Proposal for Water, Sewer and Stormwater Rate Analyses City of Bonner Springs, Kansas

Purpose and Need

This proposal describes the need, responsibilities, timing, investment and other issues for rate analyses (later referred to as "analyses") of the water and sewer utilities and stormwater services (later all referred to as the "utilities"), for the City of Bonner Springs, Kansas (later referred to as "you"). These analyses will be performed by GettingGreatRates.com (later referred to as "I"). To adequately fund operation of your utilities, build and maintain reserves, fund capital improvements and related debt service, which will be substantial, and establish rates that are fairly structured for ratepayers, you need to analyze your rates and fees, set them appropriately and periodically reset them.

Disclosure: I analyzed your water and sewer rates in 2006 and again in 2017.

Expected Results

With completion of the analyses:

1. You will discover at what level your utilities need to be funded to accomplish needed system development, refurbishment, repair, maintenance and operation.
2. You will have the "proof" you need to convince council members, ratepayers and property owners why rates and fees should be set as modeled.
3. You will have the "proof" you need to show funding agencies and the lending market why your systems deserve the grants, loans and loan terms you desire.
4. You will successfully comply with your permit to dispense water, NPDES permit and other requirements from the regulatory agencies.

In addition to such general outcomes, in a conference call with Sean Pederson, Frank Abart and Tillie LaPlante of the City, we discussed output they hope to receive from these analyses that will help them set rates and fees properly in the future. Those include:

1. A set of rates and fees that will pay all current and near-term operating and known capital improvement costs;
2. A set fee or fees that would pay for known but further in the future capital improvement needs; and
3. A multiplier that could be used to calculate a set fee or fees needed to pay for a level of capital improvement or debt payment needs that becomes clearer in the future but is not clear at the time of these analyses.

My services will produce these outputs, but I recognize that the desired outcomes may change as the project proceeds – as I analyze, the City will learn things that may cause it to adjust its goals. That is all part of the process and my service.

Firm Revenues, Qualifications and References

One hundred percent of the firm's revenues come from rate analysis and related work. Visit gettinggreatrates.com/ggr/freebies/ReferenceList.pdf and see the attached for detailed qualifications and references. The list includes all rate analysis clients since 2014. GettingGreatRates.com has one office in Jefferson City, Missouri but we operate nation-wide.

Carl Brown, President, will perform all analysis work for this project. He has been doing rate analysis work since 1993. For most of that time he has also been teaching practitioners all over the U.S. on rate analysis and rate setting, writing the rate setting book called, "How to Get Great Rates" and designing rate analysis software.

Jacki Hicks, the firm's Vice-president, will assist in these analyses by doing data testing and data input. Ms. Hicks prepares analysis models, especially those for analyses that require databases. Ms. Hicks has approximately 24 years of experience in accounting, financial assurance and complex spreadsheet and database design. Eight of those years have been devoted to utility rate analysis.

GettingGreatRates.com serves as the rate analyst for the Kansas RATES Program https://krwa.net/TECHNICAL-ASSISTANCE/Rate-Reviews. Kansas Rural Water Association (KRWA) member systems qualify for a 25 percent discount on all fees. I know the City to be a member system of KRWA, therefore, you qualify for this discount.

You may expect your analysis results package to look much like the rate analysis report package attached and others that can be found at the bottom of this Webpage https://gettinggreatrates.com/freebies/freebies.shtml.

Form of Agreement

This proposal and your acceptance (probably by e-mail message) of one or more service packages is all the agreement I need. Nearly all my clients acquire my services this way. However, if you prefer to attach a cover "letter of agreement" or signature page to this proposal, you are welcome to do so.

Guarantee

If you are not satisfied with our work, don't pay us.

Details: If you are unsatisfied with our work, simply tell me about it. I will do my best to make it right by you. If I still am not able to satisfy you, notify me by mail or e-mail. I will cease the services in question at that point, you will owe me nothing for those services and I will refund any payments you may have already made for those services.

This has been my guarantee policy from the day the company was formed. No client has invoked this guarantee to date, and I don't plan to have you be the first.

Insurance

The firm carries the following insurance:

- Professional liability, $2,000,000 limit, United States Liability Insurance Company (USLI)
- General liability, $1,000,000 limit, United States Liability Insurance Company (USLI)
- Auto liability, $1,000,000 limit, American Family Insurance Company

Scope of Services That You May Select or Decline, at Your Option

The following service packages are intended to satisfy your rate analysis and rate setting needs.

- Service package 1 is analysis of your water utility's user charge and other fee adjustment needs. Analysis will include output from modeling of your current financial situation in up to three modeled rate scenarios that depict rate structures and other variables you may want to consider. Because you are faced with substantial capital improvements, you will likely need two scenarios modeled and possibly three.
- Service package 2 is the same as service package 1, except it is for the sewer utility.
- Service package 3 is the same as service package 1, except it is for the stormwater utility.
- Service package 4 is for on-site visits. Each visit will be one instance of this service package. (I generally recommend one on-site visit to present the completed analyses and recommendations and to answer questions at a public council meeting. That is especially useful when I analyze more than one utility, or the analyses and rate adjustments are complex. Because stormwater rates are relatively new for you and setting of those rates may proceed on a different timeline, you might want to have me do that analysis and a separate report early-on. In that case, you might want to have me make a site visit for that utility's rates and another visit later to cover water and sewer.)
- Service package 5 is an hourly rate for scenarios beyond the first three for each utility, or for any work you desire that does not fit into the other service package descriptions above. It appears three scenarios for each utility will satisfy your scenario needs, and you will need no other kind of service from me, either.

You may add or drop service packages at any time.

Approach and Timeline

For most of my clients, rate analysis and eventual rate adjustments take about six months from start to finish. That is mainly because clients must gather data for the analysis, make some interim decisions as the project proceeds and proof analysis models and draft reports. That takes time. However, in my experience working with Tillie LaPlante, who was previously my main contact for data, she is quite fast in sending needed data and returning drafts after review. Completion time will be somewhat affected by my workload. But if we start soon and you gather data quickly, we can have your analyses and report done by the end of 2019.

Most analyses include the same basic elements, but they do not necessarily get completed in the same order. And, each situation calls for special considerations and treatments. However, your project will likely proceed approximately as follows:

1. I will call your contact person, probably the day I am notified that I will be doing the analyses, to discuss data needs and get the contact started on initial data retrieval.
2. Your staff will assemble and send to me data and information, most of which is described in the "Data Needs Sheet," attached. I will guide your staff through the entire process. Where data is missing, I will create estimates or help you to create estimates. Initial data retrieval will be accomplished early on, preferably within a few weeks. But some data will be acquired throughout the project.
3. I will analyze this data and information and build your rate analysis models.
    a. Coordinating with your contact, I will target a set of goals ten years in the future. These will include, at least, covering all costs, including capital improvements over that time period, and building appropriate reserves.
    b. I will model rates on a "cost-to-serve" basis to satisfy those goals. You may request other structures and I will model those, as well.
    c. Key model building will probably be completed about three months into the project, if you collect data quickly. Some modeling will continue through nearly the end of the project.
    d. Once models have been built, "what-if" scenarios will be run to find the optimum mix of rate and fee levels and structures, capital improvement funding options, reserve levels, etc. to suit the needs of your utilities.
4. During the last half of the project I will examine as many scenarios of your possible future as it makes sense. If I simply discuss a scenario with or send by e-mail information about a scenario, but do not prepare a written report about that scenario, that is simply work required to perfect your models. If I prepare and send a written report about the scenario, that will count against the three scenarios you are allowed under service packages 1, 2 and 3. If you desire modeling of more than three such scenarios, I will do that work and bill you the hourly rate under service package 5 for that work. It is unlikely you will need such work.
5. You will likely choose to consider adopting rates and funding levels from the one or two most promising scenarios for each utility.
6. Final output will include a cover letter, a narrative report of my findings and recommendations and copies of the analysis scenarios that interest you.
    a. The project is "complete" when you say it is. Until then, I will reanalyze and issue supplemental or new reports until you are satisfied. To be clear, supplemental reports having to do with the first three scenarios are covered by service packages 1, 2 and 3. Such work is not billable under service package 5.

7. If you choose the on-site visit service package, I will present my final analysis results and recommendations to your council in person. While there I would also like to meet with staff to discuss how to make needed changes to billing, equipment replacement scheduling and any other administration or operational issues that are discovered.
8. As you draft proposed amendments to your ordinances and budgets to make the rate, fee and other changes, at your request I will review those changes to assure that they will accomplish what you intend to accomplish.
9. The council will pass ordinance amendments to set new rates and fees and make budget revisions and other changes. From this point forward, your utilities will be headed to a better financial future.

Work Coordination and Contacts

Generally, I will only communicate with your designated contact(s) about the analyses. There are degrees of exceptions:

1. I keep KRWA informed of my activities through the RATES Program. Therefore, I copy them on proposals, invoices, rate analysis reports and other communications of similar importance. But I have an understanding with them that they will not divulge to others, information I share with them. Other than, perhaps, using your project as a teaching example, they have little call for discussing your situation anyway. Sharing with them is focused on enabling them to oversight my work.
2. It is rarely, but sometimes, beneficial for me to contact funding or permitting agencies, and similar entities, about funding options and such. But I would discuss that with your contact first.
3. On occasion, a ratepayer, developer or someone else who would be affected by new rates will call or e-mail me direct. In those situations, I speak courteously with people and give them general information about how I perform analysis and the like. But I do not divulge important specific information about the client's analyses. I leave that up to the client. I apply this policy to council members, staff and other people who are not designated contacts but who are concerned about the rate analysis or they want to "guide" the analysis even though they are not one of my contacts. To put it bluntly, I guard against a council member "going rogue."

Early on you will probably designate your finance director and public works director or delegated staff to be my contacts. This stage is primarily a data gathering and modeling function. When we progress to the reporting out stage you may want to also designate a policy-related staff person or governing member as I prepare rate, fee and proposed policy action recommendations.

I sum up my contacts policy like this. You are my client. I work for you. When I give my work product to your designated contact, it becomes your property and no one else's until you make it public.

Use of Electronic Technology

I do almost all analysis work electronically and remotely, receiving and sharing data and information by e-mail attachment. I prefer to receive numerical data in a spreadsheet format and textual material in a word processor format, but we can work with other formats, too. When I return material to you that you need to manipulate further, such as a revised ordinance, I will return it electronically in a format you can conveniently use. You will receive my analysis reports, the analyses and my recommendations electronically as PDF documents.

Investment

Because Bonner Springs is a member system of KRWA, you qualify for the 25 percent Kansas RATES Program discount. Therefore, following are your complete investments for my services, materials and travel costs, based upon the service descriptions above:

- **Service package 1**, water rate analysis – full fee of $9,682, less the Kansas RATES Program discount of $2,421 yields a **net fee of $7,262**
- **Service package 2**, sewer rate analysis – full fee of $9,682, less our multi-study discount of $968, and less the Kansas RATES Program discount of $2,178 yields a **net fee of $6,535**
- **Service package 3**, stormwater rate analysis – full fee of $9,682, less our multi-study discount of $968, and less the Kansas RATES Program discount of $2,178 yields a **net fee of $6,535**
- **Service package 4**, on-site visits – $1,121, less the Kansas RATES Program discount of $280 yields a **net fee of $841 per visit**
- **Service package 5**, hourly rate of $142.38 per hour, less the Kansas RATES Program discount of $35.60 yields a **net hourly rate of $106.79 per hour**

If you choose service packages 1, 2 and 3, and one visit from package 4, the group of services you most likely need, the total investment will be $21,173, which includes total multi-study and Kansas RATES Program discounts of $8,994.

Once the project gets started you may add or drop service packages as your needs become clearer.

Proposal Acceptance

This proposal is effective through December 31, 2020, if you choose at least one service package by September 1, 2019. Once you tell me what service packages you desire, and you provide data to work with, I will immediately start to produce the analyses.

Promptly given the data I need, there is no good reason why I cannot complete the project by the end of 2019.

Action item: If you accept this proposal call me to tell me what services you desire. Or, give me the same information in writing by e-mail message.

Payment

I will first invoice you for one-half of the project dollar amount after 90 days from proposal acceptance and the balance when I submit the final report package. If you request hourly work, I will invoice you no more frequently than monthly. You shall promptly pay the full amounts of those invoices. If you request and pay for services but later cancel those services, I will refund those fees to you. If I cancel any services in this proposal (I have yet to do such a thing), you will owe me no fees for those services, and I will refund any fees you have already paid for those services.

In Closing

I am looking forward to the opportunity to conduct the next round of your rate analyses, so you can get your utility rates, finances and services set on an excellent course, again.

Best regards,
GettingGreatRates.com

Carl E. Brown
President

March 5, 2020

Jeff Harrington, Mayor
City of Bonner Springs
200 E 3rd Street
Bonner Springs, KS 66012

Subject: Water, Sewer and Stormwater Rate Analysis Report

Dear Mr. Harrington:

Attached is the rate analysis report for the City's water, sewer and stormwater utilities and services. Before I address the report, I have some observations for you.

This is the third set of rate analyses I have done for the City. Having worked with Tillie LaPlante, Finance Director, each time, I'm getting to know Tillie pretty well. She is, and always has been so good to work with. She knows the City's finances and how things work, she has produced just what I needed every time and has done it so easily. She is a very good person to have as my rate analysis contact with the City.

This is my first time working with Frank Abart since he joined the City staff as Public Works Director, though I knew him a bit from before that. Frank is so meticulous, accurate, helpful and on a personal level, easy to work with.

I like working with your staff and I'm confident in what they produced for me. That makes rate analysis accurate and it makes the work enjoyable. Count yourselves lucky to have these folks.

Now, on to the report.

This is the third set of analyses for water and sewer. With the proposed set of water and sewer rate adjustments, you are approaching "cost-to-serve" rates about as close as you can get. And, these rates will fully fund some significant improvement needs in the next few years without big increases.

Stormwater rates will be a different matter. The City is on the cusp of building, essentially, a brand-new stormwater management program. You just cannot compare the current program to what will be the new program. Necessarily, stormwater management and the rates needed to fund that program will be a work in progress for a few years. But ten years from now, when you look back at this time, I'm confident you will be astounded at the improvements you have made. Stormwater rates need to go up markedly and the structure needs even more change. The rates I have calculated do both, bringing those rates into a cost-to-serve structure.

Once the initial water, sewer and stormwater rate adjustments are in place, you should monitor cash flow and reserve accumulation carefully. Over the next several years, if revenues and costs – especially capital improvement costs – and reserves come in as projected, great. Do the inflationary increases I recommend in the report. If reserves fall short of their targets and if it appears that will not be a temporary situation, have Ms. LaPlante give me a call to discuss the situation. If you need to make further adjustments to get reserves back on track, I can probably help you do that quickly and for no additional fee. Having models of your new conditions makes it easy to change a factor and re-run the rates to cover the change.

The City engaged me to make an on-site visit to present my report and results to the Council and answer questions. I look forward to that meeting, so I can explain things that are difficult to grasp in a long report and complex models.

Finally, I am sure you and the Council members know of other cities and districts that also need rate setting help. As you run into these folks at municipal league and rural water association meetings and other 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 work with Bonner Springs.

Best regards,
GettingGreatRates.com

Carl E. Brown
President

Enclosure

Water, Sewer and Stormwater

Rate Analysis Report

Bonner Springs, Kansas

Prepared March 5, 2020

Carl Brown, President
GettingGreatRates.com, LLC

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Index of Model Tables and Charts

Executive Summary

The analyses in this report calculate cost-to-serve water, sewer and stormwater rates for the City.

The initial water rate adjustments will result in the water bill for a 5,000 gallon per month residential customer increasing from the now current $51.35 per month to $69.41.

The initial sewer rate adjustments will result in the sewer bill for a 5,000 gallon per month residential customer increasing from the now current $53.73 per month to $61.90.

The initial stormwater rate adjustments will be pronounced, resulting in the stormwater bill for a single-family residential property with two Equivalent Residential Units (ERUs) increasing from the now current $3.00 per month to $13.02. However, the current costs and rates are remarkably low, so any increase will be large on a percentage basis. The future financial need will be remarkably high due to the need to satisfy State stormwater requirements, so big investments are needed.

The Meaning of This Report, in a Nutshell

The City of Bonner Springs, KS, later called "the City" or "you," hired GettingGreatRates.com, later called "me," "we" or "I," to perform rate analysis of its water, sewer and stormwater services; to produce a report of my findings and recommendations; and to provide guidance on rate setting. (As background, I performed similar water and sewer rate analyses for the City in 2006 and 2016. This year is your first for stormwater rate analysis.)

This report is detailed. The math behind the report is complex. Many assumptions had to be made about data. And, your rates situation has some complexities. These things make the modeling complex and interpreting the models difficult. Following 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 are 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.

Overall, rate revenues for water and sewer need to go up moderately. Stormwater revenues need to go up markedly. Stormwater rate restructuring and a large increase overall is needed because the current structure is not based on cost-of-service calculations. In addition, the City recently was cited by the Kansas Department of Health and Environment as needing marked system improvements. Improving the stormwater management program will be beneficial to the City and its residents and businesses. But the initial driver is the fact the State is pushing the City to improve its stormwater management performance.

When all rate adjustments for all three utilities and services are considered, the resulting rates will be simpler, and they will be related to the costs to serve customers and properties.

Important Sets of Names and Terms Used in This Report

The report includes three rate analysis models, called:

- "Bonner Springs, KS, 2020 Water Rates Model 1," later called, "the Water Model;"
- "Bonner Springs, KS, 2020 Sewer Rates Model 2," later called, "the Sewer Model;" and
- "Bonner Springs, KS, 2020 Stormwater Rates Model 3," later called, "the Stormwater Model."

I shorten these names in the report to make reading quicker and understanding better. Later, in the section of the report that covers water rates, I shorten the name even future to "the Model." I do the same in the other two sections when referring to the models that are relevant to each section. When I refer to all models collectively, I call them the "models," in lower case.

The models are sets of integrated calculations that mathematically depict the utilities' and services' situations – incomes, expenses, capital improvement needs, debt and more. The process of doing calculations with models is called, "modeling."

Introduction

"Test year" is the one-year period from which data was used as the starting place for the analysis.

Overall, water, sewer and stormwater rate revenues are about on track with current financial needs. Over the years, you have done the hard rate adjustments work to make that happen. Most utilities do not carry through as you have, and they suffer for it. Raising rates is never fun but if you do it a little at a time, as needed, it is a lot easier for everyone concerned. I commend you for the good work. Now the work expands by adding a high level of stormwater management to the list.

Water and sewer revenues need to go up moderately. Both will need to rise in the future to match inflation in the costs to operate and improve the systems. Stormwater rates must rise markedly to fund an essentially brand-new program of service.

Having adequate rates is rate setting job one. But, having fairly structured rates is very important, too. Cost-to-serve rates are the clearest way to achieve both goals. I recommend such rates. There are several special rates that, if it is possible and practical, I recommend you assess the same rates to those customers as all others.

Changes in the amounts of minimum charges, unit charges and system development fees were driven by cost classification. Costs have changed over the years, so rates need to change to match them. Thus, some customers' bills will go up while others will go down, but it is all due to the nature and level of each system's costs.

This report is the culmination of a process where I submitted information and data requests to Tillie LaPlante (and later to Frank Abart and Matt Beets). They submitted data and I modeled it. We went through this step several times. Eventually, the modeling progressed enough to submit drafts for review and feedback. Ms. LaPlante and Mr. Abart reviewed those drafts to assure accuracy, and in some instances, they corrected data.

With that feedback, I prepared and submitted a draft final report. Again, City staff reviewed and gave me feedback, from which I revised the full report to arrive at this, hopefully, the final report.

The report is in two parts. The first is this narrative report that tells readers what should be done to the utility's rates and why and interprets much of the mathematical modeling. The second is a printout of the modeling spreadsheets, all built on the same template.

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 then make well-informed decisions about actions to take. And the report and models are not legal recommendations. For legal issues consult your attorney.

Important Issues, Assumptions, Details and Caveats

Water Customer Usage Data

We base analyses on customer usage data. The customer usage data for your water system included many large volume corrections. I understand this occurred because, during the test year, the City was changing out meters to a different type that registered volume differently. Thus, the City had a mix of meters reading to different volume increments; some to single gallons, others to one-hundred gallons.

The effect of these corrections was to make individual customer volume data points unusable for our purposes. Thus, we could not associate the rate change effects with individual customers or use at different ranges of volume. Fortunately, the City's water and sewer rate structures as such that we did not need that degree of detail to accurately model revenues to be generated by new rates.

Said another way, the net volume billed to customers should be accurate. We just do not know how that volume was distributed among the customers.

Finally, I understand the meter changeout should be completed soon, so this problem should be resolved soon.

Capital Improvement and Repair and Replacement Scheduling

The City schedules and pays for equipment repair and replacement (R&R), as well as what appear to be lesser capital improvements, on an annual basis. In the budget, these are called, "Major Capital Items." R&R is also handled that way. I decided to leave the R&R items in the expense tables, but I moved the obvious capital improvements and related debt service to a separate table with which I analyze such items.

The public works director also gave me a capital improvements plan (CIP) that lists major needs for ten years, starting with 2019. A new water treatment plant, a new water tower plus the engineering for projects of this level of cost are included in the CIP. Sewer has similar types of needs. Stormwater needs are quite different and major.

K. C. Renaissances Festival and Other Special Customers

Some customers have been set out as special customers, or their rates have been set out separately in rate ordinances. Some services are unique enough that they do need their rates set out separately. Likewise, if a customer receives service from the City by special contract rather than through the City's rate ordinances and ordinances regarding how the City will provide utility services, using a contract makes good sense. Otherwise, I recommend you provide service and assess rates based on what the council adopts by ordinance. And, the rates for a customer that is like other customers that are served by ordinance, should pay the same rates as those other customers. An example is the sewer rates for K. C. Renaissances Festival.

K. C. Renaissances Festival is a business. Like other businesses, it should pay sewer rates based on water volume used each month. Other businesses do not enjoy a 30,000 gallon per month billed volume maximum. K. C. Renaissances Festival should pay sewer user charges based on the total flow of wastewater it generates, not a maximum of 30,000 gallons per month.

K. C. Renaissances Festival and a few other customers the City currently bills at special rates do not appear individually later in this report or in the recommended rates. That is because I recommend you bill them as you would any other customer based on the meter size that serves them.

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. In the past, I wrote about such issues in each rate analysis report. Now, I cover such issues in separate guides, all available for FREE download at https://gettinggreatrates.com/freebies/freebies.shtml. Following is a listing of a few those guides and resources:

1. How to Get Great Rates© (e-book)
2. Rate Setting Issues Guide©
3. Replacement Scheduler©
4. CIP Scheduler©

How to Get Great Rates focuses on rate setting for smaller systems. The Rate Setting Issues Guide expands upon the book to cover affordability, sustainability, bill assistance programs, meter size-based system development fees and minimum charges, and more.

The last two items in the list above are spreadsheet applications that enable users to build equipment repair and replacement and capital improvement schedules themselves, calculate their costs and calculate revenues needed to pay those costs. In fact, these spreadsheets were extracted from my model template and made a bit more user-friendly for do-it-yourselfers. I encourage the City to use these two sheets so you can make repair and replacement and capital improvement plans more formal, more forward-looking and less reactive.

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

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. Your situation is simple enough that I did not need to use all the methods I normally employ for calculating fair and adequate rates.

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. The cost-needs approach is a static (one year) rate calculation. I enhance that approach by projecting costs and revenues into the future.

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 time period, usually in the near future, are classified as "fixed," "variable," "capacity-to-serve," or some combination of the three. Fixed costs are converted to a 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 minimum charge. (Fixed, variable and capacity costs are the major types of costs. However, other costs could be involved, classified and attributed to appropriate customers or entities, too.)

The first step in calculating cost-to-serve rates is to classify costs, which is done in Table 8. The "Average Fixed Cost/User/Month" from Table 8 is used for calculating the base minimum charge. Also, from Table 8, the "Average Variable Cost to Produce/1,000 gallons (or other units)" is the basis for calculating unit charges. I classify costs for a year in the near future that appears to be typical of what the utility can expect in a few years. The ratio between the fixed cost sum and the variable cost sum determine the cost-to-serve rates structure, to be described a bit later.

An aside, but an important one in my mind, is this. The M1 Manual describes how to calculate cost-to-serve rates to the customer class level. If a rate analyst classifies costs to that level and the utility sets rates in that structure, 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. Within a class, rates could still be quite unfair.

I take cost classification one step further, to the customer level. Thus, rates that I calculate are cost-to-serve at 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.

The second step is to arrive at capacity costs.

The third step is to project costs ten years into the future. Generally, this is done by applying an expected inflationary factor to each cost. Some expenses, like postage, treatment chemicals and electricity, rise with inflation plus growth in the customer base or use. Those were increased in future years by both factors.

The fourth step is to set reserve goals, through the tenth year, in my case. 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.

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.

The fifth step is to arrive at the full suite of rates needed to fully fund the utility. This is a dynamic set of decisions and calculations, too complex and situation-specific to completely explain here. I will leave out some details. The "Cliff's Notes" version is this:

- 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. In a similar way, capacity costs are calculated to be recovered by system development fees, system development surcharges or a combination of both.
- To increase (or very rarely decrease) overall revenues to a target, the revenue stream from fixed cost recovery and the revenue stream from variable cost recovery are 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) need is established, the base charge is calculated from the projected minimum charge revenue. The unit charge is calculated from the projected unit charge revenue. The resulting rates are the starting user charge rates, what you will (hopefully) adopt initially. In later years, you will increase these starter rates and fees across-the-board by an inflationary factor, to keep them tracking with rising costs.
- Of course, investment earnings, penalties collected, and other income sources generate revenues. Those are calculated and added to rate revenues for each year. Without explaining the details, you should have a sense that, while the math is complex, the rates are calculated to be proportionate to the costs each customer causes and the revenues will be adequate to cover all costs for the next ten years.

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.

Cost-to-serve rates are considered by many, including me, to be the most mathematically fair and defensible rate structure. However, there are often good reasons to adopt rates that are at least somewhat different from true cost-to-serve rates.

Your utilities already have, and 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, "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, you incur one increment of this type of cost. **In your case, all fixed costs were considered to be equally shared by all customers.**

- 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.*** The surcharges are added to the base minimum charge to arrive at the surcharged, or full minimum charge for each meter size.

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.
- 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 customer on the phone and the revenues such rates will produce next year are the easiest to accurately predict. I like to tell most of my clients that if they 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 water, and almost all sewer service is assessed using 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.

To complicate the aforesaid just a bit, rate setting is first about recovering 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 set of spreadsheets for each analysis that depict, 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.

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 adjust almost any cost, revenue or rate structure and arrive at a new set of rates to adopt. If, one, two or three years from now, you discover your costs or incomes will be different from what I had assumed, call me. Tell me what is different. I can enter the changes into the model 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 probably a written report, I do those projects on an hourly basis. Fees for those usually come in at $500 – $1,000. Some of my clients find that to be a very accurate and cost-effective way to maintain good rates when changes pop up.

Two final thoughts on the rate modeling and adjustment topic:

- Almost always, rate adjustments include bill increases for at least some customers. 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.
- You will get complaints about customers' bills going up. In my experience, 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.

- These statements do not mean "do-it-yourself" rate adjustments are always unfair or insufficient, or that rate adjustments calculated by a "rate analyst" always are fair. Rate structure fairness happens because of what someone does, not who someone is. I always advocate for rates that are fairly structured. If my client wants fairly structured rates, and most do, I calculate them. But costs and other conditions change, so even cost-to-serve rates that I have calculated will become unfair after some years. Over time, rate structures need renewal.

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. As you read the report and models, keep in mind that my recommendations have been weighed against these principles:

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 to be left high and dry without utility services to support their investments.
2. The second order of business is, perform in a business-like manner. Be effective. Be as efficient as you reasonably can. Those two attributes compete with one another. In most utility services and situations, effectiveness trumps efficiency. It does not benefit water customers if you pump lots of water to them cheaply, but that water will make them sick. And, customers gain more benefit from water rates that are a bit higher than they would like, but those rates 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 by paying commensurate system development fees. Likewise, service users should pay for what they use. Each user or class of users should pay their fair share of service costs. This is another way of saying, "cost-to-serve" rates.
    a. A related point is, each utility, or enterprise, should pay its own way. Water should not subsidize sewer, sewer should not subsidize trash collection, trash collection should not subsidize the City's general fund.

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 carefully consider the necessity of making the change. For example, cost-to-serve rate analysis may indicate you need to raise the minimum charge markedly. That would raise the bill to most residential customers markedly. That would 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. And 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 forces existing customers to pay all the costs of the utility rather than sharing them with new customers.
5. While cost-based rates are the most demonstrably fair rate structure, they can be impractical for some utilities. Consider this: a large City with thousands of customers that are served by a wide range of meter sizes and there is a wide range of use by those customers, needs rates that are cost-based. 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. The slight increase in rate structure fairness would not be worth it. Simpler rates are better for them.

General Issues

Concerning construction of the models, they were built to match the systems' financial statements and other data as much as is practical. 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 your 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 fund, etc. Therefore, the models account for funds in a more simplified way than you do. When it comes to segregating funds, staff knows best how to do that, so the models do little in this regard and leave the fund segregating up to staff.

Several line graph charts in the models graphically depict some things which would be difficult to pick out of the tables. In all the charts, the **blue line** represents what would happen under the **recommended** 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 Water Model, to learn the meaning of terms used in the charts of both analysis models.

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 decide to keep your current rates. 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 models depict user rates. When the Chart 3 and 4 blue lines go up, meaning rates are going up, customers don't like that because their bills are going up. But the utility will be better funded as a result of those higher rates and that benefits ratepayers because it makes their utility more resilient and able to make improvements that will serve them better. Customers feel higher rates. But they benefit from better service even if they are not aware it is happening.

One thing you will notice in viewing the charts in the models is this. Sometimes, only one of the lines shows up. When that occurs, it means that all the lines are taking the same path (one line is covering up the others). For example, sometimes Chart 5 shows only one line – the working capital goal amount. When that happens both the current rates and the modeled rates' net revenues are adequate to satisfy the goal, so those two lines are hidden by the line for the goal. That is because, in the models, I programmed all funds that exceed what is needed to meet the working capital goal to "spill over" into the CIP and Debt Service fund reserve. When that happens, rest assured, the other two lines are underneath the goal line and that is a good thing.

Charts 6 and 7 can do the same thing, making it seem like the current rates are "just as good as" the modeled rates. But, Chart 8 will spell the difference between the two sets of rates. The modeled rates will generate more revenue and, thus, produce stronger total reserves. Since the working capital reserve gets truncated at a certain level, the differences in the total reserves show up in the CIP and Debt Service fund balances. These balances appear near the bottom of Tables 5 and 6 of each model, and they are included in the Chart 8 amounts of each model, too.

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.

Action Recommendations for Policy and General Issues

Use the following as a checklist of "to-do" tasks. Many if not all these things you are already doing, but they bear repeating:

1. Periodically determine how long, on average, it takes to perform the various services you provide in the field, such as after-hours service, meter disconnects and reconnects, special meter readings, etc. Be sure to include all the time you actually pay staff for performing these services. Then determine how much it costs the utility per hour, on average, to have staff perform these services. This includes benefits, taxes, use of utility vehicles, tools and minor equipment, etc. It should also include a fair amount to cover the time that office staff devotes to working on these services to track them, bill for them, etc. This should be the hourly rate or a set fee you will charge for these services. In addition, set a minimum that you will charge for showing up, whether the service takes

30 minutes to perform or only ten. 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 functions is important, do not make the process burdensome. For many functions you likely can just estimate your 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 conduct a full rate analysis again when the actual financial performance and my projection of future performance diverge significantly. Conditions should dictate rate analysis frequency, but you will likely need the next analysis in about five years.
4. Fully adopt management strategies that are included in what is most 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 to do capital improvement and equipment repair and replacement scheduling, costing and annuity calculations. These are at the core of asset management.
5. Track volume usage, incomes and expenses on a regular basis so the data and information you generate will support future rate analyses.
6. As a reminder, check with your attorney for language and legality of all charges and issues discussed.

The remainder of this report directly addresses the analysis findings and my recommendations, first for water and later for sewer and stormwater. Several issues affect water, sewer and stormwater rates. Thus, to keep the report shorter and simpler, I will cover such issues in the water section. In the later sections, I will just refer readers back to the water section for those issues.

Water Rates

Recommended Rate Structures

I recommend your rates include:

- System development fees that graduate with meter size, based on the cost of capacity to serve different meter sizes.
- A minimum charge that is also based on meter size for the same reason.
- A single level unit charge with no usage allowance, to be assessed to all customers.
- A premium added to the above rates for out-of-City customers.

You do these things already, but I reiterate them here to say you are on the right track, keep it up. Most of these things are fairly easy to understand but I will expound upon meter size-based rates a bit more in the next subsection.

Meter Size-based Rates

I calculated water meter size-based rates for system development fees and minimum charge surcharges to recover system development costs over time. Thus, system development costs will be paid partly with up-front fees at the time of connection of a new customer, and partly with on-going surcharges to the 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 part of their system development costs over time in the form of surcharges. All of this is a bit complicated but just keep in mind, all the math is done on a cost-to-serve basis.

I almost always recommend meter size-based system development fees (connection fees) and minimum charges for both water and sewer utilities. Your utilities are large enough, and customers are diverse enough to warrant them, so I recommend both for you, too.

Where are these things covered in the Water Model (and in the other models)?

- Tables 12 through 16 cover regular water customer rates.
- The revenues that result from these rates and fees are in Table 3, page 47.

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.

There is a lot of math to such calculations. If you want to research this further, please read Chapter 12 of the "Rate Setting Issues Guide" cited in the subsection called, "Rate Setting Resources Beyond This Report" on page 9.

Out-of-City Rates

Generally, it costs more to serve customers outside of the City than those inside. Out-of-City customers should pay a premium for service. It is common for that premium to be between 100 percent and zero, with the most common premiums at 25 and 50 percent. Yours is 50 percent, which I recommend you continue.

Volume Usage

Table 2, page 40, shows the volumes used by each rate class of customers. In fact, Table 2 breaks volumes used into ranges of use to facilitate revenue calculations, for when the unit charge is not level. These volumes are used to calculate revenue projections from the rates I modeled.

Due to the number and volume of corrections in the data, we could not always discern which data points to include as the billed volume for each customer. Therefore, we calculated the average usage of all customers within each rate class. Because you assess the same unit charge to all volume of use and you have no usage allowance, using the average in revenue calculations produces the same revenue as using the individual usage for each customer for each month. However, using the class-wide average prevents us from calculating the distribution of customers and their use. Said simply, the projected revenues will be correct, and the average use is correct, but within each rate class, we don't know how many customers used 1,000 gallons per month and how many used 100,000.

