WATER AUTHORITY FISCAL IMPROVEMENT PLAN

The document has been approved by the Louisa County Water Authority Board and documents the steps the Water Authority proposes be taken to correct deficiencies in its organization, structure, authority and independence.

CONTENTS

APPENDICES

EXECUTIVE SUMMARY

Since 1982, the Louisa County Water Authority (Authority) has not been able to operate without financial assistance from the County (and the Town of Louisa). This is so for two principal reasons. First, there have never been enough retail customers to whom the operating expenses could be reasonably billed. Second, contractual arrangements negotiated during the Authority's development restrict the Authority's access to some customers, limit the prices it may charge for its services, prevent it from receiving all the fees charged for its services, and prevent it from using all the fees it does collect. See Appendix B for current revenue streams. Arrangements with the County have been designed to allow the County to recoup its capital investments in the infrastructure. However, they have created such financial constraints that the Authority is unable to generate sufficient funds to cover its operating expenses and hire the personnel needed to properly conduct its business, operational and compliance functions.

The County has added infrastructure and responsibilities to the Authority over time to change it from a water provider to a wastewater treatment plant operator. However, the Authority did not keep pace with the personnel and compliance requirements needed to run properly. In an effort to minimize its financial requirements, the Authority has operated on a shoestring budget hiring fewer than adequate staff, performing less than adequate maintenance, and limping along with antiquated management and administrative processes. The boom years up to the recent recession kept enough funds flowing to all parties that they were distracted from the actual long-term functional and fiscal needs of the Authority. With the arrival of the recession, compliance issues, and ongoing civil lawsuits, the inherent flaws in its financial and operating structure have manifested themselves with glaring clarity.

The Authority proposes to eliminate the myriad of agreements with the County and Towns and enter a single, simple contractual agreement with them that covers all facilities and operations. It proposes a simple business model whereby it will operate the water and sewer treatment infrastructure county-wide in the most cost efficient manner that provides for the long term preservation of the infrastructure, and in compliance with all regulatory requirements. The Authority will explore new avenues of customer development, revenue generation and cost reduction. The County would agree to cover any funding deficits until such time as the County believes there are sufficient customers to pay for all the financial needs of the Authority.

This plan proposes a large, continuing expenditure by the County to keep the Authority afloat. However, it allows the County to choose the date it cuts off funding. It places the Authority on a sound financial foundation for future sustainability and growth. It alleviates the towns of their water and sewer utility responsibilities and places infrastructure across the county on a single utility standard. It provides a means for equitable water rates across the county. County supervisors will be more politically removed from rate increases. And, county investment return will be based on tax revenues, thus making it easier to demonstrate benefit to all county residents.

MISSION

To provide top quality potable water to every tap in our system around the clock and to meet or exceed all regulatory mandates when returning effluent back into the environment.

VISION

The Authority shall stand as an agency of County government with sufficient resources and income to sustain the infrastructure, operations and staffing assigned to or owned by it that is needed to fulfill its corporate purpose.

PURPOSE

The Purpose for which the authority is formed is to acquire, finance, construct, reconstruct, operate and maintain facilities to provide water, sewage, sewage disposal and/or garbage and refuse collection and disposal services for the County of Louisa. [Articles of Incorporation, Number 5]

GOALS

- To obtain sufficient customers, reduce operating costs, meet regulatory compliance standards and economically maintain the serviceable lifetime of infrastructure in a manner that weans the Authority from County financial assistance as quickly as possible.
- To build a reserve of funds sufficient to provide for both present and future corporate needs and still be able to make significant contributions to major county infrastructure projects.
- To identify additional revenue streams consistent with the Authority's corporate purpose.
- To protect itself and assist the County in avoiding legal liabilities by maintaining full compliance with the law.
- For the Board to be an active participant in planning and managing the County's long range growth.

CURRENT STATE

CUSTOMERS

The Authority has only 520 customers it can bill to cover all its expenses. The Town of Louisa, one of those 520, offers water and sewer services to its 760 customers by purchasing water at a wholesale rate and contracting with the Authority to operate the Regional WWTP at a "break even"/not for profit rate dictated by agreement. The Town of Mineral, another of those 520 customers, which also receives water at a wholesale rate, has 400 customers of its own. Not all customers purchase both water and sewer services. In total, there are presently, approximately, 1680 customers receiving public water and sewer services from all Authority infrastructure across the County.

PERSONNEL

The Authority's largest expense is the cost of personnel. It has 14 full-time employees and operates on a minimum manning principle. Three of the employees have multiple certifications that allow them to provide crossover backup across the Authority's operations to cover vacation, sick days and training time of all the others. In 2010, the Authority paid $58K in overtime. In 2011, it was $58,700. Collectively, the Authority employees have accumulated 615 unused vacation days and 190 comp time days. As of June 30, 2011, only 29 sick days have been taken. Most of the employees are on call 24-hours to respond to emergencies. The employees of the Water Authority are dedicated public servants who continue to make many personal sacrifices to keep the water flowing where it needs to go.

County personnel are relied upon for internet service, communications support, GIS support, procurement support, legal support, and financial management support. The Authority does not reimburse the County for this support.

The organizational structure of the Authority is depicted in Appendix A. Note how the shortage of personnel is manifested in the multiple reporting lines which reflect the overlap of positions, supervisors and duties.

As a career field, being a waste water treatment plant or water plant operator is not attractive to many young people and finding talent is challenging. The Authority has been fortunate in its ability to recruit certified operators from other nearby authorities. However, given the limited supply of certified personnel, the cost of obtaining them is naturally rising. There are examples among staff where recent hires have higher pay than their peers and this is creating disparities in the pay structure of the Authority that needs correction. Furthermore, increasing plant capacity is also increasing the need to satisfy DEQ-mandated staff hours which leads to more overtime to cover manpower shortages. With its increased plant capacity and operating hours, the Authority is headed into a new personnel era and needs a structure to its pay system that justifies pay to certifications, reduces overtime and allows for competitive hiring.

On July 1, 2011, the two most recently hired employees were added to cover the increased wastewater operational hours dictated by regulators. The Louisa Regional STP moves to increased hours this fall as the new upgrade comes on line.

COMPLIANCE

The Authority holds 4 Virginia Pollution Discharge Elimination System (VPDES) permits from the Department of Environmental Quality (DEQ), 2 from the Virginia Department of Health (VDH) and 2 from the Virginia Department of Conservation and Recreation (DCR). Because of the past operational deficiencies already identified, the Authority must also meet all the requirements of its two Consent Orders and their attendant Compliance Plans. The Consent Orders mandate a wastewater reuse project that will result in reuse of 100K gpd at the Zion plant by 2015. The VPDES permits (and Consent Order Compliance Plans) mandate the creation of a pretreatment program that places the Authority in the role

of regulator; this program has its own financial burdens and fast approaching deadlines. It maintains its Dam Certification for the NE Creek Reservoir and the County's certificate for the Bowlers Mill Dam.

The Authority receives the following services via contractors to enable it to meet regulatory requirements:

- Monthly Discharge Monitoring Reports preparation
- Lab testing of daily, weekly, and monthly samples
- Quarterly QAQC inspections
- Data review and advice
- Design and implementation of special studies (pretreatment local limits, metals, toxics, de-nitrification events, etc.), new equipment or process changes needed for regulatory compliance
- Permit application/modification, dam certification
- Rental of several pieces of lab and test equipment

As additional personnel are brought on, contractor services will be reduced where fiscally sensible to do so. Relief from compliance requirements can be specifically requested from DEQ as our state of compliance and trustworthiness with DEQ improves. Nevertheless, many of these compliance requirements will only grow as our plant capacities and internal compliance programs grow.

One of the new programs is the Pretreatment Program (PTP). The PTP place the Authority in the role of being a regulator of local businesses. It must set discharge limits, issue permits, receive sample and monitoring reports, review slug control plans and undertake enforcement activities. These functions, and more, are to be performed by existing personnel.

The Authority faces looming deadlines for removal of metals, specifically copper and zinc from its effluent. The plants were not designed to accomplish this. Several alternatives are being explored that will result in additional expense to plant operations. The deadlines to meet for metals removal are extremely challenging. The options to resolve this challenge range from changes to plant processes, to source water treatment in all their varieties, to moving the Zion Crossroads outfall several miles away to the South Anna River.

Along with the wastewater treatment issues, the authority is under pressure from VDH to reduce the amounts of disinfection by-products in the NE Creek potable water system. These requirements, set by the US EPA, may require significant upgrades at the Northeast Creek water treatment plant. A stop gap measure of adding an activated carbon filter media is in place for now, but lower THM and HAA5 permit levels may require process modifications including additional filtering and the reduction of Total Organic Compounds (TOC's) at the source reservoir.

INFRASTRUCTURE

Water Treatment. The Authority was given ownership of the Northeast Creek Reservoir, treatment plant, and water distribution system. That system has 2 stand pipe tanks (90K &, 570K gallons each) and 46,000 linear feet of distribution lines. The plant and tanks are 29 years old.

The County owns the Zion Crossroads wells and the land on which they are located. For the owner, the Authority maintains and operates 23,000 linear feet of water line, including one elevated tank of 500K gallons.

Wastewater Treatment. The County and the Town of Louisa share ownership of the Regional STP but each own and operate their own collection system. The town of Mineral owns and operates its collection system, as well. The plant's latest upgrade is scheduled to be completed in September, 2011. For the County, the Authority maintains and operates approximately 53,500 linear feet (just over 10 miles) of sewer line (force main and gravity) in the Regional service area, which includes 4 lift stations. The town of Louisa owns a single pump station and 71,080 feet of sewer lines that feed the Regional plant.

The County owns the Zion Crossroads Wastewater Treatment Plant and collection system. For the owner, the Authority maintains and operates 780 linear feet of force main and 13,500 linear feet of gravity sewer mains in the Zion Crossroads service area which includes a single lift station.

Laurel Hill. On January 4, 1994, the Louisa County Board of Supervisors adopted a Resolution (RES 94.003) extending the boundaries of the Louisa County Water Authority to include the Laurel Hill Water and Sewer system. Laurel Hill is an eight (8) home community at the intersection of Centerville Road and Kentucky Springs Road. This community is served by a small package wastewater treatment plant serving five (5) of the homes. The septic tanks collect the solids and the treatment plant chlorinates the water effluent. The other three (3) homes are served by individual drain fields on their property with no treatment from the package plant. All of the eight (8) homes are supplied water from two (2) wells on the property. Although the homeowners are responsible to maintain their drain fields and septic tanks, their neglect of this duty has compelled the Authority to absorb the cost in order to maintain the integrity of the package plant. Additionally, the Authority Board has chosen not to apply the same level of rate increases to these customers due to the difficulty in collecting payment. Their current rates are $10.00/4,000 gallons for water and sewer.

FINANCES

Cost Of Goods Sold. Calculating costs for the Authority is challenging because it is presently undergoing large changes in its treatment requirements, treatment processes, personnel, use of consultants, establishment of new regulatory programs and its use of outside legal representation. Therefore, all initial cost figures will be presented beginning in FY2010 because this was the last fiscal period that could be considered "normal". Furthermore, costs will be presented for the Authority as a whole using a unit of measure of 1000 gallons, because the goal of this plan is to place the Authority on a healthy footing as a whole we will present figures that represent the Authority as a unified whole. It may be somewhat easier to look at individual business units and understand how each works under the

separate agreement that applies to that part. However, it is boggling to try to understand how all the different agreements intermesh. So, the following discussion will try to focus on the whole "forest" rather than the individual "trees". An overview of the "trees" can be found in the Business Model section below.

In FY2010, it cost the Authority $9.40 per 1000 gallons to process the water it provides to customers. In FY2011, it cost the Authority $15.87 per 1000 gallons. The budget projected for FY2012 anticipates it will cost approximately $18.15 per 1000 gallons to sell the anticipated flow of 195M gallons. From all sources of income in FY2010 (including County payments, interest income, fishing license sales, etc.), the Authority received $9.19 per 1000 gallons. That income is broken down as follows for the past two years and projected into next year:

FY2010	FY2011	FY2012	
$5.02	$4.08	$4.40	average user rate paid (total customers/total rate payments received)
$0.84	$6.79*	$3.23	extra charges collected (connect fees, septage fees, fish licenses, etc.)
$2.90	$2.41	$3.94	plant costs paid directly by County or Town
$0.43	$0.30	$0.43	interest income from funds in savings
$9.19	$11.18	$12.00	total income received from all sources per 1000 gallons
$9.40	$15.87	$18.15	total cost to process the 1000 gallons sold

*Includes $3.26 from a supplemental county appropriation

Debt. The County loaned the Authority $3.1M in 1982 to construct the NEC water treatment plant. Approximately $2.6M was used for construction and the balance is classified as encumbered or deferred funds that are held in the Authority's fund accounts to repay the $3.1M Endowment in October 2032. These funds are made up of the Northeast Creek Water Treatment Plant connection fees and the unspent endowment fund balance. The Authority may withdraw money from the fund so long as withdrawals are repaid. The Authority uses interest income from the fund to help defray operating expenses. There is presently $1.146M in the fund which is restricted and considered principal repayment that the Authority is not allowed to use for its needs. Besides the funds owed to the County, the Authority carries debt from no other sources because it is not creditworthy enough to receive a loan. Its expenses have always exceeded its income.

Equity. The water authority owns a 2400 square foot office building at Loudin Village, a 3-bay garage maintenance shop and office at the NE Creek Reservoir site, 8 vehicles and current assets of $2.3M and capital assets of $6.5M. These items are owned free and clear as assets of the Water Authority. Except for two, all vehicles have in excess of 100,000 miles of use.

Connection fees. The established connection fees which are charged to new customers to hook up to the public system can be found at Appendix D. Based on tradition and custom (there is no written agreement, memo, understanding or resolution requiring such), the Authority remits to the County the major portion (75% - 90%) of all connection fees it has received. The only written document addressing the application of connection fees is the 1982 Endowment Agreement which created the NE Creek water

treatment system. It requires all connection fees received be applied first to replenish the cost of system construction to the Endowment Fund The Authority continues to escrow its share of the NE Creek connection fees for the repayment of the Endowment and is able to utilize the interest income to supplement operating income . In the Zion Crossroads service area, approximately $2.6M in connection fees have been paid to the County to date. In total, approximately $734,500 collected as connection fees has been used by the Authority to fund operating expenses.

