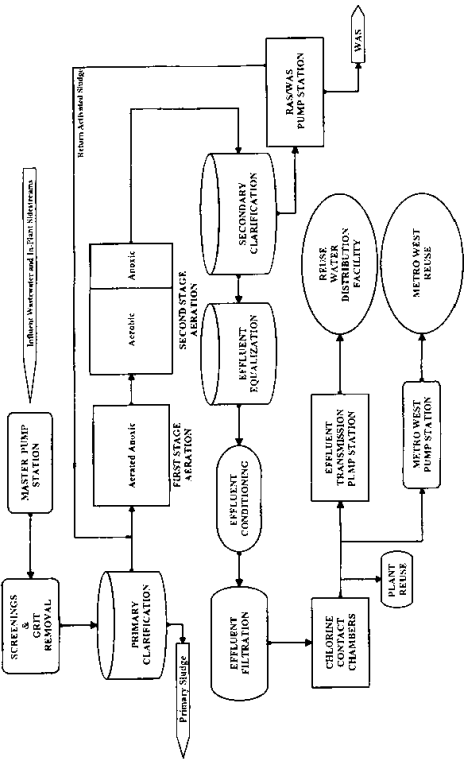
The Water Conserv II Water Reclamation Facility has a design capacity of 25 mgd, and, as of 1998, treats an average daily flow of approximately 13 to 15 mgd. The basic flow patterns for liquid and solids treatment are identified in the next few pages:

Liquid Flow Stream

Two gravity mains and two force mains are joined together and enter one common wet well at the master pump station. All of the in-plant recycle flows (sidestreams) are combined into the gravity main. In this manner, all flow enters the master pump station wet well. The Master Pump Station is designed with five high capacity pumps powered by variable speed VFD drives. The master pump station discharges into a common inlet forebay at the preliminary treatment structure.

... Page 2

WATER CONSERV II WATER RECLAMATION FACILITY Liquid Treatment Conceptual Flow Pattern



... Page 3

Public Information and Notification

Conserv II

(continued from previous page)

From here, the influent flow is split with slide gates to separate preliminary treatment systems. Each north and south system includes a Parkson bar/filter screen, a manual bar screen, a Pista grit chamber and a grit removal screw. Grit and screenings are stored in dumpsters for disposal in an approved landfill. Leaving the preliminary treatment structure, the flow remains totally separate through the north and south plants until the secondary clarifier effluent is combined prior to effluent filtration.

Flow from each preliminary treatment outlet is measured as it passes the magnetic flow meters before entering the primary treatment system. Each primary treatment system has a domed primary clarifier with primary sludge pumps, scum removal system with a common rotary drum for grease removal (the rotary drum filtrate is returned to the plant headworks - master pump station wet well), and an odor control system by means of aeration blowers. Primary effluent mixed with secondary clarifier RAS flows to the north or south bank of aeration tanks. The north and south banks are comprised of five, rectangular, plug flow aeration tanks with fine bubble dome diffusers. The north bank has aeration tanks 1, 3, 5, 7, and 9; the south bank has aeration tanks 2, 4, 6, 8, and 10. The aeration banks can be interconnected at the inlet mixing structure of the first stage aeration tanks. The inlet air to four centrifugal Hoffman blowers originates from inside the domed primary clarifiers. The air is then supplied to the fine bubble diffusers in each aeration tank. Each aeration tank is equipped with four diffuser droplegs with isolation valves. This design allows for operator control of dissolved oxygen at various portions of the aeration tank. By regulating the individual dropleg valves, aerobic and/or anoxic environments can be created to provide significant levels of nitrification and denitrification in the aeration tanks. Each aeration tank outlet includes continuous monitoring of dissolved oxygen.

Aeration effluent mixed liquor is combined into common channels, separate for the north and south banks, and flows into a segmented mixed liquor splitter box. From here, the north side mixed liquor is split between secondary clarifiers 1 and 3, and the south side mixed liquor is split between secondary clarifiers 2 and 4. The clarifier splitter box can be interconnected to combine both the north and south mixed liquor from both aeration banks.

Each secondary clarifier is 120' diameter, center feed, peripheral launder with sludge collection & removal through 12 draft tubes. RAS from the north side clarifiers flows by gravity over an adjustable weir gate and then into the north RAS wet well; RAS from the south side clarifiers flows by gravity over another adjustable weir gate and then into the south RAS wet well. Weir gate adjustability is used to control the flow of RAS from each bank of secondary clarifiers. Each RAS wet well has three RAS pumps with 2-speed motors (a total of six RAS pumps). The north RAS is metered with a sonic flow meter and returned to the head of the north bank

... Page 4

of aeration tanks; the south RAS is metered with another sonic flow meter and returned to the head of the south bank of aeration tanks. The RAS can be interconnected to combine all RAS flow into either or both RAS wet wells; the discharge of the RAS pumps can also be interconnected to supply RAS to either bank of aeration tanks.

All secondary clarifier effluent is combined and flows by gravity to the IPS (Intermediate Pump Station) wet well, where it is either stored in the EQ (Equalization) tanks, and/or applied onto the effluent filters. Flow to be stored for equalization of filter loading/effluent pumping is pumped into the EQ tanks with variable speed EQ Pumps. Flow to be applied to the filters is pumped with variable speed Transfer Pumps. Before the flow is applied to the effluent filters, it first passes through flash mixing and flocculation stages designed to achieve phosphorus removal. Currently, no chemicals other than chlorine is used in this process.

There are six dual-media, dual-automatic backwash carriage rapid gravity ABW filters. Spent backwash water is returned, via the plant drain system, to the plant headworks Master Pump Station.

Several filtration system locations are continuously monitored with turbidity analyzers: common filtration inlet, filtration outlet for each filter, and common filtration outlet.

Filtration effluent passes through two chlorine contact chambers and is chlorinated to achieve disinfection. The final effluent flow is continuously monitored for turbidity and total chlorine residual. From the contact chambers, the effluent flows by gravity to the TPS (Transmission Pump Station) wet well where it is pumped 25 miles to the Reuse Distribution Facilities, in Winter Garden, for citrus irrigation, irrigation of the Orange County National Golf Center, and recharge of the Floridan aquifer through Rapid Infiltration Basins. A portion of the effluent is also pumped to the Metro West reuse irrigation system.

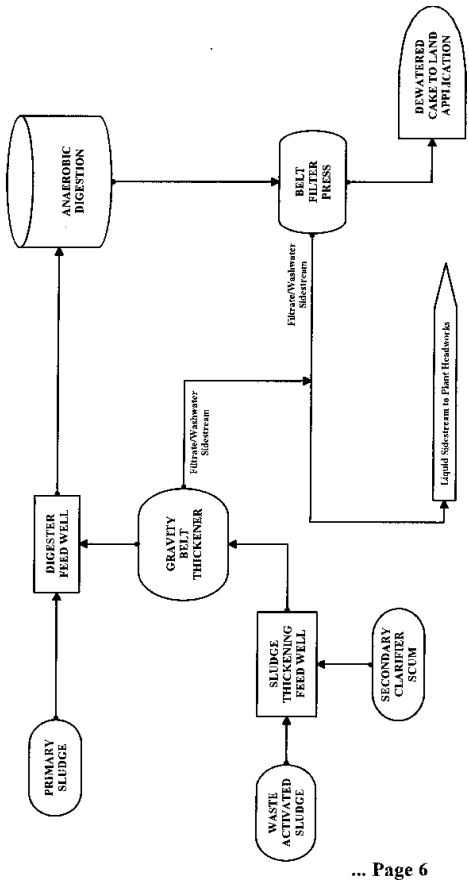
Sludge Treatment Processes

Primary sludge is pre-thickened in the primary clarifiers and pumped to the digester feed well where it is combined with thickened WAS. There are three positive displacement primary sludge pumps controlled through an adjustable, automatic counter and timer system. This combined sludge flow is metered with a sonic flow meter and pumped directly into the primary anaerobic digesters.

Waste activated sludge is removed from the RAS wet well by three centrifugal WAS pumps and discharged into the sludge thickening feed well. WAS can also be pumped to the inlet of the primary clarifiers for co-settling with the primary sludge. The WAS pumps are controlled with an

... Page 5

WATER CONSERV II WATER RECLAMATION FACILITY Solids Handling Conceptual Flow Pattern



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adjustable, automatic timer system. Three thickener feed pumps draw from the thickening feed wet well and deliver the WAS to the sludge thickening system, where it is first conditioned with polymer, and then thickened on two gravity belt thickeners. Washwater for belt cleaning utilizes plant water supplied to separate booster pumps located at each belt thickener unit.

The combined sludge is conditioned/stabilized in the anaerobic digestion system within the mesophilic temperature range of about 95 to 98°F. Sludge is transferred from the three primary digesters into the fourth sludge storage/gas holding tank. Low pressure digester gas is supplied to four high pressure gas compressors. The compressed gas is returned to the primary digesters for mixing of the tank contents via gas mixing guns. Each primary digester has four gas mixing guns with internal heat exchangers. Hot water is supplied to the digester heat exchangers from the Energy Recovery System.

Digested sludge is withdrawn from the sludge storage/gas holding tank with four sludge dewatering feed pumps. The digested sludge is conditioned with polymer and then dewatered with four belt filter presses.

All plant sidestreams, spent backwash water from the ABW filters, filtrate and washwater from the gravity belt thickeners and belt filter press system is returned to the plant headworks via the plant drain system and the Master Pump Station.

Dewatered sludge cake is hauled off-site and beneficially applied to agricultural land complying with all regulations and requirements for Class B residuals.

Facility Support Systems

The Water Conserv II Facility has various support systems, including the Plant Water Pumping Station, the Chlorination System, the Emergency Power System and the Energy Recovery System.

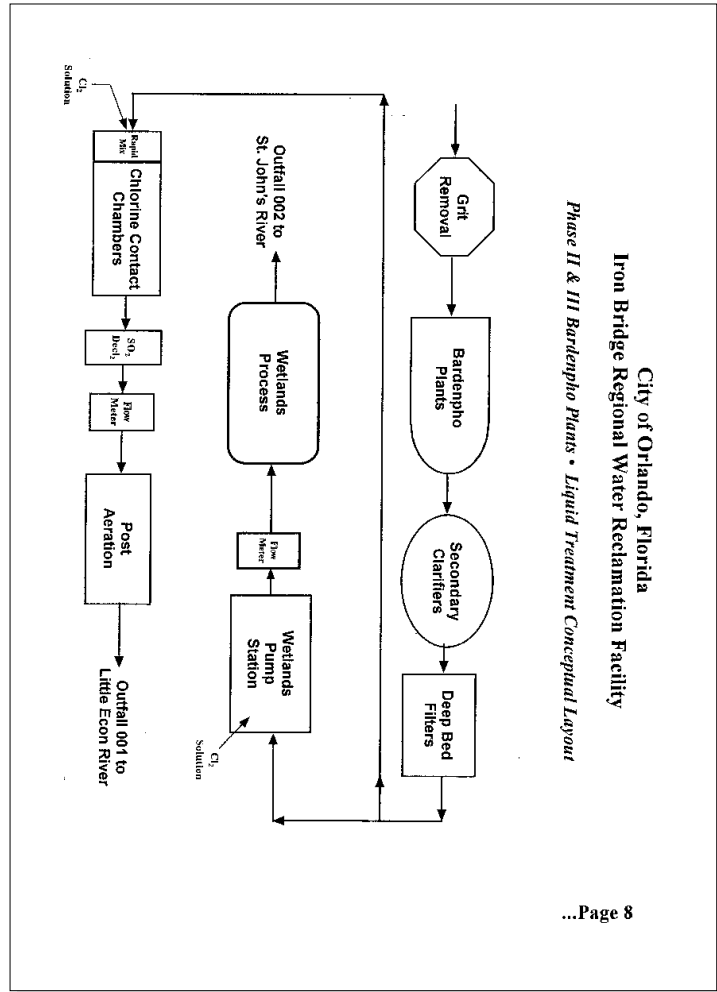
Plant Water Pumping System

The Plant Water Pumping System has four vertical turbine pumps with multiple-stage impellers. These pumps deliver plant water to every location

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Fermentation
Raw wastewater mixed with RAS from the clarifiers enters the fermentation basin from the splitter box. The RAS mixed with the raw wastewater produces fermentation conditions, under which the microorganisms in the system release stored phosphorus. Microorganisms consistently exposed to such conditions developed the ability to store greater than normal amounts of phosphorus when later reintroduced to aerobic conditions. The fermentation basins use mechanical mixers to gently maintain solids in suspension without dissolving any oxygen.

First Anoxic
Flow from the fermentation basin enters the nitrate-rich first anoxic basin where it is combined with internally recirculated mixed liquor from the aerobic (nitrification) basin. The nitrates produced in the nitrification basin are contacted with a high BOD load contained in the recycled sludge and raw wastewater. In the absence of oxygen, the bacteria use the incoming BOD as a carbon source and the oxygen available from nitrate to accomplish biological denitrification. Mixing is again provided to keep solids in suspension, prevent oxygen dissolution, and continue to maintain biological activity.

Aerobic
Flow from the first anoxic basin enters the aerobic basin (oxidation ditch), which is configured similar to a race track, where sufficient oxygen is provided to remove BOD not removed in the 1st anoxic basin, and to accomplish nitrification (bio-oxidation of ammonia to nitrate). At the same time, the microorganisms developed in the fermentation stage undergo a "luxury uptake" of phosphorus. The stored phosphorus is removed from the system when sludge is wasted from the Bardenpho process. Two-speed mechanical aerators (two for each basin) maintain aerobic conditions and provide mixing. Wastewater leaves the aerobic basin over adjustable effluent weirs that are used to control the D.O. concentration in the nitrification basin.

Second Anoxic
Mixed liquor leaving the aerobic/nitrification basin enters the second anoxic basin. The second anoxic basin is provided to reduce nitrate to levels of 0.5 to 1.5 mg/l. Mechanical mixing is provided in this basin; oxygen dissolution is prevented.

Reaeration
Mixed liquor from the second anoxic basin enters the reaeration basin where oxygen is added to prevent re-release of phosphorus. Additional phosphorus uptake, nitrogen gas stripping, and additional nitrification may also occur in this basin. Coarse bubble diffused aeration is used to maintain aerobic conditions.

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Mixed liquor from the reaeration basin discharges to the appropriate Bardenpho Alum Mix Box. Alum is added to the mix box based on the soluble phosphorus concentration in the clarifier effluent. Alum addition may be required in order to remove residual phosphorus that cannot be removed by luxury uptake in the biological process.

Secondary Clarifiers

Mixed liquor from the Alum Mix Box discharges to the clarifier influent Splitter Box, where the mixed liquor is then distributed to the secondary clarifiers. The clarifiers are center feed peripheral draw units with suction withdrawal mechanisms for sludge removal. Sludge is withdrawn from the clarifiers at a rate controlled by individual telescoping valves and discharged to RAS pump stations. Pumps in the wet wells return the settled solids to the raw influent line entering the fermentation basins of the Bardenpho process trains.

Sludge is wasted from the system by waste activated sludge (WAS) pumps located in the RAS pump station wet wells. The sludge from both wet wells is wasted in a common header to the sludge holdings tanks. Scum collected by rotating arms on the clarifiers is withdrawn by pneumatic scum ejectors. The captured scum is discharged with the WAS to the sludge holding tanks.

Effluent Filtration

Treated effluent from the secondary clarifiers flows by gravity to the deep bed filter (DBF) splitter box. A weir gate in the splitter box allows flow from the Bardenpho system clarifiers to be applied to either the Deep Bed filters, or the ABW filters.

Solids removed by the DBF's are backwashed from the media and discharged to the recycle backwash pump station. The recycle backwash pump station returns the solids to the RBC pretreatment structure. Effluent from the filters mixes with the effluent from the ABW filters and discharges to either the chlorine contact chambers, or the Wetlands Pump Station.

The dechlorinated effluent leaving the contact chambers passes through the post aeration basins before entering the final discharge channel to the river.

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Sludge Handling and Stabilization

Sludge produced in the operation of the primary clarifiers, the RBC system and the Bardenpho process are stabilized in anaerobic digesters. The anaerobic digesters are the third distinct biological process at the plant and being anaerobic versus aerobic or anoxic require completely different operating procedures.

In normal circumstances the system is operated as follows:

- Primary sludge is pumped to the digesters.
- RBC sludge is pumped to either of two RBC sludge holding tanks, then to the gravity belt thickeners, and then to the digesters.
- Bardenpho sludge is pumped to either of two nutrient sludge holding tanks, then to the gravity belt thickeners, and then to the digesters

The digesters are used to stabilize the sludge by removing residual organic matter, reducing the volatile solids concentration and reducing the number of pathogens contained in the sludge.

The digested sludge is removed from the system and disposed of through land application. The system is equipped to dewater digested sludge, with belt filter presses, for disposal when wet weather prevents land spreading of liquid sludge. All filtrates and decants from the sludge handling system are returned to the Phase I RBC system.

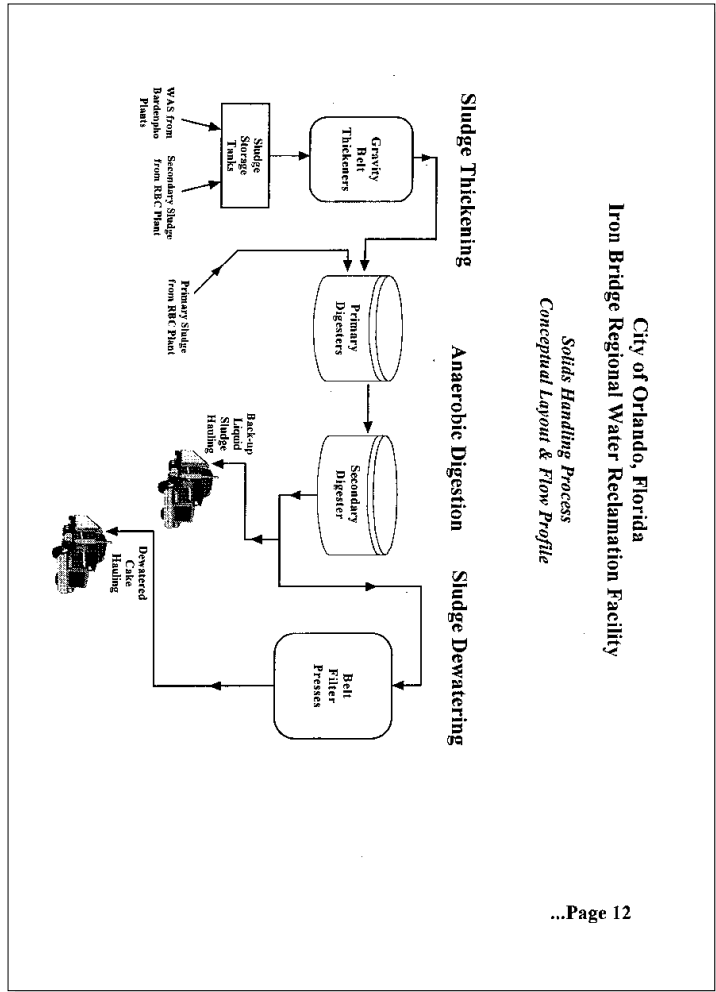
Effluent Release

The Iron Bridge Facility has two effluent release locations: the Little Econ River, and the constructed wetlands. Both of these discharges are governed under the Environmental Protection Agency (EPA) and the Department of Environmental Protection (DEP) permits. Up to 28 mgd can be discharged to the Little Econ River, and 20 mgd to the constructed wetlands, as long as the discharge limits are met. These limits are summarized in the following table:

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Parameter	Limit / Range
Permit Limitations - Little Econ River Outfall 001	
Permitted Flow Capacity	28 mgd
CBOD ₅	4.28 mg/l.
TSS - before disinfection	17.2 mg/l.
TN	3.08 mg/l.
TKN	2.14 mg/l.
TP	0.94 mg/l.
Fecal Coliform	Less than 200 per 100 ml
pH	6.0 to 8.5
D.O. (Temperature Dependent)	Minimum of 6.1 mg/L ≥ 30 °C
Pre-Chlorination Total Chlorine	Minimum of 0.5 mg/L with 15 minutes
Final Effluent Total Chlorine Residual	Max of 0.01 mg/L.
Permit Limitations - Wetlands Influent Flow	
Permitted Flow Capacity	20 mgd
CBOD ₅	10 mg/L
TSS - before disinfection	15 mg/l.
TN	6.0 mg/l.
TP	0.75 mg/l.
pH	6.0 to 8.5
Total Chlorine Residual	Min of 0.5 mg/L
Permit Limitations - Wetlands Effluent Flow Outfall 002	
CBOD ₅	10 mg/L
TSS - before disinfection	15 mg/L
TN	2.31 mg/l.
TP	0.2 mg/L
D O	3.8 mg/L, annual avg
Total Chlorine Residual	Max of 0.01 mg/L
pH	6.0 to 8.5

