



2007 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 eight 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 90 million gallons of water per day 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,

“(Water) is treated using ozone and other processes that produce a high quality drinking water which we proudly call H2OUC.”

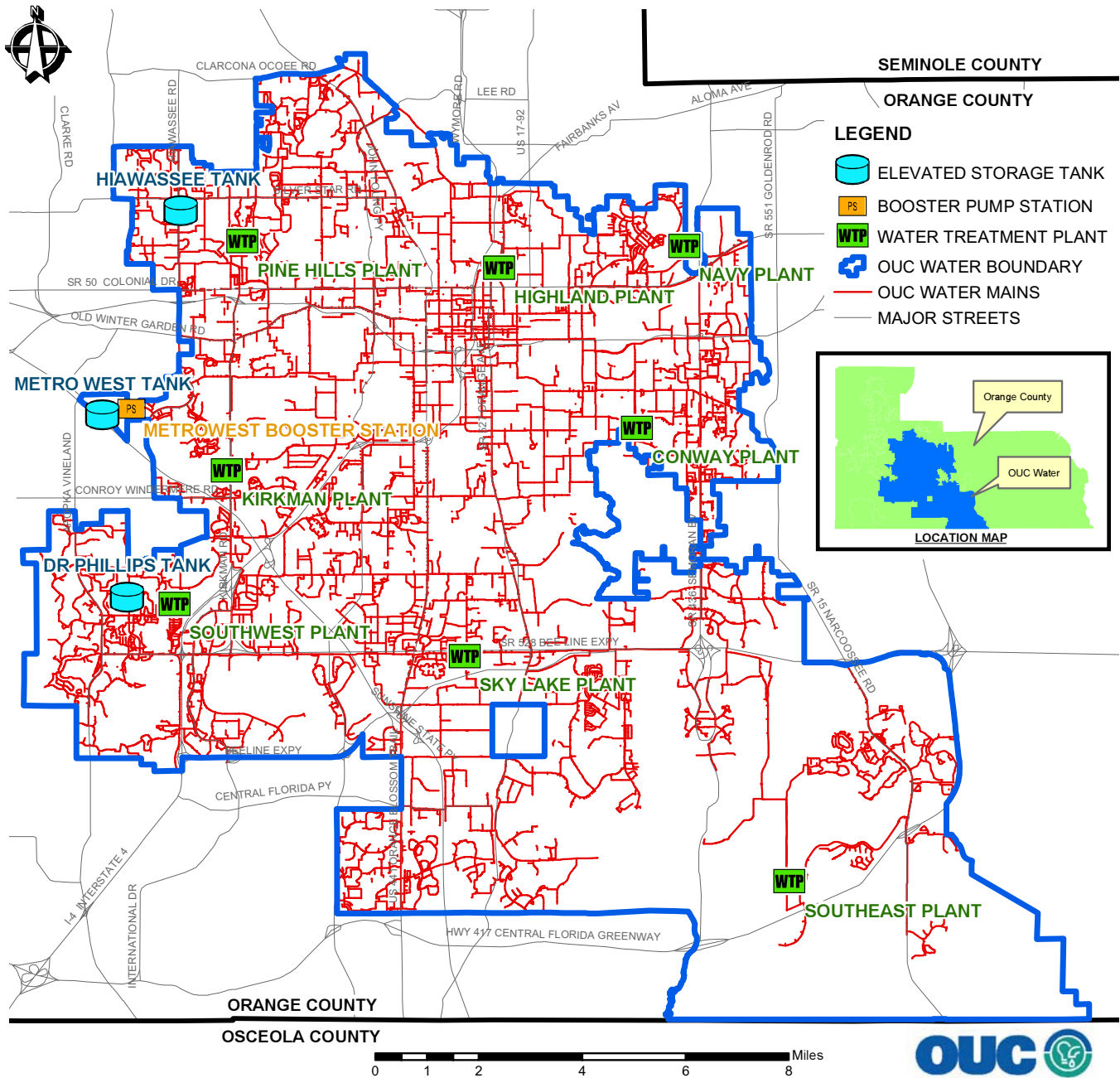
storage reservoirs, high service pumps, standby generators, buildings

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 transmission/distribution pipe network is comprised of 1,714 miles of pipe ranging in size from 2 to 48-inches, valves, 9,451 public fire hydrants, 137,306 active services, 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 eight 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 seven facilities can supply water to the area affected by the outage.

The net asset value of the water system is approximately \$349 million.

ORLANDO UTILITIES COMMISSION WATER SERVICE AREA



03/18/08

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.

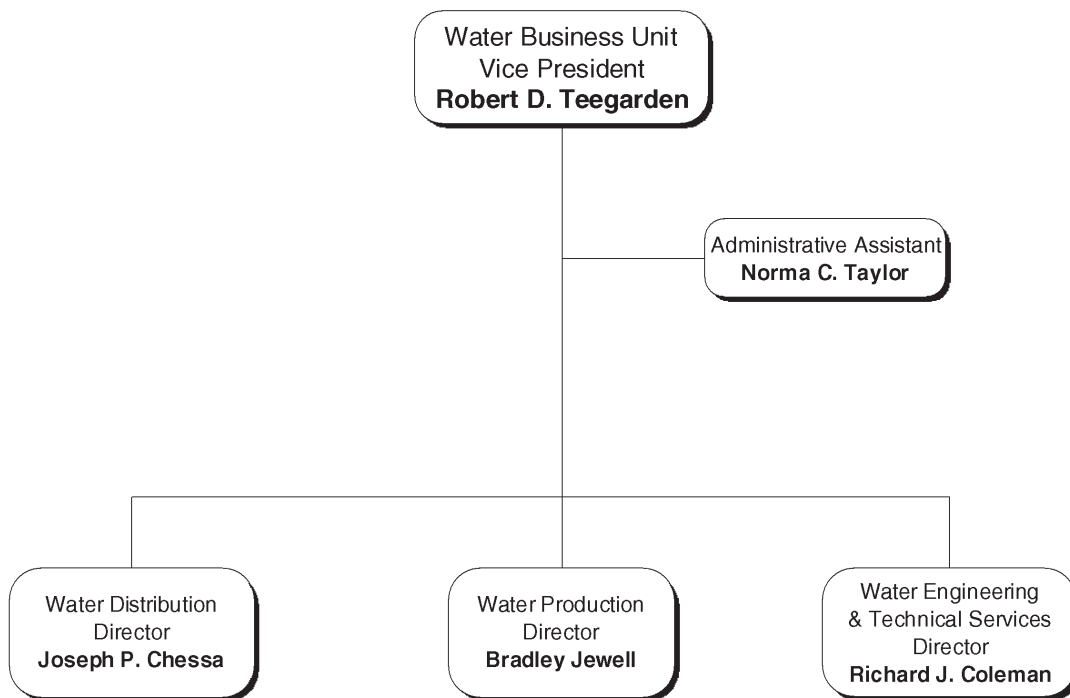
In 2007, the WBU participated with other OUC departments to develop strategic goals that will achieve OUC's vision for the future. The five goals, captured in the word "DREAM" are: **D**eliver operational excellence for our customers, **R**ally a team of exceptional employees, **E**nsure long-term competitiveness, **A**dvance community and regional relationships and **M**anage our business with actionable information.

"...dedicated to providing our customers with reliable, high-quality potable water service."

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 eight 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

(Dollars in thousands)	2007	2006	2002
Population Served	\$ 418,200	\$ 414,500	\$ 391,730
Employees			
Total Water Business Unit Funded Positions (Note 1)	123	124	122
Per 1,000 population	0.29	0.30	0.31
Note 2			
Consumption			
Total, billions of gallons treated water	32.95	32.74	30.92
Percent change from previous year	.64	3.02	-3.22
Total, billions of gallons water treated for sale	32.88	32.67	30.90
Total, billions of gallons unbilled	2.89	3.37	2.42
Percent unbilled, % of water treated for sale	8.79	10.32	7.83
Daily average, millions of gallons treated water	90.27	89.70	84.71
Per capita, gallons per day	216	216	216
Per mile of pipe, gallons per day	52,669	52,609	52,421
Per service, gallons per day	657	677	703
Services			
Active, metered	137,306	132,512	120,466
Percent change from previous year	3.62	1.37	1.06
Per 1,000 population	328	320	308
Per mile of pipe	80	78	75
Pipe			
Mile of	1,714		1,616
Population per mile of		243	242
Hydrants			
Number of	9,451	9,118	6,736
Per 1,000 population	23	22	17
Per mile of pipe	5.5	5.3	4.2
Income			
Water sales in millions	\$65.43	\$56.03	\$41.85
Per capita	\$156	\$135	\$107
Per mile of pipe	\$38,174	\$32,862	\$25,897
Per metered service	\$477	\$423	\$347
Per million gallons treated water	\$1,986	\$1,711	\$1,353
Capital Investment (annual, in millions)			
Production Plant	\$10.39	\$2.02	\$13.62
Transmission & Distribution	\$14.35	\$12.61	\$9.97
Contribution-in-Aid-of-Construction (CIAC)	\$17.16	\$14.82	\$8.18
Total Capital Investment	\$41.90	\$29.74	\$31.77
Percent CIAC	40.95	50.33	25.74
Operations and Maintenance Costs			
Total in millions	\$33.02	\$29.44	\$21.03
Per capita	\$79	\$72	\$54
Per mile of pipe	\$19,265	\$17,443	\$13,014
Per service	\$240	\$224	\$175
Per million gallons treated water	\$1,002	\$908	\$680

Note 1: Starting this year, 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. In previous reports, the number reported reflected the number of funded positions actually filled at the end of the fiscal year.

Note 2: The average service tenure, which was shown in past reports, is no longer reported because it does not reflect the overall experience of the many employees who join OUC with many years of applicable experience with other employers.



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 for compliance with OUC water system design and construction standards; developing design and construction standards; designing, estimating, permitting and managing water pipeline construction projects; master-planning expansion of the water distribution system; and coordinating water pipeline adjustments and replacements to accommodate roadway construction projects. The section is managed by Steve Lockington, P.E. and includes a project engineer, two associate engineers and a senior distribution designer.

The Water Resources Management section is responsible for long-range

planning for OUC's water supply needs; all aspects of consumptive use permits (CUPs); managing WBU capital plans; managing water plant capital projects; and maintaining the hydraulic model used to analyze the water system. The section is managed by Debbie Bradshaw, P.E. and includes a project engineer and an engineer.

The Water Technical Services section is responsible for maintaining water distribution system records using GIS; maintaining and updating the GIS system; providing drafting and records management support to WBU; and providing water distribution system information to internal and external customers. The section is managed by Ron Hawkins and includes a tech support administrator and three GIS technicians.

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 required to perform laboratory testing; and providing water quality testing support to internal and external customers. The section is managed by John Gray and includes two senior chemists, a chemist and administrative support.

The Division was reorganized this past year to dedicate a project engineer to special projects. Special projects undertaken this year include identification, and subsequent billing, of unbilled fire services, which will bring in over \$300,000 of additional revenue to WBU; negotiations with Orlando and Orange County to make OUC the retail provider of reclaimed water to OUC water customers; participation in research projects; and partnering with Orange County on future regional pipelines.

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

WETS Water Engineering Section

During 2007, approximately 5.8 miles of water main pipe were added to the OUC water distribution system. Over 9.7 miles of pipe was abandoned or removed from the OUC system, most of which was old 2 inch galvanized pipe.

Projects

Water Engineering's workload remained steady during 2007. Many of the projects were located in the southeast portion of the service area.

Numerous commercial/industrial projects were worked by Water Engineering this past year. Some of the major projects for 2007 included the Burnham Institute and the UCF Medical School in the Lake Nona South area and several projects in the Airport Distribution Center near Orlando International Airport. Other projects in the southeast area that are just in the beginning phases include the VA Hospital and the Nemours Children Hospital.

Activities

While the value of Water Engineering estimates increased from last year by approximately 25%, the number of estimates completed decreased by about 30%. Several projects that had been originally conceptualized as single family residential were redesigned as commercial or as mixed use with residential, commercial



Johnny Reynolds, Associate Engineer reviews plans for a new development planned for the OUC water service area.

and industrial components. Plans for single family and multi-family developments with more than 5600 units were reviewed by Water Engineering. This compares with approximately 6000 units in 2006. Nineteen inter-agency road projects were worked on during 2007. 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 SR 50 and Semoran Boulevard. All of these projects required a lot of effort by Water Engineering and Water Distribution staff to minimize impacts to the water distribution system. Another major project this year included the updating of the Manual of Construction Standards by Water

Engineering and Water Distribution staff. Water Engineering also implemented new procedures to do more of the review and design work electronically to help speed up the review and design process.

