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Utility Rate Study (A Case Study)

Dear Reader:

The following document was created from the Municipal Technical Advisory Services website ([mtas.tennessee.edu](https://www.mtas.tennessee.edu)). This website shares information relative to Tennessee municipal government. We hope this information will be useful to you and that it will assist you with questions that arise in your tenure in municipal government. However, the *Tennessee Code Annotated* and other relevant laws or regulations should always be consulted before any action is taken based upon the contents of this document.

The Municipal Technical Advisory Service (MTAS) was created in 1949 to provide technical assistance to elected and appointed municipal officials in Tennessee. We are a resource for Tennessee municipal officials in areas of municipal government, human resources, finance, fire, legal, police, public works, water, and wastewater. We provide personal and professional knowledge growth opportunities on current issues within municipal government.

The University of Tennessee
Municipal Technical Advisory Service
1610 University Avenue
Knoxville, TN 37921-6741
www.mtas.tennessee.edu

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Utility Rate Study (A Case Study)

Reference Number: MTAS-554

Reviewed Date: 04/22/2025

The mayor and board of alderman of *Any City* had just finished listening to a presentation from the water/sewer manager about needed projects. The water and sewer systems had their challenges. The mains, especially sewer lines, in the heart of the city were old and badly needed repair. The manager kept talking about “I & I,” finally explaining that this meant inflow of surface water and infiltration of groundwater into the sewer system. In other words, the sewer lines and manholes were cracked allowing extraneous water to enter the system. Heavy rains resulted in excess water being transported through the sewer lines to the treatment plant. This caused an increase in operational expenses and often caused operational compliance problems.

The manager mentioned that the “man from the state” had been to talk about the problems, and the city needed to take corrective action soon or potentially face fines and enforcement action.

The water manager said that water lines, particularly the old downtown lines, were deteriorated and the “water loss” was excessive. He explained that water meters in the downtown area were old and most likely not registering all the water being used. Because the sewer bills were calculated using water consumption, the resulting loss of revenue was compounded. *Any City* was likely losing revenues in both water and sewer billings because of the old meters.

Another major challenge came from an area where the interstate highway intersected the city limits. Commercial and residential developers were clamoring for water and sewer service. While water service was available in this area of town, lines were sized inadequately for large demands. Sewer service was not available. If development of this area was going to occur, water infrastructure had to be expanded, and sewer infrastructure had to be installed. *Any City's* engineering firm had just finished a cost study for these improvements. It would cost more than \$6 million to expand water and sewer service to meet the demands of new development. Repairs, replacement, and rehab of existing lines would cost more than \$4 million. The good news was that *Any City's* water and sewer treatment plants were capable of handling new growth, particularly if water loss and I/I were reduced.

The bottom line, the manager explained, was that several million dollars were needed to fund these projects. The city administrator said that some monies could eventually be recouped from new development. However, improvement of existing mains in the downtown area would not result in any new customer revenues. She concluded by saying that the city would probably qualify for some grant monies but nothing approaching the total needed. Silence filled the room as the water/sewer manager took his seat and the enormity of the challenge was understood.

Sound familiar? This meeting could have taken place in your city. Water and sewer operations and maintenance problems challenge city leaders everywhere. Add increasing federal and state regulations, and it is easy to see why many municipal decision makers feel overwhelmed. The answer for *Any City* lies in bringing together a combination of factors, including proper planning and financial resources. The mayor and alderman instructed the city administrator to work with the water/sewer manager and finance director to come up with a funding plan.

Planning new projects, meeting the demands of customers, dealing with rising costs, and complying with new laws and regulations are all part of operating a municipal water/sewer

system. And they all have one thing in common – money. As the city staff began to assess the task, they quickly realized that the current water/sewer revenues were simply inadequate. But how much would they need, how would rates be impacted, and how would rate-payers react?

“We need a rate study.”

As the city administrator, water/sewer manager, and finance director discussed their assignment, it became apparent that the focus could not be limited to capital projects, but also would need to include all the operation and maintenance expenses, depreciation expense, and debt obligations. It had been several years since consultants from the University of Tennessee Municipal Technical Advisory Service (MTAS) had assisted with developing financial projections and suggested new rates for the water/sewer fund.

