

City of Millersville

Rate Study

2020

Revised

Prepared By:



City of Millersville

2020 Wastewater Rate Study

Introduction

Purpose

The purpose of this report is to present a rate study to assist the City of Millersville (City) in complying with an order dated December 4, 2019 from the Water and Wastewater Financing Board (WWFB), a division of the Tennessee Comptroller of the Treasury. The order states:

1. The City shall hire the Tennessee Association of Utility Districts, or another qualified expert as approved by Board staff, to complete a rate study that includes the following:
 - a. The creation of a five-year capital asset budget to be taken from the current capital asset list and to include future anticipated needs; and
 - b. A review of the City's leak adjustment policy, including any recommended modifications:

This order is the result of the City's non-compliance with TCA § 68-221-1010 (included at the end of this report). Non-compliance conditions include a deficit total net position in any one (1) year, a negative change in net position for two (2) consecutive years, or currently in default on any debt instruments.

RateStudies LLC was hired to perform this analysis.

Methodology

The methodology used by RateStudies is based on the *American Water Works Association (AWWA) M54 Manual - Developing Rates for Small Systems*. Although rate studies are not an exact science, the financial models used in this report can be a valuable tool for making financial decisions and setting wastewater rates. Considerations are made to simplify the rate study process so that it is understandable to utility officials, managers, staff, and customers.

This report presents a comprehensive financial analysis of the City's wastewater system, including a historical 4-year view and a 5-year projection of customer growth, revenue, and expenses. The City's 5-year Capital Improvement Plan and its impact on depreciation are included. The report also shows projections of existing debt service obligations. The City Manager/Recorder, with the assistance of the City's consulting engineer from OHM Advisors, provided assistance in the collection of historical data, development of the Capital Improvement Plan, growth projections, financial projections, and the final recommendations of this report.

This study uses a Cash Flow Analysis and a Change in Net Position Analysis to determine the need for rate increases. Each of these gives an indication of financial stability for the City's wastewater system. Such information is presented both as Excel spreadsheets designed to function as financial models, and as graphs and charts to give a visual presentation of the critical analyses in this report.

The results of the Cash Flow Analysis and the Change in Net Position Analysis are used to determine the amount of increase needed in wastewater revenues to remedy the City's financially distressed position. These analyses were used to determine the amount of revenue required and to help ensure that the Statutory Change in Net Position is not negative for two future consecutive years.

Significant Events and Factors

Factors affecting this analysis are the following conditions or significant plans:

- Since 2016, the City's customer base has increased minimally, at a rate of approximately 0.8%. For this analysis, management is projecting a 1.1% increase each year, principally for residential and commercial customers.
- In the fiscal year (FY) 2019, rates were re-structured using a lower amount of water for the minimum bill. The usage changed from 1,500 to 1,200 gallons for residential customers, and from 1,500 to 1,000 gallons for commercial customers. Also, 81 customers were reclassified from residential to commercial. The net effect of these changes was to increase 2019 sewer revenue by 18.6%.
- The City passed an ordinance in January 2019, indicating that, effective July 1, 2019, and for each following year on July 1, there shall be an automatic increase of 2% to all sewer rates and charges.
- In FY 2020, there was a rate increase of 2% for both residential and commercial customers. Although a 10% increase in rates for motels, hotels, and campgrounds had also been planned, it was not implemented until March 2020. At which time, the rate was increased by 12.2%. While the rate for customers using water wells had not increased for at least four years, the well rate was increased in March 2020 by 3.2%.
- Changes in general expenses increased from 2016 to 2017 by 25%, and then, for 2018 and 2019, they rose an average of 5.0%. For this analysis, management projects future expenses to continue increasing 5.0% per year, except in 2022, which will increase by 8.0% due to the need for additional manpower.
- The five-year Capital Improvement Plan (CIP) for the wastewater system totals \$3,327,828 and will add \$126,350 in additional depreciation.
- There is currently one State Revolving Fund Loan of \$466,200 for which the annual scheduled debt service of \$23,976 is expected to begin in 2021, and which will mature in 2041. This analysis assumes the City will obtain four more State Revolving Fund Loans to finance the additional future capital improvement projects described in the CIP.
- In 2018, the State of Tennessee amended a law requiring the calculation of the Change in Net Position as total revenues less all grants, capital contributions, and expenses, but without reduction for any excluded non-cash items. The Tennessee Comptroller's office has interpreted the phrase "but without reduction for any excluded non-cash items" to require the addition of any decrease (or the subtraction of any increase) in Net Pension and Other Post-Employment Benefit (P&OPEB) Assets, and the opposite treatment for P&OPEB Liabilities. Thus, the Change in Net Position (2018 Statute) shown in this report is calculated based on that interpretation.

Recommendations

Rate Increases

Over the next five years, the City's Statutory Change in Net Position is projected to be negative for FY 2021 through 2024. To remedy this financially distressed position, a 15% rate increase is recommended for FY 2021, a 10% increase for FY 2022, and then a 5% increase for both FY 2023 and FY 2024. **Figure 1** below shows a summary of these recommended rates. A more detailed presentation, showing rates by customer class and the impact on monthly bills for varying levels of usage, is shown in **Figure 17**.

Proposed Annual Rate Increases				
2020	2021	2022	2023	2024
0%	15%	10%	5%	5%

Figure 1

Leak Adjustment Policy

On April 21, 2020, the City's Board of Commissioners approved an updated "Sewer Adjustment Policy" (shown in **Figure 19**), which includes provisions to address adjustments due to leaks. We have reviewed this policy and make no further recommendations.

Other Considerations

Price elasticity is a measurement of how buyers respond to changes in price. Generally, as the price of a product increases, buyers will buy less of the product. The City may experience price elasticity with some of its customers. Higher rates could encourage customers to use less water, which would result in less wastewater collected and fewer revenues collected. This report does not include a price elasticity analysis.

The recommendations of this report are designed to improve the City's finances and meet the requirements of the Tennessee Comptroller over the next five years. It is recommended to monitor and verify projections presented in this report on an annual basis and to react to unforeseen financial changes and make corrections as necessary.

Customer Growth and Revenue Projections

Overview

The City depends on revenue collected from five classes of customers -- residential; commercial; motels, hotels & campgrounds, and customers using well water. Revenue is needed to pay for all of the wastewater department needs, including the cost of operation, maintenance, debt service, depreciation, and capital expenses. A review and analysis of the previous four years' of records (FY 2016-2019) provide a reasonable basis for making growth and revenue projections over the next five years (FY 2020-2024) concerning customer growth and revenue.

Customer Growth

The City's customer base has been mostly flat since FY 2016, increasing an average of only 0.8% per year from FY 2016-2019. For this analysis, management has projected the number of total customers to increase an average of 1.1% for each of the next five years, FY 2020-2024.

Revenue Projections

Total revenue increased over FY 2016-2019 by an average of 8.3%. With no additional rate increases, revenue is projected to increase an average of 1.2%, for each of the next five years, FY 2020-2024.

Figure 2 is both a spreadsheet and graphical representation of the number of customers and the related revenue from the previous four years and a projection of growth assuming no additional changes in rates for the next five years. This information provides a basis for recognizing that, given management's anticipated lack of any significant growth in the number of customers, and assuming no additional rate increases are enacted over the next five years, revenue projections for FY 2020-2024 will remain relatively flat.

Other Considerations

Wastewater usage and associated wastewater revenue will vary according to weather. Customers generally use less water in years that have greater than average amounts of rainfall and more water usage in years when the amount of rainfall is less than average. This report assumes that rainfall will remain at average levels over the next five years.

Also, many water customers are becoming more conscious of water conservation. They are installing water conservation devices to help reduce water usage. Any reduction in water usage will result in a reduction of wastewater revenue.

Wastewater Customers and Revenue - with No Rate Increases									
Number of Customers	2016	2017	2018	2019	2020	2021	2022	2023	2024
Residential	1,789	1,799	1,820	1,755	1,775	1,795	1,815	1,835	1,855
Commercial	2	2	1	82	83	84	86	88	90
Motels, Hotels & Campgrounds	8	8	8	4	4	4	4	4	4
Wells (Flat Rate)	3	3	3	2	2	2	2	2	2
Total Customers	1,802	1,812	1,832	1,843	1,864	1,885	1,907	1,929	1,951
% Change		0.6%	1.1%	0.6%	1.1%	1.1%	1.2%	1.2%	1.1%

Revenue	2016	2017	2018	2019	2020	2021	2022	2023	2024
Residential	\$800,791	\$838,568	\$879,220	\$881,737	\$891,785	\$901,833	\$911,881	\$921,930	\$931,978
Commercial	\$5,581	\$10,471	\$14,683	\$178,809	\$180,990	\$183,170	\$187,532	\$191,893	\$196,254
Motels, Hotels & Campgrounds	\$59,616	\$47,569	\$46,827	\$34,616	\$34,616	\$34,616	\$34,616	\$34,616	\$34,616
Wells (Flat Rate)	\$1,236	\$1,140	\$919	\$1,077	\$1,077	\$1,077	\$1,077	\$1,077	\$1,077
Total Revenue	\$867,224	\$897,748	\$941,650	\$1,096,238	\$1,108,467	\$1,120,696	\$1,135,106	\$1,149,515	\$1,163,925
% Change		3.5%	4.9%	16.4%	1.1%	1.1%	1.3%	1.3%	1.3%

