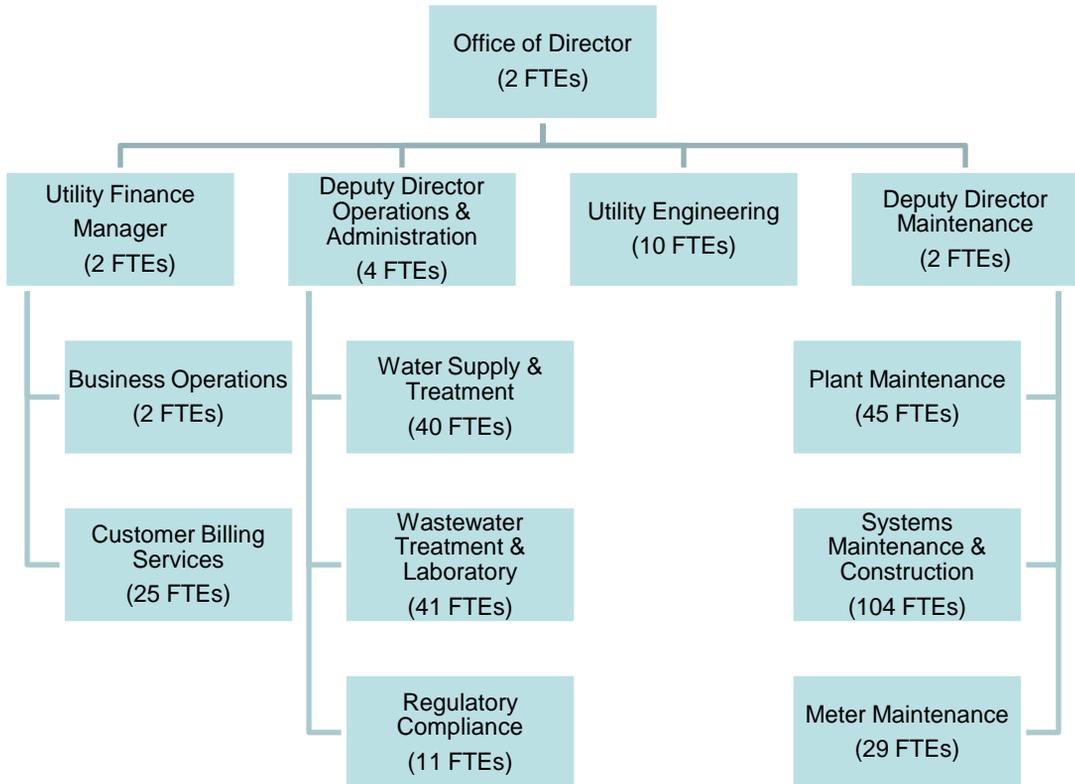




Water Management (317 FTEs)



WATER MANAGEMENT

Mission:

To provide water and sewer services in full compliance with all legal and regulatory requirements consistent with the community's expectations for level of service and the community's values for economic development and fiscal accountability. The department's core services provide for the protection of public health and safety by ensuring effective resource management, infrastructure maintenance, adequate fire flows, environmental protection and natural resource management.