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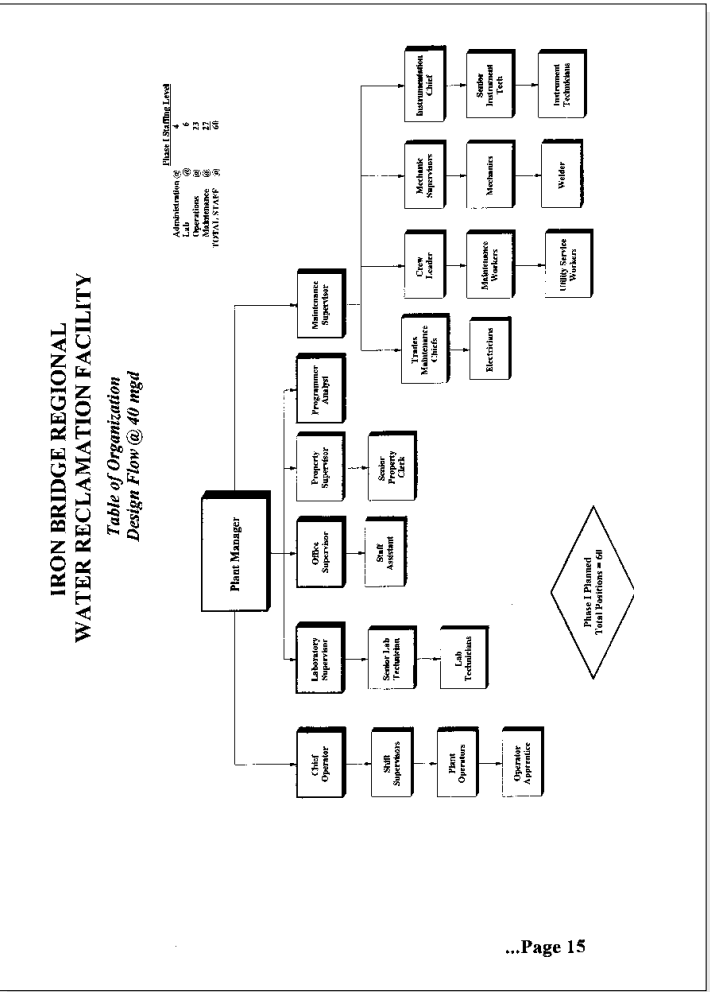
Capital Cost of the Iron Bridge Facility

Year	Phase / Size	Dollars
1982	Phase I RBC Plant / 24 mgd	\$75 Million
The capital cost for Phase I included collection system interceptors.		
1989	Phase II Bardenpho / 12 mgd & Solids Handling Processes	\$47 Million
1991	Phase III Bardenpho / 12 mgd	\$16 Million
Total Capital Cost		\$138 Million

Iron Bridge Facility
Annual O&M Budget - 1998

\$7.7 Million

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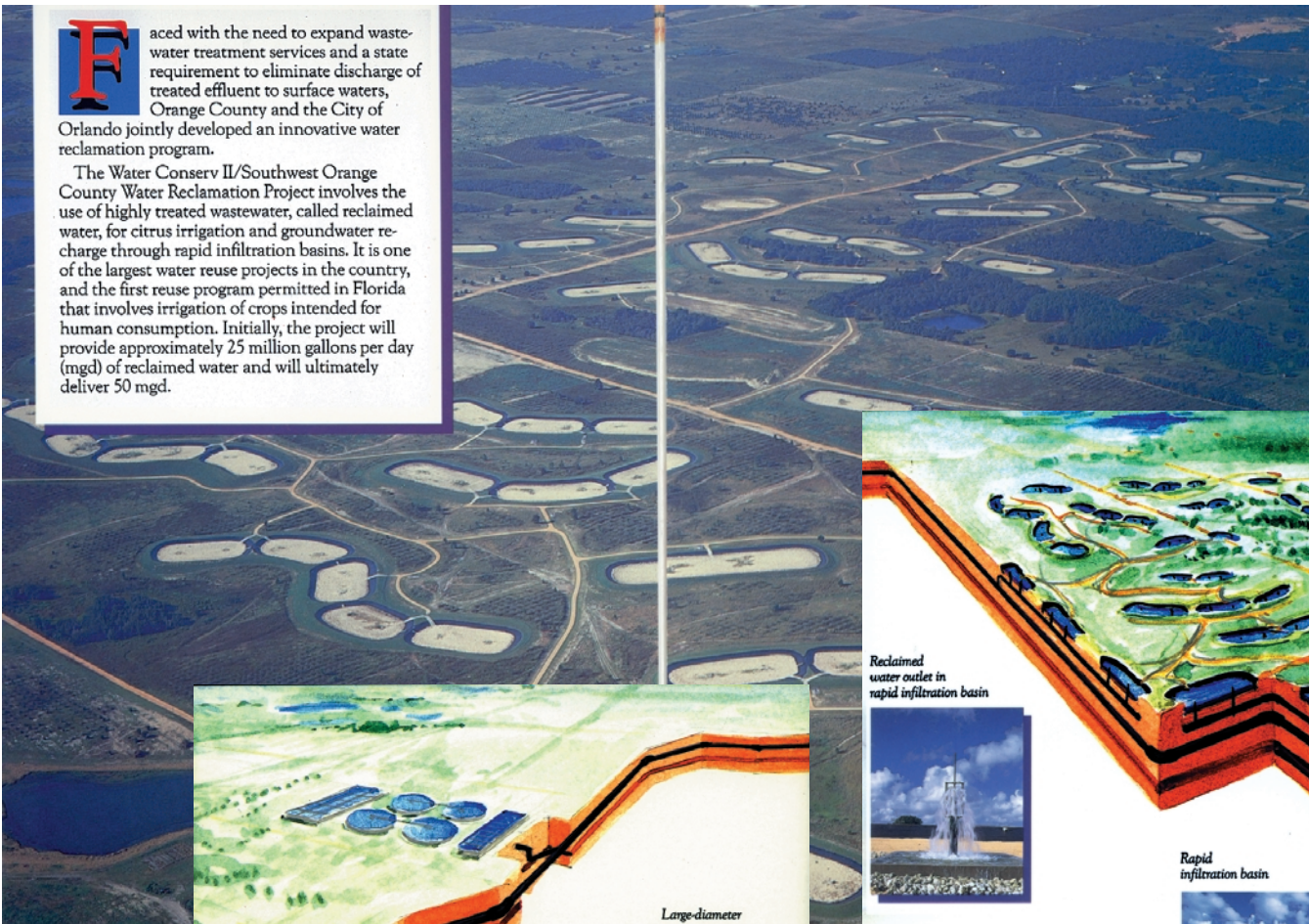
Public Information and Notification

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Faced with the need to expand waste-water treatment services and a state requirement to eliminate discharge of treated effluent to surface waters, Orange County and the City of Orlando jointly developed an innovative water reclamation program.

The Water Conserv II/Southwest Orange County Water Reclamation Project involves the use of highly treated wastewater, called reclaimed water, for citrus irrigation and groundwater recharge through rapid infiltration basins. It is one of the largest water reuse projects in the country, and the first reuse program permitted in Florida that involves irrigation of crops intended for human consumption. Initially, the project will provide approximately 25 million gallons per day (mgd) of reclaimed water and will ultimately deliver 50 mgd.

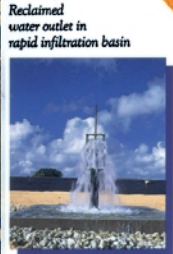
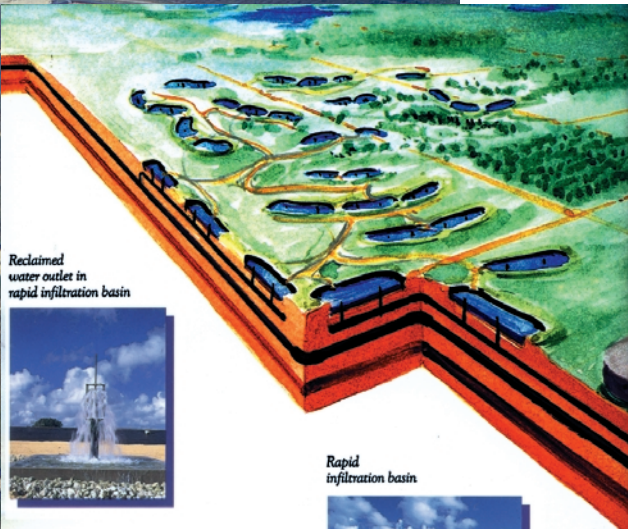


Advanced Treatment
The project includes two treatment facilities: Orlando's Water Conserv II Water Reclamation Facility and Orange County's Sand Lake Road Wastewater Treatment Facility, which are being upgraded and expanded to 21 mgd and 23 mgd, respectively. Both treatment facilities are designed to produce virus-free reclaimed water suitable for citrus irrigation and safe for human contact. Advanced secondary treatment to reduce turbidity and remove viruses is achieved through dual-media (carbon and sand) filtration and chlorination. Because of the strict treatment requirements, extensive pilot testing of the filtration and disinfection processes was performed. Both facilities were designed to meet EPA Class I Reliability Requirements to ensure a clear, odorless, and virus-free product.



Transmission
After treatment, transmission facilities transport the reclaimed water from the metropolitan area to the center of the agricultural community located about 15 miles to the west. Large effluent pump stations at each treatment plant pump the reclaimed water to a common transmission force main. The transmission main, which varies from 42 to 54 inches in diameter, extends 21 miles to deliver the combined flows to the distribution center.

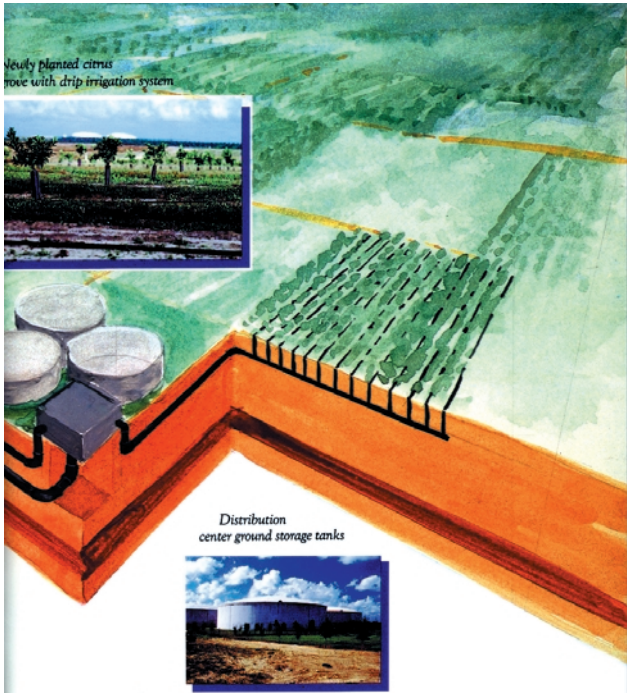
Distribution
The distribution center includes four 5 million-gallon ground storage tanks, a 100 mgd pumping station, a maintenance building, and an operations building with computer facilities for monitoring and operating the system. From the distribution center, reclaimed water is pumped through the distribution system to citrus groves for irrigation and/or to rapid infiltration basins for recharge of the aquifer. The distribution system includes over 30 miles of pipeline, 23 supplemental wells, and over 20 computer-controlled, metered connections. Under 20-year contracts, the water is delivered to the participating growers' property lines for use in their irrigation systems.



The Innovative Reuse System
The citrus irrigation and rapid infiltration basin reuse methods complement each other. Citrus irrigation provides beneficial reuse without costly land acquisition. Rapid infiltration basins provide reuse capacity when irrigation demand is low. Both systems provide the added benefit of recharging the Floridan aquifer. The citrus irrigation system will initially provide reclaimed water to about 8,000 acres and will ultimately serve between 12,000 and 15,000 acres. A key environmental benefit of the system is the conservation of our freshwater supply. Without reclaimed water, these thousands of acres would continue to be irrigated with groundwater from wells on each grower's property. The project also aids the agricultural community, which has recently suffered from diminished rainfall, damaging freezes, and more stringent groundwater use restrictions. Benefits to the growers include a dependable water supply



for irrigation and freeze protection, potential reduced fertilization due to nutrients in the reclaimed water, and reduced energy costs because the water is delivered under pressure. The rapid infiltration basin system consists of 60 individual basins, each about 300 to 400 feet long and 150 feet wide. The reclaimed water percolates rapidly through the underlying sands, which range in depth from 30 to 200 feet. This sand layer provides additional filtration before the reclaimed water reaches the aquifer to replenish the freshwater supply. The rapid infiltration basins are distributed over four different sites covering about 1,600 acres of freeze-damaged citrus groves and open land in an area of groundwater recharge.



Instead of the traditional rectangular shape, the basins are curved to maintain the existing landform and natural character of the gently rolling landscape. An extensive reforestation program was designed to return the area to its pre-citrus, forest-like state. Between 500,000 and 600,000 seedlings and shrubs will be planted, including long-leaf pines, turkey oaks, pawpaws, gopher apples, and other native species. The reforested land will attract wildlife once common to the area, and the habitat will be open to the public for birdwatching and other naturalist activities.

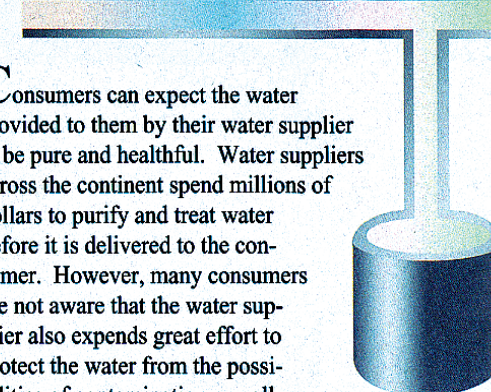
The City of Orlando/Orange County water reuse project may become a benchmark for other communities faced with a water reclamation challenge. The program demonstrates how cooperative efforts between the urban and agricultural communities can result in water reuse projects that effectively satisfy the water-related needs of all.

Public Information and Notification

Manatee County
Medium Agricultural System
10MGD



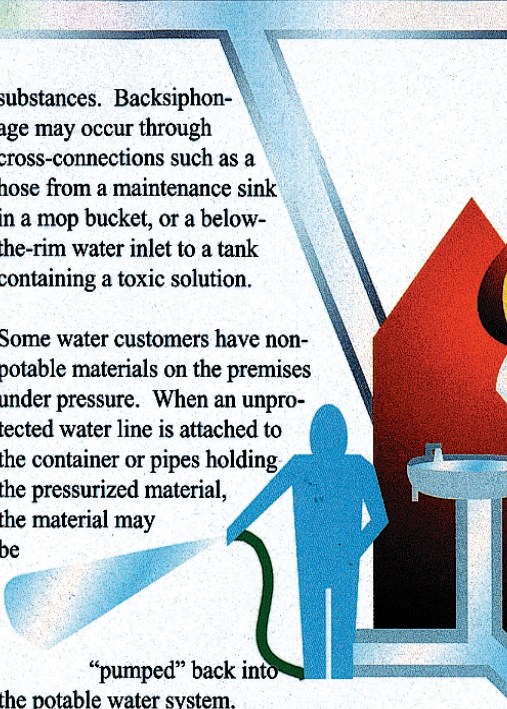
Working Together For Safe Water



Consumers can expect the water provided to them by their water supplier to be pure and healthful. Water suppliers across the continent spend millions of dollars to purify and treat water before it is delivered to the consumer. However, many consumers are not aware that the water supplier also expends great effort to protect the water from the possibilities of contamination or pollution while it flows through the distribution system. It is possible for this to occur when a water supply line is connected to equipment containing a non-potable (unfit to drink) substance. A make-up water line may be connected to a tank filled with acid, or a hose may drop into a bucket of cleaning solution. These connections, called *Cross-Connections*, whether they are permanent or temporary, would be dangerous if no protective measures were taken.

Water distribution systems are designed with the intention of the water flowing in a certain direction - from the distribution system to the consumer. However, hydraulic conditions within the system may deviate from the "normal" conditions, causing the water to flow in the opposite direction in unprotected systems. This is called *backflow*.

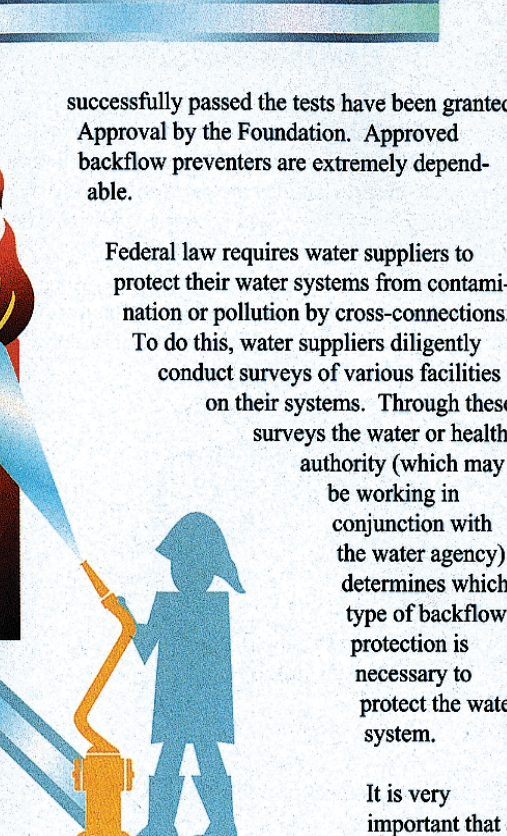
Backflow occurs when the pressure in the distribution system drops, siphoning water from the consumer's system into the distribution system. This would also siphon any substance which may be in contact with the water system through a cross-connection. This type of backflow is called *Backsiphonage* and may occur when there is an unusually high use of water or undersized piping in an area. For example, during fire fighting, or when a main water line breaks, water is "sucked" to the point of high usage, possibly drawing non-potable substances with it, filling the water line with these



substances. Backsiphonage may occur through cross-connections such as a hose from a maintenance sink in a mop bucket, or a below-the-rim water inlet to a tank containing a toxic solution.

Some water customers have non-potable materials on the premises under pressure. When an unprotected water line is attached to the container or pipes holding the pressurized material, the material may be "pumped" back into the potable water system. This type of backflow is called *backpressure*. Backpressure may occur through a cross-connection such as a make-up water line which is connected to a recirculating system containing soap, acid, antifreeze or any non-potable substance.

Because of these potential dangers to the water consumer it is necessary to control cross-connections. There are several types of mechanical assemblies which serve as *Backflow Preventers*. Different types of backflow preventers are designed to work under backsiphonage or backpressure conditions. Some are acceptable for high hazard conditions while others are only acceptable for low-hazard (or non-health hazard) conditions. Most of these backflow preventers have been tested using stringent specifications in the laboratory and in the field by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California. Those which

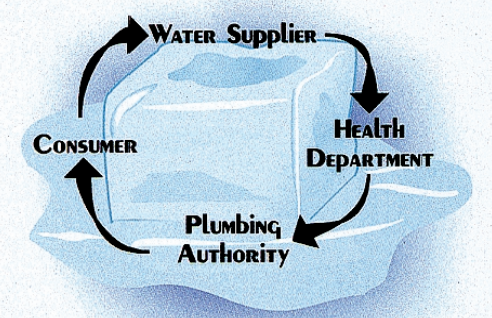


successfully passed the tests have been granted Approval by the Foundation. Approved backflow preventers are extremely dependable.

Federal law requires water suppliers to protect their water systems from contamination or pollution by cross-connections. To do this, water suppliers diligently conduct surveys of various facilities on their systems. Through these surveys the water or health authority (which may be working in conjunction with the water agency) determines which type of backflow protection is necessary to protect the water system.

It is very important that a strong cross-connection control program be maintained, in order to protect the purity of the drinking water. To accomplish this, the water supplier, health department, plumbing authority and consumer must work together. The water supplier and health department may carry out cross-connection control surveys, not only to determine what may be needed to protect the distribution system from contamination or pollution; but, also to determine what may be needed to protect the water system *internally*.

The consumer, on the other hand, must be aware of cross-connections and prevent them, or protect such



connections with the appropriate backflow preventer. These backflow preventers must be tested at least once each year, to ensure that they are performing properly in preventing backflow. When necessary they must be repaired in order to assure proper operation.

With cooperation, a comprehensive cross-connection control program keeps a purified water distribution system free from objectionable impurities and health hazards.

Water suppliers across the continent take great pride in the fact that the water they deliver to the consumers is consistently pure and healthful. One reason for this is a comprehensive cross-connection control program which enables the water suppliers to protect the drinking water at any point in the distribution system.

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(continued from previous page)



PROTECTING OUR WATER & OUR HEALTH

Wastewater treatment systems are vital to protect both our water resources and our health. They are a last line of defense against water pollution. By carefully treating sewage, Manatee County's treatment plants return clean water safely to our environment. By disinfecting wastewater, treatment plants also protect the public health by eliminating disease-causing bacteria and viruses.

The Manatee County Wastewater Treatment System treats wastewater and sewage through an advanced process and then reuses the treated effluent as reclaimed water for irrigation. Cleaning or removing impurities from wastewater is like washing dishes after a meal. We don't throw away the dishes every time we use them. Since the wastewater treatment plants actually produce a usable product...reclaimed water, the plants actually function as water factories.

The reclaimed water must meet tough federal and state water quality standards to protect the public health and the environment.



Aerial view of the Southwest Wastewater Treatment Plant and the Manatee County Golf Course.

PUMP IT! How The Collection System Works

SERVICE LINES
These pipes carry domestic wastewater from the home to sewer mains in the street.

MANHOLES
These are placed where pipe sizes or directions change. The manholes are usually all the public ever sees of the intricate network that makes up the wastewater system.

GRAVITY LINES
In gravity sewer lines wastewater is carried by the force of gravity along the declining slopes.

SATELLITE LIFT STATIONS
These 339 pumping stations are the muscle of the sewer collection system. When wastewater runs by gravity as far as it can and is at its lowest point, it must be pumped through force mains.

FORCE MAINS
Wastewater is carried between lift stations in lines that are under pressure. There are more than 800 miles of gravity lines and force mains in the system. Sewer lines are separate from storm sewers, which collect storm water runoff for discharge into retention ponds or waterways.



Reclaimed water irrigates a sod farm in eastern Manatee County.