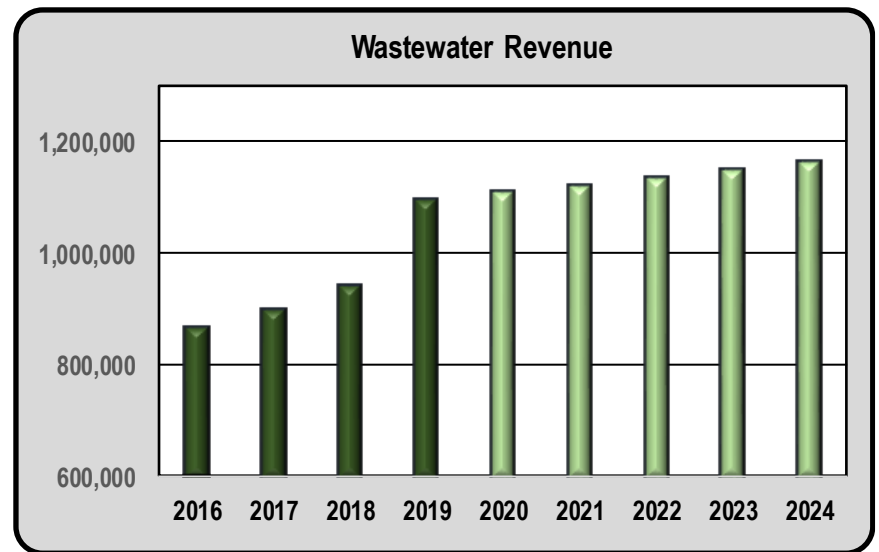
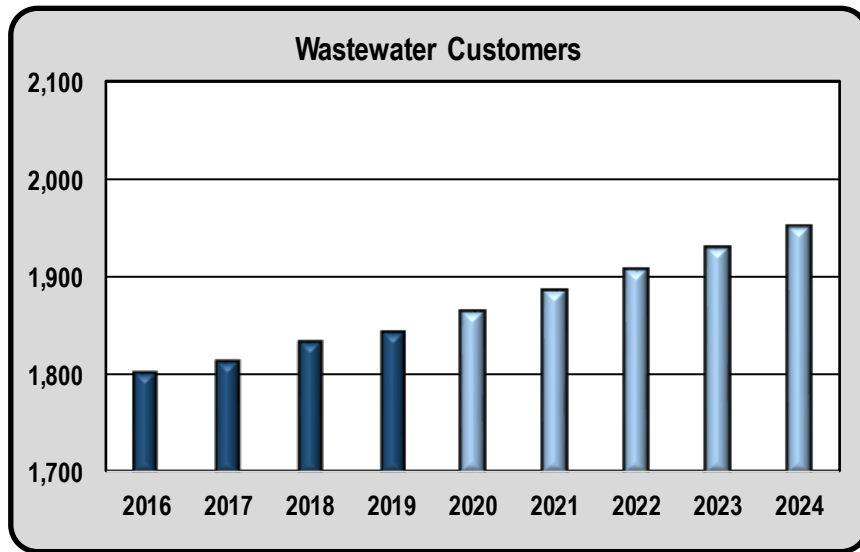


Figure 2

Figure 3 identifies Other Income besides revenue from customers. Note that, in 2021, the City will no longer buy and sell Sewer Tank/Pump Packages; instead, each customer will be required to buy them from a supplier.

Other Income - with No Rate Increases									
	2016	2017	2018	2019	2020	2021	2022	2023	2024
Sewer Fees (Inspects, Permits, etc)	450	50		3,085	3,000	3,000	3,000	3,000	3,000
Sewer Tank/Pump Pkgs	23,525	48,288	45,194	46,634	15,000				
Misc Income	17,469	29,386	30,876	29,454	30,000	30,000	30,000	30,000	30,000
Total Other Income	41,444	77,724	76,070	79,173	48,000	33,000	33,000	33,000	33,000
Percent Change		87.5%	-2.1%	4.1%	-39.4%	-31.3%	0.0%	0.0%	0.0%

Figure 3

Capital Improvement Plan

Overview

A Capital Improvement Plan (CIP) is typically an unaudited planning document used to identify needed capital improvements and other assets, along with methods of financing, and a calculation of annual depreciation. Capital assets, not including infrastructure assets, are defined by the City as assets with an original cost of \$5,000 or more and a useful life of more than three years. Maintenance items such as meter replacements are not considered capital expenses.

Anticipated Projects

The City's CIP, shown in **Figure 4**, lists anticipated capital improvements and other assets over the next five years. The CIP includes the name of each project, its estimated cost, proposed financing, useful life in years, and annual depreciation. The depreciation is calculated on the "straight line" method, meaning that the amount of each project or capital expense is divided by its useful life in years.

In addition to anticipating miscellaneous costs of \$ 50,000 per year for unforeseen capital expenditures, specific major projects identified by the City Manager/Recorder and the City's consulting engineer include:

- In FY 2020, an Inflow and Infiltration (I&I) Rehabilitation project, as well as replacing various pumps and other equipment;
- In FY 2021, two more I&I projects (Woody Lane Phase II and replacing some Grinder Lids and Diaphragms);
- In FY 2022, another I&I project (McMurtry Slip Lining);
- In FY 2023, another I&I project (Slater's Creed Road slip lining) McMurtry Slip Lining); and
- In FY 2024, installation of Cartwright Circle North Gravity pumps.

The need for so many I&I projects is illustrated in **Figure 5**. This chart shows an increase in I/I of 27 million gallons between FY 2018 and 2019, which results in an additional annual cost of about \$60,000 for transportation and treatment. Rainfall increased by 3 inches in FY 2019, which could have caused more I/I. Still, the increase in I/I could also be due to other causes such as missing or broken lids, or additional cracks in the sewer lines.

Financing Future Expenditures

The current I&I rehabilitation project is being financed with a State Revolving Fund Loan of \$518,200, including a grant of \$51,800. All other significant capital improvements are anticipated to be financed with State Revolving Fund Loans, without grants. The remaining capital projects will be funded via cash reserves.

Other Considerations

The CIP can serve as a planning document and should be reviewed and updated annually. The plan should cover at least five years and include significant purchases. The CIP can also help in developing annual budgets that include depreciation as an expense.

Wastewater Capital Improvement Plan						
Fiscal Year 2020 (July 1, 2019 - June 30, 2020)						
Projects	Cost	Cash	Loan	Grant	Life-Years	Annual Depr.
I&I Rehab	\$362,827		\$311,027	\$51,800	40	\$12,950
Pumps	\$70,000	\$70,000			10	\$7,000
Equipment	\$87,000	\$87,000			10	\$8,700
Miscellaneous	\$50,000	\$50,000			10	\$5,000
Total	\$569,827	\$207,000	\$311,027	\$51,800		\$33,650
Fiscal Year 2021 (July 1, 2020 - June 30, 2021)						
Projects	Cost	Cash	Loan	Grant	Life-Years	Annual Depr.
Woody Lane Phase II (I&I)	\$126,500		\$126,500		40	\$3,163
Grinder Lids and Diaphragms (I&I)	\$350,000	\$350,000			20	\$17,500
Miscellaneous	\$50,000	\$50,000			10	\$5,000
Total	\$526,500	\$400,000	\$126,500			\$25,663
Fiscal Year 2022 (July 1, 2021 - June 30, 2022)						
Projects	Cost	Cash	Loan	Grant	Life-Years	Annual Depr.
McMurtry Slip lining (I&I)	\$460,000		\$460,000		40	\$11,500
Miscellaneous	\$50,000	\$50,000			10	\$5,000
Total	\$510,000	\$50,000	\$460,000			\$16,500
Fiscal Year 2023 (July 1, 2022 - June 30, 2023)						
Projects	Cost	Cash	Loan	Grant	Life-Years	Annual Depr.
Slaters Creek Rd Slip lining (I&I)	\$747,500		\$747,500		40	\$18,688
Miscellaneous	\$50,000	\$50,000			10	\$5,000
Total	\$797,500	\$50,000	\$747,500			\$23,688
Fiscal Year 2024 (July 1, 2023 - June 30, 2024)						
Projects	Cost	Cash	Loan	Grant	Life-Years	Annual Depr.
Cartwright Circle North Gravity	\$874,000		\$874,000		40	\$21,850
Miscellaneous	\$50,000	\$50,000			10	\$5,000
Total	\$924,000	\$50,000	\$874,000			\$26,850

