Winston-Salem/Forsyth County
Utility Commission

Annual Report

for Fiscal Year 2010-2011

Winston-Salem • Forsyth County
City/County Utilities
Water • Sewer • Solid Waste Disposal

WINSTON-SALEM
CITY COUNCIL

Mayor: Allen Joines

City Council:

Vivian H. Burke, Mayor Pro Tempore, Northeast Ward

Denise D. Adams, North Ward

Dan Besse, Southwest Ward

Robert C. Clark, West Ward

Molly Leight, South Ward

Wanda Merschel, Northwest Ward

Derwin L. Montgomery, East Ward

James Taylor, Jr., Southeast Ward

City Manager: Lee Garrity

Assistant City Manager: Greg Turner

Utilities Director: David Saunders

FORSYTH COUNTY
COMMISSIONERS

Richard V. Linville, Chairman

Debra Conrad, Vice Chair

Walter Marshall

David R. Plyler

Gloria D. Whisenhunt

Bill Whiteheart

Everette Witherspoon

County Manager: Dudley Watts, Jr.

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Winston-Salem/Forsyth County
Utilitiy Commission
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101 N. Main St.
Winston-Salem, NC 27101

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Winston-Salem • Forsyth County

City/County Utilities

Water • Sewer • Solid Waste Disposal

Utilities Administration

City of Winston-Salem
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Letter of Transmittal

The Utility Division staff is pleased to submit the *Annual Report of the Winston-Salem/Forsyth County Utility Commission* for Fiscal Year 2011. This reports format intended to not only provide a summary of the previous year's operational data and benchmarking metrics, but also provide the reader with a detailed educational focus about the Utility Commission's operational and planning process. This edition provides an in depth look at the rate setting process and focus on the regulations governing Wastewater Treatment. Future editions will focus more on other important operational issues and challenges, and Solid Waste management issues facing our local communities.

Fiscal Year 2010-2011 marks the completion of several projects related to Utility Division's deliberate choice to begin replacing strategic infrastructure components. For the past several years, the division's master planning has focused on maintaining the viability for key construction components. The replacement of the Archie Elledge Wastewater Plant Headworks provides a state of the art, energy efficient, reliable treatment of wastewater for the next 50-100 years! The replacement of the R.A. Thomas Water Treatment Plant will allow the system to be one of the few in North Carolina that can provide high quality potable water from multiple water suppliers, and will allow for meeting the capacity requirements for at least the next 20 years.

Thank you for taking the time to review this Annual Report and we hope you will find informative and helpful in understanding your water/sewer and solid waste services provided by the City/County Utility Commission.

Gregory M. Turner, PE
Assistant City Manager

David K. Saunders, PE
Utilities Director

CityLink
your link to city services
727-8000
cityline@cityofws.org
• request a service • report a problem
• make a suggestion

City Council Mayor Allen Joines, Vivian H. Burke, Mayor Pro Tempore, Northeast Ward, Denise D. Adams, North Ward, Dan Besse, Southwest Ward, Robert C. Clark, West Ward, Molly Leight, South Ward, Wanda Merschel, Northwest Ward, Derwin L. Montgomery, East Ward, James Taylor, Jr., Southeast Ward, City Manager Lee D. Garrity

Forsyth County Commissioners Richard V. Linville, Chairman, Debra Conrad, Vice-Chair, Walter Marshall, David R. Plyler, Gloria D. Whisenhunt, Bill Whitaker, Ivanne Wilhamson, County Manager Dudley Watts, Jr.

City/County Utility Commission David Neil, Chairman, James E. Lowe, Vice Chairman, Taylor "Jay" Beaty, Harold R. Holmes, Charles D. Jewell, D. James Lalik, Paul S. McGill, Al H. Newman, Stephen M. Nielsen, J. Hill Stockton, Randall S. Turle

The Winston-Salem/Forsyth County Utility Commission

The Winston-Salem/Forsyth County Utility Commission is an 11-member appointed body that oversees the publicly operated water treatment, wastewater and solid waste facilities that serve Winston-Salem and Forsyth County. All decisions regarding the management of these facilities are delegated to the Commission by the Winston-Salem City Council and the Forsyth County Commissioners. Ownership and the responsibility for the disposal of these assets is the city's, pursuant to the original 1976 agreement that consolidated the city and county utility systems. The Commission is responsible for:

- Overseeing the long-range planning, funding, operation and maintenance of water treatment, wastewater and solid waste facilities and their associated collection and distribution systems;
- Setting rates, charging assessments, and providing improvements and extensions to utilities facilities;
- Receiving comments and suggestions from the public and holding public hearings concerning matters under the authority of the Commission;
- Setting policy for all publicly owned water, wastewater, and solid waste disposal facilities; and
- Awarding contracts for the construction and operation of the utility system.

Five members of the Commission are appointed by City Council upon recommendation of the Mayor; another five members are appointed by Forsyth County Board of Commissioners. The chairperson is appointed jointly by the mayor and the chairperson of the Forsyth County Board of Commissioners.

The Commission chairperson serves a two-year term and is limited to five terms. Commission members serve staggered five-year terms and are limited to two terms.

GOVERNANCE

The Commission has three standing committees:

- The Operations Committee considers items relating to the long-term operation of both the water/wastewater and solid waste disposal programs. Three Commission members sit on the Operations Committee.
- The Finance Committee considers items related to the finances of both the water/wastewater and solid waste disposal programs. Four Commission members sit on the Finance Committee.
- The Planning and Policy Committee considers changes to policies and procedures for the operation of the water/wastewater and solid waste disposal programs. Three Commission members sit on the Planning and Policy Review Committee.

Authority for establishing the Utility Commission is N.C.G.S. 160A-460 et.seq. The Utility Commission was created by an interlocal agreement between the City of Winston-Salem and Forsyth County on April 20, 1976.

The chairperson of the Commission appoints the members of each committee and designates one person as Committee Chairperson and another as Vice-Chairperson.

COMMISSION FINANCES

Funding to operate, maintain and extend water and sewer services comes from water and sewer user fees, assessments, interest earned on the Commission's reserve funds, and from revenue bonds issued against the Commission's revenue stream. Funds to operate and expand the solid waste disposal programs come from two sources, tipping fees and special obligation bonds approved by the City Council. The Commission receives no financial support from property or sales taxes paid by citizens of Winston-Salem or Forsyth County. The Utility Commission has no authority to issue bonds or incur debts without prior approval from the City Council.

Utility Commission policies provide that capital improvement projects, such as plant expansions, major facility upgrades, transmission mains, outfalls, and pump stations, are funded through user fees charged bi-monthly to customers for water and sewer services. These facilities benefit all customers and therefore, all customers are expected to help fund them. Each year the Utility Commission determines if new projects in these categories should be paid for with generated balances from fund user fee funds or financed with new debt.

These decisions are made based on the cost of financing and financial advisement from the city's Chief Financial Officer. The local collection and distribution systems, known as street mains, are funded by the properties that they serve. When new properties are developed, system lines are required to be installed by the developer and subsequently dedicated to the Utility Commission for ownership and operation. When owners of existing properties request service extensions, the extension requests are provided for under the Utility Commission's petitioned programs.

The Utility Commission's policies for setting assessment rates follow the guidance established in the North Carolina general statutes. Each year the Commission reviews construction costs from the previous year and sets a new assessment rate designed to recover the cost of a typical installation. New customers benefit from this process in that the rates they are assessed are based on the previous years' actual construction costs and are not adjusted upward for annual inflationary factors. In many cases, customers are

SYSTEM GROWTH: THEN AND NOW

	1976	2011
Water		
Total Water Customers	54,985	121,969
Miles of Water Lines	1,046	2,201
Water Treated Per Day	29 MGD	36.7 MGD
Number of Employees	126	153
Sewer		
Total Wastewater Customers	31,385	92,705
Miles of Sewer Lines	690	1,701
WW Treated Per Day	21 MGD	31.0 MGD
Number of Employees	134	176
Budget		
Total Water and Sewer O&M Expenses	$8,554.963	$69,713,348

City	No. of Customers	Monthly Charge	Median Household Income	*Cost of Service As % of Median Household Income
Durham	83,584	$49.51	$47,384	1.15%
Charlotte	245,854	$43.81	$52,364	0.91%
Greensboro	100,019	$38.22	$41,050	0.97%
Raleigh	177,000	$44.90	$53,370	0.91%
Winston-Salem	**121,769**	***$30.76**	**$41,979**	**0.83%**

WATER & SEWER RATES FOR FIVE MAJOR MUNICIPALITIES (BASED ON 600 CF MONTHLY)[1]

[1] According to EPA data, costs of water and sewer are considered affordable if the total cost of service is less than 2.5% of the Median Household Income.

* Calculated using October 1, 2011 rates. Source: Environmental Finance Center, UNC School of Government

not actually assessed for two to three years after the cost of the extension is established, allowing them a considerable discount against the actual cost of installation.

The Utility Commission's sound financial policies and the superior fiscal management of the utility system is reflected in the high credit ratings assigned to the system's revenue bonds. They carry an AAA rating from Standard and Poor's Rating Agency (one of 53 such ratings nationwide); Aa1 from Moody's Investor Service and AA+ from Fitch. High credit ratings allow the Commission to sell bonds at lower interest rates when financing capital improvements. Given the projections of capital needs for the next five years, a lower cost of capital will enable the Commission to meet those needs with greater savings.

COMMISSION OPERATIONS

The Utilities Division of the City of Winston-Salem is responsible for all day-to-day operation and maintenance of the water and wastewater treatment facilites and their associated collection and distribution systems, and solid waste facilities in accordance with policies established by the Utility Commission.

The Utilities Division also provides technical and administrative assistance to the Commission and is responsible for capital improvements under the direction of the Commission. Utilities Division management advises the Commission regarding policy changes that will benefit citizens and future growth, as well as maintenance and operation of the system.

The operations of the Utilities Division fall under the oversight of the City manager and an assistant city manager.

The Utilites Division and its staff adhere to the

same general processes and procedures regarding the operation of its systems as all other departments within the City of Winston-Salem.

The Commission's financial assets are managed by the city Finance Department and the City's Budget Office assists with preparation of the Commission's budget. Negotiations for property acquisitions are conducted by the city Real Estate Office; the City-County Purchasing Office manages all other system asset acquisitions.

The city Engineering Division provides the Utilities Division with design and project management services for main line extension projects. Additionally, due to the specialized nature of the work of division operations and facilities, outside consultants may be enlisted to provide assistance in those areas that are outside of staff expertise.

The City Attorney Office provides legal assistance to the Commission and the Utilities Division when necessary. Major maintenance and repairs of the division's buildings are handled through the city Property Management Division.

CITY/COUNTY UTILITIES DIVISION PERSONNEL

Administration:	8
Water Treatment:	55
Water Distribution:	69
Wastewater Collection:	58
Wastewater Treatment:	94
Solid Waste Management:	35
Technical Support:	32
Customer Service:	13
Total:	364

Willette Crosby, Assistant Chemist at the Manson Meads Complex performing an analysis on a wastewater sample.

The High Rock Lake Watershed for which a TMDL is being developed to limit the amount of nutrients entering the streams.

Preserving Water Quality

Given that the Yadkin River supplies 80 percent of Forsyth County's water, the City-County Utility Commission has a vested interest in protecting water quality of the river and in its basin of tributaries.

However, the commission has deep reservations about a plan by the N.C. Division of Water Quality to address chlorophyll and turbidity in High Rock Lake. This plan would significantly impact the Utility Commission and every other entity that holds stormwater and wastewater treatment permits in the Yadkin River Basin upstream of the lake. The Utilities Division staff and the Utility Commission believe that there are flaws in both the process by which the Division of Water Quality decided to draft a nutrient reduction plan, and in the division's conclusion that nutrient reduction is needed and appropriate.

The Division of Water Quality's plan will set daily limits on the amount of nitrogen and phosphorus that can go into the lake. This is called TMDL, or "total maximum daily load." Most wastewater plants in the basin will be allocated a portion of this TMDL as the maximum amount of nitrogen and phosphorus that they will be allowed to discharge in their treated wastewater.

