

WATER AND WASTEWATER SYSTEMS ANNUAL REPORT

FISCAL YEAR 2009

Prepared for



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Section 1 Introduction

1.1 Purpose of the Report

The purpose of this Engineer's Report for Water and Wastewater Services (WWS) of Broward County, Florida is to provide the following:

- A review of the management and organization of WWS, which operates the Utility;
- A description of the Utility;
- A financial review of the Utility regarding historical and prospective debt service coverage, insurance requirements, and future system funding needs.
- A summary of projections of future impacts on the Utility, projections of revenues and expenses, and a review of the planned capital improvements of the Utility.

Section 2

Administration and Management

Section 2 Administration and Management

2.1 Organization of the Water and Wastewater Services

The Broward County Utilities Division was created on January 31, 1962, with the County's purchase of a small, investor-owned water and wastewater utility. Between 1962 and 1975, the County acquired a number of private utilities. In 1972, the Utility commenced construction of its North Regional Wastewater Treatment Plant (NRWWTP) and, in 1975, began providing wholesale wastewater treatment service to large users. In 1976, to achieve fiscal consolidation, the County established uniform rates throughout its service areas. The water utility service area is divided into districts, where District 1 is served by WTP 1A, District 2 by WTP 2A and District 3 by purchased water from the City of Hollywood.

In 1988, the Broward County Utilities Division was reorganized, and Water and Wastewater Services (WWS) was created. WWS, consisting of five divisions within the Public Works Department, is responsible for planning, construction, operations, maintenance, customer service, water management, and financial management of the Utility. These divisions are Water and Wastewater Operations, Water and Wastewater Engineering, Water Management, Water and Wastewater Information Technology, and Fiscal Operations. Additionally, within WWS, there are two sections that support these divisions: Administration / Personnel and Project and Community Coordination. As of September 30, 2009, WWS employed 390 people, including 17 certified water operators, 19 certified wastewater operators, ten registered professional engineers, and five certified accountants. In addition, seven employees are dual certified as both water and wastewater operators. An organizational chart, **Figure 2-1**, is provided on page 2-9.

Under the County Code of Ordinances, the County exercises exclusive jurisdiction, control and supervision over the Utility system or any part of a utility system owned, operated or maintained by the County. The Board of County Commissioners of the County (the Board) has the specific legal authority to fix, charge and collect from its customers, rates, fees and charges, and to acquire, construct, finance and operate the utility without supervision or regulation by any other political subdivision of the State (provided that environmental impacts are regulated as described herein).

2.2 Mission

In Fiscal Year (FY) 1993, WWS formally reviewed and revised its mission statement with the goal of increasing coordination, efficiency and understanding among the divisions.

Section 2 Administration and Management

The mission statement expresses a commitment to provide cost-effective water and wastewater management services and programs while maintaining the quality of life in Broward County through sound environmental practices. The following goals were established to fulfill this mission.

Goals

- To provide high quality and cost-effective services.
- To treat customers professionally and with the utmost respect.
- To operate the facilities and execute programs in a manner that protects the environment.
- To protect and enhance the natural resources of Broward County.
- To create and maintain a workplace in which employees are provided the opportunity to develop to their maximum potential.
- To maintain honesty and integrity in every aspect of the operation.

Water and Wastewater Services Administration

Water and Wastewater Services Administration manages and directs the activities of the five Water and Wastewater Services (WWS) divisions: Engineering, Fiscal Operations, Information Technology, Operations, Water Management; as well as the office of Project & Community Coordination, which assists in the management of the Neighborhood Improvement Projects (NIPs). Administration approves operating and capital budgets, assures rates, fees, charges are sufficient to support fund activities and debt service requirements while maintaining appropriate coverage to maintain or enhance bond ratings. Administration develops and implements financing plans for the successful implementation of the capital plan and policies to ensure environmentally safe water resources. The section manages relationships with Large Users of the North Regional Wastewater System and the Regional Raw Water System. Administration serves as the liaison with local, state and federal agencies, as well as with public and private groups regarding the regulation, safety and conservation of water and wastewater resources. The section manages human resource activities, including maintaining employee records, processing personnel actions, oversight of employee training as well as managing the safety and security of staff and facilities.

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Administration manages publishing the award-winning, federally-mandated annual Water Quality Report and the WWS employee newsletter. Staff serves as liaison to the Office of Public and Government Relations for all water and wastewater-related legislation at both the state and federal levels. Administration coordinates activities to identify efficiencies and synergies to reduce overall costs and enhance the delivery of services. The section develops and implements water conservation programs to benefit customers and to protect and preserve the environment, sponsors periodic customer service surveys, and, manages a program to promote personal and professional employee development.

For FY 2009, WWS Administration highlights included:

- Despite the economic climate, Water and Wastewater Services sold, at a very competitive rate, over \$175 million in water and sewer utility revenue bonds which will finance a number of utility projects over the next two years.
- Water and Wastewater Services' water and sewer utility bonds received very strong long-term ratings—"AA", "AA" and "Aa3"--from the three major rating services.

Each division has developed and established policies and goals to support the WWS mission.

Water and Wastewater Operations Division

The Water and Wastewater Operations Division (WWOD) is responsible for pumping, treating, and distributing water and/or the provision of wastewater collection services to retail and water resale customers. The Division operates and maintains water treatment plants; re-pumping and storage facilities; lift stations, underground water distribution and sewage collection systems; and other support facilities. The Division provides raw water from two regional wellfields to five large users and to Broward County retail operations.

The Division is also responsible for providing wastewater transmission and treatment services to eleven large users and to Broward County through the operation and maintenance of a regional wastewater treatment facility and related master pumping stations. The Division operates a reclaimed water facility, which provides reclaimed water to both industrial and retail customers. In addition, the Division operates a State certified laboratory (NELAP), a nationally recognized Industrial Pretreatment Program (IPP), and provides critical environmental service through operating and maintaining the only septage receiving facility located in Broward County.

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During FY 2009:

- The Water and Wastewater Operations Division provides retail water distribution to 230,000 citizens and wastewater collection services to 161,000 citizens in Broward County. The Division produces potable water from two water treatment plants (20.57 MGD). Water continues to be purchased for District 3 from the City of Hollywood (6.47 MGD).
- Division goals include improved employee commitment through participation in the planning process and better workforce utilization through improved communications, training and organizational restructuring.
- The Division treats, disposes, and reuses wastewater for approximately 650,000 citizens through its regional wholesale operation. This equates to providing approximately 40 percent of the County population with wastewater management services.

Water and Wastewater Engineering Division

The Water and Wastewater Engineering Division (WWED) is responsible for developing and implementing a capital improvements program for services provided by the Water and Wastewater Services (WWS) including water, wastewater, and drainage. The Division is responsible for coordination of developer-donated facilities, the maintenance of record information on potable water and wastewater facilities, for administration of potable water and sewer easements, and for administration of permits to connect to the potable water and wastewater plants operated by the WWS. The Division also provides general potable water and wastewater engineering support for Broward County. These processes ensure compliance with the County's minimum standards for construction and integrity of WWS systems.

- The Neighborhood Improvement Program (NIP) encompasses a total area the size of a medium city with 9,223 acres, 92,000 people, and 28,382 homes. Planned improvements include 292 miles of roadways, 422 miles of sidewalk, and 617 miles of pipeline which will enable the elimination of 10,434 septic tanks. Construction started in 1996 and is currently scheduled to be completed in 2013. The current estimated cost of the NIP is \$747 million. Of the 65 planned bid packages, 52 are under construction or have been completed. The total spent thru fiscal year 2009 is \$492M.

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- The Utility Analysis Zone Improvement Program (UAZ) includes an area of 1,479 acres. The planned improvements include 54 miles of pipeline. Construction started in 2009.
- Evolving regulations coupled with on-going facilities operations permit negotiations at the North Regional Wastewater Treatment Plant (NRWWTP) are developing into potential plant process improvements ranging from \$50M to \$900M in construction costs within the next 5 to 15 years. The scope and nature of the improvements will be determined through the master planning efforts to achieve compliance with legislative rule and permit negotiations. In addition, WWS is simultaneously implementing a series of collection system improvements to ensure adequate system capacity as well as reliability.
- In excess of \$41 Million in construction is budgeted for potable water treatment, storage and pumping facility improvements including the reverse osmosis treatment facility at Water Treatment Plant 1A.
- WWS currently has over \$275 Million budgeted in local utilities projects and other retail construction. These projects include water main construction, sewer mains, and engineering services.
- Water and Wastewater Services was awarded the 2009 “Project of the Year” by the Broward Branch of the American Society of Civil Engineers (ASCE) for WWS’s Wiles Road 16-inch reclaimed water line in the city of Coconut Creek.

Water Management Division

The Water Management Division (WMD) programs in engineering, management, and development review provide for the planning, design, construction, and right-of-way management of waterways, culverts, pump stations and water control structures that provide flood protection, surface and ground water recharge, saltwater intrusion abatement, and urban water supply. Water supply planning, well site assessments, and permitting services are provided to apply for, obtain, and assure compliance with public water supply and diversion & impoundment water use permits. Staff also engineers and manages the inspection, cleaning, and repairs of County roadway drainage elements and assures compliance with the Florida DEP National Pollutant Discharge Elimination System (NPDES), Municipal Separate Storm Sewer Systems

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(MS4) Permit for Broward County and prepares and submits applications and data for the renewal of surface water management licenses for the roadway drainage system.

Other activities included:

- The Florida Atlantic University Water Use Study was completed.
- The C-5 Canal excavation project south of Hillsboro Boulevard was completed.
- Division staff continues to be actively involved in water supply and water resource development programs, including the Broward County Water Resources Task Force and Technical Team and the Broward County Water Advisory Board and Technical Advisory Committee.
- The initial C-51 Reservoir Study was completed, and additional work was authorized to further examine the feasibility of the project.

Fiscal Operations Division

The Fiscal Operations Division (FOD) supports other WWS divisions by providing customer service, billing, financial management, fiscal planning, and related support services. FOD provides accounting services for all divisions of Water and Wastewater Services (WWS) to provide timely financial reporting, ensure compliance with Federal and State laws, professional accounting standards and County policy and procedures. The Division provides customer services including meter reading and meter repair, monthly billing, and collection of revenues. The Division operates a warehouse for materials and supplies used in the operations and maintenance of utility infrastructure. The Fiscal Operations Division coordinates materials management, purchasing and contract administration functions for all operational and administrative activities in WWS. In addition, the Division provides Grounds and Building support services to over 200 locations owned and operated by WWS throughout the County. The Division also coordinates the fiscal planning, financing, budgeting and rate setting activities for all divisions of WWS.

During FY 2009, the following highlights took place within the Division:

- The Division sponsors a water conservation contest among Broward County Elementary Schools. The contest consists of coloring a poster with an environmental theme and creating poems on that theme. The contest is

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supported by over 130 eligible schools. We also published coloring books which featured prior year's winners.

- The Division provides billing services for 12 municipalities. This service combines billings for municipal services such as garbage or trash collection and stormwater utility fees with the monthly water and sewer bill.
- The Division brought to the Board of County Commissioners for approval and implemented an Identity Theft Program to comply with the Federal Trade Commission rule on identity theft Red Flags; 16 CFR Part 681.
- The Division implemented a toilet credit program for residential customers which offers \$100 credits for each (up to 2) high water use toilet that customers replace with new, high-efficiency model toilets. South Florida Water Management District has agreed to match WWS rebates, up to a total of \$75,000.
- Inaugurated a new print vendor and an updated and easy to read color coordinated bill format for retail customers.
- Achieved a 83% customer satisfaction rating

Water and Wastewater Information Technology Division

The Water and Wastewater Information Technology Division (WWITD) is responsible for maintaining the automation and industrial control systems at all four main treatment and distribution facilities and over one hundred other distribution and storage facilities within Broward County on a 24-hour, 7 day-per-week basis. WWITD also provides desktop, server and network support for the WWS segment of the County's administrative network. WWITD provides specialized automation services to the water and wastewater utility by acquiring, developing, and maintaining the latest utility specific technology solutions on its proprietary utility network. During FY 2009, the division:

- Replaced 20% of desktops, laptops, and servers on the Admin and Utility networks
- Created an intranet portal using the Microsoft Sharepoint framework, replacing the older FIMS system. The newer technology opens up a whole new level of collaboration through innovative tools and techniques.
- Division goals include improved employee commitment through

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- participation in the planning process and better workforce utilization through improved communications, training and organizational restructuring
- Successfully completed an automated interface with the Advantage accounting system. The interface allows an automated exchange of data between advantage and WWS applications like Maximo and CIS, reducing labor intensive data entry and dramatically reducing input errors.
 - Completed a “green” initiative by virtualizing forty of the servers used at WWS, requiring less power consumption and space while increasing redundancy and improving administration.
 - Began testing the deployment of virtualized desktop computers within WWS. This project will reduce the costs associated with supporting desktops and will also reduce WWS’ carbon footprint and lower energy costs.

Project and Community Coordination

Project and Community Coordination (P&CC) operates within Water and Wastewater Services (WWS) Administration and manages WWS’ public affairs, including publishing the federally mandated annual Water Quality Report and the internal WWS employee newsletter “Keeping Connected”. The group provides public information and supports public and customer relations to customers/residents impacted by construction projects (including the Neighborhood Improvement Projects) by keeping them informed of construction plans and schedules and investigating customers’ construction related concerns. The group provides outreach and education for water conservation programs, sponsors periodic customer service surveys and works closely with other Agencies on special educational projects for Career Days, Earth Day, and Drinking Water Week and water conservation events.

For FY 2009, highlights included:

- Water and Wastewater Services won 5 awards in the National Association of County Information Officers (NACIO) “Awards of Excellence” competition, including awards for its most recent Water Quality Report, its employee newsletter and for a brochure which answered frequently asked questions about boil water orders.
- Water and Wastewater Services staff participated in a number of community events in 2009, including activities commemorating “Drinking Water Week”, “Earth Day” and “Broward: Water Matters Day”. These events attracted several

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hundred members of WWS's public constituencies who received rain gauges, water bottles, crayons, coloring books and other giveaways.

- Water and Wastewater Services published and distributed nearly 50,000 copies of its annual Consumer Confidence Report to all of its customers in 2009, pursuant to Federal law.

Figure 2-1 Organizational Chart



Retail Water and Wastewater Utilities System

Section 3 Retail Water and Wastewater Utilities System

This section describes the water and wastewater retail system including a description of the service area, results of the physical inspection and review of the renewal and replacement program.

3.1 General Description

The retail water system (Retail Water System) supplies potable water to retail customers in several sections of the County and to one significant bulk water user. Over the past ten years, the County's Retail Water System has grown from 50,306 customers (connections) to its present retail base of 58,287. This represents a population of approximately 230,000. The City of Coconut Creek, a sale for resale customer, has approximately 61,000 residents. Including the City of Coconut Creek, the Retail Water System serves approximately 13 percent of Broward County's total population.

The retail wastewater system (Retail Wastewater System) provides wastewater collection service to approximately 75 percent of the County's retail water customers. The County's wastewater retail customer base has grown from 33,737 customers (connections) to its present base of 43,591 customers in the past ten years and will continue to grow through the County's extension of sanitary sewers into currently unserved areas. Treatment and disposal is provided by the County-operated North Regional Wastewater System (the "Regional Wastewater System" discussed in Section 4 and collectively with the Retail Wastewater System the "Wastewater System") and by the Southern Regional Wastewater System operated by the City of Hollywood. A summary of the Retail Water and Wastewater systems is presented in **Table 3-1**.

Service Area and Customer Base

The Retail Water System is divided into three (3) service districts - Districts 1, 2 and 3. District 2 sells water to the City of Coconut Creek which re-sells it to its customers. These water service districts cover over 40 square miles. Two (2) water treatment plants, one each in District 1 and District 2, has a combined permitted water treatment capacity of 46 MGD (million gallons per day). However, potable water production is constrained by consumptive use permits from the South Florida Water Management District to an allocation of 30.1 MGD of raw water from the Biscayne aquifer on an annual average daily basis through March 2013. Water for District 3 is provided by the City of Hollywood through a water for resale agreement.

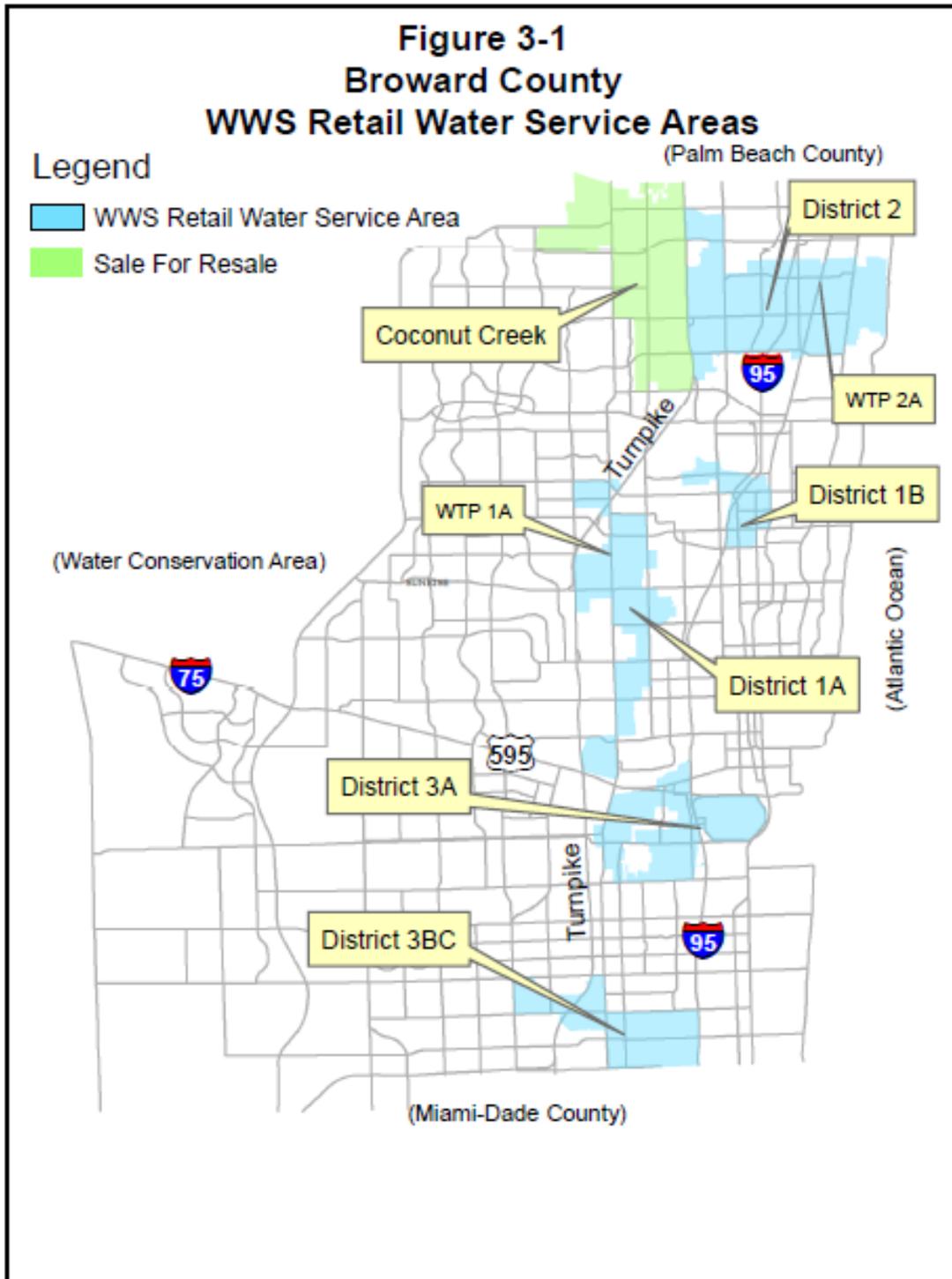
The distribution systems in the three Districts contain approximately 696 miles of water distribution and transmission mains with 2-inch or greater diameters. **Figure 3-1** shows

the geographic location of each service district as well as the large user (the City of Coconut Creek). **Table 3-2** summarizes information on the production wells, treatment plants, and water system storage capacity in each district.

3-1 Summary of Retail Water System and Retail Wastewater System

Table 3-1					
Summary of Retail Water System and Retail Wastewater System					
System Component	Units	Fiscal Year		Change	Percent Change
		2000	2009		
Water System					
Customer Base	Customers	50,306	58,287	7,981	15.86%
Water Service Area	Square Miles	40.10	40.99	0.89	2.22%
Water Lines	Miles	634.15	696.31	62.16	9.80%
Water Plant Capacity:					
Plant Capacity ¹	MGD ³	52.70	46.00	(6.70)	-12.71%
Avg. Daily Production ^{1,2}	MGD ³	26.39	20.29	(6.10)	-23.13%
Max. Daily Production ^{1,2}	MGD ³	34.16	22.75	(11.41)	-33.40%
Purchased Water ^{1,2}	MGD ³	0.00	7.11	7.11	N/A
Wastewater System					
Customer Base	Customers	33,737	43,591	9,854	29.21%
Wastewater Service Area	Square Miles	39.95	40.63	0.68	1.70%
<p>¹ Water Treatment Plant 3A was deactivated in 2001. Water for District 3 is now provided through a wholesale agreement with the City of Hollywood.</p> <p>² The drought which began in April 2007 has resulted in reduced water use due to restrictions mandated by SFWMD.</p> <p>³MGD = Million Gallons Per Day.</p>					
Source: Broward County Water and Wastewater Services					

Figure 3-1 Broward County WWS Retail Water Service Areas



3-2 Summary of Water System Facilities and Capabilities as of September 30, 2009

Table 3-2				
Summary of Water System Facilities and Capabilities as of September 30, 2009				
	District 1	District 2	District 3	Total
Production Wells	9	11	0	20
Wellfield Firm Capacity, (MGD) ^{1,2}	19.6	28.9	0	48.5
Treatment Plants ^{3,4}	1	1	0	2
Permitted Plant Capacity (MGD) ²	16	30	0	46
Permitted Allocation (MGD) ^{2,5}	10.7	19.4	0	30.1
Storage Capacity (Million Gallons) ⁴	6.2	8.5	5	19.7
Distribution Mains (Miles)	241.27	242.69	212.35	696.31
Service Area (Square Miles)	11.99	14.79	14.21	40.99
Purchased Water (MGD) ²	0.578	0	6.536	7.114
Produced Water (MGD) ²	7.766	12.52	0	20.286
<p>¹Firm Capacity refers to the available flow with the largest well in each district out of service.</p> <p>²MGD = million gallons per day</p> <p>³Does not reflect consumptive use permit restrictions. Separate permits exist for supply and treatment capacities, with supply capacities less than permitted treatment capacities.</p> <p>⁴Includes clearwells, on site and distribution storage facilities. In 2007, WWS was in a stage 2 water restriction from SFWMD. In 2008, WWS went into a stage 3 restriction from SWFMD</p> <p>⁵Does not include purchased water from the City of Plantation. Includes finished water sold to Coconut Creek.</p>				
Source: Water & Wastewater Services				

The Water System supplies water primarily to retail customers but also serves the City of Coconut Creek under a resale agreement. Presently, there is no practical or economic incentive for the City of Coconut Creek to pursue development of its own facility or to develop alternative sources of supply. Without prior approval by the County, the City of Coconut Creek is prohibited from buying or otherwise providing water within its service area from any source other than the County during the term of the resale agreement, and cannot provide more than 100,000 gallons per day of water to any customer unless approved by the County. The County cannot charge rates to Coconut Creek greater than those charged to other customers in the same class. Billing based upon water meter readings is provided monthly. A summary of historical treated

water sold and consumption data, including service to the City of Coconut Creek, is shown in **Table 3-3**. Values for annual average daily consumption will differ from the sum of production plus purchased water due to system losses.

