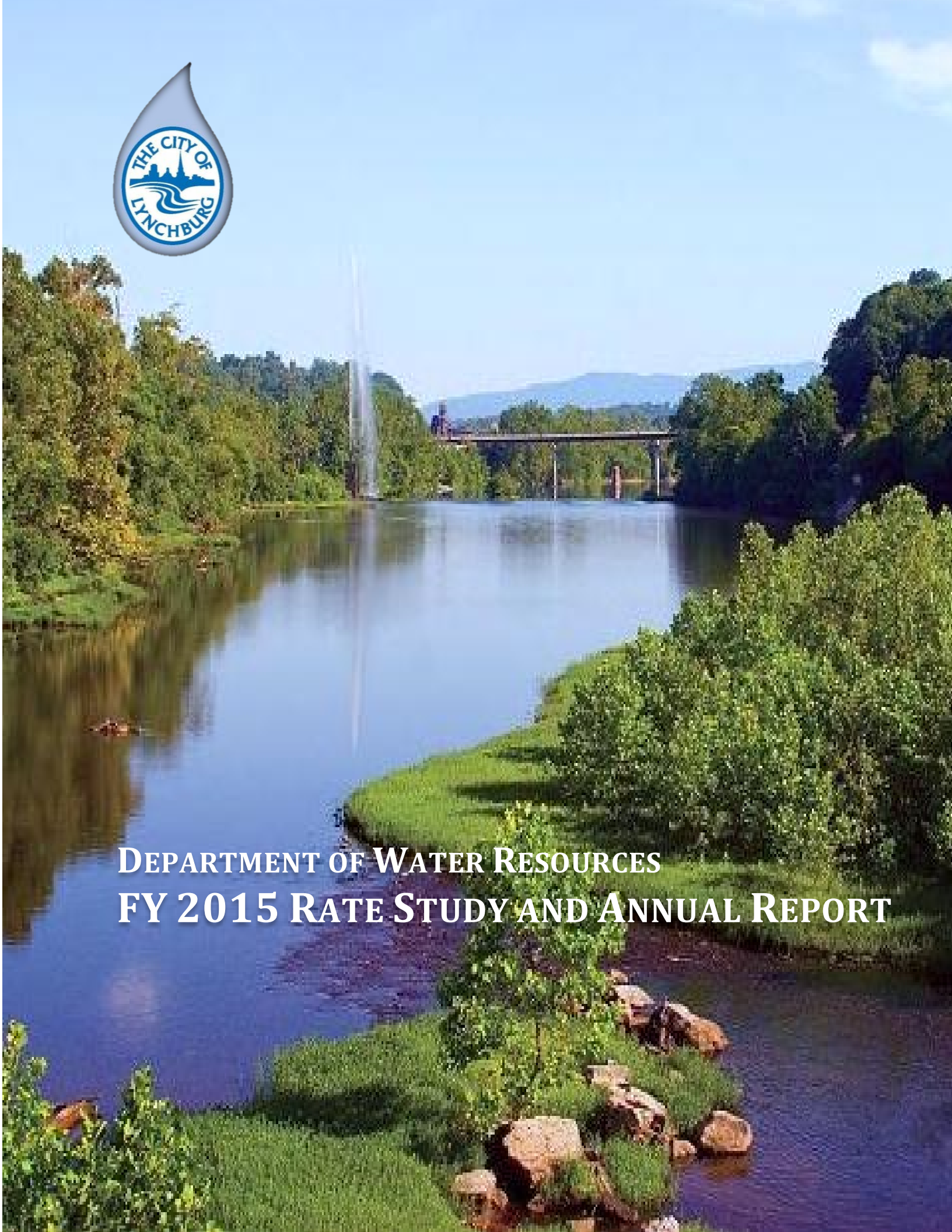

Department of Water Resources
FY 2015 Rate Study and Annual Report

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Mission Statement

Our Mission is to provide excellent water, wastewater, and stormwater services that promote the health, safety, and prosperity of the community.

Director's Message

Recently, an employee reminded me that the Department of Water Resources is actually a very new department. Eight years ago "Utilities" was one of five divisions of the Department of Public Works. As a result of ever increasing infrastructure needs and regulatory challenges, Public Works was split and the Department of Utilities was established on April 5, 2006. Two years ago we dramatically changed again with the development of the Stormwater Utility and renaming of the Department to Water Resources, once again to adapt to the changing environment and better represent what we actually do. Our mission is to "provide excellent water, wastewater, and stormwater services that promote the health, safety, and prosperity of the community." Basically, we want to produce the cleanest water possible while being good stewards of the environment and provide these services at a reasonable and equitable cost.

"It is essential that we renew our infrastructure at a pace that will ensure that it meets the needs of future generations . . . Water is essential for life, adequate water infrastructure is essential for the long term vitality of our city."

The Department has not only adapted as necessary to meet changing regulations, we have been actively involved in both the state and federal regulatory and legislative process from aggressive participation in various technical advisory committees to lobbying our congressional delegation. The purpose of which is fighting to keep both legislative and regulatory actions reasonable for the citizens of Lynchburg.

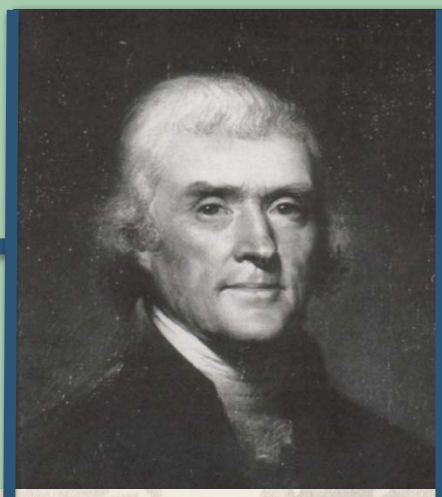
We also strive for continuous improvement, always looking to find a better way. After nearly a five year effort, we are in the home stretch of obtaining approval of a new CSO Long Term Control Plan by the Department of Environmental Quality. This effort will save the citizens of Lynchburg nearly a quarter of a billion dollars. Additionally, over the last decade we have secured nearly $60 million in state and federal grants including a $30 million grant in the 2013 General Assembly Session. This was due in large part to the savings of time and money associated with the new CSO plan, thus providing further savings to the citizens while improving water quality faster.

We have performed assessments of our utility assets and developed and begun implementation of various plans to address our extensive infrastructure needs. Overall we are making progress. Both water treatment plants have recently been upgraded. The Pedlar Dam has been brought into compliance with the new dam safety regulations. The wastewater treatment plant just completed a major upgrade that allows much higher flows to be treated and normal flows to be treated to an even higher quality. Priority water line replacement projects throughout the city have been established based on size, material, age, and maintenance history of the pipe lines including the Central Business District Water Line Replacement Master Plan.

As a result of our efforts, we have gained much state and national recognition some of which is described in this report. The Department of Water Resources has come a long way in a short period of time but our work is ongoing. It is essential that we renew our infrastructure at a pace that will ensure that it meets the needs of future generations. Our utility systems are a testament to the vision of those that came before us, but it is essential that we have the same foresight and will to adequately invest in our future. Water is essential for life, adequate water infrastructure is essential for the long term vitality of our city.

Tim Mitchell

Director



Drinking Water

History

Lynchburg has an extraordinary history associated with our drinking water system that dates back to Thomas Jefferson's Presidency. Over 200 years ago only 18 towns in the country were supplied with water, and in 1812 Lynchburg gained the distinction of being the first town in Virginia to complete such a system. It consisted of logs with 3-inch holes bored end-to-end and connected by iron bands. The wooden piping extended along Church Street and was fed by gravity from a spring near the present day Fifth Street roundabout.

By 1822 the town was rapidly growing away from the river. The leaking wooden piping had become obsolete and was replaced by a dam and canal along the river, a brick reservoir on Clay Street, and downtown distribution piping. A water wheel powered pump lifted the water 242 feet from the river to the reservoir, an unprecedented engineering feat at the time. In 1878, fulfilling the bequest of philanthropist Samuel Miller, the system was extended to an even higher reservoir at College Hill and the original Clay Street Reservoir was replaced by the reservoirs there today.

A late 1800s search for cleaner water led to the 1907 construction of the Pedlar Reservoir in Amherst County and 21 miles of redwood piping through three mountain tunnels and under the James River to College Hill. The wooden pipe was replaced during the 1930s with a cast iron pipe made by Lynchburg Foundry.

Lynchburg's clean water leadership led to the 1917 College Hill Filtration Plant which caused the typhoid rate to drop to zero, chlorination in the 30s, fluoridation in the 50s, new filtration plants at College Hill and Abert on the James River in the 50s and 70s, and today 460 miles of distribution system delivering 12 million gallons of drinking water daily and fire protection to 22,000 customers at a water rate among the lowest in Virginia.

That tradition of excellence continues today. Lynchburg water meets and exceeds the requirements of every drinking water standard and perennially receives the Virginia Department of Health's highest recognition, the Excellence in Water Works Performance Award.

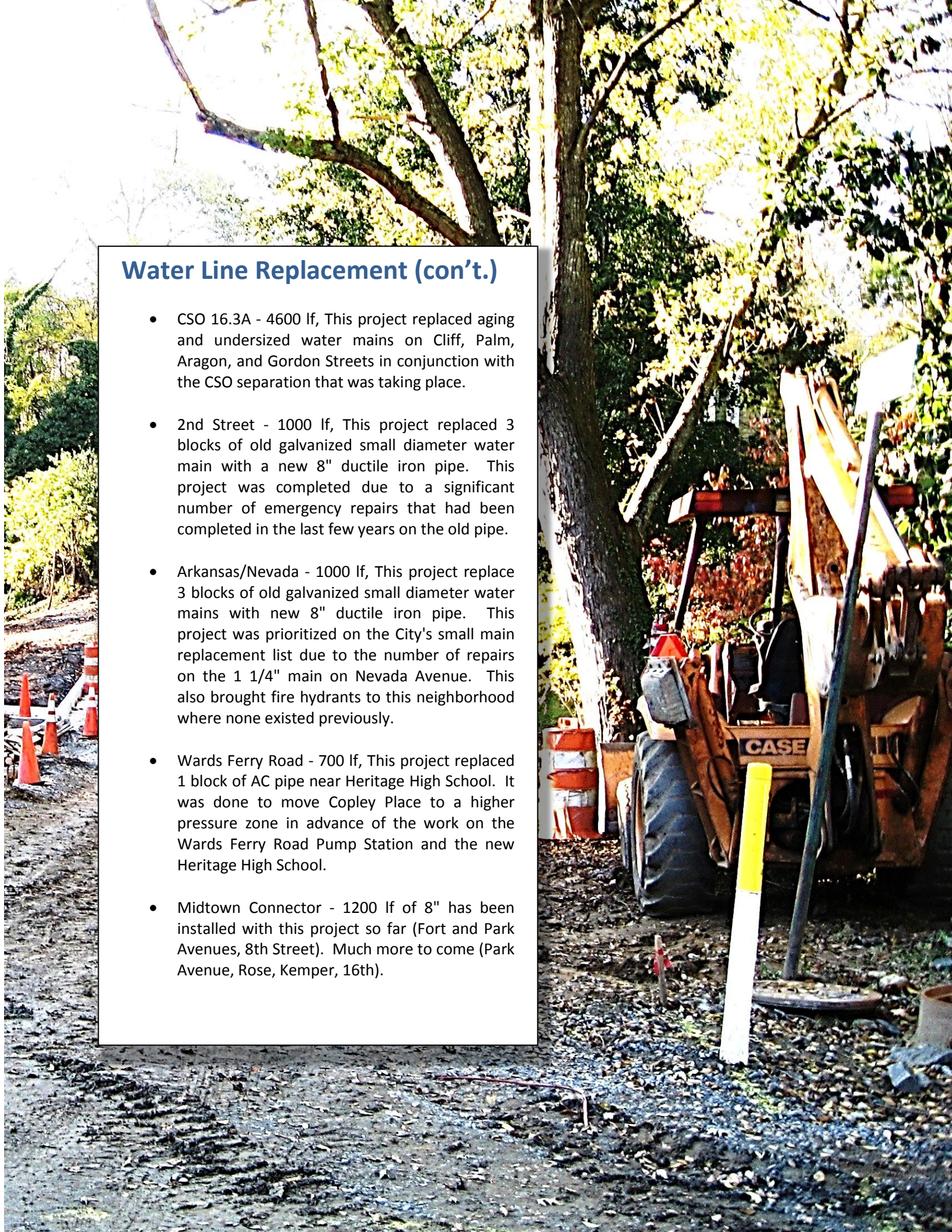
Water Line Replacement Projects

The Department of Water Resources replaced a total of 16,900 linear feet (3.4 miles) of water lines in 2013. While this is close to the goal of replacing one percent of the water system per year it still falls short of the 4.6 miles necessary to accomplish this goal. Additionally, as illustrated in the “Challenges” section below, there is a significant back log of projects that have already been identified as high priority projects. The following provides a brief description of projects that have been completed within the last year.

- Blue Ridge Farms (2012 and 2013) - 7000 lf, This project replaced undersized 4" and 6" AC pipe on Dandridge and Ardmore Drive. Work started in 2012 and was completed in 2013. This was Phase 1 of four potential projects in this neighborhood. Phase 2 has been designed and will include the remainder of Ardmore Drive and the interconnecting streets between Ardmore and Dandridge.

- Fifth Street (2012 and 2013) - 1800 lf, This project replaced a 100 year old 8" cast iron pipe with a 16" ductile iron water main from Harrison to Main Street. This project will also allow the future abandonment of a 100 year old large diameter main on 6th Street. Future work in the Central Business District will build off this water main. During construction it was discovered that the old 8" cast iron pipe on 5th Street was cracked in 2 locations, which would have eventually led to main breaks had the pipe not been abandoned.

- Clay Street - 800 lf, This project replaced 100 year old cast iron water main between 5th Street and the Clay Street PRV. When the water main is replace uphill of the roundabout with a future project, this will complete a new large diameter ductile iron main from the College Hill WTP to the Clay Street PRV, ensuring reliability for water entering the 739 pressure zone



Water Line Replacement (con't.)

- CSO 16.3A - 4600 lf, This project replaced aging and undersized water mains on Cliff, Palm, Aragon, and Gordon Streets in conjunction with the CSO separation that was taking place.

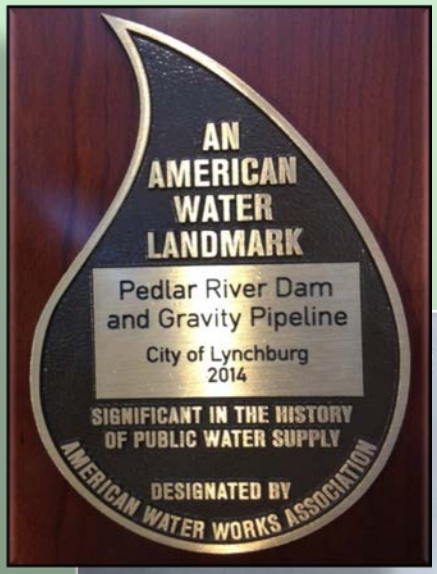
- 2nd Street - 1000 lf, This project replaced 3 blocks of old galvanized small diameter water main with a new 8" ductile iron pipe. This project was completed due to a significant number of emergency repairs that had been completed in the last few years on the old pipe.

- Arkansas/Nevada - 1000 lf, This project replace 3 blocks of old galvanized small diameter water mains with new 8" ductile iron pipe. This project was prioritized on the City's small main replacement list due to the number of repairs on the 1 1/4" main on Nevada Avenue. This also brought fire hydrants to this neighborhood where none existed previously.

- Wards Ferry Road - 700 lf, This project replaced 1 block of AC pipe near Heritage High School. It was done to move Copley Place to a higher pressure zone in advance of the work on the Wards Ferry Road Pump Station and the new Heritage High School.

- Midtown Connector - 1200 lf of 8" has been installed with this project so far (Fort and Park Avenues, 8th Street). Much more to come (Park Avenue, Rose, Kemper, 16th).

Awards and Recognition



Water Landmark Award

This award, presented by the American Water Works Association, is given to only a few historic water projects that meet strict eligibility requirements including: historical significance, purpose, demonstrated maintenance, and age requirements

Best Maintained Dam

The City of Lynchburg received the 2013 Best Maintained Publically Owned Dam in Virginia award for the historic Pedlar River Dam at the Virginia Lakes and Watersheds Association annual conference in Richmond on March 5, 2013.

Recognition in a National Publication

Leslie Gryder, our Water Chemist was recognized for her talents and dedication in the September edition of "Water System Operator," a national publication.

Fluoridation Award

In December, 2013, the City of Lynchburg received an award from the U.S. Centers for Disease Control and Prevention (CDC) for consistently treating drinking water with fluoride at optimal level to prevent tooth decay. The CDC has recognized community water fluoridation as one of the ten great public health achievements of the 20th Century and recommends water fluoridation as a safe, effective, and inexpensive method of preventing tooth decay.

Challenges

The City of Lynchburg has over 460 miles of water distribution piping necessary to serve customers throughout the City and into surrounding counties. The water distribution network includes pipe installed in 1829 (the second oldest cast iron water pipe in the country), and throughout the 19th, 20th, and 21st centuries. The distribution system includes cast iron, ductile iron, asbestos cement, and galvanized steel pipe in sizes from 1" to 36" in diameter.

The Department of Water Resources (DWR) operates and maintains this distribution network. As part of this maintenance, the Department has taken an active role in replacement of water distribution piping which is undersized or beyond its expected life. In evaluating the existing piping, the Department targets three particular criteria which make a pipe more likely for replacement.

Pipe Size – The size of a water distribution main is important to deliver adequate fire protection through the distribution system. Currently, the City's standards and specifications does not allow any new water distribution pipe under 8" diameter with the exception that 6" diameter is allowed for short dead end water mains with no potential for looping or extension.

1" to 3" diameter water mains have the highest priority for replacement due to inadequate flow capacity. Once these water mains are replaced, DWR would then target replacement of 4" diameter mains.

Pipe Materials – The City standard is to use ductile iron for new water main projects. Prior to the introduction of ductile iron in the 1960's, cast iron and galvanized steel was readily used by City contractors and developers. Asbestos cement (AC) water pipe was used in Campbell County and Bedford County and inherited by the City during annexation.

Due to the number of failures and the size of the mains, the galvanized steel pipe has the highest priority for water main replacement, followed by the asbestos cement pipe. Cast iron has shown to have a much longer expected lifespan, at 100 years or longer depending on site conditions.

Pipe Age – The Ductile Iron Pipe Research Association (DIPRA) has considered the average life expectancy of cast or ductile iron pipe to be 100 years. The Chrysotile Institute estimates the average AC pipe life expectancy is 70 years. The City began installing cast iron pipe in 1829, over 180 years ago. It is unknown exactly how old the piping is in much of the downtown, College Hill, Diamond Hill, Tinbridge Hill, and other older areas. The Department's oldest map shows all the piping that was in place in 1908 and DWR installation records begin in 1910.

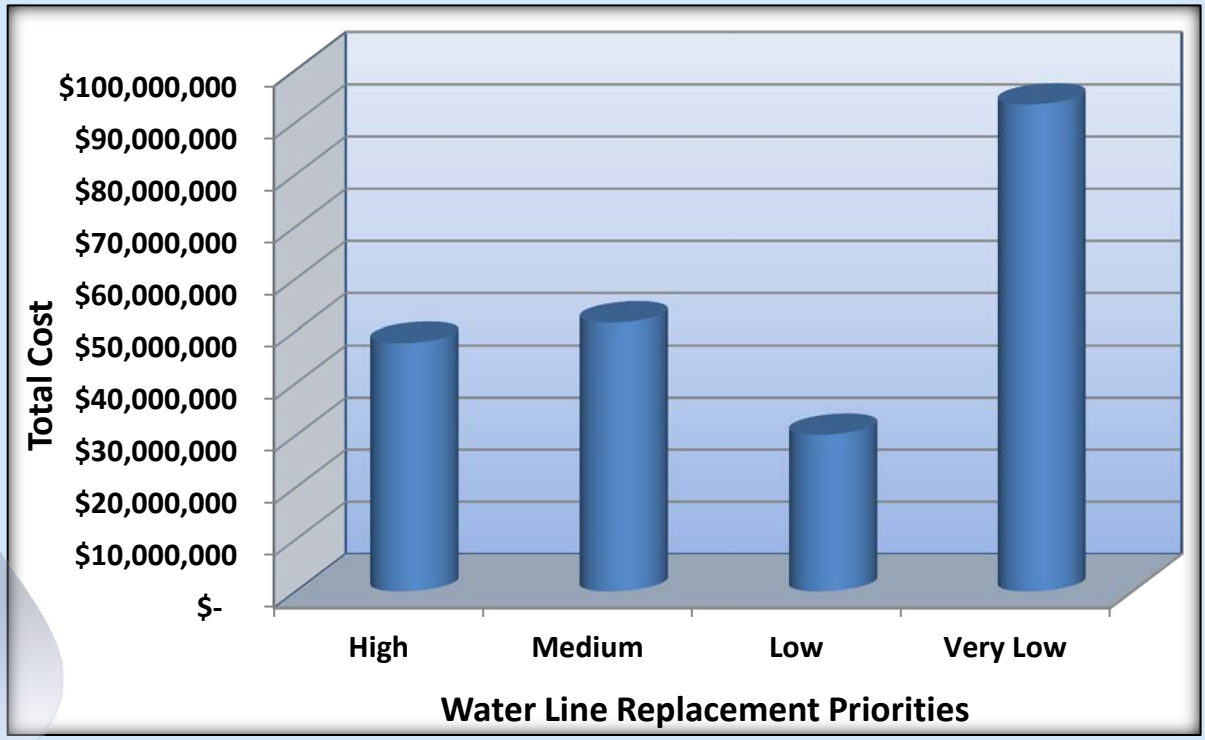
DWR targets all piping over 100 years old as critically in need of replacement. Cast iron pipe installed between 1910 and 1940 has held up very well from a maintenance standpoint but consideration of replacement would be a priority once the pre 1910 pipe is replaced.

8" Cast iron main from 5th Street Project, failure would have been imminent.

Looking inside a 100 year old cast iron water main

The following table shows DWR priority water distribution pipe replacements. In order to avoid falling further behind, we should plan on replacing the high priority water lines within the next decade. With total cost of $48 million, we should be budgeting $5 million annually for water line replacement. For FY2015 we have only included $2.75 million for distribution system replacement.

Pipe Size	Pipe Material	Pipe Age	Approx. Length (ft)	Replacement Cost (Est $)	2014 Priority
1”-3”	Galvanized	>90 years	20,000	$3,500,000	High
1”-3”	Galvanized	70-90 years	31,000	$5,400,000	High
1”-3”	Galvanized	<70 years	26,000	$4,500,000	High
4”	Cast Iron	>90 years	31,000	$5,400,000	High
4”	Cast Iron	<70 years	15,000	$2,600,000	Medium
6”-8”	Cast Iron	>90 years	165,000	$28,900,000	High
6”-8”	Cast Iron	70-90 years	133,000	$23,300,000	Low
6”-8”	Cast Iron	<70 years	338,000	$59,200,000	Very low
10”+	Cast Iron	>90 years	51,000	$11,500,000	Medium
10”+	Cast Iron	70-90 years	30,000	$6,800,000	Low
10”+	Cast Iron	<70 years	152,000	$34,200,000	Very low
4”-6”	AC	30-60 years	140,000	$24,500,000	Medium
8”+	AC	30-60 years	74,000	$13,000,000	Medium



Water main break – damage to concrete and brick sidewalks.

Water main break – damage to pavement.

Water Infrastructure Failure Impacts

Water main pipe failures can result from many causes, including water main age, weaknesses inherent in the pipe manufacture, soil conditions, and installation methods. The most common failure is at a pipe joint where age and repeated stresses due to slight movement or water surges may weaken the bell of the pipe or the gasket at the joint. Repairs can be made in the field at the joint or by cutting sections of the pipe out and installing a new piece of pipe.

The impacts during a water main break can be as small as the inconvenience of traffic detours and water being shut off for a period of time while a repair is made, or in the worst cases, can result in property flooding, damage to public and private property, or boil water notices in cases where water mains are shut down elevating the risk of a contamination event.

Water main break – flooding of private property.

Water main break – damage to pavement and sewer manhole (risk of cross contamination from sewer)

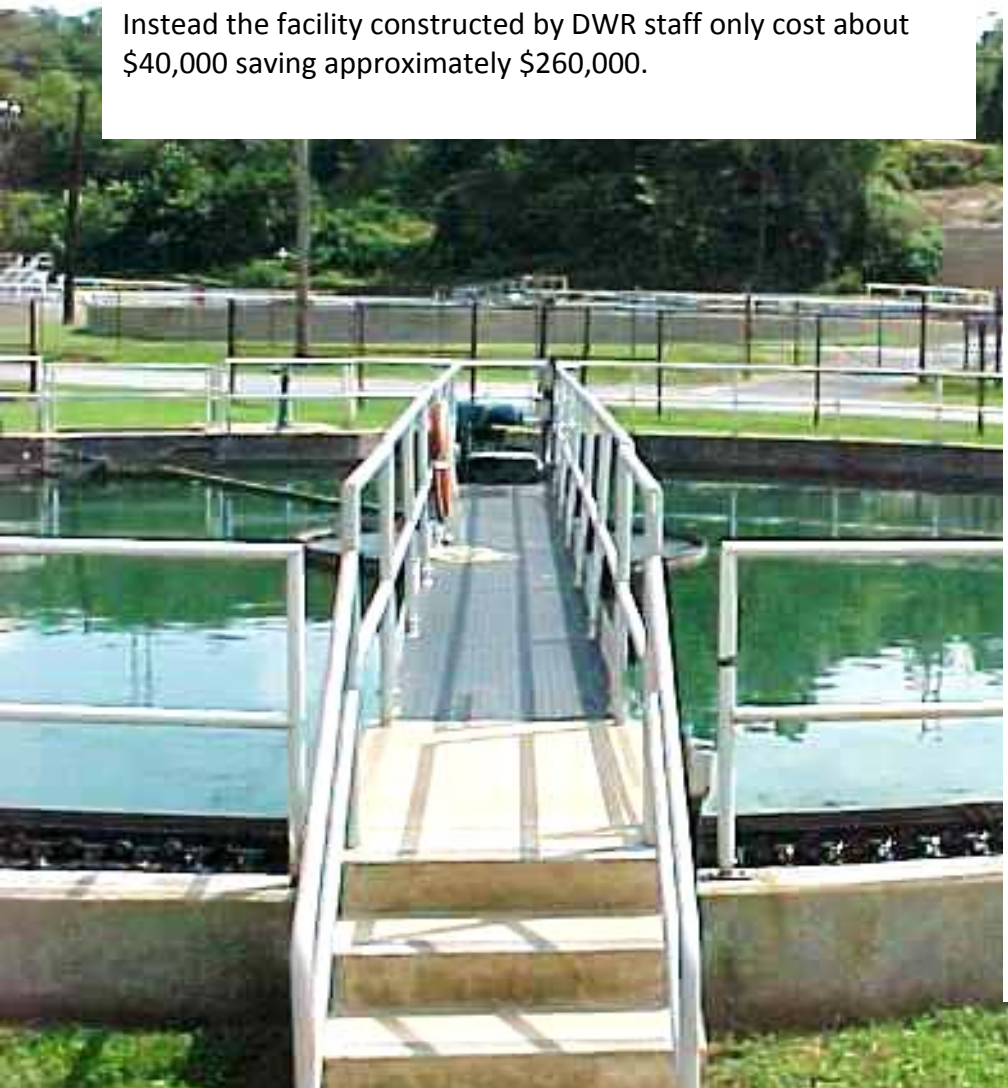
Wastewater Treatment

In January, 2014, the Lynchburg Regional Wastewater Plant (LRWWTP) completed a 10 million dollar upgrade to increase flow capacity and replace obsolete clarifier equipment. This was accomplished without exceedance of any of the permit parameters during the two and a half year construction project. In fact, even with constant changes in the treatment processes to allow for various improvements throughout the facility, staff was able to keep the appropriate balance of microorganism necessary for appropriate treatment and nutrient reduction. Moreover, as a result of staffs' diligence, we have been able to reduce the nutrient loads by approximately 20% over the last several years. This results in generating approximately $100,000 in annual revenue from the Virginia Nutrient Credit Exchange Association "The ExChange" instead of needing to purchase $160,000 worth of credits as originally projected when the The ExChange was created.

In conjunction with the upgrade, plant staff developed wet weather operating procedures to maximize treatment capacity and minimize CSOs. Recently during a heavy rainfall these procedures were tested and it was verified that the plant could treat a flow rate of nearly 60 million gallons per day (mgd) for extended periods of time and still meet all permit requirements. This dramatic improvement in plant operation and significantly reduces the volume of untreated sewage being discharged into the James River. This is a critical component of the proposed CSO Long Term Control Plan.

In 2013, the LRWWTP removed over 23,000 tons of material from the wastewater before discharging it to the river. Over half of this was carbon, nitrogen, phosphorous, salts and other miscellaneous metals converted by a plant grown blend of microorganisms to a form which the process is capable of removing in the 8-12 hours liquids remain in the plant. Of this, 19,000 tons were hauled to the Region 2000 Landfill on Livestock Road in Campbell County. The remaining 4,000 tons was shipped to Maplewood Landfill in Amelia, a private landfill operated by Waste Management, Inc.

During the past year the WWTP staff and Sewer Collection staff completed a grit transfer station for the sewer cleaning trucks and other vehicles to transfer grit and other wetted materials to a container where it can dry. This allowed continued use of existing equipment and saved hours of driving time. A single canister can hold 3 to 4 loads from a sewer cleaning truck requiring one trip to the landfill instead of four. DWR previously had an engineering firm develop plans for a dump station, which was estimated to cost about $300,000 dollars. Instead the facility constructed by DWR staff only cost about $40,000 saving approximately $260,000.

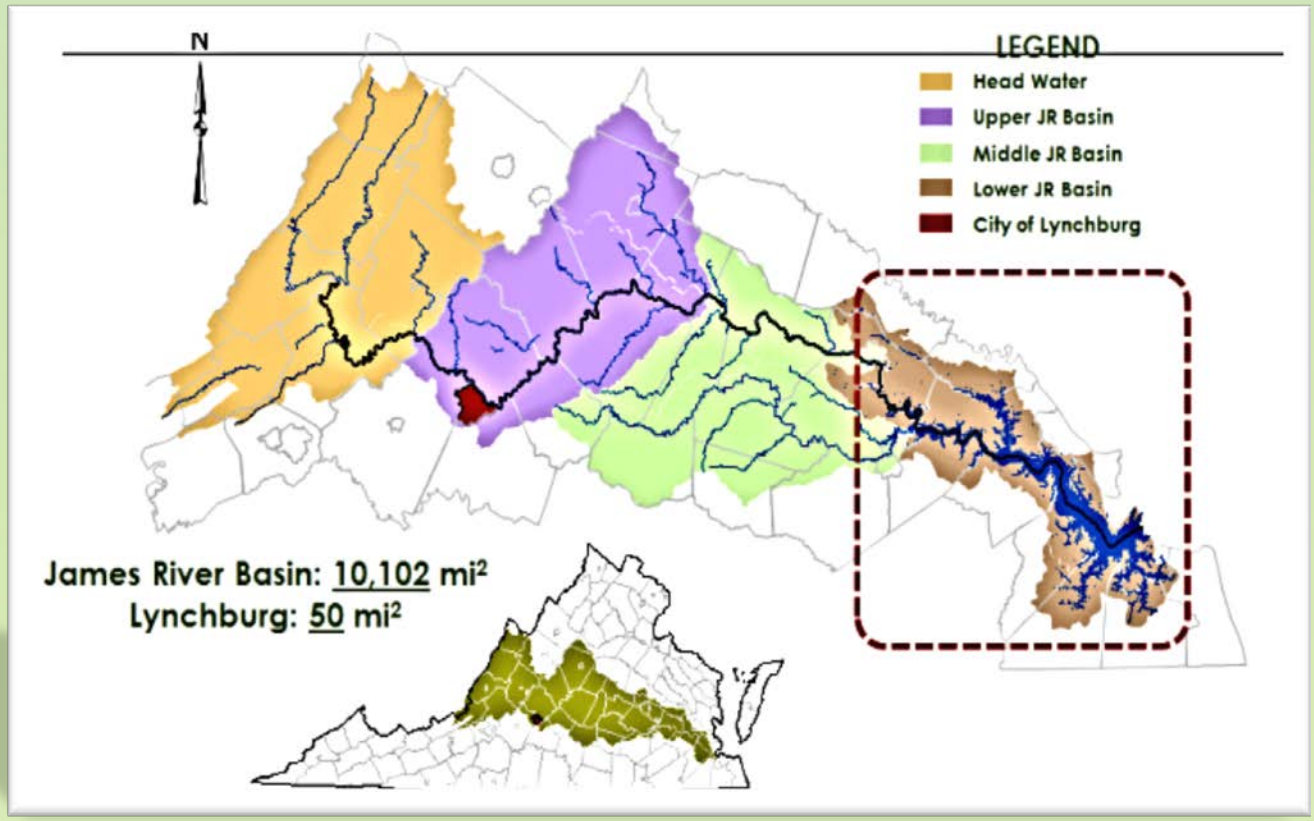


DWR completed a three year study and installed a chemical feed facility to eliminate long term sewer odors and complaints from the Ivy Creek Interceptor area. The odors were caused by high strength waste discharged in an area of low flows resulting in the generation of high levels of hydrogen sulfide. Hydrogen sulfide can result in damage to the sewer system and nuisance odors throughout the area. Using expertise of three divisions (Sewer Collection, Wastewater plant and Technical Services) gas detection equipment was installed at key points in the sewer system to continuous record hydrogen sulfide levels. Staff completed three chemical pilot studies to determine most cost effective method of reduction of odors. Once the chosen alternative was installed odor improvements were almost immediately evident.

Despite these successes, significant challenges remain. At the top of the list is attracting and retaining highly qualified personnel. With all four senior management staff currently eligible for retirement, succession planning is critical. Finding qualified applicants that have the needed science or engineering background and that are willing to make a career working in the conditions at the LRWWTP is a significant challenge. Operators must be knowledgeable of bacteria and microorganisms, perform various laboratory tests, and operate very complex and technical equipment effectively and efficiently.

Another significant challenge is the long term disposal of biosolids. Processing and disposal of biosolids is the most costly operation of the facility. Biosolids are being hauled to the Maplewood Landfill with increased frequency driving the disposal costs up. Recently proposals for land application were received and could have potentially saved nearly $200,000. However, this would have had a negative financial impact on the Regional Landfill resulting in increased tipping fees for the region which would have overall increased the trash disposal costs for the City. While landfilling sludge is the short term answer, it is not a long term sustainable option. A solids master plan was completed a few years ago and options that convert sludge into energy should be pursued as the long term option.

Continued compliance with ever increasing regulations will also be challenging. Within the next few years we should know the results and impacts of the State initiated study of Chlorophyll-A in the James River. Many of the Chesapeake Bay final decisions regarding final nutrient allocations for facilities on the James River have been deferred pending the results of this study. Initial estimates for upgrades to the next level of nutrient removal for the LRWWTP are between $70 and $80 million.

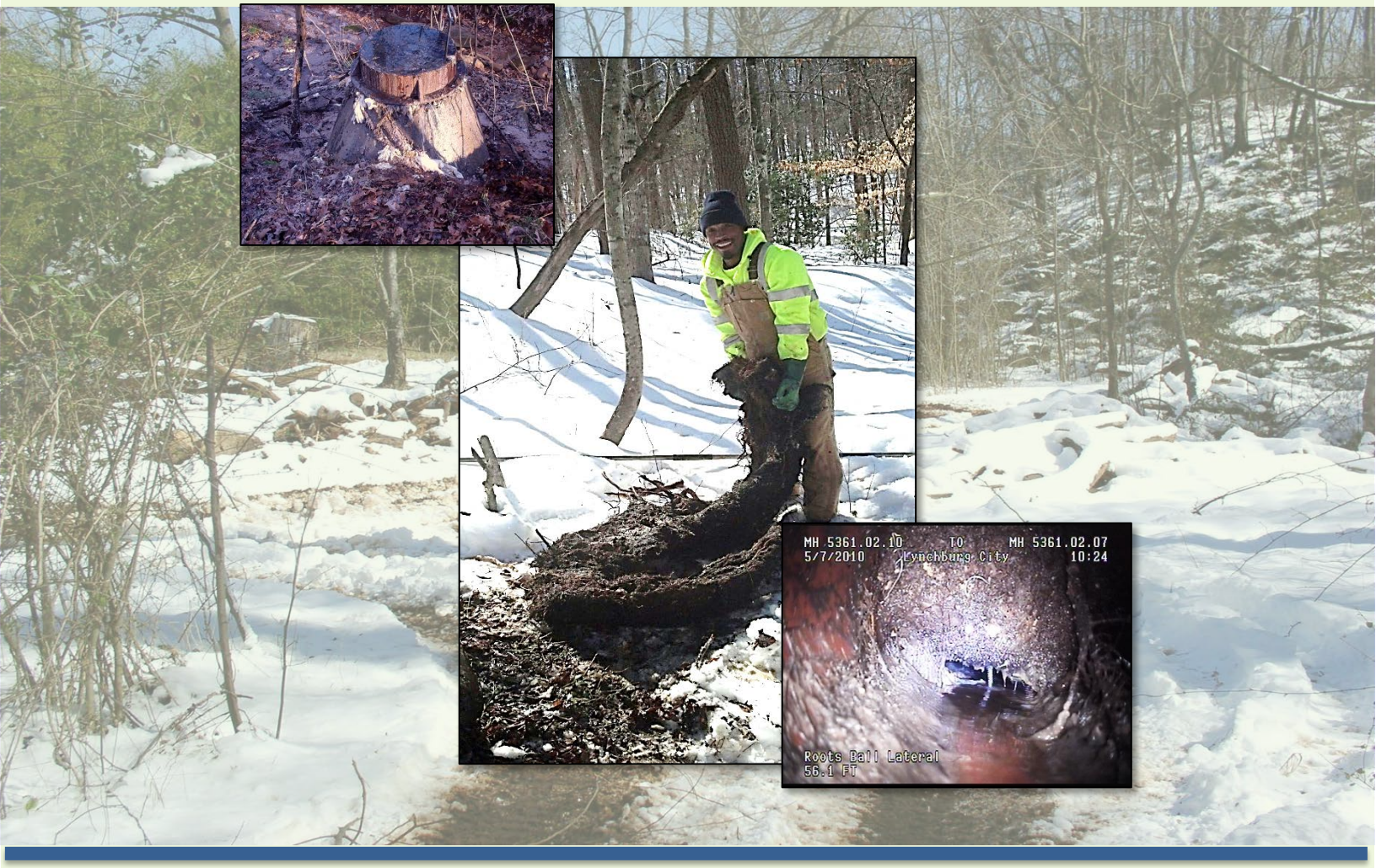


James River Chlorophyll-a Study

Sewer Line Maintenance

There are over 450 miles of combined and separated sewers in the City that are maintained by the Sewer Line Maintenance Division of Water Resources. With the exception of the influent pump station at the LRWWTP the entire public sewer system is currently served by gravity. Adequate maintenance of this system is absolutely critical and requires well trained staff and a fleet of specialized vehicles. Without it the system is subject to back-ups, pipe and manhole failures, and Sanitary Sewer Overflows (SSOs).