Figure 4

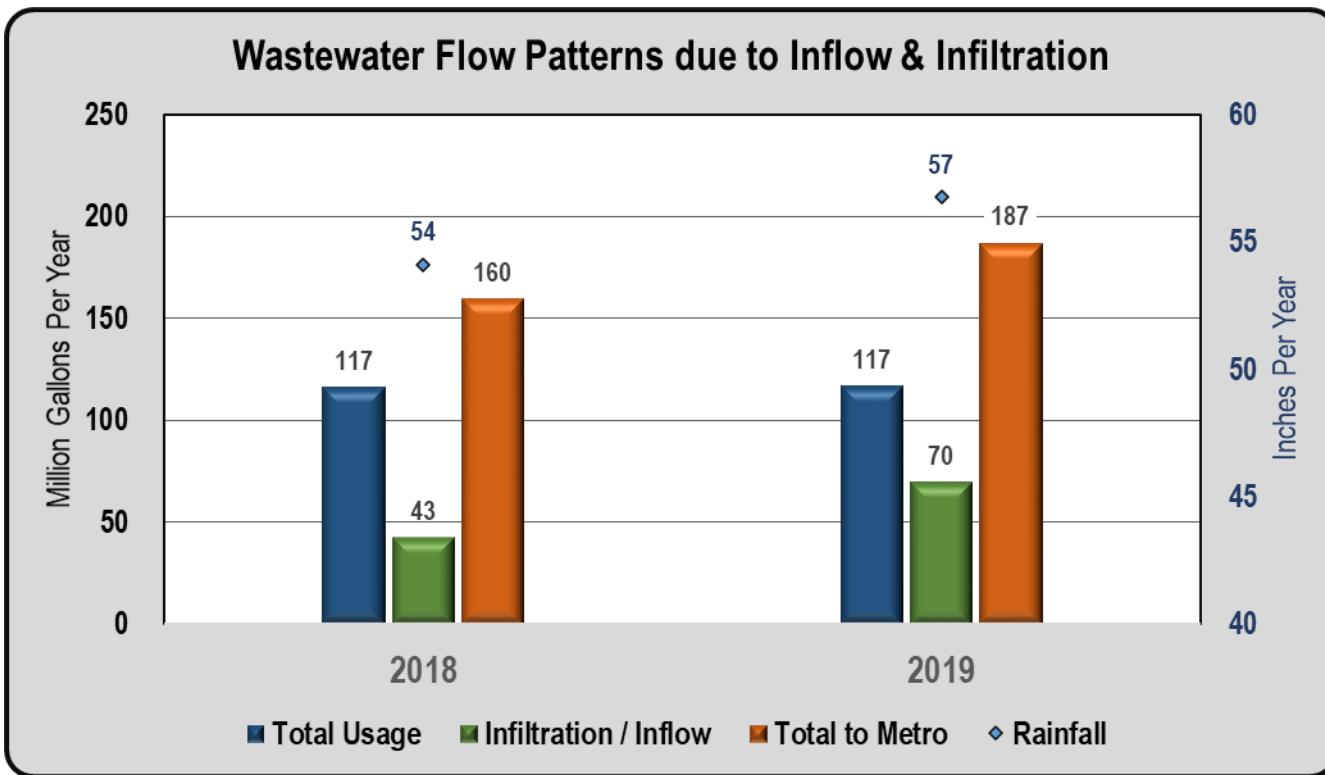


Figure 5

Depreciation

Overview

Depreciation is defined as a reduction in the value of an asset with the passage of time, due in particular to wear and tear. Although depreciation is listed as an expense, it is not paid out to anyone, but remains within the City's cash reserves. Funding depreciation is a process compelling the City to accumulate cash. Over time the accumulated depreciation equals the value of money initially spent on each capital asset. This process allows the City to have enough funds for financing new capital improvements or replacing depreciated assets. **Figure 4** (above) shows the amount of annual depreciation of each capital expenditure listed in the CIP.

Figure 6 is a simplified schedule of all depreciation showing the past five years and projections for the next five. Without any additions to wastewater system fixed assets, the current wastewater depreciation schedule (FY 2019) will remain constant from FY 2020-2022 and then drop to \$234,461 by FY 2024. However, new additions proposed in the CIP will add \$126,350 in new depreciation. **Figure 7** is a graphical representation of scheduled depreciation of existing assets and additional depreciation of new assets placed in service via the anticipated capital improvement projects.

Requirement

Tennessee state law requires that all utility systems depreciate capital assets. The Governmental Accounting Standards Board (GASB) requires depreciation is to be included in the "Statement of Revenues, Expenses, and Change in Net Position" section of the annual audit as an operating expense. Therefore, the utility must provide sufficient revenue to "fund" the depreciation expense.

Calculating the Costs

Although there are several methods of determining depreciation, the "straight line" method is used by the City. The calculation is simply dividing the cost of an asset by its useful life. Depreciation has been calculated on each class of depreciable property using the straight-line method. Estimated useful lives are as follows:

Buildings	40	Machinery & Equipment	2 - 20
Improvements	40	Sewer Trunk Lines	50

The depreciation schedule is a listing of each asset, its original cost, the year it went into service, and its useful life. From that, an annual depreciation amount is determined, the accumulated depreciated amount is calculated, and the book value is determined. When the accumulated depreciated amount equals the original cost, the book value goes to zero, and the annual amount of depreciation goes to zero. Unless new assets are added, the total annual depreciation will either stay the same, or it will eventually go away.

Other Considerations

All assets are to be depreciated regardless of the method of financing, including assets acquired with grants or purchased by developers. An asset begins to depreciate when it is placed into service, not when it is bought or under construction.

Depreciation - Wastewater									
	2016	2017	2018	2019	2020	2021	2022	2023	2024
Scheduled Depreciation	178,484	228,709	246,189	253,705	253,705	253,705	253,705	238,298	234,461
2020 Additional Depreciation					8,413	33,650	33,650	33,650	33,650
2021 Additional Depreciation						12,831	25,663	25,663	25,663
2022 Additional Depreciation							8,250	16,500	16,500
2023 Additional Depreciation								11,844	23,688
2024 Additional Depreciation									26,850
Additional Depreciation					8,413	46,481	67,563	87,656	126,350
Total Depreciation	178,484	228,709	246,189	253,705	262,117	300,186	321,267	325,954	360,811

Total Wastewater Depreciation									
Total Scheduled Depreciation	178,484	228,709	246,189	253,705	253,705	253,705	253,705	238,298	234,461
Total Additional Depreciation					8,413	46,481	67,563	87,656	126,350
Total Depreciation	178,484	228,709	246,189	253,705	262,117	300,186	321,267	325,954	360,811

Figure 6

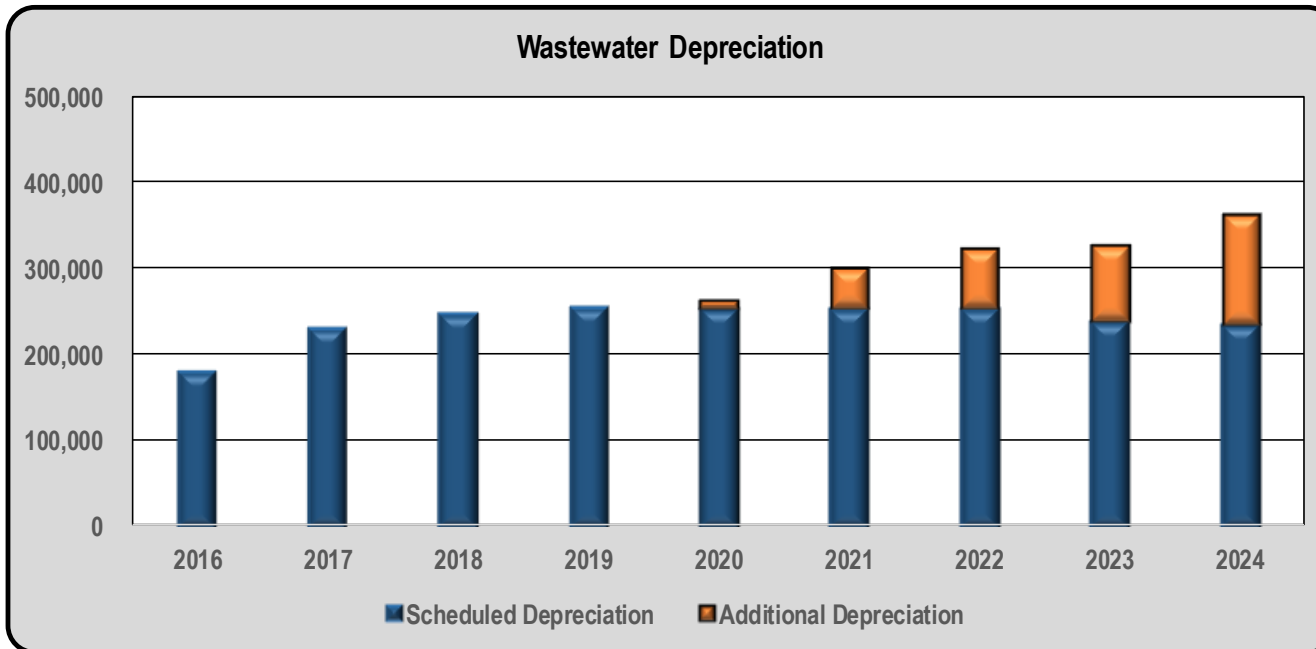


Figure 7
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Debt Service

Overview

The City currently has one State Revolving Fund Loan of \$466,200 (\$518,000 less a grant of \$51,800), which was initiated in 2017 to finance the current I&I Rehabilitation project. The City has made two draws on this loan -- \$135,949 in FY 2018 and \$19,224 in 2019. The City has made only interest payments for this loan. In FY 2021, the remaining loan balance is scheduled to be released such that this loan will begin repayment of principal plus interest, the scheduled debt service for which is \$23,976/year lasting until 2041.

It is anticipated that the City will use State Revolving Fund Loans for future CIP projects, each having an assumed 1.0% interest rate and a 20-year term. Future projects are assumed to be financed without debt forgiveness or grants.

Methodology

Debt service impacts both the Cash Flow and the Change in Net Position. Both principal and interest are included in the Cash Flow Analysis. Only the interest amount is included in the Change in Net Position Analysis.

Debt Service

The wastewater system debt service schedule is shown in **Figure 8**. Given the addition of four additional long-term loans over each of the next four years, debt service will increase from \$27,481 in FY 2021 to \$146,333 in FY 2024 and will remain constant for 20 years.

Other Considerations

The principal and interest debt schedules can be a resource when developing an annual budget.