Staff

Ed Upchurch retired as Manager of Water Engineering after 34.5 years with OUC. Michael Muller (14.5 years) and Greg Taylor (5.5 years) also left OUC for other opportunities. Steve Lockington replaced Ed as Manager of Water Engineering and Matthew Tibbetts transferred from an Inspector in Water Distribution to a Senior Distribution Technician in Water Engineering. Johnny Reynolds and Matt Tibbetts both achieved 10 years in 2007

WETS Water Engineering Section (continued)

Water Engineering Section Projects

Single Family Individually Metered Projects	Number of Units
Baldwin Park Condos 355 and 356	27
Baldwin Park Condos Lot 615	21
Bellanona Grande Estates	27
Cypress Creek	204
Delaney Townhomes	7
Eagle Creek	135
Hartsden Park	16
Lucerne Terrace Condominiums	8
Pershing Point Place	6
Villagewalk	231
Waters Edge at Northlake Park	492
Winder Oaks Phase II	7
Total	1181

Multi-Family Master Metered Projects	Number of Units
Baldwin Park North Shore Condominiums	7
Clarion Hills Condominiums	184
Cypress Creek	738
East Park	148
Eunice Avenue Condos	177
Lake Nona Village 1 and 2	121
Marabella Point	224
Mercy Drive Affordable Condos	26
Millenia 300	329
Point Orlando	144
Sage Resort and Spa	260
South of Downtown Orlando	308
Star Tower Condominiums	186
Stonebridge Reserve	240
The Fountains at Millenia	376
Victoria Point Ventures Place	16
Total	3484

Inter-Agency Projects

Canadian Ct - International Dr to Tradeshow
City of Orlando Conway Road -Tradeport to Hoffner
City of Orlando E. Central Street
City of Orlando Grant Street
City of Orlando Robinson Street
City of Orlando Summerlin Ave Widening - South St to Anderson
FDOT International Dr and Kirkman Rd
FDOT Oakridge at Froida Turnpike
FDOT Orange Ave - Sandlake Rd to Locust
FDOT SR 528/US 441 to I-4
Orange County Crystal Lake Dr - Drainage Dupree & Coe
Orange County Crystal Lake - Grant to Curry Ford
Orange County Narcoosee Road-SR 417 to Osceola County
SR 15/600 Mills Ave
SR 408 Mercado, Yucatan, and Oxalis
SR 50 Good Homes to Pine Hills Road
SR 50 Semoran to SR417

Special Projects

Holden Heights Ph 3 Renewal & Replacement
Kirby Smith Road
Orlando International Airport Master Mtr 1&3

WETS Water Engineering Section (continued)

Water Engineering Section Projects (continued)

Commercial/Industrial Projects

1st Life Pregnancy Center	Elegeti Property 92 Hotel Rooms
5/3 Bank - Herndon	Ellmand Street Main Extension
600 Wilkinson LLP	Evans Replacement High School
ADP Surfaces	Farco Plastics Supply
AIPO Border Warehouse	Ferran Services and Contracting
AIPO Liberty Joint Venture	Ferris Office Building
Airport Distribution Center Conway Road	First Union Methodist Church
Airport Distribution Center Phase 2	Florida Concrete Office Building
Airport Fuel Enterprises	Florida Hospital - Reference Lab
Airport Warehouse 1 and 2	Full Deliverance Church of Jesus
Amscot Financial	GOAA BP 369 Airside 1
Amsouth Bank	Goldenrod Commerce Park
Andy's Ice House	Granikus Lot 2
Atlas Commerce Park	Grant Street Medical Complex
Attorney's Title	Hack Westside Plaza
Audubon Elementary School	Hansel Office Building
B & G Equipment and Supply	Harbor Square at Lake Cay
BaldwinPark Misc Reclaimed Meters	Harley Davidson Garage
BBJ Linen	Harygin Restaurant and Retail
Blue Water Express Car Wash	Heaven Plaza 1
Brenntag Mid South, Inc	Hilton Convention Center
Burger King	Holy Family Catholic Church
Burnham Institute	Homewood Suites
Cajun Paddy, Inc	Hughes Mega Center
Camelot Self Storage	IKEA
Chinatown Development	Iron Workers Local 808 Union
Church in the Son	ITIG Quick Mart
Church of God by Faith	Ivey Lane Commercial
City of Orlando Fire Station #15, #16, and #17	John Young Community Center Lot 5
College Park Commerce Center Building 7	Keiser College Adult Education Center
Conway Appliance Center	Kentucky Fried Chicken
Conway Breeze 390 Hotel Units	Lady Bird Academy
Crossroads Business Park Lot 1	Lake Gloria Office Park
Crown Point Buildings 5 & 6	Lake Nona Estates Community Center Lot 5
Cypress Creek High School	Lake Nona Village 1 and 2
Della Drive Office	Lee Middle School
Dellaggio PD Phase 1	Lee Vista Center
Denny's Restaurant	Lee Vista Industrial Center Building A
Dowden Road Extension	Lee Vista Lakeside
Doyle Office Building	Lee Vista Plaza
Dr. Medary Office Building	Legacy Point
Dr. Morales Medical Building	LGE Sports Modular Office
Drew Tina Commerce Center Buildings D and E	Liberty Beeline Lot 3

WETS Water Engineering Section (continued)

Water Engineering Section Projects (continued)

Commercial/Industrial Projects

Liberty Property Trust Lots 1,2 3, and 4	Regency Industrial Park Warehouse
Long Term Acute Care	Restaurant Depot
Lucerne Terrace Parking Deck	Robinson Building
Lyndol, Inc.	Robinswood Middle School
Lynx New Operation Base	Rosemont Center
McKinney Warehouses	Sanctuary of Praise Ministry
McRae Avenue Parking Garage - Florida Hospital	Sand Lake Medical Plaza
Memorial Middle School	Shoppes at Portofino
Metro Station Lot 2	Silver Star Shopping Center
Millenia Parcel 1-B	Social Security Administration
Millenia Parcel E - 7-Eleven Store	South of Downtown Orlando Phase I and II
Missionary Ventures International	Southgate Commerce Center
Mitsubishi Building Expansion	Southland Executive Park Phase 2
Moran Foods	Southland Logistice Services Inc.
Noah's Ark	Southpark Business Center
North Park Baptist Church	Southport Center
Oak Ridge Gas Staion	Southridge Commerce Park Building 12
Oceanair Seafood Restaurant	St. John Vianney Catholic Church
OEA Moog Hanger	Taco Bell
OOCEA Administration Building	Temple of Prayer Church
Orange Center	Thompson Pump
Orange County Fire Station #51	Turnstile Publishing Co
Orange County Juvenile Justice	U Pull and Pay
Orlando Federal Courthouse	U.S. Auto Wash
Orlando Regional Hospital - Turkey Lake Rd	UCF Medical College
Orlando South Park III Business Center	United World Electric
ORMC 6" Main Extension	USA Stor Away
OUC Administration Building	Valencia Community College - Allied Health
Palceski Office Building Unit 7	Valentine Business Center
Panda Express	Vera Avenue Facilities
Pentecostal Church of God	Village Center Retail E and F
Pine Castle Commerce Center	Wachovia - Moss Park
Pine Castle United Methodist Chrch	Walgreens
Pine Hills Boys and Girls Club	Wayne Densch YMCA
Plus 1	West Warehouse
Princeton-John Young Commerce Center	Westminster Care Delaney
Quick Connect Gas/Retail	Whole Foods
Ralph Poetsch Main Ext	Windemere Business Center
Redrock Canyon Grill	YLS Office Building

WETS Water Resources Management Section

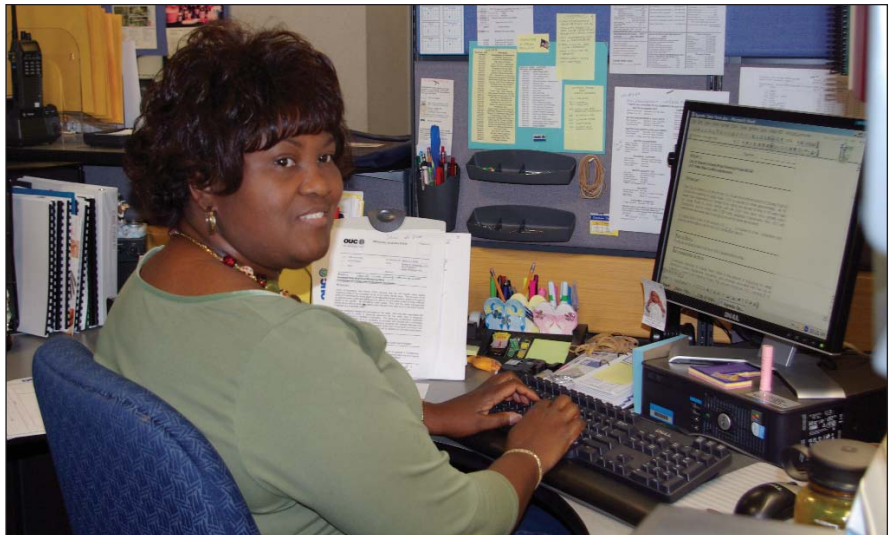
During 2007, the Water Resources Management section of WETS was very busy providing support to Water Production on treatment plant projects, participating in multiple alternative water supply investigations, and doing the things necessary for OUC to comply with our consumptive use permit (CUP). Following is a summary of activities for the section.

Treatment Plant Project

The Southwest Water Plant was the first OUC ozone plant. It uses compressed air as the oxygen source for ozone generation, whereas all the other plants use liquid oxygen. Water Resources Management retained CH2MHILL to analyze the feasibility of converting from compressed air to liquid oxygen. The results of the study, due in early FY2008, will determine if the conversion is feasible and cost-effective.

Alternative Water Supply

In 2007, Central Florida water utilities, at the urging of the St. Johns River Water Management District (SJRWMD), continued to pursue development of surface water supply sources as an alternative to traditional groundwater sources. Water Resources Management continued to



La'Tanya Woodson, Administrative Specialist, provides support to the WETS Division.

“The SJR/TCR Project is OUC’s best opportunity to secure water from an alternative water supply source.”

represent OUC in the preliminary design phase of the St. Johns River/Taylor Creek Reservoir (SJR/TCR) Project. This phase of the project, scheduled to be completed in FY2009, will determine if the project is feasible from the standpoints of yield, cost and environmental impact. A joint venture comprised of two large local engineering consultants, CH2MHILL and PB Water, is preparing the preliminary design report. Other utility participants in the project, in addition to OUC, include Orange County, Cocoa, Titusville, Toho Water Authority and East Central Florida Services, which is associated with Deseret Properties.

The SJR/TCR Project is viewed as OUC’s best opportunity to secure water from an alternative water supply source to meet future demands within



Chris Russell, Project Engineer, oversees CUP compliance for OUC.

the service area. It is located a relatively short distance from the OUC service area, and it can be cost-effectively integrated into the overall OUC water system. However, until the preliminary design phase of the project is completed, and an agreement is signed by all participants to construct, operate and maintain the new facilities, both of which are expected to occur in FY2009, there is no guarantee that the project will be implemented. Therefore, as "backups" to the SJR/TCR Project, Water Resources Management is representing OUC in the investigations of other alternative water supply projects in the region, including the Yankee Lake Project and the State Road 46 Project, both located in south Seminole County on the St. Johns River, and the Upper Kissimmee River Basin Project, located in north Osceola County.

Consumptive Use Permit

The Water Resources Management section spent most of its time during FY2007 dealing with consumptive use permit (CUP) matters. We participated in new rule-making undertaken by SJRWMD to limit future groundwater withdrawals and force water users to rely on alternative water supply sources to meet future demands that occur after 2013. OUC, together with other Central Florida water utilities, was successful in persuading SJRWMD to include provisions in the new rule that are favorable to water utilities.

We also spent a great deal of time performing activities that were required to comply with our CUP, which was issued by SJRWMD in May 2004. The following paragraphs summarize CUP compliance activities

undertaken by Water Resources Management in 2007.

OUC entered into an agreement with the City of Orlando by which OUC will contribute money to pay for a share of the City's Eastern Regional Reclaimed Water Distribution System, a pipe that will convey reclaimed water from the City's Iron Bridge Water Reclamation Facility to the southeast part of OUC's water service area. OUC's cost share, which is \$17.5 million, is based on the quantity of reclaimed water that the City will supply to OUC water customers so that OUC can comply with CUP conditions, and reduce our future reliance on groundwater. We also completed reclaimed water utilization reports that are required to be submitted to the SJRWMD under the CUP.

We completed a financial analysis for Project RENEW, a regional reclaimed water project. The financial analysis, coupled with the engineering study completed the previous year, allowed OUC to make a final decision on how to implement Project RENEW. To implement Project RENEW, a 17 mile long pipe will be built to connect the City of Orlando Water Conserv II Water Reclamation Facility, located on McLeod Rd., with the City of Apopka Water Reclamation Facility, located on Cleveland Ave. in south Apopka. A pump station will be built at the Water Conserv II facility to pump 8.55 million gallons per day (MGD) of reclaimed

WETS Water Resources Management Section (continued)

water to Apopka, where the City of Apopka will distribute it to their customers. In addition, modifications will be made to the City of Orlando wastewater collection system to move 9.2 MGD of wastewater from the Iron Bridge service area to the Water Conserv II Water Reclamation Facility, where it will be treated to reclaimed water quality standards. The remaining component of Project RENEW will be delivery of 0.65 MGD of reclaimed water to the City of Winter Garden by means of the existing Water Conserv II transmission pipeline, which will be accomplished by the City of Orlando on behalf of OUC. On January 3, 2007, SJRWMD approved OUC's plan for implementation of Project RENEW.

Water Resources Management completed installation of the water level measuring equipment for the 25 wetland/lake monitoring sites as required by the CUP. We also completed an addendum to the environmental monitoring baseline report to incorporate baseline data for the last five monitoring sites completed last year. Finally, we completed annual panoramic photos for the 25 monitoring sites in September, as required by the CUP.