Reserves. The Endowment Fund for the NE Creek system presently contains $1.146M. While the principal cannot be spent, it earns interest at approximately 4% which can be used by the Authority. In FY2010, the Authority had a reserve fund, built from excess revenue from all sources, for refurbishment and repair in the amount of $300K. That fund has been depleted in the past year.

Operating Expenses. The operating expenses of the Authority are primarily compliance costs; they are the costs incurred to operate the systems that satisfy the permit requirements. Consequently, operating expenses are a perfect reflection of changing compliance requirements and a direct measure of compliance costs.

Operating expenses for FY2010, FY2011, and projections for FY2012 are provided at Appendix B. The Authority is now in a financial position where it has no available financial reserves and operates from month to month. If there are insufficient funds at the end of each month, the County is called upon to cover deficits. In FY2011, the County provided $605,530 beyond amounts originally budgeted.

Here is a general overview of current operations:

(1) The Northeast Creek Water Treatment Plant operates 365 days a year producing and distributing 350,000 – 375,000 gallons of potable water daily. Total plant capacity in its current state is 1 MGD. The Northeast Creek Reservoir has a safe yield of 2.77 MGD. Louisa County Water Authority provides potable water to approximately 92 residential and 68 commercial customers; the towns of Louisa and Mineral are considered commercial customers. The Authority's largest retail customer is the Louisa County Public School System. The Town of Louisa purchases 100% of its potable water from the Authority and serves 616 residential and 161 commercial customers. The Town of Mineral purchases approximately 21% of its water from the Authority to supplement their well system and serves 270 residential and 45 commercial customers.

(2) The Regional Wastewater Treatment Plant (400,000 gpd) operates 365 days a year treating approximately 280,000 gallons of wastewater daily. The Regional Wastewater Treatment Plant serves approximately 36 residential and 43 commercial county customers in the County service area, 752 in the Town of Louisa and 155 in the Town of Mineral. The Authority's largest retail customer is the Louisa County Public School System.

(3) The Authority operates six (6) potable water wells and maintains fourteen (14) monitoring wells that serve the Zion Crossroads service area. These wells produce approximately 150,000 gallons per day. There are currently 322 residential customers and 37 commercial customers being served potable water. All Zion Crossroads customers are LCWA customers.

(4) Zion Crossroads Wastewater Treatment Plant (100,000 gpd) operates 365 days a year treating approximately 80,000 gallons of wastewater daily. Currently there are 318 residential and 28 commercial customers being served by the Zion Crossroads Wastewater Treatment Plant. Zion

Crossroads Well permitted well capacity is 9,888,000/month residential and 7,572,000/month commercial. Current total usage of well water capacity is approximately 28%.

(5) Currently there are approximately 520 meters recording water use for the Authority; 160 in the NE Creek service area and 359 in the Zion Crossroads service area.

(6) Bowlers Mill reservoir has a pump station that provides raw water used at the Old Dominion Electric Cooperative electrical generation plant in Gordonsville.

(7) Laurel Hill is an area located near the North Anna Nuclear Power Plant, at the intersection of Kentucky Springs and Centerville Roads. It has a small package wastewater plant serving five (5) homes. That area also has a two (2) well system serving eight (8) homes.

Due to regulatory compliance mandates, new treatment processes and legal challenges, the costs of the Authority have more than doubled over the past year. They are not expected to drop back to old levels, but, instead, will likely continue to increase. Furthermore, the Authority has no funds set aside for refurbishment and replacement of its aging equipment, anticipates adding personnel as the new plants come on line, and must update its business processes and equipment to handle the necessary increase in customers.

RATE STRUCTURE

The basic current rate structure is relatively simple. Retail customers pay an established rate for water service and a rate for sewer service per 1000 gallons. Regardless of actual consumption, a minimum charge is imposed on all customers for their first 4,000 gallons. Beyond the first 4,000, retail customers are charged for actual usage in pro-rated 1000 gallon increments. The current rate structure can be found at Appendix E. The two towns pay a wholesale rate to the Authority per agreement and then set their own rates and sell services independent of the Authority.

Based on current rates and 2010 consumption, the Authority receives a weighted average price for the services it sells in the amount of $4.56. Prices and proportions are displayed in the following table.

Customer Type	Proportion of Total Gallons Sold	Average Price per 1000 gallons	Weighted average rate
Raw	2%	$.50	$4.556
Towns	55%	$2.43 (wt avg*)	
Irrigation	7.1%	$3.50	
Schools	3.9%	$8.25	
Commercial	18.8%	$8.25	
Residential	13.2	$8.25	

*Louisa pays $2.34/1000gal for first 127K gpd. Then it pays $2.60/1000gal for additional water. Mineral pays $2.60/1000gal for the potable water it does not pump from its own well. (Mineral's sewer charges are included in the commercial/residential totals.)

The most prominent fact in the table above is that over half the Authority's water is sold at a cost of $2.43 per 1000 gallons, while it costs the Authority $9.40 to produce it.

The Authority has proposed a rate increase of 45% for its retail water and sewer customers, effective October 2011. See Appendix E. The new rate will charge Authority retail customers a minimum charge of $48 per month for water and sewer. Using FY2010 consumption figures, the new rates will increase the weighted average rate received by the Authority to $6.01.

The towns of Louisa and Mineral charge their customers $54 and $46 per month for 4,000 and 3,000 gallons, respectively, for water and sewer service. The Authority cannot charge the towns significantly higher rates for potable water until after 2014 when the current rate agreement expires. The Town of Louisa is not charged for sewer service because it pays (its share of the) actual operating costs for the Regional STP. The Town of Mineral pays a retail rate for sewage treatment.

BUSINESS MODEL

The current business model of the Authority is complex. It is governed by multi-layered agreements, past custom ("it's how we've always done it") and antiquated manual processes. Every one of its facilities is governed by a different set of rules and agreements.

For the NE Creek water treatment and distribution system, the Authority operates out of its own budget. The Authority is required by agreement to sell water at very low wholesale rates and any deficits in funding are subsidized by the County. However, no deficits have ever been billed to the County from this system. Both Towns own and maintain their water distribution systems at their own expense. The Authority owns and maintains lines to its 160 customers in the rest of the service area, including the meters installed at the beginning of the Towns' lines.

Wholesale rates charged to the towns are controlled by an agreed formula and enforced by the County's appointed Rate Commission. That agreement ends in 2014 when there will be no restriction on the amount the Authority may charge the towns. There is no restriction on the Authority governing the rates it may charge its own retail customers; the Rate Commission was not created to control retail rates.

For the Regional Sewage Treatment Plant, the Authority does not own the plant or the sewer collection system. The plant is owned jointly by the County and the Town of Louisa who divide all operational and capital expenses according to their proportional use based on flow. The Authority bills 100% of the plant's expenses, including staff salaries and transportation costs, to the owners as well as a 2% markup. The Authority has never paid any of the costs of operating the Regional plant. There is no clear agreement regarding the billing of costs for the plant's sewer collection system so the Authority has never billed the plant owners for those costs. However, it does retain the user fees associated with these sewer customers. The Town of Louisa controls its own connection fee charges to cover the cost of infrastructure of the treatment plant and collection system; as a retail customer of the regional plant, the town of Mineral also charges a connection fee to cover the costs of repair and maintenance of it's the collection system, but does not contribute directly to the treatment plant infrastructure.

For the Zion Crossroads water and sewer systems, the County owns the land, the easements, infrastructure and distribution/collection systems. 100% of the operating expenses in the Zion

Crossroads service area are paid by the Authority. 75-95% of all connection fees are remitted to the County. There is no written agreement governing the County-Authority cost sharing in the ZC area.

On the whole, all of the agreements governing the Authority's operations were drafted from an optimistic view of the expected future revenue streams. When the abundant customers/revenues did not materialize, the agreements provide that the County is guaranteed to receive its revenue regardless of Authority need.

CONCLUSIONS

The Water Authority has four fundamental problem areas needing correction:

1. The Authority has too few retail customers to sustain itself on its existing infrastructure .
2. The tradition of artificially low water prices, recouping infrastructure investments from connection fees or mandated savings to repay debt has deprived the Authority of the financial resources it needs for financial viability when receipts from connection fees decreased and legal expenses increased. The complex web of agreements protects the County and towns at the expense of the Authority.
3. The Authority's lack of financial strength has caused the Authority's shorthanded personnel to engage in a reactive operations mode which functions on shortcuts, quick-fixes, outdated processes, personal sacrifice, county staff augmentation, and general neglect of infrastructure.
4. The Authority has not been included in long-term planning and therefore has been unaware of new county projects and opportunities.
5. The Authority has not realized its functional potential as provided in its Articles of Incorporation.

THE NEW AND IMPROVED WATER AUTHORITY

PROPOSED BUSINESS MODEL

The Authority proposes a model to be applied across all publicly owned water and sewer infrastructure, uniformly. Simply stated, it is this: the Authority shall operate the water and sewer infrastructure as efficiently as possible to fulfill its corporate purpose. The County shall provide such funding as is needed to cover Authority deficits until such time as there are sufficient customers or resources to pay for all Authority expenses.

- The County shall determine the timing of when it no longer will contribute funds to Authority operations. At that time, customers will assume the entire cost of the Authority's expenses.
- The County will determine whether or not it will transfer ownership of infrastructure to the Authority. Ownership of infrastructure is not essential to the Authority's purpose.
- The County shall receive annual budget projections from the Authority, along with reviews and audits of its operations.
- The Authority shall maintain all operating permits in its name.

- The County shall fund capital infrastructure projects and improvements until such time as the Authority is able to contribute to its own infrastructure projects.
- The Authority will receive all rates and fees pertaining to water and sewer services.
- The County will receive tax revenues (from property values increased by the presence of water and sewer services).
- Rates will be developed which realistically address and support the following fiscal requirements:
    - Operating/compliance costs
    - Repair and replacement of infrastructure and equipment
    - Debt service requirements
- Oversight of Authority operations and expenses will be provided by the Authority's Board of Directors, who are accountable to the Board of Supervisors.

If the Authority is to operate as a financially independent and sustainable agency, it should be allowed to accumulate large reserves in anticipation of legal, compliance and capital maintenance and improvement expenses. The County is expected to lay the needed financial foundation without expectation of reimbursement from Water Authority funds.

PROPOSED ACTIONS TO FACILITATE IMPROVEMENT

1. **Obtaining Customers.** The primary focus of both the County and the Authority must be the acquisition of more customers on its existing infrastructure. It is the key to financial viability and independence. This is currently the focus of the Authority's planning. The County can assist the Authority to acquire more customers in the following ways:
    a. Mandatory connection within existing service areas
    b. Eliminate sharing of connection fees
    c. Mandatory reclaimed water lines in all new developments
    d. Facilitate transfer of Town customers to the Authority
    e. Placement of infrastructure in designated growth areas
    f. Facilitate development of composting bio-solids
    g. Mandatory septic tank cleaning
    h. Planning and Zoning ordinance amendments that allow higher densities and provide incentives for developers to connect to the public water and sewer utilities

These suggestions will promote growth, increased tax revenues, and environmental protection, in addition to assisting in Water Authority financial viability.

2. **Financial Foundation.** The focus of the County-Authority financial relationship is presently centered on the desire of the County to recoup all its capital investments. Because the County holds the taxing power and the Authority does not, the relationship should be based, foremost, on Authority long-term viability and strength. Therefore, the County should base its infrastructure investments on planned need and the expectation of tax revenue, and not on a desire to immediately recoup costs of a project. There are several steps that will rebuild the Authority's financial foundation:

a. All existing agreements addressing the LCWA should be renegotiated to capture the general principles described in the "Proposed Business Model", above, and eliminate:
    i. Mandatory price controls or limits for specific parties
    ii. Mandatory escrow of Authority funds
    iii. Unique funding arrangements for individual facilities
    iv. Sharing of connection fees
b. The County should forgive the NE Creek Endowment Fund debt and not seek recoupment of further infrastructure costs.
c. The Authority must focus on keeping operating costs as low as possible while maximizing the useful life of the infrastructure.
d. The County must underwrite Authority deficits until it decides there are sufficient customers to pay the Authority's expenses.

A draft Water Authority Operating Agreement is offered as a proposal at Appendix H.

3. **Personnel Structure.** In order to position itself properly for the acquisition and retention of the additional personnel mandated by regulatory controls, the Authority will institute a pay structure for LCWA employees that is based upon their regulatory certifications and, thus, will not conform to the County pay structure (in several respects, including timing of pay increases). See the proposed pay scale chart at Appendix F.
4. **Authority Interests.** Pursuant to the Mission, Purpose, Vision and Goals outlined above, the Board of Directors have determined that the following interests are the Authority's highest priority:
    a. Regulatory compliance
    b. Maximizing customers and income sources
    c. Retaining, motivating and empowering adequate staff expertise
    d. Minimizing operating costs or other depletions to funding streams
    e. Pursue business opportunities such as composting, recycling and waste disposal services
    f. Maximizing involvement in County planning such as liaising with the County Planning Commission
    g. Investigate alternate water sources and discharge locations for the Zion Crossroads service area
5. **Fulfilling its Corporate Purpose.** Take under consideration the expansion of operations to include all aspects of the Authorities articles of incorporation

TIMELINE FOR CHANGES

This plan does not contain specific details for how the Water Authority will implement the "proposed actions to facilitate improvement." This is because the majority of actions lie within the control of the Board of Supervisors. Also because, many of the proposals will need a detailed plan, an agreement or an approved ordinance to be successful. The Directors of the Water Board did not want to delay presenting the way forward for the Supervisors. Furthermore, the Directors need Supervisor approval before resources should be committed to pursuing some proposals. With that approval, the Directors will research and present the further details needed.

From the list of proposals above, the following items can be accomplished almost immediately, before the end of this calendar year.

1.a. Mandatory connection within existing service areas
1.b. Eliminate sharing of connection fees
1.c. Reclaimed water lines mandated in all new developments
1.d. Financial assistance in transferring Town customers to the Authority
1.g. Mandatory septic tank cleaning
1.h. Planning and Zoning ordinance amendments that allow higher densities and provide incentives for developers to connect to the public water and sewer utilities
2.b. Forgiveness of the Northeast Creek Endowment Fund debt
3. Acquiesce to an Authority pay structure that is independent of the County's
4. Concur in Authority priorities and empower Water Board Directors to implement them

With Board of Supervisors approval, the Authority will present proposed new Ordinances and changes to existing ordinances that will facilitate the proposals above.

By the end of the current fiscal year, with the Supervisors' concurrence to proceed and assurance of support, the Authority can accomplish the following proposals.