Wastewater Debt Service			
2017 State Revolving Loan			
	Principal	Interest	Total
2020		432	432
2021	22,704	1,272	23,976
2022	22,764	1,212	23,976
2023	22,824	1,152	23,976
2024	22,896	1,080	23,976

Wastewater Debt Service			
2021 State Revolving Loan			
	Principal	Interest	Total
2020			
2021	2,873	632	3,505
2022	5,802	1,208	7,010
2023	5,861	1,150	7,010
2024	5,919	1,091	7,010

Wastewater Debt Service			
2022 State Revolving Loan			
	Principal	Interest	Total
2020			
2021			
2022	10,446	2,300	12,746
2023	21,100	4,391	25,491
2024	21,311	4,180	25,491

Wastewater Debt Service			
2023 State Revolving Loan			
	Principal	Interest	Total
2020			
2021			
2022			
2023	16,974	3,737	20,711
2024	34,287	7,136	41,423

Wastewater Debt Service			
2024 State Revolving Loan			
	Principal	Interest	Total
2020			
2021			
2022			
2023			
2024	39,693	8,740	48,433

Total			
All State Revolving Loans			
	Principal	Interest	Total
2020	0	432	432
2021	25,577	1,904	27,481
2022	39,012	4,720	43,732
2023	66,758	10,430	77,188
2024	124,106	22,227	146,333

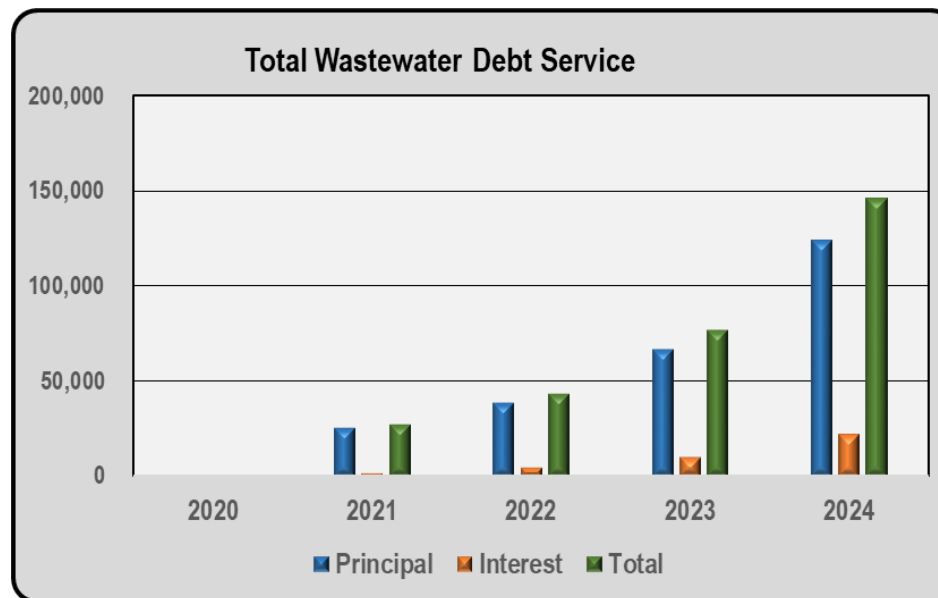


Figure 8

General Operating Expenses

Overview

General operating expenses are listed in the annual audit report on the "Statement of Revenues, Expenses, and Changes in Net Position" section. They include items such as Sewer Pretreatment and Odor Control, Treatment (costs from Metro), Transport (Through Goodlettsville and Hendersonville), and all other wastewater system costs borne by Millersville.

Methodology

In order to project wastewater operating expenses over the next five years, a work session was conducted with key people knowledgeable of the City's wastewater system. Each line of operating expense was reviewed, and decisions were made as to the expected percentage increase for each line item expense. Although total expenditures increased from 2016 to 2017 by 25%, for 2018 and 2019, they rose an average of 5.5%. For this analysis, management projects future expenses to continue increasing 5.0% per year, except in 2022, which will increase by 8.0% due to the need for additional manpower.

Other Considerations

For a small city like Millersville, operating expenses can vary widely from year to year. A significant repair item or the need to buy large quantities of materials & supplies can make a difference in general expenses. This would have a negative impact on the Cash Flow and the Change in Net Position.

Figure 9 shows a summary of the total expenses.

Wastewater Expenses									
	2016	2017	2018	2019	2020	2021	2022	2023	2024
Pretreatment & Odor Control	17,994	24,849	25,433	23,811	25,002	26,252	27,564	28,942	30,390
Metro Costs	267,624	261,488	290,023	332,679	349,313	366,779	385,118	404,373	424,592
<i>Percent Change</i>		-2%	11%	15%					
Goodlettsville & Hendersonville Costs	91,316	104,438	114,682	128,975	135,424	142,195	149,305	156,770	164,608
<i>Percent Change</i>		14%	10%	12%					
Millersville Collection	236,239	375,882	386,154	363,074	381,228	400,289	450,304	472,819	496,460
Total	613,173	766,657	816,292	848,539	890,966	935,514	1,012,290	1,062,904	1,116,050
<i>Total Percent Change</i>		25%	6%	4%	5%	5%	8%	5%	5%

Figure 9

Cash Flow Analysis

Overview

It is essential for the City to know the amount of cash it has on hand and if its cash reserves are growing or being depleted. Cash is necessary to pay for the utility's operational and maintenance needs, as well as debt service and capital expenditures, in order to preserve its infrastructure, retain its staff, deliver services to customers, and maintain a healthy cash reserve. Therefore, it is vital to predicting its anticipated expenditures and how much cash the City expects to receive from its customers and other sources. Such an examination is called a Cash Flow Analysis. If the projected Net Cash Flow becomes negative, under normal circumstances, then a rate increase is needed.

Methodology

The Cash Flow Analysis is configured like a cash budget showing the amount of cash at the beginning of the fiscal year, the amount of income (including customer charges and miscellaneous fees), and the amount of general expenses and interest paid on debt. The Cash Flow Analysis does not include the depreciation as an expense. Adding income and subtracting expenses provides the amount of cash available for capital expenses or adding to the cash reserves. Additional financing from contributions (tap and connection fees), loans, and grants are also included. The City operates on an accrual accounting basis, so an accrual adjustment line item is added to facilitate a cash amount at the end of the year. It is difficult to project what is the accrual adjustment (reconciliation of operating income) in future years, so it is not included in the projected years. The cash balance at the end of one year becomes the amount of cash available at the beginning of the next year.

Wastewater System

Figure 10 shows the Cash Flow Analysis with no new rate increases over the next five years. It is shown that the net income remains positive and that the cash balance will continue to increase to \$790,313 in FY 2024. **Figure 11** is a graphical representation of the Cash Flow Analysis showing total income, total expenses, and the amount of cash ending for each year.

It is prudent for the District to maintain a cash reserve that is enough to cover emergencies and paying for unexpected items needing to be replaced. The extent of cash reserves required should be evaluated each year to determine if additional action is necessary regarding setting rates and fees.

Other considerations

The Cash Flow Analysis is developed as a financial model to project the flow of cash from one year to the next. Therefore, if one parameter is changed in one year, all values will adjust in the following years to reflect the change. The line item "Net Income" is an indicator of whether there is sufficient income to pay for expenses.

Having a better understanding of cash flow and the accumulation or depletion of cash can help develop a multi-year capital improvement plan and financing of future projects.

Wastewater Cash Flow - with No Rate Increases									
	2016	2017	2018	2019	2020	2021	2022	2023	2024
Cash Beginning Jul 1	1,448,824	1,060,558	1,140,272	1,029,555	1,033,483	1,085,566	870,443	926,033	912,135
Revenue / Income									
Total Sewer Revenue	867,224	897,748	941,650	1,096,238	1,108,467	1,120,696	1,135,106	1,149,515	1,163,925
Total Other Income	41,444	77,724	76,070	79,173	48,000	33,000	33,000	33,000	33,000
Interest	4,019	3,118	3,204	3,201	3,213	3,375	2,706	2,879	2,836
Total Income	912,687	978,590	1,020,924	1,178,612	1,159,681	1,157,071	1,170,812	1,185,394	1,199,761
Expenses									
General Expenses	613,173	766,657	816,292	848,539	890,966	935,514	1,012,290	1,062,904	1,116,050
Debt	163,402			456	432	27,481	43,732	77,188	146,333
Transfers (Paid in lieu of taxes)		24,495	29,118	29,200	29,200	29,200	29,200	29,200	29,200
Total Expenses	776,575	791,152	845,410	878,195	920,598	992,195	1,085,222	1,169,293	1,291,583
Income Less Expenses	136,112	187,438	175,514	300,417	239,083	164,877	85,590	16,102	(91,822)
Capital Financing									
Tap & Connection Fees	16,775	25,925	21,350	\$16,775	20,000	20,000	20,000	20,000	20,000
Loans			135,949	19,224	311,027	126,500	460,000	747,500	874,000
Grants					51,800				
Total Capital Financing	16,775	25,925	157,299	35,999	382,827	146,500	480,000	767,500	894,000
Capital Expenses									
Capital Expenses	559,162	232,034	248,673	429,037	569,827	526,500	510,000	797,500	924,000
Wastewater Net Cash Flow									
Annual Gain - (Loss)	(406,275)	(18,671)	84,140	(92,621)	52,083	(215,123)	55,590	(13,898)	(121,822)
Accrual Adjustment	18,009	98,385	(194,857)	96,549					
Cash Ending Jun 30	1,060,558	1,140,272	1,029,555	1,033,483	1,085,566	870,443	926,033	912,135	790,313