We obtained an easement from Lake Nona Property Holdings to construct a multi-zone, deep monitoring well, which will be used to detect any movement of saline water into the

“ OUC can comply with CUP conditions, and reduce our future reliance on groundwater.”

aquifer in the southeast portion of the OUC water service area. Construction of the well will commence in FY2008. We also completed a water quality trend analysis report on March 30, 2007, and submitted it to SJRWMD to comply with CUP conditions. This report analyzes aquifer water quality from several existing lower Floridan aquifer wells that OUC is required to monitor under the CUP.

The Crooked Lake Region Mitigation Plan was completed in December 2006 and submitted to SJRWMD. The plan concludes that lake water levels in the Crooked Lake region in west Orange County are influenced more by rainfall than by groundwater pumpage. Groundwater modeling analyses performed as part of the plan showed that reduced groundwater pumpage

instituted by OUC at the Pine Hills Plant should improve aquifer water levels in the region.

We performed a 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.

Water Resources Management was successful in securing grant funds for some of the reclaimed water projects that we are required to implement under the CUP. Project RENEW is eligible for up to 20% funding from SJRWMD for construction. In addition, the South Florida Water Management District approved funding for FY 2008 for some of OUC's share of the City's Eastern Regional Reclaimed Water Distribution System. OUC was notified in September 2007 that \$3,491,300 was approved for construction completed in FY 2008. This amount is contingent on the amount of construction actually completed by the City during FY 2008, which will most likely be less than \$1 million.

Work commenced on the 5-year compliance report, which is due to SJRWMD on April 10, 2008. We have met with SJRWMD staff to obtain guidance from them on report format and contents, and plan to submit this very important report by the due date.

WETS Water Quality Laboratory Section

In 2007, the Water Quality Laboratory continued to perform its core mission of providing water quality testing services to help assure that OUC remains in compliance with the Safe Drinking Water Act. In addition, the Lab provided support to several divisions within OUC including Water Production, Power Generation and Environmental Affairs; provided services to customers outside OUC which yielded a significant revenue stream; and worked on special projects related to water quality testing.

Major Accomplishments in 2007

OUC submitted a standard monitoring plan to the Environmental Protection Agency (EPA) that identified sampling points in the water distribution system for the new Stage II Disinfection Byproducts rule. The monitoring plan was approved by EPA. Over the next year, the Lab will collect samples from the new sampling points, test them for trihalomethanes and haloacetic acids, and submit the data to EPA. This is a prelude to the new rule, which will change the way that trihalomethanes and haloacetic acids are reported to EPA. The new rule takes effect in 2012.



Donna McCue, Chemist, analyzes treated water produced at OUC's water plants to make sure it meets regulatory standards

The Lab provided contract water quality testing services to Boyle Engineering on a project that the firm worked on for a Central Florida client.

The Lab assisted Water Production in their efforts to provide superior water quality to customers living and working in the rapidly growing southeast portion of the service area. The Laboratory underwent an on-site assessment from The State Department of Health, Bureau of Laboratories, which is required every two years in order to maintain the Lab's certification. Continuing certification was granted to the Lab by the Bureau.

New Purchases

The Lab purchased a GC-MS (gas chromatography-mass spectrometry)

instrument. This instrument is used to analyze herbicides and insecticides, which is a requirement of the Florida Department of Environmental Protection (FDEP).

Revenues From Outside Sources

The Lab provides limited testing services for clients outside OUC, and collects revenues for these services. The Lab surpassed its goal of \$90,000.00 for this fiscal

year. Analytical services for outside clients earned a total of \$100,308.00 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 clients using our services include Boyle Engineering, Tri-Tech Laboratories, Action Ice, Environmental Reagent Services and Orange County Public Schools. The primary mission of the Lab is to provide testing services to help make sure that OUC water complies with Federal and State water quality standards. This goal is never compromised when the Lab considers opportunities to provide services to outside clients.

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 2007 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	<0.001	<0.001
Chromium	0.1	<0.001	<0.001
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	5.60	9.94
Nitrate	10	<0.05	<0.05
Nitrite	1.0	<0.05	<0.05
Fluoride	4	0.136	0.754
Turbidity in NTU	1.0	0.191	<0.10
Antimony	0.006	<0.001	<0.001
Beryllium	0.004	<0.001	<0.001
Nickel	0.100	<0.001	<0.001
Thallium	0.002	<0.0005	<0.0005
Organics			
Volatile Organics (21 Total)	**	All BDL	All BDL
Disinfection By-Products			
THMs (Total)	0.080	-	0.052 RAA
HAAs	0.060	-	0.021 RAA
Bromate	0.010	-	0.005 RAA
Radionuclides			
Gross Alpha in pCi/L	15.0	-	< 1.8
Radium 228* in pCi/L	5	-	<0.8*

SECONDARY CONSTITUENTS

	MCL	Raw Water	Treated Water
Chloride	250	9.15	14.4
Color in Pt-Co Units	15	4	1
Copper	1.3	<0.001	0.24
Corrosivity	+0.2 -0.2	-0.10	-0.13
Iron	0.3	0.06	0.012
Manganese	0.05	0.002	<0.001
Odor Threshold # Units	3.0	4.47	NOD
pH Field	6.5-8.5	7.75	7.68
Sulfate	250	10.6	12.9
Total Dissolved Solids	500	183	170
Silver	0.100	<0.001	<0.001
Zinc	5.0	0.004	0.003
Aluminum	0.200	0.007	0.007

ADDITIONAL TESTING NON-REGULATED CONSTITUENTS

Alkalinity as CaCO3	-	113	117
Ammonia	-	0.31	<0.10
Calcium as Ca	-	36.5	37.3
Carbon Dioxide	-	4.02	5.23
Conductivity in µs/cm	-	299	331
Dissolved Oxygen	-	0.34	10.2
Foaming Agent	-	-	<0.02
Hydrogen Sulfide	-	2.07	<0.4
Magnesium as Mg	-	8.20	8.09
Phosphate as P	-	<0.10	<0.10
Potassium as K	-	1.00	1.07
Silica	-	10.6	11.1
Total Hardness as CaCO3	-	125	126
Total Organic Carbon	-	1.90	1.70

Abbreviations & Notes:

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

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

Work activities related to preparation of engineering drawings decreased by 90%. This decrease was due to the Water Engineering section reviewing and creating more of their own engineering drawings using Auto CAD. As-built mapping projects decreased by 27%. There was also a 44% decrease in emergency street opening permits. These decreases

“Keeping the landbase on a separate server increases the performance of the GIS servers”

are attributed to a slow down in construction activity in OUC's water service area. Analysis of these activities is reflected in Appendix 1 of this report.

GIS Servers

In July the Water and Electric GIS areas consolidated their respective GIS servers into one GIS production server. The objective of this



Water Distribution crews rely on accurate maps prepared by the Technical Services Section to locate underground pipes.

consolidation was to reduce the number of processors which will in turn reduce the cost of Oracle licenses. The new server is a DELL 8-core PowerEdge 1950 rack-mounted server with two Quad-Core 2.66 GHz Xeon 5355 CPU's with 16 GB RAM each.

The production Landbase GIS server will reside on a separate DELL 2950 server. This will hold all landbase information and the aerial ortho-photography for several counties. New color ortho-photographs were purchased from the Orange County Property Appraiser and will be loaded on this server. Keeping the landbase on a separate server will increase the

performance of the GIS servers, which will benefit both Water and Electric GIS operations.

The test and disaster recovery (DR) servers will also undergo changes, again to reduce the cost of Oracle licenses. The test servers will host the Water, Electric and Landbase GIS databases. The Test Landbase database will only encompass the current aerial ortho-photography. The DR servers will have the same server configuration as the Water/Electric and Landbase GIS servers, except the Landbase server will have internal RAID5 disk drives. These servers will reside at the Orlando Operations Center (OOC).



Steve Grubbs, Associate Engineer works with Calvin Griffin, GIS Technician on a pipeline design project.

Hydrant Audit Software

New GIS software has been implemented in the Water Distribution area. The product is called InfraWater from iWater, Inc. This new software has been installed on laptops that will be used in two hydrant maintenance trucks. This software will allow hydrant maintenance personnel to edit GIS data associated with the hydrants they are auditing in the field. Since the passage of Senate Bill 1774, Chapter 2006-65 it is very important to track fire hydrants

to insure their performance and functionality. The law requires an annual inspection of both public and private hydrants. The Accountability Supervisor in the Water Distribution Division has a “view only” copy of the software and in the near future another editable copy of InfraWater will be purchased to collect flow data on hydrants where developer/customer requested flow tests have been performed.

Staffing

Calvin Griffin was hired February 12,

2007 as a GIS Tech II. Calvin was born in Miami, FL and received an associate's degree in drafting and computer assisted design (CAD) from Miami Dade Community College. Another GIS Tech II position was

“ InfraWater (software) will allow hydrant maintenance personnel to edit GIS data associated with the hydrants they are auditing in the field.”

created and approved for FY 2008. This position will assist more with the day to day editing and maintaining of the existing and proposed water distribution assets and will allow the current GIS Tech I to broaden work skills by taking on more responsibility and assignments.



WATER PRODUCTION DIVISION

Water Production (WPRO) produced 32.88 billion gallons of drinking water in Fiscal Year 2007. It was an increase of 210 million gallons over the prior year. Flows ranged from a high of 111.38 million gallons per day (MGD) in August, to a low of 71.07 MGD in December.

During the past year WPRO made several organizational changes to expand our team's strengths and implement OUC's strategic plan. Both Ron Dollar (Electrical and Instrumentation) and Mike Isabelle (Mechanical) were promoted to Supervisors. The Supervisor positions were created to provide overall direction to the maintenance areas. Lead positions were also added to each of the three sections (Electrical, Instrumentation and Mechanical). In

“ We are now concentrating more on larger projects; which are necessary due to the increasing age of our facilities.”

addition to being responsible for the daily activities of the group, the Leads also coordinate the larger projects.

Fred Thompson (Mechanical) and Chris Clark (Instrumentation) were promoted to Leads. The Electrical Lead position is expected to be filled in FY08. Restructuring has allowed WPRO to realign maintenance from plant specific to trade specific. We are now concentrating more on larger projects; which are necessary due to the increasing age of our facilities.

Several OUC employees reached service and tenure milestones. Dave Cantwell, Ron Dollar, Al Fort and Lee Marshall all achieved 20-year anniversaries. Two employees retired in 2007. Ed Lawson retired with 33-years of experience and Don Becker retired with 25-years of experience. Ed's duties included ordering materials and chemicals for the Division. These duties were re-assigned to the Supervisors and the Business Analyst, Marcia McBride.

Water Production Division (continued)

Dave Friess, Advanced Water Treatment Specialist, resigned after seven years of service, and returned to the private sector. Dave's leadership and direction during his tenure prepared WPRO for the day when he would not be readily available to answer any and all ozone questions. Water Production welcomed

“Supervisors are now able to obtain the status of equipment on their tablet computer in the field.”

two new employees during the year; Gigi Anacleto and Brad Fincher. Gigi is an Administrative Specialist II performing administrative duties as well as assisting the Supervisors with the implementation of iMaint, a Computerized Maintenance Management System (CMMS). Brad Fincher came over from Water Distribution with water plant experience and a C Operators License from a previous employer. Six employees sat for the State of Florida Drinking Water



Debbie Bradshaw, Manager of the Water Resources Management Section helps WPRO on major water plant projects.

Operator License exams and all passed. Bob Slattery and Mary Stevens both passed their Drinking Water Class A Operator License exam. In fact, Mary obtained the highest test score in the State. Eric Jones passed both the Drinking Water Class C and B Operator License exams. Vince Morters, Nowell Ediger and John Bolick, passed the Drinking Water Class C Operator License exams.

We continued to expand applications that run as a terminal server session. The Supervisory Control and Data Acquisition (SCADA) System used in our control center no longer relies upon

a dedicated computer, but may be accessed by any computer on the internal network that has access to the application. This application also allows remote operations of facilities away from the control room. Supervisors are now able to obtain the status of equipment on their tablet computer in the field.

SharePoint Implemented:

Robert Sumpter explored secure methods by which technicians could be updated with both WPRO and OUC information. Along with Marla Hartson (EMA) he was able to

Water Production Division (continued)

implement the free version of Microsoft SharePoint as a terminal server application. We are now using SharePoint to pass along general OUC information to people in the field, to schedule chemical and maintenance vendors, and to report equipment information and operational status. We are continuing to expand this tool to include maintenance information as well.

Security Audit

WPRO also continued to improve and expand security. A cyber security audit identified several areas that would benefit from new technology. Robert Sumpter and Marla Hartson (EMA) hosted an AWWA Webinar titled "Water Utility Security" in August. Information for this webinar was taken from training provided to all WPRO employees during the past year, making everyone more aware of the cyber threats that exist today. Chris Clark improved secure communications to our remote sites and implemented a standardized process for this. We also increased our physical security measures at all of the water plants.

Plant Repairs

Staffing shortages have caused WPRO to concentrate on repairs this year. Another shell failure occurred in a PCI-Wedeco ozone generator at the Lake Highland Water Treatment Plant

“(SCADA) now can be accessed by any computer on the internal network that has access to the application.”

