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Water and Sewer Utility Rate Study

City of Carbondale, Illinois

Prepared By:

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Table of Contents

Executive Summary

The City of Carbondale hired a team of consultants to complete a Water and Sewer Utility Rate Study to accomplish three primary goals:

1. Obtain an independent engineering review of Carbondale's water and sewer infrastructure and develop a 20-year capital replacement plan;
2. Determine the cost of capital replacement and the amount of revenue needed to maintain and upgrade the City's 50-year old utility systems and meet all new regulatory requirements; and
3. Recommend future water and sewer rates that will support the necessary capital projects.

The engineering firm of Fehr-Graham and Associates reviewed the City's capital project list, made a physical inspection of the treatment plants and storage facilities and reviewed the City's utility operations. There were no weaknesses found in the operations of the water and sewer system. This report establishes priorities and provides the estimated costs for capital improvements over the next 20 years. The proposed 20-Year Capital Plan averages nearly $5.8 million in capital costs per year. By contrast, the City has spent between $1 million and $1.4 million per year over the past five years to complete the most urgent repairs.

The need to replace and maintain the water and sewer utility systems over the next twenty years will introduce new financial pressures. The financial advisory firm of Ehlers completed a rate analysis. Annual rate increases will be needed for both water and sewer beginning in FY2012, to keep pace with operating costs and to fund the 20-Year Capital Plan. The recommended changes to the City's utility rates include:

1. Replace the minimum monthly charge with a small fixed monthly charge. This will actually reduce the water bills for the lowest volume users in Fiscal Year 2012.
2. Increase usage rates annually for sewer beginning in FY 2012 and annually for water in FY 2013.

Even with the recommended rate increases, the residents and businesses in the City of Carbondale will continue to enjoy lower water and sewer rates than two-thirds of other Illinois communities that were surveyed.

Introduction

The City of Carbondale retained Fehr-Graham & Associates and Ehlers to assist staff in reviewing the physical condition of the water and sewer systems, identify improvements and repairs that would be needed over the next 20 years, make recommendations, and to prepare a funding plan to address the identified needs.

The process of evaluating the City's sewer and water infrastructure began in 2008 when the City of Carbondale's public works staff initiated a comprehensive look at the condition of its infrastructure and began the process of planning for timely and orderly replacement of aging systems. Much of the City's water and sewer mains were installed over 50 years ago.

Prior to this effort, the City has used its five-year Community Investment Program to guide decisions about capital replacement. The Community Investment Program (CIP) is developed by identifying the available funds and targeting those to the most urgent capital projects. Staff has effectively used the limited funding to address immediate needs for capital improvements and is, in fact, operating award-winning utility systems. Nevertheless, the simple fact that a large portion of Carbondale's sewer and water systems were built before 1960 necessitates a new, longer-term approach to capital planning.

When Fehr-Graham and Ehlers were hired to complete this study in the spring of 2010, City staff had already identified a preliminary list of needed capital projects. The purpose of this study was to review the City's project list and to examine the physical condition of the treatment plants and water storage facilities and utility operations. Fehr-Graham and Associates completed this review, made several recommendations and provided cost estimates for the revised project list. Ehlers, a financial advisory firm, has taken the cost estimates, made recommendations on how to pay for them with cash and bond financing, and made recommendations for water and sewer rates.

Water System

The City's water supply comes from a man-made impoundment commonly known as Cedar Lake. It is clear that care has been taken over the years to protect this resource and ensure its long term viability to provide water to the 26,000 plus Carbondale residents, as well as Southern Illinois University, the South Highway Water District and the Lakeside Water District.

An alternate water resource is the City Reservoir. This water source was built in 1926 and has served as a back-up water supply for Cedar Lake. Over time, the City Reservoir has silted in, the intake point is sometimes inaccessible, and has diminished storage capacity. Thus, it is no longer a viable alternate source of water. The City of Carbondale will need to dredge the City Reservoir to restore full capacity. Alternatively, to provide sufficient back-up water supply the City could construct storage facilities. Dredging the City Reservoir is a more cost-effective option, plus it will maintain the recreational value of the City Reservoir over time.

The distribution system of water main pipes is aged and much needs replacement. For a city its size, Carbondale has a high rate of water main failures that interrupt service and require emergency repair, resulting in expensive overtime and material costs. Water main breaks are caused by pipe corrosion and weakness that result from pipe age. The following chart details the number of water main breaks over the last four years.

Number of Water Main Breaks per Fiscal Year	
2007	63
2008	91
2009	54
2010	67

The key capital needs facing the existing water system includes:

- Replacing water mains
- Painting the water towers
- Cedar Lake Pump Station renovation
- Dam inspection and repair
- Reservoir maintenance
- Replacing filtration equipment in the water treatment plant
- Building maintenance
- Building new water storage facility to replace underground tanks downtown. Due to the flood hazard, the two underground storage tanks must be relocated or replaced with other storage facilities.

In addition, the engineering review identified future improvements to the system:

- Automatic meter reading system (estimated to be $1.2 million)
- Improving chemical treatment system to enhance safety ($600,000)

Sewer System

The sewer system is comprised of two wastewater treatment plants (WWTP), the Northwest WWTP and the Southeast WWTP. It is fed by a collection system made up of 138 miles of gravity sewer and force mains coupled with lift stations. Much work has been done in the recent past to improve the efficiency at each of the WWTP, which has helped to reduce operational costs at both facilities. In reviewing the system needs, care was taken to identify aged portions of the plants as well as identify further operational cost savings.

The majority of sewer capital results from the need to preserve the aged collection system. Carbondale has a high rate of sewer line stoppages that interrupt service and require emergency repair. Sewer stoppages are caused by aging clay pipes that collapse or become porous to roots. Porous sewer lines also allow storm water to seep in, increasing the volume of sewer that the City is required to treat. Below is recent data on sewer stoppages requiring immediate repair or replacement.

Number of Sewer Line Stoppages per Fiscal Year	
2007	109
2008	169
2009	128
2010	128

The key capital needs facing the existing sewer system includes:

- Replacing and relining sewer mains
- Relining manholes
- Replacing lift station pumps
- Repairing man hole covers to keep storm water out of the sewer system
- Replacing equipment at the treatment plants
- Building maintenance

In addition, the engineering review identified improvements needed to keep the sewer system in compliance with new environmental protection regulations:

- Upgrade the wastewater treatment plants to give them the capacity to remove phosphorous and ammonium nitrates.

Operations and Management

The City of Carbondale provides potable water and sewer service to residents in a cost conscious and high quality manner. The backbone of these services is provided by the public works staff who operate, maintain and update the water and sewer system to meet the needs of the users and the ever-changing environmental regulations.

Fehr-Graham evaluated the operations and management of the system and commends staff in the use of best practices. Operations are efficient and cost effective. The City of Carbondale has a top-notch utility operation.

We identified and recommend four categories of capital improvements that will save energy or reduce chemical use.

1. We are recommending the replacement of pumps at Cedar Lake with higher efficiency pumps that will lower electricity costs.

2. We are recommending a new progressive upgrade in the chlorine generation system to enhance worker and community safety. Improved chemical treatment may also lead to reduced chemical costs. Pilot testing should be conducted prior to making changes in the chemical treatment process.

3. We are recommending the replacement of pumps at several lift stations to reduce energy use and costs.

4. We are recommending the City make re-lining the manholes a priority to keep storm water out of the sewer system. Replacing or relining sewer pipes will also reduce inflow and infiltration. It is expensive for the City to treat storm water via the wastewater treatment plants.

20-Year Capital Plan

The key to future water and sewer service will be to begin the process of replacing the aging infrastructure and upgrading the equipment. The City has been managing the system by making emergency repairs to pipes when they leak or break. Eventually, the aging infrastructure will begin to fail at a rate the City can no longer manage effectively. Consistent with the City's past practice of excellent utility management, the City has initiated a comprehensive planning process to replace and upgrade the utility infrastructure, in a thoughtful and intentional way, over the next 20 years.

The first step in completing this study was conducting a comprehensive review of all existing buildings, trucks and equipment, treatment plants, storage facilities, and lift stations. The review looked at both the age and condition of the above-grade parts of the system. We reviewed the age and the performance of various sections of pipe throughout the whole community.

Using information gathered in the review, we projected when capital equipment would need replacing over the next 20 years, based on industry standards and its existing condition. We generally found that all equipment had been well maintained and replacement will be necessary only because of age and normal wear and tear. The 20-Year Capital Plan includes ongoing maintenance and repair of existing assets so as to extend their useful life.

The second step was to evaluate the system to determine if improvements or upgrades should be recommended either to cure existing deficiencies, improve operational efficiencies or to meet new environmental standards. Improvements were put on the list only if we found them to be cost-effective. The only "deficiencies" we found were areas where the system needs to change to

meet evolving state and federal standards and best practices. Specifically, there is a need to replace the underground tanks that could be damaged by flooding, the need to loop water lines to strengthen the distribution system, and the need to increase the size of some water and sewer mains to accommodate more flow.

As previously discussed, the improvements recommended for operational efficiencies include replacing pumps, lining sewer pipes and manhole covers, and exploring a new chemical feed system for the water treatment plant.

Total recommended improvements to the two wastewater treatment plants over the next 20 years are $11.8 million. These projects are based on proposed standards currently being promulgated by the Illinois Environmental Protection Agency (IEPA). It is good practice to complete these types of projects on the City's schedule as opposed to an accelerated schedule driven by a Compliance Commitment Agreement based on a Notice of Violation.

The single two biggest capital projects are replacement of water mains and replacement or lining of the sewer mains. Water main replacement is estimated at $36 million over 20 years, and sewer main replacement and repair is estimated at approximately $50 million over 20 years.

Approximately 90% of the sewer pipes scheduled for repair and/or replacement are the old clay pipes. Wherever possible, the sewer lines will be fixed by leaving the existing line in place and inserting a new lining. Lining pipes is more cost effective than replacing them, and causes less disruption in neighborhoods.

The 20-Year Capital Plan (shown in Appendix E) is a comprehensive list of the projects needed in the next 20 years. This list was prioritized based on system need, condition of the asset, and expectation of when the IEPA standards will require system improvements. The detailed 20-Year Capital Plan is attached as Exhibit E.

For the purposes of this report, we looked at the investment program in 5-year intervals. The projects that pose the greatest need and/or potential liability were slated to be completed in the first five years, and significant effort was given to reasonably balance the program years. The result was a total program of nearly $116 million dollars averaging near $5.8 million in capital costs per year for 20 years. By contrast, the City has spent between $1 million and $1.4 million per year over the past five years.

A five-fold increase in annual capital costs will necessarily have an impact on ratepayers. The next sections of this report make recommendations for water and sewer rates to fund the 20-Year Capital Plan. In addition, it considers the rate impacts if we take 25 or 30 years to complete the projects. A 25-year schedule would result in average annual capital costs of $4.64 million, and a 30-year schedule would reduce the annual cost to $3.86 million. (All cost estimates are in today's dollars.)

There are infrastructure risks to extending the program timeframe. The needs presented are real and necessary. The need to maintain and replace assets in the utility system can be compared to home ownership: You're never done. Even after you fix the roof the house still needs new

windows. Similarly the projects in the 20-Year Plan are the highest priority projects, but additional systems will need attention in years 20 through 30. Postponing current needs will cause the City to postpone future capital projects as well. The lower priority projects that could be delayed include sewer main rehabilitation projects, water main replacement projects and the water meter replacement project.

The subsequent sections of this report address how the 20-Year Capital Plan can be financed over 20, 25, or 30 years, and how the City will need to adjust its water and sewer rates.

Water & Sewer Utility Rates

The Art of Establishing Utility Rates

The philosophy of the City of Carbondale has been to set rates as low as possible, while maintaining sufficient revenue to cover its operating costs, pay debt service, and maintain a small operating reserve. Historically, rates have not been sufficient to build reserves sufficient to replace the aging infrastructure.

Ehlers' approach to setting rates is to work with the community to identify its goals, the types of users, and the water consumption patterns. Recommended rates are then tailored to fit the needs of each community. One size does not fit all for utility rates – either for communities or customers. We look at who your customers are (see Appendix H) and the demands they are making on the system.

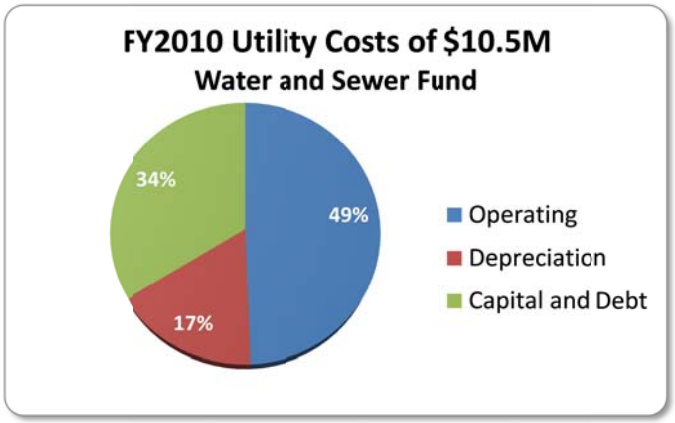
Ehlers' analysis is based on water consumption data we received from the City of Carbondale. We verified that the historical consumption tied out to the historical revenues, but we did not independently verify water bills or consumption reports.

For the City of Carbondale, we have tailored the rates to make water more affordable for essential indoor water use (bathing and laundry) than for discretionary outdoor water use (washing cars or lawn irrigation). ***The proposed rates will actually result in a 35% decrease in the utility bill of residents using less than 1,000 gallons of water and sewer per month.***

Nevertheless, there will be the need to increase water and sewer revenues to pay for the proposed 20-Year Capital Plan. In suggesting rates that are fair and reasonable, we look at the City's utility expenditures and the City's customers.

Water and Sewer Expenditures

The break-down of costs for FY2010 is shown in the graph on the next page. Currently, the City is not fully funding depreciation, consistent with most City owned utilities.



For purposes of the rate study, we made the following assumptions about future expenditures:

- Operating expenses increase 3% annually
- Capital costs in the 20-Year Capital Plan are inflated 4% annually
- Investment income is 1.5% for the next two years, and 2% thereafter
- The interest rate on bonds to finance a portion of the capital costs are 4.25% (see the Funding Plan section on page 13 of this report)

Current Water Rates

The City's current water rate is $3.35 per thousand gallons for residential and commercial properties. The City charges a minimum monthly fee of $10.05 which includes the first 3,000 gallons of water per month. The minimum charge only applies to customers who use less than 3,000 gallons per month and helps cover fixed costs such as billing and meter reading, which are incurred regardless of how much water a customer uses. Users above 3,000 gallons per month pay for only what they use.

The City has lower rates for wholesale water users, as shown in the following chart. These customers have lower rates because the water is distributed to the water districts through large water mains and only a few meters. Each water district is responsible for distributing and metering water to their individual consumers. The customers in the Former Crab Orchard Water District have an additional charge added to the residential rate through FY2017 to pay for improvements to the distribution system in that area.

Description	FY2011 Monthly Rate
Residential and Commercial	$3.35 / 1,000 gallons
Southern Illinois University (large meters) and South Highway Water District	$3.03 / 1,000 gallons
Lakeside Water District	$3.15 / 1,000 gallons
Former Crab Orchard District	$5.42 / 1,000 gallons

The rates for the Lakeside Water District are already higher because they were previously raised in anticipation of the rate increases expected as a result of this study.

The City collects approximately $3,964,000 in annual water revenues from its ratepayers.

In FY2012, the City is budgeted to spend approximately $300,000 in fixed costs such as utility billing administration, communications, information and financial management services, and insurance. The remainder of the expenses are for water reservoirs, distribution, storage and treatment and equals roughly $2,870,000 per year.

Although the water and sewer utilities are combined in one fund, we looked at each utility separately to ensure the water rates are set at a level to fully cover the cost of the water system. Appendix B provides an analysis of the water portion of the utility fund. Appendix D provides an analysis of the combined water and sewerage utility fund.

Proposed Water Rates

Recommended Rate Option: Fixed Charge plus Usage Charge

Fixed Charge

Municipal utilities commonly have a fixed meter charge for all customers. The fixed charge is used to pay for the fixed costs of the system such as Support Services staff, postage, insurance, information services, and financial management services incurred by all users of the system. The proposed fixed charge would replace the existing minimum charge with a **flat fee per account:**

$3.09 per month for residential and commercial customers
$309.00 per month for wholesale customers

The fixed charge is an equitable way for all customers to help carry the core administrative costs of utility operations.

Water Usage Rate

For FY2012 we are recommending a rate of $3.35 per thousand gallons.