SSOs are an untreated or partially treated sewage release and are different from CSOs in that they are not discharged through a permitted overflow point and are prohibited by the Clean Water Act and are



typically caused by pipe failures, roots, grease, debris, or capacity issues. This results in public health and safety issues, private property damage, and environmental damage. Most of the sewer system is composed of vitrified clay pipe (VCP). This was the primary pipe material installed in the City until approximately 15 years ago, at which time polyvinyl chloride (PVC) became the predominant pipe material utilized. Most of the interceptors, the largest sewer lines, are composed of concrete pipe. VCP is prone to root intrusion, collapse, and other forms of failure.

In an effort to identify and prioritize priority areas and sewer lines for maintenance and rehabilitation, we have an ongoing Sewer System Evaluation Survey (SSES) Program. As part of the SSES Program the sewer system was methodically divided into fifteen areas for assessment. A sanitary sewer criticality model was developed to identify sewer areas that pose the most risk with regard to likelihood and consequence of failure and ranked the fifteen areas from highest to lowest. This helps to target limited resources on the portions of the system that have the most need and pose the greatest risk.

In addition to the SSES Program, the Department of Water Resources manages a CMOM Program. CMOM stands for "Capacity, Management, Operations, and Maintenance". It is a flexible, dynamic framework used to incorporate widely accepted wastewater industry practices to:

- Better manage, operate, and maintain collection systems
- Investigate capacity constrained areas of the collection system
- Respond to sanitary sewer overflow (SSO) events

In CMOM planning, performance goals are established, and CMOM activities are designed to meet those goals. Information collection and management practices are used to track how well each CMOM activity is meeting the performance goals, and whether overall system efficiency is improving. Our CMOM program includes activities such as sewer line cleaning and inspection, a Sewer Overflow Response Plan or SORP, a Fats Oil and Grease (FOG) Program, among others. These elements are critical in reducing SSOs. For example, one of the most frequent causes of SSOs is a build-up of grease in the sewer lines. A robust FOG Program is essential in that it educates the public on ways to properly dispose of grease and it holds food establishments accountable for properly installing and maintaining grease handling facilities.

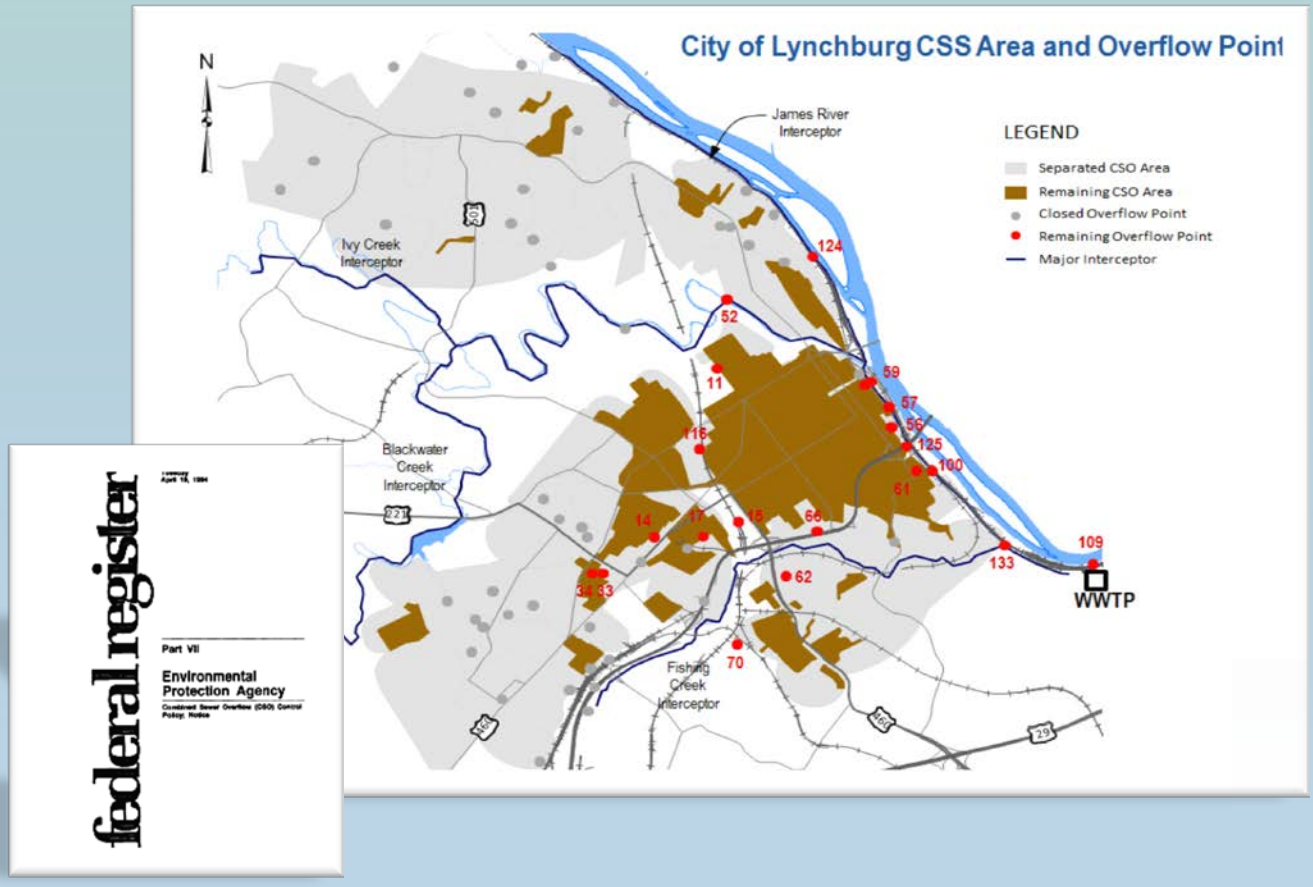
CSO

We are on the verge of completing one of the most significant projects in the CSO Program's history. The James River Interceptor is by far the largest and most complex component of the CSO plan. It included six divisions, spanning 7.23 miles along the James River including multiple tunnels, navigating around numerous obstacles and challenges, and ranging in size from 24 to 84 inches in diameter. Construction has just begun on the last 2,780 feet of the project through Riverfront Park. When complete, the total project cost will be in excess of $75 million. Completing the James River Interceptor is vital to being able to move forward with the new CSO plan because of the volume of flow it can convey to the LRWWTP.

The Department of Water Resources continues to work with the Department of Environmental Quality towards final approval of the revised CSO Long Term Control Plan (LTCP). This is a process that started nearly five years ago as part of an effort to a more holistic approach of meeting water quality goals. It became clear with the Chesapeake Bay TMDL and associated regulations that in order to effectively address the various water quality requirements we would need to change our approach. Simply remaining status quo was no longer an option.

We had to explore new alternatives that could utilize the infrastructure that we had already invested in to meet water quality goals. The Federal CSO Policy of 1994 essentially provides several alternatives to achieve compliance. Currently our CSO Program is based on the 100% capture approach which can only be achieved by completely separating all the sanitary and storm sewers. It is estimated that this will take another $280 million and many more decades to complete.

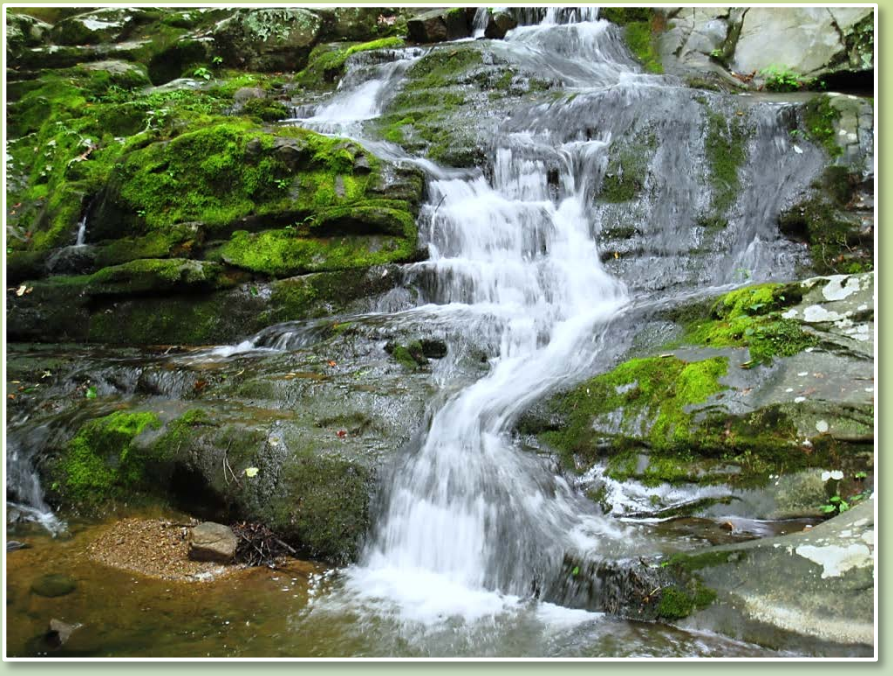
Our new plan takes advantage of two alternative approaches allowed by the Federal CSO Policy. The first is the "Presumption Approach" whereby no more than an average of four overflow events occur each year or no less than 85% of the combined sewage is collected and treated. Upon completion of the new LTCP we will be eliminating or capturing and treating approximately 93% of the original CSO volume of 1 billion gallons annually. Our primary approach is the "Demonstration Approach". Under this method of complying with the CSO Policy, we must be able to show that the remaining CSO discharges do not cause or contribute to the exceedance of Water Quality Standards. We have done this by developing an extensive hydraulic model of the sewer system and extensive water quality models of the tributaries and the James River. This new approach will save the citizens of Lynchburg nearly a quarter billion dollars and will enable the program to be completed in the next 10 to 15 years. This level of assurance that the program could



be completed and amount of savings involved played a key role in the General Assembly's $30 million grant award last year. The Department of Water Resources has received an Excellence in Environmental Engineering Award from the American Academy of Environmental Engineers & Scientists for the holistic approach to our CSO program. We were also recognized in a national publication for the efforts. In July, 2013, Municipal Sewer & Water magazine featured Lynchburg's program entitled "Holistic Approach – Lynchburg, VA attacks CSO problems with innovative planning."

We are working closely with DEQ staff as well as the Director to finalize our plan. This process has been long and complex and many of DEQ's staff have not been involved in a process such as this and have had many questions requiring several submittals of the plan. However, we are very optimistic that we have successfully addressed most all of their questions and concerns and are close to obtaining final approval on the new LTCP. Upon approval we will enter into a new Consent Order that will enable us to proceed with this exciting new approach.

Stormwater



As we are completing the second year of the stormwater utility, we have been very busy working with regulatory agencies on policies, guidance, and planning. The transfer of the State's stormwater authority from the Department of Conservation and Recreation to the Department of Environmental Quality has added to the complexity of our program development. We have also been working with various many other City Departments, especially Public Works and Community Development to further develop the City's Stormwater Program. Because this is such a regulatory driven program, memorandums of understanding are being developed among these departments regarding the operations or activities that can impact permit compliance in order to clearly identify areas of responsibility. We have also been working with City Schools because all properties owned by the City are owned subject to the same regulations. These properties also provide opportunities to help meet pollutant reduction goals as well as educational goals through the installation of stormwater best management practices. We knew that the stormwater program was going to be more complex and costly, and we are now beginning to better understand the ultimate impacts.

The City's new Small Municipal Separate Storm Sewer System (MS4) General Permit became effective July 1, 2013 and is effective through June 30, 2018. The new permit requires a much more extensive effort than previous permits including:

- significant mapping requirements,
- measurable goals for public outreach, and education,
- an enhanced illicit discharge program,
- development of nutrient management plans and stormwater pollution prevention plans (SWPPPs),
- Development of an employee training program,
- New post construction program regulations and requirements.

The most important and significant new requirements include specific nitrogen, phosphorous, and sediment reduction goals for meeting the Chesapeake Bay Total Maximum Daily Load (TMDL) such as the James River Bacteria TMDL. Each of these efforts falls under the permit or one of the six minimum

control measures (MCMs) of the permit. These requirements require extensive planning and resources to achieve and maintain compliance with the permit and other associated regulations.

In order to address these requirements in the most cost effective manner possible, the DWR has started a master planning initiative for the stormwater program with the goal of meeting all of the requirements and timeframes for permit compliance. This will be an iterative process so that the program can adapt to changes in regulations and/or permit requirements. Strategies will be developed to meet current and future permit, regulatory, and infrastructure needs. The initial phase will develop a regulatory framework for tracking the various permit components and requirements; characterize the city's watersheds and systems to determine baseline conditions and setting waste load allocations to meet the Chesapeake Bay TMDL requirements; coordination with the MCMs of the permit; developing required TMDL Action Plan and implementation strategy; and developing a strategy for capital improvement needed to existing infrastructure system. Water Resources will be coordinating with multiple city departments in the development of the master plan and will also provide opportunities for the public to comment on the process through a series of meetings or charette-style events.

There are specific program requirements of the six MCMs that will impact city departments. We are currently in the process of evaluating city facilities for the development of required stormwater pollution prevention plans and nutrient management plans. These plans will require additional resources for the inspection and upkeep of city facilities to meet the good housekeeping/pollution prevention requirements of the permit. A training program for operating and maintenance requirements is also required for city employees working at certain facilities. Training is to occur biannually and also requires specific certification requirements for employees handling pesticides and herbicides, responsible for the erosion and sediment control and VSMP programs and spill response.

The City has also been very involved in the transfer of the state Virginia Stormwater Management Permit (VSMP) to localities

through the Stormwater Local Government Advisory Committee. We have also worked closely with Region 2000 PDC and surrounding localities to develop local programs and tools needed to implementation the program July 1, 2014. This transfer will require additional

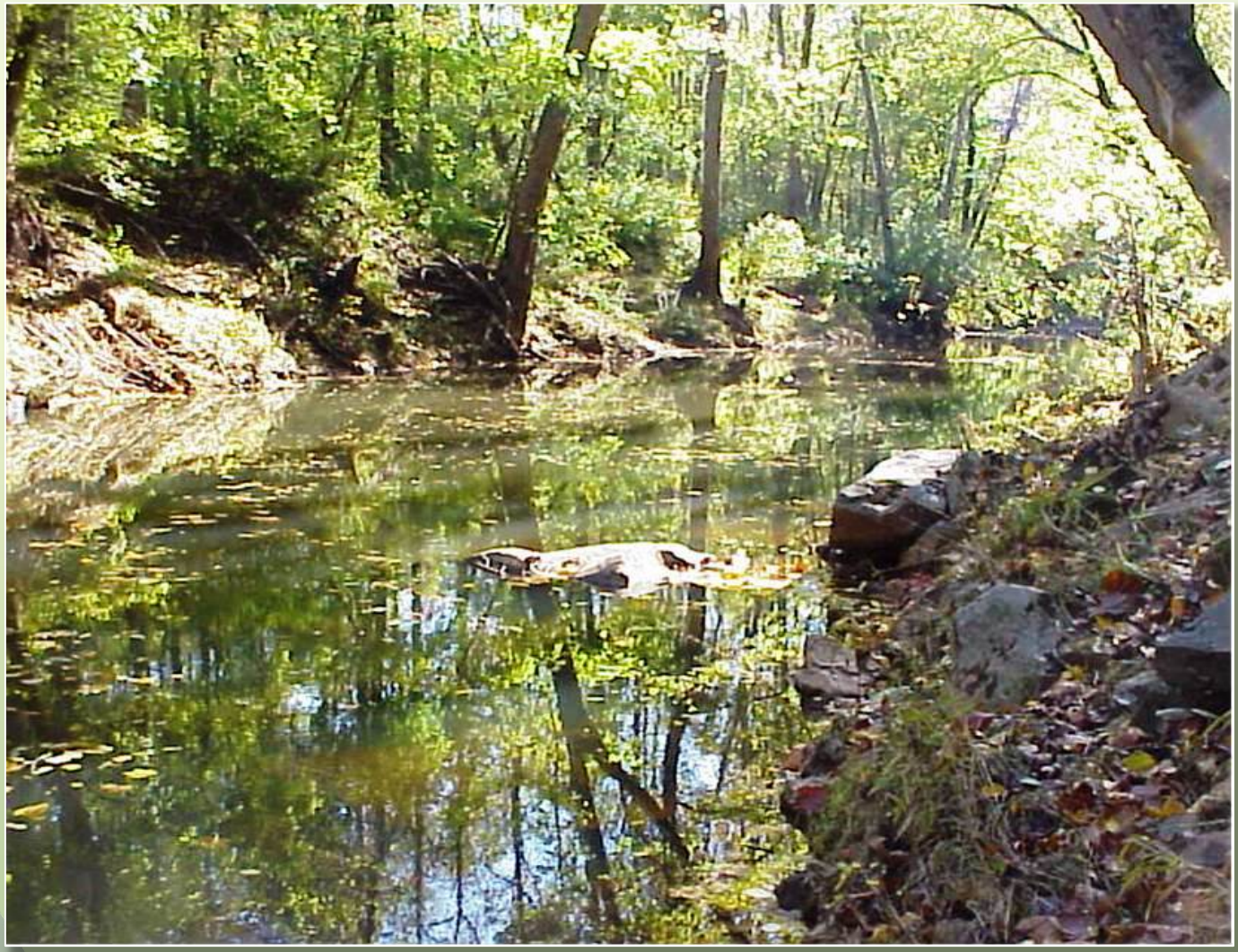
administration of the VSMP program that includes stormwater management requirements in addition to the stormwater pollution prevention plans. The City will have additional responsibility in the collection of permit information and associated fees of the VSMP program and coordination with the Department of Environmental Quality (DEQ). Additional resources will be required for the effective administration of the VSMP program.

Water Resources has also been working on developing an education and outreach program. This program will be centered on raising public knowledge and awareness about issues that affect water quality. Through a grant from the Chesapeake Bay Foundation we have been able to create a framework for the Public Education and Outreach Plan. This plan will act as a guide to maximize the effectiveness of public outreach campaigns. This plan will help Lynchburg Water Resources better understand the audiences in the watershed, create messages that resonate with them, find appropriate ways to communicate the message, and prompt changes in behavior to reduce water pollution in Lynchburg. During this process we have been able to research, review, and recommend improvements to current program policies and procedures. We have been also able to bring up to date many of program manuals, brochures and stormwater educational media.

To begin to address both mapping and infrastructure capital needs, we have been working with WorldView Solutions for the update of the GIS mapping of the stormwater infrastructure system. Program outfall inspection requirements entail having a complete map of the infrastructure; specific data retention for drainage areas served by the

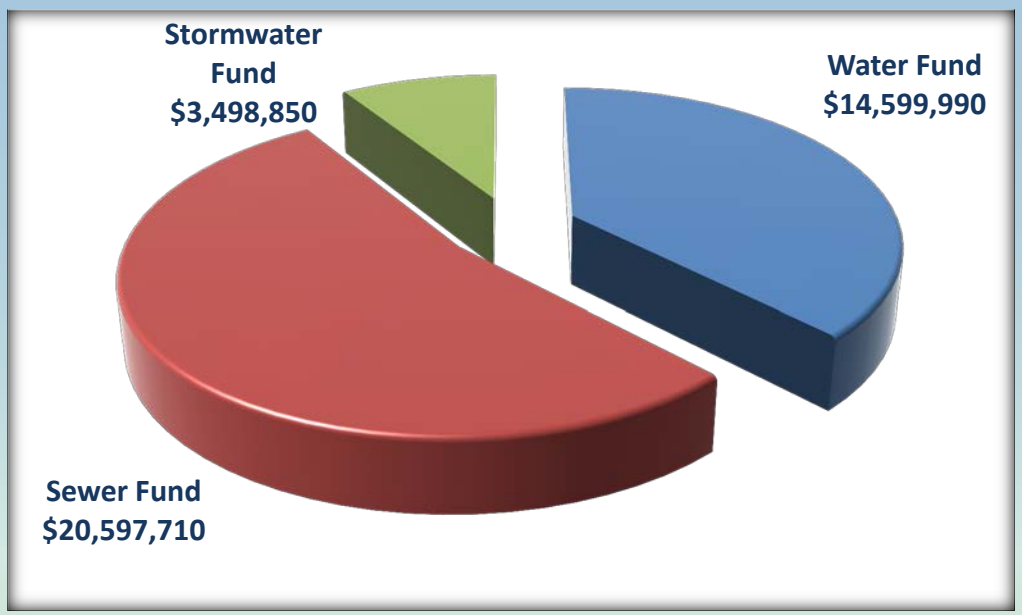
infrastructure and increased coordination of the illicit discharge program. Through this mapping process many assets were found that previously were unknown and many also found in poor condition. The Department has begun a holistic planning approach when planning infrastructure renewal projects to include stormwater infrastructure in addition to water and sewer. Through the master planning process, the Department plans to develop a strategy for assessing the system condition, prioritization of system repairs or replacement, and associated capital costs.

In summary, although stormwater utility is still very new, we are making progress towards meeting the various new requirements and meeting the significant water quality and infrastructure challenges that lie ahead. In order to be successful, it is going to take a substantial coordinated effort. The new requirements and infrastructure needs are daunting and will be very costly. Through good planning and financial strategies we will work to minimize the impacts to the citizens of Lynchburg.

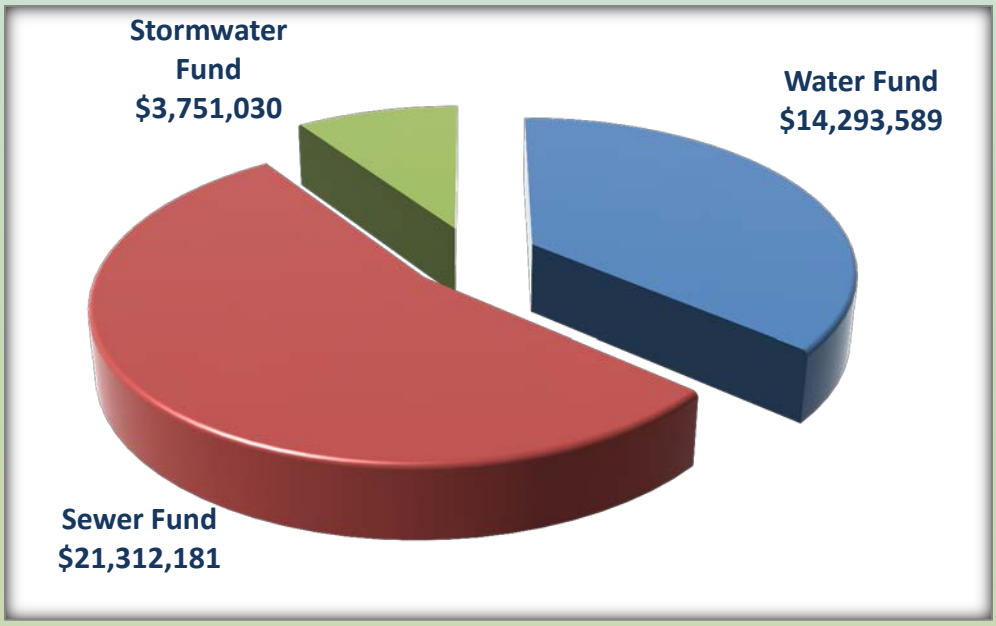


Financial

Water, Sewer, and Stormwater Total Revenues = $38,696,550



*Total Expenses = $39,356,800

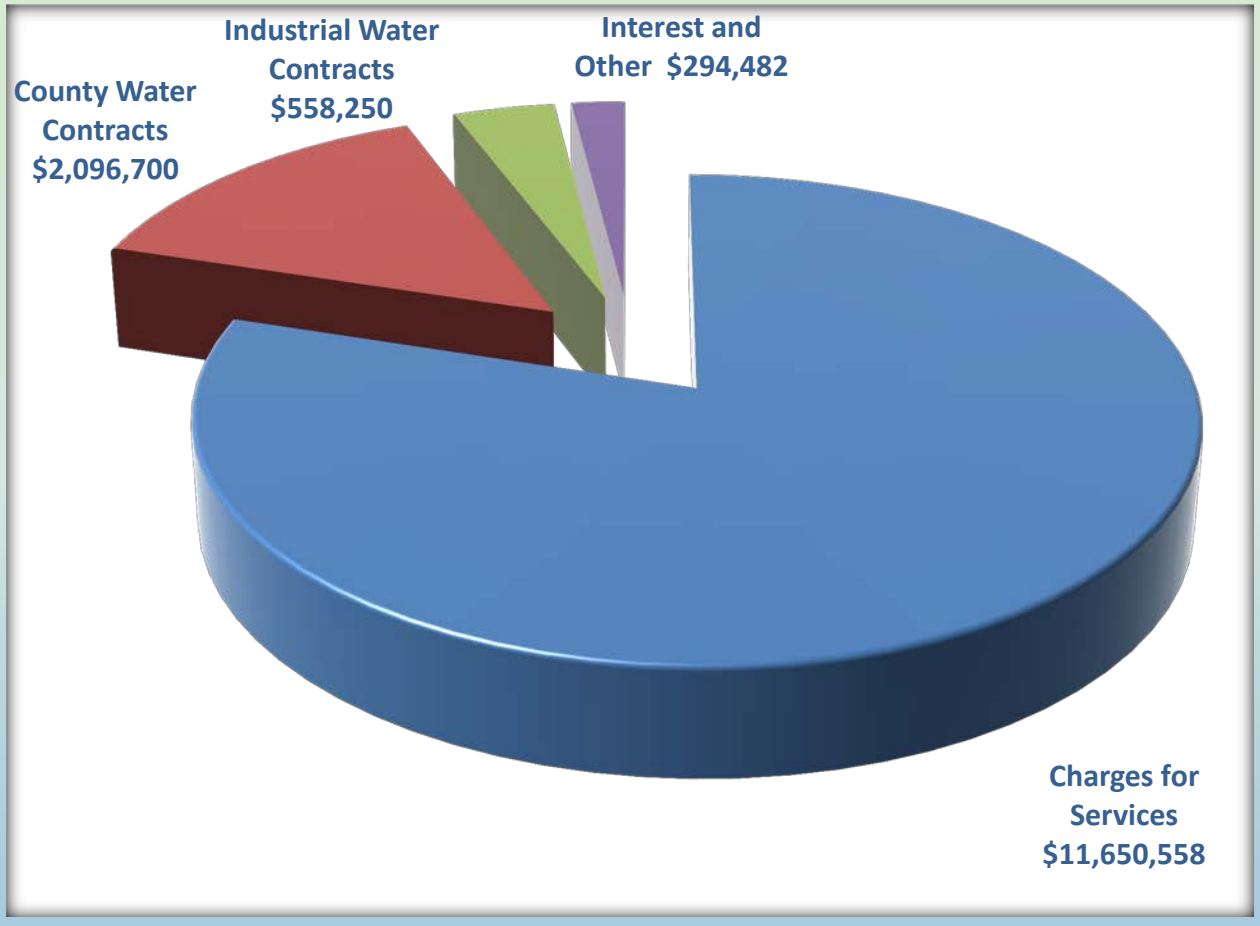


*Stormwater Fund expense explanation – For fiscal year ending June 30, 2014, the Stormwater Operating Fund is projected to have $1,080,417 in Unrestricted Net Assets. These available funds allow for a budgeted transfer to the Stormwater Capital Fund in FY 2015 in the amount of $1,050,000 compared to budgeted transfers for FY 2013 and FY 2014 of $300,000 and $750,000 respectively. This is included in the Stormwater Fund expenses.

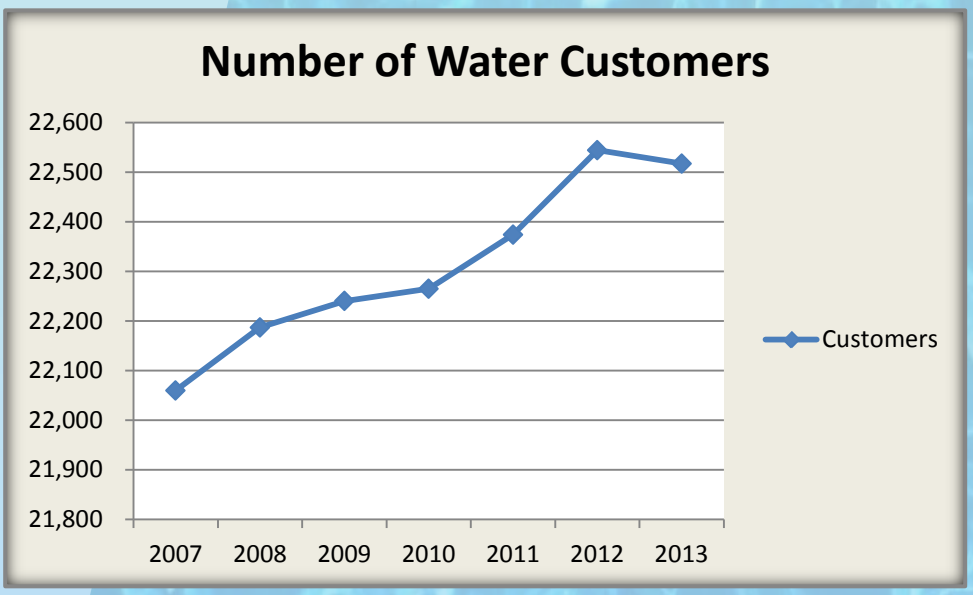
*Sewer Fund expense explanation – For fiscal year ending June 30, 2014, the Sewer Operating Fund is projected to have $11,424,670 in Unrestricted Net Assets. These available funds allow for a budgeted transfer to the Sewer Capital Fund in FY 2015 in the amount of $2,000,000 compared to budgeted transfers for FY 2013 and FY 2014 of $1,500,000 each year. In addition the budgeted $2,000,000 transfer provides compliance with the CSO Special Order that requires unrestricted cash to equal no more that 25% of the subsequent year's budgeted operating expenditures.

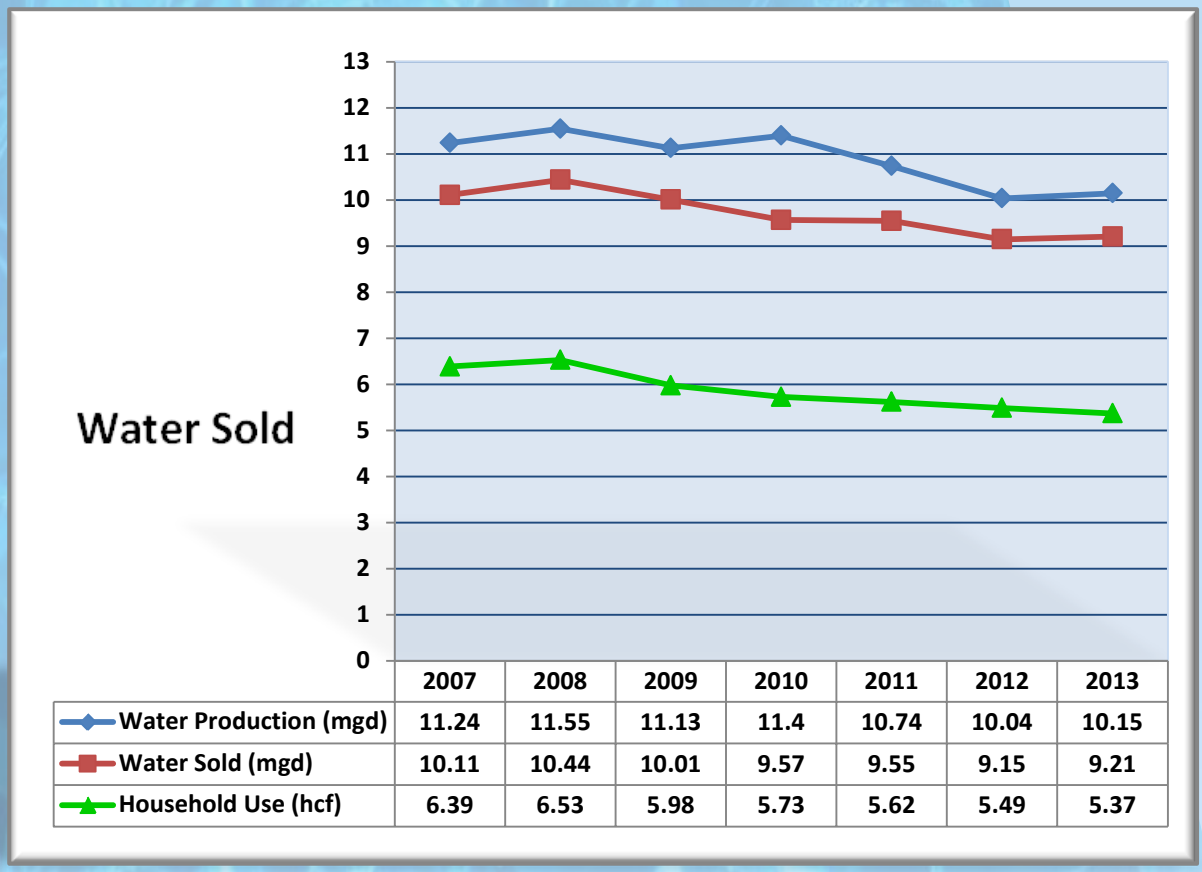
Water Fund – Revenues

Total Revenues = $14,599,990



Assuming the proposed rate increases are implemented the Water Fund revenues are expected to be $14,599,990 for FY 2015. There has been a steady increase in customer base with the exception of last year where there was a slight decrease in the number of business customers. Last year there was a very slight increase in overall water sold from 9.15 million gallons per day to 9.21 million gallons per day but the average residential usage continues to decline. Currently the average household is using 5.37 hcf, slightly over 4,000 gallons per month.

