



2008 OUC Water Business Unit
ANNUAL REPORT



Since 1995, OUC has converted six water plants to ozone treatment and built two new ozone plants. As part of the process, OUC abandoned five older plants, constructed more than 12 miles of transmission pipelines and installed a sophisticated computer system that enables OUC personnel to operate all water plants from a single location.

By treating its water with ozone, a strong but safe disinfectant, OUC is dramatically reducing the use of chlorine in its water system and removing hydrogen sulfide, a naturally occurring compound that can create an unpleasant taste and odor in water. The result is tap water that tastes so good it bears the company's name - H2OUC.

H2OUC was named the best drinking water in the state in 2004 by the Florida section of the American Water Works Association (AWWA). A panel of judges tested water from 10 utilities across the state, checking for taste, color, clarity and smell.



Table of Contents

2	OUC Water System
4	Water Business Unit
5	WBU Statistical Summary
6	Water Engineering & Technical Services Division
7	WETS Water Engineering Section
11	WETS Water Resources Management Section
14	WETS Water Quality Laboratory Section
15	Water Quality Analysis
16	WETS Water Technical Services Section
18	Water Production Division
21	Water Distribution Division
29	Appendix 1



OUC Water System

The OUC water system is comprised of water supply/treatment facilities and a transmission/distribution pipe network. The water system serves an area that measures 200 square miles, and encompasses the Cities of Orlando, Edgewood and Belle Isle, plus large portions of unincorporated Orange County. The service area boundary was established by OUC and Orange County in 1994 by means of a territorial agreement.

Treated water is produced at seven water supply/treatment facilities that are spread across the service area. The source of water is the Lower Floridan aquifer, which is about 1,100 feet below land surface. Wells tap the aquifer, and well pumps raise raw water from the aquifer to the treatment plants where it is treated using ozone and other

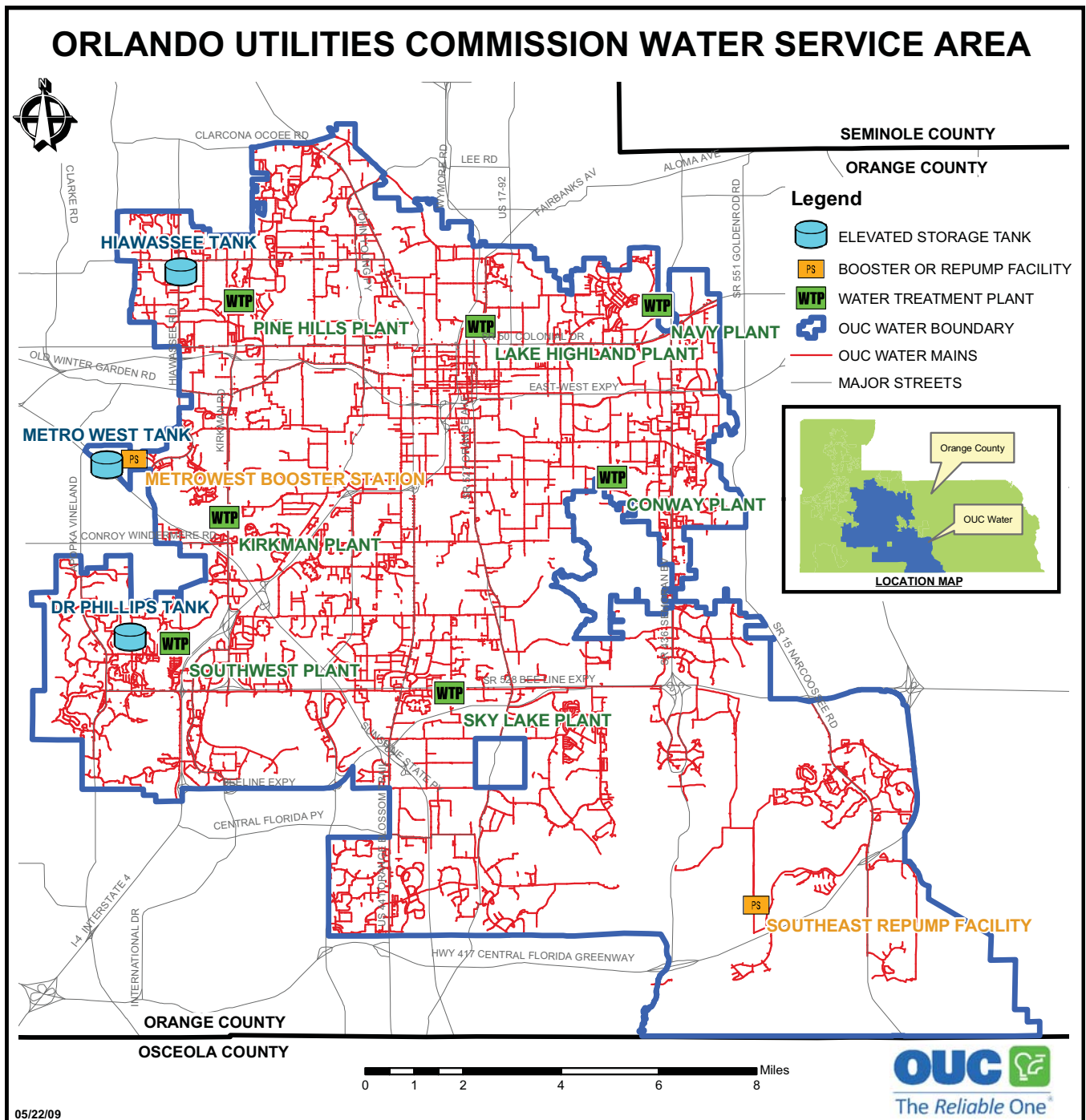
processes that produce a high quality drinking water which we proudly call H2OUC. Each treatment facility is comprised of wells, ozone treatment equipment and contact tanks, chemical feed equipment, storage reservoirs, high service pumps, standby generators, buildings and sophisticated control equipment. All of OUC's treatment facilities are relatively new as a result of a \$125 million construction program that took place between 1995 and 2001.

The Metrowest Booster Facility consists of pumps that boost system pressure sufficiently to serve the high elevation sections of the Metrowest development. The Southeast Repump Facility consists of a storage tank and pumps that receive water from the main part of the OUC system via a dedicated fill pipe, and repump the

water into the pipe network that serves customers in the southeast corner of the service area. This facility will play a key role in the future when OUC has to integrate water from a planned alternative water supply source located on the St. Johns River.

The transmission/distribution pipe network is comprised of pipe ranging in size from 2 to 48-inches, valves, fire hydrants, services, meters, three elevated storage tanks and one pressure booster station. In addition to delivering drinking water to customers and providing a source of water for fighting fires, the transmission pipe network interconnects all of the water supply/treatment facilities. This creates a very reliable system, because in the event that one facility is out of service, the other facilities can supply water to the area affected by the outage.

OUC Water System (continued)



Water Business Unit

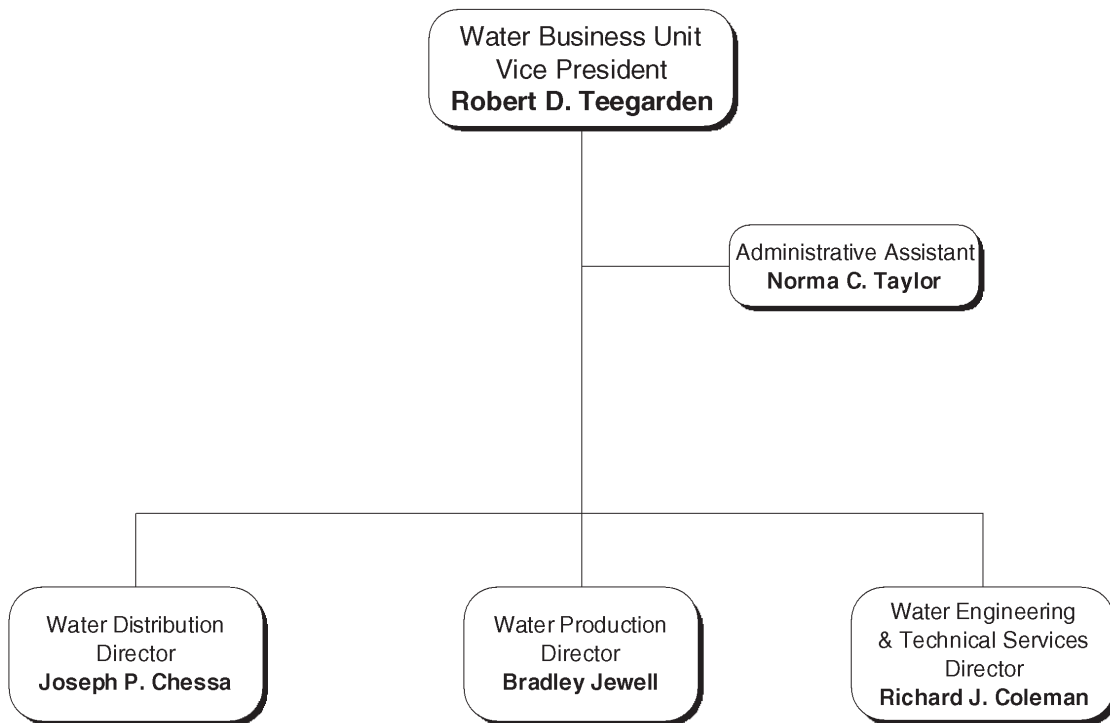
The Water Business Unit (WBU) is one of four business operations within the OUC organization. The others are Electric, Chilled Water and Lighting.

The WBU is responsible for managing, operating, maintaining and engineering

OUC's water system. The Water Distribution Division installs and maintains transmission/distribution pipes, services and meters. The Water Production Division operates and maintains the seven water supply/treatment facilities, elevated storage tanks and pressure booster station. The Water Engineering &

Technical Services Division provides engineering, records management, water quality testing, project management and water resource management services. The WBU is a cohesive group of professionals dedicated to providing our customers with reliable, high-quality potable water service.

OUC Water Business Unit Organizational Chart



WBU Statistical Summary

Fiscal Year	2008	2007	2003
Population Served	422,200	418,200	395,420
Employees			
Total Water Business Unit Funded Positions (Note 1)	129	123	122
Per 1,000 population	0.31	0.29	0.32
Consumption			
Total, billions of gallons treated water	31.05	32.95	30.29
Percent change from previous year	-5.77%	0.64%	-1.91%
Total, billions of gallons water treated for sale	31.02	32.88	30.27
Total, billions of gallons unbilled	4.04	2.89	2.90
Percent unbilled, % of water treated for sale	13.02%	8.79%	9.59%
Daily average, millions of gallons treated water	85.07	90.27	82.99
Per capita, gallons per day	203	216	210
Per mile of pipe, gallons per day	48,473	52,209	50,481
Per service, gallons per day	620	657	676
Services			
Active, metered	137,142	137,306	122,774
Percent change from previous year	-0.12%	3.62%	1.92%
Per 1,000 population	325	328	310
Per mile of pipe	78	79	75
Pipe			
Miles	1,742	1,729	1,645
Population per mile	241	242	240
Hydrants			
Number	9,578	9,451	6,908
Per 1,000 population	23	23	17
Per mile of pipe	5.5	5.5	4.2
Income			
Water sales in millions	\$62.22	\$65.43	\$46.31
Per capita	\$147	\$156	\$117
Per mile of pipe	\$35,453	\$37,843	\$28,152
Per metered service	\$454	\$477	\$377
Per million gallons treated water	\$2,004	\$1,986	\$1,529
Capital Investment (annual, in millions)			
Production Plant	\$5.57	\$10.39	\$17.11
Transmission & Distribution	\$14.45	\$14.35	\$9.79
Contribution-in-Aid-of-Construction (CIAC)	\$13.66	\$17.16	\$8.30
Total Capital Investment	\$33.68	\$41.90	\$35.20
Percent CIAC	40.55%	40.95%	23.57%
Operations and Maintenance Costs			
Total in millions	\$35.08	\$33.02	\$22.01
Per capita	\$83	\$79	\$56
Per mile of pipe	\$19,989	\$19,098	\$13,380
Per service	\$256	\$240	\$179
Per million gallons treated water	\$1,130	\$1,002	\$726

Note 1: The number of employees is reported as the number of funded positions contained in the operating budget, which is adopted by the Commission annually in August.



Water Engineering & Technical Services Division

The Water Engineering & Technical Services (WETS) Division is comprised of four sections: Water Engineering, Water Resources Management, Water Technical Services and the Water Quality Laboratory.

The Water Engineering section is responsible for reviewing development plans, preparing design standards, designing and managing water pipeline and water plant projects, and capital planning. The section is managed by Steve Lockington, P.E.

The Water Resources Management section is responsible for planning OUC's long-range water supply needs, securing and maintaining consumptive use permits, capital planning, and maintaining the distribution system hydraulic model. The section is managed by Debbie Bradshaw, P.E.

The Water Technical Services section is responsible for maintaining water distribution system records using GIS, maintaining the GIS system, and providing drafting and records management support to WBU and other customers. The section is managed by Ron Hawkins.

The Water Quality Laboratory is responsible for performing all water quality testing and maintaining records to comply with federal and state drinking water regulations, maintaining certifications, and providing water quality testing support to internal and external customers. The section is managed by John Gray.

In addition to projects undertaken by the four sections, WETS also worked on special projects. Special projects included: fire service billing project, which resulted in \$340,000 per year in

extra revenues, plus procedural changes that have improved fire service billing accuracy; ongoing investigation of the feasibility of OUC, Orlando and Orange County to form a partnership to operate and maintain reclaimed water facilities within the OUC service area; and participation in two research projects with the American Water Works Association Research Foundation, including a study to investigate alternative methods to treat reject water from desalination membranes, and a study of biofilms in water distribution pipes.

Specific activities in each of the four WETS sections are summarized in the following pages.

WETS Water Engineering Section

Activities

During 2008, approximately 41 miles of water main pipe were added to the OUC water distribution system. Approximately 2.4 miles of pipe were abandoned or removed from the OUC system.

Water Engineering prepared a total of 794 estimates, with 443 of the estimates for projects inside the City of Orlando and 351 for projects outside the City. This compares with a total of 850 estimates prepared in FY2007. The total value of the estimates for FY2008 was \$6.33 million compared to \$2.49 million in FY2007. While the value of Water Engineering estimates increased from last year by approximately 250%, the number of estimates decreased by about 7%. There were two very large road construction/utility adjustment projects on SR 50 that accounted for \$3.06 million, or almost half, of the total estimate value in FY2008.

The majority of the projects this year were commercial projects. Plan reviews for single family and multi-family developments decreased, with approximately 3,792 units reviewed by Water Engineering. This compares with approximately 5,600 units in FY2007. This decrease was indicative of the housing market decline in FY2008.

Projects

Twenty six inter-agency road projects were worked on during FY2008. Three of these were major projects, including the Narcoosee Road Widening, SR 50 from Good Homes Road to Pine Hills Road, and SR 50 from west of Semoran Boulevard (SR 436) to SR 417, which also includes an overpass at the SR 50/Semoran Boulevard intersection. All of these projects required a lot of effort by Water Engineering and Water Distribution staff to minimize impacts to the water distribution system.

Major downtown projects included the Events Center, the new home of the



Matt Tibbetts, WETS Water Engineering Senior Distribution Designer checks the progress on one of his projects in STORMS, the OUC work order management system.

Orlando Magic. Major projects in the southeast area that are just in the beginning phases includes the VA Hospital and the Nemours Children Hospital.

During 2008 Water Engineering designed approximately 10,000 feet of 10-inch diameter water main along Kirby Smith Road. This pipe was constructed by OUC crews. The purpose of this pipe is to provide reliability for the southeast portion of the service area, particularly the Eagle Creek Subdivision, during the construction of the Narcoosee Road widening, which is expected to start in February 2009.