Amending the treatment process will require major changes in how the plants are configured. Like all wastewater treatment plants, the Archie Elledge and Lower Muddy Creek wastewater treatment plants are configured to remove pollutants that consume oxygen in the water. (These organisms are collectively referred to as biological oxygen demand, or BOD.) Wastewater treatment plants accomplish this through a biological process. Beneficial bacteria consume the BOD in the wastewater before it is discharged into Salem Creek or the Yadkin River.

Regulating the amounts of nitrogen and phosporus in wastewater will require additional treatment tanks, as well as a new way of routing wastewater through the plant. Essentially, the plants will have to be rebuilt, and they will require more land. The Lower Muddy Creek plant is land-locked and does not have room to expand. This will require pumping the wastewater over to the Archie Elledge plant.

Based on the cost of the recent upgrades to the Archie Elledge plant, the commission staff estimates that it could cost $150 million to $200 million to rebuild the plants and make other changes that would be required under the nutrient reduction strategy.

Heretofore, the Division of Water Quality primarily has imposed TMDL limits only after the Environmental Management Commission declared that the affected basin contained nutrient sensitive

waters. In this case, the division plans to implement TMDL limits without seeking any such declaration by the EMC. The staff believes that in doing so, the Division of Water Quality failed to follow due process as outlined in the North Carolina General Statutes regarding nutrient sensistive waters. This lack of process denies the public an opportunity to comment on the development of nutrient management plans for the basin, and it pre-empts several key scientific processes required to draw complete and accurate conclusions about the state of High Rock Lake and the proposed solution.

These key points need to be considered:

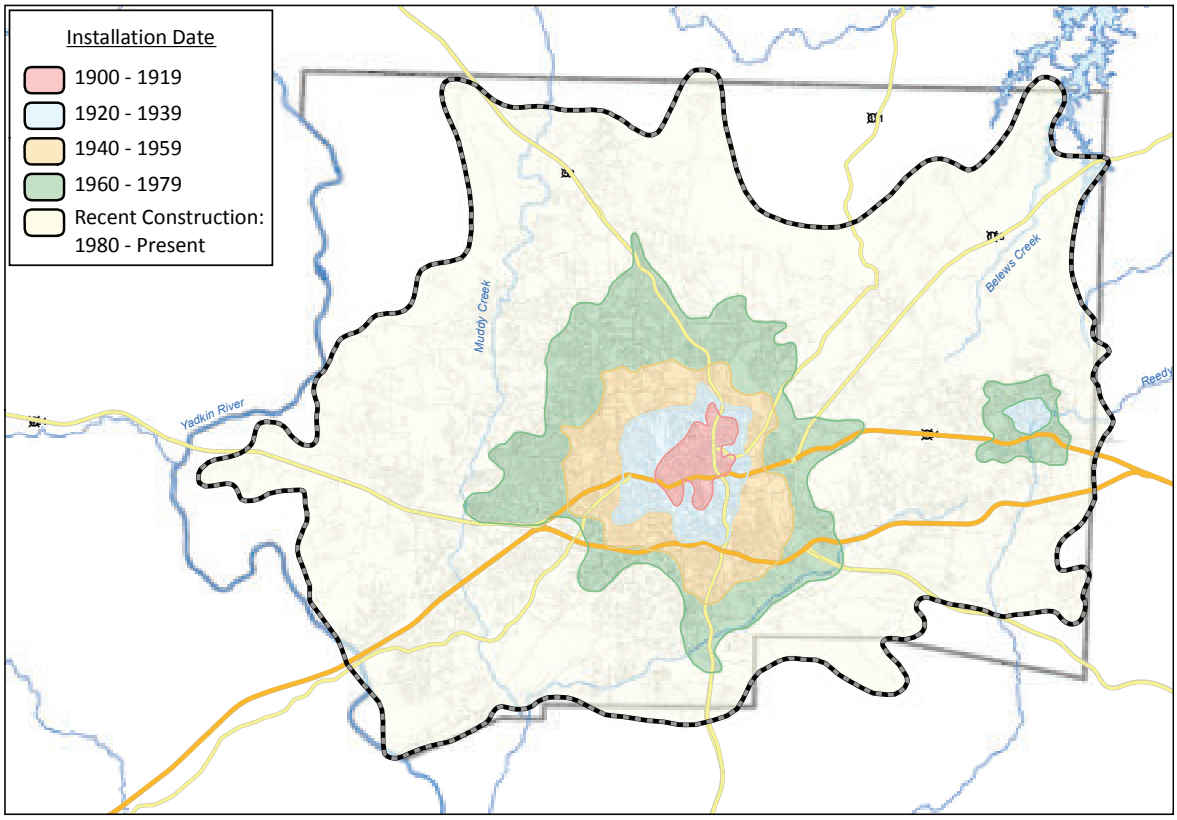
- High Rock Lake is not classified as a drinking water supply and has no drinking water intakes, yet the staff at the Division of Water Quality have cited the 2005 Drinking Water Reservoir Protection Act as their legal authority to pursue a nutrient reduction strategy without going before the EMC.
- There is no empirical evidence that the lake is impaired for its current uses. It is used for power generation and recreation, and is routinely listed as one of the best fishing lakes in the Southeast.
- Setting daily load limits for nitrogen and phosphorus would do little to reduce chlorophyll – which is the surrogate way of measuring nutrients – in the water. The algae blooms that have occurred in the lake are predominantly blue-green algae. This type of algae takes nitrogen from the atmosphere and thus is immune to efforts to reduce chlorophyll by limiting nitrogen levels in the water.
- There is insufficient data on chlorophyll levels in the lake to sufficiently understand the biology in order to develop a nutrient management plan. An independent study concluded it would take several year's worth of thorough chlorophyll testing in the lake to produce a dataset of sufficient quality to model the lake biology
- The division's TMDL process does not address non-point source loading in the basin that supplies the lake. More than 80 percent of the watershed in the Yadkin River basin is agricultural and forest land that cumulatively accounts for the vast majority of nutrient loading and turbidity in the lake.
- There are no studies to assure that the cost of new wastewater treatment processes will yield a result that makes an appreciable difference in the water quality of the lake. Such studies might identify alternative management strategies that could be equally or more effective than a nutrient management plan.

In its rush to implement a nutrient reduction strategy for High Rock Lake, the Division of Water Quality is imposing a solution to a yet-to-be-determined problem. It will have a significant financial impact on the operations of the Utility Commission – and its customers – if it proceeds as scheduled.

The commission is working with legislative committees with a goal of passing legislation that would require the Division of Water Quality to follow its normal protocols by requiring an declaration of nutrient-sensitive waters before nutrient reduction strategies are imposed.

The Utility Commission is committed to good stewardship of the waters of the Yadkin River system by providing the highest quality service to its customers, and the highest level of protection of the environment, that can be proven effective in improving water quality.

HIgh Rock Lake is used for power generation and recreation, and is routinely listed as one of the best fishing lakes in the Southeast.



Water/Sewer Infrastructure Age

Water & Sewer Mains
Infrastructure Limits
Lakes & Streams
Highways
Interstate
Cities
County Boundary

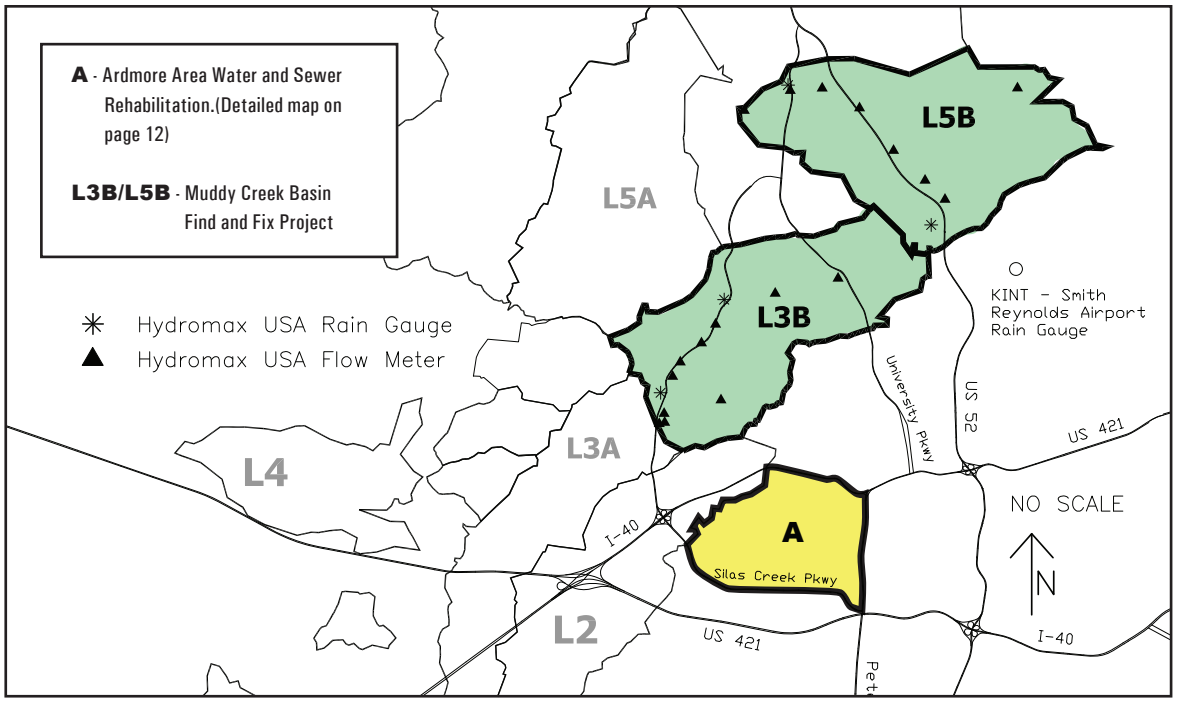
Managing Our Assets

To execute its daily operations the Utilities Division uses more than $500 million worth of equipment. To track the condition of all this equipment, as well as to plan for maintenance and replacement, the division has developed an asset management tool that uses various sources of information to track current and future system needs.

To project future needs, the division considers such factors as its capacity to serve its current customers, the capacity to serve expected future development, and the condition of critical assets and their expected life cycle. Other factors include changes in regulations that may affect operations, and performing system upgrades and repairs to maintain Utilities Division assets in such a way that it minimizes the impact on water, sewer and landfill-disposal rates. These factors, in turn, affect long-term funding as projected in the six-year Capital Improvement Program.

The CIP is a six-year roadmap for planning, maintaining

The Capital Improvement Program is broken down by water and wastewater utilities. Each of the two utilities has asset classes for which projects are identified, prioritized, planned for, and developed into the CIP. Water assets are divided into two categories: distribution facilities and treatment facilities. Likewise, wastewater assets are grouped under the categories of collection facilities and treatment facilities. The projects associated with water treatment and wastewater treatment are grouped and presented as a subset of the overall CIP. Similarly, water distribution and wastewater collection projects are grouped and presented as another subset of the CIP. Projects are generally associated with asset replacement and rehabilitation needs, regulatory needs, service needs, or a combination of the three.



and funding present and future infrastructure requirements. It is reviewed and updated annually to ensure that it finances only the necessary capital expenditures.

To assess the condition of sewer mains, Utilities staff often hires consultant engineering firms to complete sewer system evaluation surveys in areas with maintenance calls for sanitary sewer overflows, and areas with an increase in wet weather flows as indicated at pumping stations or wastewater plants.

Evaluation surveys use smoke tests and closed captioned television to identify potential collapsed or failing sewer pipes, root intrusions or other obstructions in the mains. Manholes may also be inspected.

Water distribution systems are assessed by reviewing reported water leaks in water mains and connections, and by assessing water main age, size and materials. Also pressure and flow measurements are taken throughout the system to determine if adequate service is available to the customer.

Studies including these types of inspections began in 2008 in the Ardmore Area Collection system (bounded by Peter Creek Parkway on the east, Silas Creek Parkway on the south, Stratford Road on the west, and Business I-40 on the north) and for the Muddy Creek Basin Find and Fix project (an 82-square-mile drainage basin).

For both of these projects, the overall areas were divided into sub-basins with each basin being prioritized based upon the severity of defects in the existing infrastructure. Sewer mains, sewer connections, sewer manholes, water mains, water connections and water valves were assessed and are being rehabilitated or repaired as needed.