Should we call MTAS? Or, since we have a previous study as guideline, can we do it ourselves? Any City’s staff decided to undertake the task.

Beginning Steps

Reference Number: MTAS-1461

Reviewed Date: 04/22/2025

“Where do we begin?”

The staff had completed step one of the water/sewer rate study – deciding who is going to conduct it. Cities have several options, including hiring an engineering firm, hiring other consultants, or doing it in-house. Sometimes bringing in someone from the outside is the best option. A third party may have fresh perspectives and ideas and may lend credibility to the staff’s recommendations in the eyes of the governing body and customers. If the city has staff with the expertise and time to devote to the task, it may choose to conduct the study in-house.

Next, city staff talked with the mayor to gain more specific information on his expectations for the study. With any utility rate study, it is important to establish what is to be accomplished. Goals may include:

- Generating additional revenues to keep up with inflation. The costs of operations may have risen due to inflation, and the city merely needs additional revenues to cover those costs.
- Obtaining new loans. The city may need to borrow money for capital improvements and, therefore, needs to generate additional revenue to cover debt service (i.e., principal and interest). This could include items such as the infrastructure improvements and replacement described above or updating treatment plants or pump stations. It may include new infrastructure to meet growth requirements or be a combination of several things.
- Examining the rate structure. This involves an evaluation of rates by customer class to see if various customer classes are paying fairly. It may involve simplifying a complicated rate structure or, if the city wants to encourage water conservation, changing the rate structure to charge higher rates for large volume users may be a goal.

The mayor and staff of *Any City* outlined the following goals:

- Generate additional revenues to fund needed infrastructure improvements and expansions. Funds would come from a combination of user fees, loans, and grants.

- Make water and sewer rate structures fair for all users.
- Comply with professional and regulatory requirements.
- Examine and modify (if needed) water and sewer policies, including extension policies, connection and tap fees, etc., to ensure that “new” customers were not being allowed to connect onto the system at the expense of existing customers.
- Develop rate and policy information that is easy to explain to rate payers.
- Develop a communications plan to inform customers.

Gathering Information

Reference Number: MTAS-1462

Reviewed Date: 04/22/2025

“Let’s look at the calendar.”

The mayor and staff concluded by setting a date for completion of a draft study. They considered deferring the study until after the council election, which was still six months away. If the city leadership is likely to change soon, it may be a good idea to wait until the new officials are on board before making major rate decisions. Since the majority of the governing body of *Any City* was not likely to change, they decided to go ahead with the study.

The next task – a large one – consisted of pulling together information needed for the study. This work generally falls to the finance director. The study would encompass two areas: income projections and the related cash flow. They made a list of items needed:

- Financial records
 - Audits for the previous two to three years;
 - The previous year-end financial reports (if the audit has not been completed);
 - The current year-to-date financial report; and
 - Principal and interest schedules for any new debt not already included in the financial report
- Billing records

A 12-month summary of water and sewer billings listed by customer totals, consumption totals, and total revenues for each separate rate classification.
- Capital projects

A list of planned capital improvements and their estimated costs for the next few years. The list should include the project cost and its estimated fiscal year(s) of completion, number of new customers, and usage projections.
- Water/sewer policies and operational guidance
 - Water and sewer usage fees;
 - Code of ordinances;
 - Any uncodified water/sewer ordinances enacted since the last code update; and
 - Operational guidance documents pertaining to extensions, tap fees, connection fees, and so forth.

“We’ve gathered information. Where do we go from here?”

The city administrator, water/sewer manager, and finance director sat down at a table stacked with financial and billing records and policies. They had met with the city’s consulting engineer and determined estimated costs for capital improvements and a project implementation schedule for the next few years. They began with the premise that any good business would begin with a determination of costs before setting the price to charge. They also determined to keep the following principals in mind.