(WTP). A team of technicians, lead by Jerry Farina, quickly got to work and had the unit repaired and on-line. Chemical feed pumps were replaced at both the Conway and Kirkman WTPs. A well maintenance program continues this year. Layne Atlantic was awarded a contract in December for this work. Mike Isabelle is coordinating the well maintenance program. The program started with service to well #5 (submersible well pump) at the Southwest WTP. Maintenance and repairs were absent on this well since it was installed over 12-years ago, and it was overdue for a complete overhaul. In addition, work was performed on Pine Hill's well #2. The technicians along with help from

Phil Jones (Master Technician - Fleet) also repaired the ozone diffuser header in Contactor #1 at Pine Hills. During the year the operators noticed a steady increase in off-gas ozone levels, and they wanted to increase ozone flow to the contactor. After inspection, several cracked welds were discovered in the header pipe. Consulting with Steve Harmon (Safety) and Phil we were able to develop a plan that allows us to safely enter a contactor and make welding repairs. The off-gas analyzers were also replaced. After the repairs were made all flow was routed through one contactor. Access to the Southeast WTP was changed also this year. In the past we entered from the west side through a series of cattle gates. With the expansion of the Lake Nona Development we are now able to access the plant from the east side, and avoid the series of cattle gates. The technicians were able to relocate the gate controller as well as the card access station. In the past WPRO has sent out blowers for repair. This year, we were able to save several thousand dollars per blower by making these repairs in-house. Bob Slattery and Benny Crawford took the initiative to plan a mechanical shop at the Sky Lake WTP for this purpose. We have started to outfit the shop accordingly, and will add equipment as necessary to assist with blower repairs.



WATER DISTRIBUTION DIVISION

Water Distribution Crews

Work continues with the poly replacement program. The goal of the program is to replace approximately 33,000 polybutylene service lines that were installed in the 1980's and that are a source of maintenance problems. To date, approximately 10,000 new copper services have been installed. A large majority of the work during 2007 was performed in the Bryn Mawr and Willow Bend Subdivisions where nearly 90% of the poly services have been replaced with copper service material. This on-going program has significantly reduced the number of emergency service line repairs and greatly enhanced service reliability to our customers.

This year the WDIS unit experienced two major main breaks with significant road damage. A 20" cast iron main broke at the intersection of South St. and Summerlin Ave. causing about \$110,500 in damage to the road, storm

drains, curbs, sidewalk and flooding one residence. The main was repaired by WDIS crews and put back in service in less than 10 hours. In addition, a 12" cast iron main broke on Robinson Street near the intersection of

Westmoreland Ave. that caused approximately \$34,000 in damage to the street. This main was repaired by WDIS crews and put back in service in less than 4 hours.

In summary, the crew section installed approximately 1.5 miles of pipe broken down as follows: 1837' of 2", 253' of 4", 406' of 6", 2050' of 8", 6496' of 12" and 226' of 16" and larger mains. We installed 15 fire hydrants; 74-2", 2-4", 6-6", 9-8" and 2-10" fire services; and 351- 1", 52-2", 8-4", 16-6", 8-8" and 8-12" service taps.

WDIS Crew Section 2007 Large Projects

- Replaced and relocated 850' of 16" ductile iron (D.I.) pipe as a result of the FDOT Turnpike/Oakridge Rd Interchange road and bridge widening project. Existing main would have been buried under the proposed overpass with +/- 20' of cover.
- Constructed 826' of 12" to complete a hydraulic loop closure on South Osceola Ave. from East Pine St. to East Jackson St.
- Installed 580' of 8" D.I. pipe to serve the Stafford Pointe subdivision and close a loop on Kirby Smith Rd.
- Replaced 150' of old 2" galvanized pipe with 2" Certi-lock PVC pipe on Telstar Ave.
- Replaced 60' of 8" asbestos cement pipe with 8" D.I. pipe on Tradeport Rd.
- Completed two poly renewal projects by replacing 826 blue poly services in the Peppermill and 107 blue poly services in the Grant Station Subdivisions.
- Arranged training on directional drill machine equipment with the manufacturers representative.

Water Distribution Division (continued)



Benny Florvil uses special equipment to locate leaks in underground water pipes.

WDIS continues to utilize temporary employees from two temp agencies to provide assistance to crews and in the meter shop. This practice has been very successful because it gives us an opportunity to observe the temp employees before offering them employment. with OUC. Several first-rate employees have been hired through the temporary agency program.

Other important events that occurred in 2007:

- Promotions: George Williams and Mike McGregor (Distribution Crew section Technician I positions) to Senior Distribution Response Technicians in the Operations section.
- Andrea Craft (Operations Backflow Tester) was promoted to WDIS Coordinator.

- WDIS hired five Distribution Technicians and two Administrative Specialists in 2007 to fill vacancies.

“Leak detection will play an even more important role in the future as more emphasis is placed on conservation.”

- James Applewhaite, Maniram Bhim, Leroy Williams, Tim Annis, Chrisnor Henry and Martin Scurry crosstrained in the Response and Inspection sections this year.

- Rhea Henry was welcomed to the team as an Administrative Specialist.

Water Distribution Operations

In 2007 the Water Distribution Operations section continued to build upon key areas that support the accurate measurement and delivery of high quality water to the doorstep of each customer and provide operational support to the OUC community.

The Response section implemented an aggressive approach towards leak detection by dedicating more resources to find and repair leaking pipes. Leak detection will play an even more important role in the future as more emphasis is placed on conservation. The Response section is participating in the OMS/CAD upgrade for mobile dispatch which is scheduled to go live in January of 2008.

As residential and commercial growth continued, the Inspection section

Water Distribution Division (continued)

remained busy overseeing the installation of new water infrastructure and insuring quality workmanship. In addition to inspecting new water systems, inspectors continued to support efforts for backflow testing. As reclaimed water service expands, the critical role of protecting our system from backflow is more important than ever and will continue to be monitored through cross connection control and annual testing. Meeting this regulatory requirement will remain as one of the most critical components of our operational priorities.

The Accountability section stayed on track in 2007 by continuing the meter exchange program. Utility Partners of America contracted with WDIS to change out 5,000 water meters. Accountability personnel exchanged 2,425 meters bringing the total to 7,425 exchanges. In addition, the section reinstated the large meter test program, resulting in the identification and field testing of 257 water meters ranging in sizes 3" and above. Fire hydrant audits increased due to legislation being passed that required publicly owned fire hydrants to be inspected annually. WDIS evaluated the available resources to effectively meet regulatory requirements and manage approximately 9,500 fire hydrants within OUC's distribution system. After working closely with

WETS and the California based vendor I Water Inc, WDIS implemented a second hydrant audit truck and continued with the purchase of Infra-Map software.

“As reclaimed water service expands, the critical role of protecting our system from backflow is more important than ever.”

The Operations section continued its employee training and development programs. The Response, Inspection and Accountability sections participated in OUC's Care and Work Place Violence classes along with Drug and Alcohol awareness classes. Other classes attended included the

Track 1 Leadership and Development course attended by Frank Gordon and Corey Johnson, plus Trenching and Excavation and Traffic Work Zone. Cross training in Water Distribution remained active throughout 2007. WDIS continues to promote cross training to develop and strengthen staff.

Other Significant Accomplishments:

New Staff:

The Operations Section welcomed Alba Agosto to the team as an Administrative Specialist.

Response Section:

The Response section implemented the 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 3,239 valves this year. Response personnel were dispatched to 5,156 service calls this year. In the Response section, George Williams and Mike Macgregor were promoted to Senior Distribution Technicians.

Water Distribution Division (continued)

Inspection Section:

The Inspection section continued to focus on cross connection control and backflow testing in 2007. Water Distribution's goal was to test 10,000 devices. In order to accomplish this task, WDIS contracted with Utility Partners of America (UPA) to test 4,000 backflow devices located primarily in the Lake Nona and Baldwin Park subdivisions. Our combined effort enabled OUC to successfully test 11,488 devices and make 55 repairs. The cross connection control section conducted 398 inspections and 811 field surveys. Construction Inspectors were responsible for 154 projects and inspected a total of 206,432 feet of new water main totaling \$7,541,050. Pipe removed from service equaled 53,259 feet. Inspection expenses for utilizing UPA totaled \$80,510.00. Other statistical information included:

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		

Accountability Section:

Accountability personnel successfully audited 3,422 fire hydrants in 2007 surpassing its original goal of 3000. Hydrants in need of repair totaled 757. During the repair and audit process crews painted 302 hydrants and tested 300. A program designed to identify and tag hydrants in both Orange County and City of Orlando ended with a total of 1,300 fire hydrants being completed. Other activities that occurred were the installation of 248 special irrigation meters by the Accountability staff and 1,358 new meter sets by Utility Partners of America. The section welcomed Nioker White as Senior Distribution Tech-Coordinator and Larry Bridle as a Support Specialist. Accountability expenses for utilizing UPA totaled \$287,038 with a savings of \$5,740 for timely invoice payment. Other statistical information included:

Domestic New Meter Sets:

Reclaim Meter Sets:

44

89

Water Distribution Division (continued)

Water Accountability Section Activities

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

Water Distribution Division (continued)

Distribution Crews Activities

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

Water Distribution Division (continued)

Inspection/Response Section Activities

Maintenance Tasks	2000	2001	2002	2003	2004	2005	2006	2007
Adjust mains or services	125	178	139	118	58	127	12	111
Adjust meter box to grade	534	573	735	596	372	441	443	392
Adjust valve boxes	140	114	105	124	194	127	223	292
Clean out meter box and read	1,112	1,061	1,614	1,245	1,008	1,097	1,097	1,400
Customer trouble	156	632	695	481	631	665	792	861
Customer water quality inquiry	205	103	105	64	42	30	37	14
Cut temporarily	398	410	411	316	361	351	314	459
Cut-on/off	457	448	407	372	336	350	396	424
Exercise valves	520	467	427	346	42	323	1,455	2,062
Flow test	191	103	102	62	104	139	240	122
Flush mains	185	97	112	78	55	65	194	490
Installed meter riser	141	542	604	477	421	360	325	341
Irrigation meter sets	805	442	393	269	254	16	36	14
Line locates for contractor/utility	9,809	11,025	14,067	15,023	18,328	20,829	22,502	25,085
Locate valves	1,600	1,920	1,977	1,202	1,103	858	2,845	4,314
Low pressure calls	137	110	90	60	58	51	58	66
Meter exchanges	312	439	773	825	686	759	730	692
Meter removal	285	188	223	184	74	20	20	40
Meter set	1,061	449	581	258	170	192	174	85
PM calls	671	1,632	2,351	1,696	1,351	924	977	1,161
Relocate meter	77	163	143	135	63	28	27	22
Renew services	159	255	348	243	507	167	147	127
Repair customer's service	267	293	321	294	246	298	228	239
Repair hydrants	22	16	41	13	15	9	6	10
Repair mains	60	78	81	77	66	67	71	43
Repair meter leaks	276	312	331	320	272	458	556	564
Repair servies	469	582	533	412	246	490	371	406
Repair valves	32	57	57	29	401	12	23	24
Replace box/lid	475	648	766	716	710	169	212	351
Replace curb cock or coupling	860	856	997	727	595	597	556	632
Replace port cap	35	34	43	28	28	2	12	11
Reset lids	275	256	308	198	160	169	162	58
Backflow prevention tests	1,983	1,604	3,968	4,473	4,201	4,034	5,461	11,095
Cross connection inspections	1,147	940	2,116	1,522	2,108	-	606	1,255
Totals	24,981	27,027	35,964	32,983	35,266	34,055	41,308	53,262

Water Distribution Division (continued)

Summary of Pipe in Service

Pipe Size (in)	Pipe Material (Note 2)	Pipe In Service As Of: (Note 1):				Net Gain (Loss) (Note 3)	
		Sep 30, 2006		Sep 30, 2007		All Activities	Abandoned
		Miles	%	Miles	%	Miles	Miles
2 and less	Galv or Unk	158.00	9.27%	149.23	8.67%	(8.77)	3.56
2 and less	PVC	65.91	3.87%	69.46	4.04%	3.55	0.50
3	All	2.16	0.13%	1.93	0.11%	(0.23)	0.00
4	All	160.26	9.40%	161.23	9.37%	0.97	0.76
6	All	440.99	25.86%	448.65	26.08%	7.66	1.05
8	All	384.32	22.54%	393.97	22.90%	9.65	1.43
10	All	59.37	3.48%	59.84	3.48%	0.47	0.36
12	All	243.03	14.25%	245.86	14.29%	2.83	0.73
14	All	2.26	0.13%	2.26	0.13%	0.00	0.00
16	All	106.80	6.26%	106.03	6.16%	(0.77)	1.19
18	All	1.20	0.07%	1.20	0.07%	0.00	0.00
20	All	66.53	3.90%	66.30	3.85%	(0.23)	0.13
24	All	9.81	0.58%	9.80	0.57%	(0.01)	0.00
30	All	2.79	0.16%	2.74	0.16%	(0.04)	0.00
36	All	1.75	0.10%	1.74	0.10%	(0.01)	0.00
42	All	0.04	0.00%	0.05	0.00%	0.01	0.00
48	All	0.06	0.00%	0.06	0.00%	0.00	0.00
Totals		1,705.27	100.00%	1,720.36	100.00%	15.09	9.71

Calculated average pipe diameter in OUC transmission/distribution system as of Sep 30, 2006: 8.096 in.
 Calculated average pipe diameter in OUC transmission/distribution system as of Sep 30, 2007: 8.104 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.