Reviewing and prioritizing repairs in the basins helps the Utilities staff project repair budgets for upcoming years. This helps to spread the cost of repairs over time, reducing the potential for unexpected rate changes to cover the cost of unanticipated repairs.

In 2011, the staff budgeted $4.4 million for Ardmore Area Water and Sewer Rehabilitation, and $4.32 million for Muddy Creek Basin Find and Fix. By prioritizing these basins repairs, the division addressed its critical needs first, spending only the funds necessary, while extending the expected life cycle of our assets. The overall budget for the CIP planning period for the projects are $30,800,000 and $18,792,920 respectively.

Identifying critical assets, determining the minimal life-cycle costs to maintain these assets, and determining the best long-term strategies to fund these costs has been the core function of the CIP planning process.

Ardmore is home to some of the oldest utility infrastructure in Forsyth County. Over the next 5-7 years rehabilitation will consist of installing cured-in-place lining or pipebursting approximately 25,000 linear feet (LF) of sewer line, rehabilitating approximately 110 manholes and 420 sewer service connections and replacing approximately 23,140 LF of water line, 130 valves and 440 water services connections.

Thomas Water Treatment Plant

Setting Water & Sewer Rates: Part Art, Part Science

An adage in the Utilities profession is that water and sewer rates are determined for the coming five to ten years when the capital projects list is approved.

To be sure, capital spending has a major impact on the Utility Commission's rates. However, water sales and operating expenses also play a significant role.

Capital projects directly impact rates because the Utility Commission depends upon revenue bonds to finance big construction and repair projects, such as the $67 million Thomas water treatment plant. When it sells the bonds, the commission is obligated to set water and sewer rates high enough to make the bond payments.

And because the commission has been through a cycle of major construction and repair projects, it has been selling a lot of bonds. In 2002 the commission was making payments on about $175 million of bonds. By 2010, this figure had grown to $512.3 million.

Debt service in 2010 for these bonds totaled $35.5 million, up $8.8 million from the year before.

Water and sewer rates also must cover the costs of operating the water and sewer system, including the treatment plants, pumping stations, and distribution and collection system. To a certain extent, the commission has some sway over these costs through its annual budget process. Hence for the fiscal year 2011-2012 budget, while debt service increased 33 percent, careful budgeting held the increase in operating costs to just sixth-tenths of one percent – $250,000 of the $40.8 million operating budget.

The rates have to bring in enough revenue to cover operating costs and debt service based on a given amount of water sales. The "art" of the process comes in forecasting just what those water sales will be. Development, economic conditions and weather all play a role: Development adds customers. Economic conditions can affect how much water is used by factories and other industrial customers. And the weather affects irrigation sales.

Further complicating the issue is the effect that conservation-incentive pricing has on water sales. In 2009 the Utility Commission adopted a new rate structure that rewards conservation by setting rates based on five tiers of usage. The price goes up as water use goes up, except for the largest usage tier, which was created for industrial customers who use more than 40,000 cubic feet of water per bimonthly billing cycle.

This conservation pricing, combined with a general water-conservation ethic that has taken hold in the general public as part of the larger interest in sustainability, works to reduce water sales, and must also be taken into account in setting rates.

Operations building at the Thomas Water Treatment Plant.

Water Treatment and Distribution

The Utility Commission operates three water treatment facilities. The R.W. Neilson and P. W. Swann water treatment plants can treat 48 million and 25 million gallons per day, respectively. These plants draw water from separate intakes on the Yadkin River. The new R.A. Thomas Water Plant, came on line on September 14, 2011 with a capacity of 18 million gallons per day. It will draw water from the Yadkin River and Salem Lake.

During FY 2010-11 the Neilson and Swann plants treated and pumped approximately 13.4 billion gallons of water that met or exceeded all state and federal standards for drinking water quality. This accomplishment reflects the quality and dedication of the employees who work year-round to provide adequate supplies of safe drinking water.

The system serves a population of 312,900 with a water distribution system that includes 2,201 miles of water distribution mains, 14 water tanks and seven pumping stations.

FACILITY UPGRADES

The Utility Commission continues to invest in its raw water pumping stations, water treatment facilities and distribution infrastructure to improve their efficiency and operation. During this fiscal year more than 14 miles of new main lines were added to the system that provides treated water to a large portion of Winston-Salem and Forsyth County. In addition, 4,673 feet of waterline, 62 connections and 17 valves were replaced.

Maintenance and repair of the existing systems assure our customers that all components of the infrastructure are in proper functioning condition.

Thomas Water Plant Modernization

During FY 2010-11, construction was nearly completed on the replacement of the 83-year-old R. A. Thomas Water Treatment Plant, the oldest of the three water treatment plants in Forsyth County. This project included replacing the treatment facilities, the finished water storage facilities, and the finished water pumping facilities with new construction and modern technology. By end of the fiscal year, approximately 95 percent of the construction contract funds had been spent. All major structures have been built; interior work complete; and electrical and control systems checkout and operator training was occuring. During the year the Commission approved two contract modifications, for additional finished water piping and modifications to the residuals lagoons, that brought the total project budget to $67,093,265. Expenditures as of end of FY 2011 totaled $63,493,394. The project was completed in November 2011.

Pipe gallery at the Thomas Water Treatment Plant.

Idols Pump Station Rehabilitation

This project includes replacement of aging electrical and pumping equipment that has achieved its useful life. Phase I concluded in June 2010 and included the installation of updated, energy-efficient motors for each pump, upgraded motor control centers and soft starters for each pump, and instrumentation and communications equipment to operate the station remotely from the Neilson Water Treatment Plant. The budget for Phase 1 totaled $3,099,320; total project expenditures came to $2,947,548. A second phase of this project is scheduled for FY 2014 to install an emergency electrical generator capable of operating two pumps simultaneously.

Northwest Raw Water Pump Addition

The Northwest Raw Water Pump station supplies Yadkin River water to the Swann Water Treatment Plant. This project provides for the purchase and installation of a second 25 MGD pump, ancillary piping, valves, and motor controls at the station. The second pump will provide reliable capacity at the station. Construction began during FY 2008-09 and was 97 percent complete by the end of FY 2009-10. The project was concluded in early FY 2010-11 and the total project budget is $1,574,618. As of June 30, 2011 total expenditures were $1,450,425.

Salem Lake Dam Replacement

The Salem Lake dam was built in 1919 to create a reservoir to supply the treatment plant that was on the site that the new Thomas Plant sits on. The dam was raised in 1921, 1931 and 1947 to increase the lake's capacity. Additional construction included a three-story pump house in the central portion of the dam around 1931; in 1996 concrete on the downstream face was replaced with a structural overlay to match the 1947 crest elevation. Recent engineering evaluation and analysis of the dam found no immediate concerns relative to public safety but confirmed that the dam does not meet current standards for spillway capacity, lake draw down, and downstream energy dissipation. An engineering analysis recommended replacement of the dam as the more cost-effective solution. The project includes the pre-design, design, and construction of a new dam, and relocation of a portion of the Salem Lake Trail to accommodate construction of the dam. Design work was completed in FY 2010. Construction of the dam is scheduled to commence in January 2011 and will take about 18 months to complete. While under construction, the level of Salem Lake was lowered 12 feet. This will allow the lake to absorb a 10-year storm without overflowing the construction site. The lake will be closed to fishing and boating while the level is lowered. The project's total budget is $8,101,016. Expenditures at end of the fiscal year totaled $2,154,235.

Raw Water Pipeline Evaluation and Repair

This project provides for inspection and evaluation of the raw water lines that connect the Thomas water treatment plant to Salem Lake and the Neilson water treatment plant. The line from the lake to the Thomas plant consists of 9,400 feet of 48-inch steel pipe. The line from the Neilson plant to the Thomas plant consists of 54,000 feet of 36-

Sewer connection renewal.

inch prestressed concrete cylinder pipe. Records indicate that both lines have been in service since at least the 1940s. There are no records of any previous inspections.

The budget for the project was $2,039,813 and included funding for inspection, evaluation, design, and valve and pipeline replacement needs discovered during the evaluation. Although the pipeline had been in continuous service since the 1940's, the evaluation indicated only 2,500 feet of the 63,400 feet of pipe inspected was in immediate need of repair. The evaluation also concluded that 34 of the existing 36 air-release valves needed to be replaced. Construction contracts were bid, awarded, and completed by the end of FY 2011. Expenditures through the end of the fiscal year totaled $1,802,131.

Neilson Generators

The 2007 Water Facilities Master Plan identified several capital needs at the Neilson plant to replace aging infrastructure, improve treatment to meet current and future regulatory requirements, and ensure the continued reliability of this critical facility. This project fills the need for new standby power generators and distribution switchgear. Two Caterpillar 1,500kW, 480V generators and their associated switchgear were installed. The generators and switchgear were salvaged from the original Thomas Water Treatment Plant before its demolition. The project involved electric vault construction, new 480V electric service, a new pad-mounted transformer, and removal of the old diesel generators. Construction started toward the end of FY 2009-2010 and was completed on October 11, 2010. The total expenditures at the end of the fiscal year were $1,226,943.

Winston-Salem State University Distribution System Improvements

This project will eliminate encroachment of a 24-inch water main easement on the Winston-Salem State University campus and ensure quality of service provided by the Thomas Water Treatment Plant's transmission mains. The project is being completed in two phases, replacing/relocating approximately 10,670 feet of transmission mains that range in size from 12" to 24." Construction of phase one was completed in May 2010 within budget . Phase 2 includes replacement of a 30-inch water line and is on schedule for award of a construction contract in the spring of 2012. Construction is expected to be completed a year after contract award. This project totals $4,780,860; through the end of FY 2009-10 expenditures total $1,501,229.

Two-inch Water Main Replacement

This project will replace 2-inch water mains at approximately 30 locations within Winston-Salem and multiple locations in Rural Hall and Kernersville. These lines are undersized and no longer provide adequate domestic flow or fire flow to the areas they serve. Two-inch water mains are being replaced with 6- or 8-inch mains. During FY 2010-11, projects were completed for areas in Rural Hall, totaling 4,673 feet of replacement lines. Total budget and expenditures for the two projects came to $458,962.49.

Muddy Creek WWTP Water Service Relocation

This project will extend a water main from the intersection of Cooper and Loop roads, near Clemmons, to the Muddy Creek Wastewater Treatment Plant. When the new main is built, an existing

Water flowing over Idols Dam.

service connection for the Muddy WWTP will be severed on the 48-inch water main leaving the Neilson Water Treatment Plant; doing so will provide additional chlorine contact time prior to delivery to the customer as required by state regulations. Extending this main will also allow future domestic connections along Cooper Road. The project was awarded in April 2011 and is expected to be complete early FY 2012. The project budget is $305,851; expenditures through FY 2010-2011 totaled $54,291.

Chitty High Service Pumping Station - Standby Power and Electrical Improvements

The Chitty High Service Pumping Station comprises two pumping stations. The oldest station, built in 1961, has operated for more than 49 years with little capital investment. The equipment has aged beyond its useful life and the lack of available replacement parts has rendered the equipment difficult to maintain. The 1986 pumping station has been in continuous service for 24 years and some capital improvement is needed to replace aging equipment and maintain the reliability of the station.

Under this project the existing electrical substation will be replaced. New standby power generators will be provided for both the 1961 and 1986 stations. New equipment will include 4160V switchgear and generators, 480V generators, fuel storage tanks and transformer. The existing diesel-driven pumps will be removed from service and emergency power will be provided by the new equipment. The 49-year-old motor-control center will be replaced with a new 4,160V motor-control center and new starters will be installed.

Due to changes in the distribution system since the station was put in service, the pumps have experienced abnormal wear. An evaluation of both pump stations will be performed to determine the cause of the wear and corrective action taken to extend the life of the equipment. It is anticipated that some or all of the pumps will need to be replaced. This project is currently in the design phase and construction is expected to begin in FY 2012. Design phase appropriations: $699,892. Total expenditures through FY 2011: $0

Idols Dam Repairs

The Idols Dam plays a vital part in the Winston-Salem/Forsyth County water system by providing a pool of water for one of the system's intake structures along the Yadkin River just upstream from the dam. The Idols Dam has been in service since 1892. There are several areas of concern with the structure, including erosion along the stream bank, sediment deposits at the trash rack, erosion and undermining at the retaining wall, and deficiencies in the masonry weir. An evaluation of the structure has been performed noting the areas of concern and possible alternatives for repairs. This project would include making the recommended repairs to preserve the dam and surrounding areas. Corrective measures will protect the integrity of the dam structure as well as the intake pool area for many years into the future.

