June 28, 2024

Ms. Stacy Kinder, Mayor
City of Cape Girardeau
44 North Lorimier
Cape Girardeau, MO 63701

Subject: Water Rate Analysis Report

Dear Mayor Kinder:

Attached is the City's rate analysis report. Before I address the report, I want to speak to everyone who will read this.

Casey Brunke and Erica Bogenpohl were my primary contacts with the City early on. Later, Lisa Mills became my primary contact. I asked for many kinds of data and information, some of them quite complicated. My contacts were amazing – prompt, accurate, and just wonderful to deal with. But they had fantastic support, I am sure. Others helped me either directly or through them – Stanley Polivick, Kendra Boos, Mary Thompson, Gayle Conrad, and Trisha Holloway, that I know of. All of them made data gathering go so well and pleasantly, in fact. That does not happen often. I am sure you and the Council recognize the expertise and value of City staff. I hope citizens and ratepayers will also get a glimpse of just how well they are being served by these folks. Without them, and without their accurate assistance, my analysis work would not be possible.

Now, on to the report.

The report and the included rate models cover a lot of technical ground, and that is just the tip of the analysis iceberg. I am confident Ms. Mills can answer Council members' questions about the report, the modeling, the analysis process and other things. But should you need something from me, filter questions to me through Ms. Mills and I will answer them all. I can meet with the Council again, if you think that would be useful. But I doubt that is necessary. I am confident you have the tools needed to proceed to new, completely adequate and appropriate rates very soon.

Finally, I am sure you and Council members know of other cities and utilities that also need rate setting help. As you run into these folks at municipal league and other meetings and venues, I hope you will tell them about my services. I get much of my business from referrals by past clients. I hope to be able to trace several future clients back to my work with Cape, as well.

Best regards,
GettingGreatRates.com

Carl E. Brown
President

Enclosure

Water Rate Analysis Report

Cape Girardeau, Missouri

Prepared June 28, 2024

Carl Brown, President
GettingGreatRates.com, LLC

Contents

Index of Model Tables and Charts

Executive Summary

This analysis calculated water rates for the City of Cape Girardeau in many different structures that produce different revenue. This report presents one of those scenarios and references two others. The included scenario, the partial restructure scenario, would pay all system improvement costs and accomplish some rate restructuring. Not included but often referenced is the 5% across-the-board increase scenario. This one adheres to the current structure and stays within the City Charter rate increase limitation. But that set of rates would not produce enough revenue to fund all planned system improvements. A third scenario, also not included, is the full restructure scenario. That one is like the partial restructure scenario except it depicts fully restructured rates. That much restructuring was deemed by City Management to be too aggressive at this time. None of the scenarios would have the City borrow for improvements because the City does not have available borrowing capacity for those improvements.

The Models' Names and Descriptions

The included model is called, "Cape Girardeau, MO, Water Rates Model 2024-14, Partial Restructure." Later this model will just be called "the Model." Other than the degree of restructuring, this model is the same as the Full Restructure Model.

Only referenced is the "Cape Girardeau, MO, Water Rates Model 2024-13, Full Restructure" model. As the name describes, this one includes a robust restructuring to incorporate a full slate of cost-to-serve rate features. Later this model will just be called the "Full Restructure Model."

Also referenced only is the "Cape Girardeau, MO, Water Rates Model 2024-15, 5% Across-the-board Increase" model. Later this model will just be called the "5% ATB Model." This model simply increases the current rates by five percent across-the-board and will not produce enough revenue to pay for all needed improvements.

Table A: Model Comparisons

Table A: Comparisons of the Included Models

Model	Rate Adjustment Type	Total Reserves in 10th Year	Affordability Index in Year Starting 7/1/2024	Affordability Index in Year Starting 7/1/2025
Water Rates Model 2024-14, Partial Restructure	Cost-to-serve restructuring	$10,169,911	0.76%	1.02%
Water Rates Model 2024-15, 5% Across-the-board Increase	Across-the-board Increase	**-$24,078,996**	0.76%	0.78%

Special Notes

What is Presented in This Report, What is Not, and Why

Analysis models that considered all critical issues were prepared. I prepared more than a dozen major models and many other minor ones. Each model arrived at a set of rates and fees that paid all system costs, or only part of those costs in the case of rate increases limited by the City Charter. To present all the models and explain their differences would be quite confusing to report readers and decision makers. Thus, only one model with rates that are viewed as most doable is included. The partial rates restructuring model covers conditions, rates and fees, and many structures and considerations which I recommend as best practices. It does not include some of the more aggressive restructuring in the "Full Restructure" model because City management believes those features are not doable in your case at this time. And the "Five Percent Across-the-board Increase" model will not produce adequate revenue. Therefore, those two models are only briefly described in this narrative report but not included.

Why include the Partial Restructure rates model and only reference the other two models?

I believe it is important for the City Council to know what rates they should soon adopt and why – the near-term, doable rates.

I believe the Council should know what may be preferable for future rates and fees – long-term rates goals that you may or may not get to someday. Those are the Full Restructure rate model rates.

And I believe it is critical for the Council, citizens and ratepayers to know what simply will not work, given the needs of the utility. That is the current paradigm of rate increases limited to five percent across-the-board every year. You are moving into a period of system refurbishment and improvement that cannot be done with a five percent rate increase. Without larger rate increases, if you attempt to make the needed improvements, by 2027 the utility's reserves will be completely depleted and then go deeper and deeper into negative territory.

Your Current Rates Are Modest

The test year rates were modest when considered against the primary affordability indicator, the "Affordability Index," or "AI." Nationally it is thought the average AI for water is 1.0 percent. That means, the "average" household using 5,000 gallons of water per month pays 1.0 percent of its income to pay the water bill.

In Cape Girardeau, for a five-eighth inch meter residential customer the test year AI was 0.71 percent. With the rates that fully fund system improvements and reserves, the AI would rise to 1.04 percent in fiscal year 2025.

City Charter Restricts Rate Increases and Rate Restructuring

Note: I am not an attorney, so I cannot, and I will not interpret law. However, being a rate analyst, I can tell you what would happen to rates and system improvements if you interpreted the City Charter in certain ways.

Recently I was informed the City has a rate increase restriction in the City Charter that says rates may not be increased during any year by more than five percent. There are also a few "work around" caveats, too. This restriction is interesting, and it is a problem for a few reasons:

- First, analyzing rates since 2005, I have never run into that situation before. Perhaps such restrictions existed elsewhere and a few of my client utilities did not remember they have such a restriction, or they just did not abide by it. However, I doubt that is the case because there are people – regular citizens and ratepayers – who know of and remember when there are limitations on a utility's powers, and they bring it up when it appears the utility is about to "break the rules." I suspect your rates restriction is not common.
- Second, as described to me by the finance director, that restriction prevents increasing any customer's bill by more than five percent per year. Thus, rates could not be restructured in any meaningful way to make them fairer, even if the overall revenue increase was less than five percent. Your rates need restructuring to make them fairer.
- That restriction does not consider the fact that rates have been increased during years in the past by less than five percent and at the same time, system improvement needs have been accumulating. That is the "perfect storm" of utilities you should not feel like you are facing this alone. It is common. Were rates increased five percent each year, they may have been adequate to cover system improvement needs as they were occurring. Thus, the utility is now in a hole where system improvement needs are great and user charge rates are far too low to cover them.
- The restriction does not take into account the fact the City has no available borrowing capacity for system improvements. Any improvements made must be funded with grants, if available, and system income and reserves.
- The restriction would leave over $24 million of system improvements undone.

My recommendation is this. Revise the City Charter to remove this restriction entirely. Short of removing the increase restriction entirely, you could allow citizens vote to allow an exception, given the current situation.

System Development Fees for New Connections, and Surcharges

For my client utilities that are growing at a reasonable or strong pace, and the City is growing rapidly, I recommend meter size-based system development fees. Many call these new connection fees. And I recommend setting those fees as high as competition with nearby cities and areas will allow. City staff advised me, unfortunately, that the City is already a new connections fee price leader in the area, so I assume you will continue with the current set of system development fees. City staff also advised that adjusting the minimum charge structure markedly at this time would also be problematic, so that restructuring is left out for now. That makes Tables 12 through 16 of the Model unnecessary, so they have been left out of the report.

Introduction

The City is growing rapidly, which is good. Growth increases water usage, increasing costs, but increasing revenues, too. Growth also requires more complicated and simply bigger facilities to supply growing use, and greater capacity to serve. The modeling and report cover the rates-related parts of these issues, and others.

As for me, your rate analyst, I have analyzed rates as a consultant since 2005, completing 379 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 that discussion out of the main part of the report. I placed those discussions in Appendix A, starting on page 17.

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.

Now, to the specifics of your rates situation and my analysis and recommendations.

Currently, the water user charge rate structure can be summarized like this: Minimum charges rise with meter size and there is no usage allowance. Those are good pricing practices.

Unit charges are in two tiers – the unit charge for the first tier of volume (lower volumes) is higher than for higher volumes in the second tier. Those are called "declining" rates. That structure merits more discussion, which appears in the "Meter Size-based Rates" subsection that soon follows.

This report is the culmination of a process where I submitted information and data requests to my primary City contacts. Initially they were Casey Brunke, Public Works Director; and Erica Bogenpohl of Alliance Water, the contract operations firm for the

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 and completed during 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.

City's water system. Most recently, it has been Lisa Mills, the City's Finance Director. Others behind the scenes assisted but I coordinated all communications through these primary contacts.

Rate analysis takes a large amount of data, and it is common to "home in" on the optimal set of conditions and rates as the analysis reveals them. As I received information and data, I modeled the utility's finances and rates and submitted drafts for review and feedback. My contacts reviewed those drafts to assure accuracy, and when needed, they corrected data.

I prepared and submitted a draft final report. Again, contact reviewed and gave me feedback. This is, hopefully, the final report.

The report is in two parts. The first part is this narrative report that tells readers what could be done to the utility's rates and why and interprets much of the mathematical modeling. The second is a printout of the modeling.

Finally, I note that the current rate structure has the unit charge declining as use goes higher. I do not see that structure much these days and only rarely do I recommend it. I do not recommend it in your case, either.

As you read this report, please keep this in mind. The report does not *direct* the City to do anything. Actions you take or do not take are strictly up to you. The report is meant to inform and educate so you can make well-informed decisions about actions to take. And the report and models are not legal recommendations. For legal issues consult your attorney.

About the Partial Restructure Model, Generally

The Model was built to match the system's 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 Model does not always match financial statements.

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 Model accounts for funds in a more simplified way than most utilities do it. When it comes to segregating funds, staff knows best how to do that, so the Model does little in this regard and leaves the segregating up to staff.

Ratepayers ask, "Why should I pay more?"

Nearly every ratepayer served by every one of my client systems wants to keep their current (lower) rates. No one wants to pay more for their water than someone "down the road." That is human nature. We are wired that way, and that is not a bad thing.

Nearly all my client systems have system improvements they need to make. They cannot fund them out of current revenues. That is why they have a backlog of improvement needs. Quite simply, rates need to go higher, so improvements can be done. While your rates may go higher than those in other systems nearby, that is likely a temporary situation. Those other systems have a backlog of improvement needs. Once they start to attack that problem, their rates will go up, too.

Saying this will not make anyone feel good about higher rates. But this situation is going on nearly everywhere. Maybe not on the same schedule as you, but their day is coming, too.

A special note about Chart 2, page 70. The blue line drops to zero in the last year. That looks alarming, but debt will cease that year. When there is no debt, there is no coverage ratio.

Several line graph charts in the Model 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 the Model to learn the meaning of terms used in the charts.

I will say it simply, like this. Chart 8 depicts reserve levels under the existing rates (red line) and the modeled rates (blue line). When the blue line goes up, that is a good thing for the utility. When the red line goes down, that is a bad thing, at least, if you were to decide to keep your current rates for very long.

In contrast to Chart 8, Charts 3 and 4 in the Model depict user rates. When the 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. Utility effectiveness is the first priority. Efficiency (low cost, as customers view it) is the second priority. Customers want efficiency but they must have effectiveness.

One thing you will notice in viewing Chart 5 is this. Only the red line (current rates) and the black line (goal amounts) show up. That means the blue line, the proposed rates line, is taking the same path as the line depicting the goal or the current rates. That is because, in the Model, I programmed all funds that exceed what is needed to meet the working capital goal to "spill over" into the CIP and Debt Service fund reserve. Thus, both the recommended and current rates satisfied the goal for a couple of years, but the current rates are now falling short, and that trend will continue without rate increases.

Chart 8 spells the difference between the two sets of rates. The modeled rates will generate more revenue over time and, thus, produce stronger total reserves.

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.

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 versus what likely will happen under the modeled rates. Often, the best course of action is then very easy to see.

The remainder of this report directly addresses the analysis findings and my recommendations.

Partial Restructure Model Discussion

Meter Size-based Rates

You currently assess meter size-based minimum charges and new connection fees. You should continue that practice, but adjust some of the rates, so they will be cost-based. Tables 11 through 16 of the Model cover calculation of these fees. These tables are not included because management considers changing minimum charges and system development fees at this time too much change to manage.

Declining Unit Charge

The declining unit charge would be eliminated for residential customers but retained for commercial customers.

Expected Incomes

Table 3, page 46, shows the various past incomes and future incomes to expect, as well as several other things related to revenues. Near the top of the table, the growth rate in new connections, which goes hand in hand with system development fees, was 207 during the test year. It varied some over the next two years and I assumed it will stabilize at about the level it appears new connections are headed for this year, about 135 per year. Management intends to hold system development fees (tap fees) steady and set minimum charges in proportion to the current minimum charges. Since Tables 11 through 16 calculate both those types of fees and rates, and are not needed in your situation, they have been left out of the modeling.

Expected Operating Costs

Table 4, page 47, shows expected operating costs. I expect most operating costs will inflate by four percent per year. However, chemicals to treat water, electricity to pump water and similar costs that are flow-related or billing-related will also increase by the rate of growth in new connections and use. Those items are highlighted green.

To make calculation of a few financial indicators accurate and simple, I do not include as "operating costs" those costs associated with building and financing capital improvements. Those costs are covered in Table 5.

Capital Improvements and Expected Balances

Capital improvement costs are going to rise dramatically and be a major driver of higher rates, regardless of the rate structure you choose. Table 5, page 49, shows capital improvement needs, costs, and revenue sources to pay those costs. Though rates in the Model will be higher to pay these costs, rates will still be affordable after adjustment. More will be said about that in the Rate Affordability subsection to follow.

The City is in the process of making significant, long-term system improvements. The City's plan is detailed. In Table 5, highlighted green, are improvement needs the City updated just last week. Fortunately, CIST tax revenues will moderate the net cost. I assumed you will use the full water allotment of that tax for water improvements funding starting this year.

Repair and Replacement Scheduling

Most equipment repair and replacement (R&R) items are imbedded in various costs, especially the depreciation item, in Table 4, page 47. However, the utility schedules fleet R&R separately, which I also entered in the table near the bottom. This is where I normally display the long-term annual cost of overall R&R, but I used it to display your fleet R&R instead. Doing that made my Tables 6 and 7 unnecessary, so those tables have been left out of the Model.

Target Reserve Levels

According to your test year balance sheet, your total reserves were a bit low for a system of your size. In the following, I show you what I normally recommend for systems of your size and what I also recommend for you:

1. Unobligated cash and cash equivalent reserves equal to at least 25 percent of the annual operating costs, not including debt service and general administration costs;
2. A 20-year repair and replacement (R&R) schedule reserve, in the 20th year equal to at least two times the average year's cost of R&R. Your cash and cash equivalents reserves need to cover this, too, and
3. Capital improvement and debt reserves at the end of the tenth year, after debt is paid, equal to that year's debt payments plus cash-paid capital improvement expenses.

These targets produce total reserves in the tenth year of slightly over $20 million. City management opted for lower but still prudent reserves, to keep the rates lower. In this Model on the bottom of Table 17, page 61, and several of the charts at the end of the Model you can see the reserves balance in the tenth year is projected at slightly over $10 million. ***Chart 8, page 73, graphically shows how reserves will perform over the next ten years.*** Note that reserves drop a lot in the tenth year. That is because of one very large system improvement assumed for that year. If system improvement costs come in more like the average after the tenth year, reserves will turn around and resume climbing after that one large expense.

What if Expenses in the Model Miss the Mark Someday?

First, missing the mark is a certainty. Eventually, the projected expenses will miss the mark. That is why analysis needs to be redone periodically. With time, things change.

If you adopt the Model's rates, then in a future year it turns out the Model failed to accurately predict the expenses you experience, what should you do? That depends upon which way (higher or lower) your expenses went, and how much they differed from what was predicted. It may also depend upon which expense(s) varied because that could markedly affect cost structure, and therefore, rate structure. And it will depend upon what happened to revenues, too.

- Your "fix" for a situation may be to continue with future rate adjustments as recommended. Not all "misses" need to be addressed. Some right themselves.
- Or it may be to speed up or slow down future inflationary increases to get revenues and reserves back on track.
- Or it may be to do a proportional increase to minimum and unit charges based upon the percentage that the experienced expenses are higher or lower than those in the Model.
- Or it may be to give me a call if you are not clear about how to make the needed adjustments.

My suggestion is this. When in doubt, err on the side of calling me for advice. I can usually talk folks through how to make the appropriate adjustment and I do not charge for that.

If your new situation requires modeling, I probably will request a fee for that. In that case, would estimate the hours needed to do the analysis adjustment and I would propose to do that at the hourly rate I used to calculate the fees for the original project. Most such projects, including the reporting out, take a day or less to do, so they rarely go over $1,000.

If "getting back on track" is a problem several or many years into the future, many issues could then be in play. In that case, it is time for a new rate analysis.

The critical point is this. Do not hesitate to make the recommended rate adjustments because you are not positive it will work out. Make the adjustments and then track how it works out through the years. If you get concerned about something later, just call. I cannot say, "I have seen it all." But I have seen a lot. I probably can work you through any rate setting situation you will experience.

Rate Affordability

I calculate each rate analysis client's rate affordability, measured by the Affordability Index. For most utilities, it is a very useful tool to assess how "cheap" or "expensive" their rates will be. The Affordability Index is also 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.

In Cape Girardeau, personal income growth, as determined by the Census Bureau, averaged 2.73 percent per year over the last 20 years through 2019. Incomes and income growth rates are shown in the top left corner of Table 3, page 46.

Residential water use for in-City, five-eighth inch meter customers averaged 3,656 gallons (489 cubic feet) per month. That is lower than the national use benchmark for affordability of 5,000 gallons per month. Thus, affordability of the current bill and the bill under the modeled rates for your average residential use will be lower than the Affordability Index in Table 17, page 61. But the Affordability Index is still a useful indicator. The Affordability Index is also shown graphically in Chart 4, page 71.

In the table, the Affordability Index calculation for the test year was 0.71 percent. That means, a 5,000 gallon per month residential customer earning at the City-wide median household income level paid 0.71 percent of their monthly household income to pay their monthly water bill. The national average is thought to be approximately 1.0 percent, so your current rates are lower than the national average on that basis.

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, this customer's Affordability Index would go up to 1.02 percent, right at the national average. Table 18, page 63, shows "before and after" bills for customers using different volumes of water.

How to Implement the Partial Restructure Model Rates

In the following, I summarize most things you would need to do to get set on this course of rates:

1. You must solve the current City Charter restriction on rate increases to pursue these rates. If you can do that…
2. Table B lists the rates and fees derived from the Model. I call this set of adjustments the "initial rate adjustment."