To comply with the CUP, OUC, in partnership with the City of Orlando and the City of Apopka, is required to transfer a total of 9.2 mgd of reclaimed water to northwest Orange County. In order to accomplish this, Statement of Qualifications were requested from engineering consultants for two projects. The first was the Reclaimed Water Pumping Station and Transmission Main for which HDR Inc. was selected as the consultant from a group of seven consulting engineering firms. Work has begun and the design will be completed in October 2009. The second project was the Lift Stations and Force Main for which Boyle Engineering Corporation was

selected from a group of five engineering firms. The scope of work and fee for this project is currently in negotiations.

A third request for Statement of Qualifications was requested for the Ozonator Replacement Project which will be a multiyear project to replace the ozone equipment at the water treatment plants. The consultant will be selected in December of 2008.

Another major project was the preparation of submittal procedures for developers and the development of an OUC website for customers, developers and engineers. This will allow them to obtain information they need to successfully complete their projects with OUC.

Staff

Charles (Chuck) DiGerlando joined the Water Engineering department in April 2008 as a project engineer. Chuck was hired to help implement and manage the Project RENEW design and construction and other similar projects. He will also assist in the day to day work of the department. Chuck has 18 years of engineering experience with 12 years of those with Orange County Utilities in a similar role.

WETS Water Engineering Section (continued)

Water Engineering Section Projects

Single Family Individually Metered Projects	Number of Units
Baldwin Park Condos 355 and 356	21
Dellagio PD Ph III	93
Eagle Creek Planned Dev	83
Lancaster Lotus Apts, LLC	8
Misc. Single Family Residential	49
Staghorn Villas Development	58
Village Walk Phase 3 A	36
Village Walk Phase 3 B	43
Total	391

Multi-Family Master Metered Projects	Number of Units
Conley Street Townhomes	15
Eagle Creek Planned Dev	91
Habitat for Humanity	8
Lake Nona Village 1 and 2	121
LaVina - Tract G	420
Millenia 300	329
Millenia 700	698
Mills & Nebraska Planned Dev	314
Nona Preserve Townhomes	228
Randal Park Towncenter North	537
Sandlake Resort Club PD	183
Stonebridge Reserve	72
The Montage	185
The Rialto	200
Total	3401

Inter-Agency Projects
1076 Jetstream Drive
409 America Street
508 S Division Avenue
6300 E Colonial Drive
Boone Avenue/Anderson Street
Canadian Court
Canadian Court - International Drive to Tradeshow
Church Street Project #1275
Church Street/Division Avenue
City of Orlando Concord St & Westmoreland Dr
City of Orlando Conway Road - Tradeport to Hoffner
City of Orlando Grant Street
Hughey/Church/Division/I-4
N Division Avenue
OOCEA Project253 C (SR 408)
Orange County E Wetherbee
Orange County Narcoosee Road SR417 to Osceola County
Sand Lake Road/Turkey Lake Road
South Street
SR 15/600 Mills Avenue
SR 408 - 253B Crystal Lake Avenue to Conway Road
SR 417 & Moss Park Road
SR 417/Innovation Way
SR 482 (Sand Lk Road)
SR 50 Good Homes to Pine Hills Road
SR 50 Semoran to SR 417

Special Projects
Burnham Phase 1 Infrastructure
City of Orlando Events Center
Kirby Smith Road
Lake Nona Chilled Water Plant
Lake Nona South Infrastructure
UCF Biomedical Building
UCF Medical Building

WETS Water Engineering Section (continued)

Water Engineering Section Projects (continued)

Commercial/Industrial Projects

3 Lake Village	Dr. Thomas Katta, M.D.
33rd St Facilities Trailer	DRMP Phase 2 Buildings
618 E South St	Eagle Creek Golf Community
7-Eleven Store #33974	East Park
85 Door Expansion	Edgewood Service Center
A Character Middle School	Eligeti Property
Airport Distribution Center	Emerson Pointe Subdivision
ALDI Food Store	Empire Tire of Edgewater, LLC
Aldi Foods-Suite #106	Episcopal Church of the Ascension
ALDI, Inc	Escot Bus Lines, Inc
Alecon Drive	Executive Airport
Alumitech	ExxonMobil
Amazon Hose & Rubber	Fairvilla Park
Ambulatory Surgery Center	Family Dollar
American Audio Business Park	Family Medicine of Metrowest
Angie's Retail Center	FDOT #239535 4 56 04
Assn to Preserve African Am	First Baptist Church of Orlando
AT&T Building at Millenia	Florida Billiards
Atlas Commerce Park	Florida Children's Hospital
Ayia Irrevocable Trust	Florida Dev & Holding Corp
Baldwin Park Office Building	Florida Hospital Orlando
Beeline Used Auto Parts	Florida Mall Town Center
Belco Commercial Building	Four Square Studio
Bikkuri Restaurant	Freedom Fire Protection, Inc
Bodies By Mahmood	G E Walker Inc
Bruton Gas Station	Galaxy Printing
Burger King	GAS FOOD PLUS, INC
Cambria Suites	GEC Building
Carver Park	Gene Polk Park
Cathay Building	Genesis Communications, Inc
Cathy Street Retail	GMB Engineers and Planners
Central Group Plaza	GOAA-OIA
Church of God by Faith	Goldenrod Commerce Park
Church Street Entertainment	Green Hill Presbyterian Church
City of Orlando -Fire Station	Grenada PD Dellagio PD Ph 2
City of Orlando Lift Station	GSA Citizenship & Immigration
City of Orlando Parks & Rec	Hampton Inn
City of Orlando Parks Admin	Hardin Engineering, LLC
City of Orlando Police Training Facility	Hennessey-Coyle Inc
City of Orlando Public Works	Herndon Village
CNL	Hiawassee
College Park Business Ctr Ph 3	HK Auto Finance
Conway Appliance Unit A	Holiday Inn Express & Suites
Conway Crest Condominiums	Holy Land Experience
Crossroads Business Park	Home Depot Utilities Warehouse
Current Lee Vista Project	Homewood Suites
Cycle Sports Center	House of Plastics
Cypress Park V	Ice Bar of Orlando
Danube Plaza	Iglesia Pentacostal
Delaney Townhomes	Inez B Walker Family Ltd Ptnrs
Della Drive Office	Infinity, Aston Martin & Smart
Dellagio PD Ph I	International
Dellagio PD Ph II	Ivey Ln/Lenox Ave Gas Station
Delta Properties Intl LLC	Jack Jennings & Sons
Docs Grove Circle	Jetport Industrial Park
Don Mitchell	JKL Landscape Supply
Donald Craig Suzuki Dealership	Jones Sheet Metal & Gutter
Dorchester Assisted Living Fac	Kay Green Design

WETS Water Engineering Section (continued)

Water Engineering Section Projects (continued)

Commercial/Industrial Projects

Keiser College - Orlando	Peabody Hotel Expansion-Ph 2
Kelsey Construction	Peppermill Community Assoc
KFC @ Walmart Plaza	Phillips View Tower
Lake Brantley Rowing Assoc	Pine Ridge South
Lake Jessamine Estates Homeown	Pinycastle Commerce Center
Lake Nona Investors, LLC	Prime Construction Grp
Lake Nona Village Phases 1,2	Promenade at Universal Studios
Lake View Medical Park	Quick Connect II
Lakeview Medical Park	Quick Lube & Carwash
Laundry	Ramski and Co.
Law Offices of Peter Mendez	RL Burns Corporate Office Bldg
Legacy Pointe	Rosalind Avenue
Liberty AIPO	Rosemont Center
Liberty Property Trust	Sand Lake Development
Lincoln at Baldwin Park	Sapphire Property of CF, LLC
LMG Warehouse Expansion	Sawgrass Plantation
Magnolia Towers	Semoran Business Center
Mark Cross and Company, Inc	Shader Road Warehouse
Massey Services	Shoppes at Portofino
Mattress Firm @ Colonial Drive	Shri Lakshmi Narayan
McCorkle Office Bldg	Silver Meteor Center LLC
McDonalds	Small Warehouse
Mears Transportation Group	Small Warehouse
Mel Lurn Properties, Inc	SODO Phase II
Memorial Gardens	South Orange Commerce Center
Metro West International...	South Park LLC
Micco Group Home	Southpark Center Building 1500 & 900
Mid Town Realty of Orlando	Southridge Commerce Park
Millenia Crossing	Star Taxi, Inc
Millenia Lakes 4 & 5	Starbucks O.B.T.
Missionary Ventures Intern	Sunrise Assisted Living Fac
Mitsubishi Building Expansion	Taco Bell & LJS
National Semi Trailer Office	Taco Bell @ Walmart Plaza
Newsom	Tami Auto Sales
Nona Park	Technics
Oak Ridge Plaza	The Esplanade-Tennis Courts
OEA Hanger #4	The International
OEA Hanger #5	The Montage
Office Max-Suite #100	The Rialto
Old Winter Garden Road	The Sand Lake Building
Oliveira Warehouse	The Square (Orlando Int Hotel)
On Site Air & Hydraulic Svc	TLuna Twistee Treat LLC
Orange County Project 107063	Tuscany, Phase III
Orange County Public Schools	United Properties SW, LLC
Orange Tree Country Club	United States Crane
ORHS	Unknown company small duplex unit
ORHS Parking Deck C	Unknown Convenience Store
Orl Reg'l Healthcare Sys., Inc	Valencia Community College West
Orlando Collision Center	Valleycrest Landscape Develop
Orlando Gateway	Villages at Moss Park
Orlando Lutheran Towers	Walgreens
Orlando Regional Healthcare Fn	Walgreens at Semoran Plaza
OUC New Headquarters Building	Wal-Mart Plaza
Outback Steak House	Walmart Supercenter 195
Outer Road	Wash Me Fast Car Wash
P.K.'s Garden & Pet Shop	Wendy's
Pace Electric Inc	Wetherbee Road Lift Station
Peabody Hotel Expansion Ph 1	Wing House of Orlando

WETS Water Resources Management Section

During 2008, the Water Resources Management (WRM) section of WETS provided support to Water Production on treatment plant projects and to Water Engineering on water distribution projects, participated in alternative water supply investigations, and performed the tasks necessary for OUC to comply with our consumptive use permit (CUP). The following is a summary of activities for WRM.

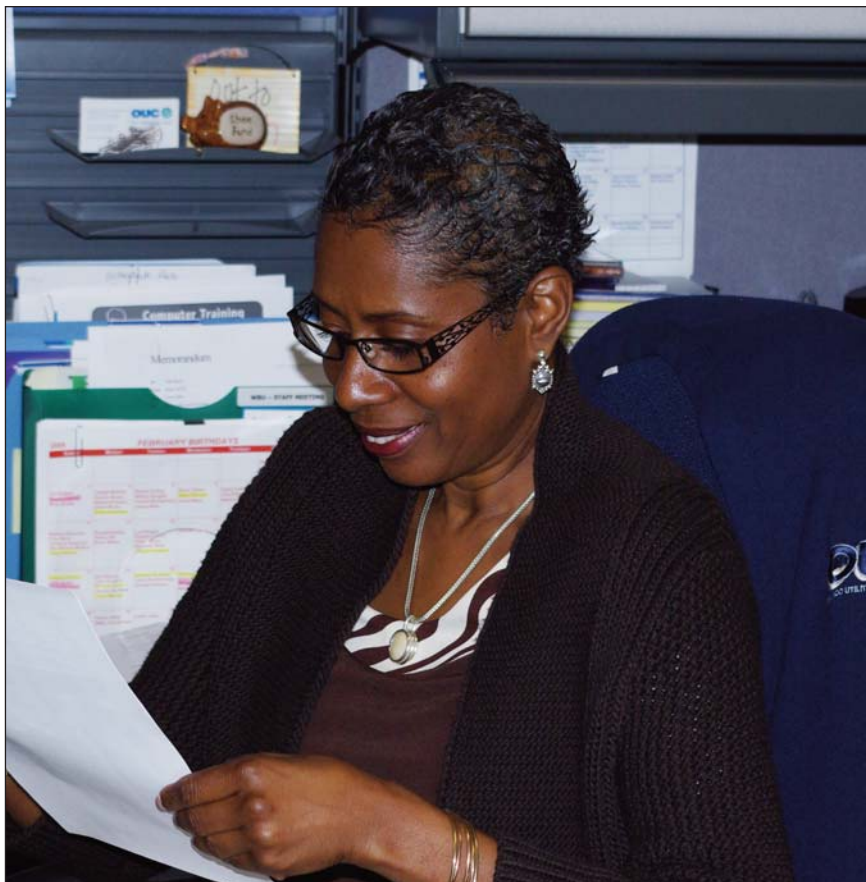
Treatment Plant Project

CH2MHILL completed a study that analyzed the feasibility of converting ozonators at the Southwest Plant from compressed air to liquid oxygen (LOX). The technical memorandum, submitted to OUC in May 2008, recommends conversion to a LOX system, including the installation of new, more efficient LG dielectrics and power supply units for the existing ozonators. In FY2009 OUC will retain a consultant to design the conversion, plus replace other ozonators in the fleet as part of an ongoing asset management program.

Water Distribution Projects

OUC receives numerous requests from developers to provide pressures at specified locations in the distribution system based on the design flows for their developments. In the past, these requests have been made over the phone or in writing. In an effort to streamline the process for developers and to improve internal management of the data requests, a special email address was established (HGL@ouc.com) for developers to submit their requests.

The Southeast Plant currently operates as a repump station. It receives water from the main part of the OUC system

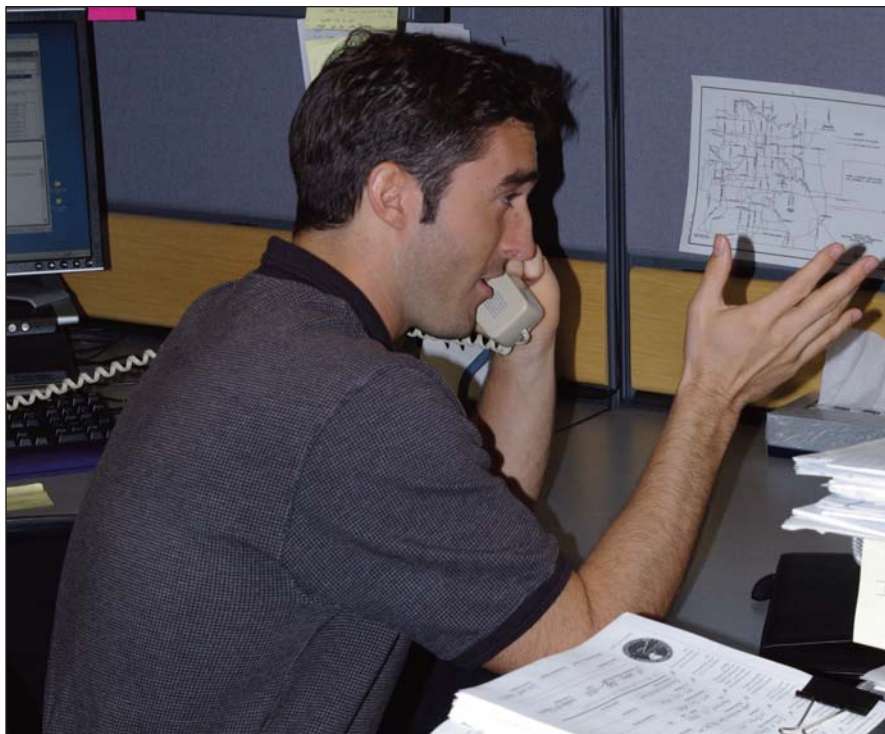


Norma Taylor, Administrative Assistant to WBU Vice President Rob Teegarden, reviews an agenda item before sending it to administration for further review.