Expected Incomes

Table 3, page 47, 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 three-percent annual across-the-board rate increase in future years. That means, in years after the initial rate adjustments, which will be discussed later, you will need to raise all important rates and fees by three percent each year to enable incomes to keep up with inflation, pay for improvements and build the reserves to the target level. Thus, rate adjustments need to be done in two lifts; the initial rate adjustments, and in later years, across-the-board increases.

Expected Operating Costs

Table 4, page 48, shows expected operating costs. The first column of costs is for the test year, the next column is for this year, the column after that is for next fiscal year, and so on. Future costs were usually increased by the inflation factor of three percent each year, but some were adjusted by recommendations from City staff. Hence, the need to increase rates across-the-board in future years by three percent.

Unbilled-for and Lost Water

According to the difference between your master metered water purchase/production volumes and the volumes billed to customers, your unbilled-for water rate of 18 percent is a bit high, but common. That unbilled volume is close to the 21 percent rate that comes from the State Water Report you submitted for 2018. If you could get this rate down to around ten percent, you would save tens of thousands of dollars per year in un-incurred variable costs. Thus, some loss prevention measures would "turn a profit" in cost savings, but others would not. Be judicious in which losses you try to fix. On a dollar cost basis, not all losses are worth preventing.

Capital Improvements

Capital improvements and debt are covered in Table 5, page 50. You have debt and a broad slate of improvement projects, so these costs impact rates significantly. With the exceptions of hydrogeologist services and engineering, which will be paid from system reserves, I assumed all improvement costs in this table will be paid for with debt. The new water plant and new water tower will be quite expensive, so debt service will rise markedly in the future. To give you a sense of scale, debt payments in 2024 are projected to be 2.5 times more than current debt payments and rise more for a few more years.

Target Reserve Levels

Your current total reserves exceed what I normally recommend. In such cases, I almost always recommend rates that will retain that level of reserves ten years out, indexed up for inflation. That is what I modeled and recommend for you, too. And, with many expensive improvements approaching, it will be good to have extra reserves on-hand anyway.

You may want to know what reserves I otherwise would have recommended for you. The following spells that out:

1. Unobligated cash and cash equivalent reserves equal to at least 35 percent of the annual operating costs, not including debt service and general administration costs. *Your utility is on the smaller side with big needs approaching, so I would recommend 50 percent;*
2. A 20-year repair and replacement (R&R) schedule reserve, in the 20th year equal to at least one average year's cost of R&R. *You do not have such a schedule, so the cash and cash equivalents reserve will need to cover these costs, as well,* 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. *In your case, I would recommend the same.*

The lines on the bottom of Table 17, page 67, 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.

Chart 8, page 73, shows how reserves will grow over the next ten years.

Projecting budgets and ending balances for next year is a difficult task. 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

Rate affordability, often measured by the Affordability Index (AI), is an important indicator to which you should pay attention.

In Table 17, near the top, I show the estimated AI. The AI is also shown graphically in Chart 4, page 71.

In the table, the AI calculation for the now current rates, listed in the "Test Year" column, was at 1.02 percent. That means, such a customer is paying 1.02 percent of their monthly household income to pay their monthly water bill. The national average is around 1.0 percent and that is consider affordable, so your current rates are right at the average.

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

Under the recommended rates, this customer's AI would rise to 1.35 percent. That is less affordable than the current bill, but still near the average.

Affordability is important because most grant programs that have an AI eligibility criterion try to keep rates, after a capital improvement is completed and debt is in place, below 1.5 to 2.0 percent. Your rates do not satisfy such a criterion and in the future, it is projected the AI will be fairly stable. But do not dismiss grants entirely for future projects. Grant agencies have other eligibility criteria, so you might get a grant based on those.

In Table 17, in the section below the AI information, I calculated bill affordability for a low-income, low-volume customer. Their bill is and will be less affordable than the average customer's bill, which is normal.

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 68, shows how customers' bills at different volumes of use and different meter sizes will be affected by the recommended rates. Table 18 gives ratepayers useful information. It is one of the few tables from the Model that I recommend you give to all who attend the council meeting where we will discuss rates.

Senior Rates and Bill Payment Assistance

I note that you have a senior rate. You may have other criteria besides age to qualify for that program, but I assume the intent is to help those who have a hard time affording their utility bills.

I am not a proponent of bill assistance programs. They are administratively messy, intrusive into participants' personal lives and they can cause an "us versus them" feeling among ratepayers. However, if you would like ideas on how to structure and use such a program, I encourage you to read Chapter 4 of the "Rate Setting Issues Guide" at https://gettinggreatrates.com/freebies/RSIG.pdf.

Recommendations for Adjusting Water Rates

The Water Model contains all my rates-related recommendations and shows what they are built upon. I have discussed some recommendations earlier in this narrative report, too. In the following, I summarized most of those recommendations. In the table that follows, I list the rates and fees you should adopt:

1. Table A that follows this list states the recommended rates and fees to adopt initially.
2. The calculations assumed you would have made these adjustments early enough to enable collection at these rates for billings starting after May 1, 2020.
3. You would need to satisfy all Statutory requirements for making rate adjustments in advance of the adjustment date. That is coming up soon, so if you want to make that date, you will need to move promptly.
4. Approximately one full year after the initial rate adjustments, 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 3.0 percent, as shown near the top of Table 3, page 47.
    b) If balances did not accrue as shown at the bottom of Table 17, but they are not egregiously too low, follow the instructions in Chapter 9 of the book, "How to Get Great Rates" for how to make inflationary increases correctly.
    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. If not, I may be able to make simple rate model adjustments to arrive at an adjusted set of rates.

5. Repeat recommendation Number 4 each following year until you have raised rates and fees by a cumulative 20 percent, which should occur in about five years from now. At that time, have me or another rate analyst of your choice perform a new rate analysis, so rate structure and adequacy can be adjusted again. If you need capital improvements or repair and replacements with costs that are quite different from those assumed, you will need a new rate analysis sooner than that.

Table A: Recommended Water Rates

Table A: System Development Fees; Minimum and Unit Charges; and Usage Allowance Calculated by the Bonner Springs, KS, 2019 Water Rates Model 1

In-City Rates (Assess Out-of-city Customers 50 Percent More)

Water Meter Size in Inches	Meter Type	System Development Fee (Does Not Include New Connection Out-of-pocket Costs)	Monthly Minimum Charge Each Meter Size	Usage Allowance in Gallons	Unit Charge per 1,000 Gallons
0.625	Displacement	$2,602	$26.86	0	$8.51
0.750	Displacement	$2,602	$26.86	0	$8.51
1.000	Displacement	$6,504	$29.00	0	$8.51
1.500	Displacement	$13,008	$32.56	0	$8.51
2.000	Displacement	$20,813	$36.84	0	$8.51
2.500	Displacement	$32,520	$43.26	0	$8.51
3.000	Singlet	$41,626	$48.25	0	$8.51
3.000	Compound, Class I	$41,626	$48.25	0	$8.51
3.000	Turbine, Class I	$45,528	$50.39	0	$8.51
4.000	Singlet	$65,040	$61.09	0	$8.51
4.000	Compound, Class I	$65,040	$61.09	0	$8.51
4.000	Turbine, Class I	$80,650	$69.65	0	$8.51
6.000	Singlet	$130,080	$96.75	0	$8.51
6.000	Compound, Class I	$130,080	$96.75	0	$8.51
6.000	Turbine, Class I	$169,104	$118.15	0	$8.51
8.000	Compound, Class I	$208,128	$139.55	0	$8.51
Senior		By Meter Size Above	$21.48	0	$6.81
Temporary Service		N.A.	$124.12	0	$10.64

Closing

I recommend you adopt the rates calculated in the Model and discussed in several subsections above. The recommended rates are shown in Table A immediately above. These rates are in a cost-to-serve structure, based upon the utility's costs. They are projected to fully fund the utility over the long term.

It is important that you examine accrual of balances each year to assure the rates are bringing in adequate revenue. If they are not, increase rates across the council by a percentage that will bring the balances up to where I calculated they need to be each year.

This combination of adjustments will result in a modest overall increase in water rate revenues. Future inflationary increases will likely raise all bills by 3.0 percent per year.

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Sewer Rates

Recommended Rate Structures

My recommendations here are the same as for the water rates, with the exception that you should bill residential sewer customers based on winter average use. You already do that. In addition, you should allow, and you do allow, non-residential customers to install "deduct" meters if they have consumptive use of water for which they do not want to be billed sewer charges.

Meter Size-based Sewer Rates

So long as a sewer customer received metered water service, meter size-based rates apply to their sewer rates, as well. If a sewer customer does not have metered water service, you should determine what meter size would be appropriate for their water needs and situation and assess a sewer minimum charge to them for that size meter.

Expected Incomes

Table 3, page 84, shows the various past incomes and future incomes to expect, as well as several other things related to revenues. The income amounts are different but generally, the categories are the same.

Expected Operating Costs

Table 4, page 85, shows expected operating costs. As with incomes, cost amounts are different but of the same nature as the water costs.

Inflow and Infiltration

Water systems have water loss. Sewer systems have inflow and infiltration (I&I). The I&I rate, at five percent, is quite low. That means, the cost of I&I is also quite low – well done.

Capital Improvements

Capital improvements and debt are covered in Table 5, page 86. You have debt and a broad slate of improvement projects, so these costs impact rates significantly. This is not different from water, but important to stress again.

As I assumed for the water system, sewer system improvement costs will likely be 100 percent funded with debt.

Target Reserve Levels

The reserves strategy for sewer should be like that for water. The difference is, operating and system improvement costs will be lower, so you need not build reserves as high for sewer and for water and your sewer reserves are already closer to that goal amount.

The lines on the bottom of Table 17, page 100, 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.

As shown in Chart 8, page 106 total reserves will grow over the next ten years.

Rate Affordability

In Table 17, near the top, I show the estimated AI. The AI is also shown graphically in Chart 4, page 104.

In the table, the AI calculation for the now current rates, listed in the "Test Year" column, was at 1.06 percent. That means, such a customer is paying 1.06 percent of their monthly household income to pay their monthly sewer bill. Like water, the national average sewer AI is around 1.0 percent and that is consider affordable, so your current rates average.

Under the recommended rates, this customer's AI would rise to 1.20 percent. That is less affordable than the current bill, but still close to average.

Table 18, page 101, shows how customers' bills at different volumes of use and different meter sizes will be affected by the recommended rates.

Recommendations for Adjusting Sewer Rates

In the following, I summarized my sewer rates recommendations. In the table that follows, I list the rates and fees you should adopt:

1. Table B that follows this list states the recommended rates and fees to adopt initially.
2. The calculations assumed you would have made these adjustments early enough to enable collection at these rates for billings starting after May 1, 2020.
3. You would need to satisfy all Statutory requirements for making rate adjustments in advance of the adjustment date. That is coming up soon, so if you want to make that date, you will need to move promptly.
4. Approximately one full year after the initial rate adjustments, 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 3.0 percent, as shown near the top of Table 3, page 84.

b) If balances did not accrue as shown at the bottom of Table 17, but they are not egregiously too low, follow the instructions in Chapter 9 of the book, "How to Get Great Rates" for how to make inflationary increases correctly.

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.

5. Repeat recommendation Number 4 each following year until you have raised rates and fees by a cumulative 20 percent, which should occur in about five years from now. At that time, have me or another rate analyst of your choice perform a new rate analysis, so rate structure and adequacy can be adjusted again. If you need to capital improvements or repair and replacements that are quite different from those assumed, you will need a new rate analysis sooner than that.

Table B: Recommended Sewer Rates

Table B: System Development Fees; Minimum and Unit Charges; and Usage Allowance Calculated by the Bonner Springs, KS, 2019 Sewer Rates Model 2

In-City Rates (Assess Out-of-city Customers 50 Percent More)

Water Meter Size in Inches	Meter Type	System Development Fee (Does Not Include New Connection Out-of-pocket Costs)	Monthly Minimum Charge Each Meter Size	Usage Allowance in Gallons	Unit Charge per 1,000 Gallons
0.625	Displacement	$4,161	$21.10	0	$8.16
0.750	Displacement	$4,161	$21.10	0	$8.16
1.000	Displacement	$10,403	$23.55	0	$8.16
1.500	Displacement	$20,807	$27.63	0	$8.16
2.000	Displacement	$33,291	$32.53	0	$8.16
2.500	Displacement	$52,017	$39.88	0	$8.16
3.000	Singlet	$66,582	$45.59	0	$8.16
3.000	Compound, Class I	$66,582	$45.59	0	$8.16
3.000	Turbine, Class I	$72,824	$48.04	0	$8.16
4.000	Singlet	$104,034	$60.28	0	$8.16
4.000	Compound, Class I	$104,034	$60.28	0	$8.16
4.000	Turbine, Class I	$129,002	$70.08	0	$8.16
6.000	Singlet	$208,068	$101.10	0	$8.16
6.000	Compound, Class I	$208,068	$101.10	0	$8.16
6.000	Turbine, Class I	$270,489	$125.59	0	$8.16
8.000	Compound, Class I	$332,909	$150.08	0	$8.16
Senior		By Meter Size Above	$16.88	0	$6.53

Closing

I recommend you adopt the rates calculated in the Model and discussed in several subsections above. The recommended rates are shown in Table B immediately above. These rates are in a cost-to-serve structure that will fully fund the utility over the long term. Except that these rates are different from the water rates, all other major issues in play for water rates apply here, as well.

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Stormwater Rates

Introduction

Stormwater is like water and sewer regarding financial statements, repair and replacement, capital improvement planning and the like. The type of equipment needed is different and the capital improvements are different. But money is accounted-for in the same basic ways. And the broad categories of expenses that require money: billing, general administration, staffing, capital improvements and such, are the same.

The main thing that sets stormwater apart from water and sewer is the unit of measure for the service. Water and sewer recover variable costs on a per 1,000 gallons of water used, or wastewater contributed, basis. Stormwater recovers variable costs on the basis of "Equivalent Residential Units." The analogy is not exact, but close.

With that in mind, a stormwater bill should include two parts:

- A base fee (called a "base minimum charge" in water and sewer), to recover the cost of billing, general administration of the program and all other costs that are caused equally by all customers.
    - If a person or company owns multiple properties, all should be combined into one bill, with one base fee assessed to that bill, and
- A unit charge for each Equivalent Residential Unit (ERU) assessed to each bill.

Finally, "capacity" as a separate cost is not relevant in stormwater because stormwater generation capacity is related to the square footage of impervious surface on a site; the more square footage of impervious surface a property has, the more system capacity is obligated to that property, and the more that property owner should pay. Thus, capacity costs are recovered in the unit charge; the ERU.

The Stormwater Rates Unit of Measure

Impervious surfaces – roofs, paved parking lots and the like – yield stormwater runoff. Granted, natural surfaces yield runoff, too, but it is the "man-caused" stormwater we are most concerned about. That is largely what stormwater management facilities are created to deal with.

Impervious surface square footage can be measured, so it is used as the basis for billing for stormwater. You could use one square foot as the basic unit of measure for ERUs, but that would complicate the math and the practicality of figuring rates for property owners. It would cause some property owners to hire an engineer to measure their square footage of impervious surfaces, to try to get a "better deal" on their fees. And, it is hard for people to visualize 10,000 square feet and similar values.

Thus, rates are almost always put into a unit most people are familiar with and that is simpler to deal with – the area covered by the average single-family home, plus a driveway and related roofs and surfaces on the average residential lot. This is the "Equivalent Residential Unit," or "ERU." Using the ERU as the billing basis also simplifies the workload of determining rates. Most properties in most cities, towns and other places are single-family residential. Thus, if a property is classified as "single-family," it is assigned one ERU for stormwater billing purposes. There are relatively few other types of properties, perhaps ten to twenty percent of the total, and they are usually larger and easily measurable from aerial photos. Thus, calculating the ERUs for each such property is not an onerous chore.

Recommended Rate Structure

My recommendations here are like those for water rates: a minimum charge per bill to recover equally sharable costs – "fixed costs," and a unit charge per ERU to recover "variable costs." The equally sharable costs are easy to convert to a minimum charge. ERU fees require more math. Fortunately, once you have set rates for each property, most will not change for many years. For the most part, adjustments in the future will involve calculating impervious surface area and ERU values for newly developing properties – bringing growth onto the stormwater fee system.

The City recently had a survey done to determine the acreage of properties and the acreage of impervious surfaces on each property. That is an excellent step toward establishing fair stormwater rates. The survey classified residential properties into "low-density," "moderate-density" and "high-density" categories. I used moderate-density residential properties as the basis for one ERU, which I will soon explain.

Low-density residential properties averaged two ERUs and high-density residential properties varied widely. Likewise, other classes of properties varied widely in their ERU values. But because each property was measured, its impervious surface area ratio compared to the basis value was mathematically calculated.

As mentioned earlier, one could calculate the ratio of the exact square footage of impervious surface on a site compared to the basis square footage and multiply that by the charge per ERU to come up with the ERU charge for each site. But the relatively low cost per ERU does not warrant such an exact calculation. Thus, I recommend the City use its classification of properties to markedly reduce the math of setting stormwater rates for properties in this way:

- Moderate-density residential properties averaged one ERU. Assess all such properties one ERU's worth of expense.
- Low-density residential properties averaged two ERUs. Assess all such properties two ERU's worth of expense.
- High-density residential properties varied widely. Assess each such property one ERU's worth of expense for each whole ERU of impervious surface on each site.
- Other properties varied widely, too. Assess each such property one ERU's worth of expense for each whole ERU of impervious surface on each site.

Most properties are moderate and low-density residential properties, so calculating fees in this way will markedly simplify the work of assessing rates to such properties.

Expected Incomes

It appears your current stormwater program is quite basic, quite cheap, the rates are low and are not based on the cost to provide stormwater management to properties. The City is being pushed by the State to up its stormwater performance, so costs, rates and incomes will need to go up markedly.

With that preamble, Table 3, page 113, shows the various past incomes and future incomes to expect, as well as several other things related to revenues. Incomes will go up dramatically.

Expected Operating and Capital Costs

As mentioned, costs will go up dramatically, too. Table 4, page 114, shows expected operating costs. Table 5, page 115, shows expected capital improvement (CIP) costs. Stormwater management is very capital intensive. It takes lots of improvements placed in and on the ground to manage urban stormwater. And because stormwater causes most things to decay, that infrastructure must be renewed to keep it functioning. It will be expensive.

Target Reserve Levels

The need for reserves for stormwater is like that for water. Unfortunately, you have little in starting reserves and you need to build reserves substantially to cover future debt for stormwater improvements.

The lines on the bottom of Table 17, page 123, 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.

As shown in Chart 8, page 130, total reserves will grow substantially over the next ten years.

Rate Affordability

To my knowledge, there is not a commonly accepted "affordable" stormwater rate level. But the single-family residential property is the basis for water and sewer rate affordability. That same property is the basis for stormwater fees, so we can start there.

In Table 17, near the top, I show the estimated AI for a single-family residential property. The AI is also shown graphically in Chart 4, page 128.

In the table, the AI calculation for the now current rates, listed in the "Test Year" column, was at 0.06 percent. That means, such a customer is paying 0.06 percent of their monthly household income to pay their monthly stormwater bill. This bill is so low that it almost does not exist.

Under the recommended rates, this customer's AI would rise to 0.25 percent. That is a large increase, but when you raise a tiny number by another small number, the percentage increase is large. On an affordability basis, the rate is still quite modest.

Table 18, page 124, shows how customers' bills for different numbers of ERUs will be affected by the recommended rates.

Recommendations for Adjusting Stormwater Rates

In the following, I summarized my stormwater rates recommendations. In the tables that follow, I list the rates and fees you should adopt:

1. Table C that follows this list states the recommended rates and fees to adopt initially. As stated before:
    - Moderate-density residential properties averaged one ERU. Assess all such properties one ERU's worth of expense.
    - Low-density residential properties averaged two ERUs. Assess all such properties two ERU's worth of expense.
    - High-density residential properties varied widely. Assess each such property one ERU's worth of expense for each <u>whole</u> ERU of impervious surface on each site.
    - Other properties varied widely, too. Assess each such property one ERU's worth of expense for each <u>whole</u> ERU of impervious surface on each site.
2. The calculations assumed you would have made these adjustments early enough to enable collection at these rates for billings starting after May 1, 2020.
3. You would need to satisfy all Statutory requirements for making rate adjustments in advance of the adjustment date. That is coming up soon, so if you want to make that date, you will need to move promptly.

4. Approximately one full year after the initial rate adjustments, 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 3.0 percent, as shown near the top of Table 3, page 113.

   b) If balances did not accrue as shown at the bottom of Table 17, but they are not egregiously too low, follow the instructions in Chapter 9 of the book, "How to Get Great Rates" for how to make inflationary increases correctly.

   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.

5. Repeat recommendation Number 4 each following year until you have raised rates and fees by a cumulative 20 percent, which should occur in about five years from now. At that time, have me or another rate analyst of your choice perform a new rate analysis, so rate structure and adequacy can be adjusted again. If you need to capital improvements or repair and replacements that are quite different from those assumed, you will need a new rate analysis sooner than that.

Table C: Recommended Stormwater Rates

Table C: Minimum and ERU Unit Charges Calculated by the Bonner Springs, KS, 2020 Stormwater Rates Model 3

Property Class	Monthly Minimum Charge Each Billed Customer	Unit Charge per ERU	ERUs	Total Monthly Charge
Residential, Low Density	$5.34	$3.84	2	$13.02
Residential, Moderate Density	$5.34	$3.84	1	$9.18
All Other Properties	$5.34	$3.84	# for Each Customer	Calculate for Each Customer

Closing

I recommend you adopt the rates calculated in the Model and discussed in several subsections above. The recommended rates, and how to calculate varying rates, are shown in Table C immediately above. These rates are in a cost-to-serve structure that will fully fund the utility over the long term. Except that these rates are different from the water and sewer rates, all other major issues in play for those rates apply here, as well.

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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 Model available to track your progress and determine the effect of condition changes later, I should be able to test changes easily and advise you quickly.

As time passes you will need to adjust rates incrementally as recommended 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, sewer and stormwater 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 these analyses. To satisfy those information needs, the City can publicize the current and recommended rates and/or the bill comparisons.
- A few customers will want to know more, especially high-volume customers. Give them the full report, if that is what they want.
- A good way to accomplish these things is to post the report on the City's Web site, Facebook page or other 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 have engaged me pay one visit to the council to discuss my findings and recommendations. I look forward to meeting with the council, answering everyone's questions and helping you get on your way to the next generation of great rates.

Bonner Springs, KS, 2019 Water Rates
Model 1

This model calculated cost-to-serve rates with only minor variances.

March 2, 2020

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Note: This document is a print out of the spreadsheet model used to calculate new user charge and other rates and fees for the next 10 years. These calculations are complex and are based upon many conditions and assumtions. 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."
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 Rates	Rates where, at the customer class level, fixed and variable costs caused by each customer class are paid by that class with minimum and unit charges, respectively. However, this analysis models takes it one step further and calculated 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 is a good measure of overall financial health.
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.
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)	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 EDU. All other types of customers are then compared on this measuring basis and the EDUs are calculated. Generally the purpose of this exercise is to calculate fees that each EDU must pay.
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.

Definitions

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.
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.
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.
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.
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.
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, to many thousands of dollars for a large industrial customer with capacity costs included. 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, which is usually the last completed fiscal year. See related "analysis year."
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.

Definitions

Water Loss	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.
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

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 left out to prevent confusion.

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	Nearly the same as Table 12, except it pertains to fire sprinkler 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	Nearly the same as Table 13, except it pertains to fire sprinkler 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	Nearly the same as Table 14, except it pertains to fire sprinkler 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 pertains to fire sprinkler 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 pertains to fire sprinkler systems.
Table 17 - Financial Capacity Indicators and Reserves	Shows the financial effects of the modeled rates, costs, etc. on the utility and on the benchmark 5,000 gallon per month residential water or sewer customer, as appropriate
Table 18 - Bills Before and After Rate Adjustments	Bills at the modeled rates are compared to those under the current rates. Note: the modeled bills do not include capacity surcharges to the minimum charges unless they are included in the minimum charges column of Table 10.
Table 19 - User Statistics	If included, this table shows volumes and percentages of use, revenue generated and other statistics
Chart 1 - Operating Ratio	*Graph of operating ratio for 10 years as a result of the modeled rates and the current rates*
Chart 2 - Coverage Ratio	*Graph of coverage ratios for 10 years of the modeled rates and the current rates*
Chart 3 - 5,000 Gallon Residential User's Bill	*Graph of the bill for the benchmark 5,000 gallon per month residential user, with smallest available meter size (used in grant and loan eligibility determinations) as a result of the modeled rates, and the current rates*
Chart 4 - Affordability Index	*Graph of the affordability index for 10 years of the benchmark residential user's bill (used in grant and loan eligibility determinations)*
Chart 5 - Working Capital vs Goal	*Graph for 10 years of total (unobligated) cash assets at modeled rates compared to the goal for total cash assets*
Chart 6 - Value of Cash Assets Before Inflation	*Graph for 10 years of unobligated cash assets NOT adjusted for inflation at modeled rates and current rates*
Chart 7 - Value of Cash Assets After Inflation	*Graph for 10 years of unobligated cash assets adjusted for inflation at modeled rates and current rates. This is the real buying power of cash reserves.*
Chart 8 - Sum of All Reserves	*Graph of all reserves of all kinds at the modeled rates and at the current rates*

Table 1 - Rates
Bonner Springs, KS, 2019 Water Rates Model 1

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

Rates in Effect at End of Test Year

Customer Type, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Billing Cycle Minimum Charge	Usage Allowance in 1,000 Gallons	Unit Charge per 1,000 Gallons
In City .625 Meter Size	0	$17.26	0.000	$6.43
	1,000	$17.26	0.000	$6.43
	145,000	$17.26	0.000	$6.43
In City 1 Inch Meter Size	0	$19.12	0.000	$6.43
	1,000	$19.12	0.000	$6.43
	145,000	$19.12	0.000	$6.43
In City 2 Inch Meter Size	0	$39.08	0.000	$6.43
	1,000	$39.08	0.000	$6.43
	145,000	$39.08	0.000	$6.43
In City 3 Inch Meter Size	0	$79.77	0.000	$6.43
	1,000	$79.77	0.000	$6.43
	145,000	$79.77	0.000	$6.43
In City 4 Inch Meter Size	0	$126.36	0.000	$6.43
	1,000	$126.36	0.000	$6.43
	145,000	$126.36	0.000	$6.43
In-City 6 Inch Meter Size	0	$252.11	0.000	$6.43
	1,000	$252.11	0.000	$6.43
	145,000	$252.11	0.000	$6.43
In-City 8 Inch Meter Size	0	$429.61	0.000	$6.43
	1,000	$429.61	0.000	$6.43
	145,000	$429.61	0.000	$6.43
Senior	0	$13.81	0.000	$5.14
	145,000	$13.81	0.000	$5.14

Table 1 - Rates

Rates in Effect at End of Test Year

Customer Type, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Billing Cycle Minimum Charge	Usage Allowance in 1,000 Gallons	Unit Charge per 1,000 Gallons
Out of City .625 Inch Meter Size	0	$25.89	0.000	$9.65
	1,000	$25.89	0.000	$9.65
	145,000	$25.89	0.000	$9.65
Out of City 1 Inch Meter Size	0	$28.68	0.000	$9.65
	1,000	$28.68	0.000	$9.65
	145,000	$28.68	0.000	$9.65
Out of City 2 Inch Meter Size	0	$58.62	0.000	$9.65
	1,000	$58.62	0.000	$9.65
	145,000	$58.62	0.000	$9.65
Out of City 3 Inch Meter Size	0	$119.66	0.000	$9.65
	1,000	$119.66	0.000	$9.65
	145,000	$119.66	0.000	$9.65
Out of City 6 Inch Meter Size	0	$378.17	0.000	$9.65
	1,000	$378.17	0.000	$9.65
	145,000	$378.17	0.000	$9.65
Temporary Service	0	$79.77	0.000	$8.04
	1,000	$79.77	0.000	$8.04
	145,000	$79.77	0.000	$8.04
KC Renaissance 2 Inch Meter Size	0	$39.08	0.000	$6.43
	1,000	$39.08	0.000	$6.43
	2,000	$39.08	0.000	$6.43
	145,000	$39.08	0.000	$6.43
No Charge	0	$0.00	0.000	$0.00
	145,000	$0.00	0.000	$0.00