1.e. Present plans for infrastructure in designated growth areas
1.f. Facilitate development of composting bio-solids
2.a. Negotiate a single, unified agreement addressing the Authority's financial relationships

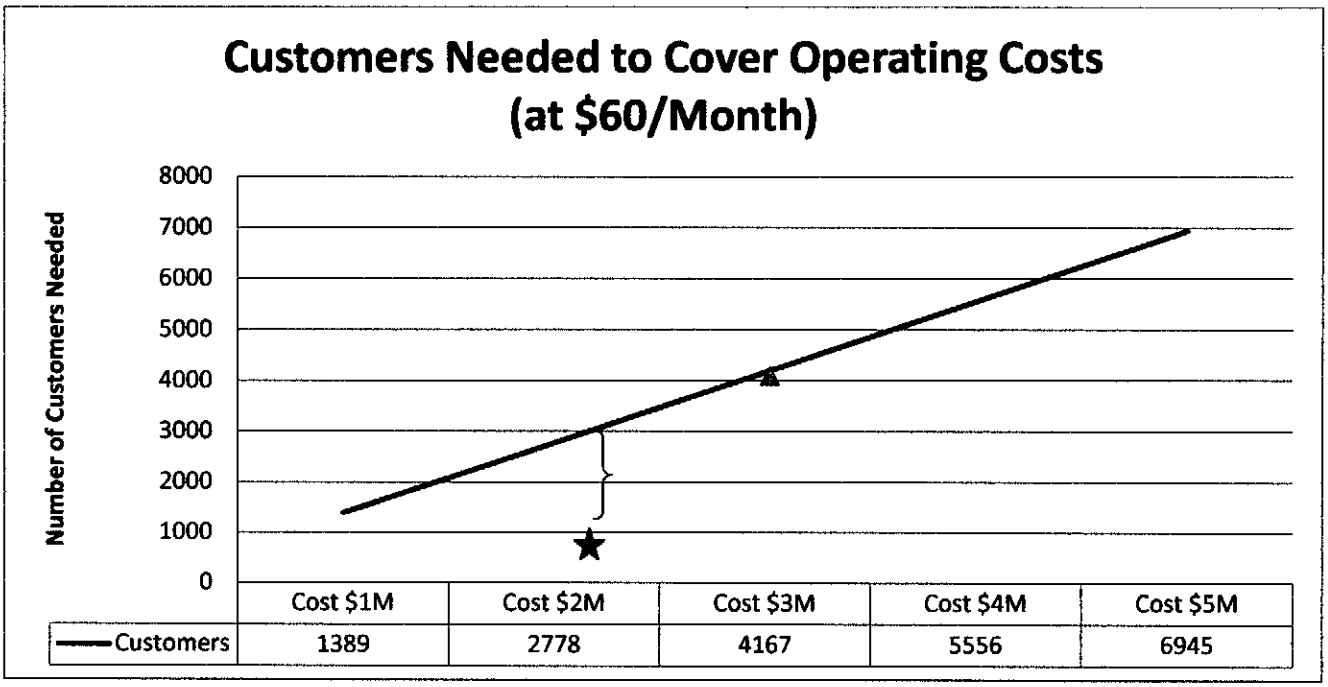
A GET-WELL DATE

To calculate a get well date for the Authority, one needs two pieces of data: the cost to operate; and the rate which customers will be expected to pay for services. Dividing the costs by the rate will arrive at the approximate number of customers needed to pay the costs. When that number of customers is achieved, the Authority will have arrived at a healthy state and the County can withdraw its support.[1]

Authority operations (and, thus, its cost to operate) are expected to be normalized by July 1, 2015. How we estimate that date can be found at Appendix G.

By way of example, the following table displays the number of customers needed to support the Authority's operations. It assumes a customer will pay $60 per month (the current average bill for surrounding counties and municipalities) for a minimum service of 4000 gallons per month for both water and sewer. (It also assumes the Authority receives all income only from customers. In truth, the amount charged to customers will be reduced by sales of bulk water, reclaimed water, biosolids, interest earned, connection fees retained, or other sources. None of these sources are significant at this time except connection fees and those are dependent on economic development and the economy.)

[1] For instance, if it costs $2M to operate, and $55 per month is a reasonable service rate to charge, it will take 3,000 customers to support the Authority. [$2M/3,000 customers = $666.67 per customer; $666.67/12 months = $55.56 per month for each customer]



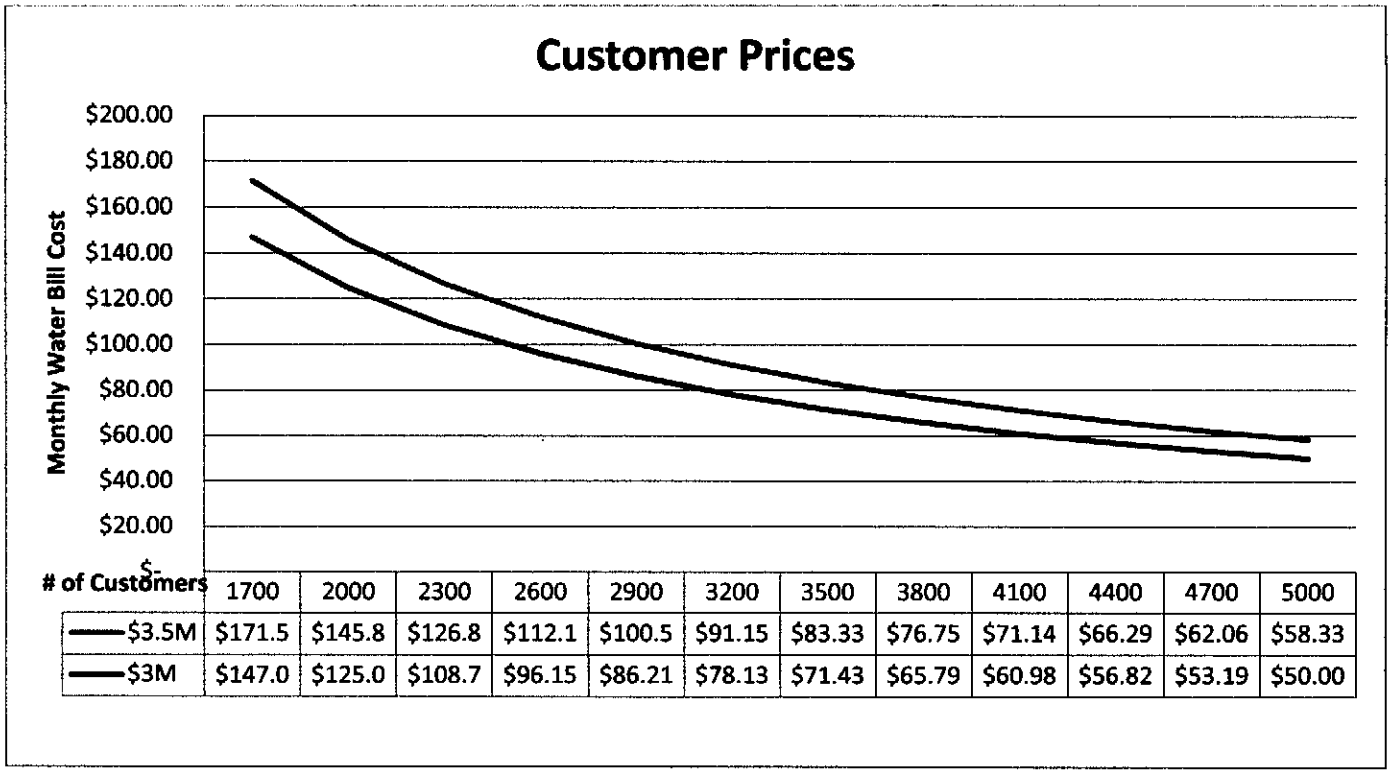
★ 2011 operating expenses exceed $2.5M. The Authority has 520 customers.

} This example shows that the Authority would need approximately 2480 more customers, paying $60/month, to cover its FY2011 operating expenses.

▲ Thus, if the operating budget were $3M after reductions from other income sources and customers pay $60/month, it would take 4,167 customers to cover all the operating expenses for the year.

To the extent there are not enough customers, the Authority must seek budget supplementation from the County.

Rather than assume all customers should pay $60/month for water and sewer service, let's assume the Water Authority will have a $3.5M operating budget in the year FY2015 OR a $3M budget. What price would customers be expected to pay if we are not sure how many customers there will be?



# of Customers	1700	2000	2300	2600	2900	3200	3500	3800	4100	4400	4700	5000
—$3.5M	$171.5	$145.8	$126.8	$112.1	$100.5	$91.15	$83.33	$76.75	$71.14	$66.29	$62.06	$58.33
—$3M	$147.0	$125.0	$108.7	$96.15	$86.21	$78.13	$71.43	$65.79	$60.98	$56.82	$53.19	$50.00

Obviously, the price each customer pays falls as the number of customers increases. This chart shows the bill a customer can expect to pay to cover operating expenses at $3.5M and $3M. The chart gives the BoS a sense of how many customers are needed to bring the cost down to a reasonable level. The BoS will decide what is reasonable and, thus, when the cost of monthly water service is low enough to end County subsidization.

So, the determination of a get well date is governed by the following factors:

- The ability of the Authority to keep its costs down,
- The speed with which additional customers can be added to the Authority's rolls, and
- A determination by the BoS that the consumer base is sufficient to cover the operating costs of the Authority.

CALL TO ACTION:

In order to create a new and improved water authority, the Water Authority Board of Directors requests the concurrence of the County Board of Supervisors to proceed with the actions proposed to facilitate improvement, with the understanding that the Supervisors will render the support needed to implement them.

Respectfully submitted this 3rd day of October 2011.

James Bogdan
Chairman, Louisa County Water Authority Board

APPENDIX A: ORGANIZATIONAL STRUCTURE

APPENDIX B: OPERATING EXPENSES

APPENDIX C: REFURBISH & REPLACE SCHEDULE

APPENDIX D: CURRENT RATES AND CONNECTION FEES

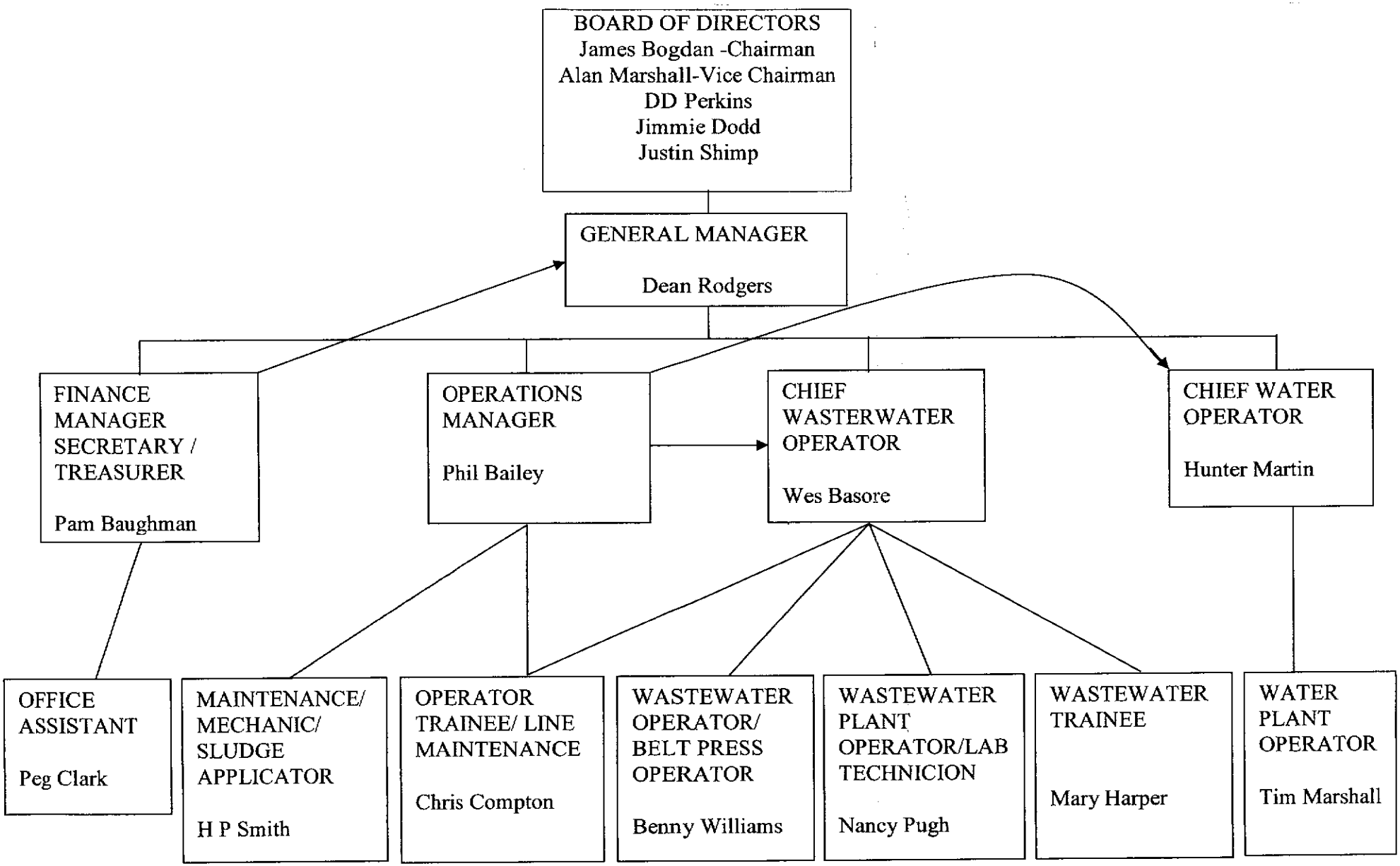
APPENDIX E: RECENTLY PROPOSED RATE INCREASE