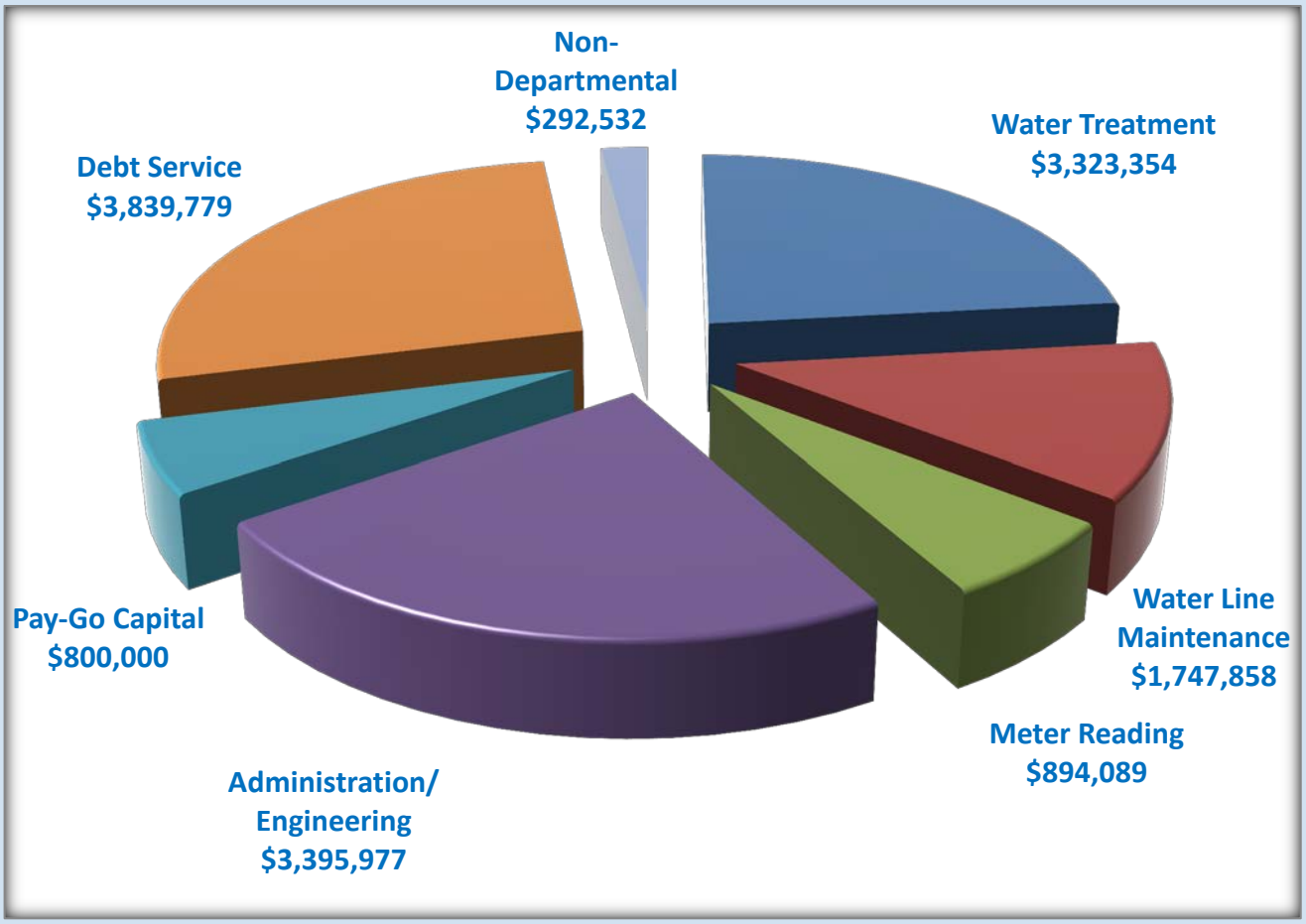




	2007	2008	2009	2010	2011	2012	2013
Water Production (mgd)	11.24	11.55	11.13	11.4	10.74	10.04	10.15
Water Sold (mgd)	10.11	10.44	10.01	9.57	9.55	9.15	9.21
Household Use (hcf)	6.39	6.53	5.98	5.73	5.62	5.49	5.37

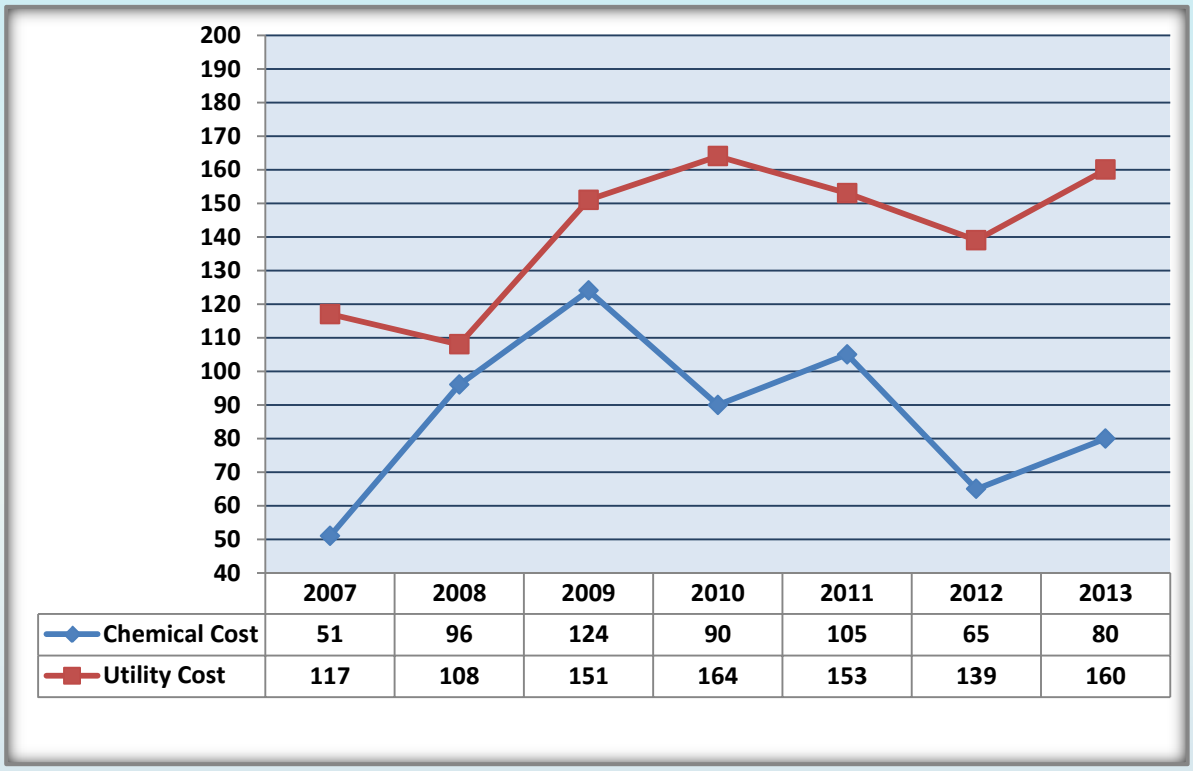
Water Fund

Water Fund-Total Expenses = $14,293,589



The **Administrative Division** provides administrative functions for water, sewer, and stormwater and is funded in the water fund. Transfers are made from the sewer and stormwater funds to cover administrative costs associated with sewer and stormwater activities. The proposed FY 2015 Administrative Division budget is $3,395,977 and reflects an increase of $312,963 over the adopted FY 2014 budget primarily due to increases in the indirect cost payments to the General Fund, FY 2014 salary increases, and the addition of three positions that are needed due to the increasing requirements associated with the stormwater program. The positions include a stormwater engineer, training coordinator, and administrative support associate. Most of the expenses of these positions is offset by transfers from the Stormwater Fund and the transfer of one engineering technician position to the General Fund.

The **Water Treatment Division** is responsible for the operation and maintenance of the City's two water filtration plants, the Pedlar Reservoir, and numerous pump stations and water tanks. The proposed FY 2015 budget is $3,323,354 and represents a $44,545 increase above the adopted FY 2014 budget primarily due to FY 2014 salary increases. There are minor variations in other expense categories. It should be noted that the variable expenses, primarily chemicals and utilities increased by $36 per million gallons treated last year.



	2007	2008	2009	2010	2011	2012	2013
Chemical Cost	51	96	124	90	105	65	80
Utility Cost	117	108	151	164	153	139	160

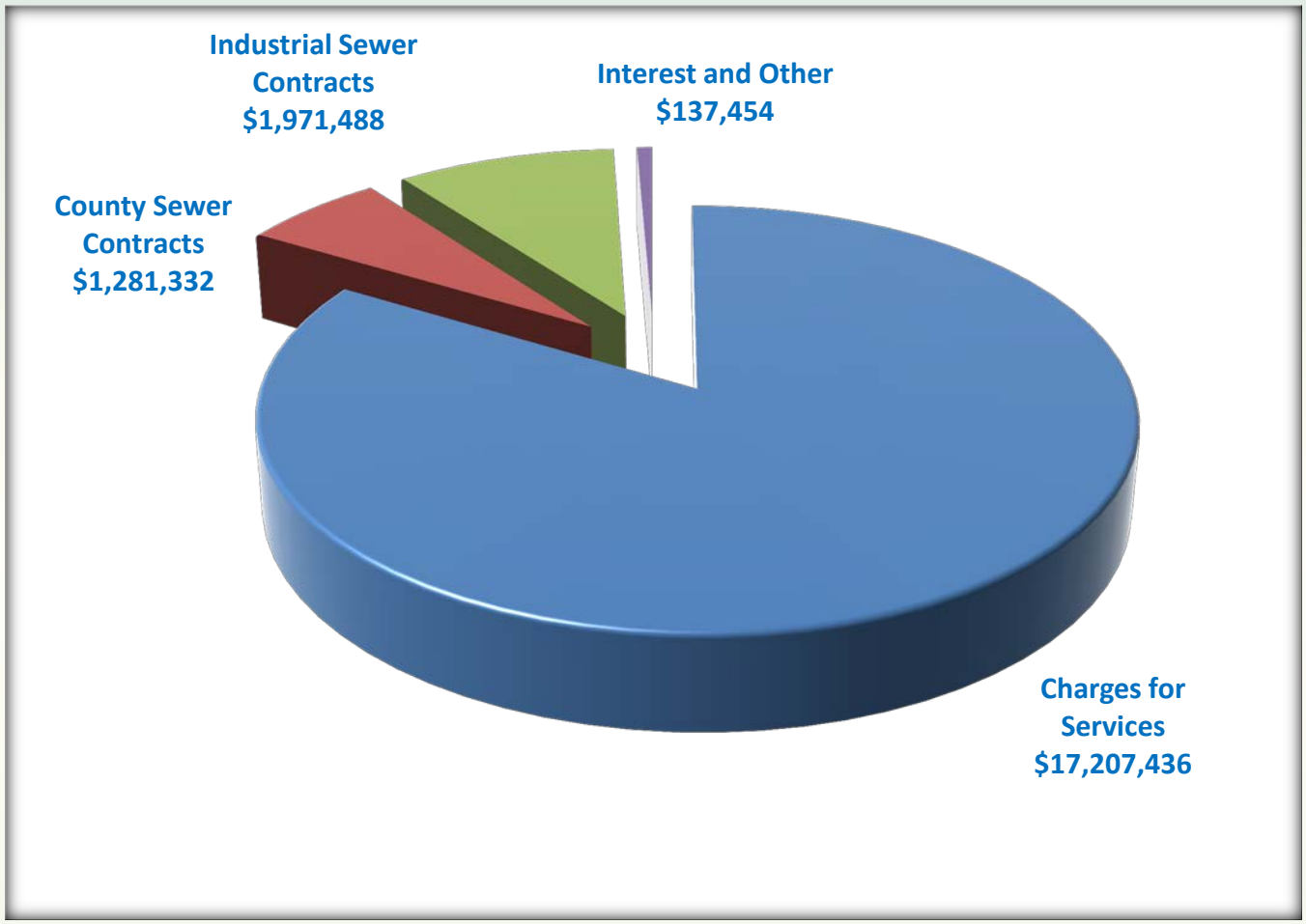
Water Treatment Variable Expenses per Million Gallons Treated

The **Water Line Maintenance Division** is responsible for the operation and maintenance of over 460 miles of water line and appurtenances within the City including: repairing main breaks, fire hydrant maintenance, service installations, etc. The proposed budget for the Water Line Maintenance Division for FY 2015 is $1,747,858 and represents a $66,829 increase above the adopted FY 2014 budget. This increase is primarily due to FY 2014 salary increases. There are minor variations in other expense categories.

The **Meter Reading Division** is responsible for the reading, maintenance, replacement, of nearly 23,000 meters. Additionally, they are responsible for cut-offs / ons related to delinquent accounts. The proposed budget for FY 2015 is $894,089 which represents a $6,461 increase from the FY 2014 adopted budget. The primary reason for this increase is FY 2014 salary increases.

Sewer Fund

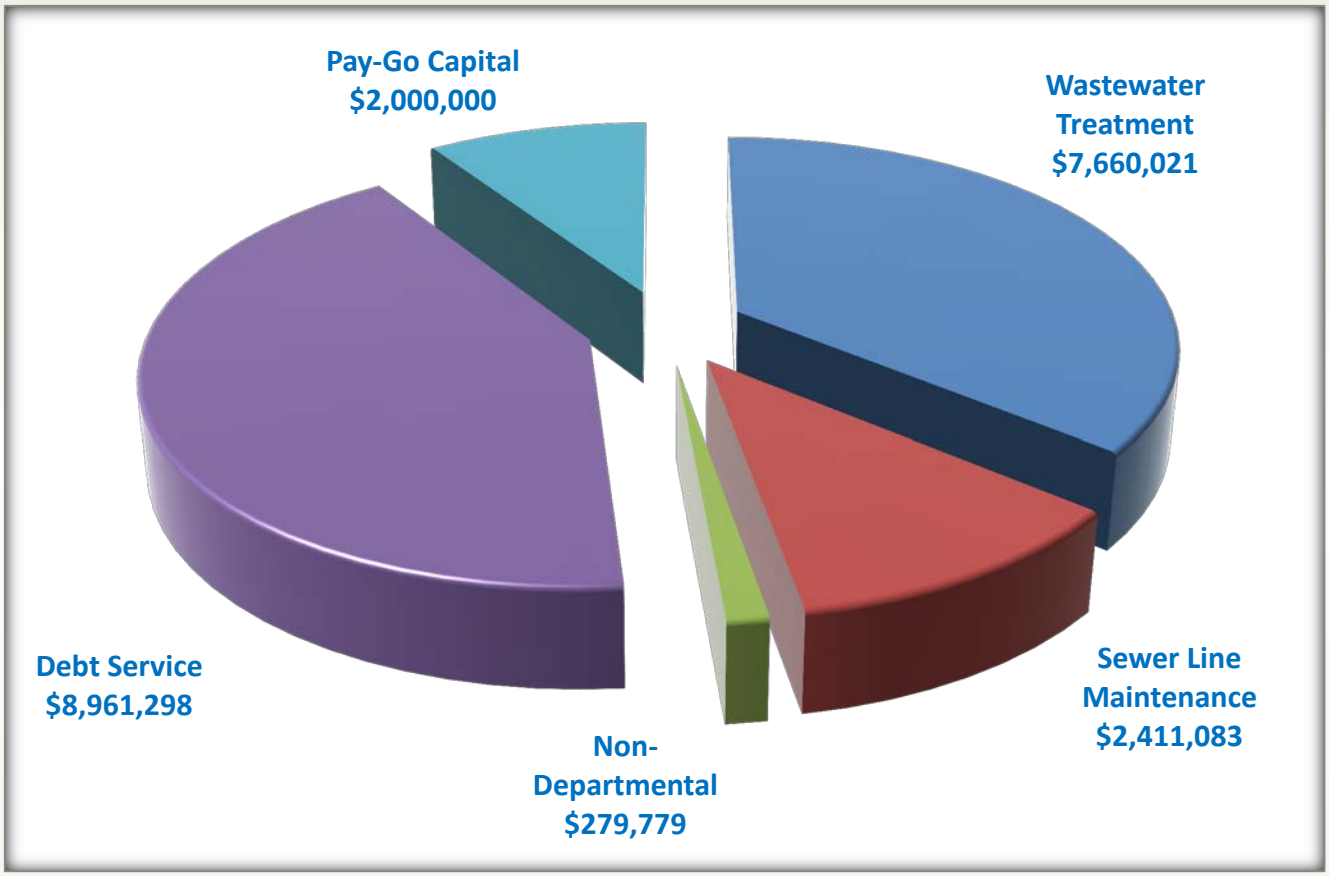
Sewer Fund – Total Revenues = $20,597,710



Assuming the proposed rate adjustments are implemented, the total Sewer Fund revenues are expected to be $20,597,710 in FY 2015.

Sewer Fund – Total Expenses = $21,312,181

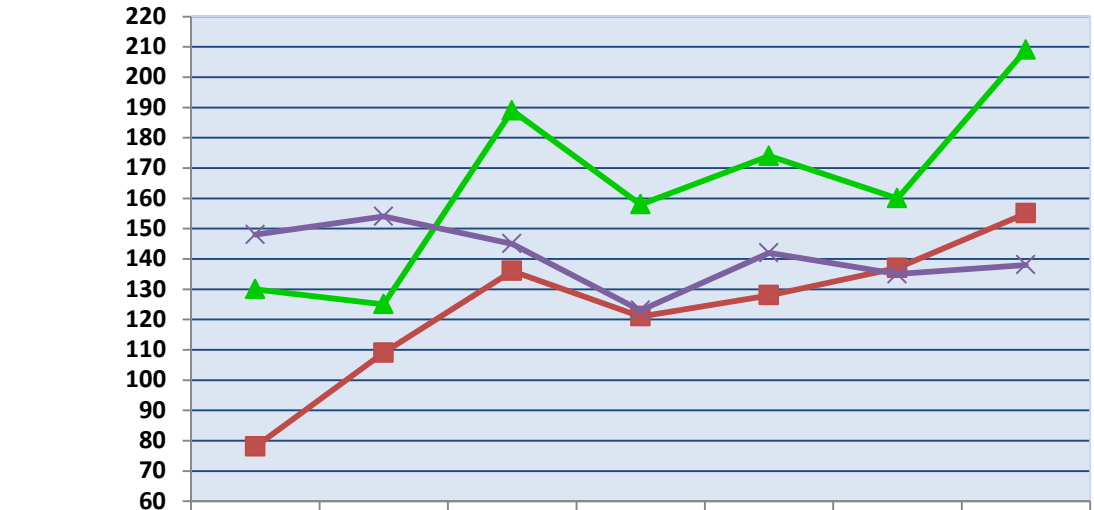
Sewer Fund Expenses



The **Wastewater Treatment Division** is responsible for the operation and maintenance of the Lynchburg Regional Wastewater Treatment Plant (LRWWTP). The proposed FY 2015 budget is $7,660,021 and represents a $578,489 increase from the adopted FY 2014 budget. This increase is primarily the result of significant increases in the indirect cost transfer to the General Fund, FY 2014 pay increase, and significant increases in chemicals, utilities, and sludge disposal costs.

The variable expenses or the LRWWTP, chemicals, power, and sludge disposal rose from $432 per million gallons treated in FY 2012 to $502 per million gallons treated in FY 2013, a 16% increase in one year. This helps to illustrate the volatility of costs associated with operating the LRWWTP.

Variable Expenses per Million Gallons Treated



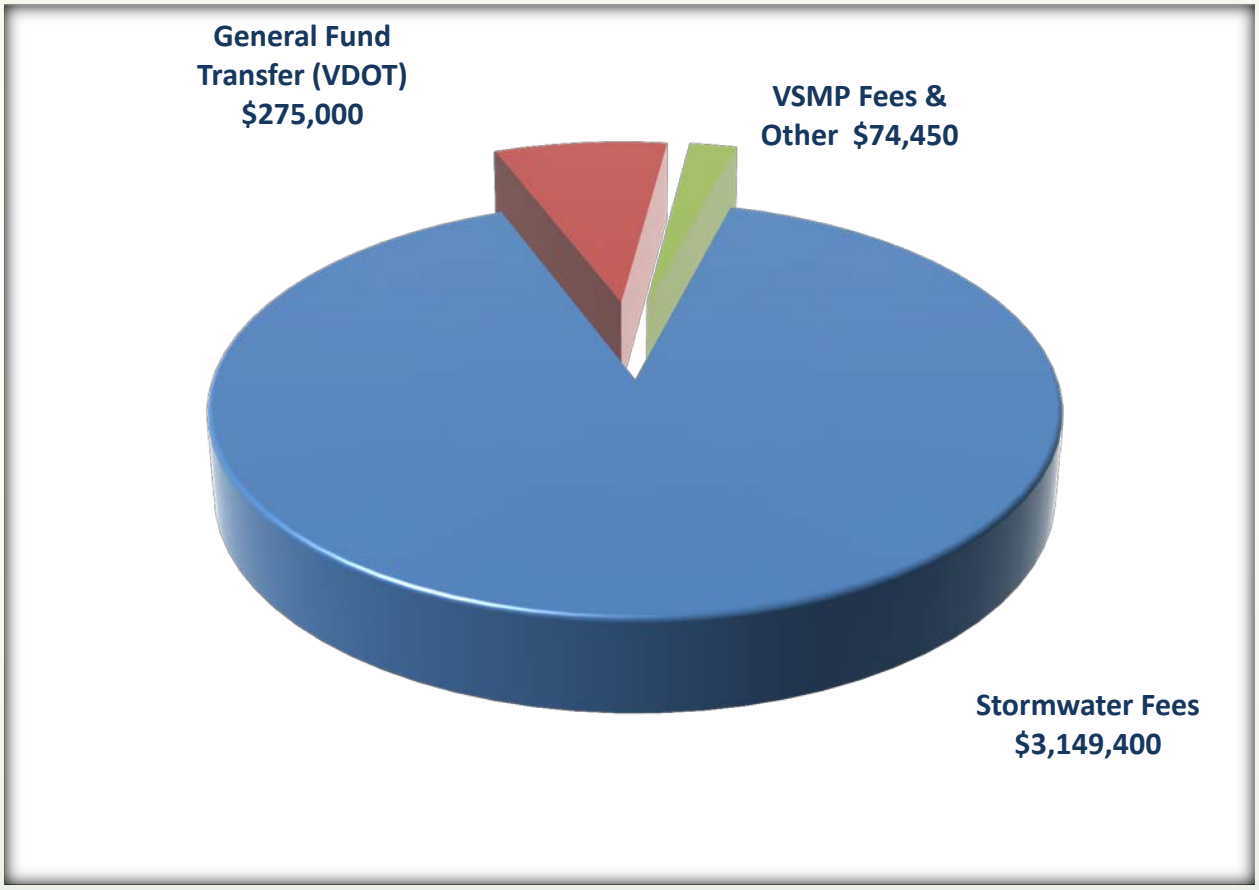
	2007	2008	2009	2010	2011	2012	2013
Chemicals	78	109	136	121	128	137	155
Utilities	130	125	189	158	174	160	209
Sludge	148	154	145	123	142	135	138

The **Sewer Line Maintenance Division** is responsible for the operation and maintenance over 450 miles of sanitary sewer lines in the City including: inspection, cleaning, repairing, installation of services, etc. The proposed budget for FY 2015 is $2,411,083 and represents a $287,973 increase from the adopted FY 2014 budget. This increase is primarily due to the addition of two new Utility Line Technician positions which are needed to provide an additional sewer cleaning crew. This is essential in meeting regulatory requirements associated with reducing and eliminating sanitary sewer overflows. Other significant increases include costs associated with utility line marking services, increases to the indirect cost payment to the General Fund, increased transfer to the Administration Division, and funds for the purchase of a portable camera unit.

Stormwater Fund

Stormwater Fund – Total Revenues = $3,498,850

Total revenues for the Stormwater Fund for FY 2015 are expected to be $3,498,850. This is a decrease of $283,150 from FY 2014 primarily due to $375,000 reduction in the VDOT transfer for VDOT eligible stormwater work. Instead of including Public Works' VDOT eligible costs in the Stormwater budget and then reimbursing Public Works for the activity, this funding will just remain in the General Fund.



Stormwater Fund – Total Expenses = $3,751,030

The Stormwater Fund expenses for FY 2015 are proposed to be $3,751,030. Of this $1,050,000 will be transferred to pay-go capital for master planning, infrastructure renewal, and water quality projects. A total of $738,235 will be transferred to the General Fund for stormwater related activities in the Community Development and Public Works Departments. As previously mentioned, Public Works will also still be performing stormwater work that is eligible for VDOT reimbursement; however, those funds will no longer run through the Stormwater Fund. Part of the Water Resources budget also includes a transfer for indirect costs to the General Fund in the amount of $107,986.

Significant changes in expenditures include the funding of three new positions that are needed in order to address the increasing stormwater related workload. These include a stormwater engineer, a training coordinator, and an administrative support associate. Additional expenses include increases in contractual services and materials. We have also included $400,000 in capital outlay for the purchase of a new sewer/storm sewer cleaning truck to restore one to the Sewer Fund that was previously transferred to Stormwater.

Although we are gearing up to meet new permit requirements including addressing water quality issues associated with the Chesapeake Bay TMDL we are hopeful that we can avoid any increases to the stormwater rate for at least the next several years.

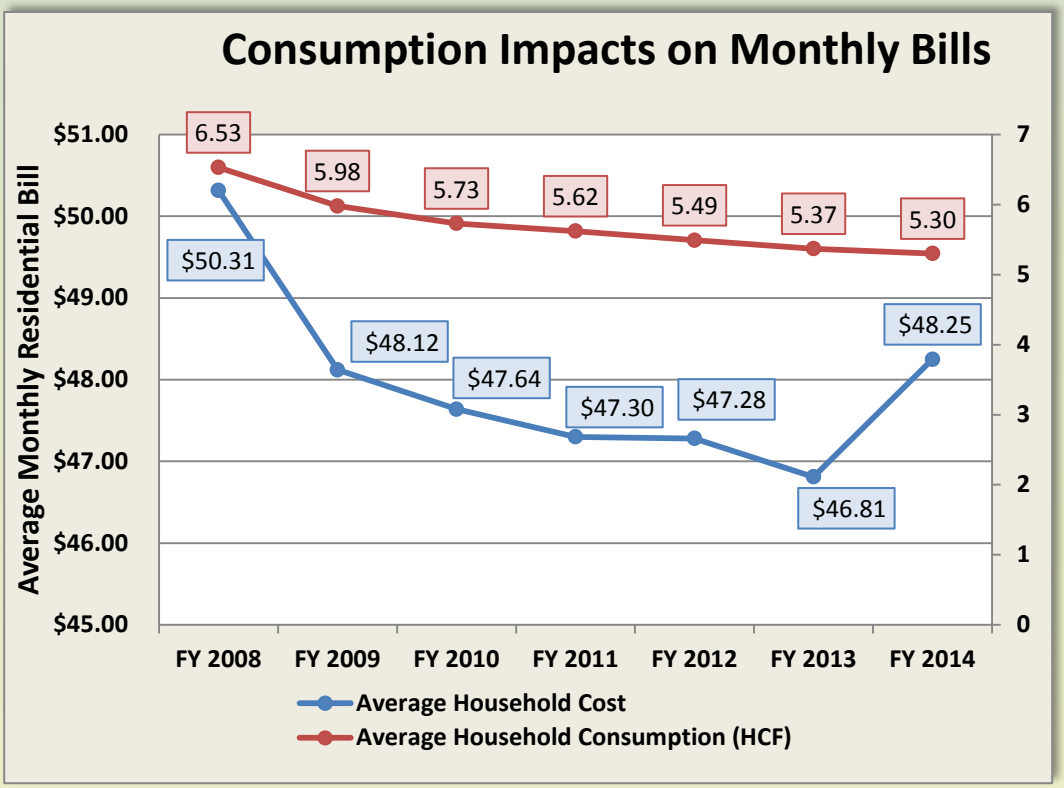
Rate Analysis

The rate adjustments proposed in this report will result in a typical monthly water and sewer bill increase of $2.35 for a residential customer using 7 hcf of water per month or approximately 3.8% increase. The table below provides a comparison of typical monthly water and sewer bills for a cross section of the customer base.

Monthly Bill Impact

Customer Type	Monthly Volume	Current Bill	**Proposed Bill**	% Increase
Residential (5/8" meter)	7 hcf	$61.90	**$64.25**	3.8%
Commercial (2" meter)	60 hcf	$501.49	**$520.49**	3.8%
Industrial (8" meter)	1000 hcf	$8,213.69	**$8,443.69**	2.8%

Since FY 2008 when the actual household consumption is factored in with the applicable water and sewer rates at the actual average household water and sewer bill has declined from $50.31 per month in FY 2008 to $48.25 in FY 2014. The average bill is calculated by multiplying the average monthly household consumption by the prevailing water and sewer rates and adding the monthly service fee. This is attributable to the continuous decline in residential consumption. The figure below illustrates the change in average household water and sewer bills since FY 2008.



Monthly Service Charge per Meter Size

As we presented last year although the number of households are increasing the average household consumption continues to decline. With over 90% of costs being fixed it is important that we continue to take steps to stabilize the revenue by minimizing increases in the volumetric rates and instead shifting more of the increases to the fixed monthly service charge. It is recommended that we increase the fee per equivalent meter by $2.00. Revenues from this increase will be divided between the water and sewer fund as they were last year. One third of the revenue ($0.66) will be allocated to Water and two thirds ($1.34) will be allocated to Sewer. This is approximately the ratio of debt service between the two funds.

Water Volume Rate

It is recommended that the water volume rate be increased by 2% in FY 2015. This increase is needed to cover increases in chemicals, utilities, and materials but more importantly it allows continuous progress on water line replacement. As mentioned above there are over $40 million in high priority needs for water distribution system replacement that should be addressed within the next 10 years. Without adequate funding, water system renewal will fall further and further behind.

Sewer Volume Rate

There is no sewer volume rate increase proposed for FY 2015. The City's CSO Special Order dictates that we maintain the average annual sewer bill at 1.25% of the Median Household Income (MHI). As of July 1, 2013 the average annual sewer bill was 1.32% of the MHI.

Sewer Only Rate

It is recommended that $1.34, the portion of the fixed charge increase attributable to the sewer fund, be added to the current sewer only rate. The proposed new sewer only rate would be $45.92 which is a 3.0% increase.

Stormwater Rate

As discussed above it is recommended the stormwater rate remain at $4.00 per sfu per month.

Industrial Surcharges

These charges are designed to recover the cost of treating high strength sewerage which is measured in pounds of biological oxygen demand (BOD) or total suspended solids (TSS) over the amounts assumed to be included in domestic sewerage. There a total of 19 industrial pretreatment permits of those, seven are currently billed for high strength BOD and TSS. Rock Tenn and Frito-Lay are billed based on contract rates.

A comparison between the current rates and the actual cost of treating BOD and TSS is shown in the following table *"Pretreatment Cost Analysis"*.

Pretreatment Cost Analysis

	Current Rate	Actual Cost	% Difference	Proposed Rate (+5%)
BOD charge / 100 lbs.	$22.40	$31.53	40.8%	**$23.52**
TSS charge / 100 lbs.	$25.33	$27.55	8.8%	**$26.60**

The BOD and TSS rates included in the above table are based on a cost of service analysis that was used to determine the contract rates charged to Rock Tenn and Frito-Lay.

Continuing with the proposed strategy from last year, we recommend that the current BOD and TSS rates be increased 5% to more closely recover the actual cost of service. In future years the BOD rate should increase at a faster pace than the TSS due to the large difference in actual cost of service.

Septic Hauler Charges

There are currently 22 permitted septic haulers that dispose of septic material at the Wastewater Treatment Plant plus approximately 40 large companies that have contracts with the City to dispose their septic material at the plant. Currently the septic hauler rates do not recover the actual cost of providing this service.

If the charges are based on the average concentrations of BOD and TSS in septic material that are treated in the wastewater plant, the charge for a 2,500 gallons truck load of septic material would be as shown in the following table.

Actual Septage Disposal Costs

	Lbs.	Rate / lb.	Charge
BOD	155	$.3153	$48.87
TSS	730	$.2755	$201.12
Administration*			$50.00
Total for a 2,500 gallon truck load			**$299.99**
Charge for each additional 500 gallons			$40.23

* Administration includes approximately 4 hours of City time to register a septic hauler at the wastewater plant, take PH samples, and record information for billing purposes.

The BOD and TSS rates included in the above table are based on a cost of service analysis that was used to determine the contract rates charged to Frito-Lay and Rock Tenn.

Revenues from septic haulers and customers with contracts that dispose of waste in the Wastewater Treatment Plant have averaged $350,000 over the past five years. The current minimum septic hauler charge is $204.90 and applies to all trucks that carry up to 2,500 gallons of septic material. The current septic hauler charge increases by $34.74 for every 500 gallon increase in the septic carrying capacity of a truck.

Continuing with the proposed strategy from last year, we recommend that current septic hauler charges be increased 5% per year until fees match the actual cost of providing the service. The resulting rate for FY 2015 would be $215.15 for a 2,500 gallon truck load and $36.48 for each additional 500 gallons.

Connection and Availability Fees

There are no proposed increases in these fees for FY 2015.

Proposed Water and Sewer Rates

Below is a comparison of the current water and sewer rates to the rates proposed for City Council approval, effective July 1, 2014.

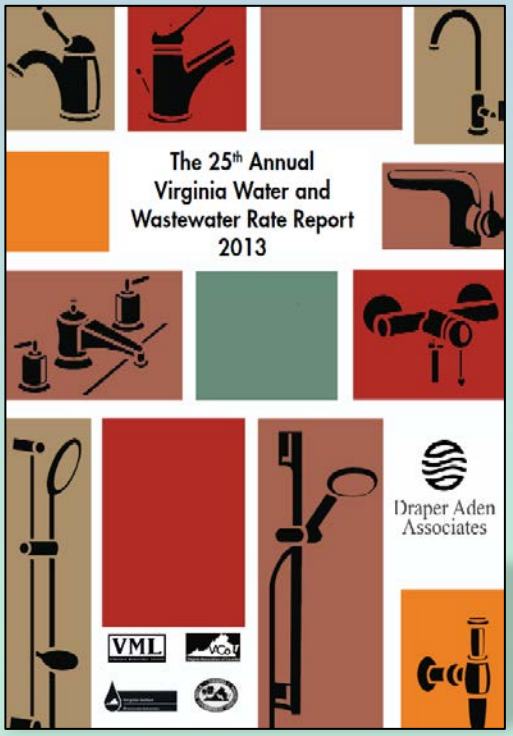
Water and Sewer Rates

		Proposed	%
	FY 2014	FY 2015	**Increase**
Water			
Volume charge / hcf	$2.38	$2.43	**2%**
Sewer			
Volume charge / hcf	5.65	5.65	**0%**
BOD charge / 100 lbs	22.40	23.52	**5%**
TSS charge / 100 lbs.	25.33	26.60	**5%**
Septic hauler charge	204.90	215.15	**5%**
Industrial permit fee	varies	varies	**0%**
Sewer only	44.58	45.92	**3%**
Stormwater			
Rater per sfu per month	$4.00	$4.00	**0%**
Fire Protection			
Hydrants & 8” or smaller fire lines	19.79	19.79	**0%**
10” fire lines	35.53	35.53	**0%**
12” fire lines	56.38	56.38	**0%**
Availability Fees			
Water	1220.00	1220.00	**0%**
Sewer	1950.00	1950.00	**0%**
Water Connection Fees			
¾” & 5/8” meters	1,045.00	1,045.00	**0%**
1” service – 5/8’ meter	1,100.00	1,100.00	**0%**
1” service – 1” meter	1,265.00	1,265.00	**0%**
Greater than 1”- minimum	1,265.00	1,265.00	**0%**
Sewer Connection Fees			
4” sewer line	1,210.00	1,210.00	**0%**
Greater than 4”- minimum	1,320.00	1,320.00	**0%**
Other Charges			
Monthly Service Charge	(See Table A)	(See Table A)	**(See Table A)**
Cut-on charge	15.00	15.00	**0%**
Cut-off charge	25.00	25.00	**0%**
Delinquent account fee	5%	5%	**0%**

Table A - Recommended Service Charge

Meter Size	Exist. Account Charge	Meter Factor	Fee per Equivalent Meter	Fee per Meter Size	Total Service Charge
5/8”	$3.69	1.0	$4.00	$4.00	**$7.69**
3/4”	$3.69	1.5	$4.00	$6.00	**$9.69**
1”	$3.69	2.5	$4.00	$10.00	**$13.69**
1-1/2”	$3.69	5.0	$4.00	$20.00	**$23.69**
2”	$3.69	8.0	$4.00	$32.00	**$35.69**
3”	$3.69	15.0	$4.00	$60.00	**$63.69**
4”	$3.69	30.0	$4.00	$120.00	**$123.69**
6”	$3.69	60.0	$4.00	$240.00	**$243.69**
8”	$3.69	90.0	$4.00	$360.00	**$363.69**
10”	$3.69	150.0	$4.00	$600.00	**$603.69**

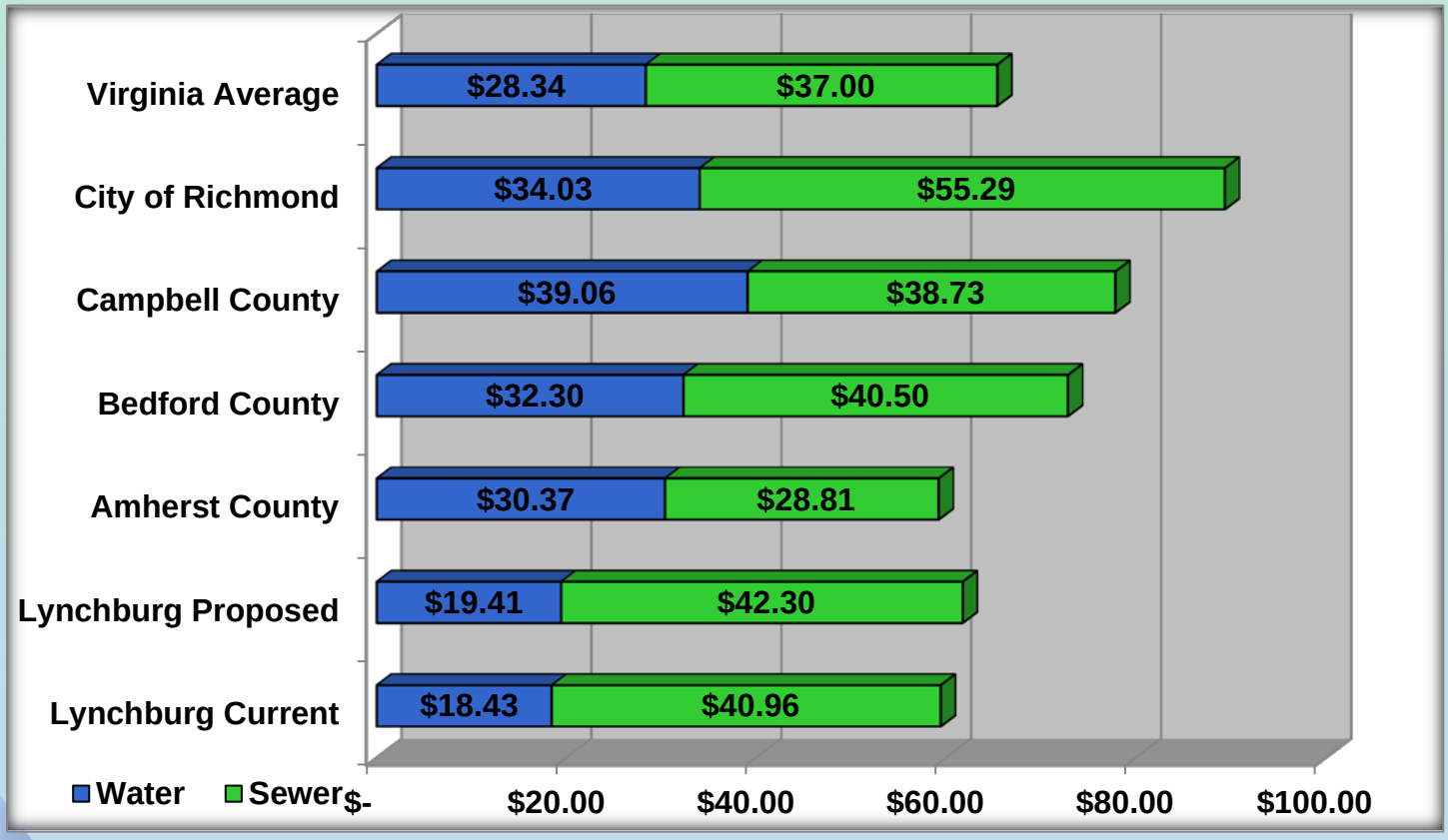
Rate Comparisons



A comparison of the City's water and sewer bills for a customer using 5,000 gallons (6.68 hcf) of water per month to other communities is shown below. (Information from other localities and the statewide average is based upon the "*25th Annual Virginia Water and Wastewater Report 2013*", prepared by Draper Aden Associates.)