Table 2 - Test Year Usage
Bonner Springs, KS, 2019 Water Rates Model 1

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

Test year = the one-year period being analyzed starts: 1/1/2018

Date this model created: 12/30/2019

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)	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
In City .625 Meter Size	0	999	32,254	32,254,000	0	0	0	0.0%	0.0%
	1,000	1,999	32,254	32,254,000	0	0	0	0.0%	0.0%
	2,000	2,999	32,254	32,254,000	0	0	0	0.0%	0.0%
	3,000	3,999	32,254	32,254,000	0	0	0	0.0%	0.0%
	4,000	4,999	32,254	18,618,020	32,254	147,634,020	2,688	93.7%	57.5%
			161,270	147,634,020	32,254	147,634,020	2,688	93.7%	57.5%
In City 1 Inch Meter Size	0	999	1,166	1,166,000	0	0	0	0.0%	0.0%
	1,000	1,999	1,166	1,166,000	0	0	0	0.0%	0.0%
	2,000	2,999	1,166	1,166,000	0	0	0	0.0%	0.0%
	3,000	3,999	1,166	1,166,000	0	0	0	0.0%	0.0%
	4,000	4,999	1,166	1,166,000	0	0	0	0.0%	0.0%
	5,000	5,999	1,166	1,166,000	0	0	0	0.0%	0.0%
	6,000	6,999	1,166	1,166,000	0	0	0	0.0%	0.0%
	7,000	7,999	1,166	1,166,000	0	0	0	0.0%	0.0%
	8,000	8,999	1,166	1,166,000	0	0	0	0.0%	0.0%
	9,000	9,999	1,166	1,166,000	0	0	0	0.0%	0.0%
	10,000	14,999	1,166	5,830,000	0	0	0	0.0%	0.0%
	15,000	19,999	1,166	3,499,400	1,166	20,989,400	97	3.4%	8.2%
			13,992	20,989,400	1,166	20,989,400	97	3.4%	8.2%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in 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
In City 2 Inch Meter Size	0	999	486	486,000	0	0	0	0.0%	0.0%
	1,000	1,999	486	486,000	0	0	0	0.0%	0.0%
	2,000	2,999	486	486,000	0	0	0	0.0%	0.0%
	3,000	3,999	486	486,000	0	0	0	0.0%	0.0%
	4,000	4,999	486	486,000	0	0	0	0.0%	0.0%
	5,000	5,999	486	486,000	0	0	0	0.0%	0.0%
	6,000	6,999	486	486,000	0	0	0	0.0%	0.0%
	7,000	7,999	486	486,000	0	0	0	0.0%	0.0%
	8,000	8,999	486	486,000	0	0	0	0.0%	0.0%
	9,000	9,999	486	486,000	0	0	0	0.0%	0.0%
	10,000	14,999	486	2,430,000	0	0	0	0.0%	0.0%
	15,000	19,999	486	2,430,000	0	0	0	0.0%	0.0%
	20,000	24,999	486	2,430,000	0	0	0	0.0%	0.0%
	25,000	29,999	486	2,430,000	0	0	0	0.0%	0.0%
	30,000	34,999	486	2,430,000	0	0	0	0.0%	0.0%
	35,000	44,999	486	4,860,000	0	0	0	0.0%	0.0%
	45,000	54,999	486	4,860,000	0	0	0	0.0%	0.0%
	55,000	64,999	486	4,860,000	0	0	0	0.0%	0.0%
	65,000	74,999	486	4,860,000	0	0	0	0.0%	0.0%
	75,000	84,999	486	4,860,000	0	0	0	0.0%	0.0%
	85,000	94,999	486	4,350,913	486	45,660,913	41	1.4%	17.8%
			10,206	45,660,913	486	45,660,913	41	1.4%	17.8%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in 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
In City 3 Inch Meter Size	0	999	154	154,000	0	0	0	0.0%	0.0%
	1,000	1,999	154	154,000	0	0	0	0.0%	0.0%
	2,000	2,999	154	154,000	0	0	0	0.0%	0.0%
	3,000	3,999	154	154,000	0	0	0	0.0%	0.0%
	4,000	4,999	154	154,000	0	0	0	0.0%	0.0%
	5,000	5,999	154	154,000	0	0	0	0.0%	0.0%
	6,000	6,999	154	154,000	0	0	0	0.0%	0.0%
	7,000	7,999	154	154,000	0	0	0	0.0%	0.0%
	8,000	8,999	154	154,000	0	0	0	0.0%	0.0%
	9,000	9,999	154	154,000	0	0	0	0.0%	0.0%
	10,000	14,999	154	770,000	0	0	0	0.0%	0.0%
	15,000	19,999	154	770,000	0	0	0	0.0%	0.0%
	20,000	24,999	154	770,000	0	0	0	0.0%	0.0%
	25,000	29,999	154	770,000	0	0	0	0.0%	0.0%
	30,000	34,999	154	770,000	0	0	0	0.0%	0.0%
	35,000	44,999	154	1,540,000	0	0	0	0.0%	0.0%
	45,000	54,999	154	1,540,000	0	0	0	0.0%	0.0%
	55,000	64,999	154	1,540,000	0	0	0	0.0%	0.0%
	65,000	74,999	154	1,540,000	0	0	0	0.0%	0.0%
	75,000	84,999	154	1,540,000	0	0	0	0.0%	0.0%
	85,000	94,999	154	1,540,000	0	0	0	0.0%	0.0%
	95,000	104,999	154	1,540,000	0	0	0	0.0%	0.0%
	105,000	114,999	154	1,540,000	0	0	0	0.0%	0.0%
	115,000	124,999	154	1,201,753	154	18,911,753	13	0.4%	7.4%
			3,696	18,911,753	154	18,911,753	13	0.4%	7.4%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in 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
In City 4 Inch Meter Size	0	999	48	48,000	0	0	0	0.0%	0.0%
	1,000	1,999	48	48,000	0	0	0	0.0%	0.0%
	2,000	2,999	48	48,000	0	0	0	0.0%	0.0%
	3,000	3,999	48	48,000	0	0	0	0.0%	0.0%
	4,000	4,999	48	48,000	0	0	0	0.0%	0.0%
	5,000	5,999	48	48,000	0	0	0	0.0%	0.0%
	6,000	6,999	48	48,000	0	0	0	0.0%	0.0%
	7,000	7,999	48	48,000	0	0	0	0.0%	0.0%
	8,000	8,999	48	48,000	0	0	0	0.0%	0.0%
	9,000	9,999	48	48,000	0	0	0	0.0%	0.0%
	10,000	14,999	48	240,000	0	0	0	0.0%	0.0%
	15,000	19,999	48	240,000	0	0	0	0.0%	0.0%
	20,000	24,999	48	240,000	0	0	0	0.0%	0.0%
	25,000	29,999	48	240,000	0	0	0	0.0%	0.0%
	30,000	34,999	48	240,000	0	0	0	0.0%	0.0%
	35,000	44,999	48	480,000	0	0	0	0.0%	0.0%
	45,000	54,999	48	480,000	0	0	0	0.0%	0.0%
	55,000	64,999	48	480,000	0	0	0	0.0%	0.0%
	65,000	74,999	48	480,000	0	0	0	0.0%	0.0%
	75,000	84,999	48	480,000	0	0	0	0.0%	0.0%
	85,000	94,999	48	480,000	0	0	0	0.0%	0.0%
	95,000	104,999	48	480,000	0	0	0	0.0%	0.0%
	105,000	114,999	48	480,000	0	0	0	0.0%	0.0%
	115,000	124,999	48	480,000	0	0	0	0.0%	0.0%
	125,000	134,999	48	480,000	0	0	0	0.0%	0.0%
	135,000	144,999	48	480,000	0	0	0	0.0%	0.0%
	145,000	1,000,000	48	5,519,280	48	12,479,280	4	0.1%	4.9%
			1,296	12,479,280	48	12,479,280	4	0.1%	4.9%
In-City 6 Inch Meter Size	0	999	0	0	0	0	0	0.0%	0.0%
	145,000	1,000,000	0	0	0	0	0	0.0%	0.0%
			0	0	0	0	0	0.0%	0.0%
In-City 8 Inch Meter Size	0	999	0	0	0	0	0	0.0%	0.0%
	145,000	1,000,000	0	0	0	0	0	0.0%	0.0%
			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)	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
Senior	0	999	60	60,000	0	0	0	0.0%	0.0%
	1,000	1,999	60	8,000	60	68,000	5	0.2%	0.0%
			120	68,000	60	68,000	5	0.2%	0.0%
Out of City .625 Inch Meter Size	0	999	107	107,000	0	0	0	0.0%	0.0%
	1,000	1,999	107	107,000	0	0	0	0.0%	0.0%
	2,000	2,999	107	107,000	0	0	0	0.0%	0.0%
	3,000	3,999	107	107,000	0	0	0	0.0%	0.0%
	4,000	4,999	107	27,700	107	455,700	9	0.3%	0.2%
			535	455,700	107	455,700	9	0.3%	0.2%
Out of City 1 Inch Meter Size	0	999	0	0	0	0	0	0.0%	0.0%
	145,000	1,000,000	0	0	0	0	0	0.0%	0.0%
			0	0	0	0	0	0.0%	0.0%
Out of City 2 Inch Meter Size	0	999	66	66,000	0	0	0	0.0%	0.0%
	1,000	1,999	66	66,000	0	0	0	0.0%	0.0%
	2,000	2,999	66	66,000	0	0	0	0.0%	0.0%
	3,000	3,999	66	66,000	0	0	0	0.0%	0.0%
	4,000	4,999	66	66,000	0	0	0	0.0%	0.0%
	5,000	5,999	66	66,000	0	0	0	0.0%	0.0%
	6,000	6,999	66	66,000	0	0	0	0.0%	0.0%
	7,000	7,999	66	66,000	0	0	0	0.0%	0.0%
	8,000	8,999	66	66,000	0	0	0	0.0%	0.0%
	9,000	9,999	66	66,000	0	0	0	0.0%	0.0%
	10,000	14,999	66	330,000	0	0	0	0.0%	0.0%
	15,000	19,999	66	330,000	0	0	0	0.0%	0.0%
	20,000	24,999	66	330,000	0	0	0	0.0%	0.0%
	25,000	29,999	66	330,000	0	0	0	0.0%	0.0%
	30,000	34,999	66	330,000	0	0	0	0.0%	0.0%
	35,000	44,999	66	660,000	0	0	0	0.0%	0.0%
	45,000	54,999	66	660,000	0	0	0	0.0%	0.0%
	55,000	64,999	66	660,000	0	0	0	0.0%	0.0%
	65,000	74,999	66	660,000	0	0	0	0.0%	0.0%
	75,000	84,999	66	660,000	0	0	0	0.0%	0.0%
	85,000	94,999	66	490,900	66	6,100,900	6	0.2%	2.4%
			1,386	6,100,900	66	6,100,900	6	0.2%	2.4%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in 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 City 3 Inch Meter Size	0	999	0	0	0	0	0	0.0%	0.0%
	145,000	1,000,000	0	0	0	0	0	0.0%	0.0%
			0	0	0	0	0	0.0%	0.0%
Out of City 4 Inch Meter Size	0	999	0	0	0	0	0	0.0%	0.0%
	145,000	1,000,000	0	0	0	0	0	0.0%	0.0%
			0	0	0	0	0	0.0%	0.0%
Out of City 6 Inch Meter Size	0	999	0	0	0	0	0	0.0%	0.0%
	145,000	1,000,000	0	0	0	0	0	0.0%	0.0%
			0	0	0	0	0	0.0%	0.0%
Temporary Service	0	999	33	33,000	0	0	0	0.0%	0.0%
	1,000	1,999	33	33,000	0	0	0	0.0%	0.0%
	2,000	2,999	33	33,000	0	0	0	0.0%	0.0%
	3,000	3,999	33	33,000	0	0	0	0.0%	0.0%
	4,000	4,999	33	33,000	0	0	0	0.0%	0.0%
	5,000	5,999	33	33,000	0	0	0	0.0%	0.0%
	6,000	6,999	33	33,000	0	0	0	0.0%	0.0%
	7,000	7,999	33	33,000	0	0	0	0.0%	0.0%
	8,000	8,999	33	33,000	0	0	0	0.0%	0.0%
	9,000	9,999	33	33,000	0	0	0	0.0%	0.0%
	10,000	14,999	33	165,000	0	0	0	0.0%	0.0%
	15,000	19,999	33	165,000	0	0	0	0.0%	0.0%
	20,000	24,999	33	165,000	0	0	0	0.0%	0.0%
	25,000	29,999	33	165,000	0	0	0	0.0%	0.0%
	30,000	34,999	33	165,000	0	0	0	0.0%	0.0%
	35,000	44,999	33	330,000	0	0	0	0.0%	0.0%
	45,000	54,999	33	330,000	0	0	0	0.0%	0.0%
	55,000	64,999	33	330,000	0	0	0	0.0%	0.0%
	65,000	74,999	33	330,000	0	0	0	0.0%	0.0%
	75,000	84,999	33	37,900	33	2,512,900	3	0.1%	1.0%
			660	2,512,900	33	2,512,900	3	0.1%	1.0%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in 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
KC Renaissance 2 Inch Meter Size	0	999	12	12,000	0	0	0	0.0%	0.0%
	1,000	1,999	12	12,000	0	0	0	0.0%	0.0%
	2,000	2,999	12	12,000	0	0	0	0.0%	0.0%
	3,000	3,999	12	12,000	0	0	0	0.0%	0.0%
	4,000	4,999	12	12,000	0	0	0	0.0%	0.0%
	5,000	5,999	12	12,000	0	0	0	0.0%	0.0%
	6,000	6,999	12	12,000	0	0	0	0.0%	0.0%
	7,000	7,999	12	12,000	0	0	0	0.0%	0.0%
	8,000	8,999	12	12,000	0	0	0	0.0%	0.0%
	9,000	9,999	12	12,000	0	0	0	0.0%	0.0%
	10,000	14,999	12	60,000	0	0	0	0.0%	0.0%
	15,000	19,999	12	60,000	0	0	0	0.0%	0.0%
	20,000	24,999	12	60,000	0	0	0	0.0%	0.0%
	25,000	29,999	12	60,000	0	0	0	0.0%	0.0%
	30,000	34,999	12	60,000	0	0	0	0.0%	0.0%
	35,000	44,999	12	120,000	0	0	0	0.0%	0.0%
	45,000	54,999	12	120,000	0	0	0	0.0%	0.0%
	55,000	64,999	12	120,000	0	0	0	0.0%	0.0%
	65,000	74,999	12	120,000	0	0	0	0.0%	0.0%
	75,000	84,999	12	120,000	0	0	0	0.0%	0.0%
	85,000	94,999	12	120,000	0	0	0	0.0%	0.0%
	95,000	104,999	12	120,000	0	0	0	0.0%	0.0%
	105,000	114,999	12	52,600	12	1,312,600	1	0.0%	0.5%
			276	1,312,600	12	1,312,600	1	0.0%	0.5%
No Charge	0	999	36	36,000	0	0	0	0.0%	0.0%
	1,000	1,999	36	36,000	0	0	0	0.0%	0.0%
	2,000	2,999	36	36,000	0	0	0	0.0%	0.0%
	3,000	3,999	36	36,000	0	0	0	0.0%	0.0%
	4,000	4,999	36	36,000	0	0	0	0.0%	0.0%
	5,000	5,999	36	36,000	0	0	0	0.0%	0.0%
	6,000	6,999	36	36,000	0	0	0	0.0%	0.0%
	7,000	7,999	36	36,000	0	0	0	0.0%	0.0%
	8,000	8,999	36	36,000	0	0	0	0.0%	0.0%
	9,000	9,999	36	36,000	0	0	0	0.0%	0.0%
	10,000	14,999	36	173,500	36	533,500	3	0.1%	0.2%
			396	533,500	36	533,500	3	0.1%	0.2%
		Grand Totals:	193,833	256,658,966	34,422	256,658,966	2,869	100%	100%

Table 3 - Operating Incomes and Basic User Data
Bonner Springs, KS, 2019 Water Rates Model 1

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

Annual Median Household Income (AMHI)

$59,264	Census Bureau estimate of AMHI for the year	2017
$43,234	Census Bureau estimate of AMHI for the year	2000
$16,030	AMHI growth during this time period	
2.18%	Simple annual income growth rate during this time period (used to project incomes into the future)	

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

10	Number of new Water connections made during the test year
$22,219	Average 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 in the last column of that 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	Analysis Year	Years Following the Analysis Year (for Which Results Have Been Projected)									
		0 Year	0 Year	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year
		Starting	Starting	Starting	Starting	Starting	Starting	Starting	Starting	Starting	Starting	Starting	Starting
		1/1/18	1/1/19	1/1/20	1/1/21	1/1/22	1/1/23	1/1/24	1/1/25	1/1/26	1/1/27	1/1/28	1/1/29
Rate Increases Projected for Future Years	N.A.	N.A.	N.A.	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
				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.	2,869	2,879	2,889	2,899	2,909	2,919	2,929	2,939	2,949	2,959	2,969	2,979
Customers Added or Lost (-) Each Year	N.A.	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Customer Growth or Loss (-) Rate	N.A.	0.35%	0.35%	0.35%	0.35%	0.34%	0.34%	0.34%	0.34%	0.34%	0.34%	0.34%	0.34%
Actual (Test Year) and Projected Volumes, in Gallons	N.A.	256,658,966	257,553,716	258,448,466	259,343,215	260,237,965	261,132,715	262,027,465	262,922,214	263,816,964	264,711,714	265,606,464	266,501,213
How User Charge Fees Were Calculated, Accounting for New Customers and Future Rate Increases													
Actual or Calculated Sales Revenues		$2,269,489	$2,301,173	$3,249,486	$3,358,558	$3,471,291	$3,587,722	$3,708,016	$3,832,298	$3,960,700	$4,093,357	$4,230,409	$4,371,999
Additional Sales Revenues From New Customers			$22	$11,250	$11,627	$11,935	$12,293	$12,662	$13,042	$13,433	$13,836	$14,251	$14,679
Total Calculated Revenues (User Charge Fees)		$2,269,489	$2,301,195	$3,260,736	$3,370,185	$3,483,226	$3,600,015	$3,720,678	$3,845,340	$3,974,133	$4,107,193	$4,244,660	$4,386,678
Operating Incomes													
User Charge Fees (Tables 10 - 12, 15, 16)	N.A.	$2,180,689	$2,101,582	$2,977,888	$3,077,844	$3,181,079	$3,287,738	$3,397,934	$3,511,782	$3,629,403	$3,750,921	$3,876,463	$4,006,163
Late Payment Charge	N.A.	$21,878	$21,825	$21,900	$21,976	$22,051	$22,127	$22,203	$22,278	$22,354	$22,429	$22,505	$22,580
Water Impact Fees (Current Rate Structure)	% Above	$222,190	$47,875	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Meter Size-based System Development Fees (Tables 13, 14)	% Above	$0	$91	$34,211	$35,237	$36,294	$37,383	$38,505	$39,660	$40,850	$42,075	$43,337	$44,638
Interest Income	N.A.	$41,663	$43,937	$9,957	$9,875	$10,181	$11,050	$11,072	$11,157	$11,549	$12,435	$12,227	$12,656
Fees (notices, connects, meters)	N.A.	$84,079	$53,758	$53,758	$53,758	$53,758	$53,758	$53,758	$53,758	$53,758	$53,758	$53,758	$53,758
INTEREST CREDIT REFUND	N.A.	$0	-$3,386	-$3,386	-$3,386	-$3,386	-$3,386	-$3,386	-$3,386	-$3,386	-$3,386	-$3,386	-$3,386
RECYCLING	N.A.		$437	$437	$437	$437	$437	$437	$437	$437	$437	$437	$437
Reimbursed expenses	N.A.	-$1,956	-$538	-$538	-$538	-$538	-$538	-$538	-$538	-$538	-$538	-$538	-$538
Sale of Property	N.A.	$2,726	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Miscellaneous revenue	N.A.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cancel prior year encumb	N.A.	$3,674	$28,613	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Transfer from Riverview waterline	N.A.	$8,813	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Miscellaneous permits	N.A.	$275	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Revenue Loss Because Rate Adjustments Made This Number of Months Late	5.0	$0	$0	-$356,672	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Incomes		**$2,564,031**	**$2,294,194**	**$2,737,556**	**$3,195,204**	**$3,299,877**	**$3,408,569**	**$3,519,984**	**$3,635,149**	**$3,754,427**	**$3,878,132**	**$4,004,805**	**$4,136,310**

Table 4 - Operating Costs and Net Income

Bonner Springs, KS, 2019 Water Rates Model 1

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

(First year costs and net incomes are actual, subsequent years are projected.)

	Inflation/ Deflation (–) Factor	Test Year Starting 1/1/18	Analysis Year 0 Year Starting 1/1/19	Years Following the Analysis Year (for Which Results Have Been Projected) 1st Year Starting 1/1/20	2nd Year Starting 1/1/21	3rd Year Starting 1/1/22	4th Year Starting 1/1/23	5th Year Starting 1/1/24	6th Year Starting 1/1/25	7th Year Starting 1/1/26	8th Year Starting 1/1/27	9th Year Starting 1/1/28	10th Year Starting 1/1/29
Full time wages	3.0%	$307,699	$341,206	$375,572	$386,839	$398,444	$410,398	$422,710	$435,391	$448,453	$461,906	$475,763	$490,036
Overtime	3.0%	$24,891	$14,954	$15,402	$15,864	$16,340	$16,831	$17,336	$17,856	$18,391	$18,943	$19,511	$20,097
Employee benefits	3.0%	$139,679	$145,652	$167,555	$172,582	$177,759	$183,092	$188,585	$194,242	$200,069	$206,072	$212,254	$218,621
Postage/deliveries	3.0%	$870	$254	$263	$272	$281	$290	$300	$310	$320	$331	$342	$354
Telephone/mobile/pagers	3.0%	$9,608	$11,364	$11,705	$12,057	$12,418	$12,791	$13,175	$13,570	$13,977	$14,396	$14,828	$15,273
Setoff collection fees	3.0%	$781	$1,187	$1,223	$1,259	$1,297	$1,336	$1,376	$1,417	$1,460	$1,504	$1,549	$1,595
Credit card fees	3.0%	$16,711	$24,850	$25,595	$26,363	$27,154	$27,969	$28,808	$29,672	$30,562	$31,479	$32,424	$33,396
Mileage	3.0%	$6	$76	$78	$81	$83	$86	$88	$91	$94	$96	$99	$102
Claims	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Prof dev/dues/travel/subscripts	3.0%	$4,516	$6,476	$10,000	$10,300	$10,609	$10,927	$11,255	$11,593	$11,941	$12,299	$12,668	$13,048
Background Checks	3.0%	$60	$18	$18	$19	$19	$20	$20	$21	$22	$22	$23	$24
Hydrogeologist	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Engineering	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Engineering Design	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Insurance	3.0%	$13,127	$13,927	$14,345	$14,775	$15,218	$15,675	$16,145	$16,629	$17,128	$17,642	$18,171	$18,716
Medical services	3.0%	$291	$343	$353	$363	$374	$385	$397	$409	$421	$434	$447	$460
Water Assurance District fee	3.0%	$5,341	$5,157	$5,330	$5,509	$5,694	$5,885	$6,082	$6,286	$6,496	$6,714	$6,938	$7,171
Water samples	3.0%	$3,416	$5,289	$5,448	$5,611	$5,780	$5,953	$6,132	$6,316	$6,505	$6,700	$6,901	$7,108
Legal/professional services	3.0%	$0	$8,138	$8,382	$8,633	$8,892	$9,159	$9,434	$9,717	$10,008	$10,308	$10,618	$10,936
Computer Serv/Maintenance	3.0%	$2,422	$2,659	$2,739	$2,821	$2,906	$2,993	$3,082	$3,175	$3,270	$3,368	$3,469	$3,573
Well maintenance	3.0%	$44,067	$6,261	$6,471	$6,688	$6,913	$7,144	$7,384	$7,631	$7,887	$8,151	$8,424	$8,706
Printing/publication	3.0%	$1,123	$807	$831	$856	$881	$908	$935	$963	$992	$1,022	$1,052	$1,084
Equipment rental	3.0%	$1,549	$1,502	$1,547	$1,593	$1,641	$1,690	$1,741	$1,793	$1,847	$1,902	$1,959	$2,018
Custodial services	3.0%	$2,825	$2,819	$2,903	$2,990	$3,080	$3,172	$3,268	$3,366	$3,467	$3,571	$3,678	$3,788
Vehicle maintenance/repairs	3.0%	$6,654	$4,510	$4,645	$4,785	$4,928	$5,076	$5,228	$5,385	$5,547	$5,713	$5,884	$6,061
Equipment repairs	3.0%	$3,456	$3,335	$3,435	$3,538	$3,644	$3,753	$3,866	$3,982	$4,101	$4,224	$4,351	$4,481
Plant maintenance	3.0%	$6,966	$12,097	$15,000	$15,450	$15,914	$16,391	$16,883	$17,389	$17,911	$18,448	$19,002	$19,572
Distribution system maintenance	3.0%	$90,727	$170,904	$176,641	$182,570	$188,693	$195,020	$201,557	$208,310	$215,287	$222,495	$229,942	$237,635
Building/grounds maint/repairs	3.0%	$5,990	$3,829	$3,944	$4,062	$4,184	$4,309	$4,439	$4,572	$4,709	$4,850	$4,996	$5,146
Uniform Rentals	3.0%	$1,615	$2,831	$5,600	$5,768	$5,941	$6,119	$6,303	$6,492	$6,687	$6,887	$7,094	$7,307
Telemetry maintenance	3.0%	$1,841	$4,344	$4,474	$4,608	$4,747	$4,889	$5,036	$5,187	$5,342	$5,503	$5,668	$5,838
Franchise fees	3.0%	$50,000	$50,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Collection losses	3.0%	$5,744	$1,549	$1,601	$1,654	$1,710	$1,767	$1,827	$1,888	$1,951	$2,016	$2,084	$2,153
Kansas One Call	3.0%	$1,414	$1,708	$1,759	$1,812	$1,866	$1,922	$1,980	$2,039	$2,100	$2,163	$2,228	$2,295
Sales&use/clean drinking wtr tax	3.0%	$7,157	$6,301	$6,512	$6,731	$6,957	$7,190	$7,431	$7,680	$7,937	$8,203	$8,478	$8,761
Utilities	3.0%	$98,362	$72,239	$120,000	$124,028	$128,188	$132,486	$136,927	$141,514	$146,254	$151,151	$156,210	$161,436

Table 4 - Operating Costs and Net Income

	Inflation/ Deflation (–) Factor	Test Year Starting 1/1/18	0 Year Starting 1/1/19	1st Year Starting 1/1/20	2nd Year Starting 1/1/21	3rd Year Starting 1/1/22	4th Year Starting 1/1/23	5th Year Starting 1/1/24	6th Year Starting 1/1/25	7th Year Starting 1/1/26	8th Year Starting 1/1/27	9th Year Starting 1/1/28	10th Year Starting 1/1/29
Office/computer/copier supplies	3.0%	$1,509	$4,549	$4,685	$4,826	$4,971	$5,120	$5,274	$5,432	$5,595	$5,763	$5,935	$6,113
Marketing materials	3.0%	$100	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plant maintenance supplies	3.0%	$7,283	$5,085	$5,238	$5,395	$5,557	$5,724	$5,895	$6,072	$6,254	$6,442	$6,635	$6,834
Building maintenance supplies	3.0%	$2,706	$4,942	$5,090	$5,243	$5,400	$5,562	$5,729	$5,901	$6,078	$6,260	$6,448	$6,641
Distribution maint supplies	3.0%	$45,059	$62,092	$63,955	$65,873	$67,849	$69,885	$71,982	$74,141	$76,365	$78,656	$81,016	$83,446
Replacement meters (Est 200/yr)	3.0%	$46,363	$22,170	$22,914	$23,684	$24,478	$25,299	$26,147	$27,023	$27,928	$28,863	$29,829	$30,827
New development meters (Est 25/yr)	3.0%	$11,057	$7,616	$7,872	$8,136	$8,409	$8,691	$8,982	$9,283	$9,594	$9,915	$10,247	$10,590
Safety equipment / supplies	3.0%	$2,591	$4,863	$5,009	$5,159	$5,314	$5,473	$5,638	$5,807	$5,981	$6,160	$6,345	$6,535
Uniforms / Clothing / PPE	3.0%	$851	$1,561	$1,608	$1,656	$1,706	$1,757	$1,810	$1,864	$1,920	$1,977	$2,037	$2,098
Water purchases	3.0%	$239,305	$186,546	$202,648	$209,450	$216,475	$223,733	$231,232	$238,979	$246,984	$255,253	$263,796	$272,622
Chemical/lab equip/supplies	3.0%	$57,051	$78,751	$81,114	$83,547	$86,054	$88,635	$91,294	$94,033	$96,854	$99,760	$102,753	$105,835
Well maintenance supplies	3.0%	$173	$222	$229	$236	$243	$250	$258	$266	$274	$282	$290	$299
Vehicle fuel	3.0%	$15,096	$12,891	$13,278	$13,676	$14,087	$14,509	$14,945	$15,393	$15,855	$16,330	$16,820	$17,325
Equip replacement parts/supplies	3.0%	$495	$2,026	$2,087	$2,150	$2,214	$2,281	$2,349	$2,420	$2,492	$2,567	$2,644	$2,723
Vehicle supplies	3.0%	$507	$3,164	$3,259	$3,357	$3,458	$3,561	$3,668	$3,778	$3,892	$4,008	$4,129	$4,252
Small equipment/tools	3.0%	$3,720	$2,781	$2,864	$2,950	$3,039	$3,130	$3,224	$3,321	$3,420	$3,523	$3,629	$3,737
Operating materials	3.0%	$561	$2,762	$2,845	$2,930	$3,018	$3,108	$3,202	$3,298	$3,397	$3,498	$3,603	$3,711
Water Plant Upgrades	3.0%	$5,184	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Equipment Storage Structure	3.0%	$7,956	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Computer equipment	3.0%	$1,474	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Filter Media Replacement	3.0%	$90,833	$0	$0	$0	$102,234	$0	$0	$0	$115,065	$0	$0	$0
Capital Improvements	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Tower inspection/cleaning/Painting	3.0%	$929	$0	$0	$0	$0	$50,000	$0	$0	$0	$0	$0	$0
Storage Tank maintenance	3.0%	$189	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
KDHE Loan payment	3.0%	Table 5	$54,532	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Debt Service	3.0%	Table 5	$9,459	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
General Fund - administrative	3.0%	$153,750	$122,300	$125,969	$129,748	$133,641	$137,650	$141,779	$146,033	$150,414	$154,926	$159,574	$164,361
CONSTRUCTION CONTRACTORS	3.0%	$0	$412,637	$425,016	$437,767	$450,900	$464,427	$478,360	$492,710	$507,492	$522,716	$538,398	$554,550
ENGINEERING INSPECTION	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
HYDRO EXCAVATOR W/TRAILER	3.0%	$0	$56,334	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
One-time Reduction of R&R Annuity	0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
One-time Transfer to R&R Reserve	0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Payment to R&R Reserve (Table 7)	0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
User Charge Analysis Services	5.0%	$0	$7,542	$0	$0	$8,315	$0	$0	$9,167	$0	$0	$10,107	$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		**$1,553,647**	**$1,991,411**	**$1,975,051**	**$2,036,264**	**$2,209,915**	**$2,214,422**	**$2,231,491**	**$2,309,804**	**$2,486,988**	**$2,445,415**	**$2,531,290**	**$2,599,295**
Net Income (or Loss)		$1,010,384	$302,783	$762,505	$1,158,939	$1,089,962	$1,194,147	$1,288,493	$1,325,345	$1,267,439	$1,432,716	$1,473,516	$1,537,015
Working Capital Goal: 50%	In Dollars, That is:	$776,823	$995,705	$987,525	$1,018,132	$1,104,958	$1,107,211	$1,115,746	$1,154,902	$1,243,494	$1,222,708	$1,265,645	$1,299,648

Notes: The City is adding approximately 10 new customers per year. Therefore, the yellow highlighted cost items above will rise due to inflation and due to the additional cost of serving new customers. City staff noted changes to some future costs, which are highlighted green.

Table 5 - Capital Improvement Program (CIP)

Bonner Springs, KS, 2019 Water Rates Model 1

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
	1/1/18	1/1/19	1/1/20	1/1/21	1/1/22	1/1/23	1/1/24	1/1/25	1/1/26	1/1/27	1/1/28	1/1/29
Planned Spending, Debt-paid Portion of Projects (CIP costs to be funded with loans are shown in this section.)												
New Water Plant - Design	$0	$0	$0	$954,810	$0	$0	$0	$0	$0	$0	$0	$0
Replace 2" Lines Section A-1 - Design	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Replace 2" Lines Section A-1 - Build	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Replace 2" Lines Section A-2 to A-5 - Design	$0	$0	$0	$0	$163,909	$0	$0	$0	$0	$0	$0	$0
New Water Plant - Build	$0	$0	$0	$0	$0	$10,129,579	$0	$0	$0	$0	$0	$0
Replace 2" Lines Section A-2 to A-5 - Build	$0	$0	$0	$0	$0	$0	$695,564	$0	$0	$0	$0	$0
Loop/Replace Lines Section A-6 to A-10 - Design	$0	$0	$0	$0	$0	$0	$173,891	$0	$0	$0	$0	$0
Loop/Replace Lines Section A-6 to A-10 - Build	$0	$0	$0	$0	$0	$0	$0	$955,242	$0	$0	$0	$0
New 16" Line Canaan Center Section B-2 - Design	$0	$0	$0	$0	$0	$0	$0	$59,703	$0	$0	$0	$0
New 16" Line Canaan Center Section B-2 - Build	$0	$0	$0	$0	$0	$0	$0	$0	$614,937	$0	$0	$0
New Water Tower Canaan Center - Design	$0	$0	$0	$0	$0	$0	$0	$0	$491,950	$0	$0	$0
New Water Tower Canaan Center - Build	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,333,850	$0	$0
Riverview/I-70 Section B-3 - Design	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$391,432	$0
Riverview/I-70 Section B-3 - Build	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,494,183
Kansas Ave/122nd Section B-4 Design	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Kansas Ave/122nd Section B-4 - Build	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loan Closing Costs, Estimated at: 2.5%	$0	$0	$0	$25,324	$4,478	$285,023	$25,198	$30,297	$34,033	$200,588	$12,768	$117,397
Total Debt-paid Portion of Projects	$0	$0	$0	$980,134	$168,387	$10,414,603	$894,654	$1,045,242	$1,140,920	$6,534,439	$404,200	$3,611,580
Planned Spending, Cash-paid Portion of Projects (CIP costs to be funded from reserves are shown here.)												
Hydrogeologist	$1,441	$4,000	$4,120	$4,244	$4,371	$4,502	$4,637	$4,776	$4,919	$5,067	$5,219	$5,376
Engineering	$80,820	$15,000	$15,450	$15,914	$16,391	$16,883	$17,389	$17,911	$18,448	$19,002	$19,572	$20,159
Engineering Design	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cash-paid Portion of Projects	$82,261	$19,000	$19,570	$20,157	$20,762	$21,385	$22,026	$22,687	$23,368	$24,069	$24,791	$25,534
Total CIP Costs	**$82,261**	**$19,000**	**$19,570**	**$1,000,291**	**$189,149**	**$10,435,987**	**$916,680**	**$1,067,929**	**$1,164,287**	**$6,558,507**	**$428,991**	**$3,637,114**

Table 5 - Capital Improvement Program (CIP)

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

	Test Year Starting	Analysis Year 0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	1/1/18	1/1/19	1/1/20	1/1/21	1/1/22	1/1/23	1/1/24	1/1/25	1/1/26	1/1/27	1/1/28	1/1/29
Debt Repayment												
Existing Debt Payments (Following is debt that was initiated during the test year or earlier.)												
KDHE Loan payment	$54,533	$54,533	$54,533	$54,533	$54,533	$54,533	$54,533	$54,533	$54,533	$54,533	$54,533	$54,533
Debt Service (GO Bonds)	$350,283	$354,459	$351,191	$360,153	$355,958	$251,027	$251,819	$180,786	$178,575	$178,539	$176,666	$88,393
New Debt Payments (Following are payments for projects to be paid with new debt. It is assumed these will be loan/lease-financed for a term of: 20 years at a 2.0% interest rate.)												
Loan Originated in 2nd Year					$59,942	$59,942	$59,942	$59,942	$59,942	$59,942	$59,942	$59,942
Loan Originated in 3rd Year						$10,298	$10,298	$10,298	$10,298	$10,298	$10,298	$10,298
Loan Originated in 4th Year							$636,923	$636,923	$636,923	$636,923	$636,923	$636,923
Loan Originated in 5th Year								$54,714	$54,714	$54,714	$54,714	$54,714
Loan Originated in 6th Year									$63,924	$63,924	$63,924	$63,924
Loan Originated in 7th Year										$69,775	$69,775	$69,775
Loan Originated in 8th Year											$399,625	$399,625
Loan Originated in 9th Year												$24,720
Total Debt Payments	$404,816	$408,992	$405,724	$414,685	$470,432	$375,799	$1,013,514	$997,195	$1,058,908	$1,128,647	$1,526,398	$1,462,845
Total CIP-related Payouts	**$487,076**	**$427,992**	**$425,294**	**$1,414,977**	**$659,581**	**$10,811,786**	**$1,930,194**	**$2,065,124**	**$2,223,195**	**$7,687,155**	**$1,955,389**	**$5,099,959**
(This is the total cash required for this CIP and debt payment schedule. These amounts must come from utility income, reserves or outside sources, as shown in the next section.)												
CIP Fund Sources (Following are the sources and amounts of funds expected to pay for the above CIP schedule.)												
Cash Reserves (Internal Funds)												
Debt and CIP Reserves Starting Balance	$0	$1,569,081	$1,256,372	$1,626,890	$2,352,918	$2,911,919	$3,764,868	$4,084,583	$4,432,581	$4,617,804	$5,010,947	$4,990,555
Working Capital Transferred in	$2,056,157	$83,901	$770,685	$1,128,332	$1,003,137	$1,191,894	$1,279,958	$1,286,188	$1,178,847	$1,453,503	$1,430,578	$1,503,012
Debt and CIP Reserves Interest Earned (or Paid)	$0	$31,382	$25,127	$32,538	$47,058	$58,238	$75,297	$81,692	$88,652	$92,356	$100,219	$99,811
Total Available Internal Funds	$2,056,157	$1,684,363	$2,052,184	$2,787,760	$3,403,113	$4,162,051	$5,120,123	$5,452,463	$5,700,080	$6,163,663	$6,541,744	$6,593,379
Grant and Loan Proceeds (External Funds)												
Loan Originated in 2nd Year				$980,134	$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 3rd Year					$168,387	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 4th Year						$10,414,603	$0	$0	$0	$0	$0	$0
Loan Originated in 5th Year							$894,654	$0	$0	$0	$0	$0
Loan Originated in 6th Year								$1,045,242	$0	$0	$0	$0
Loan Originated in 7th Year									$1,140,920	$0	$0	$0
Loan Originated in 8th Year										$6,534,439	$0	$0
Loan Originated in 9th Year											$404,200	$0
Loan Originated in 10th Year												$3,611,580
Total Available External Funds	$0	$0	$0	$980,134	$168,387	$10,414,603	$894,654	$1,045,242	$1,140,920	$6,534,439	$404,200	$3,611,580
Total Available Funds	**$2,056,157**	**$1,684,363**	**$2,052,184**	**$3,767,894**	**$3,571,500**	**$14,576,654**	**$6,014,777**	**$6,497,705**	**$6,841,000**	**$12,698,102**	**$6,945,944**	**$10,204,959**
Outcomes (This CIP spending and funding plan will result in the following cash needs and ending balances each year.)												
Total Available Funds	**$2,056,157**	**$1,684,363**	**$2,052,184**	**$3,767,894**	**$3,571,500**	**$14,576,654**	**$6,014,777**	**$6,497,705**	**$6,841,000**	**$12,698,102**	**$6,945,944**	**$10,204,959**
Total CIP-related Payouts	**$487,076**	**$427,992**	**$425,294**	**$1,414,977**	**$659,581**	**$10,811,786**	**$1,930,194**	**$2,065,124**	**$2,223,195**	**$7,687,155**	**$1,955,389**	**$5,099,959**
Debt and CIP Reserves Ending Balances	**$1,569,081**	**$1,256,372**	**$1,626,890**	**$2,352,918**	**$2,911,919**	**$3,764,868**	**$4,084,583**	**$4,432,581**	**$4,617,804**	**$5,010,947**	**$4,990,555**	**$5,104,999**

Notes: The City has a robust slate of system improvements to do. It was assumed nearly all will be debt financed. City staff noted changes to some future costs, which are highlighted green.

