August 25, 2022

The Honorable Terry L. Weickum, Mayor
City of Rawlins
915 Third Street
Rawlins, WY 82301

Subject: Water Rate Analysis Report

Dear Mayor Weickum:

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

City Engineer Austin Gilbert and Finance Director Tom Sarvey were my main City contacts for this project. Both were wonderful to work with. They are new to the City, too, so that makes their performance even more amazing. They were helpful, prompt and knew a lot about the utility and its finances already. Other staff provided information and data directly to me and I know staff I referred to above went to them for data and information, as well. I thoroughly enjoyed working with all these folks and the City should count itself lucky to have such capable staff to serve them.

I also want to say that, while the source water system failure you recently experienced was a trauma, this has been a fascinating situation to model. Many of my client systems are operating at "steady state," not much going on, they just need to get their rates in line with that steady state. Those are work-a-day rates to model. Yours were anything but. It is satisfying to me to help a city pull itself out of a very bad situation.

Now, on to the report.

The bottom line literally is the "bottom line." Rates must be adjusted, most must be increased, and as soon as possible. Recovery from the source water system failure depends on it. Fortunately, even after the needed rate increases, your rates will still be more affordable than the commonly accepted national average.

The water rates and fees I calculated for you start with a "cost-to-serve" structure. The City has a supply agreement with the Town of Sinclair, so I modified the model rates to accommodate that situation. You have a few other rates I accommodated, as well. I modeled the rate effects of bringing the river water pre-treatment plant on-line. And to show the sensitivity of rates to the substantial system improvements the spring water collection and transportation system includes, I modeled rates with no system improvement costs. It turns out, your current rates were nearly adequate to pay current operating costs, except for the pre-treatment plant costs that have since been added to the Fiscal Year 2023 budget. However, recovering from the spring water system upset will drive rates noticeably higher.

I look forward to meeting with the Council on September 6, so I can describe to all the findings of my analysis and what I recommend you do. When big, urgent changes like this are in store, it is always useful to have me there in person to answer all questions and assure the Council that this problem is solvable, and you will come out the other side just fine.

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

Best regards,
GettingGreatRates.com

Carl E. Brown
President

Enclosure

Water Rate Analysis Report

Rawlins, Wyoming

Prepared August 25, 2022

Carl Brown, President
GettingGreatRates.com, LLC

Table of Contents

Index of Model Tables and Charts

Executive Summary

The water rate analysis that accompanies this report calculates water rates for the City that are in a cost-to-serve structure on an average cost basis with a few exceptions where rates are controlled by contract, or longstanding practice.

The City produces its own water, most from a spring water source and less from wells. Recently the spring water source failed. During the driest months last year and again this year, the wells could not keep up with demand. The spring water source system is being replaced now and that will increase the system's costs markedly. That cost will be the main driver of higher rates very soon.

As compared to the rates in effect at the end of the test year, initially, rate revenues need to go up 49.9 percent on average. However, rates also need to be restructured to make them fairer. Following the initial set of rate adjustments, rates will need to keep up with system cost inflation each year.

The Meaning of This Report, in a Nutshell

The City of Rawlins, later called "the City" or "you," hired GettingGreatRates.com, later called "me," "we" or "I," to perform rate analysis of its water utility; to produce a report of my findings and recommendations; and to provide guidance on rate setting.

This report is detailed and long. The math behind the report is complex. Some assumptions had to be made about data and outcomes, which is normal. Still, these things make the modeling complex and interpreting the models difficult. The following paragraph is the "Cliff's Notes" version of what the calculated rates will do and what they mean to customers.

The idea the rate calculations in this report is based on is called, "cost-of-service" or "cost-to-serve" rates. This is the prime industry standard for utility rate analysis. Quite simply, if a customer causes the utility to incur a cost, that customer should reimburse the utility for that cost. Your current water rates are not structured that way, so the structure needs to change.

The Governing Body's Job is Broad and Critical

This report covers my findings. Based on those findings, I made rate and fee setting recommendations. However, and this is quite 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 adjust (reduce) system costs, delay capital improvements, obtain grant or other outside funding for such 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 very helpful as the governing body does 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 make difficult and impactful decisions and direct the completion of critical work. Without such civic-minded people making utility service 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 them. That is unfortunate because local government officials make it possible for the rest of us to live and work where we do and how 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.

Introduction

I have analyzed rates as a consultant since 2005, completing 346 analyses since then. Before that, from 1995 to 2005, I did similar work for the Missouri Department of Natural Resources. My experience is deep. I calculated your rates with due diligence using the best methodologies 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 25.

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, though not completed during the next year. In the model tables, this is called, "0 Year."
- For the next ten years, the modeling used budget figures, engineer's estimates, etc. when available. Those normally cover one or two future years. For the remainder of the ten projection years, we calculated incomes, costs, etc. you should expect to experience.

If you have a basic working knowledge of rate setting and you will 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.

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

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

The City's water user charge rates can be summarized like this:

- Most water rates include a minimum charge for in-City customers and a premium for out-of-City customers (of which you have almost none), no usage allowance, and a level unit charge per 1,000 gallons, again, with a premium for out-of-City customers. That is a normal and good practice and I recommend continuing that practice, with some rate restructuring to make rates fairer.
- Most water customers (76.2 percent) are served by a five-eighths or three-quarter inch meter, there are significant numbers of meters through four inches and a few beyond that. Thus, meter size-based rates that assess a premium for capacity costs as meter size rises will have an important effect. They will, on a fair basis, keep the small meter, primarily residential minimum charge lower. I have calculated such a rate structure for you.
- Water use is based on meter readings each month of the year.
- The City sells water to the Town of Sinclair under a water supply agreement and those rates are controlled by that agreement. The agreement calls for no minimum charge and the unit charge is to be set at 60 percent of the in-City unit charge. I modeled new rates for Sinclair in that structure.

This report is the culmination of a process where I submitted information and data requests primarily to Austin Gilbert, City Engineer; and Thomas Sarvey, Finance Director. For certain types of data and information, I contacted other City staff, or they contacted me. I am sure Austin and Tom consulted with other staff behind the scenes when I asked them for something that they knew could be better addressed by someone else. I received all requested data and information from staff. We went through this step several times. As I received information and data, I modeled the utility's finances and rates and submitted drafts for review and feedback. Staff reviewed those drafts to assure accuracy, and when needed, they corrected data.

With this feedback, I prepared and submitted a draft final report. Again, staff reviewed and gave me feedback on issues with which each was familiar. We cycled through this loop a few more times to arrive at, hopefully, the final report.

This report is in two parts. The first part is this narrative report that tells readers what should be done to the utilities' rates and why and interprets much of the mathematical modeling. The second is a printout of the modeling spreadsheets described as follows:

- The model from which come the rates and fees I recommend the City adopt is called, "Rawlins, WY, Water Rates Model 2022-3." Later I will just call it "the Model." This model depicts the projected costs for the water system and the rates and fees needed to pay them.
- I created another model, the "No CIP Model," identical to the Model, except in this model I left out all system improvement costs. I then reran the rates in this model to determine the rate effects system improvements will exert. They are big.
- I created yet another model, the "River Water Model," identical to the Model, except in this model I cover costs and potential income from sale of water that originates from the river and goes through the City's pre-treatment plant.

All tables and charts from "the Model" are included in this report. Because the additional models are identical to "the Model" in all respects except just a few, I have only included a few illustrative tables and the charts from those models. That keeps the report as short and simple as possible and enables you to see the effects of what each model was created to depict.

All the models are sets of integrated calculations that mathematically depict the utility's situation – incomes, expenses, debt, capital improvements, and more under three sets of assumptions. I call those "scenarios."

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.

General Issues

Concerning construction of models, they are built to match a system's financial statements and other data as much as possible. However, the intent of rate modeling is to see to it that the resulting rates are adequate to pay all system expenses for the next ten years, build and maintain responsible reserves and collect fees from customers on a fair basis. Because incomes and expenses in standard financial statements, and other data, are seldom grouped in such a way as to enable the required rate calculation methodology, the models do not always match 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 models account for funds in a standardized way. When it comes to segregating funds, staff knows best how to do that, so the models do little in this regard and leave the segregating up to staff. In the models, the grand total reserve level is the critical thing to track and compare to your future reserves.

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 a long time. If either line is headed down toward zero, that is a very bad thing that needs to change by reducing costs, if you prudently can, or increasing rates.

In contrast to Chart 8, Charts 3 and 4 in the Model depicts aspects of user charge rates. When the Chart 3 and 4 blue lines go up, meaning rates are going up or affordability is getting worse, 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. Keep in mind, effectiveness is priority one. Efficiency (low cost, as customers view it) is priority two. Customers <u>want</u> efficiency but they <u>must have</u> effectiveness.

One thing you should notice is this. In Chart 5 the blue line depicting working capital to be generated by the proposed rates does not show up. When that occurs, it means that the proposed rates line is taking the same path as the working capital goal line, which is exactly what you want to see. The red line, working capital under the current rates, drops off a cliff and heads toward a negative $5,000,000 in ten years. But that picture gets worse.

Chart 8 spells the "big picture" difference between the two sets of rates. The modeled rates will generate more revenue and, thus, produce stronger total reserves. In my models, "excess" working capital is transferred to the CIP and Debt Service fund balances. These balances appear near the bottom of Tables 5 and 17 in the models, and they are included in the Chart 8 amounts, too. Thus, if you stayed with the current rates for ten years, total reserves would be at approximately a negative $18,600,000. Of course, that would not happen because you would subsidize the water fund with general revenues (which would not be fair) or tap some other source to keep the water system functioning.

As you set and later reset rates, I suggest you follow the guidance I give in my book, "How to Get Great Rates." This book is one of the rate setting resources I mentioned earlier.

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

Findings and Recommendations

Capital Improvements

The City's water system needs substantial improvements, primarily replacement of the spring water collection and transportation system. The cost of that project, approximately $20,000,000, will be the main driver of rate increases. That project is urgent and unavoidable. Most other improvements, primarily water line replacements, are not so urgent but are also unavoidable. Thus, water system investment costs will soon rise markedly and require markedly higher rates overall.

Because these system improvement needs are so great, I assumed all projects in the City's capital improvements plan (except for two) will be 100 percent loan-financed through USDA Rural Development. The exceptions are a potential SRF MRG grant for the source water rehabilitation project and installation of a SCADA system could be funded by a forgivable loan.

The current debt payment load is $420,967. The annual payment for new loans, plus current debt will rise to $1,360,000 in a few years. That is about three times the current debt payments, and those payments will amount to approximately 40 percent of the ownership and operating costs of the system. Obviously, new debt will be the main driver of higher rates.

Table 5, page 54, shows system improvements, their costs and how you likely will fund them. The rates I calculated will pay for those costs.

These assumptions may be the "worst-case" scenario in that I have assumed very little grant funding. Substantial grant funding is common in Wyoming, so you may well get additional grants. If that happens, the debt load will be lower which should enable you to increase future rates more slowly than is now modeled. But at this stage, it is prudent to assume almost no grants and more loan funding to make sure rates will be high enough to fully pay the system's costs if the "worst-case" scenario holds.

What if No System Improvements Were Done?

First, that is not an option because the spring water collection and transportation system is the City's main source of water, and it must be fixed. Reconstruction of that system accounts for most of the system improvement costs. Rehabilitation must be done, but it is a useful exercise to examine how sensitive your rates are to this level of cost. Following is this comparison.

In the "No CIP Model" I eliminated the cost of system improvements in Table 5, page 84. All other assumptions are the same. Then I solved for new rates in the same structure that would pay the new, lower set of costs and build an appropriate level of total reserves. The following table shows how several criteria compare between the two scenarios.

Comparison of Rawlins, WY, Water Rates Model 2022-3 and a Scenario Where No CIP Would be Done

Criterion	No CIP Model	Water Model 3 - Recommended Scenario	Water Model 3 Increase Compared to No CIP Model	Water Model 3 Increase Compared to No CIP, in %
Debt Payment in FY 2024, When Spring Water Loan Payments to Start (Table 5 of each model)	$420,967	$1,260,752	$839,784	67%
Average Rate Increase, in Percent, Compared to Current Rates (Table 18 of each model)	5.1%	49.7%	44.5%	90%
In-Town Rate for Average Customer's Use (Table 18 of each model)	$45.32	$66.03	$20.71	31%
Bill Affordability Index, in Percent, After Initial Rate Adjustments Made (Table 17 of each model)	0.54%	0.80%	0.26%	33%

Notes about the table: New debt payments, projected to begin in Fiscal Year 2024, will dwarf the current debt load due almost exclusively to the costs of the spring water system rehabilitation. The current rates are nearly high enough to cover the system's current operating and current debt costs (except for the river water pre-treatment project, which is now in the Fiscal Year 2023 budget), but rates will soon need to be markedly higher. I see no alternative to fixing the spring water collection system, so I must conclude that rates simply must go up to pay for it. Perhaps the City can qualify for more grant assistance than has been assumed. If so, that would reduce the degree of rate increases, but they would not eliminate the need for a rate increase.

On the human nature side of such a situation, we all have a tendency to look back at a time when we had something that worked and wish it still did. We can get stuck, wishing for what was and not take action to deal with what is. But action must be taken, and soon. City staff, elected officials and I must get that message to ratepayers and others.

While urgent capital improvements and their rate effects trump all else, following are additional important considerations.

Repair and Replacement Scheduling

The City handles equipment repair and replacement (R&R) scheduling and payment on an as needed, and as funds are available basis. I assumed you will continue R&R as needed and I calculated rates to do that.

However, I encourage you to consider using my replacement scheduling spreadsheet called, "ReplacementScheduler©." It is available as a free download at https://gettinggreatrates.com/Freebies. By doing R&R in this way you will be able to save ahead more accurately for R&R needs and costs, such as rolling stock replacement, pumps, motors, and other equipment that wears out before the useful life of the overall system is over. I created ReplacementScheduler© with water and sewer utilities in mind, but it works just as well for other long-lived facilities like stormwater, electric, roads, and buildings.

Recommended Rate Structures

The current rates are class description based, rather than meter size based. I recommend meter size-based rates in your situation.

I recommend your adjusted rates include:

- System development fees (connection or tap-on fees) that graduate with meter size, based on the cost of capacity to serve different meter sizes. System peak flow capacity committed to the various meter sizes ranges widely, so it makes fairness and practical sense to capture as much of that cost on a cost-to-serve basis as possible.
- A minimum charge that is also based on meter size for the same reason. I usually recommend a level minimum charge for small systems with very few meters larger than a normal residential sized meter. In such situations, simplicity trumps fairness. However, Rawlins is not small, and it has numerous meters that are larger than normal residential service meters. Thus, you should include the cost of peak flow capacity and the basic fixed cost in most customers' minimum charges, all of which I calculated. That structure also reduces the minimum charge for smaller meter customers where the most "difficult-to-pay" customers are concentrated.
- Finally, continue with a level unit charge with no usage allowance, but set that as calculated so variable costs are recovered with unit charges.

Many of the tables in the Model are involved in calculating rates, so I cannot point to one or two tables and discuss this like I can with rate revenues or costs.

More on Meter Size-based Water Rates

Table 12, page 65, which calculates peak flow capacity costs and how they will be recovered shows that very little of peak flow capacity costs will be recovered by system development fees (and that is quite normal). But since the City grows rather slowly in the years when it does grow, whether these fees are set high or low, they will not produce much revenue anyway. The main reason to recover capacity costs at the time of a new connection is to make the fee structure fair for the various sizes of meters that may be connected. The resulting system development fees are shown in Table 13, page 66. I modeled system development fees so the fee for a small meter would be the same as the current connection fee. Larger meters' fees would

then be higher, proportionate to the number of peak flow capacity cost shares each meter size represents.

I calculated recovery of two basic cost components – system development (capacity) costs and operating costs. I calculated system development costs to be paid for partly with up-front fees at the time of connection of a new customer – commonly called a "connection fee," and partly with on-going surcharges to the basic minimum charge. This simply means that a new customer will pay for some of their system development costs up-front and all customers will pay for another part of those costs over time in the form of surcharges. Remember, system development costs do not occur only once. Systems continually wear out or become obsolete. Their usefulness gets used up and must be replaced. That is a current event for the City. You are looking at major system replacements right now.

In the middle of Table 12, left-hand side, I calculated peak flow capacity costs to be recovered with system development fees on a capacity share basis. Just below that I calculated capacity costs to be recovered with minimum charge surcharges on a capacity share basis. Recovering 20 percent of these costs with a surcharge causes the surcharge to be $2.32 per capacity share. That means, the minimum charge for a small meter customer would include $2.32 for one capacity share. Larger meters that account for more capacity shares would pay additional increments of this surcharge. The resulting full minimum charges are shown in Table 15, page 68.

An easy way to conceptualize this kind of fee is this. The City's water transportation lines (like the spring water line) and distribution lines within City have failed or are getting old, they leak, and they are moving toward failure. Most need replacement now or very soon. The surcharge to the minimum charge goes toward funding about 20 percent of those replacement costs. The rest of those costs will come from regular user charge fees.

All of this is a bit complicated but just keep in mind, the math is done on a cost-to-serve basis. Where are these things covered in the Model?

- Table 11, page 64, lays out the American Water Works Association's (AWWA) meter flow capacity findings, the basis for capacity shares in my calculations. This table is used as a basis in both models, but it is only shown in the "Model."
- Tables 12 through 16 calculate system development fees and surcharges, based on the AWWA findings.
- The system development fee revenue that results is brought back to Table 3, page 52, as a revenue source.

In Tables 13 through 16, you will see that small meters have low capacities to pass flow, so they are assessed low levels of capacity costs.

If you want to research this further, please refer to Appendix A on page 25 for resources to do that.

Volume Usage

The meter size count I received from staff includes properties that have changed hands or are locations that have effectively been double counted. Actual usage data accounts for 86 percent of the supplied count of meters, therefore, the meter size inventory was reduced proportionally to match the usage data.

The current rate structure does not take meter size into account. Therefore, the billing data does not relate usage to meter size. That means I was not able to mathematically correlate most current bills with what bills would be for each customer at the modeled rates. However, the "In-City" rate class accounts for 97 percent of all customers and the total of all 1.5-inch meters and smaller account for approximately that same percentage of all meters. Therefore, when I compare "before and after" bills where meter size is taken into account in the recommended rates, I used only the rates for five-eighths and three-quarter inch meters for those comparisons.

Table 2, page 47, shows the volumes used by customers. This needs some explanation.

Because you currently have no usage allowance (which is a good practice) and you assess the same unit charge for all water used (also a good practice in most cases), I did not need customer-by-customer detailed usage data for verifying your current rate revenues, or to calculate dependable revenues that new rates would produce. That is because for situations like yours, I recommend no usage allowance and a level unit charge, the structure you have now. Not having detailed usage data prevents me from modeling usage by the different meter size rate classes, which can be useful to know but it is not critical to know.

Incomes, Past and Expected

Table 3, page 52, shows the various past incomes and future incomes to expect, as well as several other things related to revenues.

In Table 3, near the top, on the line called, "Rate Increases Projected for Future Years," note that I show a four percent annual across-the-board rate increase in future years. I assumed that almost all costs in Table 4, page 53, will inflate by four percent per year, so I assumed in Table 3 that you will match future rates of budget inflation with user charge rate increases. **If future budgets increase by a different inflationary factor, and they will, you should match that rate of inflation with increases to rates.**

For years, average water and sewer utility budgets in the U.S. have been rising by about three percent per year. Everyone knows that inflation, depicted by the "consumer price index," is running much higher than it was just a year ago. Utility budget inflation normally runs a percentage point or a point and one-half higher than the consumer price index. No one knows when or by how much water system inflation will fall, but we must plan for something now, adjust rates appropriately, and revise as conditions change.

Also, near the top of Table 3, note that I assumed customer growth over the years. That is on the line called, "Customers Added or Lost (-) Each Year." During the test year the system grew by two new connections. I assumed future growth at that rate, too.

A Special Income-related Situation – Glenn Addition

Properties in the Glenn Addition are not individually metered. There is just one meter serving those properties. The City has long billed those properties for total water usage, dividing the total use each month by the number of properties served by that meter, applying the in-City unit charge in effect at the time to the average use, and billing each property that amount for usage.

The City desires to install individual meters, which I recommend and assume will happen. Once meters are installed, the City should assess a minimum charge to each property based on the meter serving each. In addition, each property would be billed for usage based on the unit charge rate that applies to them. This will not directly affect water volume sold and revenues from those sales, but once individual customers start paying for water metered to them, some may change their water use habits. But individually metered use will more fairly assess fixed costs to the Glenn Addition through the individual minimum charges and usage. In other words, those properties would then be billed on the same basis as all other in-City properties.

It will take some time to install meters. Because the minimum charges to be collected from Glenn Addition properties would be a small percentage of the system's total revenues, I did not calculate any revenue in my modeling from Glenn Addition minimum charges. I only calculated revenues from unit charges to be assessed at the calculated in-City unit charge rate. Before meters are installed, the City may decide to assess individual minimum charges to each property. If it does, I recommend the City assess the minimum charge for the smallest meter size to each property or assess the minimum for the size of meter that would be appropriate for each property. Once meters are installed, the City should assess the appropriate meter size-based minimum charge for each property as shown in Table A, page 21.

The way Glenn Addition customers are currently billed – based on the area-wide average use – customers who use the least volume pay just as much as those who use the most. Therefore, in Table 18, page 71, I modeled the current average monthly bill, which was for 6,319 gallons per property during the test year. I showed that bill for all volumes of use because that is the billing structure for the Glenn Addition. At the recommended rates, each bill would include a monthly minimum charge, and unit charges depending on the volume that each customer used. Thus, the lowest volume using customers would see their bills go down and starting at 2,000 gallons of use, bills would go up. In the column called, "Modeled Bill for This Volume," you can see Glenn Addition customers' bills will be the same as other in-City customers' bills for the same volumes and the same meter size.

Operating Costs, Past and Expected

Table 4 shows expected operating costs. I expect most costs will inflate by four percent per year. Two sets of costs are quite important.

The first cost item in Table 4, page 53, is for personal services (staff costs) for the water system. In the column called "1st Year Starting 7/1/22," which is the fiscal year you are in now, the amount rose from the prior year. That amount came from a salary study done by the City. In years after that, personal services costs will rise by an inflationary factor.

A Special Situation – River Water Pre-treatment Costs and Possible Sales Income

Near the bottom of Table 4 is an item called, "Pre-treatment for River Water." This operating cost of approximately $500,000 per year is not in the current budget. The pre-treatment plant cost is included in Table 5, page 54, to be paid from reserves. Please note, the water fund will be in the negative this year, due to starting the pre-treatment plant, unless rate increases are made as soon as possible. River water pre-treatment deserves additional attention.

Pre-treatment will be required of river water to remove excess turbidity before final treatment. This is a notable cost increase to the system, but this source would potentially make an additional 180,000,000 gallons of water per year available to the City. The City built a pre-treatment plant previously, but it has gone unused for some time. The plant is now being made ready for operation.

I have not assumed the City will be able to sell all available spring and well water once the spring water system is rehabilitated. Thus, I recommend adopting the recommended rates from Tables A and B included later in this report.

However, if the City did have enough demand to sell all spring and well water and then sell half of the available river water, it would generate revenue through river water sales. Following is a summary of that analysis.

As I did with the "No CIP" scenario, I copied the Model and added river water sales to test the rates sensitivity of selling river water. I simply called that the "River Water Model." The only differences in the River Water Model compared to the Model are these:

- I included 90 million gallons per year of river water sales, which would be half the available quantity, at the then applicable in-City rates as an additional revenue in Table 3 of the River Water Model, page 98. Those sales would reduce the minimum and unit charges otherwise needed to cash-flow the system appropriately.

With river water sales, the In-City minimum charge would be 6.9 percent less than the same customer's minimum charge from the Model and the unit charge would be 7.5 percent less. As shown in Table 17 of the River Water Model, page 100, rates when river water (additional) sales are assumed would be slightly more affordable. Similar savings would accrue to other customers, as well.

Under this assumption, river water sales would generate $289,800 the first year of river water sales and that would grow by the rate at which future user charges are to be raised to cover inflation. That is shown in Table 3 of the River Water Model, page 98. These sales would cover about half of the estimated operating cost of the pre-treatment plant, Shown in Table 4 of the River Water Model, page 99. If water volume sales grew to the point that all spring and well water must be used and all river water the pre-treatment plant could produce was also sold at the In-City rates, the pre-treatment plant would generate a profit.

Again, I must say, you should not assume at this point that just because you have the capacity to increase the system's water production by adding river water, that you would sell additional water. I assume that will not happen.

While it would be advantageous for the pre-treatment plant to pay for itself partially or fully in revenues generated, revenue generation should not be the main motive for bringing the pre-treatment plant on-line. The City has experienced a source water availability disaster. Because the City was nearly "sole-sourcing" spring water as its water source, when that system went down, very bad things happened. It will be quite expensive to recover from that system failure. Thus, it is prudent for the City to have source water options to reduce its risk of upsets. River water is that, and at the moderate cost of accessing river water, that should be reason enough to have that source on-line and available. It is quite likely that, even with the best of management, you will experience source water and other upsets in the future. But the effects of upsets can be minimized by having redundancy in the system.

Unbilled-for Water

Unbilled-for water for the test year amounted to 28 percent of the volume produced. That is a high rate of "loss." I am confident that will be at least one of the reasons, if not the only reason, many of the City's distribution lines need to be replaced.

The marginal cost of unbilled-for water is calculated in Table 9, page 59. The marginal cost worked out to 44 percent of the average unit cost of water. That is shown in the bottom right corner of Table 9. The 42 percent cost rate was brought back to Table 8, page 58, along with the "loss" rate to arrive at an unbilled-for water cost of $407,611 during the test year, also shown in the bottom right corner of Table 8.

Not all unbilled-for water is water lost to leaks, etc. Some is used for line flushing and other system maintenance operations. But if half of the unbilled-for water cost was for actual water loss, that loss would account for approximately ten percent of the water utility's total annual budget. That would be a large net loss, making many leaky lines and other sources of loss worth fixing.

Finally, while discussing Table 8, the proportions of fixed costs versus variable costs in Table 8 set up the "cost-to-serve" rate structure I used for calculating new basic minimum and average unit charges. After all revenues like system development fees and minimum charge surcharges have been applied toward the cost stream of the utility, basic minimum and average unit charges were calculated in the proportions calculated in Table 8, to cover all remaining costs and build appropriate reserves.

Target Reserve Levels

After what happened to the spring water system, it is a good thing you had impact assistance funding, ARPA funding and general fund reserves to get you through the crisis. The rates I calculated will pay all expected costs and arrive at an appropriate level of total water fund reserves.

How will those reserves compare with industry standards and what I normally recommend? I almost always recommend rates that will build reserves as follows:

1. Unobligated cash and cash equivalent reserves (working capital) equal to at least 35 percent of the annual operating costs, not including debt service and general administration costs. Considering all the still unknown and very expensive improvements you must do, I recommend 50 percent in your case;
2. A 20-year repair and replacement (R&R) schedule reserve, in the 20th year equal to at least two times greater than the average year's cost of R&R. You do not budget in this way, so R&R is covered by default by working capital; 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.

The total reserve target works out to just over $2,000,000 in ten years.

The lines on the bottom of Table 17, page 70, and several of the charts at the end of the Model show the reserve balances to expect for the next ten years. The last line of Table 17, the "Sum of All Reserves," is the critical one. The water utility will slowly spend down its reserve balances for a few years but in about 2029 reserves begin to recover. ***Chart 8, page 81, graphically shows how reserves will gradually settle on the appropriate level over the next ten years.***

Projecting budgets and ending balances for next year is difficult. Doing the same five years out, I can usually get close. Ten-years out, there are so many assumptions we must make now that will not pan out years from now that you should not bank on those numbers. But they serve as good planning targets. In most cases, a utility will see big cost, income, growth, debt, and other changes looming on the horizon a few years out. When that happens, it is time to do a new rate analysis to get rates back on track to meet those challenges. Thus, target balances give you something to aim for, but the target will move over time. With each new rate analysis, we will bring you back on course.

Rate Affordability

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 to be affordable. The Affordability index is a primary factor in determining grant and loan eligibility and grant amount.

Even after making the needed rate increases, your rates will still be more affordable than the commonly accepted national average. That is not the case with many of my client systems. Considering the scale of the system improvements you need, that outcome is quite amazing.

Rate affordability, often measured by the Affordability Index (AI), is an important indicator to which you should pay attention. Grant and loan agencies pay close attention to it. In Table 17, near the top, I show the estimated AI. The AI is also shown graphically in Chart 4, page 79.