Large research and medical facilities are currently being developed in the southeast quadrant

via a single 20-inch diameter pipe, and pumps the water out of a ground storage tank into the distribution system that serves the southeast portion of OUC's service area. Large research and medical facilities are currently being developed in the southeast quadrant. They require highly reliable potable water service. If the 20-inch pipe were to fail, supply would be limited to the volume of water in the storage tank, which would be depleted in a few hours. WRM is developing plans for a second feed to the southeast area to eliminate the single point of failure. The planning will take into account the long-range plan to supply the southeast area with water from the St. Johns River/Taylor Creek Reservoir (SJR/TCR) Project.

WETS Water Resources Management Section (continued)



John Perrin, WETS Water Resources Management Engineer, talks with a developer about the distribution system hydraulic model, which is used to simulate the operation of the water system under existing and future demand conditions.

Alternative Water Supply

In 2008, WRM continued to represent OUC in the preliminary design phase of the SJR/TCR Project. A joint venture comprised of CH2MHILL and PB Americas, Inc. is preparing the preliminary design report. Other utilities participating in the project, in addition to OUC, includes Orange County, Cocoa, Titusville, Toho Water Authority and East Central Florida Services, which is associated with Deseret Properties. In 2008, the participating utilities started to discuss governance for the next phase of the project, which will involve final design, permitting, construction, operation and maintenance.

To provide comparative costs for a wide range of alternative water supply options, OUC retained CH2MHILL to prepare planning level cost estimates

for brackish groundwater, seawater desalination, and surface water from the SJR/TCR Project. The consultant will also evaluate how surface water from the SJR/TCR Project may be incorporated into OUC's southeast service area by utilizing existing infrastructure at the Southeast Plant.

OUC and CH2MHILL are also working together to update the potable and reclaimed water demand projections which were originally developed by CH2MHILL in 2004. These projections will assist OUC in determining the quantity of alternative water supply that will be needed in the future to supplement groundwater and reclaimed water used for irrigation. The projections also provide parcel-level consumption data in a GIS format that will be used to update OUC's water distribution model.

Consumptive Use Permit

WRM spent most of its time during FY2008 performing activities that were required to comply with our CUP, which was issued by St. Johns River Water Management Division (SJRWMD) in May 2004. The following paragraphs summarize CUP compliance activities undertaken by WRM in FY2008.

WRM completed work on the 5-year compliance report, which was submitted to SJRWMD on April 10, 2008. A considerable amount of time and effort was spent preparing the report which included working with OUC water conservation and communications staff, working with environmental and groundwater consultants, and attending meetings and teleconferences with SJRWMD. As expected, a request for additional information (RAI) was received from the District in May. The request included questions from both the SJRWMD and the South Florida Water Management District (SFWMD) pertaining to wetland impacts, groundwater modeling, conservation, and water demand projections. OUC met with the SJRWMD and the SFWMD in July and August to discuss the questions. OUC's response to the RAI was submitted in September 2008. A second RAI is expected.

WRM and OUC legal staff have been negotiating an agreement with the City of Apopka to secure their financial and operational cooperation in Project RENEW. OUC submitted a CUP modification to the District to extend the RENEW agreement milestone beyond October 2007. An annual report documenting the progress on Project RENEW was submitted to SJRWMD in October.

WRM continues to track the progress of the City's Eastern Regional Reclaimed

Water Distribution Project (ERRWDS). The CUP requires that specified quantities of reclaimed water be delivered to the OUC service area by certain dates. The reclaimed water will be conveyed to Baldwin Park and the southeast area through the ERRWDS. The CUP includes a milestone for the completion of construction of the ERRWDS by October 2007. OUC submitted a CUP modification to extend the construction completion date through December 31, 2009. The SJRWMD agreed to the extension and revised the CUP in May. An annual report documenting the status of the ERRWDS construction and the reuse quantities being used in the OUC service area was submitted to the SJRWMD in October.

WRM, with the assistance of Water Production, monitors 25 lake/wetland sites required by the CUP. Water level data is downloaded to a computer on a monthly basis and reviewed for data errors. Water level sensors are repaired and replaced periodically as needed. Annual panoramic photos for the 25 monitoring sites are completed in September, as required by the CUP. The water level data, along with daily rainfall from ten stations and daily pumping from all of OUC's wells is submitted to the SJRWMD every six months.

We are planning to construct a multi-zone, deep monitoring well in accordance with the CUP which will be used to detect any movement of saline water into the aquifer in the southeast portion of the OUC water service area. Due to budget constraints and easement negotiations, construction has been delayed until FY09.

WRM worked on the Wetland and Lake Impact Avoidance/Mitigation Contingency plan which was due to be submitted to the SJRWMD in October 2008. The plan identifies potential

WRM was successful in securing grant funds from the SFWMD under the Water Protection and Sustainability Program for FY2008.



actions that OUC will take in the event the SJRWMD determines that withdrawals by OUC are causing or contributing to significant adverse impacts to specific wetlands, lakes and spring flows. The action items may include shifting groundwater withdrawals, reducing groundwater withdrawals through implementation of additional conservation measures or reclaimed water projects, and direct or indirect augmentation of the impacted area.

We performed an annual water audit to estimate "unaccounted for" water losses in the treatment facilities and distribution system, and submitted the report to SJRWMD. OUC's water losses are well within acceptable limits established by SJRWMD.

WRM was successful in securing grant funds from the SFWMD under the Water Protection and Sustainability Program for FY2008. OUC applied for funding for a portion of OUC's share of the City's ERRWDS. OUC submitted four status reports throughout the year and a final report in August in order to comply with the funding contract. OUC received \$821,100.00 in October 2008 based on the amount of construction actually completed by the City during FY2008. WRM applied in June for grant funding from the SFWMD for FY2009. Due to limited funding, OUC, along with all other Central Florida utilities, was not approved for funding.

WRM worked with the SJRWMD and TLC Engineering to obtain Florida Water Star certification for OUC's new administration building. This water conservation program, offered by the SJRWMD, encourages water-efficient options for landscapes, irrigation, and indoor plumbing, appliances, and fixtures. The SJRWMD believes that the building will have the points needed to obtain the certification. A final walkthrough of the new building with

WETS Water Quality Laboratory Section

During fiscal year 2008 the overall theme was that of regulatory compliance. The Lab continued to support several divisions within OUC including Water Production, Water Engineering, Water Distribution, Stanton Energy Center and the Environmental Division.

Major Accomplishments in 2008

The Laboratory completed the monitoring and reporting for the implementation of the Stage II Disinfection Byproduct Rule. Samples were collected and analyzed over a one year period at selected points in OUC's distribution system. This data was required by EPA and this information will be used later for future regulation.

The lead and copper testing was successfully completed and no further testing is required until 2011. Results were submitted to FDEP.

Analytical testing services were provided to Boyle Engineering for Seminole County's Water Quality Master Plan Study.

Every production well was analyzed for total coliform bacteria on a monthly basis in 2008. This testing frequency will continue in the future.

New Purchases

The Laboratory purchased a new Laboratory Information Management System (LIMS). This system will be used to track and manage the Lab's information resources. Also, the LIMS will be used by other departments within OUC such as Water Production and Water Resources Management to track water quality information.

Revenues and Outside Services

The Lab surpassed its goal of \$90,000.00 for this fiscal year. Analytical services earned a total of \$179,478.00 in revenues for OUC. The Lab continues to provide services for local utilities including City of Winter Park, City of Lake Mary, City of Apopka, City of Cocoa, City of Titusville and Reliant Energy. Other vendors using our services include Boyle Engineering, Tri-Tech Laboratories, Action Ice, and Orange County Public Schools.

Staff Achievements

Donna McCue has been very busy working with PerkinElmer to get the new LIMS operable and integrated

with Lab services, and making sure that all the FDEP reports produced by LIMS are correct and accurate. Jennifer Koschewa, Donna McCue and Angela Scott completed a 5-day training session with PerkinElmer on the new system.

Jaritza Pluguez began performing 100% of the bacteriological analyses on samples collected monthly from OUC's distribution system, which is required by FDEP.

Jim Shoemaker has been analyzing an ever increasing amount of organic compounds, including TTHMs and VOCs. Now that Jaritza has taken over bacteriological analyses, this has allowed more time for Jim to concentrate on organic chemistry.



Angela Scott, Administrative Specialist in the Water Quality Lab has to focus a large part of her attention on the demanding job of preparing and submitting numerous reports to regulatory agencies.

Water Quality Analysis

Listed in this table are primary and secondary constituents that are regulated by the Safe Drinking Water Act. Primary constituents relate to health, while secondary constituents relate to aesthetic properties of the water. To comply with the Act, the concentration of regulated constituents in the treated water, which is the water delivered to consumers, must be below the maximum contaminant level (MCL) set forth in the Act. As shown, OUC's treated water exceeds all standards. OUC obtains raw, or untreated water from the Floridan Aquifer, a very high-quality source. The only constituent in the raw water that requires treatment is the odor threshold number, a secondary constituent, which is caused by the presence of hydrogen sulfide. OUC uses ozone to eliminate hydrogen sulfide at its eight treatment plants, and then further enhances treatment with other processes, resulting in high-quality treated water that we proudly call H2OUC. The data in the table represent averages for OUC's eight water plants based on 2008 test results. All results are in milligrams per liter (mg/l) unless otherwise noted.

PRIMARY CONSTITUENTS

Inorganics	MCL	Raw Water	Treated Water
Arsenic	0.010	<0.001	<0.001
Barium	2	0.020	0.021
Cadmium	0.005	<0.002	<0.002
Chromium	0.1	<0.002	<0.002
Cyanide	0.20	-	<0.002
Lead	0.015	<0.001	<0.001
Mercury	0.002	<0.0005	<0.0005
Selenium	0.05	<0.005	<0.005
Sodium	160	6.42	10.4
Nitrate	10	<0.05	<0.05
Nitrite	1.0	<0.05	<0.05
Fluoride	4	0.133	0.460
Turbidity in NTU	1.0	0.26	<0.11
Antimony	0.006	<0.001	<0.001
Beryllium	0.004	<0.002	<0.002
Nickel	0.100	<0.002	<0.002
Thallium	0.002	<0.0005	<0.0005

Organics			
Volatile Organics (21 Total)	**	All BDL	All BDL
Disinfection By-Products			
THMs (Total)	0.080	-	0.051 RAA
HAA5	0.060	-	0.017 RAA
Bromate	0.010	-	0.004 RAA
Radionuclides			
Gross Alpha in pCi/L	15.0	-	<1.8
Radium 228* in pCi/L	5	-	<1.0*

Abbreviations & Notes:

BDL -Below Detectable Limits
 NOD -No Odor Detected
 pCi/L -Picocuries per liter
 THMs -Trihalomethanes
 HAA5 -Haloacetic Acids

SECONDARY CONSTITUENTS

	MCL	Raw Water	Treated Water
Chloride	250	9.09	13.8
Color in Pt-Co Units	15	3	1
Copper	1.3	<0.002	0.025
Corrosivity	+0.2 -0.2	-0.04	-0.12
Iron	0.3	0.047	0.016
Manganese	0.05	0.002	<0.002
Odor Threshold # Units	3.0	5	NOD
pH Field	6.5-8.5	7.75	7.72
Sulfate	250	10.5	13.3
Total Dissolved Solids	500	163	172
Silver	0.100	<0.001	<0.001
Zinc	5.0	0.006	0.006
Aluminum	0.200	0.008	0.007

ADDITIONAL TESTING NON-REGULATED CONSTITUENTS

Alkalinity as CaCO3	-	108	118
Ammonia	-	0.36	<0.10
Calcium as Ca	-	37.1	38.1
Carbon Dioxide	-	3.63	4.66
Conductivity in µs/cm	-	303	326
Dissolved Oxygen	-	0.28	8.82
Foaming Agent	-	-	<0.02
Hydrogen Sulfide	-	2.02	<0.4
Magnesium as Mg	-	8.65	8.25
Phosphate as P	-	0.32	<0.10
Potassium as K	-	1.09	1.15
Silica	-	10.6	10.3
Total Hardness as CaCO3	-	127	129
Total Organic Carbon	-	1.83	1.60

RAA -Running Annual Average
 µs/cm -Microsiemens per centimeter
 * Reported in 2003
 ** MCL varies with each parameter.

Introduction

There were no engineering drawings created this year by the Water Technical Services (WTS) Section. In keeping with a long-term goal, engineers and designers in the Water Engineering Section started to produce and review their own drawings using AutoCad. This procedural change eliminates the need for GIS technicians to prepare design drawings, and makes the design and drawing preparation process seamless and more efficient. It allows GIS technicians to dedicate most of their time to updating our distribution system maps and database using GIS.

WaterEngine is an OUC-written GIS program that is slowly replacing EasyStreets

As-built mapping projects increased by 1%. There was also an 18% decrease in emergency street opening permits. These decreases can be attributed to a decrease in construction activity within OUC's service area. Analysis of these activities is reflected in Appendix 1 of this report.



Water Distribution crews rely on the GIS system maps to maintain and construct water pipes.

Mobile Application

EasyStreets was one of the original mobile GIS applications used in the Water Business Unit. It was written by the City of Orlando and modified by OUC to meet our specific needs. For many years, this application has satisfactorily met our needs. Today, new mobile GIS applications are available. They have more functionality and are better suited to meet our current needs.

WaterEngine is an OUC-written GIS program that is slowly replacing EasyStreets as the mobile application of choice. Using the file-based geo-database file format, water infrastructure can be seamlessly viewed making it much more user-friendly for the end-user in the field. WaterEngine has address searching capabilities that are similar to EasyStreets, but it also has water infrastructure querying capabilities. A global positioning system (GPS) tool is also included. Future tools could include valve isolation and map printing.



Ron Hawkins asks "What do you mean you don't know?"

2008 Projects

Updating the fire hydrant database in GIS has been an important project in the WTS section this fiscal year. Legislation passed in 2005 that requires owners to inspect fire hydrants on an annual basis has been one of the drivers behind this project.

OUC owns and maintains just over 9,500 hydrants. When this project began, there were approximately 1,200 hydrants in the GIS database that did not have identification numbers. As a result of field audits and database edits, that number is now down to approximately 300. The hydrant database is continuously reviewed by OUC and the two fire departments that have jurisdiction within the water service area to keep it up-to-date.

The WTS section has been aiding the OUCooling division by updating their Chiller Plant as-built drawings and specification details using AutoCad. Drawings and details have been edited for the Lockheed Martin, Vistana, Downtown North and Downtown South plants.

Old paper plan sets containing information on OUC water infrastructure and other underground utilities were scanned this past summer. These scanned documents will be viewed from a web based management system in the future. Also scanned were approximately 760 paper copies of large meter assemblies. The existing paper copies are kept in 3-ring binders that are carried in a field truck. The objective is to have these scanned meter files loaded on the field laptops and hyper-

linked to their geographic locations in the mobile GIS software, eliminating the need for the existing binders. Corrections to these images and new assemblies will be performed using AutoCad software and uploaded to the field laptops in the future.

In-line valves are being located using a Trimble GeoXH receiver

OUC water main information is being updated from repair/coupon sheets submitted by field crews. The physical locations of these mains are also being adjusted in GIS, based on GPS data obtained by Water Distribution's Valve Audit program. In-line valves are being located using a Trimble GeoXH receiver. Once the valve locations are uploaded into GIS, the location of their corresponding mains can be adjusted. This is also an on-going project. One day these GPS coordinates will be used to relocate the valves in the field.

Staffing

Jim Beck was hired on March 18, 2008 as a GIS Tech II. Jim was born in West Virginia and graduated from St. Cloud High School. He earned certificates in GIS and CADD and worked at the City of Kissimmee for 22 years. Mark Cline (GIS Tech 1) celebrated his 20th year anniversary at OUC on June 27.



Water Production Division

Water Production (WPRO) produced 31.05 billion gallons of drinking water in Fiscal Year 2008. It was a decrease of 1,900 million gallons over the prior year. Flows ranged from a peak day high of 111.175 millions gallons per day (MGD) on May 15, 2008, to a low of 71.652

MGD on January 25, 2008. The peak system flow rate was recorded at 157.772 MGD on May 14, 2008.