Table 6 - Equipment Replacement Schedule - Detailed

Bonner Springs, KS, 2019 Water Rates Model 1

Year Beginning	Included in Operating Costs in Table 4				Total Annual Replacement Costs
1/1/18	$0	$0	$0	$0	$0
1/1/19	$0	$0	$0	$0	$0
1/1/20	$0	$0	$0	$0	$0
1/1/21	$0	$0	$0	$0	$0
1/1/22	$0	$0	$0	$0	$0
1/1/23	$0	$0	$0	$0	$0
1/1/24	$0	$0	$0	$0	$0
1/1/25	$0	$0	$0	$0	$0
1/1/26	$0	$0	$0	$0	$0
1/1/27	$0	$0	$0	$0	$0
1/1/28	$0	$0	$0	$0	$0
1/1/29	$0	$0	$0	$0	$0
1/1/30	$0	$0	$0	$0	$0
1/1/31	$0	$0	$0	$0	$0
1/1/32	$0	$0	$0	$0	$0
1/1/33	$0	$0	$0	$0	$0
1/1/34	$0	$0	$0	$0	$0
1/1/35	$0	$0	$0	$0	$0
1/1/36	$0	$0	$0	$0	$0
1/1/37	$0	$0	$0	$0	$0
1/1/38	$0	$0	$0	$0	$0
1/1/39	$0	$0	$0	$0	$0
1/1/40	$0	$0	$0	$0	$0
1/1/41	$0	$0	$0	$0	$0
1/1/42	$0	$0	$0	$0	$0

Table 8 - Average Cost Classification

Bonner Springs, KS, 2019 Water Rates Model 1

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

The average rate structure basis year runs from: 1/1/2023 through 12/31/2023

Cost Items	Cost During Rate Structure Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
Full time wages	$410,398	25.0%	75.0%	$102,599	$307,798
Overtime	$16,831	25.0%	75.0%	$4,208	$12,623
0	$0	25.0%	75.0%	$0	$0
0	$0	25.0%	75.0%	$0	$0
Employee benefits	$183,092	25.0%	75.0%	$45,773	$137,319
Postage/deliveries	$290	100.0%	0.0%	$290	$0
Telephone/mobile/pagers	$12,791	100.0%	0.0%	$12,791	$0
Setoff collection fees	$1,336	30.1%	69.9%	$402	$934
Credit card fees	$27,969	30.1%	69.9%	$8,419	$19,550
Mileage	$86	25.0%	75.0%	$21	$64
Claims	$0	30.1%	69.9%	$0	$0
Prof dev/dues/travel/subscripts	$10,927	25.0%	75.0%	$2,732	$8,195
Background Checks	$20	25.0%	75.0%	$5	$15
Hydrogeologist	$0	25.0%	75.0%	$0	$0
Engineering	$0	25.0%	75.0%	$0	$0
Engineering Design	$0	25.0%	75.0%	$0	$0
Insurance	$15,675	25.0%	75.0%	$3,919	$11,756
Medical services	$385	25.0%	75.0%	$96	$289
Water Assurance District fee	$5,885	25.0%	75.0%	$1,471	$4,414
Water samples	$5,953	100.0%	0.0%	$5,953	$0
Legal/professional services	$9,159	100.0%	0.0%	$9,159	$0
Computer Serv/Maintenance	$2,993	100.0%	0.0%	$2,993	$0
Well maintenance	$7,144	25.0%	75.0%	$1,786	$5,358
Printing/publication	$908	100.0%	0.0%	$908	$0
Equipment rental	$1,690	100.0%	0.0%	$1,690	$0
Custodial services	$3,172	100.0%	0.0%	$3,172	$0
Vehicle maintenance/repairs	$5,076	25.0%	75.0%	$1,269	$3,807
Equipment repairs	$3,753	25.0%	75.0%	$938	$2,815
Plant maintenance	$16,391	25.0%	75.0%	$4,098	$12,293
Distribution system maintenance	$195,020	25.0%	75.0%	$48,755	$146,265
Building/grounds maint/repairs	$4,309	25.0%	75.0%	$1,077	$3,232
Uniform Rentals	$6,119	25.0%	75.0%	$1,530	$4,589
Telemetry maintenance	$4,889	100.0%	0.0%	$4,889	$0
Franchise fees	$0	30.1%	69.9%	$0	$0
Collection losses	$1,767	30.1%	69.9%	$532	$1,235
Kansas One Call	$1,922	30.1%	69.9%	$578	$1,343
Sales&use/clean drinking wtr tax	$7,190	30.1%	69.9%	$2,164	$5,026
Utilities	$132,486	0.0%	100.0%	$0	$132,486
Utility rate analysis	$0	30.1%	69.9%	$0	$0
Office/computer/copier supplies	$5,120	100.0%	0.0%	$5,120	$0
Marketing materials	$0	100.0%	0.0%	$0	$0

Table 8 - Average Cost Classification

Cost Items	Cost During Rate Structure Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
Plant maintenance supplies	$5,724	50.0%	50.0%	$2,862	$2,862
Building maintenance supplies	$5,562	50.0%	50.0%	$2,781	$2,781
Distribution maint supplies	$69,885	50.0%	50.0%	$34,942	$34,942
Replacement meters (Est 200/yr)	$25,299	30.1%	69.9%	$7,615	$17,684
New development meters (Est 25/yr)	$8,691	30.1%	69.9%	$2,616	$6,075
Safety equipment / supplies	$5,473	50.0%	50.0%	$2,737	$2,737
Uniforms / Clothing / PPE	$1,757	50.0%	50.0%	$878	$878
Water purchases	$223,733	0.0%	100.0%	$0	$223,733
Chemical/lab equip/supplies	$88,635	25.0%	75.0%	$22,159	$66,476
Well maintenance supplies	$250	100.0%	0.0%	$250	$0
Vehicle fuel	$14,509	25.0%	75.0%	$3,627	$10,882
Equip replacement parts/supplies	$2,281	25.0%	75.0%	$570	$1,711
Vehicle supplies	$3,561	25.0%	75.0%	$890	$2,671
Small equipment/tools	$3,130	25.0%	75.0%	$783	$2,348
Operating materials	$3,108	25.0%	75.0%	$777	$2,331
Water Plant Upgrades	$0	25.0%	75.0%	$0	$0
Equipment Storage Structure	$0	50.0%	50.0%	$0	$0
Computer equipment	$0	100.0%	0.0%	$0	$0
Filter Media Replacement	$0	30.1%	69.9%	$0	$0
0	$0	25.0%	75.0%	$0	$0
0	$0	25.0%	75.0%	$0	$0
0	$0	25.0%	75.0%	$0	$0
0	$0	25.0%	75.0%	$0	$0
0	$0	25.0%	75.0%	$0	$0
Capital Improvements	$0	25.0%	75.0%	$0	$0
Tower inspection/cleaning/Painting	$50,000	25.0%	75.0%	$12,500	$37,500
Storage Tank maintenance	$0	25.0%	75.0%	$0	$0
KDHE Loan payment	$0	25.0%	75.0%	$0	$0
Debt Service	$0	25.0%	75.0%	$0	$0
General Fund - administrative	$137,650	100.0%	0.0%	$137,650	$0
Total CIP-related Payouts, Less Capacity Charges From Tables 14 & 16 (This value can be negative)	$300,498	30.1%	69.9%	$90,450	$210,048
Grand Total Costs, Weighted Avg Percentages	$2,514,920	28.6%	71.4%	$719,533	$1,795,387

Bases for Cost to Serve Rate Structure

		100%	$2,514,920
Number Customers During Year Defined Above	2,919	Unbilled-for Water is Estimated at	18%
Billed Volume, in Gallons, During Year Defined Above	261,132,715	Unbilled-for Water is Estimated at This Percentage of Average Cost	#VALUE!
Average Fixed Cost per User per Month During Year Defined Above	$20.55	Resulting Cost of Unbilled-for Water	#VALUE!
Average Variable Cost to Produce per 1,000 Gallons During Year Defined Above	$6.88	Test Year Customer Metered Volume, in Gallons	256,658,966
Gallons per Billing Cycle Used by Average Residential Customer	4,577	+ Test Year Unbilled-for Water, in Gallons	55,769,234
		Total Test Year Volume, in Gallons, From Master Meter Readings	312,428,200

Table 10 - Initial Rate Adjustments and Resulting Revenues

Bonner Springs, KS, 2019 Water Rates Model 1

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

Premium for Out-of-City Service	150%	Conservation Rate Block Multiplier	100%	Other Multiplier	100%

12/31/19 Date when fees will first be collected at adjusted rates. Actual adjustment should occur one billing cycle earlier.

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 1,000 Gallons	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
In City .625 Meter Size	0	999	$206,825	$26.86	0.000	$8.51	$752	$207,577
	1,000	1,999	$206,825	$26.86	0.000	$8.51	$752	$207,577
	2,000	2,999	$206,825	$26.86	0.000	$8.51	$752	$207,577
	3,000	3,999	$206,825	$26.86	0.000	$8.51	$752	$207,577
	4,000	4,999	$674,565	$26.86	0.000	$8.51	$2,807	$677,372
In City 1 Inch Meter Size	0	999	$7,477	$29.00	0.000	$8.51	$27	$7,504
	1,000	1,999	$7,477	$29.00	0.000	$8.51	$27	$7,504
	2,000	2,999	$7,477	$29.00	0.000	$8.51	$27	$7,504
	3,000	3,999	$7,477	$29.00	0.000	$8.51	$27	$7,504
	4,000	4,999	$7,477	$29.00	0.000	$8.51	$27	$7,504
	5,000	5,999	$7,477	$29.00	0.000	$8.51	$27	$7,504
	6,000	6,999	$7,477	$29.00	0.000	$8.51	$27	$7,504
	7,000	7,999	$7,477	$29.00	0.000	$8.51	$27	$7,504
	8,000	8,999	$7,477	$29.00	0.000	$8.51	$27	$7,504
	9,000	9,999	$7,477	$29.00	0.000	$8.51	$27	$7,504
	10,000	14,999	$37,384	$29.00	0.000	$8.51	$136	$37,520
	15,000	19,999	$44,672	$29.00	0.000	$8.51	$174	$44,847

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 1,000 Gallons	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
In City 2 Inch Meter Size	0	999	$3,116	$36.84	0.000	$8.51	$11	$3,128
	1,000	1,999	$3,116	$36.84	0.000	$8.51	$11	$3,128
	2,000	2,999	$3,116	$36.84	0.000	$8.51	$11	$3,128
	3,000	3,999	$3,116	$36.84	0.000	$8.51	$11	$3,128
	4,000	4,999	$3,116	$36.84	0.000	$8.51	$11	$3,128
	5,000	5,999	$3,116	$36.84	0.000	$8.51	$11	$3,128
	6,000	6,999	$3,116	$36.84	0.000	$8.51	$11	$3,128
	7,000	7,999	$3,116	$36.84	0.000	$8.51	$11	$3,128
	8,000	8,999	$3,116	$36.84	0.000	$8.51	$11	$3,128
	9,000	9,999	$3,116	$36.84	0.000	$8.51	$11	$3,128
	10,000	14,999	$15,582	$36.84	0.000	$8.51	$57	$15,639
	15,000	19,999	$15,582	$36.84	0.000	$8.51	$57	$15,639
	20,000	24,999	$15,582	$36.84	0.000	$8.51	$57	$15,639
	25,000	29,999	$15,582	$36.84	0.000	$8.51	$57	$15,639
	30,000	34,999	$15,582	$36.84	0.000	$8.51	$57	$15,639
	35,000	44,999	$31,164	$36.84	0.000	$8.51	$113	$31,277
	45,000	54,999	$31,164	$36.84	0.000	$8.51	$113	$31,277
	55,000	64,999	$31,164	$36.84	0.000	$8.51	$113	$31,277
	65,000	74,999	$31,164	$36.84	0.000	$8.51	$113	$31,277
	75,000	84,999	$31,164	$36.84	0.000	$8.51	$113	$31,277
	85,000	94,999	$46,841	$36.84	0.000	$8.51	$150	$46,991
In City 3 Inch Meter Size	0	999	$988	$48.25	0.000	$8.51	$4	$991
	1,000	1,999	$988	$48.25	0.000	$8.51	$4	$991
	2,000	2,999	$988	$48.25	0.000	$8.51	$4	$991
	3,000	3,999	$988	$48.25	0.000	$8.51	$4	$991
	4,000	4,999	$988	$48.25	0.000	$8.51	$4	$991
	5,000	5,999	$988	$48.25	0.000	$8.51	$4	$991
	6,000	6,999	$988	$48.25	0.000	$8.51	$4	$991
	7,000	7,999	$988	$48.25	0.000	$8.51	$4	$991
	8,000	8,999	$988	$48.25	0.000	$8.51	$4	$991
	9,000	9,999	$988	$48.25	0.000	$8.51	$4	$991
	10,000	14,999	$4,938	$48.25	0.000	$8.51	$18	$4,955
	15,000	19,999	$4,938	$48.25	0.000	$8.51	$18	$4,955
	20,000	24,999	$4,938	$48.25	0.000	$8.51	$18	$4,955
	25,000	29,999	$4,938	$48.25	0.000	$8.51	$18	$4,955
	30,000	34,999	$4,938	$48.25	0.000	$8.51	$18	$4,955
	35,000	44,999	$9,875	$48.25	0.000	$8.51	$36	$9,911
	45,000	54,999	$9,875	$48.25	0.000	$8.51	$36	$9,911
	55,000	64,999	$9,875	$48.25	0.000	$8.51	$36	$9,911
	65,000	74,999	$9,875	$48.25	0.000	$8.51	$36	$9,911
	75,000	84,999	$9,875	$48.25	0.000	$8.51	$36	$9,911
	85,000	94,999	$9,875	$48.25	0.000	$8.51	$36	$9,911
	95,000	104,999	$9,875	$48.25	0.000	$8.51	$36	$9,911
	105,000	114,999	$9,875	$48.25	0.000	$8.51	$36	$9,911
	115,000	124,999	$19,957	$48.25	0.000	$8.51	$48	$20,005

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 1,000 Gallons	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
In City 4 Inch Meter Size	0	999	$308	$61.09	0.000	$8.51	$1	$309
	1,000	1,999	$308	$61.09	0.000	$8.51	$1	$309
	2,000	2,999	$308	$61.09	0.000	$8.51	$1	$309
	3,000	3,999	$308	$61.09	0.000	$8.51	$1	$309
	4,000	4,999	$308	$61.09	0.000	$8.51	$1	$309
	5,000	5,999	$308	$61.09	0.000	$8.51	$1	$309
	6,000	6,999	$308	$61.09	0.000	$8.51	$1	$309
	7,000	7,999	$308	$61.09	0.000	$8.51	$1	$309
	8,000	8,999	$308	$61.09	0.000	$8.51	$1	$309
	9,000	9,999	$308	$61.09	0.000	$8.51	$1	$309
	10,000	14,999	$1,539	$61.09	0.000	$8.51	$6	$1,545
	15,000	19,999	$1,539	$61.09	0.000	$8.51	$6	$1,545
	20,000	24,999	$1,539	$61.09	0.000	$8.51	$6	$1,545
	25,000	29,999	$1,539	$61.09	0.000	$8.51	$6	$1,545
	30,000	34,999	$1,539	$61.09	0.000	$8.51	$6	$1,545
	35,000	44,999	$3,078	$61.09	0.000	$8.51	$11	$3,089
	45,000	54,999	$3,078	$61.09	0.000	$8.51	$11	$3,089
	55,000	64,999	$3,078	$61.09	0.000	$8.51	$11	$3,089
	65,000	74,999	$3,078	$61.09	0.000	$8.51	$11	$3,089
	75,000	84,999	$3,078	$61.09	0.000	$8.51	$11	$3,089
	85,000	94,999	$3,078	$61.09	0.000	$8.51	$11	$3,089
	95,000	104,999	$3,078	$61.09	0.000	$8.51	$11	$3,089
	105,000	114,999	$3,078	$61.09	0.000	$8.51	$11	$3,089
	115,000	124,999	$3,078	$61.09	0.000	$8.51	$11	$3,089
	125,000	134,999	$3,078	$61.09	0.000	$8.51	$11	$3,089
	135,000	144,999	$3,078	$61.09	0.000	$8.51	$11	$3,089
	145,000	1,000,000	$41,440	$61.09	0.000	$8.51	$137	$41,577
In-City 6 Inch Meter Size	0	999	$0	$96.75	0.000	$8.51	$0	$0
	1,000	1,999	$0	$96.75	0.000	$8.51	$0	$0
	145,000	1,000,000	$0	$96.75	0.000	$8.51	$0	$0
In-City 8 Inch Meter Size	0	999	$0	$139.55	0.000	$8.51	$0	$0
	1,000	1,999	$0	$139.55	0.000	$8.51	$0	$0
	145,000	1,000,000	$0	$139.55	0.000	$8.51	$0	$0
Senior	0	999	$308	$21.48	0.000	$6.81	$1	$309
	1,000	1,999	$867	$21.48	0.000	$6.81	$4	$871
Out of City .625 Inch Meter Size	0	999	$1,029	$40.28	0.000	$12.77	$4	$1,033
	1,000	1,999	$1,029	$40.28	0.000	$12.77	$4	$1,033
	2,000	2,999	$1,029	$40.28	0.000	$12.77	$4	$1,033
	3,000	3,999	$1,029	$40.28	0.000	$12.77	$4	$1,033
	4,000	4,999	$3,029	$40.28	0.000	$12.77	$13	$3,042
Out of City 1 Inch Meter Size	0	999	$0	$43.49	0.000	$12.77	$0	$0
	1,000	1,999	$0	$43.49	0.000	$12.77	$0	$0
	145,000	1,000,000	$0	$43.49	0.000	$12.77	$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 1,000 Gallons	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
Out of City 2 Inch Meter Size	0	999	$635	$55.26	0.000	$12.77	$2	$637
	1,000	1,999	$635	$55.26	0.000	$12.77	$2	$637
	2,000	2,999	$635	$55.26	0.000	$12.77	$2	$637
	3,000	3,999	$635	$55.26	0.000	$12.77	$2	$637
	4,000	4,999	$635	$55.26	0.000	$12.77	$2	$637
	5,000	5,999	$635	$55.26	0.000	$12.77	$2	$637
	6,000	6,999	$635	$55.26	0.000	$12.77	$2	$637
	7,000	7,999	$635	$55.26	0.000	$12.77	$2	$637
	8,000	8,999	$635	$55.26	0.000	$12.77	$2	$637
	9,000	9,999	$635	$55.26	0.000	$12.77	$2	$637
	10,000	14,999	$3,174	$55.26	0.000	$12.77	$12	$3,186
	15,000	19,999	$3,174	$55.26	0.000	$12.77	$12	$3,186
	20,000	24,999	$3,174	$55.26	0.000	$12.77	$12	$3,186
	25,000	29,999	$3,174	$55.26	0.000	$12.77	$12	$3,186
	30,000	34,999	$3,174	$55.26	0.000	$12.77	$12	$3,186
	35,000	44,999	$6,348	$55.26	0.000	$12.77	$23	$6,371
	45,000	54,999	$6,348	$55.26	0.000	$12.77	$23	$6,371
	55,000	64,999	$6,348	$55.26	0.000	$12.77	$23	$6,371
	65,000	74,999	$6,348	$55.26	0.000	$12.77	$23	$6,371
	75,000	84,999	$6,348	$55.26	0.000	$12.77	$23	$6,371
	85,000	94,999	$8,580	$55.26	0.000	$12.77	$27	$8,607
Out of City 3 Inch Meter Size	0	999	$0	$72.38	0.000	$12.77	$0	$0
	1,000	1,999	$0	$72.38	0.000	$12.77	$0	$0
	145,000	1,000,000	$0	$72.38	0.000	$12.77	$0	$0
Out of City 4 Inch Meter Size	0	999	$0	$91.64	0.000	$12.77	$0	$0
	1,000	1,999	$0	$91.64	0.000	$12.77	$0	$0
	145,000	1,000,000	$0	$91.64	0.000	$12.77	$0	$0
Out of City 6 Inch Meter Size	0	999	$0	$145.13	0.000	$12.77	$0	$0
	1,000	1,999	$0	$145.13	0.000	$12.77	$0	$0
	145,000	1,000,000	$0	$145.13	0.000	$12.77	$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 1,000 Gallons	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
Temporary Service	0	999	$265	$124.12	0.000	$10.64	$1	$265
	1,000	1,999	$265	$124.12	0.000	$10.64	$1	$265
	2,000	2,999	$265	$124.12	0.000	$10.64	$1	$265
	3,000	3,999	$265	$124.12	0.000	$10.64	$1	$265
	4,000	4,999	$265	$124.12	0.000	$10.64	$1	$265
	5,000	5,999	$265	$124.12	0.000	$10.64	$1	$265
	6,000	6,999	$265	$124.12	0.000	$10.64	$1	$265
	7,000	7,999	$265	$124.12	0.000	$10.64	$1	$265
	8,000	8,999	$265	$124.12	0.000	$10.64	$1	$265
	9,000	9,999	$265	$124.12	0.000	$10.64	$1	$265
	10,000	14,999	$1,323	$124.12	0.000	$10.64	$5	$1,327
	15,000	19,999	$1,323	$124.12	0.000	$10.64	$5	$1,327
	20,000	24,999	$1,323	$124.12	0.000	$10.64	$5	$1,327
	25,000	29,999	$1,323	$124.12	0.000	$10.64	$5	$1,327
	30,000	34,999	$1,323	$124.12	0.000	$10.64	$5	$1,327
	35,000	44,999	$2,645	$124.12	0.000	$10.64	$10	$2,655
	45,000	54,999	$2,645	$124.12	0.000	$10.64	$10	$2,655
	55,000	64,999	$2,645	$124.12	0.000	$10.64	$10	$2,655
	65,000	74,999	$2,645	$124.12	0.000	$10.64	$10	$2,655
	75,000	84,999	$2,929	$124.12	0.000	$10.64	$12	$2,941
KC Renaissance 2 Inch Meter Size	0	999	$77	$36.84	0.000	$8.51	$0	$77
	1,000	1,999	$77	$36.84	0.000	$8.51	$0	$77
	2,000	2,999	$77	$36.84	0.000	$8.51	$0	$77
	3,000	3,999	$77	$36.84	0.000	$8.51	$0	$77
	4,000	4,999	$77	$36.84	0.000	$8.51	$0	$77
	5,000	5,999	$77	$36.84	0.000	$8.51	$0	$77
	6,000	6,999	$77	$36.84	0.000	$8.51	$0	$77
	7,000	7,999	$77	$36.84	0.000	$8.51	$0	$77
	8,000	8,999	$77	$36.84	0.000	$8.51	$0	$77
	9,000	9,999	$77	$36.84	0.000	$8.51	$0	$77
	10,000	14,999	$385	$36.84	0.000	$8.51	$1	$386
	15,000	19,999	$385	$36.84	0.000	$8.51	$1	$386
	20,000	24,999	$385	$36.84	0.000	$8.51	$1	$386
	25,000	29,999	$385	$36.84	0.000	$8.51	$1	$386
	30,000	34,999	$385	$36.84	0.000	$8.51	$1	$386
	35,000	44,999	$769	$36.84	0.000	$8.51	$3	$772
	45,000	54,999	$769	$36.84	0.000	$8.51	$3	$772
	55,000	64,999	$769	$36.84	0.000	$8.51	$3	$772
	65,000	74,999	$769	$36.84	0.000	$8.51	$3	$772
	75,000	84,999	$769	$36.84	0.000	$8.51	$3	$772
	85,000	94,999	$769	$36.84	0.000	$8.51	$3	$772
	95,000	104,999	$769	$36.84	0.000	$8.51	$3	$772
	105,000	114,999	$805	$36.84	0.000	$8.51	$2	$807

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 1,000 Gallons	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
	0	999	$0	$0.00	0.000	$0.00	$0	$0
	1,000	1,999	$0	$0.00	0.000	$0.00	$0	$0
	2,000	2,999	$0	$0.00	0.000	$0.00	$0	$0
	3,000	3,999	$0	$0.00	0.000	$0.00	$0	$0
	4,000	4,999	$0	$0.00	0.000	$0.00	$0	$0
No Charge	5,000	5,999	$0	$0.00	0.000	$0.00	$0	$0
	6,000	6,999	$0	$0.00	0.000	$0.00	$0	$0
	7,000	7,999	$0	$0.00	0.000	$0.00	$0	$0
	8,000	8,999	$0	$0.00	0.000	$0.00	$0	$0
	9,000	9,999	$0	$0.00	0.000	$0.00	$0	$0
	10,000	14,999	$0	$0.00	0.000	$0.00	$0	$0
Total Rate Revenue at Current Rates			$2,292,530	Total Rate Revenue at Modeled Rates			$8,643	
						Total Blended Rate Revenues for the Year		$2,301,173

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

Bonner Springs, KS, 2019 Water Rates Model 1

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

Fire sprinkler data source: National Fire Protection Association

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

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

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

Table 12 - Flow Capacity Costs

Bonner Springs, KS, 2019 Water Rates Model 1

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

Peak and Base Flow Capacity Costs

	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)
$21,513,750	100.0%	50.0%	$10,756,875	$626,891	50.0%	$10,756,875	$626,891

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

4.15%	Target Percentage of Annualized Costs to Recover
$26,015.97	Target Portion of Annualized Costs to Recover
$2,601.60	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, estimated as follows:

$0	Average Field Cost per New Connection
$0	Average Administration Cost per New Connection
$0	Average "Out-of-Pocket" Cost per New Connection

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

10.00%	Target Percentage of Costs to Recover
$62,689.09	Target Portion of Costs to Recover in One Full Year
$5,224.09	Target Portion of Costs to Recover in Monthly Surcharges
$1.43	Monthly Surcharge per Peak Capacity Share

Note: "Out-of-pocket" connection costs are in addition to peak and base flow capacity costs. All of these costs have been added together in Table 13, to arrive at the grand total fee to assess to each meter size and type.

Table 13 - System Development Fees

Bonner Springs, KS, 2019 Water Rates Model 1

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

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

				Premium for Out-of-City Service	150%				
							Economy of Scale Adjustment to Peak Capacity Factors[3]		
Meter Size	Meter Type	New Taps (Customer Growth) in a Typical Year	AWWA Capacity "Share" Factor, Compared to 5/8 Inch Meter	Economy of Scale Adjustment to Peak Capacity Factors	Premium for Out-of-City Service	Peak Capacity Cost per Capacity Share From Table 11	Peak Capacity Cost per Meter This Class	**Fee per New Connection for Peak, Base and Out-of-pocket Costs**
In-City								
Five Eighths	Displacement	9.4	1.0	100%	100%	$2,602	$2,602	**$2,602**
Three Quarters	Displacement	0.0	1.0	100%	100%	$2,602	$2,602	**$2,602**
One Inch	Displacement	0.3	2.5	100%	100%	$2,602	$6,504	**$6,504**
One & a Half Inch	Displacement	0.0	5.0	100%	100%	$2,602	$13,008	**$13,008**
Two Inch	Displacement	0.1	8.0	100%	100%	$2,602	$20,813	**$20,813**
Two & a Half Inch	Displacement	0.0	12.5	100%	100%	$2,602	$32,520	**$32,520**
Three Inch	Singlet	0.0	16.0	100%	100%	$2,602	$41,626	**$41,626**
Three Inch	Compound, Class I	0.0	16.0	100%	100%	$2,602	$41,626	**$41,626**
Three Inch	Turbine, Class I	0.0	17.5	100%	100%	$2,602	$45,528	**$45,528**
Four Inch	Singlet	0.0	25.0	100%	100%	$2,602	$65,040	**$65,040**
Four Inch	Compound, Class I	0.0	25.0	100%	100%	$2,602	$65,040	**$65,040**
Four Inch	Turbine, Class I	0.0	31.0	100%	100%	$2,602	$80,650	**$80,650**
Six Inch	Singlet	0.0	50.0	100%	100%	$2,602	$130,080	**$130,080**
Six Inch	Compound, Class I	0.0	50.0	100%	100%	$2,602	$130,080	**$130,080**
Six Inch	Turbine, Class I	0.0	65.0	100%	100%	$2,602	$169,104	**$169,104**
Eight Inch	Compound, Class I	0.0	80.0	100%	100%	$2,602	$208,128	**$208,128**
		9.9						
Out-of-City								
Five Eighths	Displacement	0.0	1.0	100%	150%	$2,602	$3,902	**$3,902**
Three Quarters	Displacement	0.0	1.0	100%	150%	$2,602	$3,902	**$3,902**
One Inch	Displacement	0.0	2.5	100%	150%	$2,602	$9,756	**$9,756**
One & a Half Inch	Displacement	0.0	5.0	100%	150%	$2,602	$19,512	**$19,512**
Two Inch	Displacement	0.0	8.0	100%	150%	$2,602	$31,219	**$31,219**
Two & a Half Inch	Displacement	0.0	12.5	100%	150%	$2,602	$48,780	**$48,780**
Three Inch	Singlet	0.0	16.0	100%	150%	$2,602	$62,438	**$62,438**
Three Inch	Compound, Class I	0.0	16.0	100%	150%	$2,602	$62,438	**$62,438**
Three Inch	Turbine, Class I	0.0	17.5	100%	150%	$2,602	$68,292	**$68,292**
Four Inch	Singlet	0.0	25.0	100%	150%	$2,602	$97,560	**$97,560**
Four Inch	Compound, Class I	0.0	25.0	100%	150%	$2,602	$97,560	**$97,560**
Four Inch	Turbine, Class I	0.0	31.0	100%	150%	$2,602	$120,974	**$120,974**
Six Inch	Singlet	0.0	50.0	100%	150%	$2,602	$195,120	**$195,120**
Six Inch	Compound, Class I	0.0	50.0	100%	150%	$2,602	$195,120	**$195,120**
Six Inch	Turbine, Class I	0.0	65.0	100%	150%	$2,602	$253,656	**$253,656**
Eight Inch	Compound, Class I	0.0	80.0	100%	150%	$2,602	$312,192	**$312,192**
		0.1						
		10.0						

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.

[3] Economy of Scale Adjustments: As meter size rises, capacity to pass peak flow rises. However, costs to build that capacity do not rise as rapidly. Therefore, peak flow capacity shares were adjusted downward by an estimated cost savings factor to account for that savings. Economy of scale savings do not apply to base costs because all connections are afforded the same level of base flow capacity.