In Table 17, the AI calculation for the test year was at 0.51 percent. That means such a customer paid 0.51 percent of their monthly household income to pay their monthly water bill. The national average is around 1.0 percent. In that context, your rates are "cheap," though I bet few of your ratepayers would think so.

Under the modeled rates, this customer's AI would rise to 0.79 percent, noticeably less affordable than the current rates but still "cheaper" than the national average. The AI is projected to stay steady over the years because the Census Bureau projects incomes in the City will rise about as fast as I project your costs will rise. That is an excellent outcome. Most of my clients see their rate affordability getting worse over time.

Affordability is important to ratepayers. It is also used by most grant and loan programs to determine grant eligibility, grant amounts, and loan terms. AI eligibility criterion generally seek to keep rates, after a capital improvement is completed and debt is in place, below 1.5 percent. Your AI is well below that now and it is projected to stay below that after project funding is in place, so I would not expect you to qualify for any grant funding on the basis of water rate affordability alone. But the assumptions in the Model about loan and grant funding (almost exclusively loans) are quite conservative as compared to most Wyoming communities I have assisted. You may well get more favorable funding assistance and that would reduce the rate at which you would need to raise rates in the future.

I will add a consideration that is self-promoting, but it may be quite beneficial to the City, too.

When it comes to rate affordability, grant and loan agencies consider the affordability of one utility's rates. But they have a second criterion where they consider the affordability of <u>combined</u> water and sewer rates. When the bill from the recommended water rates is added to the sewer bill for that customer, the Affordability Index of the combined bill may be high enough (unaffordable enough) to qualify the City for additional grants or better loan terms. If your current sewer rates are lower than they should be, you would effectively be giving up grant proceeds by not raising those rates. Were I to analyze your sewer rates and find you need to raise those, too, you may be able to draw down additional grants or better loan terms. Often, reducing the long-term payout and rates more than compensates for the short-term higher rates. The basic principle behind investing – pay an

amount now to buy something that yields a return over time – is what makes it possible for future rates to be lower.

Take home message: The cost of a sewer rate analysis may pay for itself almost instantaneously from grants it enables you to draw. If it does not do that, it still will likely pay for itself in the first few days of additional user charge fees it enables you to collect.

In Table 17, in the section below the AI information, I calculated bill affordability for a low-income, low-volume customer. Their bill will be less affordable than the City's average residential customer's bill, and that will worsen over time. Even this customer's situation is better than I usually see. I commonly see the bill affordability for these customers go up to two or three percent of their income. Still, you should try to prevent as much upset for them as you can. These customers make up a high proportion of "slow pay and no pay" customers, who are a cost, administrative and public relations problem for nearly all utilities.

The affordability index is useful, but it does not depict how new rates will affect customer types or those using different volumes. Table 18, page 71, shows "before and after" bills for classes of customers using different volumes of water. I am not recommending you continue with the class structure of rates. But in the table, I assumed comparable meter size-based rates and bills for the smallest meters, because those serve most of your customers and almost all residential customers. And most other customers, like fire protection and construction, are not assessed a minimum charge and I continued that structure under the recommended rates, too.

Table 18 gives ratepayers useful information. It is one of the few tables from the Model that I recommend you copy and bring to the Council meeting where we will discuss rates. Because most customers are concerned about what will happen to their bills, you should give this table to everyone who wants a copy.

All prior discussion brings us to the rates I recommend you adopt.

How to Adopt the Modeled Rates

1. Tables A and B that follow this list state the modeled rates and fees I recommend you adopt.
    a) The system development fee I calculated only pays for peak flow capacity. The City incurs costs to process applications to connect to the water system, supply meters and other materials, and the City may do inspections and perhaps other work to enable a new connection that complies with City requirements. The City should recover all such out of pocket costs, in addition to the recommended system development fees in the tables.
2. The calculations assumed you would have made these adjustments early enough to enable you to collect at these rates for billings starting after October 1, 2022. That is coming soon. You would need to satisfy all Statutory requirements for making rate adjustments in advance of the adjustment date.
3. Approximately one full year after the initial rate adjustments, or better, at the time you prepare the next year's budget, examine the costs and incomes the utility experienced during that year, plus the balances that have accrued. Compare those items to the same items in Tables 3, 4, 5 and 17, of the Model.
    a) If all accrued close to the values in the Model, raise all rates by 4.0 percent, as shown near the top of Table 3, page 52.
    b) If balances did not accrue as shown at the bottom of Table 17, page 70, but they are not egregiously different, follow the instructions in Chapter 9 of the book, "How to Get Great Rates" for how to make inflationary increases correctly. Download that book for free from https://gettinggreatrates.com/Freebies.
    c) If balances were too low by an amount that is troubling to you, call me to discuss the situation. It is likely I will be able to "talk you through" how to make appropriate rate adjustments to correct the situation.
        i) System improvement costs and timing are big wildcards in your case. They could come in quite different than assumed. If that happens, I encourage you to call or e-mail me and discuss the situation.
4. Repeat recommendation Number 3 each following year until you have raised rates and fees by a cumulative 20 percent. That should take about five years. By then the cost structure will have changed enough to make a new rate analysis worthwhile. With the very large and impending cost changes that are coming, you likely will need a new rate analysis well before then. When that time comes, have me or another rate analyst of your choice perform a new rate analysis.

Table A: In-City Water Rates to Adopt, and Current Rates for Comparison

Table A: System Development Fees; Minimum and Unit Charges; and No Usage Allowance, Calculated by the Rawlins, WY, Water Rates Model 2022-3

In-City Customers						
Recommended User Charge Rates					Current User Charge Rates for Information Only	
Water Meter Size in Inches	Meter Type	System Development Fee	Monthly Minimum Charge, Including Peak Capacity	Unit Charge per 1,000 Gallons	Monthly Minimum Charge, No Peak Capacity	Unit Charge per 1,000 Gallons
0.625	Displacement	$1,000	$29.48	$3.48	$14.00	$3.00
0.750	Displacement	$1,000	$29.48	$3.48	$14.00	$3.00
1.000	Displacement	$2,500	$32.96	$3.48	$14.00	$3.00
1.500	Displacement	$4,999	$38.77	$3.48	$14.00	$3.00
2.000	Displacement	$7,999	$45.74	$3.48	$14.00	$3.00
2.500	Displacement	$12,498	$56.19	$3.48	$14.00	$3.00
3.000	Singlet	$15,997	$64.32	$3.48	$14.00	$3.00
3.000	Compound, Class I	$15,997	$64.32	$3.48	$14.00	$3.00
3.000	Turbine, Class I	$17,497	$67.81	$3.48	$14.00	$3.00
4.000	Singlet	$24,996	$85.23	$3.48	$14.00	$3.00
4.000	Compound, Class I	$24,996	$85.23	$3.48	$14.00	$3.00
4.000	Turbine, Class I	$30,995	$99.17	$3.48	$14.00	$3.00
6.000	Singlet	$49,991	$143.31	$3.48	$14.00	$3.00
6.000	Compound, Class I	$49,991	$143.31	$3.48	$14.00	$3.00
6.000	Turbine, Class I	$64,989	$178.15	$3.48	$14.00	$3.00
8.000	Compound, Class I	$79,986	$213.00	$3.48	$14.00	$3.00
8.000	Turbine, Class I	$139,976	$352.39	$3.48	$14.00	$3.00
10.000	Turbine, Class II	$209,963	$515.00	$3.48	$14.00	$3.00
In-Town Glenn Addition		Minimums Above (Once Metered)		$3.48	$14.00	$3.00
In-Town Fire Protection			$0.00	$3.48	$0.00	$3.00
In-Town Construction			$0.00	$8.70	$0.00	$7.50

Table B: Out-of-City Water Rates to Adopt, and Current Rates for Comparison

Table B: System Development Fees; Minimum and Unit Charges; and No Usage Allowance, Calculated by the Rawlins, WY, Water Rates Model 2022-3

Out-of-City Customers						
Recommended User Charge Rates					Current User Charge Rates for Information Only	
Water Meter Size in Inches	Meter Type	System Development Fee	Monthly Minimum Charge, Including Peak	Unit Charge per 1,000 Gallons	Monthly Minimum Charge, No Peak Capacity	Unit Charge per 1,000 Gallons
0.625	Displacement	$1,250	$30.78	$4.64	$18.60	$4.00
0.750	Displacement	$1,250	$30.78	$4.64	$18.60	$4.00
1.000	Displacement	$3,124	$36.23	$4.64	$18.60	$4.00
1.500	Displacement	$6,249	$45.30	$4.64	$18.60	$4.00
2.000	Displacement	$9,998	$56.19	$4.64	$18.60	$4.00
2.500	Displacement	$15,622	$72.53	$4.64	$18.60	$4.00
3.000	Singlet	$19,997	$85.23	$4.64	$18.60	$4.00
3.000	Compound, Class I	$19,997	$85.23	$4.64	$18.60	$4.00
3.000	Turbine, Class I	$21,871	$90.67	$4.64	$18.60	$4.00
4.000	Singlet	$31,245	$117.90	$4.64	$18.60	$4.00
4.000	Compound, Class I	$31,245	$117.90	$4.64	$18.60	$4.00
4.000	Turbine, Class I	$38,743	$139.68	$4.64	$18.60	$4.00
6.000	Singlet	$62,489	$208.64	$4.64	$18.60	$4.00
6.000	Compound, Class I	$62,489	$208.64	$4.64	$18.60	$4.00
6.000	Turbine, Class I	$81,236	$263.09	$4.64	$18.60	$4.00
8.000	Compound, Class I	$99,983	$317.54	$4.64	$18.60	$4.00
8.000	Turbine, Class I	$174,969	$535.33	$4.64	$18.60	$4.00
10.000	Turbine, Class II	$262,454	$789.42	$4.64	$18.60	$4.00
Out-of-Town		Fees Above	Fees Above	$4.64	$18.60	$4.00
Out-of-Town Raw Water		Fees Above	$0.00	$4.50	$0.00	$4.50
Out-of-Town Fire Protection			$0.00	$4.64	$0.00	$4.00
Out-of-Town Construction			$0.00	$17.40	$0.00	$15.00
Town of Sinclair			$0.00	$2.09	$0.00	$3.00

Closing

If you adopt the modeled rates and fees, and if future costs, system improvements and other things come to pass as projected, you will fully fund the utility, pay for improvements, and fund prudent reserves. Those rates will bill customers more fairly for the service they use, and for the system capacity devoted to each. And on the basis of rate affordability, those rates will be affordable.

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

This combination of initial adjustments will result in a moderate overall increase in water rates and revenues. Future inflationary increases are projected to raise all bills by 4.0 percent per year, allowing the affordability of rates to gradually improve in future years.

Conclusion

"Conclusion" is a misnomer here. This report provides information upon which the City can make decisions. Thus, it begins the process by which you will initially adjust rates and fees and take other actions. I will continue to help you as you do that, so always feel free to call me to discuss any concerns you have as the years pass. Having the models 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 very 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 the analysis. To satisfy those information needs, the City can publicize the current and modeled rates and/or the bill comparisons table.
- 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 media, so everyone can see for themselves what the report says. That way, no one would have to print out a long document, unless they wanted to. 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 to discuss my findings and recommendations and answer questions. I look forward to meeting with the Council, describing my findings and recommendations and answering their questions. Then the Council will have good information with which to make rate setting decisions. Even after that, if you need me for anything, just call or e-mail and I will be glad to help.

Appendix A: Rate Analysis Methodology and Related Issues

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 in separate guides and a rate setting book, all available for FREE download at https://gettinggreatrates.com/Freebies. Following is a listing and descriptions of a few those guides and resources:

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

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.

Billing Program Recommendation

If your billing program cannot produce useful management data in a spreadsheet format so you can examine whatever you want, ask the software producer for that capability. If they cannot provide it, ditch that program and get one that can.

Billing programs are databases – a matrix into which you enter data. They include an interface for data entry. They also include an interface for getting things out of the database – bills, reports, and the like.

Billing programs are remarkable tools, but they are only completely useful if you can use them in ways besides simply calculating bills. For rate analysis, I and other rate analysts get individual customer usage data from the billing program. It is very difficult, sometimes impossible to get that data out of some billing programs in a format that is usable for analysis.

A robust billing program should make data export into several formats easy, not difficult, or impossible. If your billing program does not support such use, I recommend you research billing programs and acquire one that not only calculates bills, but fully supports export of that data for other purposes. If you decide to research other billing programs, I have a few suggestions.

- Contact your state rural water association and municipal league, tell them what you are trying to do and ask for their recommendations and guidance.
- Specify to prospective program suppliers that the acquired billing program must include options to export data at any time to Microsoft Excel and Word formats, Portable Document Format (PDF) and Delimited Text Format. In addition, when specifying Delimited Text Format, be sure the program includes the option of exporting in "Tab Delimited" format. That format enables conversion to spreadsheet formats without data being merged and made unusable.

Finally, if you do not acquire a more user-friendly billing program, I recommend staff consistently export data into Excel and Delimited Text formats from the current billing program, if possible, on the cycle required by the program. That may be monthly. (Quite literally, that task needs to be listed on a calendar as a standing task for staff to perform. Miss one download and you have a big hole in your data set.) Save those data files permanently for use outside of the program, so you and others can gain full benefit from the data included in the program.

Policy and General Issues Recommendations

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.

Use the following as a checklist of "to-do" tasks for rate setting and rate analysis:

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

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

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

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

2. Retain required funds in interest bearing debt service and debt reserve accounts when required by your lender(s).
3. Have me or another rate analyst of your choosing conduct a full rate analysis again when the ***actual*** financial performance and my ***projection of future*** performance diverge significantly. Conditions should dictate rate analysis timing. Most utilities benefit from rate analysis on about a five-year cycle or when total costs have risen by 20 percent. But if you 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.
4. 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.
5. 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. 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."

Most utilities are better served by getting a rate analysis only when rate restructuring may be in order or when rates will need to go up markedly. During the years in between rate analyses, it is then simple and convenient to just raise all significant rates and fees by an across-the-board percentage. Such increases may be 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. 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.

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 and the debt service for that improvement 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.

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, 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. It is more complicated than that but understand that notion and you will understand cost-to-serve rates fairly well.

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.

Near the bottom of Table 8 you will see the "Average Fixed Cost/User/Month" and the "Average Variable Cost to Produce/1,000 gallons (or other units)." These are the basic minimum charge and the average unit charge based on the costs expected in that future year. 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 take cost classification one step further, to the customer level. Thus, rates that I calculate are cost-to-serve to the customer level. My reasoning for doing this is, rate 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).
    - 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 or 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 90 minutes to run. When usage data sheet runtimes get long, we usually switch to a database format application to speed up the heavy number crunching.

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 incomes are calculated. These revenues are deducted from the total revenue need to arrive at the revenues needed from user charge fees.

    - Next, the across-the-board future rate increase rate (a percentage) is then 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 board or council meeting. Before COVID-19 that was always done in person or occasionally by phone call into their board or council meeting. During COVID-19, that has been done by remote video. After COVID-19, these meetings could be 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, so I expect many of my future "meetings" will be on-line.

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, it may still be unclear to you why I do calculations like that. The following should help you.

Utilities that serve customers through various meter sizes usually should have meter size-based minimum charges composed of two parts:

- One is the basic cost to make any level of service available to any customer. These are the so-called, "basic fixed costs" that come from the classification exercise. Billing, general administration and similar costs that are the same for all customers, regardless of "size," make up the base minimum charge. To make it easier to understand this concept, and related concepts, I use catch phrases. For this type of cost, the phrase is: ***Fixed costs are related to the fact that you have customers.*** For every customer, the utility incurs one increment of this type of cost.
- The other part of the minimum charge is 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 (as determined by American Water Works Association studies). This peak flow capacity relates well to the cost of building infrastructure "big enough" to handle peak flows. ***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.

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 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.

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 models adjust 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 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.

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 usually prove 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.

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.

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. The degree by which some customers' bills change highlights the fact that rates are unfairly structured right now. Cost-to-serve rate adjustments are aimed at correcting that unfairness. If a customer's bill will go up a lot under the new rates, that means they have been subsidized a lot by other customers. They need to count themselves lucky to have gotten that subsidy before, but fairness demands that those rates should now end.
    - 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 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.

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 to be left high and dry without utility services to support them.
2. The second order of business is, perform in a business-like manner. First, be effective. If you do nothing else, be effective. Next, be as efficient as is reasonably possible. Efficiency tends to foster lower rates, which ratepayers appreciate. But effectiveness and efficiency fight against each other. In most utility services and situations, effectiveness trumps efficiency. It does not benefit water customers if you pump lots of water cheaply if that water will make them sick, or if too much of it leaks out of holes in the pipe. Customers also gain more benefit from water rates that are a bit higher than they would like, but that fund the utility sustainably.

3. If a service costs the utility money, the utility should recover that cost from the most logical "person" if that makes good business and community administration sense. For example, generally "growth should pay for growth." Developers should fairly pay for their consumption of utility capacity obligated to them by paying commensurate system development fees. Likewise, service users should pay for what they use. Each class of users should pay their fair share of service costs. Ideally, each individual user should do that, too.

4. It sometimes contradicts point number 3 above, but if adjusting a rate, fee or policy will turn currently "good" customers into "bad" customers, or discourage development that the community desires, you should consider the necessity of making the change carefully before doing it. For example, while it may be warranted, raising the minimum charge markedly to your residential customers may make it very difficult for fixed, low-income customers to pay their utility bill. That may cause more of them to pay late or not pay at all. That may trigger the utility's attorney to write collection letters to those customers and eventually require shutoff of service. 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 large city with thousands of customers served by a wide range of meter sizes and a wide range of use by its customers, needs rates that are cost-based and, necessarily, those rates will be complicated. Such rate complexity is worthwhile because the utility's situation is complicated. But a small town serving only a few meter sizes and few, if any, customers that use high volumes would not be well-served by complicated rates. Simpler rates are better for them.

    a. However, you or a good rate analyst should still calculate cost-to-serve rates, so even if you adopt something else, you will know what you are giving up.

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.

Rawlins, WY, Water Rates Model 2022-3

This model calculated cost-to-serve rates, with variances to accommodate rates the Town is required to assess by supply agreements or for other reasons.

August 24, 2022

This rate analysis model was produced by
Carl E. Brown, GettingGreatRates.com
1014 Carousel Drive, Jefferson City, Missouri 65101
(573) 619-3411
https://gettinggreatrates.com
carl1@gettinggreatrates.com

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*

Return on Investment

Rawlins, WY, Water Rates Model 2022-3

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

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

Consider these key points about return on investment. Higher rates will fund more improvements, better repair and replacement and more. Most increases in revenue end up being used for such expenses. Thus, few systems end up with a dramatic increase in their cash reserves but they do markedly improve their financial position. In addition, fairer and higher rates generally enable systems to qualify for grant and loan funding that they otherwise would not. That increases the importation of "other people's money," which is a drain on the state and federal funds, where the money comes from, but it is very desirable at the utility level. The calculation below ignores any "outside" funds the utility may capture.

Also note that rates in this model have been modeled to be adjusted during the year following the test year or even later. That year is included in the first five-year return on investment calculation. Thus, the first year of returns calculated below include most or all of one year where rates will not have been changed yet. Thus, the real rate of return will be greater than the calculation reflects.

Calculations

$9,677	Fees to GettingGreatRates.com
$750	Estimated value of system staff time and incidentals to assemble needed information
$10,427	Total Investment for This Analysis
$7,573,319	Five-year Increase in Revenue Due at Least Partly to This Analysis
72,635%	Five-year Return on Investment (increase in revenues / investment)
$19,862,786	Ten-year Improvement in Cash Position Due at Least Partly to This Analysis
190,502%	Ten-year Return on Investment (increase in revenues / investment)

Table 1 - Rates

Rawlins, WY, Water Rates Model 2022-3

These are the rates that were in effect at the end of the test year.

Customer Type, Rate Class or Meter Size	Billing Cycle Minimum Charge	Usage Allowance in 1,000s	Unit Charge per 1,000 Gallons
In-Town	$14.00	0.000	$3.00
In-Town Glenn Addition	$14.00	0.000	$3.00
In-Town Fire Protection	$0.00	0.000	$3.00
In-Town Construction	$0.00	0.000	$7.50
Out-of-Town	$18.60	0.000	$4.00
Out-of-Town Raw Water	$0.00	0.000	$4.50
Out-of-Town Fire Protection	$0.00	0.000	$4.00
Out-of-Town Construction	$0.00	0.000	$15.00
Town of Sinclair	$0.00	0.000	$3.00

Table 2 - Test Year Usage
Rawlins, WY, Water Rates Model 2022-3

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

Test year = the one-year period being analyzed starts: 7/1/2020

Date this model created: 8/4/2022

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 Gallons)	Volume Range Top (in Gallons)	Billable Units Conversion Factor	Use Within Each Range in 1,000 Gallons	Count of Bills With ANY Use in Each Range	Use in Each Range in Gallons	Count of Bills That "Maxed Out" in Each Range	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
	0	999	1,000	1	43,082	43,082,000	0	0	0	0.0%	0.0%
	1,000	1,999	1,000	1	43,082	43,082,000	0	0	0	0.0%	0.0%
	2,000	2,999	1,000	1	43,082	43,082,000	0	0	0	0.0%	0.0%
	3,000	3,999	1,000	1	43,082	43,082,000	0	0	0	0.0%	0.0%
	4,000	4,999	1,000	1	43,082	43,082,000	0	0	0	0.0%	0.0%
	5,000	5,999	1,000	1	43,082	43,082,000	0	0	0	0.0%	0.0%
In-Town	6,000	6,999	1,000	1	43,082	43,082,000	0	0	0	0.0%	0.0%
	7,000	7,999	1,000	1	43,082	43,082,000	0	0	0	0.0%	0.0%
	8,000	8,999	1,000	1	43,082	43,082,000	0	0	0	0.0%	0.0%
	9,000	9,999	1,000	1	43,082	43,082,000	0	0	0	0.0%	0.0%
	10,000	10,393	1,000	0	43,082	16,988,794	0	0	0	0.0%	0.0%
	10,394	19,999	1,000	0	43,082	0	43,082	447,808,794	3,590	97.4%	93.7%
			Monthly and Annual Subtotals:		516,984	447,808,794	43,082	447,808,794	3,590	97.4%	93.7%
	0	999	1,000	1	733	733,000	0	0	0	0.0%	0.0%
	1,000	1,999	1,000	1	733	733,000	0	0	0	0.0%	0.0%
	2,000	2,999	1,000	1	733	733,000	0	0	0	0.0%	0.0%
	3,000	3,999	1,000	1	733	733,000	0	0	0	0.0%	0.0%
In-Town Glenn Addition	4,000	4,999	1,000	1	733	733,000	0	0	0	0.0%	0.0%
	5,000	5,999	1,000	1	733	733,000	0	0	0	0.0%	0.0%
	6,000	6,318	1,000	0	733	234,003	0	0	0	0.0%	0.0%
	6,319	6,999	1,000	0	733	0	733	4,632,003	61	1.7%	1.0%
			Monthly and Annual Subtotals:		5,864	4,632,003	733	4,632,003	61	1.7%	1.0%
	0	129	1,000	0	96	12,480	0	0	0	0.0%	0.0%
In-Town Fire Protection	130	1,999	1,000	0	96	0	96	12,480	8	0.2%	0.0%
			Monthly and Annual Subtotals:		192	12,480	96	12,480	8	0.2%	0.0%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Billable Units Conversion Factor	Use Within Each Range in 1,000 Gallons	Count of Bills With ANY Use in Each Range	Use in Each Range in Gallons	Count of Bills That "Maxed Out" in Each Range	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
	0	129	1,000	0	38	4,940	0	0	0	0.0%	0.0%
	130	1,999	1,000	2	38	71,060	0	0	0	0.0%	0.0%
	2,000	2,999	1,000	1	38	38,000	0	0	0	0.0%	0.0%
	3,000	3,999	1,000	1	38	38,000	0	0	0	0.0%	0.0%
	4,000	4,999	1,000	1	38	38,000	0	0	0	0.0%	0.0%
	5,000	5,999	1,000	1	38	38,000	0	0	0	0.0%	0.0%
	6,000	6,999	1,000	1	38	38,000	0	0	0	0.0%	0.0%
	7,000	7,999	1,000	1	38	38,000	0	0	0	0.0%	0.0%
	8,000	8,999	1,000	1	38	38,000	0	0	0	0.0%	0.0%
	9,000	9,999	1,000	1	38	38,000	0	0	0	0.0%	0.0%
	10,000	14,999	1,000	5	38	190,000	0	0	0	0.0%	0.0%
In-Town Construction	15,000	19,999	1,000	5	38	190,000	0	0	0	0.0%	0.0%
	20,000	29,999	1,000	10	38	380,000	0	0	0	0.0%	0.0%
	30,000	39,999	1,000	10	38	380,000	0	0	0	0.0%	0.0%
	40,000	49,999	1,000	10	38	380,000	0	0	0	0.0%	0.0%
	50,000	59,999	1,000	10	38	380,000	0	0	0	0.0%	0.0%
	60,000	69,999	1,000	10	38	380,000	0	0	0	0.0%	0.0%
	70,000	79,999	1,000	10	38	380,000	0	0	0	0.0%	0.0%
	80,000	89,999	1,000	10	38	380,000	0	0	0	0.0%	0.0%
	90,000	99,999	1,000	10	38	380,000	0	0	0	0.0%	0.0%
	100,000	107,327	1,000	7	38	278,464	0	0	0	0.0%	0.0%
	107,328	119,999	1,000	0	38	0	38	4,078,464	3	0.1%	0.9%
			Monthly and Annual Subtotals:		836	4,078,464	38	4,078,464	3	0.1%	0.9%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Billable Units Conversion Factor	Use Within Each Range in 1,000 Gallons	Count of Bills With ANY Use in Each Range	Use in Each Range in Gallons	Count of Bills That "Maxed Out" in Each Range	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
Out-of-Town	0	999	1,000	1	261	261,000	0	0	0	0.0%	0.0%
	1,000	1,999	1,000	1	261	261,000	0	0	0	0.0%	0.0%
	2,000	2,999	1,000	1	261	261,000	0	0	0	0.0%	0.0%
	3,000	3,999	1,000	1	261	261,000	0	0	0	0.0%	0.0%
	4,000	4,999	1,000	1	261	261,000	0	0	0	0.0%	0.0%
	5,000	5,999	1,000	1	261	261,000	0	0	0	0.0%	0.0%
	6,000	6,999	1,000	1	261	261,000	0	0	0	0.0%	0.0%
	7,000	7,999	1,000	1	261	261,000	0	0	0	0.0%	0.0%
	8,000	8,999	1,000	1	261	261,000	0	0	0	0.0%	0.0%
	9,000	9,999	1,000	1	261	261,000	0	0	0	0.0%	0.0%
	10,000	14,999	1,000	5	261	1,305,000	0	0	0	0.0%	0.0%
	15,000	19,999	1,000	5	261	1,305,000	0	0	0	0.0%	0.0%
	20,000	29,999	1,000	10	261	2,610,000	0	0	0	0.0%	0.0%
	30,000	39,999	1,000	10	261	2,610,000	0	0	0	0.0%	0.0%
	40,000	49,999	1,000	10	261	2,610,000	0	0	0	0.0%	0.0%
	50,000	59,999	1,000	10	261	2,610,000	0	0	0	0.0%	0.0%
	60,000	69,999	1,000	10	261	2,610,000	0	0	0	0.0%	0.0%
	70,000	70,876	1,000	1	261	228,897	0	0	0	0.0%	0.0%
	70,877	89,999	1,000	0	261	0	261	18,498,897	22	0.6%	3.9%
	90,000	99,999	1,000	0	0	0	0	0	0	0.0%	0.0%
		Monthly and Annual Subtotals:			4,959	18,498,897	261	18,498,897	22	0.6%	3.9%
Out-of-Town Raw Water	0	999	1,000	0	0	0	0	0	0	0.0%	0.0%
	160,000	160,000	1,000	0	0	0	0	0	0	0.0%	0.0%
		Monthly and Annual Subtotals:			0	0	0	0	0	0.0%	0.0%
Out-of-Town Fire Protection	0	999	1,000	0	0	0	0	0	0	0.0%	0.0%
	160,000	160,000	1,000	0	0	0	0	0	0	0.0%	0.0%
		Monthly and Annual Subtotals:			0	0	0	0	0	0.0%	0.0%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Billable Units Conversion Factor	Use Within Each Range in 1,000 Gallons	Count of Bills With ANY Use in Each Range	Use in Each Range in Gallons	Count of Bills That "Maxed Out" in Each Range	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
	0	129	1,000	0	3	390	0	0	0	0.0%	0.0%
	130	1,999	1,000	2	3	5,610	0	0	0	0.0%	0.0%
	2,000	2,999	1,000	1	3	3,000	0	0	0	0.0%	0.0%
	3,000	3,999	1,000	1	3	3,000	0	0	0	0.0%	0.0%
	4,000	4,999	1,000	1	3	3,000	0	0	0	0.0%	0.0%
	5,000	5,999	1,000	1	3	3,000	0	0	0	0.0%	0.0%
	6,000	6,999	1,000	1	3	3,000	0	0	0	0.0%	0.0%
	7,000	7,999	1,000	1	3	3,000	0	0	0	0.0%	0.0%
	8,000	8,999	1,000	1	3	3,000	0	0	0	0.0%	0.0%
	9,000	9,999	1,000	1	3	3,000	0	0	0	0.0%	0.0%
	10,000	14,999	1,000	5	3	15,000	0	0	0	0.0%	0.0%
	15,000	19,999	1,000	5	3	15,000	0	0	0	0.0%	0.0%
	20,000	29,999	1,000	10	3	30,000	0	0	0	0.0%	0.0%
Out-of-Town Construction	30,000	39,999	1,000	10	3	30,000	0	0	0	0.0%	0.0%
	40,000	49,999	1,000	10	3	30,000	0	0	0	0.0%	0.0%
	50,000	59,999	1,000	10	3	30,000	0	0	0	0.0%	0.0%
	60,000	69,999	1,000	10	3	30,000	0	0	0	0.0%	0.0%
	70,000	79,999	1,000	10	3	30,000	0	0	0	0.0%	0.0%
	80,000	89,999	1,000	10	3	30,000	0	0	0	0.0%	0.0%
	90,000	99,999	1,000	10	3	30,000	0	0	0	0.0%	0.0%
	100,000	109,999	1,000	10	3	30,000	0	0	0	0.0%	0.0%
	110,000	119,999	1,000	10	3	30,000	0	0	0	0.0%	0.0%
	120,000	129,999	1,000	10	3	30,000	0	0	0	0.0%	0.0%
	130,000	139,999	1,000	10	3	30,000	0	0	0	0.0%	0.0%
	140,000	149,999	1,000	10	3	30,000	0	0	0	0.0%	0.0%
	150,000	905,899	1,000	756	3	2,267,700	0	0	0	0.0%	0.0%
	905,900	905,900	1,000	0	3	0	3	2,717,700	0	0.0%	0.6%
			Monthly and Annual Subtotals:		81	2,717,700	3	2,717,700	0	0.0%	0.6%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Billable Units Conversion Factor	Use Within Each Range in 1,000 Gallons	Count of Bills With ANY Use in Each Range	Use in Each Range in Gallons	Count of Bills That "Maxed Out" in Each Range	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
Town of Sinclair	0	999	1,000	1	12	12,000	0	0	0	0.0%	0.0%
	1,000	1,999	1,000	1	12	12,000	0	0	0	0.0%	0.0%
	2,000	2,999	1,000	1	12	12,000	0	0	0	0.0%	0.0%
	3,000	3,999	1,000	1	12	12,000	0	0	0	0.0%	0.0%
	4,000	4,999	1,000	1	12	12,000	0	0	0	0.0%	0.0%
	5,000	5,999	1,000	1	12	12,000	0	0	0	0.0%	0.0%
	6,000	6,999	1,000	1	12	12,000	0	0	0	0.0%	0.0%
	7,000	7,999	1,000	1	12	12,000	0	0	0	0.0%	0.0%
	8,000	8,999	1,000	1	12	12,000	0	0	0	0.0%	0.0%
	9,000	9,999	1,000	1	12	12,000	0	0	0	0.0%	0.0%
	10,000	14,999	1,000	5	12	60,000	0	0	0	0.0%	0.0%
	15,000	19,999	1,000	5	12	60,000	0	0	0	0.0%	0.0%
	20,000	23,369	1,000	3	12	40,440	0	0	0	0.0%	0.0%
	23,370	39,999	1,000	0	12	0	12	280,440	1	0.0%	0.1%
	40,000	49,999	1,000	0	0	0	0	0	0	0.0%	0.0%
			Monthly and Annual Subtotals:		168	280,440	12	280,440	1	0.0%	0.1%
				Grand Totals:	529,084	478,028,778	44,225	478,028,778	3,685	100%	100%