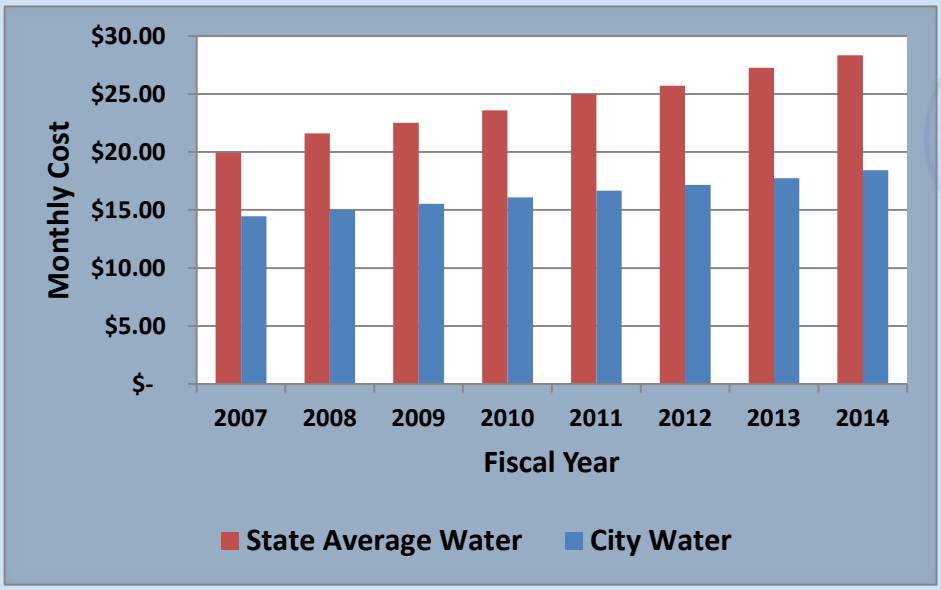
The City of Lynchburg's current combined water and sewer rates are among the lowest in the region including those of Amherst, Bedford, and Campbell Counties. Also, Lynchburg's rates for water and sewer are lower than the City of Richmond; the State's other CSO city.

Bill Comparisons



As shown below, the City of Lynchburg's water rate is $9.92 per month less than the statewide average. Since 2007 the average statewide water rates have increased by $8.40 per month while the City of Lynchburg's water rates have increased by only $3.95 per month.

Water Increases
(5000 Gallons per Month)



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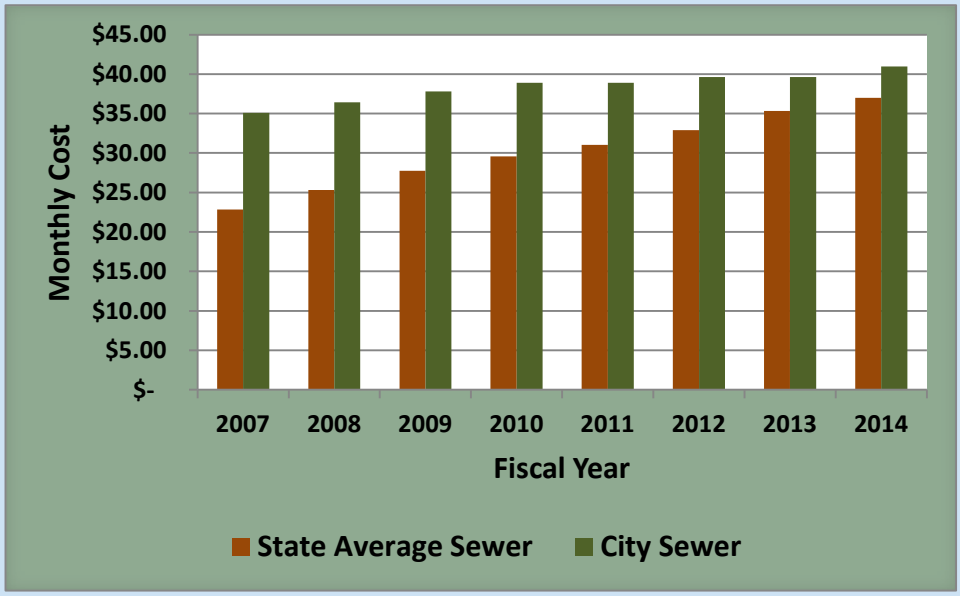
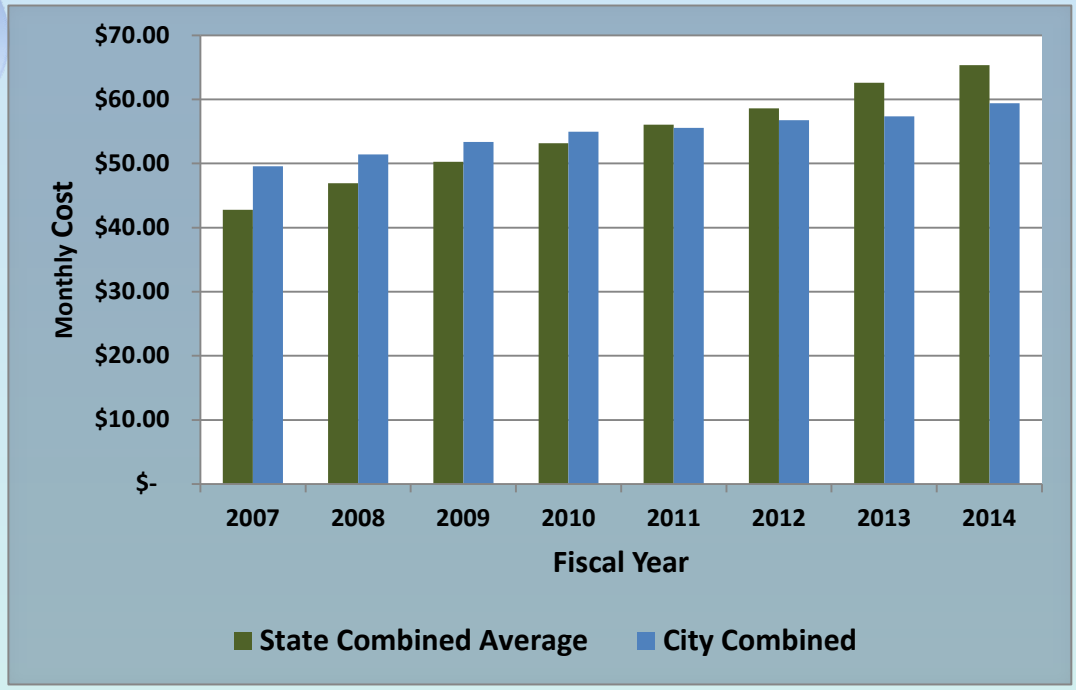
In 2007, the City of Lynchburg's monthly sewer charges were $12.24 more than the statewide average. Today that gap has closed to only $3.95, this despite the fact that Lynchburg is one of only two cities with an active CSO program. This is an indicator of not only a well-managed CSO Program but also the increasing regulatory and infrastructure burden on other utilities. The chart below provides an illustration.

Sewer Increases
(5000 Gallons per Month)



FY 2015 will be the fourth consecutive year that our combined water and sewer rates are below the statewide average and the difference continues to increase. City of Lynchburg water and sewer customers are currently paying $5.97 (10%) per month less than the average Virginian.

Combined Water and Sewer Increases
(5000 Gallons per Month)



Conclusion

It is extremely important that water and sewer rates reflect the true cost of providing the services. Adequately maintaining and renewing the water and sewer infrastructure is part of that cost. We need to have the vision to understand that deferring maintenance will have a long term detrimental effect on not only the health and safety of the community but also the economy.

Appendix A.

Projection Letter

PJ Sun, LLC
Providing Services to the
Water Industry

February 26, 2014

City Council
City of Lynchburg
900 Church Street
Lynchburg, Virginia 24504

We have assembled, from information provided by management, the accompanying financial projections of the Water, Sewer and Stormwater Funds of the City of Lynchburg for each of the six years ending June 30, 2019. The accompanying projections were prepared to help management evaluate the need for rate adjustments and develop strategies for funding capital improvements.

The financial projections have been prepared based on the assumptions that are described on the first page of the Water, Sewer and Stormwater projections that follow this letter report. An explanation of the proposed rate increases to be effective July 1, 2014 (FY 2015) and a brief overview of the rate increases that are likely to be needed after FY 2015 are included below.

PROPOSED RATE INCREASES

Over the past five years water and sewer rate increases have resulted in an average annual bill increase to most residential customers of 3.3%. As shown in Table 1 below this has been the result of annual increases in the water and sewer volume rates and a $2.00 increase in the account charge effective July 1, 2013.

TABLE 1: Actual and Proposed Water & Sewer Rates

	Actual 7/1/2009	Actual 7/1/2010	Actual 7/1/2011	Actual 7/1/2012	Actual 7/1/2013	Proposed 7/1/2014
Water Volume Rate	$2.05	$2.13	$2.22	$2.38	$2.38	$2.43
Sewer Volume Rate	$5.38	$5.54	$5.54	$5.65	$5.65	$5.65
Account Charge	$3.69	$3.69	$3.69	$3.69	$5.69	$7.69

It is noteworthy that the $3.69 account charge was increased by $2.00 effective July 1, 2013. The $2.00 increase in this fixed charge was scaled-up by equivalent meter size so that the account charge for large customers would be higher. Nationally many water utilities are increasing their fixed charges, rather than volume charges, in order to achieve a more stable and predictable revenue base. The City's account charge is currently much less than the comparable fixed charges of nearby communities.

Effective July 1, 2014 (FY 2015) the water volume rate is proposed to be increased 2% and the account charge is proposed to increase by an additional $2.00. Similar to last year, the $2.00 increase in the account charge will be scaled-up by equivalent meter size so that the account charge for larger customers will be higher. The $2.00 increase in the account charge and 2% increase in the water volume rate are estimated to generate approximately $400,000 in new annual water revenues and $400,000 in new sewer revenues. These increases equate to a 3% to 4% increase in the monthly water and sewer bill to most customers. However, the percentage increase will be higher for customers with monthly use less than 4 HCF (Hundred Cubic Feet), but still less than $2.20 per month.

As further explained in this letter report the proposed rate increases in Table 1 above are needed to ensure that the City continues to meet the Special Order Rate Requirement and Council's financial targets for debt service coverage of 1.20 and unreserved cash balance of 25% to 40% in the Water Fund.

SPECIAL ORDER REQUIREMENT

The Special Order requires the City to increase its sewer rates so that the average annual sewer bill is equal to at least 1.25% of MHI (Median Household Income). As shown in Table 2 below the City has met this requirement in FY 2013 and is expected to meet it in FY 2014 and FY 2015 based on the increases in the account charge noted above.

The FY 2013 estimated MHI shown in Table 2 below is based on numbers published by the U.S. Bureau of Labor and Statistics. For FY 2014 and FY 2015 we have assumed a 2% annual increase in MHI. The $2.00 increase in the account charge ($1.34 for sewer) is needed to (1) keep the annual sewer bill for an average customer over 1.25% of MHI and (2) pay for increasing operation and maintenance expenses and debt service on previously issued and new debt.

TABLE 2: Annual Sewer Bill as a % of MHI

	FY 2013	FY 2014	FY 2015
Annual Sewer Bill			
Sewer volume rate	**$5.65**	**$5.65**	**$5.65**
Avg. monthly use in HCF	**x7**	**x7**	**x7**
Volume charge	**39.55**	**39.55**	**39.55**
Account charge	**1.85**	**3.19**	**4.53**
Total monthly sewer bill	**41.40**	**42.74**	**44.08**
	x12	**x12**	**x12**
Annual sewer bill	**$496.80**	**$512.88**	**$528.96**
Estimated MHI	**$38,340**	**$38,823**	**$39,600**
Annual Sewer Bill as a % of MHI	**1.30%**	**1.32%**	**1.34%**

WATER FUND

Over the past five years annual water capital expenditures have averaged $4.7 million. During this time period both water treatment plants were renewed and upgraded and several water tanks were rehabilitated. Further, the Pedlar Dam and raw water lines were evaluated and reported to be in good condition considering their age. After FY 2014 annual capital expenditures in the Water Fund are projected to average $3.0 million. This is approximately 35% less than the average annual capital expenditures over the past five years. However, close to 90% of the annual capital expenditures after FY 2014 are earmarked for distribution network improvements. This level of annual expenditures will not be sufficient to rehab or replace the oldest and most vulnerable water mains in the City. Approximately $5 million is needed annually over the next decade to address the most critical water line needs. Many of these water mains are in the Downtown sections of the City.

A summary of the projected activity in the Water Capital Fund from FY 2014 to FY 2019 is included in Table 3 below.

TABLE 3: Projected Water Capital Fund Activity
(In $000's)

Year	Beginning Funds	Operating Transfers	New Borrowing	CIP Project Expenditures	Ending Funds
FY 2014	$2,653	$800	$4,200	-$5,261	$2,392
FY 2015	2,392	800	5,000	-3,330	4,862
FY 2016	4,862	800	-	-3,356	2,306
FY 2017	2,306	800	3,500	-3,642	2,964
FY 2018	2,964	800	-	-2,016	1,748
FY 2019	1,748	800	1,500	-2,785	1,263

Many of the water capital projects over the past two years and in FY 2014 have or will be been funded with a bank line of credit. Repayment of the line of credit and a portion of future water capital expenditures in FY 2015 and FY 2016 are scheduled to be funded from General Obligation bond proceeds approximating $14.4 million. We understand that the General Obligation bond is scheduled to occur in the summer of 2014.

For most of the past five years (FY 2009 to FY 2013) the financial results in the Water Fund have been above Council's minimum financial target of 1.20 debt coverage and an unreserved cash balance of 25% to 40% of budget. Financial projections of the Water Fund follow this letter. The financial projections are based on the rate increases shown in Table 1 above plus continuation of 2% annual increases in the water volume rate and the $2.00 increase in the account charge. The financial projections indicate that the debt coverage ratio in FY 2014 and FY 2015 will be 1.35 and 1.34, respectively.

Table 4 on the following page presents the projected debt coverage ratio and unreserved cash balance as a percent of budget for the FY 2014 to FY 2019 projection period.

TABLE 4: Projected Water Fund Debt Coverage & Unreserved Cash Balances as a % of Budget

Year	Debt Coverage Ratio	Unreserved Cash % of Budget
FY 2014	1.35	51%
FY 2015	1.34	49%
FY 2016	1.20	45%
FY 2017	1.26	44%
FY 2018	1.34	45%
FY 2019	1.46	49%

The debt coverage ratio decreases in FY 2016 because it is assumed that the contract water rate charged to Bedford County will be discounted by approximately 25%. This discount is likely needed in order to keep Bedford County as a City water customer. The unreserved cash balance as a percent of budget is projected to be higher than Council's 25% to 40% target. This was done in order to provide additional reserves in the event that Bedford County ceases to be a contract customer after FY 2016 as explained below.

As of the date of this letter it is unclear if Bedford County will continue to be a long term contract customer after FY 2016. We have assumed that the City will continue to service the Forest area of Bedford County but at a discount of approximately 25% to the current contract water rate. Bedford County is currently evaluating other options for serving the Forest area. If Bedford County ceases to be a contract customer the Water Fund would lose over $1.0 million in annual net revenue over and above the revenues to be derived with the 25% discount. This is equivalent to a 12% annual water rate increase. Contingency plans are currently being developed in the event Bedford County ceases to be a City water customer. These plans include a combination of rate increases and temporary reductions in Council's debt coverage target.

SEWER FUND

Over the past five years annual sewer capital expenditures have averaged $23.5 million. Almost 80% of the average annual capital expenditures have been related to the CSO (Combined Sewer Overflow) Program. Based on the terms of the current Special Order, which is based on full separation in the CSO areas of the City, this level of capital spending may need to continue indefinitely.

The Water Resources Department has recently submitted an updated Long Term Control Plan related to the CSO Program. The updated plan provides for major expansion of flow capacity at the wastewater treatment plant in lieu of complete separation of the sewers in the CSO areas of the City. If the updated plan is accepted by the Virginia DEQ (Department of Environmental Quality) the CSO Program may be completed within the next 10 to 15 years at a cost of approximately $60.0 million. The Virginia DEQ is

currently evaluating the updated Long Term Control Plan. The Sewer Fund financial projections are based on the assumption that the plan will be approved.

The cost to complete the $60.0 million CSO program will be partially financed by a $30.0 million grant that was recently awarded to the City by the Commonwealth of Virginia. The remainder of the program will be financed with 0% loans from the Virginia Clean Water Revolving Loan Fund. Other major sewer capital expenditures planned over the FY 2014 to FY 2019 projection period include the replacement of the Burton Creek Interceptor and rehab and replacement of sewer mains. Much of the sewer main work will be focused in the Downtown sections of the City and will be done together with water main rehab and replacement projects. A summary of the projected activity in the Sewer Capital Fund from FY 2014 to FY 2019 is included in Table 5 below:

TABLE 5: Projected Sewer Capital Fund Activity ($ in $000's)

Year	Beginning Funds	Grant Proceeds	Operating Transfers	New Borrowing	CIP Project Expenditures	Ending Funds
FY 2014	$9,765	$3,656	$2,250	-	-$13,589	$2,082
FY 2015	2,082	7,760	2,000	5,750	-12,536	5,056
FY 2016	5,056	1,607	2,000	-	-6,447	2,216
FY 2017	2,216	8,577	2,000	17,207	-14,478	15,522
FY 2018	15,522	8,400	2,000	-	-20,659	5,263
FY 2019	5,263	-	2,000	1,900	-6,884	2,279

For all of the past five years (FY 2009 to FY 2013) the financial results in the Sewer Fund have been above Council's minimum financial criteria of 1.20 debt coverage and consistent with the Special Order requirement to keep an unreserved cash balance of less than 25% of the subsequent year's budgeted operating expenditures. Financial projections of the Sewer Fund follow this letter and are based on the rate increases shown in Table 1 above plus continuation of annual increases of $2.00 to the account charge. The financial projections indicate that the debt coverage ratio in FY 2014 and FY 2015 will be 1.28 and 1.22, respectively. Table 6 below presents the projected debt coverage ratio and unreserved cash balance as a percent of budget for the FY 2014 to FY 2019 projection period.

TABLE 6: Projected Sewer Fund Debt Coverage & Unreserved Cash Balances as a % of Budget

Year	Debt Coverage Ratio	Unreserved Cash % of Budget
FY 2014	1.28	28%
FY 2015	1.22	24%
FY 2016	1.21	20%
FY 2017	1.21	17%
FY 2018	1.25	16%
FY 2019	1.30	17%

STORMWATER FUND

The Stormwater Fund was implemented and the stormwater fee of $4.00 per month was approved, effective July 1, 2012. The new permit cycle effective July 1, 2013 and ending June 30, 2018 provides information to allow management to more clearly understand regulatory requirements and future environmental goals. In this regard, an initial stormwater master plan will be commissioned in FY 2014 at an approximate cost of $1.5 million. The initial master plan will define capital projects needed to meet the new stormwater permit requirements. The initial master plan will include a condition assessment of the stormwater system and also include efforts to map the stormwater system in the GIS.

No increase in the $4.00 per month stormwater charge is proposed at this time. Going forward it is clear that the stormwater fee will need to increase but it is not possible to predict with any confidence when an increase will be needed. Once the master plan is developed information will be available to better assess the need for future increases in the stormwater fee.

Sincerely,

Paul J. Cumiskey

We the undersigned have participated in the preparation and review of the attached financial projections and to the best of our knowledge believe they reasonably present the expected capital expenditures, borrowings, revenues and expenses, and cash flows related to the City's Water, Sewer and Stormwater Funds for the projection period. Further, to the best of our knowledge we have made available to you all significant information that we believe is relevant to the financial projections.

Timothy A. Mitchell, P.E., Director

John Rosser, CPA, Financial Professional IV

Appendix B.

Financial Projections

WATER FUND
FINANCIAL PROJECTIONS
FY 2014 to FY 2019

WATER FUND KEY ASSUMPTIONS

1. Annual water production will average 10.60 MGD during the projection period. Over the past five years annual water production has averaged 10.66 MGD and has ranged from 10.04 MGD in FY 2012 to 10.74 MGD in FY 2011.

2. The annual volume of water billed to non-contract customers is estimated at 3.100 million HCF for each year during the projection period. Over the past five years the annual water volume billed to non-contract customers has averaged 3.147 million HCF and has ranged from 3.101 million HCF in FY 2012 to 3.187 million HCF in FY 2011.

3. The annual volume of water billed to contract customers (Amherst, Bedford, Campbell, Rock Tenn and Frito-Lay) is estimated at 1.446 million HCF in FY 2014 and is assumed to increase 1% per year despite the assumed reduction in volume from Amherst due to a phased closure of a regional training academy. Bedford County is assumed to continue buy all its water needs in the Forest area from the City. Over the past five years the annual volume of water sold to contract customers has averaged 1.487 million HCF and has ranged from 1.384 HCF in FY 2012 to 1.670 HCF in FY 2009.

4. The water volume rate is assumed to increase 2% per year during the projection period. The Account / Fixed charge is also assumed to increase $2.00 ($.66 for water and $1.34 for sewer) per year per equivalent 5/8" water meter during the projection period.

5. Water rates applicable to Amherst and Campbell County are assumed to increase 2% per year. The water rate for Bedford County is assumed to be reduced by approximately 25% in FY 2016 in connection with negotiations to retain Bedford County as a contract customer. Water rates applicable to Rock Tenn and Frito-Lay are based on recently proposed contract rates which are being negotiated.

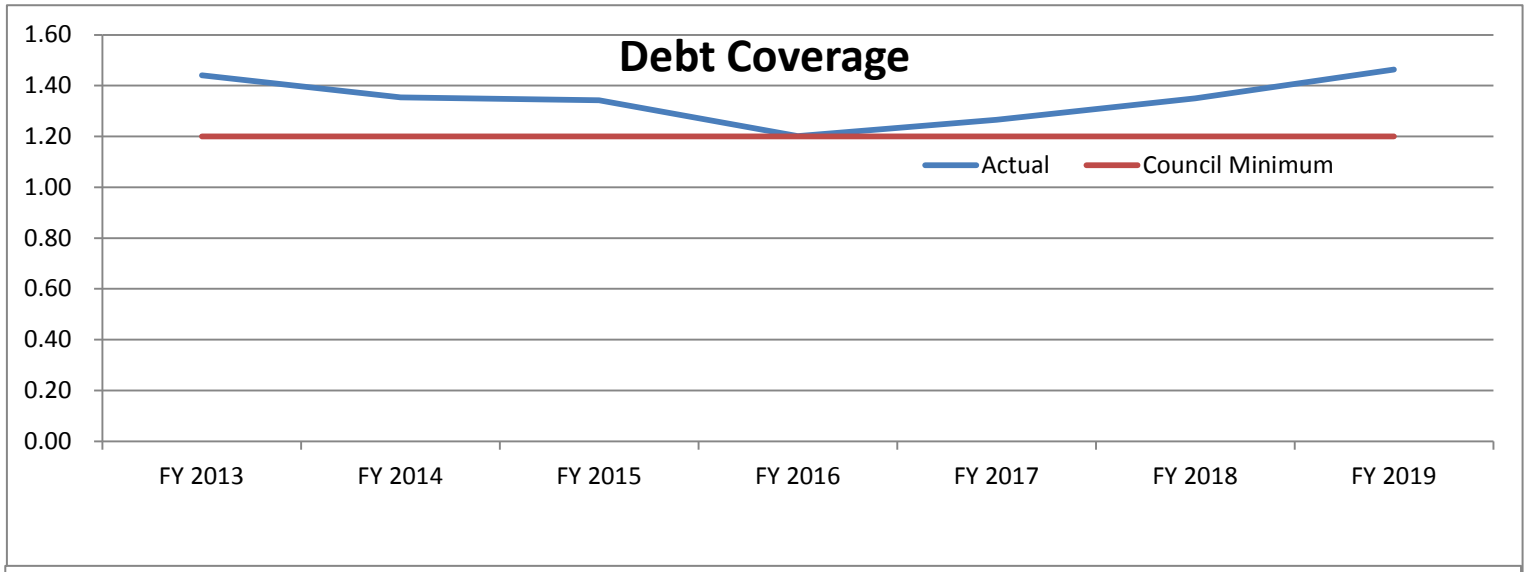
6. FY 2015 operating expenses are based on preliminary budget submission documents ; operating expenses after FY 2015 are assumed to increase 3% per year.

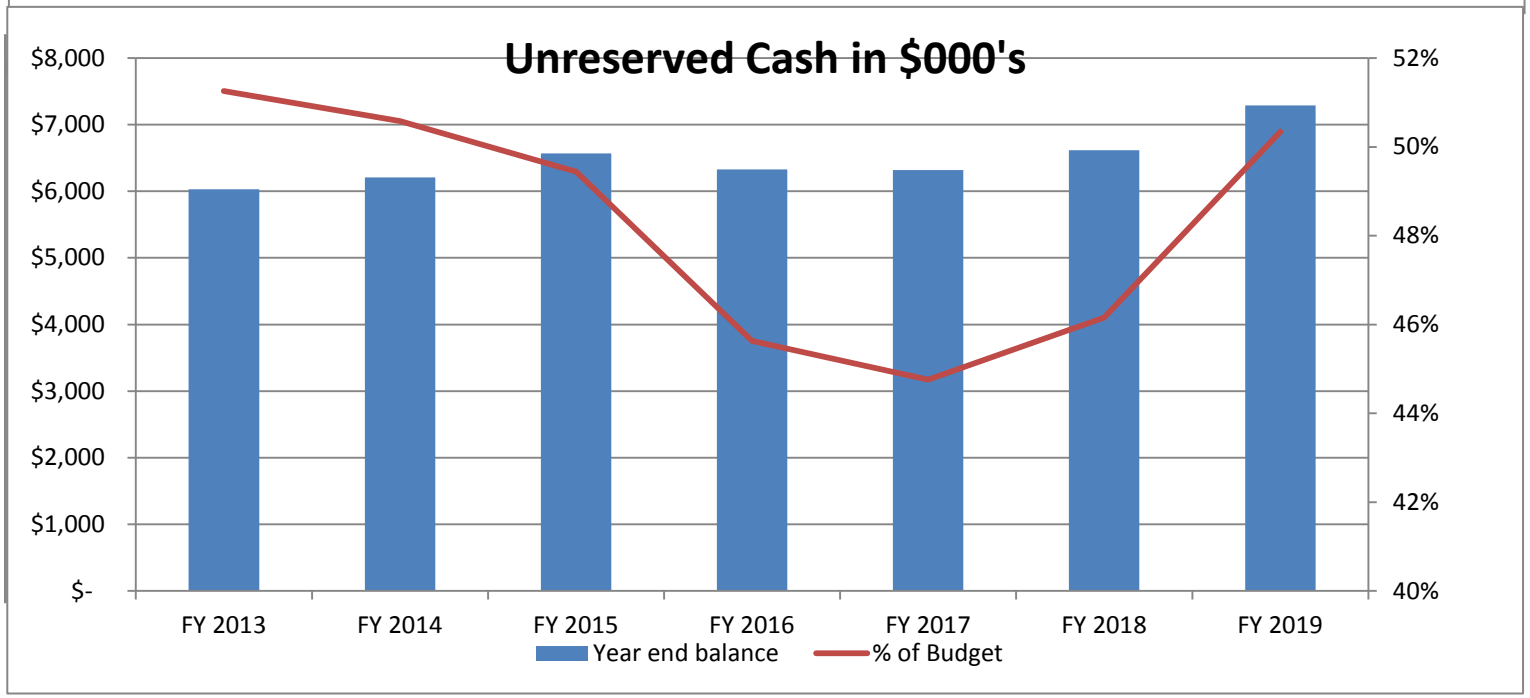
7. There are approximately 66.15 equivalent full time approved staff position in Water Fund departments in FY 2014. Three additional positions are proposed for FY 2015. No new positions are assumed from FY 2016 to FY 2019.

8. Short term line of credit financing is assumed to be available at 2%; long term debt financing is assumed to be available at 4.0%, 30 year repayment terms.

9. Additional assumptions are included as part of the notes that are included on the following financial projections.

WATER FUND


Debt Coverage
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Actual
Council Minimum
FY 2013
FY 2014
FY 2015
FY 2016
FY 2017
FY 2018
FY 2019


Unreserved Cash in $000's
$8,000
$7,000
$6,000
$5,000
$4,000
$3,000
$2,000
$1,000
$-
52%
50%
48%
46%
44%
42%
40%
FY 2013
FY 2014
FY 2015
FY 2016
FY 2017
FY 2018
FY 2019
Year end balance
% of Budget

CITY OF LYNCHBURG
WATER CAPITAL FINANCING PLAN

	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
BEGINNING FUNDS	**$2,653,291**	**$2,392,286**	**$4,861,986**	**$2,306,136**	**$2,964,136**	**$1,748,136**
RECEIPTS						
Transfers	800,000	800,000	800,000	800,000	800,000	800,000
LOC borrowing	4,200,000	-	-	-	-	-
G.O. borrowings, net proceeds	-	5,000,000	-	3,500,000	-	1,500,000
total receipts	**5,000,000**	**5,800,000**	**800,000**	**4,300,000**	**800,000**	**2,300,000**
EXPENDITURES						
Annual water petitions	-	-	-	-	-	-
Distribution system improvements	3,341,648	2,745,300	2,905,850	3,217,000	1,685,000	2,575,000
Water main replacements	673,887	-	-	-	-	-
Annual facility improvements	750,500	-	300,000	300,000	176,000	200,000
Water tank rehabilitation	48,200	235,000	150,000	125,000	155,000	10,000
Water tank 2 (PER)	400,000	350,000	-	-	-	-
Other	46,770	-	-	-	-	-
total expenditures	**5,261,005**	**3,330,300**	**3,355,850**	**3,642,000**	**2,016,000**	**2,785,000**
ENDING FUNDS	**$2,392,286**	**$4,861,986**	**$2,306,136**	**$2,964,136**	**$1,748,136**	**$1,263,136**

Notes:
1. Beginning funds in FY 2014 equals cash and investments in the Water Capital Fund plus SNAP investments.
2. Cumulative Letter of credit (LOC) borrowing at June 30, 2013 totals $5,193,865.

CITY OF LYNCHBURG
PROJECTED STATEMENT OF WATER FUND DEBT COVERAGE

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Revenues:							
Charges for services	$10,552,956	$10,676,938	$11,650,558	$12,099,969	$12,553,858	$13,012,327	$13,475,486
Water contracts	2,432,319	2,576,973	2,654,950	2,308,084	2,356,064	2,428,896	2,491,183
Interest and other	352,651	274,482	294,482	294,482	294,482	294,482	294,482
total revenues	13,337,926	13,528,393	14,599,990	14,702,535	15,204,403	15,735,705	16,261,151
Expenses:							
Water treatment	2,747,640	3,030,213	3,283,589	3,382,097	3,483,560	3,588,066	3,695,708
Water line maintenance	1,370,968	1,673,780	1,744,553	1,796,890	1,850,796	1,906,320	1,963,510
Meter reading	789,231	895,279	899,065	926,037	953,818	982,433	1,011,906
Administration / engineering	2,963,101	3,060,775	3,422,003	3,524,663	3,630,403	3,739,315	3,851,495
Non-departmental	480,529	227,713	254,600	261,488	268,583	275,890	283,417
Capitalizable cost (1)	(144,554)	(148,891)	(160,000)	(164,800)	(169,744)	(174,836)	(180,081)
total expenses	8,206,915	8,738,869	9,443,810	9,726,374	10,017,416	10,317,188	10,625,954
Operating income	5,131,011	4,789,524	5,156,180	4,976,161	5,186,988	5,418,517	5,635,197
Debt Service	3,560,120	3,536,606	3,839,266	4,140,768	4,097,185	4,015,515	3,852,222
Net Revenue	**$1,570,891**	**$1,252,918**	**$1,316,914**	**$835,392**	**$1,089,802**	**$1,403,002**	**$1,782,975**
Debt Coverage Ratio	1.44	1.35	1.34	1.20	1.27	1.35	1.46

Notes:
1. Capitalizable cost includes internal labor charges applicable to time spent on capital project activities.

CITY OF LYNCHBURG
PROJECTED STATEMENT OF WATER FUND SOURCES & USES OF CASH

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Sources of Cash:							
Beginning cash balance	$8,177,638	$9,311,413	$9,238,430	$12,075,885	$9,290,627	$9,948,685	$9,040,851
Net revenue plus capitalized costs	1,426,337	1,104,027	1,156,914	670,592	920,058	1,228,166	1,602,894
LOC borrowing	5,114,160	4,200,000	-	-	-	-	-
Federal grant	-	-	-	-	-	-	-
G.O. bond proceeds (1)	-	-	14,400,000		3,500,000		1,500,000
total sources of cash	**14,718,135**	**14,615,440**	**24,795,345**	**12,746,477**	**13,710,685**	**11,176,851**	**12,143,745**
Uses of Cash:							
Capital Fund expenditures	5,516,906	5,261,005	3,330,300	3,355,850	3,642,000	2,016,000	2,785,000
Other capital expenditures	-	116,005	75,000	100,000	120,000	120,000	120,000
Repayment of LOC borrowing	-	-	9,314,160	-	-	-	-
Payments to other organizations	-	-	-	-	-	-	-
Change in working capital items	(110,184)	-	-	-	-	-	-
total uses of cash	**5,406,722**	**5,377,010**	**12,719,460**	**3,455,850**	**3,762,000**	**2,136,000**	**2,905,000**
Ending Cash	**$9,311,413**	**$9,238,430**	**$12,075,885**	**$9,290,627**	**$9,948,685**	**$9,040,851**	**$9,238,745**

Cash in Capital Fund	$2,653,291	$2,392,286	$4,861,986	$2,306,136	$2,964,136	$1,748,136	$1,263,136
Customer deposits	626,825	636,825	646,825	656,825	666,825	676,825	686,825
Unrestricted cash	6,031,297	6,209,319	6,567,074	6,327,666	6,317,724	6,615,890	7,288,784
Total cash	**$9,311,413**	**$9,238,430**	**$12,075,885**	**$9,290,627**	**$9,948,685**	**$9,040,851**	**$9,238,745**
Unrestricted cash as a % of budget	51%	51%	49%	46%	45%	46%	50%

Notes:

1. G.O. Bond in FY 2015 based on following:

LOC borrowing to June 30, 2013	$ 5,193,865
Planned LOC borrowing in FY 2014	4,200,000
Planned new borrowing in FY 2015	5,000,000
	$ 14,393,865

CITY OF LYNCHBURG
WATER CONTRACTS

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
AMHERST							
HCF of use	42,130	35,700	35,000	30,000	25,000	20,000	15,000
Rate	1.97	2.00	2.00	2.04	2.08	2.12	2.16
Current year bills	$82,880	$71,400	$70,000	$61,200	$52,020	$42,448	$32,473
Prior year settlement	($8,860)	(210)	-	-	-	-	-
	$74,020	$71,190	$70,000	$61,200	$52,020	$42,448	$32,473
BEDFORD							
HCF of use	756,927	758,000	765,000	780,300	795,906	811,824	828,061
Rate	1.97	1.98	1.98	1.48	1.50	1.54	1.57
Current year bills	$1,488,738	$1,500,840	$1,514,700	$1,154,844	$1,193,859	$1,250,209	$1,300,055
Prior year settlement	(134,355)	(1,874)	-	-	-	-	-
	$1,354,383	$1,498,966	$1,514,700	$1,154,844	$1,193,859	$1,250,209	$1,300,055
CAMPBELL							
HCF of use	256,960	256,000	256,000	256,000	256,000	256,000	256,000
Rate	1.99	2.00	2.00	2.04	2.08	2.12	2.16
Current year bills	$511,344	$512,000	$512,000	$522,240	$532,685	$543,338	$554,205
Prior year settlement	3,384	(5,683)	-	-	-	-	-
	$514,728	$506,317	$512,000	$522,240	$532,685	$543,338	$554,205
ROCK TENN							
HCF of use	244,786	245,000	245,000	245,000	245,000	245,000	245,000
Rate	1.28	1.30	1.45	1.48	1.50	1.54	1.57
	$313,388	$318,500	$355,250	$362,600	$367,500	$377,300	$384,650
FRITO-LAY							
HCF of use	140,381	140,000	140,000	140,000	140,000	140,000	140,000
Rate	1.25	1.30	1.45	1.48	1.50	1.54	1.57
	$175,800	$182,000	$203,000	$207,200	$210,000	$215,600	$219,800
	$2,432,319	**$2,576,973**	**$2,654,950**	**$2,308,084**	**$2,356,064**	**$2,428,896**	**$2,491,183**

Notes:
1. Amherst water use assumed to decrease as the Training Center is phased-out.
2. Forest area assumed to continue to be served by City; rate decreased in FY 2016 per potential contract renegotion.
3. Campbell water use includes water not used per existing take or pay contract.
4. Rock Tenn and Frito-Lay rates starting in FY 2015 based on preliminary cost of service rate calculations.

