

January 4, 2026

The Honorable Evertt Clyde Pratt, Chairman of the Board of Trustees
Jefferson County Public Sewer District
P O Box 632
Hillsboro, MO 63050

Subject: Rate Analysis Report, Crystal City/Festus Service Area

Dear Chairman Pratt:

Attached is the rate analysis report for the District's Crystal City/Festus sewer service area. These analyses are in follow-up to analyses done a few years ago in support of the District's (at that time) potential purchase of the Crystal City/Festus combined sewer collection and treatment systems. Before I address the report package, I have something important to tell all who read this.

My data collection contact with the District was Douglas Bjornstad, P.E., District Manager/Engineer. Mr. Bjornstad, as before, was wonderful to work with – always quick and accurate with data, and so helpful with guidance and feedback. And it was wonderful to have the Burns & McDonnell engineering report as a critical source of information and data about the system's needs. You have a great manager and a great team to help you find the best path forward for the Crystal City/Festus system.

With the Burns & McDonnell findings, the District now has a very good idea of system needs. Those improvements will be expensive, and execution will span many years. But the system will gain capacity to serve the citizens and businesses of the area very well for decades into the future. Many systems need to be brave and attack this problem as you are doing. I applaud the District for stepping up to the plate. Without excellent water and sewer services, communities will find it hard to be sustainable.

Of course, when you go from rates that are just paying for most operation and maintenance needs, to paying for all those needs plus big infrastructure improvements, rates need to go up. Your charge to me was to find those rates. The attached report details what I found, the level of income needed to fund all expected needs, and what I believe to be the best structure for those rates.

The report is long and contains lots of details and mathematics. However, both rate analysis models are from the same spreadsheet template. Once you get acquainted with the first rates model, you will find the second model to be very familiar.

There is a lot to digest. Do not feel like you must understand everything right away. When the Board is ready to consider the results and my recommendations, I can attend a Board meeting or special workshop to go over everything. You may want to have me present at more than one meeting; perhaps one for the Board, and perhaps others for folks in the two cities. But if the District is quite capable of handling this without me, and you want to do it, I am all for that.

Finally, I am sure you and Board members know of other districts and cities that also need rate setting help. As you run into these folks at rural water association meetings and other venues, I hope you will tell them about my services. I get much of my business by referrals from past clients and I hope to be able to trace several future clients back to my work with JeffCo.

Best regards,
GettingGreatRates.com



Carl E. Brown
President

Enclosure

Sewer Rate Analysis Report
Crystal City/Festus Service Area –
Jefferson County Public Sewer District
Hillsboro, Missouri

Prepared January 4, 2026

Carl Brown, President
GettingGreatRates.com, LLC

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Executive Summary

This report is a follow-up to similar reports in prior years. This one calculates rates for the newly-acquired Crystal City/Festus service area. Since acquiring that system, JeffCo has been operating and maintaining the system and assessing its improvement needs. This rate analysis determined the user charge rates needed to fund operation and maintenance of the system, plus funding needed for the expected improvements over the next ten years.

Disclosure

In previous years I analyzed water rates for Crystal City, and I analyzed water and sewer rates for several service areas for the Jefferson County Public Sewer District, later called, "JeffCo." In 2022, to support decision-making for the possible sale of the Crystal City/Festus jointly owned system to JeffCo, I analyzed the rates JeffCo would likely need to charge to this service area to be able to fund operation and maintenance of, but not improvements to the system.

Names Used in This Report

My firm, GettingGreatRates, LLC, doing business as GettingGreatRates.com, is a rate analysis consultancy. Later I will just refer to my firm as "I" and other appropriate pronouns.

When referring to the Jefferson County Public Sewer District, I will call it "JeffCo."

When referring to the Crystal City/Festus plant and service area, rates for that area and such, I will call it the "Crystal/Festus Service Area."

Assumptions and Issues to Keep in Mind

Sale Pricing and Payout

The parties agreed on a sale price of \$5,000,000 in total to be paid to Crystal City and Festus. Further, they agreed JeffCo would pay the cities a total of \$1,000,000 in 2024, and then \$400,000 each following year through 2034 to effectuate full payment. This is effectively a debt, and I include it as such in the Debt Repayment section of Table 5, page 46. This debt, of course, is a rates driver, but a relatively minor one. System refurbishment and improvement needs will be the large driver of higher rates by about 2027, as JeffCo begins making those improvements. I will discuss this next.

Capital Improvements

JeffCo hired Burns & McDonnell to assess system needs. The firm did initial assessments and gave JeffCo its findings and cost estimates in its engineering report. I received that report and asked the JeffCo District Manager/Engineer for his assessment of what needed to be done during the next 10 years, and timing of those improvements. Into my model I entered from the engineering report those items and included an inflation factor for things that would be done in later years. Table 5 shows what those improvements would be, their costs, timing and such. The Burns & McDonnell report was thorough. Burns & McDonnell is one of the largest and most respected engineering firms in the world, so I trust those assessments.

As you can see, 2026 will likely be the “cheap” system improvements year at about \$1.7 million. Expected annual debt payments for that amount would likely be close to \$107,000, also shown in Table 5. The annual debt payment for that one year’s improvements would amount to 4.6 percent of that year’s operating budget. In other words, that payment would “push” average rates higher by 4.6 percent all by itself. Future years’ improvement costs would vary but have that same kind of effect.

The JeffCo District Manager/Engineer anticipated some of those improvement needs in 2022, and I included them in the modeling that resulted in the recommended rates back then. So, some of the higher rates “push” has already been covered by the current rates. But I am sure the manager did not want to speculate about system improvement costs, since he was not positioned to thoroughly assess those needs. Thus, the current rates will not cover all improvement costs that are much better known now. And system improvement needs discovered by Burns & McDonnell are largely of the nature that benefits all customers equally, so those costs will affect minimum charges more than unit charges. Said simply, minimum charges need to rise more than unit charges to pay the system’s costs on a “cost-to-serve” basis.

Administration and Billing Costs, and Operating Staff Costs

One cannot own and operate a large utility like the Crystal/Festus Service Area by only operating it. One must administer and staff well to make the system a success. Early on JeffCo did not charge the Crystal/Festus Service Area for its proportionate share of administration and billing costs and the manager expects a slight bump in operating staff pay, as well. From feedback by the manager, I have added such costs to Table 4, page 44.

Reserves

One cannot prudently own a large utility without having substantial reserves to guarantee it can weather financial upsets. A part of the sale agreement was that the two cities would “cash out” or retain their reserves. Thus, JeffCo started ownership of the system with no reserves for the system. I calculated appropriate reserves for a system of this size. I then calculated rates that would pay the system’s full costs and end the tenth year, 2035, with the appropriate level of total reserves. That progression of reserves is shown on the last line of Table 17, page 64, and in Chart 8, page 75.

I almost always recommend utilities set rates that will build reserves to the appropriate levels by the tenth year. Thus, rates under JeffCo ownership need to be higher, initially, to build reserves. Once reserves have met their targets, it would take little to keep them at the targets.

I almost always recommend rates that will build reserves as follows. My recommendations for JeffCo are in italics:

1. Unobligated cash and cash equivalent reserves equal to at least 33 percent of the annual operating costs, not including debt service and general administration costs.
I recommend the same reserve level for this system.

2. A 20-year repair and replacement (R&R) schedule reserve, in the 20th year equal to at least two times more than the average year's cost of R&R. *JeffCo is a well-run district, so I entered JeffCo's annual R&R costs for this system into my model and calculated the annual annuity needed to reach that level of reserves by the 20th year. That is included in Table 6, page 48, and that cost carries over to Table 7, page 49, where the annual annuity (savings amount) is calculated.*
3. Capital improvement and debt reserves at the end of the tenth year, after debt has been paid, equal to that year's debt payments plus cash-paid capital improvement expenses. *I recommend no less than that for this utility. CIP reserves are shown at the bottom of Table 5, page 46.*

Clearly, to have a sustainable system, costs will be higher, and reserves need to be saved, so rates need to be higher to cover those costs.

That brings me to the heart of this report.

Introduction

I have analyzed rates as a consultant since 2005, completing 414 analyses since then. Before that, from 1991 to 2005, I did similar work, as well as grant and loan coordination work, for the Missouri Department of Natural Resources. My experience is deep. I calculated your rates with due diligence using the best methodologies and reasoning I can. I trust my expertise and the results I get. You should, too. You can adopt the rates recommended in this report and all should turn out well for you.

But it is reasonable for you to be curious about my methodologies and why and how I employ them. "Trust but verify" is a reasonable attitude for you to have because rate setting is one of your most critical and criticized tasks. You need to get it right. Just summarizing my methodologies requires a lot of discussion, therefore, I left most of that discussion out of the main part of the report. Appendix A, starting on page 18, includes more detail.

Appendix A summarizes my rate analysis methodologies, theories, and general issues.

If you have a basic working knowledge of rate setting, and if you consider the logic of what follows, you should be able to read on and learn what you need to know to set rates appropriately and confidently. If, however, you read something that you do not understand and you want to understand it, go to Appendix A. I likely covered the issue there. If I did not and if the issue is important to you, just call and I will talk you through it.

This report is the culmination of a process where I submitted requests to my JeffCo contact, District Manager/Engineer Douglas Bjornstad. I bet others behind the scenes assisted but I coordinated all communications through Mr. Bjornstad.

As I received information and data, I modeled the utility's finances and rates and submitted drafts for review to get feedback. Mr. Bjornstad reviewed those drafts to assure accuracy, and when needed, he corrected data.

I analyzed the effects of many different things happening and the effects of different rate structures. The results of those investigations and feedback enabled me to “weed out” some options and issues that do not need extensive coverage in this report. This winnowing process enabled me to keep this report shorter and clearer.

This report is in two parts. The first part is this narrative report that tells readers what should be done to rates and why and interprets much of the mathematical modeling.

The second part is a printout of the rate models. Those models are named and described like this:

- “Jefferson County Public Sewer District, Crystal City/Festus Service Area, Sewer Rates Model 2025-1.” Later this model will be called “Model 1.” **These are the recommended rates.** Model 1 assumes system improvement costs developed by Burns & McDonnell are fully covered.
- “Jefferson County Public Sewer District, Crystal City/Festus Service Area, Sewer Rates Model 2025-2.” Later this model will be called “Model 2.” Model 2 is the same as Model 1 except it assumes an additional \$250,000 “placekeeper” operating cost near the bottom of Table 4, page . This model shows the rates needed should operating costs be approximately ten percent higher than expected. That annual cost would fund a 20-year loan of approximately \$3.9 million.

The rate analysis modeling covered 12 years, as follows:

- The “test year” is the one-year period from which data was used as the starting place for the analysis. We almost always use the last completed fiscal year as the test year. That is what we did in your case, too.
- The modeling was started during and completed soon after the next year. In the model tables, this is called, “0 Year.”
- For the next ten years, the modeling used budget figures, capital improvement cost estimates, etc. when available. Those normally cover one or two future years. For the remainder of the ten projection years, we increased incomes, costs, etc. by expected inflationary factors.

The models and the rates that come from those models are in a “cost-to-serve” structure, except that after consultation with my contact, I reduced the base minimum charge by \$2.50 to ease the transition from the current rate structure to a new structure.

About the Rate Models, Generally

The models were built to match the systems’ financial statements and other data as much as possible. Because incomes and expenses in standard financial statements, and other data, are seldom grouped in such a way as to enable the required rate calculation methodology, the Models do not always match the look of your financial statements, but all the data is there.

For modeling purposes, it does not matter whether funds are held in the general system account, a debt service sinking fund, repair and replacement account, etc. Therefore, the models account for funds in a more simplified way than most utilities do. When it comes to segregating funds, staff knows best how to do that, so the models do little in this regard and I leave the segregating up to staff.

Several line graph charts in the models graphically depict some things which would be difficult to pick out of the tables. In all the charts, the **blue line** represents what would happen under the **modeled** rates and the **red line** under the **current** rates. Financial trends for the red lines are (generally) bad. Those for the blue lines are (generally) good. Review the definitions section of Model 1 to learn the meaning of terms used in the charts.

Chart 1 depicts the “operating ratio,” a measure of your ability to pay operating costs. The break-even line of 1.0 is where you have just enough income to pay operating costs. The current rates will not generate enough income to break even next year.

Chart 2 depicts the “coverage ratio,” a measure of your ability to pay debt. Generally you want the colored lines to be above the break-even line of 1.0. The Alternative Coverage Ratio (total reserve) is higher than the others because it includes all reserves, not just income available each year to pay debt, the standard criterion for the coverage ratio.

Charts 3 and 4 in the models depict user rates and the Affordability Index, respectively. When Chart 3 and 4 blue lines go up, meaning rates are going up, customers do not like that. But the utility will be better funded as a result and that benefits ratepayers because it makes their utility more resilient and able to make improvements that will serve them better. The lower the blue and green lines are, the more affordable the rates will be.

Chart 5 depicts the cash available to pay operating costs. You will notice this when viewing Chart 5. Only the black line (goal amounts) and red line (amount generated by the current rates) show up. The blue line, representing cash available to pay for operations, does not show up at all. That is because the recommended or modeled rates will be adequate to pay all operating costs and the blue line is covered up by the black goal line.

Chart 8 models the critical metric – total reserves. Consider others but focus on total reserves. Chart 8 spells the net revenue difference between the current rates and the modeled rates. The modeled rates will generate more revenue over time and, thus, produce stronger total reserves. Granted, reserves build up will slow down once the improvements begin to be built and debt payments for those improvements begin. But total reserves will be where I normally recommend for a system of your size and financial situation. The current rates, however, will draw down reserves and exhaust all reserves by about 2027.

Where do the current rates trend lines come from?

Comparison of the chart trend lines between the current rates (red) and the modeled rates (blue) are useful to planning and action.

My modeling template models incomes, expenses, capital improvement plans and much more, resulting in a set of system development fees and user charge rates that will pay all costs well into the future.

In the background the template also runs a second analysis that assumes the above things but assumes the current rate and fee structures will continue for the next ten years and apply to customers as the customer base grows.

Thus, the results of that “background” analysis can be compared to the “foreground” analysis. That enables an “apples to apples” comparison of what likely will happen under the current rates, if you kept them, versus what likely will happen under the modeled rates. Often, the best course of action is then very easy to see.

To close this subsection, as you set and later reset rates, I suggest you follow the guidance I give in my book, “How to Get Great Rates.” This book is one of the rate setting resources I mentioned earlier.

The remainder of this report directly addresses the analysis findings and my recommendations and alternative scenarios and their rates.

Model 1 Discussion

Meter Size-based Rates

The rates I calculated recover two cost components – system development (capacity) costs and operating costs. I calculated system development costs paid partly with up-front fees at the time of connection of a new customer – commonly called a “connection fee,” which I and others call a “system development fee” – and partly with on-going surcharges to the minimum charge. This simply means that a new customer will pay for some system development costs up-front, and all customers will pay for the rest of those costs over time in the form of surcharges. Remember, system development costs do not occur only once. Systems continually wear out or become obsolete. Their usefulness gets used up and must be replaced.

System development fees are important in your case because growth in the service area is a rather robust 0.8 percent. Growth will use up or obligate system capacity rapidly, but system development fees, even at the lower level assumed, will generate substantial income.

I modeled the system development fee for the smallest meter new connection to be equal to the current tap fee for a small meter connection. Said another way, I solved for the fee that would come from a small meter new connection. I then solved for the peak flow capacity cost versus base flow capacity cost mix to arrive at a system development fee for a two-inch meter equal to the current fee. Fees for all meters between those two sizes and larger than two inches were then calculated based on the number of shares of peak flow each represents in Table 11, page 58. That means the system development fee for a five-eighths inch water meter and a two-inch meter would not change under the modeled rates. All others would be higher in proportion to their ability to pass peak flow.

Where are these things covered in the Model?

- Table 11, page 58, lays out the American Water Works Association’s (AWWA) meter flow capacity findings, the basis for capacity shares in my calculations.
- Tables 12 through 16 calculate system development fees and surcharges, based on the AWWA findings.
- Revenue from system development fees is included in Table 3, page 43, as a revenue source.

As to pricing minimum charges based on meter size, a similar set of calculations was done to surcharge meters, based on their capacity to pass peak flows. Those calculations are done in Tables 15 and 16.

There is a lot of math to such calculations. If you want to research this further, please refer to Appendix A on page 18 for resources to do that.

Expected Incomes

Table 3, page 43, shows the various past incomes and future incomes to expect, as well as several other things related to revenues. Please note the gold highlighting in this table. The last item, called, "Revenue Loss..." I assume new rates would not become effective before April 1, 2026, so for 2026 rate revenues, I adjusted revenues downward to account for that.

Expected Operating Costs

Table 4 shows past and expected operating costs. Near the bottom of this table, JeffCo estimated and I added billing and administration costs. I expect most operating costs will inflate by 3.0 percent per year, though that is a bit suspect right now considering the current rate of inflation. The consumer price index (CPI), which most people are familiar with, had been increasing by about 1.5 to 2.0 percent per year since the 2008 recession. Starting in 2021, that rose to five to six percent and peaked at about nine percent. Water and sewer system operating costs tend to increase more rapidly than the CPI, so my 3.0 percent increase rate assumes the CPI will return to a more historical lower level, and it will do that soon. Regardless, I assume that over the long term, the utility will raise rates to match whatever inflation it experiences in its annual budgets.

In this table, also note gold highlighted items. These are one-time operating cost increases estimated by the JeffCo manager.

Rate Affordability

I calculate each rate analysis client's rate affordability, measured by the Affordability Index (AI). For most, it is a very useful tool to assess how "cheap" or "expensive" their rates will be. For that same reason, the AI is used by many grant and loan programs to determine if an applicant will be awarded a grant, how much grant, an interest subsidized loan or no funding assistance at all.

As determined by calculations using Census Bureau data, the weighted average median household income for the two cities was \$69,1334 in 2025. It was \$46,308 in 2000. That is a weighted average income growth rate of 1.97 percent during that time. That is a slow income growth rate. I suspect it is not representative, but it is the best I can find, so I used that growth rate to project income growth for the next ten years. If incomes rise at that rate, and if inflation rises at the assumed 3.0 percent, Table 17, page 64 shows what the AI of the modeled rates may be in future years. On an affordability basis, after going up due to the initial rate increase, rate affordability would rise slowly. However, again, I suspect those incomes and growth rate. Even if this data is correct, in ten years the AI is still projected to be far below the national average AI of approximately 1.0 percent.

The AI is based on 5,000 gallons of use per month. Please note, the average residential use in his service area averaged 3,238 gallons. Thus, the average residential sewer bill is a bit lower than that for a 5,000 gallon per month user.

The following should help you assess the impact of the current and modeled rates on customers.

In Table 17, page 64, near the top, I show the estimated AI. The AI also appears graphically in Chart 4, page 73.

In the table, the AI calculation for the test year was at 0.41 percent. That means, a 5,000 gallon per month residential customer earning at the average income rate paid 0.41 percent of their monthly household income to pay their monthly sewer bill. I do not usually see such a low AI until population served exceeds about 40,000.

Affordability Index: The monthly charge for (typically) 5,000 gallons of residential service divided by the median monthly household income for the area served by the system. An index of 1.0, meaning a household pays one percent of its income to pay its bill for 5,000 gallons of service, is generally considered affordable. The Affordability index is a primary factor in determining grant and loan eligibility and grant amount.

Under the modeled rates for the next year when rates were adjusted in the model, this customer's AI would go up to 0.58 percent. That is markedly lower than the commonly thought of national average of 1.0 percent, and well below the AI that grant and loan agencies target for awarding assistance with grants and sometimes interest subsidized loans.

The affordability index is useful, but it does not depict how new rates will affect customers using different volumes. Table 18, page 65, shows "before and after" bills for customers using different volumes of sewer service.

The one thing that should jump out at everyone is this. Under the new rates, the bill for almost all meter sizes would go up the most, on a percentage basis, for the minimum charge. That is the zero gallons of use line in each rate class in Table 18. For higher volumes of use, bills would go up less. That simply means the current minimum charges for most meters are too low to a greater degree than the unit charge is. Correcting that situation, to improve rate structure fairness, is why bills change differently for different volumes of use.

Now we have arrived at the modeled rates for JeffCo to adopt initially, if it chooses, and related issues.

How to Adopt the Recommended Rates

1. The initial set of system development fees, minimum charges, and unit charges, with no usage allowance, are shown in Table A.
2. Revenue calculations assumed you would have made initial rate adjustments early enough to begin charging at the new rates starting with the bills that will be payable on or about April 1, 2026. You would need to satisfy all Statutory requirements for making rate adjustments in advance of billing at the adjusted rates.

3. Make the first inflationary adjustment following the initial rate adjustment, assumed to be an across-the-board rate and fee increase of 3.0 percent, early enough to begin charging at those rates starting with bills payable on or about the one-year anniversary of the initial adjustments.
 - a) While the increase was modeled at 3.0 percent, the actual increase should be set to match the inflation rate expected in owning and operating the system for the following year.
4. Subsequent inflationary increases should occur once per year to become effective on the anniversary of the first inflationary rate adjustment date. Or if that is different than your customary rate adjustment date but not too many months off, you can switch to your customary date. Coordinating rate adjustments with the start of fiscal years is a good practice.
5. When making inflationary increases in future years, you should examine the costs and incomes the utility experienced during the then current year, plus the balances that have accrued. Compare those items to the same items in Tables 3, 4, 5 and 17, of the Model for the year in question:
 - a) If all criteria are performing close to the values in the Model, raise all rates by 3.0 percent, as shown near the top of Table 3, page 43.
 - b) If criteria are not performing as shown at the bottom of Table 17, page 64, but they are not egregiously different, follow the instructions in Chapter 9 of the book, "How to Get Great Rates" for how to make inflationary increases correctly, adjusting for variations in incomes, costs, inflation, etc. Download that book for free from <https://gettinggreatrates.com/Freebies>.
 - c) If any criterion is performing poorly by an amount that is troubling to you (balances too low, incomes too low, expenses too high), call me to discuss the situation. It is likely I will be able to "talk you through" how to make appropriate rate adjustments to correct the situation. If not, I can do a model revision for a small fee.
6. I normally recommend repeating Bullet Point Number 5 each following year until you have raised rates and fees by a certain percentage, usually 20 percent. However, in your case, costs, capital improvements, debt and other things are not well known and will only become known over several years after beginning those improvements. Therefore, I suggest you track performance for a few years and if warranted, get a new rate analysis done. When rate analysis time arrives, have me or another rate analyst of your choice perform a new rate analysis.

Table A: Recommended Sewer Rates

Water Meter Size in Inches	Meter Type	System Development Fee*	Monthly Minimum Charge, Including Peak Capacity	Usage Allowance in 1,000s	Unit Charge per 1,000 Gallons
0.625	Displacement	\$3,000	\$7.52	0.000	\$5.23
0.750	Displacement	\$3,000	\$7.52	0.000	\$5.23
1.000	Displacement	\$3,429	\$8.95	0.000	\$5.23
1.500	Displacement	\$4,143	\$11.33	0.000	\$5.23
2.000	Displacement	\$5,000	\$14.19	0.000	\$5.23
2.500	Displacement	\$6,285	\$18.48	0.000	\$5.23
3.000	Singlet	\$7,285	\$21.81	0.000	\$5.23
3.000	Compound, Class I	\$7,285	\$21.81	0.000	\$5.23
3.000	Turbine, Class I	\$7,714	\$23.24	0.000	\$5.23
4.000	Singlet	\$9,856	\$30.39	0.000	\$5.23
4.000	Compound, Class I	\$9,856	\$30.39	0.000	\$5.23
4.000	Turbine, Class I	\$11,570	\$36.11	0.000	\$5.23
6.000	Singlet	\$16,997	\$54.21	0.000	\$5.23
6.000	Compound, Class I	\$16,997	\$54.21	0.000	\$5.23
6.000	Turbine, Class I	\$21,282	\$68.50	0.000	\$5.23
8.000	Compound, Class I	\$25,567	\$82.80	0.000	\$5.23
8.000	Turbine, Class I	\$42,706	\$139.97	0.000	\$5.23
10.000	Turbine, Class II	\$62,702	\$206.68	0.000	\$5.23

* The system development fee only "buys" system capacity. If the utility charges for meters, pipe, installation, permit application, inspection of construction or anything else, continue assessing those charges, too.

Closing

If you adopt the recommended rates and fees, and if future costs, growth, system improvements, and other assumptions come to pass, you will build prudent reserves and fully fund the utility for years to come. Those rates will bill customers fairly for service based on the costs incurred to serve them. And with this level of funding, the system will be able to serve customers well and sustainably.

It is important that you examine incomes, costs, and accrual of balances each year to assure rates are bringing in adequate revenue to meet needs and build reserves on schedule. If they are not, increase rates across-the-board by a percentage that will bring the balances up to where I calculated they need to be each year.

Model 2 Discussion

In all respects but one, this model is the same as Model 1. The exception is inclusion of a \$250,000 per year “placekeeper” annual expense. If this expense was in the form of debt service, a \$250,000 per year payment would “buy” an approximately \$3.9 million loan. This model shows you how sensitive rates are to a moderate increase in costs. In a few years, if you find costs running higher than assumed in Model 1, you can use the rates from Model 1 and Model 2 to make proportional adjustments to rates to handle that situation.

Because the “placekeeper,” and the resulting rates are the only differences between the two models, I will only discuss in this section those things that are different. Refer to the Model 1 Discussion section for everything else. And I have left out of Model 2 all tables that are duplicates, or near duplicates of tables in Model 1.

Usefulness of Model 2 Rates, Even if You do Not Adopt Them

You may adopt the recommended rates from Model 1. But in the future, things like system improvements may go from just being assumed costs now, to being actual higher costs later. If the differences are not large, you may not need to adjust future rates any differently than what I recommended. But if costs are noticeably different, especially if they are consuming reserves, you can use the Model 1 and Model 2 rates to adjust future rates on your own and do it accurately.

These two sets of rates were designed to pay different sets of costs: one as currently expected, the other a bit higher. If future total costs paid in a year, or two, or three fall within the boundary of the costs in Water Model 1 and Water Model 2, you can adjust rates proportionally to fall between the two sets of rates. Think of these two sets of rates as establishing two cost points, one high and one low. Draw a straight line between the two and that is the trend line of costs the two sets of rates will pay. (It is more nuanced than that, but that trend line will be an accurate enough guide for do-it-yourself adjustments.) You just need to determine where on the trend line future rates should be set. Then do some math to get there.

Here is an example of the process that is easy to explain. You just need to do this math with the cost increase percentage you find – the place on the trend line where the utility falls:

- Speaking about costs in a future year, let us say the total annual cost the utility experiences falls halfway between those in Model 1 (low cost) and Model 2 (high cost). That is 50 percent of the way “up” from the low-cost model rates toward the high-cost model rates.
- Go to Table A above, and find the column called, “Monthly Minimum Charge, Including Peak Capacity.” Also find the same in Table B. Go to the first minimum charge in that column in each table. From the Table B amount, subtract the Table A amount. That is the total dollar difference between the two minimum charges.
- Multiply that amount (the difference) by 50 percent to get the dollar amount of the difference between the two.
- Add that amount back to the value in Table A. That is now the adjusted “starting” minimum charge appropriate for the new cost situation, had you known now what you will come to know in the future. Do the same for each minimum and unit charge.
 - If you do all these calculations by hand, it will be a bit cumbersome. Put Tables A, and B into a spreadsheet, side by side, and you can build just a few formulas to make all the adjustments consistently and accurately.
- Above, there is a twist when I say, “starting minimum...” The rates you just calculated may need a bit more adjustment to account for cost inflation during the years between real-time now (say, 2026), and the future year you found need for adjusting rates (say, 2028). To do that, using the two example years, multiply each minimum and unit charge you just calculated by 1 plus the budget inflation rate for 2027. Do that same math for 2028. You should do this math for each year separately because the budget inflation rate will almost certainly be different for each year and because inflation compounds. These are basic inflationary adjustments but if you want my help when the time comes, give me a call.

Expected Operating Costs

Table 4, page 79, shows past and expected operating costs. Near the bottom of the table you will find the “placekeeper” cost.

Rate Affordability

Table 17, page 87 shows what the AI of these rates may be in future years to cover the “placekeeper” cost. The AI of these rates would be 0.63 percent, if adopted. That is five basis points higher than the recommended rates AI, and it is still far below the level grant agencies normally target for giving grants.

How to Adopt the Model 2 Rates, if Desired

To adopt the Model 2 rates, do those things that are detailed starting on page 11, but adopt the rates in the following Table B instead.

Table B: The Model 2 Sewer Rates

Water Meter Size in Inches	Meter Type	System Development Fee*	Monthly Minimum Charge, Including Peak Capacity	Usage Allowance in 1,000s	Unit Charge per 1,000 Gallons
0.625	Displacement	\$3,000	\$8.19	0.000	\$5.62
0.750	Displacement	\$3,000	\$8.19	0.000	\$5.62
1.000	Displacement	\$3,429	\$9.62	0.000	\$5.62
1.500	Displacement	\$4,143	\$12.01	0.000	\$5.62
2.000	Displacement	\$5,000	\$14.86	0.000	\$5.62
2.500	Displacement	\$6,285	\$19.15	0.000	\$5.62
3.000	Singlet	\$7,285	\$22.49	0.000	\$5.62
3.000	Compound, Class I	\$7,285	\$22.49	0.000	\$5.62
3.000	Turbine, Class I	\$7,714	\$23.92	0.000	\$5.62
4.000	Singlet	\$9,856	\$31.06	0.000	\$5.62
4.000	Compound, Class I	\$9,856	\$31.06	0.000	\$5.62
4.000	Turbine, Class I	\$11,570	\$36.78	0.000	\$5.62
6.000	Singlet	\$16,997	\$54.89	0.000	\$5.62
6.000	Compound, Class I	\$16,997	\$54.89	0.000	\$5.62
6.000	Turbine, Class I	\$21,282	\$69.18	0.000	\$5.62
8.000	Compound, Class I	\$25,567	\$83.47	0.000	\$5.62
8.000	Turbine, Class I	\$42,706	\$140.65	0.000	\$5.62
10.000	Turbine, Class II	\$62,702	\$207.35	0.000	\$5.62

* The system development fee only "buys" system capacity. If the utility charges for meters, pipe, installation, permit application, inspection of construction or anything else, continue assessing those charges, too.

Closing

Whether you adopt this set of rates, or the recommended Model 1 set of rates, both models' rates may become useful for making proportional rate adjustments in the future.

Conclusion

“Conclusion” is a misnomer here. This report provides information upon which the City can make decisions. Thus, it begins the process by which you will initially adjust rates and fees and take other actions. I will continue to help you as you do that. You may want to contact me occasionally over the next few years just to make sure you are on track or to make additional adjustments.

As time passes you will need to adjust rates incrementally as recommended in this report and as described in more detail in my book and the Rate Setting Issues Guide. Eventually, you will start this cycle over.

As you take on the initial adjustments, keep the following in mind. Everyone impacted by the District’s rates should at least be made aware of the results of this report.

- My default recommendation is that you give any customer as much information as they want. If they want a copy of the full report, give them that.
- Give the media a copy of the full report so they can quote the report directly and accurately rather than be forced to “figure things out.” Much of this is complex. Few people know how to or have the time to calculate utility rates. Make it easy for everyone to get the facts right.
- For most customers, what would happen to their bills is as much as they will care to know about this analysis. To satisfy that information need, the District can publicize the current and recommended rates and the bill comparisons.
- A few customers will want to know more, especially high-volume customers. Give them the full report, if that is what they want.
- A good way to accomplish these things is to post the report on the District’s Web site so everyone can see for themselves what the report says. That way, each person could read it online, search it, or print it out as they choose. Publicize the Web posting widely and publicly. Information is a good thing. *Being seen as* trying hard to get information out to folks is also a good thing.

You have not engaged me to pay visits to the Councils and Board to discuss my findings and recommendations and answer questions from them and the public. If you feel good about handling that without me, excellent. However, if you would like for me to participate, perhaps in person or perhaps online, I will be glad to do that. When dealing with difficult subjects like rates, face to face conversations certainly do make it easier. But online meetings are easier to fit into busy schedules. As the picture becomes clearer, just let me know if, when and where to meet with everyone concerned. Or just let me know you have it covered.

Appendix A: Rate Analysis Methodology and Related Issues

Policies

Handling disconnections, reconnections, penalty assessment and collection, deposits, and dealing with such customers on the phone and otherwise can take lots of staff time. It often takes lots of governing body time to hear and respond to customers who dispute how they have been dealt with by the utility. For these reasons, you should have a clear set of policies about how you will handle such situations.

A reminder: I am not an attorney, and I am not offering legal advice here. But I have found the following to be useful to some rate analysis clients.

Now, to some policy issues:

1. You should charge for the various services staff perform for customers and others. These include various services you provide in the field, such as after-hours service, meter disconnects and reconnects, special meter readings, etc. Just driving to a customer's site takes a minimum amount of time. That is time the staff person cannot perform other duties. To assess appropriate fees:
 - a. You should periodically determine how long it takes to drive to and back from the average site and to perform each service.
 - b. Determine how much it costs the utility per hour, on average, to have staff perform these services. Include staff wages, benefits, taxes, use of utility vehicles, tools, and minor equipment, etc.
 - c. Include a fair amount to cover the time that office staff devotes to working on these services to track them, bill for them, etc.

In almost all cases, these estimated costs should be recovered with fees for the various services. In addition, set a minimum that you will charge for showing up. In that minimum fee, grant a certain amount of time spent on-site, such as 10 minutes for a special meter reading or 30 minutes for a meter change-out.

In essence, set your fees in the same way plumbers and similar technicians do – a set fee for showing up, which buys the customer a set amount of time, and an hourly rate if the job takes longer than the show up charge will cover.

While accounting for time and other investments in the various services staff perform is important, do not make the costing process burdensome. For many services you likely can just estimate staff time occasionally and charge fees based upon those estimates.

2. Retain required funds in interest bearing debt service and debt reserve accounts when required by your lender(s).

3. Have me or another rate analyst of your choosing conduct a full rate analysis again when the *actual* financial performance and my *projection of future* performance diverge significantly. Conditions should dictate rate analysis timing. Most utilities benefit from rate analysis on about a five-year cycle or when total costs have risen by 20 percent. But if you plan to do significant capital improvements that were not included in the modeling, or when actual improvement costs or funding plans have changed significantly compared to those that were modeled, those factors call for a new rate analysis.
4. Fully adopt management strategies that are commonly called, “advanced asset management.” These strategies can yield better service and reduced costs for a utility, especially those looking to build new facilities or replace existing facilities soon. At a basic level, you can use my free spreadsheet tools called, “CIP Planner©” and “ReplacementScheduler©” to do capital improvement and equipment repair and replacement scheduling, costing, and annuity calculations. These functions are at the core of asset management and may be all, or nearly all the “asset management” a small, simple system needs to do. Download these tools and others from <https://gettinggreatrates.com/Freebies>.
5. As a reminder, check with your attorney for language and legality of all issues discussed in this report.

“Snowbirds,” Disconnections for Non-payment and Reconnections

You may have customers that are only part-year residents, generally called “snowbirds.” Businesses can be “snowbirds,” too.

If there are enough snowbirds, or enough demand for a snowbird fee, adopt this structure. Otherwise, avoid it because it is complicated and sometimes contentious.