Figure 10

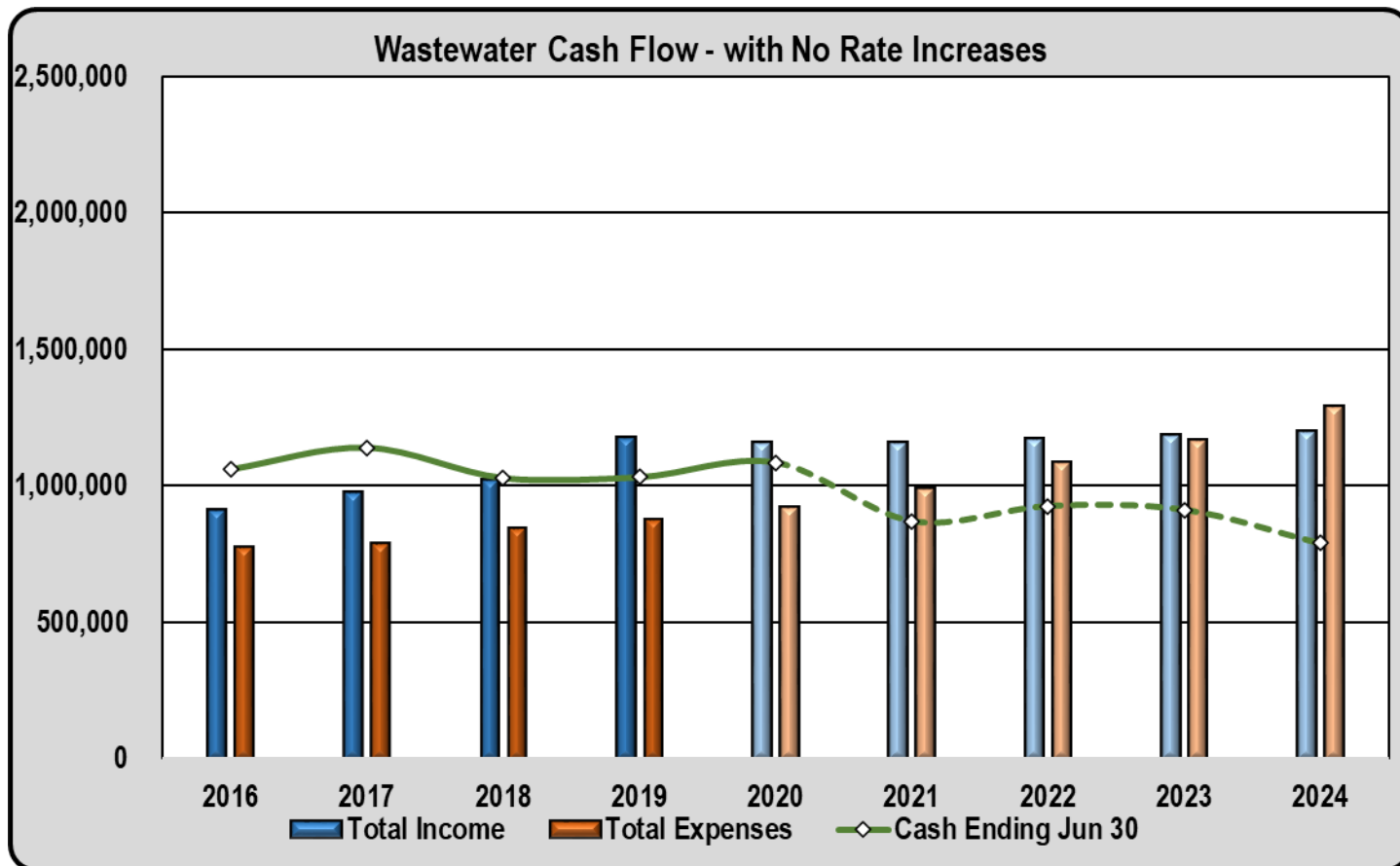


Figure 11

Change in Net Position Analysis with No Rate Increases

Overview

Net position is generally defined as assets minus liabilities. The City's wastewater assets include all cash (unrestricted and restricted), land, and the "net value" of everything owned, such as pipes in the ground, tanks, pumps, building, furniture, vehicles and other purchases made that are necessary to the operation of the utility. The net value is defined as the original cost of a capital asset less its accumulated depreciation. Each year there is a change in net position because of the amount of cash changes with increasing or decreasing revenues and expenses, and the amount of the net capital asset value changes because of new capital assets being purchased, all capital assets being depreciated, and possibly some capital assets being totally depreciated. This Change in Net Position is calculated in a section of the City's audit report called "Statement of Revenues, Expenses, and Changes in the Net Position." The Change in Net Position Analysis in this report contains the same data and information found in that section of the audit report.

Methodology

The Change in Net Position Analysis is different from the Cash Flow Analysis in that it includes depreciation as an operating expense. However, it does not include the amount of money paid for capital improvements or principal debt payments. Though the calculation of the Change in Net Position in the annual audit includes grants and capital contributions, the Tennessee Comptroller will subtract grants and capital contributions in its calculation of the Statutory Change in Net Position. For that reason, grants and capital contributions have not been included in this Change in Net Position Analysis. Finally, based on a 2018 amendment to the Tennessee State law, TCA § 68-221-1010 (shown at the end of this report), the Tennessee Comptroller's interpretation of that amendment requires the addition of any decrease (or the subtraction of any increase) in Net Pension and Other Post-Employment Benefit (P&OPEB) Assets and the opposite treatment for P&OPEB Liabilities. Thus, the increases in the City's P&OPEB Asset balances for FY 2018 and 2019 are each shown as subtractions in this Change in Net Position Analysis.

Requirement

According to TCA § 68-221-1010 (included at the end of this report), the City is subject to actions by the UMRB if the Statutory Change in Net Position is negative for two consecutive years. However, it is important to note that, because the amount of P&OPEB Assets/Liabilities needed to determine the year-to-year net change is unknown for the future years, this Analysis makes no assumptions as to the necessary adjustment for each of the years 2020-2024. Instead, one of the objectives of the rate recommendations within this report is to project enough revenue to avoid the possibility of having a negative the Statutory Change in Net Position amount for those years.

Figure 12 is the Change in Net Position Analysis. It shows the calculation of Statutory Change in Net Position based on the Tennessee law. Because the projected Change in Net Position (2018 Statute) is negative for FY 2021-2024, the City would be considered a distressed utility. Although the calculated totals shown here include no rate increases, the recommended rate increases are shown at the bottom.

Wastewater Change in Net Position - with No Rate Increases									
	2016	2017	2018	2019	2020	2021	2022	2023	2024
Revenue / Income									
Revenue	867,224	897,748	941,650	1,096,238	1,108,467	1,120,696	1,135,106	1,149,515	1,163,925
Other Income	41,444	77,724	76,070	79,173	48,000	33,000	33,000	33,000	33,000
Interest	4,019	3,118	3,204	3,201	3,213	3,375	2,706	2,879	2,836
Gain on Disposal of Assets	750	5,140	5,084						
Total Income	913,437	983,730	1,026,008	1,178,612	1,159,681	1,157,071	1,170,812	1,185,394	1,199,761
Expenses									
General Expenses	613,173	766,657	816,292	848,539	890,966	935,514	1,012,290	1,062,904	1,116,050
Depreciation	178,484	228,709	246,189	253,705	262,117	300,186	321,267	325,954	360,811
Transfer		24,495	29,118	29,200	29,200	29,200	29,200	29,200	29,200
Interest Expense	1,444			456	432	1,904	4,720	10,430	22,227
Total Expenses	793,101	1,019,861	1,091,599	1,131,900	1,182,715	1,266,804	1,367,477	1,428,488	1,528,287
Income Less Expenses	120,336	(36,131)	(65,591)	46,712	(23,035)	(109,733)	(196,665)	(243,094)	(328,526)
Statutory Change in Net Position									
Change in Net Position (2017 Statute)	120,336	(36,131)	(65,591)	46,712	(23,035)	(109,733)	(196,665)	(243,094)	(328,526)
Change in P&OPEB* Assets/Liability			(11,350)	(10,356)					
Change in Net Position (2018 Statute)			(76,941)	36,356	(23,035)	(109,733)	(196,665)	(243,094)	(328,526)
Recommended Rate Increases						15%	10%	5%	5%

* P&OPEB = Pension and Other Post Employment Benefits

Figure 12

Figure 13 shows a graphical representation of the Change in Net Position Analysis.