Funding Water and Sewer Operations

Reference Number: MTAS-555

Reviewed Date: 04/22/2025

Governmental water and sewer operation should be established as an enterprise fund. In Government Accounting, Auditing, and Financial Reporting (Chicago: National Committee on Governmental Accounting Publications No. 18, 1968), “enterprise fund” is defined as:

... a fund established to account for operations (a) that are financed and operated in a manner similar to private business enterprises – where the intent of the governing body is that the costs (expenses, including depreciation) of providing goods and services to the general public on a continuing basis be financed or recovered primarily through user charges; or (b) where the governing body has decided that periodic determination of revenues earned, expenses incurred, and/or net income is appropriate for capital maintenance, public policy, management control, accountability, or other purposes.

The definition of an enterprise fund implies that sufficient user fees should be established to ensure that the utility can operate on a self-sustaining basis. The major source of revenue for water and sewer funds is user fees.

Legal Issues for Water and Sewer Operations

Reference Number: MTAS-847

Reviewed Date: 04/22/2025

Legal Issues for Financially Distressed City-Owned Water and Wastewater Systems.

T.C.A. § 1715-04-.01 provides for state intervention into the financial affairs of city-owned water and wastewater systems who are operating with continuous financial losses. The Tennessee Comptroller has established a Board to ensure that systems operate on a sound financial basis. Bond covenants and local legal requirements, such as inter-local contracts, must be considered as well.

Impact on Water and Wastewater Customers

Reference Number: MTAS-1463

Reviewed Date: 04/22/2025

Fairness

Costs for operations and maintenance (O&M) should be recovered from customer classes in proportion to the costs of providing service to those customers. The user fee should be fair to all customer classes. Each customer should be charged for their portion of the expenses incurred by the utility in providing service. Discounted rates and subsidies may be viewed as discriminatory and in some cases may be illegal.

Impact on Customers

A city should give customers information about any planned changes in advance with explanations on why changes were needed. When modifying an existing user charge system to achieve greater fairness, sudden drastic changes can have negative consequences when costs are redistributed to certain user classifications. For this reason, a planned, phased-in approach to implement major changes gradually over a period of time is usually best.

Simplicity

The utility’s user charge system should be easy to understand and easy for officials to explain to the public. Sewer rate structures that are similar to water rate structures are easy to understand.

Competitiveness

A customer may want to know about how their rates compare with comparably sized cities or with cities in the same geographical proximity. Particularly commercial and industrial users. This information should not be used to set the rates for the utility because each utility has it's own financial issues.

Charging Water and Wastewater Customers Fairly

Reference Number: MTAS-797
Reviewed Date: 04/22/2025

Fairness is an important consideration for setting water and sewer rates. No group of customers should be subsidizing another group. The 12-month billing summary for the water department is shown in Table 1 below.

The finance director calculated percentages for each rate classification and made the comparisons shown in Table 2 below.

Since the percent consumption and percent revenue columns in Table 2 closely match within a few percentage points, staff decided that the current rate structure treats customer groups fairly. No structural changes would be needed to the current rates. If expense data per customer group is available it could be included in the fairness test.

The fairness test was repeated for the sewer rate structure with similar results.

Table 1: Any City
Water Billing Summary by Customer Class

Number of Bills	Consumption (Gal-	Revenues/Year
-----------------	-------------------	---------------

		lons/Year)	
Residential Inside	4,000	30,000,000	\$630,000
Residential Outside	1,000	6,000,000	\$163,000
Commercial Inside	100	20,000,000	\$428,109
Commercial Outside	12	4,000,000	\$150,000
Utility Districts	1	12,000,000	\$350,000
Industrial	7	7,200,000	\$176,870
Total	5,120	79,200,000	\$1,897,979

Table 2: Any City
Water Usage Versus Revenue by Customer Class

	Consumption (Gallons/Year)	%	Annual Revenues	%
Residential Inside	30,000,000	38%	\$630,000	33%
Residential Out- side	6,000,000	8%	\$163,000	9%
Commercial In- side	20,000,000	25%	\$428,109	23%
Commercial Out- side	4,000,000	5%	\$150,000	8%
Utility Districts	12,000,000	15%	\$350,000	18%
Industrial	7,200,000	9%	\$176,870	9%
Total	79,200,000	100%	\$1,897,979	100%

Note: Multiple step declining block rate structures are likely to lead to fairness issues. In such rate structures, large volume users are usually found to be paying less than their fair share. Many cities decide on lower water and sewer rates for large volume users, such as manufacturing facilities,

because of the benefits they add to the city, such as jobs. A better approach is a uniform rate structure where the first 1,000 gallons costs the same as the 101,000 gallon.

