

OUC WATER BUSINESS UNIT



2009 ANNUAL REPORT

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OUC Water System

This annual report tracks and highlights OUC Water Business Unit numbers and business performance measures for FY 2009. In the water utility business, performance measures include the following: *efficiency* – doing things right; *effectiveness* – doing the right things; *quality* – providing high quality safe drinking water; and *sustainability* – creating a utility that can withstand the surprises and shocks that occur over time in the environment. Simply put, efficiency reduces cost, effectiveness produces the right products and services, quality keeps customers happy, and sustainability keeps the utility around for a long time. This 2009 annual report serves and substantiates OUC’s commitment to be around for a long time.

During the year, the economy fizzled and growth slowed in the midst of a severe economic recession while OUC’s Water Business Unit both survived and thrived.

The OUC water system is comprised of water supply/treatment facilities and a transmission/distribution pipe network. The water system serves as 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 in 1994 by OUC and Orange County 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. Each treatment facility is comprised of wells, ozone treatment equipment and contact tanks, chemical feed equipment, storage reservoirs, high



Stanton Water Facility



CWF Water Facility

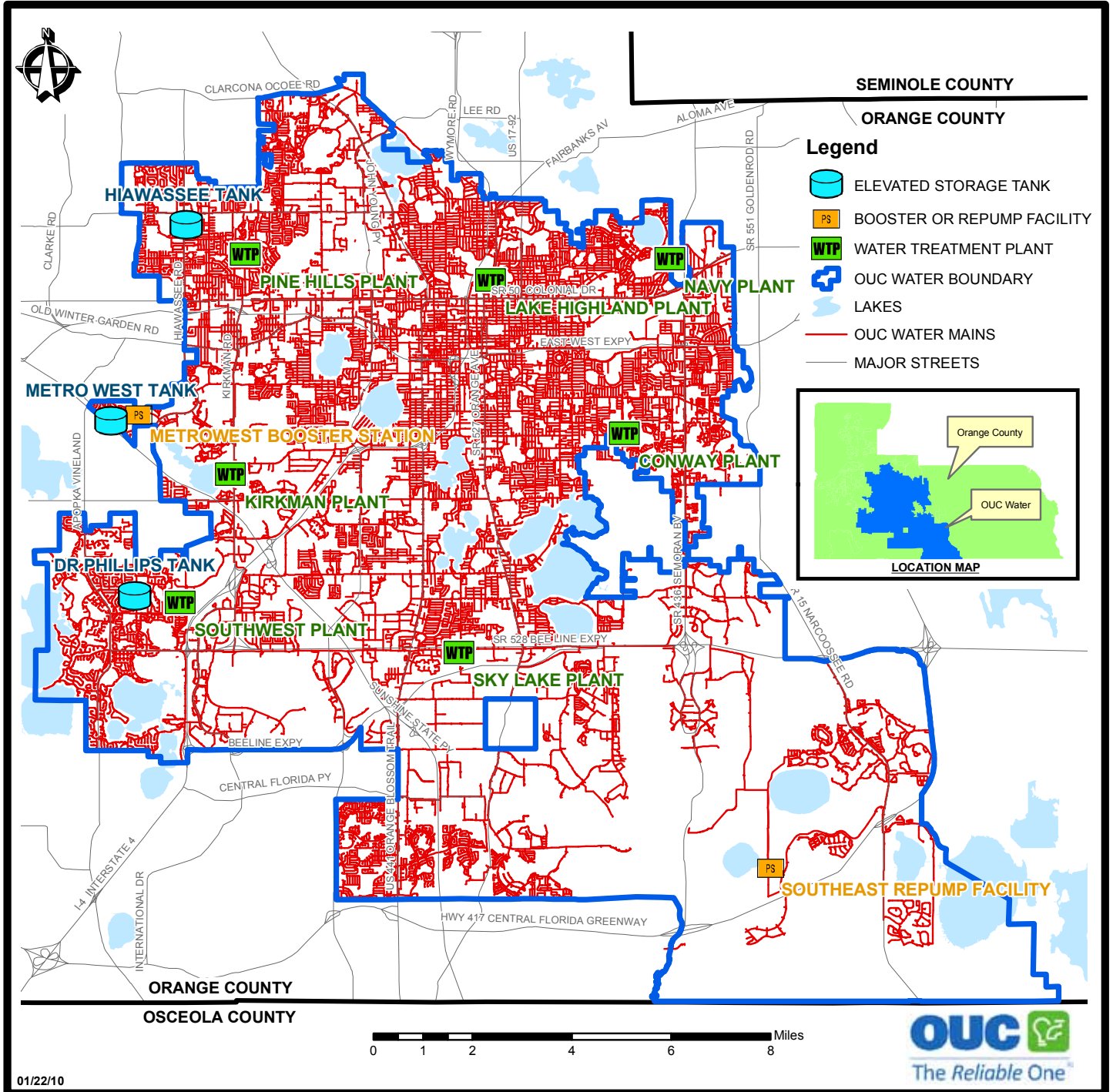
service pumps, standby generators, buildings and sophisticated control equipment.

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 fire protection, the transmission pipe network interconnects all of the water supply/treatment facilities. In the event that one facility is out of service, the other facilities can supply water to an area affected by the outage.

OUC Water System (continued)

ORLANDO UTILITIES COMMISSION WATER SERVICE AREA



Water Business Unit

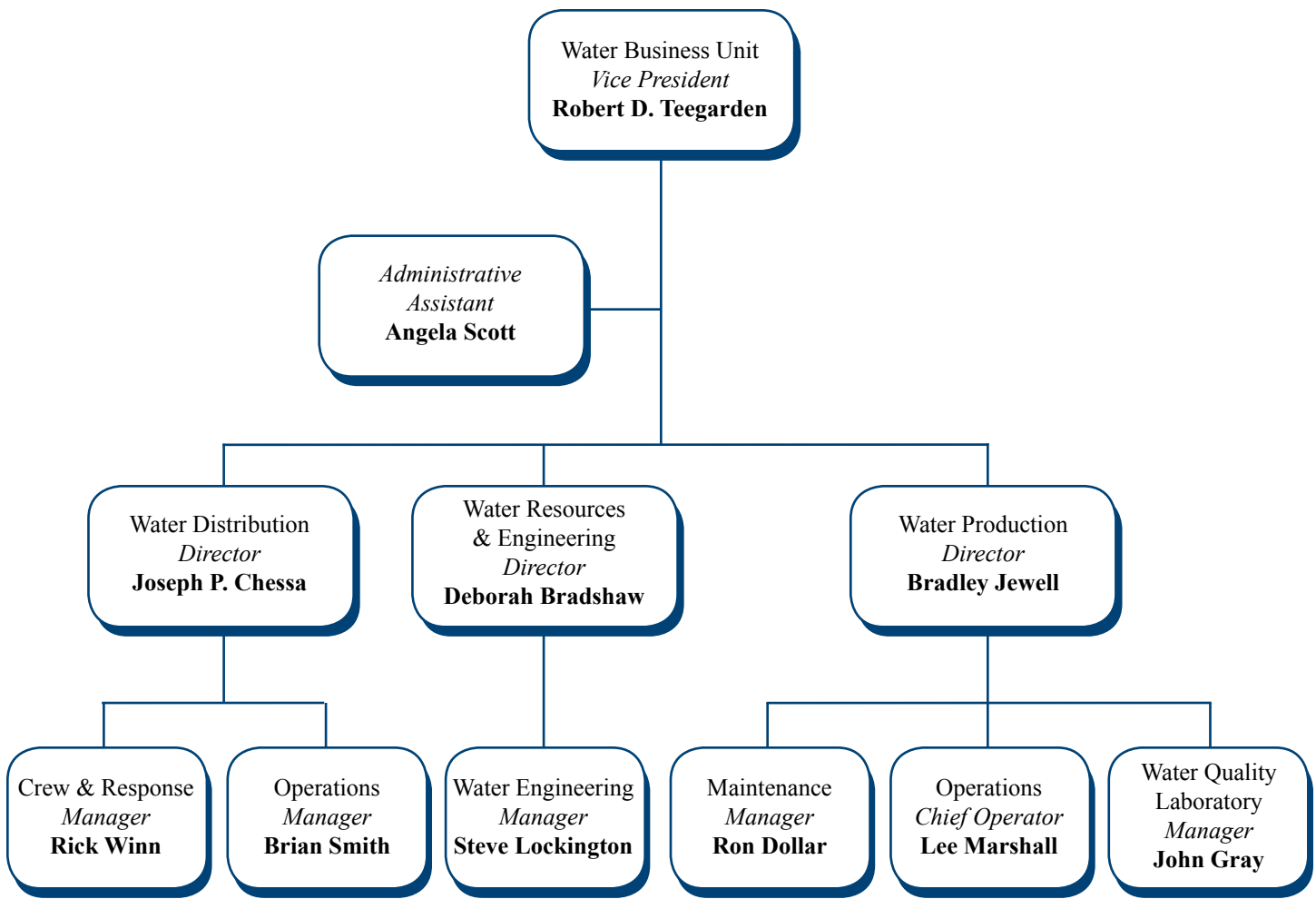
The Orlando Utilities Commission (OUC) is comprised of four operating business units. The others are Electric, Chilled Water and Lighting. The Water Business Unit's (WBU) Water Engineering and Technical Services Division (WETS) successfully spun off the GIS section to OUC's Information Technology (IT). The GIS section still resides daily and works with the water operations. GIS provides the

critical mapping and data support for the engineering, operations, and maintenance in WBU.

Water Engineering and Technical Services (WETS) is now known as Water Resources and Engineering (WRE). The Water Quality Laboratory section (WQL) shifted from the WRE section to Water Production (WPRO).

These organizational changes and the sputtering economy in 2009 were significant impacts to the WBU. Adjustment to less of a growth-centered economy requires changing priorities to our existing assets, fiscal restraints, and capital conservation. Flexible approaches, delaying projects, and attention to preserving our correct assets allows WBU to sustain in 2009 and be well positioned for the upcoming decade.

OUC Water Business Unit Organizational Chart



WBU Statistical Summary

Fiscal Year	2009	2008	2004
Population Served	423,500	422,200	403,470
Employees			
Total Water Business Unit Funded Positions (Note 1)	132	129	121
Per 1,000 population	0.31	0.31	0.30
Consumption			
Total, billions of gallons treated water	28.98	31.05	30.66
Change from previous year	-6.66%	-5.78%	1.22%
Total, billions of gallons water treated for sale	28.97	31.02	30.64
Total, billions of gallons unbilled	3.31	4.04	2.81
Percent unbilled, % of water treated for sale	11.43%	13.04%	9.15%
Daily average, millions of gallons treated water	79.40	85.06	84.00
Per capita, gallons per day	187	201	208
Per mile of pipe, gallons per day	44,908	48,467	50,450
Per service, gallons per day	587	620	663
Services			
Active metered	135,189	137,142	126,712
Percent change from previous year	-1.42%	-0.12%	3.21%
Per 1,000 population	319	325	314
Per mile of pipe	76	78	76
Pipe			
Miles	1,768	1,755	1,665
Population per mile	240	241	242
Hydrants			
Number	9,630	9,578	8,822
Per 1,000 population	23	23	22
Per mile of pipe	5.4	5.5	5.3
Income			
Water sales in millions	\$62.68	\$62.22	\$50.40
Per capita	\$148	\$147	\$125
Per mile of pipe	\$35,452	\$35,455	\$30,270
Per active metered service	\$464	\$454	\$398
Per million gallons treated water	\$2,163	\$2,004	\$1,644
Capital Investment (annual, in millions)			
Production Plant	\$1.82	\$5.57	\$7.02
Transmission & Distribution	\$11.56	\$14.45	\$11.98
Contributions in Aid of Construction (CIAC)	\$5.74	\$13.66	\$12.09
Total Capital Investment	\$19.12	\$33.68	\$31.10
Percent CIAC	30.02%	40.55%	38.89%
Operations & Maintenance Costs			
Total in millions	\$34.66	\$35.08	\$24.87
Per capita	\$82	\$83	\$62
Per mile of pipe	\$19,604	\$19,987	\$14,937
Per active metered service	\$256	\$256	\$196
Per million gallons treated water	\$1,196	\$1,130	\$811

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

WATER ENGINEERING SECTION

ACTIVITIES

During 2009, approximately 8.5 miles of water main pipe were added to the OUC water distribution system and approximately 1.1 miles of pipe were abandoned or removed from the OUC system. The OUC water distribution system of pipe contains approximately 1700 miles of pipeline. Some of the oldest pipe is more than 125 years old.

Water Engineering prepared a total of 580 engineering construction estimates in 2009, as compared to 794 in 2008. Of these, 352 estimates were inside the City of Orlando and 228 were outside the City. However, the total construction value in 2009 was similar to 2008. The total construction value of the estimates for 2009 was \$6.09 million compared to \$6.33 million in 2008. The Robinson Street 16 inch water main replacement project accounted for nearly one third of the total construction estimate of \$2.1 million for 2009.

The dominant category of construction projects this year were the commercial projects. New plan reviews for single family and multi-family developments decreased to approximately 512 from approximately 3,792 units in 2008.

The changing character of development for this year was the single family homes or duplexes where one meter was replaced with two meters. The large residential type developments were absent for the year. Drastic declines in OUC's plan review numbers were indicative of the significant lagging housing market decline in 2009.

PROJECTS

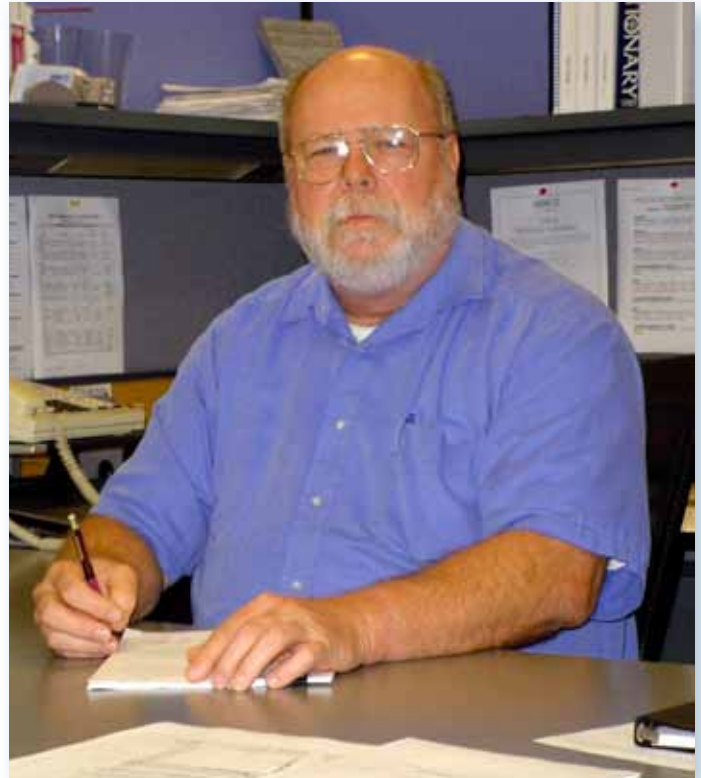
Road construction projects remained quite active with twenty four **inter-agency road projects** actively worked during 2009. Three major projects

include: 1) Narcoosee Road Widening, 2) SR 50 from Good Homes Road to Pine Hills Road, and 3) Sand Lake Road from Presidents Drive to Orange Blossom Trail. Coordinating all of these type road projects requires the extended time and focused efforts of Water Engineering's and Water Distribution's staff to minimize the impacts upon the existing water distribution system.

The major downtown projects included the Events Center, the City of Orlando's new home of the Orlando Magic and relocation of South Street due to the future performing arts center.

Major projects in the southeast water service area include the construction of the VA Hospital and the Nemours Children Hospital. Construction was completed during the year of both the UCF Medical School and the Burnham Institute. An OUC chilled water plant in Lake Nona was completed. Construction commenced on the new chilled water plant in downtown Orlando for the Events Center.