Table 14 - Revenues From System Development Fees
Bonner Springs, KS, 2019 Water Rates Model 1

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

Meter Size	Meter Type	New Taps (Customer Growth) in a Typical Year	Fee per New Connection for Peak, Base and Out-of-pocket Costs	**Total Annual System Development Fees**
In-City				
Five Eighths	Displacement	7.0	$2,602	**$24,475**
Three Quarters	Displacement	0.0	$2,602	**$0**
One Inch	Displacement	1.0	$6,504	**$2,203**
One & a Half Inch	Displacement	0.0	$13,008	**$0**
Two Inch	Displacement	2.0	$20,813	**$2,939**
Two & a Half Inch	Displacement	0.0	$32,520	**$0**
Three Inch	Singlet	0.0	$41,626	**$1,862**
Three Inch	Compound, Class I	0.0	$41,626	**$0**
Three Inch	Turbine, Class I	0.0	$45,528	**$0**
Four Inch	Singlet	0.0	$65,040	**$907**
Four Inch	Compound, Class I	0.0	$65,040	**$0**
Four Inch	Turbine, Class I	0.0	$80,650	**$0**
Six Inch	Singlet	0.0	$130,080	**$0**
Six Inch	Compound, Class I	0.0	$130,080	**$0**
Six Inch	Turbine, Class I	0.0	$169,104	**$0**
Eight Inch	Compound, Class I	0.0	$208,128	**$0**
	Subtotal:	9.9		**$32,386**
Out-of-City				
Five Eighths	Displacement	0.0	$3,902	**$121**
Three Quarters	Displacement	0.0	$3,902	**$0**
One Inch	Displacement	0.0	$9,756	**$0**
One & a Half Inch	Displacement	0.0	$19,512	**$0**
Two Inch	Displacement	0.0	$31,219	**$707**
Two & a Half Inch	Displacement	0.0	$48,780	**$0**
Three Inch	Singlet	0.0	$62,438	**$0**
Three Inch	Compound, Class I	0.0	$62,438	**$0**
Three Inch	Turbine, Class I	0.0	$68,292	**$0**
Four Inch	Singlet	0.0	$97,560	**$0**
Four Inch	Compound, Class I	0.0	$97,560	**$0**
Four Inch	Turbine, Class I	0.0	$120,974	**$0**
Six Inch	Singlet	0.0	$195,120	**$0**
Six Inch	Compound, Class I	0.0	$195,120	**$0**
Six Inch	Turbine, Class I	0.0	$253,656	**$0**
Eight Inch	Compound, Class I	0.0	$312,192	**$0**
	Subtotal:	0.1		**$829**
	Total:	10.0		**$33,215**

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
Bonner Springs, KS, 2019 Water Rates Model 1

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

Meter Size	Meter Type	Capacity Shares Each Meter Size After Adjustment	Monthly Surcharge per Peak Capacity Share (Table 11)	Annual Base Charges Revenue	Total Annual Minimum Charges Revenue	Peak Capacity Cost per Meter Size	Cost-to-Serve Minimum Charge From Table 10	**Monthly Minimum Charge Each Meter Size**
In-City								
Five Eighths	Displacement	1.0	$1.43	$823,492	$869,686	$1.43	$25.43	**$26.86**
Three Quarters	Displacement	1.0	$1.43	$0	$0	$1.43	$25.43	**$26.86**
One Inch	Displacement	2.5	$1.43	$29,651	$33,809	$3.57	$25.43	**$29.00**
One & a Half Inch	Displacement	5.0	$1.43	$0	$0	$7.13	$25.43	**$32.56**
Two Inch	Displacement	8.0	$1.43	$12,359	$17,905	$11.41	$25.43	**$36.84**
Two & a Half Inch	Displacement	12.5	$1.43	$0	$0	$17.83	$25.43	**$43.26**
Three Inch	Singlet	16.0	$1.43	$3,916	$7,431	$22.82	$25.43	**$48.25**
Three Inch	Compound, Class I	16.0	$1.43	$0	$0	$22.82	$25.43	**$48.25**
Three Inch	Turbine, Class I	17.5	$1.43	$0	$0	$24.96	$25.43	**$50.39**
Four Inch	Singlet	25.0	$1.43	$1,221	$2,932	$35.66	$25.43	**$61.09**
Four Inch	Compound, Class I	25.0	$1.43	$0	$0	$35.66	$25.43	**$61.09**
Four Inch	Turbine, Class I	31.0	$1.43	$0	$0	$44.22	$25.43	**$69.65**
Six Inch	Singlet	50.0	$1.43	$0	$0	$71.32	$25.43	**$96.75**
Six Inch	Compound, Class I	50.0	$1.43	$0	$0	$71.32	$25.43	**$96.75**
Six Inch	Turbine, Class I	65.0	$1.43	$0	$0	$92.72	$25.43	**$118.15**
Eight Inch	Compound, Class I	80.0	$1.43	$0	$0	$114.12	$25.43	**$139.55**
Out-of-City								
Five Eighths	Displacement	1.5	$2.14	$2,721	$3,064	$3.21	$25.43	**$28.64**
Three Quarters	Displacement	1.5	$2.14	$0	$0	$3.21	$25.43	**$28.64**
One Inch	Displacement	3.8	$2.14	$0	$0	$8.02	$25.43	**$33.45**
One & a Half Inch	Displacement	7.5	$2.14	$0	$0	$16.05	$25.43	**$41.48**
Two Inch	Displacement	12.0	$2.14	$1,984	$3,986	$25.68	$25.43	**$51.11**
Two & a Half Inch	Displacement	18.8	$2.14	$0	$0	$40.12	$25.43	**$65.55**
Three Inch	Singlet	24.0	$2.14	$0	$0	$51.35	$25.43	**$76.78**
Three Inch	Compound, Class I	24.0	$2.14	$0	$0	$51.35	$25.43	**$76.78**
Three Inch	Turbine, Class I	26.3	$2.14	$0	$0	$56.17	$25.43	**$81.60**
Four Inch	Singlet	37.5	$2.14	$0	$0	$80.24	$25.43	**$105.67**
Four Inch	Compound, Class I	37.5	$2.14	$0	$0	$80.24	$25.43	**$105.67**
Four Inch	Turbine, Class I	46.5	$2.14	$0	$0	$99.50	$25.43	**$124.93**
Six Inch	Singlet	75.0	$2.14	$0	$0	$160.48	$25.43	**$185.91**
Six Inch	Compound, Class I	75.0	$2.14	$0	$0	$160.48	$25.43	**$185.91**
Six Inch	Turbine, Class I	97.5	$2.14	$0	$0	$208.62	$25.43	**$234.05**
Eight Inch	Compound, Class I	120.0	$2.14	$0	$0	$256.77	$25.43	**$282.20**

Table 16 - Revenues From Minimum Charge Surcharges
Bonner Springs, KS, 2019 Water Rates Model 1

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

Meter Size	Meter Type	Current Number Meters This Size	Total Adjusted Capacity Shares	**Annual Peak Capacity Surcharge Revenues**
In-City				
Five Eighths	Displacement	2,699	1	**$46,194**
Three Quarters	Displacement	0	1	**$0**
One Inch	Displacement	97	3	**$4,158**
One & a Half Inch	Displacement	0	5	**$0**
Two Inch	Displacement	41	8	**$5,546**
Two & a Half Inch	Displacement	0	13	**$0**
Three Inch	Singlet	13	16	**$3,515**
Three Inch	Compound, Class I	0	16	**$0**
Three Inch	Turbine, Class I	0	18	**$0**
Four Inch	Singlet	4	25	**$1,712**
Four Inch	Compound, Class I	0	25	**$0**
Four Inch	Turbine, Class I	0	31	**$0**
Six Inch	Singlet	0	50	**$0**
Six Inch	Compound, Class I	0	50	**$0**
Six Inch	Turbine, Class I	0	65	**$0**
Eight Inch	Compound, Class I	0	80	**$0**
		2,853	482	**$61,125**
Out-of-City				
Five Eighths	Displacement	9	2	**$343**
Three Quarters	Displacement	0	2	**$0**
One Inch	Displacement	0	4	**$0**
One & a Half Inch	Displacement	0	8	**$0**
Two Inch	Displacement	7	12	**$2,003**
Two & a Half Inch	Displacement	0	19	**$0**
Three Inch	Singlet	0	24	**$0**
Three Inch	Compound, Class I	0	24	**$0**
Three Inch	Turbine, Class I	0	26	**$0**
Four Inch	Singlet	0	38	**$0**
Four Inch	Compound, Class I	0	38	**$0**
Four Inch	Turbine, Class I	0	47	**$0**
Six Inch	Singlet	0	75	**$0**
Six Inch	Compound, Class I	0	75	**$0**
Six Inch	Turbine, Class I	0	98	**$0**
Eight Inch	Compound, Class I	0	120	**$0**
		15	722	**$2,346**
		2,869	1,204	**$63,471**

Table 17 - Financial Capacity Indicators and Reserves

Bonner Springs, KS, 2019 Water Rates Model 1

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

Capacity Indicators	Test Year Starting 1/1/18	0 Year Starting 1/1/19	1st Year Starting 1/1/20	2nd Year Starting 1/1/21	3rd Year Starting 1/1/22	4th Year Starting 1/1/23	5th Year Starting 1/1/24	6th Year Starting 1/1/25	7th Year Starting 1/1/26	8th Year Starting 1/1/27	9th Year Starting 1/1/28	10th Year Starting 1/1/29
Customary Affordability Index: Monthly Bill for a 5,000 gal per Month, Small Meter Residential Customer	$51.35	$69.41	$71.49	$73.63	$75.84	$78.12	$80.46	$82.87	$85.36	$87.92	$90.56	$93.28
AMHI Within Service Area	$60,557	$61,877	$63,227	$64,606	$66,015	$67,455	$68,926	$70,429	$71,965	$73,535	$75,139	$76,777
Affordability Index: Current Rates First Column, Modeled Rates After That	1.02%	1.35%	1.36%	1.37%	1.38%	1.39%	1.40%	1.41%	1.42%	1.43%	1.45%	1.46%

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 not consider awarding grants if this indicator is less than 1.5 to 2.0%.

Low-income, Low-volume Affordability Index: Monthly Bill for a 2,000 gal per Month, Low-income Residential Customer	$31.31	$43.88	$45.19	$46.55	$47.94	$49.38	$50.86	$52.39	$53.96	$55.58	$57.25	$58.97
Income at One-half the AMHI and Rising at One-half the Rate Above	$30,278	$30,608	$30,942	$31,280	$31,621	$31,966	$32,314	$32,667	$33,023	$33,383	$33,747	$34,115
Affordability for Low-income, Low-volume: Current Rates First Column, Modeled Rates After That	1.24%	1.72%	1.75%	1.79%	1.82%	1.85%	1.89%	1.92%	1.96%	2.00%	2.04%	2.07%

This additional indicator of affordability assumes a residential customer with income at one-half of 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.

Estimated Operating Ratio: Current Rates First Column, Modeled Rates After That	1.65	1.15	1.39	1.57	1.49	1.54	1.58	1.57	1.51	1.59	1.58	1.59

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 the OR implies.

Estimated Coverage Ratio: Current Rates First Column, Modeled Rates After That	5.08	0.21	1.90	2.72	2.13	3.17	1.26	1.29	1.11	1.29	0.94	1.03

Coverage Ratio (CR) goes to the ability of the utility to pay its debt payments out of current incomes. OR applies only to years with debt service. 1.0 is break even. Generally, the CR should be at least 1.25. Note: If the utility has or will have reserves (shown below,) it has more ability to make debt payments than the CR implies.

Reserves	Balance Ending on 12/31/17	Balance Ending on 12/31/18	Balance Ending on 12/31/19	Balance Ending on 12/31/20	Balance Ending on 12/31/21	Balance Ending on 12/31/22	Balance Ending on 12/31/23	Balance Ending on 12/31/24	Balance Ending on 12/31/25	Balance Ending on 12/31/26	Balance Ending on 12/31/27	Balance Ending on 12/31/28	Balance Ending on 12/31/29
Cash and Cash Equivalents	$1,822,596	$776,823	$995,705	$987,525	$1,018,132	$1,104,958	$1,107,211	$1,115,746	$1,154,902	$1,243,494	$1,222,708	$1,265,645	$1,299,648
Other Liquid Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Undedicated Cash Assets	$1,822,596	$776,823	$995,705	$987,525	$1,018,132	$1,104,958	$1,107,211	$1,115,746	$1,154,902	$1,243,494	$1,222,708	$1,265,645	$1,299,648
Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	$1,822,596	$776,823	$995,705	$957,900	$957,961	$1,008,465	$980,206	$958,129	$962,001	$1,004,722	$958,289	$962,182	$988,032
Repair & Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt and CIP Reserves	$0	$1,569,081	$1,256,372	$1,626,890	$2,352,918	$2,911,919	$3,764,868	$4,084,583	$4,432,581	$4,617,804	$5,010,947	$4,990,555	$5,104,999
Sum of All Reserves	$1,822,596	$2,345,904	$2,252,077	$2,614,416	$3,371,050	$4,016,877	$4,872,079	$5,200,329	$5,587,483	$5,861,298	$6,233,655	$6,256,200	$6,404,647

Table 18 - Bills Before and After Rate Adjustments
Bonner Springs, KS, 2019 Water Rates Model 1

Revenue increase to be generated by the modeled rates (as compared to Test Year rates) 37.2%

If applicable, the revenue increase above includes meter size-based minimum charges calculated in Table 15. If rate classes shown below do not include meter size, the modeled bills below do not include those 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 at or Above This Volume But Below the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill Under Now Current Rates	Modeled Bill	Modeled Bill Increase or Decrease (-)
In City .625 Meter Size	0	0	0	2,688	$17.95	$26.86	$8.91
	1,000	0	0	2,688	$24.63	$35.37	$10.74
	2,000	0	0	2,688	$31.31	$43.88	$12.57
	3,000	0	0	2,688	$37.99	$52.39	$14.40
	4,000	2,688	2,688	2,688	$44.67	$60.90	$16.23
	5,000	0	2,688	0	$51.35	$69.41	$18.06
	10,000	0	2,688	0	$84.75	$111.96	$27.21
	30,000	0	2,688	0	$218.35	$282.16	$63.81
In City 1 Inch Meter Size	0	0	0	97	$19.88	$29.00	$9.12
	15,000	97	97	97	$120.08	$156.65	$36.57
	30,000	0	97	0	$220.28	$284.30	$64.02
	145,000	0	97	0	$988.48	$1,262.95	$274.47
In City 2 Inch Meter Size	0	0	0	41	$40.65	$36.84	-$3.81
	10,000	0	0	41	$107.45	$121.94	$14.49
	30,000	0	0	41	$241.05	$292.14	$51.09
	85,000	41	41	41	$608.45	$760.19	$151.74
	145,000	0	41	0	$1,009.25	$1,270.79	$261.54
In City 3 Inch Meter Size	0	0	0	13	$82.96	$48.25	-$34.71
	10,000	0	0	13	$149.76	$133.35	-$16.41
	30,000	0	0	13	$283.36	$303.55	$20.19
	115,000	13	13	13	$851.16	$1,026.90	$175.74
In City 4 Inch Meter Size	0	0	0	4	$131.41	$61.09	-$70.32
	10,000	0	0	4	$198.21	$146.19	-$52.02
	30,000	0	0	4	$331.81	$316.39	-$15.42
	125,000	0	0	4	$966.41	$1,124.84	$158.43
	135,000	0	0	4	$1,033.21	$1,209.94	$176.73
	145,000	4	4	4	$1,100.01	$1,295.04	$195.03
In-City 6 Inch Meter Size	0	0	0	0	$252.11	$96.75	-$155.36
	10,000	0	0	0	$318.91	$181.85	-$137.06
	30,000	0	0	0	$452.51	$352.05	-$100.46
	145,000	0	0	0	$1,220.71	$1,330.70	$109.99
In-City 8 Inch Meter Size	0	0	0	0	$429.61	$139.55	-$290.06
	10,000	0	0	0	$496.41	$224.65	-$271.76
	30,000	0	0	0	$630.01	$394.85	-$235.16
	145,000	0	0	0	$1,398.21	$1,373.50	-$24.71
Senior	0	0	0	5	$14.36	$21.48	$7.12
	1,000	5	5	5	$19.71	$28.29	$8.58

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers at or Above This Volume But Below the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill Under Now Current Rates	Modeled Bill	Modeled Bill Increase or Decrease (-)
Out of City .625 Inch Meter Size	0	0	0	9	$26.93	$40.28	$13.36
	1,000	0	0	9	$36.96	$53.05	$16.09
	2,000	0	0	9	$46.99	$65.81	$18.83
	3,000	0	0	9	$57.02	$78.58	$21.56
	4,000	9	9	9	$67.05	$91.34	$24.30
	5,000	0	9	0	$77.08	$104.11	$27.03
	10,000	0	9	0	$127.23	$167.93	$40.70
Out of City 1 Inch Meter Size	0	0	0	0	$29.83	$43.49	$13.67
	10,000	0	0	0	$130.14	$171.14	$41.01
	30,000	0	0	0	$330.75	$426.44	$95.69
	145,000	0	0	0	$1,484.29	$1,894.42	$410.13
Out of City 2 Inch Meter Size	0	0	0	6	$60.96	$55.26	-$5.70
	10,000	0	0	6	$161.27	$182.91	$21.64
	85,000	6	6	6	$913.58	$1,140.29	$226.70
	95,000	0	6	0	$1,013.89	$1,267.94	$254.05
	105,000	0	6	0	$1,114.20	$1,395.59	$281.39
	115,000	0	6	0	$1,214.51	$1,523.24	$308.73
	125,000	0	6	0	$1,314.81	$1,650.89	$336.07
	135,000	0	6	0	$1,415.12	$1,778.54	$363.41
	145,000	0	6	0	$1,515.43	$1,906.19	$390.76
Out of City 3 Inch Meter Size	0	0	0	0	$124.44	$72.38	-$52.06
	10,000	0	0	0	$224.75	$200.03	-$24.72
	30,000	0	0	0	$425.37	$455.33	$29.97
	145,000	0	0	0	$1,578.91	$1,923.31	$344.40
Out of City 4 Inch Meter Size	0	0	0	0	$890.02	$91.64	-$798.38
	10,000	0	0	0	$934.85	$219.29	-$715.56
	30,000	0	0	0	$1,015.13	$474.59	-$540.55
	145,000	0	0	0	$1,458.85	$1,942.56	$483.71
Out of City 6 Inch Meter Size	0	0	0	0	$393.29	$145.13	-$248.16
	10,000	0	0	0	$493.60	$272.78	-$220.82
	30,000	0	0	0	$694.22	$528.08	-$166.13
	145,000	0	0	0	$1,847.76	$1,996.06	$148.30
Temporary Service	0	0	0	3	$82.96	$124.12	$41.16
	5,000	0	0	3	$124.76	$177.31	$52.55
	10,000	0	0	3	$166.55	$230.50	$63.94
	75,000	3	3	3	$709.89	$921.93	$212.05
KC Renaissance 2 Inch Meter Size	0	0	0	1	$40.64	$36.84	-$3.80
	30,000	0	0	1	$241.26	$292.14	$50.88
	105,000	1	1	1	$742.80	$930.39	$187.59
No Charge	0	0	0	3	$0.00	$0.00	$0.00
	145,000	0	3	0	$0.00	$0.00	$0.00

Chart 1 - Operating Ratio

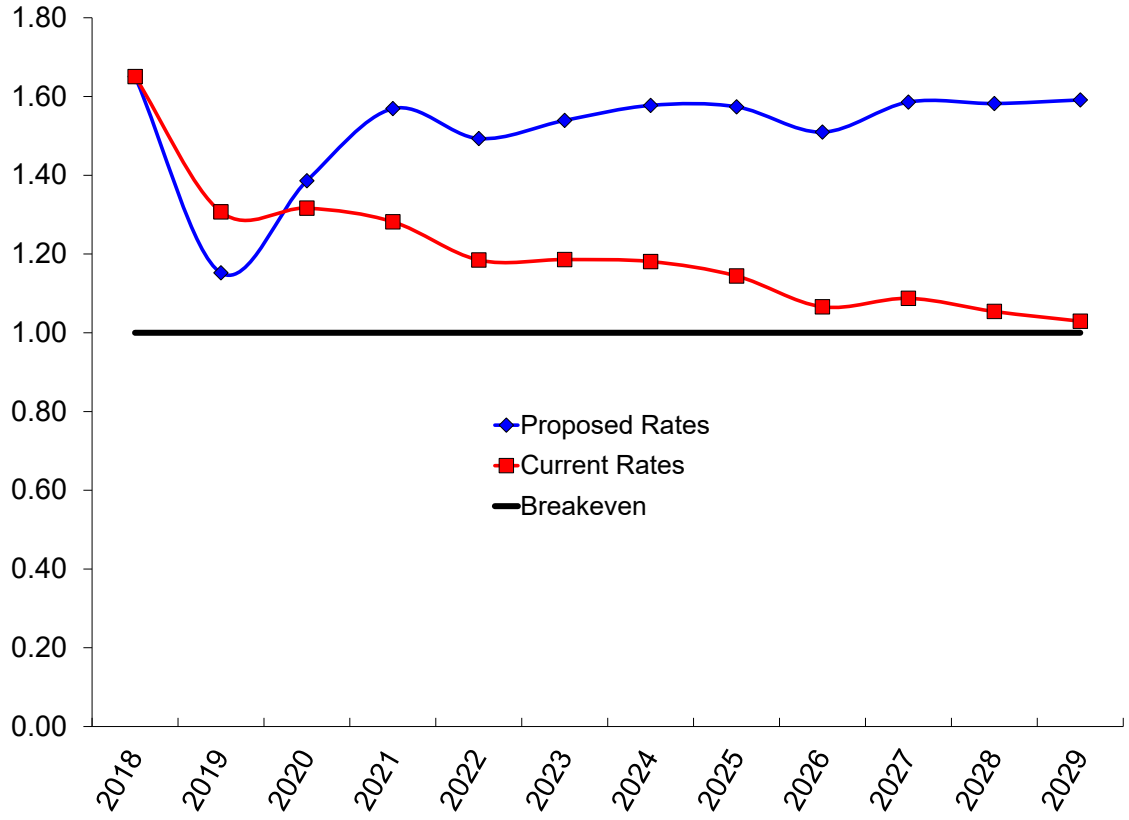


Chart 2 - Coverage Ratio

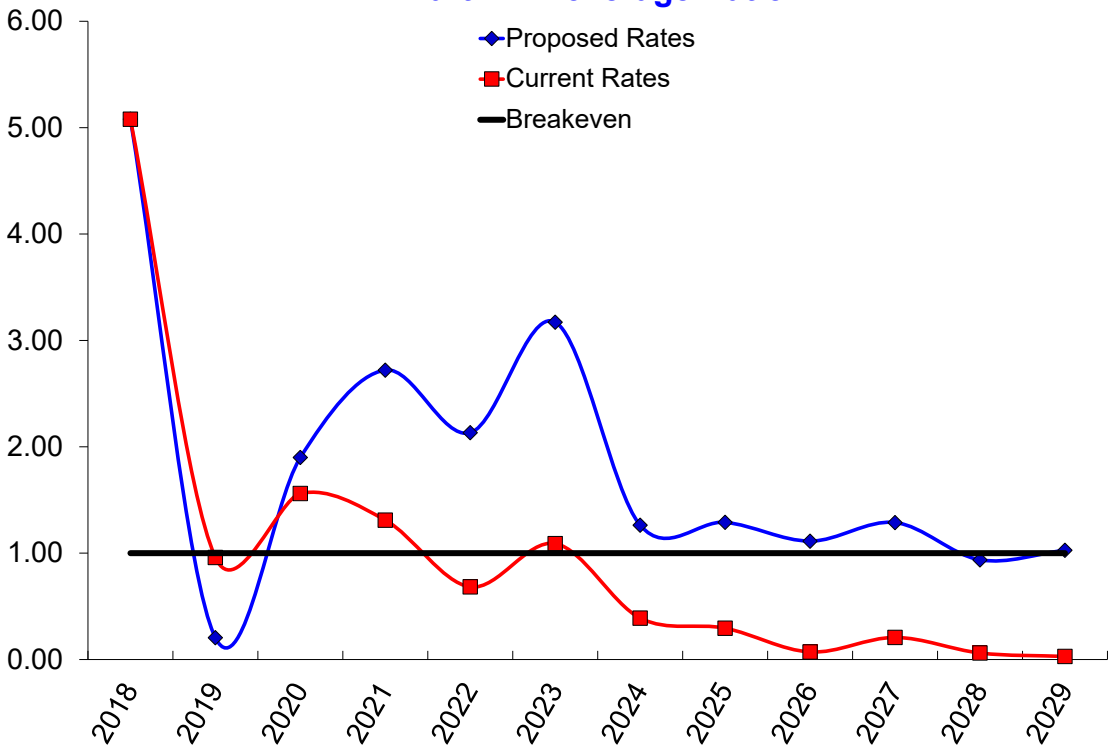


Chart 3 - Residential Users' Bills

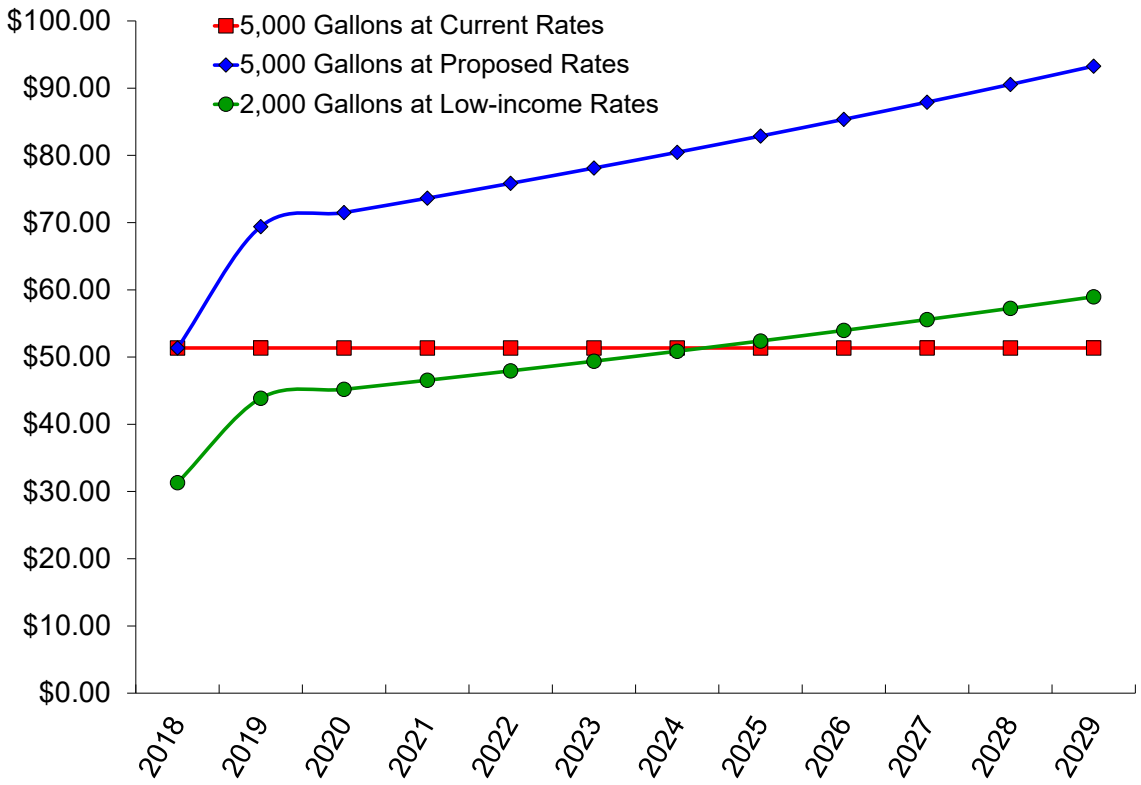


Chart 4 - Affordability

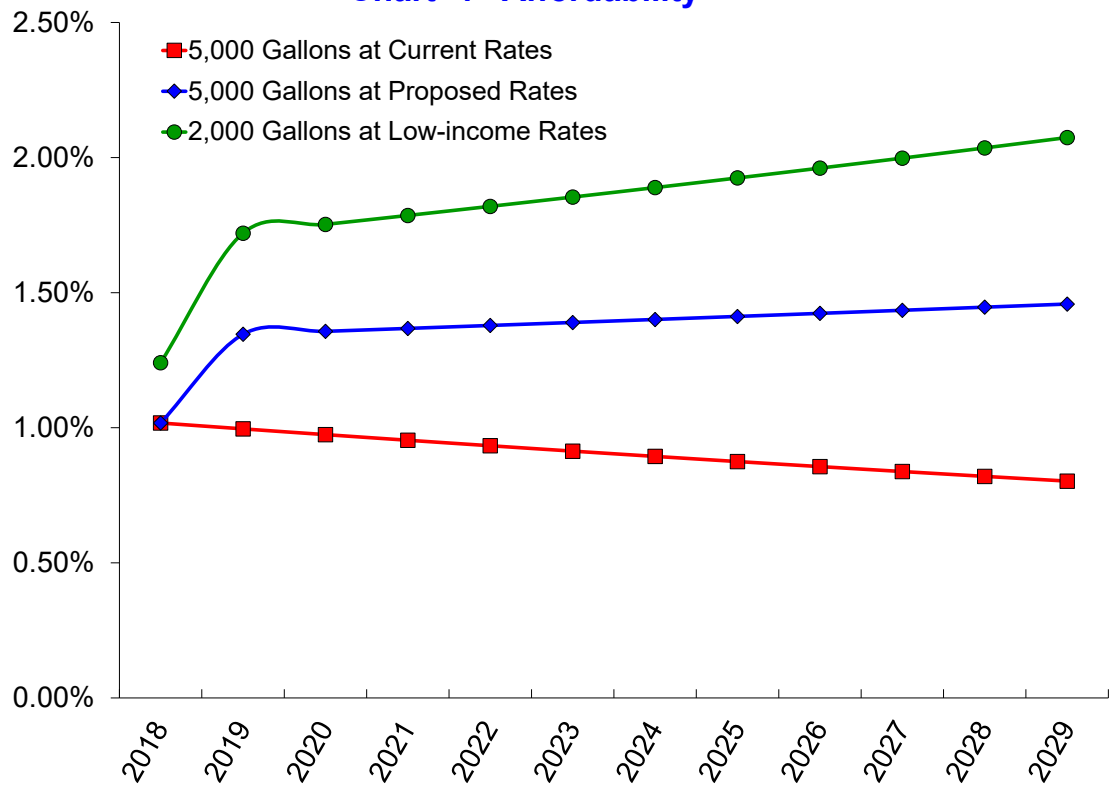


Chart 5 - Working Capital vs Goal

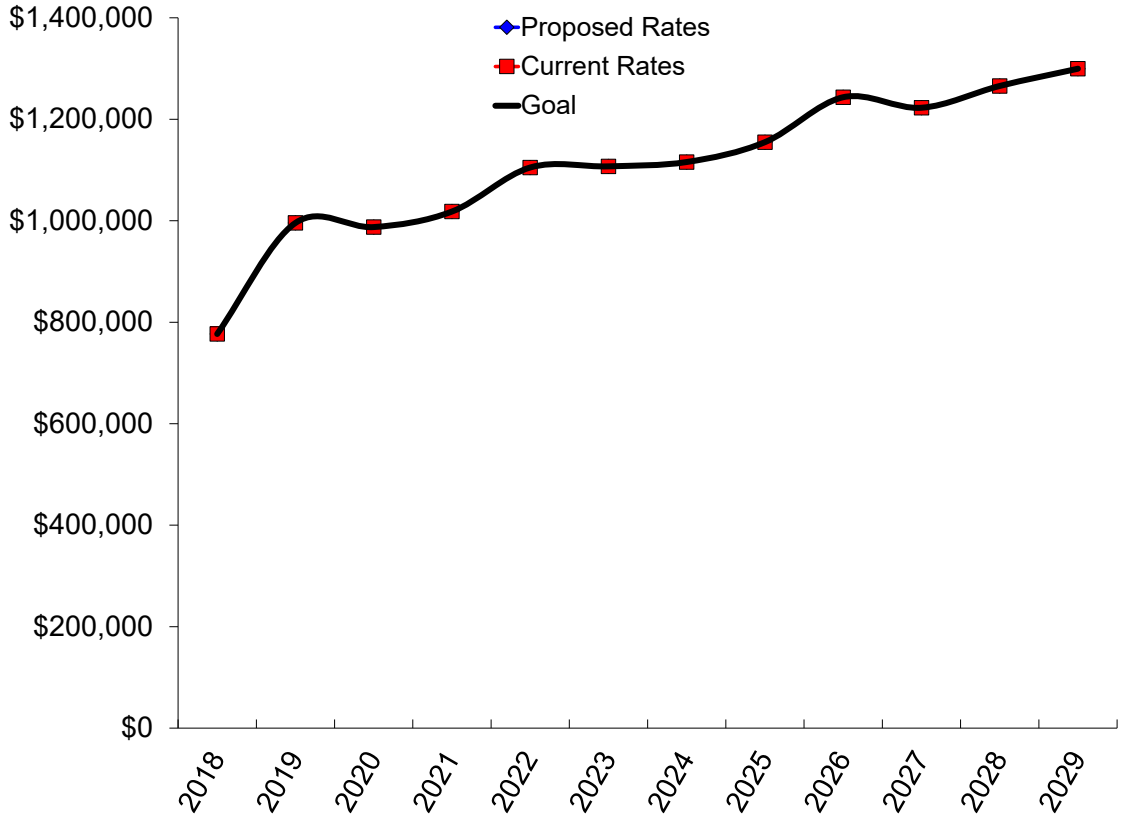


Chart 6 - Value of Cash Assets Before Inflation

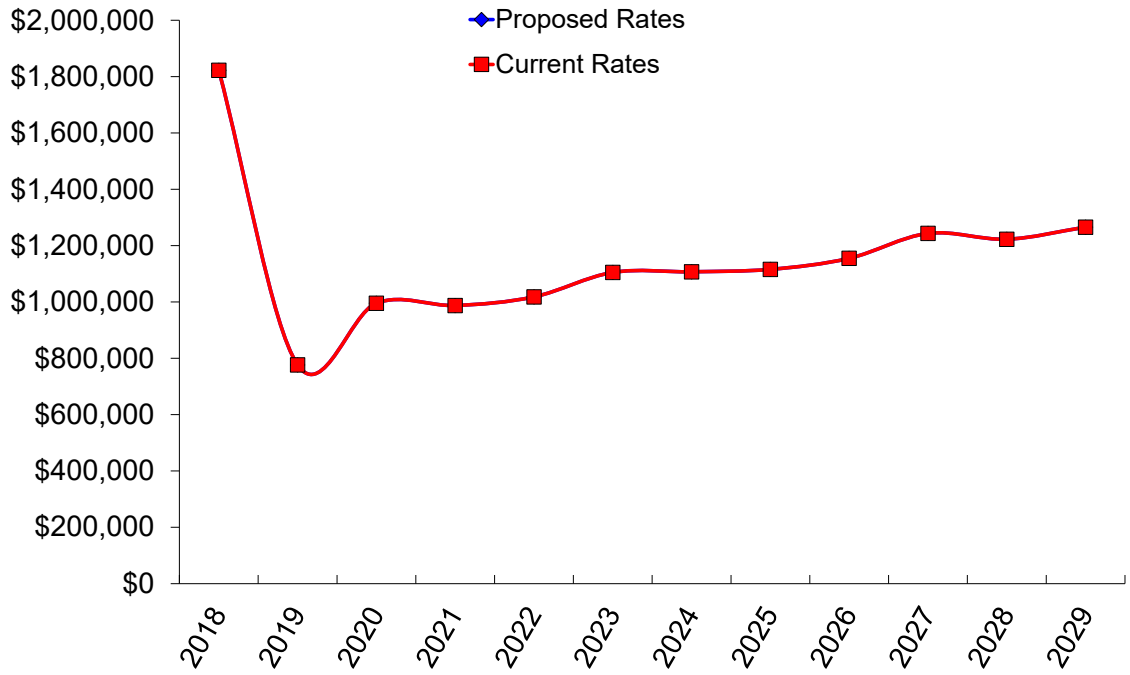


Chart 7 - Value of Cash Assets After Inflation

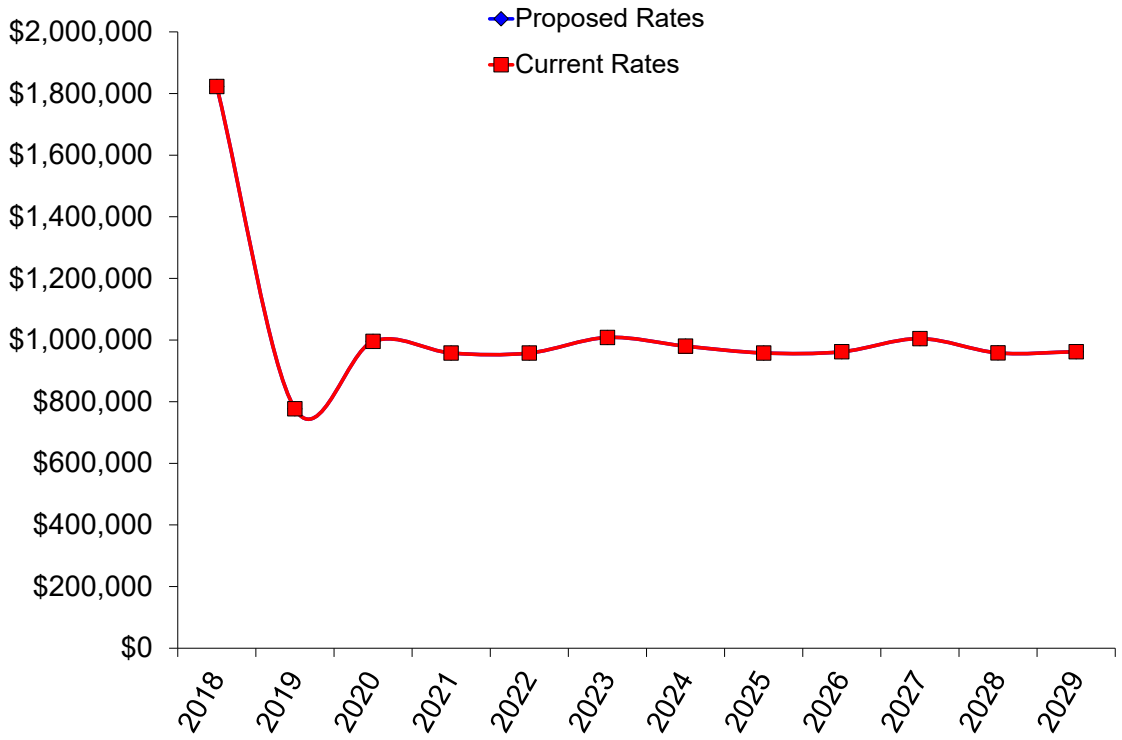
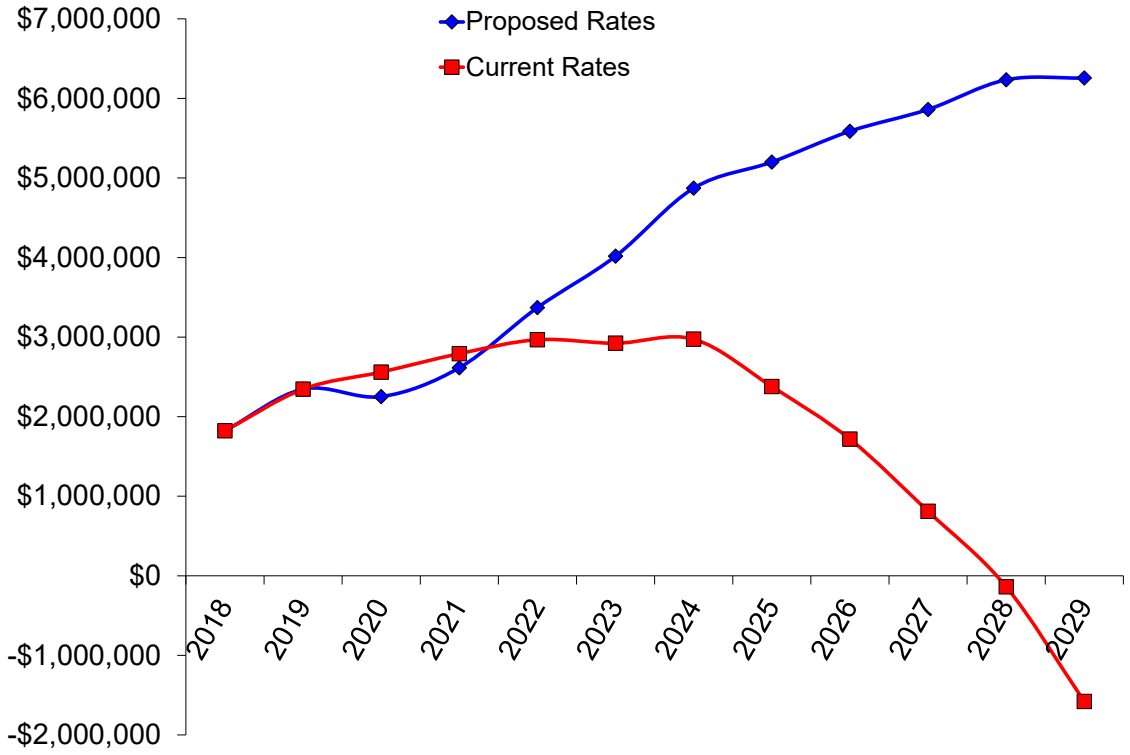


Chart 8 - Sum of All Reserves



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 Model available to track your progress and determine the effect of condition changes later, I should be able to test changes easily and advise you quickly.