Developing a Financial Spreadsheet

Reference Number: MTAS-798

Reviewed Date: 04/22/2025

How do you develop a Financial Spreadsheet? Listed below are steps that a city may follow to build a Financial Spreadsheet.

The first step involved building a spreadsheet that included a financial history of the city's water and sewer funds for the previous two to three years (or longer), the current year, and projections for future years. The history provided a foundation for projections. The spreadsheet format should be similar to the Statement of Revenues, Expenses and Changes in Fund Net Position as shown in the city's audit. It should include revenues, operating and maintenance expenses, depreciation, interest earnings and interest expense. Grants and monies received as contributed capital are now included on the income statement as non-operating revenue. Contributed capital includes items such as tap fees, payments from developers, and any other fees paid to directly offset the capital costs of the utility. Not included on this statement are principal payments on long-term debt and the amount of capital projects completed. Those two items will be included in the cash flow analysis.

Next, staff dealt with the current year. The finance director took the current month-end financial statements and projected them to year end. Some items were fixed and pretty easy to project (i.e., depreciation and debt interest). For the variable items, revenues and expenses, the director looked to the current year's trends and the history of the last few years. Events such as weather-related usage and large customers being added or deleted had to be taken into account. The director reviewed expenses with the water/sewer manager by asking questions such as: Is there a large one-time expense that affects any of the trends? Are there areas we know will encounter a significant increase or decrease in revenues or expenses? For example, if you expect that the amount the city pays for employee health insurance to increase 10 percent next year, that factor impacts projections. Or, perhaps a new area has been put into service and the city expects to see a greater than normal increase in revenues. The staff considered all of these factors to project the current year.

Next, they projected future revenues and expenses. They considered the history and looked at growth of revenues. They decided on a modest 1 percent growth rate for water sales and a 0.5 percent growth rate for sewer service sales. Realistically, expenses continue to rise. The staff would likely receive cost-of-living increases. Insurance costs would rise faster than inflation rates. After consideration, staff settled on a ~3 percent annual increase in operating and maintenance expenses.

"The dreaded D word: depreciation."

Often, one of the largest single expenses is depreciation. Since depreciation is the annual expensing of the utility's assets over their useful life, staff looked to the depreciation schedule for assets on hand and to the capital projects costs projections. Using projected costs as a guide, staff developed a depreciation schedule for the addition of these new assets. They knew that it was likely that all of the projects would not be completed in the time period listed. But they also

knew that other projects would take their place. Projections are made using the best information available at the time, realizing that some changes are likely. Armed with the depreciation schedule for assets on hand plus the projected depreciation expense of new projects, the staff could now project depreciation expense.

“Why is the operating income important?”

Operating income is the difference between operating revenues and operating expenses. If the water and sewer system is not realizing sufficient revenues to fund operating expenses and depreciation there is a serious financial problem. With the accounting change that makes contributed capital a current revenue, cities may find themselves showing healthy changes in net assets when, in fact, there are not enough revenues to fund expenses. Since grants and other similar monies can be used only for the capital projects they are intended to build, grants can provide no infusion of cash to pay ordinary operating expenses.

Any City anticipated receiving \$768,000 in grants next fiscal year, and the staff realized that the grants should be included in the projection. They made a note to bring operating income to the attention of the governing body. Any City's spreadsheet for water and sewer revenues and expenses is shown in Table 3.