APPENDIX F: PROPOSED PAY SCALE FOR WATER AUTHORITY EMPLOYEES

APPENDIX G: NORMALIZATION OF OPERATIONS

APPENDIX H: PROPOSED DRAFT OPERATING AGREEMENT

APPENDIX A: ORGANIZATIONAL STRUCTURE


BOARD OF DIRECTORS
James Bogdan -Chairman
Alan Marshall-Vice Chairman
DD Perkins
Jimmie Dodd
Justin Shimp
GENERAL MANAGER
Dean Rodgers
FINANCE MANAGER SECRETARY / TREASURER
Pam Baughman
OPERATIONS MANAGER
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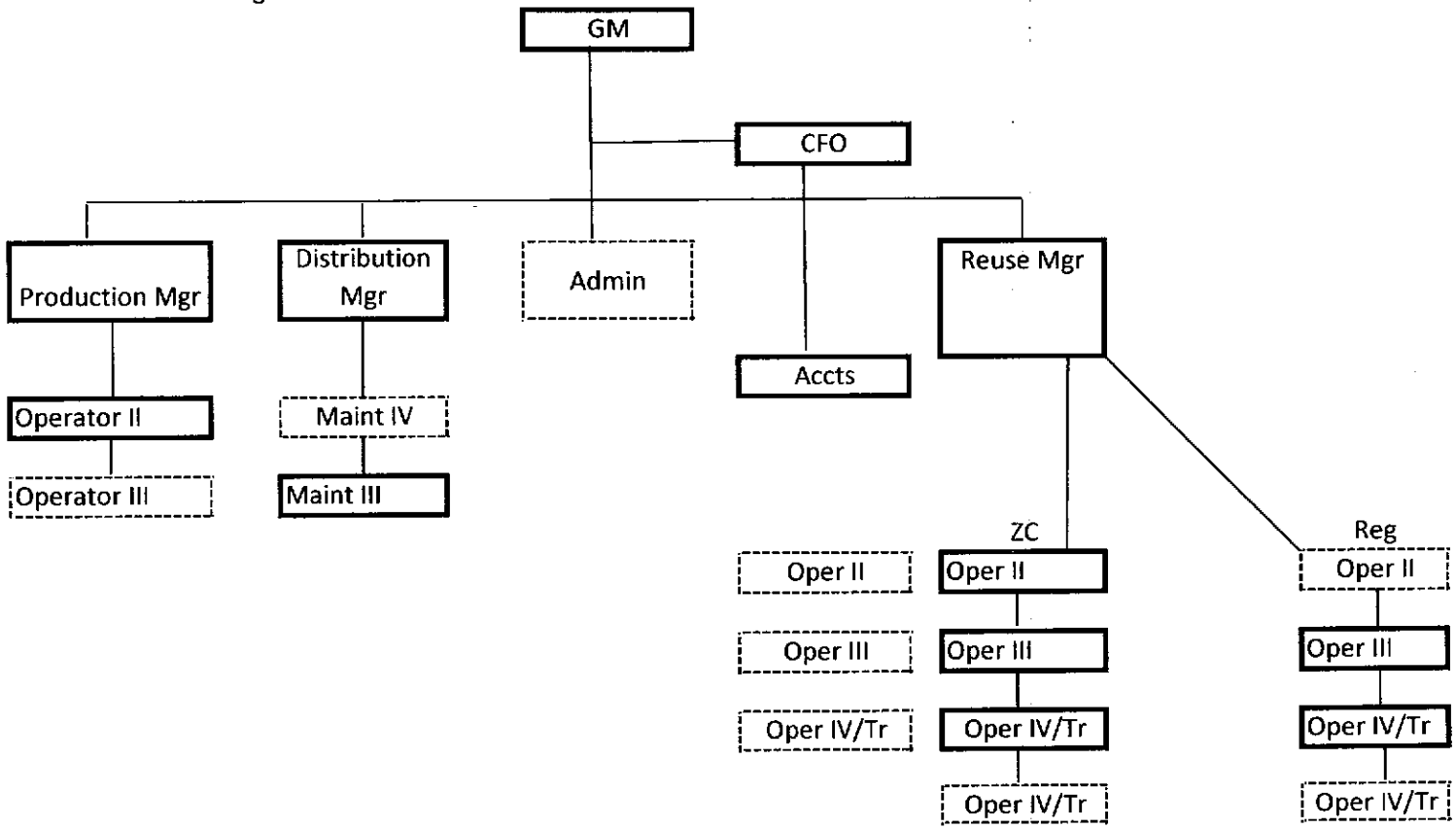
CHIEF WASTERWATER OPERATOR
Wes Basore
CHIEF WATER OPERATOR
Hunter Martin
OFFICE ASSISTANT
Peg Clark
MAINTENANCE/ MECHANIC/ SLUDGE APPLICATOR
H P Smith
OPERATOR TRAINEE/ LINE MAINTENANCE
Chris Compton
WASTEWATER OPERATOR/ BELT PRESS OPERATOR
Benny Williams
WASTEWATER PLANT OPERATOR/LAB TECHNICION
Nancy Pugh
WASTEWATER TRAINEE
Mary Harper
WATER PLANT OPERATOR
Tim Marshall

Proposed Organizational Chart

for present infrastructure coming on line.



Plant comes on line Nov '12 at 16hr/day. Must have Class II for 8hrs/day. Need a Class II + overlap Asst for each shift. Will need 3 shifts. Will request telephone standby for weekends.

Plant goes on line in November '11 at 12 hrs/weekday & 8hrs/endday. Class II must be at plant 8hrs/day. Will need Class II + overlap Asst for every shift. Reuse Mgr serves as one of the Class IIs. When plant reaches 500Kgpd it will require another Class II operator.

APPENDIX B: OPERATING EXPENSES

Louisa County Water Authority							
Statement of Income							
Fiscal 2012 Budget with actual Fiscal 2011 Year Ending Balances							
		2011 Budget		Year to Date 2011		2012 Budget	
A/C #	A/C Name	WATER	SEWER	WATER	SEWER	WATER	SEWER
25010	Sewer Sales - Res. / Comm.		$70,000		75,798		$90,000
25030	Town of Mineral - Sewer		45,000		39,892		58,000
25040	Zion Sewer Sales		170,000		205,836		220,000
25020	Sludge Services		3,500		600		3,000
25050	Septage Services		72,000		43,084		45,000
30600	Water Sales - Towns	$190,000		170,817		$190,000	
30110	Water Sales - Res. / Comm.	85,000		88,838		100,000	
30150	Zion Water Sales	160,000		177,725		200,000	
30700	Hook-up Charges	25,000		8,850		10,000	
32400	Misc. Revenue	3,000		2,687		3,000	
32410	County of Louisa - Supp App.				605,530	122,350	309,500
32000	Fishing Revenue	3,000		5,533		3,000	
31000	Reg. STP - Town of Louisa		230,000		284,931		370,000
31500	Reg. STP - County of Louisa		100,000		162,878		250,000
31800	Reimb - Sewer Service		2,500		0		2,500
32500	Zion Crossroads - STP						150,000
33000	Interest Income	85,000		57,554		85,000	
34000	ODEC - Maintenance	30,000		30,000		30,000	
35000	Raw Water Sales	7,500		3,510		7,500	
32800	ZC - Connection Fees	45,000	45,000	23,500	23,500	25,000	25,000
32900	NEC - Connection Fees	5,000		2,750		5,000	
		$638,500	$738,000	571,764	1,442,049	$780,850	$1,523,000
		$1,376,500		$2,013,813		$2,303,850	
Proposed Repair and Replacement Fund $100,000							
Proposed Meter and Accounting upgrades (including computers) $300,000							

Louisa County Water Authority

Statement of Expenses

Fiscal 2012 Budget with actual Fiscal 2010 & 2011 Year Ending Balances

		2012 Expense Budget		Year to Date 2011		2010 Actual	
A/C #	A/C Name	WATER	SEWER	WATER	SEWER	WATER	SEWER
	Overhead						
45100	Salaries & Benefits	$429,600	$495,900	$430,433	$411,436	$354,615	$338,300
45500	Insurance	11,000	11,000	9,098	9,098	9,569	9,569
45800	General Office Expense	10,000	10,000	9,125	9,125	7,018	7,018
46000	Telephone Expense	2,000	2,000	2,195	2,195	1,912	1,912
46400	Bad Debts Expense	2,000		1,050		3,150	
47000	Miscellaneous Expenses	1,500		7,319		245	
47100	Board Member Fees	2,100		1,500		1,500	
47200	Annual Audit	8,000		7,250		7,250	
	Laurel Hill						
40200	Operation of Laurel Hill	3,500	3,500	3,949	3,949	1,821	1,821
	Water Distribution NEC WTP						
43000	O & M Distribution - Water	20,000		16,424		9,640	
43010	Uniforms	1,200					
43200	Distribution Repairs Expense - Water	6,000				6,378	
45700	Transportation Expense - Water	10,000		9,752		12,194	
45900	O & M General Property - Water	7,000		7,777		9,604	
	Northeast Creek WTP						
)0	Utilities	37,500		28,426		34,558	
4 0	Supplies	4,500		3,345		2,159	
42210	Generator	1,000		540			
42220	Equipment Rental	1,000		649		898	
42230	Equipment	10,000		8,075		6,483	
42240	Chemicals	30,000		28,568		27,280	
42250	VPDES Permit Renewal	2,000		1,969		1,200	
42260	Granular Activated Carbon	20,000		18,000		17,600	
42270	Training	4,000		154			
42280	Building Maintenance	2,000		111		139	
42290	Tank Maintenance	65,000					
42100	Calibration	12,000		13,124		10,249	
42110	Uniforms	1,200					
42400	Outside Analytical Services	12,000		9,162		11,605	
46200	Fishing / Reservoir Expense	1,000		22		546	
	Regional Collection System / Pump Stations						
50200	Utilities		15,000		8,930		10,126
50210	SCADA		1,500		1,200		1,200
50220	Bio-Remediation		8,000		11,126		7,750
50230	Pump Station Maintenance		42,000		2,126		4,280
53000	Sewer Collection System Maintenance		3,000		649		413
55700	Transportation Expense - Sewer		10,000		9,405		11,485
55900	O & M - General Property - Sewer		7,000		3,587		3,504
57?00	Miscellaneous Expenses		1,500		8,517		2,492
)	Board Member Fees - Sewer		2,100		1,500		1,500
	Regional Wastewater Treatment Plant						
57500	Utilities		60,000		50,571		61,761
57510	Consulting / Lab Testing		90,000		83,036		10,365

[illegible]20	Supplies		15,000		9,235		9,999
[illegible]0	Bio-Solids		4,000		2,162		904
57[illegible]40	Permit Fees		4,000		3,461		2,500
57550	Chemicals		60,000		29,153		4,647
57560	Calibration		10,000		7,560		5,780
57570	Equipment		15,000		12,268		16,158
57580	Generator		3,000		1,592		2,249
57590	Miscellaneous Expenses		1,500		1,089		1,037
57600	Training		4,000		98		
57610	Legal		45,000		46,990		26,561
57620	Maintenance		1,500		982		
57630	Uniforms		3,000				
	Zion Water Expenses						
60100	Utilities	17,000		15,366		14,023	
60110	Miscellaneous Expenses	250		360		162	
60120	Maintenance	7,500		5,246		5,615	
60130	Chemicals	5,500		2,999		2,878	
60140	Transportation	3,000		1,431		1,173	
60150	Water Purchase - Poore Wells	1,500		835		356	
60160	Outside Analytical Services	1,500		1,909		1,115	
60170	Tank Maintenance	10,000					
	Zion Sewer Expenses						
70100	Utilities		30,000		30,555		26,365
70110	Consulting		100,000		213,181		12,140
[illegible]0	Supplies		36,000		35,952		15,123
[illegible]0	Sludge		90,000		105,128		28,716
70140	Permit Fees		2,500		2,461		1,500
70150	Chemicals		140,000		62,220		2,889
70160	Calibration		10,000		10,234		3,570
70170	Equipment		8,000		7,654		13,107
70180	Generator		2,000		1,563		556
70190	Miscellaneous Expenses		3,500		3,331		399
70200	Training		4,000		98		300
70210	Transportation		5,000		4,185		1,045
70220	Equipment Rental		48,000		52,000		
70230	Legal		100,000		168,205		
70240	Uniforms		3,000				
	Bowlers Mill						
80100	Utilities	4,500		3,476		5,217	
80110	Miscellaneous Expenses	500		322		325	
	Safety						
90100	Safety Material and Equipment	12,500	12,500				
		$780,850	$1,523,000	$649,961	$1,427,807	$568,477	$649,041
		$2,303,850		$2,077,768		$1,217,518	

MEMO

To: Louisa County Water Authority Board of Directors
From: Pam Baughman, Finance Manager, Secretary / Treasurer
Subject: Water / Sewer Rates
Date: July 27, 2011

Background Information:

Louisa County Water Authority was created in 1968 by the Louisa County Board of Supervisors as a separate legal entity from the County. The Authority is engaged in water and wastewater activities in locations as requested by Louisa County. From the beginning there has been an understanding between the Authority and the County that because the County has tasked the Authority with the creation and operation of systems, which for some years could not operate fiscally in the black, some form of County subsidization would be required.

Funds were lent to the Authority for the construction of the Northeast Creek Water Plant in the form of an endowment. The interest earned on the left over endowment funds is available and allowed to be used to supplement operational costs. The endowment must be repaid in 2030 with connection fees collected for the Northeast Creek Water Treatment Plant system.

The wastewater system has too few customers to this day and cannot operate without the operations funding from the County and Town for the Regional WWTP. The Zion Crossroads sewer system was at first subsidized directly by the County but as more customers were connected the Authority did not request O&M funding. The Authority was authorized to keep a portion of Availability Fees charged for new connections to the system in order to offset planning and development responsibilities in the system but with the decline in the economy this has been greatly reduced.

The Bowlers Mill raw water system is the exception in that it was built at no cost to the County and operates on a contract with Old Dominion Electric Coop.

Operations:

(1) The Northeast Creek Water Treatment Plant operates 365 days a year producing and distributing 350,000 – 375,000 gallons of potable water daily. Total plant capacity in its current state is 1 MGD. The Northeast Creek Reservoir has a safe yield of 2.77 MGD. Louisa County Water Authority provides potable water to approximately 92 residential and 68 commercial customers. The Authority's largest customer is the Louisa County Public School System. The Town of Louisa purchases 100% of its potable water from the Authority and serves 616 residential and 161 commercial customers. The Town of Mineral purchases approximately 21% of its water from the Authority to supplement their well system and serves 270 residential and 45 commercial customers.

(2) The Authority operates six (6) potable wells and fourteen (14) monitoring wells that serve the Zion Crossroads service area. These wells produce approximately 150,000 gallons per day. There are currently 322 residential customers and 37 commercial customers being served potable water. All Zion Crossroads customers are LCWA customers.