If a customer only spends three months using your utility service, “discontinues” your service and leaves, during which time you do not bill them, they avoid paying debt service and other unavoidable fixed costs that accrue to the system. Those expenses are incurred all year long for their benefit. But if you do not bill them, they “skate.” An example may illustrate this.

When someone borrows money from a bank to buy a car, the banker requires loan repayment every month. It does not matter if the borrower drives the car one month, or ever. Every month, debt payment is due. Debt service is an “opportunity” cost for the borrower. It is not related to use.

The same is true for a utility. It has unavoidable fixed costs related to the fact that a customer is a customer, whether they use volume or not. Such costs, when significant, should be recovered from every customer. It does not matter if they are in their home or operating their business during a given month, or not.

Likewise, some utility customers will be disconnected – the meter shut off – for non-payment. The financial effect on the system is about the same as with snowbirds. Both situations can be handled with the same set of policies and fees, outlined in the following.

1. Establish discontinuance fees and disconnection fees that fully recover the costs of interrupting service to a customer’s property, including payment for usage up to the date of discontinuance. Make sure you capture all costs associated with this action, importantly including meter shut-off if that occurs, and administrative costs.
2. Establish reconnection fees that fully recover the costs of restoring service to a property.
 - a) For those reconnections where someone sells their property, or when rental property changes tenants, likely this charge should be the same amount as the discontinuance or disconnection charge.
 - b) For those reconnections made for the same customer that discontinued voluntarily (the property did not change ownership, usually snowbirds, or a renter is a snowbird), the reconnection fees should include Item a) above, plus payment of that customer’s share of unavoidable fixed costs that accrued during the time of their discontinuance.
 - c) For those reconnections made because of involuntary disconnection for cause (non-payment), the reconnection fees should include all charges accrued plus an incentive (often called a “penalty”) to encourage such a customer to pay future utility bills on time, plus a deposit or increased deposit amount to better protect the utility from possible future non-payment. (In reality, dealing with non-payment is costly for the utility. Thus, I do not think of this as a penalty. To me it is payment for additional services selected by non-paying customers – lending, collection reminders, perhaps legal opinions written up by the utility’s attorney, liens placed on property to collect fees by other means.) I recommend a late payment fee of ten percent of the outstanding bill amount or ten dollars per billing period during which there is an unpaid balance, whichever is greater. This will catch both large and small volume users with a penalty that is meaningful to them. If not, it will at least reimburse the utility for the cost of extra services rendered.

Definitions for this subsection:

- “Discontinue service” or “disconnection” means to temporarily cease flow, as in when a customer is gone from their home to live elsewhere. Disconnection may include meter shut-off.
- “Disconnection fee” is payment to the utility of the costs to turn off the customer’s meter, if that is done, and administrative staff time costs to change the customer’s records to a stand-by or similar status to cease billing, for example.
- “Reconnection fee” is payment to reverse disconnection. It may include meter turn-on or a penalty.

3. You may want to give part-year customers (snowbirds) options for how they will be billed when they are not in town.
 - a) The most streamlined option is to not discontinue service at all, in which case they would have no usage to pay for while gone and they would get a bill for the full minimum charge for each billing period as bills come due. If such a customer is not gone for long, this is also the cheaper option because they avoid discontinuance and reconnection fees.
 - b) Another option could be to allow a customer to disconnect, pay the disconnection fee, pay the reconnection fee when they return, and pay their share of unavoidable fixed costs (“marginal costs”) that accrued during their disconnection. Collect all amounts before restoring service.

The effect of such policies is to make part-year residents and those disconnected for cause pay their fair share of the continuing costs of the system. In other words, this is a cost-of-service rate structure. By assessing these costs to part-year customers, full-year customers will not have to pay higher user rates to subsidize snowbirds and others who discontinue use temporarily.

Billing Program Data Accessibility

Many billing programs do an excellent job of supporting billing, but not other uses of your data. A good billing program should support export of data in a user-friendly format. For you to examine payment history and problems, usage trends, new connection trends, the effects of usage allowances and other rate structures on revenue generation, and many other issues, you must have a billing program that is user-friendly and robust. We rate analysts need critical data from the billing program, too.

If your current billing program is not as usable as you would like, I recommend you acquire a program that is. A good first contact to research billing programs is to contact the rural water association.

Cost-based Rate Calculations

To give you a synopsis of rate analysis, as I do it, and to make it easier for you to read and understand my findings and recommendations, a tutorial on my methodology is in order. Most situations are simple enough that I do not need to use all these methods, but it will serve you well to know the breadth of my methodology.

If you are going to err either on the side of complex rates that precisely assess costs to each customer or simpler rates that round off some of the accuracy corners but are easier to administer, choose simple rates.

When I analyze rates for a government-owned water-based utility, and other utilities that have the authority to assess cost-of-service rates, I use the cost-needs approach. This approach is described in the American Water Works Association's "M1 Manual, Principles of Water Rates, Fees and Charges," Seventh Edition. This manual, in use since the 1960s and periodically updated, is the recognized authority for water rate setting best practices.

While the manual focuses on water rate setting and uses terms, units of measure and other things specific to water, the principles and approaches work just as well for electric, sewer, stormwater, trash collection and other utilities and services that get paid for with rates and fees. One just needs to use the appropriate units of measure and a few conventions common to the other types of utilities and services when applying these principles to them.

The cost-needs approach is a static (one year) rate calculation. One could do a new rate study every year to arrive at the rates to assess each year. But that is a lot of work or expense with very little practical benefit to be gained.

A typical rate study considers the rates needed to fund one year, usually the coming fiscal year. Utilities need to plan farther into the future than that, so I calculate rates for ten years into the future. Therefore, what I do is called "rate analysis."

Most utilities are well-served getting a rate analysis only when rate restructuring may be in order or when rates will need to go up markedly. During the years in between rate analyses, it is then simple and convenient to just raise all significant rates and fees by an across-the-board percentage. Such increases may be used to keep up with inflation. Or they may be used to achieve other goals. The analysis assumes you will do inflationary increases.

To guide utilities to do future increases well, I expand the cost-needs approach by projecting costs, revenues, rates, and other criteria ten years into the future. That gives each utility a "road map" of what they can expect in the future, so they can reset rates appropriately.

Because I intend for utilities to reset rates on their own for some years into the future, and I want those rates to be "fair enough" to serve them well, I calculate the initially restructured rates so that they take future across-the-board increases into account. This is how it works.

Based on my calculations, the initially adjusted rates will be closer to a "cost-to-serve" structure than the current rates. And as you assess across-the-board increases from the analysis, rates will move even closer to the modeled rate structure until the year used for cost classification has arrived. After that, additional across-the-board increases will move the rate structure further away from the modeled structure. Eventually, a new rate analysis should be done to bring the structure back to what you desire.

Important Terms

The cost-needs approach results in rates that are called, "cost-to-serve" or "cost-of-service" rates. Simply stated, the costs for a targeted budgeting period, usually a year during the next five years, are classified as "fixed," "variable," "capacity-to-serve," or some combination of the three.

- Fixed costs are converted to a base minimum charge.
- Variable costs are converted to a unit charge.
- Capacity costs are converted to some combination of system development fees and surcharges to the base minimum charge.

To arrive at cost-to-serve rates in a future year, I must choose an appropriate year for cost classification.

- The best year may be the first year after a big capital improvement is finished and the debt service for that improvement will have already started.
- Or, if costs inflate as predicted, the best year may simply be five years in the future, the year in which most utilities should consider having a new rate analysis done anyway.

There are some basic steps to arrive at cost-to-serve rates. Calling these “steps” implies that I do one and then move on to the next. It is not that straightforward. In practice, I complete steps when opportunity allows.

That said, here are the basic steps:

1. **Cost Classification:** I place operating costs into categories – fixed, variable, and sometimes others. I classify a future year’s costs, usually within five years of the present. And I use a year that appears representative of what the utility can expect in the future.

For all utility types, I classify costs in Table 8 of the Model which follows this narrative report. The core notion of cost-to-serve rates is this: The basic minimum charge assessed to all customers should recover the sum of all fixed costs; and the average unit charge should recover the sum of all variable costs. It is more complicated than that but understand that notion and you will understand cost-to-serve rates fairly well.

Near the bottom of Table 8 you will see the “Average Fixed Cost/User/Month” and the “Average Variable Cost to Produce/1,000 gallons (or other units).” These are the basic minimum charge and the average unit charge based on the costs expected in that future year. I use the same model template for calculating rates for the various utility types. The main difference for those analyses is the measurement method for unit charges.

Rate Analysis, in a Nutshell

At its simplest, rate analysis helps a utility arrive at rates and fees that are adequate – they will pay all the utility’s costs. The next level of complexity is to arrive at rates that, on an average cost basis, will enable the utility to recover fixed and variable costs “fairly.” Most small water and sewer utilities need analysis only to this level of complexity – doing more than that results in rates that are impractical for small systems.

Another level of complexity includes calculation of meter size-based minimum surcharges and system development (connection) fees. Another includes calculation of rates on a “marginal” cost basis, for special groups of customers. Yet another level is marginal cost basis calculation of rates for individual customers, such as a wholesale customer. These facets of analysis result in accurate but complex rate structures; appropriate for the larger utility with diverse customers.

Analysis can and should provide a sound basis for advising the utility to “go or don’t go” concerning various actions it might take. Some of these actions are purely financial. Some, like the decision to enter into, or not enter into, a wholesale supply agreement, for example, include “hassle factor” and other non-financial issues. And because such agreements are made for nearly forever, a mistake made in the beginning can hamstring a utility for years or decades to come. Regardless of system size, thorough analysis should always be done before entering into such agreements.

An aside, but an important one in my mind, is this. The M1 Manual describes how to calculate cost-to-serve rates down to the customer class level. If a rate analyst classifies costs to that level and the utility sets rates that achieve that result, it is proper to say the utility has cost-to-serve rates. But they are only cost-to-serve at the customer class level.

I take cost classification one step further, to the customer level. Thus, rates that I calculate are cost-to-serve to the customer level. My reasoning for doing this is, rate fairness is felt at the customer level, not at the customer class level. Customers pay utility bills. Classes do not.

2. Capacity costs: In the ideal, capacity costs should be assessed on a cost-to-be-able-to-serve basis, but these costs are a long-term proposition. No one knows at present what the cost of capacity is because those costs unfold over decades. Thus, the dollar cost of capacity can only be estimated, but that is not a problem. The key is, whatever one estimates capacity will cost, or whatever portion of capacity a utility desires to recover with capacity charges, that cost should be distributed to new connections and current customers on a fair basis. The following goes to that goal.
 - The American Water Works Association has done excellent research on the sustainable peak flow capacity of different water meter sizes and types, so I generally use the flow capacity of each meter size and type as the basis for divvying water and sewer peak flow capacity costs. That math is lengthy, so it is spread across Tables 11 through 16 of the Model.
 - The notion of capacity applies to all utility services, so when I calculate water and sewer rates where use is metered, I use meter flow capacity as the capacity share criterion.
 - When I calculate electric rates, I use what is commonly called the “demand” exerted on the wholesale power supplier. If the utility produces its own power, I use the demand measured by the utility’s metering system.
 - When I calculate sanitation (trash collection) rates, I use the cubic foot capacity of the various bin and dumpster sizes times the number of pickups per month of each as the capacity criterion. Thus, for trash collection services except for the rare ones that actually weigh trash as it is collected, the capacity of bins times the pickup frequency becomes a component of the unit charge for each customer.
 - Stormwater capacity is analogous to trash collection capacity in that impervious surface area is the usual capacity, and unit charge criterion for stormwater fees. Square footage or similar measures of impervious surface area appears in the rates as the unit charge analogue.

3. Future cost projections: I project costs ten years into the future. To do that I apply an inflation factor to each cost. But it is also common that some costs, like the cost of debt service needed to build a new treatment plant in two years, will change future costs markedly. Such cost changes are estimated, then entered into the Model in the year in which they are expected to occur. Certain expenses, like postage, treatment chemicals and electricity for production, treatment, and distribution, rise with inflation plus growth in the customer base or use. Those costs are increased in future years by inflation and growth.
4. Reserves: Reserve goals are set through the tenth year. Those goals can only be met if (primarily) rates are set high enough and/or (secondarily) grants and subsidized loans are large enough to enable the utility to generate net revenues over the modeling period. The amount or percentages and types of reserves are dependent upon each utility's needs, so that was discussed earlier in this report.
5. Calculate rates: The full suite of rates needed to fully fund the utility and do it fairly is a dynamic set of calculations, too complex to completely explain here. And each situation requires variations on this theme. I will leave out some details, so this is the "Cliff's Notes" version of rate calculation:
 - I calculate capacity cost recovery first. Likewise, I project revenues from penalties and any other incomes the utility expects, excluding interest income. I deduct these revenues from the total revenue needed to arrive at the revenues needed from user charge fees.
 - Next, I assume an across-the-board future rate increase rate (a percentage), usually based upon the average inflation rate expected for the utility's costs. In the future, starting about one year after the initial rate adjustments have been made, rates will be increased annually by this percentage. The revenue needed from the initial rate adjustments will come from the revenues generated by the initial rate adjustments. (In truth, future inflationary revenue increases, plus interest earnings on balances accrued are dependent upon the rates that are initially set, so my model calculates revenue streams dynamically.)

For the techie reader, the analysis model we use – a Microsoft Excel spreadsheet application we call, "CBGreatRates" – is usually 3.8 mega-bites in size. Each rate analysis includes one of these sheets.

For a 1,000-connection utility, for example, we use another spreadsheet, 12.1 mega-bites in size, to sort and calculate customer volume use. We use one of these sheets for each rate class. There are usually five or so for the simplest rates. Each of these sheets is linked to the client's usage data file, usually a few mega-bites in size, for importing usage data. Thus, an analysis for a 1,000 connection utility totals 65 or so mega-bites in size.

For some of our larger client utilities with more rate classes and more customers, total size of all the linked spreadsheets runs over 250 mega-bites. We run computers with lots of RAM and memory but some of the calculations for a larger utility can take around 90 minutes to run. When usage data sheet runtimes get long, we usually switch to a database format application to speed up the heavy number crunching.

- The calculated bases for fixed costs and variable costs (Table 8) establish a ratio of the revenues that each rate component would generate in a cost-to-serve structure.
- To increase (or very rarely decrease) overall revenues to produce the revenues needed from rates, I increase or decrease each revenue stream by the same percentage. Thus, the revenue streams remain in the same ratio to each other. That means they retain their cost-to-serve proportions.
- Once I have established the overall revenue level needed:
 - I calculate the base minimum charge the adjusted minimum charge revenue will enable. (Every customer, regardless of their meter size, pays the base minimum charge.) The meter size-based surcharge, which I have already calculated, is added to the base minimum charge to arrive at the full minimum charge for each meter size. (These calculations apply to water and sewer systems. Similar math is done for other utility types.)
 - The average unit charge is calculated from the unit charge revenue amount. If the client desires inclining or declining rates, or a usage allowance, I calculate unit charges dynamically to take those variations into account.
 - The resulting rates are the starting user charge rates – the initial adjusted rates – what you will (hopefully) adopt initially. In later years, you will increase these starter rates and fees across-the-board by the inflationary factor.
- I do the above calculations to achieve a desired reserve level ten-years out. However, I also examine projected balances for years prior to that. If a prior year’s balance will dip too low, I then seek a way to avoid that. Perhaps rescheduling a capital improvement will prevent the dip. Or perhaps, the predicted level of costs will push user charge rates high enough they will be considered unaffordable enough that the utility could qualify for a grant, or a larger grant. I then include the grant change in the model. Sometimes I simply must model raising rates more initially to build reserves early enough to have enough reserves cushion to make it over the cost “hump.” There are various situations a utility may encounter and various ways of dealing with them.
- Finally, it is common for managers and decision-makers of utilities to want to “tweak” rates into a different structure, tweak the timing of adjustments or change other things. Having built the Model to handle “on-the-fly” adjustments, I model their preferences to arrive at the rates needed to fund the utility as they desire.

6. Reporting out: The culmination of all this data gathering, calculations and more ends up in a rate analysis report like what this appendix is attached to. The report covers everything that affects rates or may be affected by rates and gives the client my recommendations and guidance on how to adjust rates now, and in the future.

If desired by the client, I present the report, my findings and recommendations, and answer questions, usually at a Board or Council meeting. Before COVID-19 that was usually done in person or occasionally by phone call into their Board or Council meeting. During COVID-19, we switched to remote video. One good outcome of COVID-19 is that many small towns and districts have discovered that they too can conduct business by video conference.

Temptation Happens

I could build a static model that arrived at what I thought was the best rates outcome for a client. If the client asked for something different, it would be tempting to tell the client, "In my experience, blah blah, blah, that would not be a good thing to do." Based on my experience, I probably would be right. But that tack would be self-serving – it would save me work.

- One reason I build dynamic models is to be able to show the client the outcome of what they asked for. That usually proves up the case for what I originally modeled.
- Another reason is, when I model a change the client asked for, I sometimes find that indeed, it is doable and may even be superior to the solution I assumed was best in their situation.

Assumptions based upon deep experience are useful. But analysis based on facts and good math are a great training experience for a rate analyst.

Rate Setting Resources Beyond This Report

Over the years, I have found that several topics are common to many utilities. Others can be important to a utility at certain times in their development. Rather than cover such issues here, I cover them in separate guides and a rate setting book, all available for FREE download at <https://gettinggreatrates.com/Freebies>. Following is a listing and descriptions of a few those guides and resources:

1. How to Get Great Rates© (e-book) – The book focuses on basic rate setting issues. It is most applicable to smaller, simpler systems.
2. Rate Setting Best Practices Guide© – This guide expands upon the book to cover affordability, sustainability, bill assistance programs, meter size-based system development fees and minimum charges, and more.
3. Rate Setting Issues Guide© is just that.
4. Replacement Scheduler© is a spreadsheet application that enables users to build their own equipment repair and replacement schedule, which calculated the annuity (savings amount) needed to fund all items in the schedule.
5. CIP Planner© is a similar spreadsheet application for capital improvements planning.

I extracted the two spreadsheets from my rate analysis model template. I just added instructions and fail-safe features to make them a bit more user-friendly for do-it-yourselfers. I encourage my rate analysis clients to use these two sheets so they can make repair and replacement and capital improvement plans more formal, more forward looking and less reactive. Plus, the sheets make data gathering easy for clients and me.

There are other guides and resources on this site. All are FREE, so check them out.

Principles

I consider the following guiding principles and realities when I help systems set their utility rates, fees, and policies:

1. Water, sewer, and all other utilities are businesses, regardless of who owns them. The first order of business is, stay in business. Your customers want you to do that. They do not want their investments to be left high and dry without utility services to support them.
2. The second order of business is, perform in a business-like manner. First, be effective. If you do nothing else, be effective. Next, be as efficient as is reasonably possible. Efficiency tends to foster lower rates, which ratepayers appreciate. But effectiveness and efficiency fight against each other. In most utility services and situations, effectiveness trumps efficiency. It does not benefit water customers if you pump lots of water cheaply if that water will make them sick, or if too much of it leaks out of holes in the pipe. Customers also gain more benefit from water rates that are a bit higher than they like, but those funds enable the utility to be sustainable.
3. If a service costs the utility money, the utility should recover that cost from the most logical "person" if that makes good business and community administration sense. For example, generally "growth should pay for growth." Developers should fairly pay for their consumption of utility capacity obligated to them by paying commensurate system development fees. Likewise, service users should pay for what they use. Each class of users should pay their fair share of service costs. Ideally, each individual user should do that, too.
4. It sometimes contradicts point number 3 above, but if adjusting a rate, fee or policy will turn currently "good" customers into "bad" customers, or discourage development that the community desires, you should consider the necessity of making the change carefully before doing it. For example, while it may be warranted, raising the minimum charge markedly to your residential customers may make it very difficult for fixed, low-income customers to pay their utility bill. That may cause more of them to pay late or not pay at all. That may trigger the utility's attorney to write collection letters to those customers and eventually require shutoff of service.

As you consider rate adjustments, always keep this customer in mind:

The "little old lady, widowed, retired, living alone on Social Security." Treat her badly, or be viewed as treating her badly, and you lose the goodwill contest. Lose goodwill and you may never get it back.

Thus, in the attempt to generate more net revenue by raising rates, net revenues may go down due to non-payment and payment collection costs. Likewise, stifling development with uncompetitive system development fees costs a utility in the form of additional paying customers that instead choose to “build down the road.” That forces existing customers to pay all the costs of the utility rather than sharing them with new customers.

5. While cost-based rates are the most demonstrably fair rate structure, purely cost-to-serve rates can be impractical for some utilities. Consider this: a large city with thousands of customers served by a wide range of meter sizes and a wide range of use by its customers, needs rates that are cost-based and, necessarily, those rates will be complicated. Such rate complexity is worthwhile because the utility’s situation is complicated. But a small town serving only a few meter sizes and few, if any, customers that use high volumes would not be well-served by complicated rates. Simpler rates are better for them.
 - a. However, you or a good rate analyst should still calculate cost-to-serve rates, so even if you adopt something else, you will know what you are giving up.

Perhaps that was more than you wanted to know about rate analysis. If not, just give me a call, or drop me an e-mail.

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

This model calculated cost-to-serve rates. The cost of system improvements will be the main driver of higher and restructured rates. Building appropriate reserves will push rates higher, too.

January 4, 2026

This rate analysis model was produced by

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Note: This document is a print out of the spreadsheet model used to calculate new user charge and other rates and fees for the next 10 years. These calculations are complex and are based upon many conditions and assumptions. These issues, and others, are described in a narrative report that accompanies this model.

Definitions

Affordability Index	The monthly charge for (typically) 5,000 gallons of residential service divided by the median monthly household income for the area served by the system. An index of 1.0, meaning a household pays one percent of its income to pay its bill for 5,000 gallons of service, is generally considered affordable. Affordability index is often a factor in determining grant and loan eligibility and grant amount.
Analysis Year	The year following the "test year." Generally, rate analysis is done during the year following the "test year" and initial rate adjustments are done later still during the analysis year or sometime during the following year once the analysis shows how rates should be adjusted. See related "test year."
Capacity Cost (also see System Development Charge)	The cost incurred to design and build the infrastructure needed to provide a utility service. As the infrastructure ages and wears out from use, it must be refurbished and replaced, which is a continual capacity cost. Capacity costs are recovered in various ways - connection fees, system development fees, regular user charges and others. The cost of that capacity and the nature of the costs - base flow capacity versus peak flow capacity - should determine the way these costs are recovered.
Capital Improvement Plan or Program (CIP)	A schedule of anticipated capital improvements. These are the more expensive items such as treatment plants, lines and other expensive infrastructure that generally requires bond or grant funding.
Capital Improvement Reserves	Cash reserves dedicated to funding the CIP
Comprehensive Rate Analysis	A thorough examination of a system's operating, capital improvement, equipment replacement and other costs, revenues, current rates, number of users and their use of the system, growth rates and all other key issues surrounding the system. This examination will determine how rates and fees should be set in the future to cash-flow the system properly, to build appropriate reserves and to be fair to ratepayers. It also will determine how policies should be adjusted to enable the system to operate well now, operate well in the medium-range future (about 10 years) and prepare for expected and expectable events such as capital improvements and equipment replacement.
Connection Charge	See system development fee
Conservation (Inclining) Rates	Unit charges that go up as the volume used goes up
Cost-to-produce	There are several ways to define and calculate cost-to-produce. Each is acceptable for different purposes. Generally, cost-to-produce is the total of all variable costs required to get service to a utility's customers during one year divided by the total units of service delivered during that year. This calculation will yield the <u>average</u> cost-to-produce. In a proportional to use rate structure, this is the unit charge. See "Cost Calculations" at the bottom of Table 19.
Cost-to-serve, or Cost-of-service Rates	Rates where, at the customer class level, fixed and variable costs caused by each customer class are paid by that class primarily with minimum and unit charges, respectively. However, this analysis model takes it one step further and calculates cost-to-serve rates at the individual customer level.
Cost Types; Fixed and Variable	The two main types of costs are fixed - those that are related to the fact that someone is a customer; and variable - those that are related to the volume of the commodity delivered to customers. Generally, fixed costs should be recovered with minimum charges and variable costs with unit charges.
Coverage Ratio (CR)	Incomes available to pay debt divided by the amount of the debt for that year. A CR of 1.0 is "break-even." Most systems should have a CR greater than 1.25.
Current Position	For purposes of this report, for one year, the sum of all incomes and undedicated reserves minus all current financial obligations for that year. Future obligations (next year's loan payments) and depreciation are not included. Current position, often called "cash and cash equivalents," is a good measure of liquidity.
Declining Rates	Rates where unit charges go down as the volume used goes up
Fire Sprinkler Systems and Related Costs	Generally, fire suppression in businesses is provided by a built-in system of fire sprinklers. "Service" to such systems is primarily in the form of peak flow capacity availability to fight a fire. Capacity costs money, so larger, more sophisticated water systems should assess at least part of such costs to fire suppression systems. Small water systems usually do not charge separately for these costs, and that is reasonable.
Fixed Cost	Accounting considers a cost that does not change to be a fixed cost. That definition does not work fairly for rate setting purposes. For rate setting, a fixed cost is one that is related to the fact that you have customers. The simplest example is billing, because the utility incurs billing costs not in relation to the volume of service a customer consumes. Rather, those costs are equal for all customers, or they are so close to being equal for all customers that one likely could not justify such a cost being different for one customer compared to other customers.

Definitions

Flat Rates	Rates where all users pay exactly the same fee regardless of the volume of service they use
Equivalent Dwelling Unit (EDU) or Equivalent Residential Unit (ERU)	This definition is for water and sewer service. Based upon number of water using fixtures, average flow, potential flow or similar criteria; the consumption rate of the average single family home is rated at one ERU. All other types of customers are then compared on this basis and multiples or parts of an ERU are assigned to each for billing purposes.
Equivalent Residential Unit (ERU) for Stormwater	This definition is for stormwater. As compared to water and sewer, that are concerned with water flow, one ERU of stormwater service is the average square footage of impervious surface of a single family home. Then, larger and non-residential properties are rated by their multiples or parts of an ERU of impervious surface area for the purpose of billing for stormwater impact costs. When there is a large variation in single family home size and impervious surface area, some cities and similar places use the smaller size range of homes as their ERU standard and assess larger homes at multiples of that ERU basis, as well.
Incremental Rate Increases (Inflationary Increases)	Rate increases done, generally annually, following the initial rate adjustment. The usual goal of such increases is to keep the system's incomes on track with inflation. Such increases are usually small, in the two to five percent per year range.
Initial Rate Adjustments	Rate adjustments done in response to the comprehensive rate analysis. Generally, the goal of such adjustments is to establish rates that cover the system's short-term expected costs and do it with a structure that is fair to ratepayers. Initial adjustments should be followed in subsequent years with incremental rate increases.
Inflow & Infiltration (I&I)	In a sewer system, water that gets into the collection system by way of illicit connections (inflow) such as gutter downspouts, plus leaks in manholes and sewer lines (infiltration)
Infrastructure	Most commonly thought of as the hard assets, such as buildings, treatment plants and lines needed to provide service to customers connected to the system. In reality, staff, software and other "soft" assets should be thought of as infrastructure, as well because the hard assets cannot run well or run for long without staff.
Life-cycle Cost	The total cost to design, build, operate, maintain and eventually dispose of, or decommission, an asset. One asset may cost less to build but it may be more expensive to operate and maintain, yielding a higher total life-cycle cost. Life-cycle cost is an important consideration of asset management.
Marginal Costs	The parts of a utility's costs that are unavoidable in the course of serving a particular customer, a group of customers, more volume to all customers or some other marginal use of the system. Such customer(s) or extra use could be added at a discounted but still profitable fee, if desired. Generally marginal costs are less than the average costs but when extra use requires a system upsizing, they can be greater. These costs are especially useful when considering selling service at wholesale or charging "snow birds" while they are away, for example.
Minimum Charge	This rate, charge or fee goes by other names. "Base charge" and "availability charge" are common. This is the periodic fee paid for having water, sewer or other commodity service made available to the customer to use. Most common is a monthly or quarterly minimum charge. Generally, this charge should recover fixed costs.
Mixed Costs	Fixed and variable costs are defined elsewhere. Costs that are mixed are those that are a blend of fixed and variable. For example, a utility hires staff and provides them benefits partly just to have staff on hand to deal with line breaks, equipment breakdowns and other problems. But most staff time and related costs are incurred because the utility is doing what it was designed to do - provide water or other commodity services to customers. Two gross examples illustrate the extremes of staff costs. In one small water system with one operator, the operator sits around in the shop all day, every day with nothing to do. The cost of that operator is fixed and should be shared by all customers equally in a minimum charge. Another water system has one operator, but that operator works all day, every day operating and maintaining the system. That operator is enabling the system to do what it was designed to do - provide a commodity - so that operator's time and related costs should be considered variable and recoverable through unit charges. In reality, staffing and many other costs are a blend of fixed and variable costs, so they should be consider partly a fixed cost and partly a variable cost.
Operating Costs	Definitions and calculations vary. For rate setting purposes operating costs are costs incurred because a system is operated. Such costs are usually recovered primarily through unit charges.
Operating Reserves or Working Capital	Analogous to current position, this is the net revenues generated during "profitable" years and retained to fund operating costs during times when costs exceed incomes.
Operating Revenues	Revenues collected in the form of user fees and similar operating cost-related fees
Operating Ratio (OR)	Current incomes divided by current expenses, not including debt. An OR of 1.0 is "break even." Most systems should have an OR of 1.25 or higher.
Payback Period	In this case, time required for the investment made to get this analysis done to return that investment through increased user and other fees.

Definitions

Peak Flow Capacity or Demand	The volume of service that a user could demand for a short period of time at full volume use. In water systems, and generally in sewer systems, too, the peak flow capacity limiting factor is usually the size of the customer's meter or service line. In electric systems, demand for each commercial and industrial customer (and sometimes others) is usually calculated annually based upon the peak energy usage during a defined short period.
Proportional to Use Rates	Rates where the minimum charge recovers all fixed costs, the unit charge recovers all variable costs, the unit charge is the same for all volume sold, and there is no usage allowance in the minimum charge. This rate structure is similar to and often the same as cost-to-serve rates.
Replacement Schedule	A timetable that describes equipment replacement and important repairs that are too infrequent and/or too expensive to cover as annual operating costs but not so expensive that they need to be covered as capital improvements.
Replacement Reserves	Cash reserves used to fund the Replacement Schedule
Return on Investment	In this case, the dollar amount or percentage of revenue gain enabled by this rate analysis. Related to payback period.
Snow Bird	A customer, usually residential, that goes away during part of the year. Most commonly, these are people of "means" who live in the north who "fly south" for the winter. But, this category includes everyone who is absent for a significant part of the year but returns to their permanent residence.
Stormwater	Precipitation that falls on and then leaves a site, flows elsewhere, potentially causing or adding to flooding and often carries with it sediment and pollutants.
Stormwater Management	The practice of reducing and mitigating off-site stormwater flows and impacts.
System Development Charge, or Fee	Fee assessed to pay for at least part of the cost to build system capacity. For purposes of this model, all charges related to connecting new customers will be "rolled together" into a system development charge, usually including a charge that buys a new customer system capacity. This combined charge may be a few hundred dollars for a residential customer, if little or no capacity costs are included. If capacity costs are included, it could be many thousands of dollars for a large industrial customer. Similar terms in common use include "tap-on fee," "connection fee or charge," "hook-up fee," "impact fee," "availability charge," and "capacity charge."
Test Year	The one year period from which data was gathered to be the basis of the rate analysis, the starting place, which is usually the last completed fiscal year. See related "analysis year."
Unit Charge	This rate, charge or fee goes by other names, too. It is the rate paid for water, sewer or other commodity per unit of measurement, like per 1,000 gallons or per 100 cubic feet. Generally, this charge should recover variable costs.
Usage Allowance	The volume, if any, that is "given away" with the minimum charge. Most systems give away no volume. Those that give away an unlimited volume have what are called "flat rates" - a minimum charge only.
User Fee, User Charge, User Rates	Fees assessed to customers for use of the system. This does not include system development charges, late payment penalties or other types of charges.
Variable Cost	Accounting and rate setting agree on this definition. For rate setting, a variable cost is one that rises and falls as the customer uses the commodity. The simplest example is electricity used to treat and move water around. While the power company assesses a minimum charge and demand charges to the water or other utility that is "signed up" for electric service, the majority of the electric bill rises and falls with the volume of water produced by that utility. Therefore, variable costs should be recovered with unit charges.
Water Loss and Unbilled-for Water	Measured by volume or percent, the part of a water system's net water production that does not reach customers or is not billed to customers. This loss also includes billable volume lost due to under-registering customer meters. "Unbilled-for water" includes water loss, but it also includes water actually given away at no charge.
Working Capital, Net Income	The amount left in the operating fund after paying all costs due during that month, year or other time period.
Working Capital Goal or Operating Reserves Goal	The desired operating fund reserve, in dollars or percent, at a stated point in time. Small systems (1,000 connections) generally should target 35 percent or greater. Larger systems can target a lower percentage. The goal for each system should be based upon the needs of that system and the risk the customers are willing to take.

Table and Chart Descriptions

The tables and charts of this model tell a story about the rates and finances of the utility.

The tables you first see in this model depict utility data, like the rates that were being assessed to customers during the test year, the volume of service those customers used, how much income the utility collected, what its costs were, and more. This data came from utility records. In addition, the tables in this model go beyond the utility's historical data and include projections of incomes that will be generated by the new rates, future expenses as they grow with inflation and other forward-looking features.

Tables in the middle part of the model primarily calculate new rates and fees that will generate enough revenue to pay the utility's costs over time.

The tables in the last part of the model show the results of new rates and fees. Those include the rates themselves, surcharges to rates, if appropriate, the affordability of the new rates, and reserves generated by the new rates. Many of these results as shown graphically in charts at the end of the model.

As you progress through the model, keep this story in mind. You probably understand much the math performed by the model. There is some you likely do not recognize, and that is OK. Just know that new, adequate rates were calculated based upon the utility's historical data, projected into the future.

A final note: When a numbered table or chart listed below is not in the package, that was not a mistake. It simply means that table or chart from our master program was not needed in this situation, so it was bypassed and left out.

Now, here are descriptions of the tables and charts.

Name	What Each is or Does
Definitions (List)	The meaning of terms used in this report and in rate setting generally
Return on Investment (Calculation)	A summary of financial outcomes enabled by the proposed rates
Table 1 - Rates	User rates in effect at the end of the test year. Unless rates were recently changed, these are the current rates.
Table 2 - Test Year Usage	Compilation of actual volume of service used by customers during the test year
Table 3 - Basic User Data and Operating Incomes	Basic user statistics and operating revenues, projected for 10 years, based on the assumption the modeled rates and future inflationary increases will be adopted
Table 4 - Operating Costs and Net Income	Operating costs projected for 10 years
Table 5 - Capital Improvements Program (CIP)	Capital improvements and how they will be paid over next 10 years, including debt service
Table 6 - Equipment Replacement Schedule - Detailed	If applicable, detailed schedule of equipment replacements for next 20 years
Table 7 - Equipment Replacement Annuity Calculation	If applicable, calculation of the annual annuity (yearly savings amount) needed to pay for all equipment replacements as they come due and ending with the desired balance
Table 8 - Average Cost Classification	Sumation of a target year's costs and calculation of the "cost-of-service" rate structure basis for recovery of fixed costs and variable costs. Unless directed to do otherwise, this analysis developed cost-to-serve rates based on cost classification in this table.
Table 9 - Marginal Cost Classification	If applicable, calculation of costs incurred to serve a specified type of customer
Table 10 - Initial Rate Adjustments and Resulting Revenues	These are the modeled user rates and the resulting "blended" revenues they, and the current rates, will generate during the rate adjustment year
Table 11 - AWWA Safe Operating Flow by Meter Size	If applicable, this table calculates the meter equivalent ratio, which is used for calculating peak flow capacity-based system development fees, surcharges and revenues in Tables 13 through 16 for water meters, and when applicable, capacity costs for fire sprinklers.
Table 11B - Fire Sprinkler Peak Flow Capacity Factor	If applicable, this table shows peak flow capacity shares of various size fire sprinkler systems.