As time passes you will need to adjust rates incrementally as recommended 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, sewer and stormwater 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 these analyses. To satisfy those information needs, the City can publicize the current and recommended rates and/or the bill comparisons.
- A few customers will want to know more, especially high-volume customers. Give them the full report, if that is what they want.
- A good way to accomplish these things is to post the report on the City's Web site, Facebook page or other 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 have engaged me pay one visit to the council to discuss my findings and recommendations. I look forward to meeting with the council, answering everyone's questions and helping you get on your way to the next generation of great rates.

Bonner Springs, KS, 2019 Sewer Rates
Model 2

This model calculated cost-to-serve rates with only minor variances.

March 2, 2020

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

Table 1 - Rates

Bonner Springs, KS, 2019 Sewer Rates Model 2

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

Rates in Effect at End of Test Year

Customer Type, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Billing Cycle Minimum Charge	Usage Allowance in 1,000 Gallons	Unit Charge per 1,000 Gallons
In City .625 Meter Size	0	$17.05	0.000	$6.93
	1,000	$17.05	0.000	$6.93
	145,000	$17.05	0.000	$6.93
In City 1 Inch Meter Size	0	$19.46	0.000	$6.93
	1,000	$19.46	0.000	$6.93
	145,000	$19.46	0.000	$6.93
In City 2 Inch Meter Size	0	$45.43	0.000	$6.93
	1,000	$45.43	0.000	$6.93
	145,000	$45.43	0.000	$6.93
In City 3 Inch Meter Size	0	$98.34	0.000	$6.93
	1,000	$98.34	0.000	$6.93
	145,000	$98.34	0.000	$6.93
In City 4 Inch Meter Size	0	$158.96	0.000	$6.93
	1,000	$158.96	0.000	$6.93
	145,000	$158.96	0.000	$6.93
Senior	0	$13.64	0.000	$5.54
	145,000	$13.64	0.000	$5.54

Table 1 - Rates

Rates in Effect at End of Test Year

Customer Type, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Billing Cycle Minimum Charge	Usage Allowance in 1,000 Gallons	Unit Charge per 1,000 Gallons
Out of City .625 Inch Meter	0	$25.58	0.000	$10.40
	1,000	$25.58	0.000	$10.40
	2,000	$25.58	0.000	$10.40
	145,000	$25.58	0.000	$10.40
Out of City 2 Inch Meter	0	$68.15	0.000	$10.40
	1,000	$68.15	0.000	$10.40
	145,000	$68.15	0.000	$10.40
KC Renaissance .625 Meter Size	0	$0.00	0.000	$6.93
	1,000	$0.00	0.000	$6.93
	2,000	$0.00	0.000	$6.93
	145,000	$0.00	0.000	$6.93
KC Renaissance 2 Inch Meter Size	0	$45.43	0.000	$6.93
	1,000	$45.43	0.000	$6.93
	2,000	$45.43	0.000	$6.93
	145,000	$45.43	0.000	$6.93
No Charge KC Ren 2 Inch Meter Size	0	$0.00	0.000	$0.00
	1,000	$0.00	0.000	$0.00
	145,000	$0.00	0.000	$0.00

Table 2 - Test Year Usage
Bonner Springs, KS, 2019 Sewer Rates Model 2

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

Residential meter readings per year: 12
Other customer readings per year: 12
Bills per year: 12

Test year = the one-year period being analyzed starts: 1/1/2018
Date this model created: 12/30/2019

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in 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
In City .625 Meter Size	0	999	28,097	28,097,000	0	0	0	0.0%	0.0%
	1,000	1,999	28,097	28,097,000	0	0	0	0.0%	0.0%
	2,000	2,999	28,097	28,097,000	0	0	0	0.0%	0.0%
	3,000	3,999	28,097	16,749,288	28,097	101,040,288	2,341	95.1%	59.4%
			112,388	101,040,288	28,097	101,040,288	2,341	95.1%	59.4%
In City 1 Inch Meter Size	0	999	805	805,000	0	0	0	0.0%	0.0%
	1,000	1,999	805	805,000	0	0	0	0.0%	0.0%
	2,000	2,999	805	805,000	0	0	0	0.0%	0.0%
	3,000	3,999	805	805,000	0	0	0	0.0%	0.0%
	4,000	4,999	805	805,000	0	0	0	0.0%	0.0%
	5,000	5,999	805	805,000	0	0	0	0.0%	0.0%
	6,000	6,999	805	805,000	0	0	0	0.0%	0.0%
	7,000	7,999	805	805,000	0	0	0	0.0%	0.0%
	8,000	8,999	805	805,000	0	0	0	0.0%	0.0%
	9,000	9,999	805	805,000	0	0	0	0.0%	0.0%
	10,000	14,999	805	4,025,000	0	0	0	0.0%	0.0%
	15,000	19,999	805	2,697,400	805	14,772,400	67	2.7%	8.7%
			9,660	14,772,400	805	14,772,400	67	2.7%	8.7%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in 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
In City 2 Inch Meter Size	0	999	417	417,000	0	0	0	0.0%	0.0%
	1,000	1,999	417	417,000	0	0	0	0.0%	0.0%
	2,000	2,999	417	417,000	0	0	0	0.0%	0.0%
	3,000	3,999	417	417,000	0	0	0	0.0%	0.0%
	4,000	4,999	417	417,000	0	0	0	0.0%	0.0%
	5,000	5,999	417	417,000	0	0	0	0.0%	0.0%
	6,000	6,999	417	417,000	0	0	0	0.0%	0.0%
	7,000	7,999	417	417,000	0	0	0	0.0%	0.0%
	8,000	8,999	417	417,000	0	0	0	0.0%	0.0%
	9,000	9,999	417	417,000	0	0	0	0.0%	0.0%
	10,000	14,999	417	2,085,000	0	0	0	0.0%	0.0%
	15,000	19,999	417	2,085,000	0	0	0	0.0%	0.0%
	20,000	24,999	417	2,085,000	0	0	0	0.0%	0.0%
	25,000	29,999	417	2,085,000	0	0	0	0.0%	0.0%
	30,000	34,999	417	2,085,000	0	0	0	0.0%	0.0%
	35,000	44,999	417	4,170,000	0	0	0	0.0%	0.0%
	45,000	54,999	417	4,170,000	0	0	0	0.0%	0.0%
	55,000	64,999	417	4,170,000	0	0	0	0.0%	0.0%
	65,000	74,999	417	1,887,605	417	28,992,605	35	1.4%	17.1%
			7,923	28,992,605	417	28,992,605	35	1.4%	17.1%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in 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
In City 3 Inch Meter Size	0	999	100	100,000	0	0	0	0.0%	0.0%
	1,000	1,999	100	100,000	0	0	0	0.0%	0.0%
	2,000	2,999	100	100,000	0	0	0	0.0%	0.0%
	3,000	3,999	100	100,000	0	0	0	0.0%	0.0%
	4,000	4,999	100	100,000	0	0	0	0.0%	0.0%
	5,000	5,999	100	100,000	0	0	0	0.0%	0.0%
	6,000	6,999	100	100,000	0	0	0	0.0%	0.0%
	7,000	7,999	100	100,000	0	0	0	0.0%	0.0%
	8,000	8,999	100	100,000	0	0	0	0.0%	0.0%
	9,000	9,999	100	100,000	0	0	0	0.0%	0.0%
	10,000	14,999	100	500,000	0	0	0	0.0%	0.0%
	15,000	19,999	100	500,000	0	0	0	0.0%	0.0%
	20,000	24,999	100	500,000	0	0	0	0.0%	0.0%
	25,000	29,999	100	500,000	0	0	0	0.0%	0.0%
	30,000	34,999	100	500,000	0	0	0	0.0%	0.0%
	35,000	44,999	100	1,000,000	0	0	0	0.0%	0.0%
	45,000	54,999	100	1,000,000	0	0	0	0.0%	0.0%
	55,000	64,999	100	1,000,000	0	0	0	0.0%	0.0%
	65,000	74,999	100	1,000,000	0	0	0	0.0%	0.0%
	75,000	84,999	100	1,000,000	0	0	0	0.0%	0.0%
	85,000	94,999	100	1,000,000	0	0	0	0.0%	0.0%
	95,000	104,999	100	1,000,000	0	0	0	0.0%	0.0%
	105,000	114,999	100	1,000,000	0	0	0	0.0%	0.0%
	115,000	124,999	100	1,000,000	0	0	0	0.0%	0.0%
	125,000	134,999	100	27,953	100	12,527,953	8	0.3%	7.4%
			2,500	12,527,953	100	12,527,953	8	0.3%	7.4%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in 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
In City 4 Inch Meter Size	0	999	36	36,000	0	0	0	0.0%	0.0%
	1,000	1,999	36	36,000	0	0	0	0.0%	0.0%
	2,000	2,999	36	36,000	0	0	0	0.0%	0.0%
	3,000	3,999	36	36,000	0	0	0	0.0%	0.0%
	4,000	4,999	36	36,000	0	0	0	0.0%	0.0%
	5,000	5,999	36	36,000	0	0	0	0.0%	0.0%
	6,000	6,999	36	36,000	0	0	0	0.0%	0.0%
	7,000	7,999	36	36,000	0	0	0	0.0%	0.0%
	8,000	8,999	36	36,000	0	0	0	0.0%	0.0%
	9,000	9,999	36	36,000	0	0	0	0.0%	0.0%
	10,000	14,999	36	180,000	0	0	0	0.0%	0.0%
	15,000	19,999	36	180,000	0	0	0	0.0%	0.0%
	20,000	24,999	36	180,000	0	0	0	0.0%	0.0%
	25,000	29,999	36	180,000	0	0	0	0.0%	0.0%
	30,000	34,999	36	180,000	0	0	0	0.0%	0.0%
	35,000	44,999	36	360,000	0	0	0	0.0%	0.0%
	45,000	54,999	36	360,000	0	0	0	0.0%	0.0%
	55,000	64,999	36	360,000	0	0	0	0.0%	0.0%
	65,000	74,999	36	360,000	0	0	0	0.0%	0.0%
	75,000	84,999	36	360,000	0	0	0	0.0%	0.0%
	85,000	94,999	36	360,000	0	0	0	0.0%	0.0%
	95,000	104,999	36	360,000	0	0	0	0.0%	0.0%
	105,000	114,999	36	360,000	0	0	0	0.0%	0.0%
	115,000	124,999	36	360,000	0	0	0	0.0%	0.0%
	125,000	134,999	36	360,000	0	0	0	0.0%	0.0%
	135,000	144,999	36	360,000	0	0	0	0.0%	0.0%
	145,000	1,000,000	36	4,935,900	36	10,155,900	3	0.1%	6.0%
			972	10,155,900	36	10,155,900	3	0.1%	6.0%
Senior	0	999	12	12,000	0	0	0	0.0%	0.0%
	1,000	1,999	12	1,800	12	13,800	1	0.0%	0.0%
			24	13,800	12	13,800	1	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)	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 City .625 Inch Meter	0	999	12	12,000	0	0	0	0.0%	0.0%
	1,000	1,999	12	12,000	0	0	0	0.0%	0.0%
	2,000	2,999	12	1,600	12	25,600	1	0.0%	0.0%
			36	25,600	12	25,600	1	0.0%	0.0%
Out of City 2 Inch Meter	0	999	33	33,000	0	0	0	0.0%	0.0%
	1,000	1,999	33	33,000	0	0	0	0.0%	0.0%
	2,000	2,999	33	33,000	0	0	0	0.0%	0.0%
	3,000	3,999	33	33,000	0	0	0	0.0%	0.0%
	4,000	4,999	33	33,000	0	0	0	0.0%	0.0%
	5,000	5,999	33	33,000	0	0	0	0.0%	0.0%
	6,000	6,999	33	33,000	0	0	0	0.0%	0.0%
	7,000	7,999	33	33,000	0	0	0	0.0%	0.0%
	8,000	8,999	33	33,000	0	0	0	0.0%	0.0%
	9,000	9,999	33	33,000	0	0	0	0.0%	0.0%
	10,000	14,999	33	165,000	0	0	0	0.0%	0.0%
	15,000	19,999	33	165,000	0	0	0	0.0%	0.0%
	20,000	24,999	33	165,000	0	0	0	0.0%	0.0%
	25,000	29,999	33	165,000	0	0	0	0.0%	0.0%
	30,000	34,999	33	165,000	0	0	0	0.0%	0.0%
	35,000	44,999	33	330,000	0	0	0	0.0%	0.0%
	45,000	54,999	33	330,000	0	0	0	0.0%	0.0%
	55,000	64,999	33	286,700	33	2,101,700	3	0.1%	1.2%
			594	2,101,700	33	2,101,700	3	0.1%	1.2%
KC Renaissance .625 Meter Size	0	999	12	12,000	0	0	0	0.0%	0.0%
	1,000	1,999	12	12,000	0	0	0	0.0%	0.0%
	2,000	2,999	12	12,000	0	0	0	0.0%	0.0%
	3,000	3,999	12	12,000	0	0	0	0.0%	0.0%
	4,000	4,999	12	12,000	0	0	0	0.0%	0.0%
	5,000	5,999	12	10,700	12	70,700	1	0.0%	0.0%
			72	70,700	12	70,700	1	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)	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
KC Renaissance 2 Inch Meter Size	0	999	18	18,000	0	0	0	0.0%	0.0%
	1,000	1,999	18	18,000	0	0	0	0.0%	0.0%
	2,000	2,999	18	18,000	0	0	0	0.0%	0.0%
	3,000	3,999	18	18,000	0	0	0	0.0%	0.0%
	4,000	4,999	18	18,000	0	0	0	0.0%	0.0%
	5,000	5,999	18	18,000	0	0	0	0.0%	0.0%
	6,000	6,999	18	18,000	0	0	0	0.0%	0.0%
	7,000	7,999	18	18,000	0	0	0	0.0%	0.0%
	8,000	8,999	18	18,000	0	0	0	0.0%	0.0%
	9,000	9,999	18	16,200	18	178,200	2	0.1%	0.1%
			180	178,200	18	178,200	2	0.1%	0.1%
No Charge KC Ren 2 Inch Meter Size	0	999	5	5,000	0	0	0	0.0%	0.0%
	1,000	1,999	5	5,000	0	0	0	0.0%	0.0%
	2,000	2,999	5	5,000	0	0	0	0.0%	0.0%
	3,000	3,999	5	5,000	0	0	0	0.0%	0.0%
	4,000	4,999	5	5,000	0	0	0	0.0%	0.0%
	5,000	5,999	5	5,000	0	0	0	0.0%	0.0%
	6,000	6,999	5	5,000	0	0	0	0.0%	0.0%
	7,000	7,999	5	5,000	0	0	0	0.0%	0.0%
	8,000	8,999	5	5,000	0	0	0	0.0%	0.0%
	9,000	9,999	5	5,000	0	0	0	0.0%	0.0%
	10,000	14,999	5	25,000	0	0	0	0.0%	0.0%
	15,000	19,999	5	25,000	0	0	0	0.0%	0.0%
	20,000	24,999	5	25,000	0	0	0	0.0%	0.0%
	25,000	29,999	5	25,000	0	0	0	0.0%	0.0%
	30,000	34,999	5	9,900	5	159,900	0	0.0%	0.1%
			75	159,900	5	159,900	0	0.0%	0.1%
		Grand Totals:	134,424	170,039,046	29,547	170,039,046	2,462	100%	100%

Table 3 - Basic User Data and Operating Incomes
Bonner Springs, KS, 2019 Sewer Rates Model 2

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

Annual Median Household Income (AMHI)

$59,264	Census Bureau estimate of AMHI for the year	2017
$43,234	Census Bureau estimate of AMHI for the year	2000
$16,030	AMHI growth during this time period	
2.18%	Simple annual income growth rate during this time period (used to project incomes into the future)	

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

10	Number of new Sewer connections made during the test year
$13,147	Average 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 in the last column of that 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	Analysis Year	Years Following the Analysis Year (for Which Results Have Been Projected)									
		0 Year	0 Year	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year
		Starting	Starting	Starting	Starting	Starting	Starting	Starting	Starting	Starting	Starting	Starting	Starting
		1/1/18	1/1/19	1/1/20	1/1/21	1/1/22	1/1/23	1/1/24	1/1/25	1/1/26	1/1/27	1/1/28	1/1/29
Rate Increases Projected for Future Years	N.A.	N.A.	N.A.	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
				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.	2,462	2,472	2,482	2,492	2,502	2,512	2,522	2,532	2,542	2,552	2,562	2,572
Customers Added or Lost (-) Each Year	N.A.	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Customer Growth or Loss (-) Rate	N.A.	0.41%	0.40%	0.40%	0.40%	0.40%	0.40%	0.40%	0.39%	0.39%	0.39%	0.39%	0.39%
Actual (Test Year) and Projected Volumes, in Gallons	N.A.	170,039,046	170,729,630	171,420,214	172,110,798	172,801,382	173,491,966	174,182,550	174,873,134	175,563,718	176,254,302	176,944,886	177,635,470
How User Charge Fees Were Calculated, Accounting for New Customers and Future Rate Increases													
Actual or Calculated Sales Revenues		$1,695,361	$1,718,232	$2,092,302	$2,163,753	$2,237,644	$2,313,984	$2,392,890	$2,474,449	$2,558,747	$2,645,877	$2,735,931	$2,829,007
Additional Sales Revenues From New Customers			$19	$8,429	$8,717	$8,943	$9,211	$9,487	$9,772	$10,065	$10,367	$10,678	$10,998
Total Calculated Revenues (User Charge Fees)		$1,695,361	$1,718,251	$2,100,731	$2,172,470	$2,246,586	$2,323,195	$2,402,378	$2,484,221	$2,568,812	$2,656,243	$2,746,609	$2,840,005
Operating Incomes													
User Charge Fees (Tables 10 - 12, 15, 16)	N.A.	$1,695,225	$1,697,167	$2,074,954	$2,145,813	$2,219,020	$2,294,688	$2,372,900	$2,453,739	$2,537,292	$2,623,651	$2,712,907	$2,805,157
Late Payment Charge	N.A.	$19,268	$19,280	$19,357	$19,435	$19,513	$19,591	$19,668	$19,746	$19,824	$19,901	$19,979	$20,057
Sewer Impact Fees (Current Rate Structure)	% Above	$131,474	$62,848	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Meter Size-based System Development Fees (Tables 13, 14)	% Above	$0	$146	$54,722	$56,364	$58,054	$59,796	$61,590	$63,438	$65,341	$67,301	$69,320	$71,400
Interest Income	N.A.	$22,595	$24,625	$5,675	$6,652	$6,859	$7,109	$7,292	$7,518	$7,794	$7,993	$8,242	$8,544
Sewer surcharges	N.A.	$62,294	$9,431	$9,431	$9,431	$9,431	$9,431	$9,431	$9,431	$9,431	$9,431	$9,431	$9,431
Reimbursed Expenses	N.A.	$14,174	$21,354	$21,354	$21,354	$21,354	$21,354	$21,354	$21,354	$21,354	$21,354	$21,354	$21,354
Cancel Prior Year Encumb	N.A.	$405	$7,210	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grants	N.A.	$5,306	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Miscellaneous revenue	N.A.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Trfr from 134th St Reloc-Gen	N.A.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Trfr from Gen Fd-Developmnt Fees	N.A.	$2,250	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Revenue Loss Because Rate Adjustments Made This Number of Months Late	5.0	$0	$0	-$130,829	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Incomes		**$1,952,991**	**$1,842,060**	**$2,054,664**	**$2,259,048**	**$2,334,230**	**$2,411,969**	**$2,492,234**	**$2,575,225**	**$2,661,035**	**$2,749,631**	**$2,841,233**	**$2,935,944**

Table 4 - Operating Costs and Net Income

Bonner Springs, KS, 2019 Sewer Rates Model 2

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

(First year costs and net incomes are actual, subsequent years are projected.)			Analysis Year	Years Following the Analysis Year (for Which Results Have Been Projected)									
	Inflation/ Deflation (–) Factor	Test Year Starting 1/1/18	0 Year Starting 1/1/19	1st Year Starting 1/1/20	2nd Year Starting 1/1/21	3rd Year Starting 1/1/22	4th Year Starting 1/1/23	5th Year Starting 1/1/24	6th Year Starting 1/1/25	7th Year Starting 1/1/26	8th Year Starting 1/1/27	9th Year Starting 1/1/28	10th Year Starting 1/1/29
Full time wages	3.0%	$262,292	$235,918	$339,334	$349,514	$359,999	$370,799	$381,923	$393,381	$405,183	$417,338	$429,858	$442,754
Overtime	3.0%	$19,744	$27,577	$28,405	$29,257	$30,134	$31,038	$31,970	$32,929	$33,916	$34,934	$35,982	$37,061
Employee benefits	3.0%	$104,913	$96,866	$166,085	$171,068	$176,200	$181,486	$186,930	$192,538	$198,314	$204,264	$210,392	$216,703
Sewer main improvements (CIPP)	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Telemetry Upgrades	3.0%	$3,450	$3,485	$13,000	$13,390	$13,792	$14,205	$14,632	$15,071	$15,523	$15,988	$16,468	$16,962
Building/grounds maint/repairs	3.0%	$12,001	$25,402	$15,000	$15,450	$15,914	$16,391	$16,883	$17,389	$17,911	$18,448	$19,002	$19,572
Collection losses	3.0%	$5,219	$1,275	$1,318	$1,363	$1,410	$1,458	$1,507	$1,559	$1,612	$1,667	$1,723	$1,782
Collection system maintenance	3.0%	$127,333	$83,199	$86,040	$88,978	$92,014	$95,152	$98,395	$101,747	$105,212	$108,792	$112,494	$116,319
Computer Service/Maintenance	3.0%	$1,287	$2,339	$2,409	$2,481	$2,556	$2,633	$2,711	$2,793	$2,877	$2,963	$3,052	$3,143
Custodial services	3.0%	$1,412	$1,409	$1,452	$1,495	$1,540	$1,586	$1,634	$1,683	$1,733	$1,785	$1,839	$1,894
Development agreement fees	3.0%	$1,500	$1,500	$1,545	$1,591	$1,639	$1,688	$1,739	$1,791	$1,845	$1,900	$1,957	$2,016
Engineering	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Engineering Design	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Equipment maintenance/repairs	3.0%	$14,025	$17,732	$20,000	$20,600	$21,218	$21,855	$22,510	$23,185	$23,881	$24,597	$25,335	$26,095
Equipment rental	3.0%	$1,113	$18,620	$10,000	$10,300	$10,609	$10,927	$11,255	$11,593	$11,941	$12,299	$12,668	$13,048
Franchise fees	3.0%	$16,991	$17,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grinder pump maintenance and replacement	3.0%	$27,896	$12,569	$68,000	$70,040	$72,141	$74,305	$76,535	$78,831	$81,196	$83,631	$86,140	$88,725
Grinder pump replacements	3.0%	$24,447	$31,123	$32,057	$33,018	$34,009	$35,029	$36,080	$37,162	$38,277	$39,426	$40,608	$41,827
Insurance	3.0%	$18,632	$20,485	$21,100	$21,733	$22,385	$23,056	$23,748	$24,460	$25,194	$25,950	$26,728	$27,530
Legal services	3.0%	$0	$188	$193	$199	$205	$211	$217	$224	$231	$238	$245	$252
Medical services	3.0%	$147	$279	$287	$295	$304	$313	$323	$333	$343	$353	$363	$374
Mileage/car allowance	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plant maintenance	3.0%	$44,455	$25,816	$26,590	$27,388	$28,210	$29,056	$29,928	$30,825	$31,750	$32,703	$33,684	$34,694
Postage/deliveries	3.0%	$40	$22	$22	$23	$24	$25	$26	$26	$27	$28	$29	$30
Printing/publication	3.0%	$356	$96	$99	$102	$105	$108	$111	$114	$118	$121	$125	$129
Prof dev/dues/travel/subscripts	3.0%	$3,722	$3,747	$3,860	$3,975	$4,095	$4,217	$4,344	$4,474	$4,609	$4,747	$4,889	$5,036
Railroad Leases	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sludge/screenings disposal	3.0%	$72,098	$68,995	$71,351	$73,787	$76,305	$78,907	$81,596	$84,376	$87,249	$90,219	$93,288	$96,460
Telemetry maintenance	3.0%	$7,303	$12,923	$13,311	$13,710	$14,121	$14,545	$14,981	$15,431	$15,894	$16,371	$16,862	$17,368
Telephone/mobile/pagers	3.0%	$5,876	$6,842	$7,047	$7,259	$7,477	$7,701	$7,932	$8,170	$8,415	$8,667	$8,927	$9,195
Uniform Rentals	3.0%	$0	$844	$870	$896	$923	$950	$979	$1,008	$1,038	$1,070	$1,102	$1,135
Utilities	3.0%	$163,242	$187,243	$193,637	$200,250	$207,082	$214,143	$221,442	$228,986	$236,783	$244,842	$253,172	$261,781
Vehicle maintenance/repairs	3.0%	$6,879	$11,644	$11,994	$12,354	$12,724	$13,106	$13,499	$13,904	$14,321	$14,751	$15,193	$15,649
Wastewater samples	3.0%	$4,415	$14,106	$14,529	$14,965	$15,414	$15,876	$16,353	$16,843	$17,349	$17,869	$18,405	$18,957
Wholesale sewer - JCW	3.0%	$4,966	$5,100	$5,253	$5,410	$5,573	$5,740	$5,912	$6,089	$6,272	$6,460	$6,654	$6,854
WWTP Dry Pit Flooding	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Building Maintenance supplies	3.0%	$1,851	$1,215	$1,252	$1,289	$1,328	$1,368	$1,409	$1,451	$1,495	$1,540	$1,586	$1,633
Chemical/lab equip/supplies	3.0%	$17,779	$11,962	$12,321	$12,690	$13,071	$13,463	$13,867	$14,283	$14,711	$15,153	$15,607	$16,076
Collection maint supplies	3.0%	$8,306	$12,515	$12,890	$13,277	$13,675	$14,085	$14,508	$14,943	$15,391	$15,853	$16,329	$16,819
Equip. Replacement Parts	3.0%	$1,875	$2,118	$2,182	$2,247	$2,315	$2,384	$2,456	$2,530	$2,605	$2,684	$2,764	$2,847
Office/computer/copier supplies	3.0%	$1,856	$4,722	$4,864	$5,010	$5,160	$5,315	$5,474	$5,639	$5,808	$5,982	$6,162	$6,346

Table 4 - Operating Costs and Net Income

	Inflation/ Deflation (–) Factor	Test Year Starting 1/1/18	0 Year Starting 1/1/19	1st Year Starting 1/1/20	2nd Year Starting 1/1/21	3rd Year Starting 1/1/22	4th Year Starting 1/1/23	5th Year Starting 1/1/24	6th Year Starting 1/1/25	7th Year Starting 1/1/26	8th Year Starting 1/1/27	9th Year Starting 1/1/28	10th Year Starting 1/1/29
Operating materials	3.0%	$182	$294	$303	$312	$321	$331	$341	$351	$362	$372	$384	$395
Plant maintenance supplies	3.0%	$5,322	$12,252	$10,000	$10,300	$10,609	$10,927	$11,255	$11,593	$11,941	$12,299	$12,668	$13,048
Pump & Motors (Large)	3.0%	$9,921	$11,828	$15,000	$15,450	$15,914	$16,391	$16,883	$17,389	$17,911	$18,448	$19,002	$19,572
Safety equipment/supplies	3.0%	$744	$1,848	$1,903	$1,960	$2,019	$2,079	$2,142	$2,206	$2,272	$2,340	$2,411	$2,483
Small equipment	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Small Tools	3.0%	$447	$1,272	$1,310	$1,350	$1,390	$1,432	$1,475	$1,519	$1,565	$1,611	$1,660	$1,710
Uniforms/protective vest/PPE	3.0%	$239	$697	$718	$740	$762	$785	$808	$832	$857	$883	$910	$937
UV equipment	3.0%	$2,770	$3,891	$4,008	$4,128	$4,252	$4,379	$4,511	$4,646	$4,785	$4,929	$5,077	$5,229
Vehicle fuel/supplies	3.0%	$5,896	$5,012	$5,162	$5,317	$5,476	$5,641	$5,810	$5,984	$6,164	$6,349	$6,539	$6,735
Vehicle supplies	3.0%	$300	$316	$325	$335	$345	$356	$366	$377	$388	$400	$412	$425
Debt Service	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
General Fund - administrative	3.0%	$52,275	$100,300	$103,309	$106,408	$109,601	$112,889	$116,275	$119,763	$123,356	$127,057	$130,869	$134,795
BACKGROUND CHECKS	3.0%	$0	$18	$18	$19	$19	$20	$20	$21	$22	$22	$23	$24
HEADWORKS OPERATIONS FACILITY	3.0%	$0	$17,251	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
K-32 INTERCEPTOR	3.0%	$0	$4,384	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
PHONE EQUIPMENT	3.0%	$0	$1,869	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
User Charge Analysis Services	5.0%	$0	$6,816	$0	$0	$7,514	$0	$0	$8,284	$0	$0	$9,134	$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		**$1,065,514**	**$1,134,921**	**$1,330,351**	**$1,371,724**	**$1,421,890**	**$1,458,352**	**$1,503,694**	**$1,558,728**	**$1,598,645**	**$1,648,344**	**$1,708,719**	**$1,752,417**
Net Income (or Loss)		$887,476	$707,139	$724,312	$887,324	$912,341	$953,617	$988,540	$1,016,497	$1,062,389	$1,101,287	$1,132,515	$1,183,526
Working Capital Goal: 50% In Dollars, That is:		$532,757	$567,460	$665,176	$685,862	$710,945	$729,176	$751,847	$779,364	$799,323	$824,172	$854,359	$876,209

Notes: The City is adding approximately 10 new customers per year. Therefore, the yellow highlighted cost items above will rise due to inflation and due to the additional cost of serving new customers. City staff noted changes to some future costs, which are highlighted green.