Table B: Rates From the Partial Restructure Model

Table B: Minimum and Unit Charges; and No Usage Allowance, Calculated by the Cape Girardeau, MO, Water Rates Model 2024-14, Partial Restructure

		Unit Charge per 100 Cu. Ft. for Volumes in These Ranges	
Rate Class, Meter Size in Inches	Monthly Minimum Charge	0 - 5,999 Cu. Ft.	6,000 Cu. Ft. or More
Res, 5/8 Inch	$17.45	$3.9613	$3.9613
Res, 3/4 Inch	$20.15	$3.96	$3.96
Res, 1 Inch	$27.19	$3.96	$3.96
Res, 1.5 Inch	$50.89	$3.96	$3.96
Res, 2 Inch	$68.51	$3.96	$3.96
Res, 3 Inch	$128.34	$3.96	$3.96
Com, 5/8 Inch	$17.45	$3.96	$3.0518
Com, 3/4 Inch	$20.15	$3.96	$3.05
Com, 1 Inch	$27.19	$3.96	$3.05
Com, 1.5 Inch	$50.89	$3.96	$3.05
Com, 2 Inch	$68.51	$3.96	$3.05
Com, 3 Inch	$128.34	$3.96	$3.05
Com, 4 Inch	$211.94	$3.96	$3.05
Com, 6 Inch	$442.81	$3.96	$3.05
Hydrant Meter - RC1110	$128.34	$3.96	$3.05
Government - RC1115	$0.00	$0.00	$0.00
Fire Line 4 Inch - RC5000	$17.42	N.A.	N.A.
Fire Line 6 Inch - RC5005	$34.90	N.A.	N.A.
Fire Line 8 Inch - RC5010	$52.42	N.A.	N.A.

3. The calculations assumed you would have made the initial rate adjustments early enough to begin charging at the new rates starting with the bills that will be payable on or about July 1, 2024. Of course, that will not happen, so make the adjustments as soon as you can. Also, you will need to satisfy all Statutory requirements for making rate adjustments in advance of billing at the adjusted rates.

4. Inflationary increases should start the year following the initial adjustments. I assumed you will need to raise all minimum and unit charges by 5.0 percent that year and every following year, too.

Closing

If you adopt these rates and fees, and if future costs, growth, 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 more fairly for the service they use than the current rate structure. Of course, keep in mind that your future capital improvement costs are going to increase. Future analysis would be useful as a planning tool for those improvements as they come into focus.

This combination of initial adjustments will result in an overall increase in water revenues needed to fund the improvements in your capital improvements plan.

Conclusion

"Conclusion" is a misnomer here. This report provides information to help the City 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, so always feel free to call me to discuss any concerns you have as the years pass. Having the Model available to track your progress and determine the effect of condition changes later, I should be able to test changes easily and advise you quickly.

As time passes you will need to adjust rates incrementally as modeled in this report and as described in more detail in my book. Eventually, you will start this cycle over.

As you take on the initial adjustments, keep the following in mind.

- Everyone impacted by the City's water rates should at least be made aware of the results of this report.
- My default recommendation is to 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 those information needs, the City can publicize the current and modeled rates and/or 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 City's Web site, Facebook page or other social media, so everyone can see for themselves what the report says. Publicize the 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 engaged me to pay a visit to the Council and I did that a few weeks ago. I could visit again, if you think that will be productive. But it seems City staff are quite capable of presenting this report and answering most questions. My conclusions and recommendations are laid out clearly in this report, so I suspect the main things that need to be resolved are best done by City staff.

Still, call on me whenever it seems useful because I want to see you reach the rate setting goal line – fairly structured and completely adequate rates.

Appendix A: Rate Analysis Methodology and Related Issues

This appendix covers many issues related to rate analysis and rate setting generally, and specifically to how I do rate analysis. But first, I thank governing bodies for the valuable service they give to us.

The Governing Body's Job is Broad and Critical

The report covered my findings. Based on those findings, I made rate and fee setting recommendations. I may have offered some options, too. However, and this is important, my job is only to advise. The governing body's job is to set rates, among many other things.

Utility management requires the governing body to consider rates-related issues:

- How would the recommended rate structure and overall level of the rates affect ratepayers and funding of system needs?
- How different is the recommended structure compared to the current rate structure, meaning, how much "rate shock" would the recommended rates create for some customers?
- How might the governing body prudently reduce system costs, delay capital improvements, obtain grant or other outside funding for improvements and do many other things to reduce the need for additional revenue?
- And even if rate increases are not a problem, how might the utility be managed differently to reduce costs and be more efficient?

Those are just a few issues related to rate setting the governing body must consider. The job of the governing body is a big one, covering much more than rate setting. The members of the governing body have intimate knowledge of "conditions on the ground," community needs and ratepayer feelings. I only got a glimpse of such things. As the governing body considers those, and many other things, it will decide how to set rates and fees. My analyses and recommendations should be helpful as they do that, but my charge is only to advise, not direct.

All ratepayers and utility customers should be thankful that people from the community stepped forward and joined the governing body to do that critical work. Without such civic-minded people making utility services function well, quite literally, community-based living would not be possible. It is common for some citizens these days to not believe officials and even work against "government" at all levels. That is unfortunate because local government officials make it possible for the rest of us to live and work where we do.

To the governing body members, I say a heartfelt, "thank you." I feel privileged to advise you and I trust you to seek the best overall outcome for your citizens and utility customers.

Now, on to issues that related more narrowly to rate analysis and rate setting.

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, how to acquire rate analysis services, 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 calculates the annuity (savings amount) needed to fund all items in the schedule.
5. CIP Planner© is a similar spreadsheet application for capital improvements planning.

The two spreadsheets were extracted from my rate analysis model template and made 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.

Recommendations for Policy and General Issues

Many of the following things you probably are already aware of or are already doing, but they are worth repeating. A comprehensive list of rate setting best practices is presented in the "Rate Setting Best Practices Guide," cited above.

Whether your entity is a city, town, district, or utility authority, you can use the following as a checklist of "to-do" tasks for rate setting and rate analysis. If a reference you see in the following does not quite fit your situation, consider how you can apply the information to your special situation:

1. It is easy to export data from a robust, user-friendly billing program. Your staff gathered volume usage data from that program for my analysis work. 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. 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 your state rural water association.

2. 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 tracking process burdensome. For many services you likely can just estimate staff time occasionally and charge fees based upon those estimates.

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

4. 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 enough to make a new analysis worthwhile. 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 are planning to do significant capital improvements that were not previously included in the rate 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 as soon as you can get it done.

5. Fully adopt management strategies that are included in what is 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.
6. As a reminder, check with your attorney for language and legality of all issues discussed in this report.

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.

When I analyze rates for a government-owned water-based utility, and other utilities that are empowered to assess cost-of-service rates, I use the cost-needs approach. The approach is exhaustively 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 considered by many to be the "Bible" of 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 are 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, spread over many years. But that is a lot of work or expense with very little practical benefit to be gained.

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.

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, hence, the more accurate term of rate "analysis" rather than a rate "study."

Most utilities are better served by getting a rate analysis 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 simple and convenient to just raise all significant rates and fees by an across-the-board percentage, which should have been specified by the analyst. Such increases may be aimed at keeping up with inflation. Or they may be designed to achieve other goals. In whatever way these increases are to be done, they were planned for in the analysis and described in the foregoing report.

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 across-the-board increases are applied, rates will move even closer to a cost-to-serve structure until the year used for cost classification has arrived, which normally is four to five years in the future. After that, additional across-the-board increases will move the rate structure further away from cost-to-serve. Eventually, a new rate analysis should be done to make the structure fair again. For most moderate sized utilities, that is about five years into the future. For most smaller utilities, that may be eight or more years away.

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 planned to be finished because the debt service for that improvement probably will have already started.
- Or, if costs are expected to inflate uniformly, 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.

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 are 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.

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. In practice, most steps are affected by, and affect, what happens in other steps. Therefore, they are all done in concert with the others.

That said, here are the basic steps:

1. Cost Classification: Operating costs are placed into different categories – fixed, variable, peak flow capacity, and sometimes others. I classify costs projected for a year in the future, usually within five years of the present. And I use a year that appears to be typical of what the utility can expect in the future.

   For all utility types, operating cost classification is done in Table 8 of the model(s) that will follow in this 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.

   System capacity costs can, and usually should be recovered on a cost basis, too. That is a bit complicated and will be covered shortly.

   Back to recovery of operating costs, near the bottom of Table 8 in the foregoing report, 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. The same model template is used for calculating rates for the various utility types. The main difference for those analyses is the measurement method for unit charges.

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 can correctly be said that the utility has cost-to-serve rates. Those rates will be fairly structured, but only at the customer class level.

I classify costs to the customer level. Thus, rates that I calculate are cost-to-serve to the customer level. My reasoning for doing this is, rate structure fairness if 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 divvied out 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 out over Tables 11 through 16 of the model(s) in the report. The notion of capacity applies to all utility services, so:

- When I calculate water and sewer rates where meters are used, 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 client produces its own power, I use the demand measured by the client'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 like trash collection in that impervious surface area is the usual capacity, and unit charge criterion. Square footage or the equivalent 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. Generally, this is done by applying an expected inflationary 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. Some expenses, like postage, treatment chemicals and electricity for production, treatment, and distribution, rise with inflation plus growth in the customer base and use. Those are increased in future years by inflation and growth.
4. Reserves: Reserve goals are set through the tenth year. Those goals will 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 is discussed in the foregoing report.

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 60 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.

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:
    - Capacity cost recovery is calculated first. Likewise, penalties collected, and other non-user charge fee incomes are calculated. These revenues are deducted from the total revenue needed to arrive at the revenues needed from user charge fees.
    - Next, the across-the-board future rate increase rate (a percentage) is set. In the future, starting about one year after the initial rate adjustments have been done, rates will increase annually by this percentage. The revenue needed from the initial rate adjustments, here called the "net revenue need," 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 most "pre-calculated" revenue streams are adjusted dynamically as initial rate revenues rise or fall.)
    - 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 satisfy the net revenue need, each revenue stream is increased or decreased 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 the overall revenue increase (or decrease) is established:
        - The base minimum charge is "back calculated" from the adjusted minimum charge revenue amount. (Every customer, regardless of their meter size, pays the base minimum charge.) The meter size-based surcharge, for water and sewer systems, is added to the base minimum charge to arrive at the full minimum charge for each meter size. (Similar math is done for other utility types.)
        - The average unit charge is calculated from the unit charge revenue amount. If inclining or declining rates are to be assessed, or if there is to be a usage allowance, unit charge revenues are calculated dynamically based on those variations.

        - 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, generally to keep them tracking with rising costs.
    - After examining balances projected for future years, the future inflationary increase rate may be raised or lowered to enable the utility to accrue appropriate balances either sooner or later. That, of course, will result in initial rate adjustments that would need to be either lower or higher, respectively, to offset the change to the future adjustments rate.
    - Finally, it is common for managers and decision-makers of utilities to want to "tweak" rates into a different structure, timing of adjustment or in other ways. 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 the report this appendix is attached to. The report covers everything that seems to be important 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 Council or Council meeting. Before COVID-19 that was always done in person or rarely by phone call into their Board or Council meeting. During COVID-19, that was almost always done by remote video. After COVID-19, these meetings are being done either way, as the client desires. Many of my client systems are small and their management had not yet adopted on-line meetings. COVID has changed that. Many of my "meetings" now are done on-line, even with very small utilities. Cutting out my travel saves them a lot.

Cost-to-serve rates are considered by many, including me, to be the most mathematically fair and defensible rate structure. While I previously described how I do such calculations, I will now tell you what I consider to be "fixed" costs, "variable" costs and "capacity-to-serve" costs:

- ***Fixed operating costs are those that are related to the fact that you have customers.*** For every customer, the utility incurs one increment of this type of cost. Billing is the simplest, purest example of a fixed cost. Whether a customer uses a lot of the commodity or none, it (almost always) takes the same work, equipment, software and more to calculate their bill, "send it out" and collect the money.
    - Another part of the minimum charge will likely be a surcharge intended to recover all or part of peak flow or unusual capacity costs. These are almost always based upon water meter size because the larger a meter is, the greater

is its capacity to sustainably pass peak flows. This peak flow capacity relates well to the cost of building infrastructure "big enough" to handle peak flows. Thus, ***capacity costs are related to the fact that a particular customer has a certain capacity to demand flow or service, regardless of how much flow or service they actually use.*** These surcharges are added to the base minimum charge to arrive at the full minimum charge for each meter size.

- Larger systems invariably have more large meter customers and that makes surcharging the larger meters worthwhile and fair.
- However, small systems with few "unusual" customers and few meters larger than one inch often find it expedient to consider even peak flow capacity cost to be a fixed cost, equally sharable by all customers. At some point, there is more to be gained from administration simplicity than exact rate structure fairness.

- ***Unit charges are related to the volume of service received.*** While unit charges can be structured in various ways, the revenues they generate should be adequate to pay those costs that are related to the flow that customers use.

There are three unit charge structures that I commonly recommend, depending on the situation:

- Some systems need "conservation rates," or, their administrations simply like the notion of encouraging customers to use less of the utility's services. In this rate structure, the unit charge goes up as volume used goes up. Most of us respond to, or at least we think twice about it, when we are assessed a higher price to buy more of something. Conservation rates are most appropriate in areas with limited water supplies or in a utility that is bumping up against its capacity to produce water.

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.

- Most systems use, and should use, level unit charges – a unit charge that is the same regardless of how much volume a customer uses. With level unit charges, customers are assessed unit charges on an average unit cost basis. Such rates are the easiest to calculate, they are the easiest for a clerk to explain to a complaining customer on the phone and the revenues such rates will produce next year are the easiest to accurately predict. Most water utilities, and almost all sewer utilities assess level unit charges.

- The last major unit charge structure is called, "declining" rates. These are the reverse of conservation rates. I often call them, "use encouragement" rates. It is popular these days for many to belittle those who do not conserve resources at every opportunity. Declining rates are often scorned for that reason. However, if a system has an ample water supply and ample infrastructure to produce and distribute it, doing so will not cause unintended bad (mostly environmental) consequences; and if the governing body wants to encourage high use (which often entails such users hiring more or better paid workers), declining rates can make good sense. Declining rates are most appropriate in areas that have many high-volume industrial users or folks in that area want to attract such users. Declining rates seem to be most common in the industrial east, but they seem to be less popular everywhere these days. However, keep this in mind. One can accurately calculate the average unit charge and "prove up" that rate case. One cannot do the same with inclining or declining rates.

To complicate the aforesaid just a bit, rate setting is first about recovering costs. Job one of utility rates is to pay the utility's costs. But usually, proper rate setting is also about building adequate reserves; funding a capital improvements program (CIP); catching up on needed equipment repair and replacement (R&R); and covering similar needs. Thus, these soon-to-be-experienced costs or likely-to-be-experienced costs need to be factored into rates and fees, as well. Because time marches on and costs usually inflate over time, rate setting should account for the need for future incremental increases to cover inflation. And you cannot just assume that because the utility needs more revenue that your ratepayers will be glad to pay higher rates. Rate affordability, and the public's perception of affordability, must be addressed, too.

Even the simplest rates situation requires some complex and integrated calculations to account for these factors. For that reason, I build a spreadsheet for each analysis that depicts, in virtual reality, the utility's real-life financial and rates situation.

These models are dynamic. When the initial rate increase is set higher, future inflationary increases can be lower. When minimum charges are set lower, unit or other charges need to be set higher to make up the shortfall. When future expenses need to be higher, or lower, or of a different nature, the Model adjusts rates and fees accordingly. Such modeling enables me to do dynamic "what-if" scenario calculations. That enables me to arrive quickly at the "best fit" rates for each utility. Usually but not always, the client goes with what I recommended.

Coincidentally, such a dynamic model makes it easy to calculate rate and other changes over the next two or three years, too. If a change does not affect the cost structure drastically, I can do the same for almost any cost or rate change. If one, two or three years from now, you discover your costs or incomes will be different from what you and I had assumed, you can call me up, tell me what is different, I will enter the changes into the model(s) and re-run the rates. If the change is small and quick to model, I do that for no charge. If it is more complex and will take some time and usually a written report, I do those projects on an hourly basis. Fees for those usually come in at $500 – $1,000. Some clients find that to be a very accurate and cost-effective way to maintain good rates.

Truth be told, I have been building my template model since 2005. It is the starting place for all my analyses. The template is so robust that I can set a few "switches" here and there, build in a few things that are unique to a new client's situation and soon, I am modeling rates tailored to their needs.

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, I would be tempted to tell the client that, "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.

- Half the reason I build dynamic models is to be able to show the client the outcome of what they asked for and that usually proves up the case for what I originally recommended.
- The other half reason is, when I model what the client asked for, I sometimes find that indeed, it is doable and may even be superior to the solution I assumed was best.

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

Two final thoughts on the rate modeling and adjustment topic:

- Almost always, rate adjustments include bill increases. Thus, time is money, often big money, to the utility. A rate increase delayed is a rate increase that must be even higher to reach the same reserve target. Get to know this report well but do not spend months mulling it over. Time will not make your rate setting task easier. Proceed deliberately but quickly and make the needed changes. If you cannot make all the needed changes at the same time, make those that you can as soon as you can. Then, get around to the rest as soon as you can.
- You will get complaints about customers' bills going up. I do not want to be dismissive, but in my experience, most of the time, when the math is laid out for all to see, most people are understanding. Cost-to-serve rate analysis does not arrive at unfair rates. It arrives at fair rates. Who doesn't want fair rates? Well, those who are paying cheaper than fair rates. If they can convince those who are subsidizing them to keep subsidizing them, even those the analysis shows that is not fair, more power to them. But generally, cost-to-serve rates win the day.
    - These statements do not mean "do-it-yourself" rate adjustments are always unfair or insufficient, or that "rate analyst" calculated rate adjustments always are fair and sufficient. I always try to calculate and advocate for rates that are fairly structured. But over time, costs and other conditions change, so even cost-to-serve rates I have calculated will become unfair after some years.
        - A good blend of fair rates and a low cost to achieve them is this. You get a rate analysis done occasionally and adjust accordingly. For a few years after that, do-it-yourself across-the-board increases will keep revenues tracking with inflation. Eventually, you analyze again.

Please keep the above summary of cost-based rate calculations in mind as you read on.

Principles

I use several guiding principles when I help systems set their utility rates, fees, and policies. I considered these principles as I prepared the foregoing rate analysis report and the model(s) that follow:

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 in homes and businesses 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 like. 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 would like, but those extra 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 what they build 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. 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 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.

> 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 just be seen as treating her badly, and you lose the goodwill contest. Lose goodwill and you may never get it back.

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. A large city has thousands of customers served by a wide range of meter sizes and those customers have a wide range of service use. That city 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.
    b. In contrast, a small town serves few customer. Those customers usually have only a few meter sizes and few of them use high volumes of service. That town would not be well-served by complicated rates. Simpler rates are better for them.

However, both should still get a cost-to-serve rate analysis at least occasionally, so even if they adopt something else, they will know what you are giving up.

That is probably more than you care to know about rate analysis but if I did not answer all your questions, just give me a call, or drop me an e-mail.

Cape Girardeau, MO, Water Rates Model 2024-14, Partial Restructure

This model assumes rates will be restructured somewhat to be closer to a cost-to-serve structure. It assumes all capital improvement costs will be paid with cash, no loans, and the rate increase restriction in the City Charter will be resolved to temporarily enable a higher overall rate increase.

June 28, 2024

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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 intial 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 average 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 ber 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
Chart 1 - Operating Ratio	*Graph of operating ratio for 10 years as a result of the modeled rates and the current rates*
Chart 2 - Coverage Ratio	*Graph of coverage ratios for 10 years of the modeled rates and the current rates*
Chart 3 - 5,000 Gallon Residential User's Bill	*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*
Chart 4 - Affordability Index	*Graph of the affordability index for 10 years of the benchmark residential user's bill (used in grant and loan eligibility determinations)*
Chart 5 - Working Capital vs Goal	*Graph for 10 years of total (unobligated) cash assets at modeled rates compared to the goal for total cash assets*
Chart 6 - Value of Cash Assets Before Inflation	*Graph for 10 years of unobligated cash assets NOT adjusted for inflation at modeled rates and current rates*
Chart 7 - Value of Cash Assets After Inflation	*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.*
Chart 8 - Sum of All Reserves	*Graph of all reserves of all kinds at the modeled rates and at the current rates*

Table 1 - Rates

Cape Girardeau, MO, Water Rates Model 2024-14, Partial Restructure

Unless rates were recently changed, these are the current rates. At the least, these rates were in effect at the end of the test year. If a volume range was left out of the table, in order to make it shorter, the unit charge that shows for the next lowest volume range also applies to the hidden volume range.