During 2009 Water Engineering designed approximately 6,000 feet of 16-inch diameter water main along **East Robinson Street** from Mills Avenue to just east of Primrose Avenue. The project had to be constructed during the hours of 8 p.m. to 6 a.m. to meet the requirements



Steve Lockington, Manager of Water Engineering, reviews a project report for a new development.

of the FDOT and the City of Orlando and to minimize traffic disruption. FDOT is resurfacing this section of Robinson Street in early 2010. New 16" ductile iron water main was constructed by OUC Water Distribution crews. The purpose was to renew and replace a 67 year-old cast iron universal joint water main. The original water main was constructed to extend and provide service to the army airbase at the Herndon Airport.

The design and land acquisition for **Project RENEW** was initiated to comply with OUC's Consumptive Use Permit (CUP). HDR, Inc. has completed the preliminary design report for the reclaimed water pumping station at Water Conserv II WRF. **Final design continues**

Water Engineering & Technical Services Division

WATER ENGINEERING SECTION (CONTINUED)

of the reclaimed water main from the City of Orlando's Water Conserv II WRF to the City of Apopka. The south section of the route from the Water Conserv II WRF to State Road (SR) 50 is at 60% final design and the north section from SR 50 to the Apopka wastewater treatment plant is at 90% final design. The preliminary design of the lift station improvements and force mains, which are required to transfer raw wastewater to Water Conserv II water reclamation facility and then pumped to Apopka, is at 10% preliminary design. The engineering consultant for the collection system is AECOM (formally Boyle Engineering Corporation).

Orange County Public Works requested a special supplemental agreement be prepared for Project RENEW because the work occurring in Orange County right of ways (ROWs) was so extensive. Biweekly meetings were held for several months to go over issues and to draft an agreement. In order to inform the public and local elected officials, OUC also conducted three public meetings about Project RENEW at various locations.

During the design review of the plans for the RENEW pipeline project, Orange County recommended that OUC reroute its reclaimed water main from an existing neighborhood to unopened right of way (ROW) between Old Winter Garden Road and SR 408. Along the recommended and unopened ROW, Florida Gas Transmission (FGT) possesses gas transmission easements on either side of the ROW. Field work revealed the presence of FGT pipes, which are 24 and 26 inch high pressure steel lines, located approximately 5 feet inside each side of the ROW. OUC proposes placing the new reclaimed water main centered between the gas mains and also constructing the pipe of high density polyethylene (HDPE)



Charles (Chuck) DiGerlando, Project Engineer, is responsible for overseeing major projects such as Project RENEW and the Ozonator Replacement Project.

mitigates the corrosion issues and helps with the cathodic protection system on the steel gas transmission pipes. FGT was very resistant to the co-location of the reclaimed water main with their gas main. Alternate routes were discussed. OUC informed FGT that an alternate route is possible, when a time extension is granted from SJRWMD. However, FGT must cost share in the incremental cost to relocate the reclaimed water pipeline route.

Camp, Dresser and McKee (CDM) are the design engineering consultants for the **Ozone Generator Replacement** project. A scope of services and the fees for the project were negotiated and the preliminary design will begin in early fiscal year 2010.

Water Engineering has revised the OUC **standard details** for meters and backflow preventers. This information was placed on the external website for easy access by customers and developers.

STAFF

John Perrin, Engineer was transferred from Water Resources Management to Water Engineering. John is responsible for modeling the water distribution system. He is actively preparing OUC's master plan for the future of the water distribution system and providing support to Water Production for analysis of water quality in the system. John also assists Christine Russell in obtaining and organizing data to submit to SJRWMD for the CUP compliance. He provides support to customers and developers by providing hydraulic grade line information to evaluate fire system designs.

WRE – Water Engineering Section (continued)

WATER ENGINEERING SECTION PROJECTS

Single Family Individually Metered Projects	No. of Units
Conestoga Mobile Home Park	40
Miscellaneous SF	77
Total	117

Multi-Family Master Metered Projects	No. of Units
Ashley Court	60
Carver Court/Griffin Park	44
Osprey Sound Apartments	136
The Landmark at Universal	155
Total	395

Special Projects
Habitat for Humanity Staghorn Villas
Lake Nona Chilled Water plant
Lake Nona VA Hospital
Nemours Children’s Hospital
ORHS Underwood Improvements
Orlando Events Center
Orlando Events Center Garage
OUC Anderson Street Chilled Water Plant
OUC Emergency Interconnect Meter
Park Square Homes
Robinson Street 16 inch Water Main R&R
University of Central Florida Medical School

Inter-Agency Projects	
City of Orlando 18th and 19th Street	1
City of Orlando Concord Street Emerg Repairs	2
City of Orlando Lake Holden Terrace R&R JPA	3
City of Orlando Lakemont Ave	4
City of Orlando Mills Avenue from Dorscher to Virginia	5
City of Orlando Mission Road	6
City of Orlando Oakley Street and Pine Bluff	7
City of Orlando OBT and Pine Street	8
City of Orlando South Street	9
City of Orlando Summerlin Ave. (crew Job)	10
City of Orlando Thornton Av. (crew job)	11
FDOT Orange Ave SR 50 to Mills Ave	12
FDOT Robinson Street	13
FDOT Sand Lake Road from Presidents Dr to OBT	
FDOT Sand Lake Road from Turkey Lake Rd to JYP	14
FDOT Silver Star Rd	15
FDOT SR 15 Hoffner North of Lee Vista Blvd	16
Orange County Boggy Creek Road Widening	17
Orange County Canadian Court	18
Orange County Narcoossee Rd.	19
Orange County Pine Castle Sidewalks	20
Orange County Randolph Avenue Project, Ph 1	21
Orange County Sky Lake - Oak Ridge Subd	22
Orange County Wetherbee Road Phase III	23

WRE – Water Engineering Section (continued)

WATER ENGINEERING SECTION PROJECTS (CONTINUED)

Commercial/Industrial Projects

A+ Tutor	Dowden Road Extension
Adult Living Center	Drew Medical Building
Agere Site	DRMP Phase 2 Buildings
Aldi Food Store # 21	Drury Inn & Suites DP
Apostolic Church of Jesus	East Park
Baig Investments	Edgewater L.L.C.
Baldwin Park/Lago Rest	EIRS
Barnett Park Splash Park	El Shaddai Church & School
Brasfield & Gorrie	Eligeti Property
Cafe' LaVina	Ethanol Distribution Center
Candlewood Suites	Express Car Wash
Capital Development Grp	Eye Nona PA
Carver Court/Griffin Park	Family Dollar
Center for Drug Free Living	First Baptist Church Pinecastl
Central Florida Pipeline	First United Methodist Church
Central Florida Road Course	Florida Hospital
Century 21 Real Estate Prof	Florida Mall Town Center
City National Bank	Florida Success 6520, LLC
City of Edgewood City Hall	Gateway School
City of Orlando	Gateway School
City of Orlando Parks & Rec	General Contractor
City of Orlando Police Training Fac.	GOAA-OIA
City of Orlando Water Conserv II'	Goin' Postal
City of Orlando ZL Riley Park	Grace Covenant Presbyterian
City of Orlando Station # 7	Hampton Inn & Suites
CommonWealth Center of Metrow	Hertz
Coughlin Eye Center	Howard Fertilizer
Country Club of Orlando	Ice Bar of Orlando
Cream de la Cream	Industrial Park
CVS / Pharmacy #3921	Intercraft International
Daniels Sharpsmart, Inc	KFC
Danube Plaza	Kur-Star Construction
Del Rio Heavy Equipment Repair	Lake Hart PD
Dellagio Dental Care	Lake Nona Reclaimed Meters
Dellagio PD Ph I and II	Lake Nona South
Discovery Zone	Lake Nona Village II, LLC
DMS PROPERTIES	Lake Nona Villages II
Dollar Thrifty	Lake View Medical Park

WRE – Water Engineering Section (continued)

WATER ENGINEERING SECTION PROJECTS (CONTINUED)

Commercial/Industrial Projects	
Lamm & Co	Priscilla of Boston, Inc.
Larry's Giant Subs	Sandlake Medical Park
LaVina - Tract G	Satellite Ice House, Inc
LaVina - Tijuana Flats Rest.	Sitek Headquarters
Lee Vista Commerce Park	SODO Mixed-Used Development
Longhorn Steakhouse	Southpark Center
Lulu Belle	SPRING LAKE FOREST HOA
Mattamy Homes, Inc	St John's Missionary Baptist
McCoy Federal Credit Union	St. James Cathedral
MEGASTRON PHASE 1	Starlight Dinner Theater
Mijares Landstreet Inc LLC	Sun Plaza
MIKSAB LLC	The Learning Place Academy
Miller's Ale House	Total Renal Care
Missionary Church	Total Septic Services
MKNI, Inc	True Savings Supermarkets
Mobil Lube Facility	Turkey Lake Retail/Office
Nona Preserve Townhomes	Tuscany Place
Nona Terrace	Twice The Ice
Northpark Baptist Church	Urban Dev Company
OCPS Cypress Creek/Oak Ridge	USA Investment Properties, LLC
OCPS Lee Middle School	Vascular Specialists
OIA BP-409 Rental Car Facilities Terminal A	Viet Rices Company, LLC
OIA BP-409 Rental Car Facilities Terminal A	Wachovia Bank
Old Cheney Elementary School	Walgreen's
OOCEA Innovation Way Toll Plaza	Walgreens at Hawaiian Court
OOCEA SR 417 Dowden Rd Toll Plaza	Walgreens Distribution Center
Orange Center Elementary	Washington Shores Elementary
Orange County Public Schools	Water's Edge at Northlake Park
ORHS Parking Deck C	Water's Edge at Northlake Park
Oriental Center	Weller Blvd (High School Rd)
Orlando Fastpark	Wendy's
Orlando Gateway Commercial Cnt	YMCA at Dr Phillips
OUC Eagle Cr Recl Meter	Zou Zou Boutique
OUC Water Engineering	
Pavlik Office Building	
Peabody Hotel Expansion Ph 1	
Pediatric Dentistry	
Preserve	

WRE – Water Resources Section

During 2009, the Water Resources (WR) section provided support to Water Engineering on water distribution projects, performed research and analysis, participated in alternative water supply investigations, and performed the tasks necessary for OUC to comply with our consumptive use permit (CUP). The following highlights the activities for WR.

WINTER PARK INTERCONNECT

OUC and Winter Park are working together to prepare preliminary details to create an interconnect between the two utilities. The design would allow water transfer between the two systems during an emergency and in the future, potentially provide AWS water from OUC to Winter Park.

MASTER PLAN

In order to ensure reliable service to OUC customers, WR is creating a master plan, which compares customer demand forecasts to existing system infrastructure capacities, primarily transmission piping. The master plan develops a schedule of needed improvements based on expected inadequacies derived from the comparison for the next 25 years. The master plan is scheduled for completion in 2010.

ANALYSIS

WR is compiling and cataloging data on comprehensive asset management program, which is focused on the transmission and distribution assets. WR worked closely with Water Distribution to determine asset risks, criticality, data needs, etc. to establish framework for an efficient asset management program. OUC continues to explore the feasibility of reclaimed water partnerships with Orlando and Orange County.

RESEARCH

OUC is involved with three ongoing



Debbie Bradshaw, Director Water Resources & Engineering, talks with Marcus Cline, GIS Technician.

research projects in partnership with the Water Research Foundation (formerly AwwaRF). One study investigates the alternative methods to treat reject water from desalination membranes. The second project studies water quality effects on biofilms in water distribution pipes nationwide. The third research project investigates water meter accuracy on a nationwide basis by testing to determine whether mileage (volume) or a meter's age plays a more dominant role in the life and accuracy for water meters. These research projects are expected to be complete in 2010.

ALTERNATIVE WATER SUPPLY

In 2009, WR continued to represent OUC in the preliminary design phase of the SJR/TCR Project. A joint venture comprised of CH2MHILL and PB Water is preparing the preliminary design report and environmental information document. These reports are expected

to be finalized in early FY2010. Other utilities participating 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. In 2009, the participating utilities continued 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 continued to work with CH2MHILL to prepare planning level cost estimates for brackish groundwater, seawater desalination, and surface water from the SJR/TCR Project. The consultant evaluated 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. The report was finalized in September 2009.

WRE – Water Resources Section (continued)



Matt Tibbetts, Senior Distribution Designer, discusses a road project with Keith Browning, Project Engineer, before a meeting.

OUC and CH2MHILL also worked 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. The report was finalized in May 2009.

CONSUMPTIVE USE PERMIT

WR spent extraordinary amounts of time during FY2009 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 WR in FY2009.

Considerable amounts of time and effort were spent preparing responses to requests for additional information (RAI) received from the District in October 2008 and June 2009 for OUC's 5-year compliance report. The requests included questions from both the SJRWMD and the South Florida Water Management District (SFWMD) pertaining to wetlands impacts, groundwater modeling, conservation, and water demand projections. The SFWMD notified the SJRWMD that adverse impacts to wetlands in the boundaries of the SFWMD are occurring and that utilities undergoing agency action, such as a 5-year compliance reports, are required to determine their contribution. After lengthy negotiations, a wetlands mitigation compliance agreement was signed by OUC and the SJRWMD in September 2009. OUC agreed to pay \$475,950 to mitigate 5.7 acres of wetland functional losses. A resolution was also

signed by the SFWMD acknowledging the intended execution of a compliance agreement between SJRWMD and OUC concerning mitigation for unanticipated, harmful wetland impacts in response to the SFWMD's request to investigate. The SFWMD resolution recognizes that timely performance of the obligations set forth in the compliance agreement will completely offset the existing, harmful impacts identified and will resolve the SFWMD's request for investigation. Responses to the RAIs were submitted to the SJRWMD in May and August 2009. In September 2009, OUC was informed that the SJRWMD deemed OUC's 5-year compliance report complete. This milestone signifies that the District will not issue additional RAIs and is drafting a technical staff report (TSR) with CUP conditions, which may be different from the original.

Project RENEW is a regional reclaimed water project required by OUC's CUP. An annual report documenting the progress on Project RENEW was submitted to

OUC and Winter Park are working together to prepare preliminary details to create an interconnect between the two utilities. The design would allow water transfer between the two systems during an emergency and in the future, potentially provide AWS water from OUC to Winter Park.

WRE – Water Resources Section (continued)



La'Tanya Woodson, Admin Specialist, supports the Water Resources & Engineering Division, which includes the WRE Director, Water Engineering Manager and Project Engineers.

SJRWMD in October 2008. In February 2009, WR and OUC legal staff completed negotiations for an agreement with the City of Apopka to secure their financial and operational cooperation in Project RENEW. The agreement established a 50-50 financial partnership between OUC and Apopka for the use of 3 mgd and 8.55 mgd of reclaimed water by 2011 and 2015, respectively.

WR continues to track the progress of the City's Eastern Regional Reclaimed Water Distribution Project (ERRWDS). 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 2008. 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 December 31, 2009. There were significant delays on one segment of the pipeline due to the need to coordinate construction with the Orange County Public Works Woodbury Road Extension Project. The SJRWMD has agreed to the

extend construction completion through March 31, 2011. Despite delays, OUC continues to provide more reclaimed water than was required to its service area.

WR, with assistance from Water Production section, 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.

Plans are underway to construct a multi-zone, deep monitoring well 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, construction has been delayed until FY10.

A water quality trend analysis report due by April 1st was submitted to the District. In general, the historical data is fairly constant for all parameters for each well. As the number of samples increase, the ability to assess future trends will increase.

An annual water audit was performed to estimate "unaccounted for" water losses in the treatment facilities and distribution system, and submitted the report to SJRWMD. OUC's water losses (8.74%) are well within acceptable limits established by SJRWMD.

SJRWMD awarded the Florida Water Star certification for OUC's new administration building, Reliable Plaza, in November 2008. OUC's new Reliable Plaza was one of the first commercial buildings to receive this certification. This water conservation program, offered by the SJRWMD, encourages water-efficient options for landscapes, irrigation, and indoor plumbing, appliances, and fixtures.