CITY OF LYNCHBURG
CHARGES FOR SERVICES

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Water Sales							
HCF of use	3,106,133	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000
Water volume rate	2.38	2.38	2.43	2.48	2.53	2.58	2.63
	$7,392,597	$7,378,000	$7,525,560	$7,676,071	$7,829,593	$7,986,184	$8,145,908
% increase in revenues	*4.00%*	-0.20%	2.00%	2.00%	2.00%	2.00%	2.00%
All Other:							
Account / Fixed charge	618,168	918,000	1,168,000	1,418,000	1,668,000	1,918,000	2,168,000
Sewer Fund charge	1,620,000	1,580,000	1,630,000	1,678,900	1,729,267	1,781,145	1,834,579
Hydrant rentals-water	14,910	3,000	3,000	3,000	3,000	3,000	3,000
Hydrant rentals-equip.	14,670	4,500	10,000	10,000	10,000	10,000	10,000
General Fund hydrants	351,900	358,938	879,498	879,498	879,498	879,498	879,498
Cut-on/off-late fees	102,132	100,000	100,000	100,000	100,000	100,000	100,000
Meter removal	6,983	7,500	7,500	7,500	7,500	7,500	7,500
Delinquent account fee	86,317	85,000	85,000	85,000	85,000	85,000	85,000
Fire protection	101,905	102,000	102,000	102,000	102,000	102,000	102,000
Connection fee	115,288	50,000	50,000	50,000	50,000	50,000	50,000
Availability fee	82,992	60,000	60,000	60,000	60,000	60,000	60,000
Water cost plus & other	45,094	30,000	30,000	30,000	30,000	30,000	30,000
	3,160,359	3,298,938	4,124,998	4,423,898	4,724,265	5,026,143	5,329,577
	$10,552,956	**$10,676,938**	**$11,650,558**	**$12,099,969**	**$12,553,858**	**$13,012,327**	**$13,475,486**

Notes:

1. The water volume rate of $2.38 is assumed to increase 2% per year starting in July 2014.
2. Sewer Fund charge is designed to recover cost charged to the Adm. / Engineering Department that are applicable to the Sewer and Stormwater Fund. The Sewer Fund charge increases in FY 2015 due to additional staff positions assumed to be hired that will support the Sewer and Stormwater Fund.
3. Account / Fixed charge increases due to continuation of a $2.00 fixed charge by meter size equivalent effective July 1 of each year. Approximately one-third-of the fixed charge is allocated to the Water fund.
4. General Fund Hydrant charges assumed to increase from $358,938 to $879,498 in FY 2015 for calculated costs of providing fire protection in City.
5. No increase in the private fire protection fees assumed during the projection period.
6. Availability and connection fee revenues reduced in FY 2014 from FY 2013 actual levels due to uncertainty in real estate market.

CITY OF LYNCHBURG
INTEREST & OTHER WATER REVENUES

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Investment earnings	2,729	30,000	50,000	50,000	50,000	50,000	50,000
IRS interest rebate	251,598	233,482	233,482	233,482	233,482	233,482	233,482
Federal grants	81,789	-	-	-	-	-	-
All other	16,535	11,000	11,000	11,000	11,000	11,000	11,000
	$352,651	**$274,482**	**$294,482**	**$294,482**	**$294,482**	**$294,482**	**$294,482**

Note:

1. Investment earnings in FY 2013 are net of a decrease in principal market valuation. Thereafter investment earnings are based on estimated average cash balances at a .05% interest earnings rate.
2. IRS rebate of Build America Bonds anticipated to be reduced in FY 2014.

CITY OF LYNCHBURG
ADMIN. / ENGINEERING

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Personal services	$1,277,512	$1,217,902	$1,350,369	$1,390,880	$1,432,606	$1,475,585	$1,519,852
Fringe benefits	459,802	447,557	508,456	523,710	539,421	555,604	572,272
Supplies & materials	48,866	43,973	47,450	48,874	50,340	51,850	53,405
Gasoline / fuel	7,893	8,553	8,502	8,757	9,020	9,290	9,569
Internal service charges	21,569	17,318	24,453	25,187	25,942	26,720	27,522
Rentals & leases	4,213	4,000	4,500	4,635	4,774	4,917	5,065
Communication charges	13,037	11,500	13,900	14,317	14,747	15,189	15,645
Contractual services	95,213	233,233	159,478	164,262	169,190	174,266	179,494
Training & travel	12,501	16,700	16,700	17,201	17,717	18,249	18,796
Indirect costs	807,321	852,890	1,099,940	1,132,938	1,166,926	1,201,934	1,237,992
City engineering charges	58,934	45,000	0	0	0	0	0
Self - insurance	146,529	146,529	146,529	150,925	155,453	160,116	164,920
Miscellaneous	9,711	15,620	15,700	16,171	16,656	17,156	17,670
Sub-total	**2,963,101**	**3,060,775**	**3,395,977**	**3,497,856**	**3,602,792**	**3,710,876**	**3,822,202**
Compensation adjustments	-	-	26,026	26,807	27,611	28,439	29,292
Total	**$2,963,101**	**$3,060,775**	**$3,422,003**	**$3,524,663**	**$3,630,403**	**$3,739,315**	**$3,851,495**

Notes:

1. 2015 amounts are based on budget worksheets submitted as part of the FY 2015 budget process.
2. Personal services in FY 2015 assumes 22.6 staff positions will be filled throughout the year.
3. Indirect costs in FY 2014 is based on the approved FY 2014 budget. FY 2015 amount is based on the FY 2012 Maximus Report.
4. City engineering charges are included as part of the indirect cost starting in FY 2015.
5. After FY 2015 all costs assumed to increase 3% per year unless noted otherwise.

CITY OF LYNCHBURG
WATER TREATMENT

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Personal services	$985,656	$1,029,326	$1,049,585	$1,081,073	$1,113,505	$1,146,910	$1,181,317
Fringe benefits	380,114	418,699	429,799	442,693	455,974	469,653	483,743
Supplies & materials	135,750	128,000	129,800	133,694	137,705	141,836	146,091
Chemicals	299,536	336,400	526,400	542,192	558,458	575,211	592,468
Gasoline / fuel	9,983	11,945	10,863	11,189	11,525	11,870	12,226
Internal service charges	32,775	32,015	31,360	32,301	33,270	34,268	35,296
Rentals & leases	2,213	4,000	4,000	4,120	4,244	4,371	4,502
Communication charges	10,490	11,000	12,200	12,566	12,943	13,331	13,731
Utilities	600,543	717,458	759,200	781,976	805,435	829,598	854,486
Contractual services	186,894	259,695	224,647	231,386	238,328	245,478	252,842
Training & travel	13,105	10,000	13,000	13,390	13,792	14,205	14,632
Misc., incl. operations fee	90,581	71,675	72,500	74,675	76,915	79,223	81,599
Sub-total	**2,747,640**	**3,030,213**	**3,263,354**	**3,361,255**	**3,462,092**	**3,565,955**	**3,672,934**
Compensation adjustment	-	-	20,235	20,842	21,467	22,111	22,775
Total	**$2,747,640**	**$3,030,213**	**$3,283,589**	**$3,382,097**	**$3,483,560**	**$3,588,066**	**$3,695,708**

Notes:

1. FY 2015 amounts are based on budget worksheets submitted as part of the FY 2015 budget process.
2. Personal services in FY 2015 assumes 24 staff positions will be filled throughout the year.
3. Cemicals and utilities in FY 2015 includes a contingency for incremental cost of treating James River water in dry weather periods.
4. After FY 2015 all costs assumed to increase 3% per year.

CITY OF LYNCHBURG
WATER LINE MAINTENANCE

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Personal services	$563,755	$600,151	$618,289	$636,838	$655,943	$675,621	$695,890
Fringe benefits	204,859	232,806	243,134	250,428	257,941	265,679	273,649
Supplies & materials	365,029	488,100	501,150	516,185	531,670	547,620	564,049
Gasoline / fuel	32,254	38,791	32,433	33,406	34,408	35,440	36,504
Internal service charges	91,198	103,306	129,588	133,476	137,480	141,604	145,852
Rentals & leases	1,068	3,500	3,500	3,605	3,713	3,825	3,939
Communication charges	2,422	3,400	3,200	3,296	3,395	3,497	3,602
Contractual services	113,429	199,406	197,244	203,161	209,256	215,534	222,000
Training & travel	3,562	3,750	3,750	3,863	3,978	4,098	4,221
Miscellaneous	(6,608)	570	570	587	605	623	642
Sub-total	**1,370,968**	**1,673,780**	**1,732,858**	**1,784,844**	**1,838,389**	**1,893,541**	**1,950,347**
Compensation adjustment	-	-	11,695	12,046	12,407	12,779	13,163
Total	**$1,370,968**	**$1,673,780**	**$1,744,553**	**$1,796,890**	**$1,850,796**	**$1,906,320**	**$1,963,510**

Notes:

1. FY 2015 amounts are based on budget worksheets submitted as part of the FY 2015 budget process.
2. Personal services in FY 2015 assumes 14.75 staff positions will be filled throughout the year.
3. After FY 2015 all costs assumed to increase 3% per year.

CITY OF LYNCHBURG
METER READING

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Personal services	$257,157	$264,985	$262,073	$269,935	$278,033	$286,374	$294,965
Fringe benefits	97,967	105,987	107,733	110,965	114,294	117,723	121,254
Supplies & materials	359,212	419,000	419,200	431,776	444,729	458,071	471,813
Gasoline / fuel	19,705	21,268	21,412	22,054	22,716	23,397	24,099
Internal service charges	26,644	35,973	35,605	36,673	37,773	38,907	40,074
Rentals & leases	85	100	100	103	106	109	113
Communication charges	2,730	3,500	3,500	3,605	3,713	3,825	3,939
Contractual services	24,030	42,466	42,466	43,740	45,052	46,404	47,796
Training & travel	-	2,000	2,000	2,060	2,122	2,185	2,251
Miscellaneous	1,701	-	-	-	-	-	-
Sub-total	**789,231**	**895,279**	**894,089**	**920,912**	**948,539**	**976,995**	**1,006,305**
Compensation adjustments	-	-	4,976	5,125	5,279	5,437	5,601
Total	**$789,231**	**$895,279**	**$899,065**	**$926,037**	**$953,818**	**$982,433**	**$1,011,906**

Notes:

1. FY 2015 amounts are based on budget worksheets submitted as part of the FY 2015 budget process.
2. Personal services in FY 2015 assumes 7.63 staff positions will be filled throughout the year.
3. After FY 2015 all costs assumed to increase 3% per year.

CITY OF LYNCHBURG
WATER NON-DEPARTMENTAL

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Financial audit	$21,025	$21,914	$24,200	$24,926	$25,674	$26,444	$27,237
Interest on customer deposits	3,586	3,408	5,700	5,871	6,047	6,229	6,415
OPEB/Retirees health/WC insurance	151,234	170,500	179,700	185,091	190,644	196,363	202,254
Utility billing upgrades & other	0	0	0	0	0	0	0
Allowance for doubtful accounts	19,674	6,891	20,000	20,600	21,218	21,855	22,510
Project costs charged to operations	285,010	25,000	25,000	25,000	25,000	25,000	25,000
	$480,529	**$227,713**	**$254,600**	**$261,488**	**$268,583**	**$275,890**	**$283,417**

Notes:

1. FY 2015 amounts are based on budget worksheets submitted as part of the FY 2015 budget process.
2. OPEB related cost based on best available information.
3. Project cost charged to operations in FY 2013 includes $285,010 related to Pedlar Raw Water Main Assessment Project.
4. After FY 2015 all costs assumed to increase 3% per year.
5. Non-departmental excludes legal and fiscal charges associated with future bond sales. These charges are paid for from the bond proceeds

CITY OF LYNCHBURG
WATER FUND BONDS PAYABLE AND DEBT SERVICE

	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
P&I on borrowings o/s @ 6/30/13 (1)	$3,458,991	$3,329,747	$3,308,015	$3,194,432	$3,042,762	$2,779,423
Interest on LOC borrowing	77,615	93,142	-	-	-	-
Interest only payments on G.O. Bonds						
$14.4 million issued in FY 2015	-	288,000	-	-	-	-
$3.5 million issued in FY 2017				70,000	140,000	-
$1.5 million issue in FY 2019						30,000
Level debt service payments on G.O. Bonds						
Level P&I on $14.4 million		128,377	832,753	832,753	832,753	832,753
Level P&I on $3.5 million						210,045
	$3,536,606	**$3,839,266**	**$4,140,768**	**$4,097,185**	**$4,015,515**	**$3,852,222**

Notes:

1. Based on Debt Book as of June 30, 2013.
2. Interest on LOC based on a 2.0% annual rate and paid May 1 and November 1 of each year.
3. $14.4 million G.O. issue assumed to occur in early FY 2015; Terms are assumed to be at 4%, 30 year repayment. First principal paymen assumed to occur May, 2015.
4. All other debt issues assumed to occur in the first quarter of years shown. Terms are 4%, 30 year repayment with the first two years interest only.

SEWER FUND
FINANCIAL PROJECTIONS
FY 2014 to FY 2019

SEWER FUND KEY ASSUMPTIONS

1. Annual sewer flow at the wastewater treatment plant (WWTP) will average 11.0 MGD during the projection period. Over the past five years WWTP flow has averaged 11.0 MGD and has ranged from 10.00 MGD in FY 2009 to 13.0 MGD in FY 2010.

2. The annual volume of wastewater billed to non-contract customers is estimated at 2.550 million HCF for each year during the projection period. Over the past five years the annual wastewater billed to non-contract customers has averaged 2.550 million HCF and has ranged from 2.513 million HCF in FY 2012 to 2.582 million HCF in FY 2010.

3. The annual wastewater flow applicable to Bedford and Campbell Counties is assumed to increase slightly each year; the flow applicable to Amherst is assumed to decrease by about 35% over the next five years due to a phased closure of a regional training center located in Amherst County.

4. No increase in the wastewater volume rate is assumed during the projection period. However, a $2.00 increase in the Account / Fixed charge ($.66 for water and $1.34 for sewer) per equivalent 5/8" meter is assumed each year during the projection period.

5. Sewer rates applicable to Rock Tenn and Frito-Lay are based on recently proposed rates that are currently being negotiated with the two companies. Septic hauler charges and industrial sur-charges are also assumed to increase 5% in FY 2015 and then 3% per year thereafter.

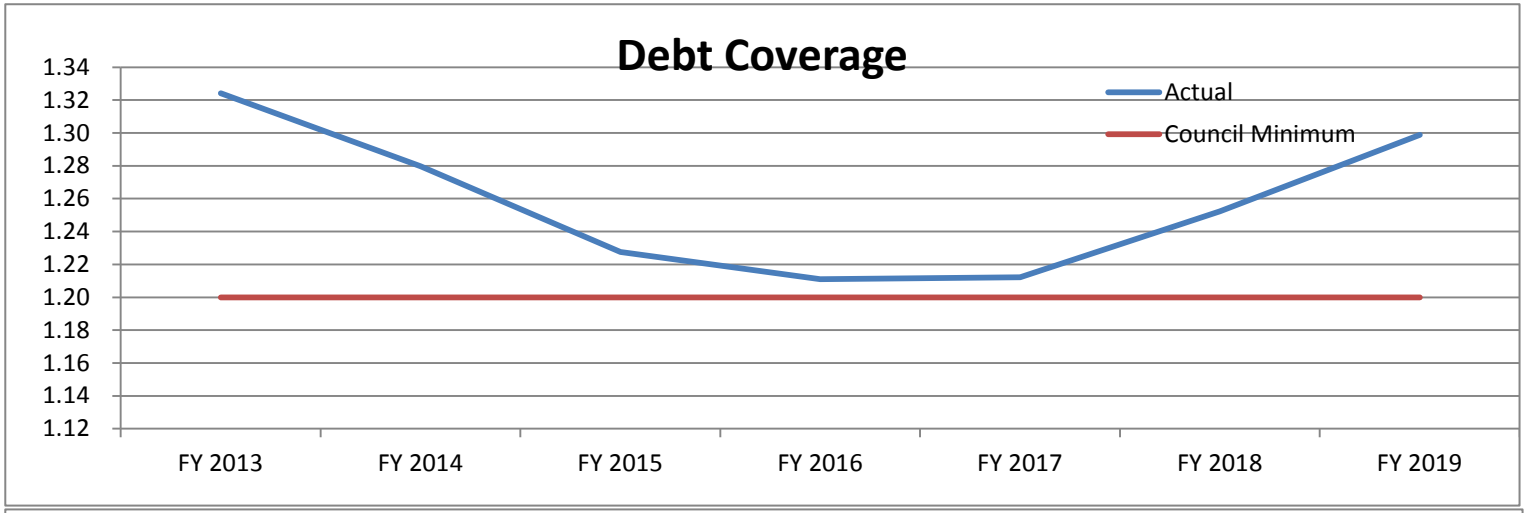
6. FY 2015 operating expenses are based on preliminary budget submission documents; operating expenses after FY 2015 are assumed to increase 3% per year.

7. There are approximately 50.45 equivalent full time approved staff positions in the Sewer Fund departments FY 2014. Two additional positions are proposed for FY 2015. No new positions are assumed from FY 2016 to FY 2019.

8. Short term line of credit financing is assumed to be available at 2%; long term financing is assumed to be available at 4.0%, 30 year repayment terms. Future borrowing with the VCWRLF is assumed to continue at 0%.

9. Additional assumptions are included as part of the notes that are included on the following financial projections.

SEWER FUND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1.32
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1.22
1.20
1.18
1.16
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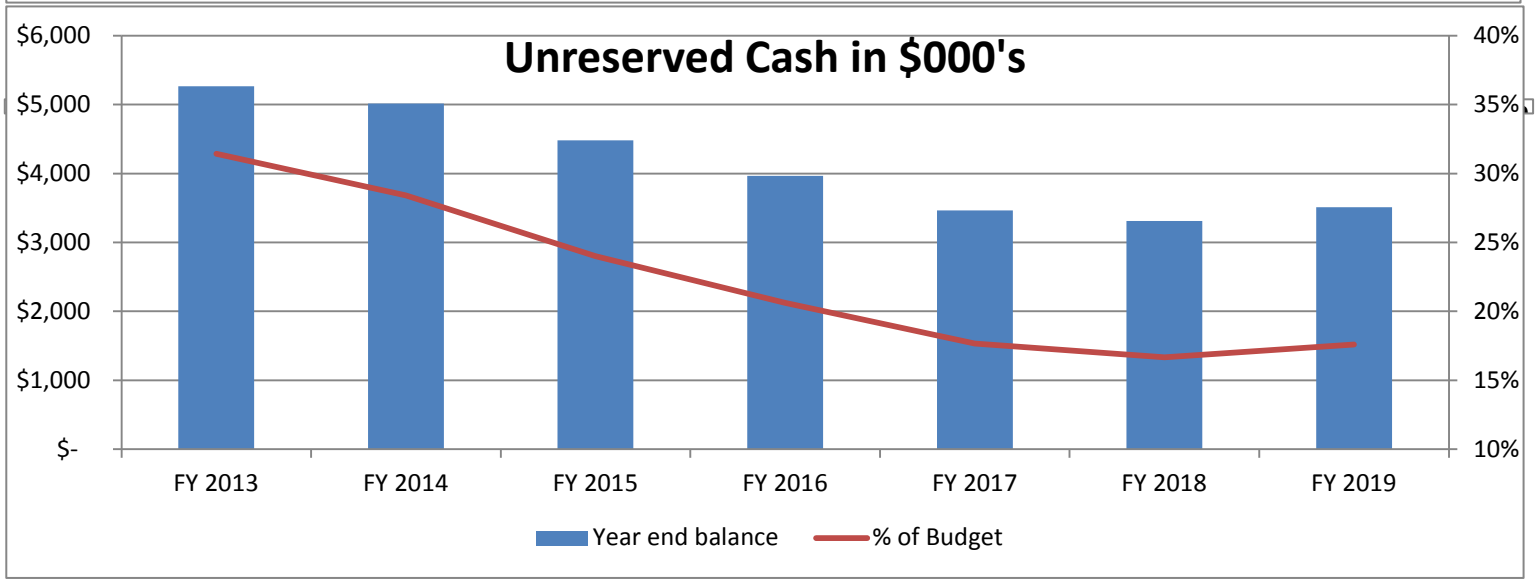
1.12
FY 2013
FY 2014
FY 2015
FY 2016
FY 2017
FY 2018
FY 2019
Actual
Council Minimum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$5,000
$4,000
$3,000
$2,000
$1,000
$-
40%
35%
30%
25%
20%
15%
10%
FY 2013
FY 2014
FY 2015
FY 2016
FY 2017
FY 2018
FY 2019
Year end balance
% of Budget

CITY OF LYNCHBURG
SEWER LOCAL CAPITAL FINANCING PLAN

	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
BEGINNING FUNDS (1)	**$3,623,774**	**$2,082,258**	**$5,056,566**	**$2,216,566**	**$3,315,566**	**$431,427**
RECEIPTS						
Transfers	2,250,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
LOC borrowing	-	-	-	-	-	-
G.O. borrowing	-	5,750,000	-	5,000,000	-	1,900,000
Total Receipts	**2,250,000**	**7,750,000**	**2,000,000**	**7,000,000**	**2,000,000**	**3,900,000**
EXPENDITURES						
SSES	755,500	1,260,000	1,695,000	3,575,000	3,121,000	1,502,900
Sewer extensions	113,815	100,000	100,000	100,000	100,000	100,000
Sewer separation / rehabilatation	1,902,565	525,692				
RDP	-	50,000	50,000	50,000	53,139	-
WWTP improvements	470,964	190,000	200,000	370,000	250,000	450,000
WWTP Control Building			750,000	1,250,000		
Blue Ridge Farms	48,672	650,000	45,000	556,000	1,360,000	-
Burton Creek interceptor	500,000	2,000,000	2,000,000	-	-	-
Total Expenditures	**3,791,516**	**4,775,692**	**4,840,000**	**5,901,000**	**4,884,139**	**2,052,900**
ENDING FUNDS	**$2,082,258**	**$5,056,566**	**$2,216,566**	**$3,315,566**	**$431,427**	**$2,278,527**

Notes:
1. Beginning funds in FY 2013 equals cash and investment accounts in the Sewer Capital Fund.
2. Unexpended appropriations represents unspent funds applicable to FY 2012 and prior year appropriations.

CITY OF LYNCHBURG
SEWER VCWRLF & GRANT FINANCING PLAN

	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
BEGINNING FUNDS	**$ 6,141,722**	**$ -**	**$ -**	**$ -**	**$ 12,206,630**	**$ 4,831,400**
RECEIPTS						
State grant reimbursements	3,656,000	7,760,000	1,607,230	8,576,770	8,400,000	
VCWRLF loan approvals - 0%	-	-	-	12,206,630	-	-
Total Receipts	**3,656,000**	**7,760,000**	**1,607,230**	**20,783,400**	**8,400,000**	**-**
EXPENDITURES FROM STATE GRANT						
JRI 3A	666,000					
JRI 3B	2,600,000	4,700,000	307,230	-	-	-
CSO 125	40,000	310,000			-	-
CSO - WWTP PER/Design	350,000	2,750,000	1,300,000	-	-	-
CSO - WWTP - headwork construction	-	-	-	8,576,770	8,400,000	-
Total Expenditures from State Grant	**3,656,000**	**7,760,000**	**1,607,230**	**8,576,770**	**8,400,000**	**-**
EXPENDITURES FROM VCWRLF LOANS						
CSO projects	3,665,814					
JRI 3A	1,808,606					
JRI 4	41,695					
WWTP - SCAB	213,675					
Long Term Control Plan	192,277					
BWC projects	119,655					
College Hill parking lot	100,000					
CSO - WWTP headworks upgrade					2,875,230	200,000
CSO - WWTP tanks					4,500,000	4,631,400
Total Expenditures from VCWRLF loans	**6,141,722**	**-**	**-**	**-**	**7,375,230**	**4,831,400**
ENDING FUNDS	**$ -**	**$ -**	**$ -**	**$ 12,206,630**	**$ 4,831,400**	**$ -**

Notes:
1. Beginning funds and VCWRLF loan approvals are funds held by DEQ on behalf of the City. No interest is earned on these funds.
2. Beginning Funds based on July Schedule 1 remaining balances.

CITY OF LYNCHBURG
PROJECTED STATEMENT OF SEWER FUND DEBT COVERAGE

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Revenues:							
Charges for services	$16,579,876	$16,735,380	$17,180,754	$17,611,351	$18,043,167	$18,476,237	$18,910,599
Sewer contracts	2,908,370	3,118,263	3,338,037	3,376,258	3,472,392	3,623,542	3,670,974
Interest and other	241	203,644	193,644	198,847	68,644	68,644	68,644
Total Revenues	19,488,487	20,057,288	20,712,435	21,186,456	21,584,202	22,168,423	22,650,217
Expenses:							
WWTP	6,447,537	6,951,012	7,417,183	7,642,998	7,875,588	8,115,156	8,361,911
Sewer line maintenance	1,952,646	2,132,646	2,371,252	2,442,390	2,515,661	2,591,131	2,668,865
Stormwater (1)	-	-	-	-	-	-	-
Non-departmental	170,850	180,093	172,697	227,128	231,692	236,392	241,234
Capitalizable cost (2)	(220,691)	(227,312)	(250,000)	(257,500)	(265,225)	(273,182)	(281,377)
Total Expenses	8,350,342	9,036,440	9,711,132	10,055,016	10,357,716	10,669,498	10,990,633
Operating Income	11,138,145	11,020,848	11,001,303	11,131,440	11,226,486	11,498,925	11,659,584
Debt service	8,411,692	8,611,155	8,961,703	9,192,095	9,261,109	9,181,985	8,976,798
Net Revenue	$2,726,453	$2,409,693	$2,039,600	$1,939,345	$1,965,378	$2,316,941	$2,682,785
Debt Coverage	1.32	1.28	1.23	1.21	1.21	1.25	1.30

Notes:
1. Capitalizable cost includes internal labor charges applicable to time spent on capital project activities.

CITY OF LYNCHBURG
PROJECTED STATEMENT OF SEWER FUND SOURCES & USES of CASH

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Sources of Cash:							
Beginning cash balance	$9,236,906	$8,891,197	$7,096,449	$9,540,357	$6,182,202	$6,781,355	$3,740,975
Net revenue plus capitalized costs	2,505,762	2,182,381	1,789,600	1,681,845	1,700,153	2,043,759	2,401,408
LOC borrowing	-	-	-	-	-	-	-
G.O. bond proceeds, net	-	-	5,750,000	-	5,000,000	-	1,900,000
State grant reimbursements	-	3,656,000	7,760,000	1,607,230	8,576,770	8,400,000	-
VCWRLF loan draw downs	14,495,045	6,141,722	-	-	-	7,375,230	4,831,400
Proceeds from sale of assets	71,000	-	-	-	-	-	-
Proceeds from other organizations	541,335	-	-	-	-	-	-
Total Sources of Cash	**26,850,048**	**20,871,301**	**22,396,049**	**12,829,432**	**21,459,125**	**24,600,344**	**12,873,783**
Uses of Cash:							
Capital & VCWRLF expenditures	17,671,906	13,589,238	12,535,692	6,447,230	14,477,770	20,659,369	6,884,300
Other capital expenditures	-	185,614	320,000	200,000	200,000	200,000	200,000
LOC repayment	-	-	-	-	-	-	-
Change in working capital items	286,945	-	-	-	-	-	-
Total Uses of Cash	**17,958,851**	**13,774,852**	**12,855,692**	**6,647,230**	**14,677,770**	**20,859,369**	**7,084,300**
Ending Cash	**$8,891,197**	**$7,096,449**	**$9,540,357**	**$6,182,202**	**$6,781,355**	**$3,740,975**	**$5,789,483**

Cash in capital fund	$3,623,774	$2,082,258	$5,056,566	$2,216,566	$3,315,566	$431,427	$2,278,527
Unrestricted cash	5,267,423	5,014,191	4,483,791	3,965,636	3,465,789	3,309,548	3,510,956
Total cash	**$8,891,197**	**$7,096,449**	**$9,540,357**	**$6,182,202**	**$6,781,355**	**$3,740,975**	**$5,789,483**
Unrestricted cash as a % of budget	31%	28%	24%	21%	18%	17%	18%

CITY OF LYNCHBURG
CHARGES FOR SERVICES

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
CITY CUSTOMERS							
HCF of use	2,573,268	2,550,000	2,550,000	2,550,000	2,550,000	2,550,000	2,550,000
Rate	5.65	5.65	5.65	5.65	5.65	5.65	5.65
	$14,538,967	$14,407,500	$14,407,500	$14,407,500	$14,407,500	$14,407,500	$14,407,500
% increase in revenues	0.0%	-0.9%	0.0%	0.0%	0.0%	0.0%	0.0%
ALL OTHER:							
Account charge	447,145	843,000	1,233,000	1,623,000	2,013,000	2,403,000	2,793,000
VDOT reimbursement	0	0	0	0	0	0	0
College Hill backwash	123,041	126,732	130,534	134,450	138,484	142,638	146,917
Leachate treatment	66,078	68,061	70,102	72,206	74,372	76,603	78,901
Septic hauler charges	488,231	512,643	538,275	554,423	571,056	588,187	605,833
Industrial pre-treatment	961	4,500	4,500	4,635	4,774	4,917	5,065
Industrial surcharges	508,516	457,945	480,842	495,268	510,126	525,429	541,192
Industrial monitoring	36,564	35,000	35,000	36,050	37,132	38,245	39,393
Cut-on penalties	95,936	83,000	84,000	86,520	89,116	91,789	94,543
Connection charges	138,800	75,000	75,000	75,000	75,000	75,000	75,000
Availability charges	122,090	100,000	100,000	100,000	100,000	100,000	100,000
Sewer cost plus	6,831	12,000	12,000	12,000	12,000	12,000	12,000
Collection & Tax Lien Fees	6,716	10,000	10,000	10,300	10,609	10,927	11,255
All other	-	-	-	-	-	-	-
	2,040,909	2,327,880	2,773,254	3,203,851	3,635,667	4,068,737	4,503,099
	$16,579,876	**$16,735,380**	**$17,180,754**	**$17,611,351**	**$18,043,167**	**$18,476,237**	**$18,910,599**

Notes:

1. Account / Fixed charge increase in FY 2014 is due to introduction of a $2.00 fixed fee by meter size equivalent. The fixed fee assumed to increase $2.00 per year starting in FY 2015. Two-thirds of the fixed fee is allocated to the Sewer Fund.
2. Septic hauler and industrial sur-charges assumed to increase 5% per year to FY 2015; thereafter 3% per year.
3. Availability and connection fees for FY 2014 - FY 2019 are conservative due to uncertainty in real estate development.

CITY OF LYNCHBURG
SEWER CONTRACTS

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
AMHERST							
Operating	$177,200	$194,628	$206,824	$213,121	$219,607	$226,288	$233,169
Existing capital amort.	217,203	268,717	265,306	252,045	251,450	248,494	245,610
Prior Year O&M settlement	1,802	5,692	-	-	-	-	-
Capital PAYGO.	16,798	30,001	23,999	15,904	11,360	19,312	11,360
Future capital - Financed	-	-	2,999	5,091	5,917	16,381	17,859
	413,003	499,038	499,128	486,161	488,334	510,475	507,998
BEDFORD							
Operating	226,200	208,530	221,597	228,344	235,294	242,451	249,824
Existing capital amort.	218,598	217,974	215,456	186,362	184,020	166,921	111,138
Prior Year O&M settlement	(9,499)	(35,147)	-	-	-	-	-
Capital PAYGO.	7,270	26,150	32,130	20,020	9,783	17,563	13,650
Future capital - Financed	-	-	18,000	18,000	18,000	21,552	21,552
	442,569	417,507	487,183	452,726	447,097	448,487	396,164
CAMPBELL							
Operating	184,000	201,579	214,211	220,733	227,451	234,370	241,497
Existing capital amort.	107,769	127,576	126,110	120,758	119,467	118,176	116,886
Prior Year O&M settlement	9,416	7,463	-	-	-	-	-
Capital PAYGO.	6,957	25,681	32,130	20,020	9,783	17,563	13,650
Future capital - Financed	-	-	7,787	7,787	7,787	11,339	11,339
	308,142	362,299	380,238	369,298	364,488	381,448	383,372
INDUSTRIAL							
Rock Tenn	982,205	1,010,457	1,075,825	1,139,117	1,207,702	1,281,063	1,342,523
Frito-Lay	762,451	828,961	895,663	928,955	964,771	1,002,069	1,040,917
	1,744,656	1,839,418	1,971,488	2,068,072	2,172,473	2,283,132	2,383,440
	$2,908,370	**$3,118,263**	**$3,338,037**	**$3,376,258**	**$3,472,392**	**$3,623,542**	**$3,670,974**

Notes:
1. County operating revenues based on % of WWTP expenses (Amherst-2.8%, Bedford-3.0%, Campbell-2.9%).
2. Amherst operating revenues decrease due to planned closure of Training Academy.
3. Rock Tenn revenues are assumed to increase 4% - 6% per year.
4. Frito-Lay revenues are assumed to increase 3% - 5% per year.

CITY OF LYNCHBURG
OTHER SEWER REVENUES

	Est.	Est.	Proj.	Proj.	Proj.	Proj.	Proj.
Other Revenues	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
Interest revenue	8,916	30,000	20,000	20,000	20,000	20,000	20,000
State highway maintenance	-	-	-	-	-	-	-
Federal grant - Derecho	93,667						
Miscellaneous revenue	11,999	6,000	6,000	6,000	6,000	6,000	6,000
Loss on asset disposal	(160,294)						
SW Fund start-up repayment	-	125,000	125,000	130,203	-	-	-
IRS interest rebate	45,953	42,644	42,644	42,644	42,644	42,644	42,644
	$241	**$203,644**	**$193,644**	**$198,847**	**$68,644**	**$68,644**	**$68,644**

Notes:

1. SW Fund start-up repayment is a transfer from the SW Fund to recover the cost incurred by the Sewer Fund to study, organize and implement the SW fund and fee.

CITY OF LYNCHBURG
WASTEWATER TREATMENT

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Personal services	$1,448,510	$1,551,685	$1,606,273	$1,654,461	$1,704,095	$1,755,218	$1,807,874
Fringe benefits	537,854	599,753	615,930	634,408	653,440	673,043	693,235
Supplies & materials	325,843	402,500	402,555	414,632	427,071	439,883	453,079
Sludge disposal - landfill	530,455	575,000	600,000	618,000	636,540	655,636	675,305
Chemicals	597,215	644,000	667,000	687,010	707,620	728,849	750,714
Gasoline / fuel	39,260	64,120	52,000	53,560	55,167	56,822	58,526
Internal service charges	183,856	272,558	197,395	203,317	209,416	215,699	222,170
Rentals & leases	3,620	8,500	8,500	8,755	9,018	9,288	9,567
Communication charges	7,712	9,300	9,300	9,579	9,866	10,162	10,467
Electricity	745,649	675,000	700,000	721,000	742,630	764,909	787,856
Other utilities	58,898	140,300	125,300	129,059	132,931	136,919	141,026
Contractual services	753,714	746,305	839,577	864,764	890,707	917,428	944,951
Training & meetings	13,545	16,600	16,700	17,201	17,717	18,249	18,796
Indirect costs	352,560	488,021	767,680	790,710	814,432	838,865	864,031
Self-insurance	48,470	48,470	48,470	49,924	51,422	52,964	54,553
Water Adm. Services	875,000	791,000	812,000	836,360	861,451	887,294	913,913
Nutrient payments	-	-	-	-	-	-	-
Nutrient sales	(74,125)	(110,000)	(110,000)	(110,000)	(110,000)	(110,000)	(110,000)
Misc.	(499)	27,900	27,900	28,737	29,599	30,487	31,402
Sub-total	**6,447,537**	**6,951,012**	**7,386,580**	**7,611,477**	**7,843,122**	**8,081,715**	**8,327,467**
Compensation adjustment	-	-	30,603	31,521	32,467	33,441	34,444
Total	**$ 6,447,537**	**$ 6,951,012**	**$ 7,417,183**	**$ 7,642,998**	**$ 7,875,588**	**$ 8,115,156**	**$ 8,361,911**

Notes:

1. FY 2015 amounts are based on budget worksheets submitted as part of the FY 2015 budget process.
2. Personal services in FY 2015 assumes 37 staff positions will be filled throughout the year.
3. Gasoline / fuel increases in FY 2014 due to closing of landfill in City and need to haul to Campbell County landfill or Maplewood.
4. Internal service charges increase in FY 2014 due to additional trucks being maintained related to sludge hauling.
5. Other utilities increase in FY 2013 due to increase in natural gas needs.
6. Indirect costs in FY 2014 is based on the approved FY 2014 budget. FY 2015 amount is based on the FY 2012 Maximus Report.
7. Nutrient payments and credits based on best available information as of date of projections.
8. Unless noted otherwise, all expenses after FY 2015 are assumed to increase 3% per year.