Table 3 - Operating Incomes and Basic User Data

Rawlins, WY, Water Rates Model 2022-3

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)

$65,294	Census Bureau estimate of AMHI for the year 2019
$36,600	Census Bureau estimate of AMHI for the year 2000
$28,694	AMHI growth during this time period
4.13%	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

2	Number new Water connections made during test year
$1,000	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 Starting 7/1/20	Analysis Year 0 Year Starting 7/1/21	Years Following the Analysis Year (for Which Results Have Been Projected) 1st Year Starting 7/1/22	2nd Year Starting 7/1/23	3rd Year Starting 7/1/24	4th Year Starting 7/1/25	5th Year Starting 7/1/26	6th Year Starting 7/1/27	7th Year Starting 7/1/28	8th Year Starting 7/1/29	9th Year Starting 7/1/30	10th Year Starting 7/1/31
Rate Increases Projected for Future Years	N.A.	N.A.	N.A.		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
				The row above shows the rate at which user charge fees should be increased for each year beyond the initial rate adjustment year. Unless stated otherwise, these should be across-the-board increases to all rates and fees and that should continue until a new rate analysis is done.									
Average Number of Customers	N.A.	3,685	3,691	3,693	3,695	3,697	3,699	3,701	3,703	3,705	3,707	3,709	3,711
Customers Added or Lost (-) Each Year	N.A.	2.0	5.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Customer Growth or Loss (-) Rate	N.A.	0.05%	0.15%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%
Test Year (Actual) and Projected Future Years' Sales, in Gallons	N.A.	478,028,778	478,750,743	479,010,160	479,269,576	479,528,992	479,788,409	480,047,825	480,307,242	480,566,658	480,826,074	481,085,491	481,344,907
Operating Incomes													
User Charge Fees (Tables 10, 12, 12B, 15, 15B, 16, 16B, as applicable)	N.A.	$2,115,809	$2,118,671	$3,285,133	$3,418,389	$3,557,048	$3,701,330	$3,851,463	$4,007,685	$4,170,243	$4,339,392	$4,515,402	$4,698,549
Penalties	N.A.	$21,160	$24,003	$24,016	$24,029	$24,042	$24,055	$24,068	$24,081	$24,094	$24,107	$24,120	$24,133
Water Meter Tap Fees	% Above	$2,000	$5,566	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Adjusted Meter Size-based System Development Fees (Tables 13, 14, if applicable)	% Above	$0	$5	$2,080	$2,163	$2,249	$2,339	$2,433	$2,530	$2,631	$2,737	$2,846	$2,960
Investment Income	N.A.	$1,564	$12,884	$7,977	$9,212	$12,081	$12,618	$13,067	$13,590	$14,193	$14,700	$15,288	$15,965
Other Income (WYDOT)	N.A.	$91,367	$10,984	$10,984	$10,984	$10,984	$10,984	$10,984	$10,984	$10,984	$10,984	$10,984	$10,984
State Water Line Grant	N.A.	$404,887	$17,400	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Shutoff Notice Fee	N.A.	$34,375	$31,175	$31,175	$31,175	$31,175	$31,175	$31,175	$31,175	$31,175	$31,175	$31,175	$31,175
Delinquent Reconnect Fee	N.A.	$5,600	$3,640	$3,640	$3,640	$3,640	$3,640	$3,640	$3,640	$3,640	$3,640	$3,640	$3,640
Investment Income	N.A.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Charges to Customers Adjustment to Reconcile With User Charge Fees Above	N.A.	$0	-$249,521	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Five Percent Net Revenue Gain After Springwater Collection System is Rehabilitated	N.A.	$0	$0	$0	$164,257	$170,827	$177,660	$184,766	$192,157	$199,843	$207,837	$216,151	$224,797
Revenue Loss Because Rate Adjustments Not Made Until October 1, 2022	3	$0	$0	-$261,055	$0	$0	$0	$0	$0	$0	$0	$0	$0
Revenue Loss (-) Due to Conservation	10.0%	$0	$0	-$50,809	-$7,739	-$8,053	-$8,379	-$8,719	-$9,073	-$9,441	-$9,824	-$10,222	-$10,637
Total Operating Incomes		**$2,676,762**	**$1,974,807**	**$3,053,142**	**$3,656,109**	**$3,803,993**	**$3,955,421**	**$4,112,878**	**$4,276,770**	**$4,447,363**	**$4,624,748**	**$4,809,384**	**$5,001,566**

Notes: I assumed a long-term budget inflation rate of four percent in Tables 4 and 5, and I assumed overall rates will be raised in future years to match whatever rate by which budgets need to go up. In addition, the springwater collection system went down last year and is being rehabilitated. Volume sales were surely impacted, assumed at five percent of total sales. The blue highlighted item adjusts for the return of those revenues, increased over time by the assumed inflationary increases.

Table 4 - Operating Costs and Net Income

Rawlins, WY, Water Rates Model 2022-3

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.)			Analysis Year	Years Following the Analysis Year (for Which Results Have Been Projected)									
Expense Items	Inflation/ Deflation (–) Factor	Test Year Starting 7/1/20	0 Year Starting 7/1/21	1st Year Starting 7/1/22	2nd Year Starting 7/1/23	3rd Year Starting 7/1/24	4th Year Starting 7/1/25	5th Year Starting 7/1/26	6th Year Starting 7/1/27	7th Year Starting 7/1/28	8th Year Starting 7/1/29	9th Year Starting 7/1/30	10th Year Starting 7/1/31
Personal Services	4.0%	$598,844	$622,797	$821,123	$853,968	$888,126	$923,651	$960,597	$999,021	$1,038,982	$1,080,541	$1,123,763	$1,168,714
Information Technogy	4.0%	$3,696	$3,843	$3,997	$4,157	$4,323	$4,496	$4,676	$4,863	$5,058	$5,260	$5,470	$5,689
Public Health Lab	4.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water Meter Service	4.0%	$106,240	$110,490	$114,910	$119,506	$124,286	$129,258	$134,428	$139,805	$145,397	$151,213	$157,262	$163,552
Hydrant Maintenance	4.0%	$28,482	$29,621	$30,806	$32,038	$33,320	$34,653	$36,039	$37,480	$38,979	$40,539	$42,160	$43,846
Backflow Prevention	4.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Asbestos & Technical Services	4.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Engineer	4.0%	$129,155	$134,322	$139,694	$145,282	$151,093	$157,137	$163,423	$169,960	$176,758	$183,828	$191,181	$198,829
Other	4.0%	$15,336	$15,950	$16,588	$17,251	$17,941	$18,659	$19,405	$20,181	$20,989	$21,828	$22,701	$23,609
Electrical	4.0%	$110,805	$115,237	$119,912	$124,776	$129,837	$135,103	$140,583	$146,286	$152,219	$158,393	$164,818	$171,503
Phone Internet	4.0%	$20,944	$21,782	$22,653	$23,559	$24,502	$25,482	$26,501	$27,561	$28,663	$29,810	$31,002	$32,242
Repair and Maintenance	4.0%	$12,603	$13,107	$13,631	$14,177	$14,744	$15,334	$15,947	$16,585	$17,248	$17,938	$18,656	$19,402
Travel and Training	4.0%	$4,727	$4,916	$5,113	$5,317	$5,530	$5,751	$5,981	$6,221	$6,469	$6,728	$6,997	$7,277
Materials	4.0%	$68,908	$71,664	$74,530	$77,512	$80,612	$83,837	$87,190	$90,678	$94,305	$98,077	$102,000	$106,080
Chemicals	4.0%	$24,361	$25,336	$26,349	$27,403	$28,499	$29,639	$30,825	$32,058	$33,340	$34,674	$36,061	$37,503
Miscellaneous Studies	4.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Facilities	4.0%	$25,300	$26,312	$27,364	$28,459	$29,597	$30,781	$32,013	$33,293	$34,625	$36,010	$37,450	$38,948
Supplies	4.0%	$2,749	$2,859	$2,973	$3,092	$3,216	$3,344	$3,478	$3,617	$3,762	$3,913	$4,069	$4,232
Other	4.0%	$53,972	$56,131	$58,376	$60,711	$63,140	$65,665	$68,292	$71,023	$73,864	$76,819	$79,892	$83,087
Depreciation Expense	0.0%	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Interest Expense	0.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Transfers Out (Administration)	4.0%	$532,042	$331,400	$364,356	$378,930	$394,087	$409,851	$426,245	$443,295	$461,027	$479,468	$498,646	$518,592
Pre-treatment for River Water	4.0%	$0	$0	$0	$500,000	$520,000	$540,800	$562,432	$584,929	$608,326	$632,660	$657,966	$684,285
User Charge Analysis Services	5.0%	$0	$9,677	$0	$0	$10,668	$0	$0	$11,762	$0	$0	$12,968	$0
Total CIP-related Payouts	N.A.	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Total Operating Costs		**$1,738,164**	**$1,595,443**	**$1,842,376**	**$2,416,138**	**$2,523,523**	**$2,613,441**	**$2,718,055**	**$2,838,618**	**$2,940,013**	**$3,057,698**	**$3,193,063**	**$3,307,391**
Net Income (or Loss)		$938,598	$379,364	$1,210,766	$1,239,971	$1,280,470	$1,341,980	$1,394,823	$1,438,152	$1,507,350	$1,567,050	$1,616,321	$1,694,174
Working Capital Goal: 50%	In Dollars, That is:	$869,082	$797,722	$921,188	$1,208,069	$1,261,761	$1,306,721	$1,359,028	$1,419,309	$1,470,006	$1,528,849	$1,596,531	$1,653,696

Notes: The green highlighted amount above, for "Personal Services," is the amount determined by a salary study done by the Town. For years, U.S. water system budget inflation has run approximately three percent. The current high inflation environment may continue for some time before "settling down." Therefore, I have assumed an average inflation rate of four percent for the entire modeling period. The blue highlighted item, electric, was also increased in future years by the rate of growth in customers and their use.

Table 5 - Capital Improvement Program (CIP)

Rawlins, WY, Water Rates Model 2022-3

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
	7/1/20	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
Planned Spending, Debt-paid Portion of Projects (CIP costs to be funded with loans are shown in this section.)												
Rawlins water supply rehabilitation project. Total $15 million for 40 yr loan. Possibly USDA	$0	$0	$20,800,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
city water model + glen addition engineered	$0	$0	$52,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
plant update	$0	$0	$0	$216,320	$224,973	$233,972	$243,331	$253,064	$0	$0	$0	$0
in alley between Water & Railroad from Monroe to Washington	$0	$0	$374,400	$0	$0	$0	$0	$0	$0	$0	$0	$0
in alley between Water & Center from Madison to Washington	$0	$0	$234,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water line on S.side of UPRR from Washington to Glenn Addition	$0	$0	$0	$611,104	$0	$0	$0	$0	$0	$0	$0	$0
Water line west end of Glasgow to Inverness	$0	$0	$0	$302,848	$0	$0	$0	$0	$0	$0	$0	$0
Water line on Inverness from Glasgow to Edinburgh	$0	$0	$0	$618,675	$0	$0	$0	$0	$0	$0	$0	$0
Water lines on Loch Lomond, Loch Ness & Dundee to Inverness	$0	$0	$0	$426,150	$0	$0	$0	$0	$0	$0	$0	$0
Water line between Daley/McMicken fom Rodeo to Colo.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$705,336
Water line between McMicken/Ryan from Rodeo to Colo.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$705,336
Water line between Ryan/Murray from trailer Ct. to Colorado St.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$894,068
SCADA System, 80% Share for Water Utility	$0	$0	$0	$175,280	$0	$0	$0	$0	$0	$0	$0	$0
Loan Closing Costs, Estimated at: 2.5%	$0	$0	$536,510	$54,377	$5,624	$5,849	$6,083	$6,327	$0	$0	$0	$35,267
Total Debt-paid Portion of Projects	$0	$0	$21,996,910	$2,404,755	$230,597	$239,821	$249,414	$259,390	$0	$0	$0	$2,340,007
Planned Spending, Grant-paid Portion of Projects (CIP costs to be grant-funded are shown here.)												
Rawlins water supply rehabilitation project. Total $15 million for 40 yr loan. Possibly USDA (SRF MRG Grant)	$0	$0	$675,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
SCADA System, 80% Share for Water Utility	$0	$0	$0	$175,280	$0	$0	$0	$0	$0	$0	$0	$0
Total Grant-paid Portion of Projects	$0	$0	$675,000	$175,280	$0	$0	$0	$0	$0	$0	$0	$0

Table 5 - Capital Improvement Program (CIP)

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

		Analysis Year	Years Following the Analysis Year (for Which Improvement Projects, Costs, Funding, etc. Have Been Projected)									
	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	7/1/20	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
Planned Spending, Cash-paid Portion of Projects (CIP costs to be funded from reserves are shown here.)												
water meter/ MXU replacement	Table 4	Table 4	Table 4	Table 4	Table 4	Table 4	Table 4	Table 4	Table 4	Table 4	Table 4	Table 4
service line locating equipment	$0	$0	$7,280	$0	$0	$0	$0	$12,653	$0	$0	$0	$0
leak detection equipment	$0	$0	$26,000	$0	$0	$0	$0	$0	$39,478	$0	$0	$0
portable cement mix trailer	$0	$0	$52,000	$0	$0	$0	$0	$0	$78,956	$0	$0	$0
new service truck w/ kuv bed	$0	$0	$72,800	$0	$0	$0	$0	$101,226	$0	$0	$0	$0
new pick up truck	$0	$0	$52,000	$0	$56,243	$0	$60,833	$0	$78,956	$0	$85,399	$0
4x4 extendable backhoe	$0	$0	$0	$0	$0	$175,479	$0	$0	$0	$0	$0	$0
excavator 33%	$0	$0	$0	$0	$0	$116,986	$121,665	$126,532	$0	$0	$0	$0
valve exerciser 50%	$0	$0	$0	$0	$0	$0	$0	$0	$78,956	$82,114	$0	$0
video inspection system 50%	$0	$0	$0	$0	$0	$0	$60,833	$63,266	$0	$0	$0	$0
gps vehicle tracking	$0	$0	$0	$0	$33,746	$0	$0	$0	$0	$0	$0	$0
filter leafs/ rebudget/ replace	$0	$0	$104,000	$108,160	$28,122	$29,246	$30,416	$31,633	$65,797	$102,643	$142,331	$37,006
new compresser	$0	$0	$26,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
service truck	$0	$0	$52,000	$0	$56,243	$0	$60,833	$0	$65,797	$0	$71,166	$0
SCADA maintenance	$0	$0	$6,240	$6,490	$6,749	$7,019	$7,300	$7,592	$7,896	$8,211	$8,540	$8,881
new security gate installed	$0	$0	$26,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
backhoe	$0	$0	$0	$0	$0	$0	$152,082	$0	$0	$0	$0	$0
tank inspections	$0	$0	$0	$0	$0	$58,493	$0	$0	$0	$0	$71,166	$0
River Water Pre-treatment Plant, Start-up Cost	$0	$0	$520,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant Acquisition Costs, Estimated at: 2.5%	$0	$0	$16,875	$4,382	$0	$0	$0	$0	$0	$0	$0	$0
Total Cash-paid Portion of Projects	$0	$0	$961,195	$119,032	$181,103	$387,223	$493,961	$342,901	$415,834	$192,968	$378,601	$45,888
Total CIP Costs	**$0**	**$0**	**$23,633,105**	**$2,699,067**	**$411,700**	**$627,044**	**$743,375**	**$602,292**	**$415,834**	**$192,968**	**$378,601**	**$2,385,895**

Table 5 - Capital Improvement Program (CIP)

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

		Analysis Year	Years Following the Analysis Year (for Which Improvement Projects, Costs, Funding, etc. Have Been Projected)									
	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	7/1/20	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
Debt Repayment												
Existing Debt Payments (Following is debt that was initiated during the test year or earlier.)												
Sage Creek Water Line	$150,278	$150,278	$150,278	$150,278	$150,278	$150,278	$150,278	$150,278	$150,278	$150,278	$150,278	$150,278
DWSRF Loan #069	$25,077	$25,077	$25,077	$25,077	$25,077	$25,077	$25,077	$25,077	$25,077	$0	$0	$0
DWSRF Loan #080	$25,328	$25,328	$25,328	$25,328	$25,328	$25,328	$25,328	$25,328	$25,328	$0	$0	$0
Atlantic Rim Pipeline	$54,763	$54,763	$54,763	$54,763	$54,763	$54,763	$54,763	$54,763	$54,763	$54,763	$54,763	$54,763
Atlantic Rim Reservoir	$113,971	$113,971	$113,971	$113,971	$113,971	$113,971	$113,971	$113,971	$113,971	$113,971	$113,971	$113,971
CWSRF Loan #145	$16,974	$16,974	$16,974	$16,974	$16,974	$16,974	$16,974	$16,974	$16,974	$16,974	$16,974	$16,974
CWSRF Loan #147	$34,577	$34,577	$34,577	$34,577	$34,577	$34,577	$34,577	$34,577	$34,577	$34,577	$34,577	$34,577
New Debt Payments			(It is assumed debt-funded projects will be loan/lease-financed at these terms:					40	years at a	2.25%	interest rate.)	
Loan Originated in 1st Year				$839,784	$839,784	$839,784	$839,784	$839,784	$839,784	$839,784	$839,784	$839,784
Loan Originated in 2nd Year					$91,807	$91,807	$91,807	$91,807	$91,807	$91,807	$91,807	$91,807
Loan Originated in 3rd Year						$8,804	$8,804	$8,804	$8,804	$8,804	$8,804	$8,804
Loan Originated in 4th Year							$9,156	$9,156	$9,156	$9,156	$9,156	$9,156
Loan Originated in 5th Year								$9,522	$9,522	$9,522	$9,522	$9,522
Loan Originated in 6th Year									$9,903	$9,903	$9,903	$9,903
Total Debt Payments	$420,967	$420,967	$420,967	$1,260,752	$1,352,559	$1,361,363	$1,370,518	$1,380,040	$1,389,943	$1,339,538	$1,339,538	$1,339,538
Total CIP-related Payouts	**$420,967**	**$420,967**	**$24,054,072**	**$3,959,818**	**$1,764,259**	**$1,988,407**	**$2,113,893**	**$1,982,332**	**$1,805,778**	**$1,532,507**	**$1,718,139**	**$3,725,433**

(This is the total cash required for this CIP and debt payment schedule. These amounts must come from utility income, reserves or outside sources, as shown in the next section.)

Table 5 - Capital Improvement Program (CIP)

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

		Analysis Year	Years Following the Analysis Year (for Which Improvement Projects, Costs, Funding, etc. Have Been Projected)									
	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	7/1/20	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
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	$2,544,760	$2,625,412	$2,383,057	$2,004,025	$1,737,221	$1,320,401	$824,845	$496,271	$157,071	$135,913	-$30,869
Working Capital Transferred in	$2,965,727	$450,724	$1,087,300	$953,090	$1,226,778	$1,297,021	$1,342,516	$1,377,870	$1,456,653	$1,508,207	$1,548,639	$1,637,010
Debt and CIP Reserves Interest Earned (or Paid)	$0	$50,895	$52,508	$47,661	$40,080	$34,744	$26,408	$16,497	$9,925	$3,141	$2,718	-$617
Internal Income Source (Name it)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Internal Income Source (Name it)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Available Internal Funds	$2,965,727	$3,046,379	$3,765,220	$3,383,808	$3,270,883	$3,068,986	$2,689,324	$2,219,212	$1,962,849	$1,668,420	$1,687,270	$1,605,523
Grant and Loan Proceeds (External Funds)												
Total Grants From Grants Section Above	$0	$0	$675,000	$175,280	$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 1st Year			$21,996,910	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 2nd Year				$2,404,755	$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 3rd Year					$230,597	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 4th Year						$239,821	$0	$0	$0	$0	$0	$0
Loan Originated in 5th Year							$249,414	$0	$0	$0	$0	$0
Loan Originated in 6th Year								$259,390	$0	$0	$0	$0
Loan Originated in 10th Year												$2,340,007
Total Available External Funds	$0	$0	$22,671,910	$2,580,035	$230,597	$239,821	$249,414	$259,390	$0	$0	$0	$2,340,007
Total Available Funds	**$2,965,727**	**$3,046,379**	**$26,437,130**	**$5,963,843**	**$3,501,481**	**$3,308,807**	**$2,938,738**	**$2,478,603**	**$1,962,849**	**$1,668,420**	**$1,687,270**	**$3,945,531**
Outcomes	(This CIP spending and funding plan will result in the following cash needs and ending balances each year.)											
Total Available Funds	**$2,965,727**	**$3,046,379**	**$26,437,130**	**$5,963,843**	**$3,501,481**	**$3,308,807**	**$2,938,738**	**$2,478,603**	**$1,962,849**	**$1,668,420**	**$1,687,270**	**$3,945,531**
Total CIP-related Payouts	**$420,967**	**$420,967**	**$24,054,072**	**$3,959,818**	**$1,764,259**	**$1,988,407**	**$2,113,893**	**$1,982,332**	**$1,805,778**	**$1,532,507**	**$1,718,139**	**$3,725,433**
Debt and CIP Reserves Ending Balances	**$2,544,760**	**$2,625,412**	**$2,383,057**	**$2,004,025**	**$1,737,221**	**$1,320,401**	**$824,845**	**$496,271**	**$157,071**	**$135,913**	**-$30,869**	**$220,097**

Notes: In future years I assumed costs will inflate by four percent. I assumed all equipment repair and replacement type items will be paid out of revenues/reserves (cash-funded). All other items, being major capital improvements, or at least such are improvements that are commonly loan-financed, I assumed those will be paid with loan proceeds. Town staff informed me it recently was notified it will be awarded a $675,000 SRF MRG grant for the springwater rehab project. And Town staff told me the system needs to initiate SCADA, which is assumed to receive a grant(s) worth half of the total cost.

Table 8 - Average Cost Classification

Rawlins, WY, Water Rates Model 2022-3

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: 7/1/2025 through 6/30/2026

Cost Items	Cost During Rate Structure Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
Personal Services	$923,651	38.5%	61.5%	$355,399	$568,253
Information Technogy	$4,496	100.0%	0.0%	$4,496	$0
Public Health Lab	$0	100.0%	0.0%	$0	$0
Water Meter Service	$129,258	0.0%	100.0%	$0	$129,258
Hydrant Maintenance	$34,653	100.0%	0.0%	$34,653	$0
Backflow Prevention	$0	100.0%	0.0%	$0	$0
Asbestos & Technical Services	$0	100.0%	0.0%	$0	$0
Engineer	$157,137	50.0%	50.0%	$78,569	$78,569
Other	$18,659	38.5%	61.5%	$7,179	$11,479
Electrical	$135,103	0.0%	100.0%	$0	$135,103
Phone Internet	$25,482	100.0%	0.0%	$25,482	$0
Repair and Maintenance	$15,334	50.0%	50.0%	$7,667	$7,667
Travel and Training	$5,751	38.5%	61.5%	$2,213	$3,538
Materials	$83,837	0.0%	100.0%	$0	$83,837
Chemicals	$29,639	0.0%	100.0%	$0	$29,639
Miscellaneous Studies	$0	41.9%	58.1%	$0	$0
Facilities	$30,781	41.9%	58.1%	$12,897	$17,884
Supplies	$3,344	41.9%	58.1%	$1,401	$1,943
Other	$65,665	41.9%	58.1%	$27,514	$38,151
Transfers Out (Administration)	$409,851	100.0%	0.0%	$409,851	$0
Pre-treatment for River Water	$540,800	0.0%	100.0%	$0	$540,800
User Charge Analysis Services	$0	41.9%	58.1%	$0	$0
Total CIP-related Payouts, Less Capacity Charges From Tables 14 & 16 (This value can be negative)	$1,588,573	50.0%	50.0%	$794,287	$794,287
Grand Total Costs, Weighted Avg Percentages	$4,202,015	41.9%	58.1%	$1,761,607	$2,440,408

Bases for Cost to Serve Rate Structure

		100%	$4,202,015	
Number Customers During Year Defined Above	3,699	Unbilled-for Water is Estimated at		28%
Billed Volume, in Gallons, During Year Defined Above	479,788,409	Unbilled-for Water is Estimated at This % of Average Cost (Marginal Cost)		42%
Average Fixed Cost per User per Month During Year Defined Above	$39.69	Resulting Marginal Cost of Unbilled-for Water		$407,611
Average Variable Cost to Produce per 1,000 Gallons During Year Defined Above	$5.09	Test Year Customer Volume, in Gallons		478,028,778
Gallons per Billing Cycle Used by Average Residential Customer	10,394	+ Test Year Unbilled-for Water, in Gallons		189,842,222
		Total Test Year Volume, in Gallons, From Master Meter Readings		667,871,000

Table 9 - Marginal Cost Classification

Rawlins, WY, Water Rates Model 2022-3

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: Unbilled-for Water

The marginal rate structure basis year runs from: 7/1/2025 through 6/30/2026

Cost Items	Fixed Cost	Variable Cost	Marginal Fixed Cost %	Marginal Variable Cost %	Marginal Fixed Cost	Marginal Variable Cost
Personal Services	$355,399	$568,253	10%	10%	$35,540	$56,825
Information Technogy	$4,496	$0	10%	10%	$450	$0
Public Health Lab	$0	$0	10%	10%	$0	$0
Water Meter Service	$0	$129,258	10%	10%	$0	$12,926
Hydrant Maintenance	$34,653	$0	0%	0%	$0	$0
Backflow Prevention	$0	$0	0%	0%	$0	$0
Asbestos & Technical Services	$0	$0	0%	0%	$0	$0
Engineer	$78,569	$78,569	75%	75%	$58,926	$58,926
Other	$7,179	$11,479	0%	0%	$0	$0
Electrical	$0	$135,103	100%	100%	$0	$135,103
Phone Internet	$25,482	$0	10%	10%	$2,548	$0
Repair and Maintenance	$7,667	$7,667	10%	10%	$767	$767
Travel and Training	$2,213	$3,538	10%	10%	$221	$354
Materials	$0	$83,837	100%	100%	$0	$83,837
Chemicals	$0	$29,639	100%	100%	$0	$29,639
Miscellaneous Studies	$0	$0	10%	10%	$0	$0
Facilities	$12,897	$17,884	10%	10%	$1,290	$1,788
Supplies	$1,401	$1,943	10%	10%	$140	$194
Other	$27,514	$38,151	0%	0%	$0	$0
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)	$794,287	$794,287	75%	75%	$595,715	$595,715
Grand Total All Costs	$1,761,607	$2,440,408			$736,582	$1,030,155
	$4,202,015				$1,766,737	

Marginal Fixed and Variable Cost Bases (For the Customer Type(s) Listed Above)	Monthly Marginal Fixed Cost per Customer	Marginal Variable Cost per 1,000 Gallons
	$16.59	
Marginal Fixed Cost as a Percent of Total Fixed Cost:	42%	$2.15
Marginal Variable Cost as a Percent of Total Variable Cost:		42%

Table 10 - Initial Rate Adjustments and Resulting Revenues

Rawlins, WY, Water Rates Model 2022-3

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

If there are no special costs to consider and before capacity costs are added, if appropriate, rates for a 5/8" meter would be in a "cost-to-serve" structure when: there is no usage allowance,
the base minimum charge is $27.15 Monthly, and the unit charge is set at $3.48 per 1,000 Gallons.