WETS – GIS Technical Services Section

CONSOLIDATION OF GIS AREAS

In August 2009 the Water Business Unit's and Energy Delivery Business Unit's Geographic Information System (GIS) mapping/data sections were merged. *This new division, GIS Technical Services (GTS), briefly reported to the Vice President of the Water Business Unit.* After consultations between EDBU and WBU design GIS units, a talent merger was created to more efficiently and effectively provide GIS products, operations support, and related services at OUC. In October 2009, the GTS section was moved under the OUC Information Technology (IT) Business Unit.



GIS Technical Service Group continues to support Info Water hydraulic pipe model software along with performing day to day editing and maintaining of the existing water distribution assets.

GTS's Mission Statement:

OUC's Geographical Information System (GIS) will accurately represent the Commission's Distribution/ Transmission systems, and provide mapping, database information and services for operations, engineering and other groups within OUC as well as their customers. The GIS will be a useful and reliable tool that can be efficiently updated, managed, viewed and interfaced with other Enterprise applications.

of as-built drawings being produced by the GTS area. While Water Engineering performed more in-house designs, they decreased the number of miscellaneous

engineering drawings produced by GTS. However, the number of as-built drawings of segments of water system as-built mapping projects increased by 4%.



Water Distribution Crew rely on the GIS system maps to maintain and construct water pipes on Anderson Street and Division Avenue

ACTIVITIES

The economic recession has slowed the construction growth in OUC's Water Service area. This decreased activity affects the types of projects and numbers

WETS – GIS Technical Services Section (continued)



Tacares McCormick, Distribution Technician



Lynn Benson, Distribution Technician

Approximately 1,590 hydrant corrections/updates were made to the Water GIS system and 2,630 valves were moved to audited Global Positioning System (GPS) locations. Emergency street opening permits decreased by 17%.

PROJECTS

OUC's Legal Department and GTS started the GIS easements project. A first

data model established the fields which describes and represents the easements in the database. Next is the first phase pilot where recently created easements are placed on maps within OUC's GIS system. The pilot project focuses on the interfacing, maintenance and functional aspects of the system. The second phase inputs the Electric Transmission easements into GIS. Easement locations are symbolized based on the type of

easement: water, electric and combined utilities. Scanned images of OUC Easements are then hyper-linked to the GIS easement map location from the Orange County Comptroller's office or the Osceola County Easements Clerk of Courts websites.

GTS is also assisting with the creation of a 2008 water distribution model using data from OUC's People Soft Enterprise Risk Management (PSERM) customer information system. After several iterations, a script was created by OUC's Information Technology group to extract detailed water consumption data. Now this programming script can be slightly edited to generate new water customer data for updates of the hydraulic model. This data will then be summarized producing an annual water demand database. The consumption and other demands are geographically located in GIS and imported into InfoWater, a hydraulic pipe model program. OUC Engineers use this model to analyze OUC's water distribution system, hydraulic parameters, and system design characteristics, such as pressure, flow and water age.

Assets of the Lake Nona Chiller Plant and approx. 8,270 feet of supply/return mains were also added to the GIS maps in 2009. Plant schematics and details were updated for the OUC Chilled Water area also.

STAFFING

Lesley Roddam was hired as a Technical Support Administrator, replacing Helen Zassyphkina. Lesley graduated from the University of Florida with a BSBA in Computer Science. She is a Certified GIS Professional and had previously worked for Walt Disney World as a GIS Administrator for 7 years prior to employment at OUC.

Water Production Division

Water Production (WPRO) produced 28.97 billion gallons of drinking water in Fiscal Year 2009, overall a water volume decrease of 2.08 billion gallons over the prior year. Flows range from a high of 103.8 millions gallons per day (MGD) on 5/10/09 to a low of 67.9 MDG on 2/3/09. OUC's peak water system flow was recorded at 145 MGD on 5/7/09.

The economic recession and decreasing water demands has caused WPRO to take an introspective look at all of its project management and business decisions. WPRO reduced the operations budget by \$700,000 while still advancing water quality. Some of the specific measures taken to reduce the budget included delayed annual painting projects and reduced biweekly aesthetic lawn maintenance services around the water treatment facilities. WPRO staff also saved \$40,000 per year in outside services by eliminating the contract custodial cleaning services. Through attrition, three positions were eliminated. The Water Quality Lab (WQL) was able to increase their outside revenues by 25%. All of this was accomplished while taking on larger projects with WETS and local consultants.

The severe decline in the local economy and reduced water demand impacts water quality within certain areas of the water distribution system. The construction slowdown reduces the amount of water typically used to flush new water mains. Foreclosures in residential neighborhoods and customers saving money through water conservation also reduce the water demand. The increased number of customer water quality inquiries (CWQI) directly correlates with the age of the water. When a large water main is installed (anticipating future demands) and placed into initial operation with only minimal demands, we usually target these areas for flushing. This is the common practice of discharging water from the distribution system to replace the older water with fresh water. With the decline



Water Production control room

in the economy, and resulting decrease in customers, many older mains sometimes may not sufficiently turnover to maintain required regulatory water quality. The water quality problems are often sporadic until receiving a CWQI. Increasing CWQI's has placed a heavy burden on the Operations Section, but they were able to maintain a good rapport both with the customers and Florida Department of Environmental Protection (FDEP).

Water Quality Laboratory (WQL) section and its six employees (five regular and one temporary) transferred from Water Engineering and Technical Services (WETS) to WPRO. Although no procedural changes were made (the WQL is autonomous when monitoring the water quality throughout the system) there are fresh approaches to solving water quality issues. Now chemists and WPRO technicians work more closely as a team. The WQL continues to maintain

Water Production Division (continued)

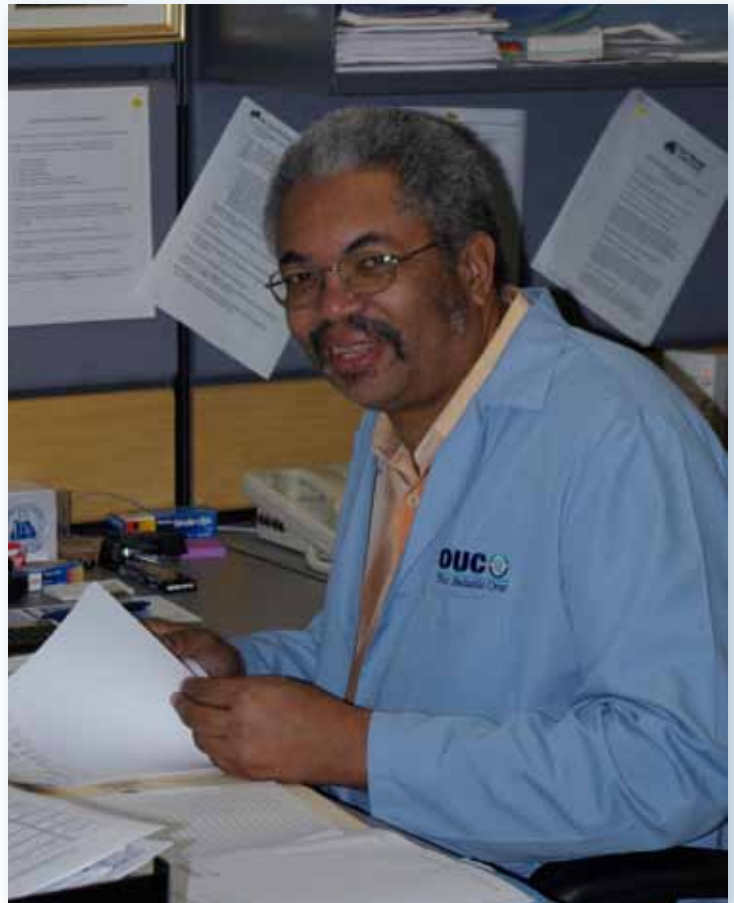
its NELAC (National Environmental Laboratory, Accreditation Conference) certification for both drinking water and non-potable water testing. The non-potable certification will be applied for the environmental monitoring and laboratory testing at the Stanton Energy Center. The WQL is also participating in the WRF (Water Research Foundation) project “Assessing and Managing Biofilm in Distribution Systems # 4087”. WQL staff also received FDEP Standard Operating Procedure Sampling Training for groundwater, surface water, and wastewater this year at the TREEO Center in Gainesville Florida.

On June 9th, 2009, the Orlando Fire Department responded to an emergency event at the Lake Highland WTP when a chlorine system pressure gauge failed causing a release of chlorine into the building. All safety systems operated as they were designed: chlorine bay was isolated via the automatic doors and vents, plant alarms sounded, and the chlorine scrubber system automatically activated. All personnel responded to the situation as they were trained. Meanwhile, the system operator successfully maintained water flow from the facility without customer impact. When the fire department’s hazmat team arrived and learned of WPRO’s HAZWOPER training, they requested OUC’s water plant personnel to enter the chlorine room with them to assist in shutting down the system. Through teamwork with the fire department, WPRO quickly isolated the problem and returned to normal operations in short order.

An after-action review was held with the fire department about the incident. We slightly modified our procedures to help the fire department to respond in a more effective manner. Now the notifications are sent directly to the fire department via the OUC radio system. This reduces any confusion and allows the fire department

to receive information from the site. The event has also led to a complete reconditioning of all the OUC chlorine scrubbers. After a scrubber is activated to remove the chlorine from the building, the chemical’s buffering capacity of caustic soda is used up. To rehabilitate the scrubber the caustic soda is simply pumped out and replaced. Extensive precipitate formations were discovered at all eight OUC scrubbers that were removed slowly with acid and water. Preventative maintenance on the scrubbers is on a regular three year schedule.

A project titled the “Tweener Project” will help us reduce our chemical demands. New chlorine analyzers were installed between the ozone contactors and the ground storage tank just after the chlorine injectors. OUC operators may adjust the chlorine dosages into the ground storage tank based upon residual and no longer rely upon calculating and adjusting it after the flow stabilizes through the tank. This helps maintain a minimal residual in the tank. The Tweener Project was a group effort self performed by the mechanics who ran all



John Gray, Water Quality Laboratory Manager (WQL), reviews regulatory reports before submittal to FDEP (Florida Department of Environmental Protection)

of the piping, the electricians who ran the wiring, the instrumentation technicians who calibrated all of the controls, and by the operators who added the reading to the SCADA Screens.

Water Quality Analysis

Listed in this chart are the parameters set by the Safe Drinking Water Act. The methods used to analyze the water are in accordance with those set forth in the Safe Drinking Water Act.

The characteristics of untreated groundwater from the Floridan Aquifer are relatively stable. It provides an excellent source of high quality drinking water. As indicated below, the water provided by OUC meets and exceeds all standards established by the Safe Drinking Water Act.

Comparison to Primary Standards			
Primary standards relate to health and are expressed as Maximum Contamination Levels (MCL).			
Inorganics	MCL	Raw Water	Treated**
Arsenic	0.010	<0.001	<0.001
Barium	2	0.020	0.023
Cadmium	0.005	<0.002	<0.002
Chromium	0.1	<0.002	<0.002
Cyanide	0.20	---	<0.003
Lead	0.015	<0.001	<0.001
Mercury	0.002	<0.00009	<0.00009
Selenium	0.05	<0.005	<0.005
Sodium	160	5.75	10.1
Nitrate	10	<0.15	<0.15
Nitrite	1.0	<0.15	<0.15
Fluoride	4	<0.15	<0.15
Turbidity in NTU	1.0	0.28	<0.12
Antimony	0.006	<0.001	<0.001
Beryllium	0.004	<0.001	<0.001
Nickel	0.100	<0.002	<0.002
Thallium	0.002	<0.0002	<0.0002
Organics			
Volatile Organics (21 total)	***	All BDL	All BDL
Disinfection By-Products			
THMs (Total)	0.080	—	0.057 RAA
HAAs	0.060	—	0.021 RAA
Bromate	0.010	—	0.005 RAA
Radionuclides			
Gross Alpha	15.0	—	<1.8
Radium 228	5	—	<1.0
Results in pCi/L Reported in 2008			

Comparison to Secondary Standards			
Secondary standards also have Maximum Contamination Levels, but are related to aesthetic qualities such as taste, odor and color.			
Secondary Standards	MCL	Raw Water	Treated**
Chloride	250	9.79	17.2
Color in Pt-Co Units	15	6.7	<0.7
Copper	1.3	<0.002	0.009
Corrosivity	+0.2- 0.2	-0.20	-0.13
Iron	0.3	0.012	0.007
Manganese	0.05	<0.002	<0.002
Odor Threshold # Units	3.0	3.2	NOD
pH Field	6.5-8.5	7.68	7.72
Sulfate	250	11.8	13.1
Total Dissolved Solids	500	170	161
Silver	0.100	<0.001	<0.001
Zinc	5.0	0.003	0.010
Aluminum	0.200	0.007	0.009

Additional Testing (No Standards)****			
Alkalinity CaCO3	—	112	118
Ammonia	—	0.34	<0.10
Calcium as Ca	—	37.0	38.7
Carbon Dioxide	—	4.88	4.30
Conductivity in µs/cm	—	291	335
Dissolved Oxygen	—	0.31	15.6
Hydrogen Sulfide	—	2.07	<0.38
Magnesium as Mg	—	8.64	8.69
Phosphate as P	—	<0.15	<0.15
Potassium as K	—	1.10	1.20
Silica	—	10.4	10.4
Total Hardness as CaCO3	—	128	132
TOC - Total Organic Carbon	—	1.72	1.55

Abbreviations:

- BDL - Below Detectable Limits
- < - Less Than
- > - Greater Than
- MCL - Maximum Contamination Levels
- NOD - No Odor Detected
- pCi/L - Picocuries per liter
- THMs - Trihalomethanes
- HAAs - Haloacetic Acids
- RAA - Running Annual Average
- µs/cm - Microsiemens per centimeter

Notes: All results in milligrams per liter (mg/L) unless noted otherwise.

- ** Average treated water for 8 plants based on 2009 test results.
- *** MCL varies with each parameter.
- **** No standards have been established for these parameters by the Safe Drinking Water Act.

Water Distribution Operations Section



WDIS Operations stepped up with exceptional teamwork in all sections to successfully operate and test over 9500 OUC owned fire hydrants. Other challenges faced this year were continuing our effort to identify non-revenue water through our leak detection survey, the meter replacement program and our backflow testing program.

The Response section answers trouble calls 24 hours/7 days per week and ensures reliable customer service. In 2009 technicians answered 4432 service calls at average response times of 24 minutes. The Response section supervisor is Mr. Donny Capatosto. Leak detection surveys are conducted using state of the art listening equipment to identify hidden leaks in OUC's water distribution system. Over twenty one miles of water main was surveyed, and five leaks were pinpointed and repaired. The valve exercise program continues to benefit water operations

and we are collecting asset data about OUC's distribution system which is tracked through our water GIS platform. The valve operation truck located and exercised 2866 valves this year. Because OUC water crews are able to quickly access critical valves during emergency events or under harsh conditions, mains are isolated, repaired and the damages due to water flow are minimized. Also, restoration times and costs are minimized.

The Inspection section inspects construction projects and oversees the Cross Connection Control (CCC) operations. 91 commercial and joint partnership construction projects were completed in 2009 within OUC water service area. OUC state certified technicians performed tests on 15,940 backflow devices ranging in sizes from ¾ inch up to 12 inch diameter. Estimates of revenues generated from CCC testing were approximately \$384,000. The Inspection section supervisor is Mr. Lee

Davis. Alba Agosto, Admin Specialist II, successfully streamlined backflow reporting and notification processes. The cross connection inspections are aimed at identifying unauthorized water connections and protecting OUC's water system from cross contamination. CCC inspections totaled 2,066. OUC's Inspection and CCC team is committed to providing service that ensures our customers receive safe, reliable drinking water.

The Accountability section administers the meter exchange program and they audit all the fire hydrants. The Accountability section is supervised by Mr. Corey Johnson. Accountability staff successfully exchanged and processed 6,600 water meters in 2009. The fire hydrant audit program audited a total of 10,817 OUC owned fire hydrants and verified as operational. When fire hydrants require repairs, it is addressed within 48 hours. In 2009, hydrant crews repaired 995 fire hydrants.