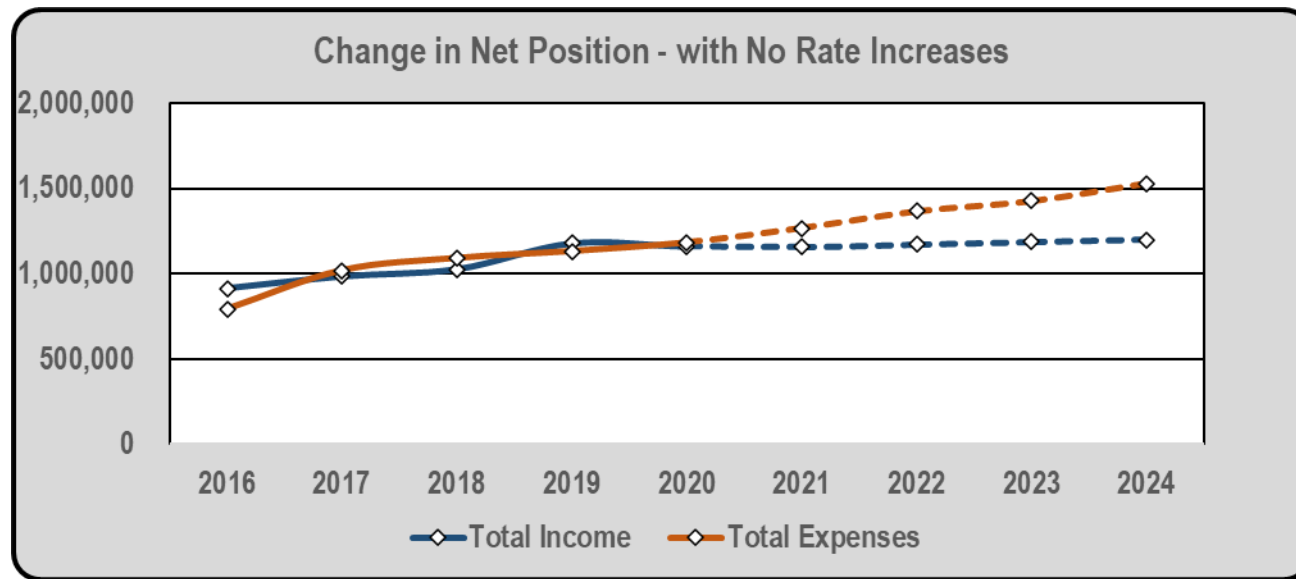


Figure 13

Other Considerations

The Change in Net Position Analysis is the analysis that generally controls the extent of rate increases needed.

Rate Increase Recommendation

Overview

The amount of rate increase needed is determined using the two analyses presented in this report: the Cash Flow Analysis and the Change in Net Position Analysis. Projections are made over five years. Ideally, rates should be set so that there will be both a cash excess and a sufficiently positive Statutory Change in Net Position in each consecutive year.

Rate Increase

When determining rate increase recommendations, given the inherent uncertainty of projections, and the need to cover the possible net increase in P&OPEB Assets/Liabilities, it is best to be conservative. Also, rather than implementing just one substantial rate increase, the City has the option to spread the needed revenue increase over several future years. In fact, the City's 2019 Ordinance requires a rate increase of 2% each year.

It is recommended to implement a 15% increase at the beginning of FY 2021 (or earlier), a 10% increase in FY 2022, and to increase rates by 5% in both FY 2023 and 2024. After that, the City should revert to its requirement for an annual 2% increase.

Cash Flow

Figure 14 is the Cash Flow Analysis showing the impact of the recommended rate increases. The proposed rate increases create an upward trend in cash reserves, projected to be \$2,044,106 by FY 2024. **Figure 15** is a graphical representation of the Cash Flow Analysis, with the recommended rate increases.

Change in Net Position

Figure 16 is the schedule and graphical representation of the Change in Net Position Analysis, showing the impacts of the recommended rate increases. The result is a positive Statutory Change in Net Position amounts in each year for the next four years. However, while the projected Change in Net Position (2018 Statute) is shown as positive for 2021-2024, the year-to-year net increase in P&OPEB Assets/Liabilities is unable to be projected for those years. Thus, for FY 2020, the projected Change in Net Position (2017 Statute) of -\$23,035 may turn out to be more or less than that amount. On the other hand, for FY 2022-2024, because the projected Change in Net Position (2017 Statute) amounts for FY 2021-2024 are at least \$58,371, it is less likely that the resulting actual Change in Net Position (2018 Statute) for those years will be negative.

Other Considerations

The recommendation for rate increases is based on projections and estimates of income, expenses, and capital expenses over the next five years. The City should review the impacts of making these increases annually, particularly on the Change in Net Position, as presented in each annual audit report and adjust rates further as necessary.

Wastewater Cash Flow - With Rate Increases									
	2016	2017	2018	2019	2020	2021	2022	2023	2024
Cash Beginning Jul 1	1,448,824	1,060,558	1,140,272	1,029,555	1,033,483	1,033,766	986,747	1,343,141	1,706,571
Revenue / Income									
Total Sewer Revenue	867,224	897,748	941,650	1,096,238	1,108,467	1,288,801	1,435,909	1,526,844	1,623,282
Rate Increase						15%	10%	5%	5%
Total Other Income	41,444	77,724	76,070	79,173	48,000	33,000	33,000	33,000	33,000
Interest	4,019	3,118	3,204	3,201	3,213	3,375	2,706	2,879	2,836
Total Income	912,687	978,590	1,020,924	1,178,612	1,159,681	1,325,176	1,471,615	1,562,723	1,659,118
Expenses									
General Expenses	613,173	766,657	816,292	848,539	890,966	935,514	1,012,290	1,062,904	1,116,050
Debt	163,402			456	432	27,481	43,732	77,188	146,333
Transfers (Paid in lieu of taxes)	0	24,495	29,118	29,200	29,200	29,200	29,200	29,200	29,200
Total Expenses	776,575	791,152	845,410	878,195	920,598	992,195	1,085,222	1,169,293	1,291,583
Income Less Expenses	136,112	187,438	175,514	300,417	239,083	332,981	386,394	393,430	367,535
Capital Financing									
Tap & Connection Fees	16,775	25,925	21,350	16,775	20,000	20,000	20,000	20,000	20,000
Loans			135,949	19,224	311,027	126,500	460,000	747,500	874,000
Grants					51,800				
Total Capital Financing	16,775	25,925	157,299	35,999	331,027	146,500	480,000	767,500	894,000
Capital Expenses									
Capital Expenses	559,162	232,034	248,673	429,037	569,827	526,500	510,000	797,500	924,000
Water and Wastewater Net Cash Flow									
Annual Gain - (Loss)	(406,275)	(18,671)	84,140	(92,621)	283	(47,019)	356,394	363,430	337,535
Accrual Adjustment	18,009	98,385	(194,857)	96,549					
Cash Ending Jun 30	1,060,558	1,140,272	1,029,555	1,033,483	1,033,766	986,747	1,343,141	1,706,571	2,044,106