**Table 3: Any City
Water/Sewer Fund Financial History and Projections**

	AUDIT F/Y 2009	AUDIT F/Y 2010	AUDIT F/Y 2011	CURRENT F/Y 2012	PROJECTED F/Y 2013	PROJECTED F/Y 2014	PROJECTED F/Y 2015
REVENUES							
Water Sales	\$1,744,860	\$1,847,424	\$1,897,979	\$1,928,583	\$1,947,869	\$1,967,348	\$1,987,021
Additional water revenue inc.							
Sewer service charges	\$840,091	\$963,516	\$1,040,725	\$1,061,538	\$1,066,846	\$1,072,180	\$1,077,541
Additional sewer revenue inc.							
Penalties	\$10,814	\$7,750	\$6,087	\$9,000	\$9,000	\$9,000	\$9,000
Tap/Service Fees/Other	\$188,926	\$141,993	\$243,476	\$135,375	\$135,375	\$135,375	\$135,375
TOTAL REVENUES	\$2,784,691	\$2,960,683	\$3,188,267	\$3,134,496	\$3,159,090	\$3,183,902	\$3,208,937
EXPENSES							
Operating & Maintenance	\$1,985,133	\$1,903,373	\$2,080,427	\$2,142,612	\$2,314,008	\$2,518,107	\$2,712,139
Depreciation	\$600,611	\$602,765	\$618,471	\$618,471	\$618,471	\$618,471	\$618,471
TOTAL EXPENSES	\$2,585,744	\$2,506,138	\$2,698,898	\$2,761,083	\$2,932,479	\$3,136,578	\$3,330,610
OPERATING INCOME (LOSS)	\$198,947	\$454,545	\$489,369	\$373,413	\$226,611	\$47,324	(\$121,673)
NON-OPERATING REVENUES/EXPENSES							
Interest Income	\$7,116	\$11,342	\$17,581	\$40,000	\$40,000	\$25,000	\$10,000
Interest Expense	(\$63,579)	(\$54,720)	(\$65,974)	(\$165,592)	(\$185,352)	(\$170,885)	(\$159,449)
Interest - New Debt				\$0	\$0	(\$290,250)	(\$281,472)
Amortization	(\$17,472)	(\$17,472)	(\$19,899)	(\$18,000)	(\$18,000)	(\$18,000)	(\$18,000)
Miscellaneous	\$21,780	\$13,786	\$2,242	\$10,000	\$10,000	\$10,000	\$10,000
TOTAL NON-OPERATING	(\$52,155)	(\$47,064)	(\$66,050)	(\$133,592)	(\$153,352)	(\$444,135)	(\$438,921)
INCOME (LOSS) BEFORE CONTRIBUTIONS & TRANSFERS	\$146,792	\$407,481	\$423,319	\$239,821	\$73,259	(\$396,811)	(\$560,594)
GRANTS	\$0	\$0	\$0	\$0	\$768,000	\$0	\$0
TRANSFERS OUT	(\$64,099)	(\$60,024)	(\$81,469)	(\$87,130)	(\$113,441)	(\$156,108)	(\$167,130)
CHANGES IN NET ASSETS	\$82,693	\$347,457	\$341,850	\$152,691	\$727,818	(\$552,919)	(\$727,724)
Growth rate water = 1.00%							
Growth rate sewer = 0.50%							

Net Assets has been changed to Net Position per GASB.

Additional Debt and Funding New Projects

Reference Number: MTAS-799

Reviewed Date: 04/22/2025

“How do we handle the additional debt requirements that are necessary to complete all the projects?”

The City’s engineer worked with city staff to develop a schedule of planned capital improvements and their estimated costs. These are shown in Table 4. Some of the new projects would require new debt.

Table 4: Any City Capital Projects

PROJECTS	ESTIMATED COST	ESTIMATED COMPLETION
Water Line Replacement	\$ 1,500,000	F/Y 2013
Sewer Line Rehab	\$ 3,000,000	F/Y 2014
Water Line Extension	\$ 2,500,000	F/Y 2015
Sewer Line Extension	\$ 3,500,000	F/Y 2015
Total	\$10,500,000	

“Do we have enough money to pay debt service and fund new projects?”

The staff was ready to calculate the rate changes the city needed in order to fund operations. But an important question had to be answered first: Would the income translate into enough cash flow to meet the principal payments on debt and pay for new projects? To answer that question, staff decided to use a simplified cash flow statement, projecting the future cash needs of the water and sewer system. Table 5 shows current and projected cash flow.