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

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

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
In-Town	0	999	$128,892	$29.48	0.000	$3.48	$411	$129,303
	1,000	1,999	$128,892	$29.48	0.000	$3.48	$411	$129,303
	2,000	2,999	$128,892	$29.48	0.000	$3.48	$411	$129,303
	3,000	3,999	$128,892	$29.48	0.000	$3.48	$411	$129,303
	4,000	4,999	$128,892	$29.48	0.000	$3.48	$411	$129,303
	5,000	5,999	$128,892	$29.48	0.000	$3.48	$411	$129,303
	6,000	6,999	$128,892	$29.48	0.000	$3.48	$411	$129,303
	7,000	7,999	$128,892	$29.48	0.000	$3.48	$411	$129,303
	8,000	8,999	$128,892	$29.48	0.000	$3.48	$411	$129,303
	9,000	9,999	$128,892	$29.48	0.000	$3.48	$411	$129,303
	10,000	10,393	$50,827	$29.48	0.000	$3.48	$162	$50,989
	10,394	19,999	$601,496	$29.48	0.000	$3.48	$3,479	$604,975
	20,000	29,999	$0	$29.48	0.000	$3.48	$0	$0
In-Town Glenn Addition	0	999	$2,193	$0.00	0.000	$3.48	$7	$2,200
	1,000	1,999	$2,193	$0.00	0.000	$3.48	$7	$2,200
	2,000	2,999	$2,193	$0.00	0.000	$3.48	$7	$2,200
	3,000	3,999	$2,193	$0.00	0.000	$3.48	$7	$2,200
	4,000	4,999	$2,193	$0.00	0.000	$3.48	$7	$2,200
	5,000	5,999	$2,193	$0.00	0.000	$3.48	$7	$2,200
	6,000	6,318	$700	$0.00	0.000	$3.48	$2	$702
	6,319	6,999	$10,234	$0.00	0.000	$3.48	$0	$10,234
	7,000	7,999	$0	$0.00	0.000	$3.48	$0	$0
In-Town Fire Protection	0	129	$37	$0.00	0.000	$3.48	$0	$37
	130	1,999	$0	$0.00	0.000	$3.48	$0	$0
	2,000	2,999	$0	$0.00	0.000	$3.48	$0	$0

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
In-Town Construction	0	129	$37	$0.00	0.000	$8.70	$0	$37
	130	1,999	$531	$0.00	0.000	$8.70	$2	$533
	2,000	2,999	$284	$0.00	0.000	$8.70	$1	$285
	3,000	3,999	$284	$0.00	0.000	$8.70	$1	$285
	4,000	4,999	$284	$0.00	0.000	$8.70	$1	$285
	5,000	5,999	$284	$0.00	0.000	$8.70	$1	$285
	6,000	6,999	$284	$0.00	0.000	$8.70	$1	$285
	7,000	7,999	$284	$0.00	0.000	$8.70	$1	$285
	8,000	8,999	$284	$0.00	0.000	$8.70	$1	$285
	9,000	9,999	$284	$0.00	0.000	$8.70	$1	$285
	10,000	14,999	$1,421	$0.00	0.000	$8.70	$5	$1,426
	15,000	19,999	$1,421	$0.00	0.000	$8.70	$5	$1,426
	20,000	29,999	$2,842	$0.00	0.000	$8.70	$9	$2,851
	30,000	39,999	$2,842	$0.00	0.000	$8.70	$9	$2,851
	40,000	49,999	$2,842	$0.00	0.000	$8.70	$9	$2,851
	50,000	59,999	$2,842	$0.00	0.000	$8.70	$9	$2,851
	60,000	69,999	$2,842	$0.00	0.000	$8.70	$9	$2,851
	70,000	79,999	$2,842	$0.00	0.000	$8.70	$9	$2,851
	80,000	89,999	$2,842	$0.00	0.000	$8.70	$9	$2,851
	90,000	99,999	$2,842	$0.00	0.000	$8.70	$9	$2,851
	100,000	107,327	$2,083	$0.00	0.000	$8.70	$7	$2,089
	107,328	119,999	$0	$0.00	0.000	$8.70	$0	$0
	120,000	129,999	$0	$0.00	0.000	$8.70	$0	$0
Out-of-Town	0	999	$1,041	$39.16	0.000	$4.64	$3	$1,044
	1,000	1,999	$1,041	$39.16	0.000	$4.64	$3	$1,044
	2,000	2,999	$1,041	$39.16	0.000	$4.64	$3	$1,044
	3,000	3,999	$1,041	$39.16	0.000	$4.64	$3	$1,044
	4,000	4,999	$1,041	$39.16	0.000	$4.64	$3	$1,044
	5,000	5,999	$1,041	$39.16	0.000	$4.64	$3	$1,044
	6,000	6,999	$1,041	$39.16	0.000	$4.64	$3	$1,044
	7,000	7,999	$1,041	$39.16	0.000	$4.64	$3	$1,044
	8,000	8,999	$1,041	$39.16	0.000	$4.64	$3	$1,044
	9,000	9,999	$1,041	$39.16	0.000	$4.64	$3	$1,044
	10,000	14,999	$5,206	$39.16	0.000	$4.64	$17	$5,222
	15,000	19,999	$5,206	$39.16	0.000	$4.64	$17	$5,222
	20,000	29,999	$10,411	$39.16	0.000	$4.64	$33	$10,445
	30,000	39,999	$10,411	$39.16	0.000	$4.64	$33	$10,445
	40,000	49,999	$10,411	$39.16	0.000	$4.64	$33	$10,445
	50,000	59,999	$10,411	$39.16	0.000	$4.64	$33	$10,445
	60,000	69,999	$10,411	$39.16	0.000	$4.64	$33	$10,445
	70,000	70,876	$913	$39.16	0.000	$4.64	$3	$916
	70,877	89,999	$4,841	$39.16	0.000	$4.64	$28	$4,869
	90,000	99,999	$0	$39.16	0.000	$4.64	$0	$0

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
Out-of-Town Raw Water	0	999	$0	$0.00	0.000	$4.50	$0	$0
	160,000	160,000	$0	$0.00	0.000	$4.50	$0	$0
Out-of-Town Fire Protection	0	999	$0	$0.00	0.000	$4.64	$0	$0
	1,000	1,999	$0	$0.00	0.000	$4.64	$0	$0
	160,000	160,000	$0	$0.00	0.000	$4.64	$0	$0
Out-of-Town Construction	0	129	$6	$0.00	0.000	$17.40	$0	$6
	130	1,999	$84	$0.00	0.000	$17.40	$0	$84
	2,000	2,999	$45	$0.00	0.000	$17.40	$0	$45
	3,000	3,999	$45	$0.00	0.000	$17.40	$0	$45
	4,000	4,999	$45	$0.00	0.000	$17.40	$0	$45
	5,000	5,999	$45	$0.00	0.000	$17.40	$0	$45
	6,000	6,999	$45	$0.00	0.000	$17.40	$0	$45
	7,000	7,999	$45	$0.00	0.000	$17.40	$0	$45
	8,000	8,999	$45	$0.00	0.000	$17.40	$0	$45
	9,000	9,999	$45	$0.00	0.000	$17.40	$0	$45
	10,000	14,999	$224	$0.00	0.000	$17.40	$1	$225
	15,000	19,999	$224	$0.00	0.000	$17.40	$1	$225
	20,000	29,999	$449	$0.00	0.000	$17.40	$1	$450
	30,000	39,999	$449	$0.00	0.000	$17.40	$1	$450
	40,000	49,999	$449	$0.00	0.000	$17.40	$1	$450
	50,000	59,999	$449	$0.00	0.000	$17.40	$1	$450
	60,000	69,999	$449	$0.00	0.000	$17.40	$1	$450
	70,000	79,999	$449	$0.00	0.000	$17.40	$1	$450
	80,000	89,999	$449	$0.00	0.000	$17.40	$1	$450
	90,000	99,999	$449	$0.00	0.000	$17.40	$1	$450
	100,000	109,999	$449	$0.00	0.000	$17.40	$1	$450
	110,000	119,999	$449	$0.00	0.000	$17.40	$1	$450
	120,000	129,999	$449	$0.00	0.000	$17.40	$1	$450
	130,000	139,999	$449	$0.00	0.000	$17.40	$1	$450
	140,000	149,999	$449	$0.00	0.000	$17.40	$1	$450
	150,000	905,899	$33,922	$0.00	0.000	$17.40	$108	$34,030
	905,900	905,900	$0	$0.00	0.000	$17.40	$0	$0

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Sales This Year at Current Rates	Minimum Charge for Calculation Purposes	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
Town of Sinclair	0	999	$36	$0.00	0.000	$2.09	$0	$36
	1,000	1,999	$36	$0.00	0.000	$2.09	$0	$36
	2,000	2,999	$36	$0.00	0.000	$2.09	$0	$36
	3,000	3,999	$36	$0.00	0.000	$2.09	$0	$36
	4,000	4,999	$36	$0.00	0.000	$2.09	$0	$36
	5,000	5,999	$36	$0.00	0.000	$2.09	$0	$36
	6,000	6,999	$36	$0.00	0.000	$2.09	$0	$36
	7,000	7,999	$36	$0.00	0.000	$2.09	$0	$36
	8,000	8,999	$36	$0.00	0.000	$2.09	$0	$36
	9,000	9,999	$36	$0.00	0.000	$2.09	$0	$36
	10,000	14,999	$180	$0.00	0.000	$2.09	$0	$180
	15,000	19,999	$180	$0.00	0.000	$2.09	$0	$180
	20,000	23,369	$121	$0.00	0.000	$2.09	$0	$121
	23,370	39,999	$0	$0.00	0.000	$2.09	$0	$0
	40,000	49,999	$0	$0.00	0.000	$2.09	$0	$0
Total Rate Revenue at Current Rates			$2,116,002	Total Rate Revenue at Modeled Rates			$8,284	
Prorated capacity surcharges from Table 16 (minimum charges above do not include them)								$390
Total Blended Rate Revenues for the Year								$2,124,676

Note: New Minimum Charge Base Rates: If meter size-based minimum charges are to be used, and the user classes modeled above include meter or connection sizes, the amounts shown in this column include meter size surcharges as calculated in Table 16. Either way, the narrative report includes the rates and surcharges to assess.

12.0	months at the old user charge rates	and	0.0	months at the new user charge rates.

Table 11 - AWWA Safe Operating Flow by Meter Size

Rawlins, WY, Water Rates Model 2022-3

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

Fire sprinkler data source: National Fire Protection Association

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

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

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

Table 12 - Flow Capacity Costs
Rawlins, WY, Water Rates Model 2022-3

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

Peak and Base Flow Capacity Costs

	Costs Related to Water Service						
Fixed Assets Original Value (Capacity Cost)	% of That Value Attributable to Regular Water Service	% Attributable to Water Peak Capacity	Peak Water Capacity Cost	Annual Water Peak Capacity Cost (40-year Depreciation)*	% of Value Attributable to Water Base Flow Capacity	Base Flow Capacity Cost for Water Service	Annual Water Base Capacity Cost (40-year Depreciation)*
$31,275,095	100.0%	50.0%	$15,637,548	$790,063	50.0%	$15,637,548	$790,063

*** It is assumed full system replacement costs will escalate each year by: 4.0%**

How Water System Capacity Costs Will Be Recovered

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

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

0.253%	Target Percentage of Annualized Costs to Recover
$1,999.65	Target Portion of Annualized Costs to Recover
$999.83	Peak Capacity Cost per Capacity Share

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

0.0%	Target Percentage of Annualized Costs to Recover
$0.00	Target Portion of Annualized Costs to Recover
$0.00	Base Capacity Cost per New Capacity Share

Note: Base flow costs exist, but they will not be recovered with system development fees. Rather, they will be recovered by default from regular user charge fees.

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

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

Part of Peak Flow Capacity Costs to be Recovered by Minimum Charge Surcharges

20.000%	Target Percentage of Costs to Recover
$158,012.69	Target Portion of Costs to Recover in One Full Year
$13,167.72	Target Portion of Costs to Recover in Monthly Surcharges
$2.32	Monthly Surcharge per Peak Capacity Share

Table 13 - System Development Fees
Rawlins, WY, Water Rates Model 2022-3

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

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

Premium for Out-of-City Service 125%

Meter Size	Meter Type	Number Meters This Size	New Taps (Customer Growth) in a Typical Year	AWWA Capacity "Share" Factor, Compared to 5/8 Inch Meter	Premium for Out-of-City Service	Capacity Shares Each Meter Size After Adjustment	Foot Notes	Peak Capacity Cost per Capacity Share From Table 11	Peak Capacity Cost per Meter This Class	Base Capacity Cost per New Customer	**System Development Fee**
In-City											
Five Eighths	Displacement	3,247	2.0	1.0	100%	1.0		$1,000	$1,000	$0.00	**$1,000**
Three Quarters	Displacement	31	0.0	1.0	100%	1.0	1	$1,000	$1,000	$0.00	**$1,000**
One Inch	Displacement	273	0.0	2.5	100%	2.5		$1,000	$2,500	$0.00	**$2,500**
One & a Half Inch	Displacement	33	0.0	5.0	100%	5.0		$1,000	$4,999	$0.00	**$4,999**
Two Inch	Displacement	66	0.0	8.0	100%	8.0		$1,000	$7,999	$0.00	**$7,999**
Two & a Half Inch	Displacement	0	0.0	12.5	100%	12.5	2	$1,000	$12,498	$0.00	**$12,498**
Three Inch	Singlet	15	0.0	16.0	100%	16.0		$1,000	$15,997	$0.00	**$15,997**
Three Inch	Compound, Class I	0	0.0	16.0	100%	16.0		$1,000	$15,997	$0.00	**$15,997**
Three Inch	Turbine, Class I	0	0.0	17.5	100%	17.5		$1,000	$17,497	$0.00	**$17,497**
Four Inch	Singlet	15	0.0	25.0	100%	25.0		$1,000	$24,996	$0.00	**$24,996**
Four Inch	Compound, Class I	0	0.0	25.0	100%	25.0		$1,000	$24,996	$0.00	**$24,996**
Four Inch	Turbine, Class I	0	0.0	31.0	100%	31.0		$1,000	$30,995	$0.00	**$30,995**
Six Inch	Singlet	4	0.0	50.0	100%	50.0		$1,000	$49,991	$0.00	**$49,991**
Six Inch	Compound, Class I	0	0.0	50.0	100%	50.0		$1,000	$49,991	$0.00	**$49,991**
Six Inch	Turbine, Class I	0	0.0	65.0	100%	65.0		$1,000	$64,989	$0.00	**$64,989**
Eight Inch	Compound, Class I	0	0.0	80.0	100%	80.0		$1,000	$79,986	$0.00	**$79,986**
Eight Inch	Turbine, Class I	0	0.0	140.0	100%	140.0		$1,000	$139,976	$0.00	**$139,976**
Ten Inch	Turbine, Class II	1	0.0	210.0	100%	210.0		$1,000	$209,963	$0.00	**$209,963**
		3,685	2.0								
Out-of-City											
Five Eighths	Displacement	0	0.0	1.0	125%	1.3		$1,000	$1,250	$0.00	**$1,250**
Three Quarters	Displacement	0	0.0	1.0	125%	1.3	1	$1,000	$1,250	$0.00	**$1,250**
One Inch	Displacement	0	0.0	2.5	125%	3.1		$1,000	$3,124	$0.00	**$3,124**
One & a Half Inch	Displacement	0	0.0	5.0	125%	6.3		$1,000	$6,249	$0.00	**$6,249**
Two Inch	Displacement	0	0.0	8.0	125%	10.0		$1,000	$9,998	$0.00	**$9,998**
Two & a Half Inch	Displacement	0	0.0	12.5	125%	15.6	2	$1,000	$15,622	$0.00	**$15,622**
Three Inch	Singlet	0	0.0	16.0	125%	20.0		$1,000	$19,997	$0.00	**$19,997**
Three Inch	Compound, Class I	0	0.0	16.0	125%	20.0		$1,000	$19,997	$0.00	**$19,997**
Three Inch	Turbine, Class I	0	0.0	17.5	125%	21.9		$1,000	$21,871	$0.00	**$21,871**
Four Inch	Singlet	0	0.0	25.0	125%	31.3		$1,000	$31,245	$0.00	**$31,245**
Four Inch	Compound, Class I	0	0.0	25.0	125%	31.3		$1,000	$31,245	$0.00	**$31,245**
Four Inch	Turbine, Class I	0	0.0	31.0	125%	38.8		$1,000	$38,743	$0.00	**$38,743**
Six Inch	Singlet	0	0.0	50.0	125%	62.5		$1,000	$62,489	$0.00	**$62,489**
Six Inch	Compound, Class I	0	0.0	50.0	125%	62.5		$1,000	$62,489	$0.00	**$62,489**
Six Inch	Turbine, Class I	0	0.0	65.0	125%	81.3		$1,000	$81,236	$0.00	**$81,236**
Eight Inch	Compound, Class I	0	0.0	80.0	125%	100.0		$1,000	$99,983	$0.00	**$99,983**
Eight Inch	Turbine, Class I	0	0.0	140.0	125%	175.0		$1,000	$174,969	$0.00	**$174,969**
Ten Inch	Turbine, Class II	0	0.0	210.0	125%	262.5		$1,000	$262,454	$0.00	**$262,454**
		0	0.0								
		3,685	2.0								

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

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

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

Table 14 - Revenues From System Development Fees
Rawlins, WY, Water Rates Model 2022-3

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

Meter Size	Meter Type	New Taps (Customer Growth) in a Typical Year	System Development Fee	**Total Annual System Development Fees**
In-City				
Five Eighths	Displacement	2.0	$1,000	**$2,000**
Three Quarters	Displacement	0.0	$1,000	**$0**
One Inch	Displacement	0.0	$2,500	**$0**
One & a Half Inch	Displacement	0.0	$4,999	**$0**
Two Inch	Displacement	0.0	$7,999	**$0**
Two & a Half Inch	Displacement	0.0	$12,498	**$0**
Three Inch	Singlet	0.0	$15,997	**$0**
Three Inch	Compound, Class I	0.0	$15,997	**$0**
Three Inch	Turbine, Class I	0.0	$17,497	**$0**
Four Inch	Singlet	0.0	$24,996	**$0**
Four Inch	Compound, Class I	0.0	$24,996	**$0**
Four Inch	Turbine, Class I	0.0	$30,995	**$0**
Six Inch	Singlet	0.0	$49,991	**$0**
Six Inch	Compound, Class I	0.0	$49,991	**$0**
Six Inch	Turbine, Class I	0.0	$64,989	**$0**
Eight Inch	Compound, Class I	0.0	$79,986	**$0**
Eight Inch	Turbine, Class I	0.0	$139,976	**$0**
Ten Inch	Turbine, Class II	0.0	$209,963	**$0**
	Total:	2.0		**$2,000**

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

Table 15 - Minimum Charge Fees, Including Capacity Surcharges
Rawlins, WY, Water Rates Model 2022-3

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

Meter Size	Meter Type	Capacity Shares Each Meter Size After Adjustment	Monthly Surcharge per Peak Capacity Share (Table 11)	Peak Capacity Cost per Meter Size	Cost-to-Serve Minimum Charge From Table 10	**Monthly Minimum Charge, Including Peak Capacity**
In-City						
Five Eighths	Displacement	1.0	$2.32	$2.32	$27.15	**$29.48**
Three Quarters	Displacement	1.0	$2.32	$2.32	$27.15	**$29.48**
One Inch	Displacement	2.5	$2.32	$5.81	$27.15	**$32.96**
One & a Half Inch	Displacement	5.0	$2.32	$11.62	$27.15	**$38.77**
Two Inch	Displacement	8.0	$2.32	$18.58	$27.15	**$45.74**
Two & a Half Inch	Displacement	12.5	$2.32	$29.04	$27.15	**$56.19**
Three Inch	Singlet	16.0	$2.32	$37.17	$27.15	**$64.32**
Three Inch	Compound, Class I	16.0	$2.32	$37.17	$27.15	**$64.32**
Three Inch	Turbine, Class I	17.5	$2.32	$40.65	$27.15	**$67.81**
Four Inch	Singlet	25.0	$2.32	$58.08	$27.15	**$85.23**
Four Inch	Compound, Class I	25.0	$2.32	$58.08	$27.15	**$85.23**
Four Inch	Turbine, Class I	31.0	$2.32	$72.02	$27.15	**$99.17**
Six Inch	Singlet	50.0	$2.32	$116.15	$27.15	**$143.31**
Six Inch	Compound, Class I	50.0	$2.32	$116.15	$27.15	**$143.31**
Six Inch	Turbine, Class I	65.0	$2.32	$151.00	$27.15	**$178.15**
Eight Inch	Compound, Class I	80.0	$2.32	$185.85	$27.15	**$213.00**
Eight Inch	Turbine, Class I	140.0	$2.32	$325.23	$27.15	**$352.39**
Ten Inch	Turbine, Class II	210.0	$2.32	$487.85	$27.15	**$515.00**
Out-of-City						
Five Eighths	Displacement	1.3	$2.90	$3.63	$27.15	**$30.78**
Three Quarters	Displacement	1.3	$2.90	$3.63	$27.15	**$30.78**
One Inch	Displacement	3.1	$2.90	$9.07	$27.15	**$36.23**
One & a Half Inch	Displacement	6.3	$2.90	$18.15	$27.15	**$45.30**
Two Inch	Displacement	10.0	$2.90	$29.04	$27.15	**$56.19**
Two & a Half Inch	Displacement	15.6	$2.90	$45.37	$27.15	**$72.53**
Three Inch	Singlet	20.0	$2.90	$58.08	$27.15	**$85.23**
Three Inch	Compound, Class I	20.0	$2.90	$58.08	$27.15	**$85.23**
Three Inch	Turbine, Class I	21.9	$2.90	$63.52	$27.15	**$90.67**
Four Inch	Singlet	31.3	$2.90	$90.75	$27.15	**$117.90**
Four Inch	Compound, Class I	31.3	$2.90	$90.75	$27.15	**$117.90**
Four Inch	Turbine, Class I	38.8	$2.90	$112.52	$27.15	**$139.68**
Six Inch	Singlet	62.5	$2.90	$181.49	$27.15	**$208.64**
Six Inch	Compound, Class I	62.5	$2.90	$181.49	$27.15	**$208.64**
Six Inch	Turbine, Class I	81.3	$2.90	$235.94	$27.15	**$263.09**
Eight Inch	Compound, Class I	100.0	$2.90	$290.39	$27.15	**$317.54**
Eight Inch	Turbine, Class I	175.0	$2.90	$508.18	$27.15	**$535.33**
Ten Inch	Turbine, Class II	262.5	$2.90	$762.26	$27.15	**$789.42**

Table 16 - Revenues From Minimum Charge Surcharges
Rawlins, WY, Water Rates Model 2022-3

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

Meter Size	Meter Type	Number Meters This Size	Total Adjusted Capacity Shares	**Annual Peak Capacity Surcharge Revenues**
In-City				
Five Eighths	Displacement	3,247	1	**$90,511**
Three Quarters	Displacement	31	1	**$860**
One Inch	Displacement	273	3	**$19,046**
One & a Half Inch	Displacement	33	5	**$4,657**
Two Inch	Displacement	66	8	**$14,711**
Three Inch	Singlet	15	16	**$6,496**
Four Inch	Singlet	15	25	**$10,747**
Six Inch	Singlet	4	50	**$5,970**
Eight Inch	Compound, Class I	0	80	**$0**
Ten Inch	Turbine, Class II	1	210	**$5,015**
Calculated Surcharges		3,685	1,963	**$158,013**
10% Revenue Reduction				**-$15,801**
Total Surcharges, Less Reduction				**$142,211**

Notes: The Town does not assess minimum charges to some customer classes and will not do so in the future. Therefore, these revenues have been adjusted to account for that practice.

Table 17 - Financial Capacity Indicators and Reserves

Rawlins, WY, Water Rates Model 2022-3

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 7/1/20	0 Year Starting 7/1/21	1st Year Starting 7/1/22	2nd Year Starting 7/1/23	3rd Year Starting 7/1/24	4th Year Starting 7/1/25	5th Year Starting 7/1/26	6th Year Starting 7/1/27	7th Year Starting 7/1/28	8th Year Starting 7/1/29	9th Year Starting 7/1/30	10th Year Starting 7/1/31
Customary Affordability Index												
Monthly Bill for a 5,000 gal per Month, Small Meter Residential Customer	$29.00	$46.88	$48.75	$50.70	$52.73	$54.84	$57.03	$59.31	$61.69	$64.15	$66.72	$69.39
AMHI Within Service Area	$67,988	$70,794	$73,715	$76,756	$79,924	$83,221	$86,655	$90,231	$93,954	$97,831	$101,868	$106,071
Affordability Index: Current Rates First Column, Modeled Rates After That	0.51%	0.79%	0.79%	0.79%	0.79%	0.79%	0.79%	0.79%	0.79%	0.79%	0.79%	0.78%
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	$20.00	$36.44	$37.89	$39.41	$40.99	$42.62	$44.33	$46.10	$47.95	$49.86	$51.86	$53.93
Income at One-half the AMHI and Rising at One-half the Rate Above	$33,994	$34,695	$35,411	$36,142	$36,887	$37,649	$38,425	$39,218	$40,027	$40,853	$41,696	$42,556
Affordability for Low-income, Low-volume: Current Rates First Column, Modeled Rates After That	0.71%	1.26%	1.28%	1.31%	1.33%	1.36%	1.38%	1.41%	1.44%	1.46%	1.49%	1.52%

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	1.54	1.24	1.66	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51

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	7.05	1.07	2.58	0.76	0.91	0.95	0.98	1.00	1.05	1.13	1.16	1.22

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.