PROGRAM DESCRIPTION

The Department of Water Management provides critical, essential services necessary for public health and safety by providing water that is safe to drink and use for other key purposes, including fire protection. Additional critical functions include ensuring reliable operations and maintenance of water and wastewater facilities as well as adequate water supplies and facility capacities. Wastewater collection and treatment are core services that not only protect the public health and safety but also the environment. Through these services, the department contributes to the goals of ensuring that all Durham citizens are safe and enjoy a prosperous economy and healthy environment. System security for both water and wastewater systems is important for reliable operation and the ability to meet system demands. Attention to security continues to be an integral part of operations. In this way, the department contributes to the goal that Durham citizens enjoy sustainable, thriving neighborhoods with efficient and well-maintained infrastructure. Long range planning for expanding water resources and treatment capacities contributes to this goal as well. The department pursues self-evaluation, benchmarking opportunities and other sound business practices in an effort to remain competitive with other cities and utilities, while promoting a positive image for the City and the services provided. Support for expanded automation of plant operations continues with the goal of maximizing chemical and power efficiencies, even in an environment of more stringent regulatory requirements and escalating energy costs, while improving reliability and maximizing staff deployment. Efforts to develop new sources of revenue include initiatives such as landfill gas development and use, as well as contract and reclaimed water sales. The department is dedicated to supporting the goal that Durham citizens enjoy an efficient and accountable city government. Department personnel support efforts to reduce crime and its root causes through active participation in the City's "Eyes and Ears" program and by participating in specific City workplace development programs. Implementation of the 2005 Bond package will continue to be a focus for the next several years and supports the goal of maintaining core services with well maintained infrastructure. Staff will continue to develop appropriate tools to expand departmental financial management strategies.

Administrative

Administration

\$1,820,395
12 FTEs

Administration is tasked with the management, oversight and planning processes necessary for providing adequate water resources and treatment capacity as well as wastewater facilities to meet the needs of a growing community and providing the foundation for a prosperous economy. Personnel are responsible for the fiscal management of the Water and Sewer fund and administering a broad range of environmental programs in support of the goals that all citizens are safe, enjoy a prosperous economy and healthy environment, and an efficient and accountable city government. These efforts provide critical services to the citizens of Durham and are related to water quality, wastewater treatment and industrial/commercial activity. Administrative staff will focus on expanding existing public education/information and customer outreach programs.

Customer Billing Services

\$1,998,146
25 FTEs

A core service area, this division is the first point of contact for most customers. Staff provides billing services for the utility, respond to customer inquiries, establish new accounts and authorize water and sewer connections and disconnections. Employees in the field services unit provide connection and disconnection services. With the implementation of Automated Meter Reading (FY10 and beyond), staff will transition to providing monthly billing for all customers.

Regulatory Compliance

\$1,471,316
11 FTEs

This division provides a core service by addressing regulatory compliance issues, tracking legislative issues, and administering the City's Industrial Waste Pretreatment/Fats, Oil and Grease Program that enforces the City's

Sewer Use Ordinance as well as the Cross Connection Control program which further insures the protection of the potable water system. The Water Conservation Program will continue to have increased visibility with the implementation of year-round water conservation measures, administration of the water efficiency rebate programs, and expanded advertising/marketing of water efficiency programs and practices.

Operations

Water Supply & Treatment

\$8,045,728
40 FTEs

This core service area is responsible for providing a safe, reliable, economical and sufficient supply of water to the citizens of Durham City and County. Through optimizing treatment processes, maximizing water transfer strategies and conducting monitoring activities, staff ensures that adequate supplies of consistently high quality drinking water are available. The Water Supply and Treatment Division operates and maintains two conventional water treatment facilities with a combined treatment capacity of 52 million gallons per day (MGD), and two surface water reservoirs with a combined safe yield of 37 MGD. Service is provided by operating equipment and adjusting treatment technologies to optimize the physical and chemical processes important in effective water treatment and by selecting pumping scenarios that assure adequate supplies at economical costs.

Wastewater Treatment and Laboratory

\$9,341,199
41 FTEs

This core service area provides the citizens of Durham with cost effective wastewater treatment and residuals management. This service is accomplished by optimizing the treatment processes so that the North Durham and South Durham facilities discharge effluent of consistently high quality in compliance with State permit requirements. The North and South Durham workgroups operate and maintain state-of-the-art tertiary treatment facilities, each with a permitted capacity of 20 MGD. North Durham personnel assist with the department's monitoring activities related to landfill post closure monitoring and management of the landfill gas collection system. The Laboratory Services Section of the department, which is located at the South Durham Facility, provides lab analysis for the water, wastewater, industrial waste and stormwater programs. This ensures that citizens enjoy an efficient and accountable city government while assuring that drinking water meets state and federal standards and that wastewater discharges meet permit limits which protect downstream users. This service area also includes wastewater treatment expenses for city wastewater flows treated at the County wastewater treatment plant.