The capital needs of the water system as identified in the 20-Year Capital Plan create the need for more water revenue. However, the size of the rate increases will depend on the timeframe for implementing the 20-Year Capital Plan: 20, 25, or 30 years.

One can make an analogy to a home mortgage to understand why extending the timeframe for implementing the 20-Year Capital Plan will affect water rates. When you buy a home, you have the option of financing it over 15 or 30 years. The price of the home stays the same, you just choose how long it will take to pay for it. Likewise, the 20-Year Capital Plan is estimated to cost $116 million in today's dollars. However, if we take 25 or 30 years to complete the work, we spread that cost over an additional five to ten years, and our "annual payment" is less, thereby reducing the water revenues needed each year.

The chart below shows the proposed FY2012 water rates and projected future increases for the three timeframes.

PROPOSED MONTHLY WATER RATES

		FY2012	FY2013	FY2014	FY2015	FY2016
20-Year Capital Plan	Fixed Charge	$3.09	$3.30	$3.52	$3.76	$4.01
	Usage Rate	$3.35	$3.58	$3.82	$4.08	$4.36
	% Increase		6.75%	6.75%	6.75%	6.75%
20-Year Capital Plan Over **25** Years	Fixed Charge	$3.09	$3.26	$3.44	$3.63	$3.83
	Usage Rate	$3.29	$3.47	$3.66	$3.86	$4.07
	% Increase		5.50%	5.50%	5.50%	5.50%
20-Year Capital Plan Over **30** Years	Fixed Charge	$3.09	$3.24	$3.40	$3.56	$3.73
	Usage Rate	$3.27	$3.43	$3.59	$3.76	$3.94
	% Increase		4.80%	4.80%	4.80%	4.80%

The projected percentage rate increases shown for FY2016 continue through FY2031.

Impacts on Sample Water Customers ~ 20-Year Capital Plan

The following charts show the monthly water bills for sample residential, commercial, and wholesale customers, using the 20-Year Capital Plan option. The water bills would be lower if the Council decides to undertake fewer capital projects and extend the 20-Year Capital Plan over 25 or 30 years.

Residential and Business Customers:

		Recommended Option				
Sample Resident / Business	**FY 2011**	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**
Low User						
1,000 gallons water	$ 10.05	$ 6.44	$ 6.88	$ 7.34	$ 7.84	$ 8.37
$ Increase / (Decrease)		**$ (3.61)**	**$ 0.44**	**$ 0.46**	**$ 0.50**	**$ 0.53**
Medium User						
6,000 gallons water	$ 20.10	$ 23.19	$ 24.78	$ 26.44	$ 28.24	$ 30.17
$ Increase / (Decrease)		**$ 3.09**	**$ 1.59**	**$ 1.66**	**$ 1.80**	**$ 1.93**
High User						
20,000 gallons water	$ 67.00	$ 70.09	$ 74.90	$ 79.92	$ 85.36	$ 91.21
$ Increase / (Decrease)		**$ 3.09**	**$ 4.81**	**$ 5.02**	**$ 5.44**	**$ 5.85**

The amounts above include moving from a minimum charge of $10.05 to a fixed charge. This will reduce the bills for low-volume customers.

Wholesale Customers:

Sample Wholesale Customer	FY 2011	Recommended Option FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Low user						
4,000,000 gallons water	$ 12,120.00	$ 12,909.00	$ 13,769.86	$ 14,712.13	$ 15,695.90	$ 16,761.27
$ Increase / (Decrease)		**$ 789.00**	**$ 860.86**	**$ 942.27**	**$ 983.77**	**$ 1,065.37**
High User						
6,500,000 gallons water	$ 19,695.00	$ 20,784.00	$ 22,169.86	$ 23,687.13	$ 25,270.90	$ 26,986.27
$ Increase / (Decrease)		**$ 1,089.00**	**$ 1,385.86**	**$ 1,517.27**	**$ 1,583.77**	**$ 1,715.37**

A complete table showing recommended rates for FY2012 – FY2016 can be found in Appendix F. An impact analysis for various users encompassing both water and sewer can be found in Appendix G.

Comparison to Other Cities' Water Rates

The City surveyed the 2010 water and sewer rates of approximately 1,000 communities. Of those communities, about 250 responded. Based on this information, the estimated fiscal year 2012 water rates will continue to be lower than the average water rate of other cities, regardless of the pace of completing capital projects.

FY 2012 Rates	Cost for 6,000 Gallons of Water	Ranking out of 258*
20-Year Capital Plan	$23.19	56th
Capital Plan over 25 years	$22.41	52nd
Capital Plan over 30 years	$22.21	50th

* A ranking of 1st would be the lowest possible charge, with 258 being the highest water rate. See Appendix A for a graph that shows where Carbondale ranks in comparison.

Policy Review ~ Former Crab Orchard Water District

As part of our review of existing rate structures, we became aware of the additional rate of $1.87 per 1,000 gallons that is charged to residents and businesses located within the former Crab Orchard Water District. This rate is collected to cover costs associated with specific projects the City has agreed to complete. This additional rate will expire in FY2018.

For example, the FY 2012 rate would be $5.22/1,000 gallons plus $3.09 fixed fee. We recommend the City review this agreement to determine the appropriate methodology going forward.

Current Sewer Rates

The chart below shows the City's current rate structure. All accounts are billed monthly.

Description	FY 2011 Monthly Rate
All Users	$3.56 / 1,000 gallons

All sewer usage is based on actual water usage with the exception of Southern Illinois University. The University's cooling towers use a significant amount of water, with a portion lost to evaporation. Thus, the University's sewer bill is reduced by an estimate of the evaporation amount.

The sewer charge also includes a minimum usage of 3,000 gallons per month (similar to water). The charge for minimum usage generates approximately $13,600 per year and helps pay for a portion of the fixed costs of operating and maintaining the system. The usage fees generate approximately $3.05 million annually.

Proposed Sewer Rates

The proposed rate structure was designed to provide sufficient resources to pay for projected operating expenses and capital costs and to maintain recommended minimum cash reserves. Appendix C provides the analysis of the sewer portion of the utility fund. Appendix D provides an analysis of the combined water and sewerage utility fund.

In FY2011, the City has budgeted approximately $300,000 in fixed costs such as utility billing administration, communications, information and financial management services, and insurance. The remainder of the expenses are for sewer collection and treatment and equals roughly $2,570,000 per year.

Recommended Sewer Rate Structure - Fixed Charge and Usage Charge

Sewer charges would continue to be based on water usage and would include a **fixed monthly charge of $3.14 per account**. The fixed monthly charge will allow the City to recover the core administrative costs associated with sewer (billing, meter reading, accounting, and billing software).

Similar to the water system, implementing the 20-Year Capital Plan will create the need for more sewer revenue. The size of the rate increases will depend on the timeframe for implementing the 20-Year Capital Plan: 20, 25, or 30 years.

The chart on the following page shows the proposed FY2012 sewer rates, and projected future increases for the three timeframes.

PROPOSED MONTHLY SEWER RATES

		FY2012	FY2013	FY2014	FY2015	FY2016
20-Year Capital Plan	Fixed Charge	$3.14	$3.69	$4.34	$5.10	$5.99
	Usage Rate	$3.86	$4.54	$5.33	$6.26	$7.36
	% Increase	8.50%	17.50%	17.50%	17.50%	17.50%
Capital Plan Extended Over **25** Years	Fixed Charge	$3.14	$3.57	$4.06	$4.62	$5.26
	Usage Rate	$3.74	$4.25	$4.83	$5.49	$6.24
	% Increase	5.00%	13.75%	13.75%	13.75%	13.75%
Capital Plan Extended Over **30** Years	Fixed Charge	$3.14	$3.53	$3.97	$4.47	$5.03
	Usage Rate	$3.69	$4.15	$4.67	$5.25	$5.91
	% Increase	3.75%	12.50%	12.50%	12.50%	12.50%

Beginning in FY2017, we expect annual rate increases to be 3.5% for the 20-Year Capital Plan, 4.25% if the Capital Plan is extended over 25 years, and 4.5% if the Capital Plan is extended over 30 years.

Impacts on Sample Sewer Customers ~ 20-Year Capital Plan

The following charts show the monthly sewer bills for sample residential and commercial customers, assuming the 20-Year Capital Plan is implemented over 20-Years. The sewer bills would be lower if the Council decides to undertake fewer capital projects, and extend the Capital Plan to 25 or 30 years.

Residential and Business Customers:

		Recommended Option				
Sample Resident / Business	**FY 2011**	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**
Low User						
1,000 gallons sewer	$ 10.68	$ 7.00	$ 8.23	$ 9.67	$ 11.36	$ 13.35
$ Increase / (Decrease)		**$ (3.68)**	**$ 1.23**	**$ 1.44**	**$ 1.69**	**$ 1.99**
Medium User						
6,000 gallons sewer	$ 21.36	$ 26.30	$ 30.93	$ 36.32	$ 42.66	$ 50.15
$ Increase / (Decrease)		**$ 4.94**	**$ 4.63**	**$ 5.39**	**$ 6.34**	**$ 7.49**
High User						
20,000 gallons sewer	$ 71.20	$ 80.34	$ 94.49	$ 110.94	$ 130.30	$ 153.19
$ Increase / (Decrease)		**$ 9.14**	**$ 14.15**	**$ 16.45**	**$ 19.36**	**$ 22.89**

A complete table showing recommended rates for FY2012 can be found in Appendix F. And an impact analysis for various users encompassing both water and sewer can be found in Appendix G.

Comparison to Other Cities' Sewer Rates

Of the 250 responding communities surveyed, 197 provide sewer services to their customers. Based on this information, the estimated fiscal year 2012 sewer rates would continue to be about average in comparison.

FY 2012 Rates	Cost for 6,000 Gallons Sewer	Ranking out of 197*
20-Year Capital Plan	$26.30	122nd
Capital Plan over 25 years	$25.58	118th
Capital Plan over 30 years	$25.28	116th

*A ranking of 1st would be the lowest possible rate, with 197 being the highest. See Appendix A for a graph that shows where Carbondale ranks in comparison.

Recommended Minimum Cash Reserves

Similar to a fund balance policy for the General Fund, we recommend the City adopt a policy for maintaining minimum cash balances (or reserves) for the Water and Sewer Utility Fund. We also recommend the policy include both operating and capital reserves.

Operating Reserve / Targeted Working Capital

We recommend the water fund carry a minimum cash balance equal to six months of operating expenses excluding depreciation. This should provide sufficient cash balances to accommodate fluctuations in revenue depending on weather and higher than anticipated operating expenses.

Any additional cash balance, above and beyond the minimum Operating Reserve, should be held for long-term replacement of the system. Over the long-term, when the annual capital demands are less, the City should begin to create a replacement reserve that increases slowly over time to equal 15% of cumulative depreciation.

The recommended water and sewer rates are sufficient to maintain the minimum recommended operating reserves.

Funding Plan

The long standing "rule of thumb" is that paying with cash is better than incurring debt. At Ehlers we agree with that. Therefore, the funding plan for the 20-Year Capital Plan uses as

much cash as possible to pay for the planned projects. Nevertheless, we are recommending that a portion of the annual capital investments be financed. Financing is necessary to avoid rate increases that would be unacceptable to the City's utility customers. Financing improvements is also a way of spreading the cost of those improvements over their useful life. A resident will help pay for the utility system while they live in Carbondale, but if they sell their house, the next resident will take over paying for the improvement which benefits them. Over time, financing can match the cost of the improvement to the residents and businesses using the utilities. The chart below sets forth the assumptions used for financing the 20-Year Capital Plan investments.

Bonding Assumptions	
Type of Bonds	General Obligation
Term	15 years
Interest Rate	4.25%
Security	100% of debt service to be paid with water and sewer revenues. Additional security provided by general obligation pledge, but tax revenues will not be used to pay debt service.

Ehlers' cash flow analysis indicates that sufficient revenue streams should be available to cover operations & maintenance (O & M) plus CIP by implementing a plan that includes bond and loan financing. (See Appendix B Water Utility Projections and Appendix C Sewer Utility Projections).

The table below shows the capital improvements on an annual basis and the portion of costs we have assumed will be paid funded with cash and debt.

	FY2012	FY2013	FY2014	FY2015	FY2016
Capital Costs	$6,026,000	$6,267,000	$6,517,000	$6,778,000	$7,049,000
Cash Portion	526,000	767,000	1,017,000	1,278,000	2,049,000
Financed Portion	5,500,000	5,500,000	5,500,000	5,500,000	5,000,000

This table shows the first five years of anticipated capital costs and associated funding allocation. These years would pay for the most critical projects shown in the 20-Year Capital Plan. The financing allocations should be carefully considered prior to the issuance of any debt. The complete cash flow model can be found in Appendix D which extends out the full 20 years. This plan is meant as a feasibility analysis and a guide to future funding decisions. Prior to issuing debt for any capital projects, the City should review its cash position and the availability of grants and low-interest loans. As with all other bonding decisions, the City's decision to issue debt for any given improvement will be based on many factors, including the City's cash balances, rating, and other financing needs.

The City of Carbondale is currently rated AA- by Standard and Poor's. One factor used in assigning a City's rating is the amount of general obligation debt it has outstanding, and the ratio of debt to population and market values. Standard and Poor's does not count the general obligation water and sewer revenue bonds in its debt ratios because they will be repaid entirely from water and sewer revenues. Similarly, the utility debt does not impact the general fund because the recommended utility rates are sufficient to support all utility debt.

The City of Carbondale is a high quality credit and we do not anticipate any difficulties issuing bonds to fund the 20-Year Capital Plan. The market for tax exempt and taxable municipal bonds has been and continues to be favorable for municipal issuers. This is true in Illinois even though the State government is in the midst of a financial crisis. However, Ehlers always incorporates what we call the "Illinois Factor" into our financial projections. We incorporate between 25 and 50 basis points or a .25% to .50% higher rate than the national average interest on bond issues. In the rate study, we conservatively estimated that Carbondale could obtain 15-year bond financing at 4.25%, to allow for uncertainty with the State's finances and changes in the bond market.

Key Findings and Recommendations

The City of Carbondale has managed its utility funds and systems well. The need to replace and maintain the water and sewer utility systems over the next several years will introduce new financial pressures. Steady revenue increases will be needed for both services beginning in Fiscal Year 2012, to keep pace with operating costs and fund the 20-Year Capital Plan. While fees associated with potential new development will for the extension of services to serve that new development, it will not be sufficient to rehabilitate the existing utility infrastructure. Current customers will need to pay for the cost of the 20-Year Capital Plan in their utility rates.

The recommended water and sewer rates can be reduced slightly if the 20-Year Capital Plan is implemented over 25 or 30 years. However, a slower implementation will postpone replacement and repair of the aging distribution and collection systems.

Recommendations for Water Rates

- No increase to the water usage rate in Fiscal Year 2012. Replace the minimum charge with a small fixed monthly fee in Fiscal Year 2012. The fixed fee will replace the minimum usage charge, resulting in ***a 35% decrease in the monthly bill for the lowest volume users.*** The proposed fixed monthly charge is:

    - $3.09 per month for residential and commercial water customers
    - $309.00 per month for wholesale water customers

    Beginning in Fiscal Year 2013, The fixed monthly fee should increase annually at the same percentage rate as the usage charge.

- Beginning in Fiscal Year (FY) 2013, increase the water rate (per thousand gallons):

    - FY 2013 - $3.58
    - FY 2014 - $3.82
    - FY 2015 - $4.08
    - FY 2016 - $4.36
    - FY 2017 and beyond – 6.75% per year

Recommendations for Sewer Rates

- Beginning in FY 2012, increase the sewer usage rates (per thousand gallons):

    - FY 2012 - $3.14
    - FY 2013 - $3.69
    - FY 2014 - $4.34
    - FY 2015 - $5.10
    - FY 2016 - $5.99
    - FY 2017 and beyond – 3.55% per year

- Implement a fixed monthly sewer fee of $3.14 in FY 2012 to cover the fixed administrative costs of the sewer utility. The fixed monthly fee should increase annually at the same percentage rate as the usage charge.

General Recommendations

- Review and update the Capital Plan annually.

- Review scheduled rate increases at least every two to three years.

- Seek out grants and low-interest loans to help complete the projects within the Capital Plan.