Table 12 - Flow Capacity Costs	If applicable, calculation of the various costs to build base and peak flow capacity to serve customers, when such fees will be based on water meter size
Table 12B - Capacity Costs Attributable to Fire Sprinkler Systems	If applicable, nearly the same as Table 12, except it applies to fire suppression systems.
Table 13 - System Development Fees	If applicable, calculation of meter size-based system development fees needed to recover costs calculated in Table 11, when such fees will be based on water meter size.
Table 13B - System Development Fees for Fire Sprinkler Systems	If applicable, nearly the same as Table 13, except it applies to fire suppression systems
Table 14 - Revenues From System Development Fees	If applicable, calculation of total fee revenues that would be generated during one full year at the fees in Table 13.
Table 14B - Revenues From System Development Fees for Fire Sprinkler Systems	If applicable, nearly the same as Table 14, except it applies to fire suppression systems
Table 15 - Minimum Charge Fees, Including Capacity Surcharges	If applicable, calculation of meter size-based capacity surcharges and minimum charges to recover costs calculated in Table 11, when such fees will be based on water meter size
Table 15B - Sprinkler System Capacity Charges	Nearly the same as Table 15, except it applies to fire suppression systems.
Table 16 - Revenues From Minimum Charge Surcharges	If applicable, calculation of total fee revenues that would be generated during one full year at the fees in Table 15.
Table 16B - Revenues From Sprinkler System Charges	Nearly the same as Table 16, except it applies to fire suppression systems
Table 17 - Financial Capacity Indicators and Reserves	Shows the financial effects of the modeled rates, costs, etc. on the utility and on the benchmark 5,000 gallon per month residential water or sewer customer, as appropriate
Table 18 - Bills Before and After Rate Adjustments	Bills at the modeled rates are compared to those under the current rates. Note: the modeled bills do not include capacity surcharges to the minimum charges unless they are included in the minimum charges column of Table 10.
Table 19 - User Statistics	If included, this table shows volumes and percentages of use, revenue generated and other statistics
<i>Chart 1 - Operating Ratio</i>	<i>Graph of operating ratio for 10 years as a result of the modeled rates and the current rates</i>
<i>Chart 2 - Coverage Ratio</i>	<i>Graph of coverage ratios for 10 years of the modeled rates and the current rates</i>
<i>Chart 3 - 5,000 Gallon Residential User's Bill</i>	<i>Graph of the bill for the benchmark 5,000 gallon per month residential user, with smallest available meter size (used in grant and loan eligibility determinations) as a result of the modeled rates, and the current rates</i>
<i>Chart 4 - Affordability Index</i>	<i>Graph of the affordability index for 10 years of the benchmark residential user's bill (used in grant and loan eligibility determinations)</i>
<i>Chart 5 - Working Capital vs Goal</i>	<i>Graph for 10 years of total (unobligated) cash assets at modeled rates compared to the goal for total cash assets</i>
<i>Chart 6 - Value of Cash Assets Before Inflation</i>	<i>Graph for 10 years of unobligated cash assets NOT adjusted for inflation at modeled rates and current rates</i>
<i>Chart 7 - Value of Cash Assets After Inflation</i>	<i>Graph for 10 years of unobligated cash assets adjusted for inflation at modeled rates and current rates. This is the real buying power of cash reserves.</i>
<i>Chart 8 - Sum of All Reserves</i>	<i>Graph of all reserves of all kinds at the modeled rates and at the current rates</i>

Return on Investment

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

The rates depicted in this model will produce various returns on investment or paybacks. Usually the most important payback, at least to ratepayers, is a rate structure that is demonstrably fair. For the system, however, making sure that revenue will be adequate to pay all expected, expectable and many unexpected costs is the the most important return. If revenue will increase as a result of this analysis, which is almost always the case, one can calculate a dollar and percentage return on investment (ROI) for having gotten the analysis.

The following calculations show what was invested and what the returns will be over two periods; five years and 10 years. Five years is a reasonable period for return projections for rate analysis because that is about as long as a good rate analysis can project accurately. Ten years is a good planning horizon but you should not bank on returns or much else projected out that far. Most systems should have their analyses redone or refreshed long before then.

Consider these key points about return on investment. Higher rates will fund more improvements, better repair and replacement and more. Most increases in revenue end up being used for such expenses. Thus, few systems end up with a dramatic increase in their cash reserves but they do markedly improve their financial position. In addition, fairer and higher rates generally enable systems to qualify for grant and loan funding that they otherwise would not. That increases your use of "other people's money." That is bad for state and federal funds and taxes, of course. But at the utility level, it can be a lifesaver. The calculation below ignores the possibility the analysis may help you get "outside" funds. If you do, your ROI will be higher.

Also note the model calculated an initial set of new rates and fees, and future inflationary-style increases. All those increases are included in the ROI calculations. There are a few other details but those are complicated to be discussed here.

Calculations

\$17,723 Fees to GettingGreatRates.com

\$750 Estimated value of system staff time and incidentals to assemble needed information

\$18,473 Total Investment for This Analysis

\$7,299,587 Five-year Increase in Revenue Due at Least Partly to This Analysis

39,515% Five-year Return on Investment (increase in revenues / investment)

\$19,206,495 Ten-year Improvement in Cash Position Due at Least Partly to This Analysis

103,971% Ten-year Return on Investment (increase in revenues / investment)

Table 1 - Rates

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

If we received the now current rates for the utility, the current rates are in this table. Otherwise, these rates were in effect at the end of the test year. If a volume range was left out of the table, rest assured, it is in the Model. We just hid some volume ranges to make the table and report shorter. In such cases, the unit charge that applies to next lowest volume range also applies to the hidden volume ranges.

Test Year Ending and (Assumed) Current Rates

Customer Type, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use Within Each Range in 1,000 Gallons	Billing Cycle Minimum Charge	Usage Allowance in 1,000s	Unit Charge per 1,000 Gallons
Res, 0.625 Inch	0	999	1.000	\$4.91	0.000	\$3.62
	170,000	or More	0.000	\$4.91	0.000	\$3.62
Com, 0.625 Inch	0	999	1.000	\$4.91	0.000	\$3.62
	170,000	or More	0.000	\$4.91	0.000	\$3.62
1 Inch	0	999	1.000	\$6.32	0.000	\$3.62
	170,000	or More	0.000	\$6.32	0.000	\$3.62
1.5 Inch	0	999	1.000	\$7.37	0.000	\$3.62
	170,000	or More	0.000	\$7.37	0.000	\$3.62
2 Inch	0	999	1.000	\$10.18	0.000	\$3.62
	170,000	or More	0.000	\$10.18	0.000	\$3.62
3 Inch	0	999	1.000	\$13.34	0.000	\$3.62
	170,000	or More	0.000	\$13.34	0.000	\$3.62
4 Inch	0	999	1.000	\$22.11	0.000	\$3.62
	170,000	or More	0.000	\$22.11	0.000	\$3.62
8 Inch	0	999	1.000	\$32.64	0.000	\$3.62
	316,624	or More	0.000	\$32.64	0.000	\$3.62

Table 2 - Test Year Usage

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

This table shows usage by all customers during the test year.

Residential meter readings per year: 12

Test year = the one-year period being analyzed starts: 1/1/2024

Other customer readings per year: 12

Date this model created: 1/4/2026

Bills per year: 12

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	# of Customers That "Maxed Out" in Each Range	% of Customers That "Maxed Out" in Each Range	% of Total Use in Each Range
Res, 0.625 Inch	0	999	81,599,000	0	0.0%	21.1%
	1,000	1,999	81,599,000	0	0.0%	21.1%
	2,000	2,999	81,599,000	0	0.0%	21.1%
	3,000	3,237	19,393,888	0	0.0%	5.0%
	3,238	4,999	0	6,800	89.7%	0.0%
	5,000	5,999	0	0	0.0%	0.0%
				264,190,888	6,800	89.7%
Com, 0.625 Inch	0	999	5,220,000	0	0.0%	1.3%
	1,000	1,999	5,220,000	0	0.0%	1.3%
	2,000	3,002	5,236,584	435	5.7%	1.4%
	3,003	3,999	0	0	0.0%	0.0%
				15,676,584	435	5.7%
1 Inch	0	999	2,096,000	0	0.0%	0.5%
	1,000	1,999	2,096,000	0	0.0%	0.5%
	2,000	2,999	2,096,000	0	0.0%	0.5%
	3,000	3,999	2,096,000	0	0.0%	0.5%
	4,000	4,999	2,096,000	0	0.0%	0.5%
	5,000	5,999	2,096,000	0	0.0%	0.5%
	6,000	6,999	2,096,000	0	0.0%	0.5%
	7,000	7,999	2,096,000	0	0.0%	0.5%
	8,000	8,999	2,096,000	0	0.0%	0.5%
	9,000	9,999	2,096,000	0	0.0%	0.5%
	10,000	11,949	4,087,682	0	0.0%	1.1%
	11,950	29,999	0	175	2.3%	0.0%
	30,000	39,999	0	0	0.0%	0.0%
			25,047,682	175	2.3%	6.5%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	# of Customers That "Maxed Out" in Each Range	% of Customers That "Maxed Out" in Each Range	% of Total Use in Each Range
1.5 Inch	0	999	109,000	0	0.0%	0.0%
	1,000	1,999	109,000	0	0.0%	0.0%
	2,000	2,999	109,000	0	0.0%	0.0%
	3,000	3,999	109,000	0	0.0%	0.0%
	4,000	4,999	109,000	0	0.0%	0.0%
	5,000	5,999	109,000	0	0.0%	0.0%
	6,000	6,999	109,000	0	0.0%	0.0%
	7,000	7,999	109,000	0	0.0%	0.0%
	8,000	8,999	109,000	0	0.0%	0.0%
	9,000	9,999	109,000	0	0.0%	0.0%
	10,000	25,237	1,660,938	0	0.0%	0.4%
	25,238	29,999	0	9	0.1%	0.0%
	30,000	39,999	0	0	0.0%	0.0%
				2,750,938	9	0.1%
2 Inch	0	999	1,664,000	0	0.0%	0.4%
	1,000	1,999	1,664,000	0	0.0%	0.4%
	2,000	2,999	1,664,000	0	0.0%	0.4%
	3,000	3,999	1,664,000	0	0.0%	0.4%
	4,000	4,999	1,664,000	0	0.0%	0.4%
	5,000	5,999	1,664,000	0	0.0%	0.4%
	6,000	6,999	1,664,000	0	0.0%	0.4%
	7,000	7,999	1,664,000	0	0.0%	0.4%
	8,000	8,999	1,664,000	0	0.0%	0.4%
	9,000	9,999	1,664,000	0	0.0%	0.4%
	10,000	19,999	16,640,000	0	0.0%	4.3%
	20,000	33,085	21,775,104	0	0.0%	5.6%
	33,086	39,999	510	139	1.8%	0.0%
	40,000	49,999	0	0	0.0%	0.0%
			55,055,614	139	1.8%	14.2%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	# of Customers That "Maxed Out" in Each Range	% of Customers That "Maxed Out" in Each Range	% of Total Use in Each Range
3 Inch	0	999	84,000	0	0.0%	0.0%
	1,000	1,999	84,000	0	0.0%	0.0%
	2,000	2,999	84,000	0	0.0%	0.0%
	3,000	3,999	84,000	0	0.0%	0.0%
	4,000	4,999	84,000	0	0.0%	0.0%
	5,000	5,999	84,000	0	0.0%	0.0%
	6,000	6,999	84,000	0	0.0%	0.0%
	7,000	7,999	84,000	0	0.0%	0.0%
	8,000	8,999	84,000	0	0.0%	0.0%
	9,000	9,999	84,000	0	0.0%	0.0%
	10,000	19,999	840,000	0	0.0%	0.2%
	20,000	29,999	840,000	0	0.0%	0.2%
	30,000	39,999	840,000	0	0.0%	0.2%
	40,000	49,999	840,000	0	0.0%	0.2%
	50,000	61,582	972,940	0	0.0%	0.3%
	61,583	69,999	0	7	0.1%	0.0%
	70,000	79,999	0	0	0.0%	0.0%
				5,172,940	7	0.1%
4 Inch	0	999	176,000	0	0.0%	0.0%
	1,000	1,999	176,000	0	0.0%	0.0%
	2,000	2,999	176,000	0	0.0%	0.0%
	3,000	3,999	176,000	0	0.0%	0.0%
	4,000	4,999	176,000	0	0.0%	0.0%
	5,000	5,999	176,000	0	0.0%	0.0%
	6,000	6,999	176,000	0	0.0%	0.0%
	7,000	7,999	176,000	0	0.0%	0.0%
	8,000	8,999	176,000	0	0.0%	0.0%
	9,000	9,999	176,000	0	0.0%	0.0%
	10,000	19,999	1,760,000	0	0.0%	0.5%
	20,000	29,999	1,760,000	0	0.0%	0.5%
	30,000	39,999	1,760,000	0	0.0%	0.5%
	40,000	49,999	1,760,000	0	0.0%	0.5%
	50,000	65,523	2,732,201	0	0.0%	0.7%
	65,524	69,999	0	15	0.2%	0.0%
	70,000	79,999	0	0	0.0%	0.0%
				11,532,201	15	0.2%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	# of Customers That "Maxed Out" in Each Range	% of Customers That "Maxed Out" in Each Range	% of Total Use in Each Range
8 Inch	0	999	23,000	0	0.0%	0.0%
	1,000	1,999	23,000	0	0.0%	0.0%
	2,000	2,999	23,000	0	0.0%	0.0%
	3,000	3,999	23,000	0	0.0%	0.0%
	4,000	4,999	23,000	0	0.0%	0.0%
	5,000	5,999	23,000	0	0.0%	0.0%
	6,000	6,999	23,000	0	0.0%	0.0%
	7,000	7,999	23,000	0	0.0%	0.0%
	8,000	8,999	23,000	0	0.0%	0.0%
	9,000	9,999	23,000	0	0.0%	0.0%
	10,000	19,999	230,000	0	0.0%	0.1%
	20,000	29,999	230,000	0	0.0%	0.1%
	30,000	39,999	230,000	0	0.0%	0.1%
	40,000	49,999	230,000	0	0.0%	0.1%
	50,000	59,999	230,000	0	0.0%	0.1%
	60,000	69,999	230,000	0	0.0%	0.1%
	70,000	79,999	230,000	0	0.0%	0.1%
	80,000	89,999	230,000	0	0.0%	0.1%
	90,000	99,999	230,000	0	0.0%	0.1%
	100,000	109,999	230,000	0	0.0%	0.1%
	110,000	119,999	230,000	0	0.0%	0.1%
	120,000	129,999	230,000	0	0.0%	0.1%
	130,000	139,999	230,000	0	0.0%	0.1%
	140,000	149,999	230,000	0	0.0%	0.1%
	150,000	159,999	230,000	0	0.0%	0.1%
160,000	316,623	3,602,341	0	0.0%	0.9%	
316,624	or More	0	2	0.0%	0.0%	
			7,282,341	2	0.0%	1.9%
Grand Totals:			386,709,187	7,581	100%	100%

Table 3 - Operating Incomes and Basic User Data

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

This table depicts user statistics, customer growth, and system incomes and across the board "inflationary" style rate increases through the 10th year.

Annual Median Household Income (AMHI)

\$69,134	Census Bureau estimate of AMHI for the year 2025
\$46,308	Census Bureau estimate of AMHI for the year 2000
\$22,825	AMHI growth during this time period
1.97%	Simple annual income growth rate during this time period (used to project future household incomes)

Test Year Growth of Customer Base and Average Tap Fee Paid per Connection

62	Number new Sewer connections made during test year
\$194	Average Sewer tap or installation fee assessed during the test year

This model is programmed for rates to be reset in the "Analysis Year," also called the "0 Year" column below (heading highlighted blue). Revenues will be collected at the now-current rates for the first part of the analysis year and the modeled rates for the last part of the analysis year. Thus, the revenues shown that column of the table are "blended" revenues; part collected at the old rates and part collected at the new rates. It was then assumed that all rate adjustments made after the initial (major) adjustment will be done annually on approximately the anniversary of the first adjustment. If rates will not be adjusted during the "0 Year," an adjustment (normally a revenue reduction) was calculated below to account for the late start in making the first adjustments.

Basic User (Customer) Data

	Inflation/ Deflation (-) Factor	Analysis Year		Years Following the Analysis Year (for Which Results Have Been Projected)									
		Test Year	0 Year	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year
		Starting 1/1/24	Starting 1/1/25	Starting 1/1/26	Starting 1/1/27	Starting 1/1/28	Starting 1/1/29	Starting 1/1/30	Starting 1/1/31	Starting 1/1/32	Starting 1/1/33	Starting 1/1/34	Starting 1/1/35
Rate Increases Projected for Future Years	N.A.	N.A.	N.A.		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
The row above shows the rate at which user charge fees should be increased for each year beyond the initial rate adjustment year. Unless stated otherwise, these should be across-the-board increases to all rates and fees and that should continue until a new rate analysis is done.													
Average Number of Customers	N.A.	7,581	7,643	7,705	7,767	7,829	7,891	7,953	8,015	8,077	8,139	8,201	8,263
Customers Added or Lost (-) Each Year	N.A.	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0
Customer Growth or Loss (-) Rate	N.A.	0.82%	0.81%	0.80%	0.80%	0.79%	0.79%	0.78%	0.77%	0.77%	0.76%	0.76%	0.75%
Test Year (Actual) and Projected Future Years' Sales, in Gallons	N.A.	386,709,187	389,871,861	393,034,536	396,197,210	399,359,884	402,522,558	405,685,232	408,847,907	412,010,581	415,173,255	418,335,929	421,498,603

Calculated User Charge Fees, Accounting for New Customers and Future Rate Increases Over the Years

Actual or Calculated Sales Revenues		\$1,858,185	\$1,865,291	\$2,837,028	\$2,974,251	\$3,117,913	\$3,268,309	\$3,425,748	\$3,590,553	\$3,763,061	\$3,943,625	\$4,132,613	\$4,330,410
Additional Sales Revenues From New Customers			\$41	\$22,829	\$23,742	\$24,692	\$25,680	\$26,707	\$27,775	\$28,886	\$30,041	\$31,243	\$32,493
Total Calculated Revenues (User Charge Fees)		\$1,858,185	\$1,865,332	\$2,859,857	\$2,997,993	\$3,142,605	\$3,293,988	\$3,452,455	\$3,618,328	\$3,791,947	\$3,973,666	\$4,163,856	\$4,362,903
Operating Incomes													
User Charge Fees (Tables 10, 12, 12B, 15, 15B, 16, 16B, as applicable)	N.A.	\$2,060,915	\$2,068,842	\$3,171,870	\$3,325,078	\$3,485,467	\$3,653,367	\$3,829,122	\$4,013,092	\$4,205,653	\$4,407,198	\$4,618,138	\$4,838,901
Late Payment Charge	N.A.	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
New Taps or Connections (Current Rate Structure)	% Above	\$12,000	\$12,000	\$2,959	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Adjusted Meter Size-based System Development Fees (Tables 13, 14, if applicable)	% Above	\$0	\$0	\$140,158	\$140,158	\$140,158	\$140,158	\$140,158	\$140,158	\$140,158	\$140,158	\$140,158	\$140,158
Interest Income	N.A.	\$0	\$3,726	\$3,066	\$7,802	\$8,006	\$8,281	\$8,433	\$8,656	\$8,959	\$9,126	\$9,372	\$9,705
Other User Charges	N.A.	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Revenue Loss (-) or Gain Because Rate Adjustments Made This Number of Months into 1st Year	3.0	\$0	\$0	-\$213,285	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Operating Incomes		\$2,072,915	\$2,084,568	\$3,104,768	\$3,473,038	\$3,633,631	\$3,801,806	\$3,977,713	\$4,161,907	\$4,354,770	\$4,556,482	\$4,767,668	\$4,988,764

Table 4 - Operating Costs and Net Income

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

This table depicts expenses during the test year, this year and for the next 10 years. Some future costs will experience inflation. Those costs that go up as use goes up are increased by the cost inflation factor plus the growth rate in users.
(First year costs and net incomes are actual, subsequent years are projected.)

Expense Items	Inflation/ Deflation (-) Factor	Test Year Starting 1/1/24	Analysis Year	Years Following the Analysis Year (for Which Results Have Been Projected)									
			0 Year Starting 1/1/25	1st Year Starting 1/1/26	2nd Year Starting 1/1/27	3rd Year Starting 1/1/28	4th Year Starting 1/1/29	5th Year Starting 1/1/30	6th Year Starting 1/1/31	7th Year Starting 1/1/32	8th Year Starting 1/1/33	9th Year Starting 1/1/34	10th Year Starting 1/1/35
50005 · Payroll Wages Hourly	3.0%	\$259,309	\$267,088	\$320,000	\$329,600	\$339,488	\$349,673	\$360,163	\$370,968	\$382,097	\$393,560	\$405,366	\$417,527
50011 · On-Call Wages	3.0%	\$9,800	\$10,094	\$10,400	\$10,712	\$11,033	\$11,364	\$11,705	\$12,056	\$12,418	\$12,791	\$13,174	\$13,570
50015 · Payroll Taxes	3.0%	\$21,595	\$22,243	\$26,200	\$26,986	\$27,796	\$28,629	\$29,488	\$30,373	\$31,284	\$32,223	\$33,189	\$34,185
50310 · Truck Supplies	3.0%	\$3,418	\$3,521	\$3,626	\$3,735	\$3,847	\$3,963	\$4,082	\$4,204	\$4,330	\$4,460	\$4,594	\$4,732
50320 · Small Tools	3.0%	\$2,139	\$2,203	\$2,269	\$2,337	\$2,407	\$2,479	\$2,554	\$2,630	\$2,709	\$2,790	\$2,874	\$2,960
50325 · Freight	3.0%	\$3,002	\$3,092	\$3,185	\$3,280	\$3,379	\$3,480	\$3,584	\$3,692	\$3,803	\$3,917	\$4,034	\$4,155
50415 · Appraisal Services/Permit Fees	3.0%	\$8,110	\$8,353	\$8,604	\$8,862	\$9,128	\$9,402	\$9,684	\$9,974	\$10,274	\$10,582	\$10,899	\$11,226
50420 · License Renewal (non vehicle)	3.0%	\$61	\$63	\$65	\$67	\$69	\$71	\$73	\$76	\$78	\$80	\$83	\$85
50425 · Legal General	3.0%	\$8,249	\$8,496	\$8,751	\$9,014	\$9,284	\$9,563	\$9,850	\$10,145	\$10,450	\$10,763	\$11,086	\$11,419
50475 · Surveying	3.0%	\$1	\$1	\$1	\$1	\$1	\$1	\$2	\$2	\$2	\$2	\$2	\$2
50495 · Outside Services	3.0%	\$9,234	\$9,511	\$9,796	\$10,090	\$10,393	\$10,705	\$11,026	\$11,357	\$11,697	\$12,048	\$12,410	\$12,782
50496 · Disconnect Fees to Water Dists	3.0%	\$5,050	\$5,202	\$5,358	\$5,518	\$5,684	\$5,854	\$6,030	\$6,211	\$6,397	\$6,589	\$6,787	\$6,990
50501 · Office Supplies	3.0%	\$3,675	\$3,786	\$3,899	\$4,016	\$4,137	\$4,261	\$4,389	\$4,520	\$4,656	\$4,795	\$4,939	\$5,088
50503 · Repair & Maint Office Equip	3.0%	\$2,054	\$2,116	\$2,179	\$2,244	\$2,312	\$2,381	\$2,453	\$2,526	\$2,602	\$2,680	\$2,760	\$2,843
50516 · Office - Phone / Internet	3.0%	\$2,343	\$2,413	\$2,486	\$2,560	\$2,637	\$2,716	\$2,798	\$2,882	\$2,968	\$3,057	\$3,149	\$3,243
50535 · Background/Testing	3.0%	\$63	\$65	\$67	\$69	\$71	\$73	\$75	\$77	\$80	\$82	\$85	\$87
50705 · Office Computer Services	3.0%	\$109	\$112	\$116	\$119	\$123	\$126	\$130	\$134	\$138	\$142	\$146	\$151
50710 · Sewer Computer	3.0%	\$3,498	\$3,603	\$3,711	\$3,822	\$3,937	\$4,055	\$4,176	\$4,302	\$4,431	\$4,564	\$4,701	\$4,842
50860 · Clothing/Boot Expense	3.0%	\$235	\$242	\$249	\$257	\$264	\$272	\$281	\$289	\$298	\$307	\$316	\$325
51085 · Fire Ext maint	3.0%	\$205	\$211	\$218	\$224	\$231	\$238	\$245	\$252	\$260	\$268	\$276	\$284
51090 · Site - Natural Gas	3.0%	\$3,553	\$3,659	\$3,769	\$3,882	\$3,999	\$4,119	\$4,242	\$4,370	\$4,501	\$4,636	\$4,775	\$4,918
51100 · Site Electric - Sewer	3.0%	\$184,669	\$190,209	\$197,492	\$205,040	\$212,864	\$220,973	\$229,376	\$238,085	\$247,110	\$256,462	\$266,153	\$276,195
51220 · Site - Trash	3.0%	\$3,920	\$4,038	\$4,193	\$4,353	\$4,519	\$4,691	\$4,869	\$5,054	\$5,246	\$5,444	\$5,650	\$5,863
51255 · Site Diesel/Propane	3.0%	\$1,988	\$2,048	\$2,109	\$2,172	\$2,238	\$2,305	\$2,374	\$2,445	\$2,518	\$2,594	\$2,672	\$2,752
52100 · Sewer DNR	3.0%	\$9,092	\$9,365	\$9,646	\$9,935	\$10,233	\$10,540	\$10,856	\$11,182	\$11,518	\$11,863	\$12,219	\$12,585
53100 · Sewer R&R exp	3.0%	\$106,427	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6
54100 · Sewer Equip Rep	3.0%	\$10,838	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6
55100 · Sewer Equip Rental	3.0%	\$53,739	\$55,351	\$160,000	\$164,800	\$169,744	\$174,836	\$180,081	\$185,484	\$191,048	\$196,780	\$202,683	\$208,764
56100 · Sewer Equip Repair	3.0%	\$17,201	\$17,717	\$18,249	\$18,796	\$19,360	\$19,941	\$20,539	\$21,155	\$21,790	\$22,444	\$23,117	\$23,810
57100 · Sewer parts	3.0%	\$26,311	\$27,101	\$27,914	\$28,751	\$29,614	\$30,502	\$31,417	\$32,360	\$33,330	\$34,330	\$35,360	\$36,421
58500 · Locates	3.0%	\$4,461	\$4,595	\$4,732	\$4,874	\$5,021	\$5,171	\$5,326	\$5,486	\$5,651	\$5,820	\$5,995	\$6,175
59050 · CCTV -- Camera Work	3.0%	\$5,519	\$5,684	\$125,000	\$128,750	\$132,613	\$136,591	\$140,689	\$144,909	\$149,257	\$153,734	\$158,346	\$163,097
59150 · Flushing/Jetting	3.0%	\$54,758	\$56,401	\$200,000	\$207,644	\$215,567	\$223,779	\$232,289	\$241,109	\$250,248	\$259,719	\$269,533	\$279,702
59165 · Grounds Maintenance	3.0%	\$3,421	\$3,524	\$3,629	\$3,738	\$3,850	\$3,966	\$4,085	\$4,207	\$4,334	\$4,464	\$4,597	\$4,735

Table 4 - Operating Costs and Net Income

Expense Items	Inflation/ Deflation (-) Factor	Test Year	0 Year	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year
		Starting 1/1/24	Starting 1/1/25	Starting 1/1/26	Starting 1/1/27	Starting 1/1/28	Starting 1/1/29	Starting 1/1/30	Starting 1/1/31	Starting 1/1/32	Starting 1/1/33	Starting 1/1/34	Starting 1/1/35
59170 · Lab Testing	3.0%	\$4,023	\$4,143	\$4,268	\$4,396	\$4,528	\$4,663	\$4,803	\$4,947	\$5,096	\$5,249	\$5,406	\$5,568
59175 · Lab Testing Supplies	3.0%	\$17,793	\$18,327	\$18,876	\$19,443	\$20,026	\$20,627	\$21,246	\$21,883	\$22,539	\$23,216	\$23,912	\$24,629
59200 · O&M	3.0%	\$23,756	\$24,469	\$25,203	\$25,959	\$26,738	\$27,540	\$28,366	\$29,217	\$30,093	\$30,996	\$31,926	\$32,884
59250 · Sludge Hauling	3.0%	\$91,983	\$94,742	\$150,000	\$155,733	\$161,676	\$167,834	\$174,217	\$180,832	\$187,686	\$194,790	\$202,150	\$209,777
59270 · Supplies O&M	3.0%	\$18,678	\$19,238	\$19,815	\$20,410	\$21,022	\$21,653	\$22,302	\$22,971	\$23,661	\$24,370	\$25,101	\$25,854
59510 · Sewer Deprec.	3.0%	\$124,915	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
60100 · Rep & Maint Vehicle	3.0%	\$1,599	\$1,647	\$40,000	\$41,200	\$42,436	\$43,709	\$45,020	\$46,371	\$47,762	\$49,195	\$50,671	\$52,191
60200 · Fuel	3.0%	\$7,931	\$8,168	\$8,413	\$8,666	\$8,926	\$9,194	\$9,469	\$9,754	\$10,046	\$10,348	\$10,658	\$10,978
60300 · Vehicle Lic Renewal	3.0%	\$105	\$108	\$112	\$115	\$119	\$122	\$126	\$130	\$133	\$137	\$142	\$146
Billing and Administration	3.0%	\$0	\$0	\$378,000	\$389,340	\$401,020	\$413,051	\$425,442	\$438,206	\$451,352	\$464,892	\$478,839	\$493,204
District Administrator	3.0%	\$0	\$0	\$73,000	\$75,190	\$77,446	\$79,769	\$82,162	\$84,627	\$87,166	\$89,781	\$92,474	\$95,248
Contingency "Placekeeper" Cost	3.0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
One-time Reduction of R&R Annuity	0.0%	-\$457,458	-\$457,458	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Annual Payment to R&R Reserve (Table 7)	0.0%	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458
User Charge Analysis Services	5.0%	\$0	\$17,723	\$0	\$0	\$19,540	\$0	\$0	\$21,542	\$0	\$0	\$23,751	\$0
Total CIP-related Payouts	N.A.	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Total Operating Costs		\$1,118,829	\$920,672	\$2,343,057	\$2,404,161	\$2,486,774	\$2,532,340	\$2,599,543	\$2,690,453	\$2,740,513	\$2,814,421	\$2,914,459	\$2,969,452
Net Income (or Loss)		\$954,086	\$1,163,896	\$761,711	\$1,068,877	\$1,146,857	\$1,269,466	\$1,378,170	\$1,471,453	\$1,614,258	\$1,742,062	\$1,853,209	\$2,019,313
Working Capital Goal: 33%	In Dollars, That is:	\$372,570	\$306,584	\$780,238	\$800,586	\$828,096	\$843,269	\$865,648	\$895,921	\$912,591	\$937,202	\$970,515	\$988,827

Notes: In 2024, the District performed needed operations and maintenance and did not "charge" the Crystal City/Festus service area for its share of billing and administration costs. The gold highlighted items have been added or increased to cover those shortfalls. Otherwise, operating costs have been increased by inflation factors to account for future inflation. Several, highlighted blue, would also increase due to growth in customers and their use.

Table 5 - Capital Improvement Program (CIP)

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

This table depicts capital improvements and their funding. Costs reflect inflation.	Analysis Year		Years Following the Analysis Year (for Which Improvement Projects, Costs, Funding, etc. Have Been Projected)									
	Test Year	0 Year	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year
	Starting 1/1/24	Starting 1/1/25	Starting 1/1/26	Starting 1/1/27	Starting 1/1/28	Starting 1/1/29	Starting 1/1/30	Starting 1/1/31	Starting 1/1/32	Starting 1/1/33	Starting 1/1/34	Starting 1/1/35
Planned Spending, Debt-paid Portion of Projects (CIP costs to be funded with loans are shown in this section.)												
Woodside Creek Drive Linear Gravity Sewer Improvements Part I	\$0	\$0	\$154,500	\$848,720	\$136,591	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Woodside Creek Drive Linear Gravity Sewer Improvements Part II	\$0	\$0	\$0	\$265,225	\$2,403,999	\$225,102	\$0	\$0	\$0	\$0	\$0	\$0
Festus Centre Drive Linear Gravity Sewer Improvements	\$0	\$0	\$0	\$0	\$163,909	\$675,305	\$144,909	\$0	\$0	\$0	\$0	\$0
Elks Drive Linear Gravity Sewer Improvements	\$0	\$0	\$0	\$0	\$0	\$281,377	\$1,622,984	\$262,692	\$0	\$0	\$0	\$0
Walmart Linear Gravity Sewer Improvements	\$0	\$0	\$0	\$0	\$0	\$281,377	\$1,159,274	\$262,692	\$0	\$0	\$0	\$0
Chestnut Street Linear Gravity Sewer Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$289,819	\$955,242	\$245,975	\$0	\$0	\$0
Sunset Park Linear Gravity Sewer Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$597,026	\$4,919,495	\$380,031	\$0	\$0
Sunset Park Linear Gravity Sewer Improvements Part II	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$368,962	\$3,420,279	\$326,193	\$0
Sunset Park Linear Gravity Sewer Improvements Part III	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$380,031	\$3,131,456	\$335,979
County Road Linear Gravity Sewer Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$190,016	\$1,174,296	\$161,270
Chestnut Street Linear Gravity Sewer Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$358,813	\$2,419,049
Sludge Press and Tank Aeration	\$0	\$0	\$1,236,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SBR Aeration Improvements	\$0	\$0	\$154,500	\$159,135	\$163,909	\$168,826	\$0	\$0	\$0	\$0	\$0	\$0
WWTP CIP-1	\$0	\$0	\$123,600	\$827,502	\$87,418	\$0	\$0	\$0	\$0	\$0	\$0	\$0
WWTP CIP-6	\$0	\$0	\$0	\$159,135	\$1,049,018	\$135,061	\$0	\$0	\$0	\$0	\$0	\$0
WWTP CIP-5	\$0	\$0	\$0	\$0	\$87,418	\$810,366	\$86,946	\$0	\$0	\$0	\$0	\$0
WWTP CIP-7	\$0	\$0	\$0	\$0	\$0	\$84,413	\$1,136,089	\$59,703	\$0	\$0	\$0	\$0
WWTP CIP-2	\$0	\$0	\$0	\$0	\$0	\$0	\$289,819	\$2,268,699	\$221,377	\$0	\$0	\$0
WWTP CIP-3 (Timing and Funding Unsettled)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Loan Closing Costs, Estimated at: 0.0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Debt-paid Portion of Projects	\$0	\$0	\$1,668,600	\$2,259,717	\$4,092,263	\$2,661,828	\$4,729,838	\$4,406,053	\$5,755,810	\$4,370,357	\$4,990,757	\$2,916,299
Planned Spending, Grant-paid Portion of Projects (CIP costs to be grant-funded are shown here.)												
WWTP CIP-3 (Timing and Funding Unsettled)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Grant-paid Portion of Projects	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Planned Spending, Cash-paid Portion of Projects (CIP costs to be funded from reserves are shown here.)												
Total Cash-paid Portion of Projects	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total CIP Costs	\$0	\$0	\$1,668,600	\$2,259,717	\$4,092,263	\$2,661,828	\$4,729,838	\$4,406,053	\$5,755,810	\$4,370,357	\$4,990,757	\$2,916,299

Table 5 - Capital Improvement Program (CIP)

This table depicts capital improvements and their funding. Costs reflect inflation.