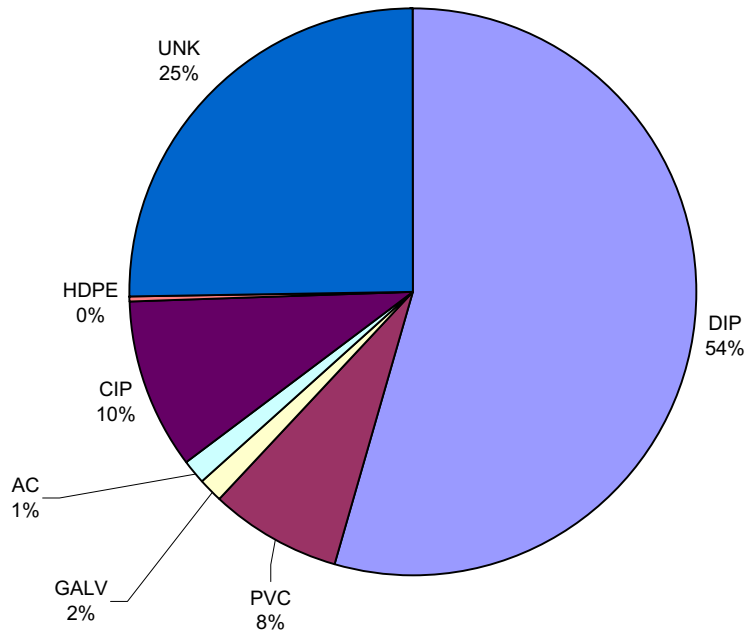
Note 3: Net Gain (Loss) is calculated by subtracting the Pipe In Service as of Sep 30, 2006 from the Pipe In Service as of Sep 30, 2007. The gain or loss in pipe length is dependent on several activities that occurred during the year, including: installation of new pipe (gain), removal of pipe that is 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.

Appendix 1

This section contains a wide range of 2007 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