Water Distribution Operations Section (continued)



WDIS crew performed repairs on Robinson Street water distribution system

WDIS employees did an exceptional job addressing new regulatory related issues while still performing their normal duties within an adjusted operating budget and at reduced staff levels this year. WDIS performed more than 108,600 activities on OUC's water distribution system.

WDIS Management and OUC's Legal Department met with outside attorneys to research installation of polybutylene water service lines in the 1980's. Lawyers will begin the legal process, assess and attempt to recover compensation for the past practice of repairs and replacement polybutylene pipe.

Seven WDIS employees successfully passed the state Level 3 Distribution Operator Exam, James Applewhaite, Tim Barley, Keith Bostwick, Rusty Graham, Thomas Howell and Mike Macgregor.

Brian Smith has successfully completed the Level III and Level II state exams.

WDIS started and is teaming up with WETS staff to develop a WBU asset management program, which will have entered into a pilot phase in early 2010.

OUC's new digital radio system began operations in October 2009, enhancing the field staff communications with office staff and local government agencies.

WDIS self-performed small concrete and sod restoration jobs in 2009 that were previously subcontracted. The self performance of the small restoration jobs resulted in more than \$100,000 savings to the 2009 operations and maintenance budget.

The WDIS Crew Section started the East Robinson Street water main project on March, 9, 2009 installing a new 16" water main, water main crossing, and

services on Robinson St. from Mill Ave. to Primrose Dr. This work preceded the FDOT road milling and resurfacing project. This project required that the majority of the work be completed at night due to the high daytime traffic on this road. The Robinson St project was completed in September of 2009 ahead of schedule and under budget.

The Accountability Section is now responsible for the zero consumption water meter report, which was previously an Accounts Receivable Management duty. WDIS is working diligently to minimize lost revenue due to water meter failures.

The Sensus Meter Alliance was extended for an additional year, allowing OUC the opportunity to pilot water meters from other manufacturers to make a well-informed decision when the meters alliance comes due in 2010.

Water Distribution Operations Section (continued)

WATER DISTRIBUTION CREWS 2009 PROJECTS

- *On going replacement of the polybutylene service lines the Meadow Woods Subdivision - 300 services being replaced*
- *Replaced and renewed blue polybutylene pipe in the Dunwoody Subdivision - 50 services being replaced.*
- *Installed approximately 6,000 feet of new 16" ductile iron water main on Robinson Street between Mills Ave and Crystal Lake Drive, performed by two working crews at night. This work was required to replace old 16" cast iron main before the FDOT road resurfacing project began.*
- *Constructed 250' of 8" D.I. pipe on Anderson Street and Division Avenue, for the new OUC Chiller Plant.*
- *Constructed 2,600 feet of 2" PVC on Robinson Street between Mills Ave and Crystal Lake Drive on the south side of Robinson Street to parallel the 16" and pick up services on the south side of the road.*
- *Replaced 300' of 24" B&S pipe with 24" D.I. pipe and replaced a 24" valve near Division Avenue. and Anderson Street near the New Events Center*
- *Replaced 50' of 6" 680' of 2" and 21 – 1" services on the Thornton Avenue City street and drainage project.*

In summary, the crew section installed approximately 2 miles of pipe which breaks down as follows: 4,390' of 2", 1,090' of 6", 595' of 8", 80' of 10", 160' of 12" and 6,060' of 16" and larger mains in 2009. There were 52 fire hydrants, 1-2" and 1-6" fire services installed; 180-1", 40-2" and larger service taps made in 2009

STAFF

Promotions: Moises Cabrera, Bradley Hall, Louis Long and Rex Long were promoted from Distribution Technician II to Distribution Technician I positions. Robert Williams and James Applewhaite were promoted to Equipment Operator.

Training: Brennan Scott, Andrew Ulrey and Rex Long completed their cross training in the Response and Accountability sections.

Level III Distribution Class: There were 12 WDIS Crew employees who successfully passed the required Level III Distribution training class this year qualifying them to take the State of Florida Department of Environmental Protection certification exam. Randy Belcher, Tonney Preston, Martin Scurry, Jeff Metheney, Tim Annis, Todd Jernigan, Louis Long, Luis Febres, Clement White, Moises Cabrera, Vern Kivel and James Applewhaite.



Mike Roberson, Support Specialist



Leonel Dominguez, Support Specialist



Larry Bridle, Support Specialist



*Thomas Howell,
Sr Distribution Technician*

Water Distribution Operations Section (continued)

WATER ACCOUNTABILITY SECTION ACTIVITIES

Meter Shop	2001	2002	2003	2004	2005	2006	2007	2008	2009
Check meters for dead and read	825	679	1,214	1,371	1,383	2,216	1,065	431	677
Clean out meter and read	2,703	1,844	2,812	3,110	3,575	4,896	4,361	6,868	6,137
Clock meter for leaks	739	872	823	523	444	701	553	637	663
Dial exchanges	120	70	150	107	118	235	102	128	178
Installed meter riser	596	567	493	341	467	382	463	327	351
Installed special irrigation meters	-	-	-	100	361	265	281	80	74
AMR repair	21	20	28	24	15	4	16	27	20
Meters field tested	199	74	110	76	144	445	365	583	258
Meter removal	-	148	210	458	393	335	192	128	210
Meter shop tested	1,995	1,086	97	294	4	147	0	55	243
Raise meter box to grade	2,330	2,320	2,032	1,853	1,735	1,686	4,361	2,004	2,266
Hydrant - Audits	1,995	1,518	2,165	1,146	689	1,102	3,422	4,404	10,765
Hydrant - Painted	664	2,595	2,500	2,157	162	202	334	187	132
Hydrant - Repair	120	139	200	361	230	720	777	597	1,257
Hydrant flow test	-	-	-	-	26	5	300	2	2
Repair meter leaks	668	823	781	623	657	666	565	469	397
Replace box and lid	2,573	2,352	2,571	2,170	2,825	3,885	3,164	3,227	3,641
Replace curb cock or coupling	523	441	351	367	415	372	422	405	309
AMR meter sets	-	6	31	22	13	0	0	3	6
Meter exchanges	-	2,761	3,446	4,700	9,312	8,775	7,022	6,751	6,611
Submeters	-	165	1,232	20	683	894	0	0	0
Reclaimed meter sets	-	-	396	1,028	1,028	315	383	134	61
Totals	16,071	18,480	21,642	20,851	23,464	28,248	28,148	27,447	34,258

DISTRIBUTION CREWS ACTIVITIES

Maintenance Tasks	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adjust hydrants	5	-	-	-	-			1	13
Adjust mains or services	877	122	54	83	8	5	98	169	199
Adjust meter box to grade	270	353	432	437	480	614	464	414	199
Adjust valve boxes	66	77	57	260	411	51	22	72	654
Exercise valves	186	68	186	712	1,069	165	4	2	301
Installed meter riser	65	52	91	71	83	48	47	101	24
Locate valves	55	14	138	784	1,216	193	7	11	32
Meter exchanges	50	76	109	297	491	358	494	362	228
Relocate meter	140	251	197	222	186	192	156	85	99
Renewed mains	193	118	97	56	37	2	89	253	611
Renewed services	614	718	892	1,171	738	634	1,152	693	705
Repair hydrants	4	2	-	5	3	16	5	2	3
Repair mains	77	108	87	109	94	105	96	110	92
Repair services	75	75	61	65	80	73	54	70	68
Repair valves	24	34	35	23	21	7	30	48	29
Replace box/lid	37	55	119	209	139	124	272	225	273
Replace curb cock/coupling	104	81	109	64	12	8	4	5	69
Replace hydrant	49	78	73	98	59	65	79	54	45
Replace/install valves	100	25	231	188	184	177	146	293	236
Totals	2,995	2,312	2,968	4,854	5,316	2,837	3,219	2,969	3,867

Water Distribution Operations Section (continued)

INSPECTION/RESPONSE SECTION ACTIVITIES

Maintenance Tasks	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adjust mains or services	178	139	118	58	127	12	111	18	16
Adjust meter box to grade	573	735	596	372	441	443	392	401	455
Adjust/Replace valve boxes	114	105	124	194	127	223	292	192	807
Clean out meter box and read	1,061	1,614	1,245	1,008	1,097	1,097	1,400	1,754	2,856
Customer trouble	632	695	481	631	665	792	861	839	923
Customer water quality inquiry	103	105	64	42	30	37	14	5	16
Cut temporarily	410	411	316	361	351	314	459	506	723
Cut-on/off	448	407	372	336	350	396	424	494	747
Exercise valves	467	427	346	42	323	1,455	2,062	1,512	1,529
Flow test	103	102	62	104	139	240	122	128	122
Flush mains	97	112	78	55	65	194	490	639	687
Installed meter riser	542	604	477	421	360	325	341	393	327
Irrigation meter sets	442	393	269	254	16	36	14	13	8
Line locates for contractor/utility	11,025	14,067	15,023	18,328	20,829	22,502	25,085	20,120	30,082
Locate valves	1,920	1,977	1,202	1,103	858	2,845	4,314	3,645	6,154
Low pressure calls	110	90	60	58	51	58	66	57	59
Meter exchanges	439	773	825	686	759	730	692	799	727
Meter removal	188	223	184	74	20	20	40	50	58
Meter set	449	581	258	170	192	174	85	423	66
PM calls	1,632	2,351	1,696	1,351	924	977	1,161	903	665
Relocate meter	163	143	135	63	28	27	22	23	25
Renew services	255	348	243	507	167	147	127	103	166
Repair customer's service	293	321	294	246	298	228	239	239	232
Repair hydrants	16	41	13	15	9	6	10	15	20
Repair mains	78	81	77	66	67	71	43	46	49
Repair meter leaks	312	331	320	272	458	556	564	506	543
Repair services	582	533	412	246	490	371	406	325	367
Repair valves	57	57	29	401	12	23	24	20	23
Replace box/lid	648	766	716	710	169	212	351	484	516
Replace curb cock or coupling	856	997	727	595	597	556	632	552	574
Replace port cap	34	43	28	28	2	12	11	7	1
Reset lids	256	308	198	160	169	162	58	80	70
Backflow prevention tests	1,604	3,968	4,473	4,201	4,034	5,461	11,095	11,208	15,940
Cross connection inspections	940	2,116	1,522	2,108	-	606	1,255	1,720	2,066
Valve Audits						2,036	3,239	3,158	2,866
Totals	27,027	35,964	32,983	35,266	34,224	45,350	56,501	51,377	70,485

Water Distribution Operations Section (continued)

WBU SUMMARY OF ALL PIPE IN SERVICE & CATEGORIZED BY PIPE SITES

Pipe Size (in)	Pipe Material (Note 2)	Pipe in Service as of: (Note 1)				Net Gain (Loss)(Note 3)	
		SEPT. 30. 2008		SEPT. 30. 2009		All Activities	Abandoned
		MILES	%	MILES	%	MILES	MILES
		-		-		-	-
2 "	or Less GALV or Unk	149.060	8.56%	148.232	8.47%	(0.83)	0.230
2 "	or Less PVC	71.645	4.11%	72.120	4.12%	0.47	0.019
3 "		1.921	0.11%	2.212	0.13%	0.29	0.000
4 "		162.273	9.32%	163.666	9.35%	1.39	0.030
6 "		451.151	25.90%	450.910	25.76%	(0.24)	0.366
8 "		401.397	23.05%	402.315	22.99%	0.92	0.120
10 "		64.802	3.72%	65.839	3.76%	1.04	0.048
12 "		245.948	14.12%	249.201	14.24%	3.25	0.179
14 "		2.264	0.13%	2.267	0.13%	0.00	0.000
16 "		107.891	6.19%	109.133	6.24%	1.24	0.109
18 "		1.199	0.07%	1.198	0.07%	(0.00)	0.000
20 "		67.410	3.87%	68.325	3.90%	0.92	0.000
24 "		10.034	0.58%	10.089	0.58%	0.05	0.000
30 "		2.823	0.16%	2.826	0.16%	0.00	0.000
36 "		1.697	0.10%	1.698	0.10%	0.00	0.000
42 "		0.052	0.00%	0.052	0.00%	0.00	0.000
48 "		0.088	0.01%	0.086	0.00%	(0.00)	0
TOTALS		1741.66	100.00%	1750.17	100.00%	8.51	1.10

2008 AVG DIA. 8.116"

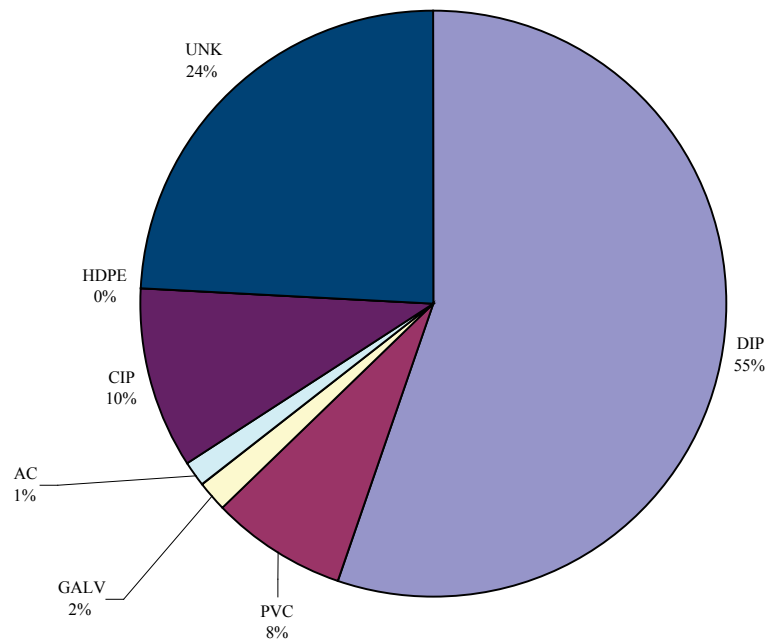
2009 AVG DIA. 8.134"

- Note 1: Pipe in Service is based on information contained in the GIS database on stated date. It excludes abandoned pipe.
- Note 2: Pipe material is based on information contained in the GIS database as of the stated date. It excludes abandoned pipe. 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 Sept 30, 2008 from the pipe in service as os Sept 30, 2009. The gain or loss in pipe is dependant 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), and 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.
- Note 4: There is discrepancy in the miles of water pipe relating to the 2009 OUC Statistical Report and the 2009 OUC Business Unit Annual Report due to an incoreect spatial query. This report maintains the correct miles of water pipe.