Table 5 - Capital Improvements Program (CIP)

Bonner Springs, KS, 2019 Sewer Rates Model 2

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

		Analysis Year	Years Following the Analysis Year (for Which Improvement Projects, Costs, Funding, etc. Have Been Projected)									
	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	1/1/18	1/1/19	1/1/20	1/1/21	1/1/22	1/1/23	1/1/24	1/1/25	1/1/26	1/1/27	1/1/28	1/1/29
Planned Spending, Debt-paid Portion of Projects (CIP costs to be funded with loans are shown in this section.)												
Lift Station 2 upgrade - Design	$0	$0	$0	$265,225	$0	$0	$0	$0	$0	$0	$0	$0
Lift Station 1 equipment upgrades	$0	$0	$0	$212,180	$0	$0	$0	$0	$0	$0	$0	$0
Lift Station 2 upgrade - Build	$0	$0	$0	$0	$1,529,818	$0	$0	$0	$0	$0	$0	$0
18" Force Main K7 to Plant - Design	$0	$0	$0	$0	$218,545	$0	$0	$0	$0	$0	$0	$0
18" Force Main K7 to Plant - Build	$0	$0	$0	$0	$0	$1,350,611	$0	$0	$0	$0	$0	$0
Santa Fe Interceptor - Design	$0	$0	$0	$0	$0	$0	$463,710	$0	$0	$0	$0	$0
Santa Fe Interceptor - Build	$0	$0	$0	$0	$0	$0	$0	$1,552,268	$0	$0	$0	$0
Grandview Interceptor - Design	$0	$0	$0	$0	$0	$0	$0	$0	$614,937	$0	$0	$0
Grandview Interceptor Lower - Build	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,140,093	$0	$0
Grandview Interceptor Upper - Build	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,304,773	$0
Spring Creek Interceptor - Design	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$391,432	$0
Spring Creek Interceptor - Build	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,209,525
Nettleton Interceptor - Design	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$335,979
Nettleton Interceptor - Build	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Lift Station 4	$0	$0	$0	$212,180	$0	$0	$0	$0	$0	$0	$0	$0
Lift Station 9	$0	$0	$0	$212,180	$0	$0	$0	$0	$0	$0	$0	$0
WWTP	$0	$0	$0	$297,052	$0	$0	$0	$0	$0	$0	$0	$0
Lift Station 3	$0	$0	$0	$0	$0	$0	$115,927	$0	$0	$0	$0	$0
Lift Station 5	$0	$0	$0	$0	$0	$0	$231,855	$0	$0	$0	$0	$0
Lift Station 7	$0	$0	$0	$0	$0	$0	$318,800	$0	$0	$0	$0	$0
Loan Closing Costs, Estimated at: 2.5%	$0	$0	$0	$31,796	$47,762	$38,003	$32,758	$46,337	$18,907	$36,106	$55,329	$51,926
Total Debt-paid Portion of Projects	$0	$0	$0	$1,230,613	$1,796,125	$1,388,614	$1,163,050	$1,598,605	$633,844	$1,176,199	$1,751,534	$1,597,430
Planned Spending, Cash-paid Portion of Projects (CIP costs to be funded from reserves are shown here.)												
Engineering	$895	$10,000	$10,300	$10,609	$10,927	$11,255	$11,593	$11,941	$12,299	$12,668	$13,048	$13,439
Engineering Design	$47,613	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sewer main improvements (CIPP)	$99,968	$80,000	$82,400	$84,872	$87,418	$90,041	$92,742	$95,524	$98,390	$101,342	$104,382	$107,513
Total Cash-paid Portion of Projects	$148,476	$90,000	$92,700	$95,481	$98,345	$101,296	$104,335	$107,465	$110,689	$114,009	$117,430	$120,952
Total CIP Costs	**$148,476**	**$90,000**	**$92,700**	**$1,326,094**	**$1,894,471**	**$1,489,909**	**$1,267,385**	**$1,706,070**	**$744,533**	**$1,290,208**	**$1,868,964**	**$1,718,382**

Table 5 - Capital Improvements 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
	1/1/18	1/1/19	1/1/20	1/1/21	1/1/22	1/1/23	1/1/24	1/1/25	1/1/26	1/1/27	1/1/28	1/1/29
Debt Repayment												
Existing Debt Payments (Following is debt that was initiated during the test year or earlier.)												
Debt Service (GO Bonds)	$597,329	$598,476	$584,389	$583,328	$578,755	$505,843	$259,709	$261,579	$255,535	$256,488	$256,903	$213,191
New Debt Payments (Following are payments for projects to be paid with new debt. It is assumed these will be loan/lease-financed for a term of: 20 years at a 2.0% interest rate.)												
Loan Originated in 2nd Year					$75,260	$75,260	$75,260	$75,260	$75,260	$75,260	$75,260	$75,260
Loan Originated in 3rd Year						$109,845	$109,845	$109,845	$109,845	$109,845	$109,845	$109,845
Loan Originated in 4th Year							$84,923	$84,923	$84,923	$84,923	$84,923	$84,923
Loan Originated in 5th Year								$71,128	$71,128	$71,128	$71,128	$71,128
Loan Originated in 6th Year									$97,765	$97,765	$97,765	$97,765
Loan Originated in 7th Year										$38,764	$38,764	$38,764
Loan Originated in 8th Year											$71,932	$71,932
Loan Originated in 9th Year												$107,118
Total Debt Payments	$597,329	$598,476	$584,389	$583,328	$654,016	$690,948	$529,737	$602,736	$694,458	$734,174	$806,521	$869,928
Total CIP-related Payouts	**$745,805**	**$688,476**	**$677,089**	**$1,909,422**	**$2,548,486**	**$2,180,857**	**$1,797,122**	**$2,308,806**	**$1,438,991**	**$2,024,383**	**$2,675,485**	**$2,588,310**
(This is the total cash required for this CIP and debt payment schedule. These amounts must come from utility income, reserves or outside sources, as shown in the next												
CIP Fund Sources (Following are the sources and amounts of funds expected to pay for the above CIP schedule.)												
Cash Reserves (Internal Funds)												
Debt and CIP Reserves Starting Balance	$0	$502,971	$496,991	$456,439	$653,395	$801,360	$960,529	$1,311,537	$1,616,547	$1,886,163	$2,152,140	$2,373,559
Working Capital Transferred in	$1,248,776	$672,436	$626,597	$866,637	$887,258	$935,386	$965,869	$988,980	$1,042,431	$1,076,438	$1,102,327	$1,161,677
Debt and CIP Reserves Interest Earned (or Paid)	$0	$10,059	$9,940	$9,129	$13,068	$16,027	$19,211	$26,231	$32,331	$37,723	$43,043	$47,471
Total Available Internal Funds	$1,248,776	$1,185,466	$1,133,527	$1,332,205	$1,553,721	$1,752,773	$1,945,609	$2,326,748	$2,691,309	$3,000,324	$3,297,510	$3,582,707
Grant and Loan Proceeds (External Funds)												
Loan Originated in 2nd Year				$1,230,613	$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 3rd Year					$1,796,125	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 4th Year						$1,388,614	$0	$0	$0	$0	$0	$0
Loan Originated in 5th Year							$1,163,050	$0	$0	$0	$0	$0
Loan Originated in 6th Year								$1,598,605	$0	$0	$0	$0
Loan Originated in 7th Year									$633,844	$0	$0	$0
Loan Originated in 8th Year										$1,176,199	$0	$0
Loan Originated in 9th Year											$1,751,534	$0
Loan Originated in 10th Year												$1,597,430
Total Available External Funds	$0	$0	$0	$1,230,613	$1,796,125	$1,388,614	$1,163,050	$1,598,605	$633,844	$1,176,199	$1,751,534	$1,597,430
Total Available Funds	**$1,248,776**	**$1,185,466**	**$1,133,527**	**$2,562,817**	**$3,349,846**	**$3,141,387**	**$3,108,659**	**$3,925,353**	**$3,325,153**	**$4,176,523**	**$5,049,044**	**$5,180,137**
Outcomes (This CIP spending and funding plan will result in the following cash needs and ending balances each year.)												
Total Available Funds	**$1,248,776**	**$1,185,466**	**$1,133,527**	**$2,562,817**	**$3,349,846**	**$3,141,387**	**$3,108,659**	**$3,925,353**	**$3,325,153**	**$4,176,523**	**$5,049,044**	**$5,180,137**
Total CIP-related Payouts	**$745,805**	**$688,476**	**$677,089**	**$1,909,422**	**$2,548,486**	**$2,180,857**	**$1,797,122**	**$2,308,806**	**$1,438,991**	**$2,024,383**	**$2,675,485**	**$2,588,310**
Debt and CIP Reserves Ending Balances	**$502,971**	**$496,991**	**$456,439**	**$653,395**	**$801,360**	**$960,529**	**$1,311,537**	**$1,616,547**	**$1,886,163**	**$2,152,140**	**$2,373,559**	**$2,591,827**

Notes: The City has a robust slate of system improvements to do. It was assumed nearly all will be debt financed. City staff noted changes to some future costs, which are highlighted green.

Table 6 - Equipment Replacement Schedule - Detailed

Bonner Springs, KS, 2019 Sewer Rates Model 2

Year Beginning	Included in Operating Costs in Table 4				Total Annual Replacement Costs
1/1/18	$0	$0	$0	$0	$0
1/1/19	$0	$0	$0	$0	$0
1/1/20	$0	$0	$0	$0	$0
1/1/21	$0	$0	$0	$0	$0
1/1/22	$0	$0	$0	$0	$0
1/1/23	$0	$0	$0	$0	$0
1/1/24	$0	$0	$0	$0	$0
1/1/25	$0	$0	$0	$0	$0
1/1/26	$0	$0	$0	$0	$0
1/1/27	$0	$0	$0	$0	$0
1/1/28	$0	$0	$0	$0	$0
1/1/29	$0	$0	$0	$0	$0
1/1/30	$0	$0	$0	$0	$0
1/1/31	$0	$0	$0	$0	$0
1/1/32	$0	$0	$0	$0	$0
1/1/33	$0	$0	$0	$0	$0
1/1/34	$0	$0	$0	$0	$0
1/1/35	$0	$0	$0	$0	$0
1/1/36	$0	$0	$0	$0	$0
1/1/37	$0	$0	$0	$0	$0
1/1/38	$0	$0	$0	$0	$0
1/1/39	$0	$0	$0	$0	$0
1/1/40	$0	$0	$0	$0	$0
1/1/41	$0	$0	$0	$0	$0
1/1/42	$0	$0	$0	$0	$0

Table 8 - Average Cost Classification

Bonner Springs, KS, 2019 Sewer Rates Model 2

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

The average rate structure basis year runs from: 1/1/2023 through 12/31/2023

Cost Items	Cost During Rate Structure Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
Full time wages	$370,799	25.0%	75.0%	$92,700	$278,100
Overtime	$31,038	25.0%	75.0%	$7,760	$23,279
Employee benefits	$181,486	25.0%	75.0%	$45,371	$136,114
0	$0	25.0%	75.0%	$0	$0
0	$0	25.0%	75.0%	$0	$0
Sewer main improvements (CIPP)	$0	25.0%	75.0%	$0	$0
Telemetry Upgrades	$14,205	100.0%	0.0%	$14,205	$0
Building/grounds maint/repairs	$16,391	50.0%	50.0%	$8,195	$8,195
Collection losses	$1,458	29.0%	71.0%	$423	$1,035
Collection system maintenance	$95,152	50.0%	50.0%	$47,576	$47,576
Computer Service/Maintenance	$2,633	100.0%	0.0%	$2,633	$0
Custodial services	$1,586	100.0%	0.0%	$1,586	$0
Development agreement fees	$1,688	29.0%	71.0%	$490	$1,199
Engineering	$0	25.0%	75.0%	$0	$0
Engineering Design	$0	25.0%	75.0%	$0	$0
Equipment maintenance/repairs	$21,855	25.0%	75.0%	$5,464	$16,391
Equipment rental	$10,927	25.0%	75.0%	$2,732	$8,195
Franchise fees	$0	29.0%	71.0%	$0	$0
Grinder pump maintenance and replacement	$74,305	0.0%	100.0%	$0	$74,305
Grinder pump replacements	$35,029	0.0%	100.0%	$0	$35,029
Insurance	$23,056	25.0%	75.0%	$5,764	$17,292
Legal services	$211	100.0%	0.0%	$211	$0
Medical services	$313	25.0%	75.0%	$78	$235
Mileage/car allowance	$0	25.0%	75.0%	$0	$0
Plant maintenance	$29,056	50.0%	50.0%	$14,528	$14,528
Postage/deliveries	$25	100.0%	0.0%	$25	$0
Printing/publication	$108	100.0%	0.0%	$108	$0
Prof dev/dues/travel/subscripts	$4,217	25.0%	75.0%	$1,054	$3,163
Railroad Leases	$0	29.0%	71.0%	$0	$0
Sludge/screenings disposal	$78,907	0.0%	100.0%	$0	$78,907
Telemetry maintenance	$14,545	100.0%	0.0%	$14,545	$0
Telephone/mobile/pagers	$7,701	25.0%	75.0%	$1,925	$5,776
Uniform Rentals	$950	25.0%	75.0%	$238	$713
Utilities	$214,143	0.0%	100.0%	$0	$214,143
0	$0	29.0%	71.0%	$0	$0
Vehicle maintenance/repairs	$13,106	25.0%	75.0%	$3,276	$9,829
Wastewater samples	$15,876	29.0%	71.0%	$4,604	$11,272
Wholesale sewer - JCW	$5,740	0.0%	100.0%	$0	$5,740
WWTP Dry Pit Flooding	$0	25.0%	75.0%	$0	$0

Table 8 - Average Cost Classification

Cost Items	Cost During Rate Structure Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
Building Maintenance supplies	$1,368	50.0%	50.0%	$684	$684
Chemical/lab equip/supplies	$13,463	100.0%	0.0%	$13,463	$0
Collection maint supplies	$14,085	50.0%	50.0%	$7,043	$7,043
Equip. Replacement Parts	$2,384	50.0%	50.0%	$1,192	$1,192
Office/computer/copier supplies	$5,315	100.0%	0.0%	$5,315	$0
Operating materials	$331	50.0%	50.0%	$165	$165
Plant maintenance supplies	$10,927	50.0%	50.0%	$5,464	$5,464
Pump & Motors (Large)	$16,391	25.0%	75.0%	$4,098	$12,293
Safety equipment/supplies	$2,079	25.0%	75.0%	$520	$1,560
Small equipment	$0	25.0%	75.0%	$0	$0
Small Tools	$1,432	25.0%	75.0%	$358	$1,074
Uniforms/protective vest/PPE	$785	25.0%	75.0%	$196	$588
UV equipment	$4,379	25.0%	75.0%	$1,095	$3,284
Vehicle fuel/supplies	$5,641	25.0%	75.0%	$1,410	$4,230
Vehicle supplies	$356	25.0%	75.0%	$89	$267
Debt Service	$0	29.0%	71.0%	$0	$0
General Fund - administrative	$112,889	100.0%	0.0%	$112,889	$0
Total CIP-related Payouts, Less Capacity Charges From Tables 14 & 16 (This value can be negative)	$666,473	29.0%	71.0%	$193,277	$473,196
Grand Total Costs, Weighted Avg Percentages	$2,124,825	29.3%	70.7%	$622,753	$1,502,072

Bases for Cost to Serve Rate Structure

		100%	$2,124,825
Number Customers During Year Defined Above	2,512	Inflow and Infiltration is Estimated at	5%
Billed Volume, in Gallons, During Year Defined Above	173,491,966	Inflow and Infiltration is Estimated at This Percentage of Average Cost	66%
Average Fixed Cost per User per Month During Year Defined Above	$20.66	Resulting Cost of Inflow and Infiltration	$51,564
Average Variable Cost to Produce per 1,000 Gallons During Year Defined Above	$8.66	Test Year Customer Metered Volume, in Gallons	170,039,046
Gallons per Billing Cycle Used by Average Residential Customer	3,596	+ Test Year Inflow and Infiltration, in Gallons	8,780,954
		Total Test Year Volume, in Gallons, From Master Meter Readings	178,820,000

Table 10 - Initial Rate Adjustments and Resulting Revenues
Bonner Springs, KS, 2019 Sewer Rates Model 2

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

Premium for Out-of-City Service	150%	Conservation Rate Block Multiplier	100%	Other Multiplier	100%

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 1,000 Gallons	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
In City .625 Meter Size	0	999	$194,179	$21.10	0.000	$8.16	$628	$194,807
	1,000	1,999	$194,179	$21.10	0.000	$8.16	$628	$194,807
	2,000	2,999	$194,179	$21.10	0.000	$8.16	$628	$194,807
	3,000	3,999	$593,496	$21.10	0.000	$8.16	$1,999	$595,495
In City 1 Inch Meter Size	0	999	$5,563	$23.55	0.000	$8.16	$18	$5,581
	1,000	1,999	$5,563	$23.55	0.000	$8.16	$18	$5,581
	2,000	2,999	$5,563	$23.55	0.000	$8.16	$18	$5,581
	3,000	3,999	$5,563	$23.55	0.000	$8.16	$18	$5,581
	4,000	4,999	$5,563	$23.55	0.000	$8.16	$18	$5,581
	5,000	5,999	$5,563	$23.55	0.000	$8.16	$18	$5,581
	6,000	6,999	$5,563	$23.55	0.000	$8.16	$18	$5,581
	7,000	7,999	$5,563	$23.55	0.000	$8.16	$18	$5,581
	8,000	8,999	$5,563	$23.55	0.000	$8.16	$18	$5,581
	9,000	9,999	$5,563	$23.55	0.000	$8.16	$18	$5,581
	10,000	14,999	$27,817	$23.55	0.000	$8.16	$90	$27,907
	15,000	19,999	$34,264	$23.55	0.000	$8.16	$112	$34,376
In City 2 Inch Meter Size	0	999	$2,882	$32.53	0.000	$8.16	$9	$2,891
	1,000	1,999	$2,882	$32.53	0.000	$8.16	$9	$2,891
	2,000	2,999	$2,882	$32.53	0.000	$8.16	$9	$2,891
	3,000	3,999	$2,882	$32.53	0.000	$8.16	$9	$2,891
	4,000	4,999	$2,882	$32.53	0.000	$8.16	$9	$2,891
	5,000	5,999	$2,882	$32.53	0.000	$8.16	$9	$2,891
	6,000	6,999	$2,882	$32.53	0.000	$8.16	$9	$2,891
	7,000	7,999	$2,882	$32.53	0.000	$8.16	$9	$2,891
	8,000	8,999	$2,882	$32.53	0.000	$8.16	$9	$2,891
	9,000	9,999	$2,882	$32.53	0.000	$8.16	$9	$2,891
	10,000	14,999	$14,409	$32.53	0.000	$8.16	$47	$14,456
	15,000	19,999	$14,409	$32.53	0.000	$8.16	$47	$14,456
	20,000	24,999	$14,409	$32.53	0.000	$8.16	$47	$14,456
	25,000	29,999	$14,409	$32.53	0.000	$8.16	$47	$14,456
	30,000	34,999	$14,409	$32.53	0.000	$8.16	$47	$14,456
	35,000	44,999	$28,819	$32.53	0.000	$8.16	$93	$28,912
	45,000	54,999	$28,819	$32.53	0.000	$8.16	$93	$28,912
	55,000	64,999	$28,819	$32.53	0.000	$8.16	$93	$28,912
	65,000	74,999	$31,938	$32.53	0.000	$8.16	$79	$32,017

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 1,000 Gallons	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
In City 3 Inch Meter Size	0	999	$691	$45.59	0.000	$8.16	$2	$693
	1,000	1,999	$691	$45.59	0.000	$8.16	$2	$693
	2,000	2,999	$691	$45.59	0.000	$8.16	$2	$693
	3,000	3,999	$691	$45.59	0.000	$8.16	$2	$693
	4,000	4,999	$691	$45.59	0.000	$8.16	$2	$693
	5,000	5,999	$691	$45.59	0.000	$8.16	$2	$693
	6,000	6,999	$691	$45.59	0.000	$8.16	$2	$693
	7,000	7,999	$691	$45.59	0.000	$8.16	$2	$693
	8,000	8,999	$691	$45.59	0.000	$8.16	$2	$693
	9,000	9,999	$691	$45.59	0.000	$8.16	$2	$693
	10,000	14,999	$3,456	$45.59	0.000	$8.16	$11	$3,467
	15,000	19,999	$3,456	$45.59	0.000	$8.16	$11	$3,467
	20,000	24,999	$3,456	$45.59	0.000	$8.16	$11	$3,467
	25,000	29,999	$3,456	$45.59	0.000	$8.16	$11	$3,467
	30,000	34,999	$3,456	$45.59	0.000	$8.16	$11	$3,467
	35,000	44,999	$6,911	$45.59	0.000	$8.16	$22	$6,933
	45,000	54,999	$6,911	$45.59	0.000	$8.16	$22	$6,933
	55,000	64,999	$6,911	$45.59	0.000	$8.16	$22	$6,933
	65,000	74,999	$6,911	$45.59	0.000	$8.16	$22	$6,933
	75,000	84,999	$6,911	$45.59	0.000	$8.16	$22	$6,933
	85,000	94,999	$6,911	$45.59	0.000	$8.16	$22	$6,933
	95,000	104,999	$6,911	$45.59	0.000	$8.16	$22	$6,933
	105,000	114,999	$6,911	$45.59	0.000	$8.16	$22	$6,933
	115,000	124,999	$6,911	$45.59	0.000	$8.16	$22	$6,933
	125,000	134,999	$10,000	$45.59	0.000	$8.16	$13	$10,013
In City 4 Inch Meter Size	0	999	$249	$60.28	0.000	$8.16	$1	$250
	1,000	1,999	$249	$60.28	0.000	$8.16	$1	$250
	2,000	2,999	$249	$60.28	0.000	$8.16	$1	$250
	3,000	3,999	$249	$60.28	0.000	$8.16	$1	$250
	4,000	4,999	$249	$60.28	0.000	$8.16	$1	$250
	5,000	5,999	$249	$60.28	0.000	$8.16	$1	$250
	6,000	6,999	$249	$60.28	0.000	$8.16	$1	$250
	7,000	7,999	$249	$60.28	0.000	$8.16	$1	$250
	8,000	8,999	$249	$60.28	0.000	$8.16	$1	$250
	9,000	9,999	$249	$60.28	0.000	$8.16	$1	$250
	10,000	14,999	$1,244	$60.28	0.000	$8.16	$4	$1,248
	15,000	19,999	$1,244	$60.28	0.000	$8.16	$4	$1,248
	20,000	24,999	$1,244	$60.28	0.000	$8.16	$4	$1,248
	25,000	29,999	$1,244	$60.28	0.000	$8.16	$4	$1,248
	30,000	34,999	$1,244	$60.28	0.000	$8.16	$4	$1,248
	35,000	44,999	$2,488	$60.28	0.000	$8.16	$8	$2,496
	45,000	54,999	$2,488	$60.28	0.000	$8.16	$8	$2,496
	55,000	64,999	$2,488	$60.28	0.000	$8.16	$8	$2,496
	65,000	74,999	$2,488	$60.28	0.000	$8.16	$8	$2,496
	75,000	84,999	$2,488	$60.28	0.000	$8.16	$8	$2,496
	85,000	94,999	$2,488	$60.28	0.000	$8.16	$8	$2,496
	95,000	104,999	$2,488	$60.28	0.000	$8.16	$8	$2,496
	105,000	114,999	$2,488	$60.28	0.000	$8.16	$8	$2,496
	115,000	124,999	$2,488	$60.28	0.000	$8.16	$8	$2,496
	125,000	134,999	$2,488	$60.28	0.000	$8.16	$8	$2,496
	135,000	144,999	$2,488	$60.28	0.000	$8.16	$8	$2,496
	145,000	1,000,000	$39,819	$60.28	0.000	$8.16	$116	$39,935

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 1,000 Gallons	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
Senior	0	999	$66	$16.88	0.000	$6.53	$0	$67
	1,000	1,999	$173	$16.88	0.000	$6.53	$1	$174
Out of City .625 Inch Meter	0	999	$124	$31.65	0.000	$12.24	$0	$125
	1,000	1,999	$124	$31.65	0.000	$12.24	$0	$125
	2,000	2,999	$323	$31.65	0.000	$12.24	$1	$324
Out of City 2 Inch Meter	0	999	$342	$48.80	0.000	$12.24	$1	$343
	1,000	1,999	$342	$48.80	0.000	$12.24	$1	$343
	2,000	2,999	$342	$48.80	0.000	$12.24	$1	$343
	3,000	3,999	$342	$48.80	0.000	$12.24	$1	$343
	4,000	4,999	$342	$48.80	0.000	$12.24	$1	$343
	5,000	5,999	$342	$48.80	0.000	$12.24	$1	$343
	6,000	6,999	$342	$48.80	0.000	$12.24	$1	$343
	7,000	7,999	$342	$48.80	0.000	$12.24	$1	$343
	8,000	8,999	$342	$48.80	0.000	$12.24	$1	$343
	9,000	9,999	$342	$48.80	0.000	$12.24	$1	$343
	10,000	14,999	$1,710	$48.80	0.000	$12.24	$6	$1,716
	15,000	19,999	$1,710	$48.80	0.000	$12.24	$6	$1,716
	20,000	24,999	$1,710	$48.80	0.000	$12.24	$6	$1,716
	25,000	29,999	$1,710	$48.80	0.000	$12.24	$6	$1,716
	30,000	34,999	$1,710	$48.80	0.000	$12.24	$6	$1,716
	35,000	44,999	$3,421	$48.80	0.000	$12.24	$11	$3,432
	45,000	54,999	$3,421	$48.80	0.000	$12.24	$11	$3,432
	55,000	64,999	$5,215	$48.80	0.000	$12.24	$14	$5,229
KC Renaissance .625 Meter Size	0	999	$83	$21.10	0.000	$8.16	$0	$83
	1,000	1,999	$83	$21.10	0.000	$8.16	$0	$83
	2,000	2,999	$83	$21.10	0.000	$8.16	$0	$83
	3,000	3,999	$83	$21.10	0.000	$8.16	$0	$83
	4,000	4,999	$83	$21.10	0.000	$8.16	$0	$83
	5,000	5,999	$74	$21.10	0.000	$8.16	$1	$75
KC Renaissance 2 Inch Meter Size	0	999	$124	$32.53	0.000	$8.16	$0	$125
	1,000	1,999	$124	$32.53	0.000	$8.16	$0	$125
	2,000	2,999	$124	$32.53	0.000	$8.16	$0	$125
	3,000	3,999	$124	$32.53	0.000	$8.16	$0	$125
	4,000	4,999	$124	$32.53	0.000	$8.16	$0	$125
	5,000	5,999	$124	$32.53	0.000	$8.16	$0	$125
	6,000	6,999	$124	$32.53	0.000	$8.16	$0	$125
	7,000	7,999	$124	$32.53	0.000	$8.16	$0	$125
	8,000	8,999	$124	$32.53	0.000	$8.16	$0	$125
	9,000	9,999	$927	$32.53	0.000	$8.16	$2	$929

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 1,000 Gallons	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
No Charge KC Ren 2 Inch Meter Size	0	999	$0	$0.00	0.000	$8.16	$0	$0
	1,000	1,999	$0	$0.00	0.000	$8.16	$0	$0
	2,000	2,999	$0	$0.00	0.000	$8.16	$0	$0
	3,000	3,999	$0	$0.00	0.000	$8.16	$0	$0
	4,000	4,999	$0	$0.00	0.000	$8.16	$0	$0
	5,000	5,999	$0	$0.00	0.000	$8.16	$0	$0
	6,000	6,999	$0	$0.00	0.000	$8.16	$0	$0
	7,000	7,999	$0	$0.00	0.000	$8.16	$0	$0
	8,000	8,999	$0	$0.00	0.000	$8.16	$0	$0
	9,000	9,999	$0	$0.00	0.000	$8.16	$0	$0
	10,000	14,999	$0	$0.00	0.000	$8.16	$1	$1
	15,000	19,999	$0	$0.00	0.000	$8.16	$1	$1
	20,000	24,999	$0	$0.00	0.000	$8.16	$1	$1
	25,000	29,999	$0	$0.00	0.000	$8.16	$1	$1
	30,000	34,999	$0	$0.00	0.000	$8.16	$0	$0
Total Rate Revenue at Current Rates			$1,712,666	Total Rate Revenue at Modeled Rates			$5,565	
				Total Blended Rate Revenues for the Year				$1,718,232

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 12 - Flow Capacity Costs

Bonner Springs, KS, 2019 Sewer Rates Model 2

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 Sewer Service						
Fixed Assets Original Value (Capacity Cost)	% of That Value Attributable to Regular Sewer Service	% Attributable to Sewer Peak Capacity	Peak Sewer Capacity Cost	Annual Sewer Peak Capacity Cost (40-year Depreciation)	% of Value Attributable to Sewer Base Flow Capacity	Base Flow Capacity Cost for Sewer Service	Annual Sewer Base Capacity Cost (40-year Depreciation)
$24,622,500	100.0%	50.0%	$12,311,250	$717,477	50.0%	$12,311,250	$717,477

How Sewer System Capacity Costs Will Be Recovered

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

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

5.80%	Target Percentage of Annualized Costs to Recover
$41,613.67	Target Portion of Annualized Costs to Recover
$4,161.37	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, estimated as follows:

$0	Average Field Cost per New Connection
$0	Average Administration Cost per New Connection
$0	Average "Out-of-Pocket" Cost per New Connection

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

10.00%	Target Percentage of Costs to Recover
$71,747.70	Target Portion of Costs to Recover in One Full Year
$5,978.98	Target Portion of Costs to Recover in Monthly Surcharges
$1.63	Monthly Surcharge per Peak Capacity Share

Note: "Out-of-pocket" connection costs are in addition to peak and base flow capacity costs. All of these costs have been added together in Table 13, to arrive at the grand total fee to assess to each meter size and type.

Table 13 - System Development Fees
Bonner Springs, KS, 2019 Sewer Rates Model 2

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	150%	Economy of Scale Adjustment to Peak Capacity Factors[3]		
Meter Size	Meter Type	New Taps (Customer Growth) in a Typical Year	AWWA Capacity "Share" Factor, Compared to 5/8 Inch Meter	Economy of Scale Adjustment to Peak Capacity Factors	Premium for Out-of-City Service	Peak Capacity Cost per Capacity Share From Table 11	Peak Capacity Cost per Meter This Class	**Fee per New Connection for Peak, Base and Out-of-pocket Costs**
In-City								
Five Eighths	Displacement	9.4	1.0	100%	100%	$4,161	$4,161	**$4,161**
Three Quarters	Displacement	0.0	1.0	100%	100%	$4,161	$4,161	**$4,161**
One Inch	Displacement	0.3	2.5	100%	100%	$4,161	$10,403	**$10,403**
One & a Half Inch	Displacement	0.0	5.0	100%	100%	$4,161	$20,807	**$20,807**
Two Inch	Displacement	0.1	8.0	100%	100%	$4,161	$33,291	**$33,291**
Two & a Half Inch	Displacement	0.0	12.5	100%	100%	$4,161	$52,017	**$52,017**
Three Inch	Singlet	0.0	16.0	100%	100%	$4,161	$66,582	**$66,582**
Three Inch	Compound, Class I	0.0	16.0	100%	100%	$4,161	$66,582	**$66,582**
Three Inch	Turbine, Class I	0.0	17.5	100%	100%	$4,161	$72,824	**$72,824**
Four Inch	Singlet	0.0	25.0	100%	100%	$4,161	$104,034	**$104,034**
Four Inch	Compound, Class I	0.0	25.0	100%	100%	$4,161	$104,034	**$104,034**
Four Inch	Turbine, Class I	0.0	31.0	100%	100%	$4,161	$129,002	**$129,002**
Six Inch	Singlet	0.0	50.0	100%	100%	$4,161	$208,068	**$208,068**
Six Inch	Compound, Class I	0.0	50.0	100%	100%	$4,161	$208,068	**$208,068**
Six Inch	Turbine, Class I	0.0	65.0	100%	100%	$4,161	$270,489	**$270,489**
Eight Inch	Compound, Class I	0.0	80.0	100%	100%	$4,161	$332,909	**$332,909**
		9.9						
Out-of-City								
Five Eighths	Displacement	0.0	1.0	100%	150%	$4,161	$6,242	**$6,242**
Three Quarters	Displacement	0.0	1.0	100%	150%	$4,161	$6,242	**$6,242**
One Inch	Displacement	0.0	2.5	100%	150%	$4,161	$15,605	**$15,605**
One & a Half Inch	Displacement	0.0	5.0	100%	150%	$4,161	$31,210	**$31,210**
Two Inch	Displacement	0.0	8.0	100%	150%	$4,161	$49,936	**$49,936**
Two & a Half Inch	Displacement	0.0	12.5	100%	150%	$4,161	$78,026	**$78,026**
Three Inch	Singlet	0.0	16.0	100%	150%	$4,161	$99,873	**$99,873**
Three Inch	Compound, Class I	0.0	16.0	100%	150%	$4,161	$99,873	**$99,873**
Three Inch	Turbine, Class I	0.0	17.5	100%	150%	$4,161	$109,236	**$109,236**
Four Inch	Singlet	0.0	25.0	100%	150%	$4,161	$156,051	**$156,051**
Four Inch	Compound, Class I	0.0	25.0	100%	150%	$4,161	$156,051	**$156,051**
Four Inch	Turbine, Class I	0.0	31.0	100%	150%	$4,161	$193,504	**$193,504**
Six Inch	Singlet	0.0	50.0	100%	150%	$4,161	$312,103	**$312,103**
Six Inch	Compound, Class I	0.0	50.0	100%	150%	$4,161	$312,103	**$312,103**
Six Inch	Turbine, Class I	0.0	65.0	100%	150%	$4,161	$405,733	**$405,733**
Eight Inch	Compound, Class I	0.0	80.0	100%	150%	$4,161	$499,364	**$499,364**

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.

[3] Economy of Scale Adjustments: As meter size rises, capacity to pass peak flow rises. However, costs to build that capacity do not rise as rapidly. Therefore, peak flow capacity shares were adjusted downward by an estimated cost savings factor to account for that savings. Economy of scale savings do not apply to base costs because all connections are afforded the same level of base flow capacity.