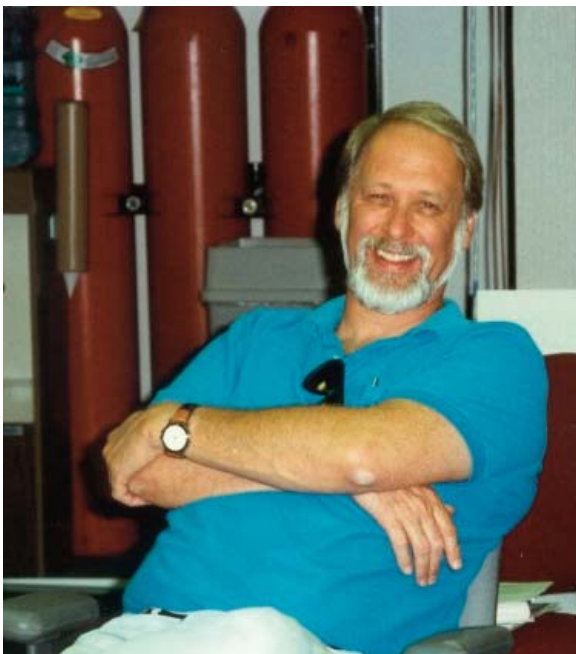
On April 25, 2008, WPRO lost David Allen Cantwell after a long illness. Dave's official title was Supervisor of Operations, but Dave was much more than that to us. Dave was the Licensed Operator for the entire water system that OUC operates. Dave typically spent his days conferring with the Maintenance Section to see how their activities would impact overall operations, investigating CWQI's (Customer Water Quality Inquires), and comparing our flows with CUP allocations. Dave was often asked for his opinion on opportunities (they're not problems in WPRO). He was the expert's expert.

He was always able to add his good judgment to any conversation. Dave is missed.

Several employees reached service tenure milestones with OUC. Ronald Rabaut and Robert Sumpter both achieved their 10-year anniversary. Gigi Anacleto achieved her 2-year anniversary.

Jerry Farina passed his Drinking Water Class B Operator License exam.

The Operations Section has seen many changes in the past year. Prior to the passing of Dave, we began organizational and successive planning. Lee Marshall was promoted from SCADA Coordinator to Lead Operator. The Lead Operator position was created to manage the daily operational tasks. This in turn allowed the Supervisor of Operations to concentrate more on long range planning and water quality issues. Robert Sumpter received a promotion from Operator to SCADA Coordinator to take up the slack created by the promotion of Lee Marshall. Lee and Robert have both stepped up and responded partially filling the void created by Dave's passing.



Dave Cantwell

Water Production Division (continued)



The Control Room underwent a major renovation this year. Gone are the old pink formica kitchen cabinets and mauve wall paper. New work stations allow the operator to adjust both the height of the monitors and the keyboard independently by the touch of a button. Now an operator can shift from a sitting to a standing position and still have easy access to all of the controls. The two work stations have been replaced with four work stations comprised of the following: a primary station with 12-monitors for the Operator on Duty; a 6-monitor Supervisor's Work Station; and two 4-monitor observer/contractor work stations. The room was remodeled with the help of an interior decorator who helped the team program the functions and select both the paint colors and carpet. Full color pictures of all 8-water plants were added to soften the room a little bit and remind everyone what we are operating.

For operational efficiency the operators were given access to their e-mail accounts which allowed them to respond more efficiently (or timely)

to Customer Water Quality Inquiries that come in from Service Dispatch. The operators have also started to use iMaint (WPRO's Maintenance Management Software) to report plant troubles. The Water Quality Technicians (Al Fort and John Perrotti)

both have wireless access in their vehicles, the operator on duty is now aware of the request as well and can coordinate a response.

During the past year WPRO completed other organizational changes that were started two years ago. Eric Jones was promoted from Master Technician – Electrical to Lead Technician – Electrical. The promotion of Eric completes the organizational changes within the maintenance section. Areas of expertise (mechanical, electrical, INC) each has a Lead who coordinates all major projects. The Supervisors now dedicate more time to planning and preparing for projects.

Ron Dollar and Fred Thompson both worked hard to implement iMaint. We initially anticipated a three-year period to fully implement iMaint, but after Internal Audit's recommendation, it was completed in less than two years. WPRO now tracks all work completed at the plants (materials and labor) as



Water Production Division (continued)



well as schedule preventative maintenance. We have taken this scheduling one step further and all PPE (personal protective equipment) inspections went through the system as well. The Supervisors are now notified via e-mail (on their Blackberries) when a work order is requested and completed. This information is collected and analyzed so we can make informed decisions in the future whether it is more cost effective to repair or replace equipment as it fails.

Five well pump assemblies (Conway, Highland, Southwest, Pinehills and Navy) were reconditioned this year. There was very little documentation of maintenance performed on them since they were installed (8 to 50 years ago). Repairs ranged from simple spider



bearing replacement to rebuilding a pump impeller that was no longer manufactured. Based on these repairs, we have a much better handle on what repairs to expect in the future.

The ozone diffuser systems are definitely showing their age and are now in need of repair. Both the Pine Hills Contactor #1 and Southwest Contactor #2 were worked on this year. Besides replacing all of the gaskets and a portion of the diffuser stones, we had to weld the diffuser manifolds. Even though manifolds were constructed out of stainless steel it is apparent that ozone equipment will last for approximately 10-years.



We have come to the conclusion that spot welding repairs are insufficient to keep ozone equipment operational, and have begun to remove the manifold and completely rebuild it outside of the contactor. WPRO has also started to upgrade all of the ozone analyzers at the facilities. We have standardized on one manufacturer to reduce the quantity of spare parts inventory.



WPRO is now working with ITT Wedeco to improve the performance of their ozone generators. This came about after another failure of the single unit at Lake Highland and a meeting with ITT Wedeco representatives. At this meeting, they agreed to install a digital controller in each unit. They will also provide quarterly maintenance for one year for each of the units (two at Navy, one at Lake Highland, one at Conway).

Security continues as a concern at all of our water plants and our control center. In the past year we have tested Internet Protocol security cameras at several of the plants with favorable results. IP has proven to be easier to install and as a result of this, cameras are being added to areas that had marginal coverage in the past. We are also extending our video coverage to include the working areas at the facilities. By doing this, we are better able to verify what occurs onsite after the perimeter is breached. In the future, we plan outfitting cameras with two-way communications which allows the operator to speak with those who are in range of the camera.



Water Distribution Division

The Water Distribution Division (WDIS) is comprised of two sections: Operations and the Crew section.

The Crew section is responsible for the installation and repair of the distribution system. This section is managed by Rick Winn, P.E. and includes Crew supervisor Tonney Preston, a Coordinator, five Senior Distribution Technician leads, five Equipment Operators, one Support Specialist, six Distribution Technician I's, ten Distribution Technician II's, as well as an Administrative Specialist.

The Operations Section is responsible for the day to day operations and Maintenance of the Distribution System. This section is managed by Brian Smith, Inspection Supervisor Lee Davis, Response Supervisor Donnie Capatosto and Accountability Supervisor Corey Johnson. Also included are fifteen Senior Distribution Technicians, seven Support Specialists, one Coordinator,

WDIS Crew Section 2008 Projects

- Installation of 12,000 feet of 10" ductile iron (DI) pipe to complete the hydraulic loop closure on Kirby Smith Rd. and provide a secondary feed for the Eagle Creek Subdivision.
- The Wetherbee Rd. realignment included the installation of 1400' of 16" DI pipe. The Cleveland Ave project included 1300' of 6", 4", and 2" water main.
- Bryn Mawr and Willow Bend poly renewal projects were completed with over 600 services being renewed.
- Approximately 7 miles of water main were added to the OUC water distribution system.
- There were 21 fire hydrants installed.
- 12 fire services and 223 1" taps and 95 2" taps and larger were installed.

three Distribution Technician I's, three Distribution Technician II's and two Administrative Specialists.

Specific activities of each section are summarized in the following pages.

WDIS Crew Section

During 2008, approximately seven miles of water main were added to the OUC water distribution system by the Crew section. There were 21 fire hydrants, 12 fire services and 223 1" taps and 95 2" taps and larger installed by the Crew section.

Projects

The Crew's workload remained steady during FY2008. Many of the projects were located in the southeast and downtown sections of the service area.

Numerous projects were worked by the Crew section this past year. Some of the major projects



for 2008 included the installation of 12,000 feet of 10" ductile iron (DI) pipe to complete the hydraulic loop closure on Kirby Smith Rd. and provide a secondary feed for the Eagle Creek Subdivision. The Wetherbee Rd. realignment included the installation of 1,400 feet of 16" DI pipe. The Cleveland Ave project included 1,300 feet of 6", 4", and 2" water main. Bryn Mawr and Willow Bend poly renewal projects were completed with over 600 services being renewed.

Staff

Tim Annis, Luis Fabres, James Applewhaite and Jason Anastasi were promoted to Distribution Technician I positions. Maniram Bhim was promoted from Distribution Technician I to a Support Specialist position responsible

for testing backflows. Keith Bostwick was promoted from Equipment Operator to Senior Distribution Technician Lead to fill the vacancy left by John Dow.

Vern Kivel and Jeff Metheney cross trained in the Inspection Section. Luis Fabres cross trained on the valve truck and in the Response and Accountability sections. Louis Long, Jason Anastasi and Tim Annis cross trained in the Response and Accountability sections as well. Keith Bostwick completed Track I Leadership Development training through Reliable U.

James Wirtz completed his training as a Nationally Certified Equipment Trainer. Three Distribution Technicians completed the first in house nationally certified "Equipment Operator's Training Program" that provides qualified WDIS personnel with hands-on training and certification using a rubber tired backhoe. Successful candidates will be eligible for future positions as an Equipment Operator.

WDIS Operations Section

The Water Distribution Operations section is made up of three critical areas: Water Accountability, Water Inspection and Water Response. Each plays a unique role in the reliable and accurate delivery of water to OUC customers.

The Water Accountability Section experienced another successful year by accomplishing key operational objectives. Water Distribution's pledge to account and accurately measure water resulted in the continuation of our meter exchange initiative. This program identifies aging water meters in residential and commercial applications and through OUC staff and contractors,

The Water Distribution Operations section is made up of three critical areas

exchanges them with new, more accurate meters. In 2008, Water Accountability staff exchanged and processed 7,065 water meters.

Another key accomplishment for Accountability staff this year was addressing Florida Statue 633.082. This regulatory requirement directs public utilities to perform an annual inspection on all public fire hydrants. To achieve this, a new position was created to compliment the existing hydrant repair truck already in place. A new Support Specialist Hydrant Audit position was established and staffed. In 2008, this combined effort resulted in the audit of 4,404 hydrants and the repair of 631 hydrants. Our Technicians also painted 187 hydrants. OUC is committed to providing dependable resources aimed at fire protection and public safety.

The Water Inspection section continued to meet operational objectives this year by successfully overseeing the installation of new pipeline capital

The Water Response section continued its leak detection program to identify non-revenue water

projects, and inspecting pipeline adjustments that were required as part of road widening improvements. Inspectors were responsible for the completion of 155 projects this year at a total cost of \$5,472,676.49. The Cross Connection Control section continued its efforts on backflow testing and site inspections. In 2008, OUC staff and contractors tested 13,926 backflow devices and conducted 1,720 cross connection inspections. The revenue generated through backflow testing for 2008 was \$476,578.00.

The Water Response section continued its leak detection program to identify non-revenue water. Response personnel surveyed 117,728 feet of distribution mains resulting in 10 confirmed leaks and repairs. The valve audit truck successfully audited 3,158 valves this year. Response personnel answered 5,156 calls for service this year. Fire hydrant flow testing revenue increased to \$27,125.00 for 2008.



Water Distribution Division (continued)

Fire lines installed:	New Pipe Installed (Ln. Ft.):	Pipe Removed From Service (Ln. Ft.):	Fire Hydrant Installations:	New Meter Installations:
4''- 29	2''- 18,652	2''- 32,491	192	5/8''- 59
6''- 45	4''- 14,600	3''- 576		1''- 42
8''- 34	6''- 58,957	4''- 1,352		1.5''- 38
10''- 8	8''- 59,381	6''- 4,888		2''- 69
12''- 1	10''- 10,719	8''- 4,341		3''- 4
	12''- 20,836	10''- 1,300		4''- 4
	16''- 2,490	12''- 7,550		8''- 10
	20''- 18,367	16''- 27		10''- 2
	24''- 2,430	20''- 734		

Domestic New Meter Sets:

44

Reclaim Meter Sets:

89



Water Distribution Division (continued)

Water Accountability Section Activities

Meter Shop	2000	2001	2002	2003	2004	2005	2006	2007	2008
Check meters for dead and read	915	825	679	1,214	1,371	1,383	2,216	1,065	431
Clean out meter and read	4,277	2,703	1,844	2,812	3,110	3,575	4,896	4,361	6,868
Clock meter for leaks	587	739	872	823	523	444	701	553	637
Dial exchanges	322	120	70	150	107	118	235	102	128
Installed meter riser	1,514	596	567	493	341	467	382	463	327
Installed special irrigation meters	-	-	-	-	100	361	265	281	80
AMR repair	-	21	20	28	24	15	4	16	27
Meters field tested	427	199	74	110	76	144	445	365	583
Meter removal	232	-	148	210	458	393	335	192	128
Meter shop tested	3,958	1,995	1,086	97	294	4	147	0	55
Raise meter box to grade	3,370	2,330	2,320	2,032	1,853	1,735	1,686	4,361	2,004
Hydrant - Audits	1,885	1,995	1,518	2,165	1,146	689	1,102	3,422	4,404
Hydrant - Painted	1,305	664	2,595	2,500	2,157	162	202	334	187
Hydrant - Repair	-	120	139	200	361	230	720	777	597
Hydrant flow test	-	-	-	-	-	26	5	300	2
Repair meter leaks	786	668	823	781	623	657	666	565	469
Replace box and lid	2,047	2,573	2,352	2,571	2,170	2,825	3,885	3,164	3,227
Replace curb cock or coupling	762	523	441	351	367	415	372	422	405
AMR meter sets	-	-	6	31	22	13	0	0	3
Meter exchanges	-	-	2,761	3,446	4,700	9,312	8,775	7,022	6,751
Submeters	-	-	165	1,232	20	683	894	0	0
Reclaimed meter sets	-	-	-	396	1,028	1,028	315	383	134
Totals	22,387	16,071	18,480	21,642	20,851	23,464	28,248	28,148	27,447



Water Distribution Division (continued)

Distribution Crews Activities

Maintenance Tasks	2000	2001	2002	2003	2004	2005	2006	2007	2008
Adjust hydrants	41	5	-	-	-	-	-	-	1
Adjust mains or services	59	877	122	54	83	8	5	98	169
Adjust meter box to grade	213	270	353	432	437	480	614	464	414
Adjust valve boxes	116	66	77	57	260	411	51	22	72
Exercise valves	334	186	68	186	712	1,069	165	4	2
Installed meter riser	30	65	52	91	71	83	48	47	101
Locate valves	146	55	14	138	784	1,216	193	7	11
Meter exchanges	46	50	76	109	297	491	358	494	362
Preventative maintenance calls	34	4	5	-	-	5	-	-	-
Relocate meter	113	140	251	197	222	186	192	156	85
Renewed mains	18	193	118	97	56	37	2	89	253
Renewed services	589	614	718	892	1,171	738	634	1,152	693
Repair hydrants	431	4	2	-	5	3	16	5	2
Repair mains	119	77	108	87	109	94	105	96	230
Repair services	112	75	75	61	65	80	73	54	70
Repair valves	32	24	34	35	23	21	7	30	48
Replace box/lid	35	37	55	119	209	139	124	272	225
Replace curb cock/coupling	157	104	81	109	64	12	8	4	5
Replace hydrant	131	49	78	73	98	59	65	79	54
Replace/install valves	125	100	25	231	188	184	177	146	293
Totals	2,881	2,995	2,312	2,968	4,854	5,316	2,837	3,219	3,089