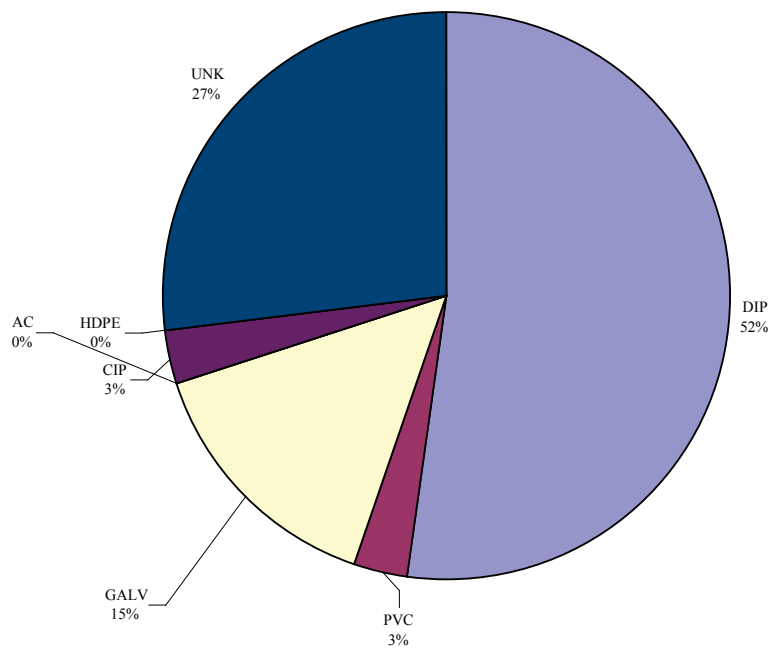
Appendix 1

This section contains a wide range of 2009 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
2009 Pipe Material Percentages

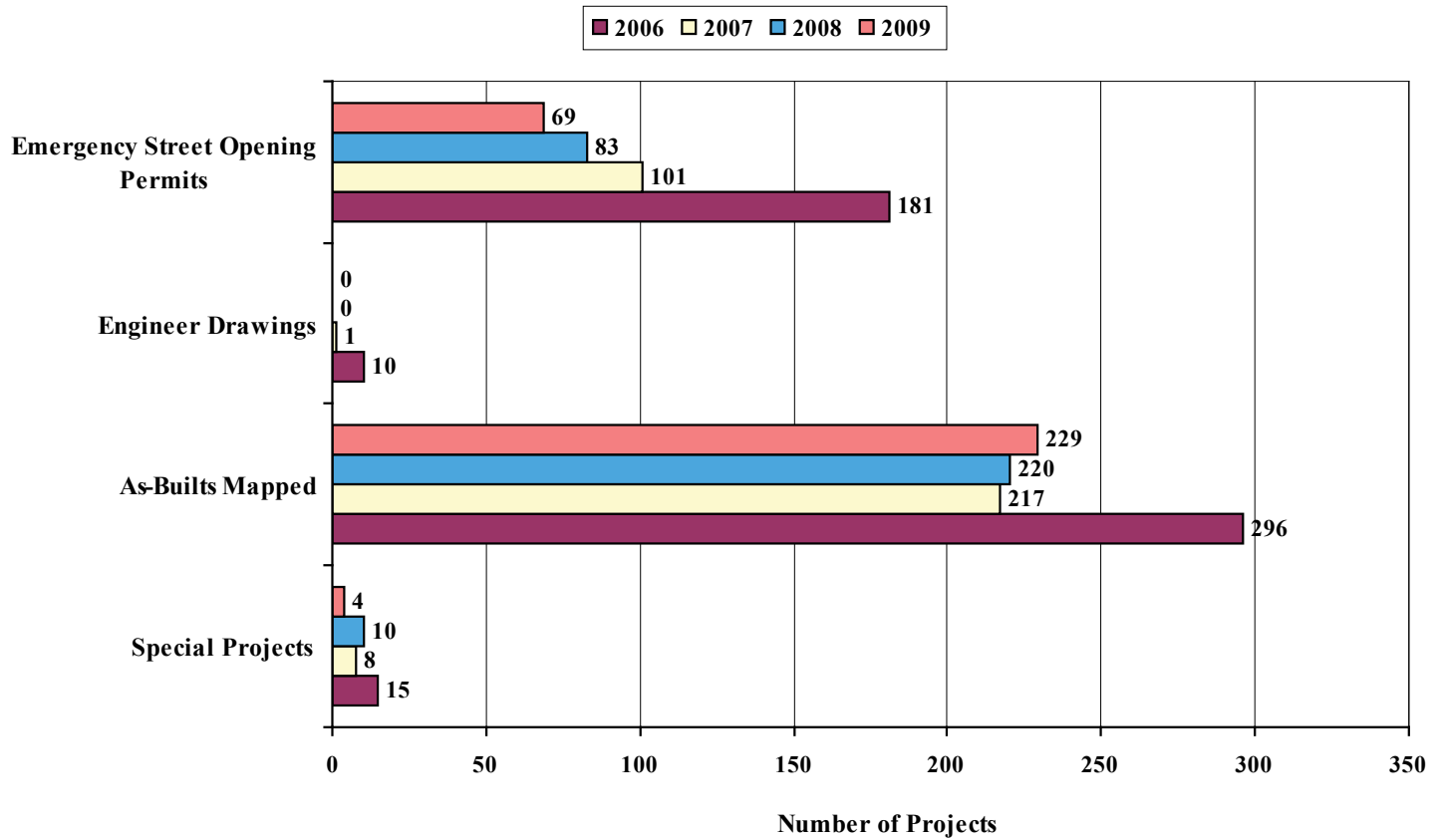


2009 Total Miles of Pipe Abandoned



Appendix 1 (continued)

Figure 2
Technical Services Projects



Appendix 1 (continued)

Figure 3
Water Engineering Section
Total Value of Estimated Projects

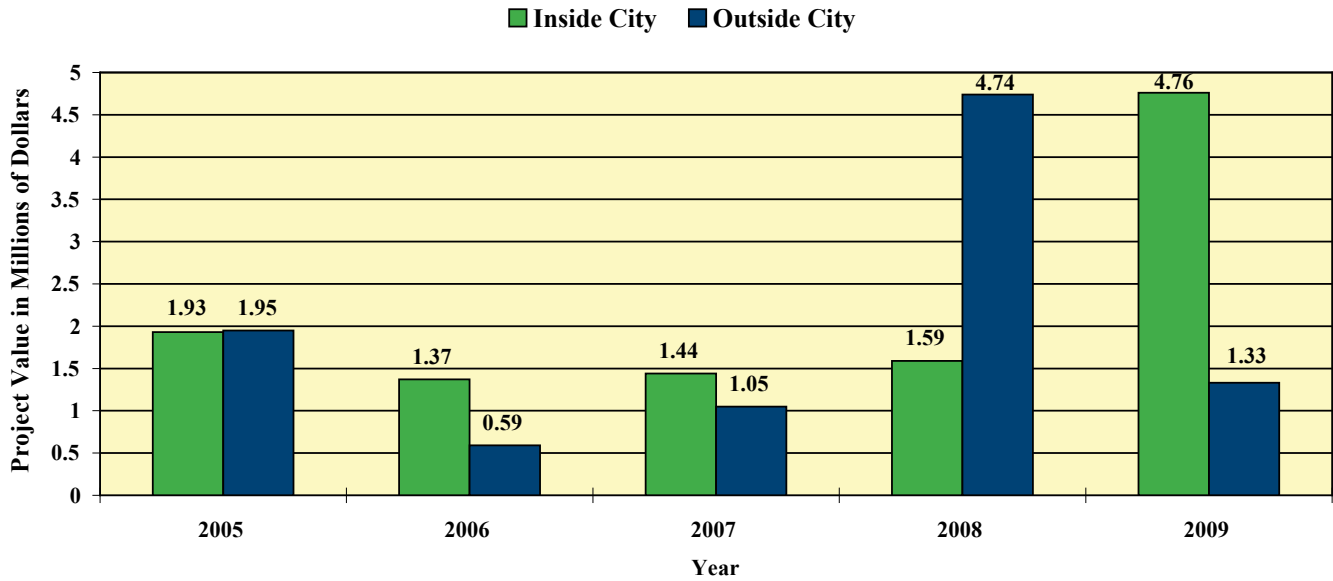


Figure 4
Water Engineering Section
Total Number of Water Construction Projects

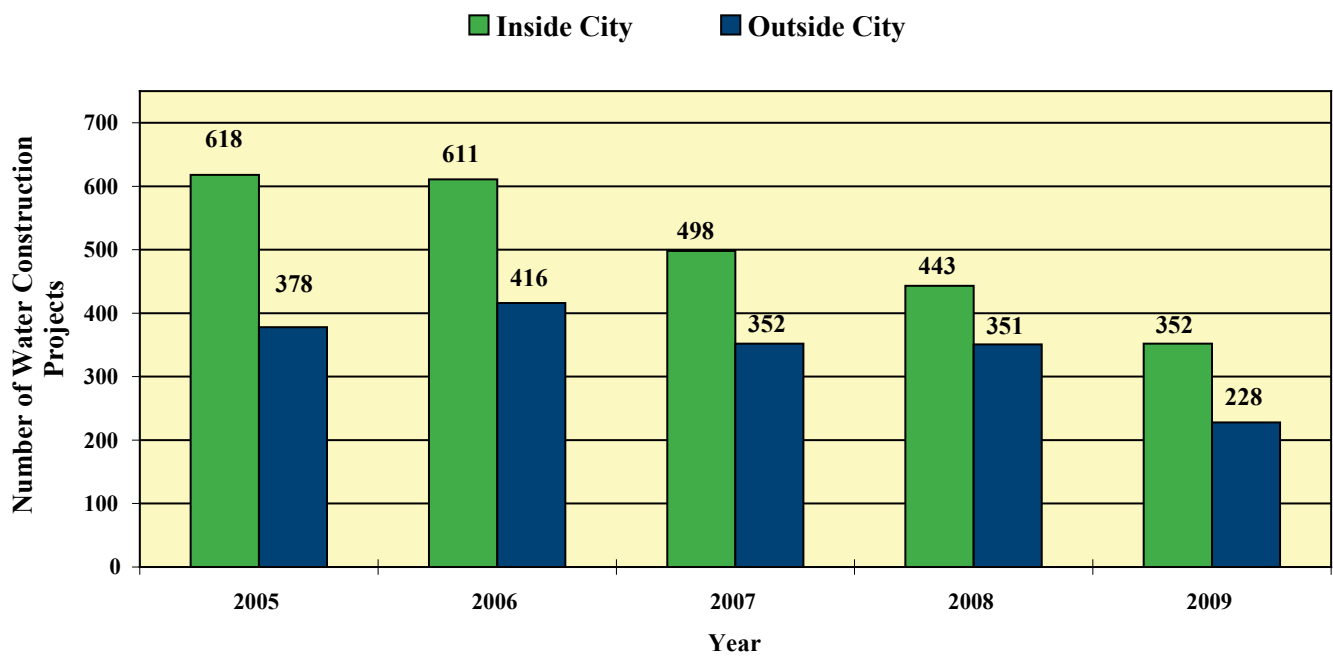


Figure 5
Water Business Unit
Breakout Of Capital Improvements Funding Sources

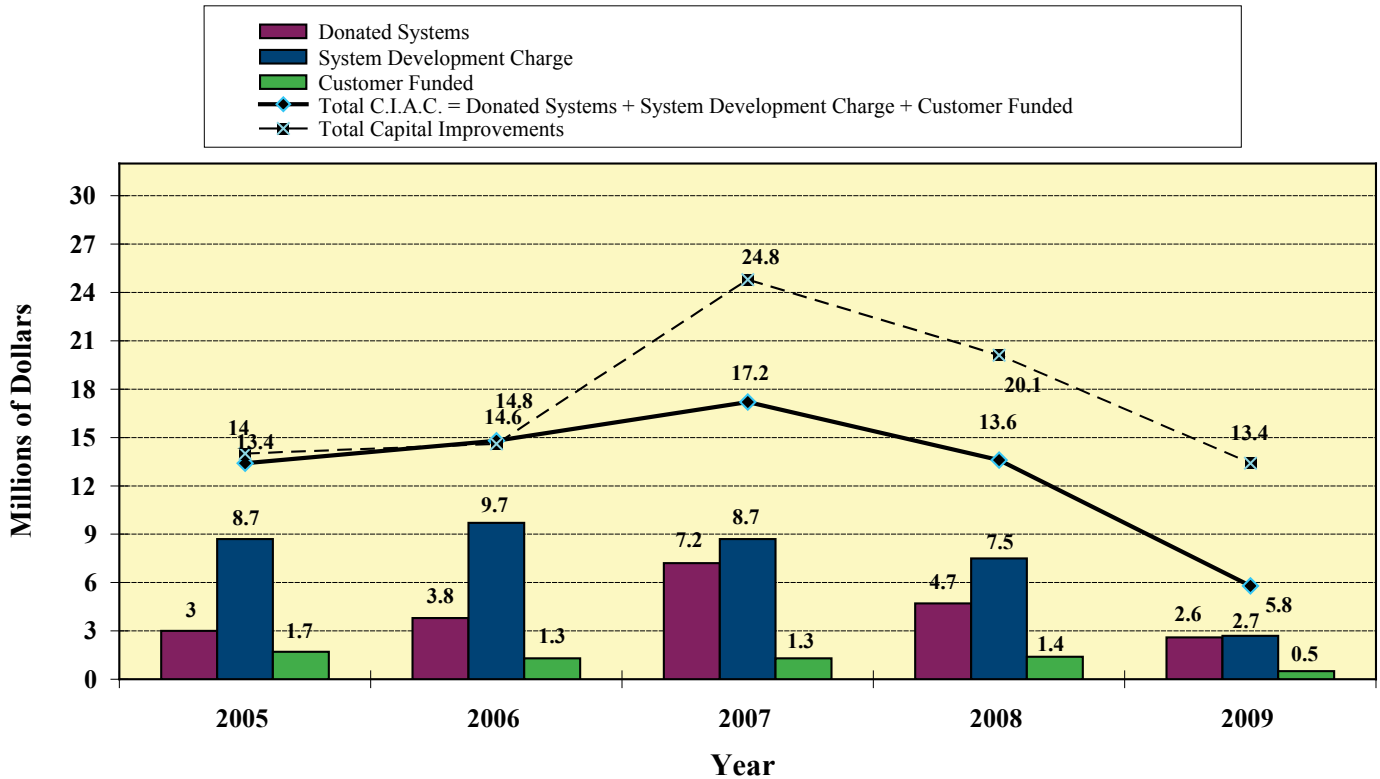
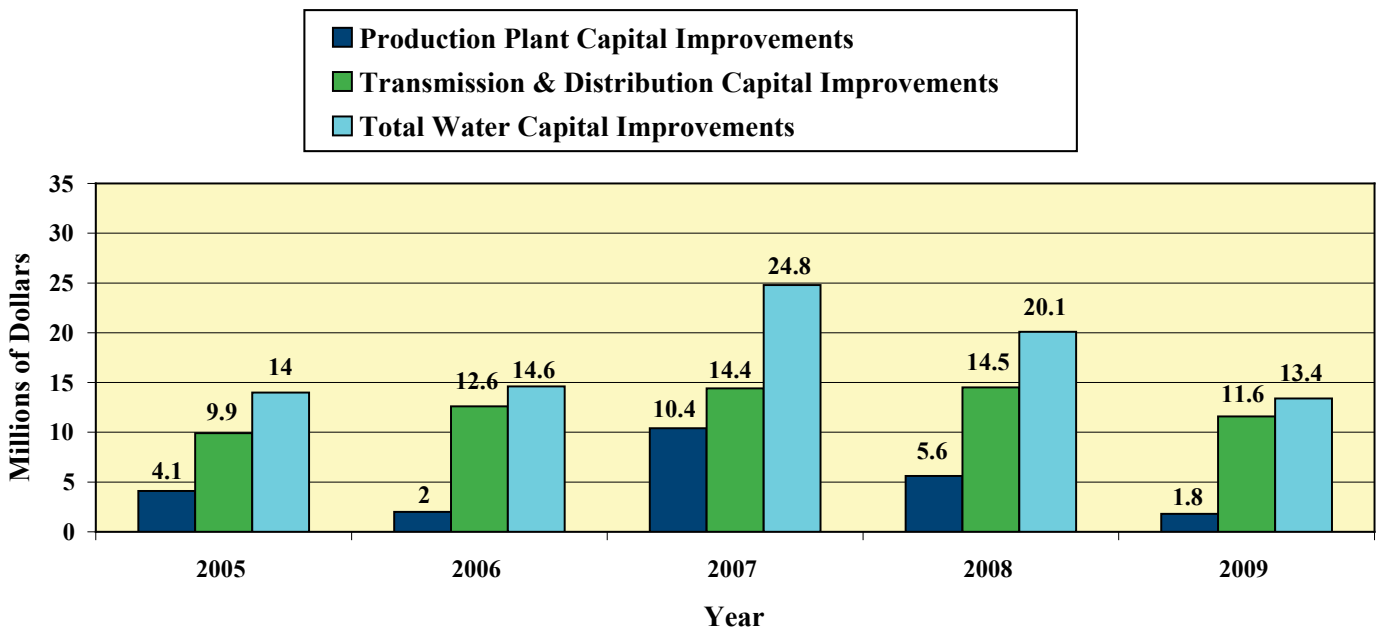


Figure 6
Water Business Unit
Capital Improvements Spending History



Appendix 1 (continued)

Figure 7
Total Number of Chemical Analyses for
Outside Clients and for OUC Drinking Water Compliance