2007 Pipe Material Percentages



2007 Total Miles of Pipe Abandoned

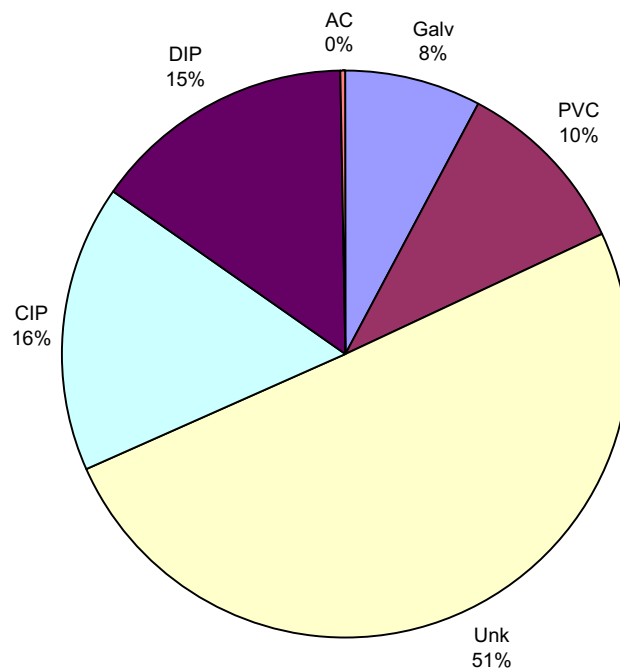


Figure 2

Water Technical Services Section Projects

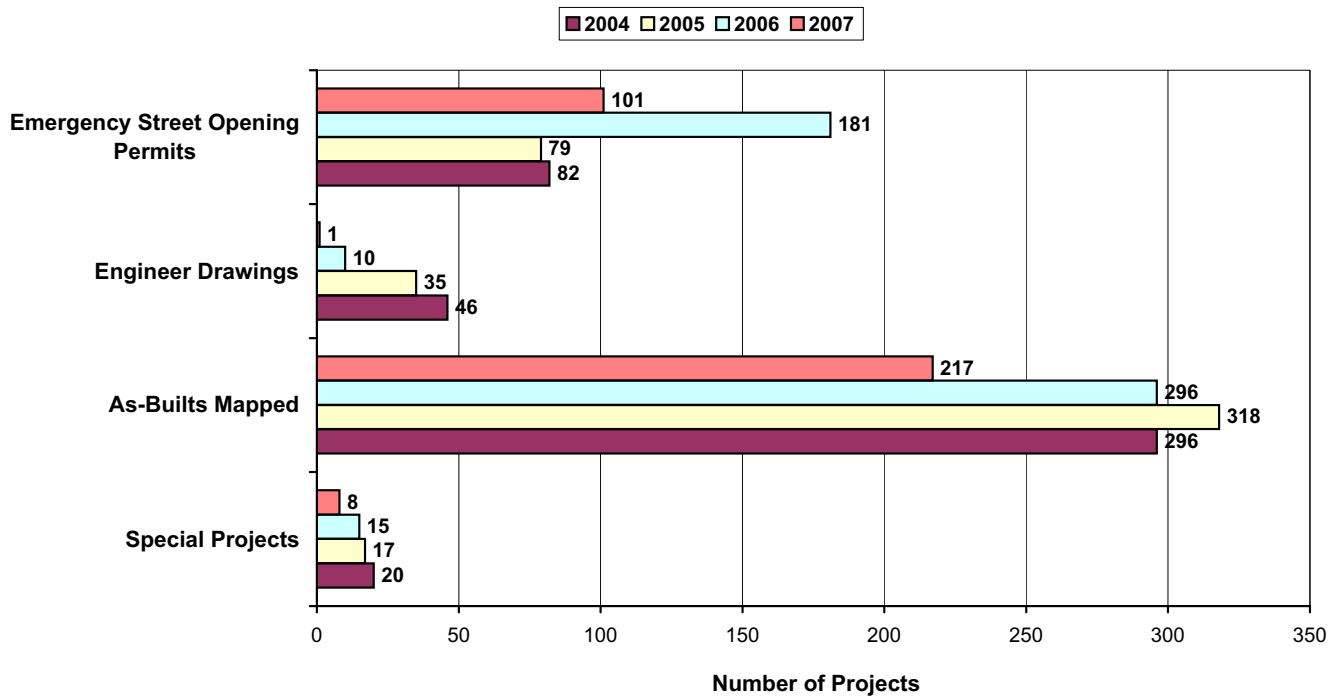


Figure 3

Water Engineering Section
Total Value of Estimated Projects

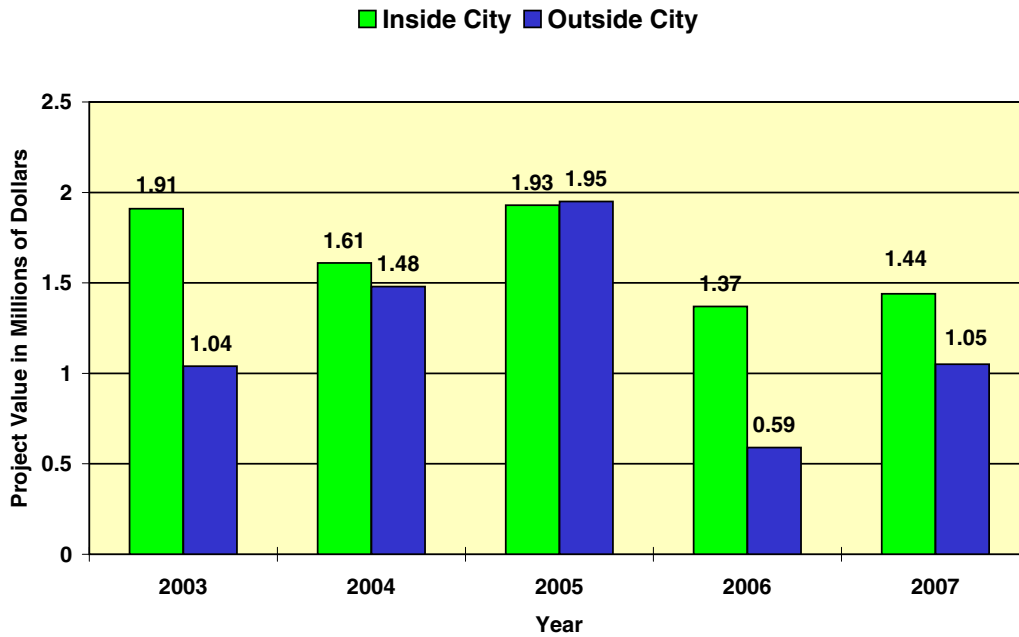


Figure 4

Water Engineering Section
Total Number of Water Construction Projects

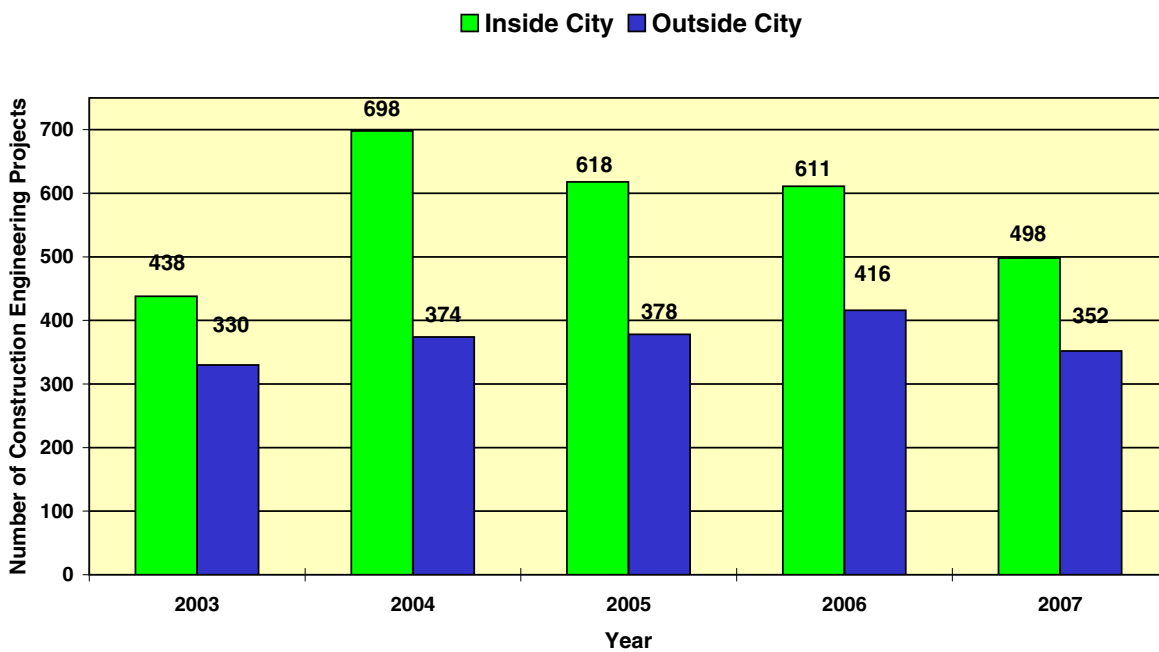


Figure 5

Water Business Unit
Breakout of Capital Improvements Funding Sources

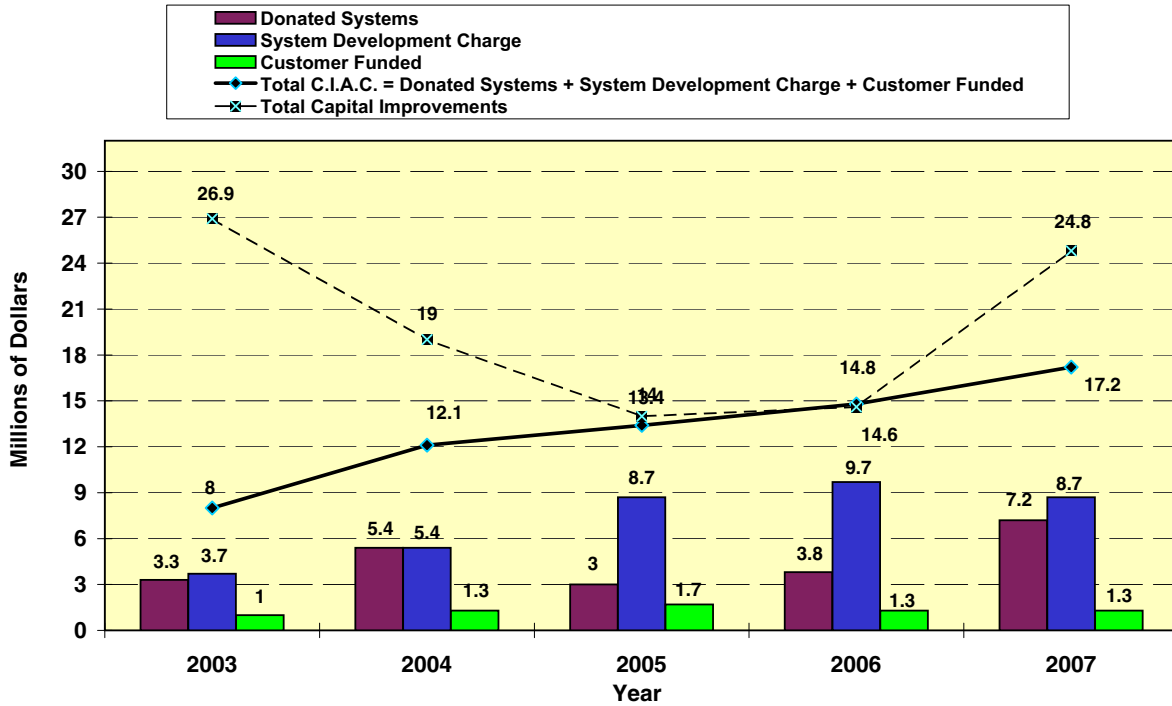


Figure 6

Water Business Unit
Capital Improvements Spending History

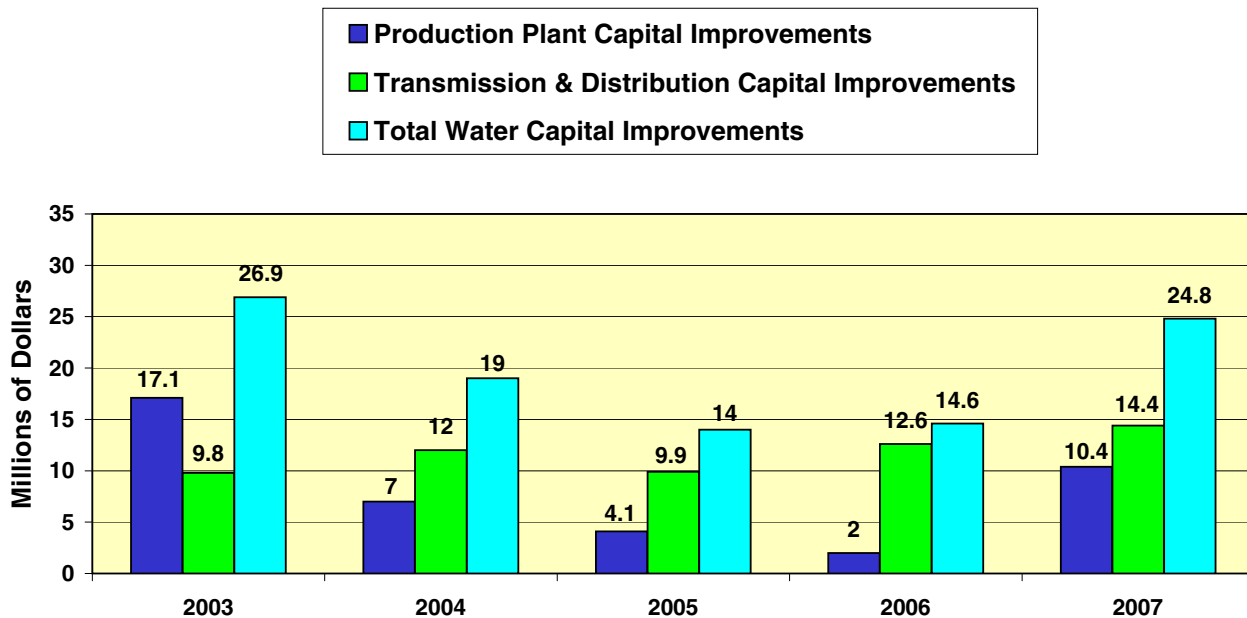


Figure 7

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

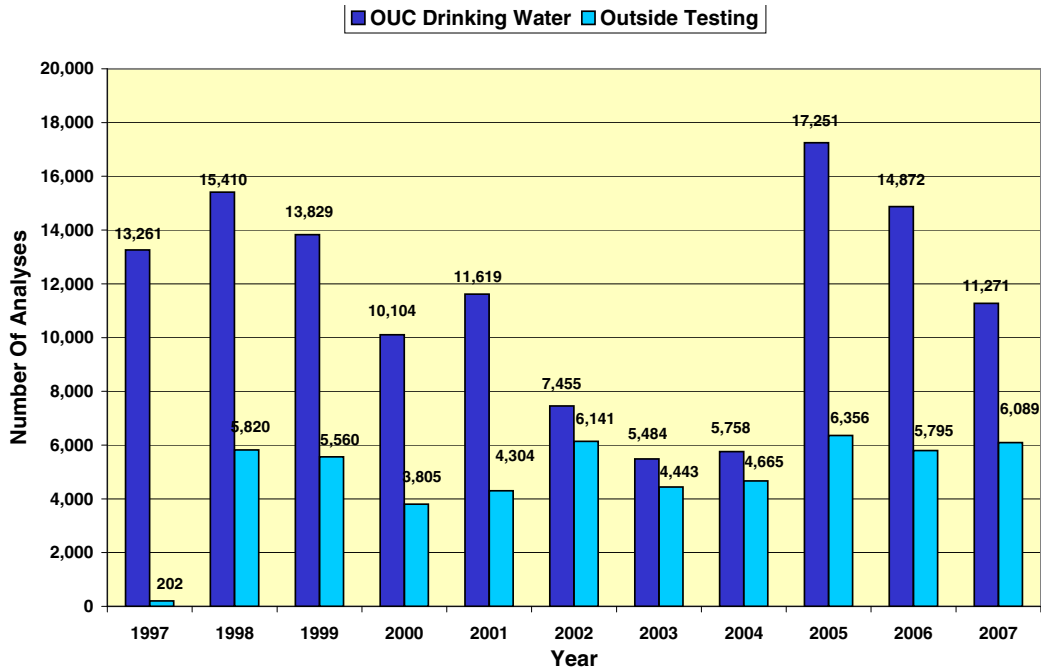


Figure 8