Water Distribution Division (continued)

Inspection/Response Section Activities

Maintenance Tasks	2000	2001	2002	2003	2004	2005	2006	2007	2008
Adjust mains or services	125	178	139	118	58	127	12	111	18
Adjust meter box to grade	534	573	735	596	372	441	443	392	401
Adjust valve boxes	140	114	105	124	194	127	223	292	192
Clean out meter box and read	1,112	1,061	1,614	1,245	1,008	1,097	1,097	1,400	1,754
Customer trouble	156	632	695	481	631	665	792	861	839
Customer water quality inquiry	205	103	105	64	42	30	37	14	5
Cut temporarily	398	410	411	316	361	351	314	459	506
Cut-on/off	457	448	407	372	336	350	396	424	494
Exercise valves	520	467	427	346	42	323	1,455	2,062	1,512
Flow test	191	103	102	62	104	139	240	122	128
Flush mains	185	97	112	78	55	65	194	490	639
Installed meter riser	141	542	604	477	421	360	325	341	393
Irrigation meter sets	805	442	393	269	254	16	36	14	13
Line locates for contractor/utility	9,809	11,025	14,067	15,023	18,328	20,829	22,502	25,085	20,120
Locate valves	1,600	1,920	1,977	1,202	1,103	858	2,845	4,314	3,645
Low pressure calls	137	110	90	60	58	51	58	66	57
Meter exchanges	312	439	773	825	686	759	730	692	799
Meter removal	285	188	223	184	74	20	20	40	50
Meter set	1,061	449	581	258	170	192	174	85	423
PM calls	671	1,632	2,351	1,696	1,351	924	977	1,161	903
Relocate meter	77	163	143	135	63	28	27	22	23
Renew services	159	255	348	243	507	167	147	127	103
Repair customer's service	267	293	321	294	246	298	228	239	239
Repair hydrants	22	16	41	13	15	9	6	10	15
Repair mains	60	78	81	77	66	67	71	43	46
Repair meter leaks	276	312	331	320	272	458	556	564	506
Repair servies	469	582	533	412	246	490	371	406	325
Repair valves	32	57	57	29	401	12	23	24	20
Replace box/lid	475	648	766	716	710	169	212	351	484
Replace curb cock or coupling	860	856	997	727	595	597	556	632	552
Replace port cap	35	34	43	28	28	2	12	11	7
Reset lids	275	256	308	198	160	169	162	58	80
Backflow prevention tests	1,983	1,604	3,968	4,473	4,201	4,034	5,461	11,095	13,926
Cross connection inspections	1,147	940	2,116	1,522	2,108	-	606	1,255	1,720
Valve Audit	-	-	-	-	-	-	2,036	3,239	3,158
Totals	24,981	27,027	35,964	32,983	35,266	34,055	45,350	58,508	56,103

Water Distribution Division (continued)

Summary of Pipe in Service

Water Transmission / Distribution System Pipe Size Summary

Pipe Size (in)	Pipe Material (Note 2)	Pipe In Service As Of: (Note 1):				Net Gain (Loss) (Note 3)	
		Sep 30, 2007		Sep 30, 2008		All Activities	Abandoned
		Miles	%	Miles	%	Miles	Miles
2 and less	Galv or Unk	149.23	8.67%	149.06	8.56%	(0.17)	0.61
2 and less	PVC	69.46	4.04%	71.65	4.11%	2.18	0.17
3	All	1.93	0.11%	1.92	0.11%	(0.01)	0.00
4	All	161.23	9.37%	162.27	9.32%	1.04	0.03
6	All	448.65	26.08%	451.15	25.90%	2.50	0.46
8	All	393.97	22.90%	401.40	23.05%	7.43	0.11
10	All	59.84	3.48%	64.80	3.72%	4.97	0.01
12	All	245.86	14.29%	245.95	14.12%	0.09	0.80
14	All	2.26	0.13%	2.26	0.13%	0.01	0.00
16	All	106.03	6.16%	107.89	6.19%	1.86	0.15
18	All	1.20	0.07%	1.20	0.07%	0.00	0.00
20	All	66.30	3.85%	67.41	3.87%	1.11	1.01
24	All	9.80	0.57%	10.03	0.58%	0.23	0.00
30	All	2.74	0.16%	2.82	0.16%	0.08	0.00
36	All	1.74	0.10%	1.70	0.10%	(0.04)	0.00
42	All	0.05	0.00%	0.05	0.00%	0.00	0.00
48	All	0.06	0.00%	0.09	0.01%	0.03	0.00
Totals		1,720.36	100.00%	1,741.66	100.00%	21.30	3.36

Calculated average pipe diameter in OUC transmission/distribution system as of Sep 30, 2007: 8.104 in.
Calculated average pipe diameter in OUC transmission/distribution system as of Sep 30, 2008: 8.116 in.

Note 1: Pipe In Service is based on information contained in the GIS database as of the stated date. It excludes abandoned pipe.

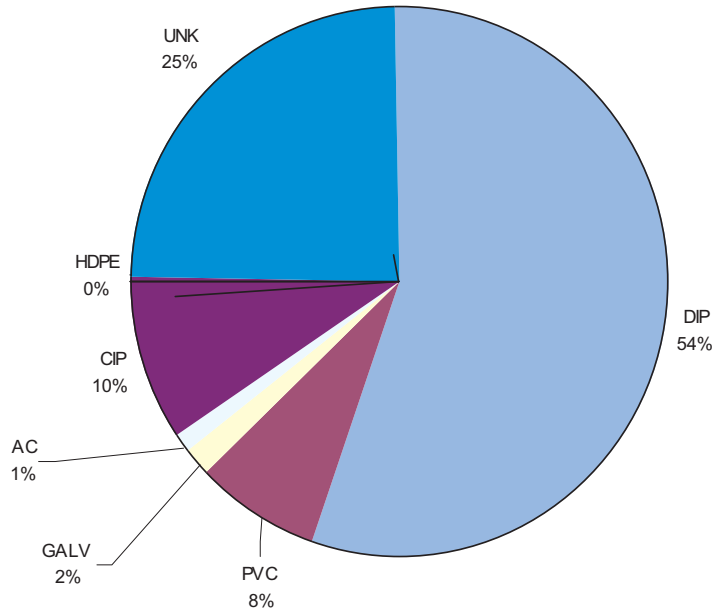
Note 2: Pipe Material is based on information contained in the GIS database as of the stated date. Pipe materials include ductile iron, cast iron, PVC, galvanized (Galv), asbestos cement, high density polyethylene, and unknown (Unk). Pipe material is summarized in Appendix 1, Figure 1.

Note 3: Net Gain (Loss) is calculated by subtracting the Pipe In Service as of Sep 30, 2006 from the Pipe In Service as of Sep 30, 2007. The gain or loss in pipe length is dependent on several activities that occurred during the year, including: installation of new pipe (gain), removal of pipe that is not in service (loss), abandonment of pipe that is not in service (loss), corrections that are made to the GIS database as a result of new information collected during the year (gain or loss). Abandoned pipe is pipe that is not in service, and is left in the ground instead of removing it.

This section contains a wide range of 2008 performance data from all three Divisions within the Water Business Unit: Water Production Division, Water Distribution Division and Water Engineering & Technical Services Division.