Rates in Effect at End of Test Year

Customer Type, Rate Class or Meter Size	Volume Range Bottom (in Cu Ft)	Billing Cycle Minimum Charge	Usage Allowance in 100s	Unit Charge per 100 Cu Ft
Res, 5/8 Inch	0	$10.37	0.000	$3.00
	1,337	$10.37	0.000	$3.00
	6,000	$10.37	0.000	$2.31
	750,000	$10.37	0.000	$2.31
Res, 3/4 Inch	0	$15.99	0.000	$3.00
	1,337	$15.99	0.000	$3.00
	6,000	$15.99	0.000	$2.31
	750,000	$15.99	0.000	$2.31
Res, 1 Inch	0	$21.58	0.000	$3.00
	1,337	$21.58	0.000	$3.00
	6,000	$21.58	0.000	$2.31
	750,000	$21.58	0.000	$2.31
Res, 1.5 Inch	0	$40.39	0.000	$3.00
	1,337	$40.39	0.000	$3.00
	6,000	$40.39	0.000	$2.31
	750,000	$40.39	0.000	$2.31
Res, 2 Inch	0	$61.72	0.000	$3.00
	1,337	$61.72	0.000	$3.00
	6,000	$61.72	0.000	$2.31
	750,000	$61.72	0.000	$2.31

Table 1 - Rates

Rates in Effect at End of Test Year

Customer Type, Rate Class or Meter Size	Volume Range Bottom (in Cu Ft)	Billing Cycle Minimum Charge	Usage Allowance in 100s	Unit Charge per 100 Cu Ft
Res, 3 Inch	0	$115.62	0.000	$3.00
	1,337	$115.62	0.000	$3.00
	6,000	$115.62	0.000	$2.31
	750,000	$115.62	0.000	$2.31
Com, 5/8 Inch	0	$10.37	0.000	$3.00
	1,337	$10.37	0.000	$3.00
	6,000	$10.37	0.000	$2.31
	750,000	$10.37	0.000	$2.31
Com, 3/4 Inch	0	$15.99	0.000	$3.00
	1,337	$15.99	0.000	$3.00
	6,000	$15.99	0.000	$2.31
	750,000	$15.99	0.000	$2.31
Com, 1 Inch	0	$21.58	0.000	$3.00
	1,337	$21.58	0.000	$3.00
	6,000	$21.58	0.000	$2.31
	750,000	$21.58	0.000	$2.31
Com, 1.5 Inch	0	$40.39	0.000	$3.00
	1,337	$40.39	0.000	$3.00
	6,000	$40.39	0.000	$2.31
	750,000	$40.39	0.000	$2.31
Com, 2 Inch	0	$61.72	0.000	$3.00
	1,337	$61.72	0.000	$3.00
	6,000	$61.72	0.000	$2.31
	750,000	$61.72	0.000	$2.31

Table 1 - Rates

Rates in Effect at End of Test Year

Customer Type, Rate Class or Meter Size	Volume Range Bottom (in Cu Ft)	Billing Cycle Minimum Charge	Usage Allowance in 100s	Unit Charge per 100 Cu Ft
Com, 3 Inch	0	$115.62	0.000	$3.00
	1,337	$115.62	0.000	$3.00
	6,000	$115.62	0.000	$2.31
	750,000	$115.62	0.000	$2.31
Com, 4 Inch	0	$190.81	0.000	$3.00
	1,337	$190.81	0.000	$3.00
	6,000	$190.81	0.000	$2.31
	750,000	$190.81	0.000	$2.31
Com, 6 Inch	0	$398.93	0.000	$3.00
	1,337	$398.93	0.000	$3.00
	6,000	$398.93	0.000	$2.31
	750,000	$398.93	0.000	$2.31
Hydrant Meter - RC1110	0	$45.00	0.000	$3.00
	1,337	$45.00	0.000	$3.00
	6,000	$45.00	0.000	$2.31
	750,000	$45.00	0.000	$2.31
Government - RC1115	0	$0.00	0.000	$0.00
	750,000	$0.00	0.000	$0.00
Fire Line 4 Inch - RC5000	0	$13.20	0.000	$0.00
	750,000	$13.20	0.000	$0.00
Fire Line 6 Inch - RC5005	0	$26.44	0.000	$0.00
	750,000	$26.44	0.000	$0.00
Fire Line 8 Inch - RC5010	0	$39.71	0.000	$0.00
	750,000	$39.71	0.000	$0.00

Table 2 - Test Year Usage

Cape Girardeau, MO, Water Rates Model 2024-14, Partial Restructure

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

Test year = the one-year period being analyzed starts: 7/1/2021

Date this model created: 6/26/2024

Residential meter readings per year: 12

Other customer readings per year: 12

Bills per year: 12

Customer, Rate Class or Meter Size	Volume Range Bottom (in Cu Ft)	Volume Range Top (in Cu Ft)	Use Within Each Range in 100 Cu Ft	Use in Each Range in Cu Ft	Volume of Bills That "Maxed Out" in Each Range	# of Customers That "Maxed Out" in Each Range	% of Customers That "Maxed Out" in Each Range	% of Total Use in Each Range
Res, 5/8 Inch	0	266	2	35,135,479	7,613,840	4,576	26.2%	3.7%
	267	400	1	11,641,107	10,558,620	2,643	15.1%	5.1%
	401	534	1	8,003,563	10,629,900	1,899	10.9%	5.1%
	535	667	1	5,364,406	9,425,770	1,319	7.6%	4.6%
	668	801	1	3,614,779	7,877,480	900	5.2%	3.8%
	802	935	1	2,504,128	5,519,770	532	3.0%	2.7%
	936	1,069	1	1,802,978	4,079,850	341	2.0%	2.0%
	1,070	1,202	1	1,335,600	3,304,450	244	1.4%	1.6%
	1,203	1,336	1	1,031,786	2,353,310	155	0.9%	1.1%
	1,337	5,999	9	6,154,814	13,843,220	550	3.2%	6.7%
	6,000	9,999	20	486,810	1,360,810	15	0.1%	0.7%
	10,000	49,999	37	217,850	807,850	5	0.0%	0.4%
	50,000	99,999	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			77,293,300	77,374,870	13,179	75.5%	37.4%
Res, 3/4 Inch	0	266	2	4,267,283	573,030	371	2.1%	0.3%
	267	400	1	1,646,130	1,117,520	278	1.6%	0.5%
	401	534	1	1,237,950	1,270,570	226	1.3%	0.6%
	535	667	1	916,981	1,125,270	158	0.9%	0.5%
	668	801	1	694,505	1,145,040	130	0.7%	0.6%
	802	935	1	524,838	891,950	86	0.5%	0.4%
	936	1,069	1	409,959	646,590	54	0.3%	0.3%
	1,070	1,202	1	334,711	568,000	42	0.2%	0.3%
	1,203	1,336	1	281,068	390,560	26	0.1%	0.2%
	1,337	5,999	14	2,757,005	4,606,000	153	0.9%	2.2%
	6,000	9,999	18	236,730	770,730	9	0.1%	0.4%
	10,000	49,999	49	118,170	308,170	2	0.0%	0.1%
	50,000	99,999	500	50,000	0	0	0.0%	0.0%
	100,000	149,999	500	50,000	0	0	0.0%	0.0%
	150,000	199,999	500	50,000	0	0	0.0%	0.0%
	200,000	249,999	500	50,000	0	0	0.0%	0.0%
	250,000	299,999	500	50,000	0	0	0.0%	0.0%
	300,000	349,999	500	50,000	0	0	0.0%	0.0%
	350,000	399,999	500	50,000	0	0	0.0%	0.0%
	400,000	449,999	500	50,000	0	0	0.0%	0.0%
	450,000	499,999	500	50,000	0	0	0.0%	0.0%
	500,000	549,999	500	50,000	0	0	0.0%	0.0%
	550,000	599,999	500	50,000	0	0	0.0%	0.0%
	600,000	649,999	500	50,000	0	0	0.0%	0.0%
	650,000	699,999	500	50,000	0	0	0.0%	0.0%
	700,000	749,999	500	50,000	0	0	0.0%	0.0%
	750,000	999,990	2,500	249,990	999,990	0	0.0%	0.5%
	Monthly and Annual Subtotals:			14,375,320	14,413,420	1,534	8.8%	7.0%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Cu Ft)	Volume Range Top (in Cu Ft)	Use Within Each Range in 100 Cu Ft	Use in Each Range in Cu Ft	Volume of Bills That "Maxed Out" in Each Range	# of Customers That "Maxed Out" in Each Range	% of Customers That "Maxed Out" in Each Range	% of Total Use in Each Range
Res, 1 Inch	0	266	2	675,438	42,640	66	0.4%	0.0%
	267	400	1	297,227	99,500	25	0.1%	0.0%
	401	534	1	257,111	144,410	26	0.1%	0.1%
	535	667	1	219,404	136,650	19	0.1%	0.1%
	668	801	1	190,505	164,970	19	0.1%	0.1%
	802	935	1	162,677	151,180	15	0.1%	0.1%
	936	1,069	1	145,226	91,750	8	0.0%	0.0%
	1,070	1,202	1	133,600	103,520	8	0.0%	0.1%
	1,203	1,336	1	123,422	80,240	5	0.0%	0.0%
	1,337	5,999	23	2,065,830	2,115,670	58	0.3%	1.0%
	6,000	9,999	23	428,560	978,560	11	0.1%	0.5%
	10,000	49,999	52	306,110	896,110	5	0.0%	0.4%
	50,000	99,999	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			5,005,110	5,005,200	263	1.5%	2.4%
Res, 1.5 Inch	0	266	3	67,380	0	0	0.0%	0.0%
	267	400	1	33,598	710	0	0.0%	0.0%
	401	534	1	32,995	4,920	1	0.0%	0.0%
	535	667	1	31,501	6,100	1	0.0%	0.0%
	668	801	1	29,244	15,340	2	0.0%	0.0%
	802	935	1	27,615	7,160	1	0.0%	0.0%
	936	1,069	1	26,056	7,740	1	0.0%	0.0%
	1,070	1,202	1	25,693	3,500	0	0.0%	0.0%
	1,203	1,336	1	25,401	0	0	0.0%	0.0%
	1,337	5,999	26	495,939	563,950	13	0.1%	0.3%
	6,000	9,999	29	88,990	84,990	1	0.0%	0.0%
	10,000	49,999	80	151,470	341,470	2	0.0%	0.2%
	50,000	99,999	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			1,035,880	1,035,880	21	0.1%	0.5%
Res, 2 Inch	0	266	2	35,961	400	1	0.0%	0.0%
	267	400	1	17,260	3,490	1	0.0%	0.0%
	401	534	1	15,767	5,740	1	0.0%	0.0%
	535	667	1	14,087	6,600	1	0.0%	0.0%
	668	801	1	13,132	6,180	1	0.0%	0.0%
	802	935	1	12,148	1,720	0	0.0%	0.0%
	936	1,069	1	11,515	5,900	1	0.0%	0.0%
	1,070	1,202	1	10,964	5,750	0	0.0%	0.0%
	1,203	1,336	1	10,311	3,760	0	0.0%	0.0%
	1,337	5,999	25	190,356	135,960	4	0.0%	0.1%
	6,000	9,999	31	80,550	106,550	1	0.0%	0.1%
	10,000	49,999	78	101,460	231,460	1	0.0%	0.1%
	50,000	99,999	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			513,510	513,510	12	0.1%	0.2%
Res, 3 Inch	0	266	1	16,840	2,700	10	0.1%	0.0%
	267	400	1	7,738	2,390	1	0.0%	0.0%
	401	534	1	7,015	1,400	0	0.0%	0.0%
	535	667	1	6,556	3,080	0	0.0%	0.0%
	668	801	1	5,781	2,840	0	0.0%	0.0%
	802	935	1	5,503	1,760	0	0.0%	0.0%
	936	1,069	1	5,229	2,020	0	0.0%	0.0%
	1,070	1,202	1	5,027	1,150	0	0.0%	0.0%
	1,203	1,336	1	4,689	5,090	0	0.0%	0.0%
	1,337	5,999	23	75,512	71,630	2	0.0%	0.0%
	6,000	9,999	34	27,440	25,440	0	0.0%	0.0%
	10,000	49,999	53	26,390	76,390	0	0.0%	0.0%
	50,000	99,999	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			193,720	195,890	15	0.1%	0.1%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Cu Ft)	Volume Range Top (in Cu Ft)	Use Within Each Range in 100 Cu Ft	Use in Each Range in Cu Ft	Volume of Bills That "Maxed Out" in Each Range	# of Customers That "Maxed Out" in Each Range	% of Customers That "Maxed Out" in Each Range	% of Total Use in Each Range
Com, 5/8 Inch	0	266	1	1,829,681	654,320	671	3.8%	0.3%
	267	400	1	511,984	335,380	85	0.5%	0.2%
	401	534	1	414,963	252,530	45	0.3%	0.1%
	535	667	1	348,031	267,550	37	0.2%	0.1%
	668	801	1	292,103	281,140	32	0.2%	0.1%
	802	935	1	249,620	227,160	22	0.1%	0.1%
	936	1,069	1	216,095	238,020	20	0.1%	0.1%
	1,070	1,202	1	184,740	254,660	19	0.1%	0.1%
	1,203	1,336	1	159,244	205,100	14	0.1%	0.1%
	1,337	5,999	14	1,555,618	2,428,260	84	0.5%	1.2%
	6,000	9,999	19	200,250	618,250	7	0.0%	0.3%
	10,000	49,999	21	41,360	241,360	2	0.0%	0.1%
	50,000	99,999	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			6,003,690	6,003,730	1,038	5.9%	2.9%
Com, 3/4 Inch	0	266	2	644,146	113,130	116	0.7%	0.1%
	267	400	1	246,525	87,300	22	0.1%	0.0%
	401	534	1	215,700	96,850	17	0.1%	0.0%
	535	667	1	193,344	77,970	11	0.1%	0.0%
	668	801	1	176,096	102,700	12	0.1%	0.0%
	802	935	1	159,445	95,140	9	0.1%	0.0%
	936	1,069	1	145,936	77,620	7	0.0%	0.0%
	1,070	1,202	1	136,833	84,560	6	0.0%	0.0%
	1,203	1,336	1	126,664	88,830	6	0.0%	0.0%
	1,337	5,999	17	1,565,552	2,060,140	66	0.4%	1.0%
	6,000	9,999	27	330,370	426,370	5	0.0%	0.2%
	10,000	49,999	38	238,810	868,810	5	0.0%	0.4%
	50,000	99,999	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			4,179,420	4,179,420	281	1.6%	2.0%
Com, 1 Inch	0	266	2	884,478	118,900	130	0.7%	0.1%
	267	400	1	366,136	81,510	21	0.1%	0.0%
	401	534	1	339,058	82,240	15	0.1%	0.0%
	535	667	1	316,663	87,920	12	0.1%	0.0%
	668	801	1	298,269	108,830	12	0.1%	0.1%
	802	935	1	279,988	108,330	10	0.1%	0.1%
	936	1,069	1	262,867	112,600	9	0.1%	0.1%
	1,070	1,202	1	246,114	166,970	12	0.1%	0.1%
	1,203	1,336	1	229,173	130,510	9	0.0%	0.1%
	1,337	5,999	21	3,482,404	3,962,340	115	0.7%	1.9%
	6,000	9,999	28	828,760	1,244,760	13	0.1%	0.6%
	10,000	49,999	84	1,123,130	1,953,130	10	0.1%	0.9%
	50,000	99,999	181	180,950	680,950	1	0.0%	0.3%
	100,000	149,999	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			8,837,990	8,838,990	369	2.1%	4.3%
Com, 1.5 Inch	0	266	2	495,520	39,370	47	0.3%	0.0%
	267	400	1	219,735	36,580	9	0.1%	0.0%
	401	534	1	208,161	38,910	7	0.0%	0.0%
	535	667	1	194,637	64,690	9	0.1%	0.0%
	668	801	1	181,882	68,780	8	0.0%	0.0%
	802	935	1	170,969	56,530	5	0.0%	0.0%
	936	1,069	1	162,891	47,650	4	0.0%	0.0%
	1,070	1,202	1	157,259	46,430	3	0.0%	0.0%
	1,203	1,336	1	152,248	40,350	3	0.0%	0.0%
	1,337	5,999	26	2,913,329	2,569,340	68	0.4%	1.2%
	6,000	9,999	27	838,470	1,186,470	13	0.1%	0.6%
	10,000	49,999	85	1,267,870	2,667,870	12	0.1%	1.3%
	50,000	99,999	46	9,120	109,120	0	0.0%	0.1%
	100,000	149,999	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			6,972,090	6,972,090	189	1.1%	3.4%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Cu Ft)	Volume Range Top (in Cu Ft)	Use Within Each Range in 100 Cu Ft	Use in Each Range in Cu Ft	Volume of Bills That "Maxed Out" in Each Range	# of Customers That "Maxed Out" in Each Range	% of Customers That "Maxed Out" in Each Range	% of Total Use in Each Range
Com, 2 Inch	0	266	2	797,770	46,690	48	0.3%	0.0%
	267	400	1	373,581	42,030	11	0.1%	0.0%
	401	534	1	359,919	45,480	8	0.0%	0.0%
	535	667	1	346,385	63,230	9	0.1%	0.0%
	668	801	1	331,805	82,340	9	0.1%	0.0%
	802	935	1	319,279	77,300	7	0.0%	0.0%
	936	1,069	1	307,609	65,630	6	0.0%	0.0%
	1,070	1,202	1	299,692	75,360	6	0.0%	0.0%
	1,203	1,336	1	289,937	88,600	6	0.0%	0.0%
	1,337	5,999	33	7,035,035	3,350,650	87	0.5%	1.6%
	6,000	9,999	34	3,684,240	2,364,240	25	0.1%	1.1%
	10,000	49,999	147	11,567,900	15,577,900	59	0.3%	7.5%
	50,000	99,999	246	1,891,810	4,641,810	6	0.0%	2.2%
	100,000	149,999	128	141,340	1,241,340	1	0.0%	0.6%
	150,000	199,999	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			27,746,300	27,762,600	288	1.6%	13.4%
Com, 3 Inch	0	266	1	165,814	2,980	45	0.3%	0.0%
	267	400	1	81,039	2,830	1	0.0%	0.0%
	401	534	1	79,880	4,880	1	0.0%	0.0%
	535	667	1	78,018	6,360	1	0.0%	0.0%
	668	801	1	77,412	3,080	0	0.0%	0.0%
	802	935	1	76,646	4,320	0	0.0%	0.0%
	936	1,069	1	75,641	8,930	1	0.0%	0.0%
	1,070	1,202	1	74,871	8,160	1	0.0%	0.0%
	1,203	1,336	1	73,349	12,520	1	0.0%	0.0%
	1,337	5,999	40	2,172,170	362,780	10	0.1%	0.2%
	6,000	9,999	36	1,502,360	780,360	8	0.0%	0.4%
	10,000	49,999	236	7,699,310	4,959,310	17	0.1%	2.4%
	50,000	99,999	351	4,210,670	3,510,670	4	0.0%	1.7%
	100,000	149,999	432	2,896,430	2,846,430	2	0.0%	1.4%
	150,000	199,999	347	1,560,190	3,510,190	2	0.0%	1.7%
	200,000	249,999	453	1,086,230	886,230	0	0.0%	0.4%
	250,000	299,999	500	1,000,000	0	0	0.0%	0.0%
	300,000	349,999	459	917,620	1,667,620	0	0.0%	0.8%
	350,000	399,999	424	636,490	1,486,490	0	0.0%	0.7%
	400,000	449,999	446	490,560	840,560	0	0.0%	0.4%
	450,000	499,999	402	361,850	911,850	0	0.0%	0.4%
	500,000	549,999	375	262,450	1,562,450	0	0.0%	0.8%
	550,000	599,999	307	122,810	1,122,810	0	0.0%	0.5%
	600,000	649,999	35	6,970	1,206,970	0	0.0%	0.6%
	650,000	699,999	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			25,708,780	25,708,780	96	0.6%	12.4%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Cu Ft)	Volume Range Top (in Cu Ft)	Use Within Each Range in 100 Cu Ft	Use in Each Range in Cu Ft	Volume of Bills That "Maxed Out" in Each Range	# of Customers That "Maxed Out" in Each Range	% of Customers That "Maxed Out" in Each Range	% of Total Use in Each Range
Com, 4 Inch	0	266	1	75,958	4,480	24	0.1%	0.0%
	267	400	1	38,065	1,300	0	0.0%	0.0%
	401	534	1	37,775	1,010	0	0.0%	0.0%
	535	667	1	37,567	0	0	0.0%	0.0%
	668	801	1	37,198	2,840	0	0.0%	0.0%
	802	935	1	37,032	0	0	0.0%	0.0%
	936	1,069	1	36,963	1,000	0	0.0%	0.0%
	1,070	1,202	1	36,825	1,130	0	0.0%	0.0%
	1,203	1,336	1	36,765	0	0	0.0%	0.0%
	1,337	5,999	41	1,134,893	200,540	5	0.0%	0.1%
	6,000	9,999	38	832,020	134,020	1	0.0%	0.1%
	10,000	49,999	208	4,164,190	3,864,190	13	0.1%	1.9%
	50,000	99,999	350	1,610,950	1,510,950	2	0.0%	0.7%
	100,000	149,999	295	707,780	1,907,780	1	0.0%	0.9%
	150,000	199,999	441	352,630	352,630	0	0.0%	0.2%
	200,000	249,999	446	267,580	717,580	0	0.0%	0.3%
	250,000	299,999	391	117,360	267,360	0	0.0%	0.1%
	300,000	349,999	376	75,260	325,260	0	0.0%	0.2%
	350,000	399,999	500	50,000	0	0	0.0%	0.0%
	400,000	449,999	500	50,000	0	0	0.0%	0.0%
	450,000	499,999	500	50,000	0	0	0.0%	0.0%
	500,000	549,999	500	50,000	0	0	0.0%	0.0%
	550,000	599,999	500	50,000	0	0	0.0%	0.0%
	600,000	649,999	500	50,000	0	0	0.0%	0.0%
	650,000	699,999	500	50,000	0	0	0.0%	0.0%
	700,000	749,999	500	50,000	0	0	0.0%	0.0%
	750,000	1,013,070	2,631	263,070	1,013,070	0	0.0%	0.5%
	Monthly and Annual Subtotals:			10,299,880	10,305,140	48	0.3%	5.0%
Com, 6 Inch	0	266	1	3,209	0	1	0.0%	0.0%
	267	400	1	1,604	0	0	0.0%	0.0%
	401	534	1	1,604	0	0	0.0%	0.0%
	535	667	1	1,604	0	0	0.0%	0.0%
	668	801	1	1,604	0	0	0.0%	0.0%
	802	935	1	1,604	0	0	0.0%	0.0%
	936	1,069	1	1,604	0	0	0.0%	0.0%
	1,070	1,202	1	1,604	0	0	0.0%	0.0%
	1,203	1,336	1	1,604	0	0	0.0%	0.0%
	1,337	5,999	47	55,957	0	0	0.0%	0.0%
	6,000	9,999	40	48,000	0	0	0.0%	0.0%
	10,000	49,999	154	185,060	305,060	1	0.0%	0.1%
	50,000	99,999	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			305,060	305,060	2	0.0%	0.1%
Hydrant Meter - RC1110	0	266	1	20,963	3,080	10	0.1%	0.0%
	267	400	1	9,609	2,390	1	0.0%	0.0%
	401	534	1	8,887	1,400	0	0.0%	0.0%
	535	667	1	8,311	4,300	1	0.0%	0.0%
	668	801	1	7,385	2,840	0	0.0%	0.0%
	802	935	1	7,062	2,650	0	0.0%	0.0%
	936	1,069	1	6,570	2,960	0	0.0%	0.0%
	1,070	1,202	1	6,364	1,150	0	0.0%	0.0%
	1,203	1,336	1	5,969	6,370	0	0.0%	0.0%
	1,337	5,999	23	96,250	86,400	3	0.0%	0.0%
	6,000	9,999	31	34,270	40,270	0	0.0%	0.0%
	10,000	49,999	111	66,390	76,390	0	0.0%	0.0%
	50,000	99,999	312	31,170	81,170	0	0.0%	0.0%
	100,000	149,999	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			309,200	311,370	17	0.1%	0.2%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Cu Ft)	Volume Range Top (in Cu Ft)	Use Within Each Range in 100 Cu Ft	Use in Each Range in Cu Ft	Volume of Bills That "Maxed Out" in Each Range	# of Customers That "Maxed Out" in Each Range	% of Customers That "Maxed Out" in Each Range	% of Total Use in Each Range
Government - RC1115	0	266	1	135,661	28,900	60	0.3%	0.0%
	267	400	1	67,196	19,870	5	0.0%	0.0%
	401	534	1	60,195	21,960	4	0.0%	0.0%
	535	667	1	55,680	13,300	2	0.0%	0.0%
	668	801	1	52,467	19,980	2	0.0%	0.0%
	802	935	1	49,192	18,310	2	0.0%	0.0%
	936	1,069	1	45,731	27,950	2	0.0%	0.0%
	1,070	1,202	1	42,367	23,650	2	0.0%	0.0%
	1,203	1,336	1	40,194	15,060	1	0.0%	0.0%
	1,337	5,999	30	879,728	477,450	14	0.1%	0.2%
	6,000	9,999	34	453,000	201,000	2	0.0%	0.1%
	10,000	49,999	234	2,457,420	1,957,420	6	0.0%	0.9%
	50,000	99,999	430	1,333,790	583,790	1	0.0%	0.3%
	100,000	149,999	445	1,024,330	624,330	0	0.0%	0.3%
	150,000	199,999	457	823,100	523,100	0	0.0%	0.3%
	200,000	249,999	472	708,140	458,140	0	0.0%	0.2%
	250,000	299,999	387	502,830	1,652,830	1	0.0%	0.8%
	300,000	349,999	455	318,760	668,760	0	0.0%	0.3%
	350,000	399,999	489	244,510	394,510	0	0.0%	0.2%
	400,000	449,999	500	200,000	0	0	0.0%	0.0%
	450,000	499,999	433	173,040	473,040	0	0.0%	0.2%
	500,000	549,999	500	150,000	0	0	0.0%	0.0%
	550,000	599,999	457	137,010	587,010	0	0.0%	0.3%
	600,000	649,999	500	100,000	0	0	0.0%	0.0%
	650,000	699,999	500	100,000	0	0	0.0%	0.0%
	700,000	749,999	500	100,000	0	0	0.0%	0.0%
	750,000	6,864,710	38,935	7,787,030	9,287,030	0	0.0%	4.5%
	Monthly and Annual Subtotals:			18,041,370	18,077,390	104	0.6%	8.7%
Fire Line 4 Inch - RC5000	0	266	0	0	0	0	0.0%	0.0%
	267	400	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			0	0	0	0.0%	0.0%
Fire Line 6 Inch - RC5005	0	266	0	0	0	0	0.0%	0.0%
	267	400	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			0	0	0	0.0%	0.0%
Fire Line 8 Inch - RC5010	0	266	0	0	0	0	0.0%	0.0%
	267	400	0	0	0	0	0.0%	0.0%
	Monthly and Annual Subtotals:			0	0	0	0.0%	0.0%
	Grand Totals:			206,820,620	207,003,340	17,457	100%	100%