This project is currently in the design phase and construction is expected to begin in FY 2012. Design phase appropriations: $178,500. Total expenditures through FY 2011: $73,757

Earl Green, Utility Plant Operator at the Thomas Water Treatment Plant is in the process of performing the daily bacteriology analysis.

Wastewater Collection and Treatment

The Winston-Salem/Forsyth County Utility Commission operates two wastewater treatment plants with a combined treatment capacity of 51 million gallons per day. The collection and treatment system includes approximately 1,701 miles of sewer lines, 49 pumping stations and three chemical odor control stations. The Utility Commission and the Utility Division staff work hard to meet or exceed the requirements mandated by the North Carolina Clean Water Act and the requirements of the National Pollutant Discharge Elimination System (NPDES) permits that regulate the actual operation of the treatment plants and the disposal of biosolids.

WASTEWATER TREATMENT PLANTS

From July 1, 2010, to June 30, 2011, the sewage plants treated 11.33 billion gallons of wastewater. The Muddy Creek and Archie Elledge wastewater treatment plants and the Thermal Biosolids Dryer facility operated all year within the parameters established by state and federal permits. By removing 96.7 percent of regulated pollutants they received, the commission's two wastewater treatment plants well exceed state and federal requirements. Approximately 22,075 tons of regulated pollutants were removed by the treatment processes during the period ending June 30, 2011.

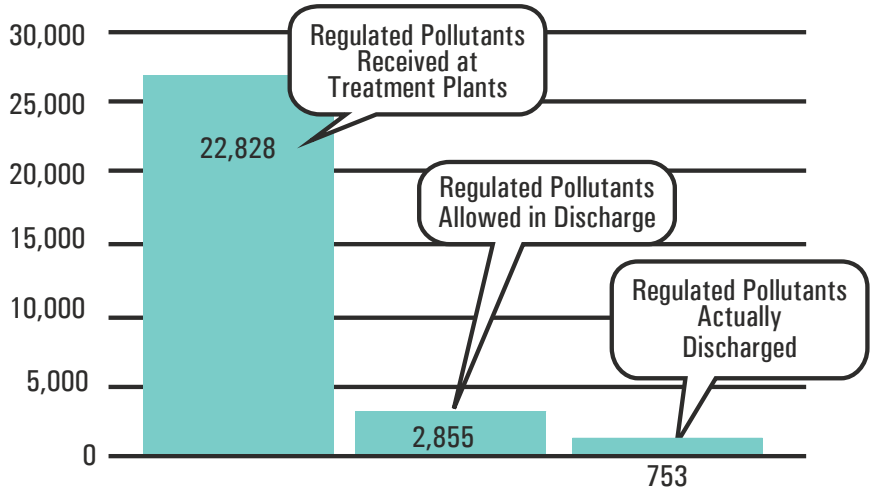
The treatment and disposal of residual biosolids produced by the wastewater treatment plants is accomplished by anaerobic digestion followed by further processing at the Biosolids Drying Facility.

Methane, one of the longest-lasting greenhouse gases, is captured in the treatment process before it escapes to the atmosphere. Each year more that 212 million cubic feet of methane is captured from the digesters and used as fuel to reduce the cost of running the plants.

The Biosolids Drying Facility at the Elledge plant uses excess methane from the existing treatment process to dry dewatered biosolids into a pellet much like granular fertilizer; known as Winston-Salem Soil Solution. During FY 2010-11 the dryer produced 5,431 dry tons of pelletized biosolids. The biosolids are then beneficially reused in various agricultural settings via a contract marketing/hauling company.

Elledge Plant Improvement

By the end of FY 2010-11, improvements to the Elledge Wastewater Treatment Plant were sub-



WASTEWATER TREATMENT PLANT EFFICIENCY

Tons of Pollutants per Year - FY 2010-2011

The treatment process removed approximately 26,008 tons of regulated pollutants during the year ending June 30, 2011.

stantially completed. The original plant had been in operation since 1959 and many parts were showing signs of deterioration. Construction of four new primary clarifying basins at a higher elevation along Salem Creek is one of the main highlights of this improvement project. In addition, a new control building was built to house electrical/IT rooms, a control room, and a small laboratory. A new influent pumping station was constructed to allow the sewage to flow through the plant by gravity. This project also replaced 1,600 feet of the Salem Outfall, the plant's electrical system, and gas compressors. These improvements enable the Elledge Plant to treat 30 million gallons of sewage a day with a more reliable infrastructure, and it can treat 100 million gallons a day in flood capacity. The project was completed in November 2011.

Total project budget: $62,547,730. Total expenditures through FY 2011: $61,046,687.

Muddy Creek Wastewater Treatment Plant Clarifier Improvements

This project includes the replacement of sludge scraper equipment, the addition of baffles, construction of one new secondary clarifier, and the addition of return activated sludge pumping capacity at the Muddy Creek wastewater treatment plant. The sludge scraper equipment in the existing primary clarifiers will be replaced with scrapers that can be operated independently for each clarifier unit. Although there are four separate clarifier units, the existing bridge-type scrapers operate in pairs so that a shutdown for maintenance or any other reason removes two of the four clarifiers from service. This negatively affects the loading and performance of downstream processes and the overall reliability of the entire wastewater treatment plant. The upgraded units will allow greater reliability within the existing clarifiers.

This project also includes an evaluation of the performance of the existing secondary clarifiers and return activated sludge pumping system at the Muddy Creek plant. The existing secondary clarifiers experience performance issues as flow increases even when flow is well within normal loading guidelines. Dye testing and velocity measurements will be conducted to identify the specific issues that may be correctable with the installation of baffles within each clarifier.

In addition, the return activated sludge pumps currently cannot pump the designed pumping capacity. The shortfall is suspected to be caused by excessive suction side headloss. The source of the excessive headloss will be investigated during the clarifier study. This project is currently in the design phase and construction is expected to begin in FY 2012. Design phase

Susan Loggins performaing an analysis on a wastewater sample at the Manson Meads Complex laboratory facility.

appropriations: $728,490. Total expenditures through FY 2011: $70,939.

Wastewater Facilities Master Plan

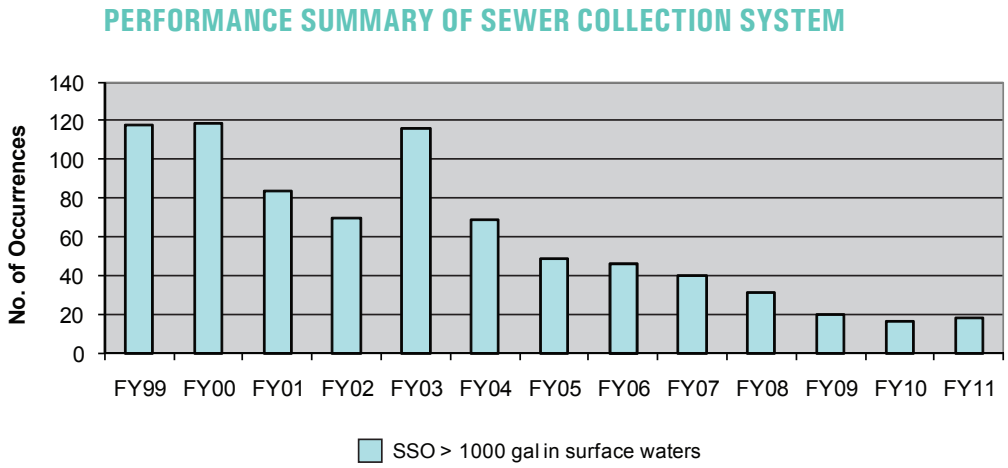
Per EPA guidelines, the total maximum daily load for High Rock Lake will lead the Division of Water Quality to set specific limits for nitrogen and/or phosphorus in the future NPDES permits for both wastewater plants.

The need for nutrient removal stems from High Rock Lake being listed by the Division of Water Quality as impaired by chlorophyll and turbidity. Chlorophyll is formed by microbiological growth when the proper amounts of nutrients (nitrogen and phosphorus) are present in the water. The sources of these nutrients vary but are mostly due to non-point source runoff and point source discharges. Turbidity, which is a measure of the clarity of the water, and is the result of erosion due to runoff and impairs the waters by preventing sunlight penetration or increased sediment deposition. Once a water body is listed as impaired, DWQ is required by the U.S. Environmental Protection Agency to issue a Total Maximum Daily Load limit (TDML). A TDML will quantify how much contaminant load the water body can naturally assimilate.

To plan for this, the staff has been working with a consulting engineer to update the wastewater facilities master plan, which provides long-term guidance and planning for capital improvement projects at lift stations and the Elledge and Muddy Creek wastewater treatment plants. During a meeting with representatives of the Division of Water Quality, target limits for both nitrogen and phosphorus were discussed and were used to determine the potential nutrient removal processes that could be implemented at both the Elledge and Muddy Creek plants.

In 2010, a wastewater treatment master plan was completed that considered wastewater flow projections and future, more restrictive effluent limits. While flow projections predicted growth in sewer flows, new treatment capacity is not expected to be needed until 2020. However, more restrictive effluent limits on our treatment permits are anticipated before 2020.

The NPDES permits for both treatment plants will be renewed in 2014, which is within the window of the current capital improvements plan. During the summer of 2011, staff met with the Director of the N.C. Division of Water Quality to discuss the upcoming permit cycle and any changes that may impact the renewals. After this discussion the Director of DWQ indicated that " stringent limits are not likely to be in place by 2014. It is possible that a study of the ability to opti-



mize and reduce nutrient loading through optimization of the existing facilities would be required." From this, staff anticipates that the 2014 permits will not contain nutrient limits (for nitrogen and/or phosphorus) which would require a major capital expenditure to construct nutrient removal processes at both wastewater treatment plants.

The final report provides prioritization and planning level descriptions and cost estimates for the recommended improvement projects for 5-year, 10-year, and 20-year planning periods and is reflected in current and future capital plans presented to the Utility Commission.

WASTEWATER COLLECTION

The Commission oversees the third-largest collection system in North Carolina and the Utilities Division has 62 employees dedicated to operating and maintaining the system. More than 99.99% of the wastewater generated by the system's customers was collected and delivered to the treatment facilities. Despite the staff's best efforts, sanitary sewer overflows will occur. Most overflows occur when sewer lines are obstructed or their capacity is reduced due to inflow or infiltration of ground or surface water.

Wastewater Collection System Permit Compliance

The Utilities Division has been operating under a Wastewater Collection System Permit issued in August 2005. This permit sets requirements on system performance, operations, maintenance, record keeping, monitoring and reporting, and inspection expectations that have immediate impact to the commission's operation. The permit also requires that system owners and operators demonstrate that a proactive and preventative maintenance program is in place to eliminate overflows.

The Utilities Division has spent significant effort refining preventive maintenance programs. In 2008, three different preventive sewer line maintenance contracts were put in place: chemical root control, hydraulic and mechanical cleaning of sewer lines and right-of-way maintenance. Each maintenance contract can be renewed annually for up to five years. These contracts will supplement our staff resources and help achieve the goals required in the permit.

A crew dedicated to cleaning large diameter mains was approved in the FY 2008-09 budget. This crew has been hired and trained in the operation of the specialized equipment used to clean sewer mains 18" and above. This specific need will be the mission of this operation because large sewer mains are the arteries of the system. These mains carry large volumes of flow and over time have a tendency to accumulate sediment and other deposits that reduce their carrying capacity. This crew will utilize existing specialized equipment to remove the sedimentation and thus recapture capacity while cleaning

Odor control units at the Elledge Wastewater Treatment Plant.

the line. This will be another positive step towards proactive preventative maintenance and reducing the potential for Sanitary Sewer Overflows (SSO).

During 2008, the Division of Water Quality began issuing Notices of Violation for reportable sanitary sewer overflows. Civil penalties are levied for any overflow that the division deems to have been preventable. In FY 2010-11, our system received 76 notices of violation; three overflows were listed as "Intend to Enforce" actions if no additional information about the cause of the overflow was presented. Staff provided follow-up information on all three incidents and the Division was satisfied with our efforts to prevent sanitary sewer overflows from occurring in our system. As a result, the Commission did not pay any civil penalties for SSOs during FY 2010-11. An SSO reduction team of staff continues to identify causes of sanitary sewer overflows and actively plans projects in an effort to reduce overflows, and infiltration and inflow into the sewer system.