**Table 5: Any City
Water/Sewer Fund Cash Flow**

	AUDIT F/Y 2010	AUDIT F/Y 2011	CURRENT F/Y 2012	PROJECTED F/Y 2013	PROJECTED F/Y 2014	PROJECTED F/Y 2015
INCOME (LOSS) BEFORE						
CONTRIBUTIONS AND TRANSFERS			\$239,821	\$73,259	(\$396,811)	(\$560,594)
ADD:						
Depreciation-Existing			\$618,471	\$618,471	\$618,471	\$618,471
Depreciation - New				\$67,508	\$159,295	\$232,363
Grants				\$768,000	\$0	\$0
Proceeds from Existing Debt			\$3,215,708	\$5,800,000	\$0	\$0
Proceeds from New Debt				\$0	\$0	\$0
TOTAL FUNDS AVAILABLE			\$4,074,000	\$7,327,238	\$380,955	\$290,240
Capital Projects			(\$734,053)	(\$3,320,032)	(\$5,280,600)	(\$1,446,260)
Debt Principal -Existing			(\$521,436)	(\$461,571)	(\$407,657)	(\$350,855)
Debt Principal - New Debt					(\$175,558)	(\$184,336)
Transfers Out			(\$87,130)	(\$113,441)	(\$156,108)	(\$167,130)
CASH INCREASE (DECREASE)			\$2,731,381	\$3,432,194	(\$5,638,968)	(\$1,858,341)
BEGINNING CASH			\$902,965	\$3,634,346	\$7,066,540	\$1,427,572
ENDING CASH		\$902,965	\$3,634,346	\$7,066,540	\$1,427,572	(\$430,769)

Analysis for a Rate Increase

Reference Number: MTAS-565

Reviewed Date: 04/22/2025

Once the staff completed the projections of income and cash flow, it was evident that without a revenue increase, the utility would run out of cash in a few years. By state law, water/sewer funds must produce an income. More importantly no water/sewer system can function for a long period of time while continually losing money. As Any City's staff looked over the numbers it was quickly apparent that the city would have to increase rates. What size increase would be needed?

The staff considered several options:

1. Implement a minimum increase sufficient to fund the current costs; determine the amount of and implement larger increase(s) later once the actual costs of capital improvements are known.

Advantages:

- Lessens the immediate impact to customers; and
- Rates set after the costs have been incurred obviously are based on better data than projections.

Disadvantage:

Enacting rate changes several times within a short period means customers' attention will be directed to higher rates over and over again. This is likely to lead to repeated customer complaints.

2. Look at the largest year's financial requirement and increase the rates enough to cover that year.

Advantages:

- City leaders have to significantly raise rates only once and answer all questions and complaints then;
- Revenues in the near term years will be greater before the new debt begins so there is an opportunity to set monies aside for future use.

Disadvantages:

- Larger increases generally upset customers more;
- If the projections turn out not to be as accurate as hoped, additional rate increases may be needed.

3. Cut operating and maintenance costs and/or reduce the capital improvement schedule.

Advantage:

Rate increases may be delayed and/or reduced.

Disadvantages:

- Needed projects likely will be postponed;
- Customer service may suffer;
- State and federal regulators may impose fines and other penalties for failure to make improvements.

Option three was quickly discarded since water/sewer rate increases were needed. Now they had to determine the size and timing of rate increases and communication strategies.

Phasing in New Rates

Reference Number: MTAS-800

Reviewed Date: 04/22/2025

Because revenue needs were large, staff decided on a phased approach. They recommended increasing both water and sewer rates in each of the next three years. For the first fiscal year, water and sewer rates would each be increased by 15 percent; at the beginning of the second fiscal year, water rates would increase 10 percent and sewer rates 15 percent; at the beginning of the third fiscal year, water rates and sewer rates would each increase 5 percent. Table 6 below shows the results.