Table 3 - Operating Incomes and Basic User Data

Cape Girardeau, MO, Water Rates Model 2024-14, Partial Restructure

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)

$51,360	Census Bureau estimate of AMHI for the year 2022
$32,452	Census Bureau estimate of AMHI for the year 2000
$18,908	AMHI growth during this time period
2.65%	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

207	Number new Water connections made during test year
$1,493	Average Water 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

(First year balances and incomes are actual, subsequent years are projected.)	Inflation/ Deflation (–) Factor	Test Year	0 Year (Analysis Year)	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year
		Starting 7/1/21	Starting 7/1/22	Starting 7/1/23	Starting 7/1/24	Starting 7/1/25	Starting 7/1/26	Starting 7/1/27	Starting 7/1/28	Starting 7/1/29	Starting 7/1/30	Starting 7/1/31	Starting 7/1/32
				Years Following the Analysis Year (for Which Results Have Been Projected)									
Rate Increases Projected for Future Years	N.A.	N.A.	N.A.	5.0%		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
				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.	17,457	17,663	17,758	17,892	18,026	18,160	18,294	18,428	18,562	18,696	18,830	18,964
Customers Added or Lost (-) Each Year	N.A.	207.0	206.4	94.5	134.0	134.0	134.0	134.0	134.0	134.0	134.0	134.0	134.0
Customer Growth or Loss (-) Rate	N.A.	1.19%	1.17%	0.53%	0.75%	0.74%	0.74%	0.73%	0.73%	0.72%	0.72%	0.71%	0.71%
Test Year (Actual) and Projected Future Years' Sales, in Cu Ft	N.A.	206,820,620	209,265,977	210,385,580	211,973,167	213,560,753	215,148,339	216,735,925	218,323,511	219,911,098	221,498,684	223,086,270	224,673,856
Operating Incomes													
User Charge Fees (Tables 10, 12, 12B, 15, 15B, 16, 16B, as applicable)	N.A.	$7,416,108	$7,591,735	$8,009,335	$11,124,147	$11,767,184	$12,446,716	$13,164,782	$13,923,538	$14,725,258	$15,572,341	$16,467,319	$17,412,864
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	$309,052	$308,156	$141,089	$200,063	$200,063	$200,063	$200,063	$200,063	$200,063	$200,063	$200,063	$200,063
Investment Revenue	N.A.	$69,906	$13,455	$14,111	$16,445	$16,605	$16,615	$16,749	$17,437	$18,256	$18,486	$20,599	$20,795
Other Fees and Charges (Penalties, Lease Interest)	N.A.	$112,922	$112,922	$112,922	$112,922	$112,922	$112,922	$112,922	$112,922	$112,922	$112,922	$112,922	$112,922
Miscellaneous	N.A.	$17,529	$17,529	$17,529	$17,529	$17,529	$17,529	$17,529	$17,529	$17,529	$17,529	$17,529	$17,529
Gain from Sale of Assets	N.A.	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150	$150
Transfers In (Capital Improvement Sales Tax)	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
Contributed Capital - Government	N.A.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Contributed Capital - Connect Fee	N.A.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Contributed Capital - Developers (Infrastructure Dedicated to City, Not Cash)	N.A.	Assets	Assets	Assets	Assets	Assets	Assets	Assets	Assets	Assets	Assets	Assets	Assets
Bad Debt Allowance	N.A.	Table 4	-$39,000	-$39,000	-$39,000	-$39,000	-$39,000	-$39,000	-$39,000	-$39,000	-$39,000	-$39,000	-$39,000
Revenue Loss (-) Due to Conservation	5.0%	$0	-$6,574	-$15,633	-$116,601	-$24,072	-$25,438	-$26,880	-$28,403	-$30,012	-$31,710	-$33,503	-$35,396
Total Operating Incomes		**$7,925,667**	**$7,998,373**	**$8,240,504**	**$11,315,654**	**$12,051,381**	**$12,729,557**	**$13,446,314**	**$14,204,236**	**$15,005,166**	**$15,850,781**	**$16,746,078**	**$17,689,926**

Table 4 - Operating Costs and Net Income

Cape Girardeau, MO, Water Rates Model 2024-14, Partial Restructure

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 7/1/21	Analysis Year 0 Year Starting 7/1/22	Years Following the Analysis Year (for Which Results Have Been Projected) 1st Year Starting 7/1/23	2nd Year Starting 7/1/24	3rd Year Starting 7/1/25	4th Year Starting 7/1/26	5th Year Starting 7/1/27	6th Year Starting 7/1/28	7th Year Starting 7/1/29	8th Year Starting 7/1/30	9th Year Starting 7/1/31	10th Year Starting 7/1/32
Advertisement	4.0%	$94	$98	$101	$105	$110	$114	$119	$123	$128	$133	$139	$144
Alliance Operations Contract	4.0%	$2,644,799	$2,750,591	$2,860,615	$2,975,039	$3,094,041	$3,217,802	$3,346,514	$3,480,375	$3,619,590	$3,764,374	$3,914,949	$4,071,547
Bad debts (One-time Allowance Adjustment)	4.0%	-$30,177	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Bill printing and mailing	4.0%	$34,508	$36,307	$37,961	$39,775	$41,673	$43,660	$45,739	$47,914	$50,191	$52,572	$55,064	$57,672
Books and periodicals	4.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Building & contents insurance	4.0%	$60,153	$62,559	$65,062	$67,664	$70,371	$73,186	$76,113	$79,158	$82,324	$85,617	$89,042	$92,603
Building repairs & maintenance	4.0%	$15,971	$16,609	$17,274	$17,965	$18,683	$19,431	$20,208	$21,016	$21,857	$22,731	$23,640	$24,586
Building supplies	4.0%	$7,854	$8,169	$8,495	$8,835	$9,188	$9,556	$9,938	$10,336	$10,749	$11,179	$11,626	$12,091
Chemicals	4.0%	$483,842	$509,075	$532,256	$557,692	$584,311	$612,168	$641,318	$671,821	$703,737	$737,133	$772,074	$808,630
Claims against the City	4.0%	$1,057	$1,100	$1,144	$1,189	$1,237	$1,286	$1,338	$1,391	$1,447	$1,505	$1,565	$1,628
Construction equipment	4.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Credit Card Processing Fees	4.0%	$6,634	$6,899	$7,175	$7,462	$7,761	$8,071	$8,394	$8,730	$9,079	$9,442	$9,820	$10,213
Depreciation	4.0%	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Education and training	4.0%	$765	$796	$827	$861	$895	$931	$968	$1,007	$1,047	$1,089	$1,132	$1,178
Electricity - buildings	4.0%	$464,973	$489,223	$511,499	$535,944	$561,525	$588,295	$616,308	$645,622	$676,294	$708,387	$741,965	$777,096
Engineering and architect	4.0%	$2,088	$2,171	$2,258	$2,348	$2,442	$2,540	$2,641	$2,747	$2,857	$2,971	$3,090	$3,214
Equipment and vehicle rent	4.0%	$2,993	$3,112	$3,237	$3,366	$3,501	$3,641	$3,787	$3,938	$4,096	$4,259	$4,430	$4,607
Equipment maintenance contract	4.0%	$1,750	$1,820	$1,893	$1,969	$2,047	$2,129	$2,214	$2,303	$2,395	$2,491	$2,590	$2,694
Equipment repairs & maint	4.0%	$68,245	$70,974	$73,813	$76,766	$79,836	$83,030	$86,351	$89,805	$93,397	$97,133	$101,019	$105,059
Equipment supplies	4.0%	$50,475	$52,494	$54,593	$56,777	$59,048	$61,410	$63,867	$66,421	$69,078	$71,841	$74,715	$77,704
Food	4.0%	$16	$17	$17	$18	$19	$19	$20	$21	$22	$23	$24	$25
Internal info technology serv	4.0%	$112,749	$117,259	$121,949	$126,827	$131,900	$137,176	$142,663	$148,370	$154,305	$160,477	$166,896	$173,572
Intrnl fleet repair & mtce chg	4.0%	$93,397	$97,133	$101,018	$105,059	$109,262	$113,632	$118,177	$122,904	$127,821	$132,933	$138,251	$143,781
Lab fees	4.0%	$9,045	$9,407	$9,783	$10,174	$10,581	$11,005	$11,445	$11,903	$12,379	$12,874	$13,389	$13,924
Land and building rent	4.0%	$63,615	$66,160	$68,806	$71,558	$74,421	$77,397	$80,493	$83,713	$87,062	$90,544	$94,166	$97,932
Land improvements & maintenance	4.0%	$1,936	$2,013	$2,094	$2,178	$2,265	$2,355	$2,450	$2,547	$2,649	$2,755	$2,866	$2,980
Lubricants	4.0%	$706	$734	$763	$794	$825	$858	$893	$928	$966	$1,004	$1,044	$1,086
Miscellaneous operating exp	4.0%	$2,802	$2,915	$3,031	$3,152	$3,278	$3,410	$3,546	$3,688	$3,835	$3,989	$4,148	$4,314
Natural gas	4.0%	$19,765	$20,556	$21,378	$22,233	$23,123	$24,048	$25,009	$26,010	$27,050	$28,132	$29,257	$30,428
Non-vehicle diesel	4.0%	$5,346	$5,560	$5,783	$6,014	$6,255	$6,505	$6,765	$7,036	$7,317	$7,610	$7,914	$8,231
Office supplies	4.0%	$1,298	$1,349	$1,403	$1,460	$1,518	$1,579	$1,642	$1,707	$1,776	$1,847	$1,921	$1,997
Other contractual services (Administrative and Service Support From Other Departments)	4.0%	$148,671	$154,618	$160,803	$167,235	$173,924	$180,881	$188,116	$195,641	$203,467	$211,605	$220,069	$228,872
Other contractual services 400	4.0%	$3,114	$3,238	$3,368	$3,502	$3,642	$3,788	$3,940	$4,097	$4,261	$4,432	$4,609	$4,793
Other fleet supplies	4.0%	$539	$561	$583	$606	$631	$656	$682	$709	$738	$767	$798	$830
Other professional, engineering design	4.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Other professional, engineering, internal	4.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Other professional, Veolia Water Tank Maint	0.0%	$399,000	$399,000	$399,000	$399,000	$399,000	$399,000	$399,000	$399,000	$399,000	$399,000	$399,000	$399,000
Other small equipment	4.0%	$30,818	$32,051	$33,333	$34,666	$36,053	$37,495	$38,995	$40,554	$42,177	$43,864	$45,618	$47,443
Other supplies	4.0%	$5,824	$6,057	$6,299	$6,551	$6,813	$7,086	$7,369	$7,664	$7,970	$8,289	$8,621	$8,966
Overhead expense transferred	4.0%	$7,226	$7,516	$7,816	$8,129	$8,454	$8,792	$9,144	$9,510	$9,890	$10,286	$10,697	$11,125
Payment in lieu of franchise	4.0%	$351,937	$366,014	$380,655	$395,881	$411,716	$428,185	$445,313	$463,125	$481,650	$500,916	$520,953	$541,791

Table 4 - Operating Costs and Net Income

Expense Items	Inflation/ Deflation (–) Factor	Test Year Starting 7/1/21	0 Year Starting 7/1/22	1st Year Starting 7/1/23	2nd Year Starting 7/1/24	3rd Year Starting 7/1/25	4th Year Starting 7/1/26	5th Year Starting 7/1/27	6th Year Starting 7/1/28	7th Year Starting 7/1/29	8th Year Starting 7/1/30	9th Year Starting 7/1/31	10th Year Starting 7/1/32
Permits	4.0%	$649	$675	$702	$730	$759	$790	$821	$854	$888	$924	$961	$999
Personnel cst alloc to oth prj	4.0%	-$23,106	-$24,030	-$24,991	-$25,991	-$27,030	-$28,112	-$29,236	-$30,405	-$31,622	-$32,887	-$34,202	-$35,570
Personnel related	4.0%	$35,452	$36,871	$38,345	$39,879	$41,474	$43,133	$44,859	$46,653	$48,519	$50,460	$52,478	$54,577
Personnel salary	4.0%	$130,161	$136,949	$143,185	$150,028	$157,189	$164,682	$172,524	$180,730	$189,316	$198,300	$207,700	$217,534
Postage	4.0%	$182	$191	$200	$209	$219	$230	$241	$252	$264	$277	$290	$303
Printing - general	4.0%	$688	$715	$744	$774	$805	$837	$870	$905	$941	$979	$1,018	$1,059
Propane gas	0.0%	$457	$457	$457	$457	$457	$457	$457	$457	$457	$457	$457	$457
Revenue Bonds Expense	4.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Software maintenance contracts	4.0%	$11,496	$11,955	$12,434	$12,931	$13,448	$13,986	$14,546	$15,127	$15,732	$16,362	$17,016	$17,697
Street repairs and maintenance	4.0%	$85,965	$89,404	$92,980	$96,699	$100,567	$104,590	$108,773	$113,124	$117,649	$122,355	$127,250	$132,340
Telephone	0.0%	$10,049	$10,049	$10,049	$10,049	$10,049	$10,049	$10,049	$10,049	$10,049	$10,049	$10,049	$10,049
Transfer to general cap imp fd	4.0%	$1,103	$1,147	$1,192	$1,240	$1,290	$1,341	$1,395	$1,451	$1,509	$1,569	$1,632	$1,697
Travel	4.0%	$381	$396	$412	$429	$446	$463	$482	$501	$521	$542	$564	$586
Vehicle gasoline	4.0%	$46,110	$47,954	$49,872	$51,867	$53,942	$56,100	$58,344	$60,677	$63,104	$65,629	$68,254	$70,984
Vehicle insurance	4.0%	$8,682	$9,030	$9,391	$9,767	$10,157	$10,564	$10,986	$11,426	$11,883	$12,358	$12,852	$13,366
Vehicles	4.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water lines supplies	4.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Water main extensions	4.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Water main replacements	4.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Water meters	4.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Water system improvements	4.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Water Fleet Annual Replacement Costs	0.0%	$0	$0	$736,800	$574,111	$321,666	$149,461	$168,342	$206,451	$42,691	$597,917	$349,680	$349,680
User Charge Analysis Services	5.0%	$0	$18,457	$0	$0	$20,349	$0	$0	$22,435	$0	$0	$24,734	$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		**$5,382,095**	**$5,644,374**	**$6,577,859**	**$6,641,974**	**$6,646,136**	**$6,699,688**	**$6,974,932**	**$7,302,523**	**$7,394,503**	**$8,239,496**	**$8,317,833**	**$8,607,515**
Net Income (or Loss)		$2,543,572	$2,353,999	$1,662,645	$4,673,680	$5,405,245	$6,029,868	$6,471,382	$6,901,713	$7,610,663	$7,611,285	$8,428,246	$9,082,412
Working Capital Goal: 25%	In Dollars, That is:	$1,345,524	$1,411,094	$1,644,465	$1,660,494	$1,661,534	$1,674,922	$1,743,733	$1,825,631	$1,848,626	$2,059,874	$2,079,458	$2,151,879

Notes: It was assumed most costs will inflate by 4.0 percent per year. Costs highlighted green will also rise with growth in customers and their use. The City's water fleet replacement schedule ended at 2032, so the last two years of that cost item (highlighted pink) are the average annual costs of the eight years included in the schedule.