Maintenance

This core service area provides the citizens of Durham with cost effective maintenance of water and sewer infrastructure including the distribution and collection systems, raw water lake facilities, water treatment and water reclamation facilities, pump stations and elevated storage tanks.

Systems Maintenance and Construction

\$11,749,785
133 FTEs

The Systems Maintenance and Construction division provides routine and emergency maintenance to the water distribution and wastewater collection systems as well as the installation of new service lines. Tasks include the inspection, cleaning and repairing of water mains and sewer trunk lines. This division also operates and maintains fire hydrants and water valves, and installs and repairs water and sewer service connections. The Meter Shop is responsible for reading water meters and providing routine and emergency response to water meter problems, including leaks, unusual consumption rates and water pressure concerns. This division will transition to monthly meter reading with the on-going implementation of the Automated Meter Reading program.

Plant Maintenance

\$4,001,055
45 FTEs

Plant Maintenance provides both major corrective maintenance and minor construction support for water and wastewater facilities, pump stations and other facilities. This division also has responsibility for long-term maintenance of the closed landfill. Expenses for support services are apportioned to the appropriate core services of water and wastewater as they relate to performance indicators.

Engineering

Utility Engineering

\$1,130,170
9.5 FTEs

Utility Engineering manages the ongoing evaluation and improvement of departmental facilities and engineering projects for water and wastewater facilities as a part of the Capital Improvements Program. This unit also provides water distribution and wastewater collection system monitoring and analytical support necessary for detecting inflow and infiltration problems. The program also has oversight of manhole rehabilitation and replacement projects, supplemental flow studies and major pipeline reconstruction and renewal services for both the water distribution and wastewater collection systems.

Post-Closure Monitoring

\$218,321
0.5 FTE

This service area provides oversight for the monitoring and maintenance of the closed landfill and is supported by the Solid Waste Fund. With the implementation of the landfill gas to power project, there is now a revenue stream associated with this function.

RESOURCE ALLOCATION

	Actual FY 2008-09	Adopted FY 2009-10	Estimated FY 2009-10	Adopted FY 2010-11	Change
Appropriations					
Personal Services	\$ 16,522,835	\$ 18,312,901	\$ 16,250,174	\$ 18,806,167	2.7%
Operating	16,285,630	18,348,214	18,301,811	20,521,074	11.8%
Capital	50,889	77,000	47,000	448,874	483.0%
Total Appropriations	\$ 32,859,354	\$ 36,738,115	\$ 34,598,985	\$ 39,776,115	8.3%
Full Time Equivalents	310	312	312	317	5
Part Time	-	-	-	-	-
Revenues					
Water & Sewer Fund	\$ 32,705,893	\$ 36,534,665	\$ 34,396,942	\$ 39,557,794	8.3%
Solid Waste Disposal Fund	153,461	203,450	202,043	218,321	7.3%
Total Revenues	\$ 32,859,354	\$ 36,738,115	\$ 34,598,985	\$ 39,776,115	8.3%

BUDGET ISSUES FOR FY 2010-2011

- No changes are made to levels of water and wastewater services. Energy and chemical costs constitute a substantial portion of water and wastewater treatment costs. Increasing energy and chemical costs (due to higher levels of treatment) have significant impacts. Expanded sampling for compliance with existing regulations or for evaluation of strategies for requirements for nutrient removal will be costly.
- Efforts to improve revenue for the utility will continue to address CIP funding and the long-term financial health of the Water & Sewer Fund.
- Evaluate opportunities to enhance revenue streams through on-going improvements and enhancements to MUNIS Utility Billing System and expanded delinquent account collection practices.
- Efforts to enhance long range plans for system reliability and water supply, both raw and treated water, will require additional CIP funding. Predicted changes in weather patterns and climate may impact the reliability of current sources.
- Funding of infrastructure rehabilitation and replacement continues to be an issue of concern for the utility.
- Increasing public education and outreach programs for water conservation/efficiency and the Fats, Oils and Grease efforts; maintaining and expanding water efficiency incentive programs.
- To continue to fund new operational improvements to meet new regulatory requirements.