	Analysis Year		Years Following the Analysis Year (for Which Improvement Projects, Costs, Funding, etc. Have Been Projected)									
	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	1/1/24	1/1/25	1/1/26	1/1/27	1/1/28	1/1/29	1/1/30	1/1/31	1/1/32	1/1/33	1/1/34	1/1/35
Debt Repayment												
Existing Debt Payments (Following is debt that was initiated during the test year or earlier.)												
Staged Payments to Crystal City, Festus	\$1,000,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$0
New Debt Payments (Following are payments for projects to be paid with new debt. It is assumed these will be loan/lease-financed for a term of: 20 years at a 2.5% interest rate.)												
Loan Originated in 1st Year				\$107,036	\$107,036	\$107,036	\$107,036	\$107,036	\$107,036	\$107,036	\$107,036	\$107,036
Loan Originated in 2nd Year					\$144,954	\$144,954	\$144,954	\$144,954	\$144,954	\$144,954	\$144,954	\$144,954
Loan Originated in 3rd Year						\$262,507	\$262,507	\$262,507	\$262,507	\$262,507	\$262,507	\$262,507
Loan Originated in 4th Year							\$170,749	\$170,749	\$170,749	\$170,749	\$170,749	\$170,749
Loan Originated in 5th Year								\$303,406	\$303,406	\$303,406	\$303,406	\$303,406
Loan Originated in 6th Year									\$282,636	\$282,636	\$282,636	\$282,636
Loan Originated in 7th Year										\$369,219	\$369,219	\$369,219
Loan Originated in 8th Year											\$280,346	\$280,346
Loan Originated in 9th Year												\$320,143
Total Debt Payments	\$1,000,000	\$400,000	\$400,000	\$507,036	\$651,990	\$914,497	\$1,085,246	\$1,388,651	\$1,671,287	\$2,040,506	\$2,320,851	\$2,240,994
Total CIP-related Payouts	\$1,000,000	\$400,000	\$2,068,600	\$2,766,753	\$4,744,253	\$3,576,325	\$5,815,084	\$5,794,704	\$7,427,097	\$6,410,862	\$7,311,609	\$5,157,293
(This is the total cash required for this CIP and debt payment schedule. These amounts must come from utility income, reserves or outside sources, as shown in the next section.)												
CIP Fund Sources (Following are the sources and amounts of funds expected to pay for the above CIP schedule.)												
Cash Reserves (Internal Funds)												
Debt and CIP Reserves Starting Balance	\$0	-\$418,484	\$403,029	\$299,146	\$846,623	\$1,330,912	\$1,697,325	\$2,001,817	\$2,094,382	\$2,062,571	\$1,780,767	\$1,315,427
Working Capital Transferred in	\$581,516	\$1,229,883	\$288,057	\$1,048,530	\$1,119,347	\$1,254,292	\$1,355,791	\$1,441,180	\$1,597,588	\$1,717,450	\$1,819,897	\$2,001,000
Debt and CIP Reserves Interest Earned (or Paid)	\$0	-\$8,370	\$8,061	\$5,983	\$16,932	\$26,618	\$33,947	\$40,036	\$41,888	\$41,251	\$35,615	\$26,309
Total Available Internal Funds	\$581,516	\$803,029	\$699,146	\$1,353,658	\$1,982,902	\$2,611,822	\$3,087,063	\$3,483,034	\$3,733,858	\$3,821,273	\$3,636,279	\$3,342,736
Grant and Loan Proceeds (External Funds)												
WWTP CIP-3 (Timing and Funding Unsettled) above is an upsizing primarily to be driven by a large prospective new customer. In another model I will assume that customer will pay for half of those improvements. Therefore, this payment will be like a grant, but none of that is in play in this scenario.	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Loan Originated in 1st Year			\$1,668,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Loan Originated in 2nd Year				\$2,259,717	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Loan Originated in 3rd Year					\$4,092,263	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Loan Originated in 4th Year						\$2,661,828	\$0	\$0	\$0	\$0	\$0	\$0
Loan Originated in 5th Year							\$4,729,838	\$0	\$0	\$0	\$0	\$0
Loan Originated in 6th Year								\$4,406,053	\$0	\$0	\$0	\$0
Loan Originated in 7th Year									\$5,755,810	\$0	\$0	\$0
Loan Originated in 8th Year										\$4,370,357	\$0	\$0
Loan Originated in 9th Year											\$4,990,757	\$0
Loan Originated in 10th Year												\$2,916,299
Total Available External Funds	\$0	\$0	\$1,668,600	\$2,259,717	\$4,092,263	\$2,661,828	\$4,729,838	\$4,406,053	\$5,755,810	\$4,370,357	\$4,990,757	\$2,916,299
Total Available Funds	\$581,516	\$803,029	\$2,367,746	\$3,613,375	\$6,075,164	\$5,273,651	\$7,816,901	\$7,889,087	\$9,489,667	\$8,191,629	\$8,627,036	\$6,259,035
Outcomes (This CIP spending and funding plan will result in the following cash needs and ending balances each year.)												
Total Available Funds	\$581,516	\$803,029	\$2,367,746	\$3,613,375	\$6,075,164	\$5,273,651	\$7,816,901	\$7,889,087	\$9,489,667	\$8,191,629	\$8,627,036	\$6,259,035
Total CIP-related Payouts	\$1,000,000	\$400,000	\$2,068,600	\$2,766,753	\$4,744,253	\$3,576,325	\$5,815,084	\$5,794,704	\$7,427,097	\$6,410,862	\$7,311,609	\$5,157,293
Debt and CIP Reserves Ending Balances	-\$418,484	\$403,029	\$299,146	\$846,623	\$1,330,912	\$1,697,325	\$2,001,817	\$2,094,382	\$2,062,571	\$1,780,767	\$1,315,427	\$1,101,742

Notes: The Festus/Crystal City service area facilities have large improvement needs, as detailed in the "Condition and Capacity Assessment Report" created by the engineering firm Burns & McDonnell. Projects from that report that the District Manager has determined will likely be needed within the next 10 years are included in this table. I assumed all will be funded with loans or leases as the District has commonly done in the past. Debt is projected to be the prime driver of higher rates.

Table 6 - Equipment Replacement Schedule - Detailed

Year Beginning	Annualized Cost of System's 20-year Anticipated R&R Cost, Before Inflation, of \$6,334,671 Total Cost		Total Annual Replacement Costs
1/1/24	\$0	\$0	\$0
1/1/25	\$316,734	\$0	\$316,734
1/1/26	\$316,734	\$0	\$316,734
1/1/27	\$316,734	\$0	\$316,734
1/1/28	\$316,734	\$0	\$316,734
1/1/29	\$316,734	\$0	\$316,734
1/1/30	\$316,734	\$0	\$316,734
1/1/31	\$316,734	\$0	\$316,734
1/1/32	\$316,734	\$0	\$316,734
1/1/33	\$316,734	\$0	\$316,734
1/1/34	\$316,734	\$0	\$316,734
1/1/35	\$316,734	\$0	\$316,734
1/1/36	\$316,734	\$0	\$316,734
1/1/37	\$316,734	\$0	\$316,734
1/1/38	\$316,734	\$0	\$316,734
1/1/39	\$316,734	\$0	\$316,734
1/1/40	\$316,734	\$0	\$316,734
1/1/41	\$316,734	\$0	\$316,734
1/1/42	\$316,734	\$0	\$316,734
1/1/43	\$316,734	\$0	\$316,734
1/1/44	\$316,734	\$0	\$316,734
1/1/45	\$316,734	\$0	\$316,734
1/1/46	\$316,734	\$0	\$316,734
1/1/47	\$316,734	\$0	\$316,734
1/1/48	\$316,734	\$0	\$316,734

Table 7 - Equipment Replacement Annuity Calculation

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

This table calculates the annual annuity (savings deposit) needed to build replacement (R&R) reserves. This annuity amount should actually be deposited in a savings account. The annuity amount, called the "Required Annual Deposit (Annuity) to Replacement Account" below, should be included in the utility's general budget as a cost. As a result, all replacement and refurbishment scheduled in Table 6, the detailed replacement schedule, would be paid for entirely from R&R reserves unless those reserves were inadequate during a year.

In simple terms, the annuity at the bottom of this table should be deposited into an account each year and R&R projects should be paid for out of that account.

3.00% Average Inflation Rate for the Table 6 Equipment for the Term of This Replacement Schedule

2.00% Average Interest Rate on Balances Invested for the Term of This Replacement Schedule

2.00% Average Interest Rate on Amounts Borrowed for the Term of This Replacement Schedule

Year Beginning	Schedule Year	This Year's Costs in Current Dollars	Future Annual Inflated Net Costs	Interest Earned on Prior Balance	End of Year Balance in Future Dollars	Minimum Desired End of Year Balance in Future Dollars
1/1/24	Test Year	\$0	\$0	\$3,000	\$153,000	\$601,794
1/1/25	Analysis Year	\$316,734	\$326,236	\$3,060	\$287,282	\$619,848
1/1/26	1st Year	\$316,734	\$336,023	\$5,746	\$414,463	\$638,443
1/1/27	2nd Year	\$316,734	\$346,103	\$8,289	\$534,107	\$657,596
1/1/28	3rd Year	\$316,734	\$356,486	\$10,682	\$645,760	\$677,324
1/1/29	4th Year	\$316,734	\$367,181	\$12,915	\$748,952	\$697,644
1/1/30	5th Year	\$316,734	\$378,196	\$14,979	\$843,193	\$718,573
1/1/31	6th Year	\$316,734	\$389,542	\$16,864	\$927,972	\$740,130
1/1/32	7th Year	\$316,734	\$401,229	\$18,559	\$1,002,760	\$762,334
1/1/33	8th Year	\$316,734	\$413,265	\$20,055	\$1,067,008	\$785,204
1/1/34	9th Year	\$316,734	\$425,663	\$21,340	\$1,120,142	\$808,761
1/1/35	10th Year	\$316,734	\$438,433	\$22,403	\$1,161,570	\$833,023
1/1/36	11th Year	\$316,734	\$451,586	\$23,231	\$1,190,673	\$858,014
1/1/37	12th Year	\$316,734	\$465,134	\$23,813	\$1,206,810	\$883,754
1/1/38	13th Year	\$316,734	\$479,088	\$24,136	\$1,209,316	\$910,267
1/1/39	14th Year	\$316,734	\$493,461	\$24,186	\$1,197,500	\$937,575
1/1/40	15th Year	\$316,734	\$508,264	\$23,950	\$1,170,643	\$965,702
1/1/41	16th Year	\$316,734	\$523,512	\$23,413	\$1,128,001	\$994,673
1/1/42	17th Year	\$316,734	\$539,218	\$22,560	\$1,068,801	\$1,024,514
1/1/43	18th Year	\$316,734	\$555,394	\$21,376	\$992,241	\$1,055,249

Notes: This is a simplified restatement of the system's R&R schedule but it also includes covering inflation. A Discretionary Annuity amount was added so that at the end of the 20-year modeling period, the balance will equal twice the average of the annual replacement cost amounts, not including interest paid for borrowing during the negative balance years.

Starting Account Balance \$150,000

Minimum Annual Annuity \$414,207

Discretionary Annuity \$43,251

Required Annual Deposit (Annuity) to Replacement Account \$457,458

(This amount is included in Table 4 as an operating cost.)

Table 8 - Average Cost Classification
Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

This table distributes costs from a representative year (the "average rate structure basis year") to fixed and variable categories (see Definitions) in order to calculate the "cost of service" rate structure for that year.

The average rate structure basis year runs from:				1/1/2030	through	12/31/2030
Cost Items During the Basis Year	Cost During Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost	
50005 · Payroll Wages Hourly	\$360,163	20.0%	80.0%	\$72,033	\$288,130	
50011 · On-Call Wages	\$11,705	20.0%	80.0%	\$2,341	\$9,364	
50015 · Payroll Taxes	\$29,488	20.0%	80.0%	\$5,898	\$23,591	
50310 · Truck Supplies	\$4,082	20.0%	80.0%	\$816	\$3,265	
50320 · Small Tools	\$2,554	20.0%	80.0%	\$511	\$2,043	
50325 · Freight	\$3,584	20.0%	80.0%	\$717	\$2,868	
50415 · Appraisal Services/Permit Fees	\$9,684	29.2%	70.8%	\$2,828	\$6,856	
50420 · License Renewal (non vehicle)	\$73	100.0%	0.0%	\$73	\$0	
50425 · Legal General	\$9,850	29.2%	70.8%	\$2,876	\$6,974	
50475 · Surveying	\$2	100.0%	0.0%	\$2	\$0	
50495 · Outside Services	\$11,026	29.2%	70.8%	\$3,220	\$7,806	
50496 · Disconnect Fees to Water Dists	\$6,030	29.2%	70.8%	\$1,761	\$4,269	
50501 · Office Supplies	\$4,389	100.0%	0.0%	\$4,389	\$0	
50503 · Repair & Maint Office Equip	\$2,453	100.0%	0.0%	\$2,453	\$0	
50516 · Office - Phone / Internet	\$2,798	100.0%	0.0%	\$2,798	\$0	
50535 · Background/Testing	\$75	100.0%	0.0%	\$75	\$0	
50705 · Office Computer Services	\$130	100.0%	0.0%	\$130	\$0	
50710 · Sewer Computer	\$4,176	100.0%	0.0%	\$4,176	\$0	
50860 · Clothing/Boot Expense	\$281	20.0%	80.0%	\$56	\$224	
51085 · Fire Ext maint	\$245	100.0%	0.0%	\$245	\$0	
51090 · Site - Natural Gas	\$4,242	29.2%	70.8%	\$1,239	\$3,004	
51100 · Site Electric - Sewer	\$229,376	0.0%	100.0%	\$0	\$229,376	
51220 · Site - Trash	\$4,869	0.0%	100.0%	\$0	\$4,869	
51255 · Site Diesel/Propane	\$2,374	0.0%	100.0%	\$0	\$2,374	
52100 · Sewer DNR	\$10,856	29.2%	70.8%	\$3,170	\$7,686	
53100 · Sewer R&R exp	\$0	20.0%	80.0%	\$0	\$0	
54100 · Sewer Equip Rep	\$0	20.0%	80.0%	\$0	\$0	
55100 · Sewer Equip Rental	\$180,081	20.0%	80.0%	\$36,016	\$144,065	
56100 · Sewer Equip Repair	\$20,539	20.0%	80.0%	\$4,108	\$16,431	
57100 · Sewer parts	\$31,417	20.0%	80.0%	\$6,283	\$25,134	
58500 · Locates	\$5,326	29.2%	70.8%	\$1,555	\$3,771	
59050 · CCTV -- Camera Work	\$140,689	0.0%	100.0%	\$0	\$140,689	
59150 · Flushing/Jetting	\$232,289	0.0%	100.0%	\$0	\$232,289	

Table 8 - Average Cost Classification

Cost Items During the Basis Year	Cost During Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
59165 · Grounds Maintenance	\$4,085	100.0%	0.0%	\$4,085	\$0
59170 · Lab Testing	\$4,803	29.2%	70.8%	\$1,403	\$3,401
59175 · Lab Testing Supplies	\$21,246	29.2%	70.8%	\$6,204	\$15,042
59200 · O&M	\$28,366	20.0%	80.0%	\$5,673	\$22,693
59250 · Sludge Hauling	\$174,217	0.0%	100.0%	\$0	\$174,217
59270 · Supplies O&M	\$22,302	20.0%	80.0%	\$4,460	\$17,842
59510 · Sewer Deprec.	\$0	29.2%	70.8%	\$0	\$0
60100 · Rep & Maint Vehicle	\$45,020	20.0%	80.0%	\$9,004	\$36,016
60200 · Fuel	\$9,469	100.0%	0.0%	\$9,469	\$0
60300 · Vehicle Lic Renewal	\$126	100.0%	0.0%	\$126	\$0
Billing and Administration	\$425,442	50.0%	50.0%	\$212,721	\$212,721
District Administrator	\$82,162	100.0%	0.0%	\$82,162	\$0
Contingency "Placekeeper" Cost	\$0	29.2%	70.8%	\$0	\$0
Annual Payment to R&R Reserve (Table 7)	\$457,458	20.0%	80.0%	\$91,492	\$365,966
User Charge Analysis Services	\$0	29.2%	70.8%	\$0	\$0
Total CIP-related Payouts, Less Capacity Charges From Tables 14 & 16 (This value can be negative)	\$791,062	50.0%	50.0%	\$395,531	\$395,531
Grand Total Costs, Weighted Avg Percentages	\$3,390,604	29.0%	71.0%	\$982,097	\$2,408,507

Bases for Cost to Serve Rate Structure		100%	\$3,390,604
Number Customers During Basis Year	7,953	Inflow and Infiltration for the test year is Estimated at	46%
Billed Volume, in Gallons, During Basis Year	405,685,232	Inflow and Infiltration is Estimated at This % of Average Cost (Marginal Cost)	34%
Average Fixed Cost per User per Month During Basis Year	\$10.29	At Recommended Unit Charge Rates, Resulting Marginal Cost of Unbilled-for Water	\$568,160
Average Variable Cost to Produce per 1,000 Gallons During Basis Year	\$5.94	Test Year Customer Volume, in Gallons	386,709,187
Gallons per Billing Cycle Used by Average Residential Customer	3,238	+ Test Year Inflow and Infiltration, in Gallons	328,970,813
		Total Test Year Volume, in Gallons, From Master Meter Readings	715,680,000

Table 9 - Marginal Cost Classification

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

The utility incurs "marginal" costs. These costs are unavoidable. Thus, the utility must collect minimal fees from various customers to "break even" on a marginal cost basis. Costs vary by customer type and volume used.

Below, it is assumed that marginal variable costs are being calculated for: **Inflow & Infiltration**

(Fixed costs are irrelevant in this case)

The marginal rate structure basis year runs from: 1/1/2030 through 12/31/2030

Cost Items During the Basis Year	Fixed Cost	Variable Cost	Marginal Fixed Cost %	Marginal Variable Cost %	Marginal Fixed Cost	Marginal Variable Cost
50005 · Payroll Wages Hourly	\$72,033	\$288,130	10%	10%	\$7,203	\$28,813
50011 · On-Call Wages	\$2,341	\$9,364	10%	10%	\$234	\$936
50015 · Payroll Taxes	\$5,898	\$23,591	10%	10%	\$590	\$2,359
50310 · Truck Supplies	\$816	\$3,265	10%	10%	\$82	\$327
50320 · Small Tools	\$511	\$2,043	10%	10%	\$51	\$204
50325 · Freight	\$717	\$2,868	10%	10%	\$72	\$287
50415 · Appraisal Services/Permit Fees	\$2,828	\$6,856	10%	10%	\$283	\$686
50420 · License Renewal (non vehicle)	\$73	\$0	10%	10%	\$7	\$0
50425 · Legal General	\$2,876	\$6,974	10%	10%	\$288	\$697
50475 · Surveying	\$2	\$0	10%	10%	\$0	\$0
50495 · Outside Services	\$3,220	\$7,806	10%	10%	\$322	\$781
50496 · Disconnect Fees to Water Dists	\$1,761	\$4,269	10%	10%	\$176	\$427
50501 · Office Supplies	\$4,389	\$0	10%	10%	\$439	\$0
50503 · Repair & Maint Office Equip	\$2,453	\$0	10%	10%	\$245	\$0
50516 · Office - Phone / Internet	\$2,798	\$0	10%	10%	\$280	\$0
50535 · Background/Testing	\$75	\$0	10%	10%	\$8	\$0
50705 · Office Computer Services	\$130	\$0	10%	10%	\$13	\$0
50710 · Sewer Computer	\$4,176	\$0	10%	10%	\$418	\$0
50860 · Clothing/Boot Expense	\$56	\$224	10%	10%	\$6	\$22
51085 · Fire Ext maint	\$245	\$0	10%	10%	\$25	\$0
51090 · Site - Natural Gas	\$1,239	\$3,004	10%	10%	\$124	\$300
51100 · Site Electric - Sewer	\$0	\$229,376	100%	100%	\$0	\$229,376
51220 · Site - Trash	\$0	\$4,869	100%	100%	\$0	\$4,869
51255 · Site Diesel/Propane	\$0	\$2,374	100%	100%	\$0	\$2,374
52100 · Sewer DNR	\$3,170	\$7,686	10%	10%	\$317	\$769
53100 · Sewer R&R exp	\$0	\$0	10%	10%	\$0	\$0
54100 · Sewer Equip Rep	\$0	\$0	10%	10%	\$0	\$0
55100 · Sewer Equip Rental	\$36,016	\$144,065	10%	10%	\$3,602	\$14,407
56100 · Sewer Equip Repair	\$4,108	\$16,431	10%	10%	\$411	\$1,643
57100 · Sewer parts	\$6,283	\$25,134	10%	10%	\$628	\$2,513
58500 · Locates	\$1,555	\$3,771	10%	10%	\$156	\$377
59050 · CCTV -- Camera Work	\$0	\$140,689	10%	10%	\$0	\$14,069
59150 · Flushing/Jetting	\$0	\$232,289	100%	100%	\$0	\$232,289

Table 9 - Marginal Cost Classification

Cost Items During the Basis Year	Fixed Cost	Variable Cost	Marginal Fixed Cost %	Marginal Variable Cost %	Marginal Fixed Cost	Marginal Variable Cost
59165 · Grounds Maintenance	\$4,085	\$0	10%	10%	\$408	\$0
59170 · Lab Testing	\$1,403	\$3,401	10%	10%	\$140	\$340
59175 · Lab Testing Supplies	\$6,204	\$15,042	10%	10%	\$620	\$1,504
59200 · O&M	\$5,673	\$22,693	10%	10%	\$567	\$2,269
59250 · Sludge Hauling	\$0	\$174,217	100%	100%	\$0	\$174,217
59270 · Supplies O&M	\$4,460	\$17,842	10%	10%	\$446	\$1,784
59510 · Sewer Deprec.	\$0	\$0	10%	10%	\$0	\$0
60100 · Rep & Maint Vehicle	\$9,004	\$36,016	10%	10%	\$900	\$3,602
60200 · Fuel	\$9,469	\$0	10%	10%	\$947	\$0
60300 · Vehicle Lic Renewal	\$126	\$0	10%	10%	\$13	\$0
Billing and Administration	\$212,721	\$212,721	10%	10%	\$21,272	\$21,272
District Administrator	\$82,162	\$0	10%	10%	\$8,216	\$0
Contingency "Placekeeper" Cost	\$0	\$0	10%	10%	\$0	\$0
Annual Payment to R&R Reserve (Table 7)	\$91,492	\$365,966	10%	10%	\$9,149	\$36,597
User Charge Analysis Services	\$0	\$0	10%	10%	\$0	\$0
Total CIP-related Payouts, Less Capacity Charges From Tables 14 & 16 (This value can be negative)	\$395,531	\$395,531	10%	10%	\$39,553	\$39,553
Grand Total All Costs	<u>\$982,097</u>	<u>\$2,408,507</u>			\$98,210	\$819,664
	\$3,390,604				\$917,873	
<p style="color: blue; margin: 0;">Marginal Fixed and Variable Cost Bases (For the Customer Type(s) Listed Above)</p>					Monthly Marginal Fixed Cost per Customer	Marginal Variable Cost per 1,000 Gallons
					\$1.03	
Marginal Fixed Cost as a Percent of Total Fixed Cost:					10%	\$2.02
Marginal Variable Cost as a Percent of Total Variable Cost:						34%

Table 10 - Initial Rate Adjustments and Resulting Revenues

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

This table calculates new user charge rates and the revenues they would generate if adjusted during the "Analysis Year."

After rate adjustments are made, customers will be billed monthly.

Following are Blended Sales Revenues: Sales at the current (Test Year) rates (gray highlighted column) will apply until rates are adjusted. Sales at the modeled rates (yellow highlighted column) would apply after the modeled rates are adopted. Adding both together, the "blended" sales revenues show in the right-most column.

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
Res, 0.625 Inch	0	999	\$294,579	\$7.52	0.000	\$5.23	\$1,169	\$295,748
	1,000	1,999	\$294,579	\$7.52	0.000	\$5.23	\$1,169	\$295,748
	2,000	2,999	\$294,579	\$7.52	0.000	\$5.23	\$1,169	\$295,748
	3,000	3,237	\$70,014	\$7.52	0.000	\$5.23	\$278	\$70,291
	3,238	4,999	\$399,553	\$7.52	0.000	\$5.23	\$1,681	\$401,234
Com, 0.625 Inch	0	999	\$18,845	\$7.52	0.000	\$5.23	\$75	\$18,919
	1,000	1,999	\$18,845	\$7.52	0.000	\$5.23	\$75	\$18,919
	2,000	3,002	\$44,464	\$7.52	0.000	\$5.23	\$183	\$44,647
	3,003	3,999	\$0	\$7.52	0.000	\$5.23	\$0	\$0
1 Inch	0	999	\$7,567	\$8.95	0.000	\$5.23	\$30	\$7,597
	1,000	1,999	\$7,567	\$8.95	0.000	\$5.23	\$30	\$7,597
	2,000	2,999	\$7,567	\$8.95	0.000	\$5.23	\$30	\$7,597
	3,000	3,999	\$7,567	\$8.95	0.000	\$5.23	\$30	\$7,597
	4,000	4,999	\$7,567	\$8.95	0.000	\$5.23	\$30	\$7,597
	5,000	5,999	\$7,567	\$8.95	0.000	\$5.23	\$30	\$7,597
	6,000	6,999	\$7,567	\$8.95	0.000	\$5.23	\$30	\$7,597
	7,000	7,999	\$7,567	\$8.95	0.000	\$5.23	\$30	\$7,597
	8,000	8,999	\$7,567	\$8.95	0.000	\$5.23	\$30	\$7,597
	9,000	9,999	\$7,567	\$8.95	0.000	\$5.23	\$30	\$7,597
	10,000	11,949	\$14,757	\$8.95	0.000	\$5.23	\$59	\$14,815
	11,950	29,999	\$13,210	\$8.95	0.000	\$5.23	\$51	\$13,262

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
1.5 Inch	0	999	\$393	\$11.33	0.000	\$5.23	\$2	\$395
	1,000	1,999	\$393	\$11.33	0.000	\$5.23	\$2	\$395
	2,000	2,999	\$393	\$11.33	0.000	\$5.23	\$2	\$395
	3,000	3,999	\$393	\$11.33	0.000	\$5.23	\$2	\$395
	4,000	4,999	\$393	\$11.33	0.000	\$5.23	\$2	\$395
	5,000	5,999	\$393	\$11.33	0.000	\$5.23	\$2	\$395
	6,000	6,999	\$393	\$11.33	0.000	\$5.23	\$2	\$395
	7,000	7,999	\$393	\$11.33	0.000	\$5.23	\$2	\$395
	8,000	8,999	\$393	\$11.33	0.000	\$5.23	\$2	\$395
	9,000	9,999	\$393	\$11.33	0.000	\$5.23	\$2	\$395
	10,000	25,237	\$5,996	\$11.33	0.000	\$5.23	\$24	\$6,020
	25,238	29,999	\$801	\$11.33	0.000	\$5.23	\$3	\$805
30,000	39,999	\$0	\$11.33	0.000	\$5.23	\$0	\$0	
2 Inch	0	999	\$6,007	\$14.19	0.000	\$5.23	\$24	\$6,031
	1,000	1,999	\$6,007	\$14.19	0.000	\$5.23	\$24	\$6,031
	2,000	2,999	\$6,007	\$14.19	0.000	\$5.23	\$24	\$6,031
	3,000	3,999	\$6,007	\$14.19	0.000	\$5.23	\$24	\$6,031
	4,000	4,999	\$6,007	\$14.19	0.000	\$5.23	\$24	\$6,031
	5,000	5,999	\$6,007	\$14.19	0.000	\$5.23	\$24	\$6,031
	6,000	6,999	\$6,007	\$14.19	0.000	\$5.23	\$24	\$6,031
	7,000	7,999	\$6,007	\$14.19	0.000	\$5.23	\$24	\$6,031
	8,000	8,999	\$6,007	\$14.19	0.000	\$5.23	\$24	\$6,031
	9,000	9,999	\$6,007	\$14.19	0.000	\$5.23	\$24	\$6,031
	10,000	19,999	\$60,072	\$14.19	0.000	\$5.23	\$238	\$60,310
	20,000	33,085	\$78,610	\$14.19	0.000	\$5.23	\$312	\$78,922
	33,086	39,999	\$16,895	\$14.19	0.000	\$5.23	\$65	\$16,960
	40,000	49,999	\$0	\$14.19	0.000	\$5.23	\$0	\$0

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
3 Inch	0	999	\$303	\$21.81	0.000	\$5.23	\$1	\$304
	1,000	1,999	\$303	\$21.81	0.000	\$5.23	\$1	\$304
	2,000	2,999	\$303	\$21.81	0.000	\$5.23	\$1	\$304
	3,000	3,999	\$303	\$21.81	0.000	\$5.23	\$1	\$304
	4,000	4,999	\$303	\$21.81	0.000	\$5.23	\$1	\$304
	5,000	5,999	\$303	\$21.81	0.000	\$5.23	\$1	\$304
	6,000	6,999	\$303	\$21.81	0.000	\$5.23	\$1	\$304
	7,000	7,999	\$303	\$21.81	0.000	\$5.23	\$1	\$304
	8,000	8,999	\$303	\$21.81	0.000	\$5.23	\$1	\$304
	9,000	9,999	\$303	\$21.81	0.000	\$5.23	\$1	\$304
	10,000	19,999	\$3,032	\$21.81	0.000	\$5.23	\$12	\$3,045
	20,000	29,999	\$3,032	\$21.81	0.000	\$5.23	\$12	\$3,045
	30,000	39,999	\$3,032	\$21.81	0.000	\$5.23	\$12	\$3,045
	40,000	49,999	\$3,032	\$21.81	0.000	\$5.23	\$12	\$3,045
	50,000	61,582	\$3,512	\$21.81	0.000	\$5.23	\$14	\$3,526
	61,583	69,999	\$1,117	\$21.81	0.000	\$5.23	\$5	\$1,123
	70,000	79,999	\$0	\$21.81	0.000	\$5.23	\$0	\$0
80,000	89,999	\$0	\$21.81	0.000	\$5.23	\$0	\$0	
4 Inch	0	999	\$635	\$30.39	0.000	\$5.23	\$3	\$638
	1,000	1,999	\$635	\$30.39	0.000	\$5.23	\$3	\$638
	2,000	2,999	\$635	\$30.39	0.000	\$5.23	\$3	\$638
	3,000	3,999	\$635	\$30.39	0.000	\$5.23	\$3	\$638
	4,000	4,999	\$635	\$30.39	0.000	\$5.23	\$3	\$638
	5,000	5,999	\$635	\$30.39	0.000	\$5.23	\$3	\$638
	6,000	6,999	\$635	\$30.39	0.000	\$5.23	\$3	\$638
	7,000	7,999	\$635	\$30.39	0.000	\$5.23	\$3	\$638
	8,000	8,999	\$635	\$30.39	0.000	\$5.23	\$3	\$638
	9,000	9,999	\$635	\$30.39	0.000	\$5.23	\$3	\$638
	10,000	19,999	\$6,354	\$30.39	0.000	\$5.23	\$25	\$6,379
	20,000	29,999	\$6,354	\$30.39	0.000	\$5.23	\$25	\$6,379
	30,000	39,999	\$6,354	\$30.39	0.000	\$5.23	\$25	\$6,379
	40,000	49,999	\$6,354	\$30.39	0.000	\$5.23	\$25	\$6,379
	50,000	65,523	\$9,863	\$30.39	0.000	\$5.23	\$39	\$9,903
	65,524	69,999	\$3,881	\$30.39	0.000	\$5.23	\$15	\$3,895
	70,000	79,999	\$0	\$30.39	0.000	\$5.23	\$0	\$0

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
8 Inch	0	999	\$83	\$82.80	0.000	\$5.23	\$0	\$83
	1,000	1,999	\$83	\$82.80	0.000	\$5.23	\$0	\$83
	2,000	2,999	\$83	\$82.80	0.000	\$5.23	\$0	\$83
	3,000	3,999	\$83	\$82.80	0.000	\$5.23	\$0	\$83
	4,000	4,999	\$83	\$82.80	0.000	\$5.23	\$0	\$83
	5,000	5,999	\$83	\$82.80	0.000	\$5.23	\$0	\$83
	6,000	6,999	\$83	\$82.80	0.000	\$5.23	\$0	\$83
	7,000	7,999	\$83	\$82.80	0.000	\$5.23	\$0	\$83
	8,000	8,999	\$83	\$82.80	0.000	\$5.23	\$0	\$83
	9,000	9,999	\$83	\$82.80	0.000	\$5.23	\$0	\$83
	10,000	19,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834
	20,000	29,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834
	30,000	39,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834
	40,000	49,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834
	50,000	59,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834
	60,000	69,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834
	70,000	79,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834
	80,000	89,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834
	90,000	99,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834
	100,000	109,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834
	110,000	119,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834
	120,000	129,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834
	130,000	139,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834
	140,000	149,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834
150,000	159,999	\$830	\$82.80	0.000	\$5.23	\$3	\$834	
	160,000	316,623	\$13,005	\$82.80	0.000	\$5.23	\$52	\$13,056
	316,624	or More	\$749	\$82.80	0.000	\$5.23	\$5	\$754
Total Rate Revenue at Current Rates			\$1,857,817	Total Rate Revenue at Modeled Rates			\$7,474	
Total Blended Rate Revenues for the Year								\$1,865,291

Table 11 - AWWA Safe Operating Flow by Meter Size

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

Water meter data source: Table VII.2-5, page 338, American Water Works Association Manual M1, Principles of Water Rates, Fees and Charges, Seventh Edition

Fire sprinkler data source: National Fire Protection Association

This table calculates the meter equivalent ratio, which is used for calculating peak flow capacity-based system development fees, surcharges and revenues in Tables 13 through 16 for water meters, and when applicable, capacity costs for fire sprinklers.