Table 5 - Capital Improvement Program (CIP)

Cape Girardeau, MO, Water Rates Model 2024-14, Partial Restructure

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
7/1/21	7/1/22	7/1/23	7/1/24	7/1/25	7/1/26	7/1/27	7/1/28	7/1/29	7/1/30	7/1/31	7/1/32
Planned Spending, Debt-paid Portion of Projects (CIP costs to be funded with loans are shown in this section.)											
Total Debt-paid Portion of Projects	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Planned Spending, Grant-paid Portion of Projects (CIP costs to be grant-funded are shown here.)											
Lead Service Line Replacement	$0	$0	$0	$0	$314,962	$327,560	$340,663	$354,289	$368,461	$383,199	$398,527	$414,468
Total Grant-paid Portion of Projects	$0	$0	$0	$0	$314,962	$327,560	$340,663	$354,289	$368,461	$383,199	$398,527	$414,468
Planned Spending, Cash-paid Portion of Projects (CIP costs to be funded from reserves are shown here.)											
2" Line Replacement	$0	$0	$135,200	$140,608	$146,232	$152,082	$158,165	$164,491	$171,071	$177,914	$185,031	$192,432
Water Tank Asset Management Program	$0	$0	$416,000	$432,640	$449,946	$467,943	$486,661	$415,025	$431,626	$448,891	$466,846	$485,520
Lead Service Line Inventory	$0	$0	$260,000	$270,400	$0	$0	$0	$0	$0	$0	$0	$0
Lead Service Line Replacement	$0	$0	$0	$0	$314,962	$327,560	$340,663	$354,289	$368,461	$383,199	$398,527	$414,468
Modifications to Filter Gallery Piping	$49,865	$140,874	$152,741	$1,173,060	$0	$0	$0	$0	$0	$0	$0	$0
Lime System Improvements	$0	$84,360	$507,191	$5,040,014	$0	$0	$0	$0	$0	$0	$0	$0
SCADA Improvements	$0	$0	$0	$108,160	$821,151	$0	$0	$0	$0	$0	$0	$0
Bertling Street 30 inch Water Main	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Booster Pump for Carbonic Acid	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Stabilization Tank Addition	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Aerator Bypass Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plant 1 Residuals	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Conversion to Sodium Hypochlorite	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,833,833
New Filter Influent Bypass	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Addition of Primary SCU 4 & Secondary SSB 4	$0	$0	$234,208	$0	$787,405	$9,574,800	$0	$0	$0	$0	$0	$0
College Booster Pump Station	$0	$0	$0	$0	$2,924,646	$0	$0	$0	$0	$0	$0	$0
Meadowbrook Standpipe Booster Pump Station	$0	$0	$0	$0	$0	$0	$1,946,645	$0	$0	$0	$0	$0
Gordonville Tank Booster Pump Station	$0	$0	$0	$0	$0	$0	$0	$2,530,638	$0	$0	$0	$0
LaSalle Standpipe Booster Pump Station	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,052,854	$0	$0
High Priority Watermain Improvements	$0	$0	$0	$0	$0	$0	$4,866,612	$2,530,638	$2,631,864	$2,737,138	$2,846,624	$2,960,489
Medium Priority Watermain Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Maintenance Shop	$0	$0	$52,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Corrosion Control	$0	$0	$0	$0	$427,448	$0	$0	$0	$0	$0	$0	$0
Polymer Feed Modifications	$0	$0	$0	$0	$674,918	$0	$0	$0	$0	$0	$0	$0
Filter Rehab	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10,435,722
Grant Acquisition Costs, Estimated at: 1.0%	$0	$0	$0	$0	$3,150	$3,276	$3,407	$3,543	$3,685	$3,832	$3,985	$4,145
Total Cash-paid Portion of Projects	$49,865	$225,234	$1,757,340	$7,164,882	$6,549,858	$10,525,661	$7,802,152	$5,998,624	$3,606,706	$5,803,828	$3,901,013	$18,326,608
Total CIP Costs	**$49,865**	**$225,234**	**$1,757,340**	**$7,164,882**	**$6,864,820**	**$10,853,221**	**$8,142,815**	**$6,352,914**	**$3,975,167**	**$6,187,027**	**$4,299,540**	**$18,741,077**

Table 5 - Capital Improvement Program (CIP)

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

	Test Year	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
	7/1/21	7/1/22	7/1/23	7/1/24	7/1/25	7/1/26	7/1/27	7/1/28	7/1/29	7/1/30	7/1/31	7/1/32
Debt Repayment												
Existing Debt Payments (Following is debt that was initiated during the test year or earlier.)												
Waterworks Refunding Revenue Bonds, Series 2019	$0	$894,750	$894,350	$892,950	$890,550	$892,150	$892,550	$894,450	$890,600	$891,150	$890,950	$0
Total Debt Payments	$0	$894,750	$894,350	$892,950	$890,550	$892,150	$892,550	$894,450	$890,600	$891,150	$890,950	$0
Total CIP-related Payouts	**$49,865**	**$1,119,984**	**$2,651,690**	**$8,057,832**	**$7,755,370**	**$11,745,371**	**$9,035,365**	**$7,247,364**	**$4,865,767**	**$7,078,177**	**$5,190,490**	**$18,741,077**
(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												
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	$8,697,018	$10,639,404	$10,829,776	$8,846,191	$8,186,911	$4,149,318	$3,140,174	$4,329,719	$8,706,675	$10,785,868	$15,818,284
Working Capital Transferred in	$8,146,883	$2,288,430	$1,429,274	$4,657,651	$5,404,204	$6,016,480	$6,402,571	$6,819,815	$7,587,668	$7,400,037	$8,408,661	$9,009,991
Debt and CIP Reserves Interest Earned (or Paid)	$0	$173,940	$212,788	$216,596	$176,924	$163,738	$82,986	$62,803	$86,594	$174,134	$215,717	$316,366
Transfers In (Capital Improvement Sales Tax)	$600,000	$600,000	$1,200,000	$1,200,000	$1,200,000	$1,200,000	$1,200,000	$1,200,000	$1,200,000	$1,200,000	$1,200,000	$1,200,000
Total Available Internal Funds	$8,746,883	$11,759,388	$13,481,466	$16,904,023	$15,627,319	$15,567,130	$11,834,876	$11,222,793	$13,203,981	$17,480,846	$20,610,247	$26,344,641
Grant and Loan Proceeds (External Funds)												
Grants Assumed in Second Sub-section Above	$0	$0	$0	$0	$314,962	$327,560	$340,663	$354,289	$368,461	$383,199	$398,527	$414,468
Total Available External Funds	$0	$0	$0	$0	$314,962	$327,560	$340,663	$354,289	$368,461	$383,199	$398,527	$414,468
Total Available Funds	**$8,746,883**	**$11,759,388**	**$13,481,466**	**$16,904,023**	**$15,942,281**	**$15,894,690**	**$12,175,539**	**$11,577,083**	**$13,572,442**	**$17,864,045**	**$21,008,774**	**$26,759,109**
Outcomes (This CIP spending and funding plan will result in the following cash needs and ending balances each year.)												
Total Available Funds	**$8,746,883**	**$11,759,388**	**$13,481,466**	**$16,904,023**	**$15,942,281**	**$15,894,690**	**$12,175,539**	**$11,577,083**	**$13,572,442**	**$17,864,045**	**$21,008,774**	**$26,759,109**
Total CIP-related Payouts	**$49,865**	**$1,119,984**	**$2,651,690**	**$8,057,832**	**$7,755,370**	**$11,745,371**	**$9,035,365**	**$7,247,364**	**$4,865,767**	**$7,078,177**	**$5,190,490**	**$18,741,077**
Debt and CIP Reserves Ending Balances	**$8,697,018**	**$10,639,404**	**$10,829,776**	**$8,846,191**	**$8,186,911**	**$4,149,318**	**$3,140,174**	**$4,329,719**	**$8,706,675**	**$10,785,868**	**$15,818,284**	**$8,018,033**

Notes: The City has a capital improvements plant to make significant, long-term improvements. That plan was brought into this table. The most recent plan updates and additions, received in June, 2024, are highlighted green. I assumed you will use the full water allotment of that tax for to fund water improvements starting this year. That is highlighted gold.

Table 8 - Average Cost Classification

Cape Girardeau, MO, Water Rates Model 2024-14, Partial Restructure

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: 7/1/2026 through 6/30/2027

Cost Items During the Basis Year	Cost During Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
Advertisement	$114	100.0%	0.0%	$114	$0
Alliance Operations Contract	$3,217,802	15.0%	85.0%	$482,670	$2,735,132
Bad debts (One-time Allowance Adjustment)	$0	25.0%	75.0%	$0	$0
Bill printing and mailing	$43,660	100.0%	0.0%	$43,660	$0
Books and periodicals	$0	100.0%	0.0%	$0	$0
Building & contents insurance	$73,186	100.0%	0.0%	$73,186	$0
Building repairs & maintenance	$19,431	100.0%	0.0%	$19,431	$0
Building supplies	$9,556	100.0%	0.0%	$9,556	$0
Chemicals	$612,168	0.0%	100.0%	$0	$612,168
Claims against the City	$1,286	25.0%	75.0%	$322	$965
Construction equipment	$0	100.0%	0.0%	$0	$0
Credit Card Processing Fees	$8,071	25.0%	75.0%	$2,018	$6,053
Depreciation	$0	25.1%	74.9%	$0	$0
Education and training	$931	100.0%	0.0%	$931	$0
Electricity - buildings	$588,295	0.0%	100.0%	$0	$588,295
Engineering and architect	$2,540	25.1%	74.9%	$638	$1,902
Equipment and vehicle rent	$3,641	25.1%	74.9%	$914	$2,727
Equipment maintenance contract	$2,129	25.1%	74.9%	$534	$1,595
Equipment repairs & maint	$83,030	25.1%	74.9%	$20,841	$62,189
Equipment supplies	$61,410	25.1%	74.9%	$15,414	$45,996
Food	$19	25.0%	75.0%	$5	$15
Internal info technology serv	$137,176	100.0%	0.0%	$137,176	$0
Intrnl fleet repair & mtce chg	$113,632	25.1%	74.9%	$28,522	$85,110
Lab fees	$11,005	33.0%	67.0%	$3,632	$7,373
Land and building rent	$77,397	25.1%	74.9%	$19,427	$57,971
Land improvements & maintenance	$2,355	100.0%	0.0%	$2,355	$0
Lubricants	$858	25.1%	74.9%	$215	$643
Miscellaneous operating exp	$3,410	25.0%	75.0%	$852	$2,557
Natural gas	$24,048	100.0%	0.0%	$24,048	$0
Non-vehicle diesel	$6,505	25.1%	74.9%	$1,633	$4,872
Office supplies	$1,579	100.0%	0.0%	$1,579	$0
Other contractual services (Administrative and Service Support From Other Departments)	$180,881	100.0%	0.0%	$180,881	$0
Other contractual services 400	$3,788	25.1%	74.9%	$951	$2,837
Other fleet supplies	$656	25.0%	75.0%	$164	$492
Other professional, engineering design	$0	25.1%	74.9%	$0	$0
Other professional, engineering, internal	$0	25.1%	74.9%	$0	$0
Other professional, Veolia Water Tank Maint	$399,000	25.1%	74.9%	$100,149	$298,851
Other small equipment	$37,495	25.1%	74.9%	$9,411	$28,084
Other supplies	$7,086	25.0%	75.0%	$1,771	$5,314

Table 8 - Average Cost Classification

Cost Items During the Basis Year	Cost During Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
Overhead expense transferred	$8,792	100.0%	0.0%	$8,792	$0
Payment in lieu of franchise	$428,185	25.0%	75.0%	$107,046	$321,139
Permits	$790	100.0%	0.0%	$790	$0
Personnel cst alloc to oth prj	$0	100.0%	0.0%	$0	$0
Personnel related	$43,133	100.0%	0.0%	$43,133	$0
Personnel salary	$164,682	100.0%	0.0%	$164,682	$0
Postage	$230	100.0%	0.0%	$230	$0
Printing - general	$837	100.0%	0.0%	$837	$0
Propane gas	$457	100.0%	0.0%	$457	$0
Revenue Bonds Expense	$0	25.1%	74.9%	$0	$0
Software maintenance contracts	$13,986	100.0%	0.0%	$13,986	$0
Street repairs and maintenance	$104,590	100.0%	0.0%	$104,590	$0
Telephone	$10,049	100.0%	0.0%	$10,049	$0
Transfer to general cap imp fd	$1,341	100.0%	0.0%	$1,341	$0
Travel	$463	100.0%	0.0%	$463	$0
Vehicle gasoline	$56,100	25.1%	74.9%	$14,081	$42,019
Vehicle insurance	$10,564	25.1%	74.9%	$2,651	$7,912
Vehicles	$0	25.1%	74.9%	$0	$0
Average Water Fleet Annual Replacement Costs	$279,744	25.1%	74.9%	$70,216	$209,528
User Charge Analysis Services	$0	25.1%	74.9%	$0	$0
Total CIP-related Payouts, Less Capacity Charges From Tables 14 & 16 (This value can be negative)	$8,941,624	25.1%	74.9%	$2,244,348	$6,697,277
Grand Total Costs, Weighted Avg Percentages	$15,799,707	25.1%	74.9%	$3,970,691	$11,829,016

Bases for Cost to Serve Rate Structure

Number Customers During Basis Year	18,160
Billed Volume, in Cu Ft, During Basis Year	215,148,339
Average Fixed Cost per User per Month During Basis Year	$18.22
Average Variable Cost to Produce per 100 Cu Ft During Basis Year	$5.50
Cu Ft per Billing Cycle Used by Average Residential Customer	489

100%	$15,799,707	
Unbilled-for Water for the test year is Estimated at		4%
Unbilled-for Water is Estimated at This % of Average Cost (Marginal Cost)		51%
At Recommended Unit Charge Rates, Resulting Marginal Cost of Unbilled-for Water		$195,543
Test Year Customer Volume, in Cu Ft		206,820,620
+ Test Year Unbilled-for Water, in Cu Ft		8,023,980
Total Test Year Volume, in Cu Ft, From Master Meter Readings		214,844,600

Table 9 - Marginal Cost Classification

Cape Girardeau, MO, Water Rates Model 2024-14, Partial Restructure

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: Unaccounted-for Water

The marginal rate structure basis year runs from: 7/1/2026 through 6/30/2027

Cost Items During the Basis Year	Fixed Cost	Variable Cost	Marginal Fixed Cost %	Marginal Variable Cost %	Marginal Fixed Cost	Marginal Variable Cost
Advertisement	$114	$0	10%	10%	$11	$0
Alliance Operations Contract	$482,670	$2,735,132	50%	50%	$241,335	$1,367,566
Bad debts (One-time Allowance Adjustment)	$0	$0	0%	0%	$0	$0
Bill printing and mailing	$43,660	$0	0%	0%	$0	$0
Books and periodicals	$0	$0	10%	10%	$0	$0
Building & contents insurance	$73,186	$0	10%	10%	$7,319	$0
Building repairs & maintenance	$19,431	$0	10%	10%	$1,943	$0
Building supplies	$9,556	$0	10%	10%	$956	$0
Chemicals	$0	$612,168	100%	100%	$0	$612,168
Claims against the City	$322	$965	25%	25%	$80	$241
Construction equipment	$0	$0	25%	25%	$0	$0
Credit Card Processing Fees	$2,018	$6,053	10%	10%	$202	$605
Depreciation	$0	$0	75%	75%	$0	$0
Education and training	$931	$0	10%	10%	$93	$0
Electricity - buildings	$0	$588,295	100%	100%	$0	$588,295
Engineering and architect	$638	$1,902	25%	25%	$159	$476
Equipment and vehicle rent	$914	$2,727	10%	10%	$91	$273
Equipment maintenance contract	$534	$1,595	10%	10%	$53	$159
Equipment repairs & maint	$20,841	$62,189	10%	10%	$2,084	$6,219
Equipment supplies	$15,414	$45,996	10%	10%	$1,541	$4,600
Food	$5	$15	10%	10%	$0	$1
Internal info technology serv	$137,176	$0	10%	10%	$13,718	$0
Intrnl fleet repair & mtce chg	$28,522	$85,110	10%	10%	$2,852	$8,511
Lab fees	$3,632	$7,373	10%	10%	$363	$737
Land and building rent	$19,427	$57,971	10%	10%	$1,943	$5,797
Land improvements & maintenance	$2,355	$0	10%	10%	$236	$0
Lubricants	$215	$643	10%	10%	$22	$64
Miscellaneous operating exp	$852	$2,557	10%	10%	$85	$256
Natural gas	$24,048	$0	10%	10%	$2,405	$0
Non-vehicle diesel	$1,633	$4,872	10%	10%	$163	$487
Office supplies	$1,579	$0	10%	10%	$158	$0
Other contractual services (Administrative and Service Support From Other Departments)	$180,881	$0	10%	10%	$18,088	$0
Other contractual services 400	$951	$2,837	10%	10%	$95	$284

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
Other fleet supplies	$164	$492	10%	10%	$16	$49
Other professional, engineering design	$0	$0	25%	25%	$0	$0
Other professional, engineering, internal	$0	$0	25%	25%	$0	$0
Other professional, Veolia Water Tank Maint	$100,149	$298,851	15%	15%	$15,323	$45,724
Other small equipment	$9,411	$28,084	10%	10%	$941	$2,808
Other supplies	$1,771	$5,314	10%	10%	$177	$531
Overhead expense transferred	$8,792	$0	10%	10%	$879	$0
Payment in lieu of franchise	$107,046	$321,139	15%	15%	$16,378	$49,134
Permits	$790	$0	10%	10%	$79	$0
Personnel cst alloc to oth prj	$0	$0	10%	10%	$0	$0
Personnel related	$43,133	$0	10%	10%	$4,313	$0
Personnel salary	$164,682	$0	10%	10%	$16,468	$0
Postage	$230	$0	10%	10%	$23	$0
Printing - general	$837	$0	10%	10%	$84	$0
Propane gas	$457	$0	10%	10%	$46	$0
Revenue Bonds Expense	$0	$0	10%	10%	$0	$0
Software maintenance contracts	$13,986	$0	10%	10%	$1,399	$0
Street repairs and maintenance	$104,590	$0	50%	50%	$52,295	$0
Telephone	$10,049	$0	10%	10%	$1,005	$0
Transfer to general cap imp fd	$1,341	$0	10%	10%	$134	$0
Travel	$463	$0	10%	10%	$46	$0
Vehicle gasoline	$14,081	$42,019	10%	10%	$1,408	$4,202
Vehicle insurance	$2,651	$7,912	10%	10%	$265	$791
Vehicles	$0	$0	10%	10%	$0	$0
Water lines supplies	$0	$0	10%	10%	$0	$0
Water main extensions	$0	$0	10%	10%	$0	$0
Water main replacements	$0	$0	50%	50%	$0	$0
Water meters	$0	$0	10%	10%	$0	$0
Water system improvements	$0	$0	10%	10%	$0	$0
Average Water Fleet Annual Replacement Costs	$70,216	$209,528	10%	10%	$7,022	$20,953
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)	$2,244,348	$6,697,277	50%	50%	$1,122,174	$3,348,638
Grand Total All Costs	$3,970,691	$11,829,016			$1,536,471	$6,069,571
	$15,799,707				$7,606,042	

Marginal Fixed and Variable Cost Bases
(For the Customer Type(s) Listed Above)

	Monthly Marginal Fixed Cost per Customer	Marginal Variable Cost per 100 Cu Ft
	$7.05	
Marginal Fixed Cost as a Percent of Total Fixed Cost:	39%	$2.82
Marginal Variable Cost as a Percent of Total Variable Cost:		51%

Table 10 - Initial Rate Adjustments and Resulting Revenues

Cape Girardeau, MO, Water Rates Model 2024-14, Partial Restructure

This table calculates a new set of user charge rates and the revenues they would generate.