Reserves	Balance Ending on 6/30/20	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
Cash and Cash Equivalents, Less deferred Outflows	$2,896,211	$869,082	$797,722	$921,188	$1,208,069	$1,261,761	$1,306,721	$1,359,028	$1,419,309	$1,470,006	$1,528,849	$1,596,531	$1,653,696
Other Liquid Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Undedicated Cash Assets	$2,896,211	$869,082	$797,722	$921,188	$1,208,069	$1,261,761	$1,306,721	$1,359,028	$1,419,309	$1,470,006	$1,528,849	$1,596,531	$1,653,696
Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	$2,896,211	$869,082	$797,722	$884,340	$1,113,357	$1,116,326	$1,109,859	$1,108,114	$1,110,975	$1,104,633	$1,102,896	$1,105,652	$1,145,240
Repair & Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt and CIP Reserves	$0	$2,544,760	$2,625,412	$2,383,057	$2,004,025	$1,737,221	$1,320,401	$824,845	$496,271	$157,071	$135,913	-$30,869	$220,097
Sum of All Reserves	$2,896,211	$3,413,842	$3,423,133	$3,304,245	$3,212,094	$2,998,983	$2,627,121	$2,183,873	$1,915,580	$1,627,078	$1,664,762	$1,565,662	$1,873,793

Table 18 - Bills Before and After Rate Adjustments

Rawlins, WY, Water Rates Model 2022-3

On average, the modeled rates will be 49.2% higher than the current rates.

If the rate classes shown below include meter size-based minimum charges, the percentage calculated and shown above includes meter size-based surcharges. Otherwise, the percentage does not include surcharges.

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	Gallons of Use	Customers Using This Volume or Less	Customers Using This Volume or More	Now Current Bill for This Volume	Modeled Bill for This Volume	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
In-Town, Assuming 5/8 or 3/4-inch meter	0	0	3,590	$14.00	$29.48	$15.48	111%
	1,000	0	3,590	$17.00	$32.96	$15.96	94%
	2,000	0	3,590	$20.00	$36.44	$16.44	82%
	3,000	0	3,590	$23.00	$39.92	$16.92	74%
	4,000	0	3,590	$26.00	$43.40	$17.40	67%
	5,000	0	3,590	$29.00	$46.88	$17.88	62%
	6,000	0	3,590	$32.00	$50.36	$18.36	57%
	7,000	0	3,590	$35.00	$53.84	$18.84	54%
	8,000	0	3,590	$38.00	$57.32	$19.32	51%
	9,000	0	3,590	$41.00	$60.80	$19.80	48%
	10,000	0	3,590	$44.00	$64.28	$20.28	46%
	10,394	3,590	3,590	$45.18	$65.65	$20.47	45%
	20,000	0	0	$74.00	$99.08	$25.08	34%
	30,000	0	0	$104.00	$133.88	$29.88	29%
	40,000	0	0	$134.00	$168.68	$34.68	26%
	50,000	0	0	$164.00	$203.48	$39.48	24%
	60,000	0	0	$194.00	$238.28	$44.28	23%
	70,000	0	0	$224.00	$273.08	$49.08	22%
	90,000	0	0	$284.00	$342.68	$58.68	21%
	110,000	0	0	$344.00	$412.28	$68.28	20%
	140,000	0	0	$434.00	$516.68	$82.68	19%
	160,000	0	0	$494.00	$586.28	$92.28	19%

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers Using This Volume or Less	Customers Using This Volume or More	Now Current Bill for This Volume	Modeled Bill for This Volume	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
In-Town Glenn Addition, Assuming 5/8 or 3/4-inch Meter	0	0	61	$32.96	$29.48	-$3.48	-11%
	1,000	0	61	$32.96	$32.96	$0.00	0%
	2,000	0	61	$32.96	$36.44	$3.48	11%
	3,000	0	61	$32.96	$39.92	$6.96	21%
	4,000	0	61	$32.96	$43.40	$10.44	32%
	5,000	0	61	$32.96	$46.88	$13.92	42%
	6,000	0	61	$32.96	$50.36	$17.40	53%
	6,319	61	61	$32.96	$53.84	$20.88	63%
	7,000	0	0	$32.96	$57.32	$24.36	74%
	8,000	0	0	$32.96	$60.80	$27.84	84%
	9,000	0	0	$32.96	$64.28	$31.32	95%
	10,000	0	0	$32.96	$64.28	$31.32	95%
	20,000	0	0	$32.96	$99.08	$66.12	201%
	146,000	0	0	$32.96	$586.28	$553.32	1679%
In-Town Fire Protection	0	0	8	$0.00	$0.00	$0.00	N.A.
	130	8	8	$0.39	$0.45	$0.06	16%
	160,000	0	0	$480.00	$556.80	$76.80	16%
In-Town Construction	0	0	3	$0.00	$0.00	$0.00	N.A.
	130	0	3	$0.98	$1.13	$0.16	16%
	160,000	0	0	$1,200.00	$1,392.00	$192.00	16%
Out-of-Town, Assuming 5/8 or 3/4-inch meter	0	0	22	$18.60	$39.16	$20.56	111%
	1,000	0	22	$22.60	$43.80	$21.20	94%
	2,000	0	22	$26.60	$48.44	$21.84	82%
	3,000	0	22	$30.60	$53.08	$22.48	73%
	4,000	0	22	$34.60	$57.72	$23.12	67%
	5,000	0	22	$38.60	$62.36	$23.76	62%
	6,000	0	22	$42.60	$67.00	$24.40	57%
	7,000	0	22	$46.60	$71.64	$25.04	54%
	8,000	0	22	$50.60	$76.28	$25.68	51%
	9,000	0	22	$54.60	$80.92	$26.32	48%
	10,000	0	22	$58.60	$85.56	$26.96	46%
	15,000	0	22	$78.60	$108.76	$30.16	38%
	20,000	0	22	$98.60	$131.96	$33.36	34%
	30,000	0	22	$138.60	$178.36	$39.76	29%
	40,000	0	22	$178.60	$224.76	$46.16	26%
	50,000	0	22	$218.60	$271.16	$52.56	24%
	60,000	0	22	$258.60	$317.56	$58.96	23%
	70,000	0	22	$298.60	$363.96	$65.36	22%
	70,877	22	22	$302.11	$368.03	$65.92	22%
	90,000	0	0	$378.60	$456.76	$78.16	21%
	110,000	0	0	$458.60	$549.56	$90.96	20%
	120,000	0	0	$498.60	$595.96	$97.36	20%
	160,000	0	0	$658.60	$781.56	$122.96	19%

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers Using This Volume or Less	Customers Using This Volume or More	Now Current Bill for This Volume	Modeled Bill for This Volume	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
Out-of-Town Raw Water	0	0	0	$0.00	$0.00	$0.00	N.A.
	1,000	0	0	$4.50	$4.50	$0.00	0%
	160,000	0	0	$720.00	$720.00	$0.00	0%
Out-of-Town Fire Protection	0	0	0	$0.00	$0.00	$0.00	N.A.
	1,000	0	0	$4.00	$4.64	$0.64	16%
	160,000	0	0	$640.00	$742.40	$102.40	16%
Out-of-Town Construction	0	0	0	$0.00	$0.00	$0.00	N.A.
	130	0	0	$1.95	$2.26	$0.31	16%
	905,900	0	0	$13,588.50	$15,762.66	$2,174.16	16%
Town of Sinclair	0	0	1	$0.00	$0.00	$0.00	N.A.
	1,000	0	1	$3.00	$2.09	-$0.91	-30%
	2,000	0	1	$6.00	$4.18	-$1.82	-30%
	3,000	0	1	$9.00	$6.26	-$2.74	-30%
	4,000	0	1	$12.00	$8.35	-$3.65	-30%
	5,000	0	1	$15.00	$10.44	-$4.56	-30%
	6,000	0	1	$18.00	$12.53	-$5.47	-30%
	7,000	0	1	$21.00	$14.62	-$6.38	-30%
	8,000	0	1	$24.00	$16.70	-$7.30	-30%
	9,000	0	1	$27.00	$18.79	-$8.21	-30%
	10,000	0	1	$30.00	$20.88	-$9.12	-30%
	15,000	0	1	$45.00	$31.32	-$13.68	-30%
	20,000	0	1	$60.00	$41.76	-$18.24	-30%
	23,370	1	1	$70.11	$48.80	-$21.31	-30%
	40,000	0	0	$120.00	$83.52	-$36.48	-30%

Table 19 - User Statistics

Rawlins, WY, Water Rates Model 2022-3

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

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

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

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

10,394	Gallons: This is the average in-Town customer's usage per Monthly billing cycle.

Usage allowance is the volume "given away" with the minimum charge. The higher the allowance, the less volume the utility can sell to generate income.

478,028,778	Gallons: The volume metered through customer meters that was available to be sold during the test year.
0	Gallons: The volume given away, if any, as a usage allowance during the test year.
$0	Annualized cost of usage allowance at the unit charge rate in effect during the test year.
$0	Annualized cost of recommended usage allowance (if any) at the recommended unit charge rate.

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
In-Town	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	6.1%	5.0%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	6.1%	5.0%
	2,000	2,999	0	0.0	0.0%	100.0%	0.0%	0.0%	6.1%	5.0%
	3,000	3,999	0	0.0	0.0%	100.0%	0.0%	0.0%	6.1%	5.0%
	4,000	4,999	0	0.0	0.0%	100.0%	0.0%	0.0%	6.1%	5.0%
	5,000	5,999	0	0.0	0.0%	100.0%	0.0%	0.0%	6.1%	5.0%
	6,000	6,999	0	0.0	0.0%	100.0%	0.0%	0.0%	6.1%	5.0%
	7,000	7,999	0	0.0	0.0%	100.0%	0.0%	0.0%	6.1%	5.0%
	8,000	8,999	0	0.0	0.0%	100.0%	0.0%	0.0%	6.1%	5.0%
	9,000	9,999	0	0.0	0.0%	100.0%	0.0%	0.0%	6.1%	5.0%
	10,000	10,393	0	0.0	0.0%	100.0%	0.0%	0.0%	2.4%	2.0%
	10,394	19,999	447,808,794	3,590.2	100.0%	100.0%	97.4%	93.7%	28.4%	42.0%
	20,000	29,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		447,808,794	3,590.2			97.4%	93.7%	91.7%	93.5%
In-Town Glenn Addition	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	2,000	2,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	3,000	3,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	4,000	4,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	5,000	5,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	6,000	6,318	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	6,319	6,999	4,632,003	61.1	100.0%	100.0%	1.7%	1.0%	0.5%	0.0%
	7,000	7,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	10,000	19,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	20,000	28,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		4,632,003	61.1			1.7%	1.0%	1.1%	0.5%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
In-Town Fire Protection	0	129	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	130	1,999	12,480	8.0	100.0%	100.0%	0.2%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		12,480	8.0			0.2%	0.0%	0.0%	0.0%
In-Town Construction	0	129	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	130	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	15,000	19,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	20,000	29,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	30,000	39,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	40,000	49,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	50,000	59,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	60,000	69,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	70,000	79,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	80,000	89,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	90,000	99,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	100,000	107,327	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	107,328	119,999	4,078,464	3.2	100.0%	100.0%	0.1%	0.9%	0.0%	0.0%
	120,000	129,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		4,078,464	3.2			0.1%	0.9%	1.4%	1.2%
Out-of-Town	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.2%	0.2%
	15,000	19,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.2%	0.2%
	20,000	29,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.5%	0.4%
	30,000	39,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.5%	0.4%
	40,000	49,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.5%	0.4%
	50,000	59,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.5%	0.4%
	60,000	69,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.5%	0.4%
	70,000	70,876	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	70,877	89,999	18,498,897	21.8	100.0%	100.0%	0.6%	3.9%	0.2%	0.3%
	90,000	99,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		18,498,897	21.8			0.6%	3.9%	3.7%	3.2%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
Out-of-Town Raw Water	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	160,000	160,000	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		0	0.0			0.0%	0.0%	0.0%	0.0%
Out-of-Town Fire Protection	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	160,000	160,000	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		0	0.0			0.0%	0.0%	0.0%	0.0%
Out-of-Town Construction	0	129	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	130	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	15,000	19,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	20,000	29,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	30,000	39,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	40,000	49,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	50,000	59,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	60,000	69,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	70,000	79,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	80,000	89,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	90,000	99,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	100,000	109,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	110,000	119,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	120,000	129,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	130,000	139,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	140,000	149,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	150,000	905,899	0	0.0	0.0%	100.0%	0.0%	0.0%	1.6%	1.3%
	905,900	905,900	2,717,700	0.3	100.0%	100.0%	0.0%	0.6%	0.0%	0.0%
	Totals for Class		2,717,700	0.3			0.0%	0.6%	1.9%	1.6%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
Town of Sinclair	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	15,000	19,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	20,000	23,369	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	23,370	39,999	280,440	1.0	100.0%	100.0%	0.0%	0.1%	0.0%	0.0%
	40,000	49,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		280,440	1.0			0.0%	0.1%	0.0%	0.0%
	Grand Totals		478,028,778	3,685			100.00%	100.00%	100.00%	100.00%