Figure 14

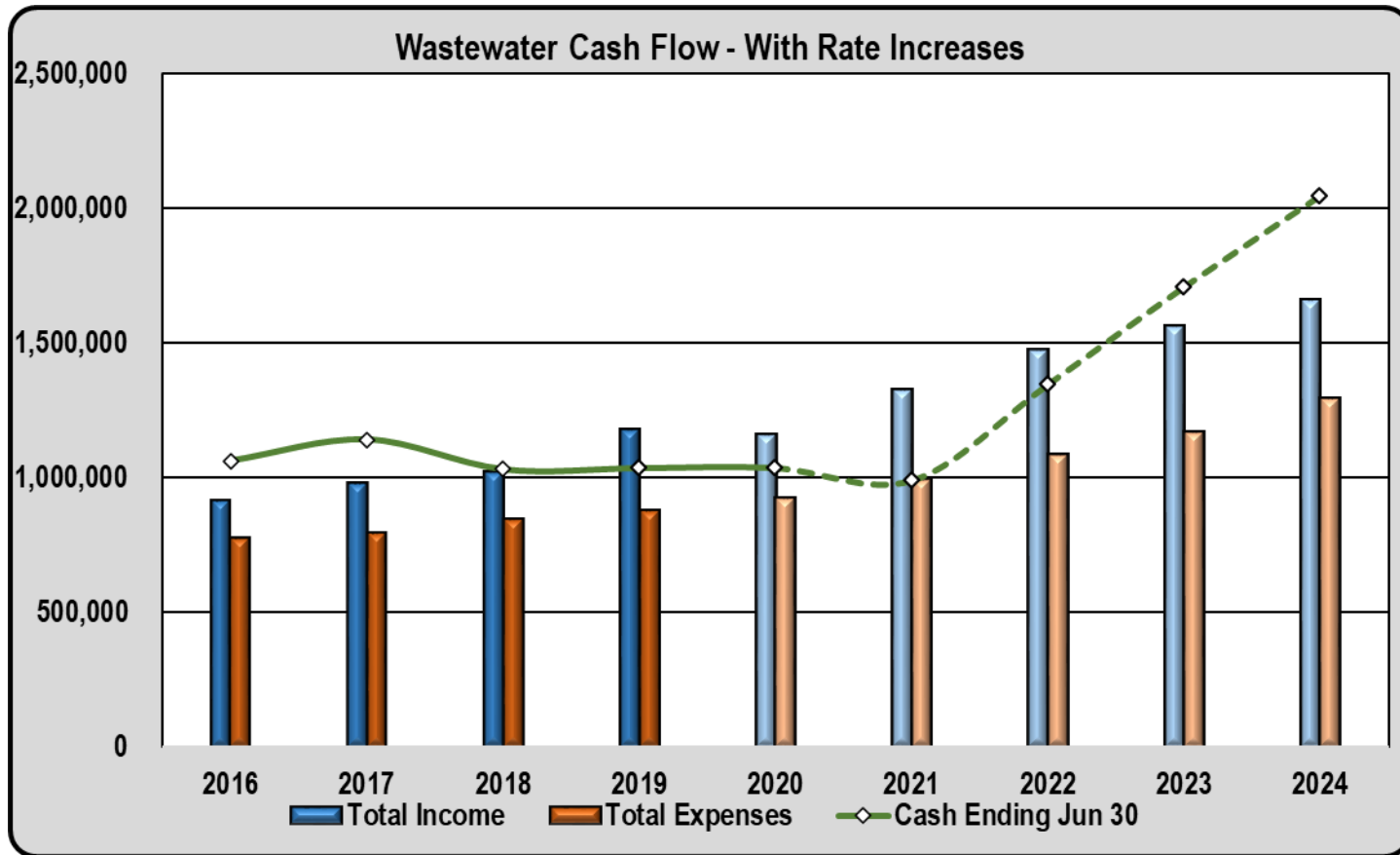


Figure 15

Wastewater Change in Net Position - With Rate Increases									
	2016	2017	2018	2019	2020	2021	2022	2023	2024
Revenue / Income									
Revenue	867,224	897,748	941,650	1,096,238	1,108,467	1,288,801	1,435,909	1,526,844	1,623,282
Other Income	41,444	77,724	76,070	79,173	48,000	33,000	33,000	33,000	33,000
Interest	4,019	3,118	3,204	3,201	3,213	3,375	2,706	2,879	2,836
Gain on Disposal of Assets	750	5,140	5,084						
Total Income	913,437	983,730	1,026,008	1,178,612	1,159,681	1,325,176	1,471,615	1,562,723	1,659,118
Expenses									
General Expenses	613,173	766,657	816,292	848,539	890,966	935,514	1,012,290	1,062,904	1,116,050
Depreciation	178,484	228,709	246,189	253,705	262,117	300,186	321,267	325,954	360,811
Transfer		24,495	29,118	29,200	29,200	29,200	29,200	29,200	29,200
Interest Expense	1,444			456	432	1,904	4,720	10,430	22,227
Total Expenses	793,101	1,019,861	1,091,599	1,131,900	1,182,715	1,266,804	1,367,477	1,428,488	1,528,287
Income Less Expenses	120,336	(36,131)	(65,591)	46,712	(23,035)	58,371	104,138	134,235	130,831
Change in Net Position									
Change in Net Position (2017 Statute)	120,336	(36,131)	(65,591)	46,712	(23,035)	58,371	104,138	134,235	130,831
Change in P&OPEB* Assets/Liability			(11,350)	(10,356)					
Change in Net Position (2018 Statute)			(76,941)	36,356	(23,035)	58,371	104,138	134,235	130,831

* P&OPEB = Pension and Other Post Employment Benefits

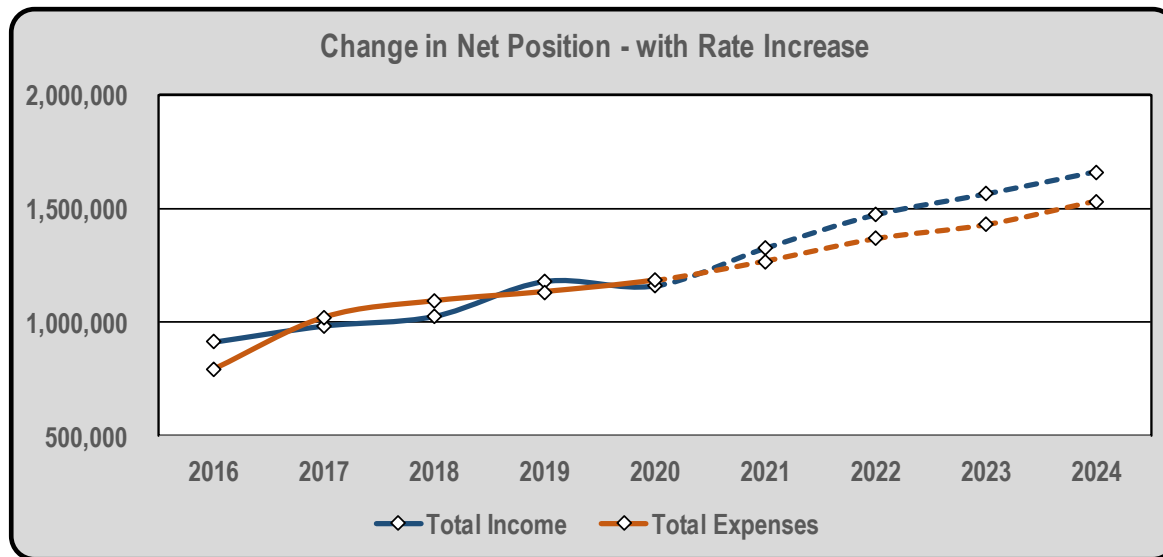


Figure 16

Impact of Recommended Rate Changes

Figure 17 shows the impact of the recommended rate increases on each customer class and the resulting monthly bill for varying usages.

Residential														
2020 Rates			2021 Rates				2022 Rates				2023 Rates			
Gallons	Minimum		Gallons	Minimum		Gallons	Minimum		Gallons	Minimum				
First	1,200	\$16.30	First	1,200	\$18.75	15%	First	1,200	\$20.62	10%	First	1,200	\$21.65	5%
		Per 1,000 gal.			Per 1,000 gal.			Per 1,000 gal.			Per 1,000 gal.			Per 1,000 gal.
Over	1,200	\$7.47	Over	1,200	\$8.59	15%	Over	1,200	\$9.45	10%	Over	1,200	\$9.92	5%
Water Sold (Gallons)	Monthly Charge		Monthly Charge	Difference	% Inc.	Monthly Charge	Difference	% Inc.	Monthly Charge	Difference	% Inc.			
1,000	\$16.30		\$18.75	\$2.45	15%	\$20.62	\$1.87	10%	\$21.65	\$1.03	5%			
3,000	\$29.75		\$34.21	\$4.46	15%	\$37.63	\$3.42	10%	\$39.51	\$1.88	5%			
5,000	\$44.69		\$51.39	\$6.70	15%	\$56.53	\$5.14	10%	\$59.35	\$2.83	5%			
7,000	\$59.63		\$68.57	\$8.94	15%	\$75.43	\$6.86	10%	\$79.20	\$3.77	5%			
10,000	\$82.04		\$94.34	\$12.31	15%	\$103.78	\$9.43	10%	\$108.96	\$5.19	5%			
Commercial														
2020 Rates			2021 Rates				2022 Rates				2023 Rates			
Gallons	Minimum		Gallons	Minimum		Gallons	Minimum		Gallons	Minimum				
First	1,000	\$16.81	First	1,000	\$19.33	15%	First	1,000	\$21.26	10%	First	1,000	\$22.33	5%
		Per 1,000 gal.			Per 1,000 gal.			Per 1,000 gal.			Per 1,000 gal.			Per 1,000 gal.
Over	1,000	\$7.98	Over	1,000	\$9.18	15%	Over	1,000	\$10.09	10%	Over	1,000	\$10.60	5%
Water Sold (Gallons)	Monthly Charge		Monthly Charge	Difference	% Inc.	Monthly Charge	Difference	% Inc.	Monthly Charge	Difference	% Inc.			
1,000	\$16.81		\$19.33	\$2.52	15%	\$21.26	\$1.93	10%	\$22.33	\$1.06	5%			
10,000	\$88.63		\$101.92	\$13.29	15%	\$112.12	\$10.19	10%	\$117.72	\$5.61	5%			
20,000	\$168.43		\$193.69	\$25.26	15%	\$213.06	\$19.37	10%	\$223.72	\$10.65	5%			
40,000	\$328.03		\$377.23	\$49.20	15%	\$414.96	\$37.72	10%	\$435.71	\$20.75	5%			
60,000	\$487.63		\$560.77	\$73.14	15%	\$616.85	\$56.08	10%	\$647.69	\$30.84	5%			
Motels, Hotels & Campgrounds														
2020 Rates			2021 Rates				2022 Rates				2023 Rates			
Gallons	Minimum		Gallons	Minimum		Gallons	Minimum		Gallons	Minimum				
All gallons	\$11.26		All gallons	\$12.95		15%	All gallons	\$14.24		10%	All gallons	\$14.96		5%
		Per 1,000 gal.			Per 1,000 gal.			Per 1,000 gal.			Per 1,000 gal.			Per 1,000 gal.
Water Sold (Gallons)	Monthly Charge		Monthly Charge	Difference	% Inc.	Monthly Charge	Difference	% Inc.	Monthly Charge	Difference	% Inc.			
10,000	\$112.60		\$129.49	\$16.89	15%	\$142.44	\$12.95	10%	\$149.56	\$7.12	5%			
30,000	\$337.80		\$388.47	\$50.67	15%	\$427.32	\$38.85	10%	\$448.68	\$21.37	5%			
60,000	\$675.60		\$776.94	\$101.34	15%	\$854.63	\$77.69	10%	\$897.37	\$42.73	5%			
90,000	\$1,013.40		\$1,165.41	\$152.01	15%	\$1,281.95	\$116.54	10%	\$1,346.05	\$64.10	5%			
120,000	\$1,351.20		\$1,553.88	\$202.68	15%	\$1,709.27	\$155.39	10%	\$1,794.73	\$85.46	5%			
Well Rate														
2020 Rates			2021 Rates				2022 Rates				2023 Rates			
Monthly Charge	\$32.68		Monthly Charge	\$37.58	15%	Monthly Charge	\$41.34	10%	Monthly Charge	\$43.41	5%			

Figure 17

Comparison with Other Utilities

Figure 18 shows a comparison with similar utilities of a monthly wastewater bill for 5,000 gallons.