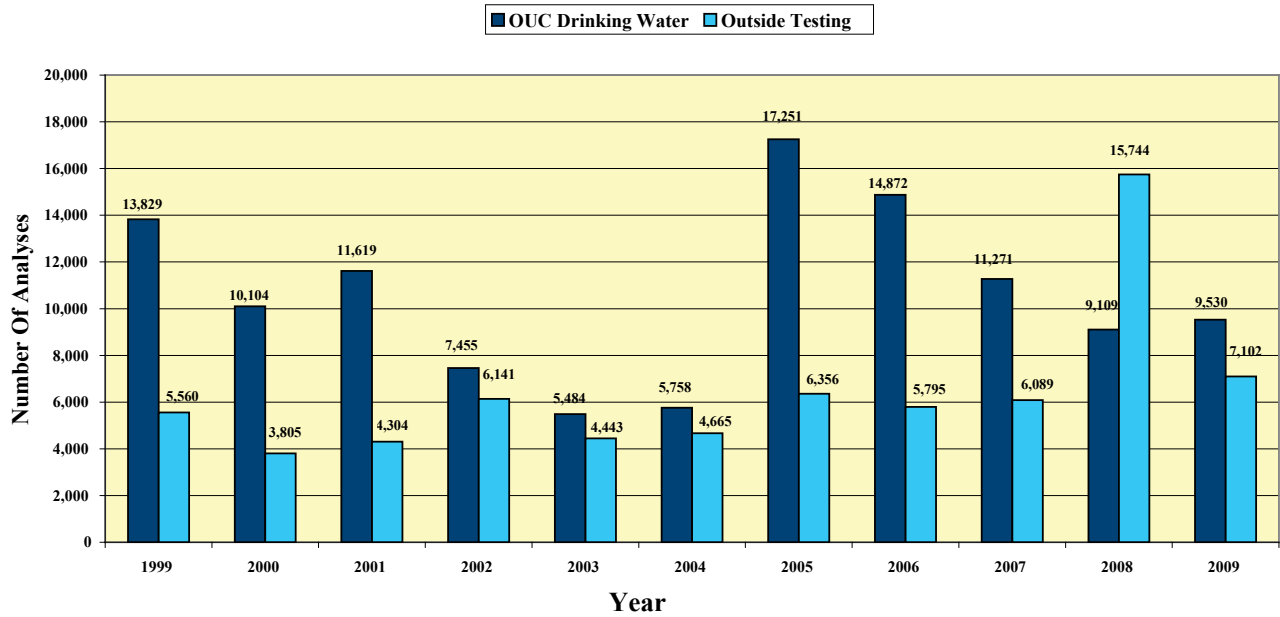
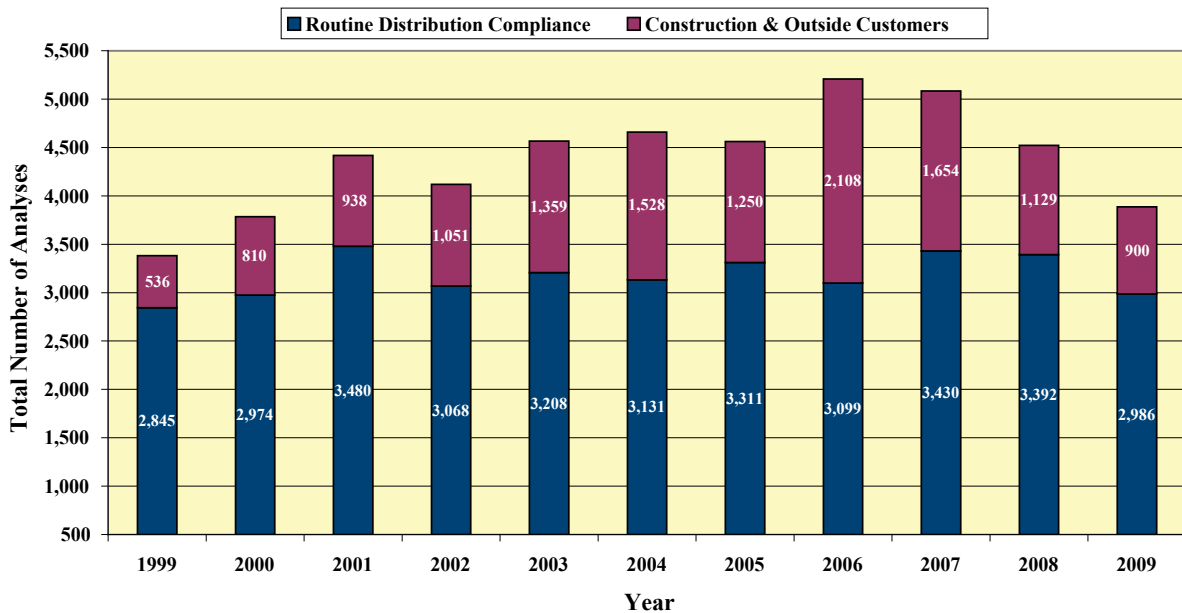


Figure 8
Total Number of Bacteriological Analyses Performed
1999 - 2009



Appendix 1 (continued)

Figure 9
OUC Total Well Capacity and Pumping Rate
From 1980 Through 2009

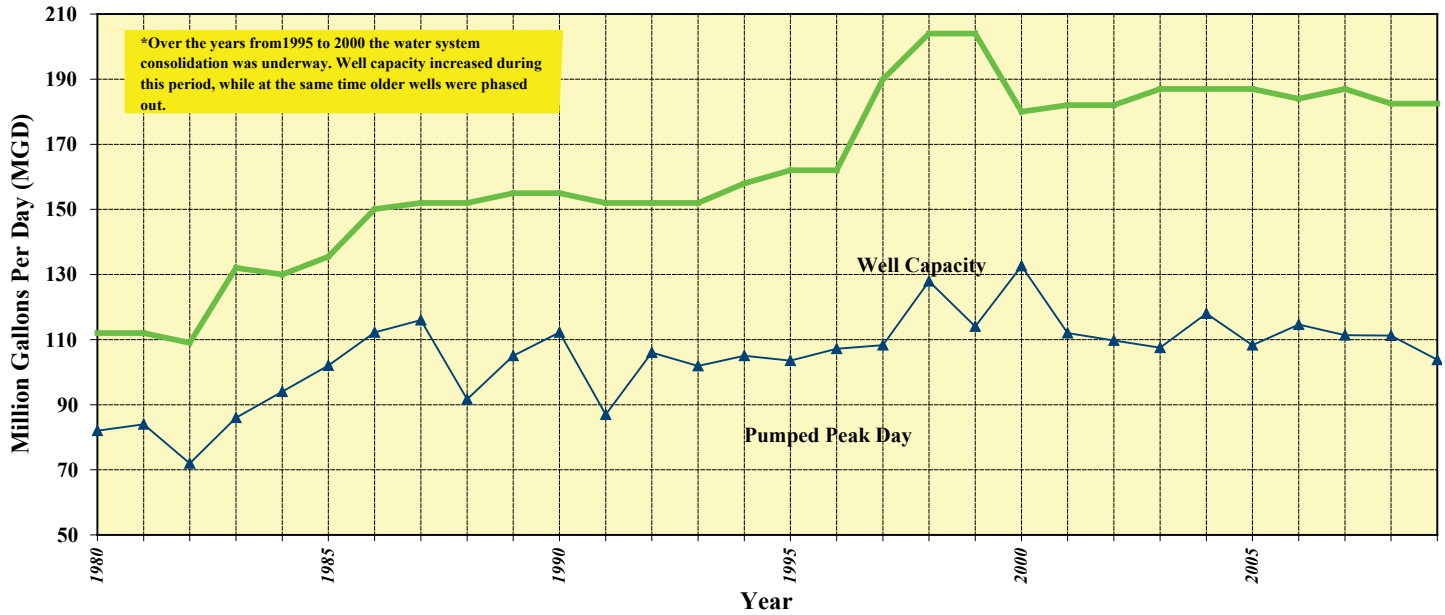
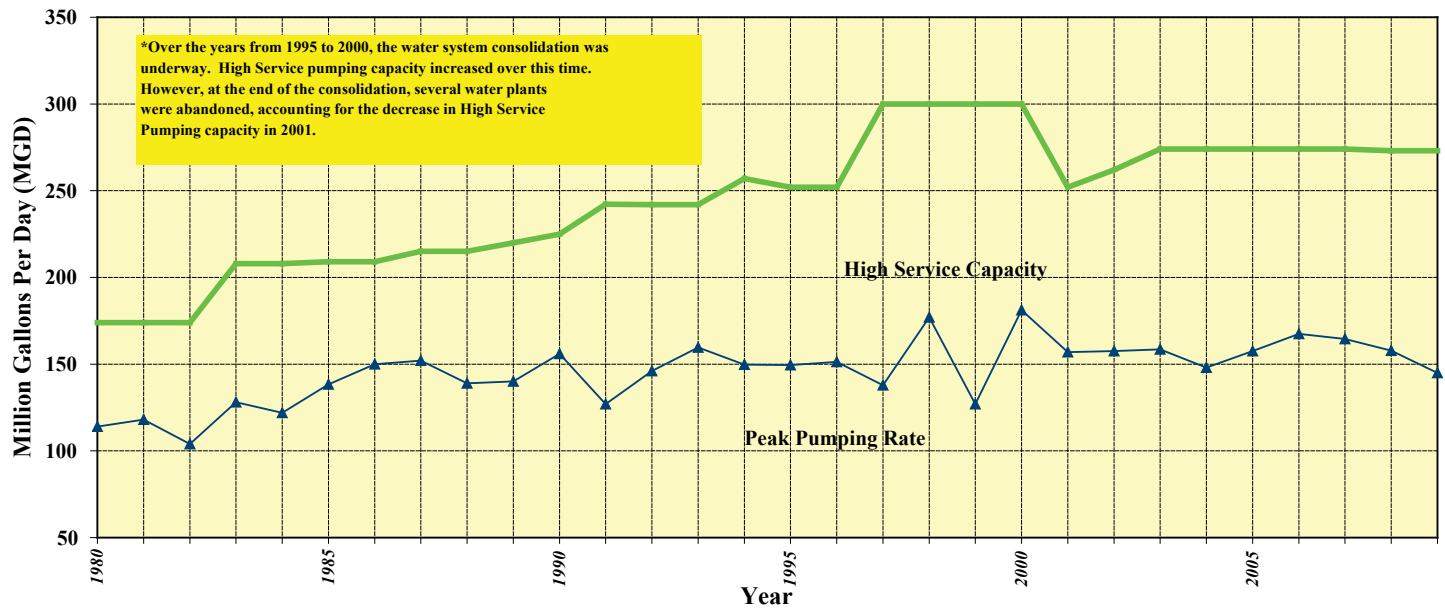


Figure 10
High Service Pump Capacity and Peak Pumping Rate
From 1980 Through 2009



Appendix 1 (continued)

Figure 11
Water Production Division
Power Cost in Cents Per 1000 Gallons

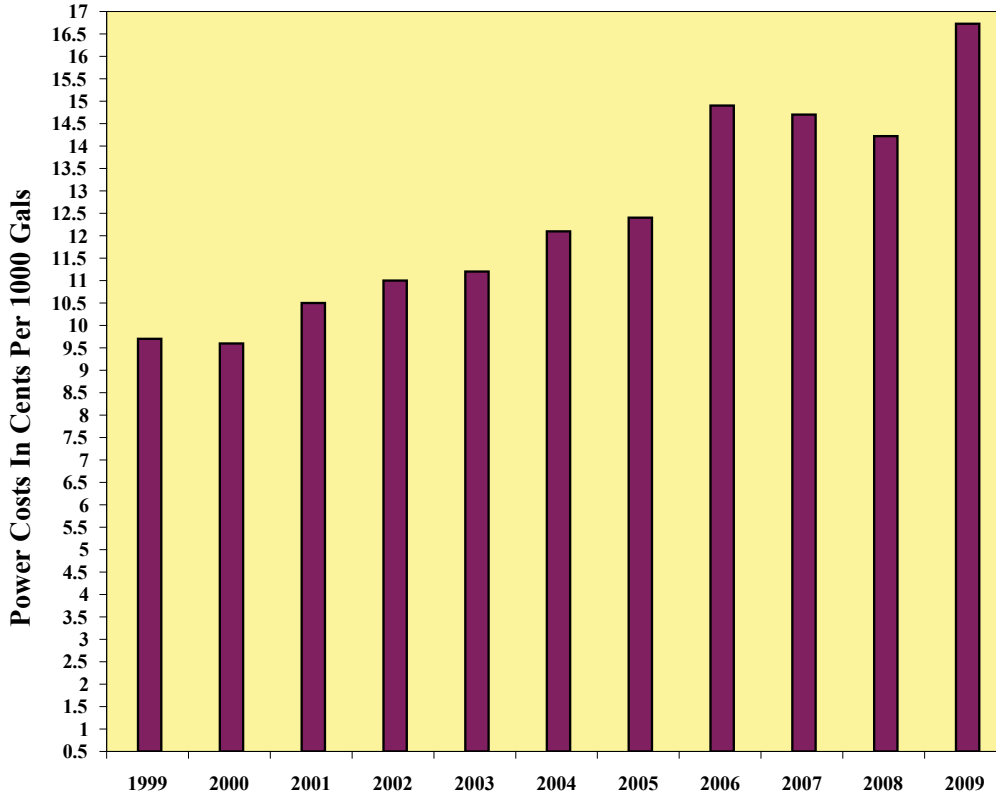
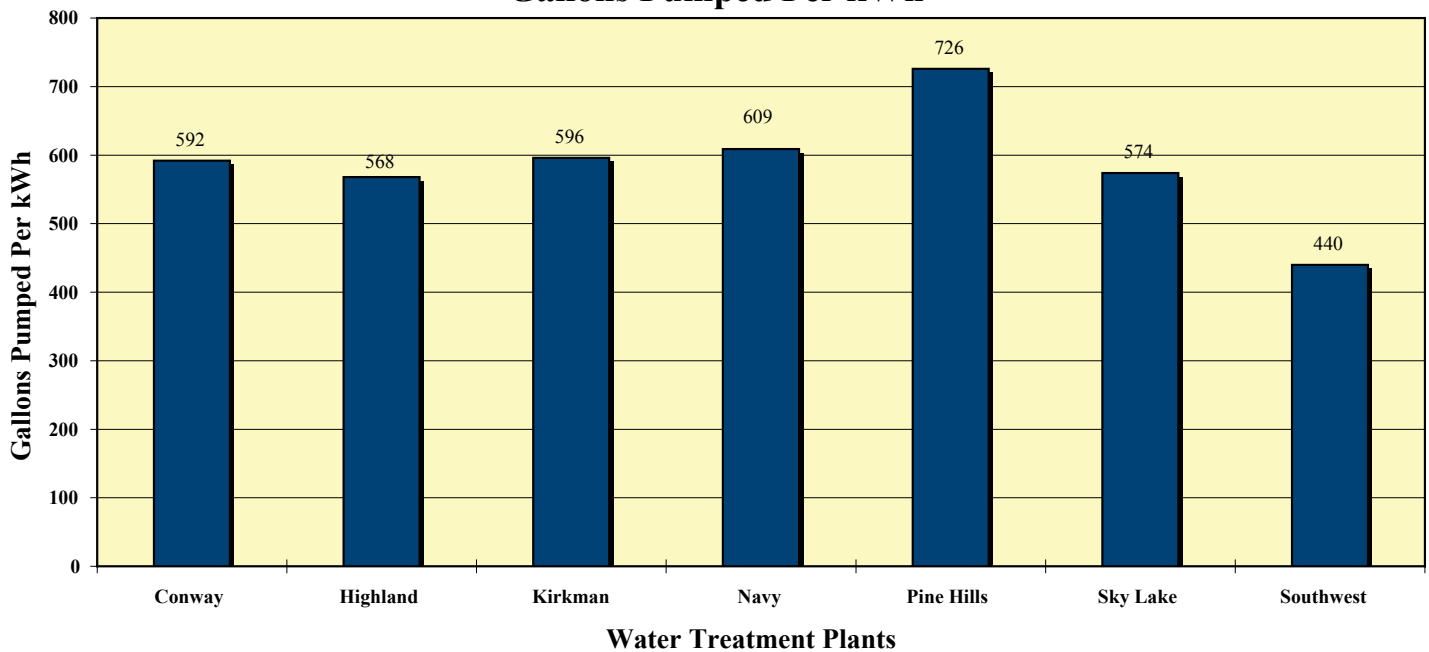