Total Number of Bacteriological Analyses Performed 1997 - 2007

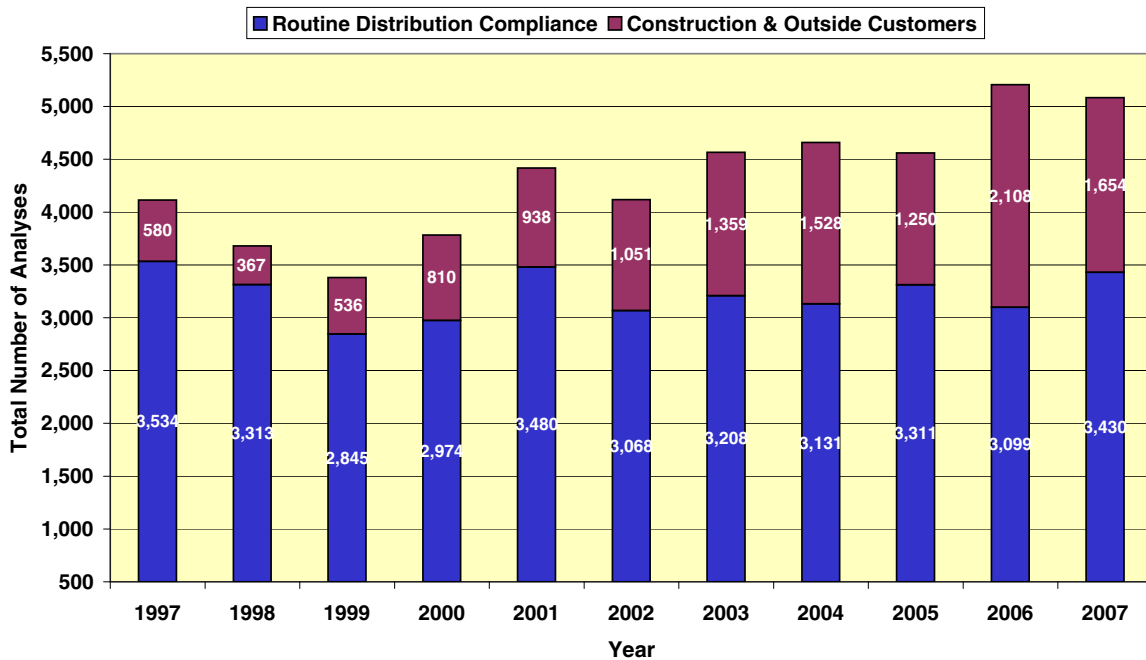


Figure 9

OUC Total Well Capacity and Pumping Rate
From 1980 Through 2007

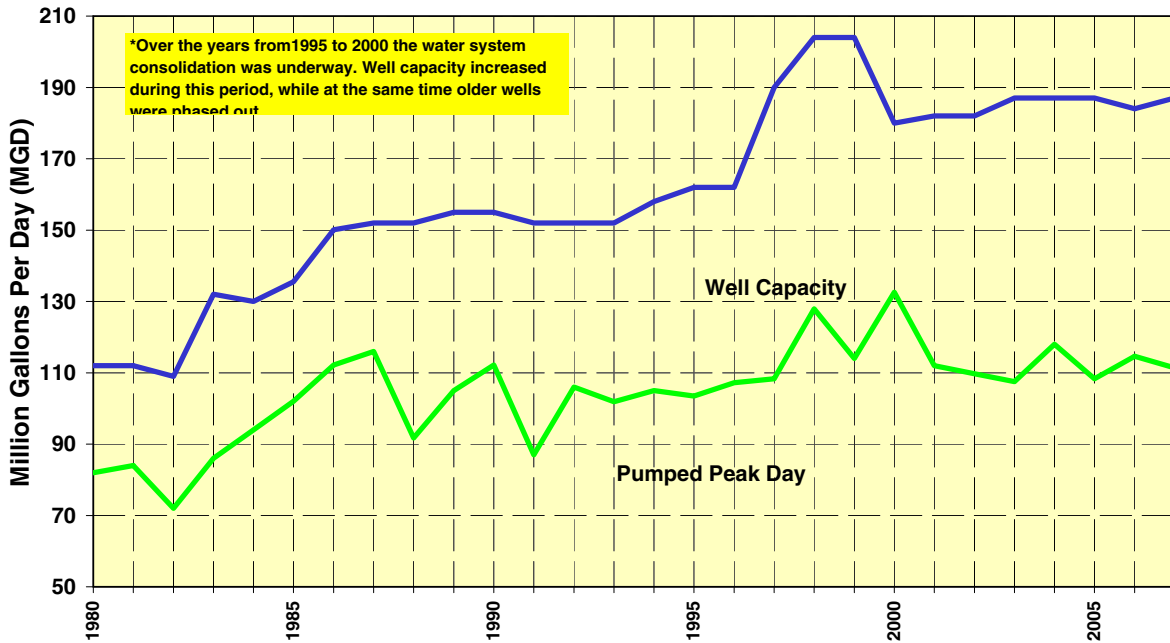


Figure 10

High Service Pump Capacity and Peak Pumping Rate
From 1980 Through 2007

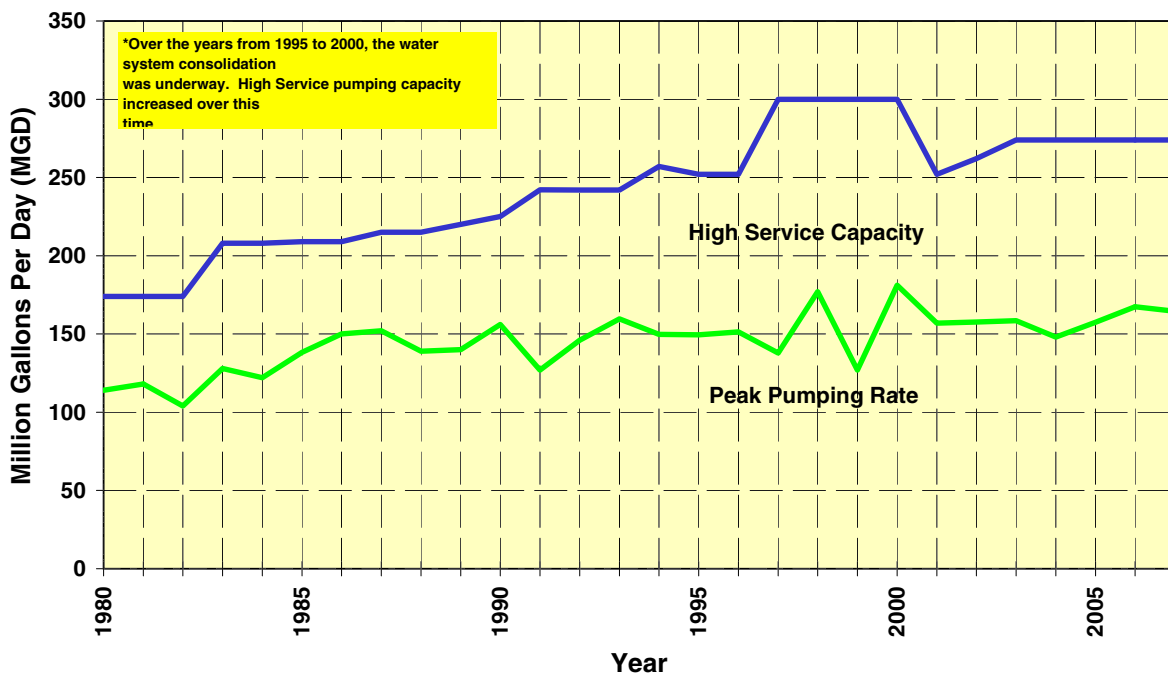


Figure 11

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

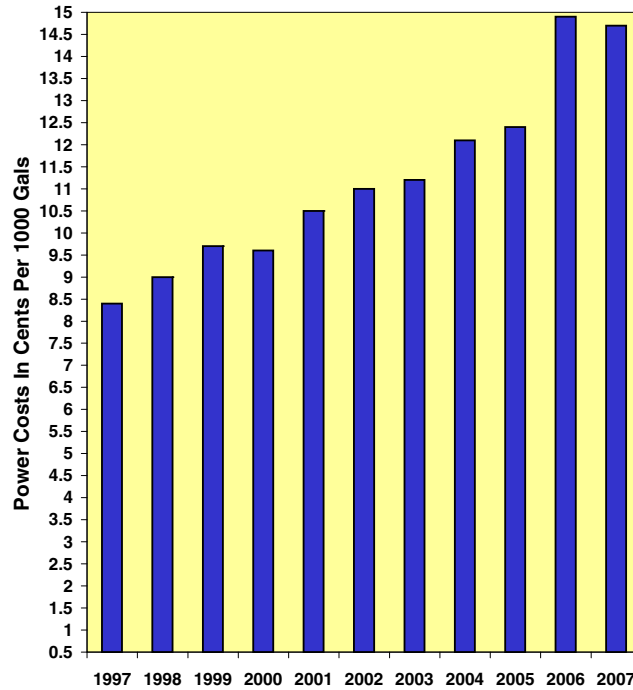


Figure 12

Water Production Division
Gallons Pumped Per kWh

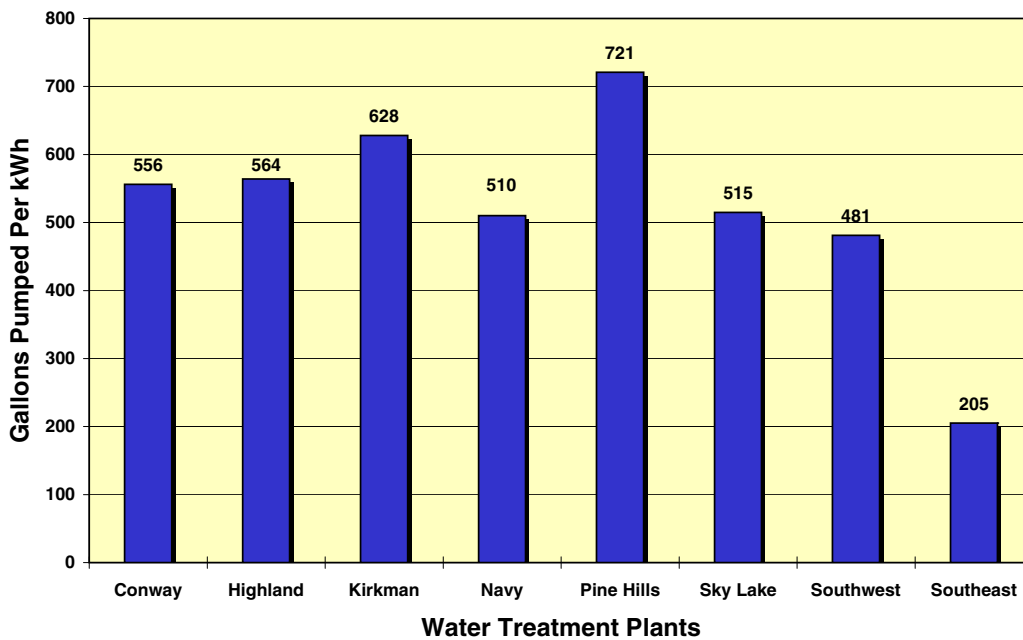


Figure 13

Total Water Pumped by Plant

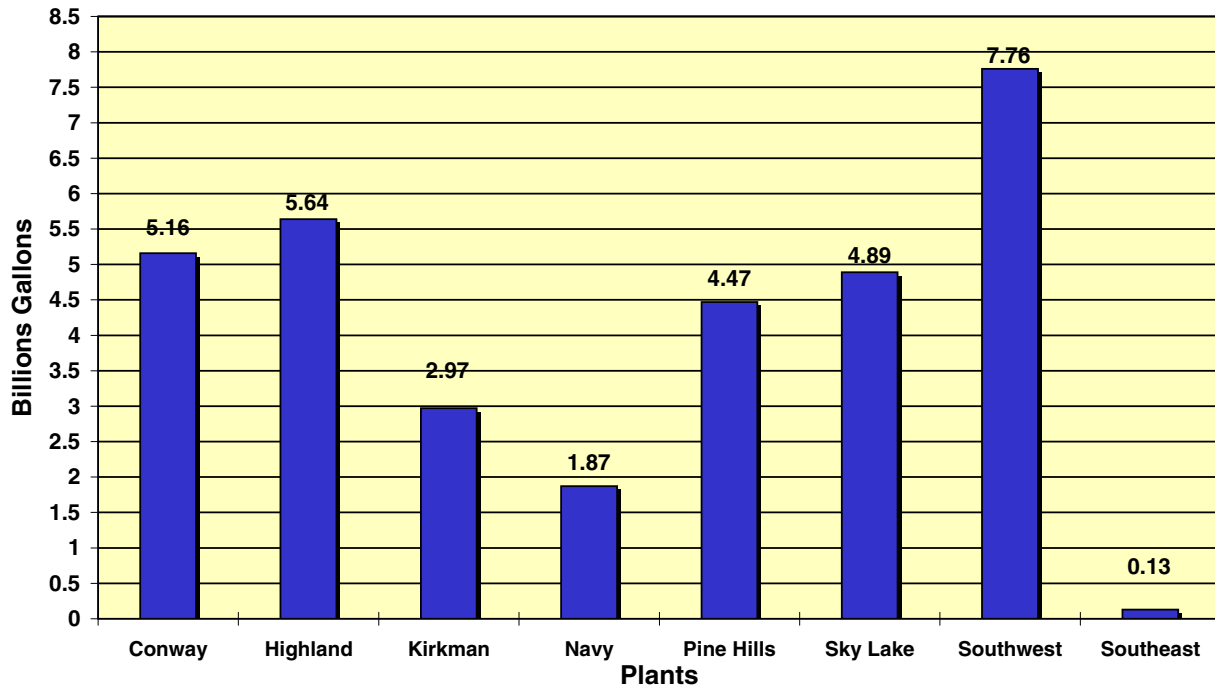


Figure 14

Average Day Vs. System Peak Day Pumped by Plant

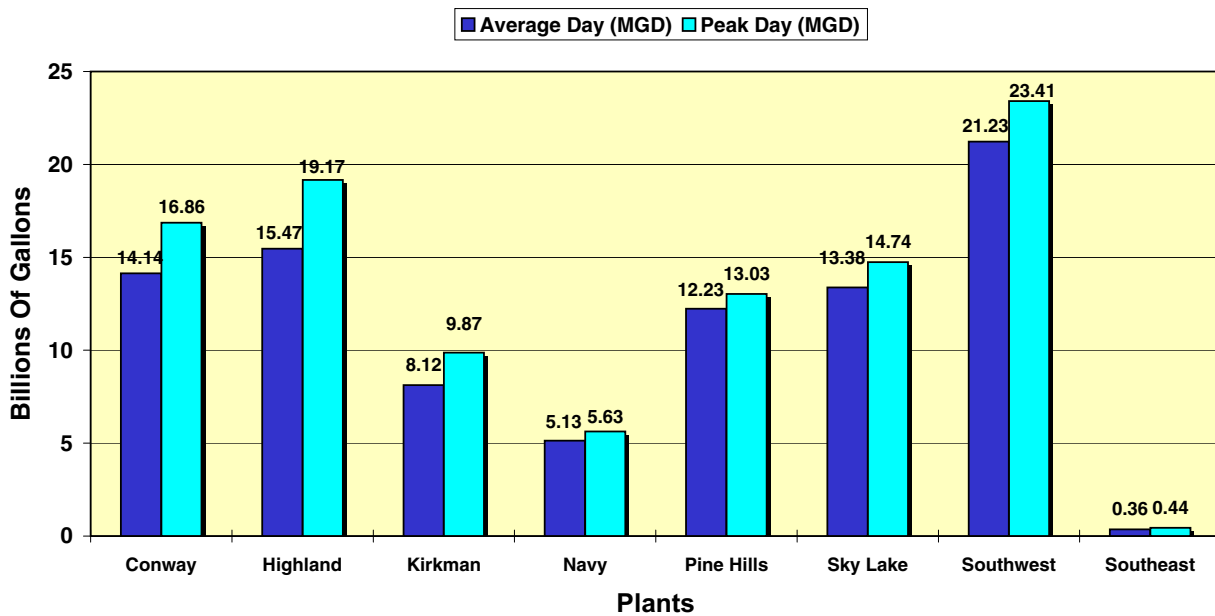


Figure 15

Aquifer Level Versus Rainfall 1997-2007

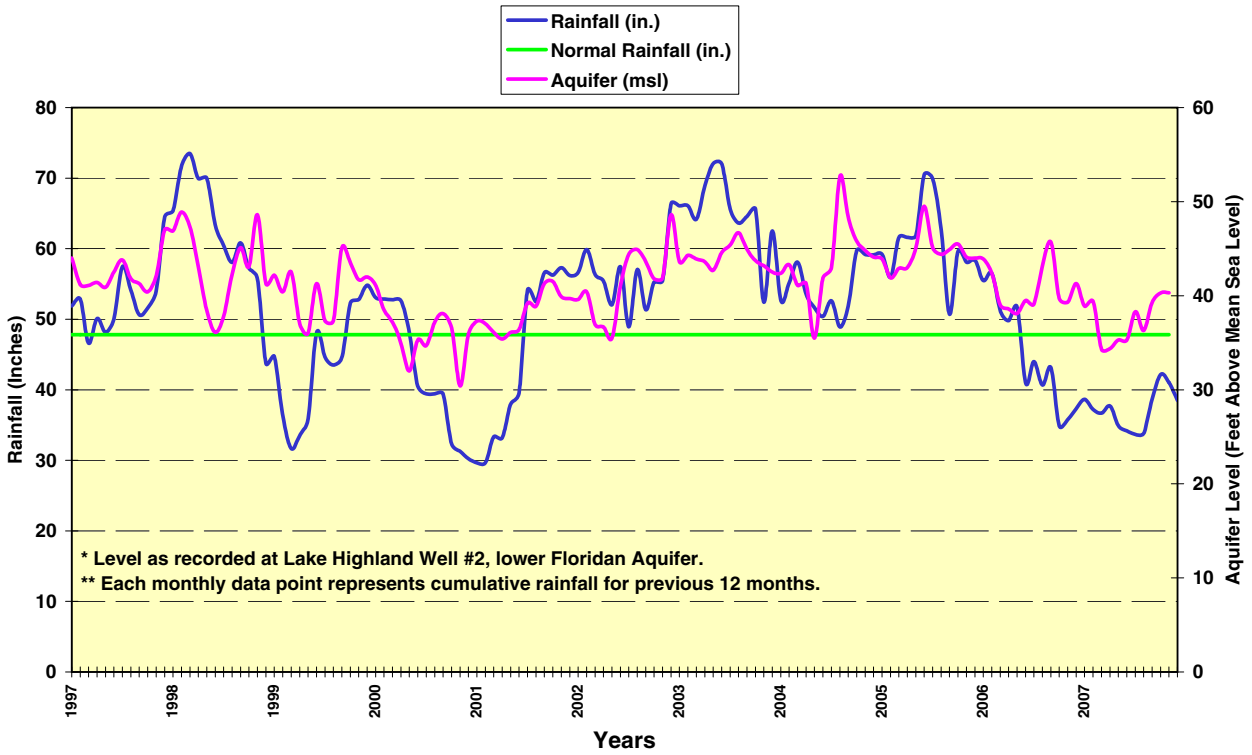


Figure 16