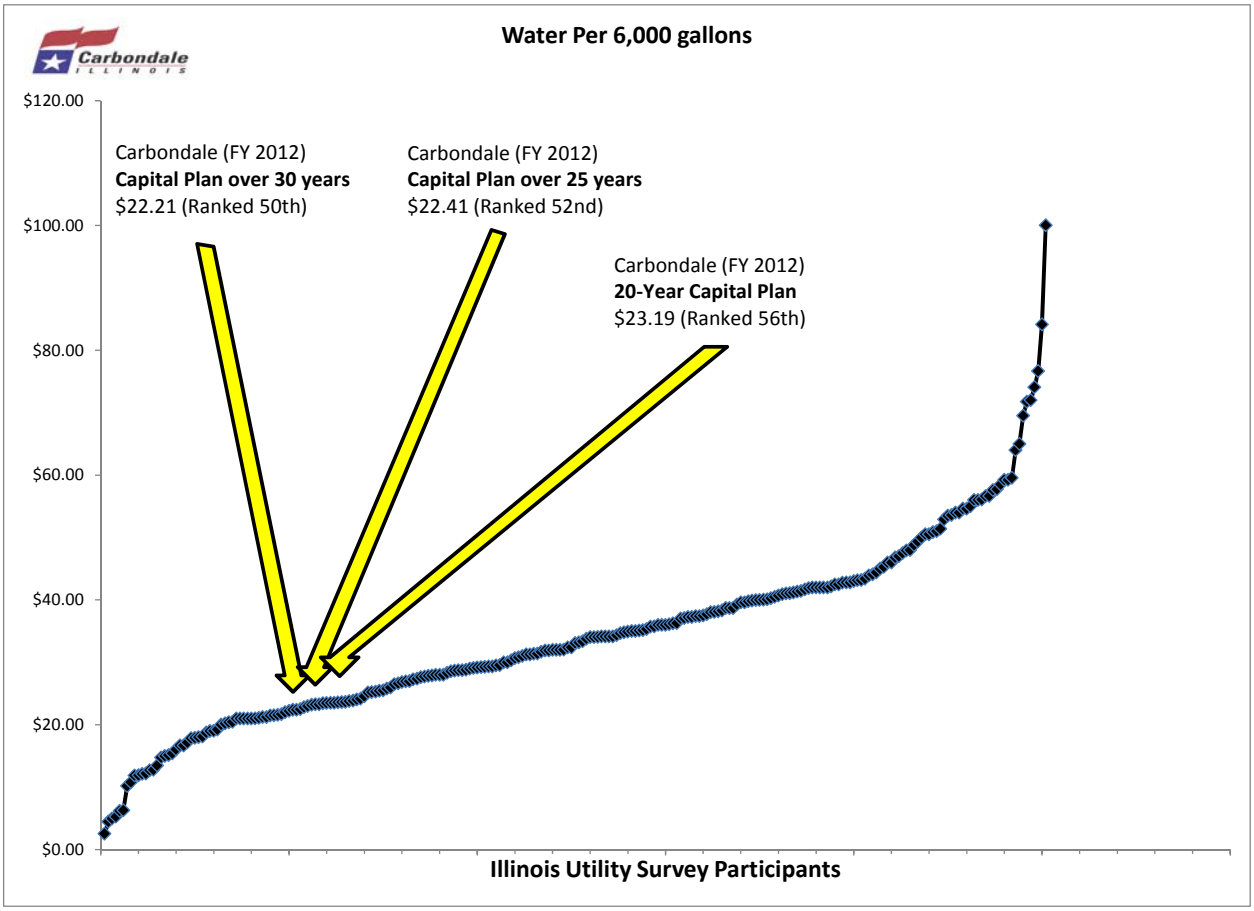
- While this analysis proposes the use of debt to allow for steady and predictable rate increases, it is not a debt plan. The City should review whether it has sufficient cash to pay for capital improvements prior to issuing debt. As with all other bonding decisions, the City's decision to issue debt for any given improvement will be based on many factors, including the City's cash balances, rating, and other financing needs. The City should continue to consult with an independent financial advisor who can periodically review utility system activities and offer financing recommendations.

Appendices to this report follow:

Appendix A	Comparisons to Other Cities' Rates
Appendix B	Water Utility Projections
Appendix C	Sewer Utility Projections
Appendix D	Combined Water and Sewer Utility Projections
Appendix E	20-Year Capital Plan for Water and Sewer
Appendix F	Proposed Rate Options
Appendix G	Impact Analysis for Various Users
Appendix H	Carbondale's Water Customers
Appendix I	Price of a Cold Drink
Appendix J	Comparison of Household Utilities

Appendix A
Comparison of Rates in Comparable Cities

The City of Carbondale solicited 2010 utility rates from over 250 Illinois communities. Below is a comparison of the fiscal year 2012 rates for both the City's existing rate structure and the recommended rate structure. ***The scale of rankings start with 1st being the lowest.***

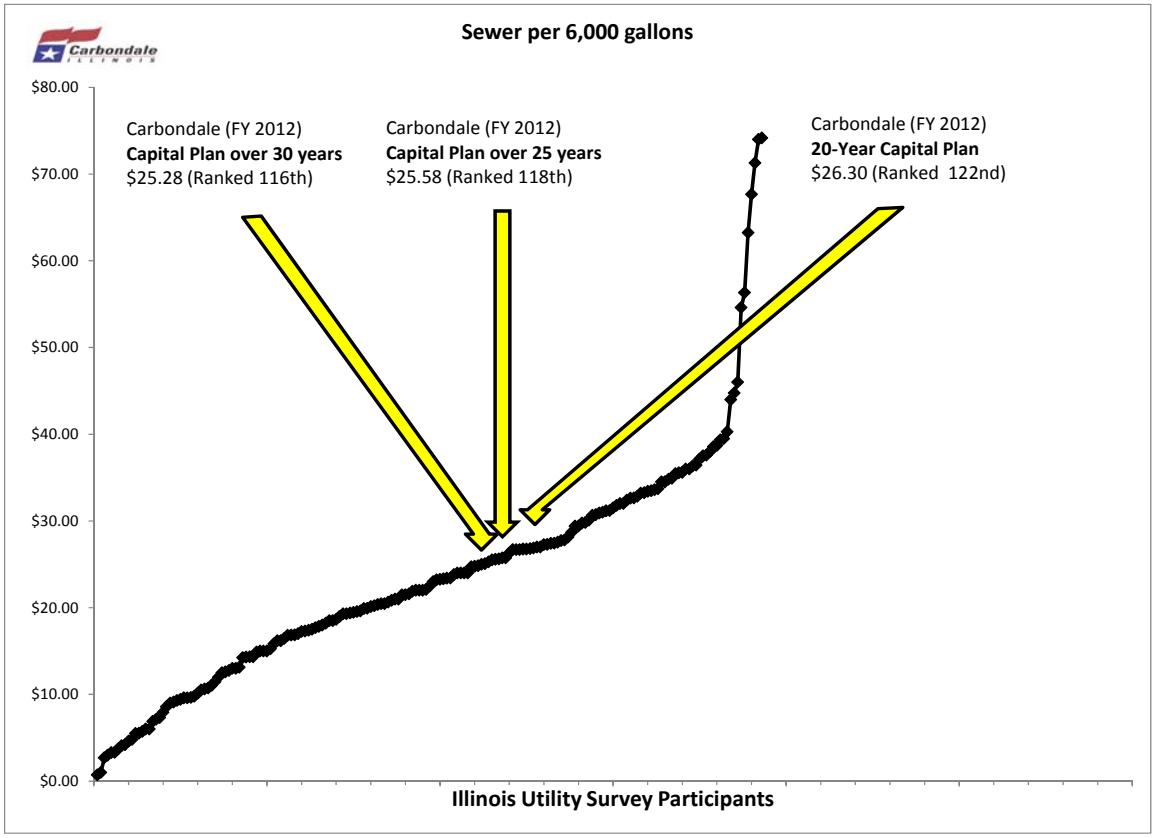


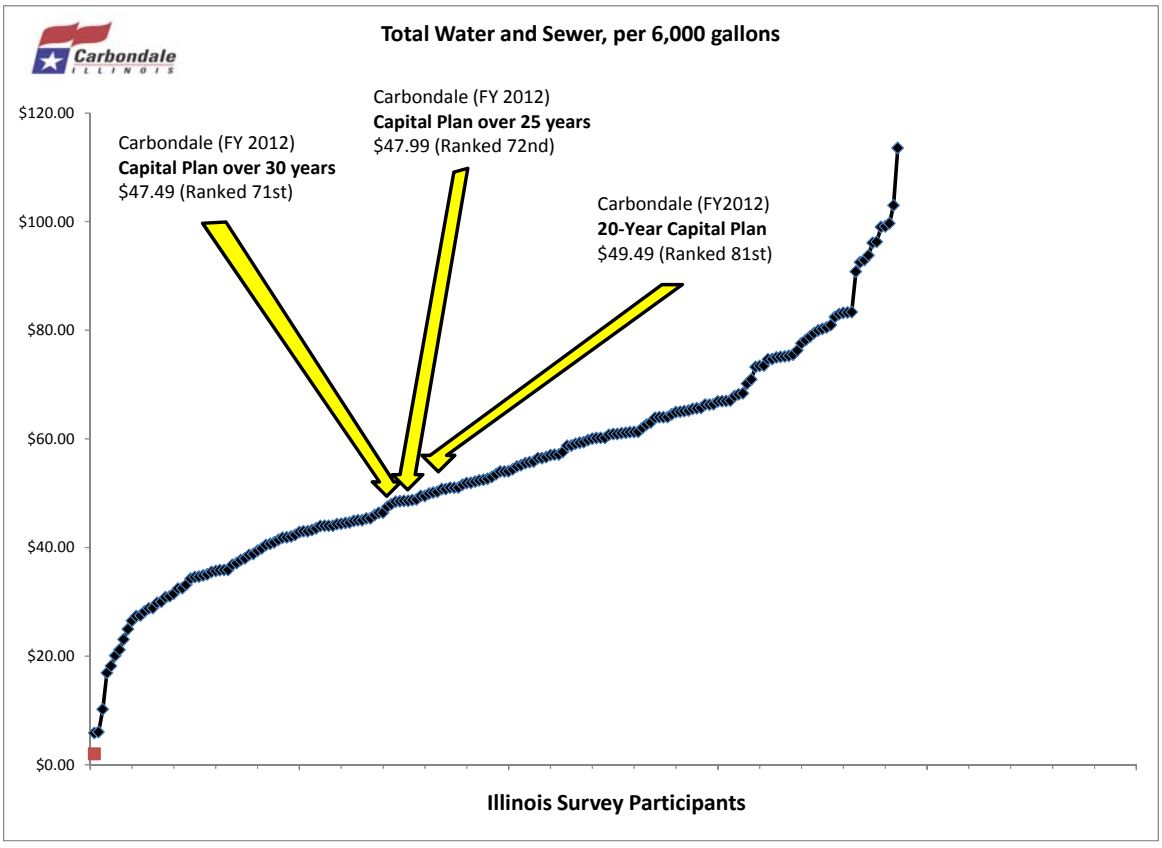
The proposed water usage rate for FY2012 is the same as current rates: $3.35 per 1,000 gallons.

For FY2012, Carbondale would continue to be in the bottom third compared to other communities' 2010 water rates.

For FY2012 sewer rates, Carbondale is about average, compared to surrounding communities' 2010 rates.

Overall, Carbondale's rates continue to be competitive while offering excellent service to all its customers.


Sewer per 6,000 gallons
$80.00
$70.00
$60.00
$50.00
$40.00
$30.00
$20.00
$10.00
$0.00
Carbondale (FY 2012)
Capital Plan over 30 years
$25.28 (Ranked 116th)
Carbondale (FY 2012)
Capital Plan over 25 years
$25.58 (Ranked 118th)
Carbondale (FY 2012)
20-Year Capital Plan
$26.30 (Ranked 122nd)
Illinois Utility Survey Participants


Total Water and Sewer, per 6,000 gallons
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
Carbondale (FY 2012)
Capital Plan over 30 years
$47.49 (Ranked 71st)
Carbondale (FY 2012)
Capital Plan over 25 years
$47.99 (Ranked 72nd)
Carbondale (FY2012)
20-Year Capital Plan
$49.49 (Ranked 81st)
Illinois Survey Participants