(3) The Regional Wastewater Treatment Plant (400,000 gpd) operates 365 days a year treating approximately 280,000 gallons of wastewater daily. The Regional Wastewater Treatment Plant serves approximately 36 residential and 43 commercial county customers. The Authority's largest customer is the Louisa County Public

School System. The Town of Louisa and Town of Mineral customers are also served by the Regional Wastewater Treatment Plant.

(4) Zion Crossroads Wastewater Treatment Plant (100,000 gpd) operates 365 days a year treating approximately 80,000 gallons of wastewater daily. Currently there are 322 residential and 31 commercial customers being served by the Zion Crossroads Wastewater Treatment Plant. Zion Crossroads Well permitted well capacity is 9,888,000/month residential and 7,572,000/month commercial. Current total usage is approximately 28%

(5) Currently there are approximately 520 meters recording water use for the two systems. (160 in the Northeast Creek service area and 360 in the Zion Crossroads service area.)

(6) There are five sewer lift stations in the systems. One (1) at Zion Crossroads and four (4) serving the Regional Wastewater Treatment Plant collection system.

(7) Bowlers Mill reservoir has a pump station that provides raw water used at the Old Dominion Electric Cooperative electrical generation plant in Gordonsville. Currently the Authority is in the process to obtain a new certificate to operate. Since the dam does not meet the newly established safety standards, renovations in excess of $1M will be necessary.

(8) Laurel Hill is an area located by the North Anna Nuclear Power Plant, at the intersection of Kentucky Springs and Centerville Roads. It has a small package wastewater plant serving five (5) homes. That area also has a two (2) well system serving eight (8) homes.

(9) Maintain and operate 23,000 linear feet of water line in the Zion Crossroad System and approximately 46,000 linear feet of water line in the Northeast Creek System.

(10) Maintain and operate 780 Linear Feet of force main and 13,500 linear feet of gravity sewer mains in the Zion Crossroads service area and approximately 53,500 linear feet (approximately 10 miles) of sewer line (force main and gravity)in the Regional Wastewater Treatment Plant service area.

(11) Two (2) stand pipe tanks and one (1) elevated tank.

Current Projects:

(1) Bowlers Mill Incremental Damages Study required by Dam Safety for dam certification
(2) Regional Wastewater Treatment Plant Expansion from 400,000 to 800,000 gpd
(3) Zion Crossroads Wastewater Treatment Plant Expansion from 100,000 to 700,000 gpd
(4) Continuing litigation and compliance related issues
(5) Water Tank cleaning and maintenance
(6) Supplemental Environmental Project
(7) Bench Testing to determine the best way to meet the metals regulations

Bowlers Mill (Raw Water):

Louisa County Water Authority receives $2,500/month or $30,000 annually from Old Dominion Electric Cooperative to maintain and operate the pump station, lines and storage tank. This is an agreed management fee. Any water pumped by Old Dominion Electric Cooperative is billed at .50¢/1,000. Additionally, we occasionally sell raw water to some landscaping companies in the area.

In fiscal year ending 2010, 2,617,000 gallons of raw water was sold.

2,617,000 x .50¢/1,000 = $1,305.50

In fiscal year ending 2011, 6,769,570 gallons of raw water was sold

6,769,570 x .50¢/1,000 = $3,384.79

Northeast Creek Water System:

2010:
Total Gallons Sold in Fiscal 2010: 88,641,520
Total cost to produce $3.77/1,000 ($333,542)[3]

2011:
Total Gallons Sold in Fiscal 2011: 88,550,959
Total cost to produce $4.12/1,000 ($364,733)[3]

Wholesale Water (Town of Louisa / Town of Mineral):

Rates are set by the Water and Sewer Rate Commission using the CPI to calculate the 75% average of the previous two years. This formula was established by an agreement that expires October 10, 2014.

Town of Louisa:

Fiscal Year Ending 2010 breaks down as follows:

Gallons Sold	Rate Received[2]	Revenue Received
15,240,000 gallons	@2.31/1,000	$35,204.40
7,609,900 gallons	@2.57/1,000	19,557.42
30,861,000 gallons	@2.34/1,000	72,214.74
11,530,200 gallons	@2.60/1,000	29,978.52
Total Revenue		$156,955.08

Average Rate received in 2010 per 1,000 gallons = $2.40

Fiscal Year Ending 2011 breaks down as follows:

Gallons Sold	Rate Received	Revenue Received
46,355,000 gallons	@2.34/1,000	$108,470.70
19,808,100 gallons	@2.60/1,000	51,501.06
Total Revenue		$159,971.76

Average Rate received in 2011 per 1,000 gallons = $2.42

Current Rate $2.34/1,000 up to 127,000 gpd
$2.60/1,000 for all water over 127,000 gpd

Town of Mineral:

Fiscal Year Ending 2010 breaks down as follows:

Gallons Sold	Rate Received[2]	Revenue Received
1,825,300 gallons	@2.57/1,000	$4,691.02
4,158,500 gallons	@2.60/1,000	10,812.10
Total Revenue		$15,503.12

Average Rate received in 2010 per 1,000 gallons = $2.59

Fiscal Year Ending 2011 breaks down as follows:

Gallons Sold	Rate Received	Revenue Received
4,171,200 gallons	@2.60/1,000	$10,845.12

Average Rate received in 2011 per 1,000 gallons = $2.60

Current Rate $2.60/1,000 gpd

Retail Water:

Retail Water Revenue is received from Louisa County schools, residential and commercial customers.

Total Revenue received in Fiscal 2010: $247,148 (or $2.78/1,000)

Total Retail Gallons Sold in 2010: 17,416,620 revenue received $74,689 (or $4.28/1000).

	Gallons	Rate Charged	Rate Received[1]	Revenue Received
School Facilities	4,313,900 gallons	$3.00/1,000	$5.67/1,000	$24,471.15
School Irrigation	2,813,260 gallons	$3.00/1,000	$3.13/1,000	8,825.04
Residential	3,697,830 gallons	$3.00/1,000	$4.02/1,000	14,875.03
Commercial	6,591,630 gallons	$3.00/1,000	$4.02/1,000	26,518.35
Total Retail Revenue				$74,689.57

2010 Note: 7,127,160 of the 17,416,620 gallons of water sold to Louisa County Public Schools (or approximately 45%).

Total Revenue received in Fiscal 2011: $259,655 (or $2.93/1,000)

Total Retail Gallons Sold in 2011: 18,216,659 revenue received $88,838 (or $4.87/1000).

	Gallons	Rate Charged[2]	Rate Received[1]	Revenue Received
School Facilities	375,330 gallons	$3.00/1,000	$6.46/1,000	$2,425.50
	3,951,270 gallons	$3.50/1,000	$6.56/1,000	25,957.66
School Irrigation	700,470 gallons	$3.00/1,000	$3.00/1,000	2,101.41
	2,422,900 gallons	$3.50/1,000	$3.66/1,000	8,888.42
Residential	357,570 gallons	$3.00/1,000	$3.62/1,000	1,294.65
	3,650,169 gallons	$3.50/1,000	$4.69/1,000	17,146.22
Commercial	667,180 gallons	$3.00/1,000	$3.61/1,000	2,419.19
	6,091,770 gallons	$3.50/1,000	$4.69/1,000	28,615.36
Total Retail Revenue				$88,838.41

2011 Note: 7,449,970 of the 18,216,659 gallons of water sold to Louisa County Public Schools (or approximately 41%)

Rate Breakdown showing proposed rate increase:

	Rate Charged	Rate Received
Rate in 2010	$3.00/1,000	$4.28/1,000 or $74,689
Current Rate	$3.50/1,000	$5.00/1,000 or $87,170
Proposed Rate[5]	*$5.00/1,000	$7.15/1,000 or $124,529

*(state average rate)

Louisa Regional Wastewater Treatment Plant:

2010:

Revenue received from County Customers for Fiscal 2010	$ 62,558
Revenue received from Town of Mineral (13,684,140 @ $4.00/1,000)	54,737
Total Regional WWTP Revenue	$117,295

Total costs to treat sewage in 2010 $7.94/1,000 ($79,746)[3]

County Customers Sewage Treatment Revenue 2010:

	Gallons	Rate Charged	Rate Received[1]	Revenue Received
Louisa County Schools	4,313,900 gallons	$4.00/1,000	$7.56/1,000	$32,628.20
Town of Mineral	*13,684,140 gallons	$4.00/1,000	$4.00/1,000	54,737.00
Residential	1,086,340 gallons	$4.00/1,000	$4.45/1,000	4,844.62
Commercial	5,625,050 gallons	$4.00/1,000	$4.45/1,000	25,085.37
Total				$117,295.19

2011: Total gallons treated 43,763,268

Revenue received from County Customers for Fiscal 2011	$75,798
Revenue received from Town of Mineral (8,888,680 gallons total)*	39,892
Total Regional WWTP Revenue	$115,690

*3,105,240 @$4.00/1,000 = $12,420.96
5,783,440 @$4.75/1,000 = $27,471.32
Total $39,892.28

Total cost to treat sewage in 2011 $10.98 ($480,631.37)[3]

County Customers Sewage Treatment Revenue 2011:

	Gallons	Rate Charged[2]	Rate Received[1]	Revenue Received
Louisa County Schools	375,330 gallons	$4.00/1,000	$8.62/1,000	$3,234.00
	3,951,270 gallons	$4.75/1,000	$8.73/1,000	34,478.66
Town of Mineral	3,105,240 gallons	$4.00/1,000	$4.00/1,000	12,420.95
	5,783,440 gallons	$4.75/1,000	$4.75/1,000	27,471.33
Residential	107,950 gallons	$4.00/1,000	$7.62/1,000	822.05
	978,400 gallons	$4.75/1,000	$7.62/1,000	7,450.49
Commercial	410,800 gallons	$4.00/1,000	$7.62/1,000	3,128.25
	3,504,229 gallons	$4.75/1,000	$7.62/1,000	26,684.74
Total				$115,690.47

Rate Breakdown showing proposed rate increase:

	Rate Charged	Rate of Return[4]
Rate in 2010	$4.00/1,000	$6.23/1,000 or $62,558
Current Rate	$4.75/1,000	$7.36/1,000 or $73,910
State Average Rate	$6.20/1,000	$9.61/1,000 or $96,504
Proposed Rate	$7.00/1,000	$10.84/1,000 or $108,956

Zion Crossroads Water:

2010: 38,240,250 gallons of water sold in Fiscal 2010
$132,755 Revenue received for water sold in Fiscal 2010 (or $3.47/1,000)
Total Production costs in 2010 $1.78/1,000 ($68,414)[3]

Residential Water Use	16,131,480 gallons
Commercial Water Use	18,739,806 gallons
Irrigation – separate meters	3,368,960 gallons

011: 44,625,817 gallons of water sold in Fiscal 2011
177,725 Revenue for water sold in Fiscal 2011 (or $3.98/1,000)
Total Production costs in 2011 $2.40/1,000 ($107,151)[3]

Residential Water Use	19,982,788 gallons
Commercial Water Use	22,299,859 gallons
rigation – separate meters	2,343,170 gallons

Rate Breakdown showing proposed rate increase:

	Rate Charged	Rate Received	Revenue Received
Rate in 2010	$3.00/1,000	$3.57/1,000	$132,755
Current Rate	$3.50/1,000	$4.06/1,000	$155,255
Proposed Rate[5]	*$5.00/1,000	$5.80/1,000	$221,793

*(state average rate)

Zion Crossroads Sewer:

38,240,250 (Total Retail Gallons of Water Sold)
(4,832,090) (less water only customers – irrigation meters)
33,408,160

Revenue received from Zion Crossroads sewer customers in 2010 $151,090

Total costs to treat sewage in 2010 $8.47/1,000 ($283,130)[3]

Residential Customers	16,131,480 gallons
Commercial Customers	18,739,806 gallons

4,625,817 (Total Retail Gallons of Water Sold)
,279,750) (less water only customers – irrigation meters)
38,346,067

Revenue received from Zion Crossroads sewer customers in 2011 $205,836

Total cost to treat sewage in 2011 $73.09/1,000 ($908,083)[3]

Residential Customers	19,982,788 gallons
Commercial Customers	13,425,372 gallons

Rate Breakdown showing proposed rate increase:

	Rate Charged	Rate of Return[4]
Rate in 2010	$4.00/1,000	$4.54/1,000 or $151,090
Current Rate	$4.75/1,000	$5.36/1,000 or $179,068
State Average Rate	$6.20/1,000	$7.00/1,000 or $223,857
Proposed Rate	$7.00/1,000	$7.84/1,000 or $261,920

Notes:
1. "Rate Received" reflects the fact that customers pay a base rate for a minimum amount of water (for residential customers that amount is 4,000 gallons per month). Since all customers do not use all of the water they have paid for, the Authority makes more per 1,000 gallons than actually delivered.
2. Rates changed after the Water and Sewer Rate Commission meeting in late October.
3. Cost includes proportional share of Authority overhead.
4. Reflects water paid for by users but not used.

5. Experience in the water and sewer industry has determined that a Public Utility will initially only receive approximately 75% - 85% of a rate increase due to discretionary cut backs by consumers, at least initially.

ummary:

I believe the target funding gap falls between $500,000 and $750,000 annually, which will enable the Authority to move toward financial independence from the County of Louisa.

1. A 45% increase in water and sewer rates to our current customer base will increase revenues $250,000 - $275,000 for fiscal year ending 2012.
2. If the County permits the Authority to retain the Availability Fees (2010 = $503,250 / 2011 = $139,250), this will provide additional funding to meet the current short falls. However, they are dependent on growth in the economy.
3. In the past, the County has advanced to the Authority the funds approved for Capital Improvements. If the funds for the Zion Crossroads Wastewater Treatment Plant expansion are forwarded to the Authority, the Authority can also accrue interest on those funds until they are fully disbursed for the expansion costs. $10M would accrue approximately $15,000 per year for the two years the project will take to complete.
4. Additional funding opportunities are currently being reviewed at this time.

Pam Baughman
Finance Manager
Secretary / Treasurer

ASSIMILATION OF TOWN CUSTOMERS

Income:

Together the towns bring in $827,260.23 in total income from their water and sewer sales.
Louisa brings in $633,990.23 from 760 customers.
Mineral brings in $193,270.00 from approximately 400 customers.

Assumptions:

1. Income is based solely on rates charged to customers

Operating Expenses:*

Together the towns incur $359,910.55 in total expenses to operate their water systems.
Louisa incurs $239,545.55
Mineral incurs $120,368.00

Assumptions:

1. Wholesale water rates paid by the towns have been excluded.
2. Debt service paid by the towns has been excluded.
3. Depreciation expense of the towns has been excluded.
4. The towns' capital expenses have been excluded.
5. Town of Louisa's share of the LRSTP operating expense is excluded.