**Table 6: Any City
Water/Sewer Fund History and Financial Projections w/Rate Increases**

	AUDIT F/Y 2009	AUDIT F/Y 2010	AUDIT F/Y 2011	CURRENT F/Y 2012	PROJECTED F/Y 2013	PROJECTED F/Y 2014	PROJECTED F/Y 2015
REVENUES							
Water Sales	\$1,744,860	\$1,847,424	\$1,897,979	\$1,928,583	\$1,947,869	\$1,967,348	\$1,987,021
Additional water revenue inc.				\$0	\$219,135	\$226,245	\$125,679
Sewer service charges	\$840,091	\$963,516	\$1,040,725	\$1,061,538	\$1,066,846	\$1,072,180	\$1,077,541
Additional sewer revenue inc.				\$0	\$120,020	\$184,951	\$71,252
Penalties	\$10,814	\$7,750	\$6,087	\$9,000	\$9,000	\$9,000	\$9,000
Tap/Service Fees/Other	\$188,926	\$141,993	\$243,476	\$135,375	\$135,375	\$135,375	\$135,375
TOTAL REVENUES	\$2,784,691	\$2,960,683	\$3,188,267	\$3,134,496	\$3,159,090	\$3,183,902	\$3,208,937
EXPENSES							
Operating & Maintenance	\$1,985,133	\$1,903,373	\$2,080,427	\$2,142,612	\$2,314,008	\$2,518,107	\$2,712,139
Depreciation	\$600,611	\$602,765	\$618,471	\$618,471	\$618,471	\$618,471	\$618,471
TOTAL EXPENSES	\$2,585,744	\$2,506,138	\$2,698,898	\$2,761,083	\$2,932,479	\$3,136,578	\$3,330,610
OPERATING INCOME (LOSS)	\$198,947	\$454,545	\$489,369	\$373,413	\$226,611	\$47,324	(\$121,673)
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Interest Expense	(\$63,579)	(\$54,720)	(\$65,974)	(\$165,592)	(\$185,352)	(\$170,885)	(\$159,449)
Interest - New Debt				\$0	\$0	(\$290,250)	(\$281,472)
Amortization	(\$17,472)	(\$17,472)	(\$19,899)	(\$18,000)	(\$18,000)	(\$18,000)	(\$18,000)
Miscellaneous	\$21,780	\$13,786	\$2,242	\$10,000	\$10,000	\$10,000	\$10,000
TOTAL NON-OPERATING	(\$52,155)	(\$47,064)	(\$66,050)	(\$133,592)	(\$153,352)	(\$444,135)	(\$438,921)
INCOME (LOSS) BEFORE CONTRIBUTIONS & TRANSFERS	\$146,792	\$407,481	\$423,319	\$239,821	\$73,259	(\$396,811)	(\$560,594)
GRANTS	\$0	\$0	\$0	\$0	\$768,000	\$0	\$0
TRANSFERS OUT	(\$64,099)	(\$60,024)	(\$81,469)	(\$87,130)	(\$113,441)	(\$156,108)	(\$167,130)
CHANGES IN NET ASSETS	\$82,693	\$347,457	\$341,850	\$152,691	\$727,818	(\$552,919)	(\$727,724)
Growth rate water = 1.00%							
Growth rate sewer = 0.50%							

Net Assets is currently called Net Position.

Projecting New Revenue

Reference Number: MTAS-801

Reviewed Date: 04/22/2025

Using the projected new revenue, the finance director repeated the cash flow analysis. Table 7 shows that the rate increases will result in positive ending cash through the study period.

**Table 7: Any City
Water/Sewer Fund Cash Flow w/Rate Increases**

	AUDIT F/Y 2010	AUDIT F/Y 2011	CURRENT F/Y 2012	PROJECTED F/Y 2013	PROJECTED F/Y 2014	PROJECTED F/Y 2015
INCOME (LOSS) BEFORE CONTRIBUTIONS AND TRANSFERS			\$239,821	\$412,414	\$470,314	\$510,404
ADD:						
Depreciation-Existing			\$618,471	\$618,471	\$618,471	\$618,471
Depreciation - New				\$67,508	\$159,295	\$232,363
Grants				\$768,000	\$0	\$0
Proceeds from Existing Debt			\$3,215,708	\$5,800,000	\$0	\$0
Proceeds from New Debt				\$0	\$0	\$0
TOTAL FUNDS AVAILABLE			\$4,074,000	\$7,666,393	\$1,248,080	\$1,361,238
Capital Projects			(\$734,053)	(\$3,320,032)	(\$5,280,600)	(\$1,446,260)
Debt Principal -Existing			(\$521,436)	(\$461,571)	(\$407,657)	(\$350,855)
Debt Principal - New Debt					(\$175,558)	(\$184,336)
Transfers Out			(\$87,130)	(\$113,441)	(\$156,108)	(\$167,130)
CASH INCREASE (DECREASE)			\$2,731,381	\$3,771,349	(\$4,771,843)	(\$787,343)
BEGINNING CASH			\$902,965	\$3,634,346	\$7,405,695	\$2,633,852
ENDING CASH	\$902,965	\$3,634,346	\$7,405,695	\$2,633,852	\$2,633,852	\$1,846,509