Meter Size, in Inches	Meter Type	Maximum-Rated Safe Operating Flow, in gallons per minute	Meter Equivalent Ratio (Capacity Shares)	Equivalent Fire Sprinkler Square Footage*
Five Eighths	Displacement	20	1.0	100
Three Quarters	Displacement	30	1.5	150
One Inch	Displacement	50	2.5	250
One & a Half Inch	Displacement	100	5.0	500
Two Inch	Displacement	160	8.0	800
Three	Singlet	320	16.0	1,600
Three	Compound, Class I	320	16.0	1,600
Three	Turbine, Class I	350	17.5	1,750
Four	Singlet	500	25.0	2,500
Four	Compound, Class I	500	25.0	2,500
Four	Turbine, Class I	630	31.0	3,150
Six	Singlet	1,000	50.0	5,000
Six	Compound, Class I	1,000	50.0	5,000
Six	Turbine, Class I	1,300	65.0	6,500
Eight	Compound, Class I	1,600	80.0	8,000
Eight	Turbine, Class I	2,800	140.0	14,000
Ten	Turbine, Class II	4,200	210.0	21,000
Twelve	Turbine, Class II	5,300	265.0	26,500

* If applicable, see Table 12B for sprinkler calculations and explanations.

Table 12 - Flow Capacity Costs
Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

Building system capacity and connecting new customers to the system costs money. Those costs must be recovered. That can be done on the "front end" with system development fees and connection fees. It can be done later with system development surcharges to the minimum charge. It is usually most practical to use a blend of both. This table shows capacity costs. From these costs, system development fees and surcharges were developed in Tables 13 through 16.

Peak and Base Flow Capacity Costs

Fixed Assets Original Value (Capacity Cost)	Costs Related to Sewer Service						
	% of That Value Attributable to Regular Sewer Service	% Attributable to Sewer Peak Capacity	Peak Sewer Capacity Cost	Annual Sewer Peak Capacity Cost (40-year Depreciation)*	% of Value Attributable to Sewer Base Flow Capacity	Base Flow Capacity Cost for Sewer Service	Annual Sewer Base Capacity Cost (40-year Depreciation)*
\$5,000,000	100.0%	50.0%	\$2,500,000	\$108,156	50.0%	\$2,500,000	\$108,156

* It is assumed full system replacement costs will escalate each year by: 3.0%

How Sewer System Capacity Costs Will Be Recovered

These costs are modeled to be recovered from system development fees in Tables 13 and 14

Part of Peak Flow Capacity Costs to be Recovered by System Development Fees

- 16.375% Target Percentage of Annualized Costs to Recover
- \$17,711 Target Amount of Annualized Costs to Recover
- \$285.65 Peak Capacity Cost per Capacity Share

Part of Base Flow Capacity Costs to be Recovered by System Development Fees, if Any

- 155.6% Target Percentage of Annualized Costs to Recover
- \$168,318 Target Amount of Annualized Costs to Recover
- \$2,714.80 Base Capacity Cost per New Connection, Regardless of Size

Note: Base flow costs will be recovered with system development fees by the dollar amounts shown above.

Note: In addition to peak and base flow-based system development fees calculated above, each new connection should reimburse the utility for all "out-of-pocket" connection costs it incurs. Such costs were not included in these calculations.

These costs are modeled to be recovered from minimum charge surcharges in Tables 15 and 16

Part of Capacity Costs to be Recovered by Minimum Charge Surcharges

- 100% Target Percentage of Annualized Costs to Recover
- \$108,156 Target Amount of Annualized Costs to Recover
- \$9,013 Target Portion of Costs to Recover in Monthly Surcharges
- \$0.95 Monthly Surcharge per Peak Capacity Share

Overall capacity cost recovery

- \$294,184 These three modes of cost recovery will generate this much revenue in a normal year
- 136.0% Incomes collected from these fees amount to approximately this percentage of annualized capacity costs

Table 13 - System Development Fees

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

This table calculates system development fees to assess to each meter size.

Note: Larger meter sizes are available in two or more types, some having different flow capacities. To be conservative when projecting revenues, it was assumed all meters in use are of the lowest capacity types. However, when setting fees, they should be based upon the type of meter in use at each location.

Meter Size	Meter Type	Number Meters This Size	Percent Each Meter Size is of the Total	New Taps (Customer Growth) in a Typical Year	Capacity Shares Each Meter Size After Adjustment	Foot Notes	Sum of Capacity Shares in Each Meter Size Group	Percent of Capacity Shares Each Meter Size Group	Peak Capacity Cost per Capacity Share From Table 12	Peak Capacity Cost per Meter This Class	Base Capacity Cost per New Customer	System Development Fee
In-District												
Five Eighths	Displacement	7,235	95.4%	62.0	1.0		7,235	76.5%	\$286	\$286	\$2,714.80	\$3,000
Three Quarters	Displacement	0	0.0%	0.0	1.0	¹	0	0.0%	\$286	\$286	\$2,714.80	\$3,000
One Inch	Displacement	175	2.3%	0.0	2.5		437	4.6%	\$286	\$714	\$2,714.80	\$3,429
One & a Half Inch	Displacement	9	0.1%	0.0	5.0		45	0.5%	\$286	\$1,428	\$2,714.80	\$4,143
Two Inch	Displacement	139	1.8%	0.0	8.0		1,109	11.7%	\$286	\$2,285	\$2,714.80	\$5,000
Two & a Half Inch	Displacement	0	0.0%	0.0	12.5	²	0	0.0%	\$286	\$3,571	\$2,714.80	\$6,285
Three Inch	Singlet	7	0.1%	0.0	16.0		112	1.2%	\$286	\$4,570	\$2,714.80	\$7,285
Three Inch	Compound, Class I	0	0.0%	0.0	16.0		0	0.0%	\$286	\$4,570	\$2,714.80	\$7,285
Three Inch	Turbine, Class I	0	0.0%	0.0	17.5		0	0.0%	\$286	\$4,999	\$2,714.80	\$7,714
Four Inch	Singlet	15	0.2%	0.0	25.0		367	3.9%	\$286	\$7,141	\$2,714.80	\$9,856
Four Inch	Compound, Class I	0	0.0%	0.0	25.0		0	0.0%	\$286	\$7,141	\$2,714.80	\$9,856
Four Inch	Turbine, Class I	0	0.0%	0.0	31.0		0	0.0%	\$286	\$8,855	\$2,714.80	\$11,570
Six Inch	Singlet	0	0.0%	0.0	50.0		0	0.0%	\$286	\$14,283	\$2,714.80	\$16,997
Six Inch	Compound, Class I	0	0.0%	0.0	50.0		0	0.0%	\$286	\$14,283	\$2,714.80	\$16,997
Six Inch	Turbine, Class I	0	0.0%	0.0	65.0		0	0.0%	\$286	\$18,567	\$2,714.80	\$21,282
Eight Inch	Compound, Class I	2	0.0%	0.0	80.0		153	1.6%	\$286	\$22,852	\$2,714.80	\$25,567
Eight Inch	Turbine, Class I	0	0.0%	0.0	140.0		0	0.0%	\$286	\$39,992	\$2,714.80	\$42,706
Ten Inch	Turbine, Class II	0	0.0%	0.0	210.0		0	0.0%	\$286	\$59,987	\$2,714.80	\$62,702
Totals		7,581	100.0%	62.0			9,458	100.0%				

Foot Notes, which apply to Tables 14, 15 and 16, as well:

¹ The Three-Quarter-Inch meter capacity share factor is 1.5. However, it was set equal to the Five-eighths-Inch meter because most such meters are used for residential connections. This enables a uniform system development fee for almost all residential customers.

² These meter sizes were not included in AWWA study results, so these values are estimates.

Table 14 - Revenues From System Development Fees Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

This table calculates total fee revenues that would be generated during one full year at the fees in Table 13.

Meter Size	Meter Type	New Taps (Customer Growth) in a Typical Year	System Development Fee	Total Annual System Development Fees
Five Eighths	Displacement	62.0	\$3,000	\$186,028
Three Quarters	Displacement	0.0	\$3,000	\$0
One Inch	Displacement	0.0	\$3,429	\$0
One & a Half Inch	Displacement	0.0	\$4,143	\$0
Two Inch	Displacement	0.0	\$5,000	\$0
Two & a Half Inch	Displacement	0.0	\$6,285	\$0
Three Inch	Singlet	0.0	\$7,285	\$0
Three Inch	Compound, Class I	0.0	\$7,285	\$0
Three Inch	Turbine, Class I	0.0	\$7,714	\$0
Four Inch	Singlet	0.0	\$9,856	\$0
Four Inch	Compound, Class I	0.0	\$9,856	\$0
Four Inch	Turbine, Class I	0.0	\$11,570	\$0
Six Inch	Singlet	0.0	\$16,997	\$0
Six Inch	Compound, Class I	0.0	\$16,997	\$0
Six Inch	Turbine, Class I	0.0	\$21,282	\$0
Eight Inch	Compound, Class I	0.0	\$25,567	\$0
Eight Inch	Turbine, Class I	0.0	\$42,706	\$0
Ten Inch	Turbine, Class II	0.0	\$62,702	\$0
Total:		62.0		\$186,028

This is the amount used to calculate the "Meter Size-based System Development Fees" income in Table 3.

Table 15 - Minimum Charge Fees, Including Capacity Surcharges Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

This table does, essentially, the same thing as Table 13, except costs are recovered over time as minimum charge surcharges.

Meter Size	Meter Type	Capacity Shares Each Meter Size After Adjustment	Monthly Surcharge per Peak Capacity Share (Table 11)	Peak Capacity Cost per Meter Size (Table 12)	Cost-to-Serve Base Min. Charge (Top of Table 10)	Uniform Base Min. Charge Adjustment	Monthly Minimum Charge, Including Peak Capacity
In-District							
Five Eighths	Displacement	1.0	\$0.95	\$0.95	\$9.07	-\$2.50	\$7.52
Three Quarters	Displacement	1.0	\$0.95	\$0.95	\$9.07	-\$2.50	\$7.52
One Inch	Displacement	2.5	\$0.95	\$2.38	\$9.07	-\$2.50	\$8.95
One & a Half Inch	Displacement	5.0	\$0.95	\$4.76	\$9.07	-\$2.50	\$11.33
Two Inch	Displacement	8.0	\$0.95	\$7.62	\$9.07	-\$2.50	\$14.19
Two & a Half Inch	Displacement	12.5	\$0.95	\$11.91	\$9.07	-\$2.50	\$18.48
Three Inch	Singlet	16.0	\$0.95	\$15.25	\$9.07	-\$2.50	\$21.81
Three Inch	Compound, Class I	16.0	\$0.95	\$15.25	\$9.07	-\$2.50	\$21.81
Three Inch	Turbine, Class I	17.5	\$0.95	\$16.68	\$9.07	-\$2.50	\$23.24
Four Inch	Singlet	25.0	\$0.95	\$23.82	\$9.07	-\$2.50	\$30.39
Four Inch	Compound, Class I	25.0	\$0.95	\$23.82	\$9.07	-\$2.50	\$30.39
Four Inch	Turbine, Class I	31.0	\$0.95	\$29.54	\$9.07	-\$2.50	\$36.11
Six Inch	Singlet	50.0	\$0.95	\$47.65	\$9.07	-\$2.50	\$54.21
Six Inch	Compound, Class I	50.0	\$0.95	\$47.65	\$9.07	-\$2.50	\$54.21
Six Inch	Turbine, Class I	65.0	\$0.95	\$61.94	\$9.07	-\$2.50	\$68.50
Eight Inch	Compound, Class I	80.0	\$0.95	\$76.23	\$9.07	-\$2.50	\$82.80
Eight Inch	Turbine, Class I	140.0	\$0.95	\$133.41	\$9.07	-\$2.50	\$139.97
Ten Inch	Turbine, Class II	210.0	\$0.95	\$200.11	\$9.07	-\$2.50	\$206.68

Table 16 - Revenues From Minimum Charge Surcharges

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

This table calculates total minimum charge surcharge revenues that would be generated during one full year at the fees in Table 15.

Meter Size	Meter Type	Number Meters This Size	Annual Peak Capacity Surcharge Revenues
In-District			
Five Eighths	Displacement	7,235	\$82,731
Three Quarters	Displacement	0	\$0
One Inch	Displacement	175	\$4,993
One & a Half Inch	Displacement	9	\$519
Two Inch	Displacement	139	\$12,685
Two & a Half Inch	Displacement	0	\$0
Three Inch	Singlet	7	\$1,281
Three Inch	Compound, Class I	0	\$0
Three Inch	Turbine, Class I	0	\$0
Four Inch	Singlet	15	\$4,193
Four Inch	Compound, Class I	0	\$0
Four Inch	Turbine, Class I	0	\$0
Six Inch	Singlet	0	\$0
Six Inch	Compound, Class I	0	\$0
Six Inch	Turbine, Class I	0	\$0
Eight Inch	Compound, Class I	2	\$1,753
Eight Inch	Turbine, Class I	0	\$0
Ten Inch	Turbine, Class II	0	\$0
		7,581	\$108,156

Table 17 - Financial Capacity Indicators and Reserves
Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

This table depicts the affordability of future rates, the financial health of the system and the ending balances in various (assumed) accounts for the test year and the next 10 years.

	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting		
	1/1/24	1/1/25	1/1/26	1/1/27	1/1/28	1/1/29	1/1/30	1/1/31	1/1/32	1/1/33	1/1/34	1/1/35		
Capacity Indicators														
Customary Affordability Index	Monthly Bill for a 5,000 gal per Month, Small Meter Residential Customer	\$23.01	\$33.67	\$35.02	\$36.42	\$37.87	\$39.39	\$40.96	\$42.60	\$44.31	\$46.08	\$49.84		
	AMHI Within Service Area	\$67,797	\$69,134	\$70,497	\$71,886	\$73,304	\$74,749	\$76,223	\$77,726	\$79,258	\$80,821	\$84,039		
	Affordability Index: Current Rates First Column, Modeled Rates After That	0.41%	0.58%	0.60%	0.61%	0.62%	0.63%	0.64%	0.66%	0.67%	0.68%	0.71%		
	National Average Affordability Index: Commonly Accepted but Not Statistically Verifiable	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%		
	Affordability Index (AI) goes to the willingness and ability of customers to pay. AI is the cost of 60,000 gallons of residential service per year (5,000 gallons per month) divided by the Annual Median Household Income (AMHI) in the service area (gleaned from Census data or a survey). Rates near 1.0% are common in the U.S. and are generally considered affordable. Most grant agencies will decline to award grants if the AI is less than 1.5 to 2.0%, unless other eligibility criteria considered along with the AI make an applicant eligible.													
Low-income, Low-volume "Affordability Index"	Monthly Bill for a 2,000 gal per Month, Low-income Residential Customer	\$12.15	\$17.98	\$18.70	\$19.45	\$20.22	\$21.03	\$21.87	\$22.75	\$23.66	\$24.60	\$26.61		
	Income at One-half the AMHI and Rising at One-half the Rate Above	\$33,898	\$34,233	\$34,570	\$34,911	\$35,255	\$35,603	\$35,954	\$36,308	\$36,666	\$37,027	\$37,392		
	Affordability for Low-income, Low-volume: Current Rates First Column, Modeled Rates After That	0.43%	0.63%	0.65%	0.67%	0.69%	0.71%	0.73%	0.75%	0.77%	0.80%	0.85%		
	This additional indicator of affordability assumes a residential customer with income at one-half the median household income above, that income is growing at one-half the rate of the median household income and the customer uses 2,000 gallons per month. Such a customer is likely either a minimum wage or near-minimum wage worker, or is retired and living only on Social Security benefits. Such customers are more commonly the "slow pays" and "no pays" compared to others, so this indicator goes to the "business sense" of the rates modeled here. In other words, raise this customer's bill too much and they are more likely to pay late or not pay.													
Estimated Operating Ratio: Current Rates First Column, Modeled Rates After That	1.85	2.26	1.33	1.44	1.46	1.50	1.53	1.55	1.59	1.62	1.64	1.68		
Operating ratio (OR) is a measure of the utility's ability to pay its operating expenses using only current incomes. A 1.0 OR is break even. Below 1.0 indicates operating in the "red." Generally, the OR should be at least 1.15 for large systems, 1.30 or more for medium-sized systems and perhaps as high as 2.0 for small systems. Note: If the utility has or will have reserves (below,) it has more ability to pay its operating costs than this calculation of OR implies.														
Estimated Coverage Ratio: Current Rates First Column, Modeled Rates After That	0.58	3.07	0.72	2.07	1.72	1.37	1.25	1.04	0.96	0.84	0.78	0.89		
Coverage Ratio (CR) goes to the ability of the utility to pay its debt payments out of current incomes. CR applies only to years with debt service. A "N.A." above indicates there was not, or in a future year there will not be debt during that year. 1.0 is break even - just enough net revenue to pay debt. Generally, the CR should be at least 1.25. Note: If the utility has or will have other available reserves (shown below,) it has more ability to make debt payments than the CR implies. That is covered by the Alternative Coverage Ratio that follows next.														
Alternative Coverage Ratio: Current Rates First Column, Modeled Rates After That	0.15	0.27	2.49	2.95	3.35	3.07	3.03	2.67	2.34	1.95	1.63	1.52		
This Alternative Coverage Ratio (ACR) is based on the same notion as the classic coverage ratio above, except it includes reserves that are available to pay debt service. With the classic CR, a utility could build reserves early on with current net revenues, but then future rates may not be high enough to show a strong CR. The classic CR could even go negative. But in reality, the utility could have quite strong reserves with which to pay debt. Thus, the Alternative Coverage Ratio can be a better indicator of a utility's true ability to pay debt in such situations.														
Reserves	Balance Ending on 12/31/23													
	Cash and Cash Equivalents	\$0	\$372,570	\$306,584	\$780,238	\$800,586	\$828,096	\$843,269	\$865,648	\$895,921	\$912,591	\$937,202	\$970,515	\$988,827
	Other Liquid Assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Total Undedicated Cash Assets	\$0	\$372,570	\$306,584	\$780,238	\$800,586	\$828,096	\$843,269	\$865,648	\$895,921	\$912,591	\$937,202	\$970,515	\$988,827
	Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	\$0	\$372,570	\$306,584	\$756,831	\$753,271	\$755,781	\$746,540	\$743,361	\$746,277	\$737,358	\$734,526	\$737,815	\$751,737
	Repair & Replacement	\$150,000	\$153,000	\$287,282	\$414,463	\$534,107	\$645,760	\$748,952	\$843,193	\$927,972	\$1,002,760	\$1,067,008	\$1,120,142	\$1,161,570
	Debt and CIP Reserves	\$0	-\$418,484	\$403,029	\$299,146	\$846,623	\$1,330,912	\$1,697,325	\$2,001,817	\$2,094,382	\$2,062,571	\$1,780,767	\$1,315,427	\$1,101,742
	Sum of All Reserves	\$150,000	\$107,086	\$996,895	\$1,493,847	\$2,181,315	\$2,804,767	\$3,289,546	\$3,710,657	\$3,918,275	\$3,977,922	\$3,784,977	\$3,406,085	\$3,252,139

Table 18 - Bills Before and After Rate Adjustments
Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

The modeled rates will generate 46.4% more revenue per year than the test year or current rates.								
Bills would change as shown in this table. Modeled bills are compared to current bills at the now current rates, which may be different than the test year rates. The actual rates to adopt or consider are included in the narrative report.								
Customer, Rate Class or Meter Size	Gallons of Use	Customers Using at Least This Volume But Not the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
Res, 0.625 Inch	0	0	0	6,800	\$4.91	\$7.52	\$2.61	53%
	1,000	0	0	6,800	\$8.53	\$12.75	\$4.22	49%
	2,000	0	0	6,800	\$12.15	\$17.98	\$5.83	48%
	3,000	0	0	6,800	\$15.77	\$23.21	\$7.44	47%
	3,238	6,800	6,800	6,800	\$16.63	\$24.45	\$7.82	47%
	5,000	0	6,800	0	\$23.01	\$33.67	\$10.66	46%
	6,000	0	6,800	0	\$26.63	\$38.90	\$12.27	46%
	7,000	0	6,800	0	\$30.25	\$44.13	\$13.88	46%
	8,000	0	6,800	0	\$33.87	\$49.36	\$15.49	46%
	9,000	0	6,800	0	\$37.49	\$54.59	\$17.10	46%
	10,000	0	6,800	0	\$41.11	\$59.82	\$18.71	46%
	20,000	0	6,800	0	\$77.31	\$112.12	\$34.81	45%
	30,000	0	6,800	0	\$113.51	\$164.42	\$50.91	45%
	40,000	0	6,800	0	\$149.71	\$216.72	\$67.01	45%
	50,000	0	6,800	0	\$185.91	\$269.02	\$83.11	45%
	60,000	0	6,800	0	\$222.11	\$321.32	\$99.21	45%
	70,000	0	6,800	0	\$258.31	\$373.62	\$115.31	45%
	80,000	0	6,800	0	\$294.51	\$425.92	\$131.41	45%
	90,000	0	6,800	0	\$330.71	\$478.22	\$147.51	45%
	100,000	0	6,800	0	\$366.91	\$530.52	\$163.61	45%
Com, 0.625 Inch	0	0	0	435	\$4.91	\$7.52	\$2.61	53%
	1,000	0	0	435	\$8.53	\$12.75	\$4.22	49%
	2,000	435	435	435	\$12.15	\$17.98	\$5.83	48%
	3,003	0	435	0	\$15.78	\$23.23	\$7.44	47%
	4,000	0	435	0	\$19.39	\$28.44	\$9.05	47%
	5,000	0	435	0	\$23.01	\$33.67	\$10.66	46%
	6,000	0	435	0	\$26.63	\$38.90	\$12.27	46%
	7,000	0	435	0	\$30.25	\$44.13	\$13.88	46%
	8,000	0	435	0	\$33.87	\$49.36	\$15.49	46%
	9,000	0	435	0	\$37.49	\$54.59	\$17.10	46%
	10,000	0	435	0	\$41.11	\$59.82	\$18.71	46%
	20,000	0	435	0	\$77.31	\$112.12	\$34.81	45%
	30,000	0	435	0	\$113.51	\$164.42	\$50.91	45%
	40,000	0	435	0	\$149.71	\$216.72	\$67.01	45%
	50,000	0	435	0	\$185.91	\$269.02	\$83.11	45%
	60,000	0	435	0	\$222.11	\$321.32	\$99.21	45%
	70,000	0	435	0	\$258.31	\$373.62	\$115.31	45%
	80,000	0	435	0	\$294.51	\$425.92	\$131.41	45%
	90,000	0	435	0	\$330.71	\$478.22	\$147.51	45%
	100,000	0	435	0	\$366.91	\$530.52	\$163.61	45%
110,000	0	435	0	\$403.11	\$582.82	\$179.71	45%	
120,000	0	435	0	\$439.31	\$635.12	\$195.81	45%	
130,000	0	435	0	\$475.51	\$687.42	\$211.91	45%	

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers Using at Least This Volume But Not the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)	
1 Inch	0	0	0	175	\$6.32	\$8.95	\$2.63	42%	
	1,000	0	0	175	\$9.94	\$14.18	\$4.24	43%	
	2,000	0	0	175	\$13.56	\$19.41	\$5.85	43%	
	3,000	0	0	175	\$17.18	\$24.64	\$7.46	43%	
	4,000	0	0	175	\$20.80	\$29.87	\$9.07	44%	
	5,000	0	0	175	\$24.42	\$35.10	\$10.68	44%	
	6,000	0	0	175	\$28.04	\$40.33	\$12.29	44%	
	7,000	0	0	175	\$31.66	\$45.56	\$13.90	44%	
	8,000	0	0	175	\$35.28	\$50.79	\$15.51	44%	
	9,000	0	0	175	\$38.90	\$56.02	\$17.12	44%	
	10,000	0	0	175	\$42.52	\$61.25	\$18.73	44%	
		11,950	175	175	175	\$49.58	\$71.45	\$21.87	44%
		30,000	0	175	0	\$114.92	\$165.85	\$50.93	44%
		40,000	0	175	0	\$151.12	\$218.15	\$67.03	44%
		50,000	0	175	0	\$187.32	\$270.45	\$83.13	44%
		60,000	0	175	0	\$223.52	\$322.75	\$99.23	44%
	70,000	0	175	0	\$259.72	\$375.05	\$115.33	44%	
	80,000	0	175	0	\$295.92	\$427.35	\$131.43	44%	
	90,000	0	175	0	\$332.12	\$479.65	\$147.53	44%	
	100,000	0	175	0	\$368.32	\$531.95	\$163.63	44%	
1.5 Inch	0	0	0	9	\$7.37	\$11.33	\$3.96	54%	
	1,000	0	0	9	\$10.99	\$16.56	\$5.57	51%	
	2,000	0	0	9	\$14.61	\$21.79	\$7.18	49%	
	3,000	0	0	9	\$18.23	\$27.02	\$8.79	48%	
	4,000	0	0	9	\$21.85	\$32.25	\$10.40	48%	
	5,000	0	0	9	\$25.47	\$37.48	\$12.01	47%	
	6,000	0	0	9	\$29.09	\$42.71	\$13.62	47%	
	7,000	0	0	9	\$32.71	\$47.94	\$15.23	47%	
	8,000	0	0	9	\$36.33	\$53.17	\$16.84	46%	
	9,000	0	0	9	\$39.95	\$58.40	\$18.45	46%	
	10,000	0	0	9	\$43.57	\$63.63	\$20.06	46%	
		25,238	9	9	9	\$98.73	\$143.32	\$44.59	45%
		30,000	0	9	0	\$115.97	\$168.23	\$52.26	45%
		40,000	0	9	0	\$152.17	\$220.53	\$68.36	45%
		50,000	0	9	0	\$188.37	\$272.83	\$84.46	45%
		60,000	0	9	0	\$224.57	\$325.13	\$100.56	45%
		70,000	0	9	0	\$260.77	\$377.43	\$116.66	45%
		80,000	0	9	0	\$296.97	\$429.73	\$132.76	45%
		90,000	0	9	0	\$333.17	\$482.03	\$148.86	45%
	100,000	0	9	0	\$369.37	\$534.33	\$164.96	45%	
	110,000	0	9	0	\$405.57	\$586.63	\$181.06	45%	
	120,000	0	9	0	\$441.77	\$638.93	\$197.16	45%	
	130,000	0	9	0	\$477.97	\$691.23	\$213.26	45%	
	140,000	0	9	0	\$514.17	\$743.53	\$229.36	45%	
	150,000	0	9	0	\$550.37	\$795.83	\$245.46	45%	

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers Using at Least This Volume But Not the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
	0	0	0	139	\$10.18	\$14.19	\$4.01	39%
	1,000	0	0	139	\$13.80	\$19.42	\$5.62	41%
	2,000	0	0	139	\$17.42	\$24.65	\$7.23	41%
	3,000	0	0	139	\$21.04	\$29.88	\$8.84	42%
	4,000	0	0	139	\$24.66	\$35.11	\$10.45	42%
	5,000	0	0	139	\$28.28	\$40.34	\$12.06	43%
	6,000	0	0	139	\$31.90	\$45.57	\$13.67	43%
	7,000	0	0	139	\$35.52	\$50.80	\$15.28	43%
	8,000	0	0	139	\$39.14	\$56.03	\$16.89	43%
	9,000	0	0	139	\$42.76	\$61.26	\$18.50	43%
	10,000	0	0	139	\$46.38	\$66.49	\$20.11	43%
	20,000	0	0	139	\$82.58	\$118.79	\$36.21	44%
	33,086	139	139	139	\$129.95	\$187.23	\$57.28	44%
2 Inch	40,000	0	139	0	\$154.98	\$223.39	\$68.41	44%
	50,000	0	139	0	\$191.18	\$275.69	\$84.51	44%
	60,000	0	139	0	\$227.38	\$327.99	\$100.61	44%
	70,000	0	139	0	\$263.58	\$380.29	\$116.71	44%
	80,000	0	139	0	\$299.78	\$432.59	\$132.81	44%
	90,000	0	139	0	\$335.98	\$484.89	\$148.91	44%
	100,000	0	139	0	\$372.18	\$537.19	\$165.01	44%
	110,000	0	139	0	\$408.38	\$589.49	\$181.11	44%
	120,000	0	139	0	\$444.58	\$641.79	\$197.21	44%
	130,000	0	139	0	\$480.78	\$694.09	\$213.31	44%
	140,000	0	139	0	\$516.98	\$746.39	\$229.41	44%
	150,000	0	139	0	\$553.18	\$798.69	\$245.51	44%
	160,000	0	139	0	\$589.38	\$850.99	\$261.61	44%
	170,000	0	139	0	\$625.58	\$903.29	\$277.71	44%
	0	0	0	7	\$13.34	\$21.81	\$8.47	64%
	1,000	0	0	7	\$16.96	\$27.04	\$10.08	59%
	2,000	0	0	7	\$20.58	\$32.27	\$11.69	57%
	3,000	0	0	7	\$24.20	\$37.50	\$13.30	55%
	4,000	0	0	7	\$27.82	\$42.73	\$14.91	54%
	5,000	0	0	7	\$31.44	\$47.96	\$16.52	53%
	6,000	0	0	7	\$35.06	\$53.19	\$18.13	52%
	7,000	0	0	7	\$38.68	\$58.42	\$19.74	51%
	8,000	0	0	7	\$42.30	\$63.65	\$21.35	50%
	9,000	0	0	7	\$45.92	\$68.88	\$22.96	50%
	10,000	0	0	7	\$49.54	\$74.11	\$24.57	50%
	20,000	0	0	7	\$85.74	\$126.41	\$40.67	47%
	30,000	0	0	7	\$121.94	\$178.71	\$56.77	47%
3 Inch	40,000	0	0	7	\$158.14	\$231.01	\$72.87	46%
	50,000	0	0	7	\$194.34	\$283.31	\$88.97	46%
	61,583	7	7	7	\$236.27	\$343.89	\$107.62	46%
	70,000	0	7	0	\$266.74	\$387.91	\$121.17	45%
	80,000	0	7	0	\$302.94	\$440.21	\$137.27	45%
	90,000	0	7	0	\$339.14	\$492.51	\$153.37	45%
	100,000	0	7	0	\$375.34	\$544.81	\$169.47	45%
	110,000	0	7	0	\$411.54	\$597.11	\$185.57	45%
	120,000	0	7	0	\$447.74	\$649.41	\$201.67	45%
	130,000	0	7	0	\$483.94	\$701.71	\$217.77	45%
	140,000	0	7	0	\$520.14	\$754.01	\$233.87	45%
	150,000	0	7	0	\$556.34	\$806.31	\$249.97	45%
	160,000	0	7	0	\$592.54	\$858.61	\$266.07	45%
	170,000	0	7	0	\$628.74	\$910.91	\$282.17	45%

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers Using at Least This Volume But Not the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
4 Inch	0	0	0	15	\$22.11	\$30.39	\$8.28	37%
	1,000	0	0	15	\$25.73	\$35.62	\$9.89	38%
	2,000	0	0	15	\$29.35	\$40.85	\$11.50	39%
	3,000	0	0	15	\$32.97	\$46.08	\$13.11	40%
	4,000	0	0	15	\$36.59	\$51.31	\$14.72	40%
	5,000	0	0	15	\$40.21	\$56.54	\$16.33	41%
	6,000	0	0	15	\$43.83	\$61.77	\$17.94	41%
	7,000	0	0	15	\$47.45	\$67.00	\$19.55	41%
	8,000	0	0	15	\$51.07	\$72.23	\$21.16	41%
	9,000	0	0	15	\$54.69	\$77.46	\$22.77	42%
	10,000	0	0	15	\$58.31	\$82.69	\$24.38	42%
	20,000	0	0	15	\$94.51	\$134.99	\$40.48	43%
	30,000	0	0	15	\$130.71	\$187.29	\$56.58	43%
	40,000	0	0	15	\$166.91	\$239.59	\$72.68	44%
	50,000	0	0	15	\$203.11	\$291.89	\$88.78	44%
	65,524	15	15	15	\$259.31	\$373.08	\$113.77	44%
	70,000	0	15	0	\$275.51	\$396.49	\$120.98	44%
	80,000	0	15	0	\$311.71	\$448.79	\$137.08	44%
	90,000	0	15	0	\$347.91	\$501.09	\$153.18	44%
	100,000	0	15	0	\$384.11	\$553.39	\$169.28	44%
110,000	0	15	0	\$420.31	\$605.69	\$185.38	44%	
120,000	0	15	0	\$456.51	\$657.99	\$201.48	44%	
130,000	0	15	0	\$492.71	\$710.29	\$217.58	44%	
140,000	0	15	0	\$528.91	\$762.59	\$233.68	44%	
150,000	0	15	0	\$565.11	\$814.89	\$249.78	44%	
160,000	0	15	0	\$601.31	\$867.19	\$265.88	44%	
170,000	0	15	0	\$637.51	\$919.49	\$281.98	44%	
8 Inch	0	0	0	2	\$32.64	\$82.80	\$50.16	154%
	1,000	0	0	2	\$36.26	\$88.03	\$51.77	143%
	2,000	0	0	2	\$39.88	\$93.26	\$53.38	134%
	3,000	0	0	2	\$43.50	\$98.49	\$54.99	126%
	4,000	0	0	2	\$47.12	\$103.72	\$56.60	120%
	5,000	0	0	2	\$50.74	\$108.95	\$58.21	115%
	6,000	0	0	2	\$54.36	\$114.18	\$59.82	110%
	7,000	0	0	2	\$57.98	\$119.41	\$61.43	106%
	8,000	0	0	2	\$61.60	\$124.64	\$63.04	102%
	9,000	0	0	2	\$65.22	\$129.87	\$64.65	99%
	10,000	0	0	2	\$68.84	\$135.10	\$66.26	96%
	20,000	0	0	2	\$105.04	\$187.40	\$82.36	78%
	30,000	0	0	2	\$141.24	\$239.70	\$98.46	70%
	40,000	0	0	2	\$177.44	\$292.00	\$114.56	65%
	50,000	0	0	2	\$213.64	\$344.30	\$130.66	61%
	60,000	0	0	2	\$249.84	\$396.60	\$146.76	59%
	70,000	0	0	2	\$286.04	\$448.90	\$162.86	57%
	80,000	0	0	2	\$322.24	\$501.20	\$178.96	56%
	90,000	0	0	2	\$358.44	\$553.50	\$195.06	54%
	100,000	0	0	2	\$394.64	\$605.80	\$211.16	54%
110,000	0	0	2	\$430.84	\$658.10	\$227.26	53%	
120,000	0	0	2	\$467.04	\$710.40	\$243.36	52%	
130,000	0	0	2	\$503.24	\$762.70	\$259.46	52%	
140,000	0	0	2	\$539.44	\$815.00	\$275.56	51%	
150,000	0	0	2	\$575.64	\$867.30	\$291.66	51%	
160,000	0	0	2	\$611.84	\$919.60	\$307.76	50%	
316,624	2	2	2	\$1,178.82	\$1,738.74	\$559.92	47%	

Table 19 - User Statistics

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-1

This table shows measures of equitability, or "fairness," of the rates as modeled in Table 10. If debt, capacity or other surcharges were also calculated but not included in Table 10, this table does not take those fees into account.

If your rates were based only on volume of service, your % of Usage and % of Revenues figures would be the same within all the classes. While rates are not set up that way, it is still useful to make comparisons on that basis. This table does that, among other things.

Normally, the % of usage figure will be lower than the % of revenue for the lower volumes of use. That will switch for the higher volumes of use. Even for declining rate structures, this switch should occur near the volume of the average residential user, typically near 5,000 gallons/month (668 cu ft).