Combining Systems:

LCWA will reap $467,349.68 in additional annual income by adopting the towns' customers.

Assumptions:

1. LCWA does not have to pay the towns' current combined debt service of $125,195.69. (M - $44,857.00; L - $80,338.69) "Current" service excludes LRSTP upgrade project debt service.
2. Current rate structure remains unchanged (LCWA - $33; Louisa – $50; Mineral - $60).
3. Current rate of repair and maintenance by the Towns does not increase.
4. LCWA receives all retail fees and does not receive any wholesale fees from towns.
5. LCWA hires 3 new full-time employees. Upgraded accounting & meter reading systems not included.
6. County becomes the sole owner of LRSTP and pays town's share of costs; this raises the County's annual expense from $250K/yr to $620K/yr. Or, if additional income is applied to the County expense, the County's annual LRSTP expense drops from $250K/yr to $153K/yr.

Adopting the Plan:

If the LCWA assimilates the towns' customers pursuant to the listed assumptions, LCWA could reap approximately $450,000 in additional annual income, thus making more funds available to reduce the County's annual LCWA expense.

Assumptions:

1. The County does not require a debt service of LCWA for the towns' systems
2. The County allows LCWA to keep all connection fees: estimated at $250,000/yr.
3. Customer water/sewer rates are made uniform across the county at $54 month.
4. Mandatory septage ordinance may increase income by 10-15% to $5,000 /yr. (Funds are refunded to the owner of the facility).
5. The County pays all operating expense shortfalls.

* This analysis covers the towns' distribution/collection systems. It does not address the other approximately $2M of operating costs needed for the NEC Plant, ZC service area, plus LCWA overhead.

ADDITIONAL BACKGROUND

Income:

Louisa County Water Authority receives revenue from several sources.

1. Sewer user fees – Louisa Regional Wastewater Treatment Plant and Zion Crossroads Wastewater Treatment Plant.
2. Sludge Services – partially treated mostly from Shenandoah Crossings
3. Septage Services – septic tanks
4. Water user fees – Northeast Creek Water Treatment Plant and Zion Crossroads wells
5. Hook-up fees – water and sewer – to cover the costs of connections
6. Miscellaneous – late fees and account establishment fees
7. Fishing permits sales for the Northeast Creek Reservoir
8. Interest Income – earned on encumbered funds held to repay the Endowment
9. ODEC Maintenance Fees - $2,500 monthly / $30,000 annually
10. Raw water sales
11. Zion Crossroads connection fees – the Authority keeps approximately 23%
12. Northeast Creek water connection fees – $1,000 is encumbered to repay the Endowment the balance can be used to cover operational costs
13. Regional Wastewater connection fees – there is not a contract to share them, however the Authority has traditionally sequestered them to pay for future sewer improvements
14. Water Sales to the Towns of Louisa and Mineral
15. Sewer Sales to the Town of Mineral
16. Contract operational fees for the Regional Wastewater Treatment Plant to the County and Town of Louisa

Expenses:

The Authority expenses breakdown as follows:

1. Overhead – 43% of the overall budget
2. Zion Crossroads Wastewater Treatment Plant – 26% of the overall budget
3. Regional Wastewater Treatment Plant – 14% of the overall budget
4. Northeast Creek Water Treatment Plant – 9% of the overall budget
5. Distribution and collection system – 6% of the overall budget
6. Other expenses – 2% of the overall budget

Shortfalls:

Currently, shortfalls between income and expenses are covered by the County of Louisa as a supplemental appropriation. Several alternatives to reduce the necessary supplemental appropriations needed from the County of Louisa are retention of connection fees, mandatory hook-ups to public water and sewer when available, mandatory schedule for cleaning out septic tanks, higher / more standardized billing of all customers and an additional customers base.

APPENDIX C: REFURBISH & REPLACE SCHEDULE

ZION CROSSROADS WWTP

FY 2012 -2022 20 Year Plan

Replacement and Renewal Schedule June 8, 2011

				1	2	3	4	5	6	7	8	9	10	15	20
Project	Responsit	Priority	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2027	FY2032
Zion Suction Lift Influent Pump (A)						10,000							10,000	10,000	10,000
Zion Suction Lift Influent Pump (B)						10,000							10,000	10,000	10,000
Zion Suction Lift Influent Pump (C)						10,000							30,000		30,000
Zion Headwork's Screen													30,000		30,000
Zion Grit Collector													50,000		50,000
Zion Grit Collector Blower (A)													5,000		5,000
Zion Grit Collector Blower (B)													5,000		5,000
Zion Grit Collector Diffusers													5,000		5,000
Zion Grit Ultrasonic Level Sensor													3,500		3,500
Zion EQ Basin Mixer (A)													7,500		7,500
Zion EQ Basin Mixer (B)													7,500		7,500
Zion EQ Basin Diffusers													5,000		5,000
Zion EQ Basin Blower (A)													15,000		15,000
Zion EQ Basin Blower (B)													15,000		15,000
Zion EQ Basin Blower (C)													15,000		15,000
Zion EQ Basin Magnetic Flow Meter													4,000		4,000
Zion EQ Basin Submersible Pump (A)						10,000							10,000		10,000
Zion EQ Basin Submersible Pump (B)						10,000							10,000		10,000
Zion Oxidation Ditch Drive Motor #1 (VFD)														2,500	
Zion Oxidation Ditch Drive Motor #2 (VFD)														2,500	
Zion Oxidation Ditch Drive Motor #3 (VFD)														3,500	
Zion Oxidation Ditch Drive Motor #4 (VFD)														3,500	
Zion Oxidation Ditch Submersible Mixer #1													7,500		7,500
Zion Oxidation Ditch Submersible Mixer #2													7,500		7,500
Zion Oxidation Ditch Submersible Mixer #3													7,500		7,500
Zion Oxidation Ditch Submersible Mixer #4													7,500		7,500
Zion Oxidation Ditch Submersible Mixer #5													7,500		7,500
Zion Oxidation Ditch Submersible Mixer #6													7,500		7,500
Zion Oxidation Ditch Submersible Mixer #7													7,500		7,500
Zion Oxidation Ditch Submersible Mixer #8													7,500		7,500
Zion Oxidation Ditch Submersible Mixer #9													7,500		7,500
Zion Oxidation Ditch Submersible Mixer #10													7,500		7,500
Zion Oxidation Ditch Submersible Mixer #11													7,500		7,500
Zion Oxidation Ditch Internal Recycle Gate #1														8,000	
Zion Oxidation Ditch Internal Recycle Gate #2														8,000	
Zion Oxidation Ditch Blower #1													15,000		15,000
Zion Oxidation Ditch Blower #2													15,000		15,000
Zion Clarifier #1 Drive Motor														2,500	
Zion Clarifier #1 Scraper Blades						1,500							1,500	2,000	2,000
Zion Clarifier #2 Drive Motor														2,500	
Zion Clarifier #2 Scraper Blades						1,500							1,500	2,000	2,000
Zion Scum Pump #1						5,000							5,000	5,000	5,000
Zion Scum Pump #2						5,000							5,000	5,000	5,000
Zion UV Ballasts						4,000							4,000	4,000	4,000
Zion UV Bulbs					6,000		6,000		6,000		6,000		6,000	12,000	12,000
Zion UV Controller													8,000		8,000
Zion Belt Press Belt													8,000		8,000
Zion Belt Press Drive Motors														12,000	
Zion Belt Press Rollers														40,000	
Zion Belt Press Conveyor															30,000
Zion Belt Press Polymer Blend System													25,000		25,000
Zion Digester Blower (A)													7,500	7,500	25,000
Zion Digester Blower (B)													7,500	7,500	25,000
Zion Digester Blower (C)													7,500	7,500	25,000
Zion (RAS) Magnetic Flow Meter													4,000		4,000
Zion (WAS) Magnetic Flow Meter													4,000		4,000
Zion Return Activated Sludge (RAS) Suction Lift Pump (A)						4,500							4,500	4,500	4,500
Zion Return Activated Sludge (RAS) Suction Lift Pump (B)						4,500							4,500	4,500	4,500
Zion Return Activated Sludge (WAS) Suction Lift Pump						4,500							4,500	4,500	4,500
Zion RAS Magnetic Flow Meter													4,000		4,000
Zion WAS Magnetic Flow Meter													4,000		4,000
Zion Tertiary Filter #1 Clothes													20,000		20,000
Zion Tertiary Filter #2 Clothes													20,000		20,000
Zion Tertiary Filter #1 Drive Motor														2,000	
Zion Tertiary Filter #2 Drive Motor														2,000	
Zion Tertiary Filter #1 Waste Pump													5,000		5,000
Zion Tertiary Filter #2 Waste Pump													5,000		5,000
Zion Teriary Peristatic Chemical Pump #1															5,000
Zion Teriary Peristatic Chemical Pump #2															5,000
Zion Teriary Peristatic Chemical Pump #3															5,000
Zion Teriary Peristatic Chemical Pump #4															5,000
Zion Post Aeration Blower #1													10,000		10,000
Zion Post Aeration Blower #2													10,000		10,000
Zion Soda Ash Feed Pump						2,500							2,500	2,500	2,500
Zion Soda Ash Bag Breaker															20,000
Zion Sludge Pump (To Press)													12,000		12,000
Zion Ultrasonic Level Sensor (effluent)														15,000	
Zion Washwater Submersible Pump						3,500							3,500	3,500	3,500
Zion Generator 500 KW															350,000
Wastewater Systems Major Replacements			5,000	5,000	5,000	5,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	15,000	15,000
TOTALS			5,000	5,000	11,000	91,500	16,000	10,000	16,000	10,000	16,000	10,000	564,000	211,000	1,048,500

2,014,000
÷ 21 yrs
= $96,143

REGIONAL STP

FY 2012 -2022 20 Year Plan

Replacement and Renewal Schedule June 8, 2011

				1	2	3	4	5	6	7	8	9	10	15	20
Project	Responsible	Priority	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2027	FY2032
Regional New Submersible Influent Pump (A)						10,000	10,000						10,000	10,000	10,000
Regional New Submersible Influent Pump (B)						10,000	10,000						10,000	10,000	10,000
Regional Headwork's Screen (A)							0						30,000		30,000
Regional Headwork's Screen (B)							0						30,000		30,000
Regional Grit Collector							0						50,000		50,000
Regional Grit Collector Blower (A)							0						5,000		5,000
Regional Grit Collector Blower (B)							0						5,000		5,000
Regional Grit Collector Diffusers							0						5,000		5,000
Regional Grit Ultrasonic Level Sensor							0						3,500		3,500
Regional Anaerobic/Anoxic Basin Mixer (A)							0						7,500		7,500
Regional Anaerobic/Anoxic Basin Mixer (B)							0						7,500		7,500
Regional Anaerobic/Anoxic Basin Mixer (C)							0						7,500		7,500
Regional Anaerobic/Anoxic Basin Mixer (D)							0						7,500		7,500
Regional Anaerobic/Anoxic Basin Diffusers							0						5,000		5,000
Regional Anaerobic/Anoxic Basin Blower (A)							0						15,000		15,000
Regional Anaerobic/Anoxic Basin Blower (B)							0						15,000		15,000
Regional Oxidation Ditch #1 Drive Motor							0							2,500	
Regional Oxidation Ditch #2 Drive Motor							0							2,500	
Regional Oxidation Ditch #3 Drive Motor VFD (A)							0							3,500	
Regional Oxidation Ditch #3 Drive Motor VFD (B)							0							3,500	
Regional Clarifier #1 Drive Motor							0							1,500	
Regional Clarifier #1 Scraper Blades						1,500	1,500						1,500	1,500	1,500
Regional Clarifier #2 Drive Motor							0							1,500	
Regional Clarifier #2 Scraper Blades						1,500	1,500						1,500	1,500	1,500
Regional Clarifier #3 Drive Motor							0							2,500	
Regional Clarifier #3 Scraper Blades						2,000	2,000						2,000	2,000	2,000
Regional UV Ballasts						2,000	2,000						2,000	2,000	2,000
Regional UV Bulbs					4,000		4,000		4,000		4,000		4,000	8,000	8,000
Regional UV Controller							0						5,000		5,000
Regional Belt Press Belt							0						8,000		8,000
Regional Belt Press Drive Motors							0							12,000	
Regional Belt Press Rollers							0							40,000	
Regional Belt Press Conveyor							0								30,000
Regional Belt Press Polymer Blend System							0						25,000		25,000
Regional Digester Blower (A)							0								
Regional Digester Blower (B)							0								
Regional Digester Blower (C)							0								
Regional Internal Recycle Pump (A)						10,000	10,000						10,000	10,000	10,000
Regional Internal Recycle Pump (B)						10,000	10,000						10,000	10,000	10,000
Regional Internal Recycle Magnetic Flow Meter							0						4,000		4,000
Regional Return Activated Sludge (RAS) Suction Lift Pump (A)						4,500	4,500						4,500	4,500	4,500
Regional Return Activated Sludge (RAS) Suction Lift Pump (B)						4,500	4,500						4,500	4,500	4,500
Regional Return Activated Sludge (WAS) Suction Lift Pump						4,500	4,500						4,500	4,500	4,500
Regional New Return Activated Sludge (RAS) Submersible Pump (A)						8,000	8,000						8,000	8,000	8,000
Regional New Return Activated Sludge (RAS) Submersible Pump (B)						8,000	8,000						8,000	8,000	8,000
Regional Return Activated Sludge Doppler Meter (A)							0						2,000		2,000
Regional Return Activated Sludge Doppler Meter (B)							0						2,000		2,000
Regional Return Activated Sludge Doppler Meter (C)							0						2,000		2,000
Regional Return Activated Sludge Magnetic Flow Meter							0						4,000		4,000
Tertiary Filter #1 Clothes							0						20,000		20,000
Tertiary Filter #2 Clothes							0						20,000		20,000
Tertiary Filter #1 Drive Motor							0							2,000	
Tertiary Filter #2 Drive Motor							0							2,000	
Tertiary Filter #1 Waste Pump							0						5,000		5,000
Tertiary Filter #2 Waste Pump							0						5,000		5,000
Sludge Pump (To Press)							0						12,000		12,000
Macerator							0								15,000
Washwater Submersible Pump						3,500	3,500						3,500	3,500	3,500
Generator 400 KW							0								250,000
Wastewater Systems Emergency Replacements			5,000	5,000	5,000	5,000	5,000		10,000	10,000	10,000	10,000	10,000	15,000	15,000
TOTALS			5,000	5,000	9,000	85,000	89,000	-	14,000	10,000	14,000	10,000	401,500	176,500	705,500
															1,524,500
															÷ 21 yrs
															$72,595