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 Cu Ft)	Volume Range Top (in Cu Ft)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 100s	New Unit Charge per 100 Cu Ft	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
	0	266	$1	$17.45	0.000	$3.9613	$2,350,094	$2,350,095
	267	400	$1	$17.45	0.000	$3.96	$1,014,532	$1,014,533
	401	534	$0	$17.45	0.000	$3.96	$714,767	$714,767
	535	667	$0	$17.45	0.000	$3.96	$488,595	$488,595
	668	801	$0	$17.45	0.000	$3.96	$331,635	$331,635
	802	935	$0	$17.45	0.000	$3.96	$210,545	$210,545
Res, 5/8 Inch	936	1,069	$0	$17.45	0.000	$3.96	$142,879	$142,879
	1,070	1,202	$0	$17.45	0.000	$3.96	$104,018	$104,018
	1,203	1,336	$0	$17.45	0.000	$3.96	$73,312	$73,312
	1,337	5,999	$0	$17.45	0.000	$3.96	$359,016	$359,017
	6,000	9,999	$0	$17.45	0.000	$3.96	$22,512	$22,512
	10,000	49,999	$0	$17.45	0.000	$3.96	$9,659	$9,659
	50,000	99,999	$0	$17.45	0.000	$3.96	$0	$0
	0	266	$0	$20.15	0.000	$3.96	$258,688	$258,688
	267	400	$0	$20.15	0.000	$3.96	$132,409	$132,409
	401	534	$0	$20.15	0.000	$3.96	$103,787	$103,787
	535	667	$0	$20.15	0.000	$3.96	$74,468	$74,468
	668	801	$0	$20.15	0.000	$3.96	$59,026	$59,026
	802	935	$0	$20.15	0.000	$3.96	$41,505	$41,505
	936	1,069	$0	$20.15	0.000	$3.96	$29,317	$29,317
	1,070	1,202	$0	$20.15	0.000	$3.96	$23,374	$23,374
	1,203	1,336	$0	$20.15	0.000	$3.96	$17,360	$17,360
	1,337	5,999	$0	$20.15	0.000	$3.96	$146,149	$146,149
	6,000	9,999	$0	$20.15	0.000	$3.96	$11,493	$11,493
	10,000	49,999	$0	$20.15	0.000	$3.96	$5,145	$5,145
	50,000	99,999	$0	$20.15	0.000	$3.96	$1,981	$1,981
Res, 3/4 Inch	100,000	149,999	$0	$20.15	0.000	$3.96	$1,981	$1,981
	150,000	199,999	$0	$20.15	0.000	$3.96	$1,981	$1,981
	200,000	249,999	$0	$20.15	0.000	$3.96	$1,981	$1,981
	250,000	299,999	$0	$20.15	0.000	$3.96	$1,981	$1,981
	300,000	349,999	$0	$20.15	0.000	$3.96	$1,981	$1,981
	350,000	399,999	$0	$20.15	0.000	$3.96	$1,981	$1,981
	400,000	449,999	$0	$20.15	0.000	$3.96	$1,981	$1,981
	450,000	499,999	$0	$20.15	0.000	$3.96	$1,981	$1,981
	500,000	549,999	$0	$20.15	0.000	$3.96	$1,981	$1,981
	550,000	599,999	$0	$20.15	0.000	$3.96	$1,981	$1,981
	600,000	649,999	$0	$20.15	0.000	$3.96	$1,981	$1,981
	650,000	699,999	$0	$20.15	0.000	$3.96	$1,981	$1,981
	700,000	749,999	$0	$20.15	0.000	$3.96	$1,981	$1,981
	750,000	999,990	$0	$20.15	0.000	$3.96	$9,923	$9,923

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Cu Ft)	Volume Range Top (in Cu Ft)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 100s	New Unit Charge per 100 Cu Ft	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
	0	266	$0	$27.19	0.000	$3.96	$48,209	$48,209
	267	400	$0	$27.19	0.000	$3.96	$19,822	$19,822
	401	534	$0	$27.19	0.000	$3.96	$18,532	$18,532
	535	667	$0	$27.19	0.000	$3.96	$14,918	$14,918
	668	801	$0	$27.19	0.000	$3.96	$13,637	$13,637
	802	935	$0	$27.19	0.000	$3.96	$11,202	$11,202
Res, 1 Inch	936	1,069	$0	$27.19	0.000	$3.96	$8,254	$8,254
	1,070	1,202	$0	$27.19	0.000	$3.96	$7,767	$7,767
	1,203	1,336	$0	$27.19	0.000	$3.96	$6,602	$6,602
	1,337	5,999	$0	$27.19	0.000	$3.96	$100,867	$100,867
	6,000	9,999	$0	$27.19	0.000	$3.96	$20,539	$20,539
	10,000	49,999	$0	$27.19	0.000	$3.96	$13,730	$13,730
	50,000	99,999	$0	$27.19	0.000	$3.96	$0	$0
	0	266	$0	$50.89	0.000	$3.96	$2,669	$2,669
	267	400	$0	$50.89	0.000	$3.96	$1,433	$1,433
	401	534	$0	$50.89	0.000	$3.96	$1,816	$1,816
	535	667	$0	$50.89	0.000	$3.96	$1,757	$1,757
	668	801	$0	$50.89	0.000	$3.96	$2,227	$2,227
	802	935	$0	$50.89	0.000	$3.96	$1,501	$1,501
Res, 1.5 Inch	936	1,069	$0	$50.89	0.000	$3.96	$1,439	$1,439
	1,070	1,202	$0	$50.89	0.000	$3.96	$1,170	$1,170
	1,203	1,336	$0	$50.89	0.000	$3.96	$1,006	$1,006
	1,337	5,999	$0	$50.89	0.000	$3.96	$27,737	$27,737
	6,000	9,999	$0	$50.89	0.000	$3.96	$4,136	$4,136
	10,000	49,999	$0	$50.89	0.000	$3.96	$6,967	$6,967
	50,000	99,999	$0	$50.89	0.000	$3.96	$0	$0
	0	266	$0	$68.51	0.000	$3.96	$2,521	$2,521
	267	400	$0	$68.51	0.000	$3.96	$1,369	$1,369
	401	534	$0	$68.51	0.000	$3.96	$1,447	$1,447
	535	667	$0	$68.51	0.000	$3.96	$1,312	$1,312
	668	801	$0	$68.51	0.000	$3.96	$1,068	$1,068
	802	935	$0	$68.51	0.000	$3.96	$618	$618
Res, 2 Inch	936	1,069	$0	$68.51	0.000	$3.96	$867	$867
	1,070	1,202	$0	$68.51	0.000	$3.96	$777	$777
	1,203	1,336	$0	$68.51	0.000	$3.96	$614	$614
	1,337	5,999	$0	$68.51	0.000	$3.96	$10,966	$10,966
	6,000	9,999	$0	$68.51	0.000	$3.96	$4,081	$4,081
	10,000	49,999	$0	$68.51	0.000	$3.96	$4,910	$4,910
	50,000	99,999	$0	$68.51	0.000	$3.96	$0	$0
	0	266	$0	$128.34	0.000	$3.96	$15,555	$15,555
	267	400	$0	$128.34	0.000	$3.96	$1,205	$1,205
	401	534	$0	$128.34	0.000	$3.96	$663	$663
	535	667	$0	$128.34	0.000	$3.96	$901	$901
	668	801	$0	$128.34	0.000	$3.96	$742	$742
	802	935	$0	$128.34	0.000	$3.96	$475	$475
Res, 3 Inch	936	1,069	$0	$128.34	0.000	$3.96	$464	$464
	1,070	1,202	$0	$128.34	0.000	$3.96	$327	$327
	1,203	1,336	$0	$128.34	0.000	$3.96	$699	$699
	1,337	5,999	$0	$128.34	0.000	$3.96	$6,200	$6,200
	6,000	9,999	$0	$128.34	0.000	$3.96	$1,472	$1,472
	10,000	49,999	$0	$128.34	0.000	$3.96	$1,687	$1,687
	50,000	99,999	$0	$128.34	0.000	$3.96	$0	$0

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Cu Ft)	Volume Range Top (in Cu Ft)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 100s	New Unit Charge per 100 Cu Ft	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
Com, 5/8 Inch	0	266	$0	$17.45	0.000	$3.9613	$213,074	$213,074
	267	400	$0	$17.45	0.000	$3.96	$38,168	$38,168
	401	534	$0	$17.45	0.000	$3.96	$25,844	$25,844
	535	667	$0	$17.45	0.000	$3.96	$21,569	$21,569
	668	801	$0	$17.45	0.000	$3.96	$18,272	$18,272
	802	935	$0	$17.45	0.000	$3.96	$14,460	$14,460
	936	1,069	$0	$17.45	0.000	$3.96	$12,713	$12,713
	1,070	1,202	$0	$17.45	0.000	$3.96	$11,244	$11,244
	1,203	1,336	$0	$17.45	0.000	$3.96	$9,135	$9,135
	1,337	5,999	$0	$17.45	0.000	$3.96	$79,282	$79,282
	6,000	9,999	$0	$17.45	0.000	$3.0518	$7,560	$7,560
	10,000	49,999	$0	$17.45	0.000	$3.05	$1,611	$1,611
	50,000	99,999	$0	$17.45	0.000	$3.05	$0	$0
Com, 3/4 Inch	0	266	$0	$20.15	0.000	$3.96	$53,525	$53,525
	267	400	$0	$20.15	0.000	$3.96	$15,105	$15,105
	401	534	$0	$20.15	0.000	$3.96	$12,736	$12,736
	535	667	$0	$20.15	0.000	$3.96	$10,278	$10,278
	668	801	$0	$20.15	0.000	$3.96	$9,777	$9,777
	802	935	$0	$20.15	0.000	$3.96	$8,512	$8,512
	936	1,069	$0	$20.15	0.000	$3.96	$7,353	$7,353
	1,070	1,202	$0	$20.15	0.000	$3.96	$6,911	$6,911
	1,203	1,336	$0	$20.15	0.000	$3.96	$6,428	$6,428
	1,337	5,999	$0	$20.15	0.000	$3.96	$77,975	$77,975
	6,000	9,999	$0	$20.15	0.000	$3.05	$11,251	$11,251
	10,000	49,999	$0	$20.15	0.000	$3.05	$8,558	$8,558
	50,000	99,999	$0	$20.15	0.000	$3.05	$0	$0
Com, 1 Inch	0	266	$0	$27.19	0.000	$3.96	$77,535	$77,535
	267	400	$0	$27.19	0.000	$3.96	$21,193	$21,193
	401	534	$0	$27.19	0.000	$3.96	$18,189	$18,189
	535	667	$0	$27.19	0.000	$3.96	$16,541	$16,541
	668	801	$0	$27.19	0.000	$3.96	$15,812	$15,812
	802	935	$0	$27.19	0.000	$3.96	$14,463	$14,463
	936	1,069	$0	$27.19	0.000	$3.96	$13,485	$13,485
	1,070	1,202	$0	$27.19	0.000	$3.96	$13,746	$13,746
	1,203	1,336	$0	$27.19	0.000	$3.96	$11,879	$11,879
	1,337	5,999	$0	$27.19	0.000	$3.96	$175,308	$175,308
	6,000	9,999	$0	$27.19	0.000	$3.05	$29,588	$29,588
	10,000	49,999	$0	$27.19	0.000	$3.05	$37,620	$37,620
	50,000	99,999	$0	$27.19	0.000	$3.05	$5,794	$5,794
	100,000	149,999	$0	$27.19	0.000	$3.05	$0	$0
Com, 1.5 Inch	0	266	$0	$50.89	0.000	$3.96	$48,484	$48,484
	267	400	$0	$50.89	0.000	$3.96	$14,404	$14,404
	401	534	$0	$50.89	0.000	$3.96	$12,419	$12,419
	535	667	$0	$50.89	0.000	$3.96	$13,206	$13,206
	668	801	$0	$50.89	0.000	$3.96	$11,938	$11,938
	802	935	$0	$50.89	0.000	$3.96	$10,080	$10,080
	936	1,069	$0	$50.89	0.000	$3.96	$8,895	$8,895
	1,070	1,202	$0	$50.89	0.000	$3.96	$8,316	$8,316
	1,203	1,336	$0	$50.89	0.000	$3.96	$7,660	$7,660
	1,337	5,999	$0	$50.89	0.000	$3.96	$156,983	$156,983
	6,000	9,999	$0	$50.89	0.000	$3.05	$33,629	$33,629
	10,000	49,999	$0	$50.89	0.000	$3.05	$46,225	$46,225
	50,000	99,999	$0	$50.89	0.000	$3.05	$380	$380
	100,000	149,999	$0	$50.89	0.000	$3.05	$0	$0

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Cu Ft)	Volume Range Top (in Cu Ft)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 100s	New Unit Charge per 100 Cu Ft	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
	0	266	$0	$68.51	0.000	$3.96	$71,338	$71,338
	267	400	$0	$68.51	0.000	$3.96	$23,705	$23,705
	401	534	$0	$68.51	0.000	$3.96	$20,903	$20,903
	535	667	$0	$68.51	0.000	$3.96	$20,915	$20,915
	668	801	$0	$68.51	0.000	$3.96	$20,817	$20,817
	802	935	$0	$68.51	0.000	$3.96	$18,677	$18,677
	936	1,069	$0	$68.51	0.000	$3.96	$16,707	$16,707
Com, 2 Inch	1,070	1,202	$0	$68.51	0.000	$3.96	$16,393	$16,393
	1,203	1,336	$0	$68.51	0.000	$3.96	$16,281	$16,281
	1,337	5,999	$0	$68.51	0.000	$3.96	$350,341	$350,342
	6,000	9,999	$0	$68.51	0.000	$3.05	$133,264	$133,264
	10,000	49,999	$0	$68.51	0.000	$3.05	$401,607	$401,607
	50,000	99,999	$0	$68.51	0.000	$3.05	$62,257	$62,257
	100,000	149,999	$0	$68.51	0.000	$3.05	$5,067	$5,067
	150,000	199,999	$0	$68.51	0.000	$3.05	$0	$0
	0	266	$0	$128.34	0.000	$3.96	$76,385	$76,385
	267	400	$0	$128.34	0.000	$3.96	$4,237	$4,237
	401	534	$0	$128.34	0.000	$3.96	$4,448	$4,448
	535	667	$0	$128.34	0.000	$3.96	$4,502	$4,502
	668	801	$0	$128.34	0.000	$3.96	$3,580	$3,580
	802	935	$0	$128.34	0.000	$3.96	$3,678	$3,678
	936	1,069	$0	$128.34	0.000	$3.96	$4,151	$4,151
	1,070	1,202	$0	$128.34	0.000	$3.96	$3,864	$3,864
	1,203	1,336	$0	$128.34	0.000	$3.96	$4,189	$4,189
	1,337	5,999	$0	$128.34	0.000	$3.96	$101,704	$101,704
	6,000	9,999	$0	$128.34	0.000	$3.05	$58,299	$58,299
	10,000	49,999	$0	$128.34	0.000	$3.05	$261,408	$261,409
Com, 3 Inch	50,000	99,999	$0	$128.34	0.000	$3.05	$135,305	$135,305
	100,000	149,999	$0	$128.34	0.000	$3.05	$91,218	$91,218
	150,000	199,999	$0	$128.34	0.000	$3.05	$50,310	$50,310
	200,000	249,999	$0	$128.34	0.000	$3.05	$33,663	$33,663
	250,000	299,999	$0	$128.34	0.000	$3.05	$30,518	$30,518
	300,000	349,999	$0	$128.34	0.000	$3.05	$28,646	$28,646
	350,000	399,999	$0	$128.34	0.000	$3.05	$19,938	$19,938
	400,000	449,999	$0	$128.34	0.000	$3.05	$15,228	$15,228
	450,000	499,999	$0	$128.34	0.000	$3.05	$11,300	$11,300
	500,000	549,999	$0	$128.34	0.000	$3.05	$8,395	$8,395
	550,000	599,999	$0	$128.34	0.000	$3.05	$4,005	$4,005
	600,000	649,999	$0	$128.34	0.000	$3.05	$469	$469
	650,000	699,999	$0	$128.34	0.000	$3.05	$0	$0