City of Carbondale
Water and Sewer Summary

APPENDIX B
Water Utility Projections

Waterworks Section	Final FY2010	Final Budget FY2011	Projected FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Beginning Net Assets (Assumes 50% Allocation)	**20,027,761**	**20,811,294**	**21,261,700**	**21,230,207**	**20,919,436**	**20,748,060**	**20,748,807**	**20,914,241**	**21,587,582**	**22,354,053**	**23,353,266**	**24,614,993**	**26,201,196**	**28,432,208**	**31,055,402**	**34,102,471**	**37,607,977**	**41,611,724**	**45,127,114**	**49,167,607**	**53,799,988**	**59,085,736**
Operating Revenues																						
Charge for Services	3,813,666	4,003,061	4,250,844	4,528,914	4,826,240	5,147,451	5,485,226	5,842,261	6,094,915	6,507,751	6,944,471	7,416,299	7,912,726	8,444,979	9,013,056	9,624,275	10,271,320	10,962,224	11,700,893	12,494,648	13,336,171	14,237,399
Other charges	0	161,825	161,825	161,825	161,825	161,825	161,825	161,825	161,825	161,825	161,825	163,444	165,078	166,729	168,397	170,081	171,782	173,500	175,235	176,987	178,757	180,545
Charges due to Growth	0	0	0	0	0	0	0	0	0	0	0	22,952	48,969	78,372	111,482	148,797	190,531	237,255	289,397	347,704	412,355	0
Total Operating Revenues	3,813,666	4,164,886	4,412,669	4,690,739	4,988,065	5,309,276	5,647,051	6,004,086	6,256,740	6,669,576	7,106,296	7,602,695	8,126,773	8,690,080	9,292,935	9,943,153	10,633,633	11,372,979	12,165,525	13,019,339	13,927,283	14,417,944
Operating Expenses																						
Personal services	1,335,168	1,321,968	1,361,627	1,402,476	1,444,550	1,487,887	1,532,524	1,578,500	1,625,855	1,674,631	1,724,870	1,776,616	1,829,914	1,884,811	1,941,355	1,999,596	2,059,584	2,121,372	2,185,013	2,250,563	2,318,080	2,387,622
Commodities	372,262	426,211	438,997	452,167	465,732	479,704	494,095	508,918	524,186	539,912	556,109	572,792	589,976	607,675	625,905	644,682	664,022	683,943	704,461	725,595	747,363	769,784
Contractual	480,416	1,144,861	1,179,207	1,214,583	1,251,020	1,288,551	1,327,208	1,367,024	1,408,035	1,450,276	1,493,784	1,538,598	1,584,756	1,632,299	1,681,268	1,731,706	1,783,657	1,837,167	1,892,282	1,949,050	2,007,522	2,067,748
Maintenance	283,937	228,840	235,705	242,776	250,059	257,561	265,288	273,247	281,444	289,887	298,584	307,542	316,768	326,271	336,059	346,141	356,525	367,221	378,238	389,585	401,273	413,311
Other charges	45,865	49,002	50,472	51,986	53,546	55,152	56,807	58,511	60,266	62,074	63,936	65,854	67,830	69,865	71,961	74,120	76,344	78,634	80,993	83,423	85,926	88,504
Depreciation	887,754	918,743	946,305	974,694	1,003,935	1,034,053	1,065,075	1,097,027	1,129,938	1,163,836	1,198,751	1,234,714	1,271,755	1,309,908	1,349,205	1,389,681	1,431,371	1,474,312	1,518,541	1,564,097	1,611,020	1,659,351
Capital Outlay	0	0	712,868	741,383	771,038	801,880	833,955	535,103	556,508	578,768	601,919	625,995	343,452	357,190	371,478	386,337	401,790	1,453,902	1,512,058	1,572,540	1,635,442	1,700,859
Total Operating Expenses	3,405,402	4,089,625	4,925,181	5,080,065	5,239,880	5,404,788	5,574,952	5,418,330	5,586,232	5,759,384	5,937,953	6,122,111	6,004,451	6,188,019	6,377,231	6,572,263	6,773,293	8,016,551	8,271,586	8,534,853	8,806,626	9,087,180
Net Operations	408,264	75,261	(512,512)	(389,326)	(251,815)	(95,512)	72,099	585,756	670,508	910,192	1,168,343	1,480,584	2,122,322	2,502,061	2,915,704	3,370,890	3,860,340	3,356,429	3,893,939	4,484,486	5,120,657	5,330,764
Non operating revenues (expenses)																						
Intergovernmental revenue (50%)	76,524	355,700	450,000	38,891	40,058	41,259	42,497	43,772	45,085	46,438	47,831	49,266	50,744	52,266	53,834	55,449	57,113	58,826	60,591	62,409	64,281	66,210
Use of money and property	32,008	39,541	48,151	53,624	51,056	62,237	54,587	44,948	51,411	42,583	45,552	56,354	57,945	68,867	77,531	79,167	86,294	100,136	85,963	85,486	100,810	133,889
Interest expense	(22,674)	(19,808)	(16,844)	(13,672)	(10,387)	(6,950)	(3,461)	(847)	(245)	0	0	0	0	0	0	0	0	0	0	0	0	0
Other (50%)	290,821	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fiscal agent fees (50%)	(288)	(288)	(288)	(288)	(288)	(288)	(288)	(288)	(288)	0	0	0	0	0	0	0	0	0	0	0	0	0
Gain/(Loss) on disposal of capital assets (50%)	(1,122)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total non operating revenue (expenses)	375,269	375,145	481,019	78,555	80,439	96,258	93,335	87,585	95,963	89,021	93,383	105,620	108,689	121,133	131,365	134,616	143,407	158,962	146,554	147,895	165,091	200,099
Net increase (decrease) in resources	783,533	288,581	(193,318)	(472,596)	(333,201)	(161,079)	3,609	511,516	604,646	837,388	1,099,901	1,399,808	2,016,964	2,378,093	2,767,190	3,186,628	3,641,434	3,104,635	3,575,861	4,107,690	4,694,636	5,350,318
Capital contributions - From Other Funds																						
Capital contributions - To Other Funds																						
Prior Period Adjustment																						
Ending net assets	**20,811,294**	**21,261,700**	**21,230,207**	**20,919,436**	**20,748,060**	**20,748,807**	**20,914,241**	**21,587,582**	**22,354,053**	**23,353,266**	**24,614,993**	**26,201,196**	**28,432,208**	**31,055,402**	**34,102,471**	**37,607,977**	**41,611,724**	**45,127,114**	**49,167,607**	**53,799,988**	**59,085,736**	**64,616,599**
CIP Funding																						
Current Year Capital	(447,630)	(728,240)	(2,480,000)	(2,579,000)	(2,682,000)	(2,789,000)	(2,901,000)	(3,017,000)	(3,138,000)	(3,263,000)	(3,394,000)	(3,529,000)	(3,671,000)	(3,817,000)	(3,970,000)	(4,129,000)	(4,294,000)	(4,466,000)	(4,644,000)	(4,830,000)	(5,023,000)	(5,224,000)
Bond Proceeds			2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,500,000	2,500,000	2,500,000	2,500,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	1,500,000
Loan Proceeds																						
Bond P&I - Future - 15 yrs at 3.09%																						
Bond P&I - Future - 15 yrs at 4.25%				(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)				
Bond P&I - Future - 15 yrs at 4.25%					(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)			
Bond P&I - Future - 15 yrs at 4.25%						(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)		
Bond P&I - Future - 15 yrs at 4.25%							(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	
Bond P&I - Future - 15 yrs at 4.25%								(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)
Bond P&I - Future - 15 yrs at 4.25%									(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)
Bond P&I - Future - 15 yrs at 4.25%										(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)
Bond P&I - Future - 15 yrs at 4.25%											(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)
Bond P&I - Future - 15 yrs at 4.25%												(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)
Bond P&I - Future - 15 yrs at 4.25%													(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)
Bond P&I - Future - 15 yrs at 4.25%														(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)	(228,801)
Bond P&I - Future - 15 yrs at 4.25%															(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)
Bond P&I - Future - 15 yrs at 4.25%																(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)
Bond P&I - Future - 15 yrs at 4.25%																	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)	(183,041)
Bond P&I - Future - 15 yrs at 4.25%																		(183,041)	(183,041)	(183,041)	(183,041)	(183,041)
Bond P&I - Future - 15 yrs at 4.25%																			(183,041)	(183,041)	(183,041)	(183,041)
Bond P&I - Future - 15 yrs at 4.25%																				(183,041)	(183,041)	(183,041)
Bond P&I - Future - 15 yrs at 4.25%																					(183,041)	(183,041)
Bond P&I - Future - 15 yrs at 4.25%																						(183,041)
Bond Prin - Existing																						
Note Prin - Existing	(64,086)	(66,952)	(69,917)	(73,088)	(76,373)	(79,144)	(79,299)	(29,120)	(13,314)	0	0	0	0	0	0	0	0	0	0	0	0	0
Beginning Cash (Assumes 50% Allocation)	**2,133,886**	**2,636,078**	**3,210,035**	**3,574,930**	**3,403,724**	**3,111,829**	**2,729,362**	**2,247,408**	**2,056,452**	**1,703,302**	**1,822,065**	**1,878,456**	**1,931,486**	**2,295,563**	**2,215,174**	**2,261,917**	**2,465,532**	**2,861,038**	**2,456,087**	**2,442,467**	**2,880,291**	**3,825,406**
Add net operations (line 30)	408,264	75,261	(512,512)	(389,326)	(251,815)	(95,512)	72,099	585,756	670,508	910,192	1,168,343	1,480,584	2,122,322	2,502,061	2,915,704	3,370,890	3,860,340	3,356,429	3,893,939	4,484,486	5,120,657	5,330,764
Add back depreciation (line 27)	887,754	918,743	946,305	974,694	1,003,935	1,034,053	1,065,075	1,097,027	1,129,938	1,163,836	1,198,751	1,234,714	1,271,755	1,309,908	1,349,205	1,389,681	1,431,371	1,474,312	1,518,541	1,564,097	1,611,020	1,659,351
Add net non operating (line 39)	375,269	375,145	481,019	78,555	80,439	96,258	93,335	87,585	95,963	89,021	93,383	105,620	108,689	121,133	131,365	134,616	143,407	158,962	146,554	147,895	165,091	200,099
Add capital and bond (lines 51-59)	(511,716)	(795,192)	(549,917)	(835,129)	(1,124,455)	(1,417,267)	(1,712,462)	(1,961,324)	(2,249,559)	(2,044,286)	(2,404,087)	(2,767,888)	(3,138,689)	(4,013,490)	(4,349,531)	(4,691,572)	(5,039,613)	(5,394,654)	(5,572,654)	(5,758,654)	(5,951,654)	(6,652,654)
Other reconciling items	9,876	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net change in balance sheet items	(667,255)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ending Cash	**2,636,078**	**3,210,035**	**3,574,930**	**3,403,724**	**3,111,829**	**2,729,362**	**2,247,408**	**2,056,452**	**1,703,302**	**1,822,065**	**1,878,456**	**1,931,486**	**2,295,563**	**2,215,174**	**2,261,917**	**2,465,532**	**2,861,038**	**2,456,087**	**2,442,467**	**2,880,291**	**3,825,406**	**4,362,966**
Targeted Working Capital	1,258,824	1,585,441	1,989,438	2,052,685	2,117,973	2,185,367	2,254,938	2,160,652	2,228,147	2,297,774	2,369,601	2,443,699	2,366,348	2,439,056	2,514,013	2,591,291	2,670,961	3,271,119	3,376,522	3,485,378	3,597,803	3,713,915
Difference	1,377,254	1,624,594	1,585,492	1,351,039	993,856	543,995	(7,530)	(104,200)	(524,845)	(475,709)	(491,145)	(512,213)	(70,785)	(223,882)	(252,096)	(125,759)	190,077	(815,032)	(934,055)	(605,087)	227,603	649,051

EHLERS

City of Carbondale
Water and Sewer Summary

APPENDIX C
Sanitary Sewer Utility Projections

Sewerage Section	YTD FY2010	Final Budget FY2011	Projected FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Beginning Net Assets (Assumes 50% Allocation)	**20,027,760**	**20,354,441**	**20,017,712**	**19,659,324**	**19,819,071**	**20,635,108**	**22,244,258**	**24,807,130**	**27,620,548**	**30,580,076**	**33,681,809**	**36,929,855**	**40,378,507**	**43,903,604**	**47,629,419**	**51,560,219**	**55,704,567**	**60,084,100**	**64,881,658**	**69,913,080**	**75,179,358**	**80,706,379**
Operating Revenues																						
Charge for Services	3,764,345	3,175,910	3,729,112	4,380,415	5,147,632	6,048,684	7,110,217	7,359,981	7,618,655	7,886,256	8,162,793	8,448,275	8,742,715	9,046,127	9,358,521	9,688,524	10,027,535	10,375,572	10,741,256	11,115,995	11,508,415	11,909,917
Other charges	0	161,825	161,825	161,825	161,825	161,825	161,825	161,825	161,825	161,825	161,825	163,443	165,078	166,729	168,396	170,080	171,781	173,499	175,234	176,987	178,757	180,544
Charges due to Growth	0	0	0	0	0	0	0	0	0	0	0	33,751	69,854	108,417	149,545	193,525	240,356	290,145	343,284	399,667	459,756	0
Total Operating Revenues	3,764,345	3,337,735	3,890,937	4,542,240	5,309,457	6,210,509	7,272,042	7,521,806	7,780,480	8,048,081	8,324,618	8,645,469	8,977,647	9,321,273	9,676,462	10,052,129	10,439,672	10,839,216	11,259,774	11,692,649	12,146,928	12,090,461
Operating Expenses																						
Personal services	1,543,875	1,703,936	1,755,054	1,807,705	1,861,936	1,917,794	1,975,327	2,034,587	2,095,625	2,158,493	2,223,248	2,289,946	2,358,645	2,429,405	2,502,287	2,577,355	2,654,676	2,734,316	2,816,346	2,900,837	2,987,862	3,077,498
Commodities	115,606	76,827	79,132	81,506	83,951	86,469	89,063	91,735	94,487	97,321	100,241	103,249	106,346	109,537	112,823	116,208	119,695	123,286	126,985	130,794	134,718	138,759
Contractual	804,694	723,913	745,630	767,999	791,039	814,770	839,213	864,390	890,321	917,031	944,542	972,878	1,002,064	1,032,126	1,063,090	1,094,983	1,127,833	1,161,668	1,196,518	1,232,414	1,269,386	1,307,467
Maintenance	213,053	212,320	218,690	225,251	232,009	238,969	246,138	253,522	261,128	268,962	277,030	285,340	293,900	302,717	311,799	321,153	330,788	340,711	350,932	361,460	372,303	383,472
Other charges	(18,560)	17,000	17,510	18,035	18,576	19,134	19,708	20,299	20,908	21,535	22,181	22,847	23,532	24,238	24,965	25,714	26,485	27,280	28,098	28,941	29,809	30,703
Depreciation	878,514	918,742	946,305	974,694	1,003,935	1,034,053	1,065,074	1,097,026	1,129,937	1,163,835	1,198,750	1,234,712	1,271,754	1,309,906	1,349,203	1,389,679	1,431,370	1,474,311	1,518,541	1,564,097	1,611,020	1,659,350
Capital Outlay	0	138,000	302,471	314,570	327,152	340,238	353,848	254,709	264,897	275,493	286,513	297,973	422,580	439,483	457,063	475,345	494,359	313,631	326,176	339,223	352,792	366,904
Total Operating Expenses	3,537,182	3,790,738	4,064,792	4,189,760	4,318,598	4,451,427	4,588,371	4,616,268	4,757,303	4,902,670	5,052,505	5,206,945	5,478,821	5,647,412	5,821,230	6,000,437	6,185,206	6,175,203	6,363,596	6,557,766	6,757,890	6,964,152
Net Operations	227,163	(453,003)	(173,855)	352,480	990,859	1,759,082	2,683,671	2,905,538	3,023,177	3,145,411	3,272,113	3,438,524	3,498,826	3,673,861	3,855,233	4,051,692	4,254,466	4,664,014	4,896,179	5,134,883	5,389,038	5,126,309
Non operating revenues (expenses)																						
Intergovernmental revenue (50%)	76,523	355,700	62,410	38,891	40,057	41,259	42,497	43,772	45,085	46,437	47,830	49,265	50,743	52,266	53,834	55,449	57,112	58,826	60,591	62,408	64,281	66,209
Use of money and property	21,238	41,439	15,174	12,753	11,329	17,208	25,935	34,453	44,360	45,594	45,701	60,329	57,147	62,979	66,233	62,339	77,661	81,985	79,384	71,061	74,277	72,842
Interest expense	(287,655)	(280,578)	(261,830)	(244,090)	(225,921)	(208,111)	(188,944)	(170,058)	(152,807)	(135,135)	(117,023)	(98,891)	(81,044)	(62,715)	(43,926)	(24,557)	(9,131)	(6,691)	(4,157)	(1,499)	0	0
Other (50%)	290,820	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fiscal agent fees (50%)	(287)	(287)	(287)	(287)	(287)	(287)	(287)	(287)	(287)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)
Gain/(Loss) on disposal of capital assets (50%)	(1,121)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total non operating revenue (expenses)	99,518	116,274	(184,534)	(192,733)	(174,822)	(149,931)	(120,799)	(92,120)	(63,649)	(43,679)	(24,067)	10,128	26,271	51,955	75,566	92,656	125,067	133,545	135,243	131,395	137,983	138,476
Net increase (decrease) in resources	326,681	(498,554)	(520,213)	(2,077)	654,211	1,447,326	2,401,047	2,651,593	2,797,703	2,939,907	3,086,222	3,251,458	3,290,164	3,450,669	3,612,858	3,780,743	3,967,396	4,333,914	4,512,903	4,689,624	4,888,508	5,084,241
Capital contributions - From Other Funds																						
Capital contributions - To Other Funds																						
Prior Period Adjustment																						
Ending net assets	**20,354,441**	**20,017,712**	**19,659,324**	**19,819,071**	**20,635,108**	**22,244,258**	**24,807,130**	**27,620,548**	**30,580,076**	**33,681,809**	**36,929,855**	**40,378,507**	**43,903,604**	**47,629,419**	**51,560,219**	**55,704,567**	**60,084,100**	**64,881,658**	**69,913,080**	**75,179,358**	**80,706,379**	**85,971,165**
CIP Funding																						
Current Year Capital	(1,859,017)	(1,103,100)	(3,546,000)	(3,688,000)	(3,835,000)	(3,989,000)	(4,148,000)	(4,314,000)	(4,487,000)	(4,666,000)	(4,853,000)	(5,047,000)	(5,249,000)	(5,459,000)	(5,677,000)	(5,905,000)	(6,141,000)	(6,386,000)	(6,642,000)	(6,907,000)	(7,184,000)	(7,471,000)
Bond Proceeds			3,500,000	3,500,000	3,500,000	3,500,000	3,000,000	2,750,000	3,000,000	3,250,000	3,750,000	3,750,000	4,500,000	4,500,000	5,000,000	6,000,000	5,500,000	5,500,000	5,500,000	6,000,000	6,000,000	7,500,000
Loan Proceeds	240,440	1,090,830																				
Bond P&I - Future - 15 yrs at 3.09%			(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)					
Bond P&I - Future - 15 yrs at 4.25%				(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)				
Bond P&I - Future - 15 yrs at 4.25%					(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)			
Bond P&I - Future - 15 yrs at 4.25%						(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)		
Bond P&I - Future - 15 yrs at 4.25%							(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	(320,321)	
Bond P&I - Future - 15 yrs at 4.25%								(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)
Bond P&I - Future - 15 yrs at 4.25%									(251,681)	(251,681)	(251,681)	(251,681)	(251,681)	(251,681)	(251,681)	(251,681)	(251,681)	(251,681)	(251,681)	(251,681)	(251,681)	(251,681)
Bond P&I - Future - 15 yrs at 4.25%										(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)	(274,561)
Bond P&I - Future - 15 yrs at 4.25%											(297,441)	(297,441)	(297,441)	(297,441)	(297,441)	(297,441)	(297,441)	(297,441)	(297,441)	(297,441)	(297,441)	(297,441)
Bond P&I - Future - 15 yrs at 4.25%												(343,202)	(343,202)	(343,202)	(343,202)	(343,202)	(343,202)	(343,202)	(343,202)	(343,202)	(343,202)	(343,202)
Bond P&I - Future - 15 yrs at 4.25%													(343,202)	(343,202)	(343,202)	(343,202)	(343,202)	(343,202)	(343,202)	(343,202)	(343,202)	(343,202)
Bond P&I - Future - 15 yrs at 4.25%														(411,842)	(411,842)	(411,842)	(411,842)	(411,842)	(411,842)	(411,842)	(411,842)	(411,842)
Bond P&I - Future - 15 yrs at 4.25%															(411,842)	(411,842)	(411,842)	(411,842)	(411,842)	(411,842)	(411,842)	(411,842)
Bond P&I - Future - 15 yrs at 4.25%																(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)
Bond P&I - Future - 15 yrs at 4.25%																	(549,123)	(549,123)	(549,123)	(549,123)	(549,123)	(549,123)
Bond P&I - Future - 15 yrs at 4.25%																		(503,362)	(503,362)	(503,362)	(503,362)	(503,362)
Bond P&I - Future - 15 yrs at 4.25%																			(503,362)	(503,362)	(503,362)	(503,362)
Bond P&I - Future - 15 yrs at 4.25%																				(503,362)	(503,362)	(503,362)
Bond P&I - Future - 15 yrs at 4.25%																					(549,123)	(549,123)
Bond P&I - Future - 15 yrs at 4.25%																						(549,123)
Bond Prin - Existing																						
Note Prin - Existing	(621,046)	(657,585)	(611,333)	(629,075)	(647,243)	(664,951)	(680,783)	(646,878)	(653,571)	(671,243)	(689,356)	(677,722)	(695,568)	(713,897)	(732,687)	(752,056)	(58,047)	(60,487)	(63,021)	(65,679)	(452)	(2)
Beginning Cash (Assumes 50% Allocation)	**2,133,886**	**1,099,458**	**1,011,616**	**850,228**	**755,303**	**860,417**	**1,296,734**	**1,722,640**	**1,774,388**	**1,823,783**	**1,828,046**	**2,010,986**	**1,904,924**	**2,099,301**	**1,892,378**	**1,781,104**	**2,218,884**	**2,342,426**	**2,268,104**	**2,030,299**	**2,122,208**	**2,081,210**
Add net operations (line 30)	227,163	(453,003)	(173,855)	352,480	990,859	1,759,082	2,683,671	2,905,538	3,023,177	3,145,411	3,272,113	3,438,524	3,498,826	3,673,861	3,855,233	4,051,692	4,254,466	4,664,014	4,896,179	5,134,883	5,389,038	5,126,309
Add back depreciation (line 27)	878,514	918,742	946,305	974,694	1,003,935	1,034,053	1,065,074	1,097,026	1,129,937	1,163,835	1,198,750	1,234,712	1,271,754	1,309,906	1,349,203	1,389,679	1,431,370	1,474,311	1,518,541	1,564,097	1,611,020	1,659,350
Add net non operating (line 39)	99,518	116,274	(184,534)	(192,733)	(174,822)	(149,931)	(120,799)	(92,120)	(63,649)	(43,679)	(24,067)	10,128	26,271	51,955	75,566	92,656	125,067	133,545	135,243	131,395	137,983	138,476
Add capital and bond (lines 51-59)	(2,239,623)	(669,855)	(749,304)	(1,229,367)	(1,714,857)	(2,206,887)	(3,202,040)	(3,858,696)	(4,040,070)	(4,261,304)	(4,263,858)	(4,789,425)	(4,602,474)	(5,242,645)	(5,391,276)	(5,096,247)	(5,687,361)	(6,346,192)	(6,787,767)	(6,738,466)	(7,179,039)	(6,194,390)
Other reconciling items	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net change in balance sheet items	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ending Cash	**1,099,458**	**1,011,616**	**850,228**	**755,303**	**860,417**	**1,296,734**	**1,722,640**	**1,774,388**	**1,823,783**	**1,828,046**	**2,010,986**	**1,904,924**	**2,099,301**	**1,892,378**	**1,781,104**	**2,218,884**	**2,342,426**	**2,268,104**	**2,030,299**	**2,122,208**	**2,081,210**	**2,810,954**
Targeted Working Capital	1,329,334	1,435,998	1,559,243	1,607,533	1,657,332	1,708,687	1,761,648	1,759,621	1,813,683	1,869,417	1,926,877	1,986,117	2,103,534	2,168,753	2,236,013	2,305,379	2,376,918	2,350,446	2,422,527	2,496,834	2,573,435	2,652,401
Difference	(229,876)	(424,382)	(709,015)	(852,230)	(796,915)	(411,953)	(39,008)	14,767	10,100	(41,371)	84,109	(81,193)	(4,233)	(276,375)	(454,909)	(86,495)	(34,492)	(82,342)	(392,228)	(374,626)	(492,225)	158,553