In urban and suburban areas the average monthly use for residential or general customers can be twice that used by their rural and "old town" counterparts. Use is largely dependent upon who lives in a community. Older people living in longer established neighborhoods tend to use less volume than younger people living in more recently developed areas. As you make comparisons between different customers and customer classes, keep that, and the following statistics about your rates in mind:

3,238 Gallons: This is the average small meter (usually residential) customer's usage per Monthly billing cycle.									
Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	% Users	% Revenue % Use at Current Rates	% Revenue at Modeled Rates	
Res, 0.625 Inch	0	999	0	0.0	0.0%	0.0%	21.1%	15.9%	15.6%
	1,000	1,999	0	0.0	0.0%	0.0%	21.1%	15.9%	15.6%
	2,000	2,999	0	0.0	0.0%	0.0%	21.1%	15.9%	15.6%
	3,000	3,237	0	0.0	0.0%	0.0%	5.0%	3.8%	3.7%
	3,238	4,999	264,190,888	6,799.9	100.0%	89.7%	0.0%	21.5%	22.5%
Totals for Class			264,190,888	6,799.9		89.7%	68.3%	72.8%	73.1%
Com, 0.625 Inch	0	999	0	0.0	0.0%	0.0%	1.3%	1.0%	1.0%
	1,000	1,999	0	0.0	0.0%	0.0%	1.3%	1.0%	1.0%
	2,000	3,002	15,676,584	435.0	100.0%	5.7%	1.4%	2.4%	2.4%
	3,003	3,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%
Totals for Class			15,676,584	435.0		5.7%	4.1%	4.4%	4.4%
1 Inch	0	999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	1,000	1,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	2,000	2,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	3,000	3,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	4,000	4,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	5,000	5,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	6,000	6,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	7,000	7,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	8,000	8,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	9,000	9,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	10,000	11,949	0	0.0	0.0%	0.0%	1.1%	0.8%	0.8%
11,950	29,999	25,047,682	174.7	100.0%	2.3%	0.0%	0.7%	0.7%	
Totals for Class			25,047,682	174.7		2.3%	6.5%	5.6%	5.5%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
1.5 Inch	0	999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	10,000	25,237	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	25,238	29,999	2,750,938	9.1	100.0%	0.1%	0.0%	0.0%	0.0%
	30,000	39,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class			2,750,938	9.1		0.1%	0.7%	0.6%
2 Inch	0	999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	1,000	1,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	2,000	2,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	3,000	3,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	4,000	4,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	5,000	5,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	6,000	6,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	7,000	7,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	8,000	8,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	9,000	9,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	10,000	19,999	0	0.0	0.0%	0.0%	4.3%	3.2%	3.2%
	20,000	33,085	0	0.0	0.0%	0.0%	5.6%	4.2%	4.2%
	33,086	39,999	55,055,614	138.7	100.0%	1.8%	0.0%	0.9%	0.9%
	40,000	49,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%
Totals for Class			55,055,614	138.7		1.8%	14.2%	11.6%	11.4%
3 Inch	0	999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	10,000	19,999	0	0.0	0.0%	0.0%	0.2%	0.2%	0.2%
	20,000	29,999	0	0.0	0.0%	0.0%	0.2%	0.2%	0.2%
	30,000	39,999	0	0.0	0.0%	0.0%	0.2%	0.2%	0.2%
	40,000	49,999	0	0.0	0.0%	0.0%	0.2%	0.2%	0.2%
	50,000	61,582	0	0.0	0.0%	0.0%	0.3%	0.2%	0.2%
	61,583	69,999	5,172,940	7.0	100.0%	0.1%	0.0%	0.1%	0.1%
70,000	79,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	
Totals for Class			5,172,940	7.0		0.1%	1.3%	1.1%	1.1%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
4 Inch	0	999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	10,000	19,999	0	0.0	0.0%	0.0%	0.5%	0.3%	0.3%
	20,000	29,999	0	0.0	0.0%	0.0%	0.5%	0.3%	0.3%
	30,000	39,999	0	0.0	0.0%	0.0%	0.5%	0.3%	0.3%
	40,000	49,999	0	0.0	0.0%	0.0%	0.5%	0.3%	0.3%
	50,000	65,523	0	0.0	0.0%	0.0%	0.7%	0.5%	0.5%
	65,524	69,999	11,532,201	14.7	100.0%	0.2%	0.0%	0.2%	0.2%
	70,000	79,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%
Totals for Class			11,532,201	14.7		0.2%	3.0%	2.4%	2.4%
8 Inch	0	999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	10,000	19,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	20,000	29,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	30,000	39,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	40,000	49,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	50,000	59,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	60,000	69,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	70,000	79,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	80,000	89,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	90,000	99,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	100,000	109,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	110,000	119,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	120,000	129,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	130,000	139,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	140,000	149,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	150,000	159,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	160,000	316,623	0	0.0	0.0%	0.0%	0.9%	0.7%	0.7%
	316,624	or More	7,282,341	1.9	100.0%	0.0%	0.0%	0.0%	0.1%
Totals for Class			7,282,341	1.9		0.0%	1.9%	1.5%	1.5%
Grand Totals			386,709,187	7,581		100.00%	100.00%	100.00%	100.00%

Chart 1 - Operating Ratio

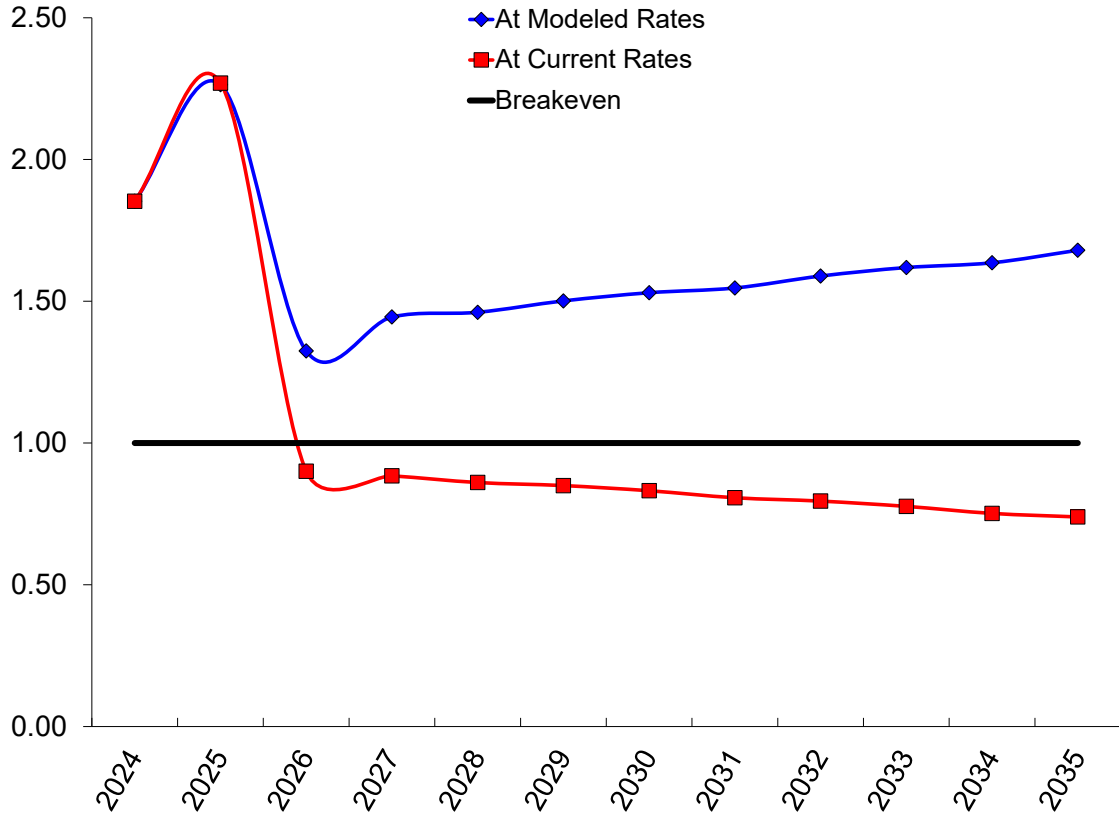


Chart 2 - Coverage Ratio

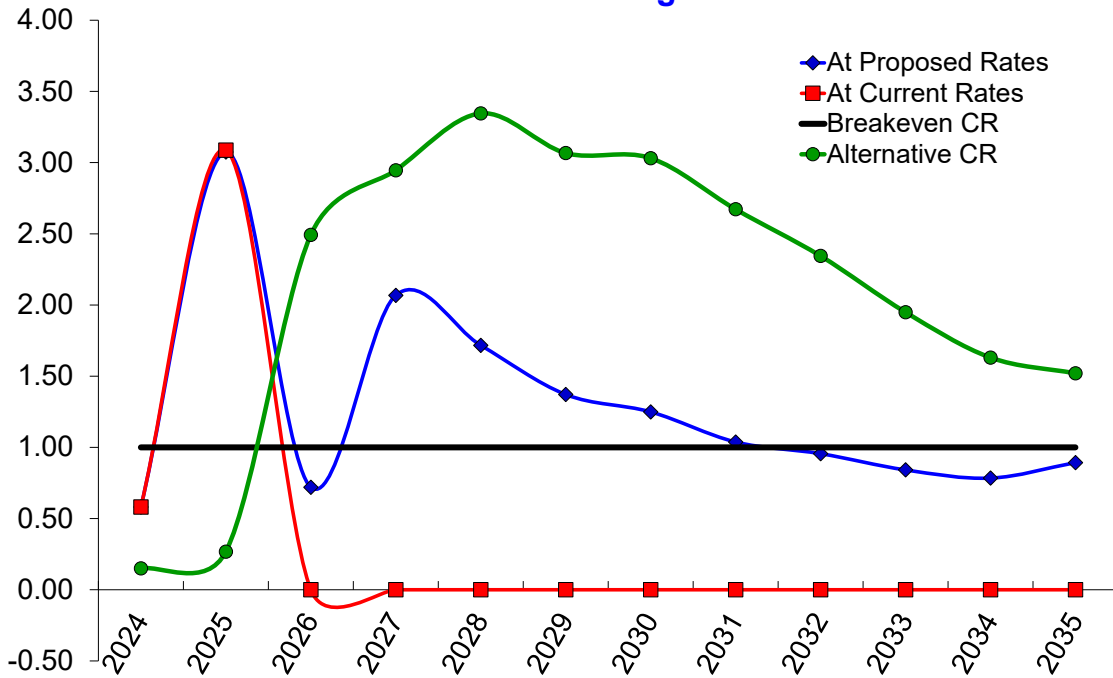


Chart 3 - Residential Users' Bills

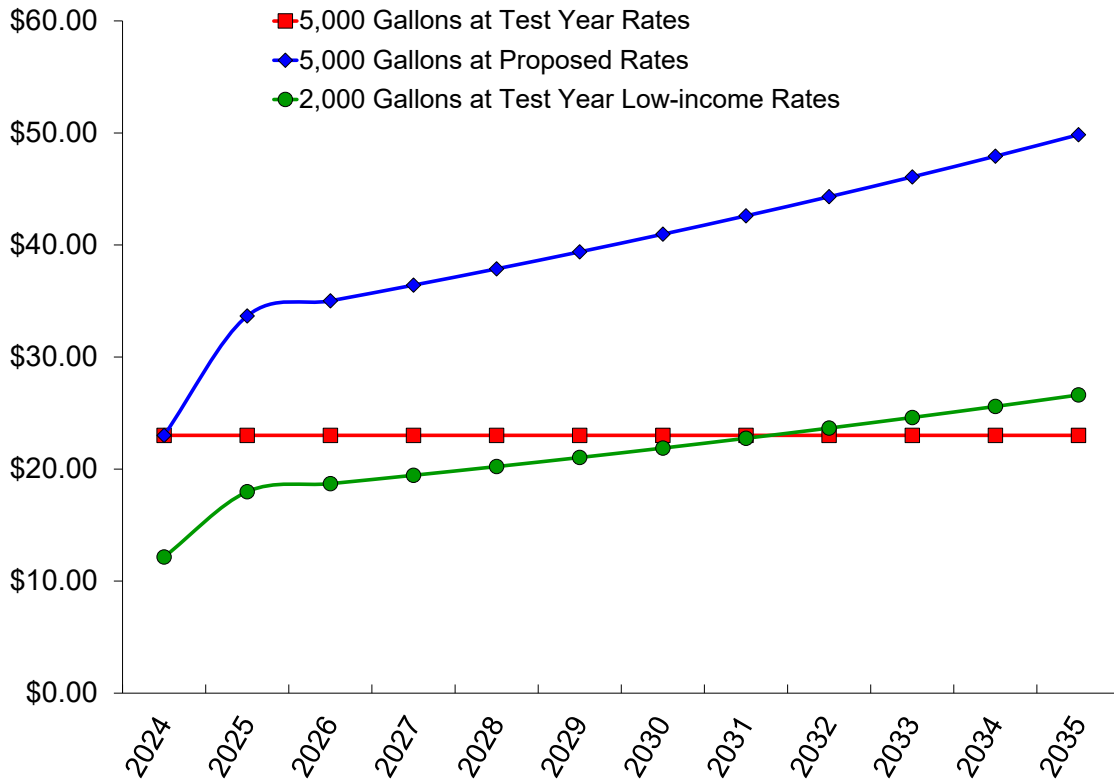


Chart 4 - Affordability

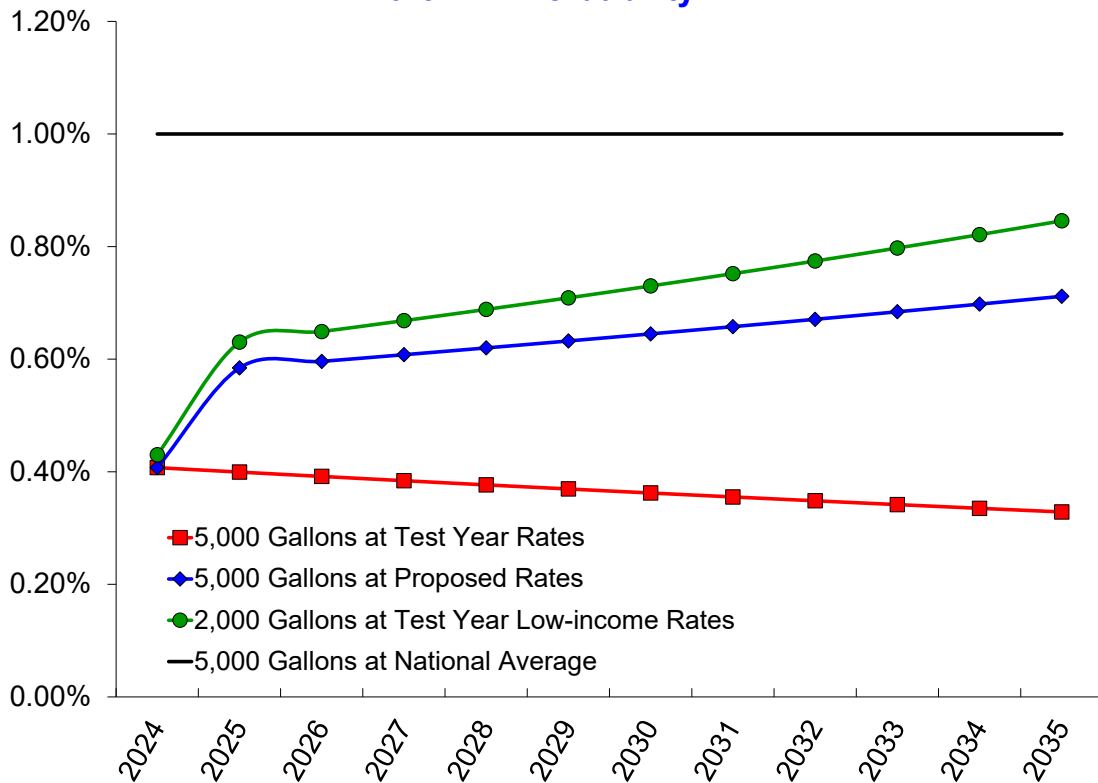


Chart 5 - Working Capital vs Goal

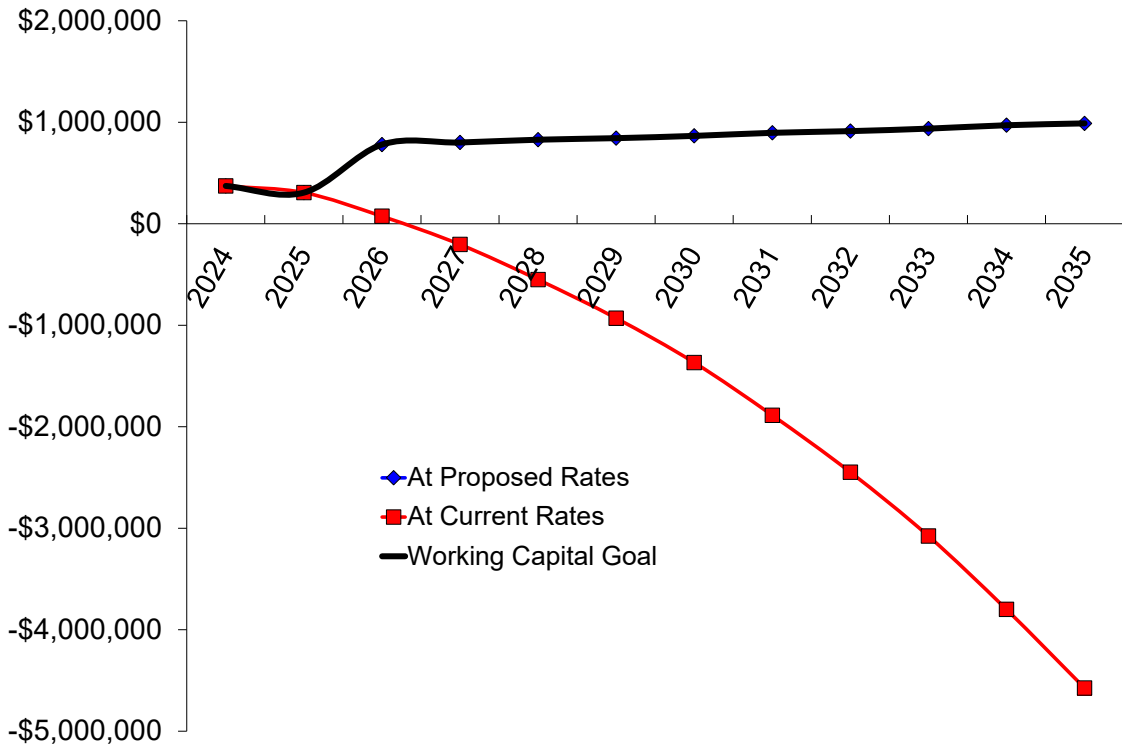


Chart 6 - Value of Cash Reserves Before Inflation

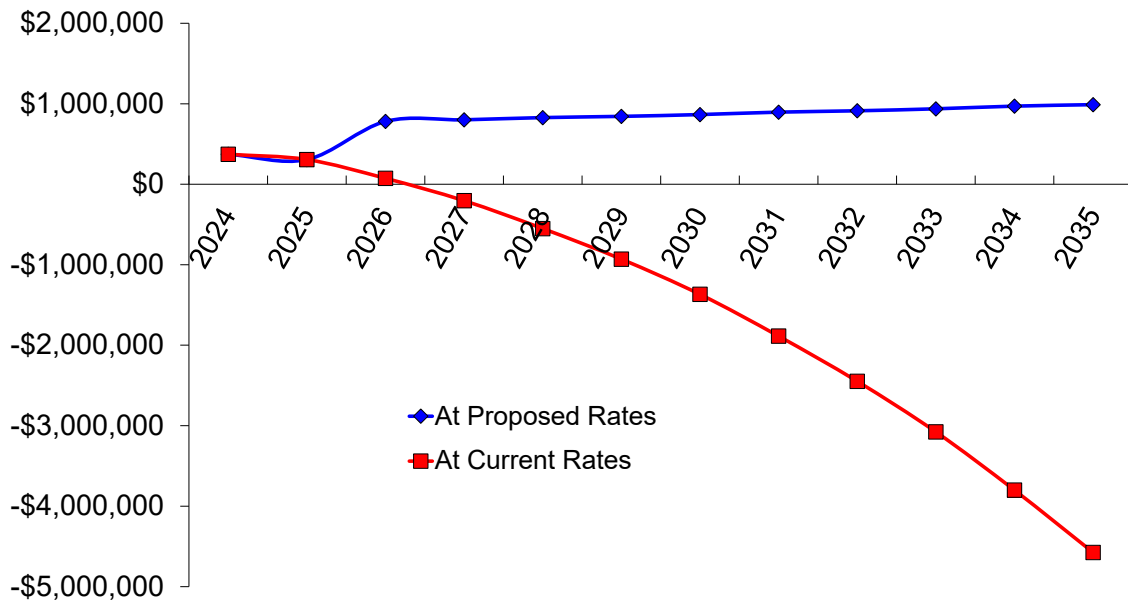


Chart 7 - Value of Cash Reserves After Inflation

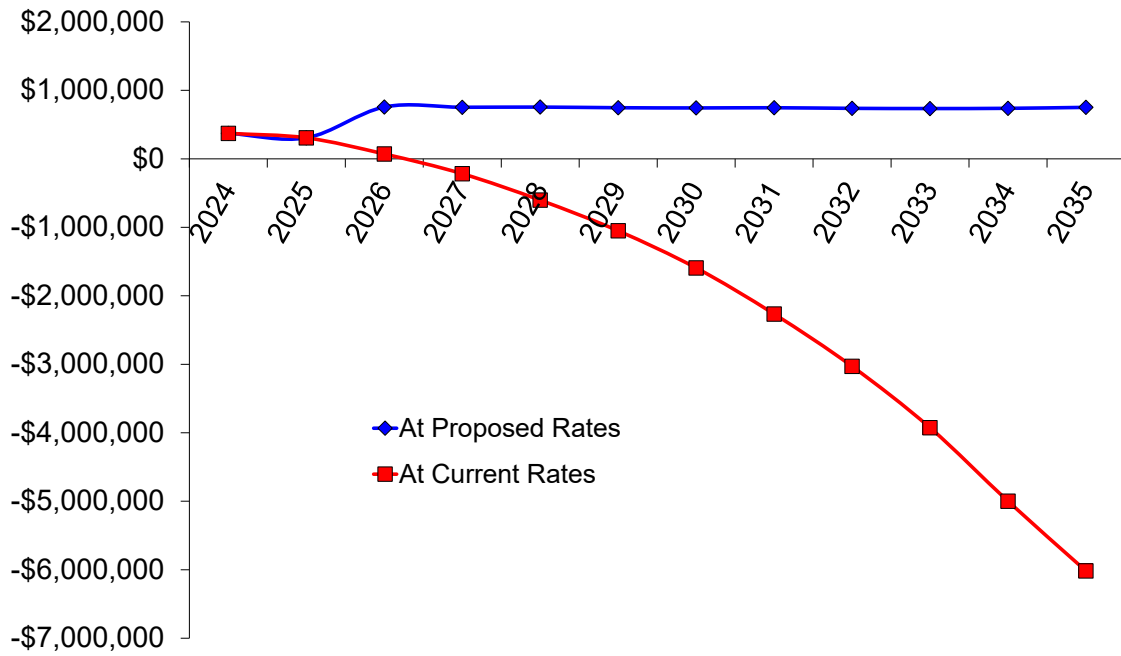
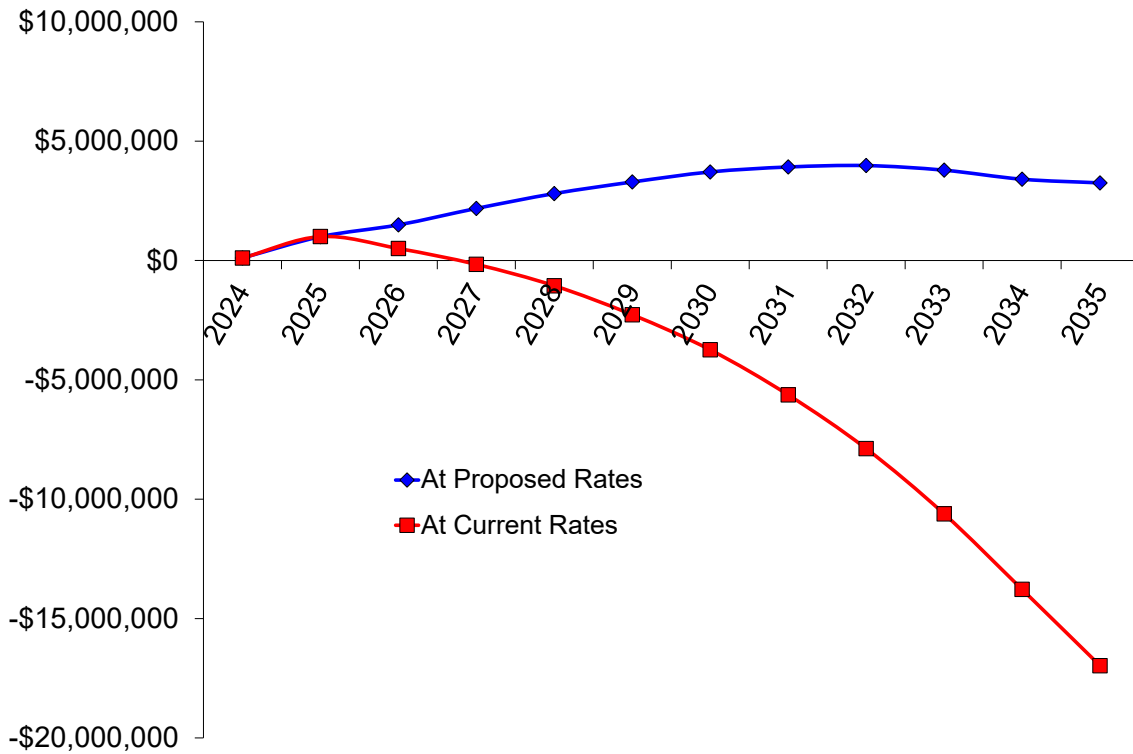


Chart 8 - Sum of All Reserves



Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-2

This model is the same as Model 1, except it includes a "placekeeper" additional annual cost of \$250,000.

January 4, 2026

This rate analysis model was produced by

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Note: This document is a print out of the spreadsheet model used to calculate new user charge and other rates and fees for the next 10 years. These calculations are complex and are based upon many conditions and assumptions. These issues, and others, are described in a narrative report that accompanies this model.

Table 3 - Operating Incomes and Basic User Data

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-2

This table depicts user statistics, customer growth, and system incomes and across the board "inflationary" style rate increases through the 10th year.

Annual Median Household Income (AMHI)

\$69,134	Census Bureau estimate of AMHI for the year 2025
\$46,308	Census Bureau estimate of AMHI for the year 2000
\$22,825	AMHI growth during this time period
1.97%	Simple annual income growth rate during this time period (used to project future household incomes)

Test Year Growth of Customer Base and Average Tap Fee Paid per Connection

62	Number new Sewer connections made during test year
\$194	Average Sewer tap or installation fee assessed during the test year

This model is programmed for rates to be reset in the "Analysis Year," also called the "0 Year" column below (heading highlighted blue). Revenues will be collected at the now-current rates for the first part of the analysis year and the modeled rates for the last part of the analysis year. Thus, the revenues shown that column of the table are "blended" revenues; part collected at the old rates and part collected at the new rates. It was then assumed that all rate adjustments made after the initial (major) adjustment will be done annually on approximately the anniversary of the first adjustment. If rates will not be adjusted during the "0 Year," an adjustment (normally a revenue reduction) was calculated below to account for the late start in making the first adjustments.

Basic User (Customer) Data

	Inflation/ Deflation (-) Factor	Analysis Year		Years Following the Analysis Year (for Which Results Have Been Projected)									
		Test Year	0 Year	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year
		Starting 1/1/24	Starting 1/1/25	Starting 1/1/26	Starting 1/1/27	Starting 1/1/28	Starting 1/1/29	Starting 1/1/30	Starting 1/1/31	Starting 1/1/32	Starting 1/1/33	Starting 1/1/34	Starting 1/1/35
Rate Increases Projected for Future Years	N.A.	N.A.	N.A.		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
The row above shows the rate at which user charge fees should be increased for each year beyond the initial rate adjustment year. Unless stated otherwise, these should be across-the-board increases to all rates and fees and that should continue until a new rate analysis is done.													
Average Number of Customers	N.A.	7,581	7,643	7,705	7,767	7,829	7,891	7,953	8,015	8,077	8,139	8,201	8,263
Customers Added or Lost (-) Each Year	N.A.	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0
Customer Growth or Loss (-) Rate	N.A.	0.82%	0.81%	0.80%	0.80%	0.79%	0.79%	0.78%	0.77%	0.77%	0.76%	0.76%	0.75%
Test Year (Actual) and Projected Future Years' Sales, in Gallons	N.A.	386,709,187	389,871,861	393,034,536	396,197,210	399,359,884	402,522,558	405,685,232	408,847,907	412,010,581	415,173,255	418,335,929	421,498,603

Calculated User Charge Fees, Accounting for New Customers and Future Rate Increases Over the Years

Actual or Calculated Sales Revenues		\$1,858,185	\$1,865,872	\$3,057,751	\$3,205,650	\$3,360,489	\$3,522,586	\$3,692,274	\$3,869,901	\$4,055,830	\$4,250,442	\$4,454,133	\$4,667,320
Additional Sales Revenues From New Customers			\$41	\$24,605	\$25,589	\$26,613	\$27,677	\$28,785	\$29,936	\$31,133	\$32,379	\$33,674	\$35,021
Total Calculated Revenues (User Charge Fees)		\$1,858,185	\$1,865,914	\$3,082,356	\$3,231,239	\$3,387,102	\$3,550,263	\$3,721,058	\$3,899,837	\$4,086,963	\$4,282,821	\$4,487,807	\$4,702,340
Operating Incomes													
User Charge Fees (Tables 10, 12, 12B, 15, 15B, 16, 16B, as applicable)	N.A.	\$2,060,915	\$2,069,487	\$3,418,644	\$3,583,771	\$3,756,639	\$3,937,601	\$4,127,030	\$4,325,314	\$4,532,856	\$4,750,082	\$4,977,433	\$5,215,371
Late Payment Charge	N.A.	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
New Taps or Connections (Current Rate Structure)	% Above	\$12,000	\$12,000	\$2,959	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Adjusted Meter Size-based System Development Fees (Tables 13, 14, if applicable)	% Above	\$0	\$0	\$140,158	\$140,158	\$140,158	\$140,158	\$140,158	\$140,158	\$140,158	\$140,158	\$140,158	\$140,158
Interest Income	N.A.	\$0	\$3,726	\$3,066	\$8,635	\$8,863	\$9,164	\$9,342	\$9,593	\$9,924	\$10,120	\$10,396	\$10,760
Other User Charges	N.A.	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Revenue Loss (-) or Gain Because Rate Adjustments Made This Number of Months into 1st Year	3.0	\$0	\$0	-\$265,617	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Operating Incomes		\$2,072,915	\$2,085,213	\$3,299,211	\$3,732,565	\$3,905,660	\$4,086,924	\$4,276,531	\$4,475,065	\$4,682,939	\$4,900,360	\$5,127,987	\$5,366,289

Table 4 - Operating Costs and Net Income

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-2

This table depicts expenses during the test year, this year and for the next 10 years. Some future costs will experience inflation. Those costs that go up as use goes up are increased by the cost inflation factor plus the growth rate in users.
 (First year costs and net incomes are actual, subsequent years are projected.)