Chart 1 - Operating Ratio

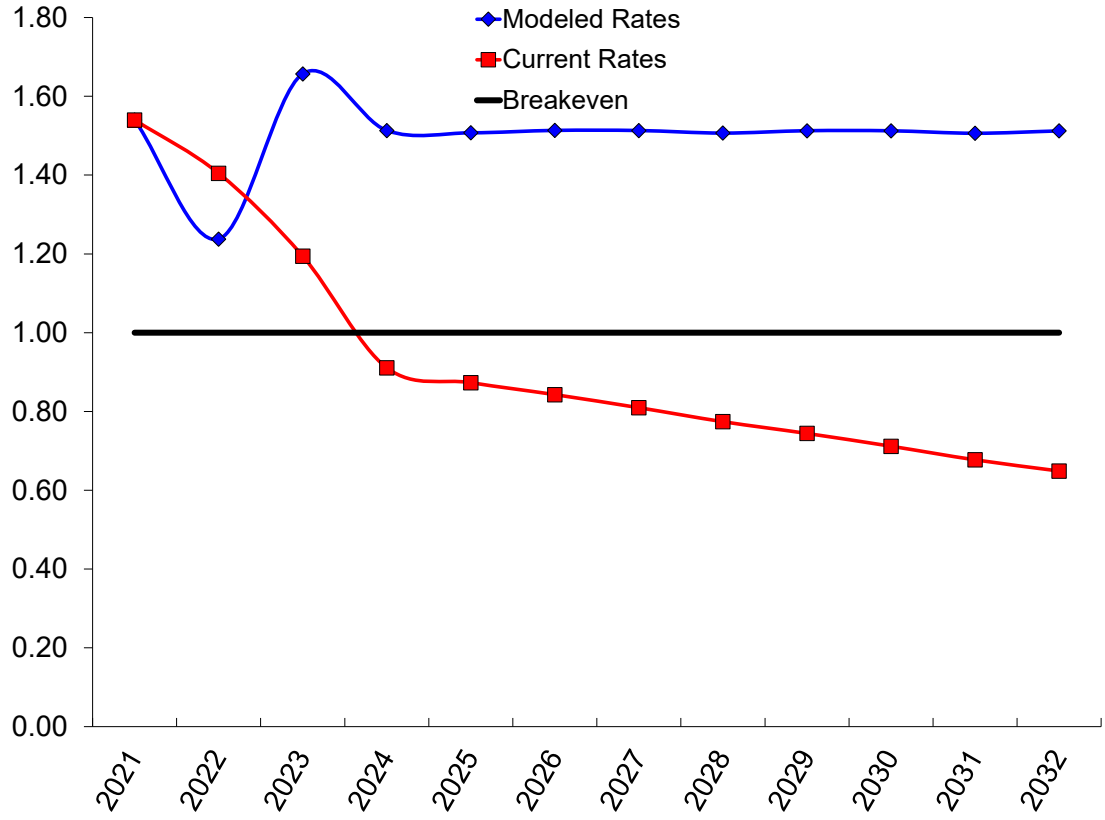


Chart 2 - Coverage Ratio

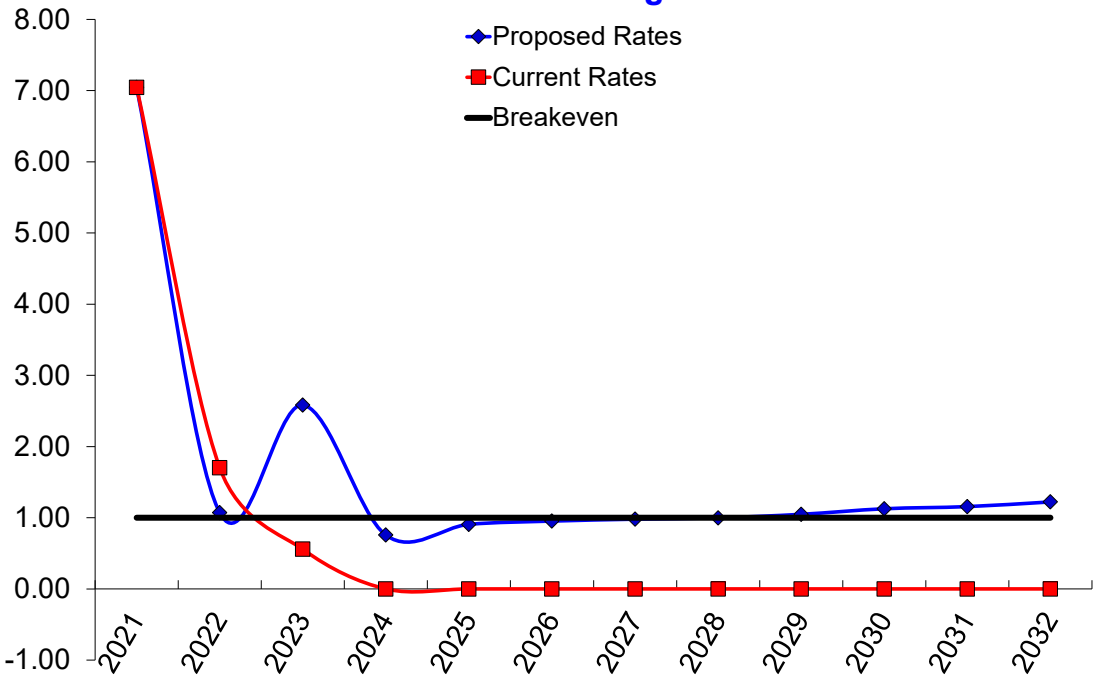


Chart 3 - Residential Users' Bills

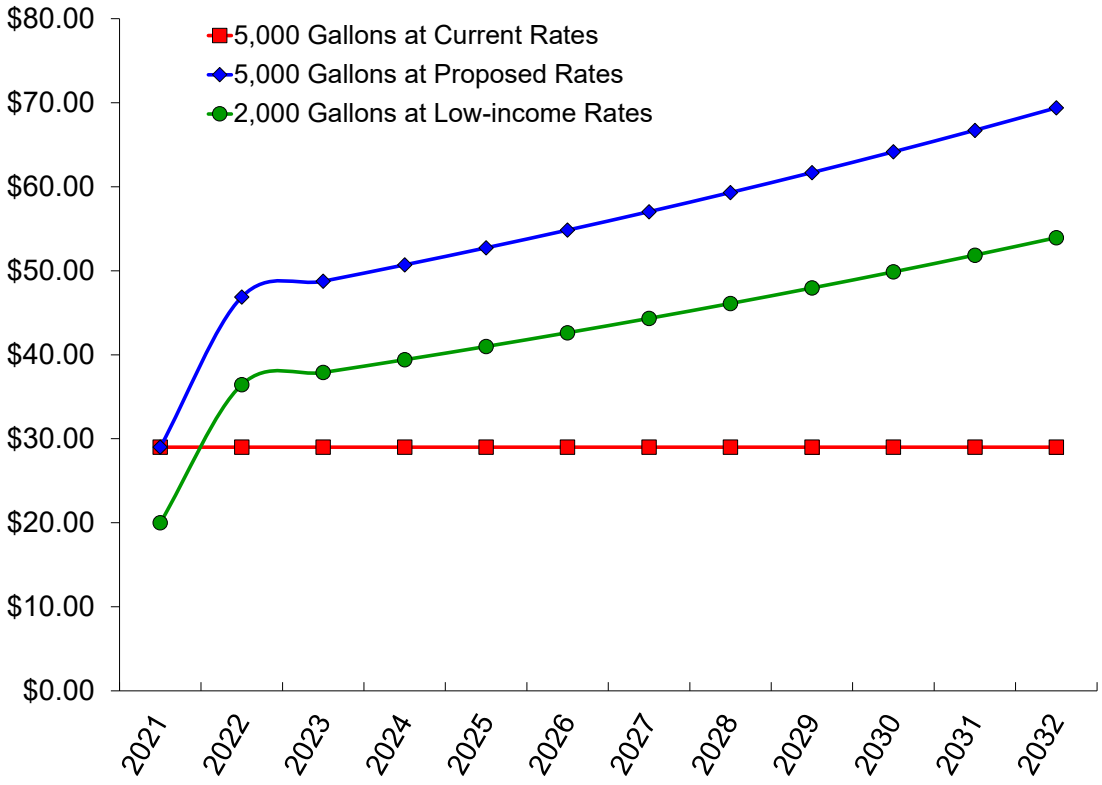


Chart 4 - Affordability

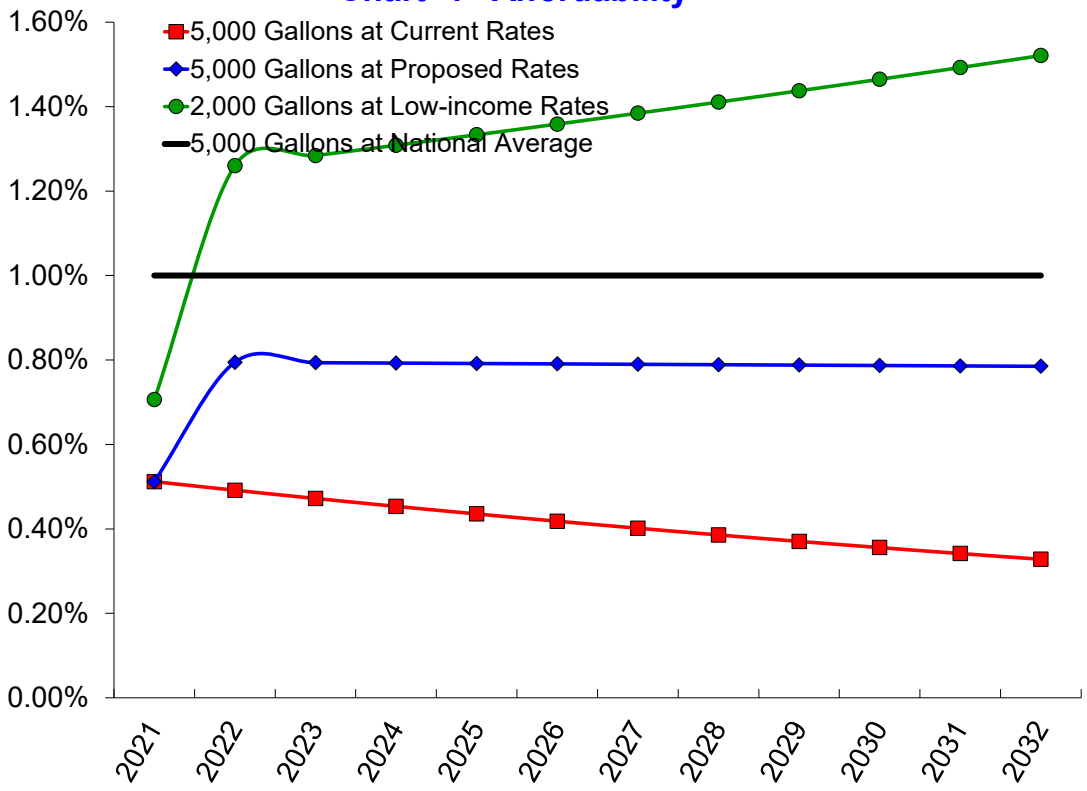


Chart 5 - Working Capital vs Goal

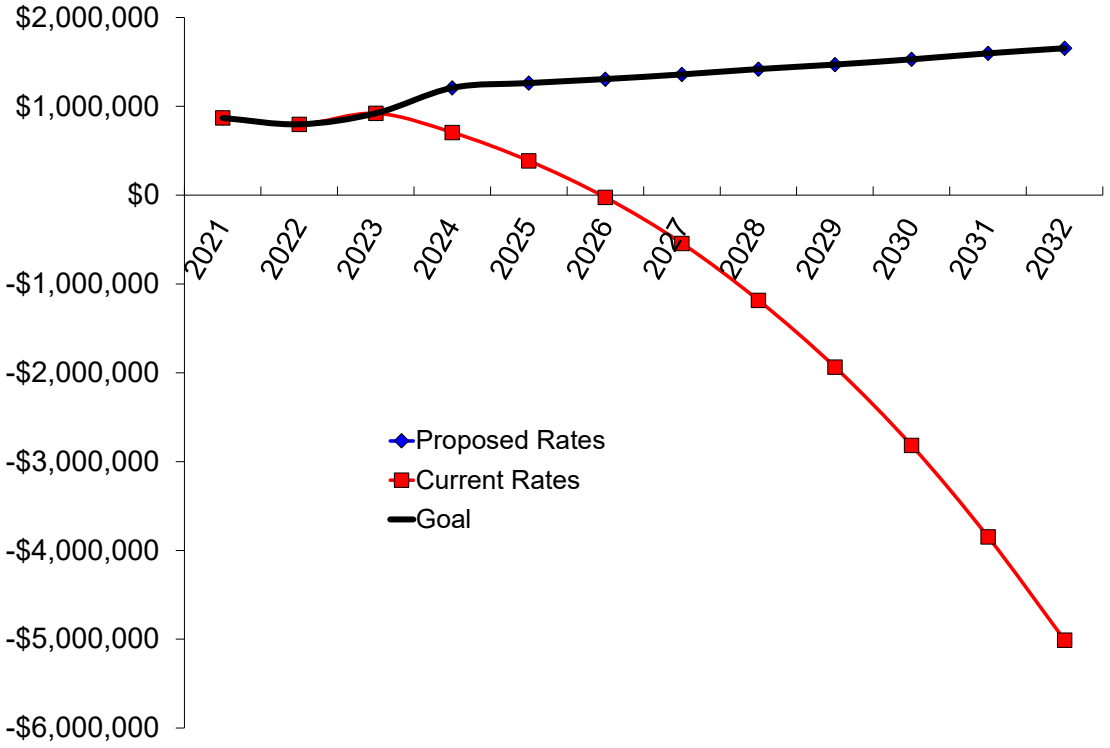


Chart 6 - Value of Cash Assets Before Inflation

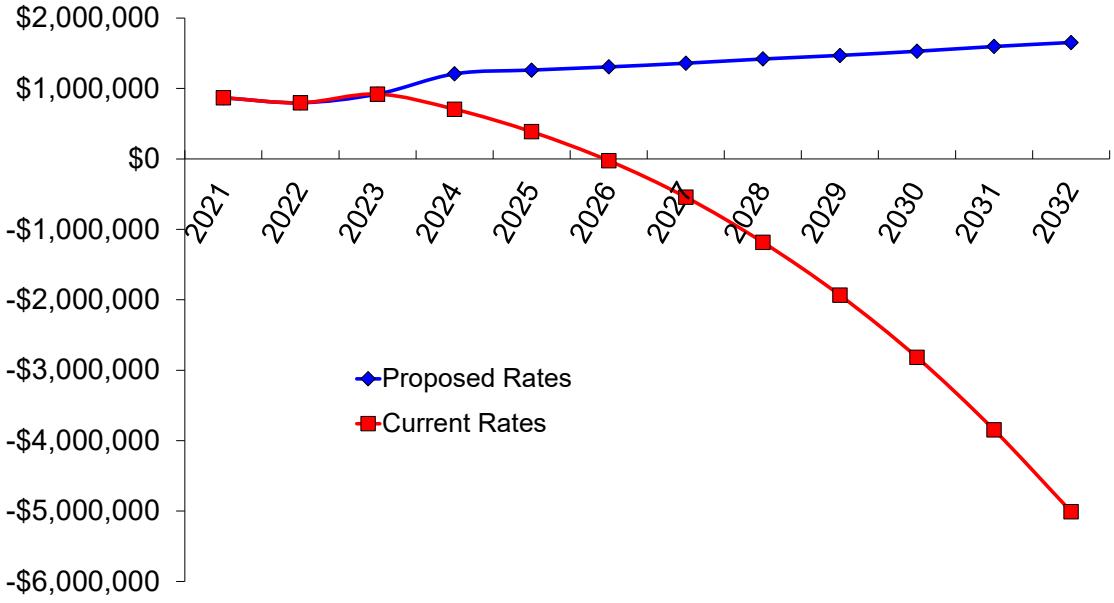


Chart 7 - Value of Cash Assets After Inflation

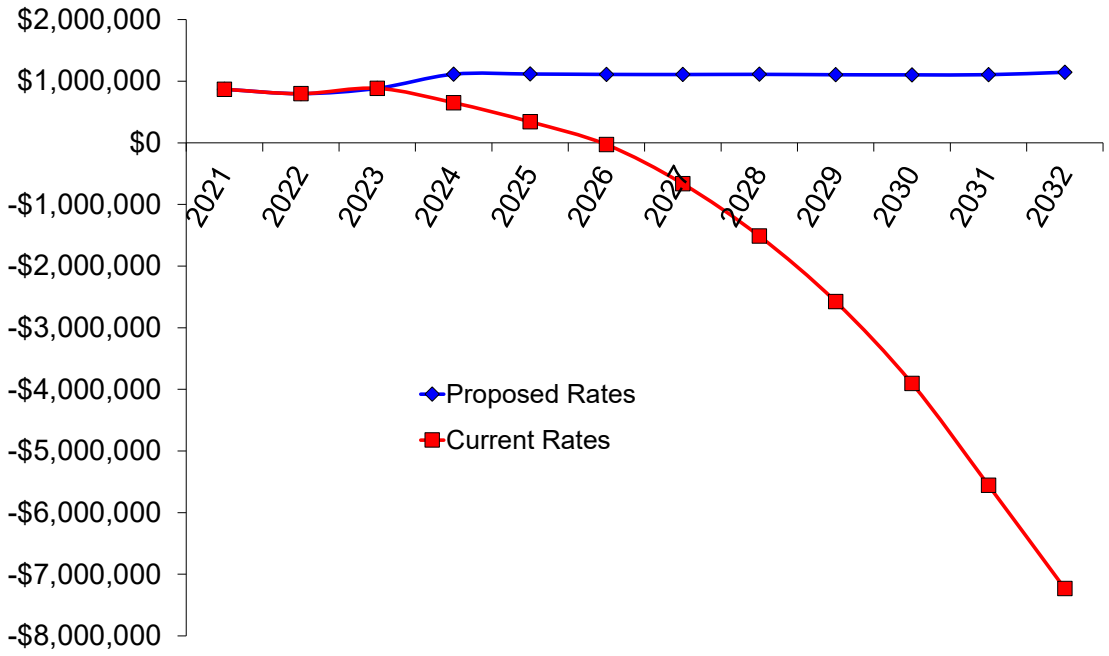
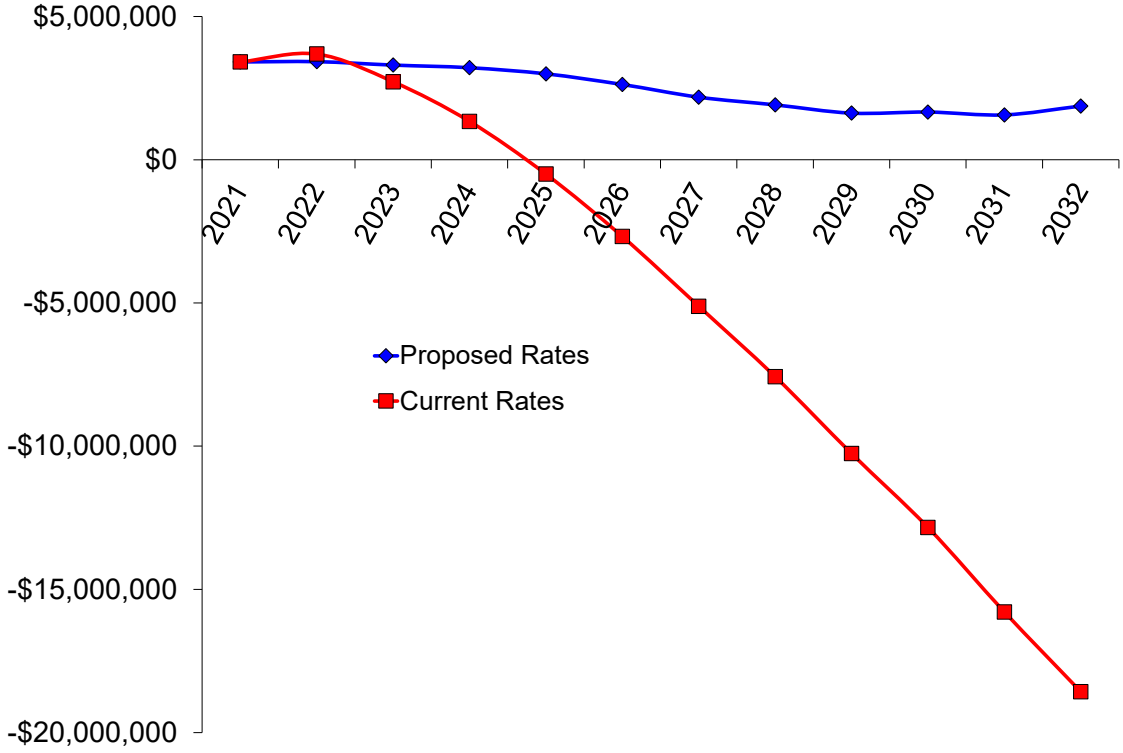


Chart 8 - Sum of All Reserves



Rawlins, WY, Water Rates Model 2022-3, No CIP

This model is the same as the recommended rates model, with one main exception. To determine the rate effects of capital improvements, all capital improvement costs have been removed from this model and rates were recalculated to pay the resulting lower costs.

August 24, 2022

This rate analysis model was produced by
Carl E. Brown, GettingGreatRates.com
1014 Carousel Drive, Jefferson City, Missouri 65101
(573) 619-3411
https://gettinggreatrates.com
carl1@gettinggreatrates.com

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

Table 5 - Capital Improvement Program (CIP)

Rawlins, WY, Water Rates Model 2022-3, No CIP

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

		Analysis Year	Years Following the Analysis Year (for Which Improvement Projects, Costs, Funding, etc. Have Been Projected)									
	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	7/1/20	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
Planned Spending, Debt-paid Portion of Projects (CIP costs to be funded with loans are shown in this section.)												
Rawlins water supply rehabilitation project. Total $15 million for 40 yr loan. Possibly USDA	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
city water model + glen addition engineered	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
plant update	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
in alley between Water & Railroad from Monroe to Washington	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
in alley between Water & Center from Madison to Washington	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water line on S.side of UPRR from Washington to Glenn Addition	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water line west end of Glasgow to Inverness	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water line on Inverness from Glasgow to Edinburgh	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water lines on Loch Lomond, Loch Ness & Dundee to Inverness	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water line between Daley/McMicken fom Rodeo to Colo.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water line between McMicken/Ryan from Rodeo to Colo.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water line between Ryan/Murray from trailer Ct. to Colorado St.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SCADA System, 80% Share for Water Utility	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loan Closing Costs, Estimated at: 2.5%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
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.)												
Rawlins water supply rehabilitation project. Total $15 million for 40 yr loan. Possibly USDA (SRF MRG Grant)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SCADA System, 80% Share for Water Utility	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Grant-paid Portion of Projects	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Table 5 - Capital Improvement Program (CIP)

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

		Analysis Year	Years Following the Analysis Year (for Which Improvement Projects, Costs, Funding, etc. Have Been Projected)									
	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	7/1/20	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
Planned Spending, Cash-paid Portion of Projects (CIP costs to be funded from reserves are shown here.)												
water meter/ MXU replacement	Table 4	Table 4	Table 4	Table 4	Table 4	Table 4	Table 4	Table 4	Table 4	Table 4	Table 4	Table 4
service line locating equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
leak detection equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
portable cement mix trailer	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
new service truck w/ kuv bed	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
new pick up truck	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4x4 extendable backhoe	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
excavator 33%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
valve exerciser 50%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
video inspection system 50%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
gps vehicle tracking	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
filter leafs/ rebudget/ replace	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
new compresser	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
service truck	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SCADA maintenance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
new security gate installed	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
backhoe	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
tank inspections	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
River Water Pre-treatment Plant, Start-up Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grant Acquisition Costs, Estimated at: 2.5%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cash-paid Portion of Projects	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total CIP Costs	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Table 5 - Capital Improvement Program (CIP)

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

		Analysis Year	Years Following the Analysis Year (for Which Improvement Projects, Costs, Funding, etc. Have Been Projected)									
	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	7/1/20	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
Debt Repayment												
Existing Debt Payments (Following is debt that was initiated during the test year or earlier.)												
Sage Creek Water Line	$150,278	$150,278	$150,278	$150,278	$150,278	$150,278	$150,278	$150,278	$150,278	$150,278	$150,278	$150,278
DWSRF Loan #069	$25,077	$25,077	$25,077	$25,077	$25,077	$25,077	$25,077	$25,077	$25,077	$0	$0	$0
DWSRF Loan #080	$25,328	$25,328	$25,328	$25,328	$25,328	$25,328	$25,328	$25,328	$25,328	$0	$0	$0
Atlantic Rim Pipeline	$54,763	$54,763	$54,763	$54,763	$54,763	$54,763	$54,763	$54,763	$54,763	$54,763	$54,763	$54,763
Atlantic Rim Reservoir	$113,971	$113,971	$113,971	$113,971	$113,971	$113,971	$113,971	$113,971	$113,971	$113,971	$113,971	$113,971
CWSRF Loan #145	$16,974	$16,974	$16,974	$16,974	$16,974	$16,974	$16,974	$16,974	$16,974	$16,974	$16,974	$16,974
CWSRF Loan #147	$34,577	$34,577	$34,577	$34,577	$34,577	$34,577	$34,577	$34,577	$34,577	$34,577	$34,577	$34,577
New Debt Payments (It is assumed debt-funded projects will be loan/lease-financed at these terms: 40 years at a 2.25% interest rate.)												
Loan Originated in 1st Year				$0	$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 2nd Year					$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 3rd Year						$0	$0	$0	$0	$0	$0	$0
Loan Originated in 4th Year							$0	$0	$0	$0	$0	$0
Loan Originated in 5th Year								$0	$0	$0	$0	$0
Loan Originated in 6th Year									$0	$0	$0	$0
Total Debt Payments	$420,967	$420,967	$420,967	$420,967	$420,967	$420,967	$420,967	$420,967	$420,967	$370,563	$370,563	$370,563
Total CIP-related Payouts	**$420,967**	**$420,967**	**$420,967**	**$420,967**	**$420,967**	**$420,967**	**$420,967**	**$420,967**	**$420,967**	**$370,563**	**$370,563**	**$370,563**

(This is the total cash required for this CIP and debt payment schedule. These amounts must come from utility income, reserves or outside sources, as shown in the next section.)

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
	7/1/20	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
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	$2,544,760	$2,625,412	$2,644,787	$2,276,715	$1,910,640	$1,673,809	$1,431,075	$1,170,290	$932,551	$739,448	$528,218
Working Capital Transferred in	$2,965,727	$450,724	$387,834	$0	$9,358	$145,924	$144,758	$131,560	$159,823	$158,809	$144,543	$175,999
Debt and CIP Reserves Interest Earned (or Paid)	$0	$50,895	$52,508	$52,896	$45,534	$38,213	$33,476	$28,622	$23,406	$18,651	$14,789	$10,564
Internal Income Source (Name it)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Internal Income Source (Name it)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Available Internal Funds	$2,965,727	$3,046,379	$3,065,754	$2,697,682	$2,331,607	$2,094,776	$1,852,043	$1,591,257	$1,353,518	$1,110,011	$898,780	$714,781
Grant and Loan Proceeds (External Funds)												
Total Grants From Grants Section Above	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 1st Year			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 2nd Year				$0	$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 3rd Year					$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 4th Year						$0	$0	$0	$0	$0	$0	$0
Loan Originated in 5th Year							$0	$0	$0	$0	$0	$0
Loan Originated in 6th Year								$0	$0	$0	$0	$0
Loan Originated in 10th Year												$0
Total Available External Funds	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Available Funds	**$2,965,727**	**$3,046,379**	**$3,065,754**	**$2,697,682**	**$2,331,607**	**$2,094,776**	**$1,852,043**	**$1,591,257**	**$1,353,518**	**$1,110,011**	**$898,780**	**$714,781**
Outcomes	(This CIP spending and funding plan will result in the following cash needs and ending balances each year.)											
Total Available Funds	**$2,965,727**	**$3,046,379**	**$3,065,754**	**$2,697,682**	**$2,331,607**	**$2,094,776**	**$1,852,043**	**$1,591,257**	**$1,353,518**	**$1,110,011**	**$898,780**	**$714,781**
Total CIP-related Payouts	**$420,967**	**$420,967**	**$420,967**	**$420,967**	**$420,967**	**$420,967**	**$420,967**	**$420,967**	**$420,967**	**$370,563**	**$370,563**	**$370,563**
Debt and CIP Reserves Ending Balances	**$2,544,760**	**$2,625,412**	**$2,644,787**	**$2,276,715**	**$1,910,640**	**$1,673,809**	**$1,431,075**	**$1,170,290**	**$932,551**	**$739,448**	**$528,218**	**$344,219**

Notes: In this model I assumed no capital improvements would be done. Otherwise, this model is like the recommended rates model.

Table 8 - Average Cost Classification

Rawlins, WY, Water Rates Model 2022-3, No CIP

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: 7/1/2025 through 6/30/2026

Cost Items	Cost During Rate Structure Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
Personal Services	$923,651	38.5%	61.5%	$355,399	$568,253
Information Technogy	$4,496	100.0%	0.0%	$4,496	$0
Public Health Lab	$0	100.0%	0.0%	$0	$0
Water Meter Service	$129,258	0.0%	100.0%	$0	$129,258
Hydrant Maintenance	$34,653	100.0%	0.0%	$34,653	$0
Backflow Prevention	$0	100.0%	0.0%	$0	$0
Asbestos & Technical Services	$0	100.0%	0.0%	$0	$0
Engineer	$157,137	50.0%	50.0%	$78,569	$78,569
Other	$18,659	38.5%	61.5%	$7,179	$11,479
Electrical	$135,103	0.0%	100.0%	$0	$135,103
Phone Internet	$25,482	100.0%	0.0%	$25,482	$0
Repair and Maintenance	$15,334	50.0%	50.0%	$7,667	$7,667
Travel and Training	$5,751	38.5%	61.5%	$2,213	$3,538
Materials	$83,837	0.0%	100.0%	$0	$83,837
Chemicals	$29,639	0.0%	100.0%	$0	$29,639
Miscellaneous Studies	$0	38.1%	61.9%	$0	$0
Facilities	$30,781	38.1%	61.9%	$11,728	$19,054
Supplies	$3,344	38.1%	61.9%	$1,274	$2,070
Other	$65,665	38.1%	61.9%	$25,018	$40,647
Transfers Out (Administration)	$409,851	100.0%	0.0%	$409,851	$0
Pre-treatment for River Water	$540,800	0.0%	100.0%	$0	$540,800
User Charge Analysis Services	$0	38.1%	61.9%	$0	$0
Total CIP-related Payouts, Less Capacity Charges From Tables 14 & 16 (This value can be negative)	$260,955	50.0%	50.0%	$130,478	$130,478
Grand Total Costs, Weighted Avg Percentages	$2,874,396	38.1%	61.9%	$1,094,006	$1,780,391

Bases for Cost to Serve Rate Structure

		100%	$2,874,396	
Number Customers During Year Defined Above	3,699	Unbilled-for Water is Estimated at		28%
Billed Volume, in Gallons, During Year Defined Above	479,788,409	Unbilled-for Water is Estimated at This % of Average Cost (Marginal Cost)		30%
Average Fixed Cost per User per Month During Year Defined Above	$24.65	Resulting Marginal Cost of Unbilled-for Water		$210,671
Average Variable Cost to Produce per 1,000 Gallons During Year Defined Above	$3.71	Test Year Customer Volume, in Gallons		478,028,778
Gallons per Billing Cycle Used by Average Residential Customer	10,394	+ Test Year Unbilled-for Water, in Gallons		189,842,222
		Total Test Year Volume, in Gallons, From Master Meter Readings		667,871,000

Table 17 - Financial Capacity Indicators and Reserves

Rawlins, WY, Water Rates Model 2022-3, No CIP

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 7/1/20	0 Year Starting 7/1/21	1st Year Starting 7/1/22	2nd Year Starting 7/1/23	3rd Year Starting 7/1/24	4th Year Starting 7/1/25	5th Year Starting 7/1/26	6th Year Starting 7/1/27	7th Year Starting 7/1/28	8th Year Starting 7/1/29	9th Year Starting 7/1/30	10th Year Starting 7/1/31
Customary Affordability Index												
Monthly Bill for a 5,000 gal per Month, Small Meter Residential Customer	$29.00	$31.54	$32.81	$34.12	$35.48	$36.90	$38.38	$39.91	$41.51	$43.17	$44.90	$46.69
AMHI Within Service Area	$67,988	$70,794	$73,715	$76,756	$79,924	$83,221	$86,655	$90,231	$93,954	$97,831	$101,868	$106,071
Affordability Index: Current Rates First Column, Modeled Rates After That	0.51%	0.53%	0.53%	0.53%	0.53%	0.53%	0.53%	0.53%	0.53%	0.53%	0.53%	0.53%
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	$20.00	$24.01	$24.97	$25.97	$27.01	$28.09	$29.22	$30.39	$31.60	$32.87	$34.18	$35.55
Income at One-half the AMHI and Rising at One-half the Rate Above	$33,994	$34,695	$35,411	$36,142	$36,887	$37,649	$38,425	$39,218	$40,027	$40,853	$41,696	$42,556
Affordability for Low-income, Low-volume: Current Rates First Column, Modeled Rates After That	0.71%	0.83%	0.85%	0.86%	0.88%	0.90%	0.91%	0.93%	0.95%	0.97%	0.98%	1.00%

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	1.54	1.24	1.28	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07

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	7.05	1.07	0.92	0.00	0.02	0.35	0.34	0.31	0.38	0.43	0.39	0.47

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.

Reserves	Balance Ending on 6/30/20	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
Cash and Cash Equivalents, Less deferred Outflows	$2,896,211	$869,082	$797,722	$921,188	$1,098,003	$1,261,761	$1,306,721	$1,359,028	$1,419,309	$1,470,006	$1,528,849	$1,596,531	$1,653,696
Other Liquid Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Undedicated Cash Assets	$2,896,211	$869,082	$797,722	$921,188	$1,098,003	$1,261,761	$1,306,721	$1,359,028	$1,419,309	$1,470,006	$1,528,849	$1,596,531	$1,653,696
Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	$2,896,211	$869,082	$797,722	$884,340	$1,011,919	$1,116,326	$1,109,859	$1,108,114	$1,110,975	$1,104,633	$1,102,896	$1,105,652	$1,145,240
Repair & Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt and CIP Reserves	$0	$2,544,760	$2,625,412	$2,644,787	$2,276,715	$1,910,640	$1,673,809	$1,431,075	$1,170,290	$932,551	$739,448	$528,218	$344,219
Sum of All Reserves	$2,896,211	$3,413,842	$3,423,133	$3,565,975	$3,374,718	$3,172,401	$2,980,530	$2,790,103	$2,589,599	$2,402,557	$2,268,297	$2,124,749	$1,997,914

Table 18 - Bills Before and After Rate Adjustments

Rawlins, WY, Water Rates Model 2022-3, No CIP

On average, the modeled rates will be 4.9% higher than the current rates.

If the rate classes shown below include meter size-based minimum charges, the percentage calculated and shown above includes meter size-based surcharges. Otherwise, the percentage does not include surcharges.

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	Gallons of Use	Customers Using This Volume or Less	Customers Using This Volume or More	Now Current Bill for This Volume	Modeled Bill for This Volume	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
In-Town, Assuming 5/8 or 3/4-inch meter	0	0	3,590	$14.00	$18.99	$4.99	36%
	1,000	0	3,590	$17.00	$21.50	$4.50	26%
	2,000	0	3,590	$20.00	$24.01	$4.01	20%
	3,000	0	3,590	$23.00	$26.52	$3.52	15%
	4,000	0	3,590	$26.00	$29.03	$3.03	12%
	5,000	0	3,590	$29.00	$31.54	$2.54	9%
	6,000	0	3,590	$32.00	$34.05	$2.05	6%
	7,000	0	3,590	$35.00	$36.56	$1.56	4%
	8,000	0	3,590	$38.00	$39.07	$1.07	3%
	9,000	0	3,590	$41.00	$41.58	$0.58	1%
	10,000	0	3,590	$44.00	$44.09	$0.09	0%
	10,394	3,590	3,590	$45.18	$45.08	-$0.10	0%
	20,000	0	0	$74.00	$69.19	-$4.81	-6%
	30,000	0	0	$104.00	$94.29	-$9.71	-9%
	40,000	0	0	$134.00	$119.39	-$14.61	-11%
	50,000	0	0	$164.00	$144.49	-$19.51	-12%
	60,000	0	0	$194.00	$169.59	-$24.41	-13%
	70,000	0	0	$224.00	$194.69	-$29.31	-13%
	90,000	0	0	$284.00	$244.89	-$39.11	-14%
	110,000	0	0	$344.00	$295.09	-$48.91	-14%
	140,000	0	0	$434.00	$370.39	-$63.61	-15%
	160,000	0	0	$494.00	$420.59	-$73.41	-15%

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers Using This Volume or Less	Customers Using This Volume or More	Now Current Bill for This Volume	Modeled Bill for This Volume	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
In-Town Glenn Addition, Assuming 5/8 or 3/4-inch Meter	0	0	61	$32.96	$18.99	-$13.96	-42%
	1,000	0	61	$32.96	$21.50	-$11.45	-35%
	2,000	0	61	$32.96	$24.01	-$8.94	-27%
	3,000	0	61	$32.96	$26.52	-$6.43	-20%
	4,000	0	61	$32.96	$29.03	-$3.92	-12%
	5,000	0	61	$32.96	$31.54	-$1.41	-4%
	6,000	0	61	$32.96	$34.05	$1.10	3%
	6,319	61	61	$32.96	$36.56	$3.61	11%
	7,000	0	0	$32.96	$39.07	$6.12	19%
	8,000	0	0	$32.96	$41.58	$8.63	26%
	9,000	0	0	$32.96	$44.09	$11.14	34%
	10,000	0	0	$32.96	$44.09	$11.14	34%
	20,000	0	0	$32.96	$69.19	$36.24	110%
	146,000	0	0	$32.96	$420.59	$387.64	1176%
In-Town Fire Protection	0	0	8	$0.00	$0.00	$0.00	N.A.
	130	8	8	$0.39	$0.33	-$0.06	-16%
	160,000	0	0	$480.00	$401.60	-$78.40	-16%
In-Town Construction	0	0	3	$0.00	$0.00	$0.00	N.A.
	130	0	3	$0.98	$0.82	-$0.16	-16%
	160,000	0	0	$1,200.00	$1,004.00	-$196.00	-16%
Out-of-Town, Assuming 5/8 or 3/4-inch meter	0	0	22	$18.60	$25.24	$6.64	36%
	1,000	0	22	$22.60	$28.58	$5.98	26%
	2,000	0	22	$26.60	$31.93	$5.33	20%
	3,000	0	22	$30.60	$35.28	$4.68	15%
	4,000	0	22	$34.60	$38.62	$4.02	12%
	5,000	0	22	$38.60	$41.97	$3.37	9%
	6,000	0	22	$42.60	$45.32	$2.72	6%
	7,000	0	22	$46.60	$48.66	$2.06	4%
	8,000	0	22	$50.60	$52.01	$1.41	3%
	9,000	0	22	$54.60	$55.36	$0.76	1%
	10,000	0	22	$58.60	$58.70	$0.10	0%
	15,000	0	22	$78.60	$75.44	-$3.16	-4%
	20,000	0	22	$98.60	$92.17	-$6.43	-7%
	30,000	0	22	$138.60	$125.64	-$12.96	-9%
	40,000	0	22	$178.60	$159.10	-$19.50	-11%
	50,000	0	22	$218.60	$192.57	-$26.03	-12%
	60,000	0	22	$258.60	$226.04	-$32.56	-13%
	70,000	0	22	$298.60	$259.50	-$39.10	-13%
	70,877	22	22	$302.11	$262.44	-$39.67	-13%
	90,000	0	0	$378.60	$326.44	-$52.16	-14%
	110,000	0	0	$458.60	$393.37	-$65.23	-14%
	120,000	0	0	$498.60	$426.84	-$71.76	-14%
	160,000	0	0	$658.60	$560.70	-$97.90	-15%

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers Using This Volume or Less	Customers Using This Volume or More	Now Current Bill for This Volume	Modeled Bill for This Volume	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
Out-of-Town Raw Water	0	0	0	$0.00	$0.00	$0.00	N.A.
	1,000	0	0	$4.50	$4.50	$0.00	0%
	160,000	0	0	$720.00	$720.00	$0.00	0%
Out-of-Town Fire Protection	0	0	0	$0.00	$0.00	$0.00	N.A.
	1,000	0	0	$4.00	$3.35	-$0.65	-16%
	160,000	0	0	$640.00	$535.47	-$104.53	-16%
Out-of-Town Construction	0	0	0	$0.00	$0.00	$0.00	N.A.
	130	0	0	$1.95	$1.63	-$0.32	-16%
	905,900	0	0	$13,588.50	$11,369.05	-$2,219.46	-16%
Town of Sinclair	0	0	1	$0.00	$0.00	$0.00	N.A.
	1,000	0	1	$3.00	$1.51	-$1.49	-50%
	2,000	0	1	$6.00	$3.01	-$2.99	-50%
	3,000	0	1	$9.00	$4.52	-$4.48	-50%
	4,000	0	1	$12.00	$6.02	-$5.98	-50%
	5,000	0	1	$15.00	$7.53	-$7.47	-50%
	6,000	0	1	$18.00	$9.04	-$8.96	-50%
	7,000	0	1	$21.00	$10.54	-$10.46	-50%
	8,000	0	1	$24.00	$12.05	-$11.95	-50%
	9,000	0	1	$27.00	$13.55	-$13.45	-50%
	10,000	0	1	$30.00	$15.06	-$14.94	-50%
	15,000	0	1	$45.00	$22.59	-$22.41	-50%
	20,000	0	1	$60.00	$30.12	-$29.88	-50%
	23,370	1	1	$70.11	$35.20	-$34.91	-50%
	40,000	0	0	$120.00	$60.24	-$59.76	-50%