EHLERS

City of Carbondale
Utility Rate Study
Base Model

APPENDIX D
Combined WAter and Sanitary Sewer Utility Projections

Waterworks & Sewerage Fund

	Actual				Final Budget	Projected																
	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
1 Revenue growth assumption - non-usage						0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
2 Revenue rate increase - water					0.00%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%	6.75%
3 Revenue rate increase - sewer					0.00%	17.50%	17.50%	17.50%	17.50%	17.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
4 Investment income yield						1.50%	1.50%	1.50%	2.00%	2.00%	2.00%	2.50%	2.50%	2.50%	3.00%	3.00%	3.00%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
5 Expense growth - personnel & internal						3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
6 Expense growth - contractual						3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
7 Expense growth - non personnel						3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
8 Beginning net assets	38,354,451	39,045,786	39,709,435	40,055,521	41,165,735	41,279,412	40,889,531	40,738,508	41,383,168	42,993,065	45,721,371	49,208,130	52,934,129	57,035,075	61,544,848	66,579,704	72,335,812	78,684,821	85,662,689	93,312,544	101,695,824	110,008,773	119,080,688	128,979,346	139,792,114
9																									
10 Operating Revenues																									
11 Charge for Services	7,173,403	7,213,182	7,241,198	7,578,011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Water Charges					4,003,061	4,250,844	4,528,914	4,826,240	5,147,451	5,485,226	5,842,261	6,094,915	6,507,751	6,944,471	7,416,299	7,912,726	8,444,979	9,013,056	9,624,275	10,271,320	10,962,224	11,700,893	12,494,648	13,336,171	14,237,399
13 Sewer Charges					3,175,910	3,729,112	4,380,415	5,147,632	6,048,684	7,110,217	7,359,981	7,618,655	7,886,256	8,162,793	8,448,275	8,742,715	9,046,127	9,358,521	9,688,524	10,027,535	10,375,572	10,741,256	11,115,995	11,508,415	11,909,917
14 Other charges					323,650	323,650	323,650	323,650	323,650	323,650	323,650	323,650	323,650	323,650	326,887	330,156	333,458	336,793	340,161	343,563	346,999	350,469	353,974	357,514	361,089
15 Charges due to Growth					0	0	0	0	0	0	0	0	0	0	56,703	118,824	186,789	261,027	342,322	430,888	527,401	632,681	747,371	872,111	0
16 Total Operating Revenues	7,173,403	7,213,182	7,241,198	7,578,011	7,502,621	8,303,606	9,232,979	10,297,522	11,519,785	12,919,093	13,525,892	14,037,220	14,717,657	15,430,914	16,248,164	17,104,421	18,011,353	18,969,397	19,995,282	21,073,306	22,212,196	23,425,299	24,711,988	26,074,211	26,508,405
17																									
18 Operating Expenses																									
19 Personal services	2,469,586	2,650,006	2,749,388	2,879,043	3,025,904	3,116,681	3,210,181	3,306,486	3,405,681	3,507,851	3,613,087	3,721,480	3,833,124	3,948,118	4,066,562	4,188,559	4,314,216	4,443,642	4,576,951	4,714,260	4,855,688	5,001,359	5,151,400	5,305,942	5,465,120
22 Commodities	320,139	383,373	435,933	487,868	503,038	518,129	533,673	549,683	566,173	583,158	600,653	618,673	637,233	656,350	676,041	696,322	717,212	738,728	760,890	783,717	807,229	831,446	856,389	882,081	908,543
23 Contractual	1,011,544	1,136,566	1,171,397	1,285,110	1,868,774	1,924,837	1,982,582	2,042,059	2,103,321	2,166,421	2,231,414	2,298,356	2,367,307	2,438,326	2,511,476	2,586,820	2,664,425	2,744,358	2,826,689	2,911,490	2,998,835	3,088,800	3,181,464	3,276,908	3,375,215
24 Maintenance	442,693	419,465	507,330	496,990	441,160	454,395	468,027	482,068	496,530	511,426	526,769	542,572	558,849	575,614	592,882	610,668	628,988	647,858	667,294	687,313	707,932	729,170	751,045	773,576	796,783
25 Other charges	61,150	29,570	88,435	27,305	66,002	67,982	70,021	72,122	74,286	76,515	78,810	81,174	83,609	86,117	88,701	91,362	94,103	96,926	99,834	102,829	105,914	109,091	112,364	115,735	119,207
26 Depreciation	1,685,561	1,728,852	1,752,370	1,766,268	1,837,485	1,892,610	1,949,388	2,007,870	2,068,106	2,130,149	2,194,053	2,259,875	2,327,671	2,397,501	2,469,426	2,543,509	2,619,814	2,698,408	2,779,360	2,862,741	2,948,623	3,037,082	3,128,194	3,222,040	3,318,701
27 Capital Outlay					138,000	1,015,339	1,055,952	1,098,190	1,142,118	1,187,803	789,812	821,405	854,261	888,431	923,968	766,032	796,674	828,541	861,682	896,149	1,767,532	1,838,234	1,911,763	1,988,234	2,067,763
28 Total Operating Expenses	5,990,673	6,347,832	6,704,853	6,942,584	7,880,363	8,989,973	9,269,824	9,558,478	9,856,215	10,163,323	10,034,598	10,343,535	10,662,054	10,990,457	11,329,056	11,483,272	11,835,432	12,198,461	12,572,700	12,958,499	14,191,753	14,635,182	15,092,619	15,564,516	16,051,332
29																									
30 Net Operations	1,182,730	865,350	536,345	635,427	(377,742)	(686,367)	(36,845)	739,044	1,663,570	2,755,770	3,491,294	3,693,685	4,055,603	4,440,457	4,919,108	5,621,148	6,175,922	6,770,937	7,422,582	8,114,806	8,020,442	8,790,118	9,619,369	10,509,695	10,457,073
31 Non operating revenues (expenses)																									
32 Intergovernmental revenue	83,243	1,820	11,529	153,047	711,400	512,410	77,782	80,115	82,518	84,994	87,544	90,170	92,875	95,661	98,531	101,487	104,532	107,668	110,898	114,225	117,652	121,182	124,817	128,562	132,419
33 Use of money and property	228,786	178,740	91,339	53,246	80,980	63,325	66,377	62,385	79,445	80,522	79,401	95,771	88,177	91,253	116,683	115,092	131,846	143,764	141,506	163,955	182,121	165,347	156,547	175,087	206,731
34 Interest expense	(176,290)	(70,320)	(293,918)	(310,329)	(300,386)	(278,674)	(257,762)	(236,308)	(215,061)	(192,405)	(170,905)	(153,052)	(135,135)	(117,023)	(98,891)	(81,044)	(62,715)	(43,926)	(24,557)	(9,131)	(6,691)	(4,157)	(1,499)	(2)	(453)
35 Other	(326,112)	(312,404)	0	581,641	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 Fiscal agent fees	0	(3,292)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)	(575)
37 Gain/(Loss) on disposal of capital assets	2,620	3,755	1,366	(2,243)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 Transfers in	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 Transfers out	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 Total non operating revenue (expenses)	(187,753)	(201,701)	(190,259)	474,787	491,419	296,485	(114,178)	(94,383)	(53,673)	(27,464)	(4,535)	32,314	45,342	69,316	115,748	134,960	173,088	206,931	227,272	268,474	292,507	281,797	279,290	303,072	338,122
41																									
42 Net increase (decrease) in resources	994,977	663,649	346,086	1,110,214	113,677	(389,881)	(151,023)	644,660	1,609,897	2,728,306	3,486,759	3,726,000	4,100,946	4,509,773	5,034,856	5,756,108	6,349,009	6,977,868	7,649,854	8,383,280	8,312,949	9,071,915	9,898,659	10,812,768	10,795,195
43																									
44 Capital contributions - From Other Funds																									
45 Capital contributions - To Other Funds																									
46 Prior Period Adjustment	(303,642)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47 **Ending net assets**	**39,045,786**	**39,709,435**	**40,055,521**	**41,165,735**	**41,279,412**	**40,889,531**	**40,738,508**	**41,383,168**	**42,993,065**	**45,721,371**	**49,208,130**	**52,934,129**	**57,035,075**	**61,544,848**	**66,579,704**	**72,335,812**	**78,684,821**	**85,662,689**	**93,312,544**	**101,695,824**	**110,008,773**	**119,080,688**	**128,979,346**	**139,792,114**	**150,587,309**
48 CIP Funding																									
49 Current Year Capital	(1,404,865)	(620,147)	(1,426,429)	(2,306,647)	(1,831,340)	(6,026,000)	(6,267,000)	(6,517,000)	(6,778,000)	(7,049,000)	(7,331,000)	(7,625,000)	(7,929,000)	(8,247,000)	(8,576,000)	(8,920,000)	(9,276,000)	(9,647,000)	(10,034,000)	(10,435,000)	(10,852,000)	(11,286,000)	(11,737,000)	(12,207,000)	(12,695,000)
50 Bond Proceeds						5,500,000	5,500,000	5,500,000	5,500,000	5,000,000	4,750,000	5,000,000	5,750,000	6,250,000	6,250,000	7,000,000	6,500,000	7,000,000	8,000,000	7,500,000	7,500,000	7,500,000	8,000,000	8,000,000	9,000,000
51 Loan Proceeds	1,000,000		916,000	240,440	1,090,830																				
52 Bond P&I - Future - 15 yrs at 3.09%						(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)	(91,971)					
53 Bond P&I - Future - 15 yrs at 4.25%							(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)				
54 Bond P&I - Future - 15 yrs at 4.25%								(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)			
55 Bond P&I - Future - 15 yrs at 4.25%									(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)		
56 Bond P&I - Future - 15 yrs at 4.25%										(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	(503,362)	
57 Bond P&I - Future - 15 yrs at 4.25%											(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)
58 Bond P&I - Future - 15 yrs at 4.25%												(434,722)	(434,722)	(434,722)	(434,722)	(434,722)	(434,722)	(434,722)	(434,722)	(434,722)	(434,722)	(434,722)	(434,722)	(434,722)	(434,722)
59 Bond P&I - Future - 15 yrs at 4.25%													(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)	(457,602)
60 Bond P&I - Future - 15 yrs at 4.25%														(526,242)	(526,242)	(526,242)	(526,242)	(526,242)	(526,242)	(526,242)	(526,242)	(526,242)	(526,242)	(526,242)	(526,242)
61 Bond P&I - Future - 15 yrs at 4.25%															(572,003)	(572,003)	(572,003)	(572,003)	(572,003)	(572,003)	(572,003)	(572,003)	(572,003)	(572,003)	(572,003)
62 Bond P&I - Future - 15 yrs at 4.25%																(572,003)	(572,003)	(572,003)	(572,003)	(572,003)	(572,003)	(572,003)	(572,003)	(572,003)	(572,003)
63 Bond P&I - Future - 15 yrs at 4.25%																	(640,643)	(640,643)	(640,643)	(640,643)	(640,643)	(640,643)	(640,643)	(640,643)	(640,643)
64 Bond P&I - Future - 15 yrs at 4.25%																		(594,883)	(594,883)	(594,883)	(594,883)	(594,883)	(594,883)	(594,883)	(594,883)
65 Bond P&I - Future - 15 yrs at 4.25%																			(640,643)	(640,643)	(640,643)	(640,643)	(640,643)	(640,643)	(640,643)
66 Bond P&I - Future - 15 yrs at 4.25%																				(732,163)	(732,163)	(732,163)	(732,163)	(732,163)	(732,163)
67 Bond P&I - Future - 15 yrs at 4.25%																					(686,403)	(686,403)	(686,403)	(686,403)	(686,403)
68 Bond P&I - Future - 15 yrs at 4.25%																						(686,403)	(686,403)	(686,403)	(686,403)
69 Bond P&I - Future - 15 yrs at 4.25%																							(686,403)	(686,403)	(686,403)
70 Bond P&I - Future - 15 yrs at 4.25%																								(732,163)	(732,163)
71 Bond P&I - Future - 15 yrs at 4.25%																									(732,163)
72 Bond Prin - Existing	(1,520,000)	(1,635,000)	(1,085,000)																						
73 Note Prin - Existing	(587,841)	(619,298)	(637,785)	(685,132)	(724,537)	(681,250)	(702,163)	(723,616)	(744,095)	(760,082)	(675,998)	(666,885)	(671,243)	(689,356)	(677,722)	(695,568)	(713,897)	(732,687)	(752,056)	(58,047)	(60,487)	(63,021)	(65,679)	(452)	(2)
74																									
75 **Beginning Cash**	**4,135,230**	**4,029,406**	**3,973,628**	**4,267,772**	**3,735,536**	**4,221,651**	**4,425,158**	**4,159,027**	**3,972,246**	**4,026,096**	**3,970,048**	**3,830,840**	**3,527,085**	**3,650,112**	**3,889,441**	**3,836,410**	**4,394,864**	**4,107,553**	**4,043,021**	**4,684,417**	**5,203,464**	**4,724,190**	**4,472,766**	**5,002,499**	**5,906,614**
76 Add net operations (line 30)	1,182,730	865,350	536,345	635,427	(377,742)	(686,367)	(36,845)	739,044	1,663,570	2,755,770	3,491,294	3,693,685	4,055,603	4,440,457	4,919,108	5,621,148	6,175,922	6,770,937	7,422,582	8,114,806	8,020,442	8,790,118	9,619,369	10,509,695	10,457,073
77 Add back depreciation (line 27)	1,685,561	1,728,852	1,752,370	1,766,268	1,837,485	1,892,610	1,949,388	2,007,870	2,068,106	2,130,149	2,194,053	2,259,875	2,327,671	2,397,501	2,469,426	2,543,509	2,619,814	2,698,408	2,779,360	2,862,741	2,948,623	3,037,082	3,128,194	3,222,040	3,318,701
78 Add net non operating (line 39)	(187,753)	(201,701)	(190,259)	474,787	491,419	296,485	(114,178)	(94,383)	(53,673)	(27,464)	(4,535)	32,314	45,342	69,316	115,748	134,960	173,088	206,931	227,272	268,474	292,507	281,797	279,290	303,072	338,122
79 Add capital and bond (lines 51-59)	(2,512,706)	(2,874,445)	(2,233,214)	(2,751,339)	(1,465,047)	(1,299,221)	(2,064,496)	(2,839,312)	(3,624,153)	(4,914,503)	(5,820,020)	(6,289,629)	(6,305,590)	(6,667,945)	(7,557,313)	(7,741,163)	(9,256,135)	(9,740,807)	(9,787,819)	(10,726,974)	(11,740,846)	(12,360,421)	(12,497,120)	(13,130,693)	(12,847,044)
80 Other reconciling items	1,296	(10,858)	(4,624)	9,876																					
80 Net change in balance sheet items	(274,952)	437,024	433,526	(667,255)																					
81 Ending Cash	**4,029,406**	**3,973,628**	**4,267,772**	**3,735,536**	**4,221,651**	**4,425,158**	**4,159,027**	**3,972,246**	**4,026,096**	**3,970,048**	**3,830,840**	**3,527,085**	**3,650,112**	**3,889,441**	**3,836,410**	**4,394,864**	**4,107,553**	**4,043,021**	**4,684,417**	**5,203,464**	**4,724,190**	**4,472,766**	**5,002,499**	**5,906,614**	**7,173,466**
82																									
83 **Ending net assets**	**39,045,786**	**39,709,435**	**40,055,521**	**41,165,735**	**41,279,412**	**40,889,531**	**40,738,508**	**41,383,168**	**42,993,065**	**45,721,371**	**49,208,130**	**52,934,129**	**57,035,075**	**61,544,848**	**66,579,704**	**72,335,812**	**78,684,821**	**85,662,689**	**93,312,544**	**101,695,824**	**110,008,773**	**119,080,688**	**128,979,346**	**139,792,114**	**150,587,309**
84																									
85 Fixed Costs																									
86 Estimated Base Charge																									
87																									
88 Target minimum working capital (note 2)	2,152,556	2,309,490	2,476,242	2,588,158	3,021,439	3,548,681	3,660,218	3,775,304	3,894,054	4,016,587	3,920,273	4,041,830	4,167,191	4,296,478	4,429,815	4,469,882	4,607,809	4,750,026	4,896,670	5,047,879	5,621,565	5,799,050	5,982,213	6,171,238	6,366,315
89 Actual working capital-cash balance	4,029,406	3,973,628	4,267,772	3,735,536	4,221,651	4,425,158	4,159,027	3,972,246	4,026,096	3,970,048	3,830,840	3,527,085	3,650,112	3,889,441	3,836,410	4,394,864	4,107,553	4,043,021	4,684,417	5,203,464	4,724,190	4,472,766	5,002,499	5,906,614	7,173,466
90 Over (Under) target working capital	1,876,850	1,664,138	1,791,531	1,147,378	1,200,212	876,477	498,809	196,942	132,041	(46,539)	(89,433)	(514,745)	(517,080)	(407,037)	(593,406)	(75,018)	(500,256)	(707,005)	(212,253)	155,585	(897,375)	(1,326,284)	(979,713)	(264,624)	807,150
91																									