Figure 12
Water Production Division
Gallons Pumped Per kWh



Appendix 1 (continued)

Figure 13
Total Water Pumped by Plant

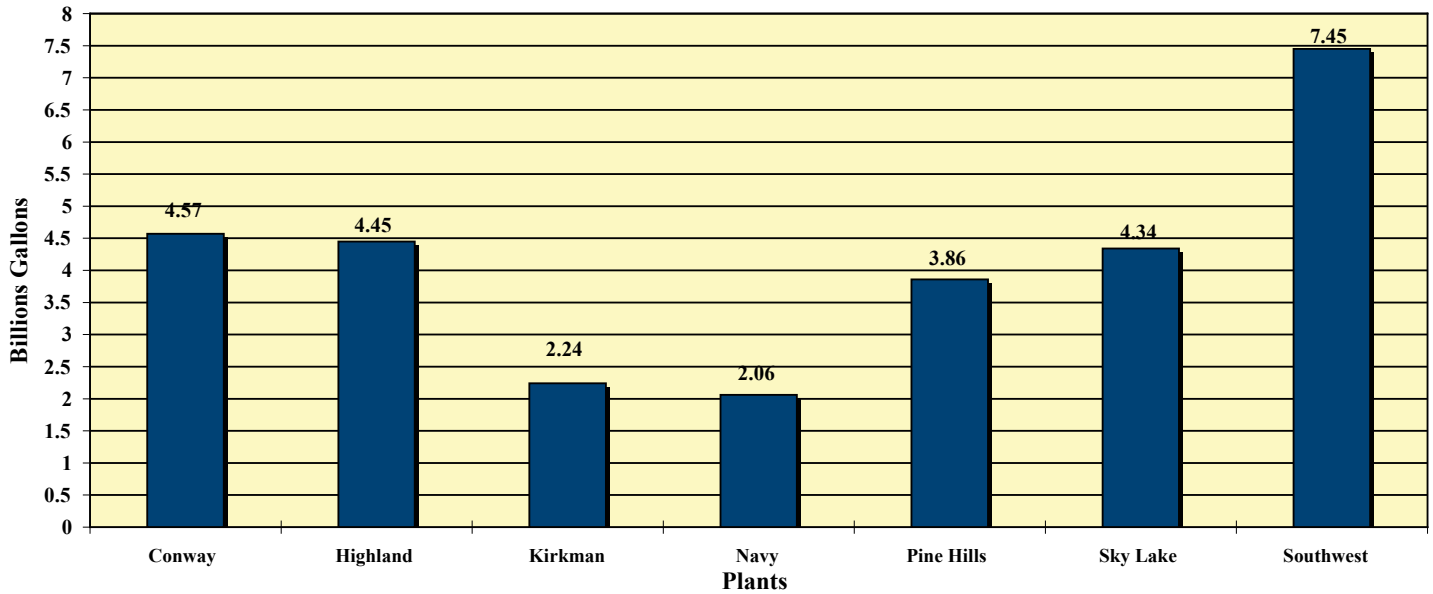


Figure 14
Average Day Vs. System Peak Day Pumped by Plant

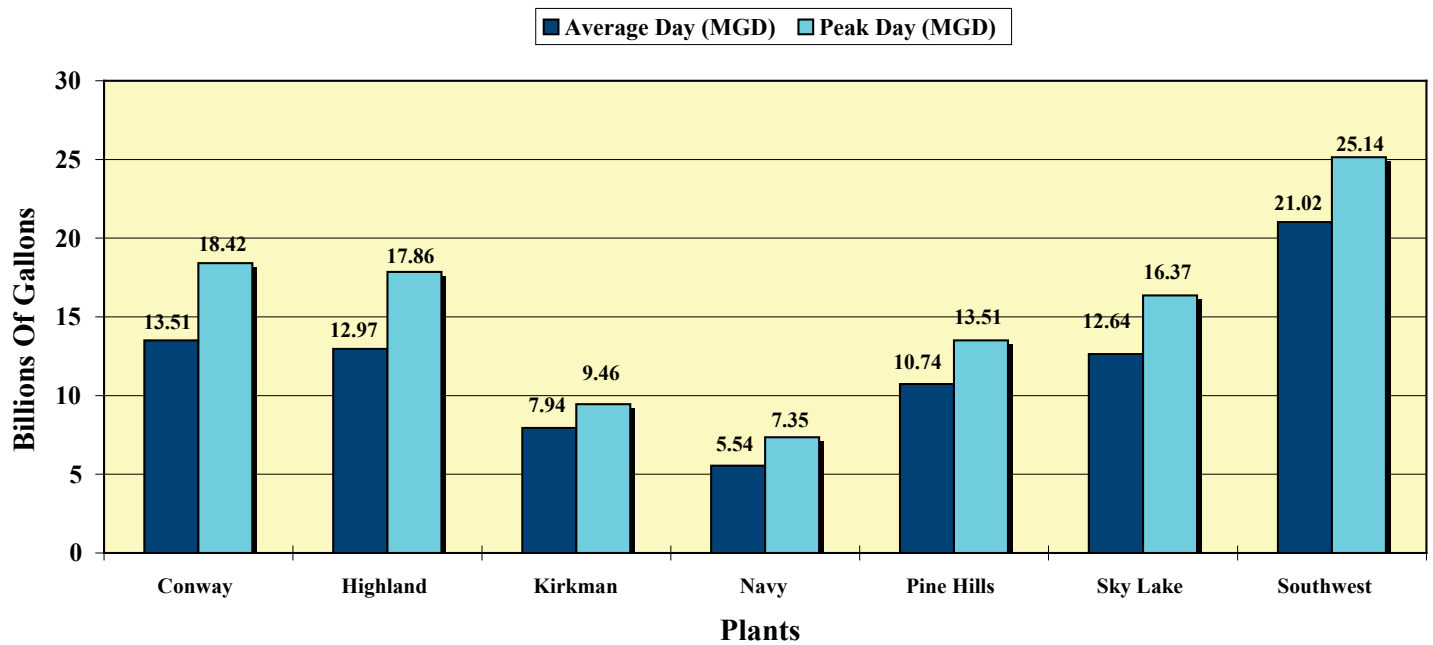


Figure 15
Aquifer Level Versus 12 months Rainfall

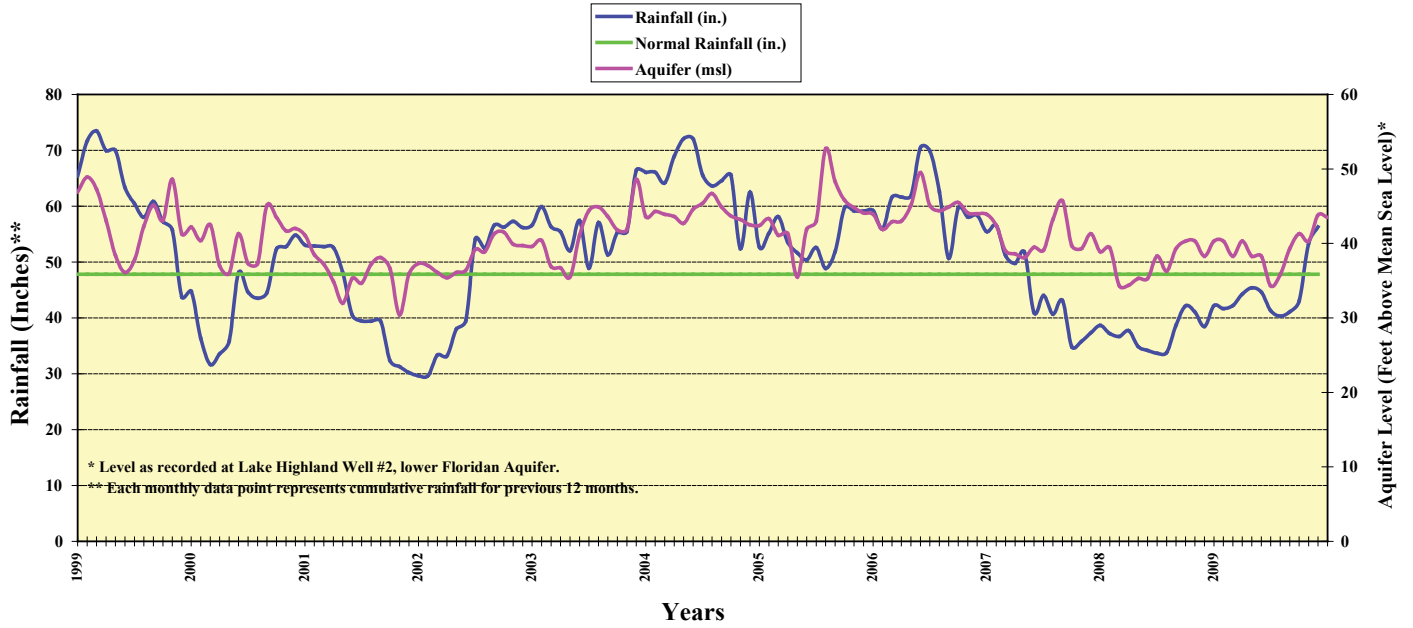
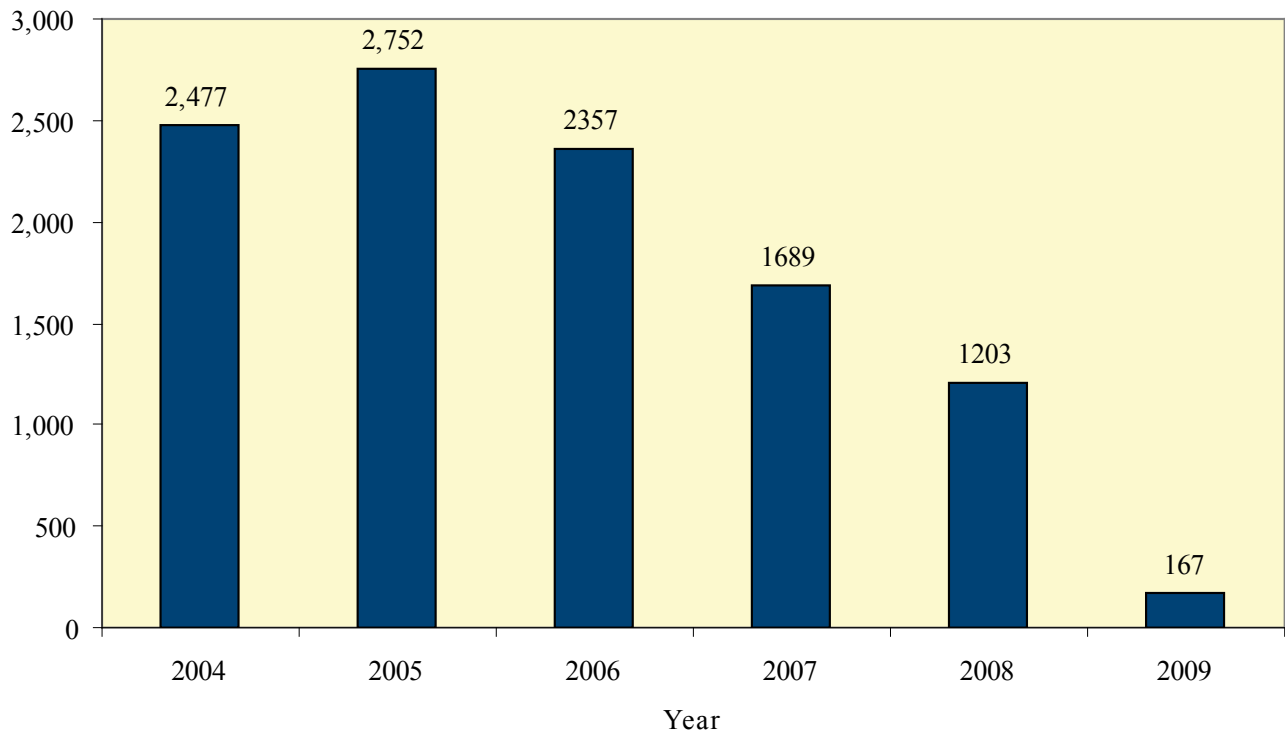


Figure 16
Water Distribution
Water Service Connections



Appendix 1 (continued)

Figure 17
Water Distribution Crew
Water Mains Installed

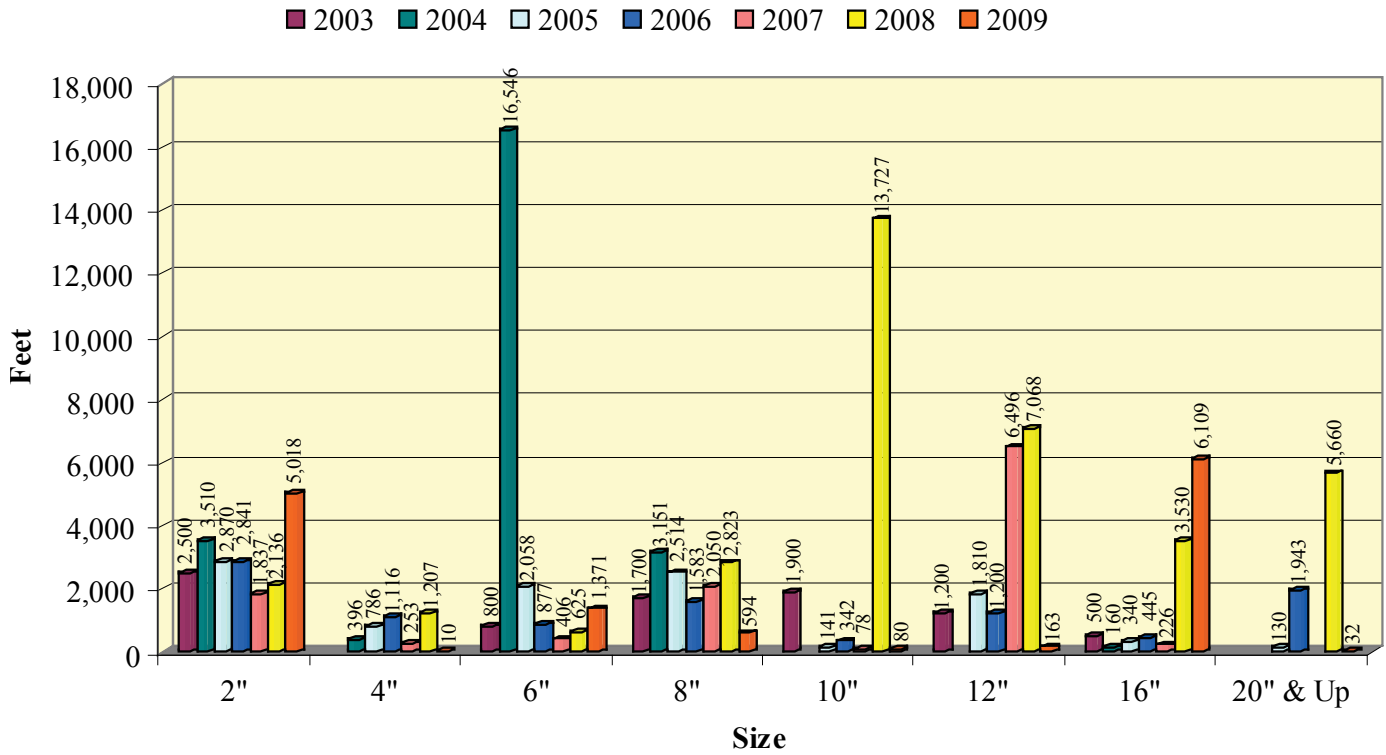
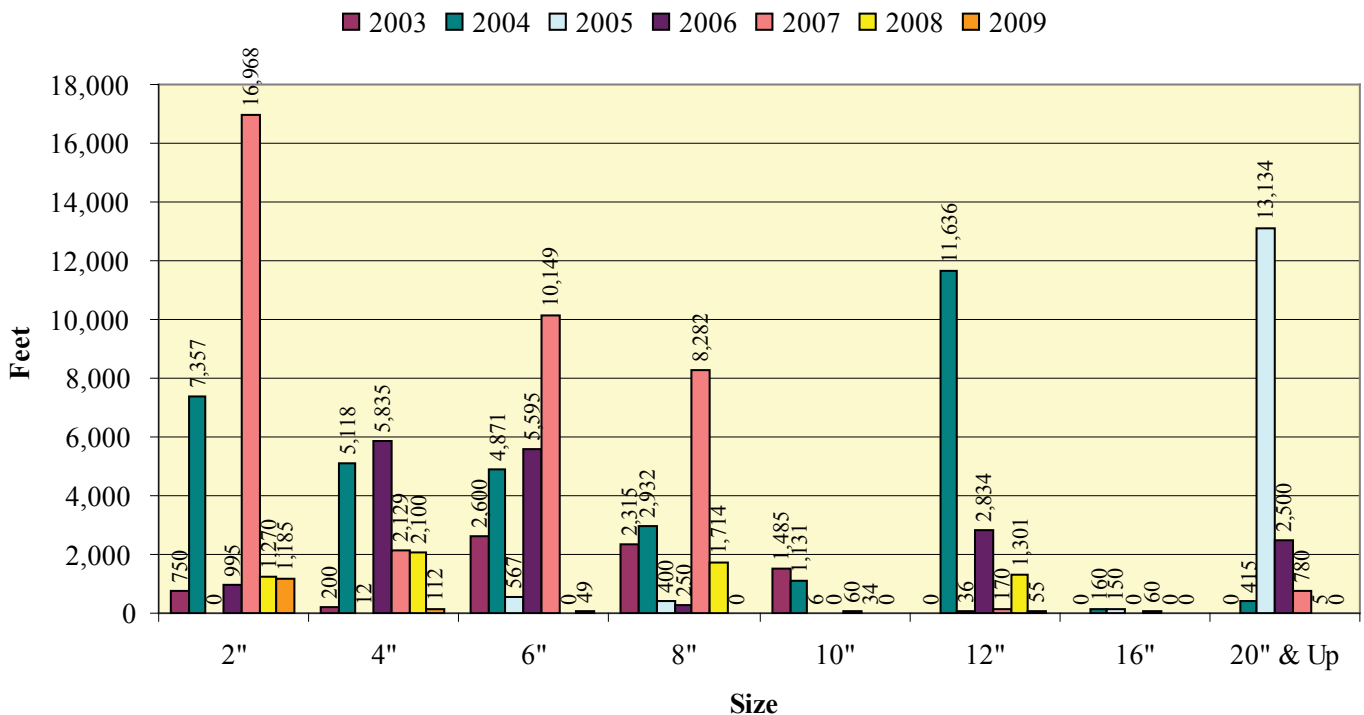