Master Control Room at the Southwest Wastewater Treatment Plant

Sewer lines are checked regularly for leaks and cracks with a small TV camera. As the camera is pulled through the lines, the video images are relayed to a monitor in a nearby truck. If cracks are found, a special machine is then pulled through the lines injecting a jell-like sealant into the cracks. Also, flusher trucks are used to flush out clogged sewer lines.

MASTER LIFT STATIONS
Wastewater is collected from the satellite lift stations at 9 master lift stations. It is then pumped through remaining force mains to one of the three wastewater treatment plants.

Reclaimed water being used at the Manatee County Golf Course.

YOUR WASTEWATER TREATMENT SYSTEM

Manatee County operates three regional wastewater treatment plants serving the southwest, southeast, and north portions of the county. The regional system serves virtually the entire urban area of unincorporated Manatee County and the cities of Bradenton Beach, Holmes Beach, Anna Maria, and the town of Longboat Key. The cities of Bradenton and Palmetto operate their own treatment systems.

Manatee County's system was constructed in the 1970s-1980s at a cost of about \$102 million with Federal construction grants paying more than half the cost. At the time, it was one of the largest capital improvement projects of its kind in Florida.

The Southwest treatment plant can treat up to 18 million gallons of wastewater per day, while the other two plants can each treat 5.4 million gallons per day... enough to handle the population growth well into the future.

The treatment plants also greatly improved the quality of water in Sarasota Bay by eliminating thousands of septic tanks and small, inefficient "package" plants that previously discharged wastewater into the Bay. Manatee County's treatment plants do not discharge any wastewater into surface waters.

The Sarasota Bay National Estuary Program said "Manatee County significantly improved wastewater treatment options, resulting in a 43-percent reduction in nitrogen loads to the central bay and a 25-percent reduction in baywide nitrogen loads. These actions improved water quality in the northern and central parts of the bay and increased fishery habitat by at least 20 percent."



Huge master lift stations are more than thirty feet underground.

MONITORING THE LIFT STATIONS
The status of each lift station is relayed by radio signals to a control center in order to assure quick response to problems such as pump failure or system blockage. Lift stations do not run continuously. In order to save energy and lengthen pump life, wastewater is collected and stored in "wetwells" until a sufficient amount has been stored. During this collection time, wastewater can be treated with chemicals to reduce odor and start the initial treatment process.

TREAT IT! How The Treatment System Works

PRE-TREATMENT
Wastewater treatment plants are designed to treat large amounts of ordinary domestic and light industrial wastewater. Sometimes wastewater from industry and businesses contain hazardous chemicals that cannot be removed in the treatment plants. Manatee County requires that these businesses pre-treat their sewage before discharging it into the county's sewer system. County inspectors monitor these sites to ensure the wastewater is properly pre-treated.

PRELIMINARY TREATMENT
1. Raw sewage is pumped to the headworks of the treatment plant. Bar screens let water pass, but not trash such as rags or sticks. The trash is collected and disposed of in the landfill.
2. A grit chamber slows the flow of water and allows sand, grit, or other heavy solids to settle at the bottom. They are then removed and disposed of in the landfill.

PRIMARY TREATMENT
3. Primary clarifiers or sedimentation tanks let smaller particles settle to the bottom. Scrappers collect the solid matter that remains, called primary sludge, plus the scum or grease floating on top of the tank.

SECONDARY TREATMENT
4. An aeration tank supplies large amounts of air to a mixture of wastewater, bacteria, and other microorganisms. Oxygen in the air speeds the growth of these helpful microorganisms, which form a floc called activated sludge that consumes the organic matter in the wastewater.



Water runs through the advanced secondary treatment process...at the end the final product looks like swimming pool water.

5. A secondary sedimentation tank allows the microorganisms to separate from the treated wastewater and settle to the bottom to be reused or removed from the system.

ADVANCED SECONDARY TREATMENT
6. The treated wastewater is then run through filters to further remove suspended solids.
7. Chlorine is added to disinfect the effluent before it leaves the treatment plant. The final reclaimed water looks and smells much like swimming pool water.



Lights come on at dusk at the South-west Wastewater Treatment Plant

GOING GOING GONE! MAKING EVERY DROP COUNT

The treatment plants generate about 17 million gallons of highly treated reclaimed water every day. For years the water has been used to irrigate golf courses, parks, and agricultural fields throughout the county. Now, the reclaimed water also is used for residential irrigation and fire protection in the urbanized southwest part of the county. Reclaimed water pipelines are separate from pipelines used to deliver drinking water.

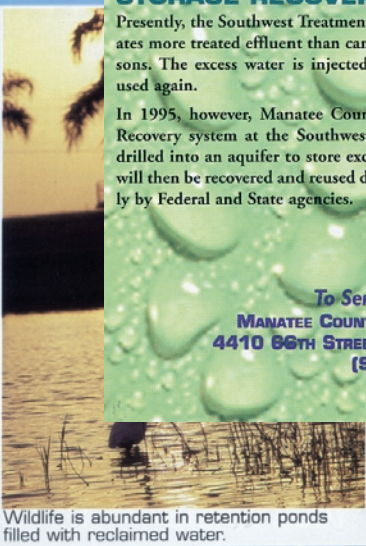
Reuse of reclaimed water for irrigation helps the environment in a number of ways: Water quality is improved by eliminating wastewater discharges into our rivers and bays... Drinking water is conserved since it is not being used for irrigation...Reclaimed water also reduces the use of water from wells, or groundwater.

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REUSE OF SLUDGE
Another byproduct of the treatment process is a bio-solid or sludge, which is processed and used as a soil conditioner.

1. The sludge settles and thickens in a chamber called a gravity thickener.
2. It is then pumped to a tank where it is decomposed.
3. Finally, most of the water is removed by a belt filter press.
4. The dried sludge, which has no odor or disease-causing organisms, but is rich in nutrients, is hauled off to agricultural areas to be used as a soil conditioner.



RECYCLING OUR RESOURCES

When sludge decomposes, methane gas is produced as a byproduct. At the Southwest Wastewater Treatment Plant, the methane gas is recovered and burned to power an electrical generator, which supplies about 20 percent of the plant's electrical needs. The gas recovery system reduces energy costs while also conserving energy supplies.

QUALITY CONTROL STANDARDS

The wastewater laboratory is an advanced quality control lab which uses state-of-the-art equipment to ensure that the reclaimed water leaving the treatment plants meets all federal and state requirements. The lab also tests wastewater samples daily throughout the treatment process to ensure that treatment methods are working correctly. The lab is fully staffed by professional chemists, biologists, and technicians.

A state-of-the-art lab monitors the entire treatment process.

AQUIFER STORAGE RECOVERY

Presently, the Southwest Treatment Plant, by far the largest of the three plants, generates more treated effluent than can be used for irrigation, especially during rainy seasons. The excess water is injected into a deep underground well, where it is never used again.

In 1995, however, Manatee County began the development of an Aquifer Storage Recovery system at the Southwest Plant. A deep underground storage well will be drilled into an aquifer to store excess reclaimed water during wet weather. The water will then be recovered and reused during dry periods. The project will be funded mostly by Federal and State agencies.

To Serve With Excellence
MANATEE COUNTY PUBLIC WORKS DEPARTMENT
4410 66TH STREET WEST, BRADENTON, FL 34210
(941) 792-8811

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A FEW WATERING TIPS

How much water is enough? Efficient watering wets only the turfgrass root zone, does not saturate the soil and does not run off. Here's a simple water schedule: apply 1/2 to 3/4 inches of water 2 to 3 times weekly in the summer and every 10 to 14 days in the winter. If it rains, sprinkling should be suspended according to rainfall amount.

CHECK THE VITAL SIGNS

Your lawn won't speak, but will give off silent alarms when it has too much or too little water. When out in the yard, check the vital signs. Look for areas that may show signs of:

- excessive moisture
- standing water or
- yellowing of leaf areas.

One way to reduce root rot is to reduce the amount of water you apply during rainy periods, permitting the soil to dry.

Excessive rainfall, combined with a heavy watering schedule, can displace the small pockets of air between the soil particles, not allowing excess water to penetrate the soil surface. If these conditions exist for an extended time, plant roots remove all oxygen from the water in the soil and the roots cannot breathe. The root dies from lack of oxygen, leading to fungal root rot which eventually kills the plant.

RESUME WATERING WHEN

the lawn begins to show these signs of stress:

- slight wilting
- leaf blades folded in half or curled
- footprints remaining in the grass longer than normal, or
- gray spots in the lawn.

MULCHING AND LANDSCAPING

The use of mulch, rock and ground cover can reduce your usable outdoor living space as well as add beauty and character to the landscape. Careful selection and proper application of these materials can:

- reduce maintenance time
- conserve water and
- provide color contrast to landscaping.

FOR MORE INFORMATION

on availability, use, costs and plant selections, please call or write:
Manatee County
Reclaimed Water Use Program
4410 - 66th Street West
Bradenton, Florida 34210
(941) 792-8811

Reclaimed Water in Manatee County

A water conscious community

PROTECTING OUR GROUND WATER RESOURCES

Urbanization in and around environmentally sensitive ground water basins makes it necessary to pursue stricter water withdrawal policies. As the demand for fresh water increases in Florida and around the globe, the challenge to develop alternative water sources to satisfy future needs has become critical.

DEVELOPING ALTERNATIVES

Over the past two decades, science and technology have been striving to develop economical ways to approach fresh water scarcity issues. Reclamation and reuse is now recognized as an outstanding trendsetter in water management and a proven method of conserving fresh water supplies.

WHAT IS RECLAIMED WATER?

Reclaimed water is the final product of multiple-stage advanced treatment process which eliminates pathogens (solids, organics and viruses) and still retains nitrogen, phosphorus elements and other micro nutrients that work as fertilizers to enhance ornamental plant and turf grass growth. This treatment process produces a water product ideal for lawn sprinkling, but not suitable for human or animal consumption, primarily due to the chemical salts (or nutrients) that remain in the water.

WHERE OUR WATER GOES

Water studies reveal that in many communities, up to 50 percent of the scarce drinking water that flows through our water meters each month is used to maintain landscape and turf grass. This objective trend can be changed in Manatee County since much of the demand for irrigation water can be met with reclaimed

water. Thanks to the use of reclaimed water for irrigation, we will be able to relieve the need for potable water for irrigation.

THINGS YOU SHOULD KNOW ABOUT USING RECLAIMED WATER

Irrigating with reclaimed water is not much different from irrigating with well or tap water except that reclaimed water does not have time restrictions for usage. To take advantage of the program, you must already have, or be willing to install, a sprinkler system. Existing in-ground sprinkler systems can be connected with little or no modifications. Reclaimed water is a nutrient-rich by-product of a biological treatment process. Due to its origin and composition, the use of reclaimed water is restricted by federal, state and local ordinances.

USES NOT PERMITTED

- NO Consumption of reclaimed water. (Human or animal).
- NO Connection to a dwelling for toilet flushing or other household use.
- NO Inter-connection with another water source.
- NO Use for body-contact recreation.
- NO Use through above ground hose bibbs, faucets, quick couplers or hoses, etc.
- NO Filling of swimming pools.
- NO Sharing a common reclaimed service or connection between properties.
- NO Washing of equipment such as cars, boats, driveways, structures, etc.

PERMITTING FOR SPECIAL USES

To use reclaimed water for purposes other than sprinkling of landscape, plants and turf grass, you must submit a request for evaluation and approval to: Reclaimed Water Section, Public Works Department, 4410 - 66th Street West, Building "A", Bradenton, Florida 34210.

FOLLOWING THE RULES

Where reclaimed water is used, all of the "USES NOT PERMITTED" listed above are violations of state and county ordinances or policies and are subject to financial penalties as well as interruption or loss of service. Regulations will be enforced.

RECLAIMED WATER IS A RESOURCE. . . . USE IT WISELY!

Sprinkling with reclaimed water is a smart alternative to using well water or potable water. Proper use by all customers will help ensure the safe and continued availability of this resource.

Public Information and Notification

Manatee County
(continued from previous page)



MANATEE COUNTY GOVERNMENT Public Works Department

Subject: Reclaimed Water

Dear Resident:

Your interest in reclaimed water is appreciated. We are pleased to inform you that reclaimed water for irrigation purposes is being programed for your neighborhood. Reclaimed water is an excellent resource for irrigating lawns and vegetation. Reclaimed water has been used for irrigation farm crops in Manatee County since 1974, several golf courses in Manatee County since 1984, and is now being utilized in several neighborhoods within the urban area.

As part of the Reclaimed Water Program and a prerequisite for residential use, education information pertaining to reclaimed water is made available through discussion with the Reclaimed Water Customer Service Coordinator. The discussion covers various topics including the County's program, use, backflow prevention, safety requirements, cost and billing arrangements for reclaimed water. Upon receipt of your application you will be notified by phone for a convenient time to meet with the Reclaimed Water Customer Service Coordinator.

If you have any questions you may contact me at 792-8811 Ext. 5249 or Kathy Zuckerman, Reclaim Water Customer Service Coordinator at Ext. 5212.

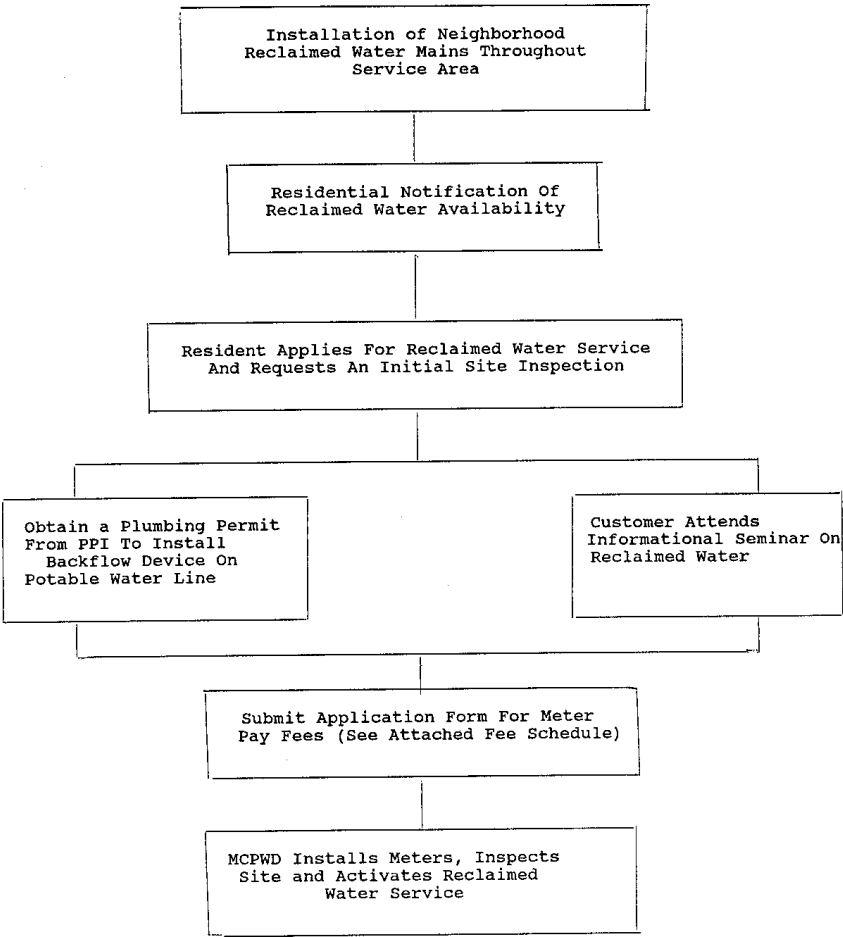
Sincerely,

Ed McAdam, P. E.
Wastewater Manager
hps

ADMINISTRATION • 4410 - 66th Street West, Bradenton, Florida 34210 • (941) 792-8811 • FAX (941) 795-3490

P.O. Box 25010, Bradenton, Florida 34206

MANATEE COUNTY PUBLIC WORKS DEPARTMENT RECLAIMED WATER PERMIT PROCESS



HOW TO APPLY FOR A RECLAIMED WATER METER

1. Call the Reclaimed Water Customer Service Coordinator (RWCS) (941) 792-8811 ext. 5212 to verify reclaimed water availability.
2. Apply for Plumbing Permit at the Building Department on the 2nd Floor of the County Administration Building, 1112 Manatee Avenue West, Bradenton, Florida, telephone number (941) 748-4501, Ext. 3875 and 3877.

Prior to paying the connection fees, a plumbing permit shall be obtained for the installation of a backflow device on the potable water line and/or any plumbing modification. A licensed plumber must obtain the plumbing permit. The homeowner may obtain the permit only if he resides on the property being permitted. The Permitting staff will advise you of the cost of the permit.

3. Fill out Application

When applying for reclaimed water, the applicant must show the plumbing permit to the Customer Service Coordinator, located at 4410 66th Street West, Bradenton, Florida, telephone number (941) 792-8811, Ext. 5212. The applicant will be required to fill out an application, view 2 videos on reclaimed water and backflow/cross connections. They may pay the appropriate fees for reclaimed water at this time to eliminate the need of a second office visit.

4. The Customer Service Coordinator will issue a request for a Public Works site inspection for a backflow device.

The homeowner is not required to be present during the inspection. A list of approved backflow devices is attached. Included also is an installation drawing of an RPZ device. As part of the installation of a "Reclaimed Water Meter" the customer is required to provide an RPZ assembly (as minimum protection) on the customer's side of the potable water meter to prevent potential contamination to the potable water supply. Irrigation systems that inject insecticides or fertilizers will require a double check valve assembly on the reclaimed water meter to prevent potential contamination to the reclaimed water supply along with an RPZ device on the potable meter. However, if the property is in a flood zone, a double check valve shall be used in lieu of an RPZ device. All devices must be properly sized and installed on the customer's side of the meter. The installation may be performed by a licensed plumber or the homeowner only if he/she resides on the property.

If the customer currently has a potable water irrigation meter and is switching to a reclaimed water meter, a plumbing permit is required in order to install the RPZ backflow device to the potable water meter.

Public Information and Notification

Manatee County
(continued from previous page)

5. Upon approval of Public Works Department Inspection and payment of fees, a work order is issued to install the reclaimed water meter.

Please be aware that the processing time for the meter installation is as follows:
1: If stub-out is provided.....5 - 10 working days
2: Road Crossing or New Tap.....2 - 4 weeks
3: State Road Crossing.....2 - 3 months

The connection fee is based on meter size. If the customer has an existing water/sewer deposit on file, no additional deposit will be required. Effective December 1, 1997, resolution R-97-135:

Table with 3 columns: METER SIZE, RECLAIMED WATER CONNECTION FEE, RECLAIMED WATER BASE MONTHLY CUSTOMER CHARGE. Rows include sizes from 5/8" X 3/4" to 10" with corresponding fees and charges.

RETAIL QUANTITY RATES - RECLAIMED WATER

(1) Quantity Rates for Retail Reclaimed Water:

Table with 2 columns: Quantity, Rate. Rows show rates for 20,000, 80,000, and 900,000 gallons per month.

Retail Customers who average in excess of 1 million gallons per month will be required to enter into a service contract with Manatee County approved by the Board which will include quantity rates.

(2) Quantity Rates for Well Credit Transferors:

Table with 2 columns: Usage, Rate. Row shows rate for Historical Use under 1 MGD.

Well credit Transferor Customers whose historical use exceeds 1 million gallons per day will be required to enter into a service contract with Manatee County approved by the Board which will include quantity rates.

Table with 2 columns: Usage, Rate. Row shows rate for Consumption Over Historical Use.

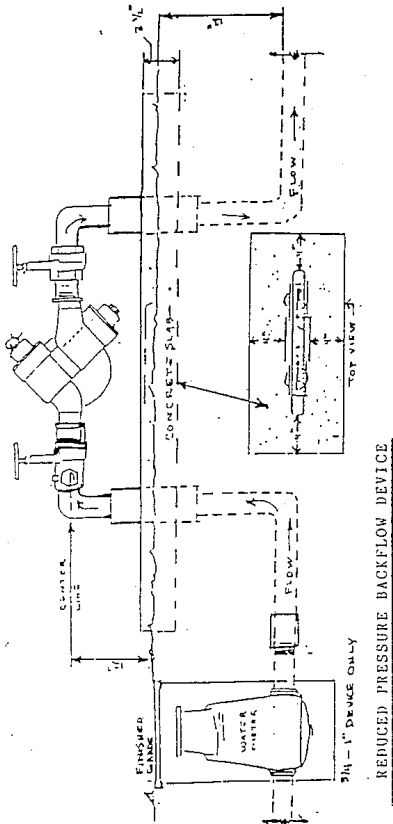
(6) Order the final plumbing inspection:

After the backflow device and meter have been installed, a plumbing final inspection must be completed by the Building Department. The number to call for a plumbing final inspection is (941) 749-3047. A certification for testing of the backflow device must be completed within a thirty (30) day period by a certified technician with a copy of the certification forwarded to the Public Works Department Distribution Section, 4625 66th Street West, Bradenton, Florida 34210. A list of certified technicians is included in the information packet.

For further information regarding the plumbing on private property, ask for George Phillips, Inspector I at (941) 748-1799.

For further information regarding reclaimed water, ask for Kathy Zuckerman, reclaimed water Customer Service Coordinator at (941) 792-8811, Ext. 5212.

For further information regarding cross connection control and backflow prevention, ask for Vicky Zimarino, Cross Connection Control Coordinator at (941) 792-8811, Ext. 5267.



FOR MORE INFORMATION CONTACT
GEORGE PHILLIPS
SENIOR PLUMBING INSPECTOR
P.P.I.
748-1799

R.P. ASSEMBLY
TYPE OF PROTECTION:
BACK SIPHONAGE-LOW AND HIGH
HAZARD
BACK PRESSURE-LOW AND HIGH
HAZARD.