Note 1: Bond proceeds or interfund fund borrowing
Note 2: Target capital equals 6 mos of operating expenses, plus 100% of next year's debt

APPENDIX E
20-Year Capital Plan for Water and Sanitary Sewer

WATER AND SEWER 20 YEAR PLAN	TOTAL COSTS				
	Project Years				
Title of Project	2010-2014	2015-2019	2020-2024	2025-2029	Annual Cost
Support Services - 47000					
Car 1998	22,000	-	-	22,000	-
Pickup 2005	-	-	22,000	-	-
Total Support Services	**$ 22,000**	**$ -**	**$ 22,000**	**$ 22,000**	**$ -**
Cedar Lake - 47002					
Replace Slope Mower	28,000	-	32,000	-	-
Replace Large Tractor	35,000	-	-	-	-
Repair/Maintain So Poplar Rd. House	40,000	-	-	-	-
Oil and Chip Parking Lot and Shop Areas	54,000	54,000	54,000	60,000	-
Replace Small Tractor	-	18,000	-	20,000	-
Replace 2 4 WD Trucks	-	60,000	-	70,000	-
Replace Patrol Boat & Motor	-	15,000	-	15,000	-
Replace and Extend Gabbions at Lake Outflow	-	216,000	-	-	-
Inspection and Repair of Main Dam Drainage System	336,000	-	-	-	-
Replace Comfort Station at Boat Ramp	-	15,000	-	-	-
New Changing Room/Bathrooms at Beach	-	-	180,000	-	-
Replace Fencing at Beach & Dam Areas	-	-	25,000	-	-
Replace Concession Stand at Beach	-	-	10,000	-	-
Seal and Restripe Boat Ramp Parking Lot	-	-	12,000	-	-
Maintain Lake Supervisors House	-	-	30,000	-	-
Repair/Maintain So Poplar Rd. House	-	-	15,000	-	-
Install Additional RipRap on Dams	-	-	-	60,000	-
Have Dams Inspected	-	-	-	12,000	-
Resurface Boat Ramp	-	108,000	-	-	-
Replace Fishing Pier	36,000	-	-	-	-
Repair Main Dam Drainage System (If needed)	-	-	-	-	-
Total Cedar Lake	**$ 529,000**	**$ 486,000**	**$ 358,000**	**$ 237,000**	**$ -**
Central Lab - 47009					
Ion Chromotography analyzer - replacement	-	-	35,000	-	-
Total Organic Carbon analyzer - replacement	-	-	35,000	-	-
Purge and Trap Apparatus	35,000	-	-	-	-
Gas Chromatography Mass Spec analyzer	-	125,000	-	125,000	-
Spectrophotometer (Hach 5000 or similar) replacement	-	6,000	-	-	-
Laboratory Refrigerators (2) replacement life 20 years	-	-	-	10,000	-
Autoclave replacement 20 years	-	-	-	5,000	-
Bench meters (2-ammonia,3- pH,1- Fluoride,1- turbidity,2- DO/BOD) replacement life 10 years	-	18,000	-	18,000	-
Ventillation Hoods (3) replacement at 30 years	-	-	25,000	-	-
Vacuum pump - replacement at 20 years	-	-	-	5,000	-
Culture Incubators - replacement at 30 years	-	-	5,000	-	-
Lab Computers - replacement	5,000	-	-	5,000	-
Muffle Furnace w/Controller (X2 replacement life 15 years)	6,000	-	-	6,000	-
Water Distillation Apparatus (X2 replacement life 15 years)	5,500	-	-	5,500	-
Vehicle, Lab sampling van (X2 replacement life 15 years 200K miles)	25,000	-	-	25,000	-
Toxicology Detection System for homeland security	6,000	-	-	-	-
Lab Operator, Salary+Benefits @$54,000 per year	-	-	-	-	54,000
ICP Analyzer (Spectrophotometer for 75 metals 90 sec) (replacement for AA instrument)	-	95,000	-	-	-
Laboratory Information System-software (new)	-	25,000	-	-	-
BOD incubator - replacement	-	-	17,000	-	-
Lab cabinets, Wastewater - replacement East side	-	-	8,000	-	-
Total Central Lab	**$ 82,500**	**$ 269,000**	**$ 125,000**	**$ 204,500**	**$ 54,000**

APPENDIX E
20-Year Capital Plan for Water and Sanitary Sewer

WATER AND SEWER 20 YEAR PLAN	TOTAL COSTS				
	Project Years				
Title of Project	2010-2014	2015-2019	2020-2024	2025-2029	Annual Cost
Water Treatment Plant 47011					
Renovations - Flooring, Lighting, Fixtures, Ceiling Tile, Exterior Doors, Etc.	-	-	75,000	-	-
Plant Generator Parts, Replacement	15,000	-	200,000	-	-
Paint Water Plant	350,000	-	-	350,000	-
MCC Room Panel Upgrades	-	50,000	-	-	-
Roof Repairs & Guttering Replacement	100,000	-	-	-	-
Water Plant Roofing & Siding Replacement	-	-	-	250,000	-
Pave Driveways at the Water Plant	-	100,000	-	-	-
Repair & Pave Access Drive at Chemical Feed Building and Cedar Lake Pump Station	150,000	-	-	50,000	-
Water Plant Valves & Controllers Replacement	-	300,000	-	-	-
Dewatering Upgrades - SludgeMate Dumping Area, Storage Shelter, Lagoon Renovations	180,000	-	-	-	-
Heating & AC Replacement - Rooftop Units	50,000	-	-	50,000	-
Water Heater - Industrial	20,000	-	-	20,000	-
High Service Pump Replacement and Rebuild (3)	-	165,000	-	35,000	-
Backwash Pump Replacement and Rebuild (2)	-	90,000	-	20,000	-
Chemical Feed Pump Replacement (10)	20,000	20,000	20,000	20,000	-
Lift Station Pump Replacement	5,000	5,000	5,000	5,000	-
Portable Generator	5,000	5,000	5,000	5,000	-
Filter Media Replacement	-	120,000	-	-	-
Overhead Crane Replacement (5)	-	50,000	50,000	50,000	-
Air Blower Replacement	-	15,000	-	-	-
Security System	15,000	-	-	15,000	-
Pickup 1995	22,000	-	22,000	-	-
Van 2007	-	30,000	-	30,000	-
BIP Fire Pump Replacement and Rebuild	50,000	-	-	10,000	-
Lab Monitors	-	-	50,000	-	-
Total Water Treatment Plant	**$ 982,000**	**$ 950,000**	**$ 427,000**	**$ 910,000**	**$ -**
Water Distribution 47015					
Water Tower Washouts and Annual Maintenance	100,000	120,000	120,000	120,000	-
Dump Truck 1989	80,000	-	-	80,000	-
Backhoe 2004	-	76,000	-	76,000	-
Utility Truck 2008	-	28,000	-	28,000	-
Compressor 1960	13,000	-	-	-	-
Maint. Building rehab	-	50,000	-	-	-
Maint. Building addition	-	-	50,000	-	-
Skid Steer 1990	-	50,000	-	-	-
Tower Painting ($400,000 in FY2011)	1,584,000	-	-	2,024,000	-
Total Water Distribution	**$ 1,777,000**	**$ 324,000**	**$ 170,000**	**$ 2,328,000**	**$ -**
Meter Services 47019					
Pickup 2001	22,000	-	22,000	-	-
Pickup 2003	-	22,000	-	22,000	-
Car 2004	-	22,000	-	22,000	-
Meter Testing	65,000	65,000	65,000	65,000	-
Total Meter Services	**$ 87,000**	**$ 109,000**	**$ 87,000**	**$ 109,000**	**$ -**
Sewer Collection 47021					
Dump Truck 2002	80,000	-	80,000	-	-
Backhoe 2001	50,000	-	50,000	-	-
Utility Truck 2009	-	28,000	-	28,000	-
Sewer Main Camera & Truck 2010	-	-	-	110,000	-
Sewer Jet 2010	-	-	-	305,000	-
Pavement Breaker	-	9,000	-	-	-
Total Sewer Collection	**$ 130,000**	**$ 37,000**	**$ 130,000**	**$ 443,000**	**$ -**
Water Operations and Sewer Collections					
	-	-	-	-	-
Additional Crew (3) @ $54,000 per person = $120,000 year X 20 years General Maint.	-	-	-	-	162,000
Additional Crew (2) @ $54,000 per per. I/I Flow Monitoring, Cross Connection Inspection and Grease Trap Inspection.	-	-	-	-	80,000
Total Water Operations and Sewer Collections	**$ -**	**$ -**	**$ -**	**$ -**	**$ 242,000**

APPENDIX E
20-Year Capital Plan for Water and Sanitary Sewer

WATER AND SEWER 20 YEAR PLAN	TOTAL COSTS				
	Project Years				
Title of Project	2010-2014	2015-2019	2020-2024	2025-2029	Annual Cost
Southeast Wastewater Treatment Plant 47022					
Variable Frequency Drives on Oxidation Ditch	41,000	-	-	-	-
Pickup Truck	28,000	-	-	28,000	-
40 HP Submersible Pump	17,665	-	-	-	-
Recycle Pump	18,571	-	-	-	-
RAW/WAS Pump	18,200	-	-	-	-
Blower Room Ventilation	20,000	-	-	-	-
Roof Over Generator	16,500	-	-	-	-
Concrete Floor In West Lagoon	250,000	-	-	-	-
Replace Final Clarifier Arms	75,000	-	-	-	-
Paint Primary Tanks	60,000	-	-	-	-
Replace Dump Truck	-	45,000	-	-	-
Replace Massey Ferguson Tractor	-	-	24,000	-	-
Replace Bobcat	-	-	46,000	-	-
Replace lift station truck	-	-	28,000	-	-
Replace grit chamber hoist	-	-	60,000	-	-
Replace perimeter fencing	-	-	81,000	-	-
Replace control building air conditioner	-	40,000	-	-	-
Replace plant water pumps	-	-	40,000	-	-
Riprap overflow lagoon	-	-	150,000	-	-
Paint Final Clarifiers	-	-	90,000	-	-
Total Southeast Wastewater Treatment Plant	**$ 544,936**	**$ 85,000**	**$ 519,000**	**$ 28,000**	**$ -**
Northwest Wastewater Treatment Plant 47023					
Grit chamber hoist replaced	45,000	-	-	-	-
Industrial Wet Well concrete needs to be repaired	50,000	-	-	-	-
River Vault Valve Replaced	-	-	65,000	-	-
Entrance tube and man lift to river vault replaced	-	-	260,000	-	-
Vacuum tanks and pumps replaced at #1 and #2 sites	-	85,000	-	-	-
Storm Water Pumps and Piping	-	90,000	-	-	-
Windows and doors in Industrial building replaced (with fiberglass)	-	40,000	-	-	-
Industrial primary needs rebuilt including gear box and motor	60,000	-	-	-	-
Industrial Final needs rebuilt including gear box and motor	60,000	-	-	-	-
Electrical Junction boxes through out the plant replaced with Stainless Steel boxes	35,000	-	-	-	-
All Painted steel handrails replaced with aluminum	-	90,000	-	-	-
Automatic bar screen in industrial wet well or in discharge of raw pumps	-	-	70,000	-	-
Replace or Upgrade S.C.A.D.A. as needed	90,000	-	-	-	-
If permit changes for nutrient removal modifications to plant will have to be made for chemical addition or biological removal	-	-	90,000	-	-
Trickling filter Center column and arms replaced	-	270,000	-	-	-
Replace Industrial Boiler and Heat Exchanger	-	65,000	-	-	-
Replace Dump Truck	-	45,000	-	-	-
Replace Lift Station Truck	28,000	-	-	-	-
Replace Pickup Truck	-	-	-	28,000	-
Total Northwest Wastewater Treatment Plant	**$ 368,000**	**$ 685,000**	**$ 485,000**	**$ 28,000**	**$ -**