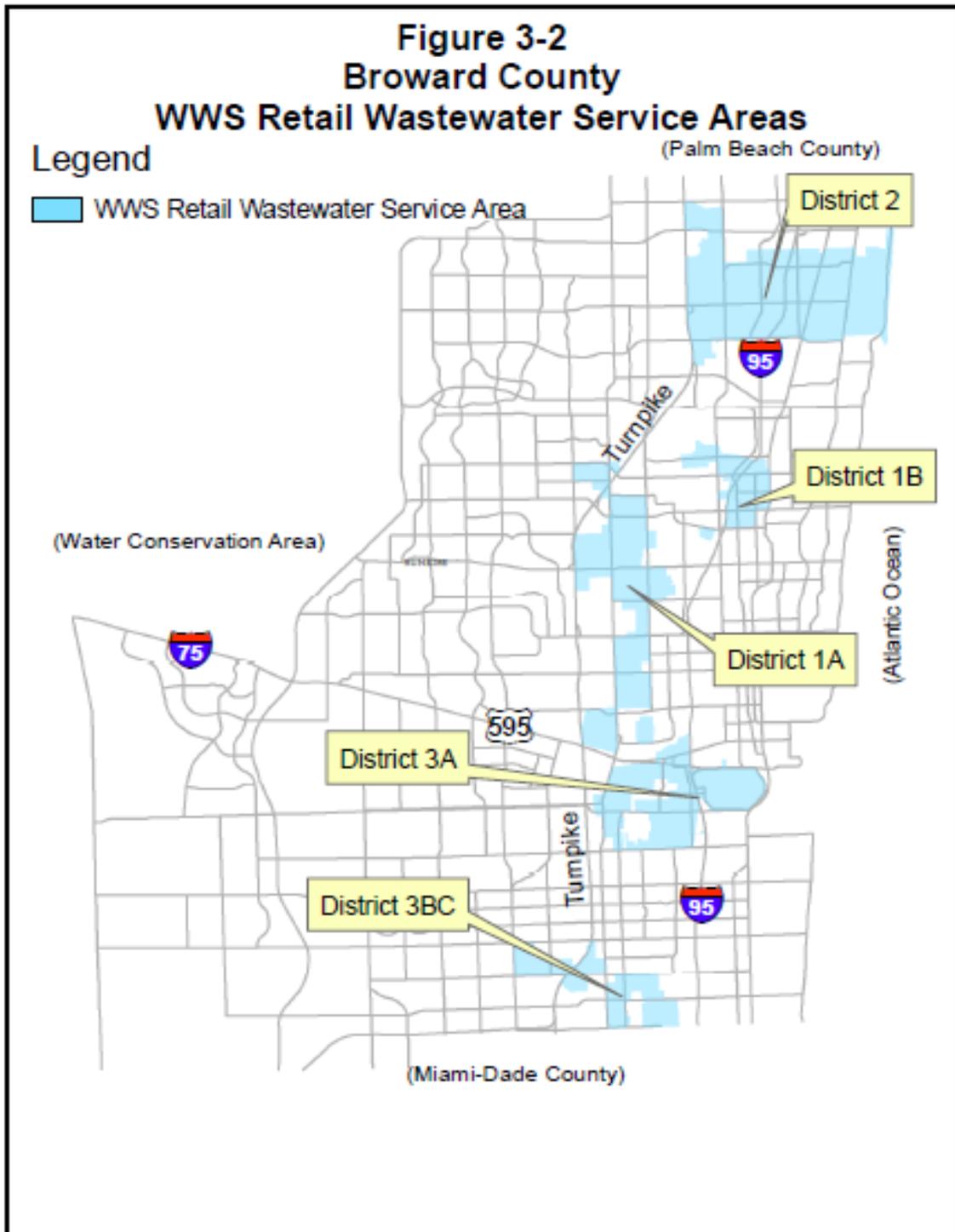
3-3 Summary of Treated Water Sold as of September 30, 2009

Table 3-3 Summary of Treated Water Sold as of September 30, 2009					
Fiscal Year	Average Number of Units¹	Average Number of Metered Customers	Total Billed Treated Water (1,000 GAL)	Total Billed Water for Resale (1,000 GAL)²	Annual Average Daily Consumption (MGD)
2000	80,522	50,306	9,763,312	2,029,732	26.75
2001 ³	80,810	50,544	9,319,520	1,998,410	25.53
2002	81,058	50,709	9,916,497	2,126,774	27.17
2003	81,658	51,044	9,962,676	2,104,272	27.30
2004	82,171	51,525	10,574,616	2,190,845	28.97
2005 ⁴	84,203	53,705	11,383,041	2,178,609	31.19
2006	83,725	52,938	10,362,713	2,005,205	28.39
2007 ⁵	87,539	55,596	9,725,151	1,958,720	26.64
2008 ⁵	89,452	57,003	9,063,644	1,868,562	24.83
2009 ⁵	92,870	58,287	9,001,466	1,872,821	24.66
<p>¹ The term "unit" means individual living unit for residential (single family), multifamily, hotel/motel and mobile home categories. Several units may be served through one connection. For commercial, the term means the number of connections.</p> <p>² Included in the total water billed; most represents service to the City of Coconut Creek.</p> <p>³ A brief drought occurred during this period resulting in reduced water use due to restrictions mandated by SFWMD.</p> <p>⁴ Several hurricanes resulted in significant water losses from line breaks and leaks throughout the system.</p> <p>⁵ The drought which began in April 2007 has resulted in reduced water use due to restrictions mandated by SFWMD.</p>					
<p>Source: Broward County Water and Wastewater Services</p>					

The Retail Wastewater System service area covers 41 square miles with approximately 389 miles of gravity sewers, 226 lift stations, and 100 miles of force mains. **Figure 3-2** shows the service districts for the Retail Wastewater System. **Table 3-4** presents Retail Wastewater System characteristics. A 10-year summary of the Retail Wastewater

System customers and billed wastewater flows is presented in **Table 3-5**. **Table 3-6** presents a five-year history of water usage by customer type.

Figure 3-2 Broward County WWS Retail Wastewater Service Areas



3-4 Retail Wastewater System Characteristics as of September 30, 2009

Table 3-4				
Retail Wastewater System Characteristics as of September 30, 2009				
	District 1	District 2	District 3	Total
Service Area (Square Miles)	12.98	15.58	12.07	40.63
Gravity Sewer (Miles)	158.33	153.39	77.52	389.24
Lift Stations	72	95	59	226
Force Mains (Miles)	35.49	32.8	32.07	100.36
Master Pump Stations	-	-	3	3

Source: Broward County Water and Wastewater Services

3-5 Summary of Billed Wastewater - Retail as of September 30, 2009

Table 3-5				
Summary of Billed Wastewater – Retail				
as of September 30, 2009				
Fiscal Year	Average Number of Units¹	Average Number of Metered Customers	Total Billed Treated Wastewater (1,000 GAL)	Annual Average Daily Flow (MGD)
2000	61,732	33,737	5,273,590	14.45
2001	62,495	34,391	5,065,656	13.88
2002	63,050	34,847	5,077,785	13.91
2003	64,377	35,704	5,121,649	14.03
2004	65,029	36,654	5,310,427	14.55
2005	67,116	38,257	5,700,915	15.62
2006	67,736	40,021	6,055,641	16.59
2007	70,361	41,297	5,733,391 ²	15.71
2008	71,718	42,163	5,373,713 ²	14.72
2009	79,843	43,591	5,468,973 ²	14.98

1 The term "unit" means individual living unit for residential (single family), multifamily, Hotel / Motel, and mobile home categories. Several units may be served through one connection. For commercial, the term means the number of connections and does not include the large user.

² Water restrictions in place since April 2007 as the result of a drought have reduced water sales. Billed wastewater is primarily based upon water sold.

Source: Broward County Water and Wastewater Services

3-6 Water Usage - Five Year History (1,000 gallons) Through September 2009

Table 3-6 Water Usage – Five Year History (1,000 gallons) Through September 2009					
Customer Class	Fiscal Year 2005 ¹	Fiscal Year 2006	Fiscal Year 2007	Fiscal Year 2008	Fiscal Year 2009
Residential	5,925,347	5,340,125	5,062,677	4,811,170	4,788,005
Commercial	2,755,477	2,492,417	2,260,552	2,032,324	1,924,704
Irrigation	523,608	524,966	443,202	351,588	415,936
Sale For Resale	2,178,609	2,005,205 ²	1,958,720	1,868,562	1,872,821
Total	11,383,041	10,362,713	9,725,151³	9,063,644³	9,001,466³
<p>¹ During 2005 several hurricanes resulted in significant leaks throughout the system.</p> <p>² The sale of water to the City of Hollywood was essentially converted to emergency-service-only effective January 2005.</p> <p>³ The drought which began in April 2007 has resulted in reduced water use due to restrictions mandated by SFWMD.</p>					
<p>Source: Broward County Water and Wastewater Services</p>					

3.2 Water System Regulatory Requirements

Current Water Quality Regulations

The Safe Drinking Water Act (SDWA, 1974) and the Safe Drinking Water Act Amendments (SDWAA, 1986) authorized the United States Environmental Protection Agency (EPA) to establish national primary and secondary drinking water regulations to regulate maximum permissible levels of contaminants in finished drinking water. These standards were incorporated into the State of Florida Water Quality Regulations in 1993, making all regulated parameters enforceable within the State.

WWOD annually performs a complete analysis for all primary and secondary drinking water standards on raw and finished water supplies to meet the State of Florida Water Quality Regulations (Chapter 62-550.300, Florida Administrative Code). No maximum contaminant levels (MCLs) have been exceeded by WWOD's finished water. WWS tests raw water quality only for the development of baseline data, MCL limitations do not apply. The annual report presenting the results of the analysis is available for at <http://www.broward.org/waterservices/documents/2009waterqualityreport.pdf>

Water Quality Regulations

The Stage I Disinfectant/Disinfection By-Products Rule (D/DB") was promulgated in 1998 and required all groundwater treatment plants, which include the WWS water treatment plants, to comply with MCL's for trihalomethanes (THMs), five haloacetic acids (HAAs), chlorite, and bromate and maximum residual disinfectant levels (MRDLs) for a number of common disinfectants including chlorine, chloramines, and chlorine dioxide. The Stage I limits for THMs and HAAs were 80 mg/l and 60 mg/l respectively, with measurements based upon a distribution system wide average.

WWS water treatment plants (WTP) currently meet all regulations and comply with current Stage I disinfection by-products regulations.

The Stage II M/DBPR was promulgated on January 4, 2006, and the regulation became effective March 6, 2006. The purpose of the Stage 2 M/DBPR is to reduce DBP occurrence peaks in the distribution system by using a new method to determine MCL compliance, defining operational evaluation levels, and regulating consecutive systems. If no problems are detected, the only change in procedures may be revised sampling protocols.

The County has completed the Stage II By-product Rule Standard Monitoring for all water distribution systems and in accordance with the rule submitted the Initial Distribution System Evaluation (IDSE) Report on December 8th, 2008 to meet the January 2009 deadline. By April 2012, the County is required to develop and implement a Compliance Monitoring Plan and to begin compliance monitoring;

Compliance Calculation Procedures were included in the IDSE Reports, as provided by the U.S. EPA-IDSE Guidance document (EPAQ 815-B-06-002) to meet the Compliance Monitoring Plan requirement.

3.3 Water Supply

The primary source of water supply for WWS is the Biscayne Aquifer. Presently, WWS operates well fields for Water Treatment Plants 1A and 2A with firm capacities of 19.6 and 28.9 MGD, respectively. Additional water is provided to District 2 by the North Regional Wellfield with a firm capacity of 18.1 MGD. A physical description of the regional system and wellfields is provided in a subsequent section. Water for District 3 is provided by the City of Hollywood.

In 1979, the Biscayne Aquifer was designated as the County's sole drinking water source by the EPA. The water in the aquifer is replenished by rainfall and recharged by water flowing from Lake Okeechobee and conservation areas through an extensive canal system. Presently, in addition to the Utility, the Biscayne Aquifer is also used for most of the municipal raw water supplies in the County.

Section 3.0 of the South Florida Water Management District Basis of Review for Water Use Permit Allocations limits raw water usage from the Biscayne aquifer for public water supply to the maximum quantity of water withdrawn during any consecutive twelve month period during the five years preceding April 1, 2006.

Due to its cost-effectiveness, the relatively shallow Biscayne Aquifer is, and is likely to remain, the County's primary source of raw water supply. Additional demands are anticipated to be met from the Floridan Aquifer.

3.4 Water Supply Regulatory Requirements

The volume of raw water withdrawal from the Utility's wellfields is regulated by the South Florida Water Management District ("FWMD). Each wellfield is governed by a water use permit that stipulates the maximum allowable annual and monthly withdrawal. These permits are reissued for periods of five to twenty years. The Utility's current annual permitted rate of raw water allocations is 18.3 billion gallons from all wellfields combined, including the Regional Raw Water Wellfields. The Utility holds three permits from the SFWMD for the wellfields 1A, 2A/North Regional Wellfield (NRW), and the South Regional Wellfield (SRW). The permits for 2A/NRW were consolidated into one 20 year permit in March 2008. The 1A Wellfield was also granted a 20-year permit in April 2008.

The permit for the SRW expired in October 2007, and the submitted application for SRW permit renewal is currently under review by the SFWMD. Table 3-7 highlights

information from the 20-year permit renewals for the 1A Wellfield and the 2A/NRW. Beginning in 2013, the SFWMD is requiring transitioning of water supply above the baseline allocation from the Biscayne Aquifer to the Floridan Aquifer. This requirement for shifting of additional water supply to a deeper, lower quality source will have implications for future treatment technology and capital investment, as well as operating costs.

Long term water supply in South Florida will also be affected by the Everglades Restoration Project and by regional water supply planning undertaken by the SFWMD and the U. S. Army Corps of Engineers (ACOE). The effect of these plans will be a reallocation of historical water supplies to secure additional fresh water for restoration of the Florida Everglades. Current planning documents known as the Lower East Coast Water Supply Plan (LECWSP) and the Comprehensive Everglades Restoration Plan (CERP), account for future needs of water utilities by utilization of new surface water reservoirs and by implementation of Aquifer Storage and Recovery (ASR) wells. A recent decision by the State to endeavor to acquire the property owned and farmed by US Sugar as part of the CERP may limit the option of utilities to store and use excess stormwater as an alternative to water supply.

It is possible that the new water supply technologies could be delayed, or could be less effective than SFWMD and ACOE expect. Recognizing this, the Utility has taken multiple proactive steps in order to assure that a continuous adequate raw water supply is available:

- The County has been actively participating in the LECWSP, the CERP and the SFWMD regulatory revision process.
- New infrastructure has been installed in order to maximize the effectiveness of the existing raw water recharged through the canal system. The most recent efforts include widening of the C-5 canal in the Cocomar Water Control District to enhance aquifer recharge for the 2A/NRW.
- The County has constructed and operates a 10 MGD wastewater reuse facility for potable water demand reduction.
- The County continues to implement the Integrated Water Resources Plan (IWRP) in order to maximize the utilization of available water. Current projects include the design of interconnects between the C-1 and C-2 Canals and between the C-12 and C-13 Canals.
- The County has initiated planning for an alternative technology in case an alternate source of water may be necessary. In South Florida, this alternative could be the Floridan Aquifer and/or the Atlantic Ocean. The Floridan Aquifer is an artesian water supply located approximately 700 feet

below the land surface in the County. Waters within the Floridan Aquifer contain higher total dissolved solids than the waters of the Biscayne Aquifer. Reverse osmosis membrane technology will readily treat Floridan Aquifer water to meet all applicable regulatory requirements. The City of Hollywood and the Town of Jupiter currently use the Floridan Aquifer for a portion of their drinking water supply.

3-7 Summary of SFWMD Wellfield Permits as of September 30, 2009

Table 3-7			
Summary of SFWMD Wellfield Permits as of September 30, 2009			
Description	Wellfield		
	1A	2A/NRW	SRW
Permit Period:			
Issuance	4/10/2008	3/13/2008	10/10/2002
Expiration	4/10/2028	3/13/2028	10/10/2007 ¹
Total Allocations:			
Annual Average Daily (MGD)	13.9	22.1	14.2
Maximum Monthly (MGD)	15.2	24.3	-
Maximum Day (MG)	-	-	22.4
BISCAYNE AQUIFER WITHDRAWALS			
Initial Period:			
Thru	4/1/2013	3/1/2013	1
Annual Average Daily (MGD)	10.7	20	1
Maximum Monthly (MGD)	11.6	21.7	1
Subsequent Period:			
Thru	4/10/2028	3/13/2028	1
Annual Average Daily (MGD)	9.2	17.5	1
Maximum Monthly (MGD)	9.9	19.2	1
FLORIDAN AQUIFER WELLS			
Annual Average Daily (MGD)	4.7	4.6	1
Maximum Monthly (MGD)	5.3	5.0	1
Number of Wells	4	4	1
Diameter (Inches)	16	16	1
Depth (Feet)	1200	1200	1
To Be Implemented By	2013	2013	1
¹ Permit for SRW expired October 2007, and application submitted for permit renewal is under review by SFWMD while sub-regional solutions for Hallandale Beach and Dania Beach are sought.			
Source: South Florida Water Management District			

3.5 Overview of the Facilities

Water System

District 1

District 1 has a combined service area of 11.99 square miles, permitted plant capacity of 16.0 MGD, and 241.27 miles of water distribution and transmission mains. WWS maintains District 1 water system interconnections with the systems of the City of Fort Lauderdale, the City of Tamarac, and the City of Lauderdale Hill to provide for emergency water supply. Water is currently purchased from the City of Plantation to serve customers in Broadview Park.

District 2

District 2, includes the Utility's largest wholesale water customer, the City of Coconut Creek. The District, not including the City of Coconut Creek, has a service area of 14.79 square miles, a permitted plant capacity of 30 MGD, and contains 242.69 miles of water distribution and transmission mains. The facilities of District 2 are interconnected with the City of Deerfield Beach, the Town of Hillsboro Beach, the City of Pompano Beach and Palm Beach County to provide for emergency water supply.

The County has an agreement with the City of Coconut Creek under which the County has agreed to provide the City of Coconut Creek with potable water for a term that exceeds by one year the last payment of any potable water system debt obligation of the County or 2040, whichever is less. The City of Coconut Creek constitutes approximately 21% of the total potable water consumption by customers of the Utility, and pays compensation amounting to 4.52% of the Utility's gross revenues. The agreement provides that, except by written consent of the County, the City of Coconut Creek will not purchase water other than from the County or pump water into its water distribution system from its own facilities. The County has agreed not to sell water to anyone else within the defined service area and the City of Coconut Creek is not permitted to increase its water service area without the written consent of the County.

District 3

District 3 is the southernmost service area of the County and is geographically separated into subdistricts referred to as 3A, 3B, and 3C. Subdistricts 3B and 3C are interconnected. 3A, 3B and 3C receive potable water through interconnects with the City of Hollywood. District 3 has a combined service area of approximately 14.21 square miles and contains 212.35 miles of transmission and

distribution mains. Subdistrict 3A has interconnects with the City of Fort Lauderdale, the City of Hollywood, and the City of Dania Beach to provide for emergency water supply. Subdistrict 3B has interconnects with the City of Hollywood. Subdistrict 3C has interconnects with the City of Hollywood, the City of Pembroke Pines and the City of Miramar to provide for emergency water supply.

Retail Wastewater System

District 1

District 1 has a service area of 12.98 square miles and includes 158.33 miles of gravity collection sewers and 72 lift stations. There are 35.49 miles of force mains.

District 2

The size of the District 2 service area is 15.58 square miles. The collection system consists of 153.39 miles of gravity sewer, 95 lift stations, and 32.8 miles of force mains.

District 3

District 3 serves an area of 12.07 square miles. The gravity collection system has 77.52 miles of gravity sewer and 59 lift stations. The force main network contains 32.07 miles of pipe that delivers the wastewater from this area to the Southern Regional Wastewater Treatment Facilities operated by the City of Hollywood. District 3A and District 3B wastewater is treated by the City of Hollywood under a large user wastewater agreement with the County. The County has 5 MGD of reserved capacity in the Southern Regional Wastewater Treatment Plant. The City of Hollywood has 48.75 MGD of plant capacity. Three (3) of the master pump stations are located within District 3.

The agreement between the County and the City of Hollywood contains a number of major provisions including: identification of the service area; requirements for the use of metering devices; reserve capacity requirements; restrictions on excessive flows; and charges for damages to the system. Debt service and operation and maintenance costs are paid on an actual flow basis. The agreement can be terminated by either party with a 365-day notice, if all financial requirements have been met. The City of Hollywood may not terminate the agreement, unless there shall be a readily available alternative means of treating and disposing of County wastewater.

3.6 Visual Inspection and Review

The visual inspections of the District 1 water treatment plant, District 2 water treatment plant and District 3 water treatment plant were performed on May 20 and 25, 2010. These inspections were performed by Milian, Swain & Associates, Inc. accompanied by WWS staff.

Water Treatment Plant 1A

WTP 1A was originally constructed in 1960 with a treatment capacity of 3.0 MGD, which was expanded to 10.5 MGD in 1979, and finally to 16.0 MGD in 1994. Overall, the plant is in very good condition as a result of the 1994 expansion and improvement project. Water quality standards were maintained at WTP 1A throughout the year.

During the visual inspection of the plant, all equipment was operating in a satisfactory manner. The plant is clean and well maintained. The following summarizes the observations resulting from the inspection:

Plant modification performed through December 2009:

- Implementation of new sodium hypochlorite dosing system to replace gas chlorination.
- Replacement of under drains on the East filters.
- Replaced media in the East and West filters.
- Installation of new equipment at the newly renovated polyphosphate room.
- Installed two (2) liquid carbon dioxide storage tanks.
- Installed new contact points at treatment units 1 and 2.
- Upgraded monitors in the control room with 14 security monitors and 14 monitors for operations at the WTP.

The plant modifications to be initiated for FY 2010:

- Correction of surface cracks on filter exterior wall (ongoing).
- Installation of two (2) ammonia tanks.

- Construction of new open cover structure for pumps 1, 3, & 5 from East clear room located next to 2.0 mg tank (ongoing).
- Installation of new variable frequency drive (VFD) units for the high service pumps adjacent to pumps 1, 3 and 5 (ongoing).
- Installation of 24" DIP discharge pipe from high service pumps (pumps 1, 3 & 5) to distribution system (ongoing).
- Backwash pump No.2 to be eliminated from clear well and new connection to the 2.0 mg storage tank to be constructed (ongoing).
- Installation of two (2) new VFD transfer pumps (3 & 4) from East clear well (ongoing).
- Installation of baffling to increase contact time at East clear well.

Water Treatment Plant 2A

The WTP 2A was originally constructed in 1975 with a treatment capacity of 20 MGD. In FY 1994, the treatment capacity was expanded to 40 MGD with permitted capacity of 30 MGD. Water quality standards were maintained at WTP 2A throughout the year.

During the visual inspection of the plant, all mechanical and electrical equipment were operating in satisfactory condition and well maintained.

Plant modification performed through December 2009:

- Rehabilitated bag house silo.
- Replacement of filter media at filter No.4.
- Replaced four (4) ammoniators.
- Replaced pumps for vacuum filters No.2 and No.3.
- Increased security swipe card system in all buildings.
- Rehabilitation of control room furniture, replacement of monitors with new flat screen.
- Installed two (2) new servers with graphics.