Expense Items	Inflation/ Deflation (-) Factor	Test Year Starting 1/1/24	Analysis Year	Years Following the Analysis Year (for Which Results Have Been Projected)									
			0 Year Starting 1/1/25	1st Year Starting 1/1/26	2nd Year Starting 1/1/27	3rd Year Starting 1/1/28	4th Year Starting 1/1/29	5th Year Starting 1/1/30	6th Year Starting 1/1/31	7th Year Starting 1/1/32	8th Year Starting 1/1/33	9th Year Starting 1/1/34	10th Year Starting 1/1/35
50005 · Payroll Wages Hourly	3.0%	\$259,309	\$267,088	\$320,000	\$329,600	\$339,488	\$349,673	\$360,163	\$370,968	\$382,097	\$393,560	\$405,366	\$417,527
50011 · On-Call Wages	3.0%	\$9,800	\$10,094	\$10,400	\$10,712	\$11,033	\$11,364	\$11,705	\$12,056	\$12,418	\$12,791	\$13,174	\$13,570
50015 · Payroll Taxes	3.0%	\$21,595	\$22,243	\$26,200	\$26,986	\$27,796	\$28,629	\$29,488	\$30,373	\$31,284	\$32,223	\$33,189	\$34,185
50310 · Truck Supplies	3.0%	\$3,418	\$3,521	\$3,626	\$3,735	\$3,847	\$3,963	\$4,082	\$4,204	\$4,330	\$4,460	\$4,594	\$4,732
50320 · Small Tools	3.0%	\$2,139	\$2,203	\$2,269	\$2,337	\$2,407	\$2,479	\$2,554	\$2,630	\$2,709	\$2,790	\$2,874	\$2,960
50325 · Freight	3.0%	\$3,002	\$3,092	\$3,185	\$3,280	\$3,379	\$3,480	\$3,584	\$3,692	\$3,803	\$3,917	\$4,034	\$4,155
50415 · Appraisal Services/Permit Fees	3.0%	\$8,110	\$8,353	\$8,604	\$8,862	\$9,128	\$9,402	\$9,684	\$9,974	\$10,274	\$10,582	\$10,899	\$11,226
50420 · License Renewal (non vehicle)	3.0%	\$61	\$63	\$65	\$67	\$69	\$71	\$73	\$76	\$78	\$80	\$83	\$85
50425 · Legal General	3.0%	\$8,249	\$8,496	\$8,751	\$9,014	\$9,284	\$9,563	\$9,850	\$10,145	\$10,450	\$10,763	\$11,086	\$11,419
50475 · Surveying	3.0%	\$1	\$1	\$1	\$1	\$1	\$1	\$2	\$2	\$2	\$2	\$2	\$2
50495 · Outside Services	3.0%	\$9,234	\$9,511	\$9,796	\$10,090	\$10,393	\$10,705	\$11,026	\$11,357	\$11,697	\$12,048	\$12,410	\$12,782
50496 · Disconnect Fees to Water Dists	3.0%	\$5,050	\$5,202	\$5,358	\$5,518	\$5,684	\$5,854	\$6,030	\$6,211	\$6,397	\$6,589	\$6,787	\$6,990
50501 · Office Supplies	3.0%	\$3,675	\$3,786	\$3,899	\$4,016	\$4,137	\$4,261	\$4,389	\$4,520	\$4,656	\$4,795	\$4,939	\$5,088
50503 · Repair & Maint Office Equip	3.0%	\$2,054	\$2,116	\$2,179	\$2,244	\$2,312	\$2,381	\$2,453	\$2,526	\$2,602	\$2,680	\$2,760	\$2,843
50516 · Office - Phone / Internet	3.0%	\$2,343	\$2,413	\$2,486	\$2,560	\$2,637	\$2,716	\$2,798	\$2,882	\$2,968	\$3,057	\$3,149	\$3,243
50535 · Background/Testing	3.0%	\$63	\$65	\$67	\$69	\$71	\$73	\$75	\$77	\$80	\$82	\$85	\$87
50705 · Office Computer Services	3.0%	\$109	\$112	\$116	\$119	\$123	\$126	\$130	\$134	\$138	\$142	\$146	\$151
50710 · Sewer Computer	3.0%	\$3,498	\$3,603	\$3,711	\$3,822	\$3,937	\$4,055	\$4,176	\$4,302	\$4,431	\$4,564	\$4,701	\$4,842
50860 · Clothing/Boot Expense	3.0%	\$235	\$242	\$249	\$257	\$264	\$272	\$281	\$289	\$298	\$307	\$316	\$325
51085 · Fire Ext maint	3.0%	\$205	\$211	\$218	\$224	\$231	\$238	\$245	\$252	\$260	\$268	\$276	\$284
51090 · Site - Natural Gas	3.0%	\$3,553	\$3,659	\$3,769	\$3,882	\$3,999	\$4,119	\$4,242	\$4,370	\$4,501	\$4,636	\$4,775	\$4,918
51100 · Site Electric - Sewer	3.0%	\$184,669	\$190,209	\$197,492	\$205,040	\$212,864	\$220,973	\$229,376	\$238,085	\$247,110	\$256,462	\$266,153	\$276,195
51220 · Site - Trash	3.0%	\$3,920	\$4,038	\$4,193	\$4,353	\$4,519	\$4,691	\$4,869	\$5,054	\$5,246	\$5,444	\$5,650	\$5,863
51255 · Site Diesel/Propane	3.0%	\$1,988	\$2,048	\$2,109	\$2,172	\$2,238	\$2,305	\$2,374	\$2,445	\$2,518	\$2,594	\$2,672	\$2,752
52100 · Sewer DNR	3.0%	\$9,092	\$9,365	\$9,646	\$9,935	\$10,233	\$10,540	\$10,856	\$11,182	\$11,518	\$11,863	\$12,219	\$12,585
53100 · Sewer R&R exp	3.0%	\$106,427	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6
54100 · Sewer Equip Rep	3.0%	\$10,838	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6	In Table 6
55100 · Sewer Equip Rental	3.0%	\$53,739	\$55,351	\$160,000	\$164,800	\$169,744	\$174,836	\$180,081	\$185,484	\$191,048	\$196,780	\$202,683	\$208,764
56100 · Sewer Equip Repair	3.0%	\$17,201	\$17,717	\$18,249	\$18,796	\$19,360	\$19,941	\$20,539	\$21,155	\$21,790	\$22,444	\$23,117	\$23,810
57100 · Sewer parts	3.0%	\$26,311	\$27,101	\$27,914	\$28,751	\$29,614	\$30,502	\$31,417	\$32,360	\$33,330	\$34,330	\$35,360	\$36,421
58500 · Locates	3.0%	\$4,461	\$4,595	\$4,732	\$4,874	\$5,021	\$5,171	\$5,326	\$5,486	\$5,651	\$5,820	\$5,995	\$6,175
59050 · CCTV -- Camera Work	3.0%	\$5,519	\$5,684	\$125,000	\$128,750	\$132,613	\$136,591	\$140,689	\$144,909	\$149,257	\$153,734	\$158,346	\$163,097
59150 · Flushing/Jetting	3.0%	\$54,758	\$56,401	\$200,000	\$207,644	\$215,567	\$223,779	\$232,289	\$241,109	\$250,248	\$259,719	\$269,533	\$279,702
59165 · Grounds Maintenance	3.0%	\$3,421	\$3,524	\$3,629	\$3,738	\$3,850	\$3,966	\$4,085	\$4,207	\$4,334	\$4,464	\$4,597	\$4,735

Table 4 - Operating Costs and Net Income

Expense Items	Inflation/ Deflation (-) Factor	Test Year	0 Year	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year
		Starting 1/1/24	Starting 1/1/25	Starting 1/1/26	Starting 1/1/27	Starting 1/1/28	Starting 1/1/29	Starting 1/1/30	Starting 1/1/31	Starting 1/1/32	Starting 1/1/33	Starting 1/1/34	Starting 1/1/35
59170 · Lab Testing	3.0%	\$4,023	\$4,143	\$4,268	\$4,396	\$4,528	\$4,663	\$4,803	\$4,947	\$5,096	\$5,249	\$5,406	\$5,568
59175 · Lab Testing Supplies	3.0%	\$17,793	\$18,327	\$18,876	\$19,443	\$20,026	\$20,627	\$21,246	\$21,883	\$22,539	\$23,216	\$23,912	\$24,629
59200 · O&M	3.0%	\$23,756	\$24,469	\$25,203	\$25,959	\$26,738	\$27,540	\$28,366	\$29,217	\$30,093	\$30,996	\$31,926	\$32,884
59250 · Sludge Hauling	3.0%	\$91,983	\$94,742	\$150,000	\$155,733	\$161,676	\$167,834	\$174,217	\$180,832	\$187,686	\$194,790	\$202,150	\$209,777
59270 · Supplies O&M	3.0%	\$18,678	\$19,238	\$19,815	\$20,410	\$21,022	\$21,653	\$22,302	\$22,971	\$23,661	\$24,370	\$25,101	\$25,854
59510 · Sewer Deprec.	3.0%	\$124,915	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
60100 · Rep & Maint Vehicle	3.0%	\$1,599	\$1,647	\$40,000	\$41,200	\$42,436	\$43,709	\$45,020	\$46,371	\$47,762	\$49,195	\$50,671	\$52,191
60200 · Fuel	3.0%	\$7,931	\$8,168	\$8,413	\$8,666	\$8,926	\$9,194	\$9,469	\$9,754	\$10,046	\$10,348	\$10,658	\$10,978
60300 · Vehicle Lic Renewal	3.0%	\$105	\$108	\$112	\$115	\$119	\$122	\$126	\$130	\$133	\$137	\$142	\$146
Billing and Administration	3.0%	\$0	\$0	\$378,000	\$389,340	\$401,020	\$413,051	\$425,442	\$438,206	\$451,352	\$464,892	\$478,839	\$493,204
District Administrator	3.0%	\$0	\$0	\$73,000	\$75,190	\$77,446	\$79,769	\$82,162	\$84,627	\$87,166	\$89,781	\$92,474	\$95,248
Contingency "Placekeeper" Cost	3.0%	\$0	\$0	\$250,000	\$257,500	\$265,225	\$273,182	\$281,377	\$289,819	\$298,513	\$307,468	\$316,693	\$326,193
One-time Reduction of R&R Annuity	0.0%	-\$457,458	-\$457,458	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Annual Payment to R&R Reserve (Table 7)	0.0%	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458	\$457,458
User Charge Analysis Services	5.0%	\$0	\$17,723	\$0	\$0	\$19,540	\$0	\$0	\$21,542	\$0	\$0	\$23,751	\$0
Total CIP-related Payouts	N.A.	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Total Operating Costs		\$1,118,829	\$920,672	\$2,593,057	\$2,661,661	\$2,751,999	\$2,805,522	\$2,880,920	\$2,980,272	\$3,039,026	\$3,121,889	\$3,231,151	\$3,295,645
Net Income (or Loss)		\$954,086	\$1,164,541	\$706,153	\$1,070,903	\$1,153,661	\$1,281,402	\$1,395,611	\$1,494,794	\$1,643,913	\$1,778,471	\$1,896,835	\$2,070,644
Working Capital Goal: 33%	In Dollars, That is:	\$372,570	\$306,584	\$863,488	\$886,333	\$916,416	\$934,239	\$959,346	\$992,430	\$1,011,996	\$1,039,589	\$1,075,973	\$1,097,450

Notes: In 2024, the District performed needed operations and maintenance and did not "charge" the Crystal City/Festus service area for its share of billing and administration costs. The gold highlighted items have been added or increased to cover those shortfalls. Otherwise, operating costs have been increased by inflation factors to account for future inflation. Several, highlighted blue, would also increase due to growth in customers and their use. This model also includes a "placekeeper" cost near the bottom of the table.

Table 8 - Average Cost Classification
Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-2

This table distributes costs from a representative year (the "average rate structure basis year") to fixed and variable categories (see Definitions) in order to calculate the "cost of service" rate structure for that year.

The average rate structure basis year runs from:				1/1/2030	through	12/31/2030
Cost Items During the Basis Year	Cost During Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost	
50005 · Payroll Wages Hourly	\$360,163	20.0%	80.0%	\$72,033	\$288,130	
50011 · On-Call Wages	\$11,705	20.0%	80.0%	\$2,341	\$9,364	
50015 · Payroll Taxes	\$29,488	20.0%	80.0%	\$5,898	\$23,591	
50310 · Truck Supplies	\$4,082	20.0%	80.0%	\$816	\$3,265	
50320 · Small Tools	\$2,554	20.0%	80.0%	\$511	\$2,043	
50325 · Freight	\$3,584	20.0%	80.0%	\$717	\$2,868	
50415 · Appraisal Services/Permit Fees	\$9,684	29.0%	71.0%	\$2,808	\$6,875	
50420 · License Renewal (non vehicle)	\$73	100.0%	0.0%	\$73	\$0	
50425 · Legal General	\$9,850	29.0%	71.0%	\$2,856	\$6,993	
50475 · Surveying	\$2	100.0%	0.0%	\$2	\$0	
50495 · Outside Services	\$11,026	29.0%	71.0%	\$3,198	\$7,828	
50496 · Disconnect Fees to Water Dists	\$6,030	29.0%	71.0%	\$1,749	\$4,281	
50501 · Office Supplies	\$4,389	100.0%	0.0%	\$4,389	\$0	
50503 · Repair & Maint Office Equip	\$2,453	100.0%	0.0%	\$2,453	\$0	
50516 · Office - Phone / Internet	\$2,798	100.0%	0.0%	\$2,798	\$0	
50535 · Background/Testing	\$75	100.0%	0.0%	\$75	\$0	
50705 · Office Computer Services	\$130	100.0%	0.0%	\$130	\$0	
50710 · Sewer Computer	\$4,176	100.0%	0.0%	\$4,176	\$0	
50860 · Clothing/Boot Expense	\$281	20.0%	80.0%	\$56	\$224	
51085 · Fire Ext maint	\$245	100.0%	0.0%	\$245	\$0	
51090 · Site - Natural Gas	\$4,242	29.0%	71.0%	\$1,230	\$3,012	
51100 · Site Electric - Sewer	\$229,376	0.0%	100.0%	\$0	\$229,376	
51220 · Site - Trash	\$4,869	0.0%	100.0%	\$0	\$4,869	
51255 · Site Diesel/Propane	\$2,374	0.0%	100.0%	\$0	\$2,374	
52100 · Sewer DNR	\$10,856	29.0%	71.0%	\$3,148	\$7,708	
53100 · Sewer R&R exp	\$0	20.0%	80.0%	\$0	\$0	
54100 · Sewer Equip Rep	\$0	20.0%	80.0%	\$0	\$0	
55100 · Sewer Equip Rental	\$180,081	20.0%	80.0%	\$36,016	\$144,065	
56100 · Sewer Equip Repair	\$20,539	20.0%	80.0%	\$4,108	\$16,431	
57100 · Sewer parts	\$31,417	20.0%	80.0%	\$6,283	\$25,134	
58500 · Locates	\$5,326	29.0%	71.0%	\$1,545	\$3,782	
59050 · CCTV -- Camera Work	\$140,689	0.0%	100.0%	\$0	\$140,689	
59150 · Flushing/Jetting	\$232,289	0.0%	100.0%	\$0	\$232,289	

Table 8 - Average Cost Classification

Cost Items During the Basis Year	Cost During Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
59165 · Grounds Maintenance	\$4,085	100.0%	0.0%	\$4,085	\$0
59170 · Lab Testing	\$4,803	29.0%	71.0%	\$1,393	\$3,410
59175 · Lab Testing Supplies	\$21,246	29.0%	71.0%	\$6,161	\$15,084
59200 · O&M	\$28,366	20.0%	80.0%	\$5,673	\$22,693
59250 · Sludge Hauling	\$174,217	0.0%	100.0%	\$0	\$174,217
59270 · Supplies O&M	\$22,302	20.0%	80.0%	\$4,460	\$17,842
59510 · Sewer Deprec.	\$0	29.0%	71.0%	\$0	\$0
60100 · Rep & Maint Vehicle	\$45,020	20.0%	80.0%	\$9,004	\$36,016
60200 · Fuel	\$9,469	100.0%	0.0%	\$9,469	\$0
60300 · Vehicle Lic Renewal	\$126	100.0%	0.0%	\$126	\$0
Billing and Administration	\$425,442	50.0%	50.0%	\$212,721	\$212,721
District Administrator	\$82,162	100.0%	0.0%	\$82,162	\$0
Contingency "Placekeeper" Cost	\$281,377	29.0%	71.0%	\$81,599	\$199,778
Annual Payment to R&R Reserve (Table 7)	\$457,458	20.0%	80.0%	\$91,492	\$365,966
User Charge Analysis Services	\$0	29.0%	71.0%	\$0	\$0
Total CIP-related Payouts, Less Capacity Charges From Tables 14 & 16 (This value can be negative)	\$791,062	50.0%	50.0%	\$395,531	\$395,531
Grand Total Costs, Weighted Avg Percentages	\$3,671,982	29.0%	71.0%	\$1,063,530	\$2,608,451

Bases for Cost to Serve Rate Structure		100%	\$3,671,982
Number Customers During Basis Year	7,953	Inflow and Infiltration for the test year is Estimated at	46%
Billed Volume, in Gallons, During Basis Year	405,685,232	Inflow and Infiltration is Estimated at This % of Average Cost (Marginal Cost)	32%
Average Fixed Cost per User per Month During Basis Year	\$11.14	At Recommended Unit Charge Rates, Resulting Marginal Cost of Unbilled-for Water	\$582,019
Average Variable Cost to Produce per 1,000 Gallons During Basis Year	\$6.43	Test Year Customer Volume, in Gallons	386,709,187
Gallons per Billing Cycle Used by Average Residential Customer	3,238	+ Test Year Inflow and Infiltration, in Gallons	328,970,813
		Total Test Year Volume, in Gallons, From Master Meter Readings	715,680,000

Table 10 - Initial Rate Adjustments and Resulting Revenues

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-2

This table calculates new user charge rates and the revenues they would generate if adjusted during the "Analysis Year."

After rate adjustments are made, customers will be billed monthly.

Following are Blended Sales Revenues: Sales at the current (Test Year) rates (gray highlighted column) will apply until rates are adjusted. Sales at the modeled rates (yellow highlighted column) would apply after the modeled rates are adopted. Adding both together, the "blended" sales revenues show in the right-most column.

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
Res, 0.625 Inch	0	999	\$294,579	\$8.19	0.000	\$5.62	\$1,256	\$295,835
	1,000	1,999	\$294,579	\$8.19	0.000	\$5.62	\$1,256	\$295,835
	2,000	2,999	\$294,579	\$8.19	0.000	\$5.62	\$1,256	\$295,835
	3,000	3,237	\$70,014	\$8.19	0.000	\$5.62	\$299	\$70,312
	3,238	4,999	\$399,553	\$8.19	0.000	\$5.62	\$1,832	\$401,385
Com, 0.625 Inch	0	999	\$18,845	\$8.19	0.000	\$5.62	\$80	\$18,925
	1,000	1,999	\$18,845	\$8.19	0.000	\$5.62	\$80	\$18,925
	2,000	3,002	\$44,464	\$8.19	0.000	\$5.62	\$198	\$44,662
	3,003	3,999	\$0	\$8.19	0.000	\$5.62	\$0	\$0
1 Inch	0	999	\$7,567	\$9.62	0.000	\$5.62	\$32	\$7,599
	1,000	1,999	\$7,567	\$9.62	0.000	\$5.62	\$32	\$7,599
	2,000	2,999	\$7,567	\$9.62	0.000	\$5.62	\$32	\$7,599
	3,000	3,999	\$7,567	\$9.62	0.000	\$5.62	\$32	\$7,599
	4,000	4,999	\$7,567	\$9.62	0.000	\$5.62	\$32	\$7,599
	5,000	5,999	\$7,567	\$9.62	0.000	\$5.62	\$32	\$7,599
	6,000	6,999	\$7,567	\$9.62	0.000	\$5.62	\$32	\$7,599
	7,000	7,999	\$7,567	\$9.62	0.000	\$5.62	\$32	\$7,599
	8,000	8,999	\$7,567	\$9.62	0.000	\$5.62	\$32	\$7,599
	9,000	9,999	\$7,567	\$9.62	0.000	\$5.62	\$32	\$7,599
	10,000	11,949	\$14,757	\$9.62	0.000	\$5.62	\$63	\$14,820
	11,950	29,999	\$13,210	\$9.62	0.000	\$5.62	\$55	\$13,266

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
1.5 Inch	0	999	\$393	\$12.01	0.000	\$5.62	\$2	\$395
	1,000	1,999	\$393	\$12.01	0.000	\$5.62	\$2	\$395
	2,000	2,999	\$393	\$12.01	0.000	\$5.62	\$2	\$395
	3,000	3,999	\$393	\$12.01	0.000	\$5.62	\$2	\$395
	4,000	4,999	\$393	\$12.01	0.000	\$5.62	\$2	\$395
	5,000	5,999	\$393	\$12.01	0.000	\$5.62	\$2	\$395
	6,000	6,999	\$393	\$12.01	0.000	\$5.62	\$2	\$395
	7,000	7,999	\$393	\$12.01	0.000	\$5.62	\$2	\$395
	8,000	8,999	\$393	\$12.01	0.000	\$5.62	\$2	\$395
	9,000	9,999	\$393	\$12.01	0.000	\$5.62	\$2	\$395
	10,000	25,237	\$5,996	\$12.01	0.000	\$5.62	\$26	\$6,022
	25,238	29,999	\$801	\$12.01	0.000	\$5.62	\$4	\$805
30,000	39,999	\$0	\$12.01	0.000	\$5.62	\$0	\$0	
2 Inch	0	999	\$6,007	\$14.86	0.000	\$5.62	\$26	\$6,033
	1,000	1,999	\$6,007	\$14.86	0.000	\$5.62	\$26	\$6,033
	2,000	2,999	\$6,007	\$14.86	0.000	\$5.62	\$26	\$6,033
	3,000	3,999	\$6,007	\$14.86	0.000	\$5.62	\$26	\$6,033
	4,000	4,999	\$6,007	\$14.86	0.000	\$5.62	\$26	\$6,033
	5,000	5,999	\$6,007	\$14.86	0.000	\$5.62	\$26	\$6,033
	6,000	6,999	\$6,007	\$14.86	0.000	\$5.62	\$26	\$6,033
	7,000	7,999	\$6,007	\$14.86	0.000	\$5.62	\$26	\$6,033
	8,000	8,999	\$6,007	\$14.86	0.000	\$5.62	\$26	\$6,033
	9,000	9,999	\$6,007	\$14.86	0.000	\$5.62	\$26	\$6,033
	10,000	19,999	\$60,072	\$14.86	0.000	\$5.62	\$256	\$60,328
	20,000	33,085	\$78,610	\$14.86	0.000	\$5.62	\$335	\$78,945
	33,086	39,999	\$16,895	\$14.86	0.000	\$5.62	\$68	\$16,963
	40,000	49,999	\$0	\$14.86	0.000	\$5.62	\$0	\$0

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
3 Inch	0	999	\$303	\$22.49	0.000	\$5.62	\$1	\$305
	1,000	1,999	\$303	\$22.49	0.000	\$5.62	\$1	\$305
	2,000	2,999	\$303	\$22.49	0.000	\$5.62	\$1	\$305
	3,000	3,999	\$303	\$22.49	0.000	\$5.62	\$1	\$305
	4,000	4,999	\$303	\$22.49	0.000	\$5.62	\$1	\$305
	5,000	5,999	\$303	\$22.49	0.000	\$5.62	\$1	\$305
	6,000	6,999	\$303	\$22.49	0.000	\$5.62	\$1	\$305
	7,000	7,999	\$303	\$22.49	0.000	\$5.62	\$1	\$305
	8,000	8,999	\$303	\$22.49	0.000	\$5.62	\$1	\$305
	9,000	9,999	\$303	\$22.49	0.000	\$5.62	\$1	\$305
	10,000	19,999	\$3,032	\$22.49	0.000	\$5.62	\$13	\$3,045
	20,000	29,999	\$3,032	\$22.49	0.000	\$5.62	\$13	\$3,045
	30,000	39,999	\$3,032	\$22.49	0.000	\$5.62	\$13	\$3,045
	40,000	49,999	\$3,032	\$22.49	0.000	\$5.62	\$13	\$3,045
	50,000	61,582	\$3,512	\$22.49	0.000	\$5.62	\$15	\$3,527
	61,583	69,999	\$1,117	\$22.49	0.000	\$5.62	\$5	\$1,123
	70,000	79,999	\$0	\$22.49	0.000	\$5.62	\$0	\$0
80,000	89,999	\$0	\$22.49	0.000	\$5.62	\$0	\$0	
4 Inch	0	999	\$635	\$31.06	0.000	\$5.62	\$3	\$638
	1,000	1,999	\$635	\$31.06	0.000	\$5.62	\$3	\$638
	2,000	2,999	\$635	\$31.06	0.000	\$5.62	\$3	\$638
	3,000	3,999	\$635	\$31.06	0.000	\$5.62	\$3	\$638
	4,000	4,999	\$635	\$31.06	0.000	\$5.62	\$3	\$638
	5,000	5,999	\$635	\$31.06	0.000	\$5.62	\$3	\$638
	6,000	6,999	\$635	\$31.06	0.000	\$5.62	\$3	\$638
	7,000	7,999	\$635	\$31.06	0.000	\$5.62	\$3	\$638
	8,000	8,999	\$635	\$31.06	0.000	\$5.62	\$3	\$638
	9,000	9,999	\$635	\$31.06	0.000	\$5.62	\$3	\$638
	10,000	19,999	\$6,354	\$31.06	0.000	\$5.62	\$27	\$6,381
	20,000	29,999	\$6,354	\$31.06	0.000	\$5.62	\$27	\$6,381
	30,000	39,999	\$6,354	\$31.06	0.000	\$5.62	\$27	\$6,381
	40,000	49,999	\$6,354	\$31.06	0.000	\$5.62	\$27	\$6,381
	50,000	65,523	\$9,863	\$31.06	0.000	\$5.62	\$42	\$9,906
	65,524	69,999	\$3,881	\$31.06	0.000	\$5.62	\$15	\$3,896
	70,000	79,999	\$0	\$31.06	0.000	\$5.62	\$0	\$0

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
8 Inch	0	999	\$83	\$83.47	0.000	\$5.62	\$0	\$83
	1,000	1,999	\$83	\$83.47	0.000	\$5.62	\$0	\$83
	2,000	2,999	\$83	\$83.47	0.000	\$5.62	\$0	\$83
	3,000	3,999	\$83	\$83.47	0.000	\$5.62	\$0	\$83
	4,000	4,999	\$83	\$83.47	0.000	\$5.62	\$0	\$83
	5,000	5,999	\$83	\$83.47	0.000	\$5.62	\$0	\$83
	6,000	6,999	\$83	\$83.47	0.000	\$5.62	\$0	\$83
	7,000	7,999	\$83	\$83.47	0.000	\$5.62	\$0	\$83
	8,000	8,999	\$83	\$83.47	0.000	\$5.62	\$0	\$83
	9,000	9,999	\$83	\$83.47	0.000	\$5.62	\$0	\$83
	10,000	19,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834
	20,000	29,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834
	30,000	39,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834
	40,000	49,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834
	50,000	59,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834
	60,000	69,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834
	70,000	79,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834
	80,000	89,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834
	90,000	99,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834
	100,000	109,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834
	110,000	119,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834
	120,000	129,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834
	130,000	139,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834
	140,000	149,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834
150,000	159,999	\$830	\$83.47	0.000	\$5.62	\$4	\$834	
	160,000	316,623	\$13,005	\$83.47	0.000	\$5.62	\$55	\$13,060
	316,624	or More	\$749	\$83.47	0.000	\$5.62	\$5	\$754
Total Rate Revenue at Current Rates			\$1,857,817	Total Rate Revenue at Modeled Rates			\$8,055	
Total Blended Rate Revenues for the Year								\$1,865,872

Table 17 - Financial Capacity Indicators and Reserves
Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-2

This table depicts the affordability of future rates, the financial health of the system and the ending balances in various (assumed) accounts for the test year and the next 10 years.

	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting		
	1/1/24	1/1/25	1/1/26	1/1/27	1/1/28	1/1/29	1/1/30	1/1/31	1/1/32	1/1/33	1/1/34	1/1/35		
Capacity Indicators														
Customary Affordability Index	Monthly Bill for a 5,000 gal per Month, Small Meter Residential Customer	\$23.01	\$36.29	\$37.75	\$39.26	\$40.83	\$42.46	\$44.16	\$45.92	\$47.76	\$49.67	\$51.66	\$53.72	
	AMHI Within Service Area	\$67,797	\$69,134	\$70,497	\$71,886	\$73,304	\$74,749	\$76,223	\$77,726	\$79,258	\$80,821	\$82,414	\$84,039	
	Affordability Index: Current Rates First Column, Modeled Rates After That	0.41%	0.63%	0.64%	0.66%	0.67%	0.68%	0.70%	0.71%	0.72%	0.74%	0.75%	0.77%	
	National Average Affordability Index: Commonly Accepted but Not Statistically Verifiable	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	
	Affordability Index (AI) goes to the willingness and ability of customers to pay. AI is the cost of 60,000 gallons of residential service per year (5,000 gallons per month) divided by the Annual Median Household Income (AMHI) in the service area (gleaned from Census data or a survey). Rates near 1.0% are common in the U.S. and are generally considered affordable. Most grant agencies will decline to award grants if the AI is less than 1.5 to 2.0%, unless other eligibility criteria considered along with the AI make an applicant eligible.													
Low-income, Low-volume "Affordability Index"	Monthly Bill for a 2,000 gal per Month, Low-income Residential Customer	\$12.15	\$19.43	\$20.21	\$21.02	\$21.86	\$22.73	\$23.64	\$24.59	\$25.57	\$26.60	\$27.66	\$28.77	
	Income at One-half the AMHI and Rising at One-half the Rate Above	\$33,898	\$34,233	\$34,570	\$34,911	\$35,255	\$35,603	\$35,954	\$36,308	\$36,666	\$37,027	\$37,392	\$37,761	
	Affordability for Low-income, Low-volume: Current Rates First Column, Modeled Rates After That	0.43%	0.68%	0.70%	0.72%	0.74%	0.77%	0.79%	0.81%	0.84%	0.86%	0.89%	0.91%	
	This additional indicator of affordability assumes a residential customer with income at one-half the median household income above, that income is growing at one-half the rate of the median household income and the customer uses 2,000 gallons per month. Such a customer is likely either a minimum wage or near-minimum wage worker, or is retired and living only on Social Security benefits. Such customers are more commonly the "slow pays" and "no pays" compared to others, so this indicator goes to the "business sense" of the rates modeled here. In other words, raise this customer's bill too much and they are more likely to pay late or not pay.													
Estimated Operating Ratio: Current Rates First Column, Modeled Rates After That	1.85	2.26	1.27	1.40	1.42	1.46	1.48	1.50	1.54	1.57	1.59	1.63		
Operating ratio (OR) is a measure of the utility's ability to pay its operating expenses using only current incomes. A 1.0 OR is break even. Below 1.0 indicates operating in the "red." Generally, the OR should be at least 1.15 for large systems, 1.30 or more for medium-sized systems and perhaps as high as 2.0 for small systems. Note: If the utility has or will have reserves (below,) it has more ability to pay its operating costs than this calculation of OR implies.														
Estimated Coverage Ratio: Current Rates First Column, Modeled Rates After That	0.58	3.08	0.37	2.07	1.72	1.38	1.26	1.05	0.97	0.86	0.80	0.91		
Coverage Ratio (CR) goes to the ability of the utility to pay its debt payments out of current incomes. CR applies only to years with debt service. A "N.A." above indicates there was not, or in a future year there will not be debt during that year. 1.0 is break even - just enough net revenue to pay debt. Generally, the CR should be at least 1.25. Note: If the utility has or will have other available reserves (shown below,) it has more ability to make debt payments than the CR implies. That is covered by the Alternative Coverage Ratio that follows next.														
Alternative Coverage Ratio: Current Rates First Column, Modeled Rates After That	0.15	0.27	2.49	2.84	3.26	3.01	2.99	2.65	2.34	1.96	1.65	1.56		
This Alternative Coverage Ratio (ACR) is based on the same notion as the classic coverage ratio above, except it includes reserves that are available to pay debt service. With the classic CR, a utility could build reserves early on with current net revenues, but then future rates may not be high enough to show a strong CR. The classic CR could even go negative. But in reality, the utility could have quite strong reserves with which to pay debt. Thus, the Alternative Coverage Ratio can be a better indicator of a utility's true ability to pay debt in such situations.														
Reserves	Balance Ending on 12/31/23													
	Cash and Cash Equivalents	\$0	\$372,570	\$306,584	\$863,488	\$886,333	\$916,416	\$934,239	\$959,346	\$992,430	\$1,011,996	\$1,039,589	\$1,075,973	\$1,097,450
	Other Liquid Assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Total Undedicated Cash Assets	\$0	\$372,570	\$306,584	\$863,488	\$886,333	\$916,416	\$934,239	\$959,346	\$992,430	\$1,011,996	\$1,039,589	\$1,075,973	\$1,097,450
	Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	\$0	\$372,570	\$306,584	\$837,583	\$833,951	\$836,388	\$827,075	\$823,823	\$826,667	\$817,675	\$814,771	\$817,988	\$834,315
	Repair & Replacement	\$150,000	\$153,000	\$287,282	\$414,463	\$534,107	\$645,760	\$748,952	\$843,193	\$927,972	\$1,002,760	\$1,067,008	\$1,120,142	\$1,161,570
	Debt and CIP Reserves	\$0	-\$418,484	\$403,674	\$160,996	\$705,239	\$1,190,932	\$1,563,833	\$1,880,367	\$1,991,032	\$1,983,913	\$1,733,963	\$1,308,242	\$1,142,581
	Sum of All Reserves	\$150,000	\$107,086	\$997,540	\$1,438,947	\$2,125,678	\$2,753,108	\$3,247,023	\$3,682,906	\$3,911,434	\$3,998,670	\$3,840,560	\$3,504,358	\$3,401,600

Table 18 - Bills Before and After Rate Adjustments
Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-2

The modeled rates will generate 57.8% more revenue per year than the test year or current rates.								
Bills would change as shown in this table. Modeled bills are compared to current bills at the now current rates, which may be different than the test year rates. The actual rates to adopt or consider are included in the narrative report.								
Customer, Rate Class or Meter Size	Gallons of Use	Customers Using at Least This Volume But Not the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
Res, 0.625 Inch	0	0	0	6,800	\$4.91	\$8.19	\$3.28	67%
	1,000	0	0	6,800	\$8.53	\$13.81	\$5.28	62%
	2,000	0	0	6,800	\$12.15	\$19.43	\$7.28	60%
	3,000	0	0	6,800	\$15.77	\$25.05	\$9.28	59%
	3,238	6,800	6,800	6,800	\$16.63	\$26.39	\$9.76	59%
	5,000	0	6,800	0	\$23.01	\$36.29	\$13.28	58%
	6,000	0	6,800	0	\$26.63	\$41.91	\$15.28	57%
	7,000	0	6,800	0	\$30.25	\$47.53	\$17.28	57%
	8,000	0	6,800	0	\$33.87	\$53.15	\$19.28	57%
	9,000	0	6,800	0	\$37.49	\$58.77	\$21.28	57%
	10,000	0	6,800	0	\$41.11	\$64.39	\$23.28	57%
	20,000	0	6,800	0	\$77.31	\$120.59	\$43.28	56%
	30,000	0	6,800	0	\$113.51	\$176.79	\$63.28	56%
	40,000	0	6,800	0	\$149.71	\$232.99	\$83.28	56%
	50,000	0	6,800	0	\$185.91	\$289.19	\$103.28	56%
	60,000	0	6,800	0	\$222.11	\$345.39	\$123.28	56%
	70,000	0	6,800	0	\$258.31	\$401.59	\$143.28	55%
	80,000	0	6,800	0	\$294.51	\$457.79	\$163.28	55%
	90,000	0	6,800	0	\$330.71	\$513.99	\$183.28	55%
	100,000	0	6,800	0	\$366.91	\$570.19	\$203.28	55%
Com, 0.625 Inch	0	0	0	435	\$4.91	\$8.19	\$3.28	67%
	1,000	0	0	435	\$8.53	\$13.81	\$5.28	62%
	2,000	435	435	435	\$12.15	\$19.43	\$7.28	60%
	3,003	0	435	0	\$15.78	\$25.07	\$9.29	59%
	4,000	0	435	0	\$19.39	\$30.67	\$11.28	58%
	5,000	0	435	0	\$23.01	\$36.29	\$13.28	58%
	6,000	0	435	0	\$26.63	\$41.91	\$15.28	57%
	7,000	0	435	0	\$30.25	\$47.53	\$17.28	57%
	8,000	0	435	0	\$33.87	\$53.15	\$19.28	57%
	9,000	0	435	0	\$37.49	\$58.77	\$21.28	57%
	10,000	0	435	0	\$41.11	\$64.39	\$23.28	57%
	20,000	0	435	0	\$77.31	\$120.59	\$43.28	56%
	30,000	0	435	0	\$113.51	\$176.79	\$63.28	56%
	40,000	0	435	0	\$149.71	\$232.99	\$83.28	56%
	50,000	0	435	0	\$185.91	\$289.19	\$103.28	56%
	60,000	0	435	0	\$222.11	\$345.39	\$123.28	56%
	70,000	0	435	0	\$258.31	\$401.59	\$143.28	55%
	80,000	0	435	0	\$294.51	\$457.79	\$163.28	55%
	90,000	0	435	0	\$330.71	\$513.99	\$183.28	55%
	100,000	0	435	0	\$366.91	\$570.19	\$203.28	55%
110,000	0	435	0	\$403.11	\$626.39	\$223.28	55%	
120,000	0	435	0	\$439.31	\$682.59	\$243.28	55%	
130,000	0	435	0	\$475.51	\$738.79	\$263.28	55%	