Chart 1 - Operating Ratio

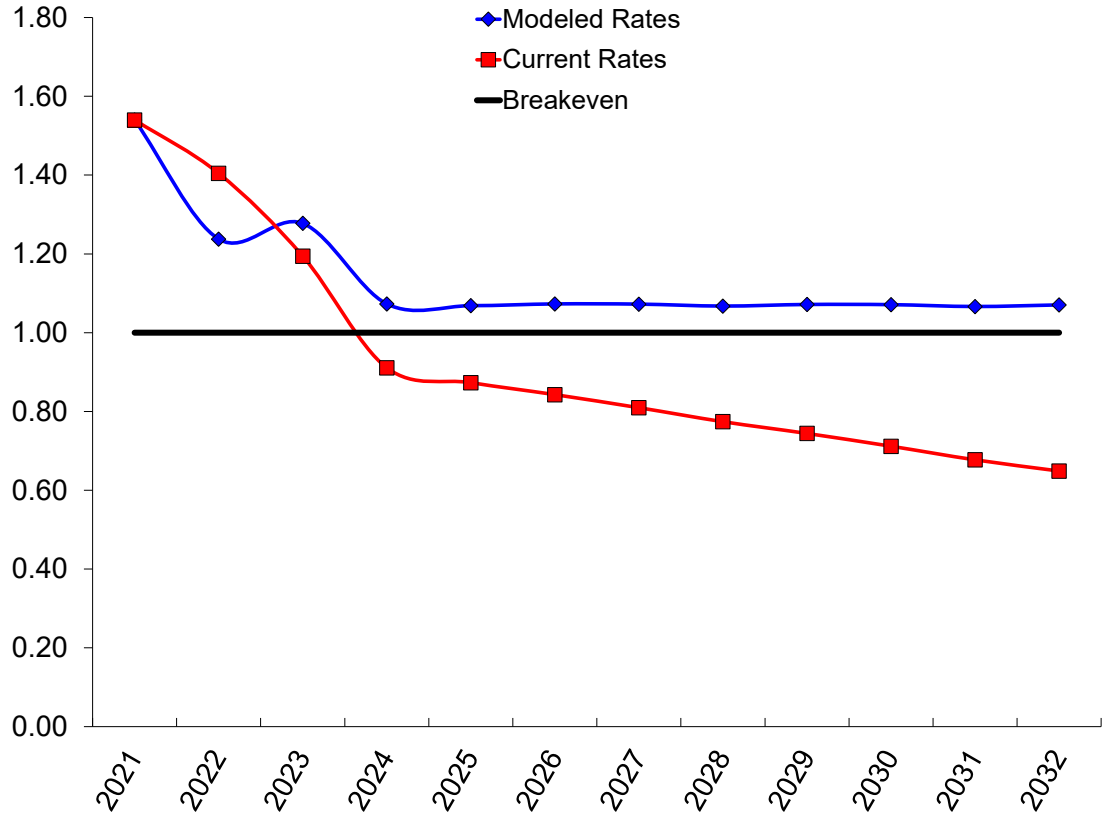


Chart 2 - Coverage Ratio

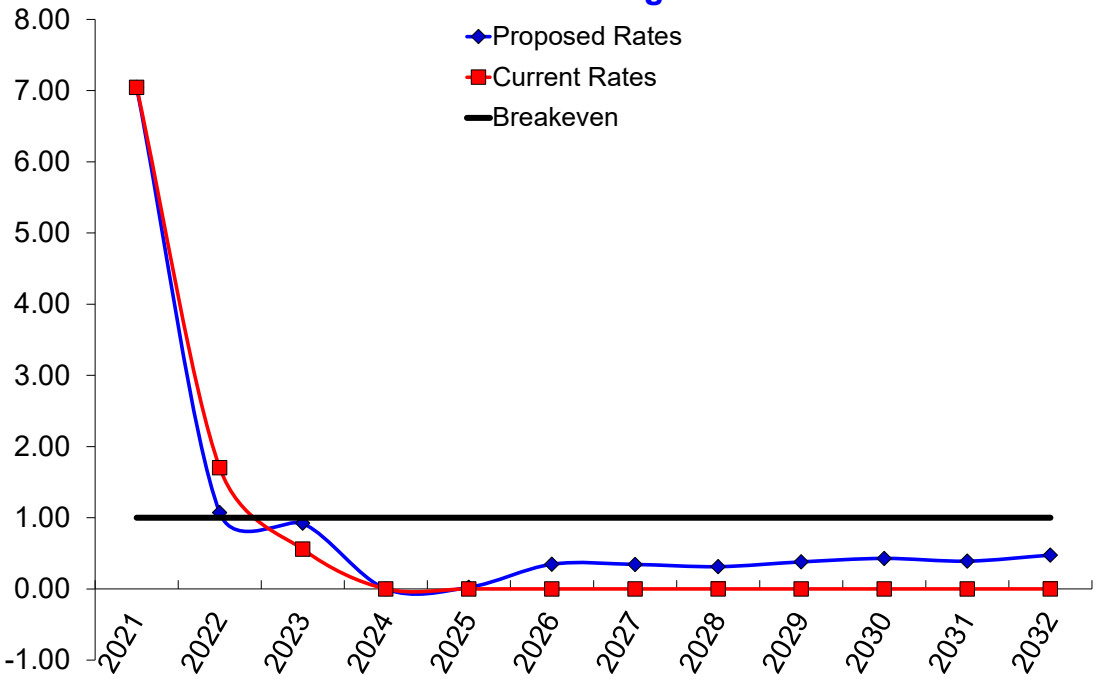


Chart 3 - Residential Users' Bills

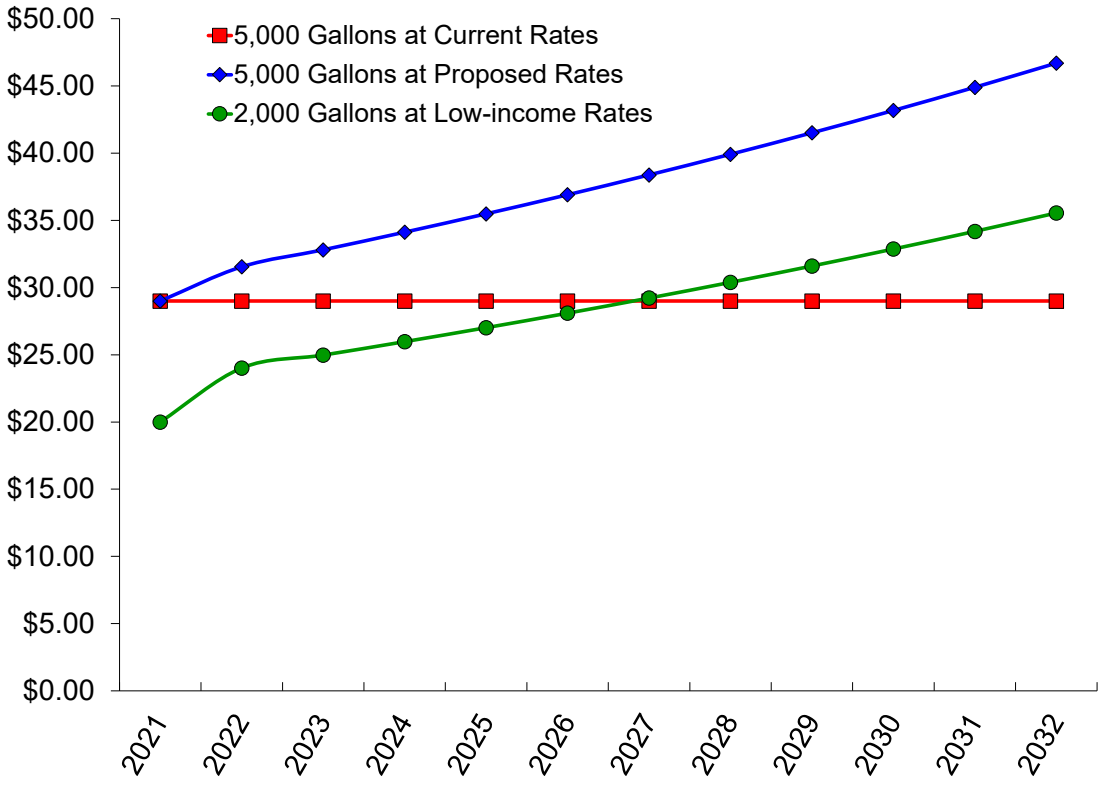


Chart 4 - Affordability

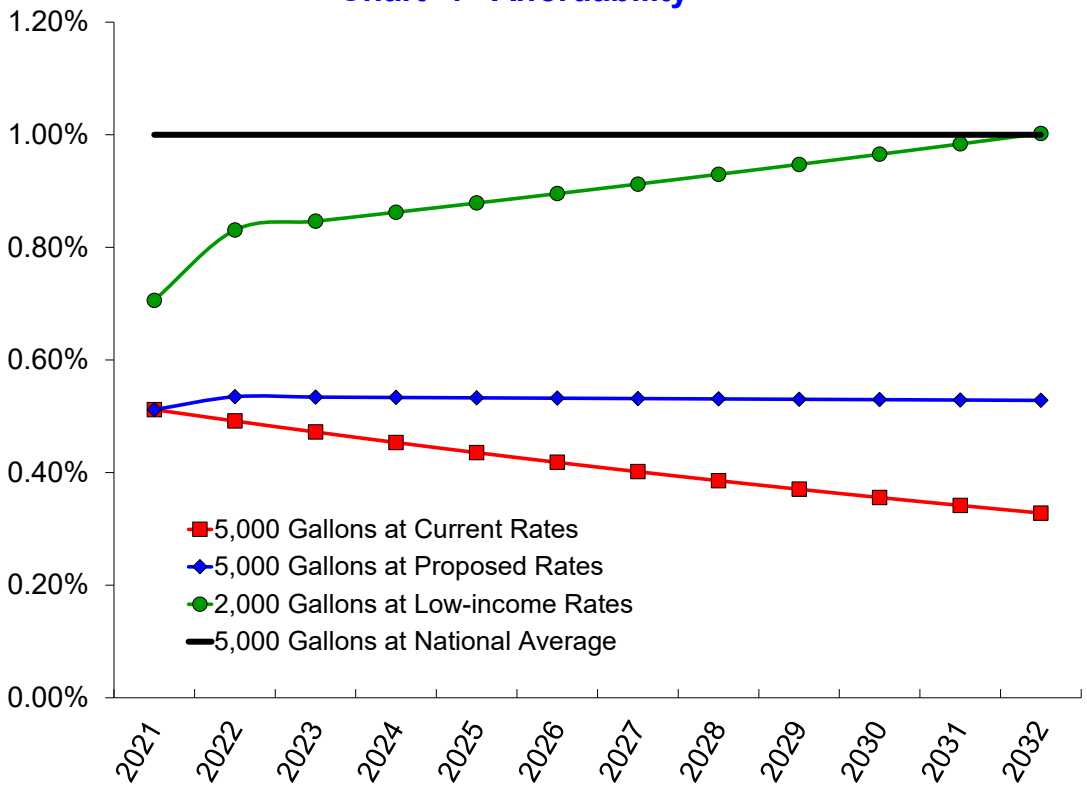


Chart 5 - Working Capital vs Goal

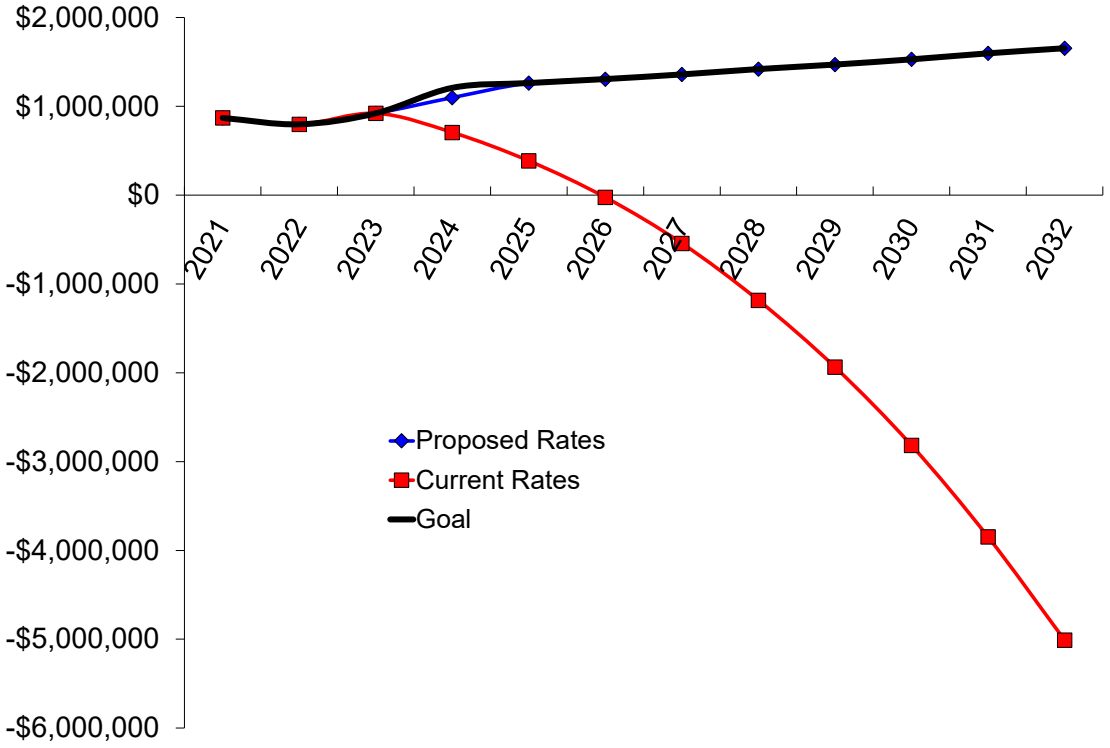


Chart 6 - Value of Cash Assets Before Inflation

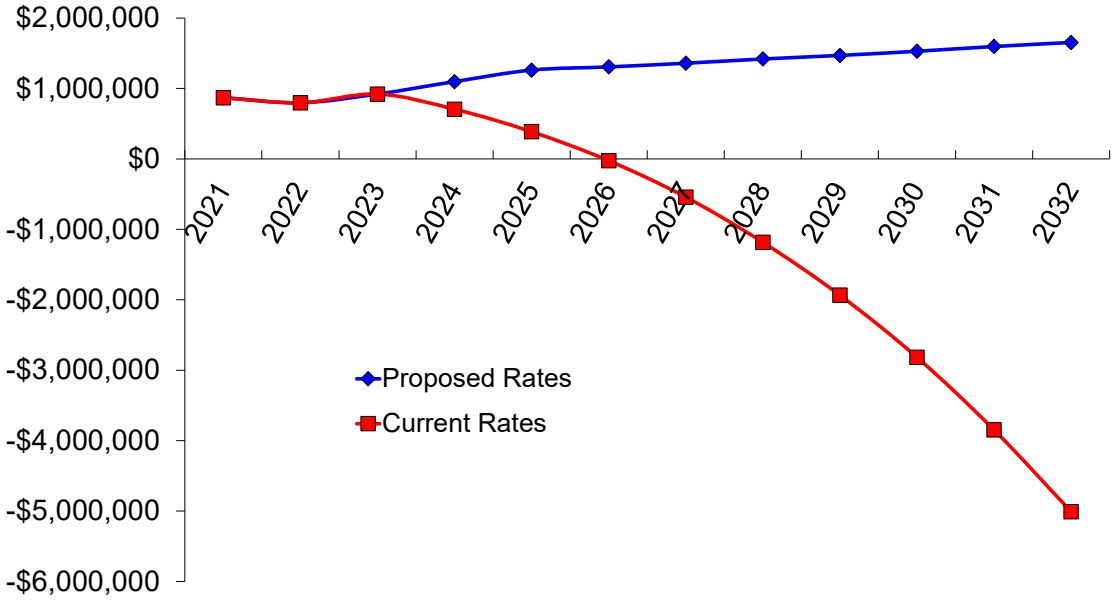


Chart 7 - Value of Cash Assets After Inflation

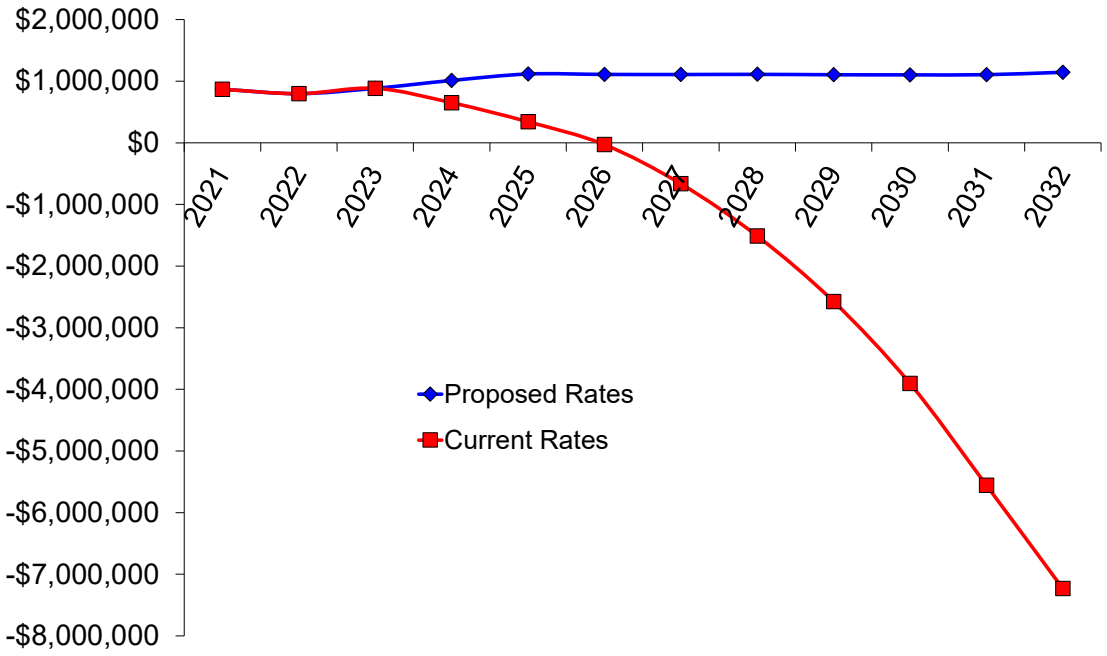
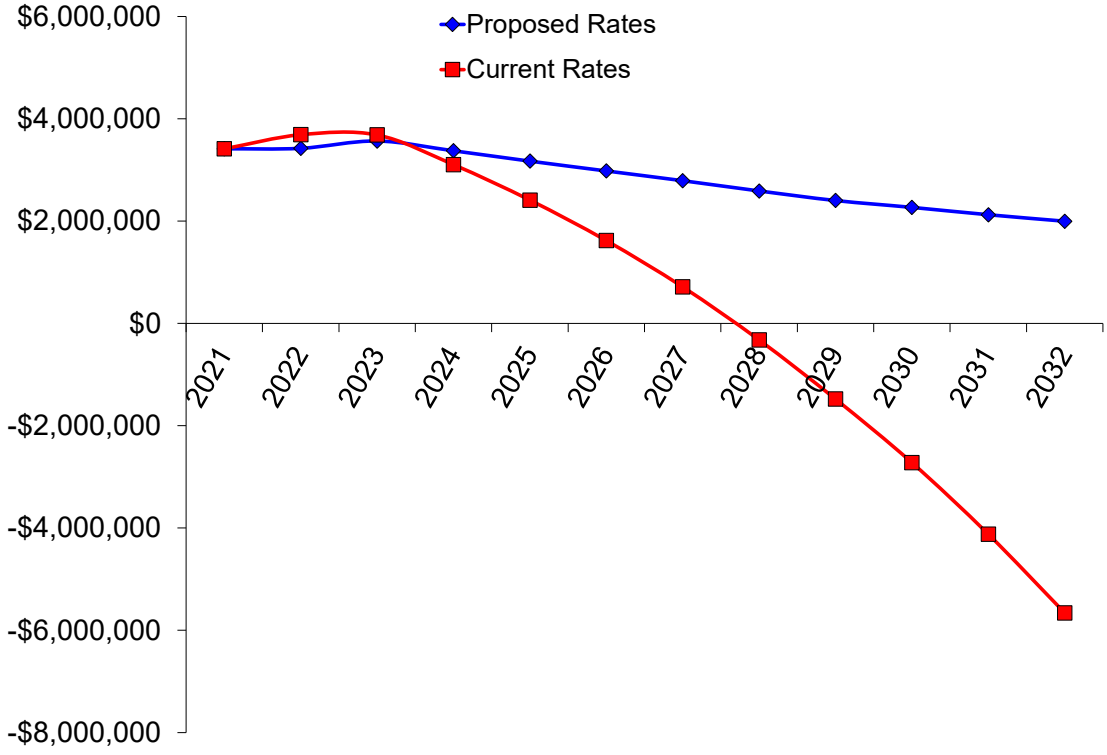


Chart 8 - Sum of All Reserves



Rawlins, WY, Water Rates Model 2022-3, River Water

This model is like the recommended rates model except it assumes additional sales of river water.

August 24, 2022

This rate analysis model was produced by
Carl E. Brown, GettingGreatRates.com
1014 Carousel Drive, Jefferson City, Missouri 65101
(573) 619-3411
https://gettinggreatrates.com
carl1@gettinggreatrates.com

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

Table 3 - Operating Incomes and Basic User Data

Rawlins, WY, Water Rates Model 2022-3, River Water

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)

$65,294	Census Bureau estimate of AMHI for the year 2019
$36,600	Census Bureau estimate of AMHI for the year 2000
$28,694	AMHI growth during this time period
4.13%	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

2	Number new Water connections made during test year
$1,000	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 Starting 7/1/20	Analysis Year 0 Year Starting 7/1/21	Years Following the Analysis Year (for Which Results Have Been Projected) 1st Year Starting 7/1/22	2nd Year Starting 7/1/23	3rd Year Starting 7/1/24	4th Year Starting 7/1/25	5th Year Starting 7/1/26	6th Year Starting 7/1/27	7th Year Starting 7/1/28	8th Year Starting 7/1/29	9th Year Starting 7/1/30	10th Year Starting 7/1/31
Rate Increases Projected for Future Years	N.A.	N.A.	N.A.		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
				The row above shows the rate at which user charge fees should be increased for each year beyond the initial rate adjustment year. Unless stated otherwise, these should be across-the-board increases to all rates and fees and that should continue until a new rate analysis is done.									
Average Number of Customers	N.A.	3,685	3,691	3,693	3,695	3,697	3,699	3,701	3,703	3,705	3,707	3,709	3,711
Customers Added or Lost (-) Each Year	N.A.	2.0	5.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Customer Growth or Loss (-) Rate	N.A.	0.05%	0.15%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%
Test Year (Actual) and Projected Future Years' Sales, in Gallons	N.A.	478,028,778	478,750,743	479,010,160	479,269,576	479,528,992	479,788,409	480,047,825	480,307,242	480,566,658	480,826,074	481,085,491	481,344,907
Operating Incomes													
User Charge Fees (Tables 10, 12, 12B, 15, 15B, 16, 16B, as applicable)	N.A.	$2,115,809	$2,118,074	$3,058,538	$3,182,603	$3,311,697	$3,446,027	$3,585,805	$3,731,252	$3,882,596	$4,040,079	$4,203,948	$4,374,462
Penalties	N.A.	$21,160	$24,003	$24,016	$24,029	$24,042	$24,055	$24,068	$24,081	$24,094	$24,107	$24,120	$24,133
Water Meter Tap Fees	% Above	$2,000	$5,566	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Adjusted Meter Size-based System Development Fees (Tables 13, 14, if applicable)	% Above	$0	$5	$2,080	$2,163	$2,249	$2,339	$2,433	$2,530	$2,631	$2,737	$2,846	$2,960
Investment Income	N.A.	$1,564	$12,884	$7,977	$9,212	$12,081	$12,618	$13,067	$13,590	$14,193	$14,700	$15,288	$15,965
Other Income (WYDOT)	N.A.	$91,367	$10,984	$10,984	$10,984	$10,984	$10,984	$10,984	$10,984	$10,984	$10,984	$10,984	$10,984
State Water Line Grant	N.A.	$404,887	$17,400	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Shutoff Notice Fee	N.A.	$34,375	$31,175	$31,175	$31,175	$31,175	$31,175	$31,175	$31,175	$31,175	$31,175	$31,175	$31,175
Delinquent Reconnect Fee	N.A.	$5,600	$3,640	$3,640	$3,640	$3,640	$3,640	$3,640	$3,640	$3,640	$3,640	$3,640	$3,640
Investment Income	N.A.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Charges to Customers Adjustment to Reconcile With User Charge Fees Above	N.A.	$0	-$248,924	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
River Water Additional Sales, 90M Gallons per Year	N.A.	$0	$0	$0	$289,800	$301,555	$313,787	$326,515	$339,759	$353,540	$367,880	$382,801	$398,328
Five Percent Net Revenue Gain After Springwater Collection System is Rehabilitated	N.A.	$0	$0	$0	$152,927	$159,044	$165,406	$172,022	$178,903	$186,059	$193,501	$201,241	$209,291
Revenue Loss Because Rate Adjustments Not Made Until October 1, 2022	3	$0	$0	-$206,460	$0	$0	$0	$0	$0	$0	$0	$0	$0
Revenue Loss (-) Due to Conservation	10.0%	$0	$0	-$40,965	-$7,205	-$7,497	-$7,802	-$8,118	-$8,447	-$8,790	-$9,146	-$9,517	-$9,903
Total Operating Incomes		**$2,676,762**	**$1,974,807**	**$2,890,986**	**$3,699,327**	**$3,848,970**	**$4,002,229**	**$4,161,591**	**$4,327,466**	**$4,500,123**	**$4,679,656**	**$4,866,527**	**$5,061,035**

Notes: Notes for the Model apply here, as well. In addition, the pink highlighted item assumes 90M gallons of additional sales of river water at the then applicable in-Town rates.

Table 4 - Operating Costs and Net Income

Rawlins, WY, Water Rates Model 2022-3, River Water

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.)			Analysis Year	Years Following the Analysis Year (for Which Results Have Been Projected)									
Expense Items	Inflation/ Deflation (–) Factor	Test Year Starting 7/1/20	0 Year Starting 7/1/21	1st Year Starting 7/1/22	2nd Year Starting 7/1/23	3rd Year Starting 7/1/24	4th Year Starting 7/1/25	5th Year Starting 7/1/26	6th Year Starting 7/1/27	7th Year Starting 7/1/28	8th Year Starting 7/1/29	9th Year Starting 7/1/30	10th Year Starting 7/1/31
Personal Services	4.0%	$598,844	$622,797	$821,123	$853,968	$888,126	$923,651	$960,597	$999,021	$1,038,982	$1,080,541	$1,123,763	$1,168,714
Information Technogy	4.0%	$3,696	$3,843	$3,997	$4,157	$4,323	$4,496	$4,676	$4,863	$5,058	$5,260	$5,470	$5,689
Public Health Lab	4.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Water Meter Service	4.0%	$106,240	$110,490	$114,910	$119,506	$124,286	$129,258	$134,428	$139,805	$145,397	$151,213	$157,262	$163,552
Hydrant Maintenance	4.0%	$28,482	$29,621	$30,806	$32,038	$33,320	$34,653	$36,039	$37,480	$38,979	$40,539	$42,160	$43,846
Backflow Prevention	4.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Asbestos & Technical Services	4.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Engineer	4.0%	$129,155	$134,322	$139,694	$145,282	$151,093	$157,137	$163,423	$169,960	$176,758	$183,828	$191,181	$198,829
Other	4.0%	$15,336	$15,950	$16,588	$17,251	$17,941	$18,659	$19,405	$20,181	$20,989	$21,828	$22,701	$23,609
Electrical	4.0%	$110,805	$115,237	$119,912	$124,776	$129,837	$135,103	$140,583	$146,286	$152,219	$158,393	$164,818	$171,503
Phone Internet	4.0%	$20,944	$21,782	$22,653	$23,559	$24,502	$25,482	$26,501	$27,561	$28,663	$29,810	$31,002	$32,242
Repair and Maintenance	4.0%	$12,603	$13,107	$13,631	$14,177	$14,744	$15,334	$15,947	$16,585	$17,248	$17,938	$18,656	$19,402
Travel and Training	4.0%	$4,727	$4,916	$5,113	$5,317	$5,530	$5,751	$5,981	$6,221	$6,469	$6,728	$6,997	$7,277
Materials	4.0%	$68,908	$71,664	$74,530	$77,512	$80,612	$83,837	$87,190	$90,678	$94,305	$98,077	$102,000	$106,080
Chemicals	4.0%	$24,361	$25,336	$26,349	$27,403	$28,499	$29,639	$30,825	$32,058	$33,340	$34,674	$36,061	$37,503
Miscellaneous Studies	4.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Facilities	4.0%	$25,300	$26,312	$27,364	$28,459	$29,597	$30,781	$32,013	$33,293	$34,625	$36,010	$37,450	$38,948
Supplies	4.0%	$2,749	$2,859	$2,973	$3,092	$3,216	$3,344	$3,478	$3,617	$3,762	$3,913	$4,069	$4,232
Other	4.0%	$53,972	$56,131	$58,376	$60,711	$63,140	$65,665	$68,292	$71,023	$73,864	$76,819	$79,892	$83,087
Depreciation Expense	0.0%	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Interest Expense	0.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Transfers Out (Administration)	4.0%	$532,042	$331,400	$364,356	$378,930	$394,087	$409,851	$426,245	$443,295	$461,027	$479,468	$498,646	$518,592
Pre-treatment for River Water	4.0%	$0	$0	$0	$500,000	$520,000	$540,800	$562,432	$584,929	$608,326	$632,660	$657,966	$684,285
User Charge Analysis Services	5.0%	$0	$9,677	$0	$0	$10,668	$0	$0	$11,762	$0	$0	$12,968	$0
Total CIP-related Payouts	N.A.	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Total Operating Costs		**$1,738,164**	**$1,595,443**	**$1,842,376**	**$2,416,138**	**$2,523,523**	**$2,613,441**	**$2,718,055**	**$2,838,618**	**$2,940,013**	**$3,057,698**	**$3,193,063**	**$3,307,391**
Net Income (or Loss)		$938,598	$379,364	$1,048,610	$1,283,188	$1,325,447	$1,388,788	$1,443,536	$1,488,848	$1,560,110	$1,621,958	$1,673,464	$1,753,644
Working Capital Goal: 50%	In Dollars, That is:	$869,082	$797,722	$921,188	$1,208,069	$1,261,761	$1,306,721	$1,359,028	$1,419,309	$1,470,006	$1,528,849	$1,596,531	$1,653,696

Notes: The green highlighted amount above, for "Personal Services," is the amount determined by a salary study done by the Town. For years, U.S. water system budget inflation has run approximately three percent. The current high inflation environment may continue for some time before "settling down." Therefore, I have assumed an average inflation rate of four percent for the entire modeling period. The blue highlighted item, electric, was also increased in future years by the rate of growth in customers and their use.