Building Support for an Increase

Reference Number: MTAS-566

Reviewed Date: 03/28/2023

Staff developed a written report, presented a copy to each member of the governing body, and prepared a presentation for the next city council meeting. After lengthy discussion, the governing body decided to delay a vote on rate increases for two months. They asked the city administrator to develop a communications strategy and prepare information to inform rate payers about why water and sewer rate increases were needed.

As the administrator and the city's information officer worked on this assignment, they kept in mind the following:

- The definition of an enterprise fund implies that sufficient user fees should be established to ensure that the utility can operate on a self-sustaining basis. The major source of revenue for water and sewer funds is user fees.
- Local officials are usually reluctant to increase user fees for fear of political backlash.
- Customers support services they value. An informed public can help. Citizens are aware that it costs more to provide safe drinking water and to clean sewage to keep rivers clean. People care about their city, the environment, and things that impact quality of life. Basically, the public is quite willing to pay a fair price for something it values. But, customers need to be informed that they're getting their money's worth.
- Elected officials and customers want efficient operations. Any City's managers knew that they had to correct some efficiency problems before implementing a rate increase. They

redoubled efforts on:

- Accurately metering and billing all water and sewer service sales;
- Aggressively collecting due accounts; and
- Using the workforce efficiently.

Message to the Customers

She prepared to answer the key question: Why are increases needed? Her information would be honest, factual and friendly and included:

- Highlighted the problems detected and corrected;
- Explained I/I and water loss problems;
- Detailed the age and condition of water and sewer lines; and
- Reported on planned development and the water/sewer infrastructure needed to serve it.

How do you communicate the message? Start in the work place by turning staff into a public relations team. All utility employees are information sources, and what they say in casual comments can create a positive (or negative) image of the utility operation.

Make certain that local government leaders are informed and on board with the proposed rate increases. User fees should be easy to understand and easy for officials to explain to the public. Help customers see the link between water/sewer service and community growth, economic development, jobs, and increased property values. Compare the cost of cable TV or cell phone services to help users understand that water/sewer services are relatively inexpensive.

Customers want to know how their rates compare with comparably-sized cities and with cities in the same geographical proximity. This information is particularly important for commercial and industrial users so be prepared to answer these concerns.

Use newspaper articles and special mailings to get the word out. Remember that the media are the eyes and ears of the community, and reporters are interested in quality of life issues. Be prepared to explain in detail why a rate increase is needed. Educate the media about water and sewer treatment. The challenge is to explain complex processes, problems, and proposed solutions in easy-to-understand terms.

By following this plan, Any City successfully passed the rate increase three months later.

Follow Up

The staff decided it couldn't rest on success. It needed to evaluate and determine how successful the program has been.

- Did we raise rates?
- Did the rates gain public support? Survey customers to find out.
- What would we do differently next time? Think about complaint calls, media coverage, and election results.

Keep a written record. Put information in the files. Don't lose the knowledge gained. Progress is based on discovering and correcting errors and writing a history of the findings.

Keep on track. Once you've completed the public education campaign and raised rates, keep on track by:

- Evaluating financial operations annually and making frequent incremental water/sewer rate adjustments. Costs of labor, chemicals, power, materials, and supplies will rise. It

makes sense to increase revenues proportionally.

- Continue to keep customers informed. Give periodic progress reports through press releases or in bill inserts.
- And, more important, thank customers for their continued support.

Source URL: <https://www.mtas.tennessee.edu/reference/utility-rate-study-case-study>