- Installed new 10" high security chain link fence on site.
- Replaced lime slacker No.2.
- Upgraded monitors in the control room.
- Correction of surface cracks on filter exterior walls.

Plant modification to be initiated for FY 2010:

- Replacement of flume filter No.6.
- Replacement of 2 10,000 gallon diesel tanks (to replace existing underground tanks).
- Continue to work towards achieving 4-log virus credit for underground rule.
- Installation of lighting improvement for the plant (ongoing).
- Rehabilitation of wells No.8 & No.9 and relocation of well No.4.
- Replacement of A/C unit for transfer pump building.
- Replacement of weirs and louvers at treatment unit No.1.
- Transfer pump No.2 motor and drive sent out to be rebuilt. Transfer pump No.1 will be sent out to be rebuilt after pump No.2 is back in service.
- Plans have begun for the construction of a new 5 mg storage tank.
- Installation of recarbonation system to the water treatment process – Bid and award in year 2010.
- Replacement of chemical feed pumps (ongoing).
- Implementation of new sodium hypochlorite dosing system to replace gas chlorination.
- Replacement of flume filter wall pipe penetration (ongoing).
- Rehabilitation of backwash tank (ongoing).
- Rehabilitation of switch gear at high service pump room at building No.1.

- Replacement of lime slacker No.1.

Water Distribution System 3A

In December 2001 the City of Hollywood began providing water for resale to the County in System 3A. Then re-pumping facilities consisting of a 2.0 MG storage tank and high service pumps supplying the 3A distribution system which includes the Fort Lauderdale / Hollywood International Airport were constructed at the site of the former WTP 3A.

During the visual inspection of plant 3A it was reported that the pump and motor for Pump No.1 was replaced and a new VFD unit was installed early in 2010. The pump and motor for Pump No.4 were replaced in FY 2009.

Installation of a new VFD for Pump No.2 is being planned for FY 2011.

The chlorine and ammonia equipment appear in fair condition but in good working order.

The overall distribution facility is well maintained and operating properly.

Water Distribution System 3B and 3C

The 3B distribution system water supply is fed primarily by the City of Hollywood through two (2) 12-inch potable water interconnect treatment stations located at the City's south system perimeter (on Pembroke Road at Park Road and at S.W. 57th Avenue). Another connection from the City of Pembroke Pines supplies water to the North Perry Airport perimeter. The County maintains a 2.5 MG storage tank and high service pumps and an emergency generator, all in very good condition. These facilities are remotely monitored and controlled via SCADA equipment/instrumentation.

During the visual inspection of plant 3B it was observed that the wall of the 2.5 MG storage tank had the same surface structural cracks that were previously reported. Also, the discharge pipes on the exterior wall of the high service pump building also need to be re-grouted and repainted. The pump room, electrical controls and generator equipment are in good condition and operating properly. Overall the facility is very well maintained.

The 3C repump facility currently consists of one 0.5 MG steel storage tank, two high service pumps and a sodium hypochlorite disinfection system. This facility is equipped with a SCADA system to allow WWS staff to monitor and control the facility operation remotely.

The 3C repump facility is currently under a full construction upgrade to replace the existing steel storage tank, high service pump building, filter units and disinfection system building. Only portion of the treatment plant has been demolished, since the plant remains in operation until the new plant is completed and placed into service.

The new plant will be equipped with a new high service pump building that will house three (3) high service pumps, emergency generator, VFD controls, hypochlorite room with two (2) tanks and one (1) blending (softening water) tank, ammonia room with controls and 150 lb ammonia cylinders, two (2) valve pits, one is the discharge vault and the other is the flow meter vault. The new distribution facility will have a 2.0 mg storage tank.

Lift Stations

There are a total of 226 lift stations operated by the County. A representative 20 lift stations were inspected by Milian, Swain & Associates, Inc. on May 18 and 19, 2010. Overall, the lift stations inspected appeared to be efficiently operated and well maintained, and the mechanical and electrical components (control panels, variable frequency drives, motor control centers, generators, telemetry units, pumps, pipes, and accessories) appeared to be in good condition unless noted. The following serves to summarize the observations made during the visual inspection of the lift stations:

- LS 10E Lift station appears in good condition. The wet well interior walls and the discharge pipes are sealed coated and appear in good condition. The valve vault and interior piping are also sealed coated and in good condition. The electro-mechanical equipment and structure are in good condition. Station is equipped with SCADA system.
- LS 10D Lift station is in fairly new condition. The wet well interior is not sealed coated but in good condition like new. The interior piping are new but not sealed coated. The valve vault has concrete bottom with a 12-inch circular hole on bottom and holding water. The electro-mechanical equipment and structure is in new condition. Station is equipped with SCADA system.
- LS 50D Lift station is in fair condition. The wet well interior wall is not sealed coated but in fair condition. Interior discharge pipes are showing signs of light corrosion. The valve vault interior wall are in good condition but not sealed coated. The valve vault piping is showing signal of corrosion and need a coat of paint. The 4-inch wet well vent needs to be repainted. The electro-mechanical equipment is in good condition. Station is equipped with SCADA system.

- LS 50G Lift station is in fair condition. The interior wet well wall and piping are sealed with protective coating and appear in good condition. The valve vault has a gravel bottom and should be replaced with a concrete bottom. The valve vault piping is showing signs of corrosion due to ground water rising through the gravel bottom and should be repainted; also the cam-lock is missing from the emergency pump out connection. The electro-mechanical equipment is in good condition. Station is equipped with SCADA system.
- LS 51A2 Lift station is in fair condition. The interior wall of this wet well is not sealed coated but in good condition. Interior piping is showing signs of corrosion and need a coat of paint. The valve vault interior walls are not sealed coated but in good condition. The piping is showing signs of light corrosion and need to be repainted. The cam-lock from the emergency pump out connection is missing. The electro-mechanical equipment is in good condition. Station is equipped with SCADA system.
- LS 50M2 Lift station appears in fair condition. The wet well interior wall and piping appear in good condition. Valve vault has a gravel bottom and is flooded due to high ground water. The pipes in the vault are under water and are showing signs of corrosion. This valve vault should be provided with a concrete bottom to eliminate this flooding condition. The electro-mechanical equipment is in good condition. Station is equipped with SCADA system.
- LS 51I Lift station appears in good condition. The interior wet well wall and piping are in good condition; no corrosion on the discharge pipes. The valve vault interior walls and piping are sealed coated and appear in good condition. The electro-mechanical equipment is in good working condition. This station does not appear to have a SCADA system.
- LS 20A Lift station appears to be in good condition. The interior wet well walls and piping are sealed with protective coating and appear in good condition. Piping shows no signs of corrosion. Valve vault interior walls and piping are also sealed coated and in good condition. Interior of valve vault should be cleaned of loose debris. The electro-mechanical equipment is in good condition. This station is equipped with a SCADA system.
- LS 20E Lift station appears in good condition. The wet well wall and piping are sealed coated and in good condition, with no corrosion on the discharge pipes. Valve vault interior walls and piping are sealed coated and in good condition, but pipes are showing light corrosion and bottom of vault is

holding water. The electro-mechanical equipment is in good condition. This station is equipped with a SCADA system.

- LS 21B Lift station is in good condition. This wet well is square in shape and the interior walls and piping are sealed coated and in good condition. The valve vault interior walls and piping are also sealed coated and in good condition. The electro-mechanical equipment appears in good condition. This station is equipped with a SCADA system.
- LS 21D6 Lift station is in fair condition. This wet well is squared shaped and the walls are partially sealed coated, and piping is showing signs of heavy corrosion and so are the two pump guide rails. The valve vault appears in good condition, but the interior piping is also showing signs of corrosion and need a coat of paint. The electro-mechanical equipment appears in good working condition. This station is equipped with a SCADA system.
- LS 21G Lift station appears in fair condition. This station collects sewage from the plant and water from the treatment process of the plant. The interior wet well wall appears to be deteriorating and the piping in the wet well is showing signs of heavy corrosion and needs to be painted. The valve vault interior walls appear in fair condition but the piping and valves need a coat of paint. The electro-mechanical equipment is in fair condition. This station is equipped with a SCADA system.
- LS 23E Lift station appears in fair condition. The wet well interior wall has lost the seal coating, but the structural integrity of the wall is in good condition. The interior pipes are not sealed coated and show signs of corrosion and need a coat of paint. The valve vault interior walls are in good condition, but this vault has a gravel bottom that should be replaced with a concrete bottom. The piping in the vault is showing heavy signs of corrosion due to the rise of ground water in the vault. The electro-mechanical equipment is in good working order. This station is equipped with a SCADA system.
- LS 24F Lift station is in fair condition. The wet well interior wall and piping are sealed coated and appear in good condition. The valve vault interior walls and piping are also coated with protective coating and in good condition, but needs to be flushed of loose debris. The cam-lock is missing from the emergency connection. The electro-mechanical equipment is in good condition. This station is equipped with a SCADA system.
- LS 30C Lift station appears in fair working condition. The wet well interior wall has been sealed coated, but is flaking off the wall and should be resealed.

The wet well interior discharge pipes have been replaced, but 90° bends need a coat of paint. The valve vault is sealed coated and in good condition, but the vault bottom is gravel and the interior piping is lying on the bottom partially covered by the dirt and gravel. The piping needs a fresh coat of paint. The bottom of the vault should be replaced with a concrete bottom. The electro-mechanical equipment and structure are in good condition. This station is equipped with a SCADA system.

LS 30E-1 Lift station is located in a mobile home park and appears in good condition. The wet well interior wall and piping are sealed coated and in good condition. Valve vault and piping are also sealed coated and in good condition. Valve vault needs to be cleaned. The cam-lock is missing from the emergency connection. The 4-inch wet well vent is showing signs of corrosion and needs to be painted. The electro-mechanical equipment appears in good condition. This station is equipped with a SCADA system.

LS 30E-2 Lift station appears in fair condition. Wet well wall and piping need to be re-sealed with protective coating. Valve vault walls have lost their protective coating. The interior pipes are sealed and in good condition. Cam-lock is missing from the emergency connection. The electro-mechanical equipment and structure appear in good condition. This station is equipped with SCADA system.

LS 30H Lift station appears in fair condition. The wet well interior wall is sealed and in good condition. The interior pipes run up through the concrete top slab and are installed above ground. Discharge pipes needs a coat of paint. The valve vault is sealed coated but the interior piping is one foot under water and pipes are showing heavy corrosion. Station has been equipped with SCADA system and new antenna. Fence and structure are in good condition. Existing control panel is in good working order.

LS 30I Lift station appears in fair working order. Wet well interior wall needs to be re-sealed. The interior piping is showing signs of light corrosion and should be painted. The valve vault interior walls are sealed as well as the piping; some light corrosion on the piping. This station has been upgraded with telemetry system and new antenna. Existing control panel is in good working condition. The 4-inch vent is showing signs of corrosion and needs paint and is lightly rusted.

LS 31C Lift station has no valve vault and is in fair condition. The discharge pipes are installed above ground and need to be painted. Wet well interior wall needs to be re-sealed. This station is equipped with SCADA system and

antenna. Existing electric control panel is in good working order. Structure is in good condition.

Section 4

Regional Wastewater System

Section 4 Regional Wastewater System

This section describes the North Regional Wastewater System (NRWWS) including the service area, visual inspection and review of the renewal and replacement program.

4.1 General Description

The Utility owns and operates the North Regional Wastewater Treatment Plant (NRWWTP), which has provided contract wholesale wastewater services to 11 large users plus the County since 1974. The large users include the Cities of Coconut Creek, Coral Springs, Deerfield Beach, Lauderhill, North Lauderdale, Oakland Park, Pompano Beach, Tamarac; and, North Springs Improvement District (NSID), Parkland Utilities, and Royal Utilities. Service is also provided to WWS Districts 1 and 2 Retail Wastewater Systems. The NRWWS includes 15 master pumping stations and approximately 98 miles of force mains. All of the wastewater collected from retail and large user customers is treated at the NRWWTP located in Pompano Beach, Florida. The plant has a permitted treatment capacity of 84 MGD. With the completion of the expansion project, the plant will treat up to 100 MGD of which 87.015 MGD has been reserved by the large users. During Fiscal Year 2009, the annual average daily flow at the NRWWTP was approximately 66 MGD, and the plant currently has sufficient capacity to meet the projected demands of all large users through 2025.

The large user agreements are substantially similar. Each is for a term that exceeds by one year the last payment of any wastewater system debt obligation applicable to the NRWWS. In addition to stipulating points of connection and establishing minimum quality limitations on all wastewater, the agreements designate reserve capacity in the plant for each user and provide for the method to charge each user for the availability and provision of service. The agreements also require the large users to deliver all wastewater collected within the service area to the County. On a monthly basis, each user is billed a fixed charge depending upon the user's reserve capacity in the plant. This fixed charge is designated to recover each large user's equitable share of debt service including coverage (1.2x principal and interest). The operation and maintenance costs associated with provision of treatment and transmission service, also billed monthly to each large user, are based upon the large user's pro rata usage of the NRWWS. Additionally, the contracts provide restrictions on excessive and peak flows, limitations on type of wastes allowed to be discharged and requirements to pay for damages caused by a large user.

The NRWWTP was designed and constructed in accordance with a master plan approved by regulatory authorities specifically to encourage the use of regional,

technologically advanced wastewater treatment processes and to discourage development and use of smaller, less efficient systems. A difficult permitting process, outstanding contractual obligations with the County, and high capital costs of constructing and operating a new facility should discourage any large users from abandoning the NRWWS.

The NRWWTTP utilizes an activated sludge treatment process for liquid treatment and an anaerobic digestion system for handling the sludge produced from the liquid treatment process. After digestion, the sludge is dewatered and disposed of by landfilling and landspreading. The effluent from the liquid treatment process is chlorinated and either pumped through the outfall pipe into the Atlantic Ocean, disposed of in on-site deep injection wells, or filtered via the County's 10 MGD reclaimed water system. The reclaimed water is used for irrigation and industrial process water at the North Resource Recovery Plant (Solid Waste Incinerator) and the NRWWTTP, and for landscape irrigation at a nearby commerce center.

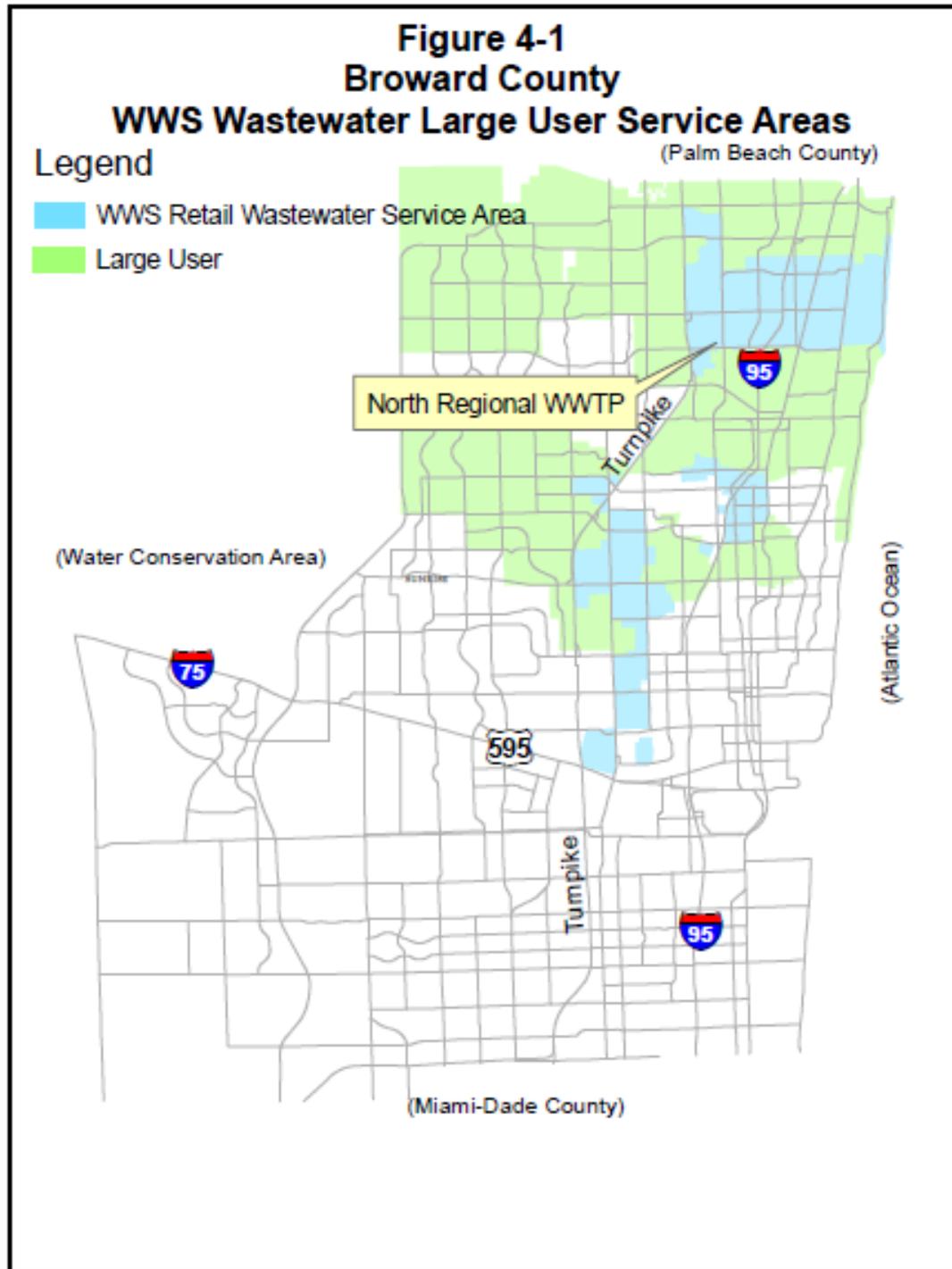
Service Area and Customer Base

Figure 4-1 shows the NRWWS service Area. All of the wastewater collected from retail Districts 1 and 2, and all large user customers, are treated at the NRWWTTP located in Pompano Beach, Florida.

The NRWWS service area provides service to 40 percent of the population in the County. In addition to providing treatment service to the retail customers in Districts 1 and 2 (District 3 treatment is provided by contract with the City of Hollywood at the South Regional Wastewater System), the NRWWTTP provides treatment to 11 large users plus the County. Service is provided pursuant to individual, contractual agreements between the County and each large user. Generally, such agreements specify each large user's reserve capacity in the plant and provisions for billing and payment for service. The large users and WWS have currently subscribed to 87.015 MGD of treatment and disposal capacity.

Table 4-1 provides a summary of historical large user wastewater flows for treatment and disposal. The reserve capacity for each large user of the NRWWS is shown in **Table 4-2**. **Table 4-3** provides information on the wastewater annual flows for the past five years. While some of the large users individually may be utilizing high percentages of their reserve capacity, collectively the large users will not exceed permitted plant capacity. Hence, such individual wastewater flows do not constitute a liability issue from the standpoint of capacity.

Figure 4-1 Broward County WWS Wastewater Large User Service Areas



4-1 Summary of Historical Large User Wastewater Average Monthly Flow for Treatment and Disposal (1,000 Gallons)

Table 4-1					
Summary of Historical Large User Wastewater					
Average Monthly Flow for Treatment and Disposal					
(1,000 Gallons)					
Large User	FY 2007¹	FY 2008¹	Change From		
			FY 2009¹	Prior Year	% of Change
Coconut Creek	111,396	104,918	102,452	(2,466)	-2.35%
Coral Springs	230,175	258,051	255,782	(2,269)	-0.88%
Deerfield Beach	178,823	223,349	213,446	(9,903)	-4.43%
Lauderhill	175,625	184,982	184,215	(767)	-0.41%
North Lauderdale	101,506	97,468	99,543	2,075	2.13%
NSID	77,291	83,607	81,508	(2,099)	-2.51%
Oakland Park	36,611	37,498	53,526	16,028	42.74%
Parkland Utilities	7,311	7,773	5,601	(2,172)	-27.94%
Pompano Beach	412,065	409,864	367,407	(42,457)	-10.36%
Royal Utilities	6,305	8,526	9,831	1,305	15.30%
Tamarac	191,512	192,263	195,063	2,800	1.46%
Subtotal	1,528,620	1,608,297	1,568,374	(39,926)	-2.48%
Broward County	492,765	488,039	414,413	(73,627)	-15.09%
Total	2,021,385	2,096,336	1,982,786	(113,552)	-5.42%
<p>¹ Water conservation efforts as well as water restrictions in place since April 2007 as the result of a drought have reduced water sales and the amount of water returned to the wastewater system.</p>					
Source: Broward County Water and Wastewater Services					

4-2 NRW System Reserve Capacity as of September 30, 2009 (MGD)

Table 4-2 North Regional Wastewater System Reserve Capacity as of September 30, 2009 (MGD)		
Large User	Capacity	
	Treatment	Transmission
Broward County	19.42	19.42
Coconut Creek ¹	6.54	4.41
Coral Springs	9.79	9.79
Deerfield Beach	8.50	8.50
Lauderhill	7.10	7.10
N S I D	3.53	3.53
North Lauderdale	4.40	4.40
Oakland Park	1.52	1.52
Parkland Utilities	0.27	0.27
Pompano Beach ¹	17.00	N/A
Royal Utilities	0.45	0.45
Tamarac	8.50	8.50
Total	87.015	67.885
¹ All of Pompano Beach and portions of Coconut Creek do not use the North Regional Wastewater System transmission facilities.		
Source: Broward County Water and Wastewater Services		

4-3 Summary of Large User Wastewater Treatment Annual Flows Five-Year History as of September 2009 (1,000 Gallons)

TABLE 4-3					
Summary of Large User Wastewater Treatment Annual Flows					
Five-Year History as of September 2009 (1,000 Gallons)					
Large User (LU)	Fiscal Year 2005	Fiscal Year 2006	Fiscal Year 2007¹	Fiscal Year 2008¹	Fiscal Year 2009¹
Coconut Creek	1,435,124	1,390,108	1,336,757	1,259,011	1,229,427
Coral Springs	2,997,502	2,873,541	2,762,105	3,096,615	3,069,385
Deerfield Beach	1,855,290	1,621,217	2,145,876	2,680,185	2,561,348
Lauderhill	2,466,095	2,235,628	2,107,495	2,219,783	2,210,581
North Lauderdale	1,461,486	1,462,676	1,218,069	1,169,616	1,194,511
NSID	935,723	929,151	927,497	1,003,282	978,100
Oakland Park	571,279	511,290	439,333	449,973	642,310
Parkland	89,267	79,487	87,728	93,272	67,215
Pompano Beach	4,975,139	5,213,300	4,944,777	4,918,370	4,408,880
Royal Utilities	101,037	75,409	75,659	102,307	117,969
Tamarac	2,521,795	2,394,739	2,298,144	2,307,154	2,340,756
Total LU	19,409,737	18,786,546	18,343,440	19,299,568	18,820,482
Broward County	5,830,874	6,323,777	5,913,178	5,856,469	4,972,950
Total LU and County	25,240,611	25,110,323	24,256,618	25,156,037	23,793,432
<p>¹ Water restrictions in place since April 2007 as the result of a drought have reduced water sales and the amount of water returned to the wastewater system.</p>					
Source: Broward County Water and Wastewater Services					

4.2 Wastewater System Regulatory Requirements

Operations of the NRWWTP are regulated by the EPA, the Florida Department of Environmental Protection (FDEP), and the Broward County Environmental Protection and Growth Management Department. Regulatory requirements are focused on effluent management, sludge disposal, reclaimed water, and an industrial pretreatment program.