Figure 18
Water Distribution Section
Water Mains Contractor Installed



Appendix 1 (continued)

Figure 19
Water Construction
Number of Fire Services Installed

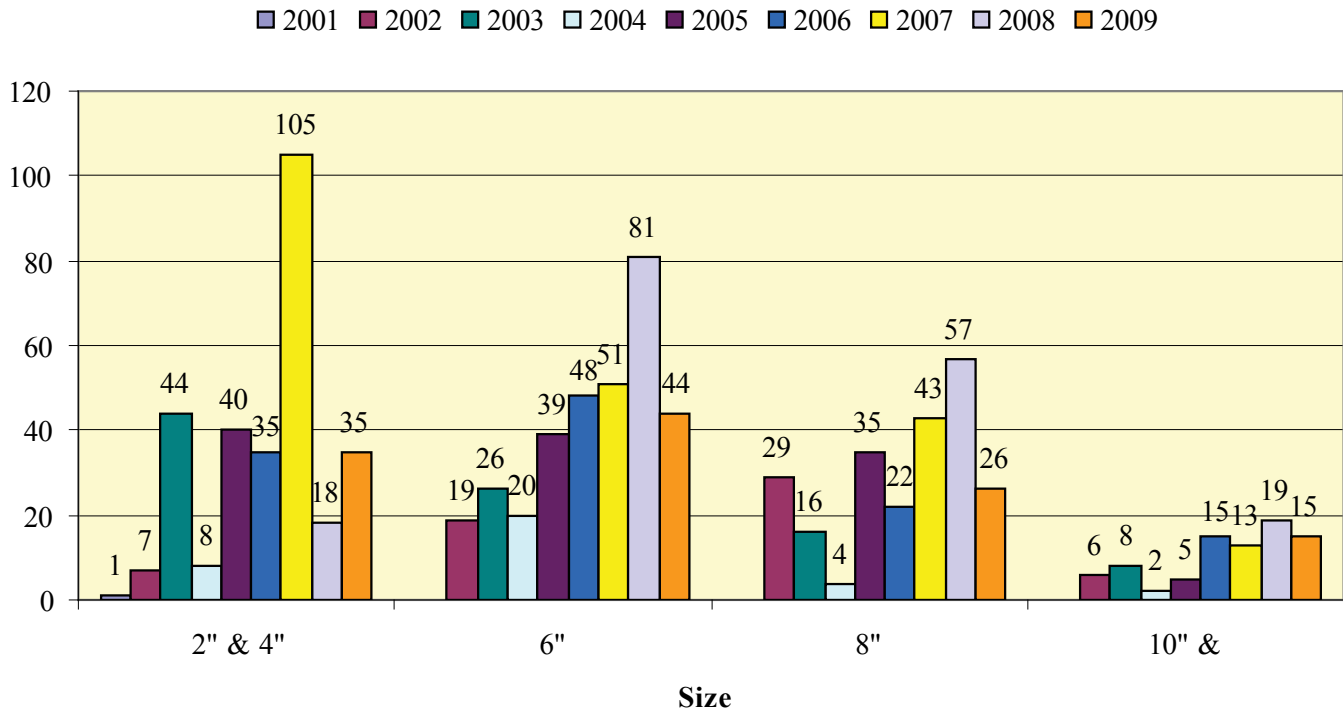
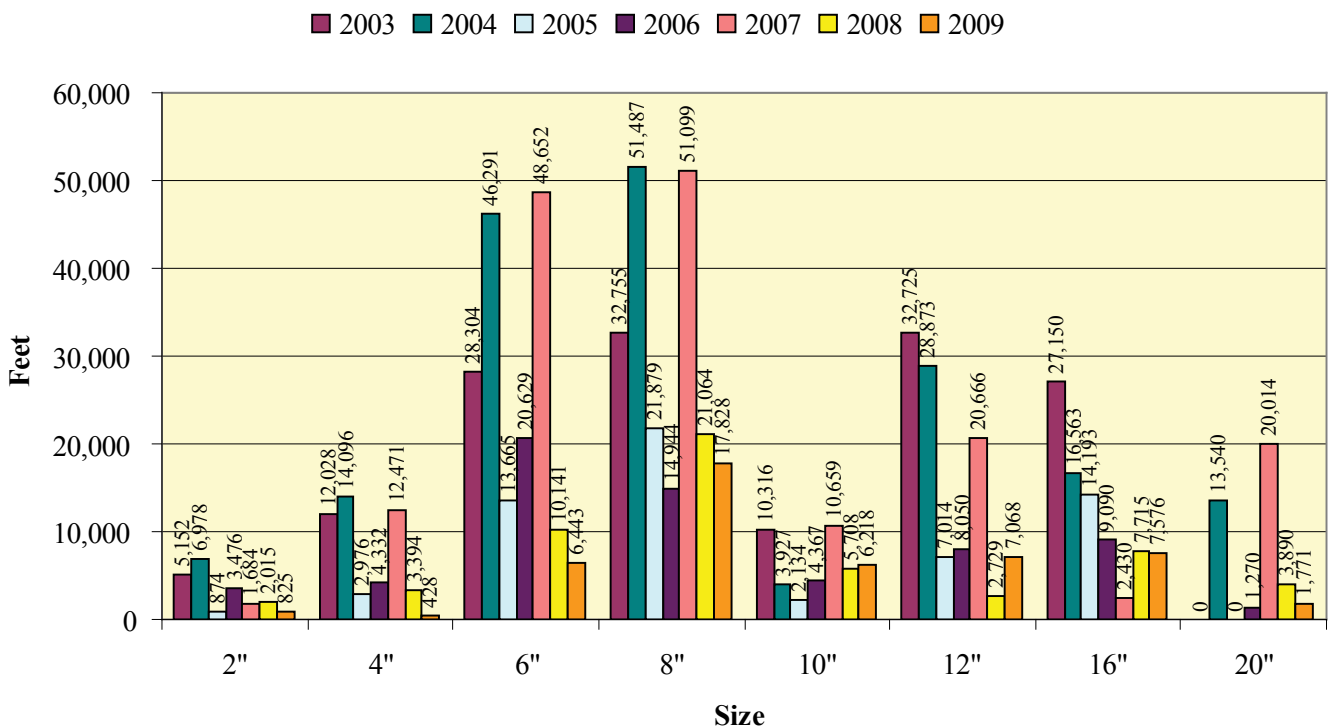


Figure 20
Water Distribution Section
Water Mains Developer Installed



Appendix 1 (continued)

Figure 21
Water Distribution O & M Expenses

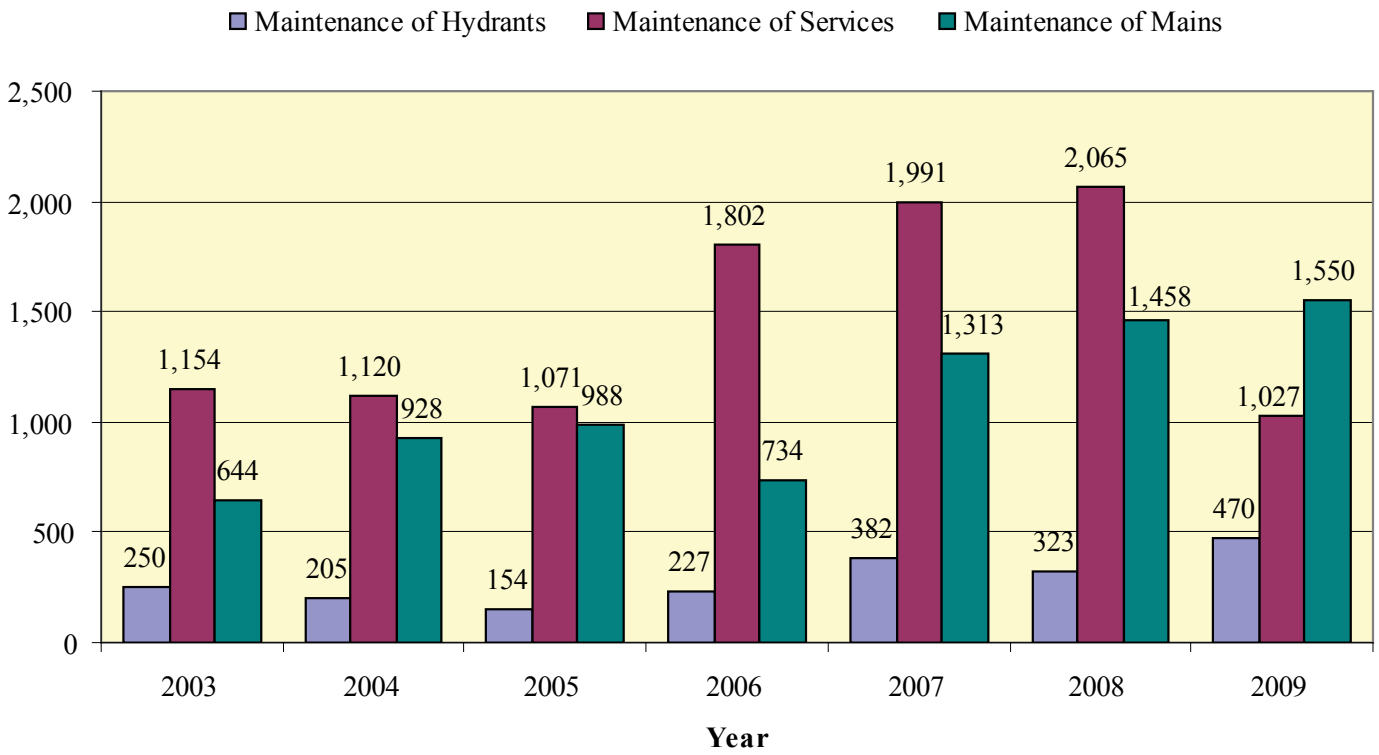
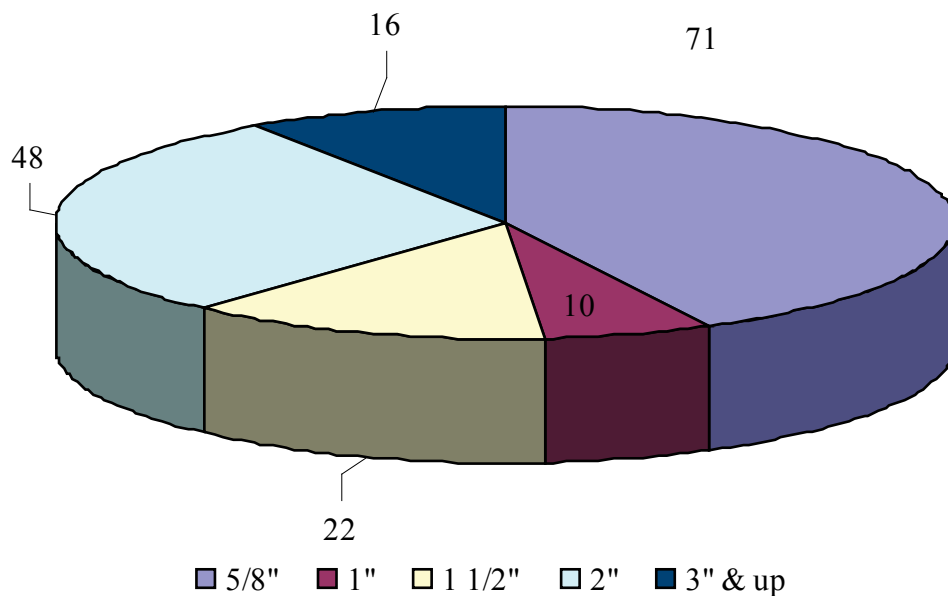


Figure 22
Water Services Installed by Size





Water Rate Schedule

Effective March 1, 2009

MONTHLY RATE FOR CUSTOMERS INSIDE CITY LIMITS

SERVICE CHARGE (includes no consumption)

Meter Size	Regular Service Amount	Single Family Irrigation Service Amount
5/8"	\$ 7.50	\$ 5.50
1"	\$ 10.50	\$ 8.50
1 1/2"	\$ 15.50	\$ 13.50
2"	\$ 21.75	\$ 19.75
3"	\$ 40.50	\$ 38.50
4"	\$ 68.00	\$ 66.00
6"	\$ 143.00	\$ 141.00
8"	\$ 243.00	\$ 241.00
Larger Sizes	\$ 380.50	\$ 378.50

DUAL RANGE METERS

Meter Size	Regular Service Amount
4" x 1 1/2"	\$ 83.50
4" x 2"	\$ 89.75
6" x 2"	\$ 164.75
8" x 2"	\$ 264.75
10" x 2"	\$ 402.25

SUBMETERED

Meter Size	Regular Service Amount
All sizes	\$ 5.20

VOLUME CHARGE (per 1,000 gallons)

ALL RESIDENTIAL SINGLE FAMILY AND ALL OTHER 5/8" METERS

POTABLE WATER

First 3,000 gallons consumed	\$ 0.634
Next 4,000 gallons consumed	1.077
Next 12,000 gallons consumed	1.589
Next 11,000 gallons consumed	2.832
All consumption over 30,000 gallons	5.300

IRRIGATION WATER

First 19,000 gallons consumed	\$ 1.589
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 \$ 1.541

FOR COMMERCIAL IRRIGATION METERS 1" AND GREATER

Commercial Irrigation Blocks (Acres)

Block Sizes (000)	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	Volume Charge
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



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