Meeting the requirements for our collection system permit is our highest priority. It has required the implementation of new programs and additional personnel to cover the operational requirements like annual inspections, preventive maintenance programs, system monitoring, recordkeeping, and rapid response to overflow events. Also, coordination of various internal and external resources to meet this obligation has been required. Even with current budgetary restrictions in place, staff is meeting state requirements with the use of existing staff, resources and contracted services.

SSO Reduction Efforts

Since the passage of the North Carolina Clean Water Act in 1999 the total volume of annual SSOs has been tracked against the baseline year of FY 1998-99. The FY 2010-11 total volume of SSOs represents a 45.3 percent decrease from the volume reported for the baseline year.

There were 109 sanitary sewer overflows during FY 2010-11, a 2.8 percent increase compared to the 106 overflows reported in FY 2009-10. These overflows totaled 95,342 million gallons, a 95 percent decrease from the 1.84 million gallons reported in FY 2009-10, and accounted for only 0.0008 percent of the 11.328 billion gallons of wastewater the system collected. However, the goal is to have zero sanitary sewer overflows from the sewer collection system.

Overflows must be reported whenever more than 1,000 gallons is spilled or any amount of untreated sewer reaches a surface water body. During the fiscal year there were 18 overflows of 1,000 gallons or more in the sanitary sewer collection system. There were three overflows from treatment plants and pumping stations that reached surface waters, totaling 1,840 gallons, or 0.000016 percent of the wastewater treated.

Accumulation of fats, oils, and grease accounted for 49 of the 109 sanitary sewer overflows in the col-

Spread from the "Can the Grease" brochure.

lection system during FY 2010-11. These 49 overflows account for 45 percent of all sewer line blockages and is down from 52 grease-attributed overflows in FY 2009-10 and 55 such blockages in FY 2008-09.

The reduction reflects the continued effectiveness of the Commission's Grease Interceptor Ordinance (in place since 2003) and public education efforts. For example, staff working with the city's Marketing & Communications department developed a "Can the Grease" brochure and associated educational materials. This information is routinely provided to the public at many functions throughout the year. The reduction also reflects the proactive approach to cleaning sewer main lines and the publicly maintained portion of sewer connections. Sewer-line maintenance also prevents overflows due to the intrusion of tree roots and debris, which are the other major contributors to line blockages.

In summary, the wastewater collection system staff continued to operate the system in compliance with the permit. Improving operational performance was key in maintaining a low volume of sewer spilled from the system. Although effort is currently being placed on operational performance and major system improvement projects, much more effort will be required to meet the goal of having zero overflows. As a result, more staff, equipment, information technology, and funding must be available and in place to ensure success.

WASTEWATER COLLECTION SYSTEM MAINTENANCE AND REHABILITATION

During the year, 666,409 linear feet of sewer mains were cleaned by Utilities Division personnel. The system spent $190,500 on contracted mainline cleaning, which provided for cleaning of approximately 234,327 linear feet of sewer lines in addition to the lines cleaned by in-house personnel. The cleaning contract will remain the same for next fiscal year in an attempt to continue to reduce sanitary sewer overflows related to debris and grease. In addition, a chemical root control contract is anticipated to treat approximately 125,000 linear feet of sewer main in FY 2011-12, further reducing the risk of sanitary sewer overflows occurring in the system.

Also, the system funded the inspection of 85,457 feet of sewer mains using closed-circuit TV. Staff and contractors also improved the access to collection system easements through the inspection and mowing/clearing of approximately 45 miles of easements.

During FY 2010-11, more than $1.8 million was invested in sewer main rehabilitation projects. These projects replaced older less reliable infrastructure with newer sewer lines, resulting in fewer leaks and service interruptions. These improvements correct problems such as cracked pipes, misaligned joints, sagging lines, and root intrusion.

The majority of the rehabilitation projects included replacing approximately 19,110 feet of gravity

Senior Operator Bobby McMannen monitoring the DO level in the basins at the Elledge Wastewater Treatment Plant.

sewer mains, 60 manholes, and 175 service laterals. The sewer mains rehabilitated primarily ranged in size from 6- to 15-inches and took place in the priority repair areas in the Ardmore Basin 10 North district, Sunnyside Avenue and Adams Street (Kernersville) areas.

Also, during the year, a series of miscellaneous collection system improvements were completed on Main Street, Betty Drive, Goldfloss Street, Plymouth Avenue, and Stonegate Drive. The total budget for these projects was $992,242.

On-going rehabilitation projects include:

Ardmore Area Rehabilitation: This project is being spread over multiple years. During FY 2010-11, design of the repairs necessary for the Ardmore Basin 10 were completed. Bids for this work were received and a contract was awarded for $5,192,058.50. Work began in June 2011. The project is progressing well and is scheduled to be complete by December 2012.

21st, 22nd, & 23rd Street Water & Sewer Rehabilitation: The scope of this project includes the complete rehabilitation of existing water and sewer lines on 21st, 22nd, 23rd and surrounding streets. The project limits include streets within the boundaries of Liberty Street to the west, 25th Street to the north, Bowen Blvd to the east and 14th Street to the south. The project is being designed and constructed to address sewer and water system issues that have resulted in sanitary sewer overflows and a high volume of work orders for maintenance staff. The project includes engineering design, easement acquisitions, construction, and construction management. This project is currently in the design phase and construction is expected to begin in FY 2011. Design phase appropriations: $265,000. Total expenditures through FY 2011: $0

Muddy Creek Find & Fix: The design phase for the first two areas of intensive rehabilitation was completed in FY 2010-11. Construction repairs in two basins are scheduled to begin in FY 2011-12. Total budget, including construction costs, is $3.5 million. Total expenditures through FY 2011 is $1,085,889.

Reedy Fork Pump Station

The Reedy Fork Pump Station was built in 1982 and due to its age it is difficult to find replacement parts for its outdated equipment. The station is a confined space and requires additional time, safety measures and costs when inspections and repairs are performed. In addition, a portion of the outfall into the pump station traverses upstream wetlands that are a significant source of infiltration and inflow. The Commission has approved a project to decommission the existing pump station, build a new pump station upstream of the wetlands, and build a new 16-inch force main. The project also includes a downstream hydraulic capacity study of the wastewater interceptors in the South Fork sewer basin. The project is in the pre-design phase and has a budget of $930,800. Expenditures through FY 2010-11 total $558,103.

2011 aerial overview of Hanes Mill Road Solid Waste Facility

Operations – Solid Waste

The Solid Waste Management program is responsible for operating the Hanes Mill Road Landfill, the Old Salisbury Road Construction and Demolition Landfill, the Reynolds Park Road leaf composting facility, and the Forum 52 and Overdale Road yard waste facilities. This program is also responsible for scrap tire and white goods management, recycling in the City/County school system, and a program that diverts household hazardous waste from landfill disposal. All programs are operated to meet or exceed regulatory standards and environmental protection criteria, and to deliver services as efficiently as possible. This requires strategic planning for future facility, land, and equipment needs; managing resources and staff efficiently; and contracting services as necessary.

The Solid Waste program managed more than 293,841 tons of municipal solid waste, construction and demolition debris and yard waste during FY 2010-11. Recycled goods included 6,506 tons of scrap tires and 351 tons of appliances. The facilities served an average of 455 vehicles per day for a total of more than 136,032 vehicles during the year, down from the previous year by 5,913 vehicles.

The trend of hauling increased amounts of municipal solid waste out of Forsyth County (for disposal in privately operated landfills) appears to be continuing. To help mitigate this trend, the City/County Utility Commission has not raised tipping fees at CCUC facilities and continues to offer discounted tip fees for higher volume customers. Waste quantities are also affected by economic factors, as waste generation generally declines during an economic recession. Table 1 illustrates the fluctuations in the municipal solid waste stream in recent years.

The waste stream at the construction and demolition landfill (Old Salisbury Road Landfill) has also declined significantly in the last few years. This decline is believed to be primarily due to economic conditions. In FY 2010-11, 46,014 tons were received, a decrease of 1,417 tons from the previous year's total of 47,431 tons. Table 2 shows the declining trend.

STATUS OF SOLID WASTE PROJECTS

Hanes Mill Road Landfill

The first cell of the landfill expansion, located across the railroad tracks to the west of the original landfill, was placed into use in May 2005. The second 14-acre lined cell (located immediately adjacent to the initial 22 acre cell) was completed in late 2006, and began receiving waste in April 2007. The construction of cells 3 and 4 began in

TABLE 1

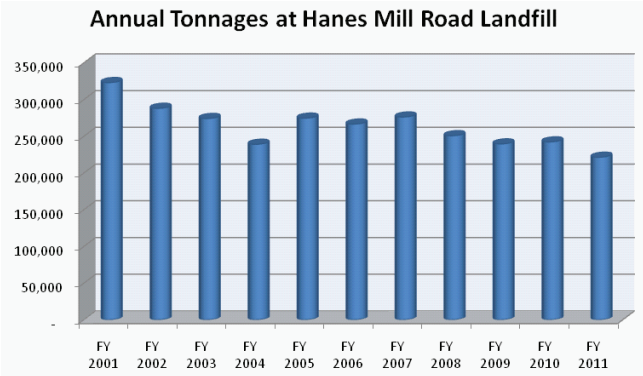
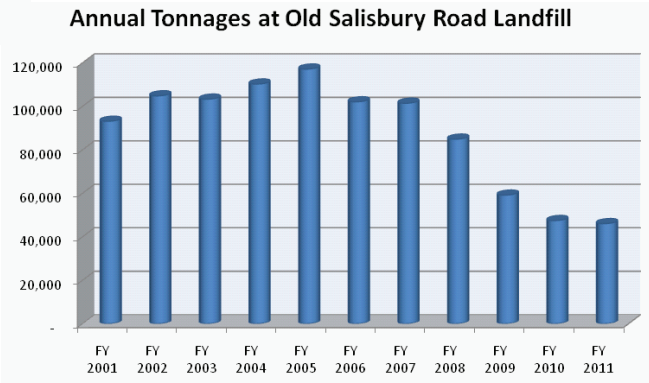


TABLE 2



late 2010, and was substantially complete by late August 2011. Approximately 17 acres of lined landfill cells were constructed, along with a perimeter access road and an area for recycling concrete and brick into reusable aggregate products. These cells will be placed into service during calendar year 2012, after a permit to operate is received from the N.C. Department of Environment and Natural Resources.

In 2006, closure of about 40 acres of inactive landfill (east of the railroad tracks) was completed. This closure involved construction of a final cover system consisting of compacted clay and a synthetic polyethylene cover to keep rainwater from coming in contact with waste. Several seasons of severe winter weather have taken a toll on this cover system, and repairs were made to the closed landfill in FY 2010-11, in conjunction with the construction of cells 3 and 4.

Landfill Gas System

The Hanes Mill Road Landfill has a landfill gas extraction system that collects gas generated by the decomposing waste. The gas is delivered to a power generation facility where it is converted into electrical power and sold back to the power grid. The contractor operating the power plant is DTE Biomass. Over 36 million kilowatt-hours of electricity are generated annually, enough electric energy for approximately 2,900 homes. Under its contract, DTWE pays the Utility Commission for the gas harvested from the landfill. Over time, these payments will serve to offset the capital cost of installing the system. In 2009 a pipeline was completed that conveys landfill gas to the power plant. Seven landfill gas wells have also been installed in the waste and connected to the system. Revenues to the solid waste fund will increase as gas production increases in the newer areas of the landfill expansion.

Woodcliff Drive Homes

In 2002, after the rezoning of property for the landfill expansion, the Utility Commission offered to purchase the homes on Woodcliff Drive as a concession to the Grassy Creek Neighborhood Association. Seventeen of the 18 houses on Woodcliff Drive were purchased by the Commission, and the last of them was resold in May 2011.