In Fiscal Year 2009, the Regional Wastewater System (NRWWTP) had no permit violations. The NRWWTP is in compliance with effluent quality standards; fifty-one (51) parameters are checked daily to assess conformance with these standards, amounting to 18,615 parameter checks in the year. During Fiscal Year 2009, there were 5 limit excursions, or only 0.03 percent of the total checks at the NRWWTP. These excursions were primarily the result of extreme short-term hydraulic flow variations,

which resulted in chlorine disinfectant concentration values outside of the narrowly prescribed range.

4.3 Wastewater Effluent Management

The NRWWTTP currently disposes of treated effluent via an open ocean outfall pipeline, a reclaimed water system and deep injection wells. The open ocean outfall is regulated through the Federal National Pollutant Discharge Elimination System (NPDES) permit program, and is administered by the FDEP. Injection to the deep wells is permitted by the FDEP Underground Injection Control Section.

Open ocean outfalls are utilized by several south Florida utilities. Concerns over possible environmental impacts exist and have been the subject of extensive study such as the Southeast Florida Ocean Outfall Experiments (SEFLOE) I and II conducted by the National Oceanic and Atmospheric Administration (NOAA). The SEFLOE studies indicated that there has been no unreasonable degradation of the discharge environment. WWS is currently participating in a joint study with NOAA titled Florida Atlantic Coastal Environment (FACE) study. The County's facility permit from the FDEP rates the NRWWTTP at 84 MGD and acknowledges 66 MGD of effluent disposal capacity through the ocean outfall. Additional effluent disposal capacity is provided through the County's Class I deep injection wells. Broward County submitted an application to the FDEP on August 2, 2007 for the renewal of the NPDES/Facility Permit for the NRWWTTP, which expired on February 2, 2008. The application has been reviewed by the FDEP; however, issuance of the permit is in abeyance as a result of significant regulatory changes adopted in June 2008 requiring phasing-out of all domestic wastewater open ocean outfalls in Florida. The range of estimated capital improvement costs associated with complying with the as-yet-uncertain regulations is described in Section 6.5. The NRWWTTP is currently operating under an administratively extended NPDES/Facility Permit until the FDEP issues the new permit accompanied by an order establishing a compliance schedule consistent with recently enacted legislation.

The FDEP is promoting a reduction of nutrients in the face of growing opposition to ocean discharges from interested groups. As a result of such opposition, Governor Crist signed into law Senate Bill 1302, including the Leah Schad Memorial Ocean Outfall Program, effective July 1, 2008. The law limits existing permitted discharge capacities for ocean outfalls, and requires that these discharges meet advanced wastewater treatment standards by December 31, 2018. Further down the timeline, domestic wastewater treatment facilities currently using ocean outfalls will no longer be permitted to employ such discharge systems and will be required by December 25, 2025 to utilize as reuse 60 percent of the annual average flow of the domestic wastewater through the facility's ocean outfall, as determined from monitoring data available for

calendar years 2003 through 2007. Based on the actual flows for these five years, over 22 million gallons a day must be utilized as reclaimed water. Finally, the ocean outfall program mandates that SFWMD encourage water resource and water supply development projects that discontinue ocean outfalls by giving these projects significant weight for FDEP and SFWMD funding from the Ecosystem Management and Restoration Trust Fund, and recognizing that the reclaimed water made available through these programs may be credited back to water supply Consumptive Use Permits.

As noted, the effluent management system also includes Class I injection wells. The operating permit for injection wells 1 through 4 technically expired on April 25, 2004. Similarly, the Operation Permit 0051336-439 UO for Injection Wells 5 and 6 expired on February 3, 2009. These two permits were administratively extended until the issuance of a new 5 year permit on July 2, 2010. This permit requires the installation of a new monitoring well (number 5) to replace monitoring well number 4, because its lower zone no longer appears to be a reliable source of data. This determination was made based on the modified monitoring protocols and data collected under the permit 0051336-439 UO administrative order.

The County's effluent management program currently includes a 10 MGD system providing highly treated reclaimed water for industrial and landscape uses. Due to state law, the County will be required to increase production of reclaimed water by 2018. Reclaimed water may be available for recharging wellfields and the County expects to receive credits related to drinking water Consumptive Use Permits as a result of this alternative water supply.

4.4 Biosolids Management

Pollutant concentrations in wastewater residuals are regulated by both federal and state sludge regulations. The federal regulation that currently regulates disposal is 40 CFR Part 503. The Part 503 rule regulates five categories of wastewater residuals disposal: agricultural land application, non-agricultural land application, distribution and marketing, monofills and surface disposal. WWS currently employs landfilling (20,000 tons per year) and landspreading (60,000 tons per year) for wastewater residuals disposal. Terra Renewal Services is under contract to dispose of biosolids by landspreading.

The County is currently managing most biosolids by land application of the treated residuals. Land application is a beneficial reuse of this wastewater treatment byproduct and is subject to both federal and state regulations. The County produces Class B residuals allowable for application to agricultural sites.

The FDEP has initiated a rule making process to modify state regulations for land application of biosolids. It is anticipated that the current site permitted for land application will be eliminated as a part of the plant's new operating permit. Land application would still be an option but permitted sites would be at greater distances than are currently available. Given the possibility that hauling costs to new disposal sites would be prohibitive, the County has secured alternate disposal capacity at a nearby Class I landfill and is participating in a multi-utility study to identify cost-effective long-term biosolids management alternatives. Disposal at the landfill will meet all current federal, state, and local regulations.

4.5 Wastewater Large User Agreements

The County is under obligation to provide large users with capacity under the terms of Large User Agreements (Agreements) it has executed with the cities of Coconut Creek, Coral Springs, Deerfield Beach, Lauderhill, North Lauderdale, Oakland Park, Pompano Beach, and Tamarac; and the North Springs Improvement District, and the private utility companies of Parkland Utilities, Inc. and Royal Utilities, which provide for wastewater transmission, treatment and disposal services. The Agreements terminate at the end of the County's fiscal year following the date all obligations, notes or bonds at any time issued for the NRWTP and associated transmission and disposal facilities, or any part thereof, are retired or satisfied. The current large user reserved capacity in the NRWTP is set forth in **Table 4-2**.

The Agreements are substantially alike in form and a brief summary of significant provisions follows:

- A. Provisions Pertaining to Connection to the County System. The Agreements require that during the term of the Agreement, each user except the City of Oakland Park will deliver all existing water flows collected by it to the County. Oakland Park sends a portion of their flow to the City of Ft Lauderdale's wastewater treatment plant. The Consulting Engineers are of the opinion that a difficult permitting process, outstanding contractual obligations with the County and high capital costs of constructing and operating a new facility should discourage any defection of users from the NRWWS.

The Agreements also identify the points of connection of the users' systems to the County's system, and state that the user will convey to the County land needed by the County for the point of connection and access thereto. The users agree to maintain their own systems, the elevation and pressure of which are required to be sufficient to deliver wastewater to the County's facility without backing up or reversing flow. The users' systems must include provisions to prevent excessive peak flow rates and extended periods of no flow. Each of the users must list in the Agreement estimates of its future flow projection and the

user must submit annual updates of these estimates to the County. The County is required to use these estimates to plan future treatment capacity and to determine whether facilities should be extended or modified. The County's obligation to provide service is limited to the capacities reserved by users, which may be increased or decreased by amendment or modification to the Agreements. The Agreements allow users to lease or sell excess capacity to other users, subject to the County's approval. The County is required to install and maintain a meter at each point of connection to determine the volume and rates of flow and to inspect the meters at least annually to determine the accuracy thereof. The Agreements provide for credits or additional charges in the event of the inaccuracy of the meters. If the meters are inoperative, the users are required to pay an amount based on the average flow of the prior month.

- B. Provisions Relating to Discharge Sampling. The Agreements specify quality limitations for wastewater discharges. A user's failure to comply with these limitations places the user in default under this Agreement and allows the County either to initiate programs to bring the user's discharge into compliance at the user's expense or to seek damages from the user. A user's system must include a sampling station and the user must upon receipt of written request from the County submit a complete laboratory analysis of a composite sample of combined wastes leaving the user's facilities. The County and the user may enter into an agreement whereby the County would accept an industrial waste of unusual strength. The County may surcharge high strength industrial waste received from large user systems.
- C. Provisions Pertaining to Charges. The County is required to conduct an annual review of the costs of providing service to users, which will provide the preliminary basis for establishing fees, rates and other charges for the next succeeding fiscal year. The fees and rates charged to the users constitute the full cost of the transmission, treatment and disposal service provided to the users, including operation and maintenance charges and debt service charges for both the NRWWT and the NRWWS transmission facilities, and include an Improvement Repair and Replacement Surcharge. Such fees, rates and charges are required to be set at a public hearing by the Board, which is required to be held after 30 days written notice to the users. The Board is required to consider recommendations of the individual users or the advisory board, which is composed of representatives from each of the users. The operation and maintenance charges applicable to the NRWWT or the transmission system are included in the monthly rate charged to the users based upon the users' actual monthly flow in thousands of gallons. The rate is to be set by dividing the total annual budgeted operation and maintenance expense for each fiscal year by the number of gallons estimated to be treated or transmitted in that fiscal year, and is to be adjusted at year end to reflect the actual number of gallons treated and actual operation and maintenance expense.

The debt service charge included in monthly rates charged to the users include principal, interest and coverage requirements on obligations issued at any time for the NRWWS and is computed by determining the ratio of the amount of capacity reserved by the user to the amount reserved by all users. The debt service charge for the NRWWS transmission facilities is computed by reference to transmission reserved capacity in the same manner. A user's contribution to the Improvement, Repair and Replacement Surcharge, which is part of the monthly rate charged to users, may not exceed 10 percent of that user's monthly bill. In addition, the Agreements provide for additional charges in the event that a customer requests additional transmission or treatment capacity or in the event that the monthly flow of a user exceeds the capacity reserved by such user for three consecutive months. A user that fails to pay the monthly bill within 45 days of its due date is required to pay an interest penalty on the unpaid balance; and if the payment is not made within 60 days, the user is in default of the Agreement and the County may enforce the Agreement by suit. The users agree to establish service charges or other means of obtaining funds sufficient to enable them to pay the monthly charge.

- D. Provisions Pertaining to Additional Obligations of Both Parties. The Agreements provide that the County will extend and expand its NRWWS to provide for the user's scheduled flow. The users must deliver their wastewater to the County facilities for treatment and the County must accept all wastewater flows collected by the users, provided the amount of such flow does not exceed the capacity reserved by such users.
- E. Provisions Pertaining to Violations and Exceptions to the Terms of Agreements. If a user violates the Agreement, the County must give written notice of the violation and allow a reasonable time to correct the violation. The user must correct the violation within the stated time. If either party violates the Agreement, that party becomes liable to the other for any expense, loss or damage occasioned by such violation; provided that any payment by the County to a user for violation of any provision of the Agreement shall be from any legally available source other than the revenues pledged to any bondholders. If there is a dispute concerning a violation that cannot be settled, the user will pay the full amount billed, and the amount in dispute will be escrowed or held in a joint trust, interest-bearing bank account and held pending settlement of such dispute. Each user agrees to hold the County harmless from costs and expenses incurred by such user or the County in any litigation resulting from the improper introduction of materials by such user into the County facility. Any temporary cessation of wastewater transmission and treatment services caused by an act of God, a fire, strikes, casualty, necessary maintenance work, breakdown of or injury to machinery, pumps or pipeline shall not constitute a breach of the Agreement. The County is required to accept and dispose of wastewater

transmitted by the users, if physically possible, regardless of the degree of treatment available, until written notice to the contrary is received from a government agency.

- F. Provisions Relating to the Term of the Agreements and Cancellation. The users and the County were bound by the Agreements at the date of their execution. The County and each user may terminate their Agreements by mutual written consent. Otherwise, the Agreements terminate at the end of the County's next full fiscal year after all obligations issued at any time during the term of the Agreements for the NRWWS have been retired or satisfied.

4.6 Visual Inspection and Review

North Regional Wastewater Treatment Plant

The visual inspection of the NRWTP was performed on May 26, 2010. Since the last report most of the expansion construction to the plant have been completed and are operational. The visual inspection indicates that the plant is well maintained and operated properly.

Plant modifications performed through December 2009:

- Replacement of VFD at clarifier A-MOD motor control center.
- Completed the mechanical integrity test (MIT) on injection wells No.1, No.2, No.3 and No.4.
- Emergency generators No.1, No.2 and No.3 were replaced.
- Replaced one (1) sludge transfer pump at the North Digester Complex.
- Replaced VFD for reuse pump station.
- Replacement of liquid rheostat 2.
- Replaced clarifier drive at D-MOD.

Plant modification to be initiated for FY 2010 and FY 2011:

- Rehabilitation of clarifier C-2 at C-MOD.

- Replacement of VFD at clarifier B-MOD and C-MOD.
- Recirculation pump No.3 needs to be replaced at clarifier C-MOD (ongoing).
- Replacement of liquid rheostat 5 (ongoing).
- Replacement of aerator blades at D-MOD (6 blades remain to be installed).
- Rehabilitate the pister grid tank (ongoing).
- Replace 7 chlorinators and piping at the chlorine dock (ongoing).
- Replacement of cover at digester D3 tank.
- Eliminate evaporators at the chlorine facility and change piping and add two scales.
- Construct enclosure structure for load centers 5 and 6 to protect from the elements.
- Rehabilitate bar screen at the head of the plant.
- Repave road at sludge pad.
- Replacement of the VFD for the two water cool injection wells No.1 and No.3.
- Replace the VFD at the reuse pump station.
- Replacement of control panel for outfall effluent pumps.
- Demolish old press building.
- Replace strainers for pumps at the reclaim water plant.
- Replacement of clarifier drivers at D2-MOD, D3-MOD and D4-MOD.

Septage Receiving Facility

The septage receiving facility receives waste from septic tank pump outs, portable toilets, vacuum trucks, grease traps, leachate from landfills, etc. The waste is separated into three categories: liquids, solids and truck washout water. The equipment which must be maintained includes grinders, transfer pumps, a diesel generator set, the biofilter and miscellaneous valves.

The septage receiving facility was inspected on May 26, 2010 and was found to be well maintained. Two (2) grinder pumps are scheduled to be replaced in FY 2010. One of the isolation valves mentioned in the previous report is still pending replacement but do not hamper the operation of the facility; the other isolation valve is part of the wastewater treatment plant operation and is scheduled to be installed during FY 2010. Plans for a new bio-filter are in the design stage with a scheduled completion date of FY 2012.

Future plans for this facility include new settlers to remove excess grit from the liquids and the purchase of equipment to manage solids in tipping floor.

Master Lift Stations

(5) Master Lift Stations representative of the sizes and ages of master lift stations throughout Broward County were inspected on May 18 and 19, 2010. Overall, the lift stations inspected appeared to be efficiently operated and well maintained. The mechanical and electrical components (control panels, variable frequency drives, motor control centers, generators, telemetry units, pumps, pipes, and accessories) appeared to be in good condition.

LS 452 Master lift station is in good condition. All three pumps are in operation and in good working condition. A new switch gear was installed in the control room. Also a new air conditioner unit was installed in the control room. All the pumps, motors and piping have been repainted and in good condition. A new stainless steel pump seal tank was installed in the pump room. Electrical control panels, generator and structural components are in substantially good condition. The interior and exterior wall paint on the building is in good condition. This master station has no wet well.

LS 440 Master lift station is in good condition. This station has no wet well on site. Pump No. 1 motor is down for repair. Pumps No. 2 and No. 3 are in operation. All pump, motors and piping have been freshly painted and show no sign of corrosion. Generator and related equipment appear in

good condition and in operation. Electrical control panels are in good condition and in operation. There is a new 6,000 gallon steel diesel fuel tank on site.

- LS 455 Master lift station is in good condition. This station has no wet well on site. The motor for Pump No. 4 was repaired and recently installed in 2010. Air conditioning units for the motor control room were replaced. A new MAG meter was replaced in 2010. Also a new transfer switch replaced the old one in FY 2009. The electrical control panels, generator, mechanical and structural components are in good condition.
- LS 422 Master lift station appears in good condition. This station was partially rehabilitated recently. Wet well interior walls (square shaped) are coated and in good condition. Interior piping is also in good condition. Valve vault has a gravel bottom and is partially holding water. This valve vault needs to have the bottom replaced with concrete bottom. All three (3) valves have been replaced in the vault. The electrical control has been rehabilitated with new control to operate the telemetry system.
- LS 450 Master lift station is located in the WTP-1A and has three pumps and all are in operation. Pump No. 3 and motor were replaced in FY 2010. The three roof exhaust fans were also replaced in 2010. The check valve in Pump No. 1 had the shaft repaired. Emergency generator was taken out of the building and will use the WTP-1A generators. VFD No. 1 was replaced this year. The two air conditioner units were replaced in FY 2009. A new electrical control panel was installed.

Section 5

Regional Raw Water Supply

Section 5 Regional Raw Water Supply

There are currently two wellfields operated by Broward County as part of the regional system, the NRW and SRW. This section describes the regional raw water supply system, including the large users, physical descriptions, and visual inspections.

5.1 General Description

The Biscayne Aquifer, currently the County's primary source of drinking water, is subject to saltwater intrusion. In 1986, the County adopted the Regional Raw Water Supply (RRWS) Program, which calls for centralized wellfields further inland to ensure a continual water supply for potable water to Broward County. Under the program, new wellfields and raw water delivery systems were financed, constructed and are operated as a regional system for large users. Large users are Dania Beach, Deerfield Beach, Hallandale Beach, Florida Power and Light Corporation, Hollywood and WWS District 2. The wellfields were constructed using general County revenues and the assets were contributed to the utility. **Figure 5-1** depicts the regional wellfields.

5.2 North Regional Wellfield

The NRW includes 10, 2-MGD wells and approximately 30,000 linear feet of pipeline, ranging from 12-inches to 48-inches in diameter. All 10 wells are currently in service. A permit application combining the District 2A retail wellfield and NRW permits was approved by the SFWMD and issued in March 2008. The permit expires in the year 2028. The well casings at the NRW are set in the Biscayne aquifer at a depth of approximately 100 feet below land surface. The NRW has two emergency generators capable of powering pumps for six wells. A physical description of the NRW is presented in **Table 5-1**.

5.3 South Regional Wellfield

The SRW includes eight 4-MGD wells, two 2- MGD wells and approximately 79,000 linear feet of transmission pipeline, ranging in size from 20-inches to 42-inches in diameter. Six wells have the ability to run under permanently installed auxiliary generator power with three wells being connected to one generator. The remaining wells have connections for a portable generator. The permitted capacity of the SRW is 22.4 MGD maximum day and 14.2 MGD annual average day. The permit expired in October 2007, and the application submitted for permit renewal is under review by the SFWMD. Wells 5 and 6 were formerly associated with WTP 3A. The well casings at the SRW are set in the Biscayne Aquifer at a depth of approximately 100 feet below land surface. A physical description of the SRW is presented in **Table 5-2**. All wells in SRW have PVC casings.

Figure 5-1 Broward County Regional Raw Water Service Area



5-1 NRW Physical Descriptions

Table 5-1 NRW Physical Descriptions								
Wellfield	Well No.	Size (in)	Depth (ft)	Casing Depth (ft)	Type of Casing	Normal Yield (GPM)	Capacity (GPM)	Service Status
NRW	1	20	170	112	PVC	1400	1400	ON LINE
NRW	2	20	130	116	PVC	1400	1400	ON LINE
NRW	27	20	130	95	PVC	1400	1400	ON LINE
NRW	29	20	130	94	PVC	1400	1400	ON LINE
NRW	30	20	121	92	PVC	1400	1400	ON LINE
NRW	31	20	121	92	PVC	1400	1400	ON LINE
NRW	32	20	120	88	PVC	1400	1400	ON LINE
NRW	33	20	121	92	PVC	1400	1400	ON LINE
NRW	45	20	112	94	PVC	1400	1400	ON LINE
NRW	46	20	170	131	PVC	1400	1400	ON LINE

5-2 SRW Physical Descriptions

Table 5-2 SRW Physical Descriptions								
Wellfield	Well No.	Size (in)	Depth (ft)	Casing Depth (ft)	Type of Casing	Normal Yield (GPM)	Capacity (GPM)	Service Status
SRW	5	20	110	75	PVC	2083	1400	*OFF LINE
SRW	6	20	110	75	PVC	2083	1400	ON LINE
SRW	17	12	115	81	PVC	2800	2800	**OFF LINE
SRW	18	12	140	80	PVC	2800	2800	ON LINE
SRW	19	12	140	80	PVC	2800	2800	ON LINE
SRW	20	12	140	80	PVC	2800	2800	ON LINE
SRW	21	12	140	80	PVC	2800	2800	ON LINE
SRW	22	12	140	80	PVC	2800	2800	ON LINE
SRW	23	12	140	80	PVC	2800	2800	ON LINE
SRW	24	12	140	80	PVC	2800	2800	ON LINE

*Offline due to salt intrusion.

** Needs new motor.

5.4 Contractual Agreements

The contractual agreements with each of the large users are substantially similar and run for an indefinite period of time. The exception is the City of Hollywood agreement that has a four-year term with an automatic renewal for four years unless otherwise terminated. The large user agreements provide for a method to charge each user a pro rata share of system operations and maintenance costs. The capital costs were funded using general County revenues.

5.5 Large Users

The North and South Regional Wellfields serve different areas in Broward County. The NRW serves the City of Deerfield Beach and the County's District 2. The SRW serves the Cities of Dania Beach, Hollywood, and Hallandale Beach and Florida Power and Light.

5.6 Regional Raw Water Supply Regulations

The volume of raw water withdrawal from the Utility's regional raw water supply wellfields is regulated by the SFWMD. Each wellfield is governed by a water use permit that stipulates the raw water maximum allowable annual and daily withdrawals. These permits are reissued for periods of five to 20 years. The permit for the combined 2A/NRW was issued in March 2008 for a 20-year period. The application for the South Regional Wellfield has been filed. The Utility has responded to permit application review comments from the SFWMD and has coordinated the review of this application with the raw water permitting needs of the Cities of Hallandale Beach and Dania Beach. Subsequent comments have been received from the SFWMD and are currently being addressed.

For wells that are in service, the County operating personnel regularly monitor pH, alkalinity, hardness, iron, chloride, color, standard plate count (SPC), coliforms, quarterly wellfield protection monitoring and annual analysis to comply with the SDWA. All water quality parameters are regulated by the FDEP.

5.7 Visual Inspection and Review

North Regional and South Regional Wellfields

Visual inspections of the County's regional wellfields were performed on May 20 and 25, 2010 by Milian, Swain & Associates, Inc. The findings of these inspections are summarized in **Tables 5-3 and 5-4**.

Overall, the NRW was observed to be in good operating condition and well maintained. Well No.2 had new silent check valve installed in FY 2009. Well No. 45 had a new electrical power panel installed to interface with power supply from FPL. During the inspection it was observed that some of the wells need to have the well head repainted due to light corrosion.

- Wells No. 1 and No. 45 at the NRW need to have the well head repainted due to light corrosion.