Northeast Creek Water Plant

FY 2012 -2022 20 Year Plan

Replacement and Renewal Schedule June 8, 2011

				1	2	3	4	5	6	7	8	9	10	15	20
Project	Responsible	Priority	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2027	FY2032
Flash Mix Motor (20y rbld, 35y rplc)	Production														Rbld
Flash Mix Gear Drive (20y rbld, 35y rplc)	Production														
Flocculator # 1 Motor (20y rbld, 35y rplc)	Production														
Flocculator # 1 Gear Drive (20y rbld, 35y rplc)	Production														
Flocculator # 2 Motor (20y rbld, 35y rplc)	Production														
Flocculator # 2 Gear Drive (20y rbld, 35y rplc)	Production														
Lime Feeder mix motor (7y rplc)	Production														
Lime Feeder drive motor (7y rplc)	Production														
Alum Feeder mix motor (7y rplc)	Production														
Alum Feeder drive motor (7y rplc)	Production														
Soda Ash Feeder mix motor (7y rplc)	Production														
Soda Ash Feeder drive motor (7y rplc)	Production														
Fluoride Saturator, pump & motor	Production				$400		$400		$400		$400	$6,000		$400	
Potassium Permanganate Pump	Production												$600		
Raw Water #1 Filter 1720C HACH Turbidimeter	Production			Rpl											
Raw Water #2 Filter 1720C HACH Turbidimeter	Production			Rpl											
Finished Effluent Filter 1720E HACH Turbidimeter	Production												Rpl		
Finished Effluent Filter 1720E HACH Turbidimeter	Production												Rpl		
#1 Finished Water Service Pump (50y rplc)	Production							Rbld							
#2 Finished Water Service Pump (50y rplc)	Production							Rbld							
Chessell 392 Chart Recorder Filter #1 ROF & LOH	Production						3000								
Chessell 392 Chart Recorder Filter #2 ROF & LOH	Production							3000							
Chessell 392 Chart Recorder Raw & Finished Flow	Production								3000						
Chessell 392 Chart Recorder Industrial Tank & Clearwell Level	Production									3000					
Chessell 392 Chart Recorder Appied & Finished pH & Cl2	Production										3000				
Chessell 392 Chart Recorder Raw, Finished, Filters 1&2 Turbs.	Production											3000			
#1 Finished Water Service Pump Motor (50y rplc)	Production							Rbld							
#2 Finished Water Service Pump Motor (50y rplc)	Production							Rbld							
Finished Water Ross Valve # 1 (7y rbld, 50y rplc)	Production									Rbld					
Finished Water Ross Valve # 2 (7y rbld, 50y rplc)	Production									Rbld					
Rosemount Transmitter Finished Flow	Production					3000									
Rosemount Transmitter Raw Flow	Production						3000								
Rosemount Transmitter Backwash Flow	Production							3000							
Rosemount Transmitter Filter #1 Flow	Production								3000						
Rosemount Transmitter Filter #1 Loss of Head	Production									3000					
Rosemount Transmitter Filter #2 Flow	Production										3000				
Rosemount Transmitter Filter #2 Loss of Head	Production											3000			
GF Signet Inline pH Probe Applied Water (rplc probe 5y)	Production														
GF SIGNET pH Reciever Applied Water (rplc probe 5y)	Production			350					350						
GF Signet pH Probe Finished Water	Production			350					350						
GF SIGNET pH Reciever Finished Water	Production								750						
Hach 2100P Benchtop Turbidimeter	Production									2000					
Hach Sension 3 Benchtop pH Meter	Production														
HACH Sension 4 Benchtop ISE Meter	Production								1000						
Clean clearwell	Production					X									
Clean filter wells	Production										X				
Chlorinator Equipment (3y rbld cycle)	Production					Rbld			Rbld			Rbld			
Hach 2800 Spectrophotometer	Production							3500							
Sedimentation Basin Drain Valves x2 (25y rbld, 35y rplc)	Production														
Mixing Basin Drain Valves (25y rbld, 35y rplc)	Production														
Sludge Collector Drive Motor (35y rbld, 50y rplc)	Production														
Sludge Collector Chains (20y rplc)	Production														
Air Conditioning Heat Pump (20y rplc)	Production														
Pressure Relief Valve (10y rbld, 30y rplc)	Production										Rplc				
Pressure Reducing Valve (10y rbld, 20y rplc)	Production														
Backflow Prevention Valve (20y rbld, 40y rplc)	Production														
#1 Filter Effluent Actuator (25y rplc)	Production								Rbld						Rplc
#1 Filter Effluent Butterfly Valve	Production						Rbld								Rplc
#2 Filter Effluent Actuator (25y rplc)	Production								Rbld						Rplc
#2 Filter Effluent Butterfly Valve	Production						Rbld								Rplc
Air Compressor for Clearwell Bubbler	Production					Rplc									
Raw Water Flow Butterfly Valve	Production		Rbld												Rplc
Submersible Sludge Pump #1 (50y rplc)	Production									15000					Rplc
Submersible Sludge Pump Motor #1 (50y rplc)	Production									15000					Rplc
Submersible Sludge Pump #2 (50y rplc)	Production									15000					Rplc
Submersible Sludge Pump Motor #2 (50y rplc)	Production									15000					Rplc
Main Emergency Generator (30y rplc @ $100K)	Production														
				700	400	3000	6400	9500	8850	68000	6400	12000	600	0 400	0

116250

÷ 20

5813

Distribution & Collection Systems

FY 2012 -2022 20 Year Plan

Replacement and Renewal Schedule June 8, 2011

					1	2	3	4	5	6	7	8	9	10	15	20
Project	Responsible	Priority	FY 2012		FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2027	FY2032
Refurbish Regional Influent Pump Station (2 pumps @ $4,750 ea.)	Maintenance								9,500					9,500		
Refurbish Zion Influent Pump Station (2 pumps @ $5,500 ea.)	Maintenance								11,000					11,000		
Refurbish St. Frances Pump Station (2 pumps @ $3,811 ea.)	Maintenance								7,622					7,622		
Refurbish Lagoon Pump Station (4 pumps @ $4,295 ea.)	Maintenance								8,590					8,590		
Refurbish Middle School Pump Station (4 pumps @ $4,295 ea.)	Maintenance								8,590					8,590		
Refurbish Walmart Pump Station (2 pumps @ $5,500 ea.)	Maintenance								11,000					11,000		
I&I Replacement (Manhole Ring & Top ($1,000 ea.), Cleanout Caps ($7.50 ea.)	Maintenance				1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100		
Replacement Water Meters (6 @ $90.00 ea.=$540)	Maintenance		540		540	540	540	540	540	540	540	540	540	540		
Replace/Rebuild Well Pumps (7 total @ one per year)	Maintenance		8,000		8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000		
Repair Well Houses (annual)	Maintenance		1,000		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000		
Replace/Rebuild Fire Hydrants ((2) per year @ $2,400 ea.)	Maintenance		2,000		4,800	4,800	4,800	4,800	4,800	4,800	4,800	4,800	4,800	4,800		
Recoat Water Treatment Plant Backwash Tank	Maintenance															
Recoat IDA Storage Tank	Maintenance		70,000		70,000	70,000	70,000	70,000	70,000	70,000	70,000	40,000	40,000	40,000		
Recoat Zion Crossroads Storage Tank	Maintenance															
Purchase Meters for Water Hauler Use (one-time event)	Maintenance		8,000													
Access Road Repairs	Maintenance		2,000		2,000		2,000		2,000		2,000		2,000			
SCADA Water Tanks / $50K once	Maintenance		50,000													
Pump Station Alarm Dialers	Maintenance															
Meter Replacement to Radio Read ($400/meter)	Maintenance				200,000	200,000	200,000	200,000	200,000							
Recalibrate Wholesale Water Meters	Maintenance		2,000			2,000		2,000		2,000		2,000		2,000		
Generator/Auto-Start Engine Replacement - WalMart ($40,000)	Maintenance						40,000									
Generator/Auto-Start Engine Replacement - St Francis ($40,000)	Maintenance							40,000								
Generator/Auto-Start Engine Replacement - Lagoon ($40,000)	Maintenance								40,000							
Generator/Auto-Start Engine Replacement - Middle School ($40,000 every 20 yrs)	Maintenance									40,000						
Generator/Auto-Start Engine Purchase - TJ Elementary ($40,000 every 20 yrs)	Maintenance										40,000					
Replace Air Release Valve (1/yr. @ $540)	Maintenance		550		550	550	550	550	550	550	550	550	550	550		
Replace WISA air pump (2/yr. @ $250)	Maintenance		500		500	500	500	500	500	500	500	500	500	500		
Replace 6" check valve (1/yr. @ $790)	Maintenance		800		800	800	800	800	800	800	800	800	800	800		
Replace 1000' of antiquated, leaking pipe	Maintenance		2,500		2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500		
Emergency Wastewater Systems Major Replacements	Maintenance		5,000		5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000		
Emergency Water System Major Replacements	Maintenance				5,000		5,000		5,000		5,000		5,000			
Cash Funded			152,890		301,790	296,790	341,790	336,790	398,092	136,790	141,790	66,790	71,790	123,092		
Debt Funded																
Not Funded																
Totals by Fiscal Year & Grand Total for Five Years:																
Five Year Total:																

Notes:

2,173,512

÷ 10 yrs

= $217,351 per year

APPENDIX D: CURRENT RATES AND CONNECTION FEES

LOUISA COUNTY WATER AUTHORITY
P. O. BOX 9
LOUISA, VIRGINIA 23093
540-967-1122
Fee-Rate Schedule (07-08-10)

I. WATER FACILITIES CONNECTION FEES AND USER RATES:

A. A Facility Fee is a one-time fee paid for the right to make specific size connection to the water system and is non-refundable. This right is transferable with the property.

	WATER	SEWER
1. Single Family Dwelling (per dwelling)	$3,750.00	$5,250.00

*2. The initial schedule of connection fees for industrial and commercial users shall be as follows:

Meter Size	Max GPM	**Gal. per Month	Facility Fees	
			WATER	SEWER
3/4"	20	4,000/ 16,000	5,250.00	6,750.00
1"	50	16,000/ 32,000	10,500.00	13,500.00
1-1/2"	100	32,000/ 72,000	21,000.00	27,000.00
2"	160	72,000/116,000	36,750.00	47,250.00
3"	450	116,000/204,000	84,000.00	108,000.00
4"	1,000	204,000/348,000	131,250.00	168,750.00
6"	2,000	348,000/540,000	262,500.00	338,250.00

Water Authority to negotiate and set rate over 6" meter.

*Estimated monthly consumption must be agreed to by the Louisa County Water Authority and be subject to adjustment to actual use. Connection Fee to be determined by gallons per month requested regardless of meter size.

B. Water & Sewer User Rates (monthly billing)

1. Residential, commercial and industrial water rate schedule

	WATER	SEWER
First 4,000 gallons	$14.00	$19.00
All over 4,000 gallons	$3.50 per/m	$4.75 per/m

2. Schedule of minimum charges for meter sizes per billing period

		WATER	SEWER
3/4" x 5/8"	4,000 gallons	$ 14.00	$ 19.00
1"	16,000 gallons	56.00	76.00
1-1/2"	32,000 gallons	112.00	152.00
2"	72,000 gallons	252.00	342.00
3"	116,000 gallons	406.00	551.00
4"	204,000 gallons	714.00	969.00
6"	348,000 gallons	1,218.00	1,653.00
8"	540,000 gallons	1,890.00	2,565.00

3. Wholesale rates to Town of Louisa as set by the Buy/Sell Agreement dated October 5, 1982 as amended.

C. Deposits

1. Residential Service----------$ 75.00

2. Commercial, industrial and other retail master meter user deposits shall be equal to the minimum monthly charge for the meter size connection but not less than $75.00. A deposit is required upon application for service. This deposit is refunded without interest upon discontinuation of service and payment in full of all outstanding charges.

D. Account Charge----------$10.00

E. Hook-up charge is a charge to defray cost of the labor and materials of the service connection. If done by the Authority.

Residential (3/4" x 5/8")----------$ 1,000.00

*Estimated commercial and industrial meter hook-up charges:

3/4" Meter----------$ 1,050.00

1"----------$ 1,150.00

1-1/2"----------$ 1,750.00

2"----------$ 1,950.00

3"----------$ 3,000.00

4"----------$ 4,500.00

6"----------$ 7,500.00

8"----------$12,000.00

*Estimated hook-up charges include the costs of labor, meters, meter boxes or manholes as required, yokes, expanders, valves, corporation stops and all appurtenant items required for a complete meter hook-up. The charge shall be the actual expense and may vary according to conditions found at the site.

Sewer hook-up charge is actual cost of labor and material used to complete the connection.

F. Billing Policy

Bills will be prepared from meter readings and will be rendered at monthly intervals. All bills are due and payable upon receipt. Before the restoration of service, a reconnection charge of $20.00 and the past-due bill and penalty must be paid. In addition, those customers who have not done so must fill out and sign an "Application for Water Service" and must pay the appropriate deposit and $10.00 account charge in connection therewith.

G. Unauthorized Connections

The connection of any other water supply to the Louisa County Water Authority's system is strictly prohibited.

H. Use of Service

The new service applicant is expected to begin use of water within thirty (30) days from the date of which such service is made available. Billing will commence at the end of the Thirty day period in accordance with prescribed rates, terms and conditions.

II. FIRE SPRINKLER SYSTEMS

The Authority does not require a Connection Fee or meter on fire service lines clearly not connected to domestic water system but the customer is expected to report all fire line water usage for testing or other purposed to the Authority promptly.