Construction and Demolition Debris Management

The Old Salisbury Road Construction and Demolition Landfill is projected to be full around the year 2021, although the declining construction waste stream makes this projection uncertain. The facility could last even longer, given the

Scalehouse at Hanes Mill Road Landfill

Forum 52 Yard Waste Facility

Convenience Area at Hanes Mill Road Landfill

Landfill Gas Plant at Hanes Mill Road Landfill

sluggishness of the construction industry. The decline in construction and demolition debris has already extended the life of this facility significantly, which provides additional time to conduct strategic planning with respect to the various options for managing this waste stream. Some of these options include: developing a new landfill and recycling facility; implementing recycling programs on existing sites; partnering with others in the recycling industry; and/or co-disposing this waste stream at Hanes Mill Road Landfill.

FUTURE CHALLENGES AND OPPORTUNITIES

Because the solid waste funding structure has relied primarily on tipping fees and gate receipts at the Hanes Mill Road Landfill and Old Salisbury Road Landfill to fund its programs, year-to-year fluctuations in the waste stream are problematic and create pressure to keep the waste stream from declining. Challenges come in the form of competition for the waste that has historically gone to the Hanes Mill Road Landfill, as well as declining quantities of waste overall. Large privately owned waste companies are often vertically integrated with collection and disposal services, and do not provide funding for waste reduction programs through disposal charges. Their competitive pricing has resulted in less waste being disposed at the Hanes Mill Road Landfill in recent years. Economic considerations also have an influence on the waste stream, and have contributed to reduced tonnages at both landfills in the last several years.

Historically, the Solid Waste Enterprise Fund has provided funding for the city's curbside recycling program, Forsyth County's drop-off recycling program, and the recycling program in the Winston-Salem/Forsyth County public schools. During budget year 2010-11, alternative approaches were implemented for some of the programs previously funded by the solid waste enterprise fund. These alternative approaches include the following:

- The household hazardous waste program was funded jointly by the water, sewer, and stormwater enterprise funds;
- The City's general fund contributed 20% of the cost of the curbside recycling program.
- The County contributed 20% of the drop-off and schools recycling programs.

In fiscal year 2011-12, the contributions from the City and the County will be increased to 40 percent, with the intent of phasing in full funding over the next few years. This alternative funding

Old Salisbury Road Landfill

Forum 52 Yardwaste Facility Leaf Compost

Hanes Landfill Gas Well

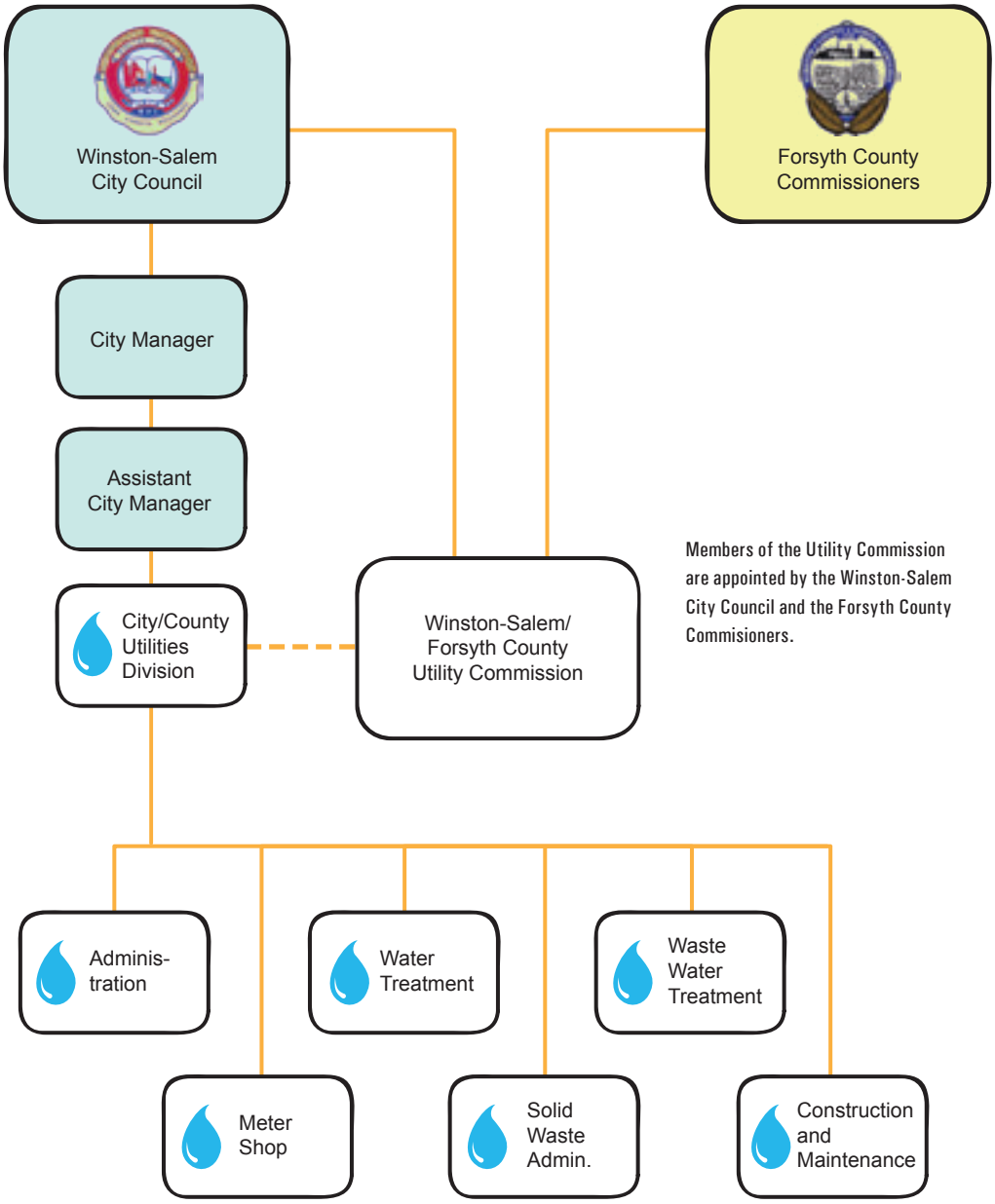
Hanes Landfill Working Face

approach is meant to reduce the pressure on the solid waste fund that has been caused by decreasing waste and declining revenues in recent years. Utilities and budget office staff are continuing to monitor other expenses as well, and are seeking cost-savings measures in its operational and capital budget. The staff is also tracking waste stream and changing market conditions in an effort to predict future economic conditions, so that it is prepared to react accordingly.

Other challenges for the solid waste program are driven by state and federal regulatory changes. A statewide disposal tax (begun in 2008) continues to provide some additional revenue, but also adds to administrative and overhead costs for its collection. Distributions from the scrap tire tax fund are reduced, due to economic conditions and budget stresses in state government. A recently imposed disposal ban on plastic bottles has added to costs for waste screening and training, and a ban on electronics and televisions came into effect July 1, 2011. New EPA regulations on greenhouse gas reporting have increased costs of compliance with air quality permits. Recently implemented solid waste permit fees have added about $50,000 to operational expenses. Finally, the recurring cost at closed landfills related to maintenance, monitoring, and implementing groundwater corrective action will continue to rise.

The Utility Commission is involved in an ongoing evaluation of ways to make the total solid waste disposal system more efficient while continuing to provide high quality solid waste programs in the future. A comprehensive study of this community's solid waste programs was conducted in 2010, and the results were presented to City Council and the County Commissioners on a wide range of topics. Best practices were studied in the areas of alternative funding, organizational structure, waste collection, recycling and disposal. Recommendations were presented to the elected officials and are now under consideration.

ORGANIZATION CHART



Members of the Utility Commission are appointed by the Winston-Salem City Council and the Forsyth County Commisioners.

The staff of the City/County Utilities Division are employees of the City of Winston-Salem and provide staff support for the Commission.

UTILITY COMMISSION MEMBERS

UTILITY COMMISSION

David Neill, Chairman
James E. Lowe, Vice Chair
Toyoko "Toy" Beaty
Charles D. Jewell, II
Harold R. Holmes
Janeen Lalik
Paul S. McGill
Al H. Seymour
Stephen M. Shelton
J. Hill Stockton
Randall S. Tuttle

COMMITTEES

FINANCE
Randall S. Tuttle, Chairman
J. Hill Stockton, Vice Chairman
Paul S. McGill
Al H. Seymour

OPERATIONS
Harold R. Holmes, Chairman
Stephen M. Shelton, Vice Chairman
Toyoko "Toy" Beaty

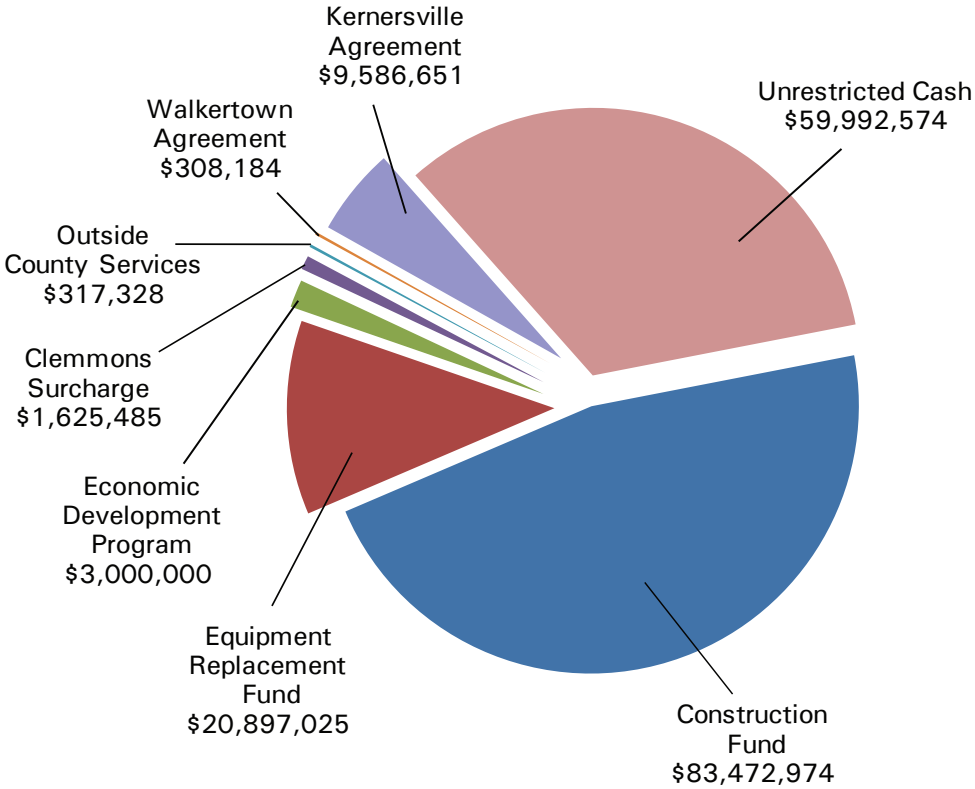
PLANNING & POLICY
Al H. Seymour, Chairman
Janeen Lalik, Vice Chairman
Charles D. Jewell, II

STAFF

Gregory M. Turner, P.E.
Assistant City Manager

David K. Saunders, P.E.
City/County Utilities Director

WINSTON-SALEM/FORSYTH COUNTY UTILITY SYSTEM RESTRICTED CASH AND INVESTMENTS



DEFINITIONS FOR RESERVES:

Trustee Construction Fund: This fund holds unspent revenue bond proceeds that can only be used for the purposes for which the bonds were issued.

Clemmons, Kernersville and Walkertown Reserves: These fund are generated from the rates charged to customers in Clemmons, Kernersville and Walktertown. The City-County Utility Commission holds these funds in trust for these municipalities to be used for their water and sewer systems.

Equipment and Replacement Fund: Excess water and sewer revenues restricted for major maintenance and capital expenditures. This fund is currently being used to fund PAYGO annually for CIP.