The SRW was also observed to be in good operating condition, but need various repairs, and based on observations made during the visual inspection; Milian, Swain & Associates, Inc. recommends that the following be performed:

- Well No.6 at the SRW is leaking from the clay-valve and needs to be repaired. The jump pump is not working and should be replaced.
- Well No.19 at the SRW need a coat of paint on the well head due to corrosion.
- Well No.24 at the SRW needs to have the well head top and bottom painted due to light corrosion

5-3 NRW Wellfield Inspections

Table 5-3 NRW WELLFIELD INSPECTIONS						
Wellfield	Well Number	Wellhead Completion	Pump Type	Sustained Moisture on Wellhead	Seals at Top of Well Casing/Wellhead	Additional Comments
NRW	1	Vault	S	No	Good	Well facility with generator in good condition. Well head needs to be painted. Piping paint in good condition. New louvers installed on building. New A/C planned for FY-2011. Electrical controls and generator in good condition.
NRW	2	Vault	S	No	Good	Well facility in good condition. Replaced silent check valve. Piping and well head paint is ok, but bottom of well head needs painting. Electrical controls in good condition.
NRW	27	Vault	S	No	Good	Well facility in good condition. Well head and piping paint in good condition. Sprinkler system fitting is leaking. Electrical controls in good condition.
NRW	29	Vault	S	No	Good	Well facility in good condition. Paint on piping and well head in good condition. Electrical controls in good condition.
NRW	30	Vault	S	No	Good	Well facility in good condition. Well head and piping in good condition. Electrical controls in good condition.
NRW	31	Vault	S	No	Good	Well facility in good condition. Paint on well head and piping in good condition. Electrical controls in good condition.
NRW	32	Vault	S	No	Good	Well facility with generator in good condition. Piping and well head paint is in good condition. New louvers installed. Electrical controls in good condition. New A/C planned for FY-2011.
NRW	33	Vault	S	No	Good	Well facility in good condition. Paint on well head and piping in good condition. Electrical controls in good condition.
NRW	45	Vault	S	No	Good	Well facility in good condition. Well head needs painting. Installed new electrical power panel to interface with FPL Electrical controls in good condition.
NRW	46	Vault	S	No	Good	Well facility in good condition. Paint on well head showing light corrosion. Electrical controls in good condition.

5-4 SRW Wellfield Inspections

Table 5-4 SRW WELLFIELD INSPECTIONS						
Wellfield	Well Number	Wellhead Completion	Pump Type	Sustained Moisture on Wellhead	Seals on Top of Well Casing/Wellhead	Additional Comments
SRW	5	Vault	S	No	Good	Well facility in fair condition. Well is out of service due to salt intrusion.
SRW	6	Vault	S	No	Good	Well facility in fair condition. Clay valve is leaking, sump pump not operational. Electrical controls in good condition.
SRW	17	Vault	S	No	Good	Well facility in good condition. Well is down for installation of a new motor. Paint on piping and well head, in good condition. Electrical controls in good condition.
SRW	18	Vault	S	No	Good	Well facility with generator in good condition. Piping and well head are in good condition. Electrical controls in good condition.
SRW	19	Vault	S	No	Good	Well facility in good condition. Well head needs painting. Electrical controls in good condition.
SRW	20	Vault	S	No	Good	Well facility in good condition. Well head and piping are painted and in good condition. Electrical controls in good condition.
SRW	21	Vault	S	No	Good	Well facility with generator appears to be in good condition. Interior walls of generator are insulated. Well head and piping are paint and in good condition. Electrical controls in good condition.
SRW	22	Vault	S	No	Good	Well facility in good condition. New well head flange and meter. Piping paint in good condition. Electrical controls in good condition.
SRW	23	Vault	S	No	Good	Well facility in good condition. Well head has light corrosion and needs painting. Paint on piping is in good condition. Electrical controls in good condition.
SRW	24	Vault	S	No	Good	Well facility appears in good condition. Well head has light corrosion on top and bottom and needs painting. Paint on piping in good condition. Electrical controls in good condition.

S = Submersible

Section 6

Capital Improvement Program

Section 6 Capital Improvement Program

6.1 Description of the Capital Improvement Program

As part of the growth management efforts mandated by State legislation, the County has developed ongoing planning efforts to accommodate future growth and regulatory requirements. WWS initiated comprehensive planning in 1988. The plan is updated regularly with the latest revision completed in 2004, which addresses the need for services and facilities based upon anticipated build out conditions of the service area in the year 2025. Current planning efforts include the Alternative Water Supply Master Plan and the Effluent Disposal and Reclaimed Water Master Plan. The County expects to complete these studies in 2010. A comprehensive update to the master plan will then be updated subsequent to the 2010 US Decennial Census.

The Utility develops a five-year capital improvement program (CIP) recognizing costs associated with the future growth and regulatory requirements. **Table 6-1** presents the current CIP categorized by expenditure category. The Board approved the CIP for Fiscal Years 2010 through 2014 in September, 2009. The five-year CIP reflects the total estimated project costs for each project which is expected to be initiated within the five-year plan regardless of the estimated time required to design and complete construction of the project. Projects remain open for many years until all related construction activities are complete. The budgets by capital project type through Fiscal Year 2014 are presented in **Table 6-2**.

6-1 Capital Improvement Program as of September 30, 2009

Table 6-1 Capital Improvement Program as of September 30, 2009						
Capital Budgets	Water Treatment	Water and Sewer Mains	Wastewater Treatment	Regional Transmission	Engineering Services	Total
Available for Carryover	\$18,724,000	\$177,471,750	\$21,774,000	\$4,818,000	\$0	\$222,787,750
2010	3,935,000	22,792,000	4,450,000	5,500,000	2,988,540	39,665,540
2011	4,000,000	16,434,000	10,000,000	500,000	3,345,260	34,279,260
2012	3,525,000	22,972,230	10,670,000	2,170,000	3,256,650	42,593,880
2013	7,440,000	17,762,000	10,700,000	4,300,000	3,256,370	43,458,370
2014	3,450,000	17,947,000	14,200,000	2,700,000	3,205,620	41,502,620
Totals	\$41,074,000	\$275,378,980	\$71,794,000	\$19,988,000	\$16,052,440	\$424,287,420
Funding:						
Debt FY 2010-2014	\$19,361,404	\$104,807,752	\$33,842,154	\$9,421,915	\$7,566,776	\$175,000,000
Cash FY 2010-2014 ¹	\$8,352,889	\$56,001,608	\$14,600,168	\$4,064,799	\$3,264,456	86,283,920
Future Needs Beyond 2014	13,359,707	114,569,620	23,351,678	6,501,286	5,221,208	163,003,500
Totals	\$41,074,000	\$275,378,980	\$71,794,000	\$19,988,000	\$16,052,440	\$424,287,420
¹ Cash reflects net revenues, capital recovery charges, large user contributions, and grants.						
Source: Broward County Water and Wastewater Services						

6-2 Capital Projects Budgets by Type Through Fiscal Year 2014

Table 6-2 Capital Projects Budgets by Type Through Fiscal Year 2014	
Water Treatment	Budget
WTP 1A Expansion	2,630,303
1A2 Storage Tank	5,625,000
1B1 Storage Tank	5,560,000
WTP2A Expansion	500,000
District 2 Storage Tank	5,016,000
District 3 Storage Tank	300,000
District 2 wells	908,463
Storage Tank Repairs	758,000
Rehab Process Equipment District 1 & 2	16,976,234
District 3 High Service Pump Repl	2,800,000
Water Treatment Subtotal	\$41,074,000
Water and Sewer Mains	
Lift Station Improvements	3,167,085
1A2 Transmission Main	2,700,000
Inflow and Infiltration Reduction Program	7,600,000
1B1 Transmission Main	3,997,000
1B2 Water Main improvements	2,181,000
High Service Pump 3A	2,800,000
Sewer Line Improvements	3,866,378
Generic short line extensions sewer	250,000
UAZ New Water and Sewer Service & Pipe replacement	71,470,733
Deerfield Feasibility Study	1,764,000
Treasure Cove sewer improvements	5,587,304
Generic short line extension water	500,000
Generic Line Relocations	1,250,000
General Developer Funding	1,500,000
Water Line Improvements	5,919,044
District 1B1 Water Main Improvements	800,000
North County NIP	103,619,000
Central County NIP	6,585,710
North Central County NIP	12,522,860
North Andrews Garden NIP	5,007,570
Broadview Park NIP	20,148,740
Broadview Estates NIP	7,779,110
Twin Lakes South NIP	4,363,446
Water and Sewer Mains Subtotal	\$275,378,980
Wastewater Treatment	
Modules A., B, and D Fine Bubble Conversion	19,000,000
NRWWTP Effluent Disposal Enhancement	28,285,500
General Process and Rehab Equipment	3,300,000
Structural Steel Repair/Replacement	4,350,000
Digester Cover Replacement	3,850,000
Septage Facility Improvements	1,500,000
NRWWTP Load Center and MCC	3,650,000
NRWWTP PistaGrit Rehab	3,000,000
NRWWTP Chlorine Facility Rehab	2,400,000
Deep Wells MIT 2014	900,000
WWTP Chiller Replacement	800,000
WWTP SCADA Replacement	758,500
Wastewater Treatment Subtotal	\$71,794,000
Regional Transmission	
Master Pump Station Renovations	6,125,000
Miscellaneous Transmission System Projects	13,863,000
Regional Transmission Subtotal	\$19,988,000
Engineering Services	\$16,052,440
GRAND TOTAL	\$424,287,420
Source: Broward County Water and Wastewater Services	

The estimated funding requirements for this five-year period ending Fiscal Year 2014 are expected to be met by net revenues, debt proceeds, capital recovery charges, contributions from large users, grants and future borrowings. The County currently anticipates cash financing at least 33 percent of the actual funding requirements. The proceeds of the Series 2009A Bonds are being used to finance a portion of the CIP. Many of the projects and improvements in the CIP are in the planning stages with cost estimates that are preliminary and contracts have not been awarded. The County plans to re-prioritize projects as needed to maintain an affordable rate structure. Current projections anticipate levelized rate increases of approximately five percent annually through Fiscal Year 2014. The County estimates it may issue approximately \$135 million of debt in Fiscal Year 2012.

The County reviews and updates the CIP annually and includes separate estimates for the Water and Wastewater Systems. The total cost of the CIP could vary from these annual estimates depending upon future demands, regulatory requirements, actual contract awards and other economic factors.

6.2 Retail Water and Wastewater System Improvements

The five-year CIP for the Retail Water System and Retail Wastewater System has the principal objectives of: rehabilitating or replacing water distribution systems; extending sanitary sewers to currently unsewered customers, and Floridan wellsite construction for additional treatment capacity of WTP1A. The estimated cost of these improvements totals \$41 million.

WWS is implementing local utility improvement projects, called Utility Analysis Zones (UAZ). While the NIP included drainage, landscaping and sidewalk improvements, which were paid for from County general funds, UAZ's focus solely on water and sanitary sewer improvements. The total cost estimate for these improvements is nearly \$275 million dollars over the next twenty plus years.

The five-year CIP includes projects of approximately \$41 million to improve the retail water treatment systems and approximately \$275 million to improve the distribution and collection systems in Districts 1, 2 and 3. The Multi-District Inflow and Infiltration Program is continuing with \$7.6 million budgeted for repairs to the wastewater collection system.

6.3 Neighborhood Improvement Program

The NIP was initiated by the County in 1993 to upgrade the infrastructure in the then unincorporated neighborhoods. The improvements include upgrades to the existing

water and sewer system, installation of drainage, new pavement, swales, and landscaping. The total estimated cost of the program is approximately \$747 million dollars. Approximately \$389 million, or 52 percent of total cost, is for water and sewer upgrades of which approximately \$256 million has been spent to date. The remaining 48 percent of total cost associated with sidewalk, drainage and landscaping improvements is being funded by the County's general fund. A summary of the NIP projects is listed on **Table 6-3**. All NIP projects are scheduled to be completed by the end of Fiscal Year 2013.

The NIP encompasses an area the size of a medium city with 9,223 acres, 92,000 people and 28,200 homes. The planned improvements include 292 miles of roadways, 422 miles of sidewalk, and 617 miles of pipeline which will enable the elimination of 10,434 septic tanks. Construction started in 1996 and is currently scheduled to be completed in 2013. Of the 65 planned bid packages, 52 are in construction or have been completed.

6-3 Summary of Neighborhood Improvement Program as of September 30, 2009

Table 6-3				
Summary of Neighborhood Improvement Program as of September 30, 2009				
Neighborhood Improvement Project	Total Costs All Improvements¹	Percent Complete	Bid Packages	Under Const.
North County	\$226,121,660	56%	15	1
South County and Riverland Village	118,503,748	100%	17	0
North Andrews Gardens	102,462,359	100%	9	0
Central County	125,665,258	92%	12	1
North Central County	74,832,172	68%	5	2
Broadview Estates	31,130,862	60%	2	1
Broadview Park	61,790,000	41%	4	0
Twin Lakes South	7,253,000	0%	1	0
Program Total Costs	\$747,759,059		65	5
¹ Includes costs for sidewalks, drainage and landscaping improvements.				
Source: Broward County Water and Wastewater Services				

6.4 Utility Analysis Zones

WWS is implementing local utility improvement projects, called Utility Analysis Zones (UAZ). Where the NIP included drainage, landscaping and sidewalk improvements, which were paid for from County general funds, the UAZ projects focus solely on water and sanitary sewer improvements. The total cost estimate for these improvements is nearly \$275 million dollars over the next twenty plus years.

6.5 Regional Wastewater System Improvements

Evolving regulations affecting the NRWWTP coupled with on-going facilities operations permit negotiations have required plant process improvement requirements with estimated costs ranging from \$50 million to \$900 million. This range will be refined as we evaluate alternatives to meet the regulatory requirements. The lower end of this cost range reflects improvements to achieve nutrient reduction. The higher end of this cost range is for advanced wastewater treatment to drinking water standards including micro-filtration, reverse osmosis and ultraviolet disinfection. Under current regulations the County is required to reduce nutrients in the ocean outfall by 50 percent and to plan for the elimination of the ocean outfall by the year 2025. The County has included approximately \$71 million in the 5 year CIP to start addressing the required improvements to meet the future requirements.

In addition, the CIP includes a series of master pump station improvements to ensure adequate system capacity as well as reliability in the regional transmission system. The CIP anticipates investing approximately \$19.9 million in improvements to the master pumping stations. Various other system improvements are budgeted at approximately \$53.7 million including digester improvements, grit removal improvements, replacement and repairs, control centers upgrades, and replacement of the aging SCADA control system.

Section 7 Financial Conditions

7.1 Overview of Financial Operations

Operating and general maintenance costs of the retail portion of the Utility are recovered through service charges, connection charges, and miscellaneous fees and charges. Capital costs for system development, large maintenance projects, and renewal and replacement projects are funded through net revenues, bond proceeds, developer contributions, contributions from other municipalities, and capital recovery charges.

User charges and fees are developed by WWS and approved by the Board. The Board has specific legal authority to fix charges and collect rates, fees, and charges from its customers and to acquire, construct, finance, and operate the Utility. The existing rate structure for retail customers is based on meter size and consumption. The County, as a matter of policy, reviews revenue requirements on an annual basis and institutes required rate increases. Revised retail water and wastewater rates were approved by the Board in September 2009 and became effective October 1, 2009. These rates are presented in **Tables 7-1, 7-2, and 7-3**. The rate resolutions also address rates for irrigation, reclaimed water, septage, and high strength industrial wastewater surcharge, an emergency rate adjustment for water conservation during drought conditions, capital recovery charges per equivalent residential unit (ERU), customer deposits, and specific service charges. Capital recovery charges underwrite the investment in additional capacity needed to serve new (additional) customers.

Capital recovery charges for these new customers are based upon the number of ERUs of capacity requested. For the Retail Water and Retail Wastewater Systems, an ERU is presently equivalent to demand for water and wastewater service at a volumetric rate of 300 and 200 annual average gallons per day (GPD), respectively. The ERU also defines volumetric plant capacity necessary to accommodate these demands at 350 GPD and 250 GPD for water and wastewater, respectively. For each requested ERU, the current capital recovery charge for water is \$1,185 and \$2,140 for wastewater. In order to mitigate the impact of the NIP on the citizens living within these areas, the County adopted the policy of not charging for the first ERU for wastewater per customer.

Charges for large users of the NRWWS are defined by the large user agreements, and consist of charges for operations and maintenance costs assessed on the basis of flows, debt service costs assessed on the basis of reserve capacity, and improvement, repair, and replacement fund costs that are assessed as a percentage of other charges. The charges for operation and maintenance costs are adjusted annually to reflect each user's proportionate share of actual costs during the fiscal year.

7-1 Broward County Water and Sewer Monthly Service Costs for a Residential Customer Using 7,000 Gallons per Month

Table 7-1 Broward County Water and Sewer Monthly Service Costs for a Residential Customer Using 7,000 Gallons per Month										
Fiscal Year	Water Fixed Charge ¹	Water Volume Charge	Total Water	% Change From Prev. Year	Sewer Fixed Charge	Sewer Volume Charge	Total Sewer	% Change From Prev. Year	Total Water and Sewer	Total % Change From Prev. Year
2006	9.18	12.46	21.64	2.2%	12.84	17.29	30.13	2.0%	51.77	2.1%
2007	9.57	13.02	22.59	4.4%	13.32	17.92	31.24	3.7%	53.83	4.0%
2008	10.08	13.65	23.73	5.0%	13.99	18.90	32.89	5.3%	56.62	5.2%
2009	11.69	15.82	27.51	15.9%	14.55	19.67	34.22	4.0%	61.73	9.0%
2010 ²	12.14	16.45	28.59	3.9%	15.43	20.86	36.29	6.0%	64.88	5.1%

¹ Includes customer charge.

² Based on rates adopted by the Board effective October 1, 2009.

Source: Broward County Water and Wastewater Services

7-2 Broward County Schedule of Retail Rates Minimum Monthly Charges by Customer Class and Meter Size Effective October 1, 2009

Table 7-2 Broward County Schedule of Retail Rates Minimum Monthly Charges by Customer Class and Meter Size Effective October 1, 2009			
Customer Class	Meter Size (inches)	Water (\$)	Wastewater (\$)
Residential, Commercial, Municipal and Institutional	5/8" & 1" Residential	8.16	15.43
	5/8	13.69	18.10
	1	32.81	63.09
	1 1/2	70.63	125.91
	2	156.14	369.21
	3	431.22	633.03
	4	1,907.96	1,225.29
	6	5,905.65	13,333.15
	8	6,839.48	14,451.73
Sale for Resale	4 or less	1,907.96	-
	6	5,905.64	-
	8	6,839.48	-
	10+	34,484.68	-
Multi-Family and Mobile Home (per unit)	All sizes	5.92	12.21
Hotels and Motels (per unit)	All sizes	5.09	10.16
Recreational Vehicles (per unit)	All sizes	3.84	11.09
Private Fire Protection	All Sizes	103.60	-
Irrigation	5/8	9.51	-
	1	26.33	-
	1 1/2	59.79	-
	2-3	139.57	-
Reclaimed Water (based on 1,000 GPD demand and 20% discount on capital contribution)	All sizes	6.00	-
Source: Broward County Water and Wastewater Services			

7-3 Broward County Schedule of Retail Rates Volume Charge (per 1,000 Gals) by Customer Class and Meter Size Effective October 1, 2009

Table 7-3 Broward County Schedule of Retail Rates Volume Charge (per 1,000 Gals) by Customer Class and Meter Size Effective October 1, 2009				
Customer Class (all Meter sizes unless noted)	Water		Wastewater	
	Volume (per 1,000 Gals)	Charge (\$)	Volume (per 1,000 Gals)	Charge (\$)
Residential	0-7	2.35	0 - 15	2.98
	8-13	3.55	Over 15	No Charge
	Over 13	5.05		
Commercial, Municipal and Institutional	0 - 110% of Avg Consumption	3.07	All Volumes	2.98
	Over 110% of Avg. Consumption	5.05		
Sale for Resale	Water Treatment Charge	2.03	N/A	-
	Water Transmission Charge	0.07	N/A	-
Multi-Family and Mobile Homes (per unit)	0-5	2.35		
	6-10	3.55	0-8	2.98
	Over 10	5.05	Over 8	No Charge
Hotels and Motels (per unit)	0 - 110% of Avg Consumption	3.07	All Volumes	2.98
	Over 110% of Avg. Consumption	5.05		
Recreational Vehicles (per unit)	0-5	2.35		
	6-10	3.55	0-8	2.98
	Over 10	5.05	Over 8	No Charge
Private Fire Protection	All Volumes	3.55	N/A	-
Irrigation	5/8" meter	0-13	3.55	N/A
		Over 13	5.05	N/A
	1" meter	0-35	3.55	N/A
		Over 35	5.05	N/A
	1 1/2" meter	0-85	3.55	N/A
		Over 85	5.05	N/A
	2 to 3" meter	0-215	3.55	N/A
Over 215		5.05	N/A	
Reclaimed Water	All Volumes	0.07	N/A	-

Source: Broward County Water and Wastewater Services

Charges for large users of the Raw Water System are defined by agreements and consist of charges for operations and maintenance costs assessed by flows and improvement, repair and replacement fund cost as a percentage of other charges. The operation and maintenance costs are adjusted annually to reflect actual costs for the fiscal year. A summary of retail volume billing data, including service to Coconut Creek, is shown in **Table 7-4**.

7-4 Retail Water and Wastewater Billing Volumes as of September 30, 2009 (1,000 Gallons)

Table 7-4 Retail Water and Wastewater Billing Volumes as of September 30, 2009 (1,000 Gallons)				
Fiscal Year Ended 9/30	Treated Retail	Coconut Creek	Treated Water Total	Wastewater Water
2005 ¹	9,319,218	2,063,823	11,383,041	5,700,915
2006	8,357,508	2,005,205	10,362,713	6,055,641
2007 ²	7,766,431	1,958,720	9,725,151	5,733,391
2008 ²	7,195,082	1,868,562	9,063,644	5,373,713
2009 ²	7,128,645	1,872,821	9,001,466	5,468,973

¹ During 2005 several hurricanes resulted in significant leaks throughout the system.

² Water restrictions in place since April 2007 as the result of a drought have reduced water and wastewater sales.

Source: Broward County Water and Wastewater Services

7.2 Water and Wastewater Rates and Charges

A rate study performed for the County in 1994 recognized an economic advantage in encouraging retail customers to conserve water. The County has continued to use a rate schedule that sets higher rates for levels of consumption considered discretionary and excessive. In the Utility service area, an inverted block rate structure is used for water services. The rate schedule is composed of three tiers:

- Rates for basic use
- Rates for discretionary use
- Rates for excessive use

As noted in **Table 7-1**, there will be an increase of 5.1% in the average monthly residential bill from Fiscal Year 2009 to Fiscal Year 2010. **Tables 7-2** and **7-3** show the minimum monthly fixed charges and volume charges for all customer classes based upon rates approved by the County which went into effect October 1, 2009.

The annual average daily consumption per residential unit has remained unchanged for over a decade except for periods of mandated water restrictions. In the event water restrictions are imposed, the County has instituted an automatic adjustment as noted in **Table 7-5** to the water rate to encourage customers to reduce consumption. The automatic rate adjustment was adopted by the Board of County Commissioners in 1990

as a way to maintain the revenues required for operations while water consumption is curtailed. SFWMD imposes phased restrictions as drought conditions are considered to warrant in increments of 15 percent for each phase.

With the automatic adjustment, the higher water rates established for larger consumption levels are applied at lower levels of consumption. The result is that customers who do conserve as required will experience a reduction in their water bills. Conversely, customers who fail to achieve reductions will pay even greater amounts for water consumed than they would otherwise pay without the adjustment. As targeted reductions increase the associated levels at which increased rates become effective decrease.