Figure 1

2008 Pipe Material Percentages



2008 Total Miles of Pipe Abandoned

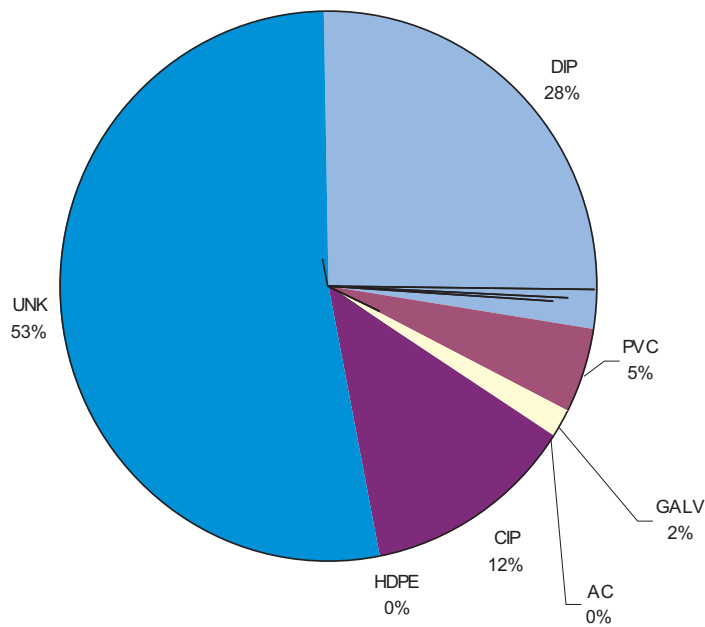


Figure 2

Water Technical Services Section Projects

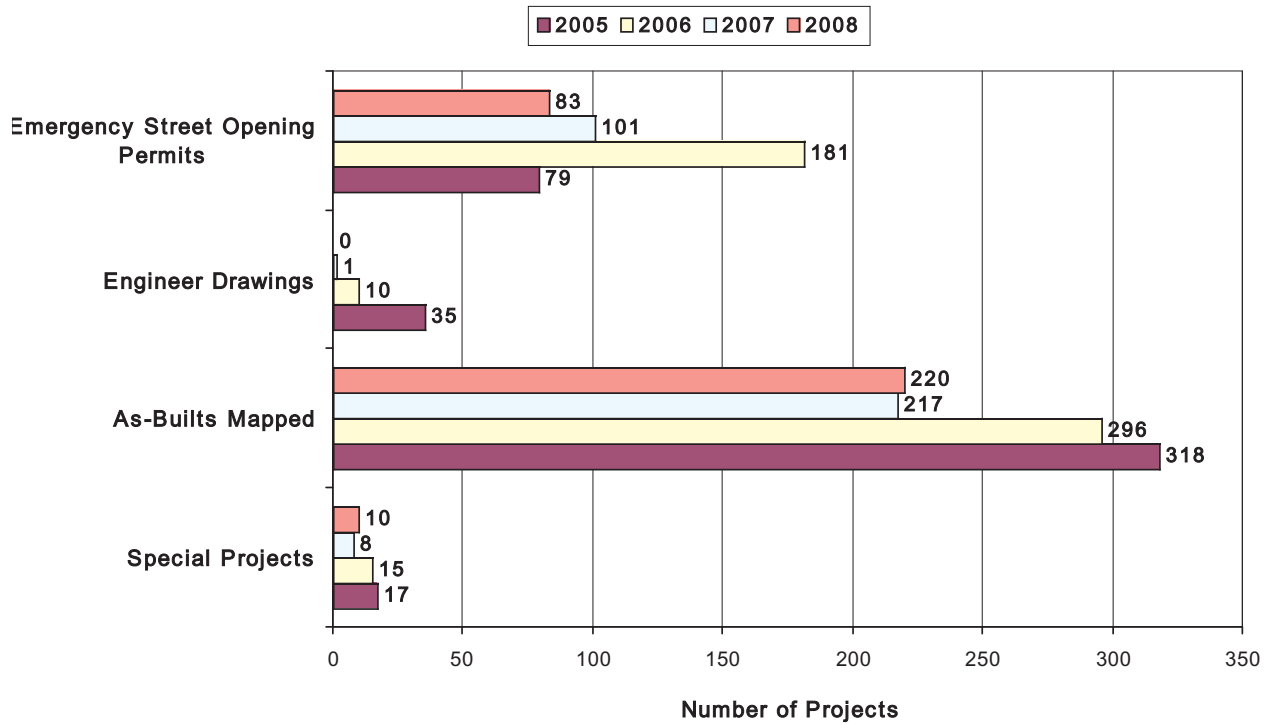


Figure 3

Water Engineering Section
Total Value of Estimated Projects

■ Inside City ■ Outside City

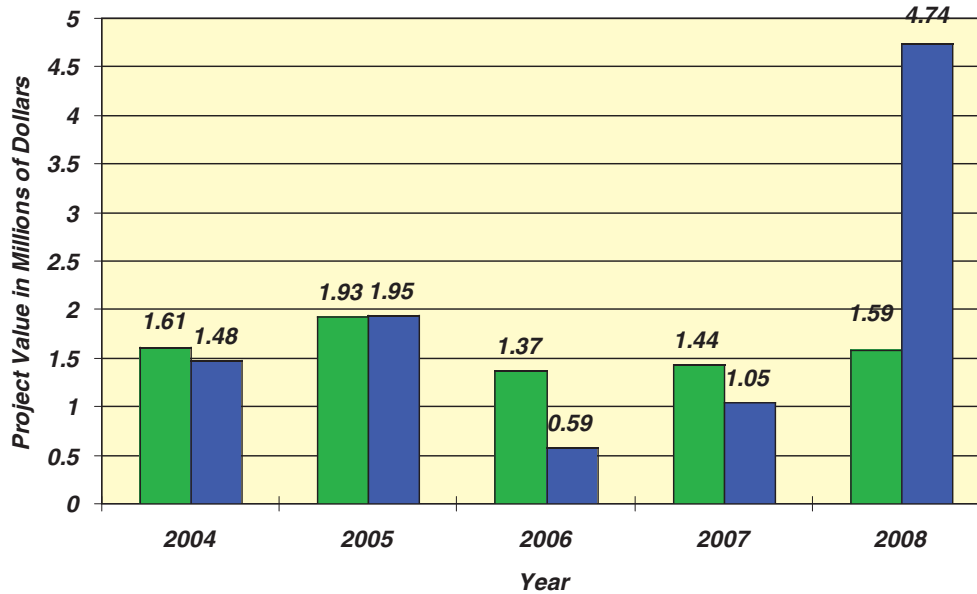


Figure 4

Water Engineering Section
Total Number of Water Construction Projects

■ Inside City ■ Outside City

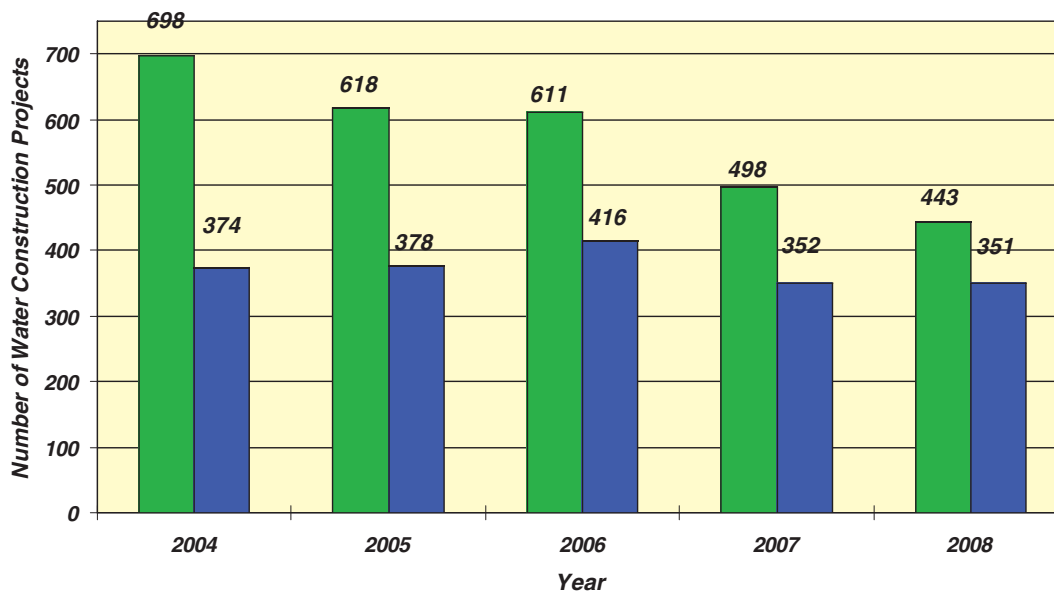


Figure 5

Water Business Unit
Breakout of Capital Improvements Funding Sources

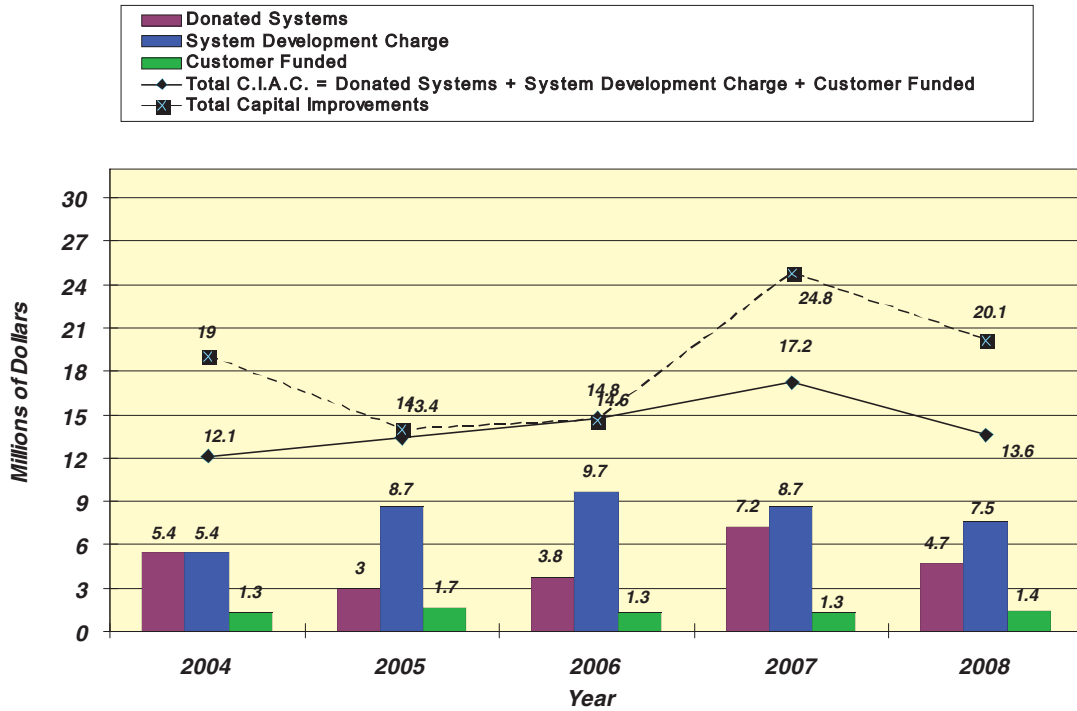


Figure 6

Water Business Unit
Capital Improvements Spending History

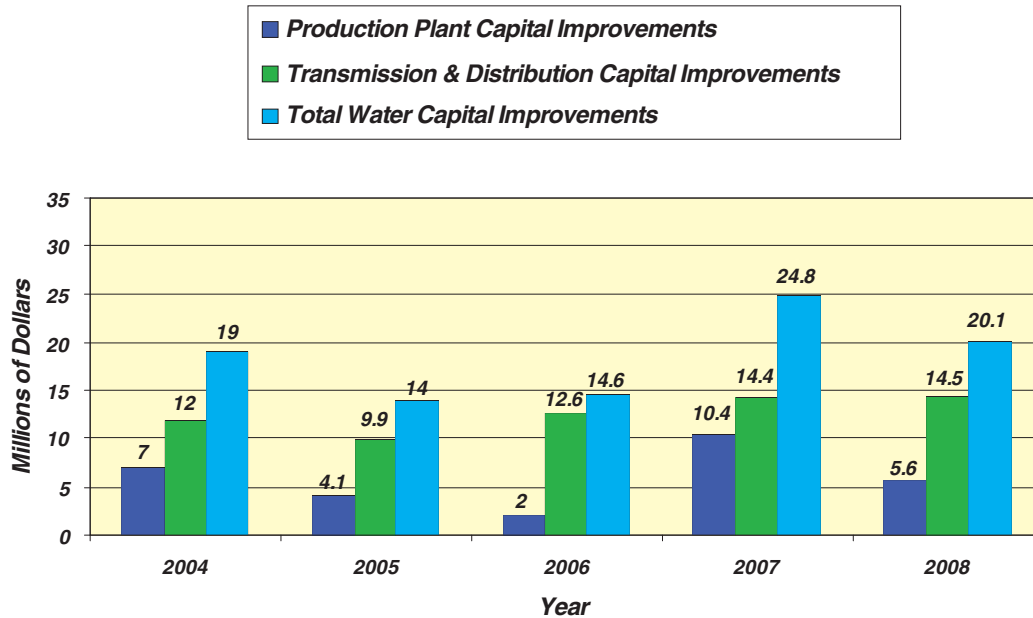


Figure 7

Total Number of Chemical Analyses for Outside Clients and for OUC Drinking Water Compliance