CITY OF LYNCHBURG
SEWER LINE MAINTENANCE

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Personal services	$449,578	$498,442	$573,695	$590,906	$608,633	$626,892	$645,699
Fringe benefits	185,614	203,773	242,636	249,915	257,413	265,135	273,089
Supplies & materials	109,952	153,000	159,800	164,594	169,532	174,618	179,856
Gasoline / fuel	52,082	60,311	66,755	68,758	70,820	72,945	75,133
Internal service charges	191,617	216,126	222,520	229,196	236,071	243,154	250,448
Rentals & leases	1,506	3,000	3,000	3,090	3,183	3,278	3,377
Communication charges	3,681	5,000	4,700	4,841	4,986	5,136	5,290
Contractual services	112,208	180,425	240,326	247,536	254,962	262,611	270,489
Training & meetings	3,381	3,750	4,150	4,275	4,403	4,535	4,671
Indirect costs	231,216	203,812	342,794	353,078	363,670	374,580	385,818
Self-insurance	152,257	152,257	152,257	156,825	161,529	166,375	171,367
City engineering / CD charges	83,809	113,300	0	0	0	0	0
Water Adm. Services	375,000	339,000	348,000	358,440	369,193	380,269	391,677
Miscellaneous Expenses	745	450	450	464	477	492	506
Sub-total	**1,952,646**	**2,132,646**	**2,361,083**	**2,431,915**	**2,504,873**	**2,580,019**	**2,657,420**
Compensation adjustment	-	-	10,169	10,474	10,788	11,112	11,445
Total	**$ 1,952,646**	**$ 2,132,646**	**$ 2,371,252**	**$ 2,442,390**	**$ 2,515,661**	**$ 2,591,131**	**$ 2,668,865**

Notes:
By Activity:
1. FY 2015 amounts are based on budget worksheets submitted as part of the FY 2015 budget process.
2. Personal services in FY 2013 and FY 2014 includes 13.45 budgeted staff positions. FY 2015 assumses two additional staff positions will be added.
3. Indirect costs in FY 2014 is based on the approved FY 2014 budget. FY 2015 amount is based on the FY 2012 Maximus Report.
4. FY 2013 and FY2014 City engineering charges represent actual labor, overhead and direct overhead cost of staff time in the PW Engineering Dept. that work on sewer projects. FY 2015 engineering charges are incorporated in FY 2015 Indirect costs.
5. Unless noted otherwise, all expenses after FY 2015 are assumed to increase 3% per year.

CITY OF LYNCHBURG
NON-DEPARTMENTAL-SEWER

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Financial audit	$19,178	$19,753	$21,000	$21,630	$22,279	$22,947	$23,636
Allowance for doubtful accounts	44,965	46,314	35,000	36,050	37,132	38,245	39,393
OPEB/Retirees health/WC insurance	86,433	89,026	91,697	94,448	97,281	100,200	103,206
Legal & professional (CSO)	-	-	-	-	-	-	-
Major sewer line cleaning	-	-	0	50,000	50,000	50,000	50,000
Fire damage	5,490	-	-	-	-	-	-
Minor capital purchases	-	-	-	-	-	-	-
Project costs charged to operations	14,784	25,000	25,000	25,000	25,000	25,000	25,000
	$170,850	**$180,093**	**$172,697**	**$227,128**	**$231,692**	**$236,392**	**$241,234**

Notes:

1. FY 2015 amounts are based on budget worksheets submitted as part of the FY 2015 budget process.
2. OPEB related cost based on best available information.
3. After FY 2015, Financial Audit, Allowance for Doubtful Accounts and OPEB/Retirees Health/WC assumed to increase 3% per year.
4. Non-departmental excludes legal and fiscal charges associated with future bond sales. These charges are paid for from the bond proceeds

CITY OF LYNCHBURG
SEWER FUND BONDS PAYABLE

	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2014	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
P&I on debt o/s @ 6/30/13 (1)	8,611,155	8,846,703	8,962,095	8,816,034	8,636,910	8,331,659
Interest on LOC borrowing	-	-	-	-	-	-
Interest only payments on G.O. Bonds						
$5.75 million bond issue in FY 2015	-	115,000	230,000	-	-	-
$5.0 million bond issue in FY 2017				100,000	200,000	-
$1.9 million bond issue in FY 2019						
Level debt service payments on G.O. Bonds						
$5.75 million bond issue in FY 2015				345,075	345,075	345,075
$5.0 million bond issue in FY 2017						300,065
	$8,611,155	**$8,961,703**	**$9,192,095**	**$9,261,109**	**$9,181,985**	**$8,976,798**

NOTES:
1. Based on Debt book as of June 30, 2013.
2. Level debt service on G.O issues starting two years after issue date at 4.0%; 30 year repayment terms.

STORMWATER FUND
FINANCIAL PROJECTIONS
FY 2014 to FY 2019

CITY OF LYNCHBURG
STORMWATER CAPITAL FINANCING PLAN

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Sources of Cash:							
Beginning funds	$ -	$ 221,718	$ 573,783	$ 143,783	$ 2,033,783	$ 2,183,783	$ 3,223,783
Transfer from Operations	300,000	1,350,000	1,050,000	1,000,000	900,000	700,000	500,000
VCWRLF loans	-	-		2,000,000	2,000,000	3,000,000	3,000,000
total receipts	300,000	1,571,718	1,623,783	3,143,783	4,933,783	5,883,783	6,723,783
Uses of Cash:							
Master planning & design	-	647,935	830,000	360,000	500,000	410,000	200,000
Infrastructure renewal	78,282	350,000	250,000	250,000	250,000	250,000	250,000
Water quality projects	-	-	400,000	500,000	2,000,000	2,000,000	3,000,000
	-	-	-	-	-	-	-
total expenditures	78,282	997,935	1,480,000	1,110,000	2,750,000	2,660,000	3,450,000
Ending Funds	$221,718	$573,783	$143,783	$2,033,783	$2,183,783	$3,223,783	$3,273,783

Notes:
1. Watershed implementation plan calls for $110 to $120 million to be spent on water quality by 2025
2. First permit cycle calls for a 5% reduction of water quality goals by 2018 (≈$1.0 million CAPEX / year).
3. Second permit cycle will call for a 35% reduction of water quality goals by 2023 (≈$8.0 million CAPEX / year).
4. Third permit cycle will call for a 60 % reduction to water quality goals by 2028 (≈$14.0 million CAPEX / year)
5. Trading and credits for existing BMPs are assumed to reduce CAPEX in first permit cycle.
6. VCWRLF loans assume to be closed in June of the year shown and available to fund water quality projects in the subsequent year. First loan closing June, 2016.

CITY OF LYNCHBURG
PROJECTED STATEMENT OF STORMWATER NET REVENUE

	Actual	Est.	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Revenues:							
Stormwater fees, net	$ 3,355,267	$ 3,135,000	$ 3,149,400	$ 3,149,400	$ 3,149,400	$ 3,345,300	$ 3,345,300
General Fund transfer (VDOT)	650,000	650,000	275,000	275,000	275,000	275,000	275,000
VSMP fees	-	-	69,450	69,450	69,450	69,450	69,450
Event Fees			4,000	4,000	4,000	4,000	4,000
Miscellaneous and Other	-	5,000	1,000	1,000	1,000	1,000	1,000
total revenues	4,005,267	3,790,000	3,498,850	3,498,850	3,498,850	3,694,750	3,694,750
Expenses & Transfers:							
Operating expenses	$936,758	$1,401,418	$1,562,795	$1,610,398	$1,657,739	$1,706,500	$1,756,724
G.F. charges - PW	862,162	1,052,501	308,000	317,240	326,757	336,560	346,657
G.F. charges - CD	298,408	388,873	430,235	443,142	456,436	470,129	484,233
Incremental BMP expense	-	-		20,000	45,000	145,000	245,000
Capital Outlay (Vactor Truck)			400,000				
Transfer to Sewer Fund (SIP Reimb)	-	125,000	125,000	130,203	-	-	-
Transfers to Capital Fund	300,000	1,350,000	1,050,000	1,000,000	900,000	700,000	500,000
Debt service	-	-	-	0	100,000	250,000	400,000
total expenses & transfers	2,397,328	4,317,792	3,876,030	3,520,983	3,485,933	3,608,190	3,732,614
Net Revenue	1,607,939	(527,792)	(377,180)	(22,133)	12,917	86,560	(37,864)
Beginning Funds	-	1,607,939	1,080,147	702,967	680,834	693,751	780,312
Ending Funds	$ 1,607,939	$ 1,080,147	$ 702,967	$ 680,834	$ 693,751	$ 780,312	$ 742,447
Debt Coverage	n/a	n/a	n/a	n/a	10.1	4.1	2.2
Ending Funds - % of Op. Budget	77%	36%	25%	27%	28%	29%	26%

Notes:

1. General Fund charges for PW (Public Works) is for maintenance of existing BMPs. Amount decreases in FY 2015 due to reduction of General Fund transfer (VDOT) to Stormwater Fund and allowable charges from Publc Works for BMP maintenance.
2. General Fund charges for CD (Community Development) is for management of the VSMP and plan review and inspection of new developmen
3. Incremental BMP expense is a rough estimate of additional staff and equipment expenses to maintain new BMPs. The incremental expense is calculated at 5% of new completed water quality projects.
4. Transfer to Sewer Fund is for reimbursement of start-up cost for the Stormwater Utility Fund.
5. Debt service assumes all debt is from VCWRLF at 0%; 20 year repayment terms.
6. Debt coverage ratio equals net revenue + transfers to capital fund + debt service / debt service.

CITY OF LYNCHBURG
STORMWATER OPERATING REVENUES & EXPENSES

	Actual	Estimated	Budget	Proj.	Proj.	Proj.	Proj.
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Stormwater Fees:							
SFU's Billed	69,584	65,000	65,300	65,300	65,300	65,300	65,300
Annual Rate	$48.00	$48.00	$48.00	$48.00	$48.00	$51.00	$51.00
Annual billed revenue	3,340,041	3,120,000	3,134,400	3,134,400	3,134,400	3,330,300	3,330,300
Delinquent account charges	15,226	15,000	15,000	15,000	15,000	15,000	15,000
	$ 3,355,267	**$ 3,135,000**	**$ 3,149,400**	**$ 3,149,400**	**$ 3,149,400**	**$ 3,345,300**	**$ 3,345,300**
Operating Expenses:							
Personal services	$ 196,418	$ 321,107	$ 255,238	$ 262,895	$ 270,782	$ 278,905	$ 287,273
Fringe benefits	86,347	133,105	110,025	113,326	116,726	120,227	123,834
M&R supplies & materials	50,357	131,059	147,200	151,616	156,164	160,849	165,675
Contractual charges	84,702	166,774	299,481	308,465	317,719	327,251	337,069
Internal service charged	97,025	74,522	101,891	104,948	108,096	111,339	114,679
Water Adm. Services	370,000	450,000	470,000	484,100	498,623	513,582	528,989
Indirect costs	-	81,807	107,986	111,226	114,562	117,999	121,539
Travel & training	3,620	5,165	10,200	10,506	10,821	11,146	11,480
Communications	1,079	2,029	2,900	2,987	3,077	3,169	3,264
Allowance for bad debts	10,122	18,000	16,000	16,000	16,000	16,000	16,000
Non Departmental	-	9,500	14,724	16,365	16,365	16,365	16,365
EPA audit	32,000	-	-	-	-	-	-
VSMP payments & other	5,088	8,350.00	27,150	27,965	28,803	29,668	30,558
	$ 936,758	**$ 1,401,418**	**$ 1,562,795**	**$ 1,610,398**	**$ 1,657,739**	**$ 1,706,500**	**$ 1,756,724**

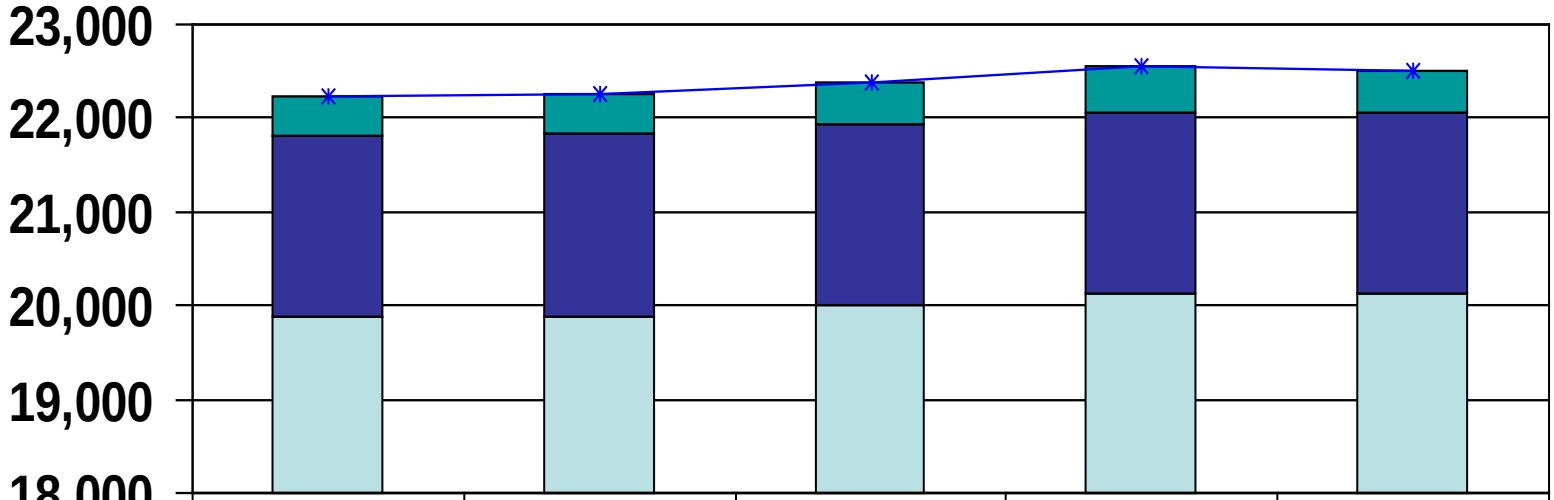
Notes:
1. FY 2014 and FY 2015 department expenses based on preliminary budget request.
2. Personal services in FY 2015 assumes 6.8 FTE staff. Decrease in FY 2015 is due to re-allocation of IT staff.
3. Internal service charges based on fuel, maintenance and depreciation for one vactor, dump truck, utility truck.
4. Water Adm. Services is based on Water Fund Engineering / Adm cost allocations.
5. Indirect costs in FY 2014 to FY 2015 based on agreed upon amounts between Finance and Water Resources.
6. Unless noted otherwise all cost after FY 2015 assumed to increase 3% per year.
7. FY13 annual billed revenue included 12 months billing plus part of July billings for accrual.

Appendix C.

Statistical Data

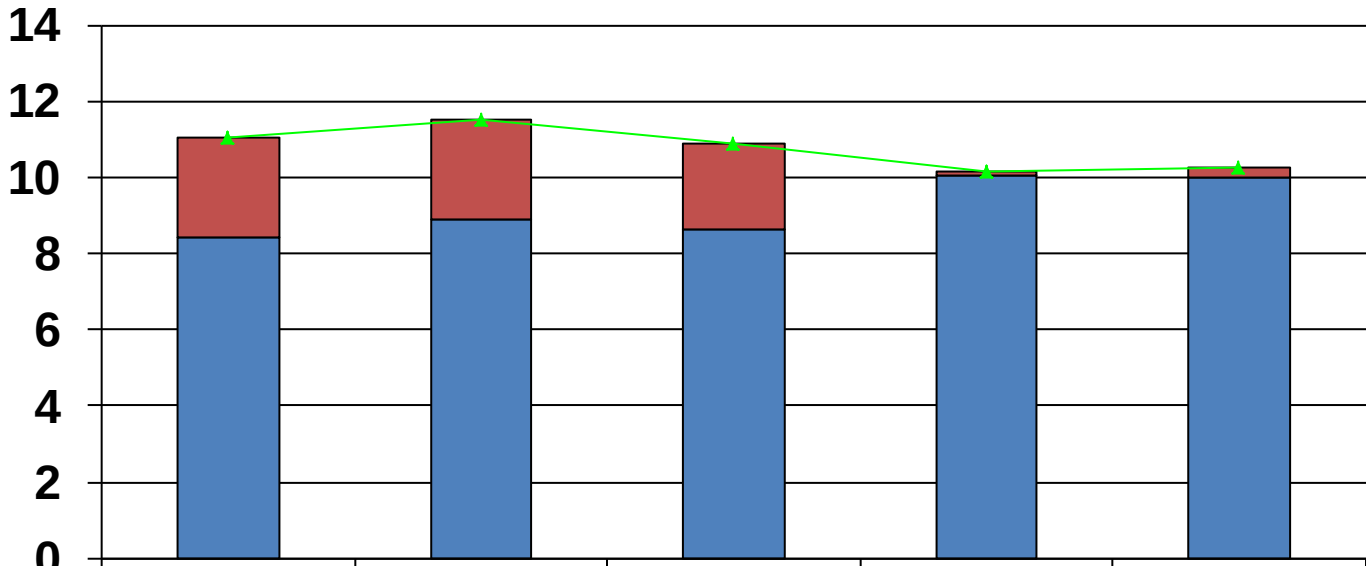
Water Fund Statistics

Number of Water Customers



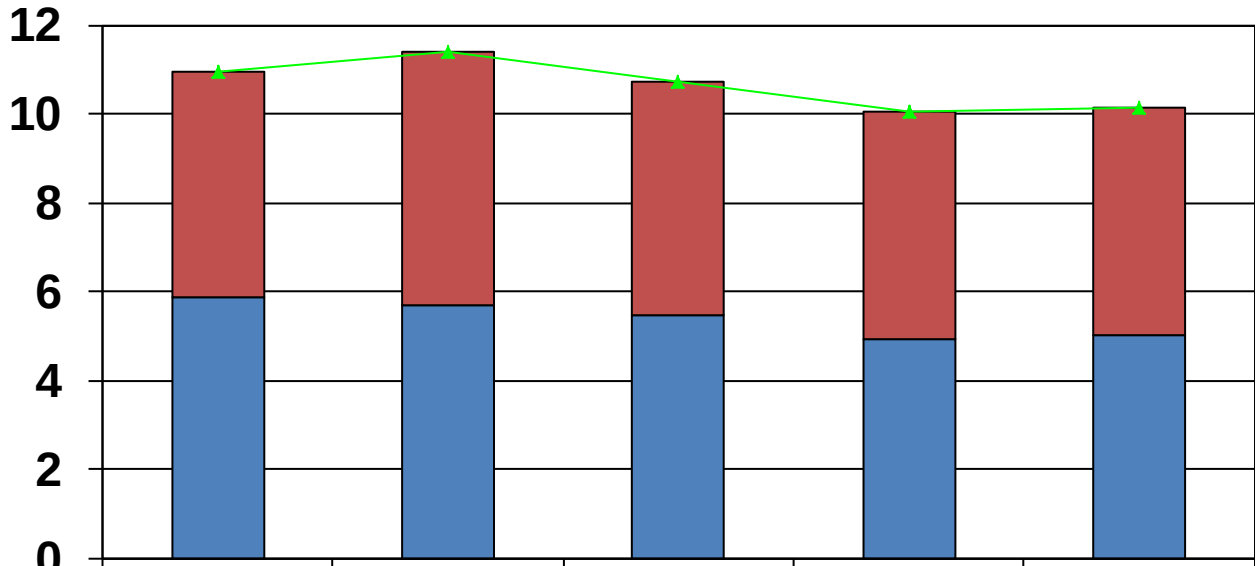
	2009	2010	2011	2012	2013
Other	430	431	436	476	452
Business	1,930	1,951	1,945	1,942	1,925
Domestic	19,880	19,883	19,993	20,126	20,140

Water Withdrawals in MGD



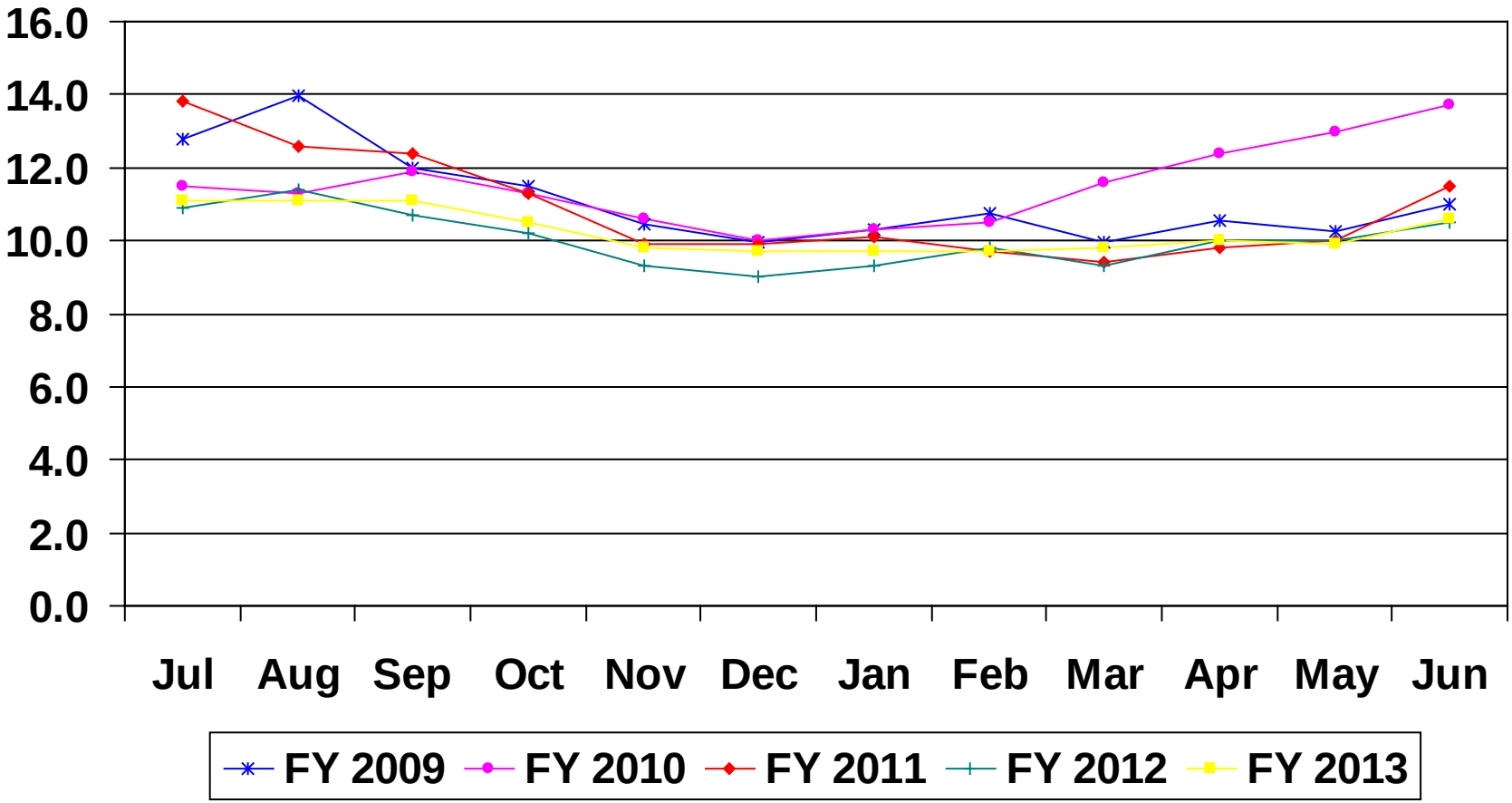
	2009	2010	2011	2012	2013
James	2.58	2.64	2.24	0.12	0.26
Pedlar	8.45	8.88	8.65	10.05	9.99
Total	11.03	11.52	10.89	10.17	10.25

Water Production in MGD

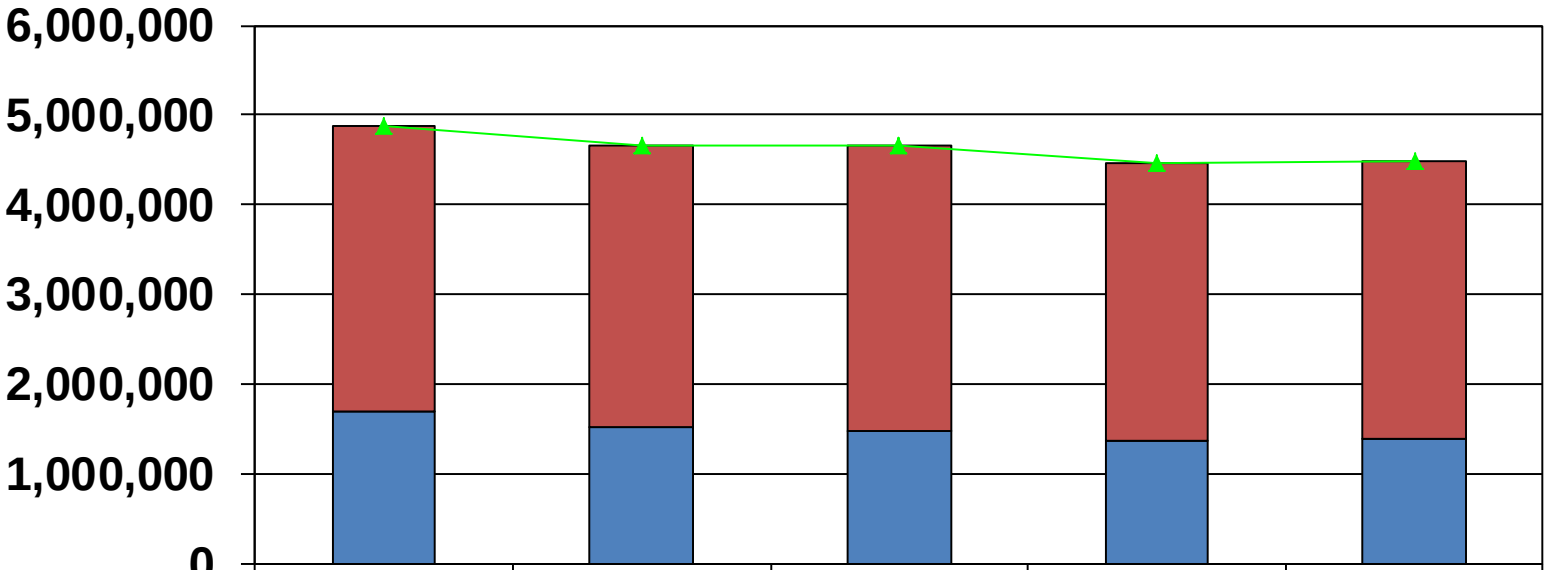


	2009	2010	2011	2012	2013
College Hill	5.08	5.71	5.26	5.10	5.11
Abert	5.89	5.69	5.48	4.94	5.04
Total	10.97	11.40	10.74	10.04	10.15

Monthly Production in MGD



Water Sold in HCF

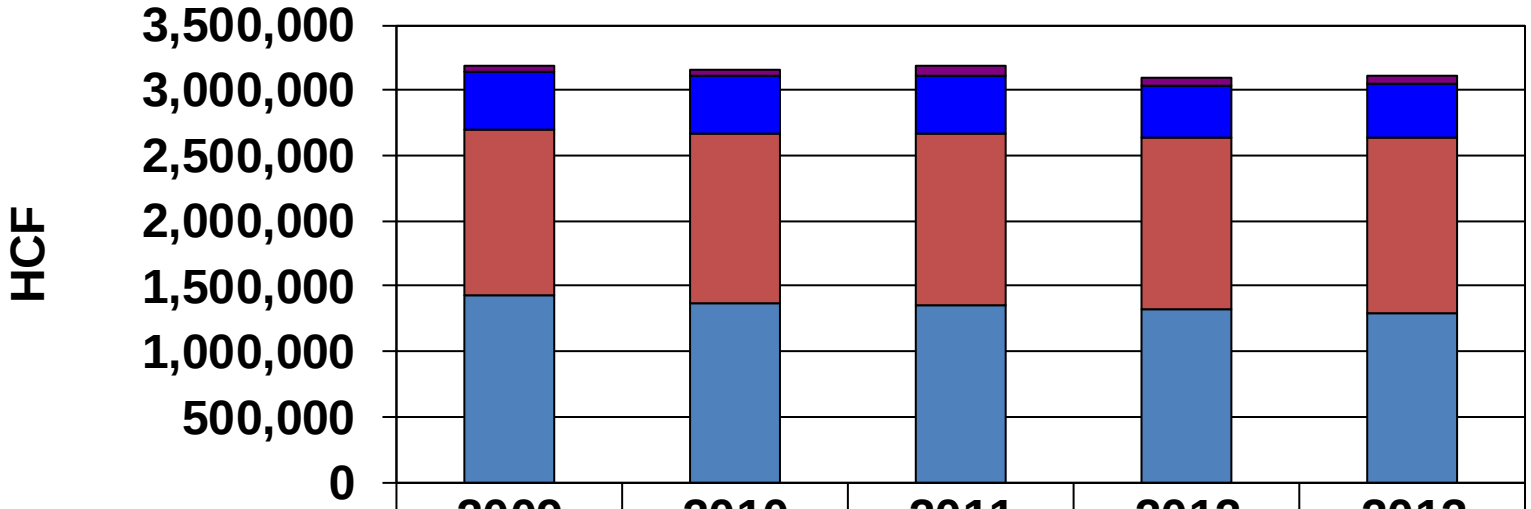


	2009	2010	2011	2012	2013
All other	3,184,500	3,155,289	3,187,335	3,101,321	3,108,070
Contracts	1,699,776	1,514,452	1,470,833	1,363,760	1,384,548
Total	4,884,276	4,669,741	4,658,168	4,465,081	4,492,618

Contract Water Use in HCF

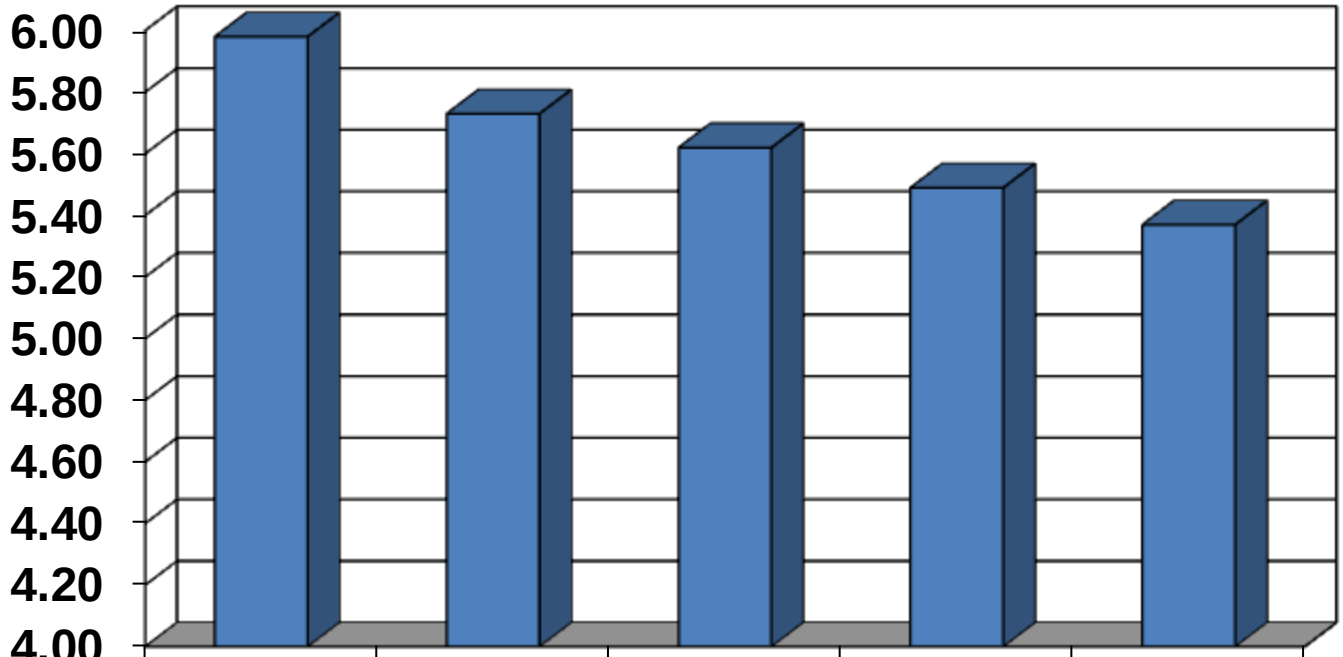
Water Customers	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Amherst	55,355	49,805	54,080	43,305	42,130
Bedford	798,263	725,571	748,310	727,881	756,927
CCUSA	250,826	215,854	196,767	182,489	200,324
Frito-Lay	155,245	125,509	139,112	136,765	140,381
Rock Tenn	440,087	397,713	332,564	273,320	244,786
Total contract use	1,699,776	1,514,452	1,470,833	1,363,760	1,384,548
Non-contract use	3,184,500	3,155,289	3,187,335	3,101,321	3,108,070
Total use	4,884,276	4,669,741	4,658,168	4,465,081	4,492,618
Contract % of use	35%	32%	32%	31%	31%

Non-Contract Water Sales in HCF



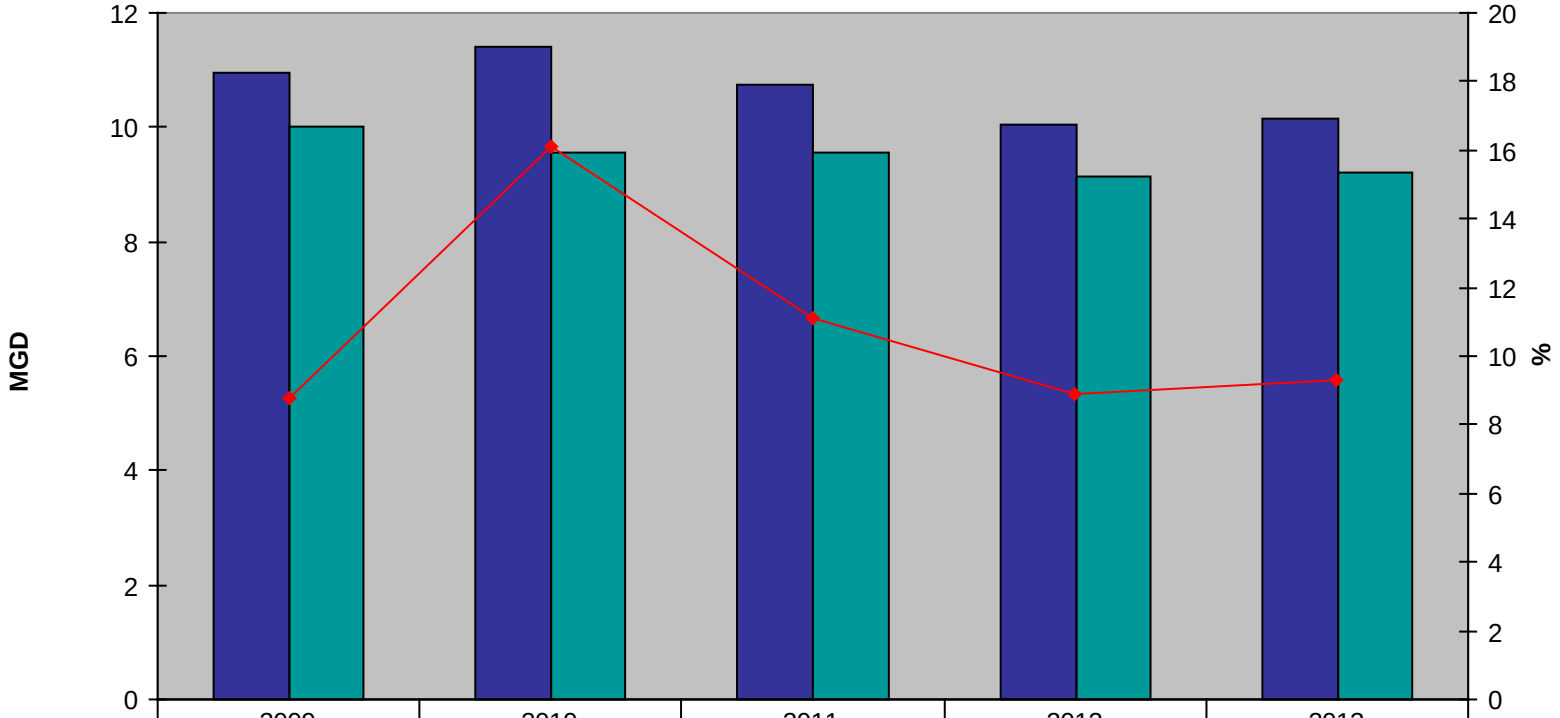
	2009	2010	2011	2012	2013
All other	49,185	41,346	72,543	71,086	55,641
Institutional	441,538	440,810	440,575	399,277	411,055
Business	1,267,26	1,305,77	1,326,34	1,305,66	1,342,98
Domestic	1,426,51	1,367,36	1,347,87	1,325,29	1,298,39

Avg. Monthly Water Sold Domestic Customers



	2009	2010	2011	2012	2013
HCF / mo.	5.98	5.73	5.62	5.49	5.37

Non Revenue Water



	2009	2010	2011	2012	2013
Production	10.97	11.40	10.74	10.04	10.15
Sales	10.01	9.57	9.55	9.15	9.21
NRW %	8.8	16.1	11.1	8.9	9.3

Water Complaints

Type of Complaint	FY2009	FY 2010	FY 2011	FY 2012	FY 2013
1. Discolored water	131	140	123	53	62
2. Odor / taste	8	2	11	6	7
3. No water	28	40	15	13	15
4. High / low pressure	94	86	95	67	54
5. Service line leaks	211	133	98	85	72
6. Main breaks	39	46	30	39	22
7. Meter related	134	75	75	71	41
8. Unclassified	-	-	255	232	239
Total complaints	645	522	702	566	512
Number of water customers	22,240	22,265	22,374	23,308	22,517
Complaints / 1,000 customers	29	23	31	24	23