7-5 Automatic Rate Adjustments for Periods of Mandated Water Restrictions

Table 7-5 Automatic Rate Adjustments for Periods of Mandated Water Restrictions					
Customer Class and Block	Restrictions Per Unit Per Month (1,000 gallons)				
	Without	Phase I	Phase II	Phase III	Phase IV
Single Family (all meter sizes)	0-7	0-6	0-5	0-4	0-4
Base Block	8-13	7-10	6-8	5-6	5
Second Block	Over 13	Over 10	Over 8	Over 6	Over 5
Final Block					
Multi-Family (per unit, all meters)					
Base Block	0-5	0-4	0-3	0-3	0-2
Second	6-10	5-7	4-6	4-5	3
Final Block	Over 10	Over 7	Over 6	Over 5	Over 3
Irrigation					
5/8" Meter, Base Block	0-13	0-10	0-8	0-4	0-2
5/8" Meter, Base Block	Over 13	Over 10	Over 8	Over 4	Over 2
1" Meter, Base Block	0-35	0-26	0-22	0-11	0-5
1" Meter, Base Block	Over 35	Over 26	Over 22	Over 11	Over 5
1 1/2" Meter, Base Block	0-85	0-64	0-55	0-27	0-14
1 1/2" Meter, Base Block	Over 85	Over 64	Over 55	Over 27	Over 14
2-3" Meter, Base Block	0-215	0-160	0-142	0-71	0-35
2-3" Meter, Base Block	Over 215	Over 160	Over 142	Over 71	Over 35
Commercial, Municipal, Institutional, Hotels, Motels and Recreational Vehicles					
Base Block	0 -110%	0-90%	0-75%	0-60%	0-45%
Second Block	Over 110%	Over 90%	Over 75%	Over 60%	Over 45%

Source: Broward County Water and Wastewater Services

The NRWWS large users' rates are reviewed and adjusted annually by the County as part of the budget process. The rates are based on the County's estimation of total costs and total flows. Debt service requirements (including required coverage) for the NRWWS are allocated to each large user in proportion to their reserved capacity. A surcharge of up to 10 percent is added to fund improvements, repairs and replacements of the NRWWS. These funds are currently maintained separately from the Renewal, Replacement and Improvement Fund established by Bond Resolution to provide a reserve for the Utility.

Presently, the Renewal, Replacement and Improvement Fund is required by the Bond Resolution to maintain a minimum balance of five percent of the previous year's revenues, or a greater amount if recommended by the Consulting Engineer. Five percent of FY 2008 and FY 2009 revenues is approximately \$4.9 million and \$5.6 million. The current balance in the Renewal, Replacement and Improvement Fund is \$5.0 million thus funding will be increased to \$5.6 million.

7.3 Revenue Projections

Annual water and wastewater revenues and expenditures for Fiscal Year 2009 are based on actual values from financial statements prepared as of September 30, 2009. Fiscal Year 2010 revenues and expenditures have been projected based upon the rates approved by the County, which were implemented October 1, 2009, in conjunction with estimated expenses for the year. Revenues for Fiscal Years 2011 through 2014 have been based on average annual number of customers, historical average consumption, and the retail service rates shown in **Tables 7-2** and **7-3**. Growth rates in the retail water and retail wastewater system customer base beginning in Fiscal Year 2011 have been estimated at one percent annually for water and three percent annually for wastewater. Operations and Maintenance costs are assumed to increase by an average of 2.5 percent annually for both water and wastewater beginning in Fiscal Year 2011. Retail rate increases from Fiscal Years 2011 through FY 2014 of approximately five percent per year for both retail water and wastewater are necessary to meet the projected revenue requirements as presented in **Table 7-6**. The revenue forecast for the large users of the NRWWS have been projected to recover costs as defined under the large user agreement.

Table 7-7 shows historical and projected ratios of large user's (regional and resale) revenues to total revenues. In Fiscal Year 2009, the total revenues generated by the Utility were sufficient to meet the bond covenant requirement of 120 percent coverage of all debt service obligations. The unaudited financial statements at September 30, 2009 presents the computation of debt service coverage on all outstanding revenue bonds as 1.88. In addition, a Balance Available for Renewal, Replacement and Capital Expenditures of approximately \$21.8 million was generated during Fiscal Year 2009.

Debt service coverage for Fiscal Year 2009 and projected values for Fiscal Year 2010 through Fiscal Year 2014 are presented in Table 7-6.

An estimate of interest income is projected annually from Fiscal Year 2010 through Fiscal Year 2014. Interest income is generated from three main sources: debt service reserve fund, general reserve fund, and investments of fund balances as permitted under the Bond Resolution.

7-6 Historical and Projected Ratios of Large Users' Revenue to Total Revenues and Wastewater Revenues for Fiscal Year 2005 through 2014 (in \$1,000s)

Table 7 - 6 Historical and Projected Ratios of Large Users' Revenue to Total Revenues for Fiscal Year 2005 Through 2014 (\$1,000s)										
	Historical					Projected				
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Revenues ¹	\$89,300	\$93,695	\$94,956	\$97,668	\$111,614	\$119,668	\$120,395	\$126,415	\$132,735	\$139,372
Regional Wastewater Revenues ²	\$23,639	\$23,209	\$25,764	\$27,758	\$29,943	\$33,739	\$35,987	\$37,786	\$39,676	\$41,659
Percentage Regional Wastewater to Total Revenues	26.47%	24.77%	27.13%	28.42%	26.83%	28.19%	29.89%	29.89%	29.89%	29.89%
Regional Raw Water Revenues	\$836	\$1,061	\$1,155	\$983	\$1,076	\$1,904	\$1,592	\$1,672	\$1,755	\$1,843
Percentage Regional Raw Water To Total Revenues	0.94%	1.13%	1.22%	1.01%	0.96%	1.59%	1.32%	1.32%	1.32%	1.32%
Sale for Resale/Water ³	\$4,461	\$4,719	\$4,096	\$4,273	\$5,044	\$6,426	\$4,352	\$4,570	\$4,798	\$5,038
Percentage Sale for Resale Revenues to Total Revenues	5.00%	5.04%	4.31%	4.38%	4.52%	5.37%	3.61%	3.61%	3.61%	3.61%
¹ Total Revenues do not include interest earned on the construction account.										
² Not including Broward County.										
³ Principally Sales to the City of Coconut Creek.										
Source: Broward County Water and Wastewater Services										

7-7 Schedule of Historical and Projected Net Revenues, Debt Service, and Debt Service Coverage for Fiscal Years 2005 to 2014 (\$1,000s)

Table 7- 7 Schedule of Historic and Projected Net Revenues, Debt Service and Debt Service Coverage for Fiscal Years 2005 to 2014 (\$1,000s)										
	Historical					Projected				
	2005	2006	2007	2008	2009	2010 ¹	2011 ²	2012 ³	2013 ³	2014 ³
Revenues:										
Water	\$34,436	\$37,874	\$34,845	\$37,388	\$42,305	\$46,724	\$46,167	\$48,475	\$50,899	\$53,444
Wastewater	50,563	51,832	53,174	55,290	61,640	66,027	67,269	\$70,632	\$74,164	\$77,872
Other	2,281	1,202	4,121	3,481	4,451	5,310	5,383	\$5,652	\$5,935	\$6,231
Interest Income	2,020	2,787	2,816	1,507	3,218	1,607	1,576	1,655	1,738	1,824
Total Revenues	\$89,300	\$93,695	\$95,956	\$97,668	\$111,614	\$119,668	\$120,395	\$126,415	\$132,735	\$139,372
Current Expenses:⁴										
Water Transmission & Distrib	\$5,749	\$6,694	\$8,676	\$8,189	\$8,838	\$9,151	\$9,426	\$9,709	\$10,000	\$10,300
Water Source of Supply, Treatment & Pumping	7,372	7,917	\$9,880	\$9,229	\$9,961	\$10,314	\$10,313	\$10,312	\$10,311	\$10,310
Wastewater Collection & Transmission	7,308	11,813	\$7,959	\$11,356	\$9,751	\$10,097	\$10,400	\$10,712	\$11,033	\$11,364
Wastewater Treatment	12,489	16,121	\$14,896	\$14,869	\$15,529	\$16,080	\$16,562	\$17,059	\$17,571	\$18,098
Customer Service	3,317	3,194	\$3,435	\$3,774	\$4,134	\$4,920	\$5,068	\$5,220	\$5,376	\$5,538
Administrative/General	17,343	12,537	\$14,093	\$15,156	\$16,576	\$16,525	\$17,021	\$17,531	\$18,057	\$18,599
Total Current Expenses	\$53,578	\$58,276	\$58,939	\$62,573	\$64,789	\$67,088	\$68,790	\$70,543	\$72,349	\$74,209
Net Revenues	\$35,722	\$35,419	\$37,017	\$35,095	\$46,825	\$52,580	\$51,605	\$55,871	\$60,386	\$65,163
Debt Service:										
Senior Lien Debt:										
Series 1988-A Bonds	\$2,530	\$2,533	\$2,341	\$2,380	\$2,380	\$0	\$0	\$0	\$0	\$0
Series 2003-A Bonds	5,056	5,059	5,063	5,062	5,061	5,867	5,868	5,867	5,862	5,865
Series 2003-B Bonds	8,247	8,244	8,434	8,393	8,291	9,970	9,970	9,973	9,975	9,971
Series 2005-A Bonds	1,716	3,837	3,837	3,837	3,837	3,837	3,837	3,837	3,837	3,837
Series 2009-A Bonds	0	0	0	0	5,361	10,324	10,324	10,322	10,324	10,326
Future Debt						0	0	5,300	10,600	10,600
Total Debt Service	\$17,549	\$19,673	\$19,675	\$19,672	\$24,930	\$29,998	\$29,999	\$35,299	\$40,598	\$40,599
Available for Capital	\$18,173	\$15,746	\$17,342	\$15,423	\$21,895	\$22,582	\$21,606	\$20,573	\$19,788	\$24,564
Debt Service Coverage	2.04	1.80	1.83	1.78	1.88	1.75	1.72	1.58	1.49	1.61
¹ Includes rate increases effective October 1, 2009, as presented in Table 7-2.										
² Assumes annual retail water and retail wastewater rate increases based on proposed FY 2011 Budget										
³ Assumes annual retail water and retail wastewater rate increases averaging 5%										
⁴ Assumes current expenses increase by approximately 2.5% annually after Fiscal Year 2010										
SOURCE : BROWARD COUNTY WATER AND WASTEWATER SERVICES										

7.4 Comparison of Utilities Service Costs for Municipalities and the Unincorporated Area in Broward County

Table 7-8 shows the current water and wastewater monthly service charges for residential customers of municipalities and the unincorporated area in the County, as well as Miami-Dade and Palm Beach Counties.

7-8 Comparative Rate Survey for FY 2009 (Usage of 7,000 Gallons per Month)

Table 7-8 Comparative Rate Survey as of 2/28/2010 (Based On Usage Of 7,000 Gallons Per Month)			
Utility	Water	Sewer	Total
Sunrise - Outside City ¹	42.51	50.56	93.07
Wilton Manors ¹	49.18	38.34	87.52
Parkland ¹	27.47	59.18	86.65
Margate	30.82	54.60	85.42
Davie	33.91	49.20	83.11
Dania	29.54	47.09	76.63
Sunrise - In City ¹	34.02	40.42	74.44
Cooper City	29.49	40.81	70.30
Hallandale ¹	29.22	36.97	66.19
Oakland Park	30.85	33.95	64.80
Deerfield Beach	34.57	29.95	64.52
Broward Average Water & Sewer	27.43	35.78	63.21
Miramar East / West	26.63	36.44	63.07
Royal Utilities	30.55	31.32	61.87
Broward County	27.51	34.22	61.73
Hollywood	23.85	36.28	60.13
Tamarac ¹	20.98	38.31	59.29
Pembroke Pines ¹	27.40	30.41	57.81
North Lauderdale	22.03	33.48	55.51
Plantation ¹	19.70	35.10	54.80
Coral Springs	22.86	31.25	54.11
Lauderhill	19.12	34.40	53.52
Coconut Creek	30.20	21.54	51.74
Pompano Beach	24.78	26.52	51.30
North Springs Improvement District	26.31	24.33	50.64
Fort Lauderdale	16.74	30.27	47.01
Coral Springs Improvement District	23.07	23.07	46.14
Water Only			
Hillsboro Beach	33.40		
Sewer Only			
Pembroke Park		49.37	
Lauderdale-By-The-Sea		33.15	
Tri-County Utilities			
Palm Beach County	17.90	22.20	40.10
Miami-Dade ¹	10.97	20.69	31.67
¹ 2010 Rates			

7.5 Insurance Coverage

The bond covenants require that customary insurance be carried on the physical assets of the system. The property insurance carried by WWS on its physical assets is part of a County-wide policy with FM Global. The term of the present policy is from February 1, 2009 to February 1, 2010.

The policy automatically insures new assets up to \$10 million per location, for 90 days; upon declaration, the policy limit applies.

The policy provides for coverage of underground mains (water, wastewater and gas) that are within 1,000 feet of a Scheduled Location as described in Appendix A of the FM Global policy. Under a County-wide policy limits of liability per occurrence are as follows:

Loss Layer	Coverage
\$0-\$70,000,000 Primary	All Risk
\$130,000,000 excess of \$70,000,000	Boiler and Machinery Only
\$60,000,000 excess of \$200,000,000	All Risk
\$15,000,000 excess of \$260,000,000	All Risk Excluding Flood
\$105,000,000 excess of \$275,000,000	All Risk Excluding Flood and Wind
\$620,000,000 excess of \$380,000,000	All Risk Excluding Earth Movement, Flood & Wind

In addition, approximately seventeen (17) other insurance carriers provided a \$130,000,000 All Risk (excluding Boiler & Machinery) layer excess of FM Global's primary layer of \$ 70,000,000.

The four major aboveground water and wastewater facilities and their estimated value as of February, 2009 are as follows:

Facility	FY 2009 Estimated Bldg Value (\$1,000s)
NRWWTP Complex	\$221,911
Water Treatment Plant 2 A	\$ 58,403
Water Treatment Plant 1 A	\$ 49,041
Water Treatment Plant 3 A	\$ 13,471

The level of coverage (less deductible) is sufficient to fund the loss of the single most expensive asset, the NRWWTP Complex; although the potential for the complete destruction of this facility is minimal. Any losses in excess of the coverage amount would have to be covered by the County through its own resources or through federal or state emergency management assistance.

Following September 11, 2001, the cost of property insurance increased and availability of coverage decreased for the US as a whole. Then following Hurricanes Katrina in 2004 and Wilma in 2005, South Florida experienced even greater cost increases and coverage reductions. However, at the February 2008 renewal, the County was able to secure an additional \$50 million in wind and flood coverage limits while reducing the County's wind deductible from \$50 million to \$35 million (excluding the Airport and Port Everglades). In addition, at the February 2009 renewal, the County was able to secure an additional \$25 million in wind limits bringing the total wind limit to \$275M per occurrence and an additional \$10 million in flood limits bringing the total flood limit to \$260M per occurrence.

Appendix A

Table A-1
Water Production, Wastewater Treatment, and Regional Raw Water
(Million Gallons)

	FY-2000	FY-2001	FY-2002	FY-2003	FY-2004	FY-2005	FY-2006	FY-2007	FY-2008	FY-2009
Water Production										
Plant 1A	3,220	2,765	3,077	3,026	3,158	3,210	3,147	2,977	3,059	2,835
Plant 1B	0	0	0	0	0	0	0	0	0	0
Plant 2A	5,474	4,798	5,447	5,574	5,913	5,752	5,568	5,179	4,599	4,571
Plant 3A	1,117	1,073	169	0	0	0	0	0	0	0
Plant 3B	0	0	0	0	0	0	0	0	0	0
Plant 3C	0	0	0	0	0	0	0	0	0	0
Broadview	0	0	0	0	0	0	0	0	0	0
Purchased Water From Municipality	1,443	1,636	2,563	2,615	2,571	2,831	2,568	2,608	2,486	2,597
Total Water Production	11,254	10,272	11,256	11,215	11,642	11,793	11,283	10,764	10,143	10,003
Wastewater Treatment										
North Regional WWTP	25,740	25,530	27,436	25,486	24,841	25,807	25,110	24,257	25,156	23,793
WW Flows to Hlwd. Regional Treatment	793	624	746	844	926	913	988	967	1,053	1,162
Total Wastewater Treatment	26,533	26,154	28,182	26,330	25,767	26,720	26,098	25,224	26,209	24,955
Regional Raw Water										
	5,479	5,802	5,514	5,297	6,247	5,668	6,597	6,795	7,023	6,438
Notes:										
1. Water for 1B and Broadview produced by 1A.										
2. Water for 3B/3C purchased from Hollywood (after October 15, 1996).										
3. Water restrictions in effect for most of the year.										
Source: Broward County Water and Wastewater Services										

Table A - 2
Average Number of Accounts
Commercial / Municipal / Institutional Class
As of September 30, 2009

Meter Size (Inches)	WATER		SEWER	
	Average Monthly Number of Accounts	Average Monthly Consumption (1,000 Gallon)	Average Monthly Number of Accounts	Average Monthly Consumption (1,000 Gallon)
5/8	2,522	19,537	1,693	12,578
1	1,335	22,769	666	13,747
1-1/2	791	35,941	475	19,142
2	579	78,311	400	51,881
3	16	6,867	7	5,795
4	9	25,096	7	9,661
6	3	12,025	1	424
8	0	-	1	5,384
10	1	151,383	-	-
TOTAL	5,256	351,930	3,250	118,611

Source: Broward County Water and Wastewater Services

Table A - 3
Broward County Water and Wastewater Services
Retail Water & Wastewater
Customer Average Monthly Demand & Revenues
As of September 30, 2009

Revenue Class	Water					Wastewater				
	Demand			Revenue		Demand			Revenue	
	Number of Units	Total 1,000 Gal	Per Unit (Gallons)	\$ Total	\$ Per 1,000 Gal	Number of Units	Total 1,000 Gal	Per Unit (Gallons)	\$ Total	\$ Per 1,000 Gal
Residential	48,410	281,936	5,824	1,195,377	4.24	40,386	244,013	6,042	944,319	3.87
Multiple/Mobile	32,540	117,072	3,598	444,645	3.80	29,598	106,399	3,595	561,736	5.28
Recreational	1,306	2,663	2,039	12,256	4.60	1,280	1,839	1,437	10,871	5.91
Com/Institutional	7,054	182,903	25,929	824,921	4.51	5,643	94,277	16,707	533,006	5.65
Hotel	3,053	9,363	3,067	38,597	4.12	2,936	9,220	3,140	45,987	4.99
Fire Protection	507	116	229	36,641	315.64	N/A	N/A	N/A	N/A	N/A
Total	92,870	594,053	6,397	2,552,437	4.30	79,843	455,748	5,708	2,095,919	4.60

Source: Broward County Water and Wastewater Services

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WATER & WASTEWATER SERVICES
ACTIVITY BASED COSTING REPORT
FOR THE 12 MONTHS ENDING SEPTEMBER 30, 2009

RETAIL WATER	Wellfields	Treatment	Purchased Water	Distribution	Total Water
PERSONAL SERVICES	85,349	2,740,686	122,091	355,572	3,303,699
OPERATING MATERIAL	27,931	445,436	0	233,901	707,268
OTHER MATERIAL	25	41,237	49	0	41,311
UTILITIES-OTHER	0	16,436	0	0	16,436
ELECTRIC	0	1,436,058	0	77,457	1,513,516
TREAT/TRANS	0	0	0	0	0
PURCHASED WATER	0	7,003	4,151,630	0	4,158,633
RENTAL/LEASES	0	532	0	0	532
MOTOR POOL	0	0	0	0	0
CONTRACT SERVICE	10,370	485,747	0	558,957	1,055,074
OTHER	4,972	190,616	0	62,652	258,240
EDUCATIONAL COURSES	0	0	0	0	0
COMPUTER MAINTENANCE	0	22,259	0	0	22,259
TRAVEL	0	1,426	0	0	1,426
MISCELLANEOUS	0	1,100,213	0	0	1,100,213
OTHER CHEMICALS	0	352,221	0	0	352,221
CHEMICALS CHLORINE	0	235,986	0	0	235,986
CHEMICALS LIME	760	1,294,715	0	0	1,295,475
<i>SUBTOTAL</i>	129,407	8,370,573	4,273,770	1,288,539	14,062,289
<u>OPERATING COST RECLASSIFIED</u>		0			
UNDERGROUND	0	0	0	1,342,302	1,342,302
ONE CALL	0	0	0	257,867	257,867
GROUNDS, BUILDINGS & EQUIPMENT	0	583,435	0	0	583,435
LABORATORY	0	531,722	0	81,851	613,573
<i>SUBTOTAL</i>	0	1,115,157	0	1,682,021	2,797,177
<u>ALLOCATE:</u>					
SECTION ADMIN.	1,542	113,803	0	19,400	134,745
DIVISION ADMINISTRATION	6,157	345,935	203,353	61,311	616,756
SUBTOTAL DIRECT OVERHEAD	7,700	459,738	203,353	80,710	751,501
<i>TOTAL COSTS</i>	137,107	9,945,468	4,477,123	3,051,270	17,610,967

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WATER & WASTEWATER SERVICES
ACTIVITY BASED COSTING REPORT
FOR THE 12 MONTHS ENDING SEPTEMBER 30, 2009

ACTIVITY - Retail Wellfields	District One			District Two			Total		
	Operations	Maintenance	Total O & M	Operations	Maintenance	Total O & M	Operations	Maintenance	Total O & M
PERSONAL SERVICES	60,895	17,922	78,817	229	6,303	6,532	61,124	24,225	85,349
OPERATING MATERIAL	0	23,622	23,622	1,137	3,172	4,309	1,137	26,794	27,931
OTHER MATERIAL	25	0	25	0	0	0	25	0	25
UTILITIES-OTHER	0	0	0	0	0	0	0	0	0
ELECTRIC	0	0	0	0	0	0	0	0	0
TREAT/TRANS	0	0	0	0	0	0	0	0	0
PURCHASED WATER	0	0	0	0	0	0	0	0	0
RENTAL/LEASES	0	0	0	0	0	0	0	0	0
MOTOR POOL	0	0	0	0	0	0	0	0	0
CONTRACT SERVICE	0	3,450	3,450	0	6,920	6,920	0	10,370	10,370
OTHER	0	3,562	3,562	51	1,359	1,410	51	4,921	4,972
EDUCATIONAL COURSES	0	0	0	0	0	0	0	0	0
COMPUTER MAINTENANCE	0	0	0	0	0	0	0	0	0
TRAVEL	0	0	0	0	0	0	0	0	0
OTHER CHEMICALS	0	0	0	0	0	0	0	0	0
CHEMICALS CHLORINE	0	0	0	0	0	0	0	0	0
CHEMICALS LIME	0	0	0	0	760	760	0	760	760
<i>SUBTOTAL</i>	60,920	48,556	109,476	1,417	18,514	19,931	62,337	67,070	129,407
<u>OPERATING COST RECLASS</u>									
UNDERGROUND	0	0	0	0	0	0	0	0	0
ONE CALL	0	0	0	0	0	0	0	0	0
GROUNDS & BUILDINGS	0	0	0	0	0	0	0	0	0
LABORATORY	0	0	0	0	0	0	0	0	0
<i>SUBTOTAL</i>	0	0	0	0	0	0	0	0	0
<u>ALLOCATE:</u>									
SECTION ADMIN.	613	488	1,101	31	410	441	644	898	1,542
DIVISION ADMINISTRATION	2,899	2,310	5,209	67	881	948	2,966	3,191	6,157
SUBTOTAL DIRECT OVERHEAD	3,511	2,799	6,310	99	1,291	1,389	3,610	4,089	7,700
<i>TOTAL</i>	64,432	51,355	115,787	1,516	19,805	21,320	65,948	71,159	137,107