- 1. Center line of unit must be 12 inches above finished grade.
2. Unit must be installed in front of meter as close as possible to the meter box.
3. A concrete pad will be poured around backflow piping. The minimum thickness will be 3 1/2 inches. The pad will extend at least 4 inches beyond unit and pipes on all sides.
4. Copper pipe type L or K, or brass pipe minimum schedule 40 shall be used from connection with backflow unit to a minimum depth of 12 inches below grade. PVC pipe may be used below grade only with a minimum depth of 12 inches.
5. Pipes passing through or encased in concrete must be properly protected and sleeved.
6. The system must meet all the requirements of the Manatee County Plumbing Code Ord. R-98-23 and the Manatee County Backflow Prevention Code Ord. R-87-125.
7. All piping from backflow device to the first atmospheric opening or to each branch valve, must be color coded per ANSI-253.1. (Pipe may be continuously spiral wrapped with approved yellow waterproof tape.)

Public Information and Notification

Manatee County
(continued from previous page)

<u>LIST OF APPROVED BACK FLOW DEVICES</u> <u>3/4" TO 1" SERVICES ONLY</u>			
<u>DOUBLE CHECK VALVE ASSEMBLIES</u>		<u>REDUCED PRESSURE ASSEMBLIES</u>	
<u>COMPANY</u>	<u>MODEL</u>	<u>COMPANY</u>	<u>MODEL</u>
BUCKNER	24100 24101	CLA-VAL	RP-2
CLA-VAL	D2	CONBRACO	40-204-02 40-204-A2U 40-204-A2Z 40-205-A2Z 40-204-A2U 40-205-A2U
CONBRACO	40-104-02 40-104-A2 40-104-A2T		
CONBRACO	40-105-02 40-105-A2 40-105-A2T	FEBCO	845 825YA 825YR 825YAR
FEBCO	805 805Y 805YR	HERSEY	FRP-2
HERSEY	FDC HDC	ORION	BRP
ORION	BDC	RAINBIRD	RPA-075-R RPA-100-R RP-QT-075 RP-QT-100
RAINBIRD	DCA-075-R DCA-100-R	WATTS	909HW QT 909 QT U909 HWQT U909 QT 009 QT 009 M2QT U009 M2QT 009 SSQT U009 QT U009 AQT U009 SSQT
WATTS	709 QT 007 M1QT 007 M2QT U007 M1QT U007 SSM1QQT 007 QT 007 SSQT U007 QT U007 SSQT		
WILKINS	550 550A 950 950A	WILKINS	575 575A 975 975A 975XL 975XLU

Page 5 of 6

Revised 09/24/96	
REGISTERED CERTIFIED BACKFLOW DEVICE TESTERS	
AQUA PLUMBING SERVICES SARASOTA (366-7676)	J. G. PLUMBING SARASOTA (371-4850)
AMERICAN PLUMBING SARASOTA (377-4010)	LAPENSEE PLUMBING HOLMES BEACH (778-5622)
ARMSTRONG PLUMBING BRADENTON (747-4645)	LEW & SONS PLUMBING ONECO (753-6681)
BACKFLOW DIV. SYSTEMS BRADENTON (358-1214)	MANATEE PLUMBING BRADENTON (748-3451)
BRADENTON PLUMBING SARASOTA (378-1602)	MCDONOUGH PLUMBING, INC. SARASOTA (753-6436)
CAMPBELL PLUMBING BRADENTON (748-6094)	PLUMBING EXPRESS SARASOTA (378-1895)
CASEYS PLUMBING BRADENTON (755-1844)	RIDGDILL PLUMBING PALMETTO (721-9146)
C. H. CLARY SARASOTA (924-6610)	SCHOFIELD PLUMBING BRADENTON (756-3715)
CONSERV BLDG. SERVICES LARGO (544-1924)	THE WATERWORKS BRADENTON (794-6688)
CY BLUE PLUMBING SARASOTA (924-1153)	UNIQUE PLUMBING SARASOTA (377-7080)
FLUHARTY PLUMBING BRADENTON (748-3153)	WYMAN PLUMBING BRADENTON (755-1595)
GRIGG'S PLUMBING BRADENTON (746-3361)	

Public Information and Notification

City of Plant City
Small Agricultural System
3MGD

acceptable levels, it will once again be made available to the reuse system. The City of Plant City's wastewater plant is staffed 24 hours per day, seven days per week.

How do I identify a reclaimed water irrigation system?

Signs should be posted and the color purple is used to mark reclaimed/reuse water.

Who do I contact if I have any problems with my Reclaimed Water Service?

The City of Plant City's Water Reclamation Facility is operated by highly trained personnel 24 hours/day. Please feel free to contact the Operations Center at (813)757-9191. Your concerns will be addressed accordingly.

A conservation attitude.

The reclaimed water program, with the objective of conserving our precious water resources, illustrates The City of Plant City's commitment to implementing programs which improve the quality of life for its residents.

For more information on water conservation and reclaimed water contact:

THE WATER RESOURCE
MANAGEMENT DIVISION
AT (813) 757-9289

**CITY OF
PLANT CITY**
*QUESTIONS & ANSWERS
ABOUT RECLAIMED WATER*



RECLAIMED WATER *FOR IRRIGATION OF LANDSCAPED AND TURF AREAS*

What is reclaimed water and how is it used?

Reclaimed water is highly treated wastewater generated by the City of Plant City's state-of-the-art water reclamation facility. Reclaimed water is colorless, odorless, and virtually indistinguishable from drinking water.

Reclaimed water can be used for landscape irrigation, industrial cooling, and various agricultural applications.

What are the benefits of using reclaimed water?

Residents using reclaimed water for landscape irrigation are not subject to SWFWMD and the City of Plant City's irrigation restrictions. In addition, residents will benefit by the savings on their monthly utility bill because of the minimal charge for reclaimed water service.

The benefit to the environment is the conservation of the potable (drinking) water supply. By substituting reclaimed water for potable water for irrigation, the quantity of water to be withdrawn from the Floridan Aquifer is reduced. Consequently the costs associated with obtaining additional sources of fresh water and subsequent treatment are reduced.

Is reclaimed water safe?

Reclaimed water goes through a high level filtration and disinfection process. Plant City's Water Reclamation Facility conducts tests seven days a week to ensure the water meets stringent State and Federal quality standards. The water is monitored 24 hours a day.

Physical contact with reclaimed water is not known to have any negative effects. Being splashed or sprayed with the water should not cause reason for alarm, however, all reclaimed customers should use the product for its intended uses only. Reclaimed water does not present any danger to family pets and/or animals.

Are hose connections allowed?

The City of Plant City does not allow the use of hose connections at this time.

For what purposes should reclaimed water NOT be used?

- NOT for drinking.
- NOT for filling swimming pools, hot tubs, wading pools, etc.
- NOT for recreational activities such as squirt guns, water slides, water balloons, etc.

How do I irrigate vegetable gardens with reclaimed water?

A drip type irrigation system must be used for watering vegetable gardens and food crops unless the food will be peeled, cooked, or thermally processed prior to being consumed.

When should I irrigate?

Irrigation timing should be set for the system to come on late evening or early morning hours.

Is it permissible for a resident to continue to use a well?

A resident may choose to maintain an independent, limited usage irrigation and/or heating-cooling supply well **but** must assure complete physical separation from the reclaimed water system. Individual systems may co-exist as long as the systems are completely separate and not interconnected in any way. *No cross connection is allowed between the reclaimed water system and any other water source.* Residents are advised that State regulations prohibit the spraying of reclaimed water within 75 feet of any potable (drinking) water well.

What happens to the reclaimed water when a treatment plant upset occurs?

The treatment process is carefully monitored so that irregularities in the quality of the reclaimed water product are quickly identified and controlled. If the on-line analyzers indicate that certain quality parameters have been violated, operations staff will close all valves to the reuse system and divert the water back to the treatment plant or to an alternate permitted disposal system. Once the quality of the reclaimed water has returned to



CITY OF PLANT CITY *RECLAIMED WATER SERVICE*



1. Q: What is Reclaimed Water?

A: Reclaimed water is a high quality water resource produced at Plant City's new "Public Access" Reclaimed Water Production Facility. Reclaimed water starts out as wastewater that is treated at Plant City's Water Reclamation Facility. After this process the treated wastewater undergoes further filtration and disinfection before it becomes classified as Level III Public Access Reclaimed Water. This resource is colorless, odorless, bacteriologically safe, and available for many applications in place of potable (drinking) water. Plant City's new facility will recycle millions of gallons of wastewater each day to provide customers with high quality reclaimed water. This "recycling" of water, and your participation in the program, will help to preserve our groundwater supplies which in turn will help to ensure our water resources for the future.

2. Q: Is Reclaimed Water Safe?

A: Reclaimed water goes through a high level filtration and disinfection process. Plant City's Water Reclamation Facility houses a State Certified Laboratory where tests are conducted seven days a week to ensure the water meets stringent State and Federal quality standards. The water is monitored 24 hours a day.

Physical contact with reclaimed water is not known to have any negative effects. Being splashed or sprayed with the water should not cause reason for alarm, however, all reclaimed customers should use the product for its intended uses only.

Reclaimed water does not present any danger to family pets and/or farm animals. (See page 7 for information concerning pastures used for grazing dairy animals.)

Public Information and Notification

City of Plant City
(continued from previous page)

CITY OF PLANT CITY
RECLAIMED WATER SERVICE

3. Q: For What Purposes Should Reclaimed Water NOT be used?
A: [a] NOT for drinking.
[b] NOT for filling swimming pools, hot tubs, wading pools, etc.
[c] NOT for recreational activities such as squirt guns, water slides, water balloons, etc.

4. Q: What Are Some Approved Uses of Reclaimed Water?
A: [a] IRRIGATION:
* Low levels of nutrients (Nitrogen and Phosphorous) are contained in reclaimed water. When properly applied these nutrients can be beneficial for healthy plant growth and development.
* A drip type irrigation system must be used for watering vegetable gardens and food crops unless the food will be peeled, cooked, or thermally processed prior to being consumed.
* A few plants, such as certain species of azaleas and roses, are sensitive to the slightly higher chloride (salt) content of reclaimed water. Care should be taken when watering these plants.
* Turf, grasses, hay fields, grazing pastures, and ornamental nursery plants may be irrigated with reclaimed water. Pastures used for cattle whose milk is intended for human consumption should not be grazed for a period of 15 days from the last application of reclaimed water. There are currently no further restrictions on grazing.

CITY OF PLANT CITY
RECLAIMED WATER SERVICE

[b] AUTOMOBILE WASHING:
* Reclaimed water is currently utilized by several municipalities for the washing of their vehicle fleets and can be safely utilized for other auto washing applications.

[c] FIRE FIGHTING:
* Reclaimed water has replaced the use of potable water in fire fighting activities in municipalities across the nation.

[d] STREET SWEEPING, SANITARY SEWER LINE CLEANING, AND MACHINERY WASH DOWN:
* The City of Plant City currently utilizes the reclaimed water produced at its facility for these applications. These uses result in the conservation of thousands of gallons of potable water everyday. Reclaimed water is used throughout the nation for these purposes.

[e] INDUSTRIAL USES:
* CF Industries on State Road 39 North will utilize a minimum of two million gallons of reclaimed water, per day, from Plant City's Reclaimed Water Production Facility. Reclaimed water can be used in industry for cooling, wash down, and other industrial applications. This type of usage can result in huge conservations of groundwater, and potable (drinking) water. At CF Industries alone this usage will result in a reduction of groundwater withdrawal by a minimum of two million gallons per day.

[f] AESTHETIC PURPOSES:
* Reclaimed water may be utilized for the following uses including, but not limited to decorative fountains, ponds, lagoons, and decorative pools.

CITY OF PLANT CITY
RECLAIMED WATER SERVICE

[g] POND LEVEL CONTROL:
* Under the guidance of the Florida Department of Environmental Protection regulations, golf course lakes, stormwater ponds, and other approved lakes and ponds may be utilized to store reclaimed water.

[h] OTHER POTENTIAL USES:
* Reclaimed water is a valuable resource that is being utilized in many areas of our everyday life. The use of this resource for the previously mentioned approved activities and other potentials such as toilet flushing, dust control, wetland recharge etc. is a powerful way to conserve our precious, limited, freshwater supplies.

Public Information and Notification

City of Plant City
(continued from previous page)

CITY OF PLANT CITY
RECLAIMED WATER SERVICE

QUESTIONS AND ANSWERS

ABOUT APPLICATION & SERVICE

1. Q: What does the City of Plant City provide
A: Plant City's Reclaimed Water Service will provide a high quality reclaimed water for approved uses to qualified customers located in the vicinity of the Reclaimed Water Service pipeline. This pipeline starts at the Water Reclamation and Reclaimed Water Production Facility on North Alexander Street in Plant City and runs along State Road 39 North to C. F. Industries just south of the Pasco County line.
Plant City's introductory offer for service provides connection to this pipeline, backflow prevention at the property line, and a meter at no charge to the customer. Initially customers will only be billed for consumption of reclaimed water. The introductory rate for consumption is \$0.05/1000 gallons. As this is an introductory offer, these terms are subject to change with time.

2. Q: How do I apply for service?
A: All potential customers must review the Customer Information and Application Folder (CIAF). It is important that all applicants read and understand this Information before signing the Application for Reclaimed Water Service. Representatives of the city will meet with the applicants throughout this phase to address individual needs and questions. Once the application is completed it will be reviewed by the city to determine approval.

CITY OF PLANT CITY
RECLAIMED WATER SERVICE

3. Q: Where can I find further information concerning the City of Plant City's reclaimed water policies and my obligations and rights as a customer?
A: Please review Part IV of the Customer Information and Application Folder. Enclosed is a copy of ORDINANCE NO. 10-1995 which establishes the City of Plant City's rules and regulations for Reclaimed Water Reuse. The following questions can be answered by reviewing the section of the Ordinance that is listed.

4. Q: How can I apply for the Reclaimed Water Service?
A: See Section 44.13 (b), (c), (d) Service Application Requirements. (Ordinance No. 10-1995)

5. Q: If I am currently using a well for irrigation, what rules must I follow if I connect to the service?
A: (a) See Section 44.10 Potable Water Wells.
(b) See Section 44.15 Cross Connection Control.
(c) No Cross connection is allowed between the reclaimed water system and any other water source. Customers are advised that State regulations prohibit the spraying of reclaimed water within 75 feet of any potable (drinking) water well.

6. Q: Who is responsible for maintenance of the Reclaimed Water Service and Connections?
A: (a) See Section 44.17 Maintenance by the Customer
(b) See Section 44.18 Maintenance by the City

7. Q: Is the supply or pressure of the Reclaimed Water Service guaranteed?
A: (a) See Section 44.06 Interruption of Service by City.
(b) Plant City will not guarantee either supply or pressure of the Reclaimed Water Service. Customers should utilize this resource as it is available.

CITY OF PLANT CITY
RECLAIMED WATER SERVICE

If the City of Plant City's service does not provide enough pressure or supply for the customer's individual needs, the customer will be responsible for providing pressure and/or supply above & beyond this service.

8. Q: If I hold a consumptive use permit through SWFWMD, will this be affected by my use of reclaimed water?
A: According to the Southwest Florida Water Management District (SWFWMD), a customer's participation in the City of Plant City's Reclaimed Water Service will not reduce the volumes specified in their consumptive-use permit. Due to the City of Plant City's unique agreement with customers, (customers utilize reclaimed water when available. No pressures or supplies guaranteed), the use permits will be maintained in the event that reclaimed water is not available.

9. Q: What guarantee do the customers have that the City of Plant City will not raise rates?
A: There is no guarantee that reclaimed water rates will not increase over time. However, because the city's policy encourages the expansion and development of the reclaimed water system, and low rates are a major incentive in a voluntary reuse program, there is a strong likelihood that the rates will remain low, relative to other options for a long time to come.

10. Q: Who do I contact if I have any problems with my Reclaimed Water Service?
A: The City of Plant City's Water Reclamation Facility is operated by highly trained personnel 24 hours/day. Please feel free to contact the Operations Center at (813) 757-9191. Your concerns will be addressed accordingly.

11. Q: Other questions?
A: If you have further questions after reviewing your Customer Information and Application Folder, please contact the Water Resource Management Division at (813) 757-9289.

Signage

City of St. Petersburg
Large Public Access System
20MGD



City of Largo
Medium Public Access System
7MGD



Signage

City of Largo
(continued from previous page)



Sarasota County
Small Public Access System
5MGD



Signage

Conserv II

Large Agricultural System
28MGD



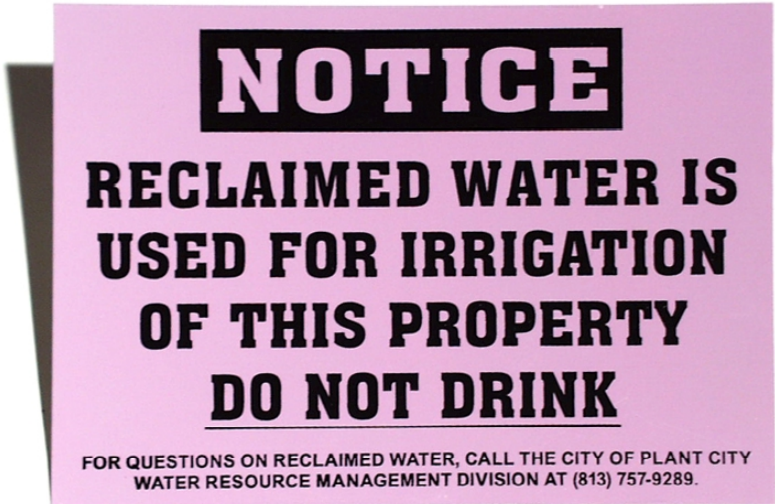
Manatee County

Medium Agricultural System
10MGD



City of Plant City

Small Agricultural System
3MGD



Inspection Information

City of St. Petersburg
Large Public Access System
20MGD

THE FLORIDA WATER
AND POLLUTION CONTROL
OPERATORS ASSOCIATION

PRESENTS

RECLAIMED WATER
INSPECTION AND
FIELD OPERATIONS
VOLUNTARY CERTIFICATION
PROGRAM

About the Course

FW&PCOA is pleased to offer the "first-in-the-nation" Reclaimed Water Inspection and Field Operations Voluntary Certification Program. The 40 hour course spans both potable water and wastewater philosophies. The voluntary certification exam will be administered during the last day of the course. Individuals who successfully complete the training course and voluntary certification exam will be certified as Reclaimed Water Inspection and Field Operations Specialists.

As with other aspects of the utilities, the reuse of wastewater to satisfy the environmental needs of our communities is becoming more and more appropriate. Experience has demonstrated that management approaches differ from community to community with control of the reclaimed water program under the auspices of wastewater and/or water utilities. In some areas of our state, where reuse is being considered, water, wastewater and reclaimed water field activities may be performed by the same individual or individuals. The misconceptions about reclaimed water result from a lack of understanding of wastewater operations, the treatment associated with preparing the effluent for reuse, and the health issues involved.

In an effort to address these misconceptions and provide a better understanding of the benefits of instituting a reclaimed water program, this voluntary certification program has been developed. In order to achieve the highest level of competence in all phases of the field operations, and to ensure consistency statewide, the FW&PCOA encourages enrollment in this voluntary certification program to further educate personnel performing tasks in the field of water reuse.