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Cu Ft)	Volume Range Top (in Cu Ft)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 100s	New Unit Charge per 100 Cu Ft	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
	0	266	$0	$211.94	0.000	$3.96	$64,048	$64,048
	267	400	$0	$211.94	0.000	$3.96	$2,356	$2,356
	401	534	$0	$211.94	0.000	$3.96	$1,920	$1,920
	535	667	$0	$211.94	0.000	$3.96	$1,488	$1,488
	668	801	$0	$211.94	0.000	$3.96	$2,321	$2,321
	802	935	$0	$211.94	0.000	$3.96	$1,467	$1,467
	936	1,069	$0	$211.94	0.000	$3.96	$1,676	$1,676
	1,070	1,202	$0	$211.94	0.000	$3.96	$1,671	$1,671
	1,203	1,336	$0	$211.94	0.000	$3.96	$1,456	$1,456
	1,337	5,999	$0	$211.94	0.000	$3.96	$57,249	$57,249
	6,000	9,999	$0	$211.94	0.000	$3.05	$28,995	$28,995
	10,000	49,999	$0	$211.94	0.000	$3.05	$159,723	$159,723
	50,000	99,999	$0	$211.94	0.000	$3.05	$53,826	$53,826
Com, 4 Inch	100,000	149,999	$0	$211.94	0.000	$3.05	$24,991	$24,991
	150,000	199,999	$0	$211.94	0.000	$3.05	$11,186	$11,186
	200,000	249,999	$0	$211.94	0.000	$3.05	$8,802	$8,802
	250,000	299,999	$0	$211.94	0.000	$3.05	$3,794	$3,794
	300,000	349,999	$0	$211.94	0.000	$3.05	$2,509	$2,509
	350,000	399,999	$0	$211.94	0.000	$3.05	$1,526	$1,526
	400,000	449,999	$0	$211.94	0.000	$3.05	$1,526	$1,526
	450,000	499,999	$0	$211.94	0.000	$3.05	$1,526	$1,526
	500,000	549,999	$0	$211.94	0.000	$3.05	$1,526	$1,526
	550,000	599,999	$0	$211.94	0.000	$3.05	$1,526	$1,526
	600,000	649,999	$0	$211.94	0.000	$3.05	$1,526	$1,526
	650,000	699,999	$0	$211.94	0.000	$3.05	$1,526	$1,526
	700,000	749,999	$0	$211.94	0.000	$3.05	$1,526	$1,526
	750,000	1,013,070	$0	$211.94	0.000	$3.05	$8,240	$8,240
	0	266	$0	$442.81	0.000	$3.96	$5,441	$5,441
	267	400	$0	$442.81	0.000	$3.96	$64	$64
	401	534	$0	$442.81	0.000	$3.96	$64	$64
	535	667	$0	$442.81	0.000	$3.96	$64	$64
	668	801	$0	$442.81	0.000	$3.96	$64	$64
	802	935	$0	$442.81	0.000	$3.96	$64	$64
Com, 6 Inch	936	1,069	$0	$442.81	0.000	$3.96	$64	$64
	1,070	1,202	$0	$442.81	0.000	$3.96	$64	$64
	1,203	1,336	$0	$442.81	0.000	$3.96	$64	$64
	1,337	5,999	$0	$442.81	0.000	$3.96	$2,217	$2,217
	6,000	9,999	$0	$442.81	0.000	$3.05	$1,465	$1,465
	10,000	49,999	$0	$442.81	0.000	$3.05	$10,961	$10,961
	50,000	99,999	$0	$442.81	0.000	$3.05	$0	$0
	0	266	$0	$128.34	0.000	$3.96	$16,745	$16,745
	267	400	$0	$128.34	0.000	$3.96	$1,279	$1,279
	401	534	$0	$128.34	0.000	$3.96	$737	$737
	535	667	$0	$128.34	0.000	$3.96	$1,228	$1,228
	668	801	$0	$128.34	0.000	$3.96	$806	$806
	802	935	$0	$128.34	0.000	$3.96	$665	$665
Hydrant Meter - RC1110	936	1,069	$0	$128.34	0.000	$3.96	$645	$645
	1,070	1,202	$0	$128.34	0.000	$3.96	$380	$380
	1,203	1,336	$0	$128.34	0.000	$3.96	$878	$878
	1,337	5,999	$0	$128.34	0.000	$3.96	$7,791	$7,791
	6,000	9,999	$0	$128.34	0.000	$3.05	$1,688	$1,688
	10,000	49,999	$0	$128.34	0.000	$3.05	$2,668	$2,668
	50,000	99,999	$0	$128.34	0.000	$3.05	$1,080	$1,080
	100,000	149,999	$0	$128.34	0.000	$3.05	$0	$0

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Cu Ft)	Volume Range Top (in Cu Ft)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 100s	New Unit Charge per 100 Cu Ft	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
Government - RC1115	0	266	$0	$0.00	0.000	$0.00	$0	$0
	267	400	$0	$0.00	0.000	$0.00	$0	$0
	750,000	6,864,710	$0	$0.00	0.000	$0.00	$0	$0
Fire Line 4 Inch - RC5000	0	266	$0	$17.42	0.000	$0.00	$70	$70
	267	400	$0	$17.42	0.000	$0.00	$0	$0
	750,000	750,000	$0	$17.42	0.000	$0.00	$0	$0
Fire Line 6 Inch - RC5005	0	266	$0	$34.90	0.000	$0.00	$0	$0
	267	400	$0	$34.90	0.000	$0.00	$0	$0
	750,000	750,000	$0	$34.90	0.000	$0.00	$0	$0
Fire Line 8 Inch - RC5010	0	266	$0	$52.42	0.000	$0.00	$0	$0
	267	400	$0	$52.42	0.000	$0.00	$0	$0
	750,000	750,000	$0	$52.42	0.000	$0.00	$0	$0
Total Rate Revenue at Current Rates			$7	Total Rate Revenue at Modeled Rates			$11,310,821	
						Total Blended Rate Revenues for the Year		$11,310,828

Table 17 - Financial Capacity Indicators and Reserves

Cape Girardeau, MO, Water Rates Model 2024-14, Partial Restructure

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.

Capacity Indicators	Test Year Starting 7/1/21	0 Year Starting 7/1/22	1st Year Starting 7/1/23	2nd Year Starting 7/1/24	3rd Year Starting 7/1/25	4th Year Starting 7/1/26	5th Year Starting 7/1/27	6th Year Starting 7/1/28	7th Year Starting 7/1/29	8th Year Starting 7/1/30	9th Year Starting 7/1/31	10th Year Starting 7/1/32
Customary Affordability Index												
Monthly Bill for a 5,000 gal per Month, Small Meter Residential Customer	$30.43	$43.93	$46.13	$46.13	$48.43	$50.85	$53.40	$56.07	$58.87	$61.81	$64.90	$68.15
AMHI Within Service Area	$51,360	$52,720	$54,116	$55,550	$57,021	$58,531	$60,081	$61,672	$63,306	$64,982	$66,703	$68,470
Affordability Index: Current Rates First Column, Modeled Rates After That	0.71%	1.00%	1.02%	1.00%	1.02%	1.04%	1.07%	1.09%	1.12%	1.14%	1.17%	1.19%
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	$18.39	$28.04	$29.44	$29.44	$30.92	$32.46	$34.08	$35.79	$37.58	$39.46	$41.43	$43.50
Income at One-half the AMHI and Rising at One-half the Rate Above	$25,680	$26,020	$26,365	$26,714	$27,067	$27,426	$27,789	$28,157	$28,530	$28,908	$29,290	$29,678
Affordability for Low-income, Low-volume: Current Rates First Column, Modeled Rates After That	0.86%	1.29%	1.34%	1.32%	1.37%	1.42%	1.47%	1.53%	1.58%	1.64%	1.70%	1.76%
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	1.47	1.42	1.25	1.70	1.81	1.90	1.93	1.95	2.03	1.92	2.01	2.06
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	N.A.	2.56	1.60	5.22	6.07	6.74	7.17	7.62	8.52	8.30	9.44	N.A.
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	N.A.	11.22	13.47	13.97	11.80	11.04	6.53	5.46	6.91	11.84	14.42	N.A.
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.												

Table 17 - Financial Capacity Indicators and Reserves

Reserves	Balance Ending on 6/30/21	Balance Ending on 6/30/22	Balance Ending on 6/30/23	Balance Ending on 6/30/24	Balance Ending on 6/30/25	Balance Ending on 6/30/26	Balance Ending on 6/30/27	Balance Ending on 6/30/28	Balance Ending on 6/30/29	Balance Ending on 6/30/30	Balance Ending on 6/30/31	Balance Ending on 6/30/32	Balance Ending on 6/30/33
Cash and Cash Equivalents	$6,948,835	$1,345,524	$1,411,094	$1,644,465	$1,660,494	$1,661,534	$1,674,922	$1,743,733	$1,825,631	$1,848,626	$2,059,874	$2,079,458	$2,151,879
Other Liquid Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Undedicated Cash Assets	$6,948,835	$1,345,524	$1,411,094	$1,644,465	$1,660,494	$1,661,534	$1,674,922	$1,743,733	$1,825,631	$1,848,626	$2,059,874	$2,079,458	$2,151,879
Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	$6,948,835	$1,345,524	$1,411,094	$1,578,686	$1,530,311	$1,470,019	$1,422,589	$1,421,792	$1,429,027	$1,389,145	$1,485,972	$1,440,095	$1,490,249
Repair & Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt and CIP Reserves	$0	$8,697,018	$10,639,404	$10,829,776	$8,846,191	$8,186,911	$4,149,318	$3,140,174	$4,329,719	$8,706,675	$10,785,868	$15,818,284	$8,018,033
Sum of All Reserves	$6,948,835	$10,042,542	$12,050,497	$12,474,241	$10,506,684	$9,848,445	$5,824,241	$4,883,907	$6,155,350	$10,555,301	$12,845,742	$17,897,742	$10,169,911

Table 18 - Bills Before and After Rate Adjustments

Cape Girardeau, MO, Water Rates Model 2024-14, Partial Restructure

To reduce its size and still cover many customers, this table shows bills for only the most common or extraordinary classes.

Customer, Rate Class or Meter Size	Cu Ft of Use	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)
Res, 5/8 Inch	0	13,179	$10.37	$17.45	$7.08
	267	8,603	$18.39	$28.04	$9.65
	401	5,960	$22.41	$33.34	$10.93
	535	4,061	$26.42	$38.63	$12.22
	668	2,742	$30.43	$43.93	$13.50
	802	1,843	$34.44	$49.23	$14.78
	936	1,311	$38.45	$54.52	$16.07
	1,070	970	$42.47	$59.82	$17.35
	1,203	725	$46.48	$65.11	$18.63
	1,337	571	$50.49	$70.41	$19.92
	6,000	20	$158.30	$255.13	$96.83
	10,000	5	$250.78	$413.58	$162.80
	50,000	0	$1,175.58	$1,998.11	$822.53
Res, 3/4 Inch	0	1,534	$15.99	$20.15	$4.16
	267	1,163	$24.01	$30.74	$6.73
	401	885	$28.03	$36.04	$8.01
	535	659	$32.04	$41.33	$9.30
	668	501	$36.05	$46.63	$10.58
	802	371	$40.06	$51.93	$11.86
	936	285	$44.07	$57.22	$13.15
	1,070	231	$48.09	$62.52	$14.43
	1,203	189	$52.10	$67.81	$15.71
	1,337	164	$56.11	$73.11	$17.00
	6,000	11	$163.92	$257.83	$93.91
	10,000	2	$256.40	$416.28	$159.88
	50,000	0	$1,181.20	$2,000.81	$819.61

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Cu Ft of Use	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)
	0	263	$21.58	$27.19	$5.61
	267	197	$29.60	$37.78	$8.18
	401	173	$33.62	$43.08	$9.46
	535	147	$37.63	$48.37	$10.75
	668	128	$41.64	$53.67	$12.03
	802	109	$45.65	$58.97	$13.31
Res, 1 Inch	936	95	$49.66	$64.26	$14.60
	1,070	87	$53.68	$69.56	$15.88
	1,203	79	$57.69	$74.85	$17.16
	1,337	74	$61.70	$80.15	$18.45
	6,000	16	$169.51	$264.87	$95.36
	10,000	5	$261.99	$423.32	$161.33
	50,000	0	$1,186.79	$2,007.85	$821.06
	0	21	$40.39	$50.89	$10.50
	267	21	$48.41	$61.48	$13.07
	401	21	$52.43	$66.78	$14.35
	535	20	$56.44	$72.07	$15.64
	668	19	$60.45	$77.37	$16.92
	802	17	$64.46	$82.67	$18.20
Res, 1.5 Inch	936	17	$68.47	$87.96	$19.49
	1,070	16	$72.49	$93.26	$20.77
	1,203	16	$76.50	$98.55	$22.05
	1,337	16	$80.51	$103.85	$23.34
	6,000	3	$188.32	$288.57	$100.25
	10,000	2	$280.80	$447.02	$166.22
	50,000	0	$1,205.60	$2,031.55	$825.95
	0	12	$61.72	$68.51	$6.79
	267	11	$69.74	$79.10	$9.36
	401	10	$73.76	$84.40	$10.64
	535	9	$77.77	$89.69	$11.93
	668	8	$81.78	$94.99	$13.21
	802	8	$85.79	$100.29	$14.49
Res, 2 Inch	936	8	$89.80	$105.58	$15.78
	1,070	7	$93.82	$110.88	$17.06
	1,203	7	$97.83	$116.17	$18.34
	1,337	6	$101.84	$121.47	$19.63
	6,000	2	$209.65	$306.19	$96.54
	10,000	1	$302.13	$464.64	$162.51
	50,000	0	$1,226.93	$2,049.17	$822.24

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Cu Ft of Use	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)
Res, 3 Inch	0	15	$115.62	$128.34	$12.72
	267	5	$123.64	$138.93	$15.29
	401	5	$127.66	$144.23	$16.57
	535	4	$131.67	$149.52	$17.86
	668	4	$135.68	$154.82	$19.14
	802	4	$139.69	$160.12	$20.42
	936	3	$143.70	$165.41	$21.71
	1,070	3	$147.72	$170.71	$22.99
	1,203	3	$151.73	$176.00	$24.27
	1,337	3	$155.74	$181.30	$25.56
	6,000	1	$263.55	$366.02	$102.47
	10,000	0	$356.03	$524.47	$168.44
Com, 5/8 Inch	0	1,038	$10.37	$17.45	$7.08
	267	366	$18.39	$28.04	$9.65
	401	281	$22.41	$33.34	$10.93
	535	236	$26.42	$38.63	$12.22
	668	199	$30.43	$43.93	$13.50
	802	167	$34.44	$49.23	$14.78
	936	145	$38.45	$54.52	$16.07
	1,070	125	$42.47	$59.82	$17.35
	1,203	106	$46.48	$65.11	$18.63
	1,337	93	$50.49	$70.41	$19.92
	6,000	9	$158.30	$212.72	$54.42
	10,000	2	$250.78	$334.79	$84.01
	50,000	0	$1,175.58	$1,555.53	$379.95
Com, 3/4 Inch	0	281	$15.99	$20.15	$4.16
	267	166	$24.01	$30.74	$6.73
	401	143	$28.03	$36.04	$8.01
	535	126	$32.04	$41.33	$9.30
	668	115	$36.05	$46.63	$10.58
	802	104	$40.06	$51.93	$11.86
	936	95	$44.07	$57.22	$13.15
	1,070	88	$48.09	$62.52	$14.43
	1,203	82	$52.10	$67.81	$15.71
	1,337	76	$56.11	$73.11	$17.00
	6,000	10	$163.92	$215.42	$51.50
	10,000	5	$256.40	$337.49	$81.09
	50,000	0	$1,181.20	$1,558.23	$377.03

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Cu Ft of Use	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)
Com, 1 Inch	0	369	$21.58	$27.19	$5.61
	267	239	$29.60	$37.78	$8.18
	401	218	$33.62	$43.08	$9.46
	535	204	$37.63	$48.37	$10.75
	668	192	$41.64	$53.67	$12.03
	802	179	$45.65	$58.97	$13.31
	936	169	$49.66	$64.26	$14.60
	1,070	160	$53.68	$69.56	$15.88
	1,203	147	$57.69	$74.85	$17.16
	1,337	139	$61.70	$80.15	$18.45
	6,000	24	$169.51	$222.46	$52.95
	10,000	11	$261.99	$344.53	$82.54
	50,000	1	$1,186.79	$1,565.27	$378.48
	100,000	0	$2,342.79	$3,091.19	$748.40
Com, 1.5 Inch	0	189	$40.39	$50.89	$10.50
	267	142	$48.41	$61.48	$13.07
	401	133	$52.43	$66.78	$14.35
	535	126	$56.44	$72.07	$15.64
	668	117	$60.45	$77.37	$16.92
	802	109	$64.46	$82.67	$18.20
	936	104	$68.47	$87.96	$19.49
	1,070	100	$72.49	$93.26	$20.77
	1,203	96	$76.50	$98.55	$22.05
	1,337	94	$80.51	$103.85	$23.34
	6,000	26	$188.32	$246.16	$57.84
	10,000	13	$280.80	$368.23	$87.43
	50,000	0	$1,205.60	$1,588.97	$383.37

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Cu Ft of Use	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)
Com, 2 Inch	0	288	$61.72	$68.51	$6.79
	267	239	$69.74	$79.10	$9.36
	401	228	$73.76	$84.40	$10.64
	535	220	$77.77	$89.69	$11.93
	668	212	$81.78	$94.99	$13.21
	802	202	$85.79	$100.29	$14.49
	936	195	$89.80	$105.58	$15.78
	1,070	189	$93.82	$110.88	$17.06
	1,203	184	$97.83	$116.17	$18.34
	1,337	178	$101.84	$121.47	$19.63
	6,000	91	$209.65	$263.78	$54.13
	10,000	66	$302.13	$385.85	$83.72
	50,000	6	$1,226.93	$1,606.59	$379.66
	100,000	1	$2,382.93	$3,132.51	$749.58
	150,000	0	$3,538.93	$4,658.43	$1,119.50
Com, 3 Inch	267	51	$123.64	$138.93	$15.29
	401	50	$127.66	$144.23	$16.57
	535	49	$131.67	$149.52	$17.86
	668	48	$135.68	$154.82	$19.14
	802	48	$139.69	$160.12	$20.42
	936	48	$143.70	$165.41	$21.71
	1,070	47	$147.72	$170.71	$22.99
	1,203	46	$151.73	$176.00	$24.27
	1,337	45	$155.74	$181.30	$25.56
	6,000	35	$263.55	$323.61	$60.06
	10,000	27	$356.03	$445.68	$89.65
	50,000	10	$1,280.83	$1,666.42	$385.59
	100,000	6	$2,436.83	$3,192.34	$755.51
	150,000	4	$3,592.83	$4,718.26	$1,125.43
	200,000	2	$4,748.83	$6,244.18	$1,495.35
	250,000	2	$5,904.83	$7,770.10	$1,865.27
	300,000	2	$7,060.83	$9,296.02	$2,235.19
	350,000	1	$8,216.83	$10,821.94	$2,605.11
	400,000	1	$9,372.83	$12,347.86	$2,975.03
	450,000	1	$10,528.83	$13,873.78	$3,344.95
	500,000	1	$11,684.83	$15,399.70	$3,714.87
	550,000	0	$12,840.83	$16,925.62	$4,084.79

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Cu Ft of Use	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)
Com, 4 Inch	0	48	$190.81	$211.94	$21.13
	267	24	$198.83	$222.53	$23.70
	401	24	$202.85	$227.83	$24.98
	535	23	$206.86	$233.12	$26.27
	668	23	$210.87	$238.42	$27.55
	802	23	$214.88	$243.72	$28.83
	936	23	$218.89	$249.01	$30.12
	1,070	23	$222.91	$254.31	$31.40
	1,203	23	$226.92	$259.60	$32.68
	1,337	23	$230.93	$264.90	$33.97
	6,000	18	$338.74	$407.21	$68.47
	10,000	17	$431.22	$529.28	$98.06
	50,000	4	$1,356.02	$1,750.02	$394.00
	100,000	2	$2,512.02	$3,275.94	$763.92
	150,000	1	$3,668.02	$4,801.86	$1,133.84
	200,000	1	$4,824.02	$6,327.78	$1,503.76
	250,000	0	$5,980.02	$7,853.70	$1,873.68
Com, 6 Inch	0	2	$398.93	$442.81	$43.88
	267	1	$406.95	$453.40	$46.45
	401	1	$410.97	$458.70	$47.73
	535	1	$414.98	$463.99	$49.02
	668	1	$418.99	$469.29	$50.30
	802	1	$423.00	$474.59	$51.58
	936	1	$427.01	$479.88	$52.87
	1,070	1	$431.03	$485.18	$54.15
	1,203	1	$435.04	$490.47	$55.43
	1,337	1	$439.05	$495.77	$56.72
	6,000	1	$546.86	$638.08	$91.22
	10,000	1	$639.34	$760.15	$120.81
	50,000	0	$1,564.14	$1,980.89	$416.75

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Cu Ft of Use	Customers Using This Volume or More	Bill at Now Current Rates	Bill at Modeled Rates	Modeled Bill Increase or Decrease (-)
Hydrant Meter - RC1110	0	17	$45.00	$128.34	$83.34
	267	6	$53.02	$138.93	$85.91
	401	6	$57.04	$144.23	$87.19
	535	5	$61.05	$149.52	$88.48
	668	5	$65.06	$154.82	$89.76
	802	5	$69.07	$160.12	$91.04
	936	4	$73.08	$165.41	$92.33
	1,070	4	$77.10	$170.71	$93.61
	1,203	4	$81.11	$176.00	$94.89
	1,337	4	$85.12	$181.30	$96.18
	6,000	1	$192.93	$323.61	$130.68
	10,000	1	$285.41	$445.68	$160.27
	50,000	0	$1,210.21	$1,666.42	$456.21
Government - RC1115	0	104	$0.00	$0.00	$0.00
	750,000	0	$0.00	$0.00	$0.00
Fire Line 4 Inch - RC5000	0	0	$13.20	$17.42	$4.22
	750,000	0	$13.20	$17.42	$4.22
Fire Line 6 Inch - RC5005	0	0	$26.44	$34.90	$8.46
	750,000	0	$26.44	$34.90	$8.46
Fire Line 8 Inch - RC5010	0	0	$39.71	$52.42	$12.71
	750,000	0	$39.71	$52.42	$12.71