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers Using at Least This Volume But Not the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)	
1 Inch	0	0	0	175	\$6.32	\$9.62	\$3.30	52%	
	1,000	0	0	175	\$9.94	\$15.24	\$5.30	53%	
	2,000	0	0	175	\$13.56	\$20.86	\$7.30	54%	
	3,000	0	0	175	\$17.18	\$26.48	\$9.30	54%	
	4,000	0	0	175	\$20.80	\$32.10	\$11.30	54%	
	5,000	0	0	175	\$24.42	\$37.72	\$13.30	54%	
	6,000	0	0	175	\$28.04	\$43.34	\$15.30	55%	
	7,000	0	0	175	\$31.66	\$48.96	\$17.30	55%	
	8,000	0	0	175	\$35.28	\$54.58	\$19.30	55%	
	9,000	0	0	175	\$38.90	\$60.20	\$21.30	55%	
	10,000	0	0	175	\$42.52	\$65.82	\$23.30	55%	
		11,950	175	175	175	\$49.58	\$76.78	\$27.20	55%
		30,000	0	175	0	\$114.92	\$178.22	\$63.30	55%
		40,000	0	175	0	\$151.12	\$234.42	\$83.30	55%
	50,000	0	175	0	\$187.32	\$290.62	\$103.30	55%	
	60,000	0	175	0	\$223.52	\$346.82	\$123.30	55%	
	70,000	0	175	0	\$259.72	\$403.02	\$143.30	55%	
	80,000	0	175	0	\$295.92	\$459.22	\$163.30	55%	
	90,000	0	175	0	\$332.12	\$515.42	\$183.30	55%	
	100,000	0	175	0	\$368.32	\$571.62	\$203.30	55%	
1.5 Inch	0	0	0	9	\$7.37	\$12.01	\$4.64	63%	
	1,000	0	0	9	\$10.99	\$17.63	\$6.64	60%	
	2,000	0	0	9	\$14.61	\$23.25	\$8.64	59%	
	3,000	0	0	9	\$18.23	\$28.87	\$10.64	58%	
	4,000	0	0	9	\$21.85	\$34.49	\$12.64	58%	
	5,000	0	0	9	\$25.47	\$40.11	\$14.64	57%	
	6,000	0	0	9	\$29.09	\$45.73	\$16.64	57%	
	7,000	0	0	9	\$32.71	\$51.35	\$18.64	57%	
	8,000	0	0	9	\$36.33	\$56.97	\$20.64	57%	
	9,000	0	0	9	\$39.95	\$62.59	\$22.64	57%	
	10,000	0	0	9	\$43.57	\$68.21	\$24.64	57%	
		25,238	9	9	9	\$98.73	\$153.84	\$55.11	56%
		30,000	0	9	0	\$115.97	\$180.61	\$64.64	56%
		40,000	0	9	0	\$152.17	\$236.81	\$84.64	56%
		50,000	0	9	0	\$188.37	\$293.01	\$104.64	56%
		60,000	0	9	0	\$224.57	\$349.21	\$124.64	55%
		70,000	0	9	0	\$260.77	\$405.41	\$144.64	55%
		80,000	0	9	0	\$296.97	\$461.61	\$164.64	55%
	90,000	0	9	0	\$333.17	\$517.81	\$184.64	55%	
	100,000	0	9	0	\$369.37	\$574.01	\$204.64	55%	
	110,000	0	9	0	\$405.57	\$630.21	\$224.64	55%	
	120,000	0	9	0	\$441.77	\$686.41	\$244.64	55%	
	130,000	0	9	0	\$477.97	\$742.61	\$264.64	55%	
	140,000	0	9	0	\$514.17	\$798.81	\$284.64	55%	
	150,000	0	9	0	\$550.37	\$855.01	\$304.64	55%	

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers Using at Least This Volume But Not the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
	0	0	0	139	\$10.18	\$14.86	\$4.68	46%
	1,000	0	0	139	\$13.80	\$20.48	\$6.68	48%
	2,000	0	0	139	\$17.42	\$26.10	\$8.68	50%
	3,000	0	0	139	\$21.04	\$31.72	\$10.68	51%
	4,000	0	0	139	\$24.66	\$37.34	\$12.68	51%
	5,000	0	0	139	\$28.28	\$42.96	\$14.68	52%
	6,000	0	0	139	\$31.90	\$48.58	\$16.68	52%
	7,000	0	0	139	\$35.52	\$54.20	\$18.68	53%
	8,000	0	0	139	\$39.14	\$59.82	\$20.68	53%
	9,000	0	0	139	\$42.76	\$65.44	\$22.68	53%
	10,000	0	0	139	\$46.38	\$71.06	\$24.68	53%
	20,000	0	0	139	\$82.58	\$127.26	\$44.68	54%
	33,086	139	139	139	\$129.95	\$200.81	\$70.86	55%
2 Inch	40,000	0	139	0	\$154.98	\$239.66	\$84.68	55%
	50,000	0	139	0	\$191.18	\$295.86	\$104.68	55%
	60,000	0	139	0	\$227.38	\$352.06	\$124.68	55%
	70,000	0	139	0	\$263.58	\$408.26	\$144.68	55%
	80,000	0	139	0	\$299.78	\$464.46	\$164.68	55%
	90,000	0	139	0	\$335.98	\$520.66	\$184.68	55%
	100,000	0	139	0	\$372.18	\$576.86	\$204.68	55%
	110,000	0	139	0	\$408.38	\$633.06	\$224.68	55%
	120,000	0	139	0	\$444.58	\$689.26	\$244.68	55%
	130,000	0	139	0	\$480.78	\$745.46	\$264.68	55%
	140,000	0	139	0	\$516.98	\$801.66	\$284.68	55%
	150,000	0	139	0	\$553.18	\$857.86	\$304.68	55%
	160,000	0	139	0	\$589.38	\$914.06	\$324.68	55%
	170,000	0	139	0	\$625.58	\$970.26	\$344.68	55%
	0	0	0	7	\$13.34	\$22.49	\$9.15	69%
	1,000	0	0	7	\$16.96	\$28.11	\$11.15	66%
	2,000	0	0	7	\$20.58	\$33.73	\$13.15	64%
	3,000	0	0	7	\$24.20	\$39.35	\$15.15	63%
	4,000	0	0	7	\$27.82	\$44.97	\$17.15	62%
	5,000	0	0	7	\$31.44	\$50.59	\$19.15	61%
	6,000	0	0	7	\$35.06	\$56.21	\$21.15	60%
	7,000	0	0	7	\$38.68	\$61.83	\$23.15	60%
	8,000	0	0	7	\$42.30	\$67.45	\$25.15	59%
	9,000	0	0	7	\$45.92	\$73.07	\$27.15	59%
	10,000	0	0	7	\$49.54	\$78.69	\$29.15	59%
	20,000	0	0	7	\$85.74	\$134.89	\$49.15	57%
	30,000	0	0	7	\$121.94	\$191.09	\$69.15	57%
	40,000	0	0	7	\$158.14	\$247.29	\$89.15	56%
	50,000	0	0	7	\$194.34	\$303.49	\$109.15	56%
	61,583	7	7	7	\$236.27	\$368.58	\$132.31	56%
	70,000	0	7	0	\$266.74	\$415.89	\$149.15	56%
	80,000	0	7	0	\$302.94	\$472.09	\$169.15	56%
	90,000	0	7	0	\$339.14	\$528.29	\$189.15	56%
	100,000	0	7	0	\$375.34	\$584.49	\$209.15	56%
	110,000	0	7	0	\$411.54	\$640.69	\$229.15	56%
	120,000	0	7	0	\$447.74	\$696.89	\$249.15	56%
	130,000	0	7	0	\$483.94	\$753.09	\$269.15	56%
	140,000	0	7	0	\$520.14	\$809.29	\$289.15	56%
	150,000	0	7	0	\$556.34	\$865.49	\$309.15	56%
	160,000	0	7	0	\$592.54	\$921.69	\$329.15	56%
	170,000	0	7	0	\$628.74	\$977.89	\$349.15	56%

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers Using at Least This Volume But Not the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
4 Inch	0	0	0	15	\$22.11	\$31.06	\$8.95	40%
	1,000	0	0	15	\$25.73	\$36.68	\$10.95	43%
	2,000	0	0	15	\$29.35	\$42.30	\$12.95	44%
	3,000	0	0	15	\$32.97	\$47.92	\$14.95	45%
	4,000	0	0	15	\$36.59	\$53.54	\$16.95	46%
	5,000	0	0	15	\$40.21	\$59.16	\$18.95	47%
	6,000	0	0	15	\$43.83	\$64.78	\$20.95	48%
	7,000	0	0	15	\$47.45	\$70.40	\$22.95	48%
	8,000	0	0	15	\$51.07	\$76.02	\$24.95	49%
	9,000	0	0	15	\$54.69	\$81.64	\$26.95	49%
	10,000	0	0	15	\$58.31	\$87.26	\$28.95	50%
	20,000	0	0	15	\$94.51	\$143.46	\$48.95	52%
	30,000	0	0	15	\$130.71	\$199.66	\$68.95	53%
	40,000	0	0	15	\$166.91	\$255.86	\$88.95	53%
	50,000	0	0	15	\$203.11	\$312.06	\$108.95	54%
	65,524	15	15	15	\$259.31	\$399.31	\$140.00	54%
	70,000	0	15	0	\$275.51	\$424.46	\$148.95	54%
	80,000	0	15	0	\$311.71	\$480.66	\$168.95	54%
	90,000	0	15	0	\$347.91	\$536.86	\$188.95	54%
100,000	0	15	0	\$384.11	\$593.06	\$208.95	54%	
110,000	0	15	0	\$420.31	\$649.26	\$228.95	54%	
120,000	0	15	0	\$456.51	\$705.46	\$248.95	55%	
130,000	0	15	0	\$492.71	\$761.66	\$268.95	55%	
140,000	0	15	0	\$528.91	\$817.86	\$288.95	55%	
150,000	0	15	0	\$565.11	\$874.06	\$308.95	55%	
160,000	0	15	0	\$601.31	\$930.26	\$328.95	55%	
170,000	0	15	0	\$637.51	\$986.46	\$348.95	55%	
8 Inch	0	0	0	2	\$32.64	\$83.47	\$50.83	156%
	1,000	0	0	2	\$36.26	\$89.09	\$52.83	146%
	2,000	0	0	2	\$39.88	\$94.71	\$54.83	137%
	3,000	0	0	2	\$43.50	\$100.33	\$56.83	131%
	4,000	0	0	2	\$47.12	\$105.95	\$58.83	125%
	5,000	0	0	2	\$50.74	\$111.57	\$60.83	120%
	6,000	0	0	2	\$54.36	\$117.19	\$62.83	116%
	7,000	0	0	2	\$57.98	\$122.81	\$64.83	112%
	8,000	0	0	2	\$61.60	\$128.43	\$66.83	108%
	9,000	0	0	2	\$65.22	\$134.05	\$68.83	106%
	10,000	0	0	2	\$68.84	\$139.67	\$70.83	103%
	20,000	0	0	2	\$105.04	\$195.87	\$90.83	86%
	30,000	0	0	2	\$141.24	\$252.07	\$110.83	78%
	40,000	0	0	2	\$177.44	\$308.27	\$130.83	74%
	50,000	0	0	2	\$213.64	\$364.47	\$150.83	71%
	60,000	0	0	2	\$249.84	\$420.67	\$170.83	68%
	70,000	0	0	2	\$286.04	\$476.87	\$190.83	67%
	80,000	0	0	2	\$322.24	\$533.07	\$210.83	65%
	90,000	0	0	2	\$358.44	\$589.27	\$230.83	64%
	100,000	0	0	2	\$394.64	\$645.47	\$250.83	64%
110,000	0	0	2	\$430.84	\$701.67	\$270.83	63%	
120,000	0	0	2	\$467.04	\$757.87	\$290.83	62%	
130,000	0	0	2	\$503.24	\$814.07	\$310.83	62%	
140,000	0	0	2	\$539.44	\$870.27	\$330.83	61%	
150,000	0	0	2	\$575.64	\$926.47	\$350.83	61%	
160,000	0	0	2	\$611.84	\$982.67	\$370.83	61%	
316,624	2	2	2	\$1,178.82	\$1,862.90	\$684.08	58%	

Table 19 - User Statistics

Jefferson Co PSD, Crystal City/Festus Service Area, Sewer Rates Model 2025-2

This table shows measures of equitability, or "fairness," of the rates as modeled in Table 10. If debt, capacity or other surcharges were also calculated but not included in Table 10, this table does not take those fees into account.

If your rates were based only on volume of service, your % of Usage and % of Revenues figures would be the same within all the classes. While rates are not set up that way, it is still useful to make comparisons on that basis. This table does that, among other things.

Normally, the % of usage figure will be lower than the % of revenue for the lower volumes of use. That will switch for the higher volumes of use. Even for declining rate structures, this switch should occur near the volume of the average residential user, typically near 5,000 gallons/month (668 cu ft).

In urban and suburban areas the average monthly use for residential or general customers can be twice that used by their rural and "old town" counterparts. Use is largely dependent upon who lives in a community. Older people living in longer established neighborhoods tend to use less volume than younger people living in more recently developed areas. As you make comparisons between different customers and customer classes, keep that, and the following statistics about your rates in mind:

3,238 Gallons: This is the average small meter (usually residential) customer's usage per Monthly billing cycle.									
Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	% Users	% Revenue % Use at Current Rates	% Revenue at Modeled Rates	
Res, 0.625 Inch	0	999	0	0.0	0.0%	0.0%	21.1%	15.9%	15.6%
	1,000	1,999	0	0.0	0.0%	0.0%	21.1%	15.9%	15.6%
	2,000	2,999	0	0.0	0.0%	0.0%	21.1%	15.9%	15.6%
	3,000	3,237	0	0.0	0.0%	0.0%	5.0%	3.8%	3.7%
	3,238	4,999	264,190,888	6,799.9	100.0%	89.7%	0.0%	21.5%	22.7%
Totals for Class			264,190,888	6,799.9		89.7%	68.3%	72.8%	73.2%
Com, 0.625 Inch	0	999	0	0.0	0.0%	0.0%	1.3%	1.0%	1.0%
	1,000	1,999	0	0.0	0.0%	0.0%	1.3%	1.0%	1.0%
	2,000	3,002	15,676,584	435.0	100.0%	5.7%	1.4%	2.4%	2.5%
	3,003	3,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%
Totals for Class			15,676,584	435.0		5.7%	4.1%	4.4%	4.5%
1 Inch	0	999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	1,000	1,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	2,000	2,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	3,000	3,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	4,000	4,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	5,000	5,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	6,000	6,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	7,000	7,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	8,000	8,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	9,000	9,999	0	0.0	0.0%	0.0%	0.5%	0.4%	0.4%
	10,000	11,949	0	0.0	0.0%	0.0%	1.1%	0.8%	0.8%
	11,950	29,999	25,047,682	174.7	100.0%	2.3%	0.0%	0.7%	0.7%
Totals for Class			25,047,682	174.7		2.3%	6.5%	5.6%	5.5%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
1.5 Inch	0	999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	10,000	25,237	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	25,238	29,999	2,750,938	9.1	100.0%	0.1%	0.0%	0.0%	0.0%
	30,000	39,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class			2,750,938	9.1		0.1%	0.7%	0.6%
2 Inch	0	999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	1,000	1,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	2,000	2,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	3,000	3,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	4,000	4,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	5,000	5,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	6,000	6,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	7,000	7,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	8,000	8,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	9,000	9,999	0	0.0	0.0%	0.0%	0.4%	0.3%	0.3%
	10,000	19,999	0	0.0	0.0%	0.0%	4.3%	3.2%	3.2%
	20,000	33,085	0	0.0	0.0%	0.0%	5.6%	4.2%	4.2%
	33,086	39,999	55,055,614	138.7	100.0%	1.8%	0.0%	0.9%	0.8%
	40,000	49,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%
Totals for Class			55,055,614	138.7		1.8%	14.2%	11.6%	11.4%
3 Inch	0	999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	10,000	19,999	0	0.0	0.0%	0.0%	0.2%	0.2%	0.2%
	20,000	29,999	0	0.0	0.0%	0.0%	0.2%	0.2%	0.2%
	30,000	39,999	0	0.0	0.0%	0.0%	0.2%	0.2%	0.2%
	40,000	49,999	0	0.0	0.0%	0.0%	0.2%	0.2%	0.2%
	50,000	61,582	0	0.0	0.0%	0.0%	0.3%	0.2%	0.2%
	61,583	69,999	5,172,940	7.0	100.0%	0.1%	0.0%	0.1%	0.1%
	70,000	79,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%
Totals for Class			5,172,940	7.0		0.1%	1.3%	1.1%	1.1%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
4 Inch	0	999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	10,000	19,999	0	0.0	0.0%	0.0%	0.5%	0.3%	0.3%
	20,000	29,999	0	0.0	0.0%	0.0%	0.5%	0.3%	0.3%
	30,000	39,999	0	0.0	0.0%	0.0%	0.5%	0.3%	0.3%
	40,000	49,999	0	0.0	0.0%	0.0%	0.5%	0.3%	0.3%
	50,000	65,523	0	0.0	0.0%	0.0%	0.7%	0.5%	0.5%
	65,524	69,999	11,532,201	14.7	100.0%	0.2%	0.0%	0.2%	0.2%
	70,000	79,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%
Totals for Class			11,532,201	14.7		0.2%	3.0%	2.4%	2.4%
8 Inch	0	999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	0.0%	0.0%	0.0%	0.0%	0.0%
	10,000	19,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	20,000	29,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	30,000	39,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	40,000	49,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	50,000	59,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	60,000	69,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	70,000	79,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	80,000	89,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	90,000	99,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	100,000	109,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	110,000	119,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	120,000	129,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	130,000	139,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	140,000	149,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	150,000	159,999	0	0.0	0.0%	0.0%	0.1%	0.0%	0.0%
	160,000	316,623	0	0.0	0.0%	0.0%	0.9%	0.7%	0.7%
	316,624	or More	7,282,341	1.9	100.0%	0.0%	0.0%	0.0%	0.1%
Totals for Class			7,282,341	1.9		0.0%	1.9%	1.5%	1.5%
Grand Totals			386,709,187	7,581		100.00%	100.00%	100.00%	100.00%

Chart 1 - Operating Ratio

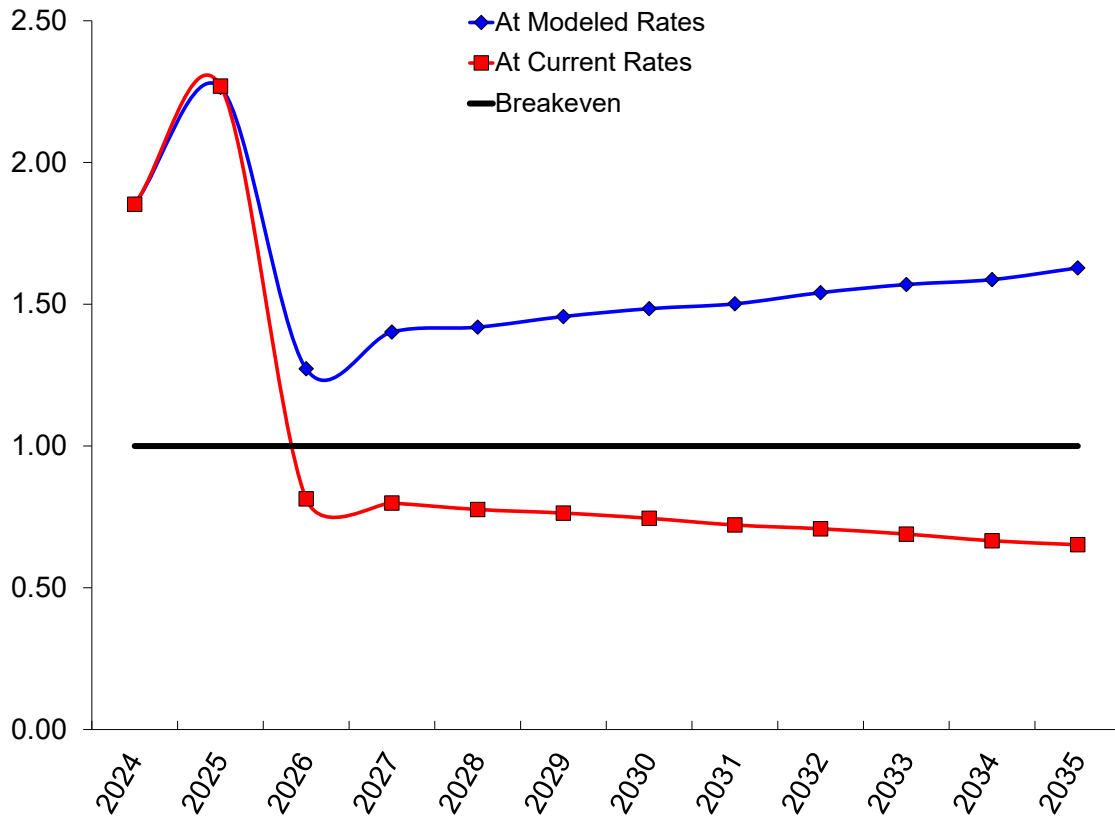


Chart 2 - Coverage Ratio

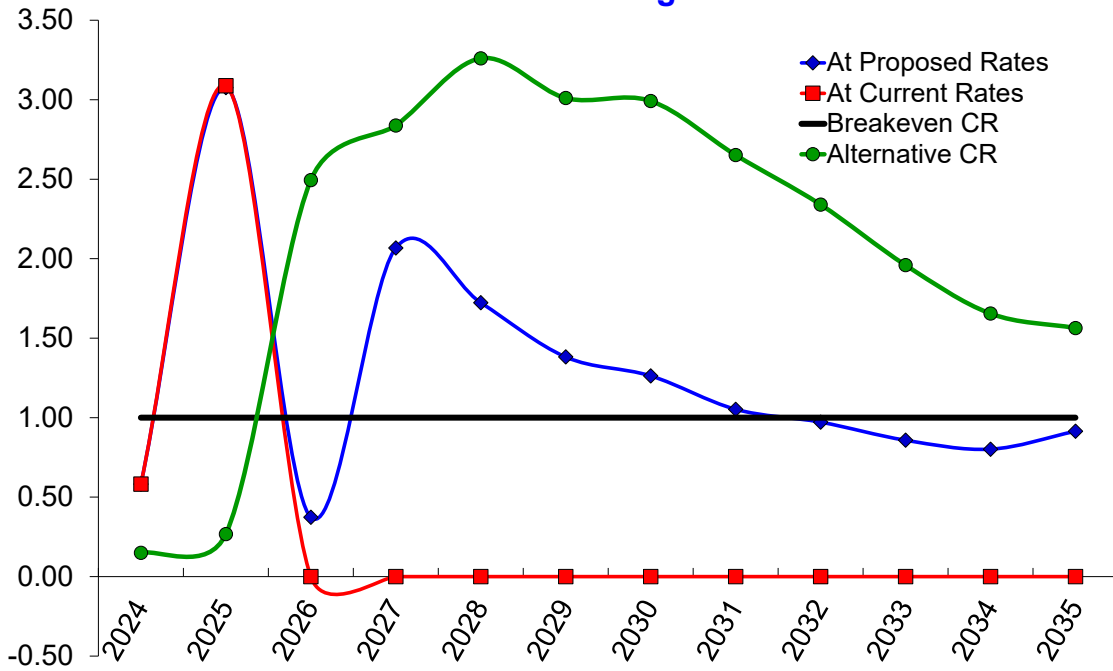


Chart 3 - Residential Users' Bills

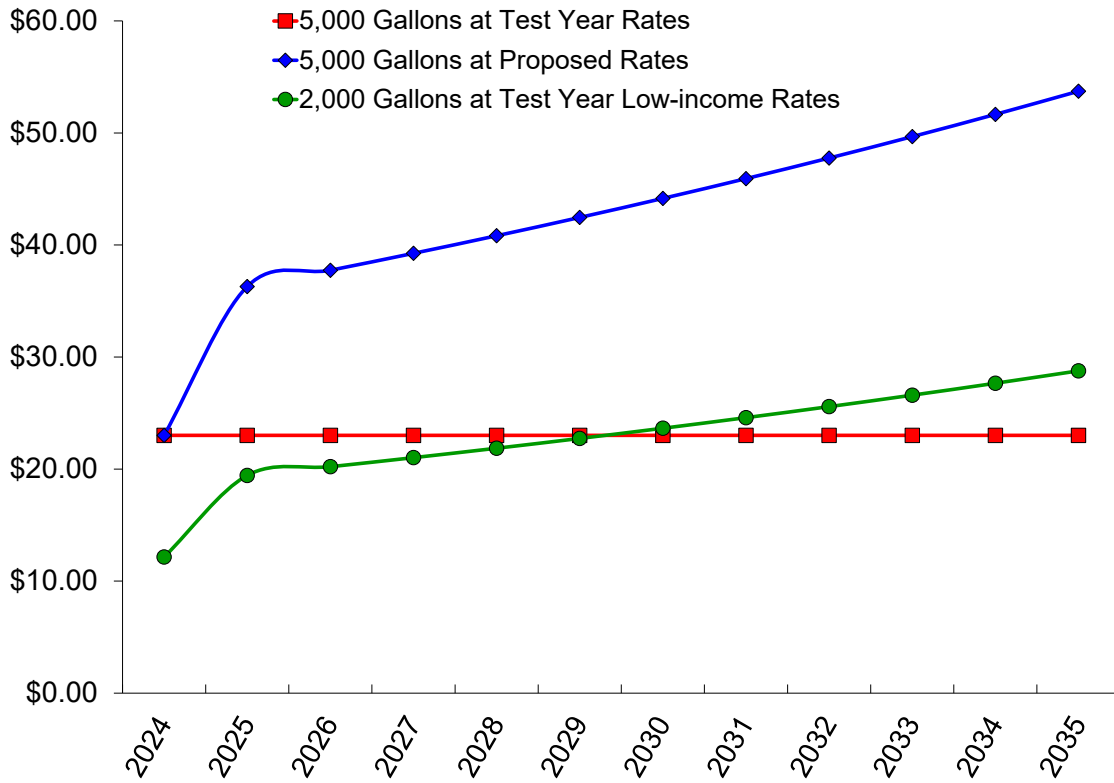


Chart 4 - Affordability

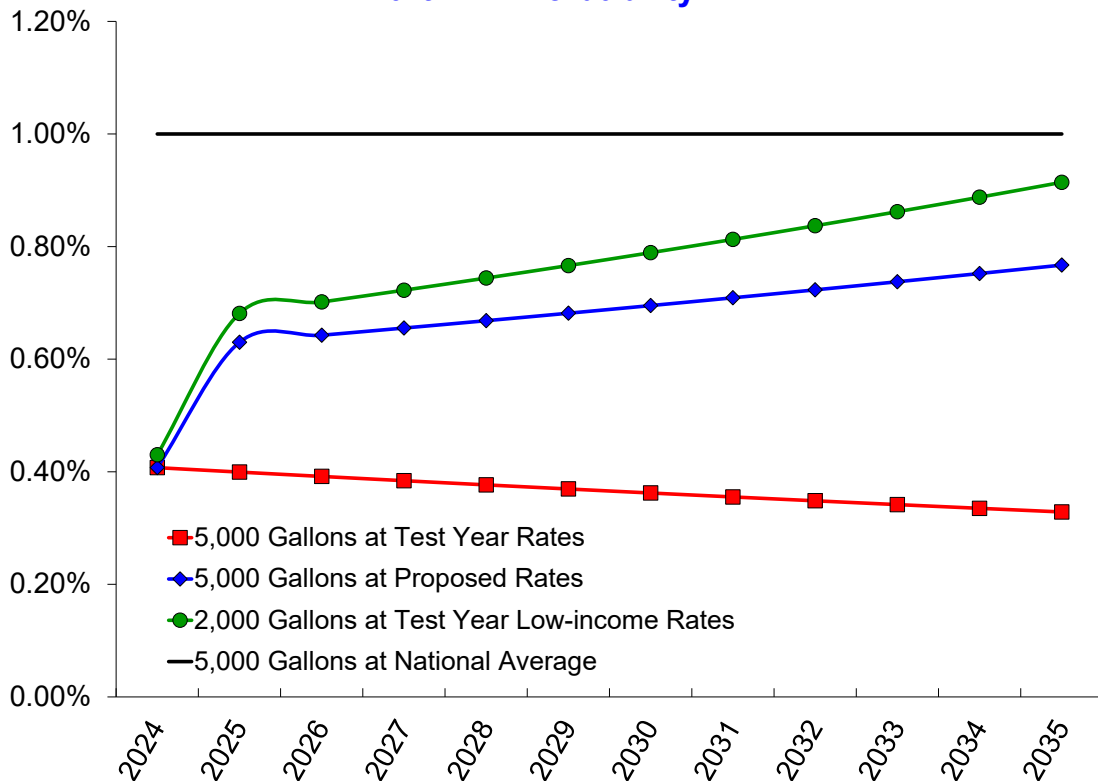


Chart 5 - Working Capital vs Goal

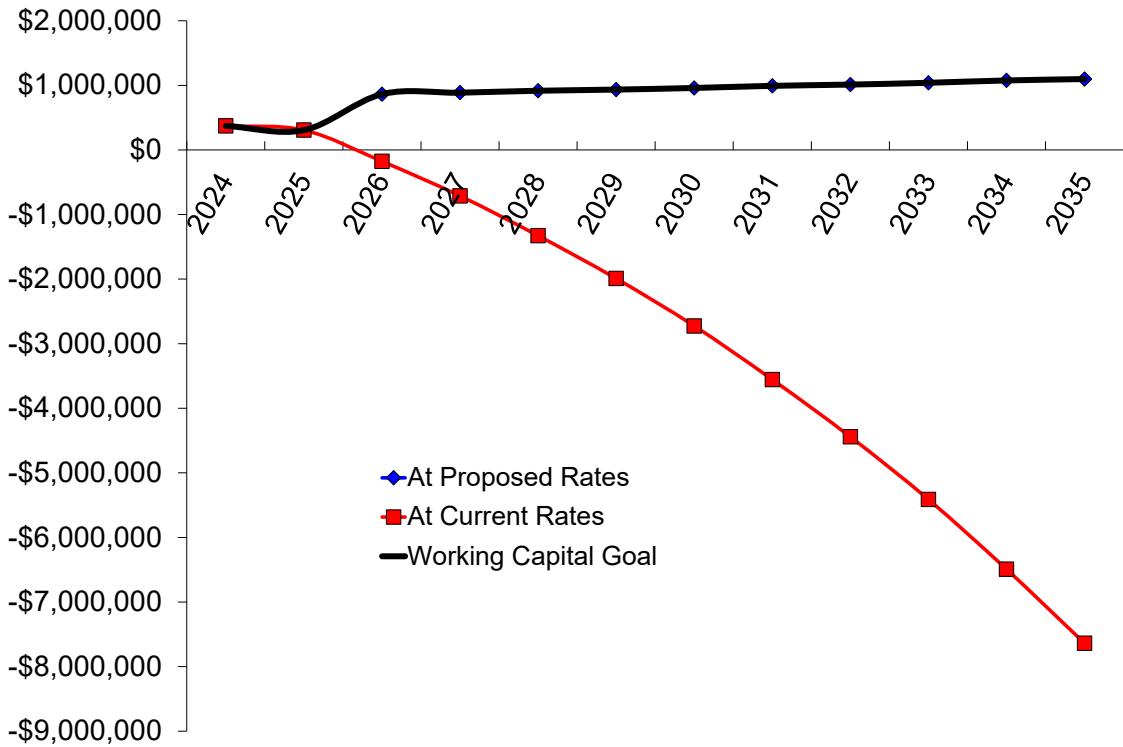


Chart 6 - Value of Cash Reserves Before Inflation

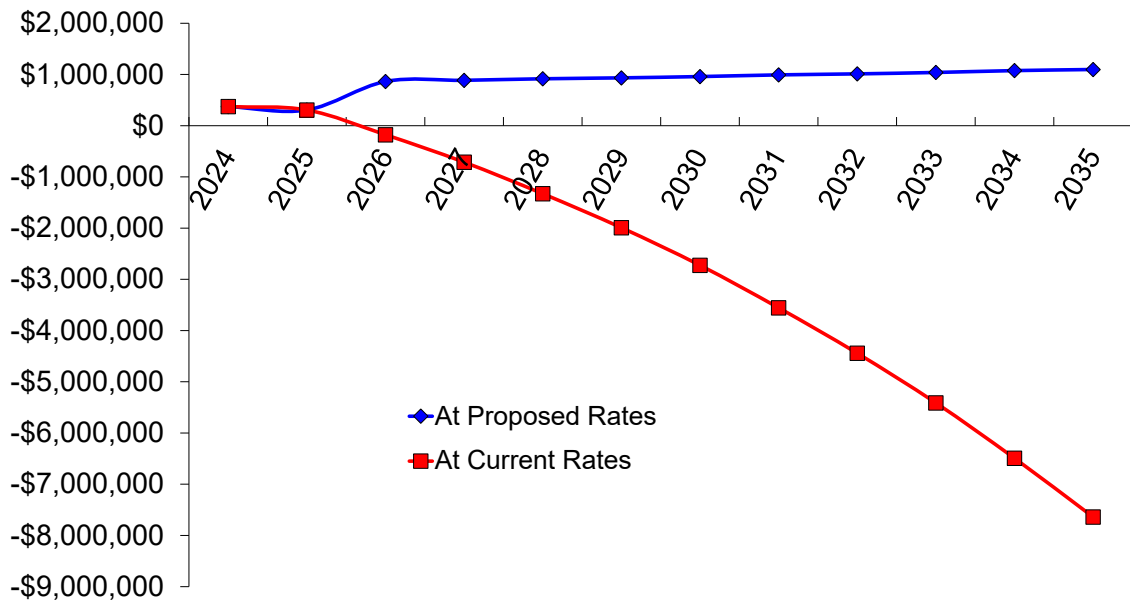


Chart 7 - Value of Cash Reserves After Inflation

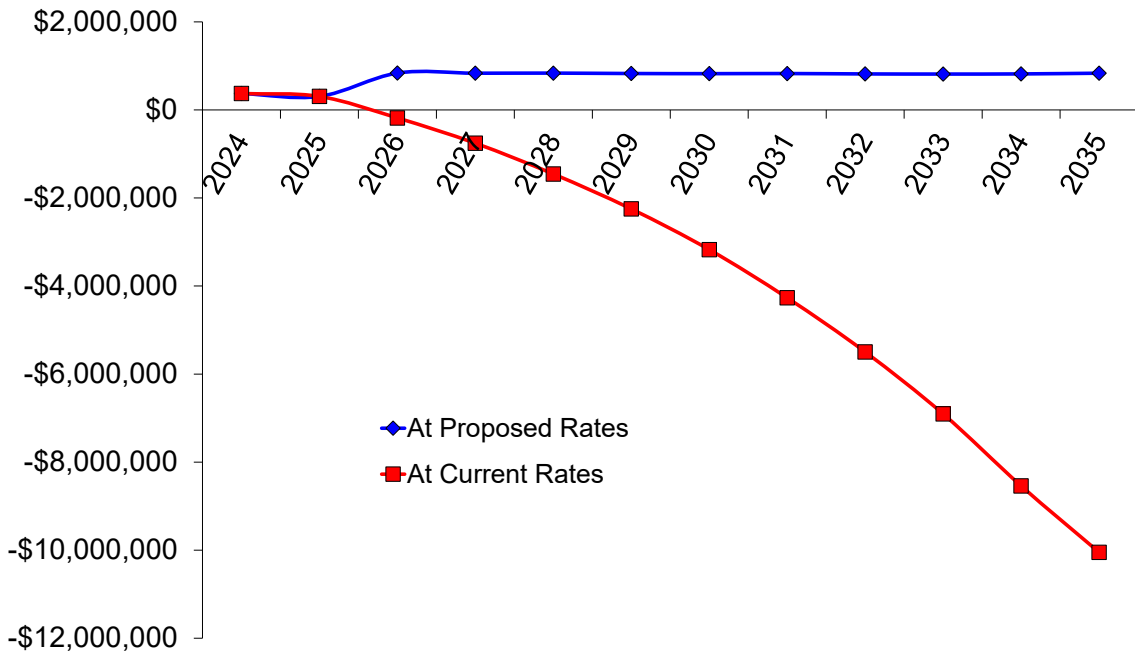


Chart 8 - Sum of All Reserves