Table 17 - Financial Capacity Indicators and Reserves

Rawlins, WY, Water Rates Model 2022-3, River Water

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 7/1/20	0 Year Starting 7/1/21	1st Year Starting 7/1/22	2nd Year Starting 7/1/23	3rd Year Starting 7/1/24	4th Year Starting 7/1/25	5th Year Starting 7/1/26	6th Year Starting 7/1/27	7th Year Starting 7/1/28	8th Year Starting 7/1/29	9th Year Starting 7/1/30	10th Year Starting 7/1/31
Customary Affordability Index												
Monthly Bill for a 5,000 gal per Month, Small Meter Residential Customer	$29.00	$43.55	$45.29	$47.10	$48.98	$50.94	$52.98	$55.10	$57.30	$59.60	$61.98	$64.46
AMHI Within Service Area	$67,988	$70,794	$73,715	$76,756	$79,924	$83,221	$86,655	$90,231	$93,954	$97,831	$101,868	$106,071
Affordability Index: Current Rates First Column, Modeled Rates After That	0.51%	0.74%	0.74%	0.74%	0.74%	0.73%	0.73%	0.73%	0.73%	0.73%	0.73%	0.73%
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	$20.00	$33.89	$35.24	$36.65	$38.12	$39.64	$41.23	$42.88	$44.59	$46.38	$48.23	$50.16
Income at One-half the AMHI and Rising at One-half the Rate Above	$33,994	$34,695	$35,411	$36,142	$36,887	$37,649	$38,425	$39,218	$40,027	$40,853	$41,696	$42,556
Affordability for Low-income, Low-volume: Current Rates First Column, Modeled Rates After That	0.71%	1.17%	1.19%	1.22%	1.24%	1.26%	1.29%	1.31%	1.34%	1.36%	1.39%	1.41%

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	1.54	1.24	1.57	1.53	1.53	1.53	1.53	1.52	1.53	1.53	1.52	1.53

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	7.05	1.07	2.20	0.79	0.94	0.99	1.02	1.04	1.09	1.17	1.20	1.27

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.

Reserves	Balance Ending on 6/30/20	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
Cash and Cash Equivalents, Less deferred Outflows	$2,896,211	$869,082	$797,722	$921,188	$1,208,069	$1,261,761	$1,306,721	$1,359,028	$1,419,309	$1,470,006	$1,528,849	$1,596,531	$1,653,696
Other Liquid Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Undedicated Cash Assets	$2,896,211	$869,082	$797,722	$921,188	$1,208,069	$1,261,761	$1,306,721	$1,359,028	$1,419,309	$1,470,006	$1,528,849	$1,596,531	$1,653,696
Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	$2,896,211	$869,082	$797,722	$884,340	$1,113,357	$1,116,326	$1,109,859	$1,108,114	$1,110,975	$1,104,633	$1,102,896	$1,105,652	$1,145,240
Repair & Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt and CIP Reserves	$0	$2,544,760	$2,625,412	$2,220,901	$1,881,843	$1,657,573	$1,285,967	$838,436	$560,830	$275,682	$311,804	$205,683	$520,850
Sum of All Reserves	$2,896,211	$3,413,842	$3,423,133	$3,142,089	$3,089,912	$2,919,334	$2,592,688	$2,197,464	$1,980,139	$1,745,689	$1,840,653	$1,802,214	$2,174,545

Table 18 - Bills Before and After Rate Adjustments

Rawlins, WY, Water Rates Model 2022-3, River Water

On average, the modeled rates will be 38.9% higher than the current rates.

If the rate classes shown below include meter size-based minimum charges, the percentage calculated and shown above includes meter size-based surcharges. Otherwise, the percentage does not include surcharges.

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	Gallons of Use	Customers Using This Volume or Less	Customers Using This Volume or More	Now Current Bill for This Volume	Modeled Bill for This Volume	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
In-Town, Assuming 5/8 or 3/4-inch meter	0	0	3,590	$14.00	$27.45	$13.45	96%
	1,000	0	3,590	$17.00	$30.67	$13.67	80%
	2,000	0	3,590	$20.00	$33.89	$13.89	69%
	3,000	0	3,590	$23.00	$37.11	$14.11	61%
	4,000	0	3,590	$26.00	$40.33	$14.33	55%
	5,000	0	3,590	$29.00	$43.55	$14.55	50%
	6,000	0	3,590	$32.00	$46.77	$14.77	46%
	7,000	0	3,590	$35.00	$49.99	$14.99	43%
	8,000	0	3,590	$38.00	$53.21	$15.21	40%
	9,000	0	3,590	$41.00	$56.43	$15.43	38%
	10,000	0	3,590	$44.00	$59.65	$15.65	36%
	10,394	3,590	3,590	$45.18	$60.92	$15.73	35%
	20,000	0	0	$74.00	$91.85	$17.85	24%
	30,000	0	0	$104.00	$124.05	$20.05	19%
	40,000	0	0	$134.00	$156.25	$22.25	17%
	50,000	0	0	$164.00	$188.45	$24.45	15%
	60,000	0	0	$194.00	$220.65	$26.65	14%
	70,000	0	0	$224.00	$252.85	$28.85	13%
	90,000	0	0	$284.00	$317.25	$33.25	12%
	110,000	0	0	$344.00	$381.65	$37.65	11%
	140,000	0	0	$434.00	$478.25	$44.25	10%
	160,000	0	0	$494.00	$542.65	$48.65	10%

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers Using This Volume or Less	Customers Using This Volume or More	Now Current Bill for This Volume	Modeled Bill for This Volume	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
In-Town Glenn Addition, Assuming 5/8 or 3/4-inch Meter	0	0	61	$32.96	$27.45	-$5.51	-17%
	1,000	0	61	$32.96	$30.67	-$2.29	-7%
	2,000	0	61	$32.96	$33.89	$0.93	3%
	3,000	0	61	$32.96	$37.11	$4.15	13%
	4,000	0	61	$32.96	$40.33	$7.37	22%
	5,000	0	61	$32.96	$43.55	$10.59	32%
	6,000	0	61	$32.96	$46.77	$13.81	42%
	6,319	61	61	$32.96	$49.99	$17.03	52%
	7,000	0	0	$32.96	$53.21	$20.25	61%
	8,000	0	0	$32.96	$56.43	$23.47	71%
	9,000	0	0	$32.96	$59.65	$26.69	81%
	10,000	0	0	$32.96	$59.65	$26.69	81%
	20,000	0	0	$32.96	$91.85	$58.89	179%
	146,000	0	0	$32.96	$542.65	$509.69	1546%
In-Town Fire Protection	0	0	8	$0.00	$0.00	$0.00	N.A.
	130	8	8	$0.39	$0.42	$0.03	7%
	160,000	0	0	$480.00	$515.20	$35.20	7%
In-Town Construction	0	0	3	$0.00	$0.00	$0.00	N.A.
	130	0	3	$0.98	$1.05	$0.07	7%
	160,000	0	0	$1,200.00	$1,288.00	$88.00	7%
Out-of-Town, Assuming 5/8 or 3/4-inch meter	0	0	22	$18.60	$36.47	$17.87	96%
	1,000	0	22	$22.60	$40.76	$18.16	80%
	2,000	0	22	$26.60	$45.05	$18.45	69%
	3,000	0	22	$30.60	$49.35	$18.75	61%
	4,000	0	22	$34.60	$53.64	$19.04	55%
	5,000	0	22	$38.60	$57.93	$19.33	50%
	6,000	0	22	$42.60	$62.23	$19.63	46%
	7,000	0	22	$46.60	$66.52	$19.92	43%
	8,000	0	22	$50.60	$70.81	$20.21	40%
	9,000	0	22	$54.60	$75.11	$20.51	38%
	10,000	0	22	$58.60	$79.40	$20.80	35%
	15,000	0	22	$78.60	$100.87	$22.27	28%
	20,000	0	22	$98.60	$122.33	$23.73	24%
	30,000	0	22	$138.60	$165.27	$26.67	19%
	40,000	0	22	$178.60	$208.20	$29.60	17%
	50,000	0	22	$218.60	$251.13	$32.53	15%
	60,000	0	22	$258.60	$294.07	$35.47	14%
	70,000	0	22	$298.60	$337.00	$38.40	13%
	70,877	22	22	$302.11	$340.76	$38.66	13%
	90,000	0	0	$378.60	$422.87	$44.27	12%
	110,000	0	0	$458.60	$508.73	$50.13	11%
	120,000	0	0	$498.60	$551.67	$53.07	11%
	160,000	0	0	$658.60	$723.40	$64.80	10%

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers Using This Volume or Less	Customers Using This Volume or More	Now Current Bill for This Volume	Modeled Bill for This Volume	Modeled Bill Increase or Decrease (-)	Modeled Bill Percentage Increase or Decrease (-)
Out-of-Town Raw Water	0	0	0	$0.00	$0.00	$0.00	N.A.
	1,000	0	0	$4.50	$4.50	$0.00	0%
	160,000	0	0	$720.00	$720.00	$0.00	0%
Out-of-Town Fire Protection	0	0	0	$0.00	$0.00	$0.00	N.A.
	1,000	0	0	$4.00	$4.29	$0.29	7%
	160,000	0	0	$640.00	$686.93	$46.93	7%
Out-of-Town Construction	0	0	0	$0.00	$0.00	$0.00	N.A.
	130	0	0	$1.95	$2.09	$0.14	7%
	905,900	0	0	$13,588.50	$14,584.99	$996.49	7%
Town of Sinclair	0	0	1	$0.00	$0.00	$0.00	N.A.
	1,000	0	1	$3.00	$1.93	-$1.07	-36%
	2,000	0	1	$6.00	$3.86	-$2.14	-36%
	3,000	0	1	$9.00	$5.80	-$3.20	-36%
	4,000	0	1	$12.00	$7.73	-$4.27	-36%
	5,000	0	1	$15.00	$9.66	-$5.34	-36%
	6,000	0	1	$18.00	$11.59	-$6.41	-36%
	7,000	0	1	$21.00	$13.52	-$7.48	-36%
	8,000	0	1	$24.00	$15.46	-$8.54	-36%
	9,000	0	1	$27.00	$17.39	-$9.61	-36%
	10,000	0	1	$30.00	$19.32	-$10.68	-36%
	15,000	0	1	$45.00	$28.98	-$16.02	-36%
	20,000	0	1	$60.00	$38.64	-$21.36	-36%
	23,370	1	1	$70.11	$45.15	-$24.96	-36%
	40,000	0	0	$120.00	$77.28	-$42.72	-36%

Chart 1 - Operating Ratio

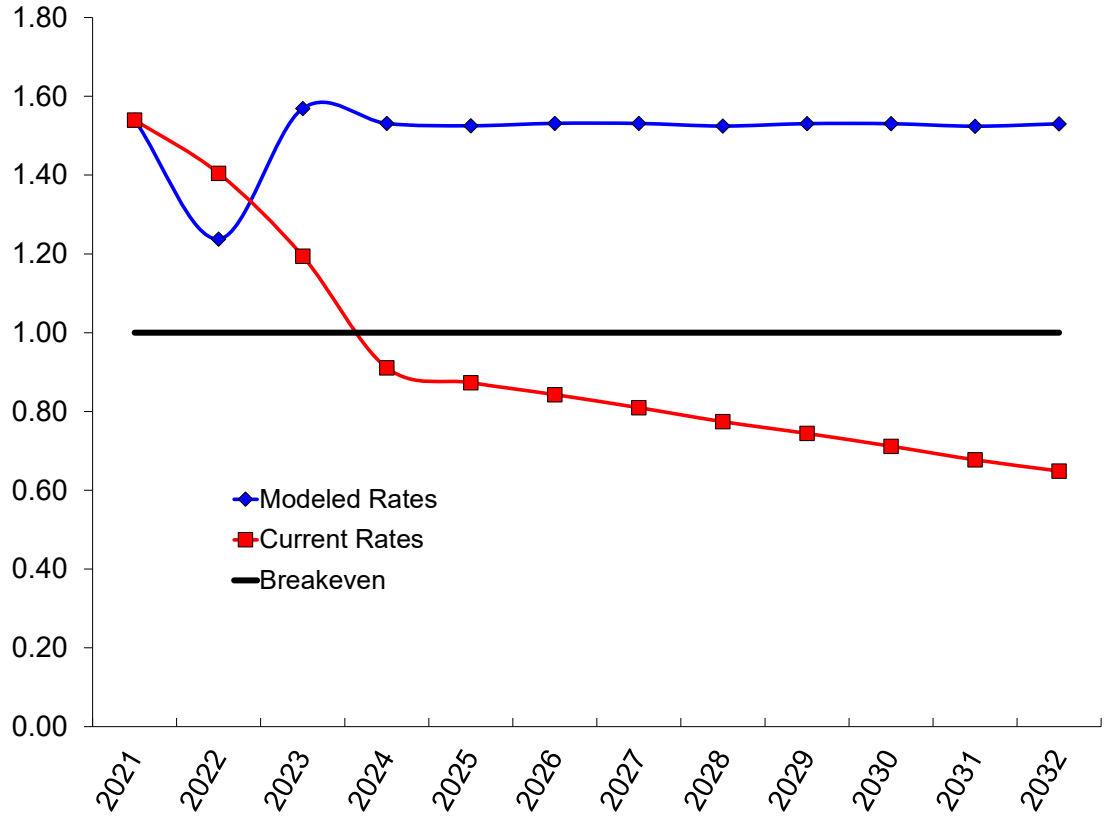


Chart 2 - Coverage Ratio

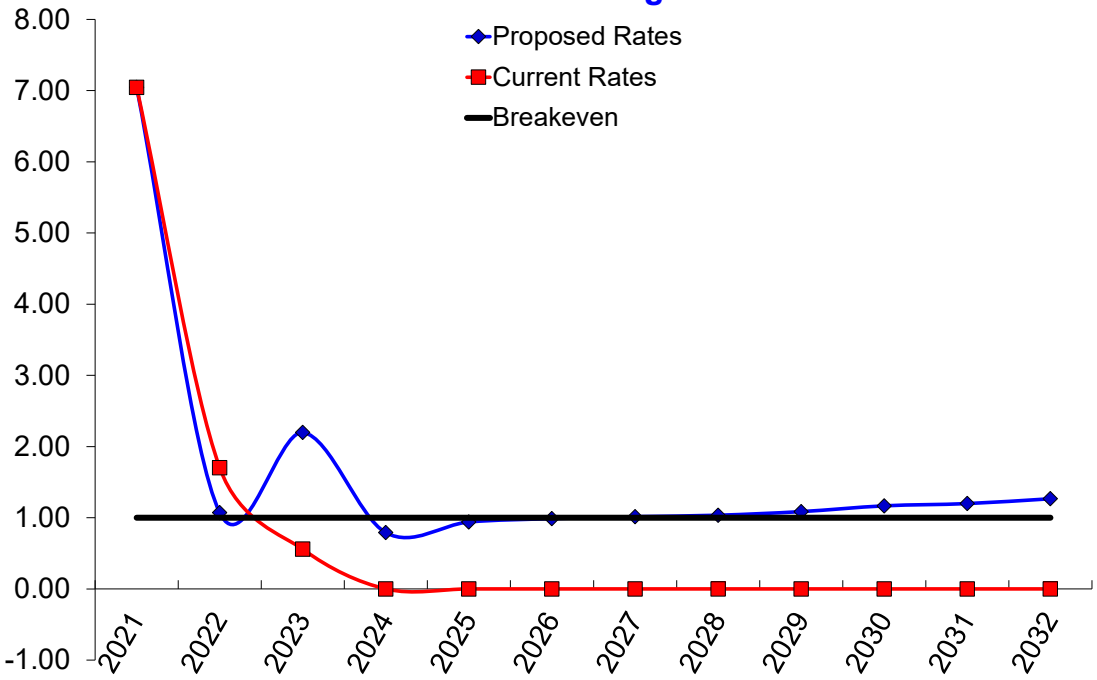


Chart 3 - Residential Users' Bills

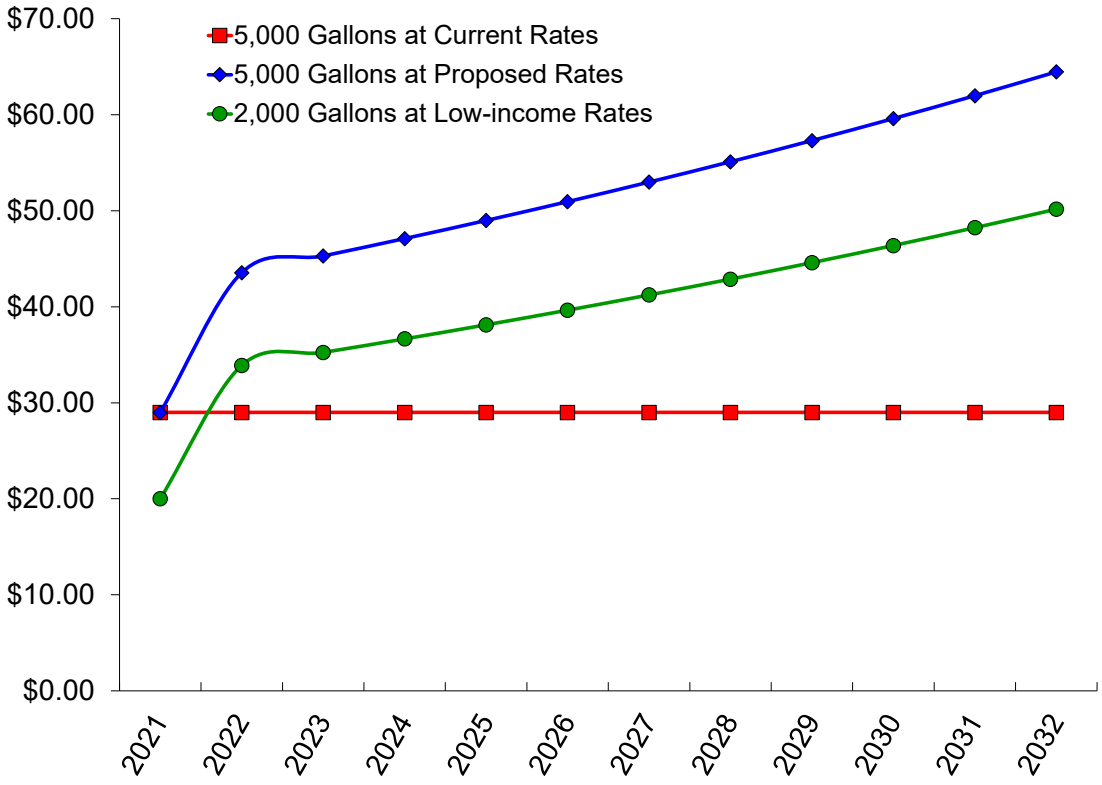


Chart 4 - Affordability

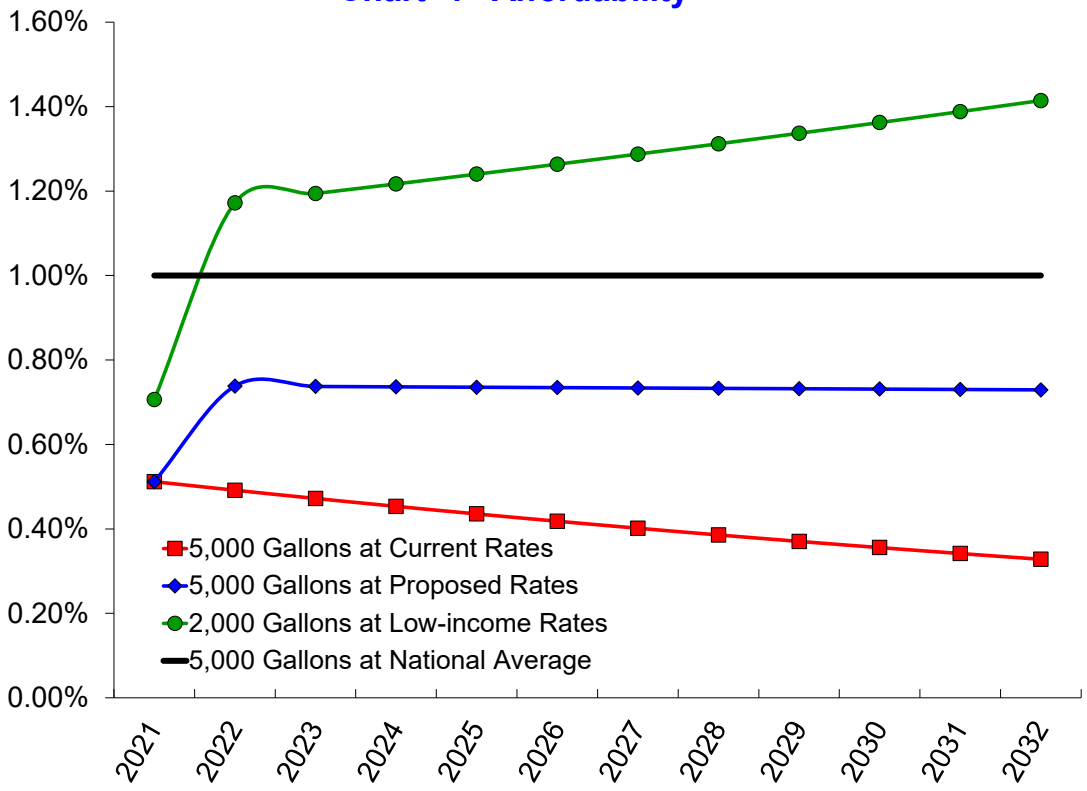


Chart 5 - Working Capital vs Goal

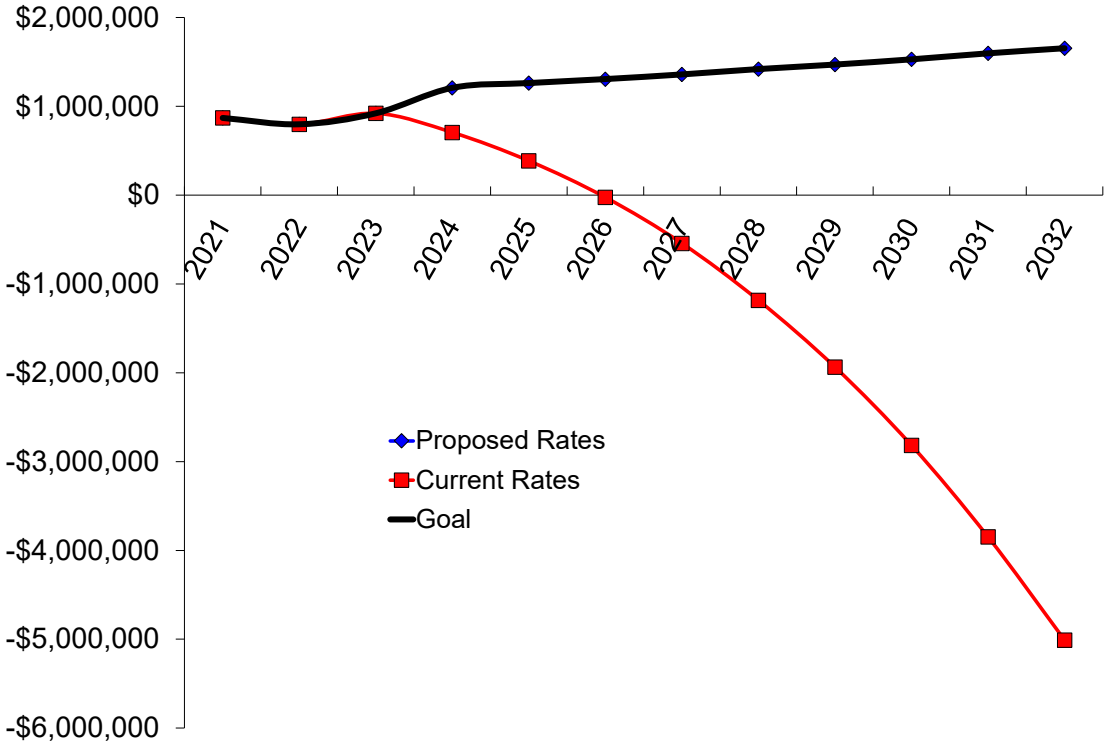


Chart 6 - Value of Cash Assets Before Inflation

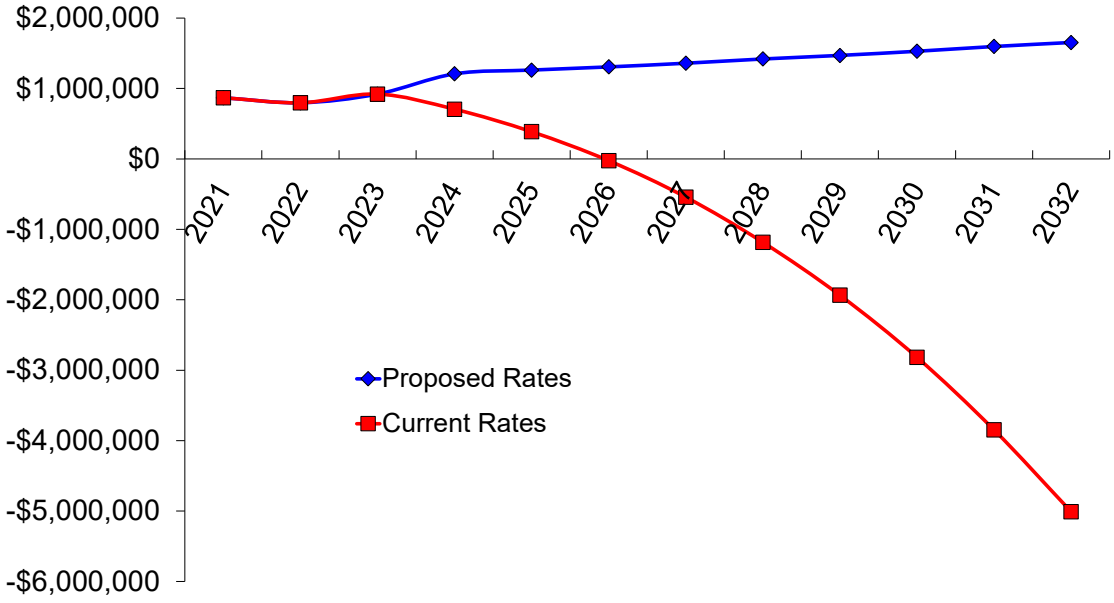


Chart 7 - Value of Cash Assets After Inflation

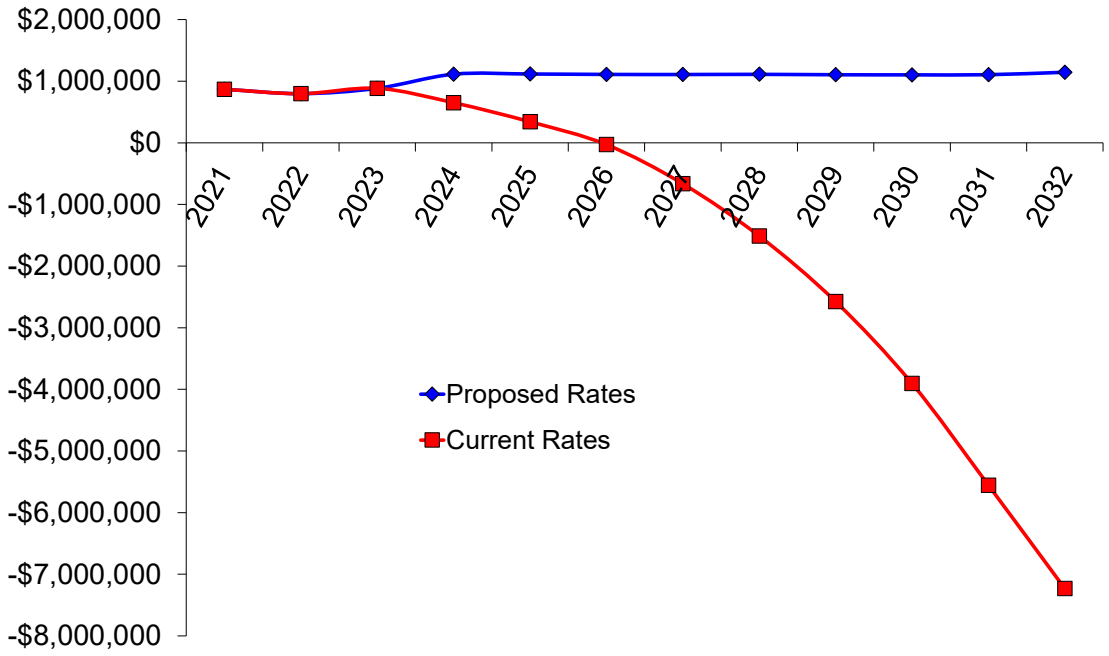


Chart 8 - Sum of All Reserves