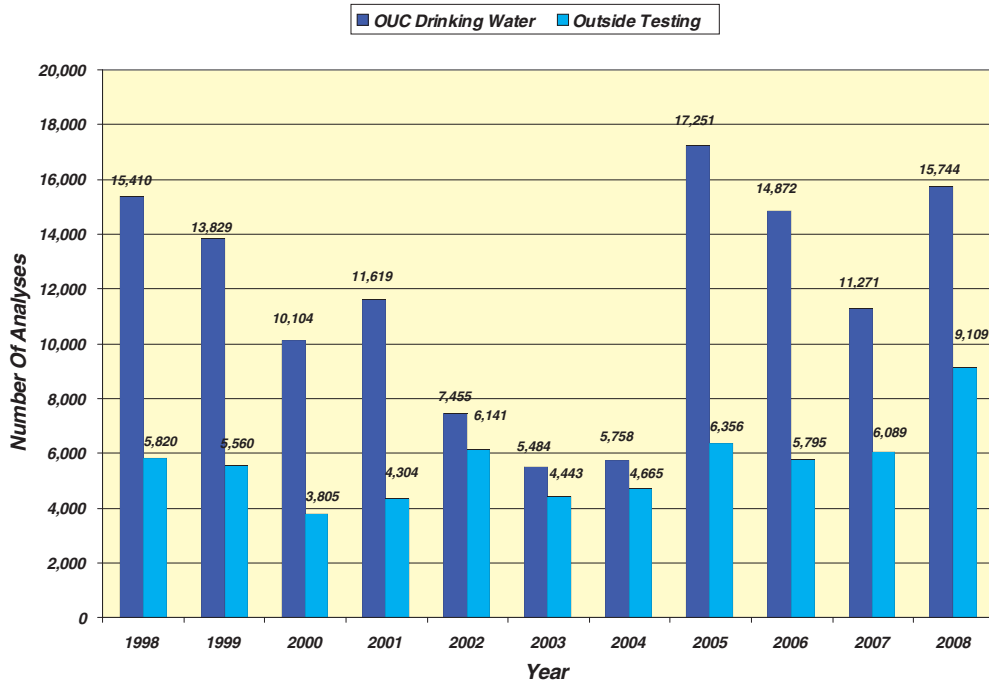


Figure 8

Total Number of Bacteriological Analyses Performed 1998 - 2008

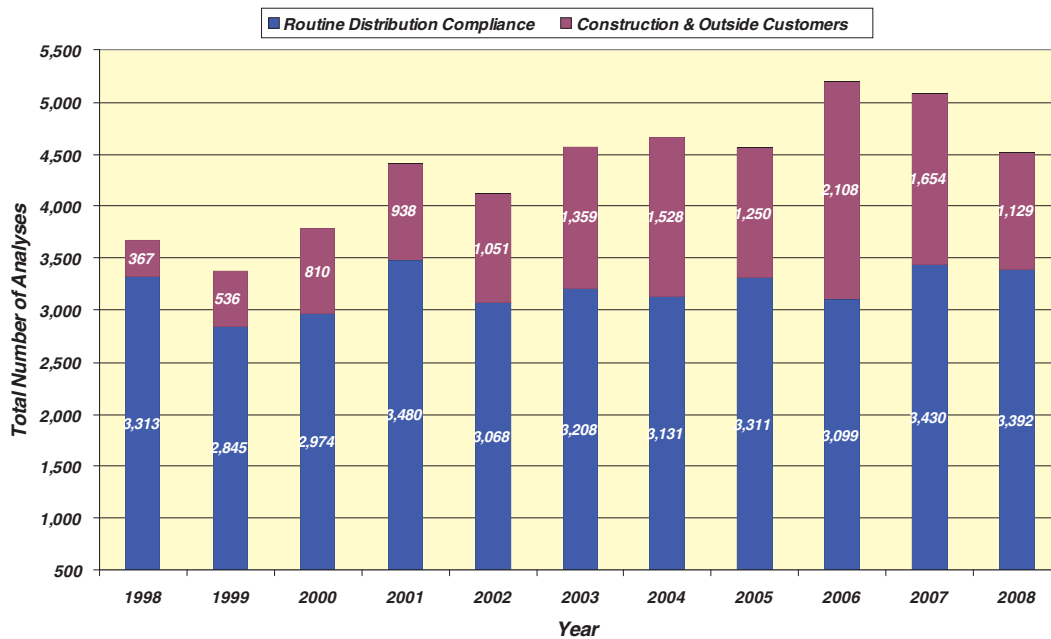


Figure 9

OUC Total Well Capacity and Pumping Rate
From 1980 Through 2008

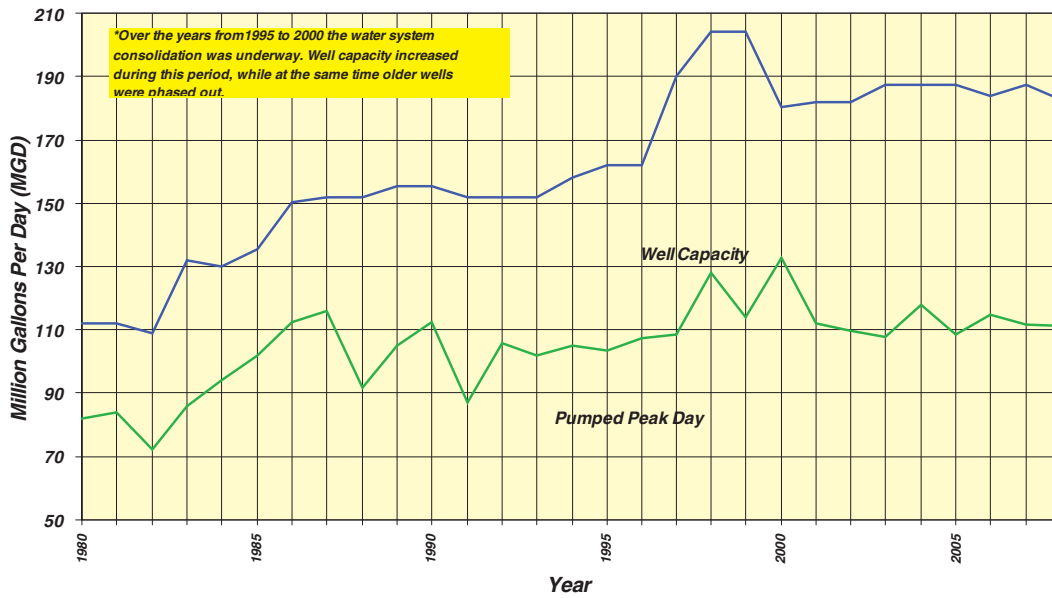


Figure 10

High Service Pump Capacity and Peak Pumping Rate
From 1980 Through 2008

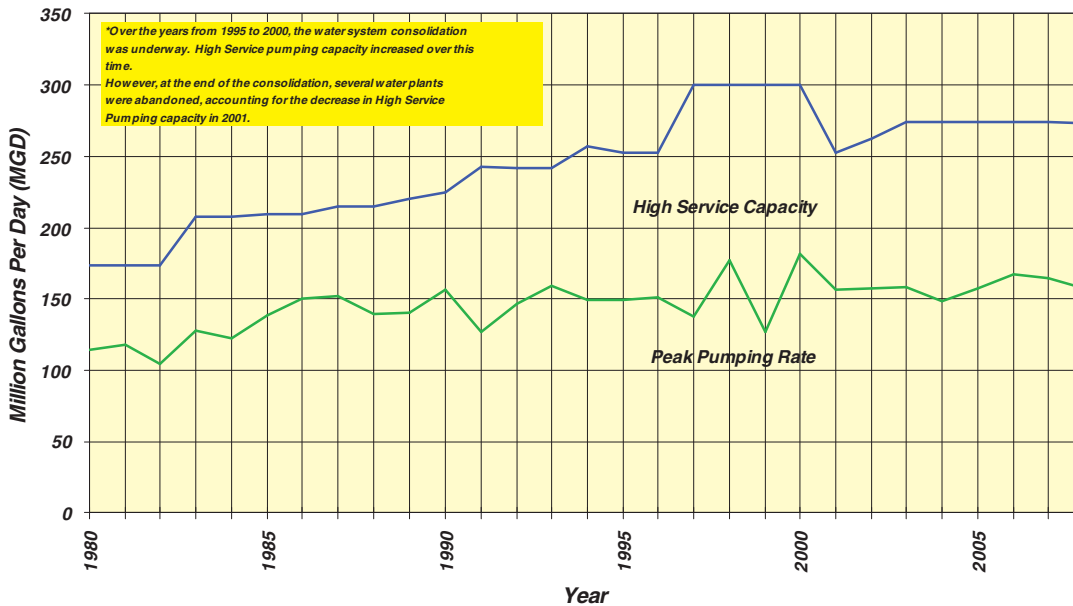


Figure 11

Water Production Division
Power Cost in Cents Per 1,000 Gallons

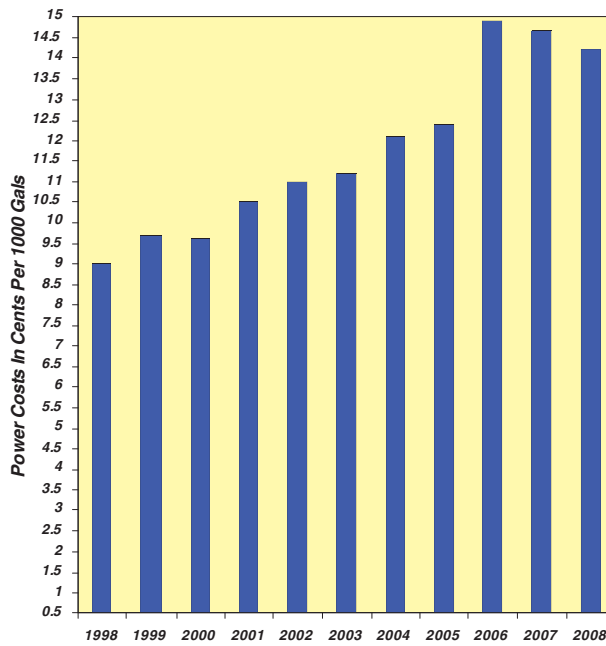


Figure 12

Water Production Division
Gallons Pumped Per kWh

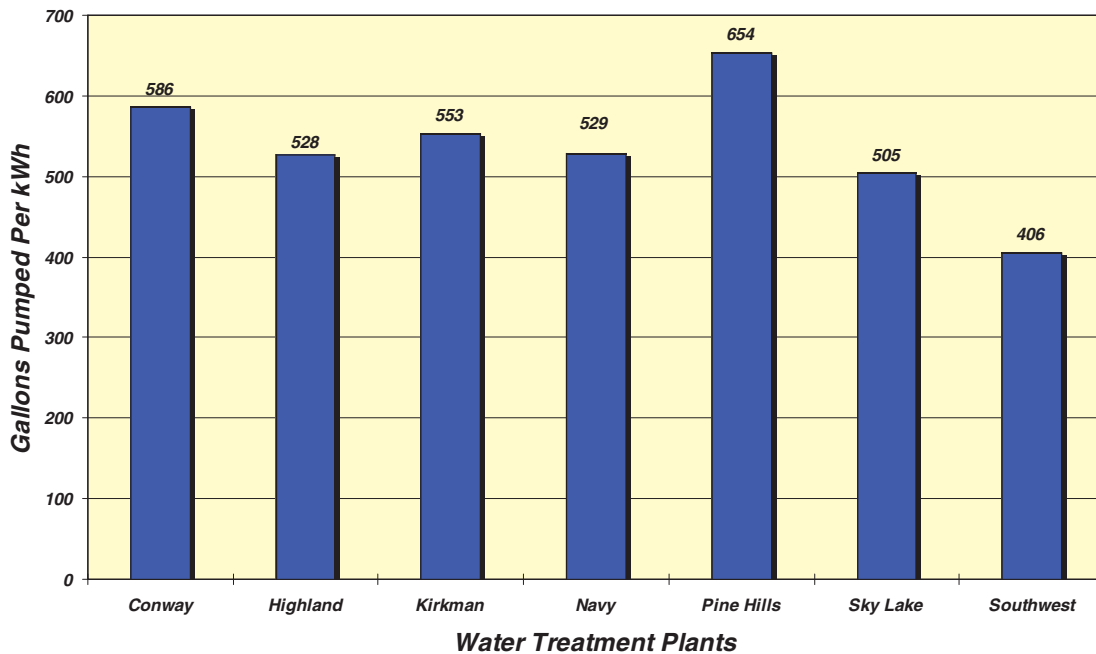


Figure 13
Total Water Pumped by Plant

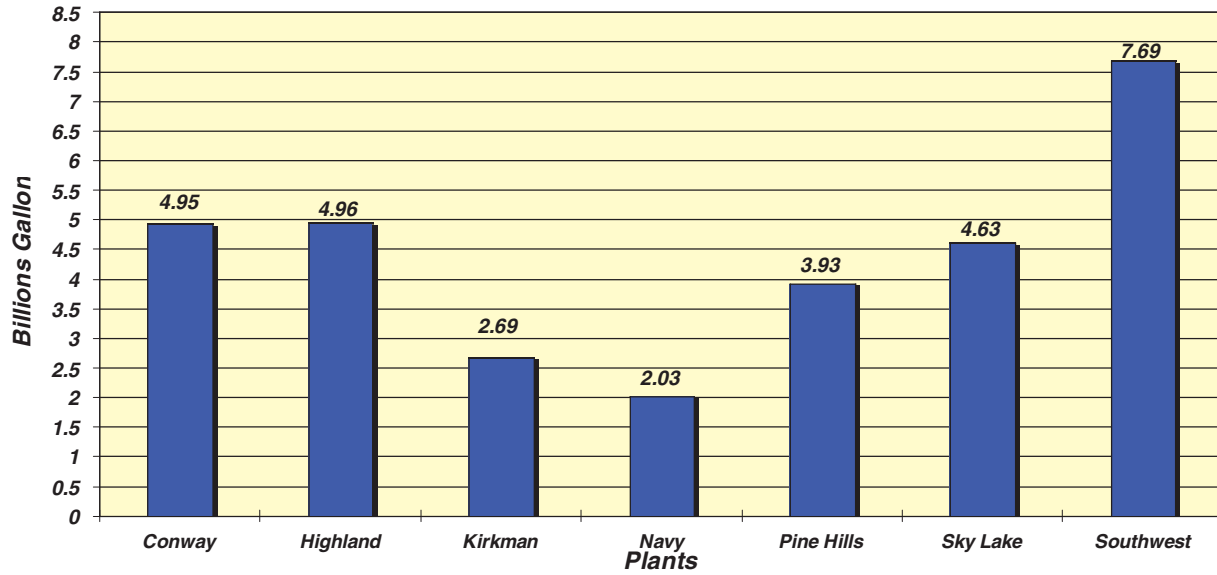


Figure 14
Average Day Vs. System Peak Day Pumped by Plant

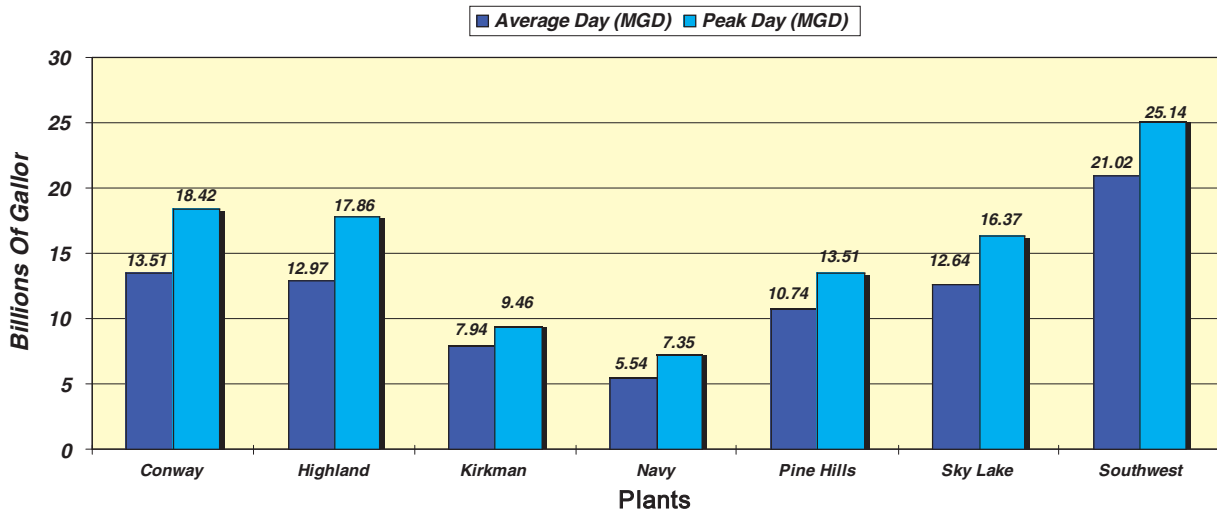


Figure 15

Aquifer Level Versus Rainfall 1998-2008

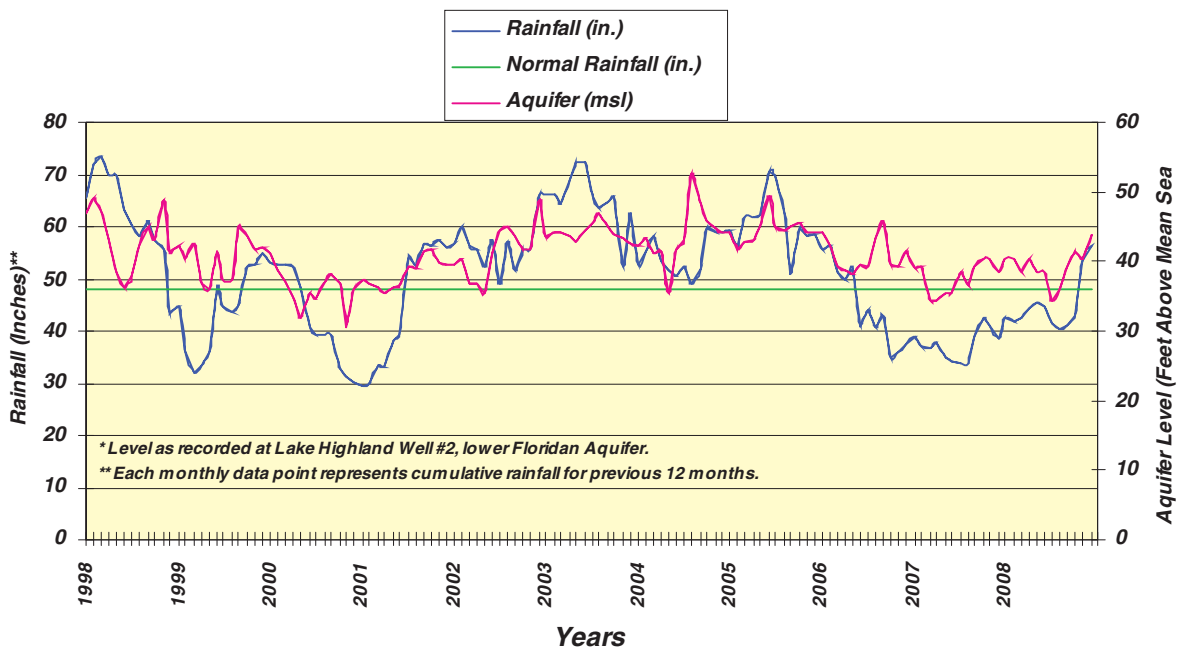


Figure 16

New Water Service Connections

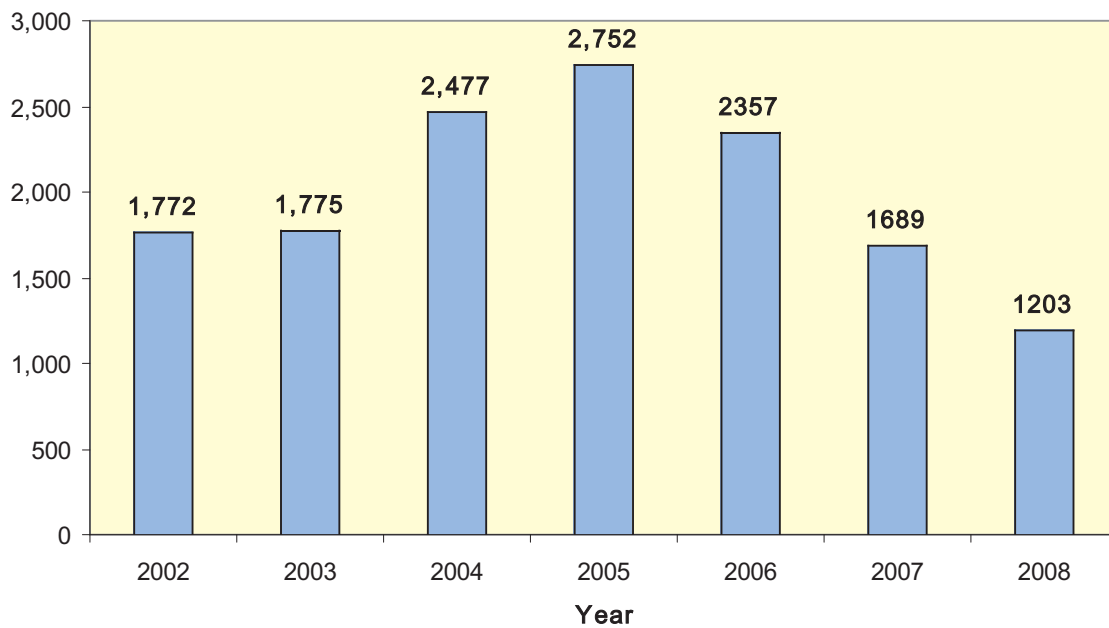


Figure 17
Water Distribution Crew
Water Mains Installed

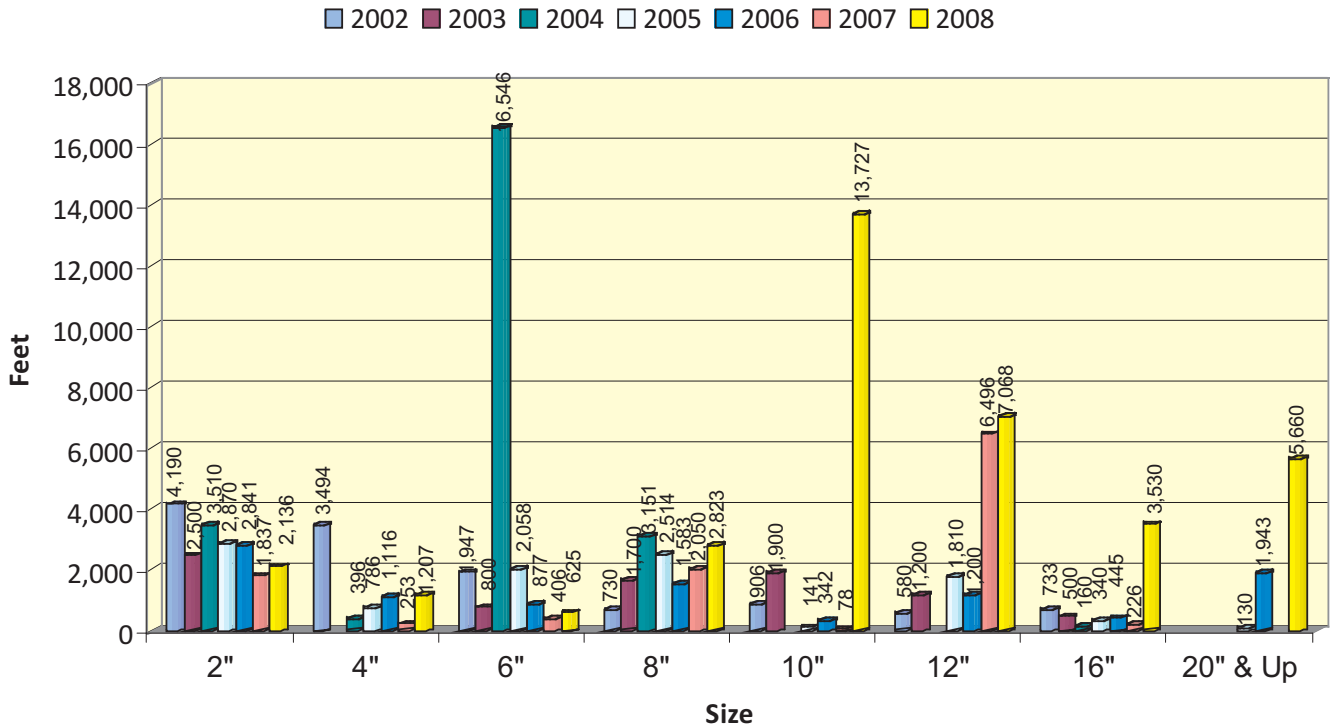


Figure 18
Water Distribution Section
Water Mains Contractor Installed

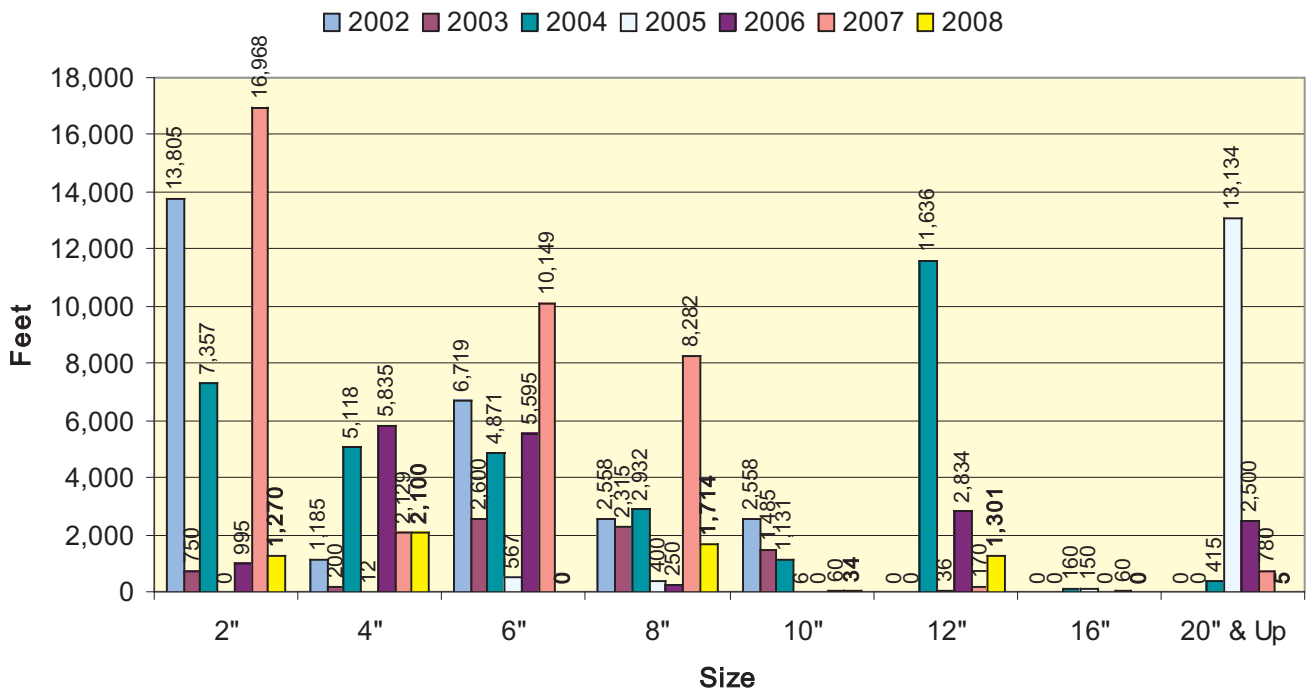


Figure 19

**Water Construction Section
Number of Fire Services Installed**

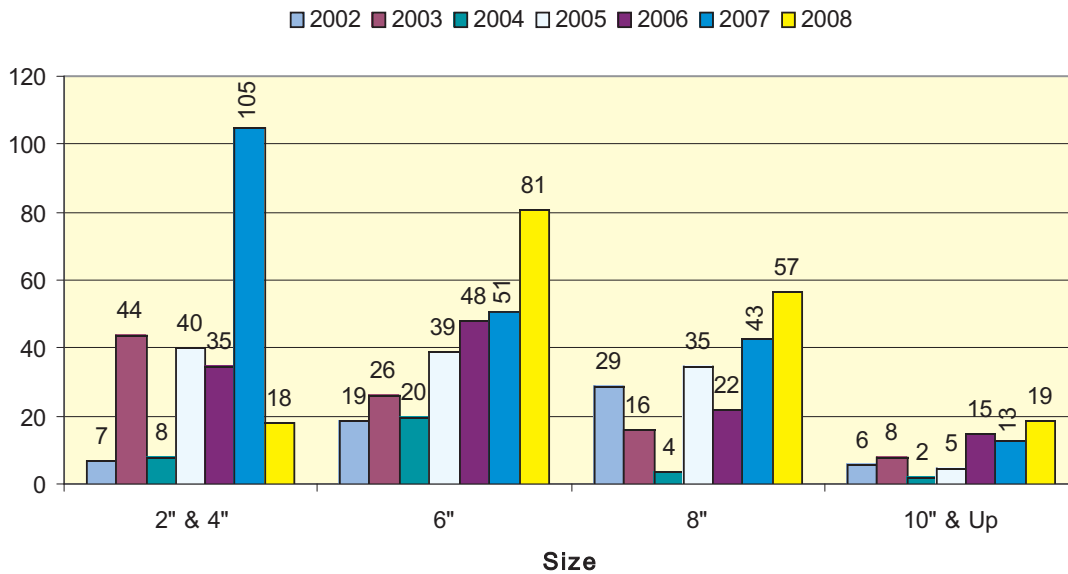


Figure 20

**Water Distribution Section
Water Mains Developer Installed**

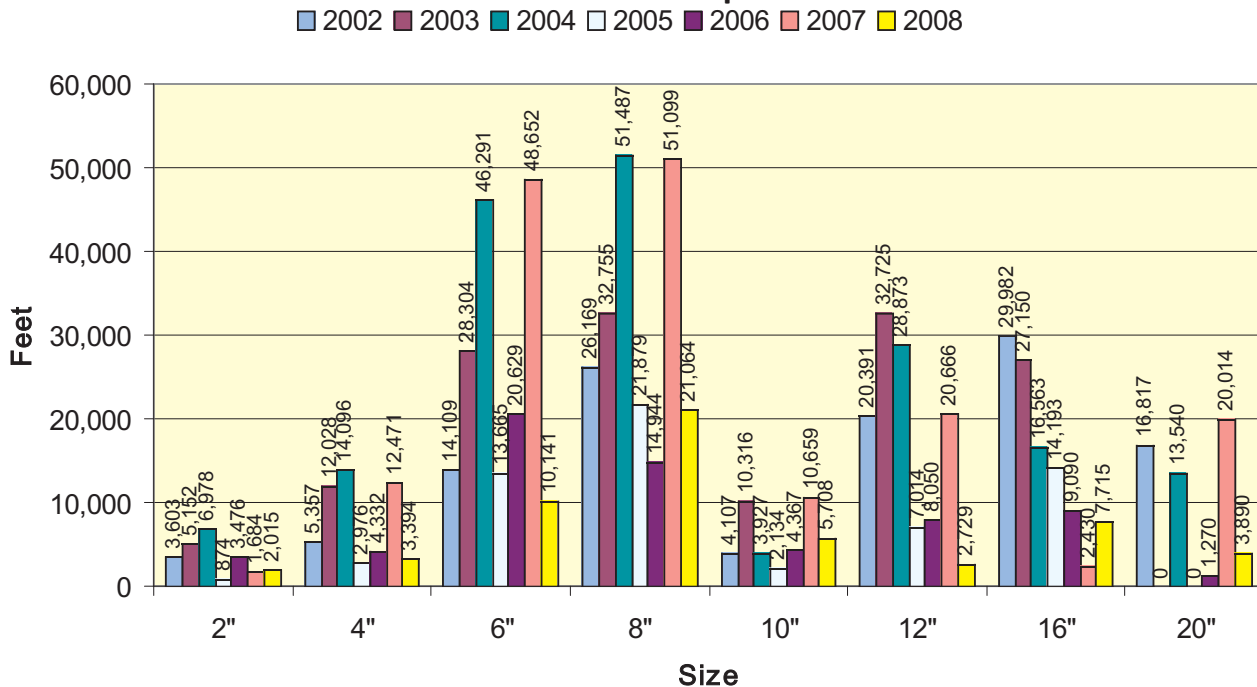


Figure 21

Water Distribution O&M Expenses

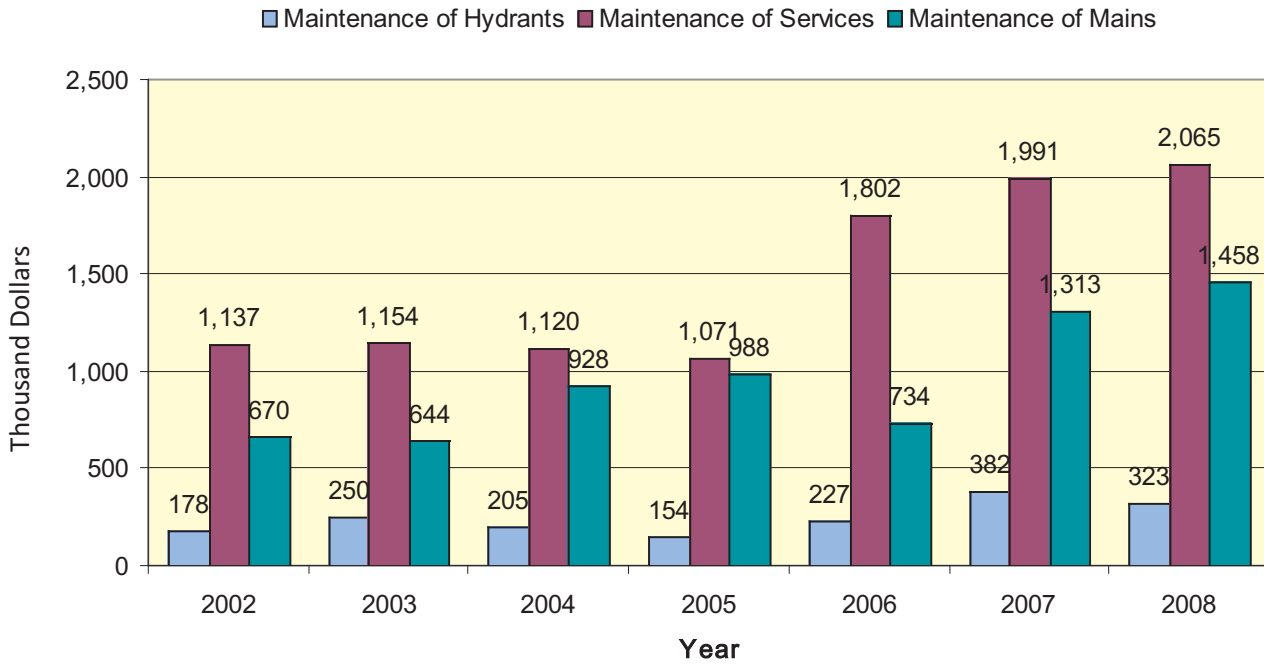


Figure 22

Water Services Installed by Size

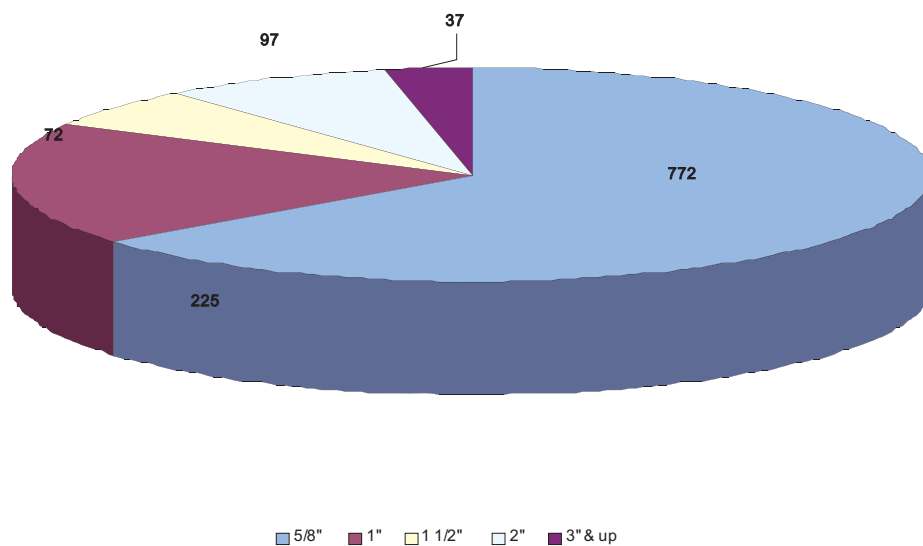


Figure 23

Water Rate Schedule

Effective October 1, 2008