New Water Service Connections

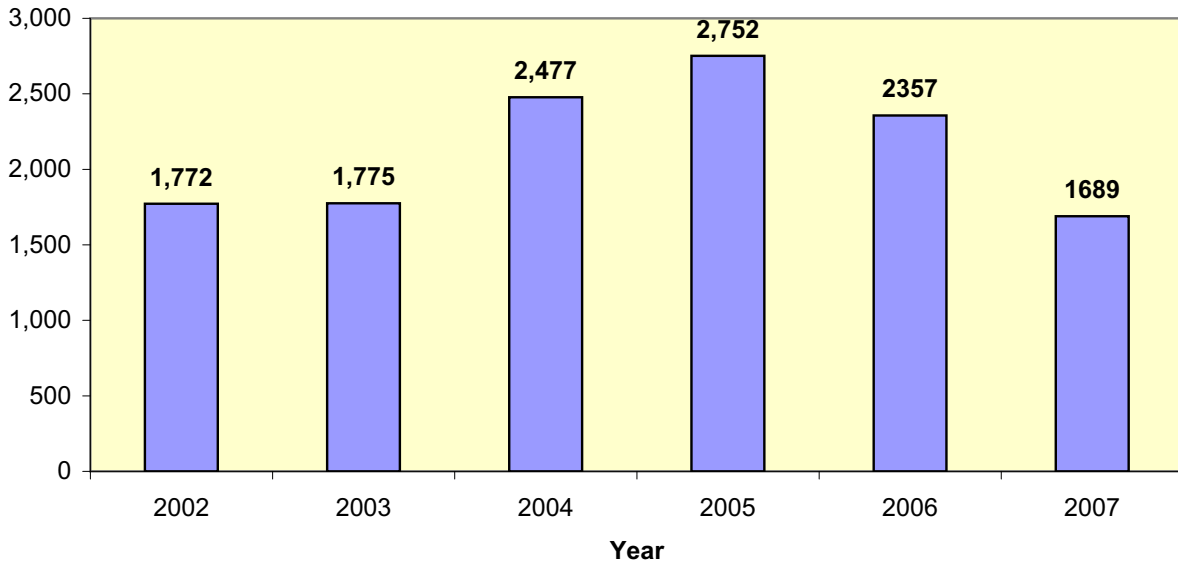


Figure 17

Water Distribution Crew
Water Mains Installed

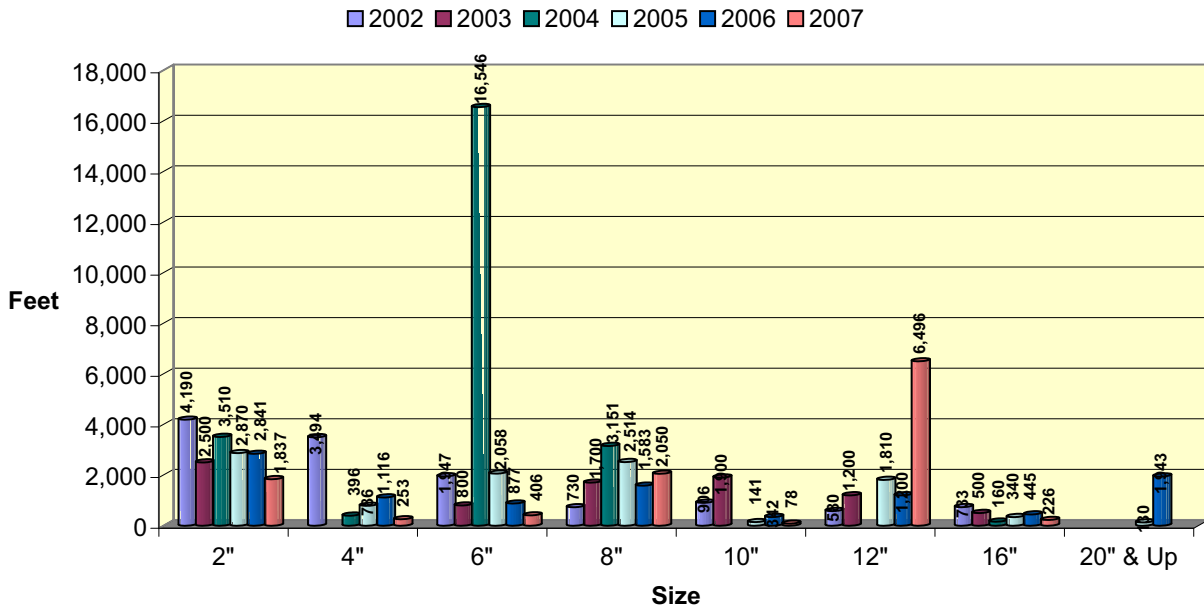


Figure 18

Water Distribution Section
Water Mains Contractor Installed

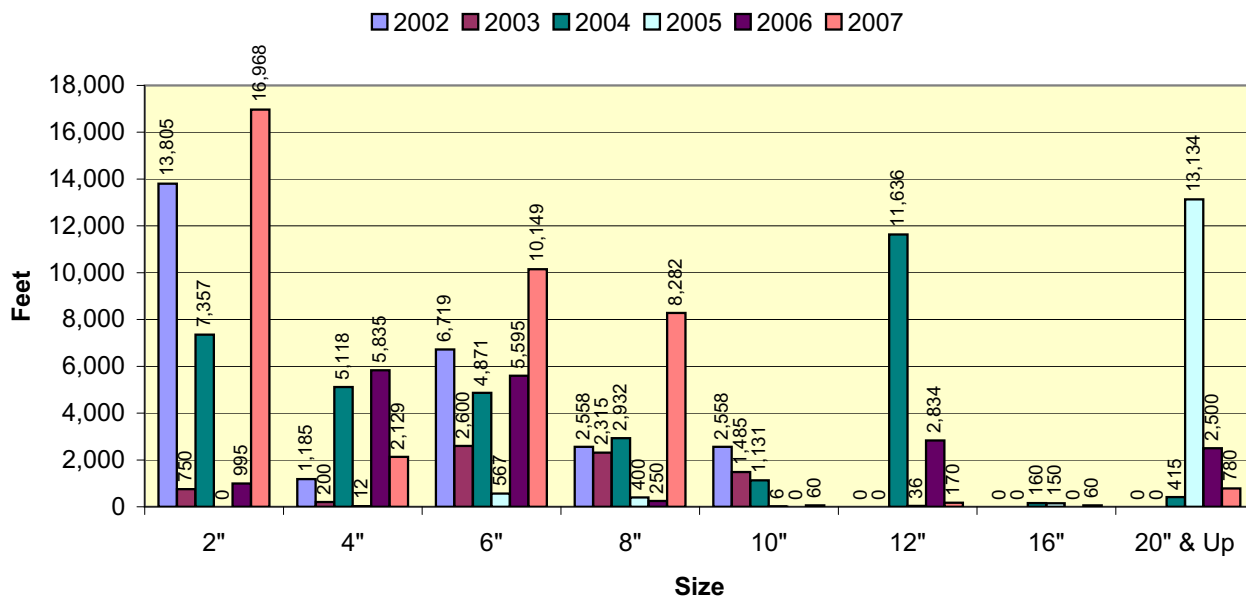


Figure 19

Water Construction Section
Number of Fire Services Installed

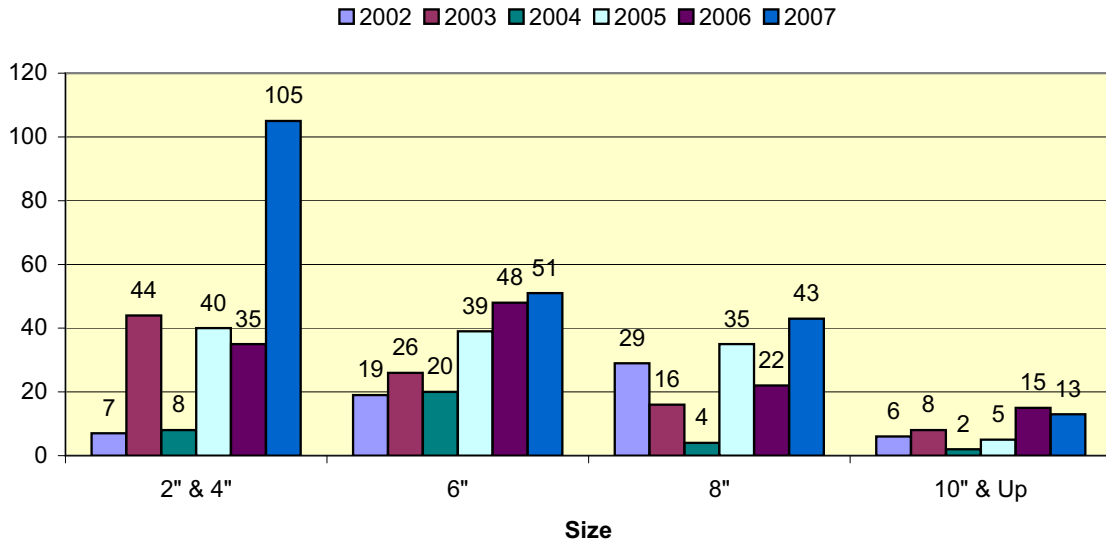


Figure 20

Water Distribution Section
Water Mains Developer Installed

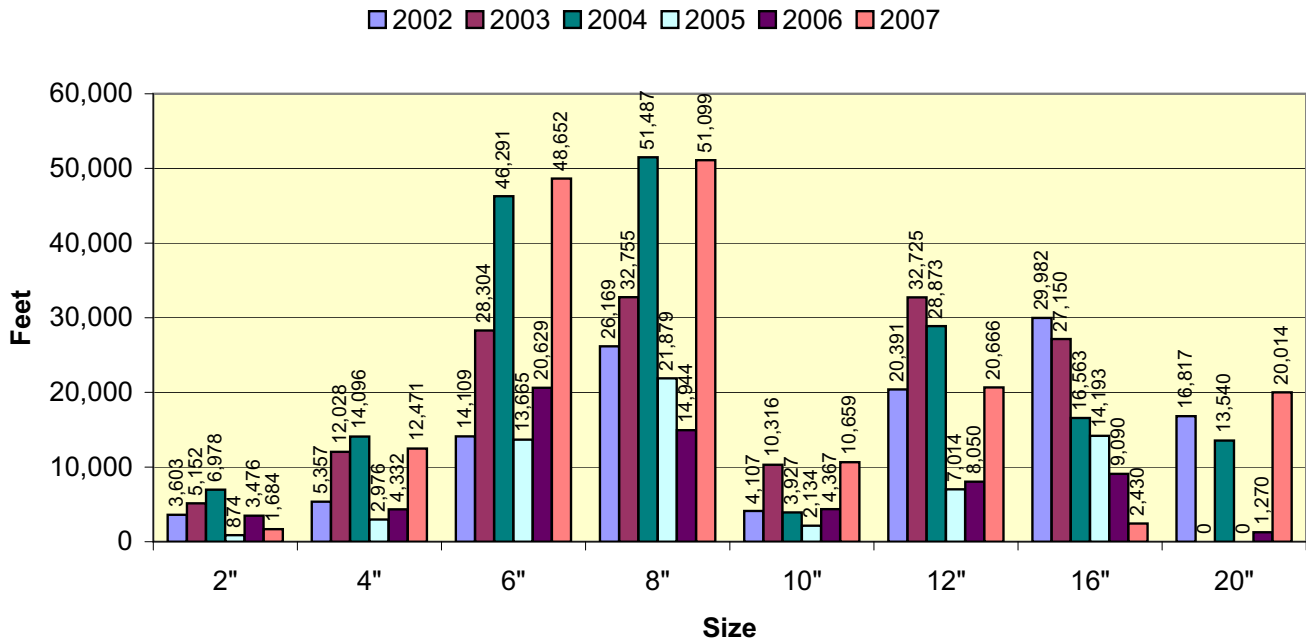


Figure 21

Water Distribution O&M Expenses

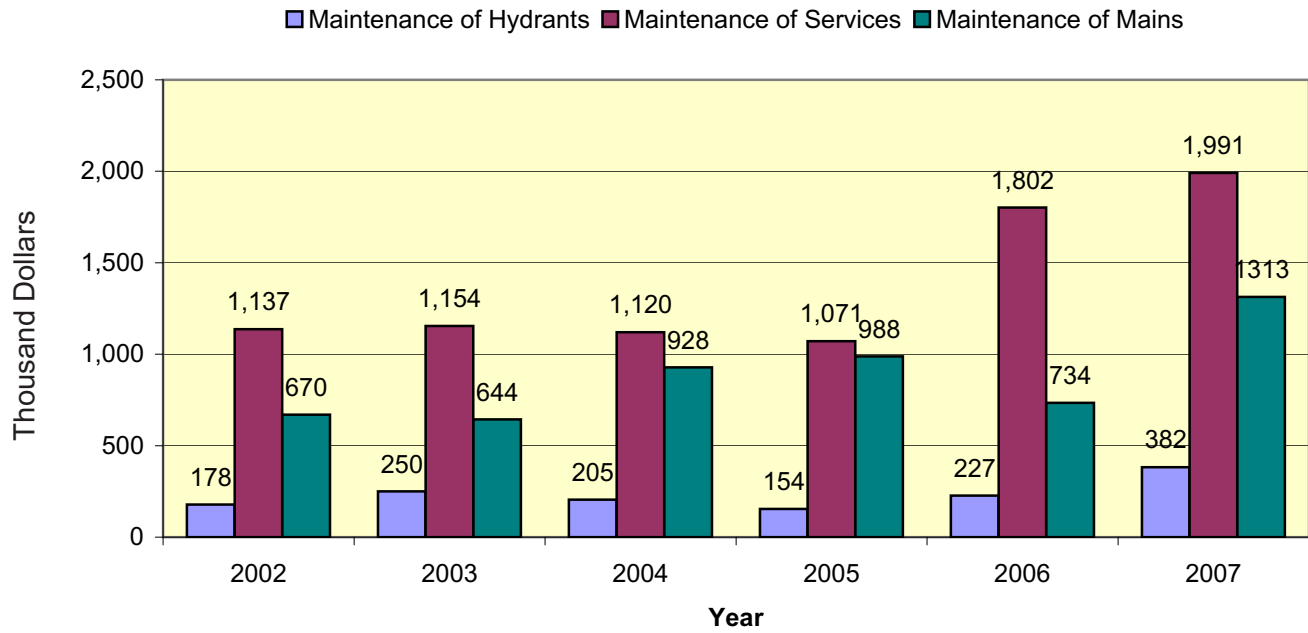
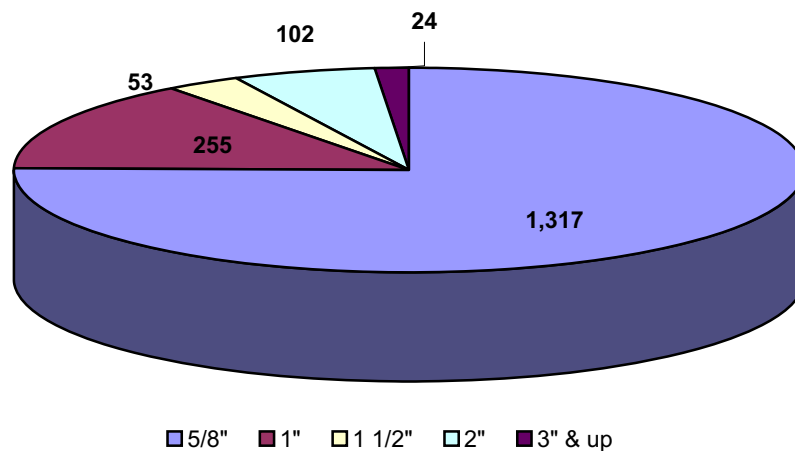


Figure 22

Water Services Installed by Size







The Reliable One[®]

500 South Orange Avenue

Orlando, Florida 32801

Phone : 407.423.9100

Fax: 407.236.9616

www.ouc.com