COMPLETED INITIATIVES FOR FY 2009-2010

- Implemented the new utility billing (UB) system on the ERP platform.
- Expanded program for Automated Meter Reading (AMR).
- Successfully established Jordan Lake Partnership with signed MOUs from 12 neighboring governments.
- Completed environmental permitting and started design of Teer Quarry project.
- Began construction of Aeration Tank and UV facilities at North Durham Water Reclamation Facility .
- Completed wastewater treatment optimization study.
- Completed construction of Water Treatment Reliability Improvement Project.
- Completed the water treatment compliance study phase and began design phase of the Water Treatment Regulatory Compliance Project.
- Completed several sewer replacement and rehabilitation projects at numerous sites.
- Assumed responsibility of lake recreation operations.
- Completed water line construction for the Cary interconnections.
- Completed Alexander Drive interconnection with Raleigh.
- Completed design on the new elevated storage tank.
- Began construction on the new North Durham sludge pad cover project.
- Completed updates of emergency action plans for both dams.
- Completed construction of the southern reinforcing main – phase I project.
- Landfill gas utilization project began operations.
- Completed construction of water distribution improvements project along Erwin Road.
- Completed pilot study for enhanced nitrogen removal at the South Durham Reclamation Facility.
- Began construction of Hillandale dual water lines replacement project – phase I.
- Began master planning and energy audits of water reclamation facilities.
- Completed North Durham WRF filter press renewal project.
- Completed rehabilitation of filters at Brown Water Treatment Plant.

DEPARTMENT INITIATIVES FOR FY 2010-11

- Continue expansion of Automated Meter Reading (AMR) program.
- Utilize AMR and staffing initiatives to move toward monthly billing of water and sewer customers.
- Enhance and expand water efficiency programs (toilet rebates).
- Complete construction of Phase I of Hillandale Dual Water Line Replacement project and begin construction of Phase II.
- Participate in Regional Water Supply Planning project with Jordan Lake Partners in support of seeking additional allocation of the Jordan Lake water supply/storage pool.
- Complete design of the Water Regulatory Compliance Project.
- Design phase of the Teer Quarry project near completion.
- Complete construction of North Durham Aeration Basin and UV facilities by end of fiscal year.
- Complete design of numerous rehabilitation projects at North and South Durham WRFs.
- Begin construction on New Elevated Storage Tank.
- Begin construction of Phase II of the Southern Reinforcing Main Project.
- Complete sewer replacement and rehabilitation projects at numerous sites.
- Completed construction of North Durham WRF Sludge Pad Cover.
- Complete construction of Water Plant Improvements Project.
- Participate in AWWA Benchmarking Performance Indicators Water and Wastewater Utilities Survey.

GOALS, OBJECTIVES & STRATEGIES FOR FY 2010-11

GOAL: *To provide sufficient quantities of high quality drinking water to all of Durham's customers at the lowest possible cost.*

OBJECTIVE: Consistently deliver safe high quality drinking water to all customers.

STRATEGY: Operate and maintain the water treatment and distribution systems to minimize customer complaints and concerns regarding water quality.

MEASURE:	Actual FY 2009	Adopted FY 2010	Estimated FY 2010	Adopted FY 2011
Technical Quality Complaints Per 1000 customer accounts	4.25	3.75	4.57	3.75

OBJECTIVE: To monitor annual average flows for assessment of remaining capacity as % of available capacity. Engineering of new facilities to begin when 80% of capacity is reached and construction to begin when 90% of capacity is reached.