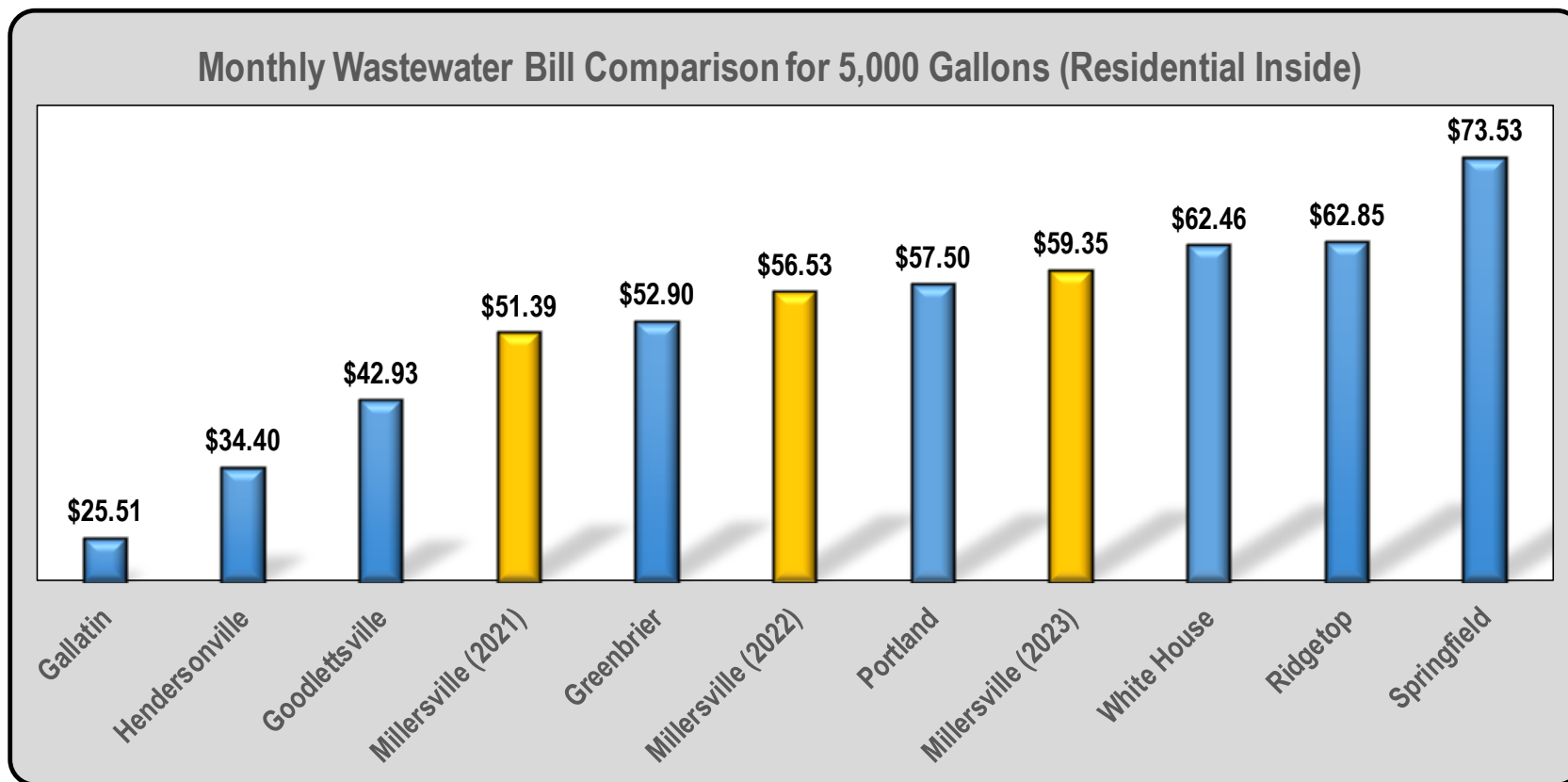


Figure 18

CITY OF MILLERSVILLE, TENNESSEE

Resolution 20-R-21 SEWER ADJUSTMENT POLICY Adopted April 21, 2020

GENERAL STATEMENT OF ADJUSTMENT POLICY

Sewer rates are based upon the cost of installation and maintenance of the system's infrastructure and the cost of treatment of the wastewater. The most efficient method of measuring sewer usage is to base it on the metered use of water. It is recognized that not all water used at a home will enter the sewer system. Therefore, the City will only make adjustments to sewer bills based upon a few extraordinary events, including major leaks and the filling of large swimming pools. A request for an adjustment should be made as soon as the water usage occurs or is discovered. Requests for an adjustment must be made within six months of the event.

WATER LEAKS

Up to two adjustments per calendar year will be given for major water leaks, provided that the leaking water does not flow into the sewer system. In general, a problem that does not result in the leaking water entering drains to the sewer system may qualify for an adjustment.

Proof of repair must be provided before a leak adjustment can be processed. Acceptable proof consists of receipt for work performed by a professional plumbing contractor, receipt(s) for plumbing parts when work is done by the owner/tenant, or a written statement attesting to the leak and subsequent repairs.

To qualify for a leak adjustment, the loss of water must be significant enough so as to result in a noticeable increase in expected water usage (i.e. well above the highest month's usage during a six-month period), followed by a return to normal when the leak is repaired. An approved leak adjustment covers up to two month's water usage. Under no circumstances will leak adjustments be approved for a yearly total of more than four months.

SWIMMING POOLS

An adjustment may be given for water used in filling a swimming pool one time during a calendar year. A Pool Fill Request must be submitted for an adjustment. A second adjustment will be permitted only if the customer provides written proof/receipt that a pool was replaced or completely drained for repairs after having been previously filled. No adjustments are given for wading pools or other pools holding less than 2,000 gallons.

OTHER WATER USAGE NOT QUALIFYING FOR AN ADJUSTMENT

No adjustments will be given for leaking faucets, running toilets, other leaks where the water is entering the drains, washing cars, pressure-washing, hot tubs, irrigation, or any other water usage not specifically mentioned as qualifying above.

CALCULATION OF ADJUSTMENTS

Adjustments are calculated by determining the average water usage of the occupants over a six-month period. For occupants without a six-month history, any adjustment may be delayed until an average can be determined. The average usage calculation is then subtracted from the usage of the month(s) qualifying for an adjustment. The balance is multiplied by the current sewer rate and deducted from the bill or credited to the account. If late fees have been applied prior to the adjustment, they will also be adjusted.

Tenn. Code Ann. § 68-221-1010

Current through the 2019 Regular Session

§ 68-221-1010. Facilities with earnings or operating deficit or operating in default.

(a)

(1) Within sixty (60) days from the time that an audit of a water system or wastewater facility is filed with the comptroller of the treasury, the comptroller of the treasury, shall file with the board the audited annual financial report of any water system or wastewater facility that has a deficit total net position in any one (1) year, has a negative change in net position for two (2) consecutive years or is currently in default on any of its debt instruments. For purposes of this section, "change in net position" means total revenues less all grants, capital contributions, and expenses, but without reduction for any excluded non-cash items. For purposes of this section, "excluded non-cash items" means any non-cash charges arising from changes to or the implementation of pension and other post-employment benefit standards promulgated by the governmental accounting standards board.

(2) Notwithstanding any other law to the contrary, a government joint venture that supplies or treats water or wastewater for wholesale use only to other governments shall not fall under the jurisdiction of the water and wastewater financing board for the purpose of reporting negative change in the net position annually, but must be referred to the board if the government joint venture is in a deficit or default position as provided herein.

(b)

(1) Within sixty (60) days from the receipt of the audited annual financial report filed by the comptroller of the treasury, the board shall schedule a hearing to determine whether the water system or wastewater facility described in the report is likely to continue in a deficit position. In reaching its determination, the board shall consider current user rates charged by the water system or wastewater facility, the size of the facility and the local government served by it, the quality of the facility's operation and management, and other relevant criteria.

(2) Upon a determination that the water system or wastewater facility is likely to remain in a deficit position, the board may order the management of the water system or wastewater facility to adopt and maintain user rate structures necessary to:

(A) Fund operation, maintenance, principal and interest obligations and adequate depreciation to recover the cost of the water system or wastewater facility over its useful life;

(B) Liquidate in an orderly fashion any deficit in total net position; and

(C) Cure a default on any indebtedness of the water system and wastewater facility.

(3) Any such order shall become final and not subject to review unless the parties named therein request by written petition a hearing before the board, as provided in §§ 68-221-1007 — 68-221-1013, no later than thirty (30) days after the date such order is served. Any hearing or rehearing provided by §§ 68-221-1007 — 68-221-1013 shall be brought pursuant to the

Uniform Administrative Procedures Act, compiled in title 4, chapter 5, part 3. Such hearing may be conducted by the board at a regular or special meeting by any member or panel of members as designated by the chair to act on its behalf, or the chair may designate an administrative judge who shall have the power and authority to conduct hearings in the name of the board to issue initial orders pursuant to the Uniform Administrative Procedures Act.

(c) In the event a water system and wastewater facility fails to adopt user rate structures pursuant to a final order of the board, the board may petition the chancery court in a jurisdiction in which the water system and wastewater facility is situated or in the chancery court of Davidson County to require the adoption of the user rate structures ordered by the board or to obtain other remedial action, which, in the discretion of the court, may be required to cause the water system and wastewater facility to be operated in a financially self-sufficient manner.

(d)

(1) Within sixty (60) days from the time that an audit of a water system is filed with the comptroller of the treasury, the comptroller of the treasury shall file with the board the audited annual financial report of any water system whose water loss as reported in the audit is excessive as established by rules promulgated by the board. Failure of the water system to include the schedule required in this section constitutes excessive water loss and the water system shall be referred to the water and wastewater financing board.

(2) In the event a water system fails to take the appropriate actions required by the board to reduce the water loss to an acceptable level pursuant to § 68-221-1009(a)(7), the board may petition the chancery court in a jurisdiction in which the water system is operating to require the water system to take such actions.

(3) By February 1 of each year, the comptroller of the treasury shall provide a written report to the speaker of the house of representatives and the speaker of the senate listing the average annual water loss contained in the annual audit for those utility systems described in § 68-221-1007.