Program Agenda:

- * Potable Water Treatment Processes
- * Wastewater Treatment Processes
- * Water Quality Standards
- * Health Issues
- * Types of Treatment
- * Biological Processes
- * Virus and Metals
- * FDER Rules and Regulations (Chapter 62-610 and Sections of Chapter 62-555)
- * Operating Protocols and Monitoring Processes
- * Cross Connection Control
- * Contractual Requirements as per Local and State Requirements
- * Field Inspection Theory
- * Techniques and Surveillance
- * Reporting and Documentation
- * Irrigation Needs and Troubleshooting of Reuse Systems
- * Field Collection and Evaluation of Water Samples For Both Reclaimed & Public Water Systems
- * Laboratory Procedures
- * Field Inspection Techniques

RECLAIMED WATER FIELD INSPECTION
CERTIFICATION PROGRAM

FIRST DAY

8:00 - 8:30	REGISTRATION & ORIENTATION Joseph Towry
8:30 - 9:45 INSTRUCTOR	WATER TREATMENT PROCESSES David Henderson Water Quality Standard/Treatment Ground Water/Surface Water
9:45 - 10:00	BREAK
10:00 - 11:45 INSTRUCTOR	WASTEWATER TREATMENT PROCESSES David Shulmister Type of Treatment Health Concerns/Biological/Chemical Viruses/Metals/Salts
11:45 - 12:45	LUNCH
12:45 - 4:00 INSTRUCTOR	FDEP RULES AND REGULATIONS David Shulmister Chapter 62-555 Chapter 62-610
4:00 - 5:00 INSTRUCTOR	PROTOCOL - David Shulmister Monitoring & Processes SEASONAL CONSIDERATIONS - Diurnal Flow Patterns Storage Requirements

SECOND DAY

8:00 - 8:45 INSTRUCTOR	FIELD TRIP TO WASTEWATER PUMPING STATION HIGH/LOW PRESSURES COMMUNICATIONS Plant Manager
10:00 - 12:00 INSTRUCTOR	AGRICULTURE REUSE AND GROUND WATER RECHARGE Phil Cross
12:00 - 1:00	LUNCH
1:00 - 2:30 INSTRUCTOR	INTRODUCTION TO THERMAL EXPANSION Joseph Towry Video Discussion Test
2:30 - 3:00	CROSS CONNECTION CONTROL Ken Morris
3:00 - 3:15	BREAK
3:15 - 5:00	CROSS CONNECTION CONTROL CONT. Ken Morris

Inspection Information

City of St. Petersburg
(continued from previous page)

<u>THIRD DAY</u>	
8:00 - 10:00	CONTRACTUAL REQUIREMENTS
INSTRUCTOR	● Joseph Towry Policies/62-610.470 F.A.C. Agreements Public Notifications Signs
10:00 - 10:15	BREAK
10:15 - 11:45	CONTRACTUAL REQUIREMENTS CONT.
11:45 - 1:00	LUNCH
1:00 - 2:30	SURVEILLANCE
INSTRUCTOR	● Charles Busch Inspection Techniques Violations Reporting and Documentation
2:30 - 2:45	BREAK
2:45 - 5:00	TYPES AND USES OF TEST KITS
INSTRUCTOR	● Charles Busch - Ken Morris Sampling Kit Orientation Sampling Techniques

<u>FOURTH DAY</u>	
8:00 - 11:45	FIELD INSPECTION AND SAMPLE EVALUATION
INSTRUCTOR	● Charles Busch - Ken Morris Inspection Water Sample Field Analysis Report
11:45 - 12:30	LUNCH
12:30 - 5:00	FIELD APPLICATIONS
	● Inspection ● Sampling ● Testing ● Flushing
<u>FIFTH DAY</u>	
8:00 - 10:00	IRRIGATION REQUIREMENTS AND HARDWARE
INSTRUCTOR	● Charles Busch Trouble Shooting
10:00 - 11:45	REVIEW
12:30 - 5:00	CERTIFICATION EXAM

City of Largo
Medium Public Access System
7MGD

<u>RESIDENTIAL RECLAIMED WATER INSPECTION PROCEDURES</u>
1. Greet homeowner and give pamphlets 2. Paint curb 3. Explain inspection 4. Turn off water heater breaker 5. Check reclaimed connection 6. Check previous source disconnect 7. Check potable box for backflow prevention device 8. Check all zones with potable 9. Turn on all potable hose bibbs 10. Turn off potable at the meter 11. Turn on reclaimed 12. Check all zones with reclaimed 13. Check potable hose bibbs during each zone 14. Turn on potable 15. Turn off hose bibbs 16. Notify customer pass / fail 17. Turn on water heater breaker 18. Install curb marker

Inspection Information

City of Largo
(continued from previous page)

ADMINISTRATION

APPLICANT: ADDRESS: CITY, STATE, ZIP APPLICATION DATE: R.O.W. [] CITY [] COUNTY [] STATE [] TYPE OF SERVICE: [] IRRIGATION [] OTHER

LARGO RECLAIMED WATER PERMIT # PIN. CO. ACCT#: ATTN: PHONE: () EMERGENCY PHONE: () ACREAGE: SERVICE SIZE: MAIN SIZE: (EXPLAIN)

ASSESSMENT HOSE BIBS CROSS CONNECTION CURB PAINTED IS THERE AN APPROVED BACKFLOW PREVENTION DEVICE INSTALLED ON POTABLE WATER SERVICE IRRIGATION SYSTEM INGROUND EXISTING SERVICE DISCONNECTED AND CAPPED PREVIOUS SOURCE SYSTEM COLOR CODED PROCESS SYSTEM (COMMERCIAL ONLY) PROCESS DISCHARGED TO SANITARY SEWER CONTRACTOR

FINAL INSPECTION RECOMMEND TURN ON: (CIRCLE ONE) YES/NO - IF NO, REASON METER(S) INSTALLED (COMMERCIAL ONLY): RECLAIMED SYSTEM ON LINE (DATE): CURB MARKED (CIRCLE ONE): YES/NO - IF NO, REASON LARGO INSPECTOR APPROVED PINELLAS COUNTY INSPECTOR NOTIFICATION LETTER SENT FILE: /home/mcunning/inspform2.wp

POTABLE SERVICE SIZE LOCATION RECLAIMED SERVICE IRRIGATION SIZE LOCATION PROCESS: SIZE LOCATION

DATE OF INSPECT. POTABLE SERVICE SIZE LOCATION RECLAIMED SERVICE IRRIGATION SIZE LOCATION

Sarasota County
Small Public Access System
5MGD

SARASOTA COUNTY UTILITIES DEPARTMENT
CROSS CONNECTION CONTROL QUESTIONNAIRE
Ordinance 89-19

Existing Residence [] Proposed Residence []

BUILDING PERMIT APPLICATION NUMBER(S):
8SO W/O#
8SO SUBD

On April 4, 1989 the Sarasota Board of County Commissioners adopted Ordinance 89-19 implementing a cross connection control program for all water connections within the unincorporated areas of Sarasota County, Florida. In order to adequately enforce these requirements the Utilities Department must have the information below completed to the best of your ability for all instances where this office will be setting the water meter.

(1) Is there or will there be another source of water to or on your property other than the metered water service connection? (i.e., well, lake, pond, swimming pool, reclaimed water, etc.)
YES [] NO []
If yes, complete the following:
WELL [] SWIMMING POOL [] LAKE [] REUSE WATER [] OTHER:
(2) Is there or will there be an underground irrigation system on the property?
YES [] NO []
If yes, what source of water will be used?
REUSE WATER [] POTABLE WATER [] WELL [] OTHER:
(3) How many stories will this residence have? (Circle One) 1 2 3

DATA FURNISHED BY: Print Name Title/Company Name
SIGNATURE: DATE: PHONE:

ANY YES ANSWERS MEANS A BACK FLOW PREVENTER IS REQUIRED!

FOR OFFICE USE ONLY:
Account Number Address

INSPECTOR (BACKFLOW) DATE COMMENTS
PECTOR (WATER METER) DATE COMMENTS
INSPECTOR (SEWER SERVICE) DATE COMMENTS

INS

CCC.FRM Rev. 04/97

Conserv II
Large Agricultural System
28MGD

CITY OF ORLANDO

Reclaimed Water Construction and Inspection Guidelines Summary
(Florida Administrative Code 62-610, September 18, 1997)

1.0) Reclaimed water mains shall be installed at a minimum horizontal distance of 3 feet (outer diameter to outer diameter) from a potable water main or any sanitary sewer main. Reclaimed water mains shall be above wastewater mains. Reclaimed water mains shall be located to provide a separation of at least eighteen (18") inches between the bottom of the reclaimed water main and the top of a wastewater main. Reclaimed water mains shall be below potable water mains. A minimum separation of eighteen (18") inches shall be provided between the bottom of a potable and the top of a reclaimed water main.

2.0) When construction conditions prevent a vertical separation of eighteen (18") inches as described above, the upper pipe shall be constructed of ductile iron pipe with mechanical joints. The ductile iron pipe shall be a minimum of twenty (20') feet in length and shall be centered at the point of crossing, so that the joints will be equidistant and as far as possible from the reclaimed water main.

3.0) All newly installed reclaimed water pipe will be color coded with the approved reclaim water line color which is pantone 522c (purple). All fittings and equipment above ground shall be purple in color.

4.0) Reclaimed water meters and boxes must be installed to measure irrigation demand. Meters should be installed in accordance with the attached meter/valve installation diagram, which illustrates isolation valves on the upstream and downstream side of the meter and pressure reducing valve.

5.0) Valve boxes for hydraulic and electric components and meter boxes should be purple in color and warnings should be stamped on the cover. Reclaimed water covers should not be interchangeable with potable water covers.

6.0) Reduced pressure principal backflow preventers must be used on the potable water main of the users of reclaimed water. See O.U.C.'s Approved Devices List attached.

7.0) Dual check valve backflow preventers are acceptable only at residential properties.

8.0) No cross connections between reclaimed and potable lines are allowed. If potable water is used as back up water for reclaimed water irrigation/ground water irrigation wells, cooling towers or heat-exchangers, a physical break is required between the potable water supply pipe and the receiving system. The air gap separating the potable water from the system containing non-potable water should be at least two pipe diameters.

ENVIRONMENTAL CONTROL SECTION • ENVIRONMENTAL SERVICES DEPARTMENT
5100 L.B. MCLEOD ROAD • ORLANDO, FLORIDA 32811
PHONE 407-246-2664 • FAX 407-246-2886 • http://www.ci.orlando.fl.us

Inspection Information

Conserv II
(continued from previous page)

- 9.0) Hose bibs (spigots or other hand operated connections) shall be located in locked vaults, service boxes, or compartments which shall be clearly labeled as being reclaimed water. Hose bibs which can be only operated by a special tool may be placed in non-lockable vaults, service boxes or compartments clearly labeled as reclaimed water.
- 10.0) A setback distance of one hundred (100') feet shall be maintained from public eating, drinking and bathing facilities. Low trajectory nozzles, or other means to minimize aerosol formation shall be used.
- 11.0) A buffer of seventy five (75') feet shall be maintained between the edge of the wetted area of the reclaimed water application sites and any potable water supply well.
- 12.0) Adequate signs are to be used to indicate that reclaimed water is used for irrigation only and not for drinking. (Contact this office at (407) 246-2664 for signs)
- 13.0) All new and relocated reclaimed water mains shall be pressure tested in accordance with AWWA Standard C600.
- 14.0) Reclaimed water shall not be used to fill swimming pools, hot tubs or wading pools.
- 15.0) All new and relocated reclaimed water mains shall be installed in accordance with standard engineering practices for the installations of underground water transmission lines.
- 16.0) All new construction/installations must be coordinated through the Environmental Services Department at 5100 L.B. McLeod Rd. Orlando Fl 32811. Telephone No. (407) 246-2664
- 17.0) Each user must complete an application/agreement for the use of reclaimed water which can be obtained at the following:
Environmental Services Department
5100 L.B. McLeod Road
Orlando Florida 32811
Telephone No. (407) 246-2664
- 18.0) Prior to any reclaimed water use, installation and post construction inspections will be conducted by the City of Orlando representative, followed by annual inspections.

CITY OF ORLANDO

RECLAIMED WATER SYSTEM INSPECTION

Facility Name: _____ 'RM # _____
Address: _____ Sample ID # _____
Reason for visit:
1. _____ Initial Inspection
2. _____ Annual Inspection
3. _____ Spot Inspection
4. _____ Re-Inspection
5. _____ Customer Request
6. _____ Request Lock-off
7. _____ Customer Complaint
8. _____ Unlock / Turn on
9. _____ Unable to complete the inspection due to limited access of the property. Please call (407) 246-2664 to schedule a time to complete this required inspection within 10 working days of this notice, to avoid any interruption in your reclaimed water service. Your assistance in this matter will be greatly appreciated.

INSPECTION OBSERVATIONS
Sprinkler System Yes No
Cross Connection Yes No
Illegal Connection Yes No
Cooling Tower Yes No
Illegal Hose Bibbs Yes No
Property Posted Yes No
Residential A/C Yes No
Ready to Serve Yes No
Comments: _____

Curbs Color Coded Yes No
Remark Curb Yes No

WATER SAMPLING
Water Samples Yes N Quantity _____ Parameter _____
Field Analysis Sample Yes o Quantity _____ Parameter _____
Results of Field Analysis _____

Private Lab Yes N Lab Utilized _____
Sample(s) City Lab Yes o Quantity _____

CROSS CONNECTION CONTROL EVALUATION
Type _____ Size _____ Manufacturer _____
Date Last Inspected: _____ Inspected By: _____

OBSERVATIONS & NOTES
Remarks: _____

FIELD INSPECTOR _____
Date _____ Time _____

April 1, 1999 Mailed Certified:
Name
Company
Address
City, State Zip
Permit # _____
Facility Name: _____

On _____ at _____ A.M. a representative of the City of Orlando's Environmental Services Department will be visiting the above referenced facility to perform a Reclaimed Water System Inspection, as required by Florida Administrative Code (FAC) 62-610. Please have the following information available at time of inspection:
1) Copy of the facility irrigation plan.
2) Copy of the Agreement For The Delivery And Use Of Reclaimed Water
3) Copy of facility potable water piping system drawings to include location(s) of backflow preventer(s).

It will be necessary to briefly shut off potable and reclaimed water during this inspection. We recommend that all residents be notified in advance of this inspection.
Please contact this office to either accept this appointment or to schedule an alternative appointment.
For your review, I am attaching a copy of the On Site Inspection form. Please feel free to call me should you have any questions.

Very truly yours,
Dan Dashtaki
Environmental Engineer
DD/dma
Attachments

ENVIRONMENTAL CONTROL SECTION • ENVIRONMENTAL SERVICES DEPARTMENT
5100 L.B. McLEOD ROAD • ORLANDO, FLORIDA 32811
PHONE 407-246-2664 • FAX 407-246-2886 • http://www.ci.orlando.fl.us

Inspection Information

Conserv II
(continued from previous page)

RECLAIMED WATER SYSTEM
ANNUAL FIELD INSPECTION REPORT

Upon Arrival

Request a pre-inspection meeting/discussion with the Owner representative(s) to:

- 1. Explain the purpose of your visit.
- 2. Provide an overview of the local reclaimed water program and how it benefits the environment.
- 3. Provide the Owner representative with any written information about the reclaimed water program, if appropriate.
- 4. Answer any questions for the Owner representative(s) regarding program requirements.
- 5. Describe the information you wish to collect during the inspection. Offer the Owner representative(s) an opportunity to view the inspection form that you intend to complete.
- 6. Discuss the need to perform a cross connection check.

RECLAIMED WATER SYSTEM
ANNUAL FACILITY INSPECTION
Exit Interview and Evaluation

- A. Provide a summary of the findings to the Owner representative.
- B. A written report will be issued by City within 30 days.
- C. Does the Owner representative require any additional information concerning this inspection and/or the reclaimed water program.

Reclaimed Water System
Annual Field Inspection Checklist

Date: Inspector's Name: Reclaimed Water Usage: (MGD)
Owner's Name:
Facility Name:
Address:
Subdivision:

INSPECTION CHECK LIST:

- Purpose of inspection explained
- Backflow prevention on domestic potable Yes No
- Cross Connection inspection was completed using following method:
No well detected on property (front/back yard)
Well detected on property
Well disconnected from irrigation and air gap exists
Potable water line turned off at the master meter
No flow detected on potable water fixtures.
(If potable shut off is not possible)
Reclaimed line turned off
All irrigation zones activated & no flow of water detected
Reclaimed line turned back on
Water samples collected at various potable fixtures
Sampling protocol referenced
- Above ground hose bibs not detected (front/back yard)
- Proper signage installed
Location
Condition
Reclaim water is applied in accordance with FAC 62-610.469
Other (explain)

Owner's Signature: Date:
Questions? Call 246-2664

RECLAIMED WATER SYSTEM
ANNUAL FIELD INSPECTION QUESTIONS

- A) Have there been any owner/operator changes during the past year? YES NO
If yes, Name:
Address:
City:
Zip Code:
Telephone #:
- B) Are there any additional irrigation systems or construction planned for the following year? YES NO
If yes, explain:
- C) Irrigating hours
Sunday Monday Tuesday Wednesday Thursday Friday Saturday
- D) Has any additional plumbing (potable or irrigation) been added (or will be added during the following year)? YES NO
If yes explain (identify where):
- E) Does the Owner representative know the procedure for notifying the Environmental Services Department of any reclaim water concerns. (407) 246-2664 YES NO

Inspection Information

Conserv II
(continued from previous page)

Date Mailed Certified:
P

Name
Company
Address
City, State Zip

RE: Permit # Annual Reclaimed Water System Inspection

The City of Orlando's Environmental Services Department has reviewed all the information gathered during the referenced inspection. Attached is a copy of the inspection report for your file.

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

Sincerely,

Dan Dashtaki
Environmental Engineer

DD/dma

Enclosure

xc: Shane Benner, Supervisor, Environmental Control Section
File

CITY OF ORLANDO
RECLAIMED WATER SYSTEM

Facility Inspection Report
for
SAMPLE

Date of Inspection: Facility Contact:
Inspector's Name: Facility Address:
Reclaimed Water Usage:

1.

Should the current Agreement For The Delivery And Use Of Reclaimed Water be amended?
If "Yes", explain:

Yes ___ No X
2.

Notify reclaimed water user of any problem(s).
Date first notified (if applicable):
Problem description (if applicable):

a.

You have been provided with 4 large signs and 3 small signs, please install the 4 large sings at the entrances and exits to the complex. Install the small signs in high walking picnicing, swimming areas. Should you need more sings please give us a call at 246-2664.

b.

Please replace all broken irrigation heads and adjust pressure to avoid future damage to the irrigation system.

c.

Adjust and redirect all sprinkler heads which spray on the roads, sidewalks or any impervious areas. Reclaimed water should only be applied to pervious green space.
3.

Is there a need to initiate enforcement proceedings?

There is no need to initiate enforcement proceedings at this time, however, the above referenced problems will need to be corrected as soon as possible.

Yes ___ No X
4.

Has the appropriate City wastewater treatment plant manager been informed of the inspection findings?

How informed: telephone ___
copy of inspection form X
other (specify) ___

Yes X No ___

5. Additional Comments:

City of Plant City
Small Agricultural System
3MGD



RECLAIMED WATER IRRIGATION INSPECTION REPORT

CUSTOMER NAME:
ADDRESS:

APPROVED PIPE, INCLUDING PURPLE COLOR AND LABELING: YES NO

APPROVED PURPLE OR LABELED IRRIGATION HEADS: YES NO

APPROVED PURPLE VALVE BOXES: YES NO

APPROVED PURPLE METER AND BACKFLOW ASSEMBLY: YES NO

APPROVED SIGNS POSTED: YES NO

POTABLE WATER SYSTEM PROTECTED WITH BACKFLOW ASSEMBLY: YES NO (Type)

ANY CROSS CONNECTIONS: YES NO

ANY HOSE CONNECTIONS: YES NO

CUSTOMER INFORMATION PACKET: YES NO

Supplemental Sources, Supply, Storage and Disposal

Reclaimed Water Aquifer Storage Recovery (ASR) in the Southwest Florida Water Management District

By Mark B. McNeal, P.G. CH2M HILL, Tampa, FL

Introduction

Reclaimed water ASR is a relatively new technology designed to store large volumes of high quality, treated wastewater to supplement reuse systems during high demand periods or other times when the reuse system resources are limited. Reuse utilities typically make a substantial investment in developing their treatment, transmission, and distribution systems to reliably provide a high quality product to their reuse customers. Without seasonal storage of excess reclaimed water or other supplemental reuse supplies, most reuse utilities find they are “built-out” at approximately 50 to 60 percent of their total annual reclaimed water supply. Many utilities planning to implement ASR, however, are relying on this technology to allow them to reuse up to 100 percent of the total annual reclaimed water supplies treated at their water reclamation facilities.

West-central Florida and Southwest Florida are drought-sensitive, and water resource issues are paramount. For this reason, many of the reuse practices have originated in this portion of the state. In addition, many surface water discharges of reclaimed water are under significant scrutiny because of the nutrient loading or other imbalances they may present to Florida’s sensitive marine and estuary ecosystems. Deep well injection, an alternative disposal practice, is also becoming more difficult to permit and operate in the state. The regulatory agencies and environmental groups in Florida generally perceive reclaimed water reuse as the most favorable wastewater effluent management practice. The reclaimed water ASR technology will be relied upon in this part of Florida to minimize or eliminate wet weather discharges and overcome dry season reclaimed water shortfalls, thereby optimizing the use of this valuable commodity.

ASR wells provide an excellent opportunity to store significant volumes of reclaimed water seasonally. While the largest of the aboveground storage tanks will typically store 5 million gallons to possibly 10 million gallons of water, a typical ASR well is capable of storing hundreds of

millions of gallons. This provides seasonal storage capabilities rather than storage designed to meet diurnal or daily variations in flow. Aboveground storage ponds and reservoirs commonly used for managing and storing excess reclaimed water face other limitations, such as losses due to evaporation or water quality deterioration such as coliform and pathogens reintroduced into the high quality reclaimed water.

Suitable Storage Zone Selection

With reclaimed water ASR systems, which are typically planned for development in brackish water aquifers, the primary consideration is to ensure that dissolved solids concentrations are maintained at acceptable levels in the recovered water. While potable ASR systems are typically limited to recovery water from the ASR well until total dissolved solids (TDS) approaches 500 mg/L, reclaimed water ASR wells which are typically designed around irrigation uses may allow extended recovery of this resource to water quality approaching 1,500 mg/L. This generally allows development of the reclaimed water ASR systems in more brackish to saline aquifers, while not significantly affecting recoverability of the stored water. Conversely, it may allow full recoverability of a usable resource earlier into the ASR program.

The ideal storage zone is typically a moderately permeable unit located between two hydrogeologic units of lower permeability. Adequate confinement should exist to limit the movement of the reclaimed water stored into overlying zones which may be utilized for potable water purposes. A degree of hydraulic control of the recharge fluids is typically required to provide adequate recoverability of the reclaimed water. In general, the tighter the confinement surrounding the storage zone the better the chance of recovering a significant portion of the water stored. Other aquifer characteristics such as transmissivity and storativity also influence the well’s ability to successfully store and recover a suitable water resource.

Permitting

Reclaimed water ASR wells are permitted by the Florida Department of Environmental Protection (FDEP) as Class V, Group 3 injection wells. The FDEP regulates

all injection wells in Florida under regulations contained in Chapter 62-528, Florida Administrative Code (FAC). Strict well construction and operating standards are enforced by the FDEP through its Underground Injection Control (UIC) program. The initial Class V, Group 3 well construction permit in Florida was granted for the Hillsborough County Northwest reclaimed water program in November 1997. A permit for the Manatee County Southwest WWTP was issued shortly thereafter. Many other reuse utilities, such as the Englewood Water District, the City of St. Petersburg, and Sarasota County, are in various stages of Class V, Group 3 permitting. Following operational testing of the reclaimed water ASR well, FDEP will also require that the utility obtain a Class V, Group 3 injection well operating permit prior to placing the well in service.