APPENDIX E
20-Year Capital Plan for Water and Sanitary Sewer

WATER AND SEWER 20 YEAR PLAN	TOTAL COSTS				
	Project Years				
Title of Project	2010-2014	2015-2019	2020-2024	2025-2029	Annual Cost
Lift Stations 47025					
Haakes-Jenkins - Line wet well put new top and valve vault guide rail and pumps	45,000	-	2,500	2,500	-
Murdale - Add New Pump guide rails and piping	-	25,000	20,000	65,000	-
Golf Course - New Pumps and guide rails and control panel	55,000	-	15,000	15,000	-
Pine Lake New Pumps guide rail and control panel	50,000	-	15,000	15,000	-
Pine Crest New pumps guide rails and control panel upgrade 3 phase power	60,000	-	7,500	7,500	-
Bradford Pear new pumps and guide rails (New pumps 2011)	15,000	-	15,000	15,000	-
North 51 new pumps and guide rails control panel	49,000	-	15,000	15,000	-
Marion Street new pumps and guide rails	25,000	-	5,000	5,000	-
Reed Station Road replace pumps and add new pump and piping, raise wet well (New pumps 2010)	15,000	40,000	-	15,000	-
Lakeland Replace pumps control panel and guide rails	45,000	-	7,500	7,500	-
Kent Drive Replace pumps	-	-	15,000	15,000	-
New Era Road Replace Pumps	-	-	15,000	15,000	-
Oak Street Replace Pumps	-	-	25,000	25,000	-
Short Street Replace Pumps	-	-	7,500	7,500	-
Total Lift Stations	**$ 359,000**	**$ 65,000**	**$ 165,000**	**$ 225,000**	**$ -**
SUB-TOTAL FOR BUDGET DIVISIONS	**$ 4,881,436**	**$ 3,010,000**	**$ 2,488,000**	**$ 4,534,500**	**$ 296,000**

APPENDIX E
20-Year Capital Plan for Water and Sanitary Sewer

WATER AND SEWER 20 YEAR PLAN	TOTAL COSTS				
	Project Years				
Title of Project	2010-2014	2015-2019	2020-2024	2025-2029	Annual Cost
Sanitary Sewers 47044 (90% Clay)					
SA7301 - Washington Street Sanitary Sewer (Monroe Street to College Street)	250,000	-	-	-	-
SA0001 - Crestview Sanitary Sewer Rehabilitation	100,000	-	-	-	-
SA0106 - East/West Sanitary Sewer between Schwartz St & College St (W. of Oakland Ave)	135,723	-	-	-	-
SA0107 - Almond St. Sanitary Sewer and North/South Sewer Located Approx. 400' East of Springer St.	-	60,858	-	-	-
SA0901 - Sanitary Sewer Rehabilitation - Various Areas to be Determined Lining	5,000,000	5,000,000	5,000,000	5,000,000	10,000,000
SA1001 - Lakeland Subdivision Sanitary Sewer	-	-	787,500	-	-
Parrish Acres - Sec. 19 - M.H. 660-679 (4500') 8" @ $250/ft. replaced	1,350,000	-	-	-	-
Parrish Acres - Sec. 19 - M.H. 447-914 (3600') 15" @ $350/ft. replaced	1,512,000	-	-	-	-
Parrish Acres - Sec. 19 - M.H. 512-679 (2400') 8" @ $250/ft. replaced	-	720,000	-	-	-
Parrish Acres - Sec. 19 - M.H. 455-512 (2600') 8" @ $250/ft. replaced	-	780,000	-	-	-
Parrish Acres - Sec. 19 - M.H. 630B-625 (1800') 8" @ $250/ft. replaced	-	540,000	-	-	-
Parrish Acres - Sec. 19 - M.H. 631-450 (800') 8" @ $250/ft. replaced	-	240,000	-	-	-
Parrish Acres - Sec. 19 - M.H. 636-635 (200') 8" @ $250/ft. replaced	-	60,000	-	-	-
Parrish Acres - Sec. 19 - M.H. 896-898 (200') 8" @ $250/ft. replaced	-	60,000	-	-	-
Parrish Acres - Sec. 19 - M.H. 897-895 (400') 8" @ $250/ft. replaced	-	120,000	-	-	-
Parrish Acres - Sec. 19 - M.H. 902-895 (900') 8" @ $250/ft. replaced	-	270,000	-	-	-
Parrish Acres - Sec. 19 - M.H. 660-661 (300') 8" @ $250/ft. replaced	-	90,000	-	-	-
Parrish Acres - Sec. 19 - M.H. 913-931 (1000') 8" @ $250/ft. replaced	-	-	300,000	-	-
Parrish Acres - Sec. 19 - M.H. 481-483 (600') 15" @ $350/ft. replaced	-	-	252,000	-	-
Parrish Acres - Sec. 19 - M.H. 915-916 (300') 8" @ $250/ft. replaced	-	-	90,000	-	-
Parrish Acres - Sec. 19 - M.H. 938-907 (1600') 8" @ $250/ft. replaced	-	-	480,000	-	-
Parrish Acres - Sec. 19 - M.H. 927-929 (2000') 8" @ $250/ft. replaced	-	-	600,000	-	-
Parrish Acres - Sec. 19 - M.H. 930-657 (1000') 8" @ $250/ft. replaced	-	-	300,000	-	-
Parrish Acres - Sec. 19 - M.H. 940-657 (4000') 8" @ $250/ft. replaced	-	-	1,200,000	-	-
Parrish Acres - Sec. 19 - M.H. 949-946 (1000') 8" @ $250/ft. replaced	-	-	-	300,000	-
Parrish Acres - Sec. 19 - M.H. 673B-946 (400') 8" @ $250/ft. replaced	-	-	-	120,000	-
Parrish Acres - Sec. 19 - M.H. 669-483 (1500') 8" @ $250/ft. replaced	-	-	-	450,000	-
Parrish Acres - Sec. 19 - M.H. 670-483 (1800') 8" @ $250/ft. replaced	-	-	-	540,000	-
Parrish Acres - Sec. 19 - M.H. 471-478 (1800') 15" @ $350/ft. replaced	-	-	-	756,000	-
Parrish Acres - Sec. 19 - M.H. 613-617 (400') 8" @ $250/ft. replaced	-	-	-	120,000	-
Interceptor - (ET Simonds to Rte. 51) industrial park to M.H. 851 (4,400 ft.) 21" @ $350/ft. replaced	-	-	1,848,000	-	-
Interceptor - NWWWTP to M.H. 851 (4,350 ft.) 21" @ $350/ft. replaced	-	1,827,000	-	-	-
Interceptor - NWWWTP to M.H. 466A (ET Simonds), including M.H. 834 to 910 (8,400 ft.) 24" @ $350/ft. replaced	3,528,000	-	-	-	-
W.Main St. MH 893 - 871C (4000 ft.) 10" - reline @ $50/ft., bore under Sycamore, line 5 manholes	300,000	-	-	-	-
S.E. Interceptor (8,000 ft.) 42" @ $350/ft. replaced	-	3,360,000	-	-	-
N.E. Interceptor to S.E. inter.(13,000ft.) 36" @ $350/ft. replaced	-	-	-	5,460,000	-
College - Grand M.H. 30D - M.H.215 (2,000 ft.) 15" @ $350/ft. replaced	-	840,000	-	-	-
N.oakland M.H. 853 - M.H. 853C (500 ft.) 8" @ $250/ft. replaced	-	-	132,000	-	-
S. Skyline M.H. 382 - M.H.351 (550 ft.) 8" @ $250/ft. replaced	-	-	165,000	-	-
Orchard Dr. MH 809-516 (1800 ft.) 8" @ $250/ft. replaced	-	-	540,000	-	-
Ill. Ave. M.H. 58 - M.H. 48 (300 ft.) 8" @ $250/ft. replaced	-	-	-	90,000	-
Manhole Relining (1,500 manholes citywide, 750 scheduled for relining over 20 years @ approx. $5,000 each)	1,200,000	1,200,000	1,200,000	1,200,000	-
Total Sanitary Sewers	**$ 13,375,723**	**$ 15,167,858**	**$ 12,894,500**	**$ 14,036,000**	**$ 10,000,000**
Wastewater Systems 47044					
WW9602 - New Era Road Sanitary Sewer Lift Station (Replace Pumps)	-	125,000	-	-	-
WW0003 - Oak Street Sanitary Sewer Lift Station as per Murdale	-	370,000	-	-	-
WW0301 - Short Street Lift Station	-	175,000	-	-	-
WW1001(U)- NWWWTP Aereation/Digester Air Improvements	-	4,200,000	-	-	-
WW1003- NWWWTP Chlorine Update to UV	340,000	-	-	-	-
WW1002- NWWWTP Bar Screen on Grit Chamber	210,000	-	-	-	-
WW1004- NWWWTP Final clarifiers troughs, weirs, center column and grout floor in both tanks replaced	1,300,070	-	-	-	-
WW1005 - SEWWTP Mechanical Bar Screen (Moved from 47022)	910,000	-	-	-	-
WW1008(U) - Primary clarifiers troughs, weirs and center column in both tanks replaced (Moved from 47023 and increased $)	-	1,500,000	-	-	-
WW1009(U)- NWWWTP Effluent pumps replaced (2) and new structure and Wet Well	-	1,900,000	-	-	-
-NWWWTP-Sludge Belt Press and building and Piping	-	-	-	1,440,000	-
WW1006 - Alarm Communication and Flow Monitoring System	250,000	-	-	-	-
Total Wastewater Systems	**$ 3,010,070**	**$ 8,270,000**	**$ -**	**$ 1,440,000**	**$ -**

APPENDIX E
20-Year Capital Plan for Water and Sanitary Sewer

WATER AND SEWER 20 YEAR PLAN	TOTAL COSTS				
	Project Years				
Title of Project	2010-2014	2015-2019	2020-2024	2025-2029	Annual Cost
Water Systems 47045					
WS8502 - Jackson Street Water Main (Washington to Wall)	205,019	-	-	-	-
WS8503 - Washington Street Water Main (Walnut to Grand)	307,529	-	-	-	-
WS9202 - Main Street Water Main (Glenview Drive to Emerald Lane)	-	242,305	-	-	-
WS9502 - Walnut Street Water Main (Illinois Avenue to Washington Street)	154,397	-	-	-	-
WS9807 - Freeman Street Water Main Replacement (Oakland Avenue to Valley Road)	296,386	-	-	-	-
WS9808 - Jackson County Housing Water Line bet. Ashley, Chestnut, Brush, & Robert A Stalls Ave	-	126,560	-	-	-
WS9813 - Main Street Water Line Relocation (Marion Street to Lewis Lane)	988,896	-	-	-	-
WS0103 - Lincoln Street Water Line Replacement (College Street to Mill Street)	-	46,849	-	-	-
WS0107 - Hill Street Water Line Replacement (Carter Street to Oakland Avenue)	85,042	-	-	-	-
WS0108 - Cherry Street Water Line Replacement (Oakland Avenue to James Street)	105,000	-	-	-	-
WS0112 - Michaels Street Water Line Replacement (From Willow Street to 300 Ft North)	80,000	-	-	-	-
WS0115 - McKinley Street Water Main Replacement (Sycamore Street to North Street)	269,581	-	-	-	-
WS0201 - Mill Street Water Main (Illinois Avenue to Oakland Avenue)	915,146	-	-	-	-
WS0202 - Water Storage Facility (Phase II)	4,000,000	-	-	-	-
WS0203 - Oakland Avenue Water Main (Walnut Street to Mill Street)	-	-	644,489	-	-
WS0205 - Billy Bryan Street Water Line Replacement (Gher St. North to End of Billy Bryan	-	107,536	-	-	-
WS0303 - Elm St. Water Line Replacement (Washtington St. to Marion St.)	-	-	-	-	-
WS0308 - Schwartz Street Water Line Replacement (Oakland Ave. to Eason Drive) and Orchard Drive - 400 Bock north to Walnut Street Water Lir	200,000	-	-	-	-
WS0402 - Clean Lakes Program Total 980,000 $804,000 from grant 1st Phase Complete	500,000	-	-	-	-
WS0601 - Water Line Interconnect at New Era Road/Illinois Route 13 Intersection	68,969	-	-	-	-
WS0801 - Union Hill Road Raw Water Line Relocation 1st Phase Complete	90,000	-	-	-	-
WS0803 - Crab Orchard Water District Improvements	1,807,000	1,136,000	-	-	-
WS0901 - Backup Water Supply - Drain and Bulldoze Reservoir	300,000	-	3,000,000	-	-
WS0903 - Marion Street (North from Fisher street) Water Line Replacement	187,200	-	-	-	-
WS0904 - Pecan Street Water Line Replacement (400-900 Blocks)	473,850	-	-	-	-
WS0905 - Sycamore Street Water Line Replacement (from Poplar to Oakland)	272,025	-	-	-	-
Laurel & Willow 3250' - 6" @ $100/ft.	-	390,000	-	-	-
Pinewood 3350' - 6" @ $100/ft.	-	402,000	-	-	-
Parrish Ln. 2250' - 6" @ $100/ft.	-	270,000	-	-	-
Cedar Ct. - 1000' - 6" @ $100/ft.	-	120,000	-	-	-
W. Kent Dr. 6000' - 6" @ $100/ft.	-	720,000	-	-	-
Lu Ct. 400' - 6" @ $100/ft.	-	48,000	-	-	-
Glen Beth & Morningside 1,250' - 6" @ $100/ft.	-	150,000	-	-	-
Owen St. 1000' - 6" @ $100/ft.	-	120,000	-	-	-
E. Sycamore 2800' - 8" @ $179/ft.	-	600,000	-	-	-
Lark Ln. 2700' - 6" @ $100/ft.	-	324,000	-	-	-
Briarwood & Hillcrest 4000' - 6" @ $100/ft.	-	480,000	-	-	-
Chautauqua 7100' - 6" @ $100/ft.	-	852,000	-	-	-
High St. 1000' - 6" @ $100/ft.	-	120,000	-	-	-
Orchard 1000' - 6" @ $100/ft.	-	120,000	-	-	-
W. Elm 2900' - 6" @ $100/ft.	-	348,000	-	-	-
Dixon 2700' - 6" @ $100/ft.	-	324,000	-	-	-
Skyline 3100' - 6" @ $100/ft.	-	372,000	-	-	-
Gary Dr. 1000' - 6" @ $100/ft.	-	120,000	-	-	-
Taylor Dr. 4500' - 6" @ $100/ft.	-	540,000	-	-	-
Hill St. (Carter to Johnson) 1000' - 6" @ $100/ft.	-	120,000	-	-	-
Elm St. at Jack. Co. Housing 300' - 6" @ $100/ft.	-	36,000	-	-	-
S. Graham 1800' - 6" @ $100/ft.	-	216,000	-	-	-
S. Logan 1800' - 6" @ $100/ft.	-	216,000	-	-	-
Forest 3800' - 10" @ $125/ft.	-	570,000	-	-	-
Norwood 700' - 6" @ $100/ft.	-	84,000	-	-	-
Beverage & Ash 2000' - 6" @ $100/ft.	-	240,000	-	-	-
Water Main Replacement - Other Areas to be Determined	-	-	9,000,000	9,000,000	15,000,000
Brook Ln. 1600'- 6" @ $100/ft.	-	192,000	-	-	-
WS0908 - Cedar Lake Boat Access Program Development IDNR Grant Match	48,000	-	-	-	-
WS0909 - Automatic Meter Reading System	1,200,000	-	-	-	-
Air Stripper Replacement	-	-	300,000	-	-
Security Fence	120,000	-	-	-	-
Chlorine Gas Replacement with Onsite Chlorine Generation System	-	600,000	-	-	-
WS1002 - Repair Existing Damage at Lake Outflow	365,000	-	-	-	-
WS1004 - Replace Water Control Structure	-	-	-	130,000	-
WS1101 - SCADA System 1st Phase Complete	-	-	-	300,000	-
Cedar Lake Chemical Feed Buiding	-	-	120,000	-	-
Cedar Lake Pump Station Renovation - 3 valves, 3 check valves, 3 VFDs, 3 pumps & motors, CP, generator, meter	1,800,000	-	-	-	-
Total Water Systems	**$ 14,839,040**	**$ 10,353,250**	**$ 13,064,489**	**$ 9,430,000**	**$ 15,000,000**
SUB-TOTAL FOR CIP DIVISIONS	**$ 31,224,833**	**$ 33,791,108**	**$ 25,958,989**	**$ 24,906,000**	**$ 25,000,000**
TOTAL FOR ALL DIVISIONS	**$ 36,106,269**	**$ 36,801,108**	**$ 28,446,989**	**$ 29,440,500**	**$ 25,296,000**

APPENDIX E
20-Year Capital Plan for Water and Sanitary Sewer

WATER AND SEWER 20 YEAR PLAN	TOTAL COSTS				
	Project Years				
Title of Project	2010-2014	2015-2019	2020-2024	2025-2029	Annual Cost
FUTURE PROJECTS					
Water Main Replacement	15,000,000				
Sanitary Sewer Rehabilitaion	10,000,000				
WS1003 - Water Plant Upgrades	6,000,000				
- SEWWTP Tertiary Sand Filter	2,300,000				
- SEWWTP Oxidation Ditch Outer Ring	3,000,000				
- SEWWTP Additional Drying Beds	1,250,000				
- SEWWTP Additional Final Tank	750,000				
WW1007(U)- Two miles sewer & updgrade pumps at Pine Lake for annexation & development west side of Carbondale	4,800,000				
-NWWWTP- Add anaerobic digester methane gas cleaning equipment and micro turbines	6,000,000				
WW1010(U)- NWWWTP Plant upgrade from 2.64 MGD to 4.2 MGD	20,000,000				
Air Stripper Replacement	250,000				
Any mid sized earth temblor could cost the City $1,000,000 plus in dam inspection/ repairs. A major earthquake could cause the dams to fail, with several millions in costs. We have no control over 65-70% of the water shed as it is owned by the U.S. Forest Service. Invasive plant or animal species in the watershed or in the lake could rapidly affect water quality and the cost to treat the raw water.					