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WATER & WASTEWATER SERVICES
ACTIVITY BASED COSTING REPORT
FOR THE 12 MONTHS ENDING SEPTEMBER 30, 2009

OPERATION AND MAINTENANCE EXPENSES:	ACTIVITY - Retail Water Treatment									ACTIVITY - Purchased Water
	WTP 1-A			WTP 2-A			Total Treatment			
	Operations	Maintenance	Total O & M	Operations	Maintenance	Total O & M	Operations	Maintenance	Total O & M	
PERSONAL SERVICES	760,396	807,050	1,567,446	599,579	573,661	1,173,241	1,359,975	1,380,711	2,740,686	122,091
OPERATING MATERIAL	11,116	191,794	202,910	-1,164	243,690	242,526	9,952	435,484	445,436	0
OTHER MATERIAL	20,314	3,684	23,998	16,093	1,147	17,240	36,406	4,831	41,237	49
UTILITIES-OTHER	16,436	0	16,436	0	0	0	16,436	0	16,436	0
ELECTRIC	797,330	0	797,330	638,728	0	638,728	1,436,058	0	1,436,058	0
TREAT/TRANS	0	0	0	0	0	0	0	0	0	0
PURCHASED WATER	7,003	0	7,003	0	0	0	7,003	0	7,003	4,151,630
RENTAL/LEASES	276	256	532	0	0	0	276	256	532	0
MOTOR POOL	0	0	0	0	0	0	0	0	0	0
CONTRACT SERVICE	-1,972	368,432	366,460	3,079	116,209	119,287	1,106	484,641	485,747	0
OTHER	112,378	-5,363	107,015	95,232	-11,631	83,601	207,610	-16,994	190,616	0
EDUCATIONAL COURSES	0	0	0	0	0	0	0	0	0	0
COMPUTER MAINTENANCE	1,705	12,515	14,220	425	7,614	8,039	2,130	20,129	22,259	0
TRAVEL	1,266	0	1,266	160	0	160	1,426	0	1,426	0
MISCELLANEOUS	564,409	0	564,409	535,804	0	535,804	1,100,213	0	1,100,213	0
OTHER CHEMICALS	267,955	0	267,955	84,266	0	84,266	352,221	0	352,221	0
CHEMICALS CHLORINE	75,214	275	75,489	160,497	0	160,497	235,710	275	235,986	0
CHEMICALS LIME	453,992	0	453,992	840,723	0	840,723	1,294,715	0	1,294,715	0
<u>SUBTOTAL</u>	3,087,818	1,378,643	4,466,461	2,973,422	930,690	3,904,112	6,061,239	2,309,333	8,370,573	4,273,770
<u>OPERATING COST RECLASS</u>										
UNDERGROUND	0	0	0	0	0	0	0	0	0	0
ONE CALL	0	0	0	0	0	0	0	0	0	0
GROUPS, BUILDINGS & EQUIPMEN	0	310,352	310,352	0	273,083	273,083	0	583,435	583,435	0
LABORATORY	283,722	0	283,722	248,000	0	248,000	531,722	0	531,722	0
<u>SUBTOTAL</u>	283,722	310,352	594,074	248,000	273,083	521,083	531,722	583,435	1,115,157	0
<u>ALLOCATE:</u>										
SECTION ADMIN.	25,382	13,867	39,249	53,954	20,600	74,554	79,336	34,467	113,803	0
DIVISION ADMINISTRATION	120,068	65,598	185,666	115,986	44,284	160,269	236,053	109,882	345,935	203,353
SUBTOTAL DIRECT OVERHEAD	145,449	79,465	224,915	169,940	64,884	234,824	315,390	144,349	459,738	203,353
TOTAL	3,516,989	1,768,461	5,285,450	3,391,362	1,268,656	4,660,018	6,908,351	3,037,117	9,945,468	4,477,123

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WATER & WASTEWATER SERVICES
ACTIVITY BASED COSTING REPORT
FOR THE 12 MONTHS ENDING SEPTEMBER 30, 2009

ACTIVITY -Distribution	District One			District Two			Total Distribution		
	Operations	Maintenance	Total O & M	Operations	Maintenance	Total O & M	Operations	Maintenance	Total O & M
PERSONAL SERVICES	0	232,296	232,296	0	123,276	123,276	0	355,572	355,572
OPERATING MATERIAL	0	171,082	171,082	0	62,819	62,819	0	233,901	233,901
OTHER MATERIAL	0	0	0	0	0	0	0	0	0
UTILITIES-OTHER	0	0	0	0	0	0	0	0	0
ELECTRIC	77,457	0	77,457	0	0	0	77,457	0	77,457
TREAT/TRANS	0	0	0	0	0	0	0	0	0
PURCHASED WATER	0	0	0	0	0	0	0	0	0
RENTAL/LEASES	0	0	0	0	0	0	0	0	0
MOTOR POOL	0	0	0	0	0	0	0	0	0
CONTRACT SERVICE	0	231,374	231,374	0	327,582	327,582	0	558,957	558,957
OTHER	0	43,106	43,106	0	19,546	19,546	0	62,652	62,652
EDUCATIONAL COURSES	0	0	0	0	0	0	0	0	0
COMPUTER MAINTENANCE	0	0	0	0	0	0	0	0	0
TRAVEL	0	0	0	0	0	0	0	0	0
OTHER CHEMICALS	0	0	0	0	0	0	0	0	0
CHEMICALS CHLORINE	0	0	0	0	0	0	0	0	0
CHEMICALS LIME	0	0	0	0	0	0	0	0	0
<u>SUBTOTAL</u>	77,457	677,858	755,315	0	533,224	533,224	77,457	1,211,081	1,288,539
<u>OPERATING COST RECLASS</u>									
UNDERGROUND	0	751,304	751,304	0	590,998	590,998	0	1,342,302	1,342,302
ONE CALL	89,102	0	89,102	168,765	0	168,765	257,867	0	257,867
GROUND, BUILDINGS & EQUIPMEN	0	0	0	0	0	0	0	0	0
LABORATORY	47,979	0	47,979	33,872	0	33,872	81,851	0	81,851
<u>SUBTOTAL</u>	137,081	751,304	888,385	202,637	590,998	793,635	339,718	1,342,302	1,682,020
<u>ALLOCATE:</u>									
SECTION ADMIN.	779	6,818	7,597	0	11,802	11,802	779	18,621	19,400
DIVISION ADMINISTRATION	3,686	32,254	35,939	0	25,372	25,372	3,686	57,625	61,311
SUBTOTAL DIRECT OVERHEAD	4,465	39,072	43,536	0	37,174	37,174	4,465	76,246	80,710
TOTAL	219,003	1,468,233	1,687,237	202,637	1,161,396	1,364,033	421,640	2,629,629	3,051,270

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WATER & WASTEWATER SERVICES
ACTIVITY BASED COSTING REPORT
FOR THE 12 MONTHS ENDING SEPTEMBER 30, 2009

ACTIVITY -Retail Sewer	Collection Total O & M	Lift Stations Total O & M	Retail Sewer TOTAL
PERSONAL SERVICES	239,840	1,722,743	1,962,583
OPERATING MATERIAL	40,601	527,131	567,733
OTHER MATERIAL	136	6,720	6,856
UTILITIES-OTHER	2,142,223	1,949	2,144,172
ELECTRIC	401	476,594	476,995
TREAT/TRANS	0	0	0
PURCHASED WATER	0	2,337	2,337
RENTAL/LEASES	0	495	495
MOTOR POOL	0	141	141
CONTRACT SERVICE	243,611	396,964	640,575
OTHER	47,517	(25,555)	21,962
EDUCATIONAL COURSES	0	0	0
COMPUTER MAINTENANCE	0	21,817	21,817
MISCELLANEOUS	0	0	0
TRAVEL	0	0	0
MISCELLANEOUS	82,000	18,000	100,000
OTHER CHEMICALS	0	0	0
CHEMICALS CHLORINE	0	0	0
CHEMICALS LIME	0	0	0
<i>SUBTOTAL</i>	2,796,330	3,149,335	5,945,665
<u>OPERATING COST RECLASS</u>			
UNDERGROUND	633,006	0	633,006
ONE CALL	141,959		141,959
GROUNDS, BUILDINGS & EQUIPMEN	0	218,056	218,056
LABORATORY			0
<i>SUBTOTAL</i>	774,966	218,056	993,022
<u>ALLOCATE:</u>			
SECTION ADMIN.	31,978	28,571	60,549
DIVISION ADMINISTRATION	129,152	148,994	278,146
SUBTOTAL DIRECT OVERHEAD	161,130	177,565	338,695
<i>TOTAL</i>	3,732,426	3,544,957	7,277,383

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WATER & WASTEWATER SERVICES
ACTIVITY BASED COSTING REPORT
FOR THE 12 MONTHS ENDING SEPTEMBER 30, 2009

ACTIVITY -Collection	District One			District Two			Total Collection		
	Operations	Maintenance	Total O & M	Operations	Maintenance	Total O & M	Operations	Maintenance	Total O & M
PERSONAL SERVICES	0	96,187	96,187	232	143,421	143,653	232	239,608	239,840
OPERATING MATERIAL	0	6,728	6,728	296	33,577	33,873	296	40,305	40,601
OTHER MATERIAL	0	0	0	0	136	136	0	136	136
UTILITIES-OTHER	2,142,223	0	2,142,223	0	0	0	2,142,223	0	2,142,223
ELECTRIC	401	0	401	0	0	0	401	0	401
TREAT/TRANS	0	0	0	0	0	0	0	0	0
PURCHASED WATER	0	0	0	0	0	0	0	0	0
RENTAL/LEASES	0	0	0	0	0	0	0	0	0
MOTOR POOL	0	0	0	0	0	0	0	0	0
CONTRACT SERVICE	0	62,367	62,367	0	181,244	181,244	0	243,611	243,611
OTHER	0	19,172	19,172	52	28,293	28,345	52	47,465	47,517
EDUCATIONAL COURSES	0	0	0	0	0	0	0	0	0
COMPUTER MAINTENANCE	0	0	0	0	0	0	0	0	0
TRAVEL	0	0	0	0	0	0	0	0	0
MISCELLANEOUS	82,000	0	82,000	0	0	0	82,000	0	82,000
OTHER CHEMICALS	0	0	0	0	0	0	0	0	0
CHEMICALS CHLORINE	0	0	0	0	0	0	0	0	0
CHEMICALS LIME	0	0	0	0	0	0	0	0	0
SUBTOTAL	2,224,624	184,454	2,409,078	580	386,672	387,252	2,225,205	571,125	2,796,330
ALLOCATE:									
SECTION ADMIN.	21,552	1,855	23,407	13	8,559	8,571	21,564	10,414	31,978
DIVISION ADMINISTRATION	101,949	8,777	110,726	28	18,398	18,426	101,977	27,175	129,152
UNDERGROUND	0	204,439	204,439	0	428,567	428,567	0	633,006	633,006
ONE CALL	55,878	0	55,878	86,082	0	86,082	141,959	0	141,959
GROUNDS AND BUILDINGS	0	0	0	0	0	0	0	0	0
SUBTOTAL DIRECT OVERHEAD	179,379	215,071	394,450	86,122	455,524	541,647	265,501	670,595	936,096
TOTAL	2,404,003	399,525	2,803,527	86,703	842,196	928,899	2,490,705	1,241,721	3,732,426

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WATER & WASTEWATER SERVICES
ACTIVITY BASED COSTING REPORT
FOR THE 12 MONTHS ENDING SEPTEMBER 30, 2009

ACTIVITY -Lift Stations	District One			District Two			Field Support	Total Lift Stations		
	Operations	Maintenance	Total O & M	Operations	Maintenance	Total O & M		Operations	Maintenance	Total O & M
PERSONAL SERVICES	0	269,724	269,724	0	182,256	182,256	1,270,763	1,270,763	451,980	1,722,743
OPERATING MATERIAL	0	172,606	172,606	0	330,927	330,927	23,598	23,598	503,533	527,131
OTHER MATERIAL	0	0	0	0	3,697	3,697	3,023	3,023	3,697	6,720
UTILITIES-OTHER	1,949	0	1,949	0	0	0	0	1,949	0	1,949
ELECTRIC	265,732	0	265,732	210,862	0	210,862	0	476,594	0	476,594
TREAT/TRANS	0	0	0	0	0	0	0	0	0	0
PURCHASED WATER	0	0	0	2,337	0	2,337	0	2,337	0	2,337
RENTAL/LEASES	0	0	0	0	0	0	495	495	0	495
MOTOR POOL	0	0	0	0	0	0	141	141	0	141
CONTRACT SERVICE	0	191,754	191,754	0	98,285	98,285	106,925	106,925	290,039	396,964
OTHER	0	55,975	55,975	0	27,214	27,214	(108,744)	(108,744)	83,189	(25,555)
EDUCATIONAL COURSES	0	0	0	0	0	0	0	0	0	0
COMPUTER MAINTENANCE	0	0	0	0	0	0	21,817	21,817	0	21,817
TRAVEL	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS	10,000	0	10,000	8,000	0	8,000	0	18,000	0	18,000
OTHER CHEMICALS	0	0	0	0	0	0	0	0	0	0
CHEMICALS CHLORINE	0	0	0	0	0	0	0	0	0	0
CHEMICALS LIME	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	277,680	690,059	967,739	221,199	642,379	863,578	1,318,018	1,816,897	1,332,438	3,149,335
ALLOCATE:										
SECTION ADMIN.	2,692	6,941	9,633	4,719	14,218	18,937	0	7,411	21,159	28,571
DIVISION ADMINISTRATION	12,737	32,834	45,571	10,144	30,565	40,710	62,713	85,594	63,400	148,994
ONE CALL	0	0	0	0	0	0	0	0	0	0
GROUPS AND BUILDINGS	0	218,056	218,056	0	0	0	0	0	218,056	218,056
SUBTOTAL DIRECT OVERHEAD	15,429	257,832	273,261	14,863	44,784	59,647	62,713	93,006	302,615	395,621
TOTAL	293,109	947,890	1,241,000	236,062	687,163	923,226	1,380,731	1,909,903	1,635,054	3,544,957

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WATER & WASTEWATER SERVICES
ACTIVITY BASED COSTING REPORT
FOR THE 12 MONTHS ENDING SEPTEMBER 30, 2009

ACTIVITY - Regional Raw Water	North System			South System			Total		
	Operations	Maintenance	Total O & M	Operations	Maintenance	Total O & M	Operations	Maintenance	Total O & M
PERSONAL SERVICES	0	13,943	13,943	69,375	29,884	99,259	69,375	43,827	113,202
OPERATING MATERIAL	0	79,037	79,037	129	7,732	7,861	129	86,769	86,898
OTHER MATERIAL	0	0	0	0	0	0	0	0	0
UTILITIES-OTHER	0	0	0	143,634	0	143,634	143,634	0	143,634
ELECTRIC	370,735	0	370,735	0	0	0	370,735	0	370,735
TREAT/TRANS	0	0	0	0	0	0	0	0	0
PURCHASED WATER	0	0	0	0	0	0	0	0	0
RENTAL/LEASES	0	0	0	0	0	0	0	0	0
MOTOR POOL	0	0	0	0	0	0	0	0	0
CONTRACT SERVICE	38,106	2,736	40,842	16,124	4,955	21,079	54,230	7,691	61,921
OTHER	136,616	3,099	139,715	81,370	6,502	87,872	217,986	9,601	227,587
EDUCATIONAL COURSES	0	0	0	0	0	0	0	0	0
COMPUTER MAINTENANCE	0	0	0	0	0	0	0	0	0
TRAVEL	0	0	0	0	0	0	0	0	0
OTHER CHEMICALS	0	0	0	0	0	0	0	0	0
CHEMICALS CHLORINE	0	0	0	0	0	0	0	0	0
CHEMICALS LIME	0	0	0	0	0	0	0	0	0
<i>SUBTOTAL</i>	545,457	98,815	644,272	310,632	49,073	359,705	856,088	147,888	1,003,976
<u>OPERATING COST RECLASS</u>									
UNDERGROUND	0	0	0	0	0	0	0	0	0
ONE CALL	7,929	0	7,929	0	0	0	7,929	0	7,929
GROUNDS & BUILDINGS	0	2,683	2,683	0	2,683	2,683	0	5,367	5,367
LABORATORY	69,484	0	69,484	38,793	0	38,793	108,277	0	108,277
<i>SUBTOTAL</i>	77,412	2,683	80,095	38,793	2,683	41,477	116,206	5,367	121,572
<u>ALLOCATE:</u>									
SECTION ADMIN.	5,486	994	6,480	6,876	1,086	7,962	12,362	2,080	14,442
DIVISION ADMINISTRATION	25,954	4,702	30,655	14,780	2,335	17,115	40,734	7,037	47,771
SUBTOTAL DIRECT OVERHEAD	31,440	5,696	37,136	21,656	3,421	25,077	53,096	9,117	62,213
<i>TOTAL</i>	654,309	107,194	761,503	371,081	55,178	426,259	1,025,390	162,371	1,187,762

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WATER & WASTEWATER SERVICES
ACTIVITY BASED COSTING REPORT
FOR THE 12 MONTHS ENDING SEPTEMBER 30, 2009

ACTIVITY - Wastewater Treatment	Solids			Liquids			Reuse			Other	Total Treatment
	Operations	Maintenance	Total O & M	Operations	Maintenance	Total O & M	Operations	Maintenance	Total O & M		
PERSONAL SERVICES	866,330	532,926	1,399,255	1,198,935	772,467	1,971,402	25,679	10,646	36,325	907,906	4,314,888
OPERATING MATERIAL	19,303	519,426	538,729	31,540	858,423	889,963	3,793	9,721	13,514	23,988	1,466,195
OTHER MATERIAL	3,378	7,200	10,577	5,069	1,636	6,704	0	0	0	1,710	18,992
UTILITIES-OTHER	27,208	0	27,208	37,574	0	37,574	0	0	0	653	65,435
ELECTRIC	0	0	0	4,148,099	0	4,148,099	0	0	0	0	4,148,099
TREAT/TRANS	0	0	0	0	0	0	0	0	0	0	0
PURCHASED WATER	0	0	0	274	0	274	0	0	0	0	274
RENTAL/LEASES	368	6,811	7,179	508	11,764	12,272	0	0	0	0	19,451
MOTOR POOL	0	0	0	0	0	0	0	0	0	0	0
CONTRACT SERVICE	1,932,719	121,353	2,054,072	12,248	245,539	257,787	0	1,008	1,008	31,625	2,344,491
OTHER	54,770	(6,695)	48,075	15,312	(13,421)	1,891	5,194	2,320	7,514	9,585	67,066
EDUCATIONAL COURSES	1,502	5,947	7,449	1,599	5,518	7,118	0	0	0	836	15,403
COMPUTER MAINTENANCE	0	0	0	0	0	0	0	0	0	174	174
TRAVEL	0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS	4,680	0	4,680	7,320	0	7,320	0	0	0	0	12,000
OTHER CHEMICALS	546,441	0	546,441	3,278	0	3,278	3,704	0	3,704	0	553,423
CHEMICALS CHLORINE	(1,090)	0	(1,090)	131,460	0	131,460	0	0	0	0	130,369
CHEMICALS LIME	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	3,455,608	1,186,968	4,642,576	5,593,215	1,881,926	7,475,141	38,370	23,694	62,064	976,477	13,156,259
OPERATING COST RECLASS											
ONE CALL	0	0	0	0	0	0	0	0	0	0	0
GROUNDS, BUILDINGS & EQUIPMENT	297,876	193,606	491,482	297,876	193,606	491,482	0	0	0	65,136	1,048,100
LABORATORY	0	0	0	609,511	0	609,511	5,061	0	5,061	13,438	628,010
SUBTOTAL	297,876	193,606	491,482	907,388	193,606	1,100,994	5,061	0	5,061	78,574	1,676,110
ALLOCATE:											
SECTION ADMIN.	0	0	0	0	0	0	0	0	0	70,923	70,923
DIVISION ADMINISTRATION	164,201	56,478	220,678	265,786	89,545	355,331	1,826	1,127	2,953	46,462	625,425
SUBTOTAL DIRECT OVERHEAD	164,201	56,478	220,678	265,786	89,545	355,331	1,826	1,127	2,953	117,385	696,347
TOTAL	3,917,684	1,437,052	5,354,736	6,766,389	2,165,077	8,931,466	45,256	24,822	70,078	1,172,436	15,528,716

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WATER & WASTEWATER SERVICES
ACTIVITY BASED COSTING REPORT
FOR THE 12 MONTHS ENDING SEPTEMBER 30, 2009

ACTIVITY - Wastewater Treatment (Other)	Reuse Distribution			Compl. & Monit.	Enforcement	Septage	Total
	Operations	Maintenance	Total O & M				
PERSONAL SERVICES	19,193	10,196	29,389	399,170	355,710	123,638	907,906
OPERATING MATERIAL	0	10,539	10,539	7,325	0	6,125	23,988
OTHER MATERIAL	0	0	0	771	237	702	1,710
UTILITIES-OTHER	0	0	0	0	0	653	653
ELECTRIC	0	0	0	0	0	0	0
TREAT/TRANS	0	0	0	0	0	0	0
PURCHASED WATER	0	0	0	0	0	0	0
RENTAL/LEASES	0	0	0	0	0	0	0
MOTOR POOL	0	0	0	0	0	0	0
CONTRACT SERVICE	0	0	0	0	0	31,625	31,625
OTHER	3,942	2,113	6,055	0	1,467	2,063	9,585
EDUCATIONAL COURSES	0	0	0	836	0	0	836
COMPUTER MAINTENANCE	0	0	0	0	174	0	174
TRAVEL	0	0	0	0	0	0	0
OTHER CHEMICALS	0	0	0	0	0	0	0
CHEMICALS CHLORINE	0	0	0	0	0	0	0
CHEMICALS LIME	0	0	0	0	0	0	0
<u>SUBTOTAL</u>	23,135	22,848	45,983	408,100	357,589	164,805	976,477
<u>OPERATING COST RECLASS</u>							
ONE CALL							0
GROUPS, BUILDINGS & EQUIPMENT	0	0	0	24,488	0	40,648	65,136
LABORATORY	0	0	0	0	0	13,438	13,438
<u>SUBTOTAL</u>	0	0	0	24,488	0	54,086	78,574
<u>ALLOCATE:</u>							
SECTION ADMIN.	0	0	0	31,106	27,256	12,562	70,923
DIVISION ADMINISTRATION	1,101	1,087	2,188	19,418	17,015	7,842	46,462
SUBTOTAL DIRECT OVERHEAD	1,101	1,087	2,188	50,524	44,270	20,403	117,385
TOTAL	24,236	23,935	48,171	483,112	401,859	239,294	1,172,436

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WATER & WASTEWATER SERVICES
ACTIVITY BASED COSTING REPORT
FOR THE 12 MONTHS ENDING SEPTEMBER 30, 2009