The ASR well also requires a well construction permit and a water use permit (WUP) from the local water management district prior to operating the well. The water management district will typically work with the reuse utility to allow cyclical testing of the well to demonstrate that a functional storage system exists prior to addressing all WUP issues for a supply well. Since only the water stored would typically be recovered from the reclaimed water ASR well, and since the wells would only be pumped for relatively short periods of time when the reuse system supplies are stressed, WUPs should be considerably more easily obtained than conventional water supply wells which utilize a high quality fresh groundwater for this supplemental source.

Other local permits may also be required to make the reclaimed water ASR system fully operational.

Chapter 62-610, FAC, is currently under revision. Much of the proposed language directly relates to rules governing development and operation of reclaimed water ASR systems. This rule is generally very favorable for the development of reclaimed water ASR programs, and the intent of the proposed rule revisions was to facilitate the advancement of this technology. For example, the proposed rule provides a “zone of recharge” in selected aquifers which waives secondary drinking water standards at the ASR wellhead. This should waive some of the more aesthetic drinking water parameters, such as color and odor, as permitted parameters in the recharge water. Other proposed language includes requirements that must

be met by the recovered water prior to placement back into the reuse system to ensure that reuse standards are maintained for public access reuse systems. Anyone interested in developing a reclaimed water ASR program should carefully consider the language contained in the proposed rule prior to implementation.

Water Quality Standards Prior to Injection

The FDEP requires that all federal primary Drinking Water Standards (DWSs) be maintained at all times in water recharging a Class V, Group 3 injection well. This is regardless of naturally occurring concentrations of these parameters in the storage zone. In addition, state primary and secondary DWSs must be maintained in the reclaimed water or, as a minimum, must at least be better than the ambient groundwater concentrations. If these standards cannot be reliably maintained in the reclaimed water, relief mechanisms may be required prior to injection. This may include an aquifer exemption or limited aquifer exemption if certain federal primary DWSs cannot be met, or a Water Quality Criteria Exemption (WQCE) is selected, state standards cannot be met.

To demonstrate that these standards are reliably achieved in the reclaimed water, FDEP will require a comprehensive reclaimed water characterization program, such as bi-monthly sampling and analysis of the reclaimed water for state/federal DWSs for at least one year to establish seasonal variations that can be anticipated in the reclaimed water quality. Sampling for pathogens such as *Cryptosporidium* and *Giardia Lamblia* is also typically required. Finally, other domestic wastewater parameters such as nutrient data will need to be fully characterized and assessed prior to obtaining FDEP permission to test the ASR well.

Competing Groundwater Users

A well inventory is required within the Area of Review prior to issuance of a well construction permit. This study typically identifies most legal competing groundwater users in the area that may either impact recoverability of the recharge water or may be adversely impacted due to reclaimed water ASR operations. Of most concern are true domestic wells (wells that supply

(continued)

water inside the homes) or wells completed to similar depths as the ASR well. Many typical water supply wells, such as irrigation or agricultural wells, can coexist with the reclaimed water program even if reclaimed water migrates to such wells. Since most reclaimed water ASR programs are being implemented in brackish to saline aquifer systems, competing groundwater use is often limited because native water quality of these aquifers is not fit for most applications. Careful consideration of existing well owners is key to successfully locating the initial reclaimed water ASR well.

Reclaimed Water ASR Program Costs

Many factors influence the cost of a reclaimed water ASR program. The quality of the reclaimed water and level of characterization required, level of permitting requirements and necessary relief mechanisms, distance of optimum ASR site from reuse system, depth of storage interval and native water quality, and the capacity of the initial ASR well are a few of the factors influencing these costs. For planning purposes, total costs to implement the initial reclaimed water ASR pilot well and associated monitoring well network have typically ranged from \$700,000 to approximately \$1,000,000 for a 1 to 2 MGD ASR system. The majority of these costs are associated with infrastructure construction, such as ASR well installation, piping, and wellhead completions. These costs also include the initial few years of operational (cycle) testing activities. Following cycle testing, the goal should be to have a fully permitted and functional ASR well that is capable of storing and recovering hundreds of millions of gallons of high quality reuse water. Conservatively assuming that the initial program costs \$1 million to implement and that an annual storage capacity of 200 million gallons is available, capital costs for this method of storage are estimated at less than a penny per gallon of annual storage. ASR is a very cost effective method of storage for large storage volumes.

Reclaimed Water ASR Program Schedule

The time required to implement the initial ASR program can range from 18 to 24 months. This time includes design, permitting, reclaimed water characterization, and construction of the facilities. Cycle testing will be required following installation of the ASR facilities to demonstrate that the well is functioning as designed and to evaluate quality of the recovered water

over time. While this will take additional time (1 to 2 years), the well should be functional during this period, allowing the reuse utility to coordinate cycle testing around supply and demand and allow the recovered water to be put to beneficial use.

Other Considerations

Further development of reclaimed water ASR wells may offer other environmental benefits. For example, saltwater intrusion barriers may be established to retard movement of saline groundwater into heavily stressed groundwater withdrawal areas. As the reclaimed water ASR technology is further advanced, it is believed that additional environmental benefits will be realized by reuse utilities committed to full use of their valuable resource.

Reclaimed Water Storage Options

Elevated Storage Tanks

Cost: per 1 MG – \$950,000
Pros: May utilize existing tank’s gravity pressure; low Cl dissipation; low biological growth; small land requirement; minimal permitting requirements
Cons: Generally small capacity, up to 3 MG; expensive to construct; possible limits on construction and siting.
Suggestions: Add Cl injection point; can be painted to advertise system.

Ground Storage Tanks

Cost: per 1 MG – \$150,000 to \$250,000
Pros: Capacities up to 20 MG; low Cl dissipation; little biological growth; small land requirement; minimal permitting requirements
Cons: Expensive to construct; possible limits on construction and siting.
Suggestions: Add Cl injections point, paint and landscape to be aesthetically pleasing.

Lined Open Storage Pond

Cost: 1 MG – \$35,000 to \$100,000
Pros: Very large capacity; less expensive to construct; can be an aesthetic enhancement; may utilize storm water.
Cons: High Cl dissipation; high biological growth; large land requirement; evaporation losses; intake and system clogging potential; moderate permitting requirements.
Suggestions: Add filter and Cl injection point at intake structure; construct in a natural shape.

Aquifer Storage and Recovery (ASR)

Cost: 1 MGD – \$700,000
Pros: Extremely large capacity; seasonal storage; no biological growth; a very small land requirement; reduction in THM levels.
Cons: Limits on appropriate siting; high Cl dissipation; stringent permitting requirements.
Note: Cost for ASR is per MGD, all others per MG.

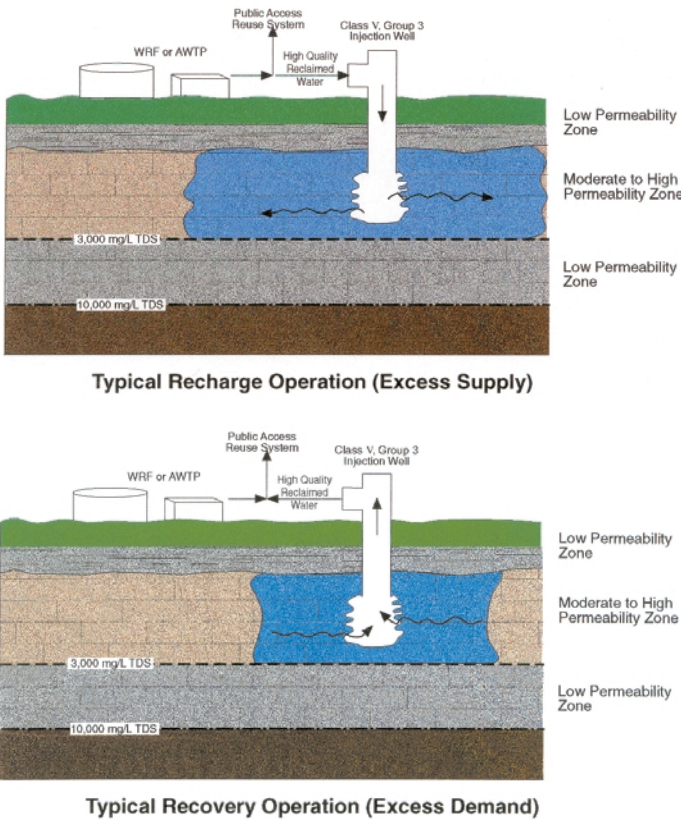
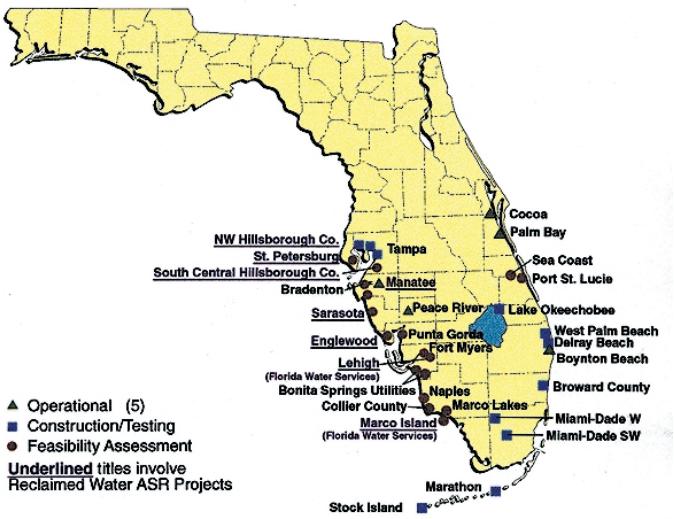


FIGURE 2
Select ASR Sites in Florida



City of St. Petersburg

Storage Issues

The City’s reclaimed water system is supported by four water reclamation facilities. Each plant has limited storage capacity. The plants have a combined treatment capacity of 68.4 mgd and a reclaimed water storage capacity of 25 mgd. Each plant is designed with an alternative method of disposal to deal with unused reclaimed and reject waters through deep well injection.

St. Petersburg’s endeavor to expand its reclaimed water system and maximize the serviceable customer base presents a number of challenges. The greatest of these challenges is ensuring adequate product availability 365 days a year. To accomplish this goal, the City is exploring a number of alternative approaches to deal with product issue. The programs include educating customers in proper landscape management techniques, resource management through metering and increased storage capabilities via above ground and ASR.

Aboveground storage poses a number of challenges as St. Petersburg is a well-established community with minimal undeveloped acreage available. To deal with this issue, St. Petersburg is aggressively pursuing the option of ASR. It is the consensus of the City that if ASR becomes a viable option for the City, it could result in a greater number of serviceable customers. This option in concert with conservation and other alternatives could carry us well beyond the current projected number of 17,000 customers. The ASR program would allow the utility to augment aboveground storage during peak demand periods by storing high quality reclaimed water during low demand and wet weather conditions.

Largo Sparkling Water System Supply, Storage and Disposal Options

The City of Largo owns and operates one 18 MGD Advanced Wastewater Treatment Facility. This facility treats approximately 12 MGD of wastewater received from a 40 square mile service area. The facility includes three onsite A2O activated sludge plants, Tetra

denitrification filters, shallow bed sand filters, two chlorine contact chambers, aerobic digesters and a “state of the art” sludge pelletizing factory.

The Sparkling Water System starts at the City’s 10 MG reclaimed water ground storage tank and pump station adjacent to the wastewater treatment facility. This CROM pre-stressed tank is the largest single reclaimed water tank of its kind in Florida. Reclaimed water pressure to the system is provided by the fully automated pump station through four, 400 horsepower pumps. These pumps provide water to customers as well as filling the City’s other 5 MG and 3 MG pre-stressed ground storage and pumping facilities which are located out in the service areas. The 5 MG and 3 MG facilities each provide water pressure via three, 250 horse power pumps. The entire system is remotely monitored and controlled using a radio frequency telemetry system and Wonderware software.

The City of Largo Advanced Wastewater Treatment Facility has a surface water discharge permit. The tertiary treated effluent not used by the Sparkling Water System is discharged into a chain of freshwater lakes in the Feather Sound area. These lakes eventually discharge into Tampa Bay. The City is interested in reusing 100% of its effluent. To meet the seasonal fluctuations in supply and demand, it will be investigating the feasibility of Reclaimed Water Aquifer Storage and Recovery.

Sarasota County’s Reclaimed Water System

Sarasota County’s reuse system consists of six water reclamation facilities, of which two are interconnected. By the end of FY00, four of the facilities in the north county area will be interconnected and will ultimately tie in with the City of Sarasota’s reuse system. In the south county service area, we are in the process of extending a transmission main to interconnect the remaining two facilities and by the end of FY02, the south county system will be tied in with the City of Venice’s existing reuse system. When completed, this regional network will allow us to deliver reclaimed water where it is most in demand during dry weather and, conversely, to store or dispose of it during wet weather.

The overall system, at build out, will have a storage

capacity of over 300,000,000 gallons. The storage consists of holding ponds at golf courses, plant sites, and remote ponds owned by Sarasota County. Our water reclamation facilities produce an average of 5.8 million gallons per day (MGD). Our customer base is broad and varied, but as with other reuse systems, it is difficult to meet the seasonal fluctuations in supply and demand. To overcome the supply and demand factor, we have obtained an aquifer, storage and recovery (ASR) feasibility study for the north county area and are performing the required tests on our effluent to apply for a permit to construct a test well in 12 months. The overall plan in the north county service area is to have three 1.0 MGD ASR wells. In the south county area, we are proposing an additional three 1.0 MGD ASR wells and plan to permit the first test well this year.

We also have deep injection wells in both the north and south county service areas, which we are in the process of permitting to allow the disposal of effluent during extreme wet weather.

In addition to ASR, we are looking at the possibility of mixing stormwater with reclaimed water during peak demand periods to meet the needs of our customers. We have contracted work to a consultant to determine the feasibility of mixing reuse with stormwater as a supplemental source, but are only in the introductory stages of this project.

Manatee County Reclaimed Water Storage and Disposal

The Manatee County Reclaimed Water System relies primarily upon storage ponds (lakes) for diurnal and seasonal storage of reclaimed water. There are three regional wastewater treatment plants (North, Southeast, Southwest) each with its own storage facilities currently supplying the system.

The North Regional Plant has 2.5 MGD average daily flow and storage facilities consisting of a 106 acre lake, a 14 acre pond and two 750,000 gallon ground storage tanks. The total storage capacity is 156.5 million gallons.

Three new 1 MGD aquifer storage and recovery (ASR) wells are planned for this plant. These planned wells will have a combined estimated storage capacity of 458 million gallons.

The Southeast Regional Plant has 2.9 MGD average daily flow and storage facilities consisting of an 86 acre lake, a 63 acre lake and a 16 acre pond. The total storage capacity is 305 million gallons.

The Southwest Regional Plant has 14.5 MGD average daily flow and storage facilities consisting of a 47 acre lake, a 25 acre lake, and a 1.4 million gallon ground storage tank. The total storage capacity is 141.4 million gallons.

Three new 1 MGD aquifer storage and recovery (ASR) wells are planned for this plant. These planned wells will have a combined estimated storage capacity of 458 million gallons.

The Southwest Regional Plant also has a 15 MGD deep well disposal system currently used to dispose of approximately 9.5 MGD.

City of Plant City Water Reclamation Facility Disposal

The wastewater treatment plant is an 8.0 MGD activated sludge process operating in the extended aeration mode. Presently the treated wasewater discharges from the pond into Westside Canal which winds its way through a series of creeks until it reaches Lake Thonotosassa.

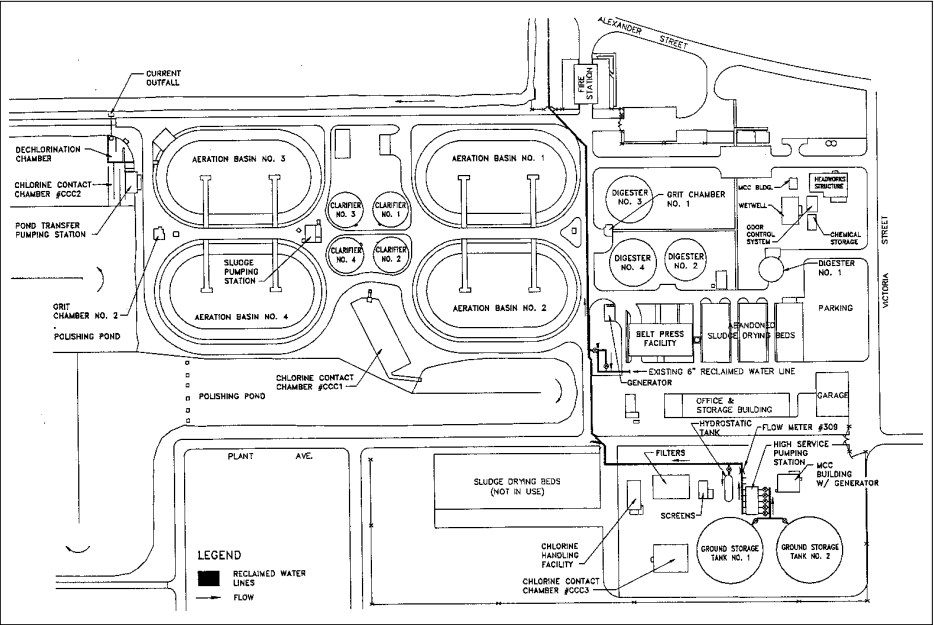
Stringent regulations have made it necessary for the city to find some other ways of disposing of its treated wastewater. The city hired Smith & Gillespie to do a reuse study which has brought us to where we are now. The construction on the west side of our property is our new Reclaimed Water Production Facility. This facility consists of a pond transfer pumping station which is located on the effluent end of the pond. The water will pass through flow measurement equipment, screens to remove any plants or fish that may be pumped to the facility, sand filters to remove suspended solids, high level disinfection, storage, and a high service pumping station which will pump the reclaimed water north.

We presently have three customers signed up for reuse for a total of 2.395 MGD. They are:

- CF Industries, Industrial Reuse, 2.05 MGD (water to be used for cooling towers)
- Lloyd & Rings Nursery, Agricultural Reuse, 0.32 MGD (water to be used for irrigation system)
- Fred Johnson, Agricultural Reuse, 0.025 MGD (water used for orange grove irrigation)

The construction in the laboratory area is a new headworks facility. This will consist of screening, flow measurement, grit removal, a pumping station, and an odor control system.

CITY OF PLANT CITY’S NEW RECLAIMED WATER PRODUCTION FACILITY



System Financing

City of St. Petersburg Funding

Program Funding and Capital Recovery

In the 1970s, the City of St. Petersburg petitioned EPA for funding to upgrade the four wastewater treatment facilities and construct a distribution network to intertie these facilities. Additional funding was obtained in the early 1980s to extend the reclaimed water system into four predominately residential areas adjacent to Tampa Bay and Boca Ciega Bay. These areas were identified as critical water quality areas. Since the mid 1980s the City has, through its annual capital improvement program (CIP), provided funding in an ongoing effort to continue the expansion of the reclaimed water system.

To request service the property owner or neighborhood shall petition the Public Utilities Division. This petition shall represent an expression of interest in obtaining reclaimed water service. The City shall provide cost estimates, information on connection fees and monthly service charges to the petitioning body. If the estimated cost is agreeable to the petitioning body, each property owner shall execute a Voluntary Lien Agreement and an Application for Reclaimed Water Restricted Use Permit.

In the case of a joint effort to obtain reclaimed water service, such as a neighborhood or subdivision, the City requires that no less than 30 percent of the petitioning body execute the Voluntary Lien Agreement and Application for Reclaimed Water Restricted Use Permit.

The document package must be submitted to the Reclaimed Water Office prior to connection and/or construction of an extension to serve the property or properties.

The City funds the reclaimed water extensions through its annual CIP program and recovers these funds through the reclaimed water voluntary assessment program. Based on the cost of the project, the customers assessment term may range from three years, which is the most common practice, to as much as ten years at eight percent simple interest. Capital costs for reclaimed water vary from \$250 to \$1,500 per residential site. For commercial facilities the capital cost for reclaimed water service may range from \$500 to as much as \$80,000. In addition to the capital investment we have connection fees and monthly service charges.

All services 2 inches and larger will be billed at actual cost. All backflow devices larger than 1 inch will be billed at actual cost.

Reclaimed water is an unmetered service and is billed on a flat rate of \$10.36 per month for the first acre or less and \$5.92 for each additional acre or part thereof. All services outside the City limits are subject to a surcharge of twenty-five percent (25%). A charge of \$25 will be charged for all reclaimed water inspections.

An approved Hose Connection Assembly can also be purchased from the City for a total of \$132. This includes the locking hose box, 50 feet of hose, key and the \$25 inspection fee. Additional hose may be purchased at 78 cents a foot.

Largo Sparkling Water System Financing

Largo has taken a multifaceted approach to financing its “Sparkling Water System.” There are five sources of funds than Largo has used during past expansions.

Largo Sewer Fund

The Largo sewer system is an enterprise fund. All sewer charges and fees collected go into the operation, maintenance and expansion of the sewer system, including the advanced wastewater treatment facility, sludge pelletizing factory and the “Sparkling Water” reclaimed water program.

Southwest Florida Water Management District (SWFWMD) Cooperative Funding

The Southwest Florida Water Management District actively supports water conservation and development of alternative water sources. This support is both technical and financial. The SWFWMD staff assist utilities in analyzing and developing the programs. The SWFWMD basin boards and Governing Board grant millions of dollars to help utilities design and build alternative water systems, including Largo’s reclaimed water system.