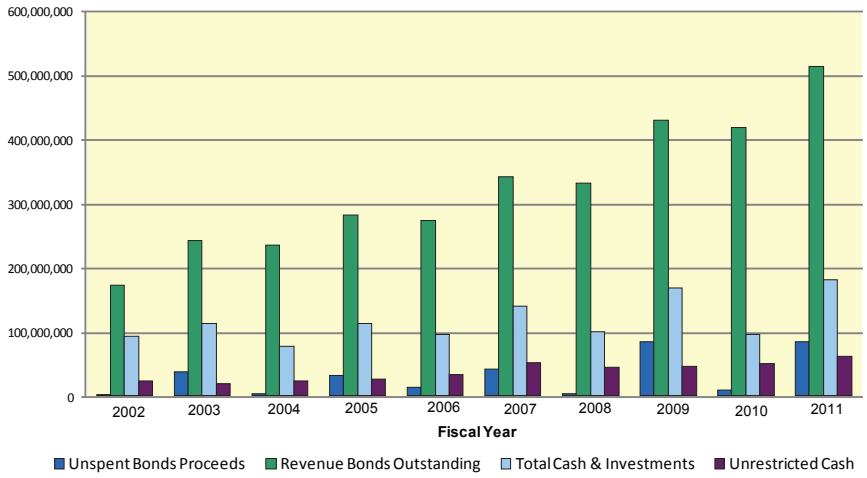
Economic Development Reserve: In April 1987, the City-County Utility Commission set aside $3 million to advance to businesses locating in industrial parks within Forsyth County for the extension of water and sewer infrastructure.

Outside County Services Reserve: In 1995 and 1996, the City Council and the Forsyth County Board of Commissioners amended the 1976 agreement establishing the Utility Commission to authorize the Commission to charge customers outside Forsyth County higher rates than those charged to customers within the county. The amendment also authorized the Utility Commission to set aside up to 50% of the revenue generated from these higher rates to be used for economic development projects approve by the City Council and the Forsyth County Commissioners.

Unrestricted: Funds used to pay for operations and those portions of the Utility Commission's Capital Improvement Plan not funded with Revenue Bonds or the Equipment & Replacement Funds.

SUMMARY OF FINANCIAL STATEMENTS

WATER AND SEWER FUND: COMPARISON OF FINANCIAL DATA



Water and Sewer Utility Fund

For FY 2010-11, total operating revenues were $70,538,136. This was $3,750,034 less than the budget, but up $3,939,251 from FY 2009-10 even though water demand remained flat during the fiscal year. The 5.9 percent increase in revenue is directly related to the rate increase implemented during the fiscal year.

Operating expenditures totaled $36,539,993, which was $6,521,696 less than the budget of $43,061,689. The bulk of the operational expense savings were in the areas of salary savings due to numerous vacant positions during the year, reduced contracted services cost, reduced cost of treatment chemicals, reduced cost of support for IT infrastructure, and reduced usage of natural gas that fuels the biosolids drying facility. Investment income for the fiscal year was $10,456,146, an increase of $3,423,503 over the previous year.

The fund ended the fiscal year with $179,200,221 in cash and cash equivalents. This is $84,873,983 more than the $94,326,238 in cash and cash equivalents the fund had at the start of the fiscal year, and includes proceeds from a $134 million bond issue during the fiscal year to refund previous bond issues at a lower interest rate and finance future capital projects over the next three years.

Accounting for debt service, investment income, and all other non-operating costs, the Water and Sewer Utility Fund ended the 2010-11 fiscal year with a net increase in assets of $13,498,760 (full accrual basis).

Solid Waste Fund

The Solid Waste Fund ended FY 2010-11 with total net assets of $42,323,385, reflecting a net increase in assets of $232,238 (full accrual basis), after adjusting for the non-operating costs and transfers to the general fund to pay for the city's curbside recycling program and the county drop-off recycling programs.

Both operating revenues and operating expenditures were slightly lower than budgeted amounts. Operating revenues were slightly lower and operating expenditures were slighly higher than previous year's levels.

Operating revenues for the solid waste fund for FY 2010-11 were $9,877,757. This was $247,322 less than the budgeted revenues of $10,125,079, and $682,440 less than the actual revenues for FY 2009-10 at $10,560,197. The decrease in revenue is directly attributed to the decrease in the amount of waste being disposed at Utility Commission-owned facilities.

Operating expenditures totaled $7,024,647, or $2,407,413 less than the budgeted amount of $9,432,060. The transfer out to the general fund to pay for recycling programs was $2,371,847 in FY 2010-11. Transfers in from the Stormwater, Water and Sewer funds were $359,311, to cover the cost of the household hazardous waste management facility, 3RC.

The net increase in the solid waste fund balance is smaller than the previous year, largely due to this year's lower investment income earnings. The unrestricted cash and investments at the end of 2011 was $12,046,154, and restricted cash was $13,500,662.

City of Winston-Salem, North Carolina
Enterprise Funds

Water and Sewer Utility Fund - Statement of Net Assets
June 30, 2011 and June 30, 2010

Assets	2011	2010
Current Assets		
Cash and cash equivalents	$ 59,992,574	$ 48,853,744
Receivables, net of allowance for uncollectibles		
Accounts	9,080,502	9,615,491
Assessments	895,984	1,063,239
Total receivables	9,976,486	10,678,730
Due from other governments	10,592	15,278
Inventories	2,736,753	2,532,735
Total current assets	72,716,405	62,080,487
Noncurrent Assets		
Restricted Assets		
Cash and cash equivalents		
Equipment and replacement fund		
Reserved	35,734,673	37,428,200
Unreserved	-	-
Construction		
Trustee construction fund	83,472,974	8,044,294
Capital fund	-	-
Total restricted assets	119,207,647	45,472,494
Property and Equipment		
Land	14,715,645	14,446,651
Buildings	168,180,969	167,325,961
Improvements other than buildings	664,452,140	635,151,741
Machinery and equipment	17,699,786	17,049,141
Construction in progress	151,278,639	133,502,859
Total property and equipment	1,016,327,179	967,476,353
Less accumulated depreciation	312,290,061	291,495,015
Property and equipment, net	704,037,118	675,981,338
Other		
Unamortized financing costs	3,944,186	3,155,997
Deferred outflow of resources	16,945,724	19,644,828
Total noncurrent assets	844,134,675	744,254,657
Total assets	916,851,080	806,335,144

Statement E-4

	2011	2010
Liabilities		
Current liabilities		
Accounts payable	$ 10,965,517	$ 8,667,453
Accrued payroll	412,362	338,410
Accrued interest payable	1,123,871	649,810
Prepaid assessments	72,694	82,757
Current maturities		
Contracts payable	265,162	290,883
Bonds payable	15,575,000	12,440,000
Total current liabilities	28,414,606	22,469,313
Noncurrent liabilities		
Contracts payable from restricted assets	7,167,995	9,526,760
Accrued vacation	664,889	658,783
Contracts payable	261,257	399,678
Bonds payable	501,643,395	405,381,328
Derivative instrument liability	16,945,724	19,644,828
Total long-term liabilities	526,683,260	435,611,377
Total liabilities	555,097,866	458,080,690
Net Assets		
Invested in capital assets, net of related debt	269,765,278	265,513,743
Unrestricted	91,987,936	82,740,711
Total net assets	**$ 361,753,214**	**$ 348,254,454**

City of Winston-Salem, North Carolina
Enterprise Funds

Statement E-5

Water and Sewer Utility Fund - Statement of Revenues, Expenses, and Changes in Net Assets
For the Fiscal Years Ended June 30, 2011 and 2010

	2011	2010
Operating Revenues		
Sales		
Water	$ 36,242,754	$ 34,525,328
Sewer	28,151,649	26,327,287
Industrial waste surcharge	2,565,034	2,056,651
Total sales	66,959,437	62,909,266
Charges for services		
New connections	315,910	276,137
Special area and privilege charges	719,994	573,230
Main line capital cost revenue	102,500	91,745
Total charges for services	1,138,404	941,112
Other	2,440,295	2,748,507
Total operating revenues	70,538,136	66,598,885
Operating Expenses		
Personal services	15,346,646	15,319,782
Maintenance and operations	21,208,931	19,731,483
Total operating expenses before depreciation	36,555,577	35,051,265
Depreciation	21,166,996	20,634,666
Total operating expenses	57,722,573	55,685,931
Operating income	12,815,563	10,912,954
Nonoperating Revenues (Expenses)		
Intergovernmental revenue	1,137,823	-
Investment income (loss)	10,456,145	7,032,643
Gain (loss) on disposal of assets	11,144	11,732
Damage settlements	1,680	14,409
Interest and fiscal expense	(13,931,571)	(13,388,768)
Amortization of financing costs	(450,687)	(585,145)
Total nonoperating expenses, net	(2,775,466)	(6,915,129)
Loss before capital contributions and operating transfers	10,040,097	3,997,825
Capital Contributions		
Conveyances	4,868,495	3,858,275
Intergovernmental revenue	127,894	309,794
Other	47,043	564,778
Total capital contributions	5,043,432	4,732,847
Operating Transfers Out		
General fund	(60,988)	(73,286)
Capital projects fund	(1,284,240)	
Solid waste disposal fund	(239,541)	-
Total transfers out	(1,584,769)	-
Change in net assets	13,498,760	8,657,386
Total net assets - beginning	348,254,454	339,597,068
Total net assets - ending	**$ 361,753,214**	**$ 348,254,454**

City of Winston-Salem, North Carolina
Enterprise Funds

Statement E-6

Water and Sewer Utility Fund - Statement of Cash Flows
For the Fiscal Years Ended June 30, 2011 and 2010

	2011	2010
Cash Flows from Operating Activities		
Cash received from sales	$ 71,230,317	$ 65,665,195
Cash payments to suppliers for goods and services	(19,114,885)	(18,448,916)
Cash payments to employees for services	(15,266,588)	(15,576,006)
Net cash provided by operating activities	36,848,844	31,640,273
Cash Flows from Noncapital Financing Activities		
Intergovernmental revenue	1,137,823	-
Operating transfers out	(1,500,529)	(73,286)
Net cash used by noncapital financing activities	(362,706)	(73,286)
Cash Flows from Capital Financing Activities		
Proceeds from issuance of bonds	137,353,503	-
Increase in contracts payable	7,639	-
Intergovernmental revenue	132,580	294,516
Capital contributions	700	564,778
Transfers out	(84,240)	-
Acquisition of property and equipment	(39,099,563)	(80,201,917)
Retirement of bonds	(12,900,000)	(11,885,000)
Retirement of refunded bonds	(25,065,000)	-
Retirement of contracts payable	(330,208)	(630,194)
Interest and fiscal expense paid on bonds	(20,874,713)	(18,865,745)
Interest paid on contracts payable	(42,455)	(68,838)
Debt issuance costs	(1,230,312)	-
Proceeds from sale of assets	15,746	11,732
Damage settlements	48,023	14,409
Net cash provided (used) by capital financing activities	37,931,700	(110,766,259)
Cash Flows from Investing Activities		
Investment income	10,456,145	7,032,694
Net increase (decrease) in cash	84,873,983	(72,166,578)
Cash and Cash Equivalents July 1	94,326,238	166,492,816
Cash and Cash Equivalents June 30	**$ 179,200,221**	**$ 94,326,238**
Reconciliation of Cash and Cash Equivalents		
Cash and cash equivalents - current	$ 59,992,574	$ 48,853,744
Cash and cash equivalents - restricted	119,207,647	45,472,494
Cash and Cash Equivalents June 30	$ 179,200,221	$ 94,326,238
Reconciliation of Operating Income to Net Cash Provided by Operating Activities		
Operating income	$ 12,815,563	$ 10,912,954
Adjustments to reconcile operating income to net cash provided by operating activities		
Depreciation expense	21,166,996	20,634,666
Change in assets and liabilities		
(Increase) decrease in receivables	702,244	(851,988)
(Increase) decrease in inventories	(204,018)	15,923
Increase in accounts payable	2,298,064	1,266,644
Increase (decrease) in accrued payroll	73,952	(237,049)
Decrease in prepaid assessments	(10,063)	(81,702)
Increase (decrease) in accrued vacation	6,106	(19,175)
Total adjustments	24,033,281	20,727,319
Net cash provided by operating activities	**$ 36,848,844**	**$ 31,640,273**

City of Winston-Salem, North Carolina
Enterprise Funds

Schedule E-7

Water and Sewer Utility Fund - Schedule of Revenues, Expenditures, and Transfers - Budget (Non-GAAP Basis) and Actual
For the Fiscal Year Ended June 30, 2011