Chart 1 - Operating Ratio

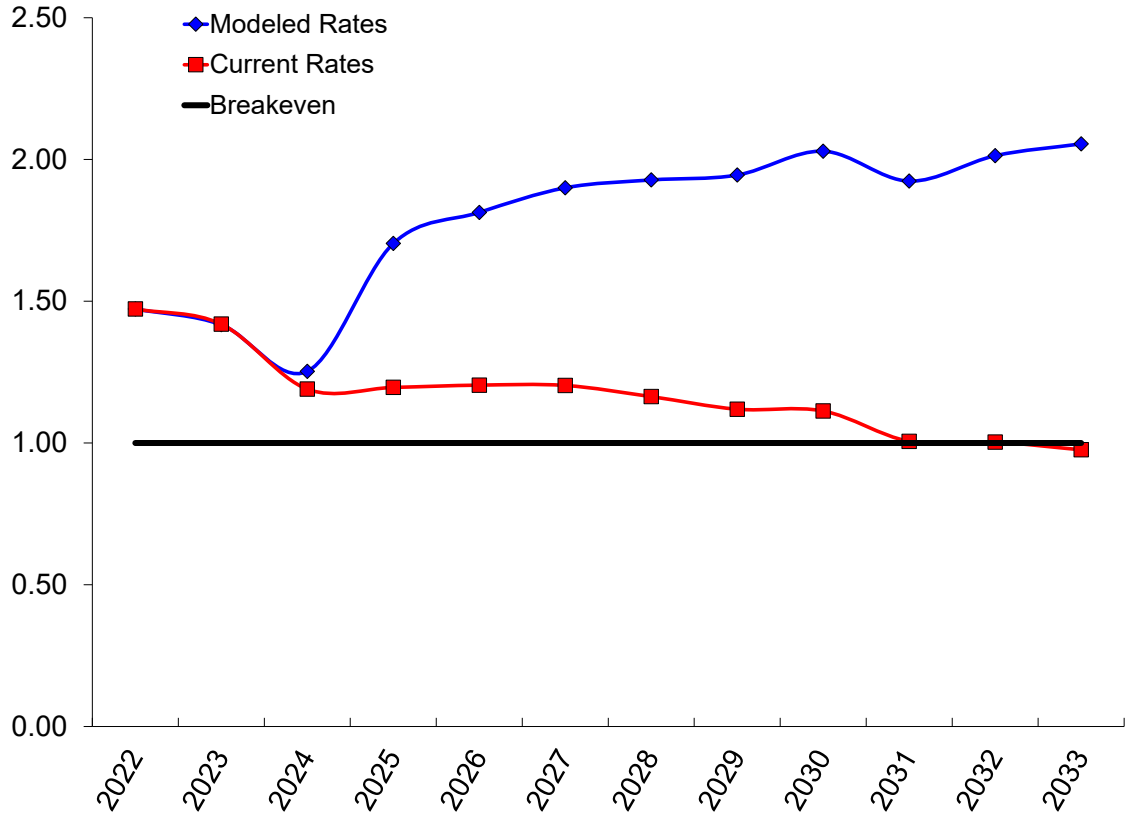

Chart 2 - Coverage Ratio

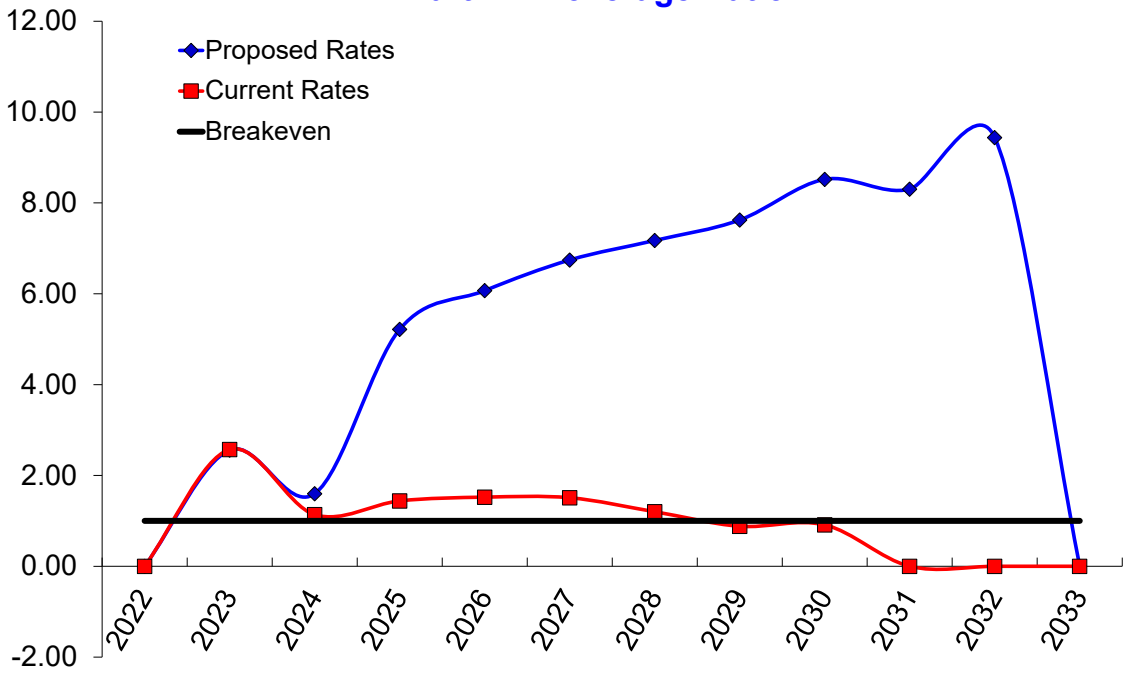

Chart 3 - Residential Users' Bills

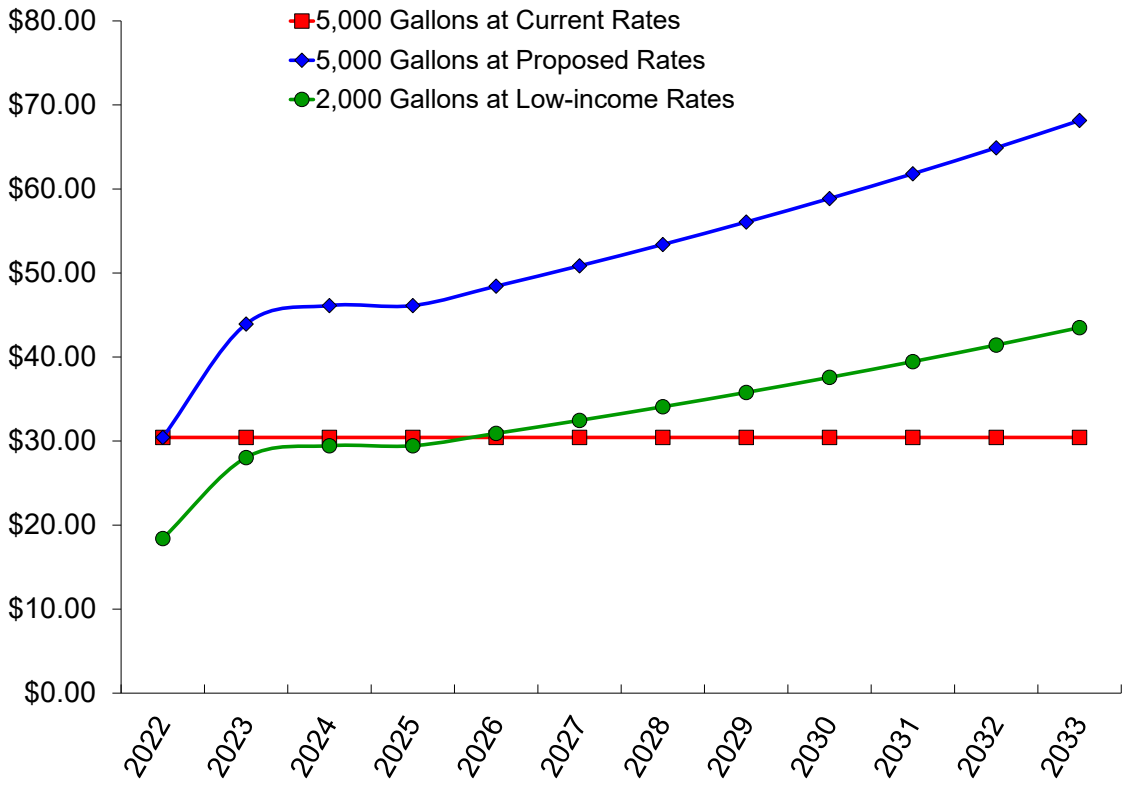

Chart 4 - Affordability

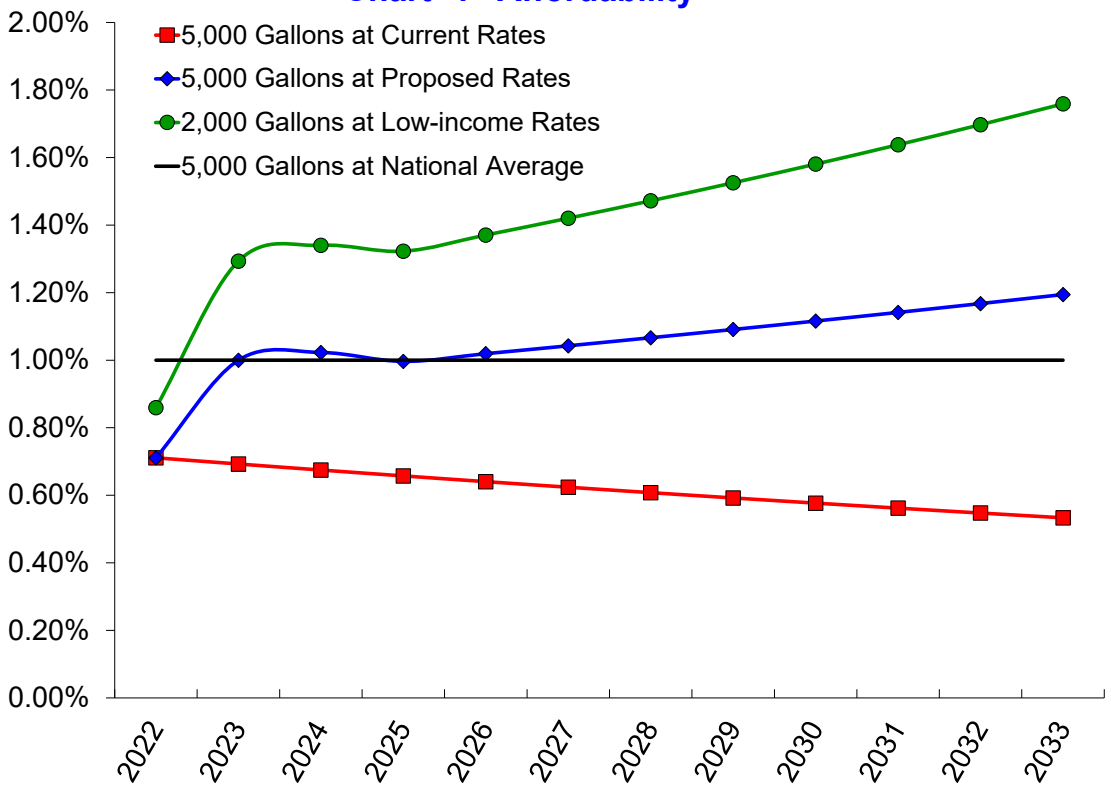

Chart 5 - Working Capital vs Goal

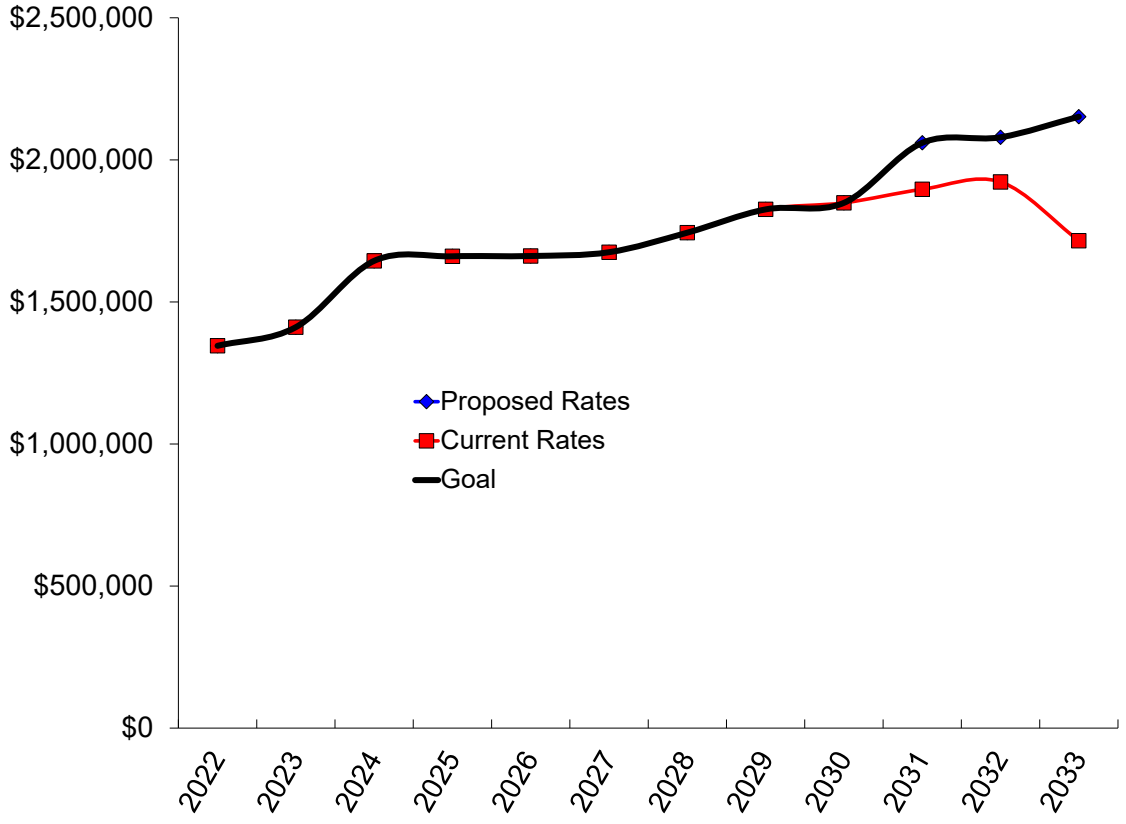

Chart 6 - Value of Cash Assets Before Inflation

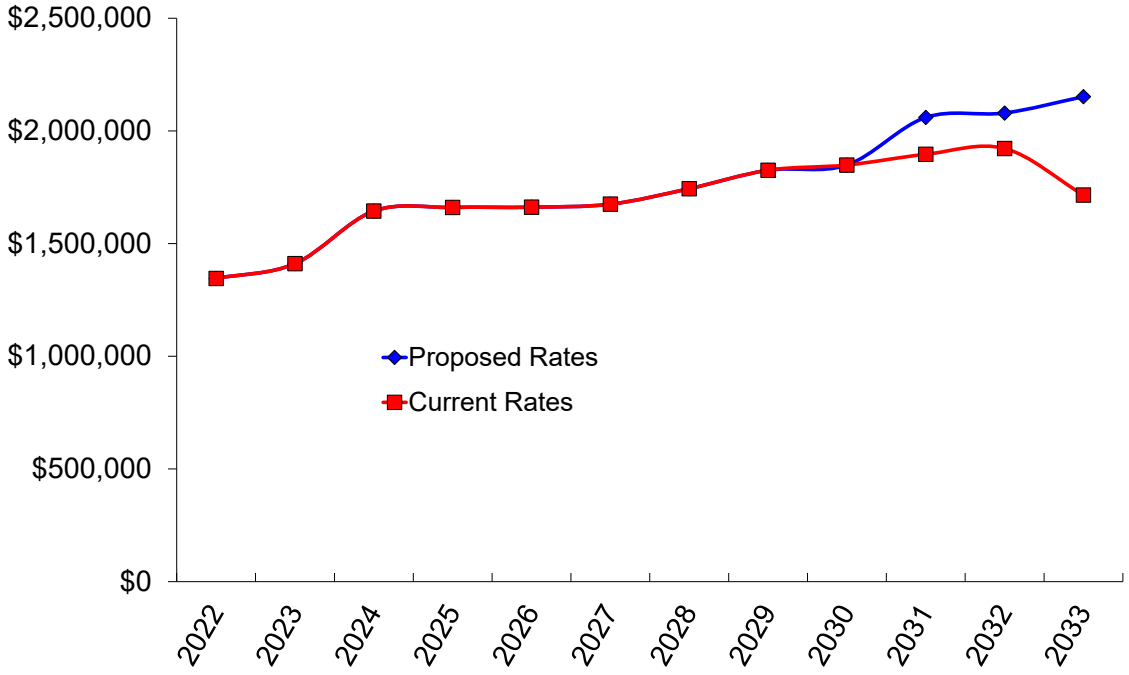

Chart 7 - Value of Cash Assets After Inflation

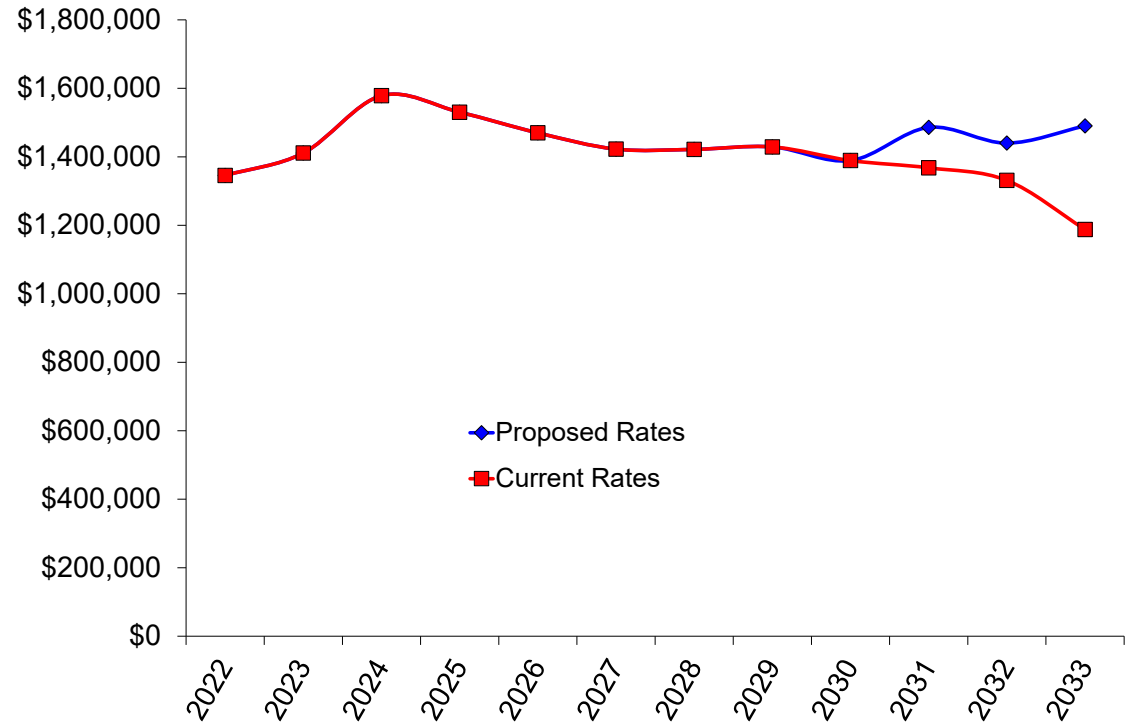

Chart 8 - Sum of All Reserves