Credit Offset Method

The extension of reclaimed water service to a commercial or industrial customer located in an area where service is not available, may be provided by the credit offset method. This method consists of the following:

- A. The property owner shall construct, at his own expense, an extension of the reclaimed water system to transport the water to his property.
- B. The City may provide a credit for water used against the cost of installation of the transmission system.
- C. Once the credit for the cost of installation of the transmission system is issued, ownership of the transmission line will revert to the city. After the credit for the cost of installation of the transmission line is exhausted, the customer will be billed for the actual amount of water used at the prevailing rate.
- D. At no time shall the City be responsible for

reimbursing the property owner for the cost of installation of the transmission line, except for issuing a credit for water used against the cost of installation of the line as stated in B above.

The credit offset method was instrumental during the early years of Largo’s system. This “win-win” method brought reclaimed water to customers that did not have access to reclaimed water mains in Largo’s system with little or no real cost to the City. In addition, the lines are sized to serve other customers along the pipeline. These other customers pay the current reclaimed water rates.

Local Option Sales Tax

Pinellas County voters approved a one cent tax on goods and services for a ten year period. This money is used for major infrastructure improvements within the county. The City of Largo uses part of its portion of the tax revenue to expand the “Sparkling Water” distribution system into neighborhoods.

Reclaimed Water Charges and Fees

The residential rate for 1 acre or less is \$7.00 per month. The commercial rate is 20 cents per 1,000 gallons. Largo reclaimed water revenue is used to help offset operation and maintenance costs. The rates and charges are set to encourage participation and not to generate revenue.

Sarasota County’s Reclaimed Water System Financing

Sarasota County funds its reclaimed water projects through rates. In addition, the Southwest Florida Water Management District (SWFWMD) supports water conservation and the use of alternative water sources through cooperative funding. This funding is applied for each year and is basically a “matching funds” effort. Applicants apply and, if accepted, the total cost of the project is funded by the applicant, subject to reimbursement from SWFWMD up to a pre-determined amount, usually 50% of the project.

Another initiative offered by SWFWMD is the New Water Source Initiative (NWSI) program. This is similar to the cooperative funding program. If a project is considered regional, whereby two separate entities are involved, it may qualify as a NWSI project. NWSI funds are also a “matching funds” effort, which is funded 25% by the basin board and 25% by the Governing Board. The application process is identical to the cooperative funding process.

The Board of County Commissioners reviews reclaimed water rates every two years. Current rates are \$0.10 per 1,000 gallons for all customers. In addition, there are no impact fees associated with tying into the reuse system.

Funding Reclaimed Water Distribution in Manatee County

Manatee County operates its Reclaimed Water Distribution System as a component part of a combined Public Utility which includes Water, Wastewater, Storm Water, Landfill and Reclaimed Water. Manatee County’s utility system operates as a self-supporting enterprise fund and receives no supplementary general revenue funds from the County. While funds for Landfill and Storm Water are generally not intermingled with the Water/Wastewater/Reclaimed Utility, they are legally combined.

Funding for Utility Capital Projects (including expansion of the reclaimed distribution system) comes from surplus funds of the Utility and may include borrowing from a variety of sources. All projects compete for funding through the annual Capital Improvement Program process, with the highest priority projects gaining funding as approved by the Board of County Commissioners.

Operation of the Reclaimed System is accomplished largely as a part of existing sections’ regular duties. Meters are read by regular meter-reading personnel, pressure is maintained by wastewater plant pumps, new customers sign up and are schooled as a regular function of customer service. Line maintenance is handled by the regular water distribution crew. Non-CIP line extensions are constructed by an in-house construction crew. Both in-house crews are permitted to charge time and materials to the Reclaimed Water cost center.

City of Plant City Reclaimed Wastewater Facilities Financing

Engineering and construction costs for Plant City’s new reuse processing facility were approximately \$15 million. The Southwest Florida Water Management District approved and paid \$4 million of the total in support of the water conservation aspects of the program. The remaining \$11 million was financed through a City water/sewer revenue bond issue.

Southwest Florida Water Management District Cooperative Funding Program History

Within the District’s 16 county jurisdictional area there are eight basin boards. The boundaries are delineated along watershed rather than political lines. Each of the basins has ad valorem taxing authority up to 0.5 mil. A major portion of the monies that are generated each year are dedicated to assisting local governments and counties cooperatively fund water resource-related projects that help implement the District’s mission, goals and strategic objectives. To guide the expenditures of these funds, the boards develop basin plans which identify their local water and natural resource management issues and prioritizes them. This is what drives their annual budget process and allows for local governments and counties to submit projects for cooperative funding consideration. The cooperative funding program has historically been a 50/50 cost share on projects approved by the basins. The projects that are submitted for funding consideration are evaluated on the following criteria:

- Consistency with basin priorities
- Regional or multi-governmental in scope
- Consistency with local comprehensive plan
- Effect on District programs and staffing levels
- Past performance of the applicant and ability to implement
- Consistency with District’s Water Management Plan and the Needs and Sources study (four resource-based areas of responsibility are Water Supply, Flood Protection, Water Quality and Natural Systems)
- Compliance with District Regulatory Programs

Projects to be considered for cooperative funding assistance are submitted to the District in December of each year and follow a timeline through to approval or denial by the individual basin boards in August when they adopt their budgets. The District then enters into a contractual agreement with the cooperator and the project commences providing the cooperator has budgeted its share of the project cost. The Cooperative Funding Program is important because:

- 1) Projects are recommended by the local governments and further establish relationships between them and the District
- 2) It allows local projects to be completed with funding assistance afforded by the individual basin boards
- 3) Local basin board tax dollars help pay for and implement local projects
- 4) It helps protect the water resource

The eight basin boards are the Alafia River, Hillsborough River, Northwest Hillsborough, Coastal Rivers, Pinellas-Anclote River, Withlacoochee River, Peace River, and Manasota. The District also has, by state statute, an Alternative Supply Grants Advisory Committee, which reviews and ranks the alternative water supply projects that have been submitted for funding consideration to the individual basin boards.

Cooperative Funding Program General Project Proposal Guidelines

The following information is required for all project proposals for potential Southwest Florida Water Management District Basin Board funding for each fiscal year (beginning October 1):

- Funding proposals must follow the outline of the appropriate informational guideline. If a particular section is considered non-applicable, please indicate why.
- **Four copies** of each project proposal must be accompanied by an application form.
- Proposals must be submitted to the District by **5 p.m. of the first Friday of December, each year.** A priority ranking is required if more than one project is submitted. Any proposal received after that date will be ineligible for funding.
- Project informational guidelines are available for aerial mapping/GIS, alternative source, communications, groundwater, stormwater/flood control, surface water improvement and management (SWIM), water

conservation and water quality.

- Applications for projects that are in more than one District should be submitted simultaneously to each District. Eligibility and ranking of such projects will be handled in the same manner as projects wholly within this District. Alternative source project proposals will include coordinated ranking by each District’s Grants Advisory Committee.
- Please contact your local Governmental Affairs Coordinator for Cooperative Funding Program materials or additional funding information and assistance.

The Governmental Affairs Coordinators and their respective service areas are:

Rand R. Baldwin
Hillsborough, Pinellas and Pasco
Tampa Service Office
7601 Highway 301 North
Tampa, Florida 33637-6759
Phone: (813) 985-7481
Fax: (813) 987-6726
Suncom: 578-2070

Jimmy A. Brooks
Citrus, Hernando, Lake, Levy, Marion and Sumter
Lecanto Service Office
3600 West Sovereign Path, Suite 226
Lecanto, Florida 34461-8070
Phone: (352) 527-8131
Fax: (352) 527-8309
Suncom: 667-3271

Joanne L. McClellan
Hardee, Highlands and Polk
Bartow Service Office
170 Century Boulevard
Bartow, Florida 33830-7700
Phone: (941) 534-1448
Fax: (941) 534-7058
Suncom: 572-6200

Steven A. Minnis
Charlotte, DeSoto, Manatee and Sarasota
Venice Service Office
115 Corporation Way
Venice, Florida 34292-3524
Phone: (941) 486-1212
Fax: (941) 486-2048
Suncom: 526-6528

(continued on next page)

Alternative Source Projects Informational Guidelines

1. Type of Project:

State the nature of the project (i.e., horizontal surficial well system, reuse of reclaimed water, reuse of stormwater, surface water, aquifer storage and recovery, membrane technology, seawater desalination, other).

2. Project Objective:

State the project objective(s) in a clear and concise manner. Describe the specific nature of the water resource problem to be addressed by the proposed project and how the project will remedy the problem.

3. Project Description:

Provide a detailed description of the project. At a minimum, the description must include the following, if appropriate: 1) general location map; 2) detailed project area map; 3) construction details; 4) quantity of water produced by the project; 5) ground and/or surface water withdrawal quantities to be offset; 6) percentage of permitted quantities to be offset; 7) user type to be offset (i.e., agricultural, public supply, recreation, mining, and/or industrial); 8) all associated water use permit numbers and their permitted quantities; 9) all associated surface water management permit numbers (including any exemptions and Florida Department of Environmental Protection permit numbers); 10) location of wet weather management systems; 11) estimate of other potential users in area; 12) customer distribution rate(s); 13) location relative to the Water Use Caution Areas; 14) type of alternative supply facility and its capacity; and 15) how project fits into the Basin Board Plan.

4. Demonstration of Need:

Describe the specific nature of how the project will: (a) optimize the management of water and water-related resources; (b) meet the Basin Board's priorities; (c) utilize existing District resources or build upon District expertise or experience.

Additionally, cite supporting documentation as found in the appropriate Basin Board Basin Plan, State Water Use Policy, District Needs and Sources Study, appropriate Water Use Caution Area Management Plan, local government comprehensive plan or other appropriate strategic or master planning documents.

5. Measurable Benefits:

Identify all measurable water savings and/or financial benefits (both local & regional if applicable) expected to

be achieved by the project. Calculate total project cost for each 1000 gallons of water produced. Amortize the cost at 8% interest over the life-expectancy of the project and include an explanation of the formula(s) used to arrive at the \$/1000 gallons. Explain the benefits of the program and how the results will be evaluated.

Reclaimed water projects will require documentation confirming that at least 25% of existing or planned potable water use has been offset by the project. List potential significant long-term benefits. If located in a Water Use Caution Area, identify how the project assists in meeting the appropriate Water Use Caution Area Management Plan.

6. Deliverables:

List and describe the project deliverables (i.e., documents, signage, constructed facilities, etc.).

7. Project Costs:

The total project cost must be clearly identified. Project cost should be estimated by task categories such as design, transmission line materials, construction of pump station or storage, etc. The District does not typically consider staff time or in-kind services as part of the applicant's matching funds. Upon approval of a funding request, the District will generally fund only up to 50 percent of the total project cost.

A detailed accounting of the amount and source of the matching funds must also be provided.

8. Completion Schedule:

Provide a scope of work with key tasks to be completed. Include a general time frame for the beginning of the project, completion schedule of key tasks, and projected date for completion. Dates may be given in terms of weeks after notice to proceed in lieu of actual calendar dates. Please note that District funds for approved proposals are not available until contracts are executed, typically after October 1st.

9. Implementation:

Provide a plan and period of implementation. Only projects that can be directly implemented by the applicant, or its contracted agent, will be considered for funding assistance. Please note that the District will require the applicant, through an inter-local agreement, to carry out the project within a specified period.

10. Key Personnel:

List all key personnel to be involved, all persons authorized to represent the applicant and a primary

contact person who will be responsible for maintaining communication with District staff.

Include name, title, mailing address and telephone number for each individual cited.

11. Additional Information:

Any other information considered relevant to the project should be included. The applicant may be asked to provide documentation verifying funds have been budgeted for the applicant's portion of the project.

Water Conservation Projects Informational Guidelines

1. Type of Project:

State the nature of the project (i.e., plumbing retrofit, toilet rebate, Xeriscape™, irrigation efficiency, etc.), and the program targets (i.e., residential, commercial, industrial, multi-family, recreational, etc.).

2. Project Objective:

State the project objective(s) in a clear and concise manner. Describe the specific nature of the water resource problem to be addressed by the proposed project and how the project will remedy the problem.

3. Project Description:

Provide a detailed description of the project. For indoor water conservation proposals, if applicable, include: 1) general location map; 2) number of homes involved; 3) number of people involved; 4) quantities expected to be saved; 5) evaluation measures; 6) project documentation methods; and 7) study area controls; and 8) follow-up methodologies such as retention studies.

For outdoor conservation proposals, if applicable, include: 1) number of units (residential, commercial, etc.) involved; 2) acreage and land use involved; 3) quantities expected to be saved; 4) evaluation measures; 5) irrigation efficiencies to be achieved; 6) description of irrigation system; 7) type of crop; and 8) local water conservation ordinance.

4. Demonstration of Need:

Describe the specific nature of how the project will: (a) provide water conserving benefits local and/or regional; (b) meet the Basin Board's priorities; (c) utilize existing District resources or build upon District expertise and experience or enhance District programs. Additionally, cite supporting documentation as found in the appropriate Basin Board Basin Plan, State Water Use

Policy, District Needs and Sources Study, appropriate Water Use Caution Area Management Plan, local government comprehensive plan or other appropriate strategic or master planning documents. Please describe how the proposed project is consistent with the basin's five-year conservation plan and, if applicable, the Northern Tampa Bay Partnership Plan.

5. Measurable Benefits:

Identify all measurable benefits expected to be achieved by the project. Water savings should be stated in terms of gallons per day per unit (i.e., home or acre) and gallons per day for the entire project. Economic benefits should be stated in terms of cost benefit and payback period, if applicable. Calculate total project cost for each 1000 gallons of water produced or saved by the project. Amortize the cost at 8% interest over the life-expectancy of the project, and include an explanation of the formula(s) used to arrive at the \$/1000 gallons. Payback should be calculated by dividing the value of the gallons saved each year by the total cost of the project. List any other potentially significant long-term benefits. If located in a Water Use Caution Area, identify how the project assists in meeting the appropriate Water Use Caution Area Management Plan. Also describe how the Basin Board's contribution to the project will be publicized.

6. Deliverables:

List and describe the project deliverables (i.e., documents, kits, reports, data, analysis, etc.).

7. Project Costs:

The total project cost must be clearly identified. Project cost should be estimated by task categories such as purchase of retrofit kits, installation of irrigation system, study evaluation, etc. The District does not typically consider staff time or in-kind services as part of the applicant's matching funds. Upon approval of a funding request, the District will generally fund only up to 50 percent of the total project cost. A detailed accounting (i.e. budget year, amounts secured from other funding sources by name) of the amount and source of the matching funds must also be provided.

8. Completion Schedule:

Provide a scope of work with key tasks to be completed. Include a general time frame for the beginning of the project, completion schedule of key tasks, and projected date for completion. Dates may be given in

terms of weeks after notice to proceed in lieu of actual calendar dates. Please note that District funds for approved proposals are not available until contracts are executed, typically after October 1st.

9. Implementation:

Provide a plan and period of implementation. Only projects that can be directly implemented by the applicant, or its contracted agent, will be considered for funding assistance. Please note that the District will require the applicant, through an interlocal agreement, to carry out the project within a specified period.

10. Key Personnel:

List all key personnel to be involved, all persons authorized to represent the applicant and a primary contact person who will be responsible for maintaining communication with District staff. Include name, title, mailing address and telephone number for each individual cited.

11. Additional Information:

Any other information considered relevant to the project should be included. The applicant may be asked to provide documentation verifying funds have been budgeted for the applicant’s portion of the project.



Protecting *Your*
Water Resources

Southwest Florida Water Management District Cooperative Funding Program Application

District Use Only
Project Number _____ FY _____
Date Submitted _____
Department Director _____

Project Name (40 character limit):

Who should we contact for more information regarding your project?

Applicant: _____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: () _____ Ext: _____ Fax: () _____

County/Countries (Identify counties associated with project): _____

Project Type (check only one):

☐ Communications

☐ SWIM

☐ Aerial Mapping/GIS

☐ Alternative Source

☐ Groundwater

☐ Stormwater Management/Flood Control

☐ Water Conservation

☐ Water Quality

Cost Information:

Total amount of project cost (all years/phases) \$ _____

Total upcoming fiscal year cost (basin cost plus applicant cost) \$ _____

Indicate amount to be provided by Applicant for upcoming fiscal year \$ _____

Is this a previously funded project? ☐ yes ☐ no

If yes, what year funding is being requested? (example 1st, 2nd, etc.) _____

If yes, what is the District Project Number? _____

(continued on next page)

Provide a brief description of the proposed project. (“see attached” is not acceptable):

Briefly describe project benefits, regionally and locally (“see attached” is not acceptable):

Briefly describe any anticipated problems:

Funding Information — Please check all basins that apply:

- ☐ Alafia River
- ☐ Coastal Rivers
- ☐ Green Swamp
- ☐ Hillsborough River
- ☐ Manasota
- ☐ Northwest Hillsborough
- ☐ Peace River
- ☐ Pinellas-Anclote River
- ☐ Withlacoochee River

Indicate the basin(s) and how much money is requested from each:

Example: Hillsborough River \$2,000 and Alafia River \$3,000

ADDITIONAL INFORMATION FOR
ALTERNATIVE WATER SUPPLY PROJECTS IN
WATER USE CAUTION AREAS

ALTERNATIVE WATER SUPPLIES GRANTS ADVISORY COMMITTEE

Florida Statute 373.1961(2)

Included within the District Cooperative Funding Program are the requirements of this Florida Statute that requires the Districts provide funding for development of alternative water supplies within water resource caution areas. These are defined as: “...water supplies that have been reclaimed after one or more public supply, municipal, industrial, commercial, or agricultural uses, or are supplies of storm water, or brackish or salt water that have been treated in accordance with applicable rules and standards sufficient to supply the intended use.”

Applications for these projects will receive the normal staff review and an additional review by the Alternative Water Supplies Grants Advisory Committee. This committee is made up of volunteers who will review proposals, hold public hearings to take public comments, hear presentations by applicants and staff, and will then provide a ranking of proposals for the consideration of appropriate Districts boards.

Committee Members

Kay Adams, Hernando County Utilities
Becky Aych, Environmental Confederation of SW Florida
Bob Brotherton, City of Dunedin Utilities
Vacant
Michael Machata, Hickory Hill Citrus Nursery

Representing

County Utility
Environment
City Utility
Private Utility
Agriculture



Applicants are asked to prepare a 5-minute presentation for each project and content should be specific to the following points:

STATUTORY CRITERIA FOR PROJECTS TO BE CONSIDERED

- Eligible Applicants:
 - Water suppliers or users
 - Local Governments
 - Water, wastewater and reuse utilities
 - Municipal, industrial, and agricultural water users
 - Other public and private water users
- Projects must be within a Water Use Caution Area
- Capital construction projects only
- Utilities:
 - Must assure that project is consistent with local comprehensive plan.
 - Must assure that hook up to the alternative supply system is mandatory.
 - Must implement rate structures that:
 - favor the use of reclaimed water.
 - promote conservation of fresh water.
 - provide for the fair distribution of costs.

PASS/FAIL THRESHOLD ELIGIBILITY REQUIREMENTS

- Source of the alternative water supply, e.g. domestic waste water, industrial waste water, agricultural runoff, surface water, brackish water, salt water
- Ready to proceed in the 1998 funding year
- Provide assurance of a 50/50 cost share or more
- Project must be permittable
- Projects must be consistent with basin priorities

scor-tab.app9/26/97

NOTE: FORMAT FOR SUBMITTALS—This form will be filled out by each member of the Alternative Water Supplies Grants Advisory Committee when they rank project proposals. It is made available to applicants to advise you of the information and format that will be used in the review of your proposal. Please use this form to summarize your project. If minimal information requested is not included, the project will not be reviewed by the committee.

ALTERNATIVE WATER SUPPLIES GRANTS ADVISORY COMMITTEE SCORING FORM	
1. Estimate of benefits and costs. A. How much alternative water will be supplied by this project? Average annual daily quantity _____ mgd B. What is the cost of this project? Cost _____	_____ (0-20)
2. What percentage of the water from this project will directly take the place of an existing use of fresh water?	_____ (0-20)
3. Does this project provide other water resource benefits in addition to water supply, such as improving water quality or insuring the sustainability of potable water supply?	_____ (0-10)
4. In addition to being within a water resource caution area, what local conditions exist that would give this project a higher priority than similar projects in another area of the Basin? (e.g. the District's Water Management Plan or Needs and Sources Study identifies significant problems in this area)	_____ (0-10)
5. Does the project represent an innovative approach or technology to developing water supplies that could be utilized by others in the industry?	_____ (0-20)
6. Project effectiveness toward the implementation of a master plan and/or local comprehensive plan?	_____ (0-5)
7. What percentage of water will be utilized: upon project completion? _____ % six months thereafter? _____ % one year thereafter? _____ %	_____ (0-5)
8. Will this project reduce adverse environmental impacts or improve the environment?	_____ (0-10)

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Rates and Fees

City of St. Petersburg

Large Public Access System
20MGD

CONNECTION FEES AND MONTHLY SERVICE CHARGES:

Based on the size reclaimed water tap you require for your irrigation system and the size backflow preventor required on your current potable water meter(s).