	Budget	Actual	Variance Favorable (Unfavorable)
Operating Revenues			
Sales			
Water	$ 38,598,900	$ 36,242,754	$ (2,356,146)
Sewer	28,724,920	28,151,649	(573,271)
Industrial waste surcharge	2,499,350	2,565,034	65,684
Total sales	69,823,170	66,959,437	(2,863,733)
Charges for services			
New connections	500,000	315,910	(184,090)
Special area and privilege charges	1,350,000	719,994	(630,006)
Main line capital cost revenue	400,000	102,500	(297,500)
Total charges for services	2,250,000	1,138,404	(1,111,596)
Other	2,215,000	2,440,295	225,295
Total operating revenues	74,288,170	70,538,136	(3,750,034)
Operating Expenditures			
Personal services	17,050,510	15,346,646	1,703,864
Maintenance and operations	25,997,106	21,184,474	4,812,632
Capital outlay	14,073	8,873	5,200
Total operating expenditures	43,061,689	36,539,993	6,521,696
Operating income	31,226,481	33,998,143	2,771,662
Nonoperating Revenues (Expenditures)			
Intergovernmental revenue	-	1,137,823	1,137,823
Investment income	-	10,456,146	10,456,146
Proceeds from sale of assets	-	15,746	15,746
Damage settlements	-	1,680	1,680
Interest and fiscal charges	(14,087,430)	(14,409,501)	(322,071)
Principal retirement	(12,758,120)	(13,230,208)	(472,088)
Total nonoperating expenditures, net	(26,845,550)	(16,028,314)	10,817,236
Loss before capital contributions and transfers	4,380,931	17,969,829	13,588,898
Capital Contributions		5,043,432	5,043,432
Transfers Out			
General fund	(71,860)	(60,988)	10,872
Capital projects fund	(1,200,000)	(1,284,240)	(84,240)
Solid waste disposal fund	(239,541)	(239,541)	-
Total transfers out	(1,511,401)	(1,584,769)	(73,368)
Change in net assets - modified accrual basis	**$ 2,869,530**	**$ 21,428,492**	**$ 18,558,962**

Reconciliation of Modified Accrual Basis to Full Accrual Basis

Change in Net Assets - Modified Accrual Basis	$ 21,428,492
Depreciation	(21,166,996)
Unamortized financing costs	(450,687)
Capital outlay	8,873
Principal retirement	13,230,208
Book value of disposed assets	(29,059)
Interest expense, net of investment income, capitalized on construction projects	477,929
Change in Net Assets - Full Accrual Basis	**$ 13,498,760**

City of Winston-Salem, North Carolina
Enterprise Funds

Statement E-8

Solid Waste Disposal Fund - Statement of Net Assets
June 30, 2011 and June 30, 2010

Assets	2011	2010
Current Assets		
Cash and cash equivalents	$ 12,046,154	$ 10,630,754
Accounts receivables, net of allowance for uncollectibles	306,432	412,965
Due from other governments	79,519	-
Total current assets	12,432,105	11,043,719
Noncurrent Assets		
Restricted Assets		
Cash and cash equivalents		
Landfill closure and postclosure costs	13,500,662	12,859,376
Total cash and cash equivalents	13,500,662	12,859,376
Property and Equipment		
Land	10,621,972	10,878,472
Buildings	3,562,156	3,562,156
Improvements other than buildings	34,906,697	34,468,146
Machinery and equipment	5,311,709	5,198,131
Construction in progress	13,170,818	9,521,199
Total property and equipment	67,573,352	63,628,104
Less accumulated depreciation	21,416,354	19,992,411
Property and equipment, net	46,156,998	43,635,693
Other		
Unamortized financing costs	208,709	156,302
Total noncurrent assets	59,866,369	56,651,371
Total assets	72,298,474	67,695,090
Liabilities and Fund Equity		
Liabilities		
Current liabilities		
Accounts payable	1,400,456	400,198
Accrued payroll	49,870	38,203
Accrued interest payable	90,856	101,376
Landfill closure and postclosure costs	283,000	-
Current maturities		
Contracts payable	391,883	378,577
Bonds payable	1,385,000	1,325,000
Total current liabilities	3,601,065	2,243,354
Noncurrent liabilities		
Accrued vacation	68,958	67,285
Landfill closure and postclosure costs	13,217,662	12,859,376
Contracts payable	437,519	584,265
Bonds payable	12,649,885	9,849,663
Total noncurrent liabilities	26,374,024	23,360,589
Total liabilities	29,975,089	25,603,943
Net Assets		
Investment in capital assets, net of related debt	31,292,711	31,498,188
Unrestricted	11,030,674	10,592,959
Total net assets	$ 42,323,385	$ 42,091,147

City of Winston-Salem, North Carolina
Enterprise Funds

Statement E-9

Solid Waste Disposal Fund - Statement of Revenues, Expenses, and Changes in Net Assets
For the Fiscal Years Ended June 30, 2011 and 2010

	2011	2010
Operating Revenues		
Charges for services	$ 9,877,757	$ 10,560,197
Operating Expenses		
Personal services	1,724,367	1,658,439
Maintenance and operations	5,300,280	5,257,010
Total operating expenses before depreciation	7,024,647	6,915,449
Depreciation	1,607,181	1,511,615
Total operating expenses	8,631,828	8,427,064
Operating income	1,245,929	2,133,133
Nonoperating Revenues (Expenses)		
Intergovernmental revenue	746,972	657,420
Investment income (loss)	857,209	2,418,489
Gain (loss) on disposal of assets	(28,556)	(32,800)
Interest and fiscal expense	(539,209)	(601,365)
Amortization of financing costs	(37,571)	(36,989)
Total nonoperating expenses, net	998,845	2,404,755
Income before transfers	2,244,774	4,537,888
Transfers In (Out)		
General fund	(2,371,847)	(2,887,450)
Water and sewer utility fund	239,541	-
Stormwater management fund	119,770	-
Total operating transfers in (out)	(2,012,536)	(2,887,450)
Change in net assets	232,238	1,650,438
Total net assets - beginning	42,091,147	40,440,709
Total net assets - ending	**$ 42,323,385**	**$ 42,091,147**

City of Winston-Salem, North Carolina
Enterprise Funds

Statement E-10

Solid Waste Disposal Fund - Statement of Cash Flows
For the Fiscal Years Ended June 30, 2011 and 2010

	2011	2010
Cash Flows from Operating Activities		
Cash received from sales	$ 9,984,290	$ 10,528,946
Cash payments to suppliers for goods and services	(4,661,379)	(4,404,090)
Cash payments to employees for services	(1,711,027)	(1,651,436)
Net cash provided by operating activities	3,611,884	4,473,420
Cash Flows from Noncapital Financing Activities		
Intergovernmental revenue	667,453	657,420
Transfers in	359,311	
Transfers out	(2,371,847)	(2,887,450)
Net cash used by noncapital financing activities	(1,345,083)	(2,230,030)
Cash Flows from Capital Financing Activities		
Proceeds from issuance of bonds	4,170,107	-
Acquisition of property and equipment	(3,085,528)	(1,417,029)
Retirement of bonds	(1,325,000)	(1,295,000)
Retirement of contracts payable	(439,861)	(611,466)
Interest and fiscal expense paid on bonds	(485,921)	(529,394)
Interest and fiscal expense paid on contracts payable	(63,808)	(82,130)
Debt issuance costs	(74,863)	-
Proceeds from sale of assets	237,550	122,200
Net cash used by capital financing activities	(1,067,324)	(3,812,819)
Cash Flows from Investing Activities		
Investment Income (loss)	857,209	2,418,489
Net increase (decrease) in cash	2,056,686	849,060
Cash and Cash Equivalents July 1	23,490,130	22,641,070
Cash and Cash Equivalents June 30	**$ 25,546,816**	**$ 23,490,130**
Reconciliation of Cash and Cash Equivalents		
Cash and cash equivalents - current	$ 12,046,154	$ 10,630,754
Cash and cash equivalents - restricted	13,500,662	12,859,376
Cash and Cash Equivalents June 30	$ 25,546,816	$ 23,490,130
Reconciliation of Operating Income to Net Cash Provided by Operating Activities		
Operating income	$ 1,245,929	$ 2,133,133
Adjustments to reconcile operating income to net cash provided by operating activities		
Depreciation expense	1,607,181	1,511,615
Change in assets and liabilities		
(Increase) decrease in receivables	106,533	(31,251)
Increase (decrease) in accounts payable	(2,385)	(127,339)
Increase in accrued payroll	11,667	6,534
Increase in accrued vacation	1,673	469
Increase in landfill closure and postclosure costs	641,286	980,259
Total adjustments	2,365,955	2,340,287
Net cash provided by operating activities	**$ 3,611,884**	**$ 4,473,420**

City of Winston-Salem, North Carolina
Enterprise Funds

Schedule E-11

Solid Waste Disposal Fund - Schedule of Revenues, Expenditures, and Transfers - Budget (Non-GAAP Basis) and Actual
For the Fiscal Year Ended June 30, 2011

	Budget	Actual	Variance Favorable (Unfavorable)
Operating Revenues			
Charges for services	$ 10,125,079	$ 9,877,757	$ (247,322)
Operating Expenditures			
Personal services	1,804,840	1,724,367	80,473
Maintenance and operations	7,627,220	5,300,280	2,326,940
Total operating expenditures	9,432,060	7,024,647	2,407,413
Operating income	693,019	2,853,110	2,160,091
Nonoperating Revenues (Expenditures)			
Intergovernmental revenue	944,590	746,972	(197,618)
Investment income	630,000	857,209	227,209
Proceeds from sale of assets	-	237,550	237,550
Interest and fiscal charges	(555,100)	(539,209)	15,891
Principal retirement	(1,795,510)	(1,764,861)	30,649
Total nonoperating expenditures, net	(776,020)	(462,339)	313,681
Income before transfers	(83,001)	2,390,771	2,473,772
Transfers In (Out)			
General fund	(2,432,700)	(2,371,847)	60,853
Water and sewer utility fund	239,541	239,541	-
Stormwater management fund	119,770	119,770	-
Total transfers in (out)	(2,073,389)	(2,012,536)	60,853
Change in net assets - modified accrual basis	**$ (2,156,390)**	**$ 378,235**	**$ 2,534,625**

Reconciliation of Modified Accrual Basis to Full Accrual Basis

Change in Net Assets - Modified Accrual Basis	$ 378,235
Depreciation	(1,607,181)
Amortization of financing costs	(37,571)
Principal retirement	1,764,861
Book value of disposed assets	(266,106)
Change in Net Assets - Full Accrual Basis	**$ 232,238**

History of the Utility Commission

The Utility Commission was created on April 20, 1976, through a joint consolidation agreement between Winston-Salem and Forsyth County. Under the terms of the agreement, the Utility Commission would operate all water and sewer facilities throughout the city and the county under policies established by the Commission and subject to the provisions and guidelines of the agreement.

At the beginning of fiscal year 1976-77, when the agreement went into effect, Forsyth County conveyed all real property, equipment, supplies and materials constituting a part of the county's water and sewerage facilities, including existing water and sewer lines, to the City of Winston-Salem. The City of Winston-Salem agreed to pay to the county, from utility revenues, the amount needed by the county to meet its water and sewer debt service obligations. These debts were all satisfied in FY 1999-2000.

On Feb. 19, 1990, the city and the county approved an amendment to the original consolidation agreement authorizing the Commission to provide solid waste disposal services as well as create a source reduction and recycling program. The responsibilities given to the Commission under this amendment includes composting, land filling and all other measures necessary to comply with North Carolina General Statute 130A, as amended, and all other applicable state and federal laws and regulations.

In October 1996, the consolidation agreement was amended again. The second amendment authorized the Commission to charge customers outside of Forsyth County a premium rate for water and sewer treatment services and to set aside one half of the rate in excess of the Forsyth County rate in an economic development fund. Additionally, the second amendment allowed customers that were members of the Region I Council of Government who were outside of Forsyth County to have separate contracts with the Commission.

A third amendment to the consolidation agreement was approved on Jan. 6, 2003, to allow the Commission to use money in the Water and Sewer Utility Fund for the purchase of land. The amendment stipulated that any such purchase made by the Commission must be consistent with the Legacy planning guide.

Winston-Salem • Forsyth County
City/County Utilities
Water • Sewer • Solid Waste Disposal

Winston-Salem/Forsyth County
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