Monthly Rate For Customers Inside City Limits

Service Charge <small>(includes no consumption)</small>			Dual Range Meters	
Meter Size	Single Family		Meter Size	Regular Service Amount
	Regular Service Amount	Irrigation Service Amount		
5/8"	\$ 6.50	\$ 4.50	4" x 1 1/2"	\$ 72.94
1"	\$ 9.13	\$ 7.13	4" x 2"	\$ 78.41
1 1/2"	\$ 13.50	\$ 11.50	6" x 2"	\$ 144.03
2"	\$ 18.97	\$ 16.97	8" x 2"	\$ 231.53
3"	\$ 35.38	\$ 33.38	10" x 2"	\$ 351.85
4"	\$ 59.44	\$ 57.44	Submetered	
6"	\$ 125.06	\$ 123.06	Meter Size	Regular Service Amount
8"	\$ 212.56	\$ 210.56		
Larger Sizes	\$ 352.88	\$ 330.88	All sizes	\$ 5.20

Volume Charge (per 1,000 gallons)

All Residential Single Family and all other 5/8" meters:

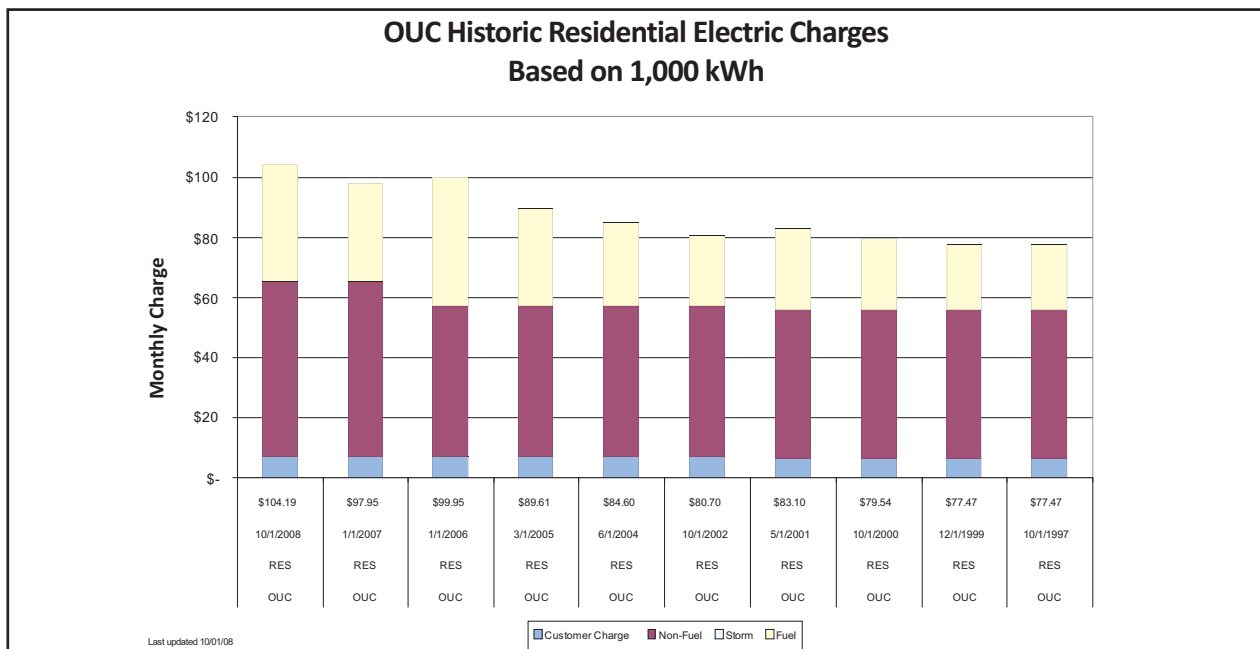
Potable Water		Irrigation Water	
First 3,000 gallons consumed	\$ 0.634	First 19,000 gallons consumed	\$ 1,589
Next 4,000 gallons consumed	1.077	Next 11,000 gallons consumed	2,832
Next 12,000 gallons consumed	1.589	All consumption over 30,000 gallons	5,300
Next 11,000 gallons consumed	2,832		
All consumption over 30,000 gallons	5,300		

For Commercial Potable Water Meters 1" and greater:
All consumption \$ 1,340

For Commercial Irrigation Meters 1" and greater:

Block Sizes (000)	Commercial Irrigation Blocks (Acres)										Volume Charge
	Up to 0.49	0.50 to 0.99	1 to 1.49	1.5 to 1.99	2 to 3.99	4 to 12.99	13 to 24.99	25 to 43.99	44 & Over		
Block 1 First	34	67	101	135	269	874	1,681	2,959	4,690	\$1,589	
Block 2 Next	34	67	101	135	269	874	1,681	2,959	4,690	\$2,832	
Block 3 Over	68	134	202	270	538	1,748	3,362	5,918	9,380	\$5,300	

Figure 24





Reliable Plaza at 100 West Anderson St
Orlando, FL 32801
Phone : 407.423.9100
Fax: 407.236.9616
www.ouc.com