** OVER 16" THROUGH 24" **

**CONNECTION FEE TABLE **

RECLAIMED WATER SERVICE TAP	FLOW RATING	TAPPING FEE	POTABLE METER SIZE BACKFLOW PREVENTOR	INSTALLATION CHARGE	TOTAL
1"	53 GPM	\$ 650.00	Plus 3/4" BF	\$115.00	\$ 765.00
1-1/2"	85 GPM	\$1,000.00	Plus 1" BF	\$160.00	\$1,160.00
2"		\$1,650.00	Plus 1-1/2" BF	\$680.00	\$2,330.00

ALL SERVICES 2 INCHES AND LARGER WILL BE BILLED AT ACTUAL COST. ALL BACKFLOW DEVICES LARGER THAN 1-1/2 INCH WILL BE BILLED AT ACTUAL COST.

Reclaimed water is an unmetered service and is billed on a flat rate of \$10.36 per month for the first acre or less and \$5.92 for each additional acre or part thereof. All services outside the City Limits are subject to a surcharge of twenty-five percent (25%). A charge of Twenty Five Dollars(\$25.00) will be charged for all reclaimed water inspections.

Sarasota County

Small Public Access System
3MGD

Sarasota County
Reuse Service Usage Fees and Charges

Bulk Service Rate
(Approved 09/14/93)

Consumption Charge, per 1,000 gallons	\$0.10
Billing Charge, per meter	1.64

City of Largo

Medium Public Access System
7MGD

Sec. 22-42. Reclaimed water charges.

RECLAIMED WATER CHARGES		
Residential Rates:	Inside City	Outside City
Monthly Usage Fee	Flat Rate: \$7 / Month 1 acre or less	Flat Rate: \$8.75 / Month 1 acre or less
	\$7 / Month each additional acre or portion of an acre	\$8.75 / Month each additional acre or portion of an acre
Connection Fee	1" S.C. - \$ 250.00 2" S.C. - \$ 400.00 4" S.C. - \$ 650.00 6" S.C. - \$1,000.00 8" S.C. - \$1,200.00	1" S.C. - \$ 312.50 2" S.C. - \$ 500.00 4" S.C. - \$ 812.50 6" S.C. - \$1,250.00 8" S.C. - \$1,500.00
Commercial/Industrial Rates:	Inside City	Outside City
Application/Inspection Fee	\$60.00	\$75.00
Monthly Usage Fee	Metered: \$0.20/1,000 Gallons	Metered: \$0.25/1,000 Gallons
*Connection Fee	1" S.C. - \$ 250.00 2" S.C. - \$ 400.00 4" S.C. - \$ 650.00 6" S.C. - \$1,000.00 8" S.C. - \$1,200.00	1" S.C. - \$ 312.50 2" S.C. - \$ 500.00 4" S.C. - \$ 812.50 6" S.C. - \$1,250.00 8" S.C. - \$1,500.00

*Note: This fee will be waived if the service connection is installed by the Commercial/Industrial customer with the approval of the City.

General Conditions:	Residential customers receive a 50% discount on the connection fee for connection within 90 days of service availability.
	Residential connection fee includes a \$60 application/inspection charge by the Wastewater Management Division and a service connection consisting of a corporation stop, polyethylene service line, locking ball valve curb stop and meter box installed at the property line.
	The customer will be responsible for making the connection to their irrigation system.
	Commercial customers will be required to install, maintain, and certify calibration of their reclaimed water meter.

Manatee County

Medium Agricultural System
10MGD

RESOLUTION R97-135
MANATEE COUNTY RECLAIMED WATER CHARGES

SERVICE SIZE	MINIMUM RECLAIMED WATER CONNECTION FEE *	MONTHLY RETAIL CUSTOMER CHARGE
5/8" X 3/4"	50	2.60
3/4"	55	2.80
1"	110	3.40
1-1/2"	180	4.10
2"	230	6.20
3"	250	21.40
4"	300	27.00
6"	400	40.00
8"	600	55.00
10"	800	80.00
12"	1,000	100.00
14"	1,200	100.00
16"	1,400	100.00
18"	1,600	100.00
20"	1,800	100.00
24"	2,000	100.00

QUANTITY RATES FOR RETAIL RECLAIMED WATER:

First 20,000 gallons/mo.	\$0.50/1,000 gallons
Next 80,000 gallons/mo.	\$0.40/1,000 gallons
Next 900,000 gallons/mo.	\$0.20/1,000 gallons

Retail Customers who average in excess of 1 million gallons per month will be required to enter into a service contract with Manatee County approved by the Board which will include quantity rates.

QUANTITY RATES FOR WELL CREDIT TRANSFERORS:

For Historical Use under 1MGD	\$.05/1,000 amt. of Historical Use
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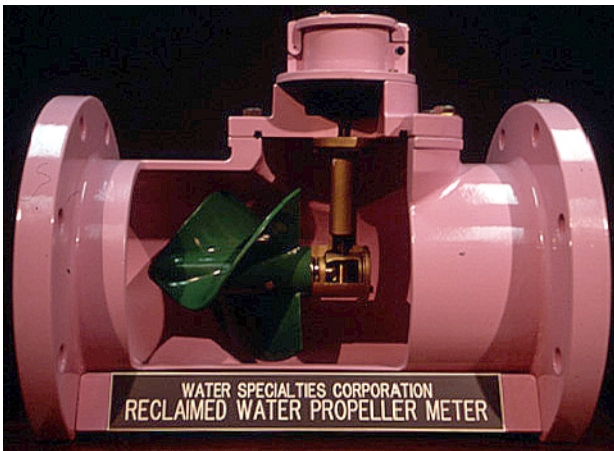
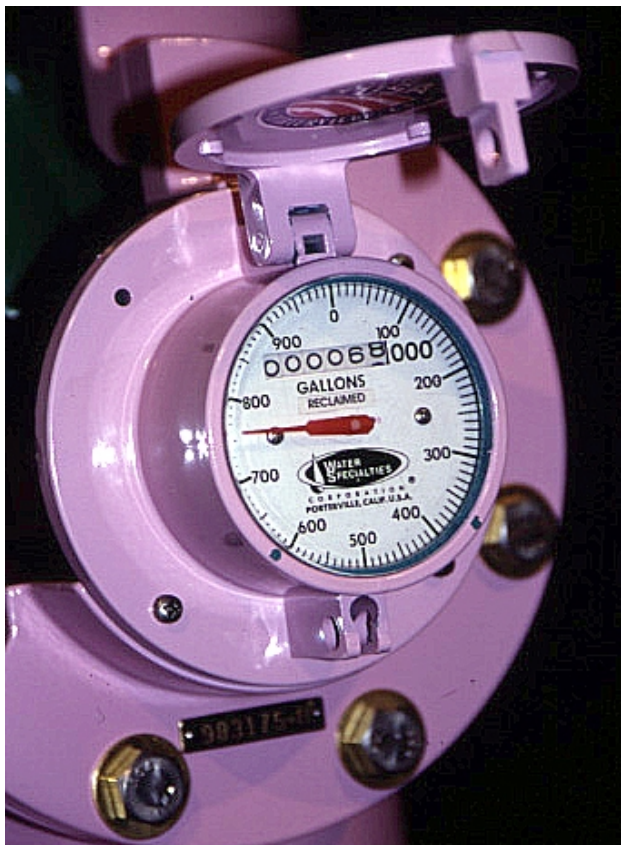
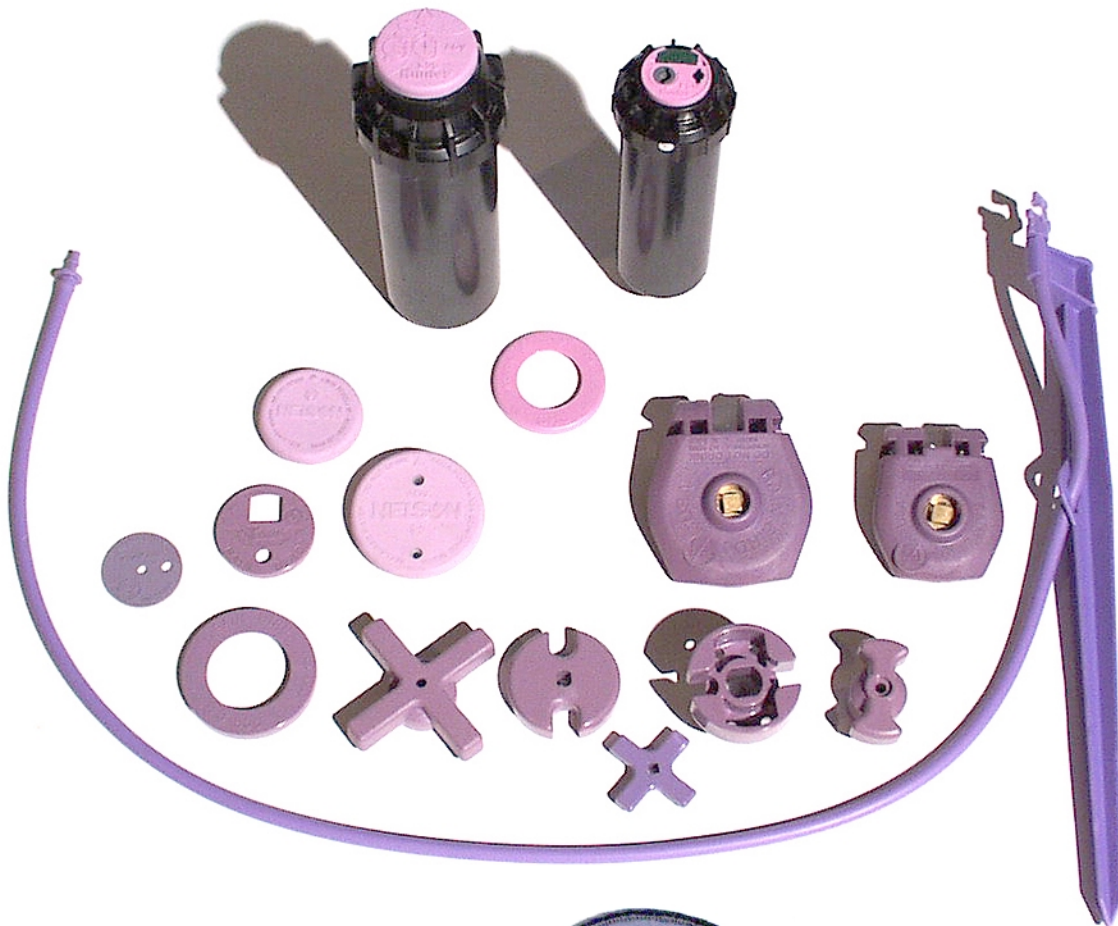
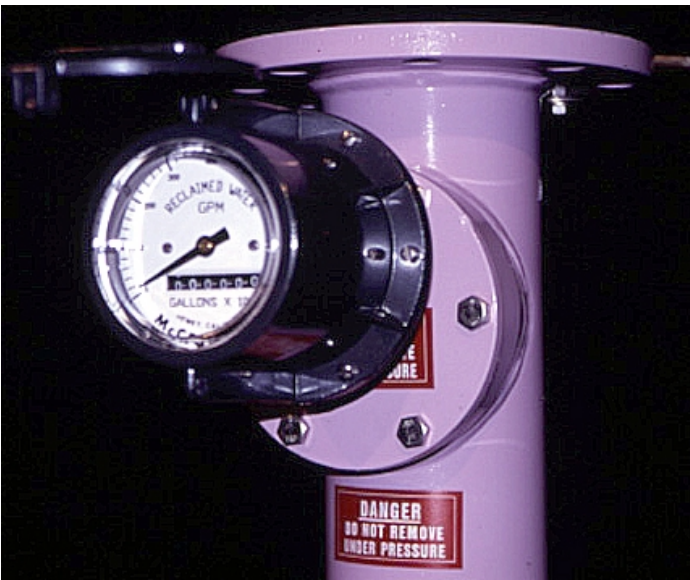
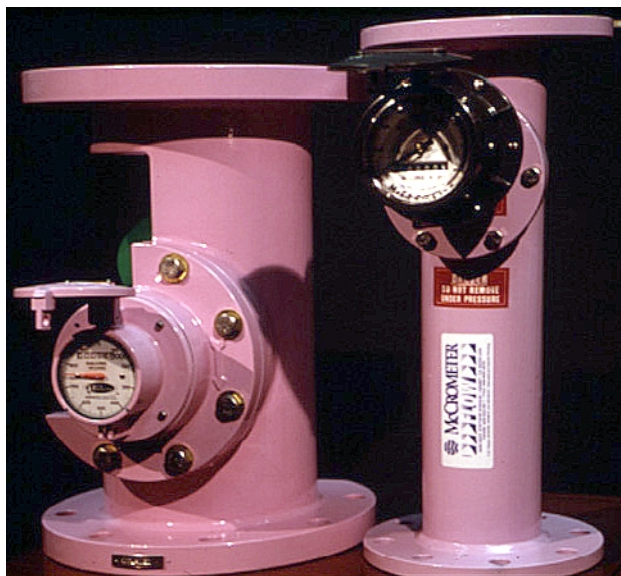
Well Credit Transferor Customers whose historical use exceeds 1 million gallons per day will be required to enter into a service contract with Manatee County approved by the Board which will include quantity rates.

For Consumption over Historical Use	\$.20/1,000
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* For 3" or larger meters the tap and the above ground meter assembly installation shall be provided by the developer/owner under the supervision of MCPWD, with the meter provided by MCPWD.

The fees appearing in Section 4.03(1) above are minimum fees. If actual costs are higher, the fee will be the actual cost and not the minimum.

Appurtenances



Reference Resources

United States Environmental Protection Agency
(To order, call 1-800-490-9198)

Cross-Connection Control Manual
#EPA570989007

*Developing Public/Private Partnerships:
An Option For Wastewater Financing* (brochure)
#EPA832F92003

Guidelines For Water Reuse (manual)
#EPA625R92004

*Municipal Wastewater Reuse:
Selected Readings On Water Reuse* (articles)
#EPA430991022

Water Conservation Plan Guidelines (manual)
#EPA832D98001

Water Reuse Via Dual Distribution Systems (brochure)
#EPA832R85106

Florida Department Of Environmental Protection
(To order, call 850-488-4524)

Reuse Of Reclaimed Water (brochure)

1997 Reuse Inventory (report)

Every Drop Counts...Use It Again, Florida! (video)

Southwest Florida Water Management District
(To order, call 1-800-423-1476)

1997 Annual Reuse Report

Retrofit Programs and Reuse Projects, 1997 Summary Report

10 Reasons Why You Should Use Reclaimed Water
(brochure)

*A Breakthrough For Future Water Supplies:
Reclaimed Water* (brochure)

Water Saved Is Water Shared (video)

St. Johns River Water Management District
(To order, call 904-329-4126)

Reuse Reference Book

Reuse of Reclaimed Water (brochure)

Reuse Water (brochure)

Florida Water & Pollution Control Operators Association
(To order, call 407-267-5452)

Water: A Resource To Reuse (video)

American Water Works Association
(To order, call 1-800-926-7337)

Dual Water Systems, M24 (manual)
#30024

Cross-Connection and Backflow Prevention (guide)
#20106

Cross-Connection Control (video and manual)
#65013

Recommended Practices for Backflow Prevention and Cross-Connection Control, M14 (manual)
#30014

Water Environment Federation
(To order, call 1-800-666-0206)

Using Reclaimed Water To Augment Potable Water Resources (guide)
#P07114HB

Water Reuse: An Assessment Report
#D42004HB

Water Reuse, MOP SM-3 (guide)
#MSM3HB

Water Reuse Digest (articles/papers)
#P0029HB

*Water Recycling:
Good For Your Lawn and Your Wallet* (bill stuffer)
#HS1302

National Water Research Institution
(To order, call 714-378-3278)

Water From Water (video)

City Of Largo
(To order, call 727-586-7417)

Sparkling Water (video)

Wastewater Management (video)

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Excellence Through Quality Service



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Utilities Department
Technical Services Division

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Reuse Water Coordinator

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BUREAU OF WASTEWATER

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Words to the Wise

1.

A Reclaimed Water Coordinator position is essential in developing a successful system. *(Mike Sepessy)*
2.

Utilities should specify purple square reclaimed water valve boxes to distinguish them from the blue round potable water valve boxes. *(Lori Ann Carroll)*
3.

Develop a program for education, inspection, cross-connection control, and inventory **before** you install the first reclaimed system. *(Bill Russell)*
4.

Replace the word “wastewater” with “Reclaimed Water,” as in “It is a Reclaimed Water Facility and not a Wastewater Treatment Plant. *(Mark Nunes)*
5.

A thorough inspection and cross-connection control program is crucial for public safety. *(Mike Sepessy)*
6.

Signs should **always** be used to identify reclaimed water irrigation systems. *(Bill Russell)*
7.

Budget for reclaimed water personnel to attend seminars, courses and certification classes to stay informed of the latest rules, trends, and technology. *(Lori Ann Carroll)*
8.

Influent to effluent, a complete cycle. *(Ed McAdam)*
9.

Recycling our resources is the key to our future needs. “Reuse water.” *(Jim Capps)*
10.

Make your reclaimed water program as visible as possible. For example, Largo Reclaimed Water personnel wear purple golf shirts and khaki pants as uniforms, and all promotional items (hats, mugs, pencils, rain gauges, etc.) are purple. *(Mike Sepessy)*
11.

All pipes, valve boxes, and meter assemblies should be purple color coded and marked “Reclaimed Water. Do Not Drink.” *(Bill Russell)*
12.

Test purple marking paint and meter/hydrant paint prior to using in the field. Some brands fade to white, or worse yet, blue, when exposed to UV light. *(Mike Sepessy)*
13.

By educating your customers on the proper uses and watering guidelines of reclaimed water you can minimize potential problems and maximize supply. *(Lori Ann Carroll)*
14.

Think of reclaimed water as a resource, and promote responsible use. *(Mike Sepessy)*
15.

Reclaimed water is a precious resource. *(Ed McAdam)*
16.

Identify, educate and contract with your customers, and **then** design your system. *(Mike Sepessy)*
17.

Reclaim the same bucket of water over and over again. *(Ed McAdam)*
18.

All advisory signs should include the appropriate universal symbols and state the required wording “Do Not Drink” and “Do Not Swim.” The use of reflective and non-fading materials on signs is a must. *(Lori Ann Carroll)*
19.

First, educate your elected officials, and **then** your public. *(Mike Sepessy)*
20.

Nature recycles, we should too. *(Ed McAdam)*
21.

Design a good pamphlet to fit the needs of your customers. *(Bill Russell)*
22.

Work in conjunction with your local County Cooperative Extension Service to develop a listing of vegetation that does well with this resource. *(Joe Towry)*
23.

Provide up-to-date information of the progress of the program, as implemented. *(Joe Towry)*
24.

Certify all field inspection personnel in the areas of cross connection control and reclaimed water field inspection. *(Joe Towry)*
25.

Ensure staff has a good understanding of Rule 62.610 and local codes as they pertain to the program. *(Joe Towry)*
26.

A complete analysis of your reclaimed water is essential in order to address the public’s concern about “salt content” and plant compatibility. Largo provides analyses of reclaimed and drinking water to demonstrate that the reclaimed water is almost drinking-water quality. *(Mike Sepessy)*

Code of Good Practices for Water Reuse in Florida

Florida Department of Environmental Protection The Florida Water Environment Association's Water Reuse Committee

Those who embrace the *Code of Good Practices for Water Reuse in Florida* commit to “do the right thing” by upholding the following 16 principles of conduct related to protection of public health and environmental quality, management of the reuse system, and public awareness:

Protection of Public Health and Environmental Quality

Public Health Significance – To recognize that distribution of reclaimed water for non-potable purposes offers potential for public contact and that such contact has significance related to the public health.

Compliance – To comply with all applicable state, federal, and local requirements for water reclamation, storage, transmission, distribution, and reuse of reclaimed water.

Product – To provide reclaimed water that meets state treatment and disinfection requirements and that is safe and acceptable for the intended uses when delivered to the end users.

Quality Monitoring and Process Control – To continuously monitor the reclaimed water being produced and rigorously enforce the approved operating protocol such that only high-quality reclaimed water is delivered to the end users.

Effective Filtration – To optimize performance of the filtration process in order to maximize the effectiveness of the disinfection process in the inactivation of viruses and to effectively remove protozoan pathogens.

Cross-Connection Control – To ensure that effective cross-connection control programs are rigorously enforced in areas served with reclaimed water.

Inspections – To provide thorough, routine inspections of reclaimed water facilities, including facilities located on the property of end users, to ensure that reclaimed water is used in accordance with state and local requirements and that cross-connections do not occur.

Reuse System Management

Water Supply Philosophy – To adopt a “water supply” philosophy oriented towards reliable delivery of a high-quality reclaimed water product to the end users.

Conservation – To recognize that reclaimed water is a valuable water resource, which should be used efficiently and effectively to promote conservation of the resource.

Partnerships – To enter into partnerships with the Department of Environmental Protection, the end users, the public, the drinking water utility, other local and regional agencies, the water management district, and the county health department to follow and promote these practices.

Communications – To provide effective and open communication with the public, end users, the drinking water utility, other local and regional agencies, the Department of Environmental Protection, the water management district, and the county health department.

Contingency Plans – To develop response plans for unanticipated events, such as inclement weather, hurricanes, tornadoes, floods, drought, supply shortfalls, equipment failure, and power disruptions.

Preventative Maintenance – To prepare and implement a plan for preventative maintenance for equipment and facilities to treat wastewater and to store, convey, and distribute reclaimed water.

Continual Improvement – To continually improve all aspects of water reclamation and reuse.

Public Awareness

Public Notification – To provide effective signage advising the public about the use of reclaimed water and to provide effective written notification to end users of reclaimed water about the origin of, the nature of, and proper use of reclaimed water.

Education – To educate the public, children, and other agencies about the need for water conservation and reuse, reuse activities in the state and local area, and environmentally sound wastewater management and water reuse practices.