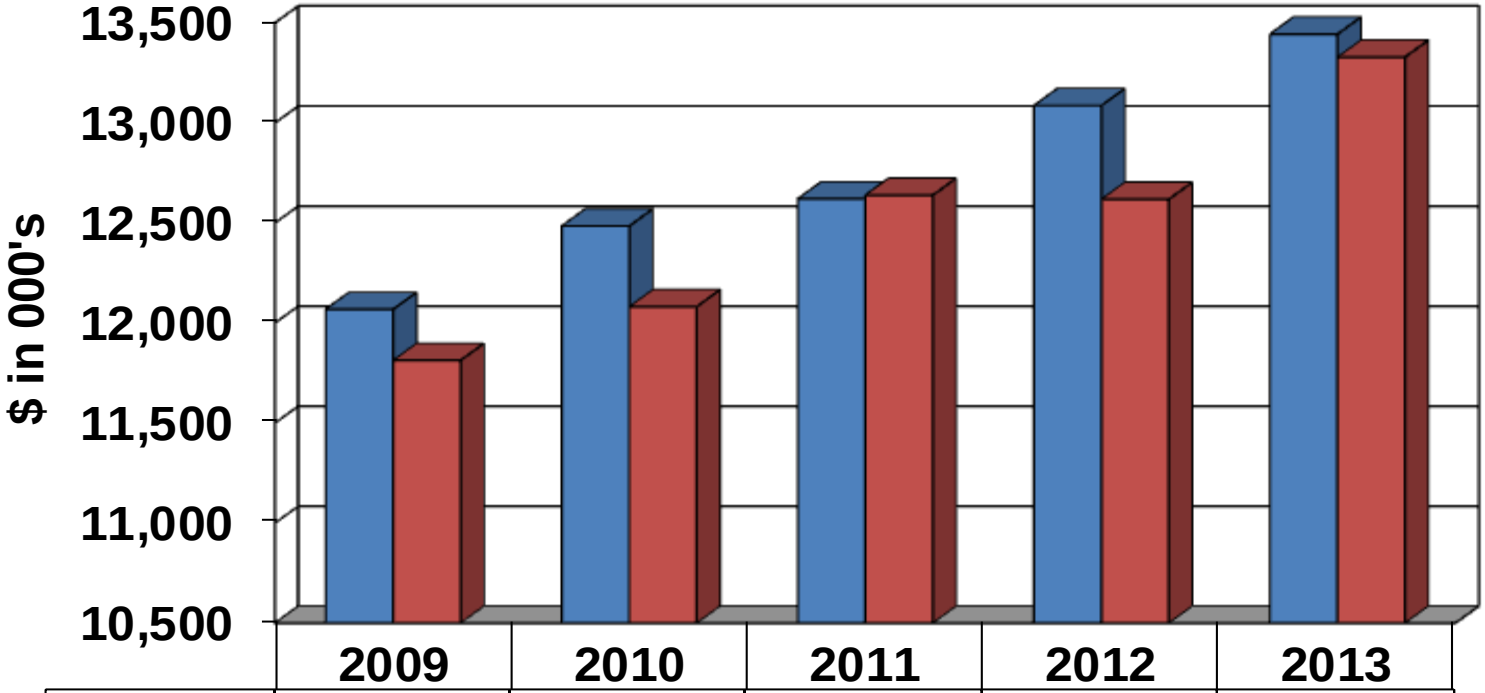
Water Fund Financial Data

Water Fund Debt Coverage

($ in 000's)

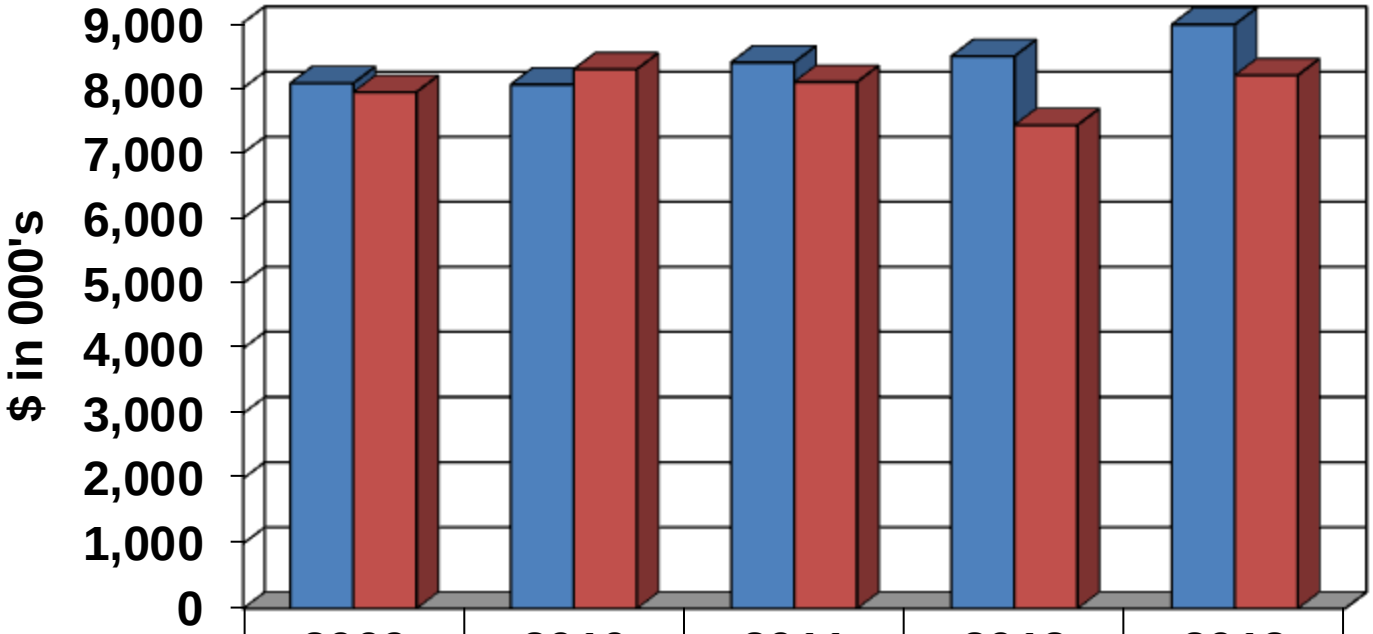
	FY2009	FY 2010	FY 2011	FY 2012	FY 2013
Revenues:					
Charges for services	$9,034	$9,309	9,792	9,791	10,549
Water contracts	2,690	2,720	2,670	2,518	2,432
Interest & other	89	52	176	309	347
	11,813	12,081	12,638	12,618	13,328
Expenses:					
Water treatment	2,954	2,863	2,767	2,390	2,727
Water line maintenance	1,548	1,603	1,627	1,469	1,378
Meter reading	821	861	836	885	787
Administration	2,452	2,448	2,793	2,647	2,967
Non-departmental	128	113	164	119	195
Project expenses	33	397	14	21	285
Capitalized expenses	0	0	(110)	(103)	(145)
	7,936	8,285	8,091	7,428	8,194
Operating income	3,877	3,796	4,547	5,190	5,134
Debt service	2,703	2,999	3,677	3,650	3,617
Debt coverage	1.43	1.27	1.24	1.42	1.42

Water Revenues
Adopted Budget vs. Actual



	2009	2010	2011	2012	2013
Budget	12,068	12,484	12,620	13,086	13,443
Actual	11,813	12,081	12,638	12,618	13,328

Water Operating Expenses Adopted Budget vs. Actual



	2009	2010	2011	2012	2013
Budget	8,073	8,052	8,391	8,487	8,974
Actual	7,936	8,285	8,091	7,428	8,194

Largest Water Customers

($ in 000's)

Customer	FY2009	FY 2010	FY 2011	FY 2012	FY 2013
1. Bedford County	$1,501	$1,537	$1,487	$1,406	$1,354
2. CCUSA	473	465	509	543	515
3. Rock Tenn	436	460	396	324	313
4. Liberty University	215	233	269	303	355
5. Frito-Lay	169	149	170	168	176
6. Azdel	56	143	150	126	193
7. Centra Health	173	124	137	262	246
8. Griffin Pipe	120	115	135	148	187
9. Amherst County	97	110	107	77	74
10. Kroger / Westover	105	108	105	107	109
11. Tri-Tech	67	106	133	154	179
12. RR Donnelley	115	102	135	112	115
Total top 12	3,527	3,652	3,733	3,730	3,816
Total water revenues	11,813	12,081	12,638	12,618	13,328
Top 12 % of total	30%	30%	30%	30%	29%

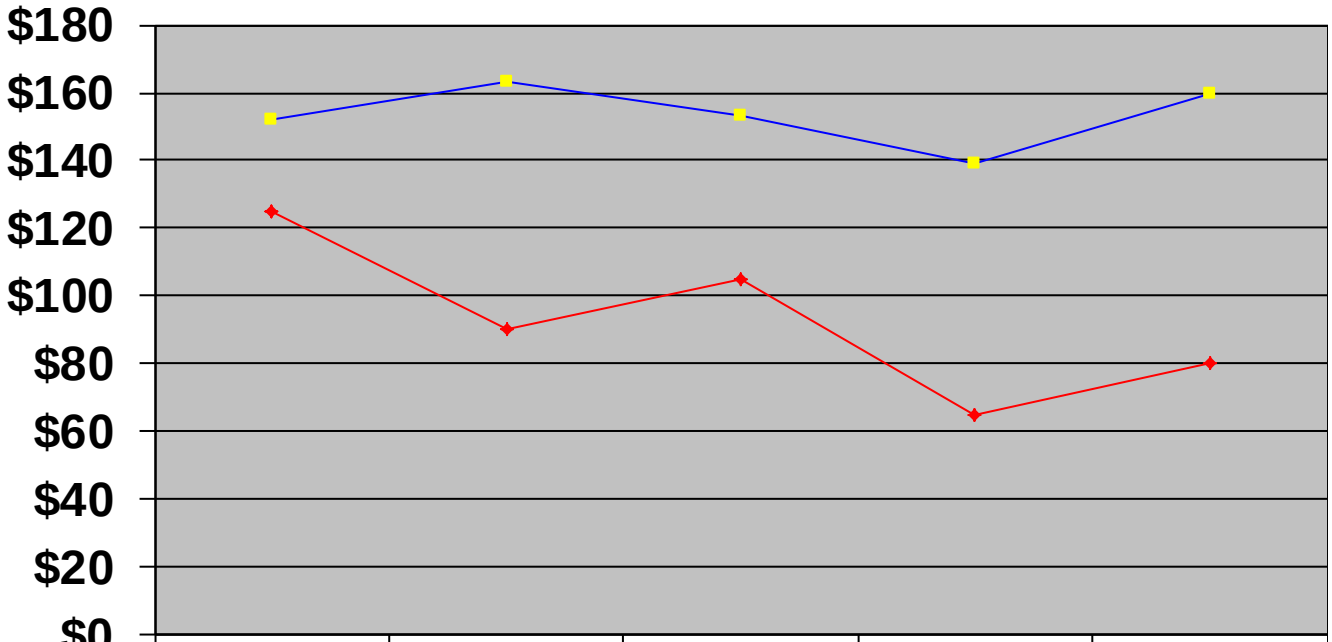
Customers with total billings in excess of $100,000 / year.

Water Expenses by Object

($ in 000's)

Expenses by object	FY2009	FY 2010	FY 2011	FY 2012	FY 2013
Personal services	$2,791	$2,828	2,976	2,770	3,084
Fringe benefits	1,022	1,052	1,151	979	1,294
Supplies & materials	959	974	1,052	1,051	908
Contractual services	479	582	419	472	420
Utilities, including natural gas	614	687	609	516	600
Chemicals	504	378	419	242	299
General Fund allocations	1,026	905	1,004	1,003	1,013
All other, including project expenses	541	879	461	395	576
Total excluding capitalized expenses	$7,936	$8,285	$8,091	$7,428	$8,194
% increase	0.6%	4.4%	-2.3%	-8.2%	10.3%

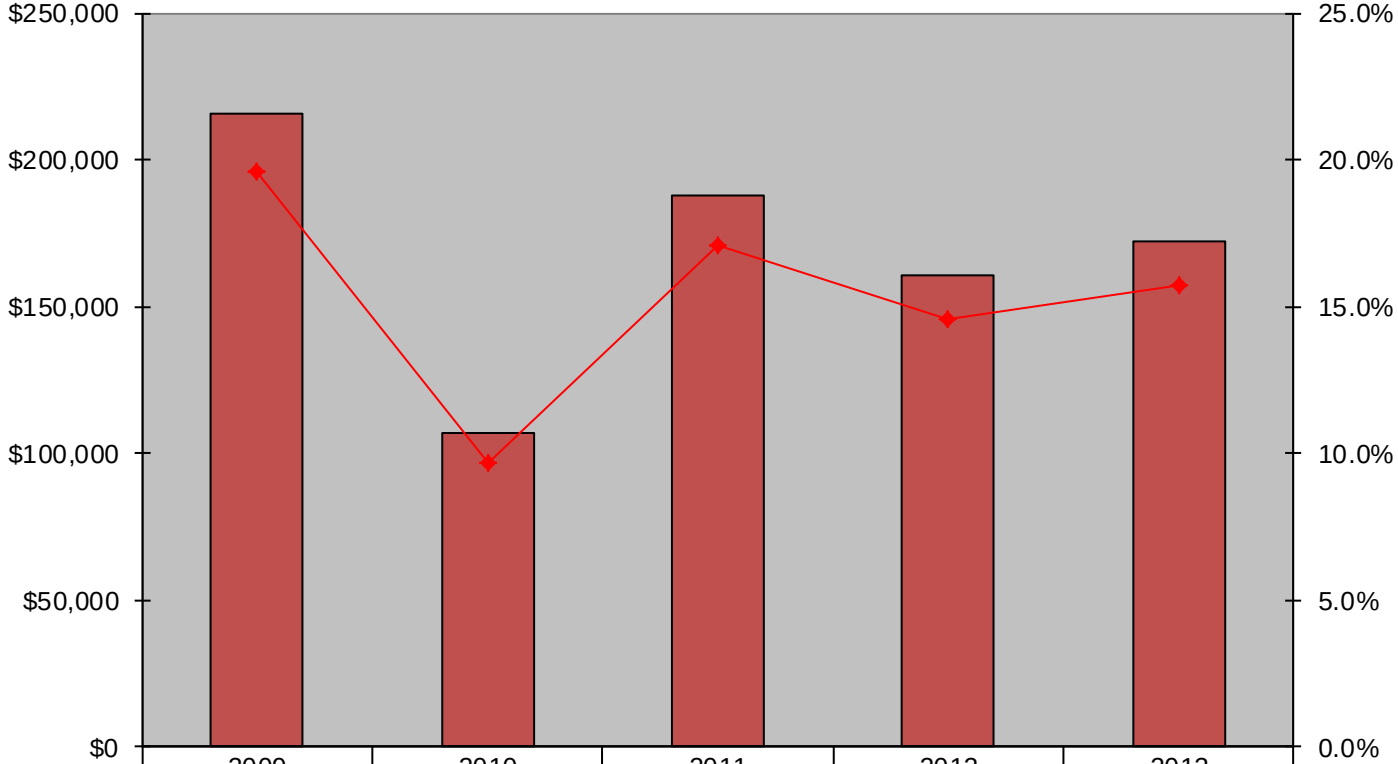
Water Variable Expenses / MG



	2009	2010	2011	2012	2013
Chemicals	$125	$90	$105	$65	$80
Utilities	$152	$163	$153	$139	$160

Water Vehicle Costs

Total cost of all vehicles ($1.1 million)

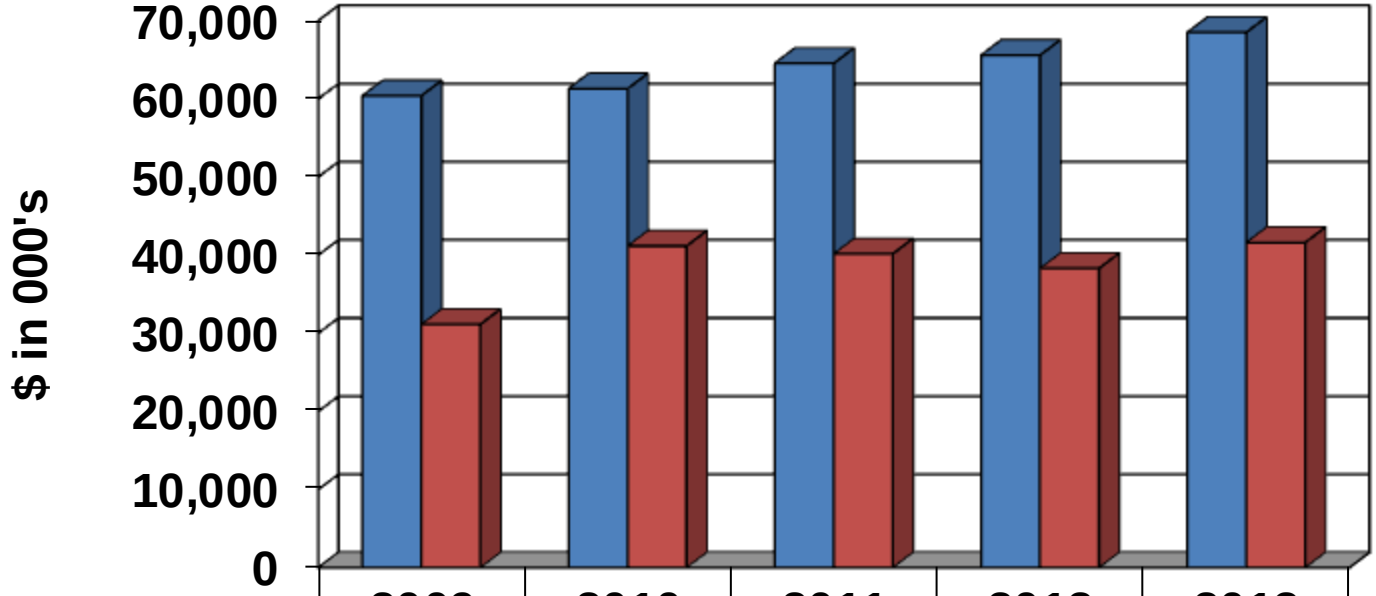


	2009	2010	2011	2012	2013
Payments	$215,500	$106,658	$187,737	$160,386	$172,187
Replcment %	19.6%	9.7%	17.1%	14.6%	15.7%

Water Capital Expenditures
$ in 000's

Capital Expenditures	FY2009	FY 2010	FY 2011	FY 2012	FY 2013
Source of supply	220	463	1,202	103	206
Treatment plants	2,349	83	494	298	209
Storage tanks	733	98	603	22	26
Petitions & extensions	211	239	304	111	121
Distribution & CSO improvements	1,765	1,795	2,435	2,920	5,245
Other	182	778	364	0	0
Total	5,460	3,456	5,402	3,454	5,807

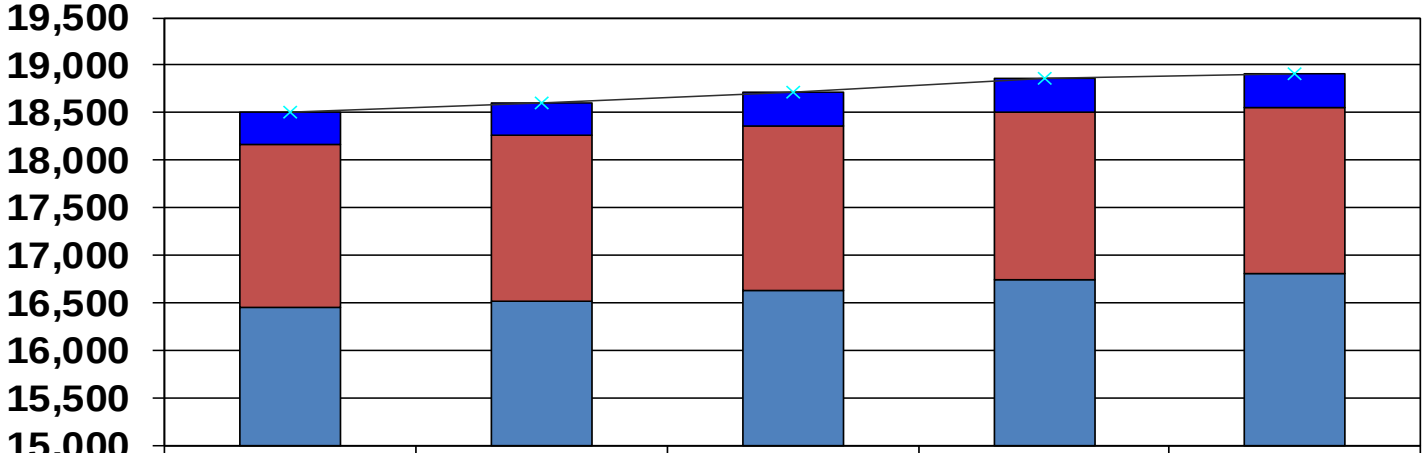
Net Water Capital Assets



	2009	2010	2011	2012	2013
Net fixed assets	60,391	61,294	64,545	65,579	68,495
Bonds & notes	31,138	41,164	40,166	38,293	41,608

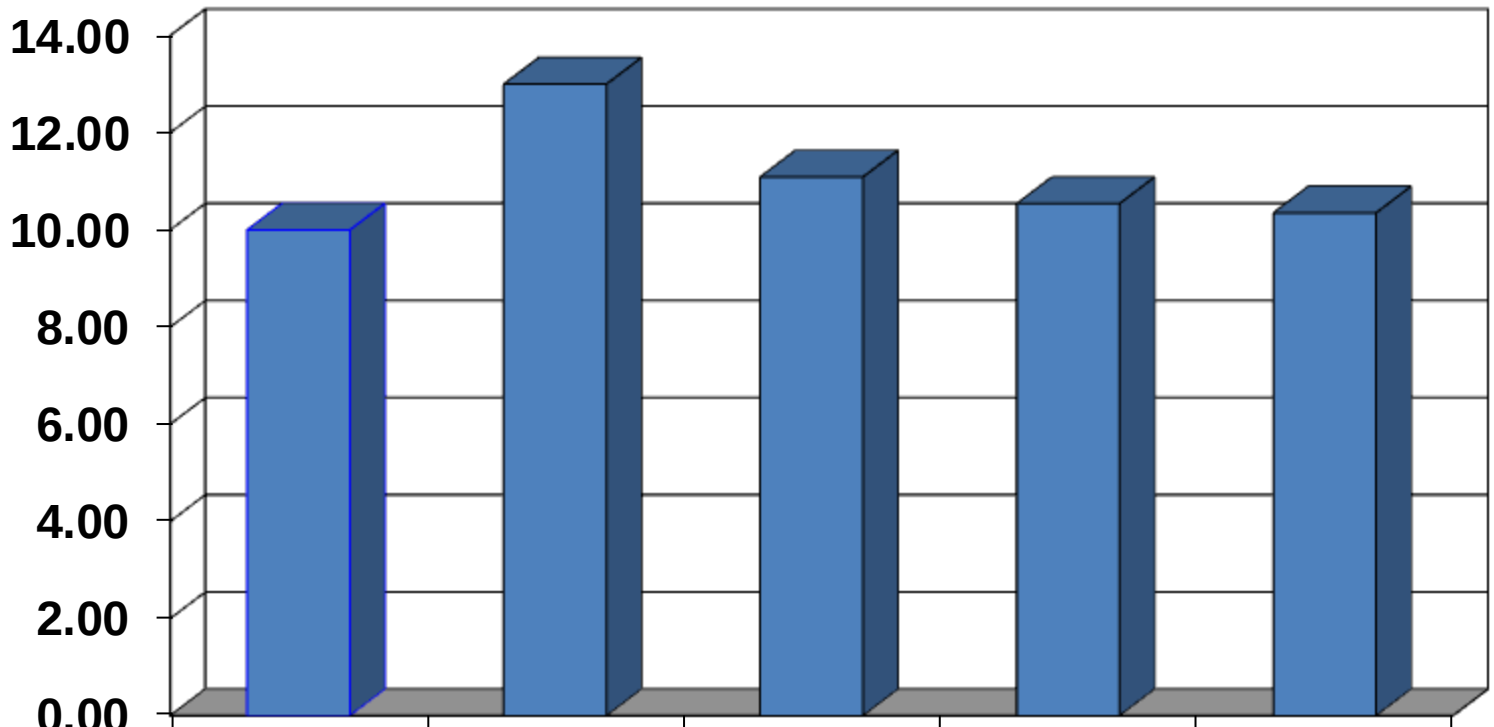
Wastewater Statistics

Number of Sewer Customers



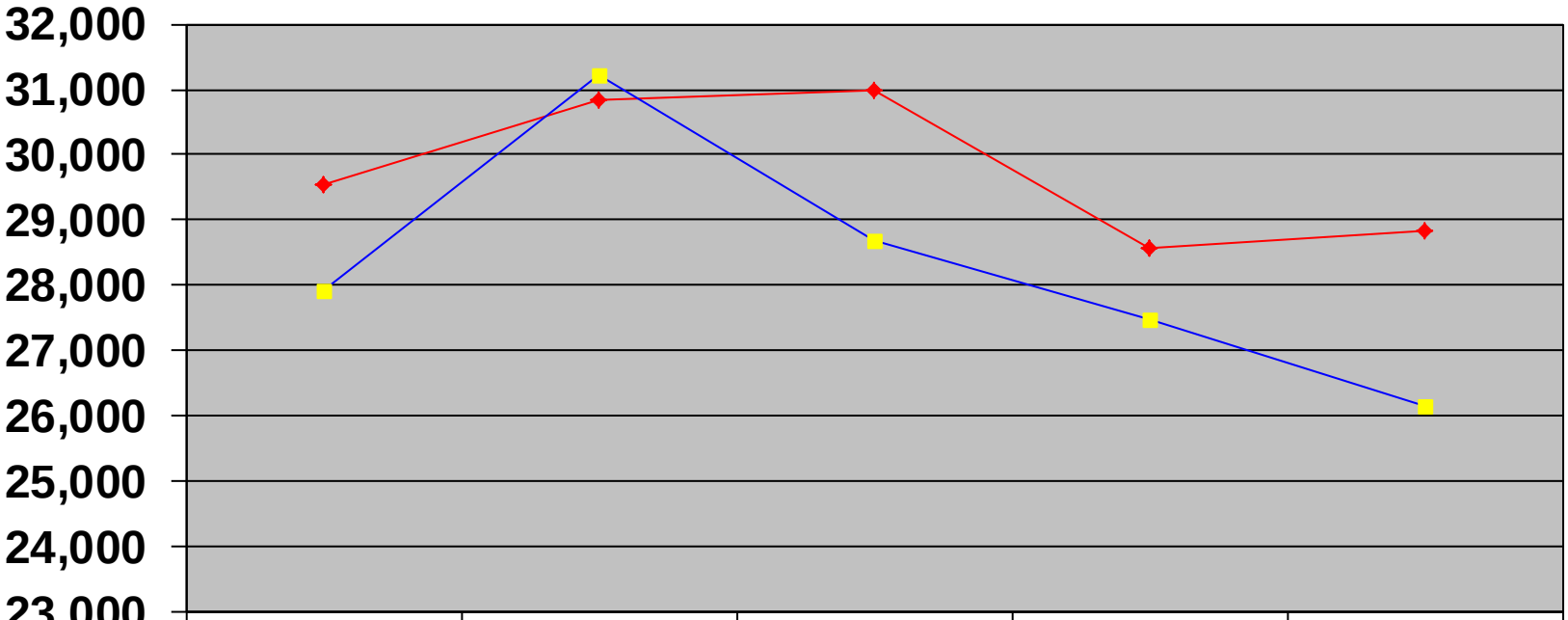
	2009	2010	2011	2012	2013
Other	340	345	350	348	360
Business	1,715	1,743	1,736	1,765	1,745
Domestic	16,450	16,518	16,632	16,745	16,811
Total	18,505	18,606	18,718	18,858	18,916

Wastewater Effluent in MGD



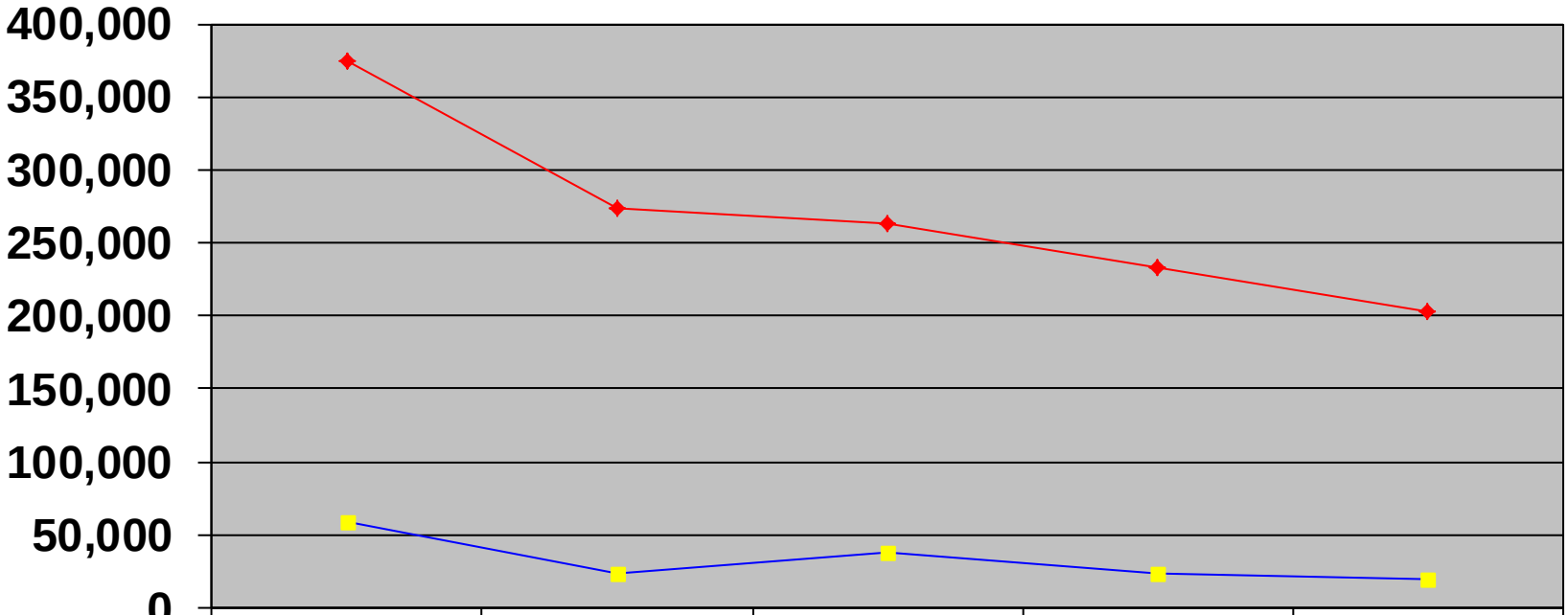
	2009	2010	2011	2012	2013
MGD	10.00	13.00	11.09	10.54	10.35

BOD / TSS Loadings in lbs. / Day



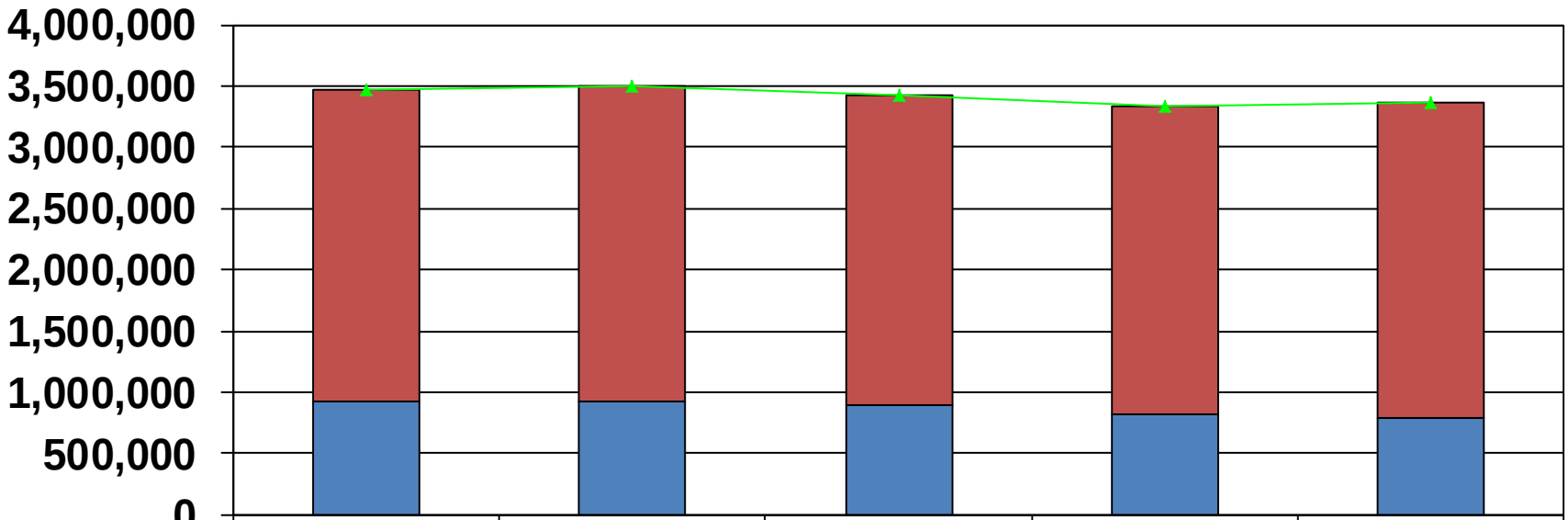
	2009	2010	2011	2012	2013
BOD	29,554	30,832	30,998	28,567	28,839
TSS	27,936	31,232	28,689	27,477	26,149

Nitrogen / Phosphorus Annual Discharge in lbs



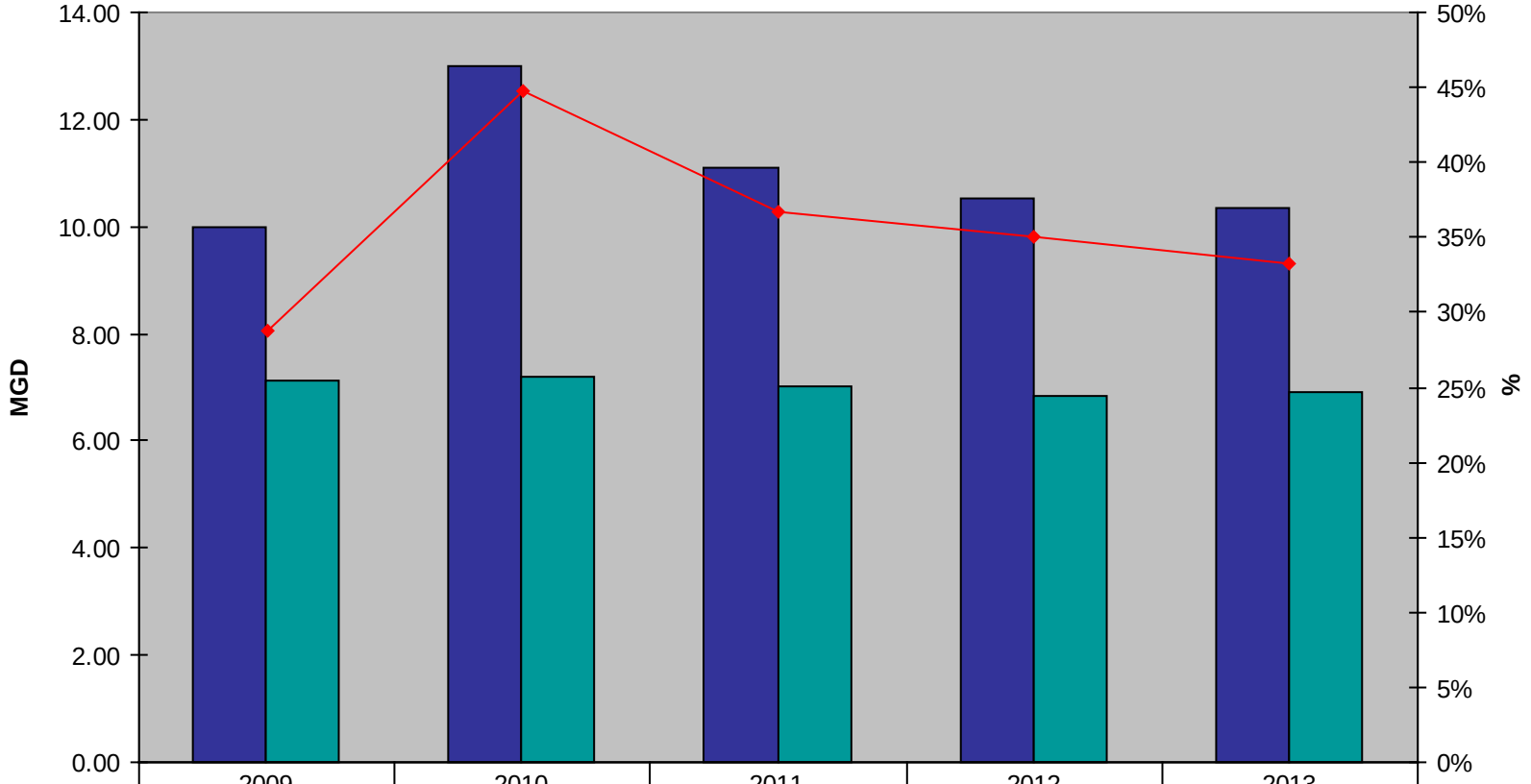
	2009	2010	2011	2012	2013
Nitrogen	375,106	273,963	263,308	232,563	203,280
Phosphorus	59,343	23,319	37,923	22,949	19,156

Sewer Sold in HCF



	2009	2010	2011	2012	2013
All other	2,546,506	2,582,089	2,536,205	2,513,335	2,573,269
Contracts	929,980	923,196	888,742	825,100	793,790
Total	3,476,486	3,505,285	3,424,947	3,338,435	3,367,059

Sewer Sales to Influent



	2009	2010	2011	2012	2013
Influent	10.00	13.00	11.09	10.54	10.35
Sales	7.12	7.18	7.02	6.84	6.9
%	28.80%	44.70%	36.70%	35.10%	33.30%