III. WATER SALES FROM FIRE HYDRANTS

Non-fire service related withdrawals from fire hydrants will be sold at the following rates:

0-100,000 gallons per month	$ 5.00 per 1000 gallons
100,000-500,000 gallons per month	$ 7.50 per 1000 gallons
over 500,00 gallons per month	$10.00 per 1000 gallons

APPENDIX E: RECENTLY PROPOSED RATE INCREASE

Public Hearing Notice

Louisa County Water Authority will hold a Public Hearing on Wednesday, September 14, 2011, at 6:00 p.m. in the Louisa County Water Authority Business Office located at 23 Loudin Lane, Louisa, Virginia 23093 to receive comments on the following proposed water and sewer user rates increase:

Current Rates:

Water & Sewer User Rates (monthly billing)
Residential, commercial and industrial water rate schedule

	WATER	SEWER
First 4,000 gallons	$14.00	$19.00
All over 4,000 gallons	$3.50 per/m	$4.75 per/m

Schedule of minimum charges for meter sizes per billing period:

Meter Size	Gallons	WATER	SEWER
3/4" x 5/8"	4,000	$14.00	$19.00
1"	16,000	$56.00	$76.00
1-1/2"	32,000	$112.00	$152.00
2"	72,000	$252.00	$342.00
3"	116,000	$406.00	$551.00
4"	204,000	$714.00	$969.00
6"	348,000	$1,218.00	$1,653.00
8"	540,000	$1,890.00	$2,565.00

The current water and sewer rate charged to Laurel Hill Residents:

	WATER	SEWER
First 4,000 gallons	$10.00	$10.00
All over 4,000 gallons	$2.50 per/m	$2.50 per/m

Water Sales from Fire Hydrants (Bulk Water):

Gallons	Rate
0-100,000	$5.00 per/m
100,000 – 500,000	$7.50 per/m
Over 500,000	$10.00 per/m

Proposed Rates:

Water & Sewer User Rates (monthly billing)
Residential, commercial and industrial water rate schedule

	WATER	SEWER
First 4,000 gallons	$20.00	$28.00
All over 4,000 gallons	$5.00 per/m	$7.00 per/m

Schedule of minimum charges for meter sizes per billing period:

Meter Size	Gallons	WATER	SEWER
3/4" x 5/8"	4,000	$20.00	$28.00
1"	16,000	$80.00	$112.00
1-1/2"	32,000	$160.00	$224.00
2"	72,000	$360.00	$504.00
3"	116,000	$580.00	$812.00
4"	204,000	$1,020.00	$1,428.00
6"	348,000	$1,740.00	$2,436.00
8"	540,000	$2,700.00	$3,780.00

The proposed water and sewer rates to be charged to Laurel Hill Residence:

	WATER	SEWER
First 4,000 gallons----------	$14.40	$14.40
All over 4,000 gallons----------	$3.60 per/m	$3.60 per/m

Water Sales from Fire Hydrants (Bulk Water):

Gallons	Rate
0-100,000	$7.25 per/m
100,000 – 500,000	$11.00 per/m
Over 500,000	$16.00 per/m

The proposed increase of 45% will assist the Authority in meeting rising costs due to increased regulatory mandates. A complete Proposed Fee-rate Schedule is available upon request from Louisa County Water Authority by phone at 540-967-1122 or in writing at P. O. Box 9, Louisa, Virginia 23093.

APPENDIX F: PROPOSED PAY SCALE FOR WATER AUTHORITY EMPLOYEES

Classification Pay System

	Waste	Water	Maint & Distr	Accting	Secr & Admin
Mgr (Salary)	10000	10000	10000	10000	
Supervisor	5000	5000	5000	5000	
Level I	5000	4000	4000	4000	
Level II	4000	3000	3000	3000	
Level III	3000	2000	2000	2000	
Level IV (adds)↑	4000	2000	1000	1000	
Trainee (starts)	28,000	28,000	27,000	32,000	23,000

For existing employees, add 1% to total for each year employed as a one-time initial adjustment to match current pay.

APPENDIX G: NORMALIZATION OF OPERATIONS

The Zion Crossroad WWTP is expected to come on line in December of 2012. (Scheduled completion is May 4, 2013.) After shaking down the plant's operations to a steady state, a 6-month period of data collection will begin to measure the plant's output of copper and zinc and study its impact on receiving waters. This will last until approximately October 2013. Two months will be needed to analyze and report the data to DEQ.

DEQ will receive our report in December 2013 and take at least 4 months to review the data and (hopefully) approve its conclusions. Then, in approximately March of 2014 DEQ will send their review to EPA who is expected to take approximately 9 months to review. If there are no significant changes needed, EPA will approve the conclusions by December 2014.

While DEQ is completing the review and approval process, the Authority will be exploring metals removal options. It may be that the metals studies will result in greatly relaxed limits for the plant. We presently have no reasonable expectation the limits will be so relaxed as to eliminate concern. This is because zinc is found in large quantities in our source water. We fully expect to undertake a 2-3 month bench scale study of alternatives to remove the necessary amount of zinc. For the most promising alternatives, we will need to undertake a 6 month plant pilot study to determine actual plant performance and cost efficiency. (Such studies cannot be run simultaneously unless the alternatives will be employed in production simultaneously.) These results will be reported to DEQ for inclusion in the permit writing process.

Once DEQ has EPA's approval of the metal standard to be imposed on the ZCWWTP, DEQ will then draft the proposed permit standards and open their draft for a 30 day public review period and 45 day public comment period. If there are no serious challenges or lawsuits, the draft permit will be forwarded to the state Water Control Board's next quarterly meeting for approval and issuance.

At that point in time, the Water Authority will have the definitive metals standards it must meet for the ZCWWTP, and it will have the approved process for metals removal. Because biological treatment plants are not designed to remove metals, that standard will drive the degree of effort and costs that will be needed to remove the zinc and copper. The degree of effort could include new infrastructure to reuse 100% of the reclaimed water, or relocating the plant's outfall, or removing metals from the source water wells, or finding and drilling new wells, or adding new processing facilities to the ZCWWTP itself.

The proposed operating budget for 2015, at Appendix B, assumes a simple addition of Jenfitch solution to the plant process will satisfy the zinc and copper standards presently expected to be imposed. Possibly, we could know at the end of our plant pilot study in Fall 2014 what our metals removal requirement and solution will be. That is, perhaps, the soonest point in time a projection of actual plant operations costs could be made. At present, our ongoing bench studies are establishing that there is no single product that will remove enough metals to allow us to meet limits. It appears that a multi-process solution will be required and expensive temporary measures will need to be put into service no later than November of 2012 to meet the standard which takes effect on December 4, 2012.

APPENDIX H: PROPOSED DRAFT OPERATING AGREEMENT

LOUISA COUNTY WATER AUTHORITY OPERATING AGREEMENT

This agreement is made this _____ day of _____, 2011, by and between the Board of Supervisors of the Louisa County, hereinafter referred to as "County" and the Louisa County Water Authority Board of Directors, hereinafter referred to as "Authority" and the town of Louisa, hereinafter referred to as "Town" and the town of Mineral, hereinafter referred to as "Mineral".

WITNESSETH

WHEREAS, the County has created and incorporated the Authority to acquire, finance, construct, reconstruct, operate and maintain facilities to provide water, sewage, sewage disposal and/or garbage and refuse collection and disposal services for the County of Louisa; and

WHEREAS, the infrastructure and facilities that have been built or installed across the county to fulfill this purpose are in some instances owned by the County and/or the Town, and in others owned by the Authority; and

WHEREAS, there are multiple agreements governing the ownership, operation, financing, cost-sharing and rate and fee charges for different facilities and customers that have been negotiated and modified over the years; and

WHEREAS, the parties desire to terminate those agreements by consolidating them into a single, simplified, overarching agreement that will govern their relationship from this point forward;

WHEREAS, the Authority is supported financially only by revenues from its operations and customers and is without taxing power; and

WHEREAS, it is in the best interests of all the parties, and the citizens of Louisa County, that the County continue to support the Authority until such time as it may support itself; and

WHEREAS, it is in the interest of the citizens of Louisa County to promote growth in designated areas within the County and in accordance with the County Capital Improvement Plan; and

WHEREAS, the County has recouped the value of past loans to the Authority through increased property tax revenues and utility connection fees; and

NOW, THEREFORE, in consideration of the foregoing and the mutual agreements hereinafter set forth,

A. The Parties agree:

1. All past agreements, understandings and operating practices whether reduced to writing or not and including but not limited to those agreements listed in Appendix A are no longer of legal effect and are hereby superseded by this agreement.
2. The agreements listed in Appendix B remain in force and effect.
3. The Authority shall stand as the sole public utility of water and wastewater treatment services in the County and no other agency, body or entity shall be formed during the Authority's existence or allowed to compete or provide alternate services, without the concurrence of the Authority.
4. They shall each, pursuant to the extent of their legal authority pass such ordinances, issue regulations or otherwise undertake to assist in maximizing the number of customers available to receive services from the Authority.
5. The Authority's Board of Directors shall serve as the body responsible for the lawful, effective and efficient performance of the Authority and be accountable to the Board of Supervisors for all activities of the Authority.
6. Subject to state law, the Authority Board is authorized to set appropriate rates and fees that will allow the Authority to function efficiently to protect both its short and long term financial health and viability.
7. The Authority shall operate in a manner to minimize its costs, maximize its revenue sources and strive to keep the rates it charges Louisa County customers as low as reasonably possible.
8. The County shall supplement Authority funding until such time as County determines it will no longer do so, thereby allowing the Authority's customers to assume the full burden of the Authority's operating budget.
9. The ownership of all existing infrastructure, plants, equipment, easements or other property pertaining to water and sewer services in the county shall remain as currently configured. The parties will determine outside this agreement whether any properties will be transferred between them.

B. The County agrees:

1. To provide such funding and services to the Authority as is necessary to prevent the Authority from incurring a financial deficit at the end of the Authority's fiscal year, which shall be June 30 of each year.
2. To provide funding to the Authority in four quarterly installments through the Authority's fiscal year based on the budget amount certified at the beginning of the fiscal year as needed by the Authority's Board of Directors and presented to the County by the end of the third quarter of the previous year.
3. To forgive any outstanding debt of the Authority for amounts owed from past agreements and forego receipt of any monies collected or set aside, to date, for the redemption of such debt.
4. To forego the collection of any connection fees from customers of the Authority.
5. It will not reduce funding for any Board approved Authority operating budget in excess of 20% without first providing one year notice.

6. To redeem that portion of the water infrastructure debt for which it can reach agreement with the Town or with Mineral.
7. There shall always be appointed to the Authority's Board of Directors at least one Director who shall represent the interests of one or both towns.

C. The Town agrees:
   1. To convey its ownership of water utility infrastructure and facilities to the County or Authority, as they may agree.
   2. To transfer its customers, and their records, to the Authority.
   3. To pay off, at its own expense, that portion of its infrastructure debt that is not assumed, financed or otherwise paid by the County.

D. Mineral agrees:
   4. To convey its ownership of water utility infrastructure and facilities to the County or Authority, as they may agree.
   5. To transfer its customers, and their records, to the Authority.
   6. To pay off, at its own expense, that portion of its infrastructure debt that is not assumed, financed or otherwise paid by the County.

E. The Authority agrees:
   1. To operate the utility in a fiscally responsible fashion that will obtain sufficient customers, minimize operating costs, meet regulatory compliance standards and economically maintain the serviceable lifetime of its infrastructure.
   2. To produce an operating budget by the end of each fiscal year's 3rd quarter for presentation to the County for the coming fiscal year.
   3. To undertake development of revenue generating products, processes and measures that will lower costs to both County and customers.
   4. To pay the debt financed by the County and incurred by the Authority to acquire that infrastructure transferred to the Authority pursuant to this agreement.
   5. To make its books, records and accounts available for inspection, on demand, to the County.
   6. To obtain and maintain as current all necessary permits and operational licenses as required by law.

F. Enforcement

The parties agree that if enforcement of any provision of this agreement is required, the substantially prevailing party in any action at law or equity shall be entitled to receive, and the other party shall pay forthwith, any and all expenses incurr3d, including , but not limited to, reasonable attorney's fees.

G. Severability

If any of the provisions of this agreement are held to be invalid or unenforceable, all othe provisions hereof shall nevertheless continue in full force and effect.

H. Modification

No modification of waiver of any of the terms of this agreement shall be valid unless in writing and executed with the same formality as this agreement. No waiver of any breach or default hereunder shall be deemed a waiver of any subsequent breach of default of the same or similar nature.

I. Governing Law

This agreement shall be construed according to the laws of the Commonwealth of Virginia. Jurisdiction and venue of any claims, suits or causes of action arising wit respect to this agreement shall be in the Circuit Court of the County of Louisa.

J. Warranties

The parties warrant that they have full and proper authority to enter into this agreement as reflected in resolutions adopted by the signatories to this agreement giving authority to the representatives of each signatory to execute said agreement and which resolutions are to be attached hereto and incorporated by reference herein.

Witness the following signatures:

Board of Supervisors of Louisa County, Virginia

By: _____ _____

Willie E. Gentry, Chairman Date

Board of Directors, Louisa County Water Authority

By: _____ _____

James E. Bogdan, Chairman Date

Louisa, Virginia Town Council

By: _____ _____

James S. Artz, Mayor Date

Mineral, Virginia Town Council

By: _____ _____

Pam Harlowe, Mayor Date

OPERATING AGREEMENT APPENIDIX A

"Terminated Agreements"

The Endowment Agreement, October 1, 1982, (between County & Authority)

The Buy-Sell Agreement with Town Louisa, October 1, 1982, including Addendums 1 & 2 of the same date & Addendum 3, October 10, 1999(between Town Louisa & Authority)

Water and Sewer Connection Fee Agreement, November 1, 1994 (between County, Authority and School Board of Louisa County)

Waste Water Treatment and Water Services Agreement, April 6, 1995(between County, Mineral, Authority and School Board)

The Buy-Sell Agreement with Town Mineral, November 14, 2002 (between Authority, Mineral and County)

Regional Sewage Treatment Plant Construction Agreement, April 18, 1983 (between County and Town Louisa)

Regional Sewage Treatment Plant Operation Agreement, March 17, 1988 (between Town Louisa, County and Authority)

Regional Sewage Treatment Plant Expansion Agreement, June 28, 1995 (between County, Town Louisa and Authority)

Waste Water Treatment and Water Services Agreement, April 6, 1995

Louisa County School Complex/Mineral Sewer Line Agent Agreement

OPERATING AGREEMENT APPENDIX B

"Effective Agreements"

Zion Crossroads Conditional Use Permits February 1, 1999

Memorandum of Understanding, March 4, 1999

Resolution Edgemar Rezoning

Spring Creek, June 2001

Old Dominion Conditional Use Permit

Louisa Generation LLC Water Agreement

Spring Creek Service Agreement

Ground Water Use Monitoring and Assessment Plan