ACTIVITY -Regional Transmission (Master Lift Stations)	District Four		
	Operations	Maintenance	Total O & M
PERSONAL SERVICES	0	638,547	638,547
OPERATING MATERIAL	19,567	619,546	639,113
OTHER MATERIAL	773	393	1,166
UTILITIES-OTHER	665,926	0	665,926
ELECTRIC	0	0	0
TREAT/TRANS	0	0	0
PURCHASED WATER	50,616	0	50,616
RENTAL/LEASES	0	0	0
MOTOR POOL	0	0	0
CONTRACT SERVICE	0	161,119	161,119
OTHER	7,570	19,759	27,329
EDUCATIONAL COURSES	0	0	0
COMPUTER MAINTENANCE	400	4,831	5,231
TRAVEL	0	0	0
MISCELLANEOUS	3,000	0	3,000
OTHER CHEMICALS	0	0	0
CHEMICALS CHLORINE	0	0	0
CHEMICALS LIME	0	0	0
<i> SUBTOTAL</i>	747,853	1,444,196	2,192,049
<u>OPERATING COST RECLASS</u>			
ONE CALL	25,296	0	25,296
GROUNDS, BUILDINGS & EQUIPMENT	0	108,882	108,882
LABORATORY	43,311		43,311
<i> SUBTOTAL</i>	68,607	108,882	177,489
<u>ALLOCATE:</u>			
SECTION ADMIN.	0	0	0
DIVISION ADMINISTRATION	35,441	68,717	104,158
SUBTOTAL DIRECT OVERHEAD	35,441	68,717	104,158
<i> TOTAL</i>	851,901	1,621,795	2,473,696

A - 5
Water & Wastewater Services
Disaggregation of Operating & Maintenance Expenses
for the PERIOD ending 09/30/2009

OPERATION AND MAINTENANCE EXPENSES:	RETAIL WATER	RETAIL SEWER	REGIONAL RAW WATER	REGIONAL TREATMENT	REGIONAL TRANSMISSION	WWS ADMIN, IT & FOD	ENGINEERING	TOTAL
Personal Services	3,303,699	1,962,583	113,202	4,314,888	638,547	7,303,894	2,365,733	20,002,547
Utility Services	1,529,952	2,621,167	514,368	4,213,533	665,926	569,119	6,145	10,120,209
Material & Supplies	748,579	574,589	86,898	1,485,186	640,280	949,542	32,314	4,517,388
Chemicals	1,883,682	0	0	683,792	0	0	0	2,567,474
Motor Pool	0	141	0	0	0	75,932	32,482	108,555
Contractual Services	1,055,074	640,575	61,921	2,344,491	161,119	2,342,219	25,806	6,631,205
Purchased Insurance	0	2,337	0	0	0	3,255,410	0	3,257,747
County Administrative Service	0	0	0	0	0	0	0	0
Purchased Water	4,158,633	0	0	274	50,616	0	0	4,209,523
Rental & Leases	532	495	0	19,451	0	5,446	16,377	42,302
Travel	1,426	0	0	0	0	14,108	1,434	16,968
Miscellaneous	1,100,213	100,000	0	12,000	3,000	385,000	0	1,600,213
Other	258,240	21,962	227,587	67,066	27,329	(575,757)	(1,382,121)	(1,355,694)
Educational Courses	0	0	0	15,403	0	50,427	10,472	76,302
Computer Maintenance	22,259	21,817	0	174	5,231	3,249,719	0	3,299,200
SUBTOTAL O & M EXPENSES	14,062,288	5,945,665	1,003,976	13,156,259	2,192,049	17,625,059	1,108,644	55,093,940
SECTION ADMINISTRATION	134,745	60,549	14,442	70,923	0	0	0	280,659
DIVISION ADMINISTRATION	616,756	278,146	47,771	625,425	104,158	1,705,784	0	3,378,040
UNDERGROUND	1,342,302	633,006	0	0	0	0	0	1,975,308
ONE CALL	257,867	141,959	7,929	0	25,296	0	0	433,051
GROUND, BUILDINGS & EQUIPMENT	583,435	218,056	5,367	1,048,100	108,882	270,674	0	2,234,514
LAB	613,573	0	108,277	628,010	43,311	0	0	1,393,171
SUBTOTAL OPERATING O/H	3,548,679	1,331,717	183,785	2,372,457	281,647	1,976,458	0	9,694,743
TOTAL COSTS	17,610,967	7,277,383	1,187,761	15,528,716	2,473,696	19,601,517	1,108,644	64,788,683
CUSTOMER SERVICE	2,412,492	1,721,322	47,515	475,151	95,030	(4,751,510)	0	0
WWS ADMINISTRATION	6,376,059	2,634,780	430,030	5,622,179	895,603	(14,850,007)	(1,108,644)	0
SUBTOTAL ALLOCATION	8,788,551	4,356,102	477,545	6,097,330	990,633	(19,601,517)	(1,108,644)	0
TOTAL OPERATING EXPENSES	26,399,518	11,633,484	1,665,306	21,626,046	3,464,329	0	0	64,788,683

Source: Broward County WATER & WASTEWATER SERVICES

**Table A-6
 Operating and Maintenance Expense for Large User Rate
 Fiscal Year 2009 and 2010 (1)
 \$ per 1000 Gallons**

	Fiscal 2009		Fiscal 2010	
	Treatment & Disposal	Transmission	Treatment & Disposal	Transmission
Total Direct Operating Costs	15,528,716	2,473,696	13,552,910	4,254,470
Allocated A & G Costs	6,097,330	990,633	5,413,700	1,545,400
Projected Annual Average Daily Flow (MGD)	71.4	52.5	68.5	50.4
Operating and Maintenance Rate Per 1,000 Gallons	0.676	0.136	0.795	0.179

NOTE: (1) This charge does not include costs of debt service which are fixed monthly charges to large users or IRR.

Source: Broward County Water & Wastewater Services

**Table A-7
Historical and Budgeted Large Users
Operating & Maintenance Rates**

Period Large User Charge in Effect	Treatment & Disposal Rate Per 1,000 Gallons	Transmission Rate Per 1,000 Gallons	Combined Rate Per 1,000 Gallons
Fiscal 2001	\$0.43	\$0.08	\$0.50
Fiscal 2002	\$0.47	\$0.07	\$0.54
Fiscal 2003	\$0.47	\$0.10	\$0.57
Fiscal 2004	\$0.51	\$0.09	\$0.60
Fiscal 2005	\$0.61	\$0.12	\$0.73
Fiscal 2006	\$0.58	\$0.12	\$0.70
Fiscal 2007	\$0.69	\$0.14	\$0.83
Fiscal 2008	\$0.70	\$0.14	\$0.84
Fiscal 2009	\$0.68	\$0.14	\$0.81
Fiscal 2010 (Proposed)	\$0.80	\$0.18	\$0.97

Source: Broward County Water & Wastewater Services

Table A - 8
Broward County Public Works Department
Water & Wastewater Fund
Statement of Net Assets
September 30, 2009, 2008, 2007, 2006, and 2005

	FY 2009	FY 2008	FY 2007	FY 2006	FY 2005
ASSETS					
Current Assets:					
Cash & Cash Equivalents	17,467,136	20,964,003	10,181,770	9,630,370	12,573,584
Investments	0	0	0	0	0
Accounts Receivable (Net)	14,903,333	12,137,601	16,667,959	11,835,909	12,304,293
Due From Other County Funds	0	0	0	0	0
Inventory	6,590,565	5,438,132	3,712,854	2,611,070	2,255,556
Other Current Assets	1,107,662	817,973	860,180	796,824	814,648
Total Current Assets	40,068,696	39,357,709	31,422,763	24,874,173	27,948,081
Noncurrent Assets:					
Restricted Assets:					
Cash & Cash Equivalents	96,486,201	35,589,820	34,482,651	35,840,973	31,669,933
Investments	38,497,045	4,499,100	10,592,034	9,013,786	47,408,920
Total Restricted Assets	134,983,246	40,088,920	45,074,685	44,854,759	79,078,853
Property, Plant and Equipment					
Land	4,896,059	4,874,216	4,874,216	4,874,216	4,874,216
Buildings	199,109,808	197,865,989	195,483,344	170,819,260	170,450,922
Equipment	641,410,769	601,781,596	565,035,966	562,520,143	533,781,417
Utility Plant in Service before Depreciation	845,416,636	804,521,801	765,393,526	738,213,619	709,106,555
Less Accumulated Depreciation	(329,407,410)	(306,231,826)	(278,270,312)	(267,358,167)	(244,339,238)
Utility Plant in Service (Net)	516,009,226	498,289,975	487,123,214	470,855,452	464,767,317
Construction in Progress	115,108,702	118,800,015	124,784,435	119,784,145	98,514,740
Property, Plant, and Equipment (Net)	631,117,928	617,089,990	611,907,649	590,639,597	563,282,057
Deferred Bond Issuance Costs	3,012,561	2,781,755	3,010,811	3,220,358	3,391,894
Total Noncurrent Assets	769,113,735	659,960,665	659,993,145	638,714,714	645,752,804
Total Assets	809,182,431	699,318,374	691,415,908	663,588,887	673,700,885
LIABILITIES					
Current Liabilities:					
Vouchers Payable and Accrued Liabilities	10,135,356	12,949,847	13,845,368	17,590,878	14,008,384
Due Other Governments	2,003,168	3,364,275	2,693,953	1,290,652	3,094,132
Customer Deposits	0	0	5,573,127	0	0
Commercial Paper	0	58,578,000	38,722,000	0	0
Total Current Liabilities	12,138,524	74,892,122	60,834,448	18,881,530	17,102,516
Noncurrent Liabilities:					
Liabilities Payable from Restricted Assets					
Accrued Interest Payable	10,257,680	6,033,563	6,119,513	6,190,213	6,057,205
Current Portion Long Term Debt	7,810,006	7,605,006	7,436,131	7,293,122	7,154,717
Customer Deposits	7,881,669	7,517,976	1,500,000	6,853,201	6,700,910
Total Liabilities Payable from Restricted Assets	25,949,355	21,156,545	15,055,644	20,336,536	19,912,832
Long Term Liabilities:					
Revenue Bonds Payable	422,418,643	256,356,660	264,041,736	271,496,563	278,764,828
Long Term OPEB Obligation	220,187	105,540			
Other Long Term Liabilities	2,501,000	2,280,000	1,921,000	1,993,000	1,421,767
Total Long Term Liabilities	425,139,830	258,742,200	265,962,736	273,489,563	280,186,595
Total Noncurrent Liabilities	451,089,185	279,898,745	281,018,380	293,826,099	300,099,427
Total Liabilities	463,227,709	354,790,867	341,852,828	312,707,629	317,201,943
NET ASSETS					
Invested in Capital Assets, Net of Related Debt	274,923,504	294,550,324	305,126,011	315,070,270	287,909,123
Restricted For:					
Capital Projects	0	0	0	0	34,897,827
Debt Service Reserve	37,809,672	27,555,357	27,197,095	27,346,345	20,053,194
Renewal, Replacement and Improvement	5,000,000	5,000,000	4,685,000	4,465,000	4,215,000
Unrestricted	28,221,546	17,421,826	12,554,974	3,999,643	9,423,798
Total Net Assets	\$345,954,722	\$344,527,507	\$349,563,080	\$350,881,258	\$356,498,942

Table A - 9
Broward County Public Works Department
Water & Wastewater Fund
Statement of Revenue, Expense, and Changes in Net Assets
September 30, 2009, 2008, 2007, 2006, and 2005

	FY 2009	FY 2008	FY 2007	FY 2006	FY 2005
Operating Revenue:					
Retail Services:					
Water	41,228,986	35,888,604	30,603,909	32,089,463	30,522,222
Wastewater	29,668,289	27,528,566	25,151,031	27,440,192	24,785,842
Septic Charges	2,027,870	1,879,407	1,939,437	1,894,505	1,875,353
Other Services	4,140,658				
	77,065,803	65,296,577	57,694,377	61,424,160	57,183,417
Wholesale Services:					
Water	1,076,284	1,499,824	5,241,738	5,785,038	3,913,884
Wastewater	29,943,381	25,882,550	25,078,707	22,497,276	23,901,922
Other Services	0	3,089,093	3,128,263	838,692	1,881,828
Total Operating Revenue	108,085,468	95,768,044	91,143,085	90,545,166	86,881,051
Operating Expenses:					
Personal Services	26,309,820	25,634,621	24,968,706	23,623,568	22,448,644
Utilities Services	14,445,819	15,167,271	14,380,038	13,443,989	11,421,612
Chemicals	2,567,199	2,317,645	2,352,152	2,240,973	1,588,235
County Services	3,255,410	3,030,850	2,532,290	2,887,860	3,355,484
Material and Supplies	4,962,861	5,138,548	4,650,449	5,001,231	4,423,505
Motor Pool	1,226,051	1,428,115	1,363,596	1,495,790	1,156,800
Contractual Services	7,967,224	7,729,129	6,851,981	5,933,915	7,288,052
Other	4,054,301	2,127,206	1,840,250	3,647,613	1,895,792
Total Operating Expense (Excluding Depreciation)	64,788,684	62,573,385	58,939,462	58,274,939	53,578,124
Operating Income Before Depreciation	43,296,784	33,194,659	32,203,623	32,270,227	33,302,927
Depreciation Expense	33,120,285	34,357,177	32,631,304	30,551,156	28,209,536
Operating Income	10,176,499	(1,162,518)	(427,681)	1,719,071	5,093,391
Non-Operating Income (Expense):					
Interest Income	3,218,290	1,507,408	2,807,060	2,786,948	2,020,417
Interest Expense	(15,814,160)	(9,876,717)	(10,698,049)	(10,593,701)	(8,005,929)
Gain/(Loss) on Disposal of Assets	310,334	353,242	911,660	(1,300,003)	198,511
Other Income	(121,481)	(254,577)	(217,895)	300,710	(94,062)
Other Debt Service	(2,427,507)	(544,402)	81,412	(71,290)	(1,744,375)
Total Non-Operating Income (Expense)	(14,834,524)	(8,815,046)	(7,115,812)	(8,877,336)	(7,625,438)
Income Before Contributions and Transfers	(4,658,025)	(9,977,564)	(7,543,493)	(7,158,265)	(2,532,047)
Capital Contributions and Operating Transfers:					
Capital Contributions	6,085,240	4,941,991	6,225,315	1,540,581	5,768,026
Total Capital Contributions and Operating Transfers	6,085,240	4,941,991	6,225,315	1,540,581	5,768,026
Changes In Net Assets Before Extraordinary/Special Item	1,427,215	(5,035,573)	(1,318,178)	(5,617,684)	3,235,979
Extraordinary/Special Item Gain / (Loss):	0	0	0	0	0
Total Net Assets - Beginning	344,527,507	349,563,080	350,881,258	356,498,942	353,262,963
Total Net Assets - Ending	\$345,954,722	\$344,527,507	\$349,563,080	\$350,881,258	\$356,498,942

Table A - 10
Broward County Public Works Department
Water & Wastewater Fund
Statement of Cash Flows
September 30, 2009, 2008, 2007, 2006, and 2005

	FY 2009	FY 2008	FY 2007	FY 2006	FY 2005
Cash Flows From Operating Activities:					
Cash Received from Customers	104,322,322	100,149,582	95,388,686	89,276,366	85,365,351
Cash Payments to Suppliers for Goods and Services	(41,710,796)	(37,513,353)	(45,153,423)	(32,050,121)	(28,162,042)
Other Cash Paid	314,947	353,242	775,178		
Cash Payments to Employees for Services	(25,770,910)	(25,201,824)	(24,635,265)	(22,965,981)	(22,131,863)
Net Cash Provided by Operating Activities	37,155,563	37,787,647	26,375,176	34,260,264	35,071,446
Cash Flows From Non-Capital Financing Activities:					
Other Non-Operating Income	0	0	0	300,710	198,511
Operating Transfers In	0	0	0	0	0
Net Cash Provided By Non-Capital Financing Activities	0	0	0	300,710	198,511
Cash Flows From Capital and Related Financing Activities					
Acquisition and Construction of Capital Assets	(48,488,022)	(37,061,268)	(52,508,140)	(55,353,249)	(56,367,383)
Proceeds from Sale of Capital Assets	0	39,142	94,889	62,530	200,205
Proceeds From Revenue Bonds	174,088,731	0	0	0	79,142,871
Proceeds from Commercial Paper Debt	0	19,856,000	38,722,000	0	0
Commercial Paper Debt Retired	(58,578,000)	0	0	0	(18,000,000)
Capital Recovery Fees	671,802	1,857,355	3,893,898	136,830	2,589,295
Capital Recovery Fees Refunded	(976,030)				
Capital Surcharges Contributed from Other Governments	2,178,587	1,439,117	708,457	614,036	538,268
Principal Paid on Revenue Bonds	(7,821,748)	(7,436,125)	(5,439,182)	(5,355,105)	(4,688,316)
Interest Paid on Revenue Bonds	(9,021,581)	(13,244,826)	(15,092,439)	(14,047,030)	(10,661,832)
Interest Paid on Commercial Paper	(862,702)				
Debt Service Cost Paid	(162,818)	(254,577)	(217,895)	(71,290)	(94,062)
Net Cash Used For Capital and Related Financing Activities	51,028,219	(34,805,182)	(29,838,412)	(74,013,278)	(7,340,954)
Cash Flows From Investing Activities:					
Purchase of Investment Securities	(64,838,704)	(59,871,248)	(39,379,314)	(22,140,376)	(46,899,502)
Proceeds from Sale and Maturities of Investment Securities	30,840,759	67,021,000	39,234,578	60,246,625	0
Interest on Investments	3,213,677	1,757,185	2,801,050	2,573,781	1,459,544
Net Cash Provided By Investing Activities	(30,784,268)	8,906,937	2,656,314	40,680,030	(45,439,958)
Net Increase (Decrease) In Cash & Cash Equivalents	57,399,514	11,889,402	(806,922)	1,227,726	(17,510,955)
Cash & Cash Equivalents, Beginning of Period	0	0	0	0	0
Cash & Cash Equivalents, Beginning of Period	56,553,823	44,664,421	45,471,343	44,243,517	61,754,472
Cash & Cash Equivalents, End of Period (1)	\$113,953,337	\$56,553,823	\$44,664,421	\$45,471,243	\$44,243,517
(1) Cash & Cash Equivalents:					
Current Assets	\$17,467,136	\$20,964,003	\$10,181,770	\$9,630,370	\$12,573,584
Restricted Assets	96,486,201	35,589,820	34,482,651	35,840,973	31,669,933
Total Cash & Cash Equivalents	\$113,953,337	\$56,553,823	\$44,664,421	\$45,471,343	\$44,243,517
Reconciliation of Operating Income to Net Cash Provided by Operating Activities:					
Operating Income	10,176,499	(1,162,518)	(427,680)	1,719,071	\$5,093,391
Depreciation	33,120,285	34,357,177	32,631,304	30,551,156	28,209,536
Miscellaneous Non-Operating Income (Expense)	314,947	353,242	775,178		
Provision for Uncollectible Accounts	488,919	148,819	(586,449)		
Change in Assets and Liabilities:					
(Increase) Decrease in Accounts Receivable	(3,254,651)	4,381,538	(1,665,496)	468,384	(1,492,316)
(Increase) Decrease Due From Other County Funds	0	0	0	0	18,440
(Increase) Decrease in Inventory	(1,152,433)	(1,725,278)	(1,101,784)	(355,514)	(425,793)
(Increase) Decrease in Other Current Assets	(520,495)	42,207	146,191	17,824	(62,770)
Increase (Decrease) in Vouchers Payable	(1,020,094)	277,289	(4,579,462)	3,510,632	1,506,179
Increase (Decrease) in Due Other Governments	(1,361,107)	670,322	1,403,301	(1,803,480)	1,956,496
Increase (Decrease) in Customer Deposits	363,693	444,849	(219,926)	152,291	268,283
Total Adjustments	26,979,064	38,950,165	26,802,856	32,541,293	29,978,055
Net Cash Provided By Operating Activities	\$37,155,563	\$37,787,647	\$26,375,176	\$34,260,364	\$35,071,446

Table A - 11
Broward County Public Works Department
Water & Wastewater Fund
Schedule of Net Revenue and Debt Coverage Calculation
September 30, 2009, 2008, 2007, 2006, and 2005

	FY 2009	FY 2008	FY 2007	FY 2006	FY 2005
Revenue:					
Water	\$42,305,270	\$37,388,428	\$35,845,647	\$37,874,501	\$34,436,106
Wastewater	61,639,540	55,290,523	52,169,175	51,831,973	50,563,117
Other	4,450,992	3,481,477	4,134,812	1,201,932	2,280,544
Interest Income	3,218,290	1,507,408	2,807,060	2,786,948	2,020,417
Total Revenue	111,614,092	97,667,836	94,956,694	93,695,354	89,300,184
Current Expenses:					
Water Transmission & Distribution	8,837,753	8,159,348	8,674,641	6,693,170	5,749,182
Water Source of Supply, Treatment and Pumping	9,960,975	9,195,518	9,880,376	7,917,064	7,372,144
Wastewater Collection and Transmission	9,751,079	11,317,333	7,965,914	11,813,291	7,308,052
Wastewater Treatment	15,528,716	14,822,306	14,889,920	16,120,579	12,489,236
Customer Service	4,751,510	3,773,630	3,435,149	3,194,328	3,316,395
Administration and General	15,958,651	15,305,250	14,093,461	12,536,507	17,343,115
Total Current Expenses	64,788,684	62,573,385	58,939,462	58,274,939	53,578,124
Net Revenue Available for Principal & Interest Requirements	\$46,825,408	\$35,094,451	\$36,017,232	\$35,420,415	\$35,722,060
Principal and Interest Requirements on Series 1988 Bonds	2,380,000	2,380,000	2,341,125	\$2,533,151	\$2,529,711
Principal and Interest Requirements on Series 1991 Bonds	\$0	\$0	\$0	\$0	\$0
Principal and Interest Requirements on Series 1993 Bonds	\$0	\$0	\$0	\$0	\$0
Principal and Interest Requirements on Series 2003 A Bonds	5,061,411	5,062,099	5,063,199	\$5,059,199	\$5,056,199
Principal and Interest Requirements on Series 2003 B Bonds	8,290,878	8,393,028	8,433,828	\$8,244,228	\$8,247,228
Principal and Interest Requirements on Series 2005 Bonds	\$3,837,000	\$3,837,000	\$3,837,000	\$3,837,000	\$1,715,992
Principal and Interest Requirements on Series 2009A Bonds	\$5,360,615	\$0	\$0	\$0	\$0
Total Principal and Interest Requirements	\$24,929,904	\$19,672,127	\$19,675,152	\$19,673,578	\$17,549,130
Required Coverage of Debt Service by Net Revenue	1.20	1.20	1.20	1.20	1.20
Actual Coverage of Debt Service by Net Revenue	1.88	1.78	1.83	1.80	2.04
Balance Available for Renewal, Replacement and Capital Expenditures	\$21,895,504	\$15,422,324	\$16,342,080	\$15,746,837	\$18,172,930

A-12
Water and Wastewater Retail Statistics
(1,000's gallons)
As of September 30,2009

Water	Produced	Purchased	Billed	System Uses & Losses
District 1	2,834,660	211,139	2,637,891	407,908
District 2	4,570,638	0	2,476,322	-
District 2 - Resale	0	0	1,826,265	268,051
District 3A	0	1,098,181	945,354	152,827
District 3BC	0	1,287,766	1,115,424	172,342
Total	7,405,298	2,597,086	9,001,256	1,001,128

Wastewater	Billed *	Wastewater Transmission to Plant
District 1	2,176,572	2,429,229
District 2	2,279,155	2,543,721
District 3A	639,637	869,965
District 3BC	343,330	291,865
Total	5,438,694	6,134,780

* Based upon water billed to wastewater customers. Residential billing capped at 15,000 gallons.

Source: Broward County Water and Wastewater Services