Sewer Complaints

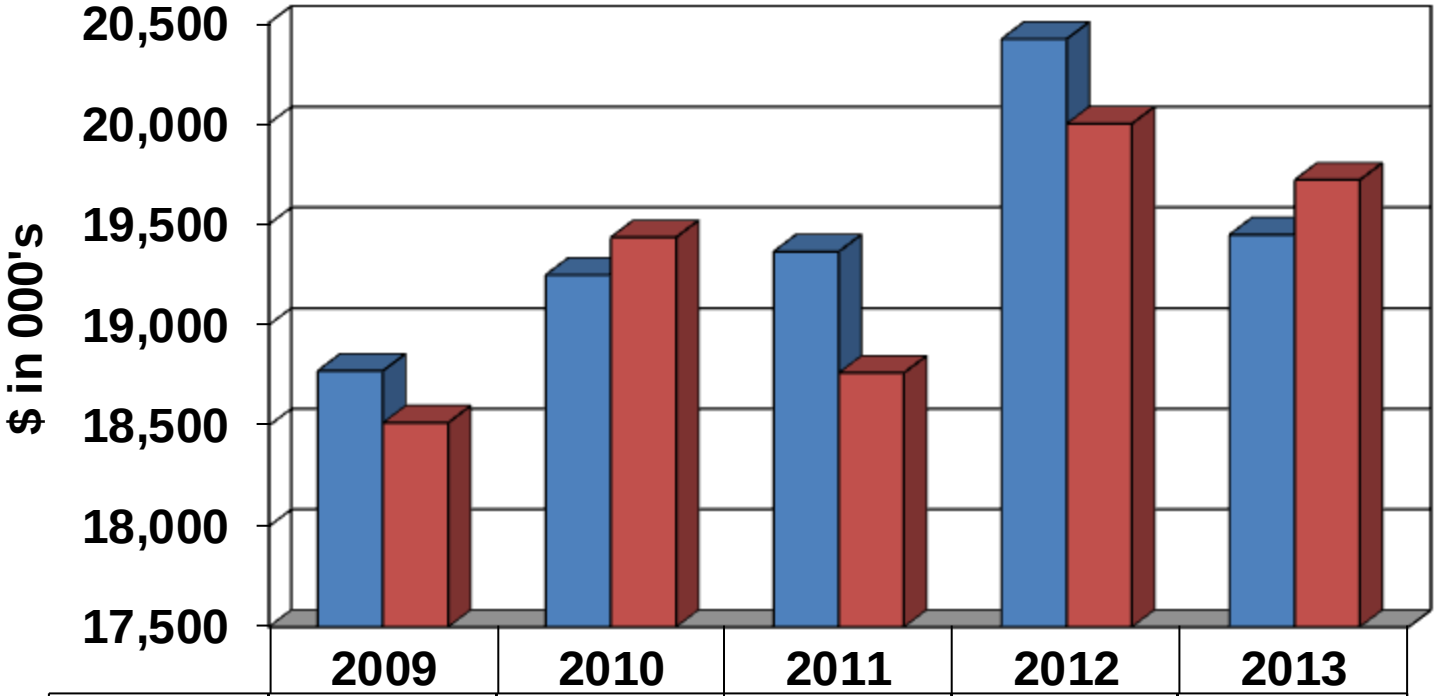
Type of Complaint	FY2009	FY 2010	FY 2011	FY 2012	FY 2013
1. Cave-in / broken sewer line	29	25	-	-	-
2. Sewer odor	76	45	72	30	32
3. Sewer overflow / backups	58	183	138	10	18
4. Stormwater related	228	203	219	154	178
5. All other	66	78	122	217	197
Total complaints	457	534	551	411	425
Number of sewer customers	18,505	18,606	18,718	19,572	18,916
Complaints / 1,000 customers	25	29	29	21	22

Sewer Fund Financial Data

Sewer Fund Debt Coverage

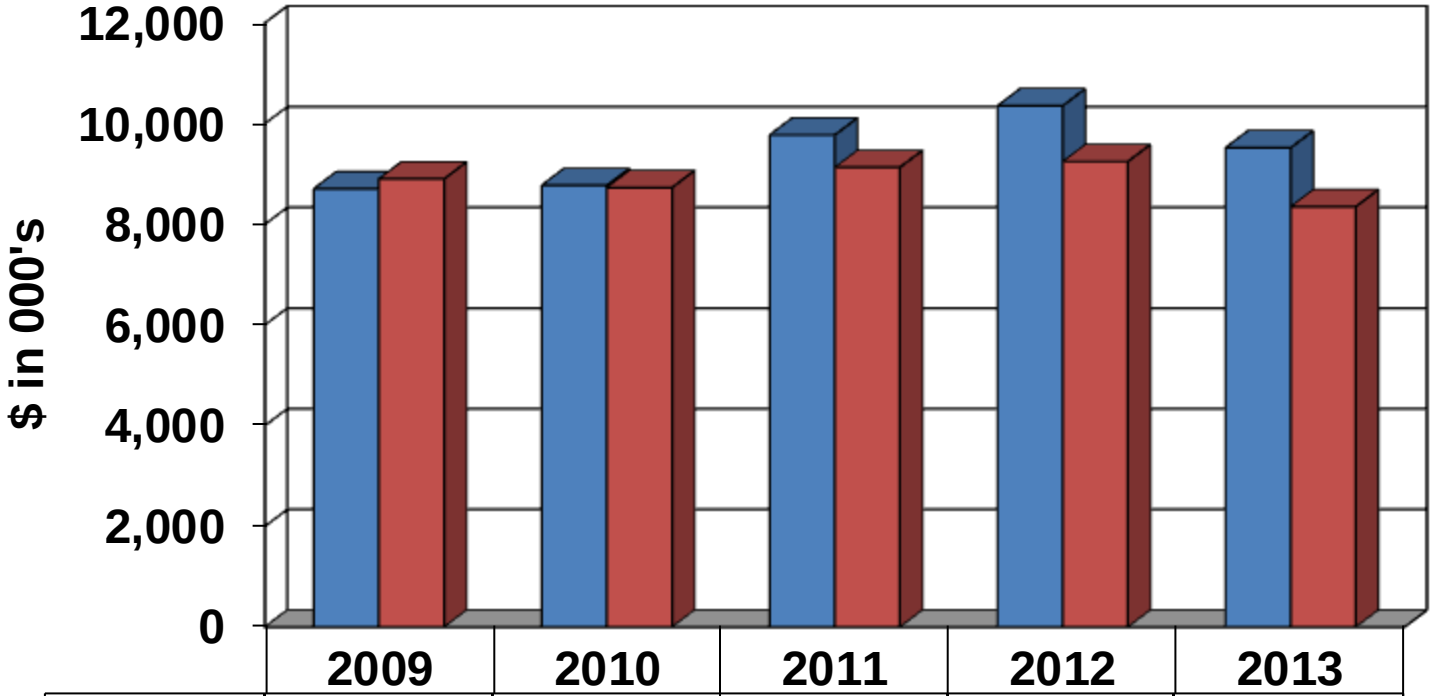
	FY2009	FY 2010	FY 2011	FY 2012	FY 2013
Revenues:					
Charges for services	15,542	16,085	15,757	16,267	16,573
Water contracts	2,562	2,991	2,806	2,802	2,909
Interest & other	410	359	199	930	238
	18,514	19,435	18,762	19,999	19,720
Expenses:					
WWTP	5,054	6,007	6,310	6,104	6,448
Sewer line maintenance + sw	1,921	2,305	2,665	2,598	1,952
Non-departmental	1,278	250	250	462	156
Project expenses	647	166	135	380	15
Capitalized expenses	0	0	(230)	(298)	(221)
	8,900	8,728	9,130	9,246	8,350
Operating income	9,614	10,707	9,632	10,753	11,370
Debt service, net of IRS rebate	6,569	7,107	7,573	8,067	8,412
Debt coverage	1.46	1.51	1.27	1.33	1.35

Sewer Revenues
Adopted Budget vs. Actual



	2009	2010	2011	2012	2013
Budget	18,772	19,248	19,364	20,420	19,448
Actual	18,514	19,435	18,762	19,999	19,720

Sewer Operating Expenses Adopted Budget vs. Actual



	2009	2010	2011	2012	2013
Budget	8,704	8,772	9,772	10,353	9,519
Actual	8,900	8,728	9,130	9,246	8,350

Ten Largest Sewer Customers

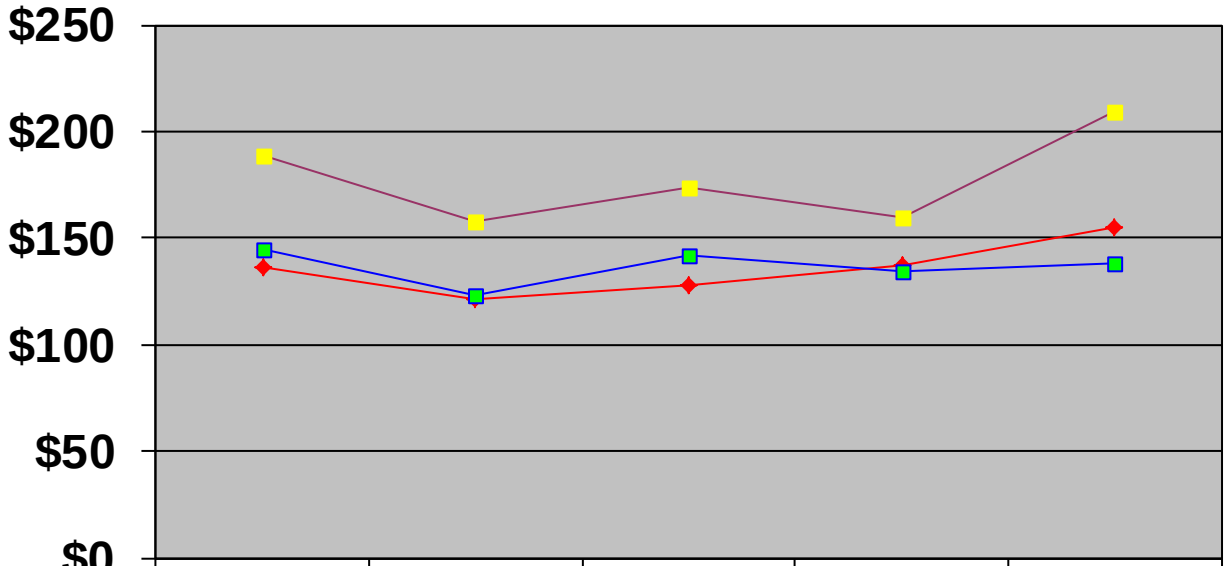
($ in 000)

Customers	FY2009	FY 2010	FY 2011	FY 2012	FY 2013
1. Rock Tenn	$1,139	$1,154	$1,019	$921	$982
2. Frito-Lay	938	1,146	1,276	1,102	1,230
3. Centra Health	382	450	537	516	601
4. Liberty University	469	476	518	614	722
5. Azdel	175	519	417	368	567
6. Bedford County	365	484	388	441	443
7. Amherst County	337	396	365	400	413
8. Griffin Pipe	295	280	316	283	502
9. Kroger / Westover Dairy	276	203	308	290	325
10. CCUSA	246	264	262	350	308
Total top 10	4,622	5,372	5,406	5,285	6,093
Total sewer revenues	18,514	19,435	18,762	19,999	19,720
Top ten % of total	25%	28%	29%	26%	31%

Sewer Expenses by Object
$ in 000's

Expenses by object	FY2009	FY 2010	FY 2011	FY 2012	FY 2013
Personal services	1,767	1,844	1,886	2,087	1,898
Fringe benefits	674	699	729	737	723
Supplies & materials	493	544	624	517	436
Contractual expenses	807	888	1,059	964	866
Sludge disposal	531	582	574	545	530
Utilities	691	751	704	648	805
Chemicals	496	575	518	555	597
General & Water Fund Allocations	2,114	1,979	2,360	2,136	2,118
All other	1,327	866	676	1,057	377
Total excluding capitalized expense	$8,900	$8,728	$9,130	$9,246	$8,350
% Increase - total	9.7%	-1.9%	4.6%	1.3%	-9.7%

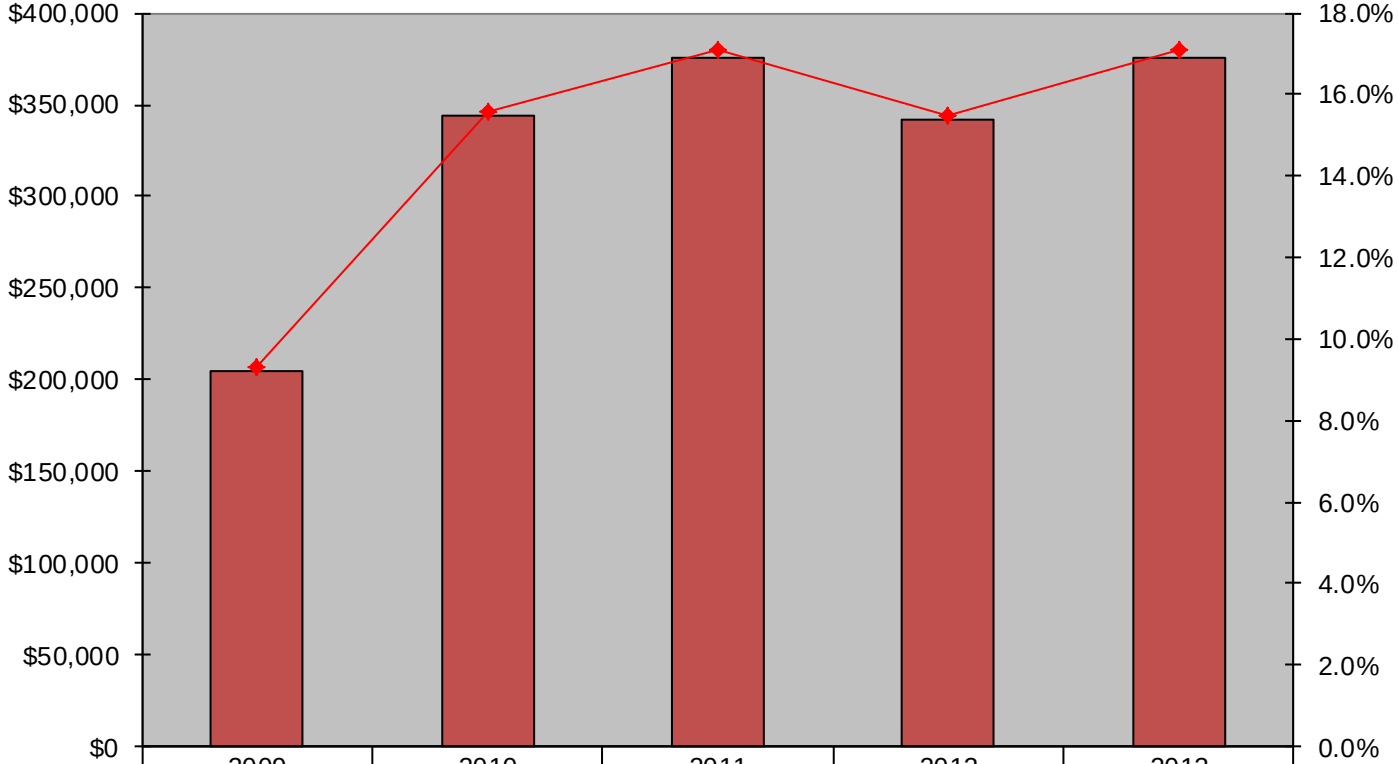
Sewer Variable Expenses / MG



	2009	2010	2011	2012	2013
Chemicals	$136	$121	$128	$137	$155
Utilities	$189	$158	$174	$160	$209
Sludge disposal	$145	$123	$142	$135	$138

Sewer Vehicle Costs

Total cost of all vehicles ($2.2 million)

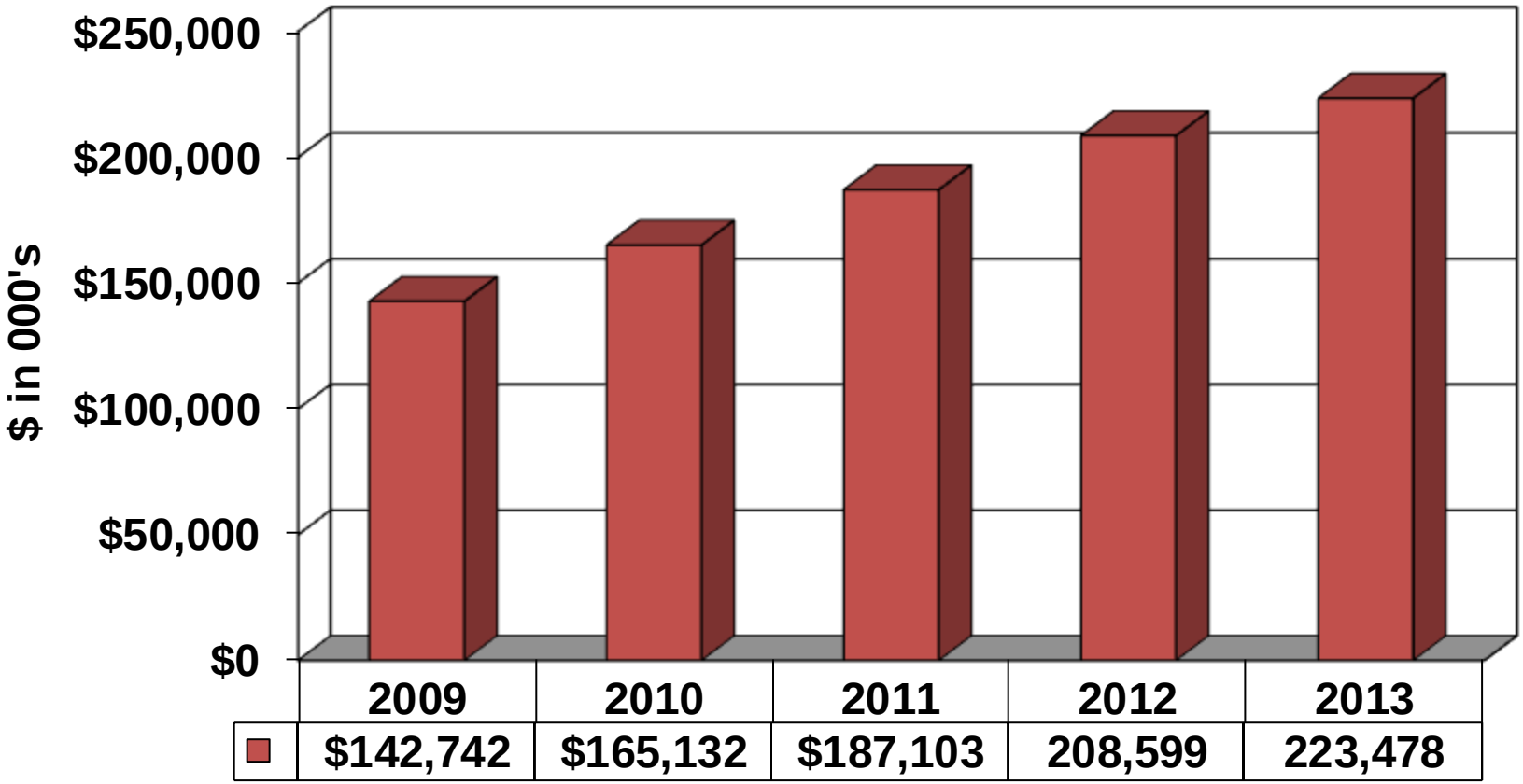


	2009	2010	2011	2012	2013
Payments	$204,453	$343,537	$375,700	$341,507	$375,473
Replcment %	9.3%	15.6%	17.1%	15.5%	17.1%

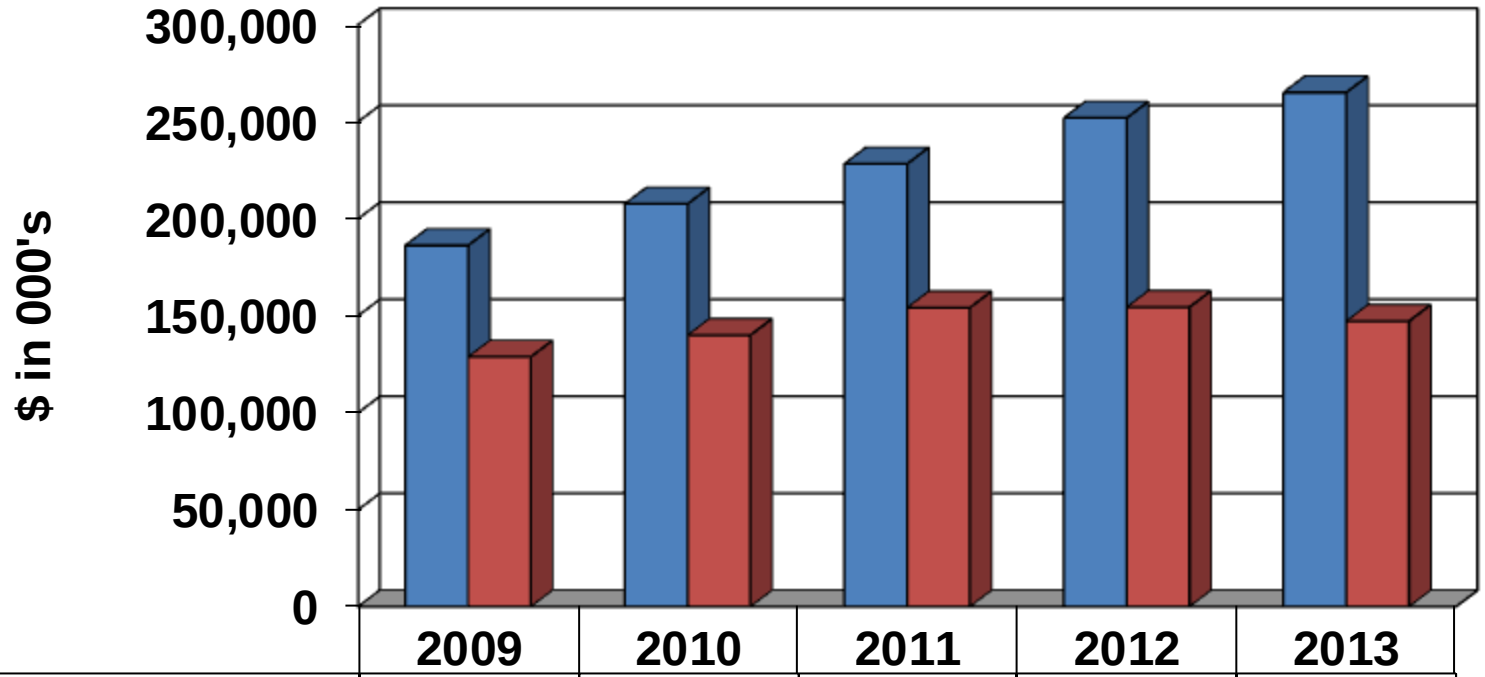
Sewer Capital Expenditures
$ in 000's

Capital Expenditures	FY2009	FY 2010	FY 2011	FY 2012	FY 2013
Sewer extensions	572	596	193	258	69
Treatment plant	2,564	1,612	1,164	5,572	3,377
Collection system repairs	309	464	997	1,667	1,402
CSO - separation & RDP	8,007	7,387	9,423	5,194	5,497
Interceptors	6,060	14,003	12,549	15,639	8,846
Stormwater	0	0	284	92	77
Other	218	1,092	1,177	1,132	183
Total	17,730	25,154	25,787	29,554	19,451

Cumulative CSO Expenditures



Net Sewer Capital Assets



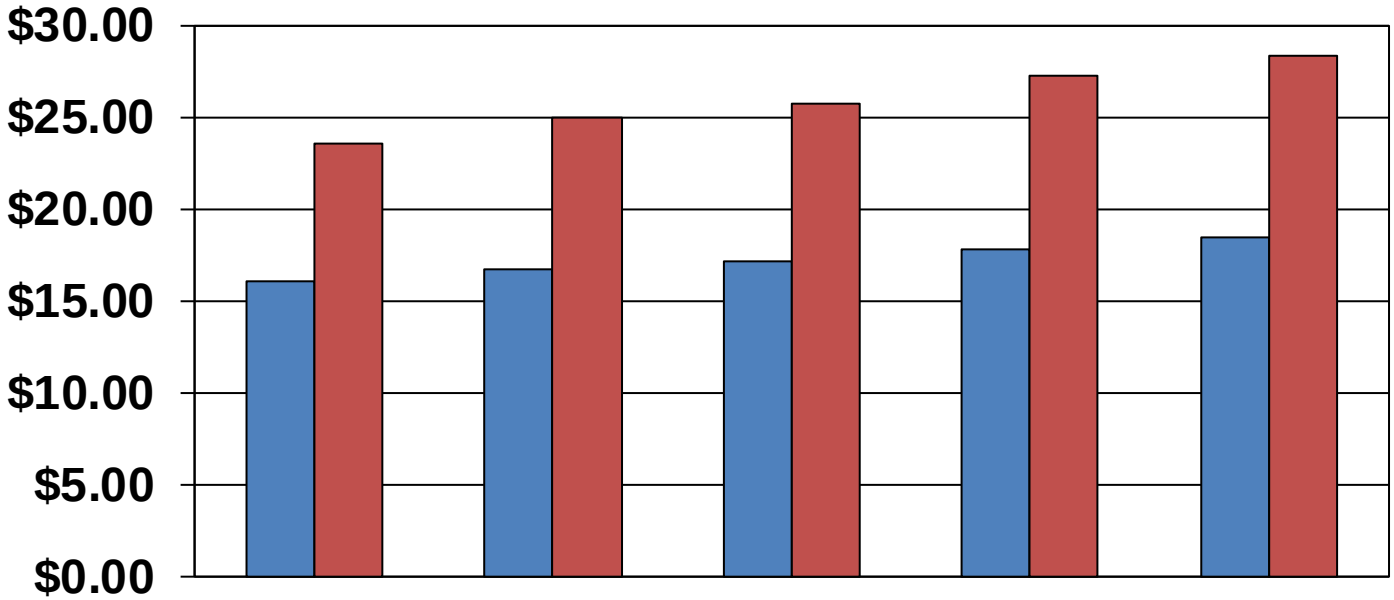
	2009	2010	2011	2012	2013
Net fixed assets	186,190	207,611	$228,252	$251,930	$265,057
Bonds & notes	128,757	139,951	$154,132	$154,374	$147,154

Rate & Bill Data

Water, Sewer & Stormwater Rates

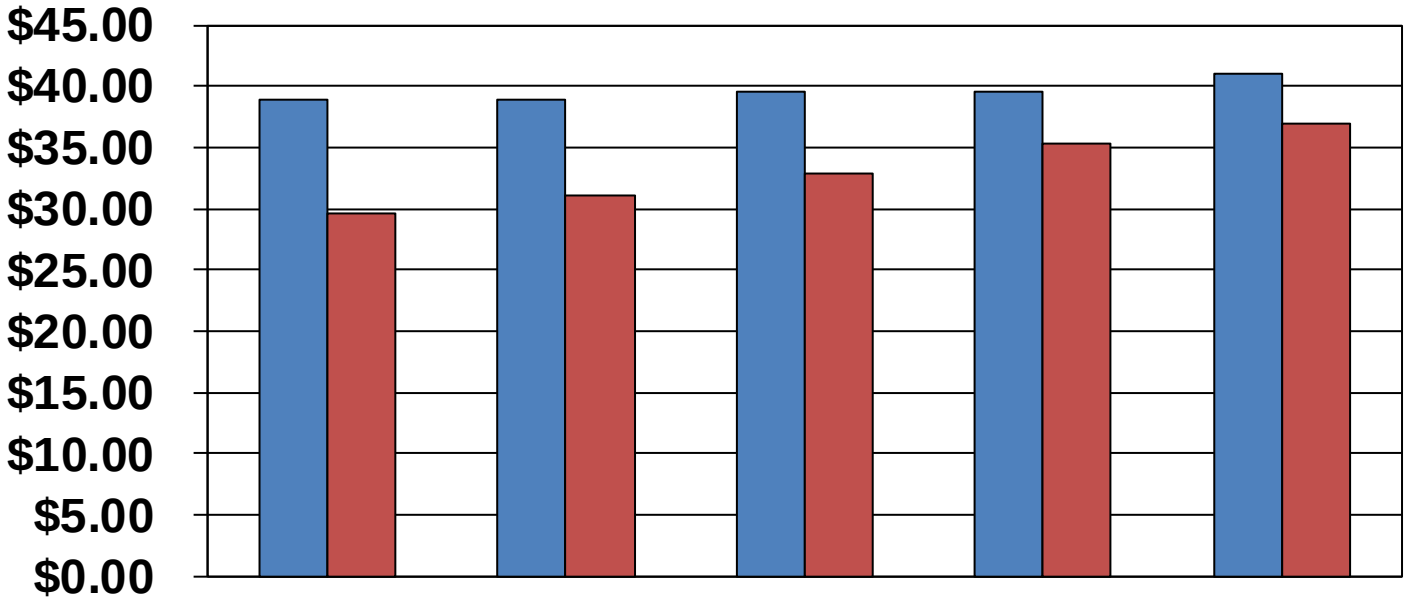
	7/1/2009	7/1/2010	7/1/2011	7/1/2012	7/1/2013
Water volume charge / hcf	$2.13	$2.22	$2.29	$2.38	$2.38
Sewer					
Volume charge / hcf	5.54	5.54	5.65	5.65	5.65
BOD / 100 lbs	18.46	20.31	20.31	21.33	22.40
TSS / 100 lbs.	20.88	22.97	22.97	24.12	25.33
Septic hauler charge	177.00	185.50	185.50	195.14	204.90
Avg. industrial pre-treatment / permit fee	1,460	1,606	1,606	1,606	1,606
Sewer only	42.47	42.27	43.24	43.24	44.58
Account charge	3.69	3.69	3.69	3.69	5.69
Stormwater					
Rate per sfu per month	0.00	0.00	0.00	4.00	4.00
Water Connection fees					
3/4" & 5/8" meters	950	950	950	950	1,045
1" service - 5/8" meter	1,000	1,000	1,000	1,000	1,100
1" service - 1" meter	1,150	1,150	1,150	1,150	1,265
Greater than 1" minimum	1,150	1,150	1,150	1,150	1,265
Sewer Connection Fees					
4" line	1,100	1,100	1,100	1,100	1,210
Greater than 4" - minimum	1,200	1,200	1,200	1,200	1,320
Availability fee					
Water	1,220	1,220	1,220	1,220	1,220
Sewer	1,950	1,950	1,950	1,950	1,950
Fire protection fees					
Hydrants & 8" fire lines	17.99	19.79	19.79	19.79	19.79
10" fire line	32.30	35.53	35.53	35.53	35.53
12" fire line	51.25	56.38	56.38	56.38	56.38
Cut-on charge	15	15	15	15	15
Cut-off charge	30	30	30	30	30

Water Bill Comparison @ 5,000 gallons / month



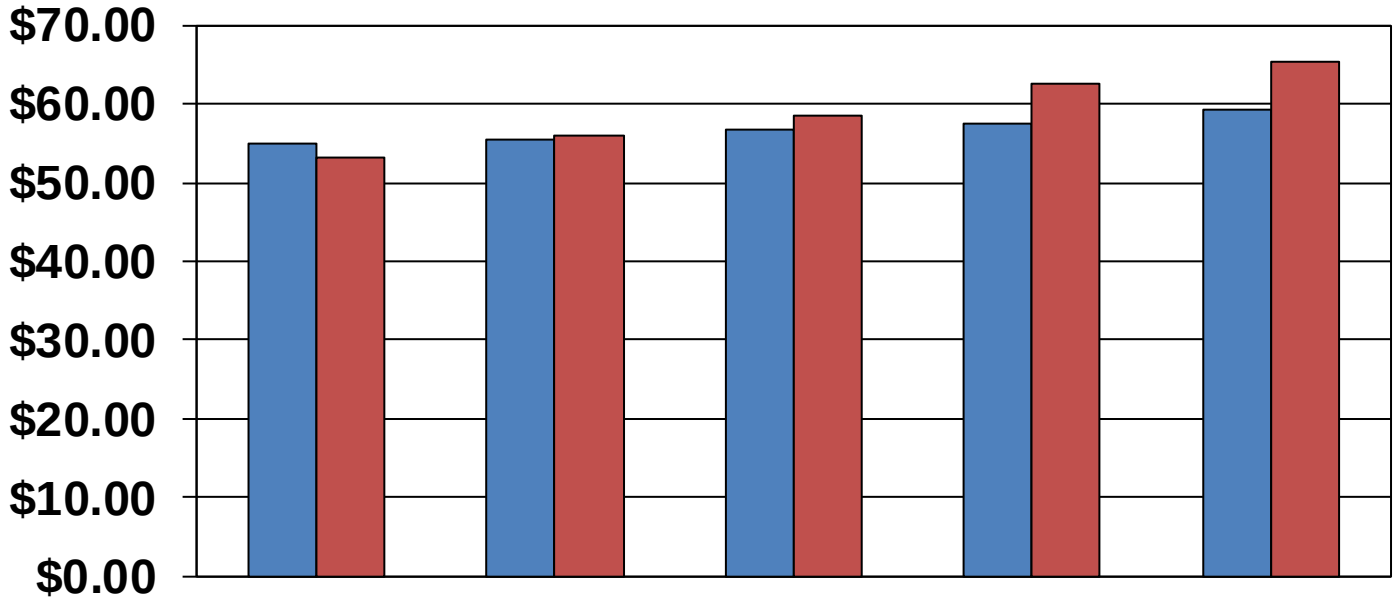
	7/1/2009	7/1/2010	7/1/2011	7/1/2012	7/1/2013
Lynchburg	$16.08	$16.68	$17.15	$17.75	$18.42
State avg.	$23.58	$25.00	$25.70	$27.25	$28.34

Sewer Bill Comparison @ 5,000 gallons / month



	7/1/2009	7/1/2010	7/1/2011	7/1/2012	7/1/2013
Lynchburg	$38.88	$38.88	$39.62	$39.62	$40.95
State avg.	$29.56	$31.03	$32.88	$35.34	$37.00

Water & Sewer Bill Comparison @ 5,000 gallons / month



	7/1/2009	7/1/2010	7/1/2011	7/1/2012	7/1/2013
Lynchburg	$54.96	$55.56	$56.76	$57.37	$59.37
State avg.	$53.14	$56.03	$58.58	$62.59	$65.34

Contract Rates

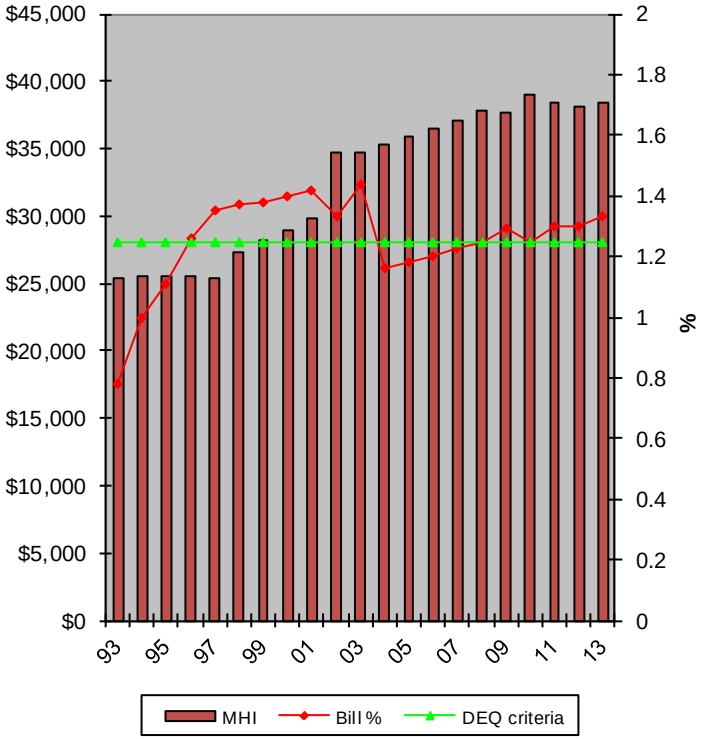
	FY2009	FY2010	FY2011	FY2012	FY2013
Water Contract rates / HCF					
Amherst	1.89	1.99	1.89	1.84	1.98
Bedford	1.93	2.00	1.90	1.84	1.98
CCUSA	1.80	1.98	1.89	1.82	1.97
Frito-Lay	1.086	1.18	1.21	1.24	1.27
Rock Tenn	1.086	1.18	1.21	1.24	1.27
Sewer Contract rates / 1,000 gallons					
Amherst (1)	1.47	1.27	1.61	1.60	1.73
Bedford (1)	1.47	1.27	1.61	1.60	1.73
CCUSA (1)	1.47	1.27	1.61	1.60	1.73
Frito-Lay	1.73	2.51	2.65	2.82	2.87
Rock Tenn	1.73	1.84	1.89	2.01	2.01
1. Volume rate only.					

Annual Sewer Bill as a % of MHI

Annual Sewer Bill

FY	Bill	MHI	%
1993	$199.08	$25,437	0.78%
1994	$255.00	$25,539	1.00%
1995	$282.96	$25,523	1.11%
1996	$321.36	$25,527	1.26%
1997	$342.96	$25,370	1.35%
1998	$374.28	$27,370	1.37%
1999	$388.32	$28,168	1.38%
2000	$406.68	$28,965	1.40%
2001	$421.80	$29,762	1.42%
2002	$461.76	$34,716	1.33%
2003	$499.56	$34,756	1.44%
2004	$408.33	$35,340	1.16%
2005	$423.72	$35,934	1.18%
2006	$439.68	$36,537	1.20%
2007	$456.48	$37,151	1.23%
2008	$473.92	$37,775	1.25%
2009	$487.56	$37,710	1.29%
2010	$487.56	$38,983	1.25%
2011	$496.80	$38,353	1.30%
2012	$496.80	$38,126	1.30%
2013	$512.76	$38,480	1.33%

Note - MHI based on 9 hcf of monthly use up to 2003; 7 hcf thereafter.



"We forget that the water cycle

and the life cycle are one."

~ Jacques Cousteau

Department of Water Resources

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