STRATEGY: Monitor annual demands and project future raw water demands to meet system growth needs.

MEASURE:	Actual FY 2009	Adopted FY 2010	Estimated FY 2010	Adopted FY 2011
Average annual demand as a percentage of raw water capacity	70.32%	<80.0%	70%	<80%

OBJECTIVE: To operate the water supply and treatment facilities to minimize increases in unit cost (\$/MG) as the system demand increases and the need for infrastructure improvements increase.

STRATEGY: Optimize the water treatment process with careful monitoring and control of chemical feed equipment. Continue to minimize costs for pumping while maintaining adequate supply by using "Time-of-Day" electric rates and water transfer by hydropower.

MEASURE:	Actual FY 2009	Adopted FY 2010	Estimated FY 2010	Adopted FY 2011
\$ Per MG treated	\$861.18	\$937	\$842	\$919

GOAL: *To provide effective wastewater treatment services so that the needs of Durham's customers can be met in a cost-effective manner.*

OBJECTIVE: Operate facilities in full compliance with permit requirements with zero violations.

STRATEGY: Optimize processes to minimize discharges of organic wastes and ammonia nitrogen beyond permit requirements. Success is measured by the percentage of monthly results that are below permit limits, with zero violations.

MEASURE:	Actual FY 2009	Adopted FY 2010	Estimated FY 2010	Adopted FY 2011
NDWRF	94%	80%	92%	80%
SDWRF	99%	80%	96%	80%

OBJECTIVE: To monitor annual average flows for assessment of remaining capacity as % of available capacity to meet state rules. Engineering of new facilities to begin when 80% of capacity is reached and construction to begin when 90% of capacity is reached.

STRATEGY: Continue to track and analyze flows relative to system capacity. Continue efficiency improvements at both wastewater plants.

MEASURE:	Actual FY 2009	Adopted FY 2010	Estimated FY 2010	Adopted FY 2010
Annual average flow demand (MG) as a percentage of plant capacity	50.21%	<80.0%	55%	<80%

OBJECTIVE: To operate the water reclamation facilities to minimize increases in unit cost (\$/MG) as the system demand increases and the need for infrastructure improvements increase.

STRATEGY: Optimize the water reclamation process improvements. Continue to minimize costs by efficient energy usage strategies and effective staff deployment.

MEASURE:	Actual FY 2009	Adopted FY 2010	Estimated FY 2010	Adopted FY 2011
\$ Per MG Treated	\$938.14	\$1214	\$1036	\$1131

GOAL: *To provide maintenance and repair of all components of the water distribution and wastewater collection systems.*

OBJECTIVE: To ensure that 95% of large meters (1½ inch or larger) meet AWWA accuracy and testing frequency standards.

STRATEGY: Test the accuracy of all large meters per AWWA standards.

MEASURE:	Actual FY 2009	Adopted FY 2010	Estimated FY 2010	Adopted FY 2011
% Meters tested according to AWWA recommended testing frequency	127.07%	98%	98%	98%

OBJECTIVE: To maintain sewer collection system in good condition and meet sewer permit requirements.

STRATEGY: Clean a minimum of 10% of the sewer system per year.

MEASURE:	Actual FY 2009	Adopted FY 2010	Estimated FY 2010	Adopted FY 2011
% Sewer system cleaned	11.43%	10%	11%	10%

GOAL: *To provide accurate water and sewer bills to customers, meeting effectiveness and accuracy standards.*

OBJECTIVE: To provide accurate bills to customers requiring minimal corrections for erroneous bills.

STRATEGY: Perform process reporting and monitoring of accounts in order to ensure accuracy of bills mailed.

MEASURE:	Actual FY 2009	Adopted FY 2010	Estimated FY 2010	Adopted FY 2011
Billing accuracy rate per 10,000 bills mailed	99.88%	99.8%	99.91%	99.8%