Appendix F
Proposed Rates

		Existing Rate Structure				
Description	**FY2011**	**FY2012**	**FY2013**	**FY2014**	**FY2015**	**FY2016**
Water						
	0.00%	6.75%	6.75%	6.75%	6.75%	6.75%
Fixed Charges						
None	$ -	$ -	$ -	$ -	$ -	$ -
Usage Rates						
Residential & Commercial	$ 3.35	$ 3.58	$ 3.82	$ 4.08	$ 4.36	$ 4.65
South Highway Water District & SIU	3.03	3.23	3.45	3.68	3.93	4.20
Lakeside Water Dist	3.15	3.36	3.59	3.83	4.09	4.37
Crab Orchard District*	5.42	5.45	5.69	5.95	6.23	6.52
Includes minimum usage of 100 gallons per day						
Sewer						
	0.00%	17.50%	17.50%	17.50%	17.50%	17.50%
Fixed Charges						
None	$ -	$ -	$ -	$ -	$ -	$ -
Usage Rates						
All Users	$ 3.56	$ 4.18	$ 4.91	$ 5.77	$ 6.78	$ 7.97
Includes minimum usage of 100 gallons per day						

Note - The Crab Orchard District is the Residential Rate + $1.87/1,000 gallons through FY2017

		20-Year Capital Plan (Recommended Rates)				
Description	**FY2011**	**FY2012**	**FY2013**	**FY2014**	**FY2015**	**FY2016**
Water						
		0.00%	6.75%	6.75%	6.75%	6.75%
Monthly Fixed Base Charge						
All Users	$ -	$ 3.09	$ 3.30	$ 3.52	$ 3.76	$ 4.01
Usage Rates						
Residential & Commercial	$ 3.35	$ 3.35	$ 3.58	$ 3.82	$ 4.08	$ 4.36
South Highway Water District & SIU	3.03	3.03	3.23	3.45	3.68	3.93
Lakeside Water Dist	3.15	3.15	3.36	3.59	3.83	4.09
Crab Orchard District*	5.42	5.22	5.45	5.69	5.95	6.23
Sewer						
		8.50%	17.50%	17.50%	17.50%	17.50%
Monthly Fixed Base Charge						
All Users	$ -	$ 3.14	$ 3.69	$ 4.34	$ 5.10	$ 5.99
Usage Rates						
All Users	$ 3.56	$ 3.86	$ 4.54	$ 5.33	$ 6.26	$ 7.36

Note - The Crab Orchard District is the Residential Rate + $1.87/1,000 gallons through FY2017

Appendix G
Impact Analysis for Various Users
20-Year Capital Plan

Estimated Change in Monthly Bills

Sample Resident / Business	FY 2011	20-Year Capital Plan FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Low User						
1,000 gallons water	$ 10.05	$ 6.44	$ 6.88	$ 7.34	$ 7.84	$ 8.37
1,000 gallons sewer	10.68	7.00	8.23	9.67	11.36	13.35
Total Bill	$ 20.73	$ 13.44	$ 15.11	$ 17.01	$ 19.20	$ 21.72
$ Increase / (Decrease)		$ (7.29)	$ 1.67	$ 1.90	$ 2.19	$ 2.52
Medium User						
6,000 gallons water	$ 20.10	$ 23.19	$ 24.78	$ 26.44	$ 28.24	$ 30.17
6,000 gallons sewer	21.36	26.30	30.93	36.32	42.66	50.15
Total Bill	$ 41.46	$ 49.49	$ 55.71	$ 62.76	$ 70.90	$ 80.32
$ Increase / (Decrease)		$ 8.03	$ 6.22	$ 7.05	$ 8.14	$ 9.42
High User						
20,000 gallons water	$ 67.00	$ 70.09	$ 74.90	$ 79.92	$ 85.36	$ 91.21
20,000 gallons sewer	71.20	80.34	94.49	110.94	130.30	153.19
Total Bill	$ 138.20	$ 150.43	$ 169.39	$ 190.86	$ 215.66	$ 244.40
$ Increase / (Decrease)		$ 12.23	$ 18.96	$ 21.47	$ 24.80	$ 28.74

Estimated Change in Monthly Bills

Sample Wholesale Customer	FY 2011	20-Year Capital Plan FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Low user						
4,000,000 gallons water	$ 12,120.00	$ 12,909.00	$ 13,769.86	$ 14,712.13	$ 15,695.90	$ 16,761.27
$ Increase / (Decrease)		$ 789.00	$ 860.86	$ 942.27	$ 983.77	$ 1,065.37
High User						
6,500,000 gallons water	$ 19,695.00	$ 20,784.00	$ 22,169.86	$ 23,687.13	$ 25,270.90	$ 26,986.27
$ Increase / (Decrease)		$ 1,089.00	$ 1,385.86	$ 1,517.27	$ 1,583.77	$ 1,715.37

Impact Analysis for Various Users
20-Year Capital Plan Over 25 Years

Estimated Change in Monthly Bills							
		20-Year Capital Plan Over 25 Years					
Sample Resident / Business	**FY 2011**	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	
Low User							
1,000 gallons water	$ 10.05	$ 6.38	$ 6.73	$ 7.10	$ 7.49	$ 7.90	
1,000 gallons sewer	10.68	6.88	7.82	8.89	10.11	11.50	
Total Bill	$ 20.73	$ 13.26	$ 14.55	$ 15.99	$ 17.60	$ 19.40	
$ Increase / (Decrease)		$ (7.47)	$ 1.29	$ 1.44	$ 1.61	$ 1.80	
Medium User							
6,000 gallons water	$ 20.10	$ 22.83	$ 24.08	$ 25.40	$ 26.79	$ 28.25	
6,000 gallons sewer	21.36	25.58	29.07	33.04	37.56	42.70	
Total Bill	$ 41.46	$ 48.41	$ 53.15	$ 58.44	$ 64.35	$ 70.95	
$ Increase / (Decrease)		$ 6.95	$ 4.74	$ 5.29	$ 5.91	$ 6.60	
High User							
20,000 gallons water	$ 67.00	$ 68.89	$ 72.66	$ 76.64	$ 80.83	$ 85.23	
20,000 gallons sewer	71.20	77.94	88.57	100.66	114.42	130.06	
Total Bill	$ 138.20	146.83	161.23	177.30	195.25	215.29	
$ Increase / (Decrease)		$ 8.63	$ 14.40	$ 16.07	$ 17.95	$ 20.04	

Estimated Change in Monthly Bills						
	20-Year Capital Plan Over 25 Years					
Wholesale Customers	**FY 2011**	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**
Low User						
4,000,000 gallons water	$ 12,120.00	$ 12,669.00	$ 13,366.00	$ 14,103.93	$ 14,882.85	$ 15,702.81
$ Increase / (Decrease)		$ 549.00	$ 697.00	$ 737.93	$ 778.92	$ 819.96
High User						
6,500,000 gallons water	$ 19,695.00	$ 20,394.00	$ 21,516.00	$ 22,703.93	$ 23,957.85	$ 25,277.81
$ Increase / (Decrease)		$ 699.00	$ 1,122.00	$ 1,187.93	$ 1,253.92	$ 1,319.96

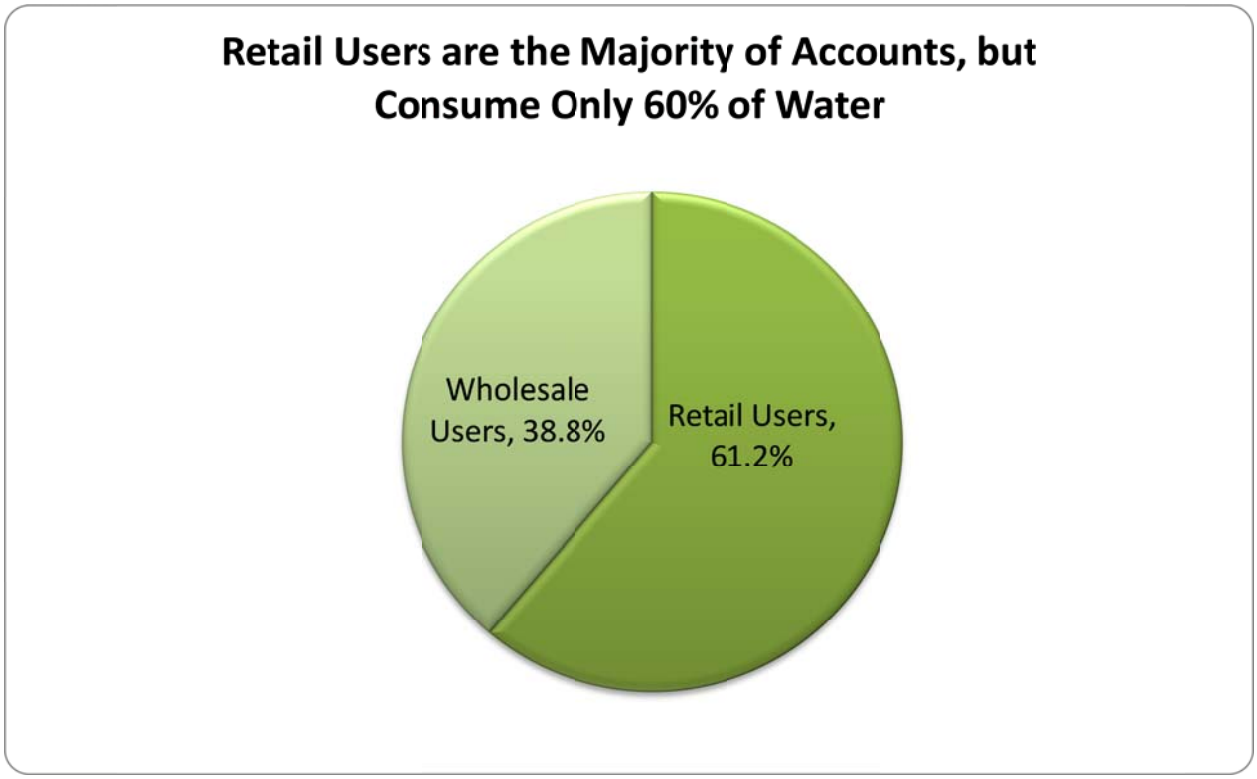
Impact Analysis for Various Users
20-Year Capital Plan Over 30 Years

Estimated Changes in Monthly Bills							
		20-Year Capital Plan Over 30 Years					
Sample Resident / Business	**FY 2011**	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	
Low User							
1,000 gallons water	$ 10.05	$ 6.36	$ 6.67	$ 6.99	$ 7.32	$ 7.67	
1,000 gallons sewer	10.68	6.83	7.68	8.64	9.72	10.94	
Total Bill	$ 20.73	$ 13.19	$ 14.35	$ 15.63	$ 17.04	$ 18.61	
$ Increase / (Decrease)		$ (7.54)	$ 1.16	$ 1.28	$ 1.41	$ 1.57	
Medium User							
6,000 gallons water	$ 20.10	$ 22.71	$ 23.82	$ 24.94	$ 26.12	$ 27.37	
6,000 gallons sewer	21.36	25.28	28.43	31.99	35.97	40.49	
Total Bill	$ 41.46	$ 47.99	$ 52.25	$ 56.93	$ 62.09	$ 67.86	
$ Increase / (Decrease)		$ 6.53	$ 4.26	$ 4.68	$ 5.16	$ 5.77	
High User							
20,000 gallons water	$ 67.00	$ 68.49	$ 71.84	$ 75.20	$ 78.76	$ 82.53	
20,000 gallons sewer	71.20	76.94	86.53	97.37	109.47	123.23	
Total Bill	$ 138.20	$ 145.43	$ 158.37	$ 172.57	$ 188.23	$ 205.76	
$ Increase / (Decrease)		$ 7.23	$ 12.94	$ 14.20	$ 15.66	$ 17.53	

Estimated Changes in Monthly Bills						
	20-Year Capital Plan Over 30 Years					
Wholesale Customers	**FY 2011**	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**
Low User						
4,000,000 gallons water	$ 12,120.00	$ 12,589.00	$ 13,203.83	$ 13,819.37	$ 14,475.66	$ 15,172.73
$ Increase / (Decrease)		$ 469.00	$ 614.83	$ 615.54	$ 656.29	$ 697.07
High User						
6,500,000 gallons water	$ 19,695.00	$ 20,264.00	$ 21,253.83	$ 22,244.37	$ 23,300.66	$ 24,422.73
$ Increase / (Decrease)		$ 569.00	$ 989.83	$ 990.54	$ 1,056.29	$ 1,122.07

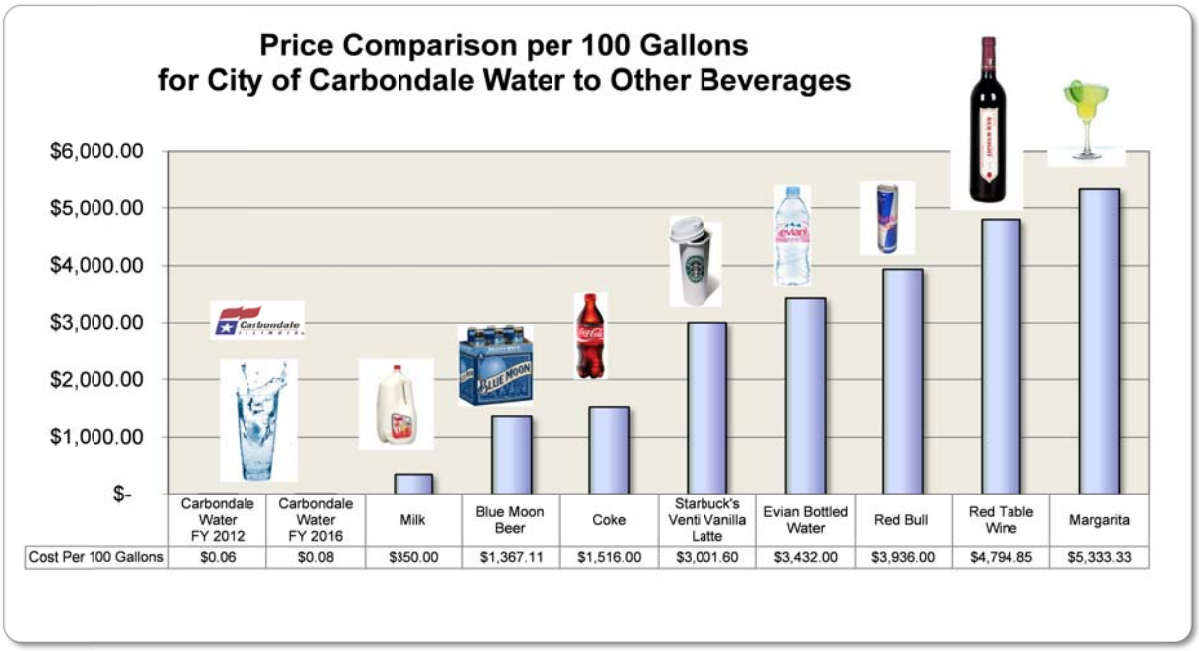
Appendix H
Carbondale's Water Customers

The City of Carbondale has both retail and wholesale customers. Below is a chart which shows the different customer types and how much water they use.



The majority of the City's customers are retail customers – individual residents and businesses in Carbondale. They account for just over 60% of consumption and 65% of revenue. Retail customers should provide more revenue because they receive more services, including individual metering and billing, plus the City maintains the distribution system in their neighborhood.

Appendix I
Price of a Cold Drink



Appendix J
Comparison of Household Utilities