Table 14 - Revenues From System Development Fees
Bonner Springs, KS, 2019 Sewer Rates Model 2

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	Fee per New Connection for Peak, Base and Out-of-pocket Costs	**Total Annual System Development Fees**
In-City				
Five Eighths	Displacement	7.0	$4,161	**$39,149**
Three Quarters	Displacement	0.0	$4,161	**$0**
One Inch	Displacement	1.0	$10,403	**$3,524**
One & a Half Inch	Displacement	0.0	$20,807	**$0**
Two Inch	Displacement	2.0	$33,291	**$4,700**
Two & a Half Inch	Displacement	0.0	$52,017	**$0**
Three Inch	Singlet	0.0	$66,582	**$2,979**
Three Inch	Compound, Class I	0.0	$66,582	**$0**
Three Inch	Turbine, Class I	0.0	$72,824	**$0**
Four Inch	Singlet	0.0	$104,034	**$1,451**
Four Inch	Compound, Class I	0.0	$104,034	**$0**
Four Inch	Turbine, Class I	0.0	$129,002	**$0**
Six Inch	Singlet	0.0	$208,068	**$0**
Six Inch	Compound, Class I	0.0	$208,068	**$0**
Six Inch	Turbine, Class I	0.0	$270,489	**$0**
Eight Inch	Compound, Class I	0.0	$332,909	**$0**
	Subtotal:	9.9		**$51,802**
Out-of-City				
Five Eighths	Displacement	0.0	$6,242	**$194**
Three Quarters	Displacement	0.0	$6,242	**$0**
One Inch	Displacement	0.0	$15,605	**$0**
One & a Half Inch	Displacement	0.0	$31,210	**$0**
Two Inch	Displacement	0.0	$49,936	**$1,132**
Two & a Half Inch	Displacement	0.0	$78,026	**$0**
Three Inch	Singlet	0.0	$99,873	**$0**
Three Inch	Compound, Class I	0.0	$99,873	**$0**
Three Inch	Turbine, Class I	0.0	$109,236	**$0**
Four Inch	Singlet	0.0	$156,051	**$0**
Four Inch	Compound, Class I	0.0	$156,051	**$0**
Four Inch	Turbine, Class I	0.0	$193,504	**$0**
Six Inch	Singlet	0.0	$312,103	**$0**
Six Inch	Compound, Class I	0.0	$312,103	**$0**
Six Inch	Turbine, Class I	0.0	$405,733	**$0**
Eight Inch	Compound, Class I	0.0	$499,364	**$0**
	Subtotal:	0.1		**$1,326**
	Total:	10.0		**$53,128**

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
Bonner Springs, KS, 2019 Sewer Rates Model 2

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)	Annual Base Charges Revenue	Total Annual Minimum Charges Revenue	Peak Capacity Cost per Meter Size	Cost-to-Serve Minimum Charge From Table 10	**Monthly Minimum Charge Each Meter Size**
In-City								
Five Eighths	Displacement	1.0	$1.63	$630,475	$683,344	$1.63	$19.47	**$21.10**
Three Quarters	Displacement	1.0	$1.63	$0	$0	$1.63	$19.47	**$21.10**
One Inch	Displacement	2.5	$1.63	$22,701	$27,460	$4.08	$19.47	**$23.55**
One & a Half Inch	Displacement	5.0	$1.63	$0	$0	$8.16	$19.47	**$27.63**
Two Inch	Displacement	8.0	$1.63	$9,462	$15,810	$13.06	$19.47	**$32.53**
Two & a Half Inch	Displacement	12.5	$1.63	$0	$0	$20.41	$19.47	**$39.88**
Three Inch	Singlet	16.0	$1.63	$2,998	$7,021	$26.12	$19.47	**$45.59**
Three Inch	Compound, Class I	16.0	$1.63	$0	$0	$26.12	$19.47	**$45.59**
Three Inch	Turbine, Class I	17.5	$1.63	$0	$0	$28.57	$19.47	**$48.04**
Four Inch	Singlet	25.0	$1.63	$935	$2,894	$40.82	$19.47	**$60.28**
Four Inch	Compound, Class I	25.0	$1.63	$0	$0	$40.82	$19.47	**$60.28**
Four Inch	Turbine, Class I	31.0	$1.63	$0	$0	$50.61	$19.47	**$70.08**
Six Inch	Singlet	50.0	$1.63	$0	$0	$81.63	$19.47	**$101.10**
Six Inch	Compound, Class I	50.0	$1.63	$0	$0	$81.63	$19.47	**$101.10**
Six Inch	Turbine, Class I	65.0	$1.63	$0	$0	$106.12	$19.47	**$125.59**
Eight Inch	Compound, Class I	80.0	$1.63	$0	$0	$130.61	$19.47	**$150.08**
Out-of-City								
Five Eighths	Displacement	1.5	$2.45	$2,083	$2,476	$3.67	$19.47	**$23.14**
Three Quarters	Displacement	1.5	$2.45	$0	$0	$3.67	$19.47	**$23.14**
One Inch	Displacement	3.8	$2.45	$0	$0	$9.18	$19.47	**$28.65**
One & a Half Inch	Displacement	7.5	$2.45	$0	$0	$18.37	$19.47	**$37.84**
Two Inch	Displacement	12.0	$2.45	$1,519	$3,811	$29.39	$19.47	**$48.86**
Two & a Half Inch	Displacement	18.8	$2.45	$0	$0	$45.92	$19.47	**$65.39**
Three Inch	Singlet	24.0	$2.45	$0	$0	$58.77	$19.47	**$78.24**
Three Inch	Compound, Class I	24.0	$2.45	$0	$0	$58.77	$19.47	**$78.24**
Three Inch	Turbine, Class I	26.3	$2.45	$0	$0	$64.28	$19.47	**$83.75**
Four Inch	Singlet	37.5	$2.45	$0	$0	$91.83	$19.47	**$111.30**
Four Inch	Compound, Class I	37.5	$2.45	$0	$0	$91.83	$19.47	**$111.30**
Four Inch	Turbine, Class I	46.5	$2.45	$0	$0	$113.87	$19.47	**$133.34**
Six Inch	Singlet	75.0	$2.45	$0	$0	$183.67	$19.47	**$203.14**
Six Inch	Compound, Class I	75.0	$2.45	$0	$0	$183.67	$19.47	**$203.14**
Six Inch	Turbine, Class I	97.5	$2.45	$0	$0	$238.77	$19.47	**$258.24**
Eight Inch	Compound, Class I	120.0	$2.45	$0	$0	$293.87	$19.47	**$313.34**

Table 16 - Revenues From Minimum Charge Surcharges
Bonner Springs, KS, 2019 Sewer Rates Model 2

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	Current Number Meters This Size	Total Adjusted Capacity Shares	**Annual Peak Capacity Surcharge Revenues**
In-City				
Five Eighths	Displacement	2,699	1	**$52,869**
Three Quarters	Displacement	0	1	**$0**
One Inch	Displacement	97	3	**$4,759**
One & a Half Inch	Displacement	0	5	**$0**
Two Inch	Displacement	41	8	**$6,348**
Two & a Half Inch	Displacement	0	13	**$0**
Three Inch	Singlet	13	16	**$4,023**
Three Inch	Compound, Class I	0	16	**$0**
Three Inch	Turbine, Class I	0	18	**$0**
Four Inch	Singlet	4	25	**$1,959**
Four Inch	Compound, Class I	0	25	**$0**
Four Inch	Turbine, Class I	0	31	**$0**
Six Inch	Singlet	0	50	**$0**
Six Inch	Compound, Class I	0	50	**$0**
Six Inch	Turbine, Class I	0	65	**$0**
Eight Inch	Compound, Class I	0	80	**$0**
		2,853	1,963	**$69,958**
Out-of-City				
Five Eighths	Displacement	9	2	**$393**
Three Quarters	Displacement	0	2	**$0**
One Inch	Displacement	0	4	**$0**
One & a Half Inch	Displacement	0	8	**$0**
Two Inch	Displacement	7	12	**$2,292**
Two & a Half Inch	Displacement	0	19	**$0**
Three Inch	Singlet	0	24	**$0**
Three Inch	Compound, Class I	0	24	**$0**
Three Inch	Turbine, Class I	0	26	**$0**
Four Inch	Singlet	0	38	**$0**
Four Inch	Compound, Class I	0	38	**$0**
Four Inch	Turbine, Class I	0	47	**$0**
Six Inch	Singlet	0	75	**$0**
Six Inch	Compound, Class I	0	75	**$0**
Six Inch	Turbine, Class I	0	98	**$0**
Eight Inch	Compound, Class I	0	120	**$0**
		15	2,944	**$2,685**
		2,869	4,907	**$72,643**

Table 17 - Financial Capacity Indicators and Reserves

Bonner Springs, KS, 2019 Sewer Rates Model 2

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

Capacity Indicators	Test Year Starting 1/1/18	0 Year Starting 1/1/19	1st Year Starting 1/1/20	2nd Year Starting 1/1/21	3rd Year Starting 1/1/22	4th Year Starting 1/1/23	5th Year Starting 1/1/24	6th Year Starting 1/1/25	7th Year Starting 1/1/26	8th Year Starting 1/1/27	9th Year Starting 1/1/28	10th Year Starting 1/1/29
Customary Affordability Index: Monthly Bill for a 5,000 gal per Month, Small Meter Residential Customer	$53.73	$61.90	$63.76	$65.67	$67.64	$69.67	$71.76	$73.91	$76.13	$78.42	$80.77	$83.19
AMHI Within Service Area	$60,557	$61,877	$63,227	$64,606	$66,015	$67,455	$68,926	$70,429	$71,965	$73,535	$75,139	$76,777
Affordability Index: Current Rates First Column, Modeled Rates After That	1.06%	1.20%	1.21%	1.22%	1.23%	1.24%	1.25%	1.26%	1.27%	1.28%	1.29%	1.30%

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 not consider awarding grants if this indicator is less than 1.5 to 2.0%.

Low-income, Low-volume Affordability Index: Monthly Bill for a 2,000 gal per Month, Low-income Residential Customer	$32.13	$37.42	$38.54	$39.70	$40.89	$42.12	$43.38	$44.68	$46.02	$47.40	$48.83	$50.29
Income at One-half the AMHI and Rising at One-half the Rate Above	$30,278	$30,608	$30,942	$31,280	$31,621	$31,966	$32,314	$32,667	$33,023	$33,383	$33,747	$34,115
Affordability for Low-income, Low-volume: Current Rates First Column, Modeled Rates After That	1.27%	1.47%	1.49%	1.52%	1.55%	1.58%	1.61%	1.64%	1.67%	1.70%	1.74%	1.77%

This additional indicator of affordability assumes a residential customer with income at one-half of 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.

Estimated Operating Ratio: Current Rates First Column, Modeled Rates After That	1.83	1.62	1.54	1.65	1.64	1.65	1.66	1.65	1.66	1.67	1.66	1.68

Operating ratio (OR) is a measure of the utility's ability to pay its operating expenses using only current incomes. A 1.0 OR is break even. Below 1.0 indicates operating in the "red." Generally, the OR should be at least 1.15 for large systems, 1.30 or more for medium-sized systems and perhaps as high as 2.0 for small systems. Note: If the utility has or will have reserves (below,) it has more ability to pay its operating costs than the OR implies.

Estimated Coverage Ratio: Current Rates First Column, Modeled Rates After That	2.09	1.12	1.07	1.49	1.36	1.35	1.82	1.64	1.50	1.47	1.37	1.34

Coverage Ratio (CR) goes to the ability of the utility to pay its debt payments out of current incomes. OR applies only to years with debt service. 1.0 is break even. Generally, the CR should be at least 1.25. Note: If the utility has or will have reserves (shown below,) it has more ability to make debt payments than the CR implies.

Reserves	Balance Ending on 12/31/17	Balance Ending on 12/31/18	Balance Ending on 12/31/19	Balance Ending on 12/31/20	Balance Ending on 12/31/21	Balance Ending on 12/31/22	Balance Ending on 12/31/23	Balance Ending on 12/31/24	Balance Ending on 12/31/25	Balance Ending on 12/31/26	Balance Ending on 12/31/27	Balance Ending on 12/31/28	Balance Ending on 12/31/29
Cash and Cash Equivalents	$894,057	$532,757	$567,460	$665,176	$685,862	$710,945	$729,176	$751,847	$779,364	$799,323	$824,172	$854,359	$876,209
Other Liquid Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Undedicated Cash Assets	$894,057	$532,757	$567,460	$665,176	$685,862	$710,945	$729,176	$751,847	$779,364	$799,323	$824,172	$854,359	$876,209
Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	$894,057	$532,757	$567,460	$645,220	$645,328	$648,860	$645,534	$645,637	$649,188	$645,839	$645,939	$649,510	$666,121
Repair & Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt and CIP Reserves	$0	$502,971	$496,991	$456,439	$653,395	$801,360	$960,529	$1,311,537	$1,616,547	$1,886,163	$2,152,140	$2,373,559	$2,591,827
Sum of All Reserves	$894,057	$1,035,728	$1,064,451	$1,121,614	$1,339,257	$1,512,305	$1,689,705	$2,063,384	$2,395,911	$2,685,485	$2,976,312	$3,227,918	$3,468,036

Table 18 - Bills Before and After Rate Adjustments

Bonner Springs, KS, 2019 Sewer Rates Model 2

Revenue increase to be generated by the modeled rates (as compared to Test Year rates) 18.3%

If applicable, the revenue increase above includes meter size-based minimum charges calculated in Table 15. If rate classes shown below do not include meter size, the modeled bills below do not include those 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 at or Above This Volume But Below the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill Under Now Current Rates	Modeled Bill	Modeled Bill Increase or Decrease (-)
In City .625 Meter Size	0	0	0	2,341	$17.73	$21.10	$3.37
	1,000	0	0	2,341	$24.93	$29.26	$4.33
	2,000	0	0	2,341	$32.13	$37.42	$5.29
	3,000	2,341	2,341	2,341	$39.33	$45.58	$6.25
	4,000	0	2,341	0	$46.53	$53.74	$7.21
	5,000	0	2,341	0	$53.73	$61.90	$8.17
	10,000	0	2,341	0	$89.73	$102.70	$12.97
	30,000	0	2,341	0	$233.73	$265.90	$32.17
In City 1 Inch Meter Size	0	0	0	67	$20.24	$23.55	$3.31
	5,000	0	0	67	$56.24	$64.35	$8.11
	10,000	0	0	67	$92.24	$105.15	$12.91
	15,000	67	67	67	$128.24	$145.95	$17.71
	30,000	0	67	0	$236.24	$268.35	$32.11
	145,000	0	67	0	$1,064.24	$1,206.75	$142.51
In City 2 Inch Meter Size	0	0	0	35	$47.24	$32.53	-$14.71
	5,000	0	0	35	$83.24	$73.33	-$9.91
	10,000	0	0	35	$119.24	$114.13	-$5.11
	30,000	0	0	35	$263.24	$277.33	$14.09
	65,000	35	35	35	$515.24	$562.93	$47.69
	145,000	0	35	0	$1,091.24	$1,215.73	$124.49
In City 3 Inch Meter Size	0	0	0	8	$102.28	$45.59	-$56.69
	5,000	0	0	8	$138.28	$86.39	-$51.89
	10,000	0	0	8	$174.28	$127.19	-$47.09
	30,000	0	0	8	$318.28	$290.39	-$27.89
	125,000	8	8	8	$1,002.28	$1,065.59	$63.31
	135,000	0	8	0	$1,074.28	$1,147.19	$72.91
	145,000	0	8	0	$1,146.28	$1,228.79	$82.51
In City 4 Inch Meter Size	0	0	0	3	$165.32	$60.28	-$105.04
	5,000	0	0	3	$201.32	$101.08	-$100.24
	10,000	0	0	3	$237.32	$141.88	-$95.44
	30,000	0	0	3	$381.32	$305.08	-$76.24
	145,000	3	3	3	$1,209.32	$1,243.48	$34.16
Senior	0	0	0	1	$14.19	$16.88	$2.70
	1,000	1	1	1	$19.95	$23.41	$3.46

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers at or Above This Volume But Below the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill Under Now Current Rates	Modeled Bill	Modeled Bill Increase or Decrease (-)
Out of City .625 Inch Meter	0	0	0	1	$26.60	$31.65	$5.05
	2,000	1	1	1	$48.22	$56.13	$7.91
	5,000	0	1	0	$80.65	$92.85	$12.20
	10,000	0	1	0	$134.71	$154.05	$19.35
	30,000	0	1	0	$350.92	$398.85	$47.93
	145,000	0	1	0	$1,594.16	$1,806.45	$212.29
Out of City 2 Inch Meter	0	0	0	3	$70.87	$48.80	-$22.08
	5,000	0	0	3	$124.92	$110.00	-$14.93
	10,000	0	0	3	$178.98	$171.20	-$7.78
	30,000	0	0	3	$395.19	$416.00	$20.80
	55,000	3	3	3	$665.46	$722.00	$56.53
KC Renaissance .625 Meter Size	0	0	0	1	$0.00	$21.10	$21.10
	5,000	1	1	1	$36.04	$61.90	$25.87
	10,000	0	1	0	$72.07	$102.70	$30.63
	30,000	0	1	0	$216.22	$265.90	$49.69
KC Renaissance 2 Inch Meter Size	0	0	0	2	$47.25	$32.53	-$14.72
	1,000	0	0	2	$54.45	$40.69	-$13.76
	2,000	0	0	2	$61.66	$48.85	-$12.81
	3,000	0	0	2	$68.87	$57.01	-$11.86
	4,000	0	0	2	$76.08	$65.17	-$10.91
	5,000	0	0	2	$83.28	$73.33	-$9.95
	6,000	0	0	2	$90.49	$81.49	-$9.00
	7,000	0	0	2	$97.70	$89.65	-$8.05
	8,000	0	0	2	$104.90	$97.81	-$7.09
	9,000	2	2	2	$112.11	$105.97	-$6.14
No Charge KC Ren 2 Inch Meter Size	0	0	0	0	$0.00	$0.00	$0.00
	5,000	0	0	0	$0.00	$40.80	$40.80
	10,000	0	0	0	$0.00	$81.60	$81.60
	30,000	0	0	0	$0.00	$244.80	$244.80

Chart 1 - Operating Ratio

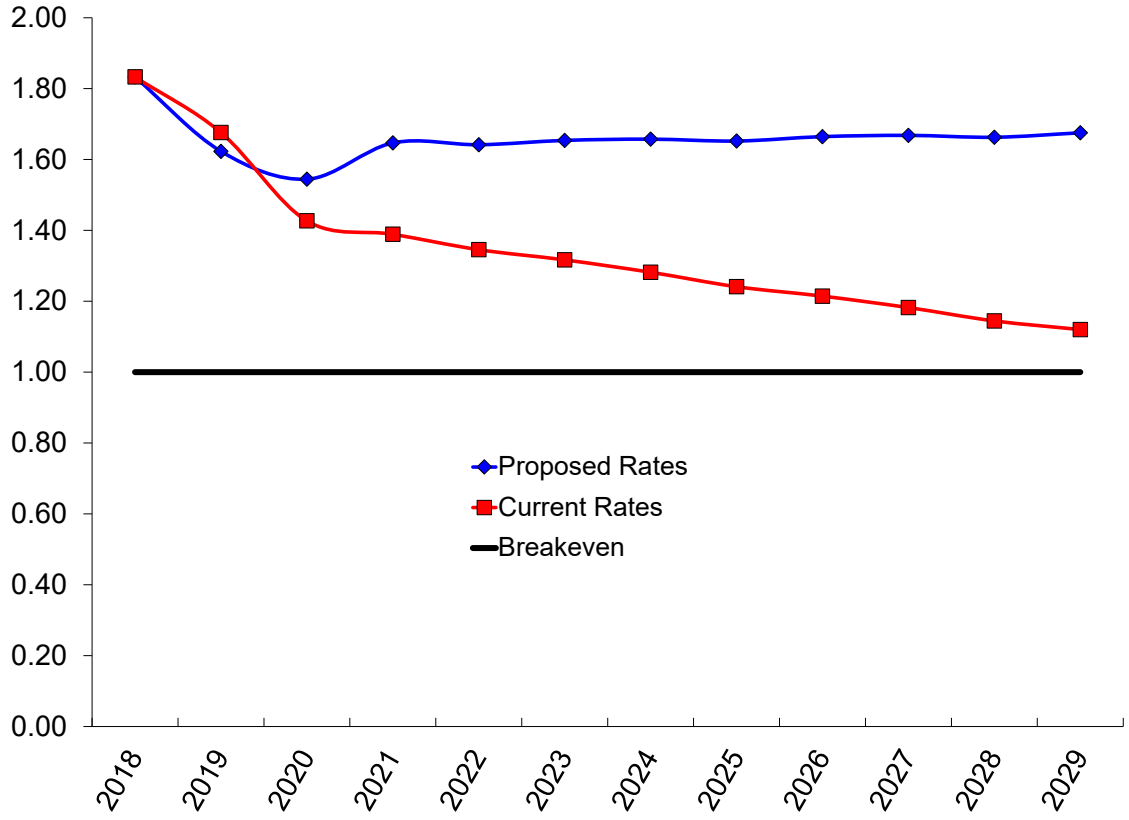


Chart 2 - Coverage Ratio

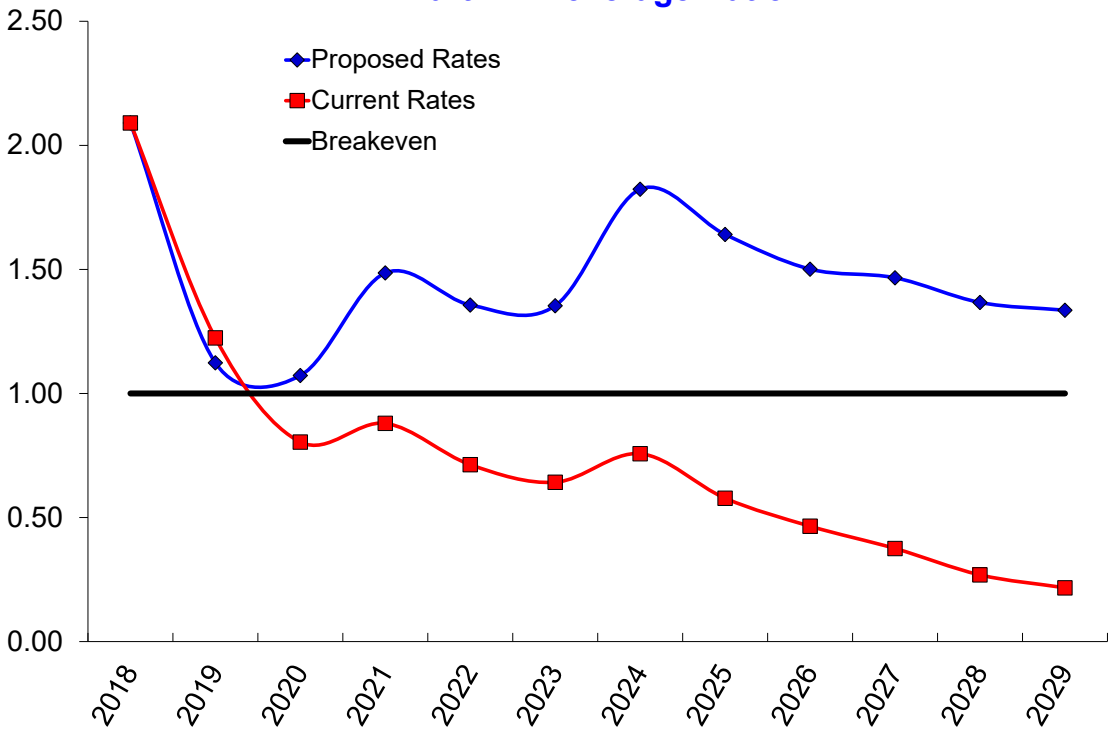


Chart 3 - Residential Users' Bills

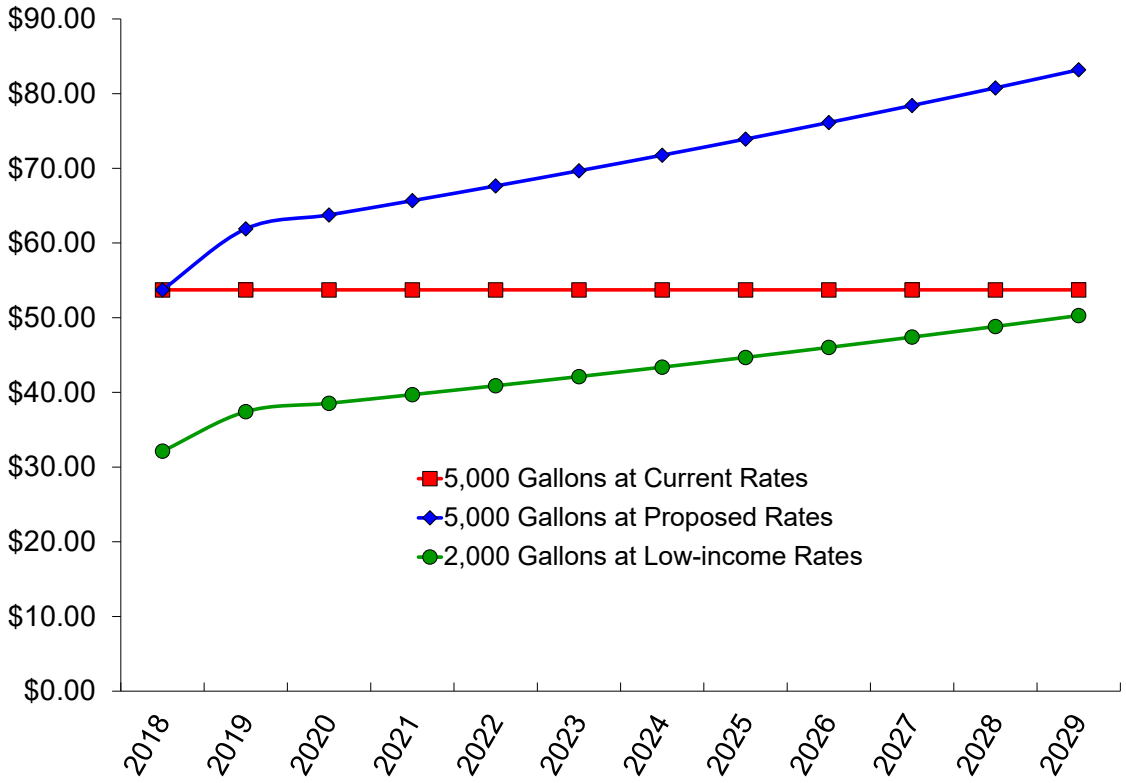


Chart 4 - Affordability

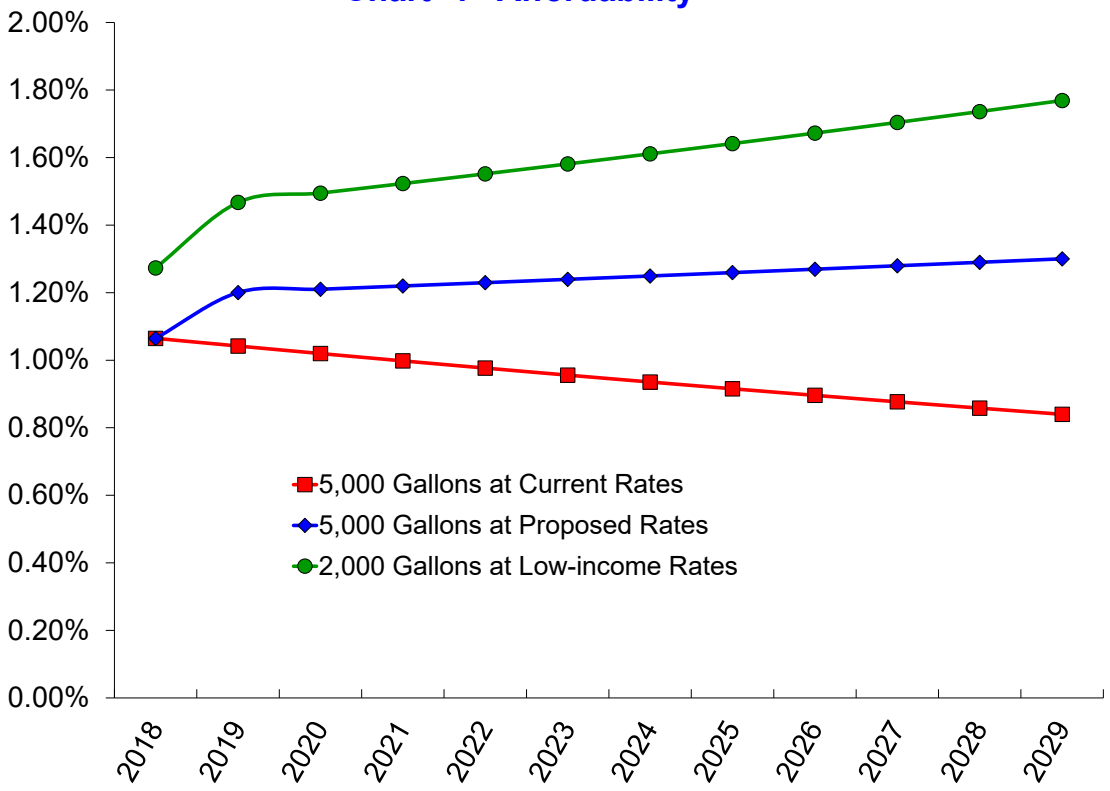


Chart 5 - Working Capital vs Goal

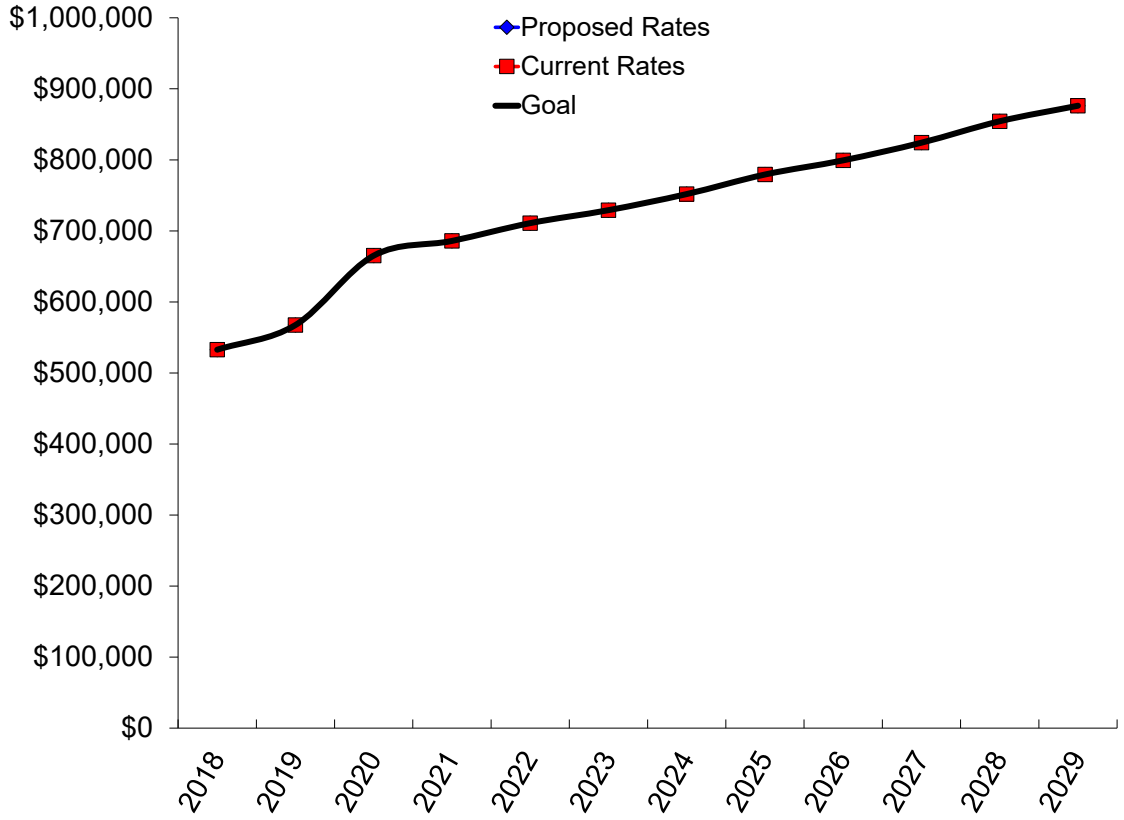


Chart 6 - Value of Cash Assets Before Inflation

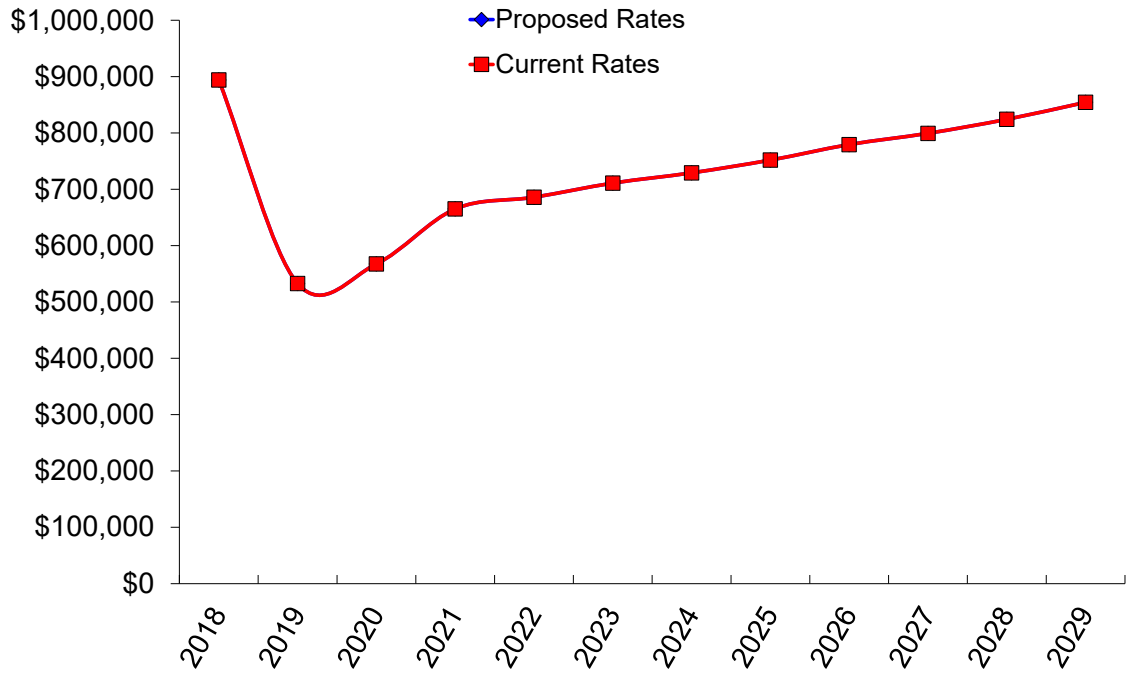


Chart 7 - Value of Cash Assets After Inflation

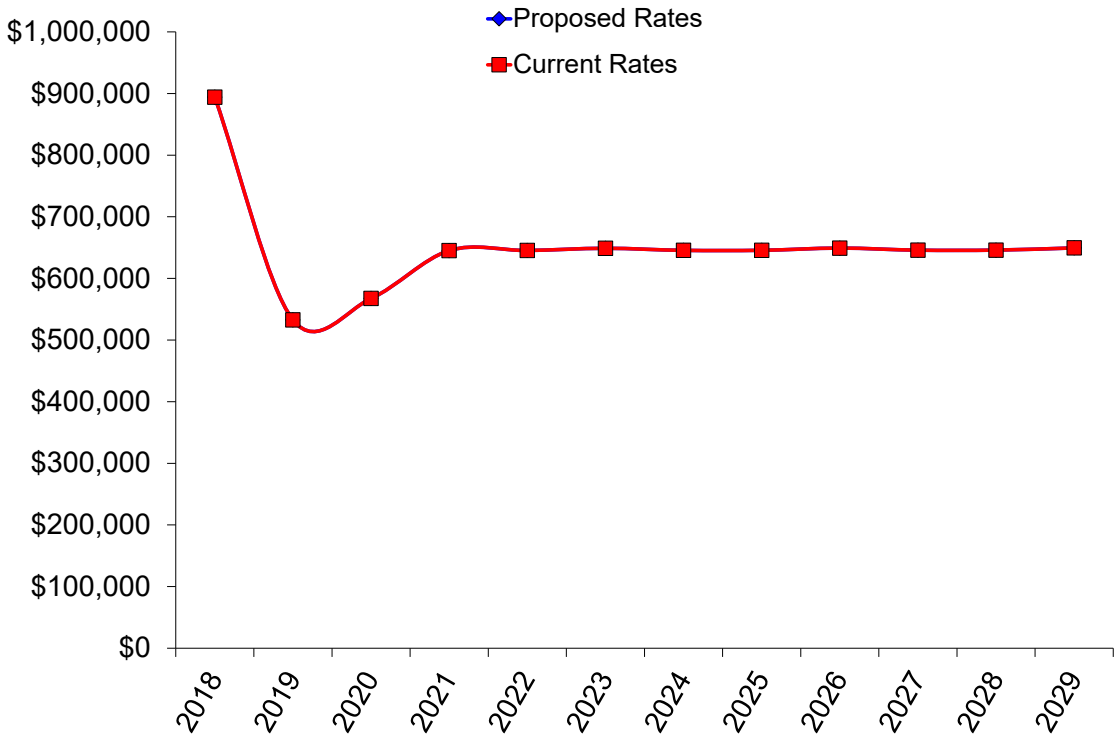
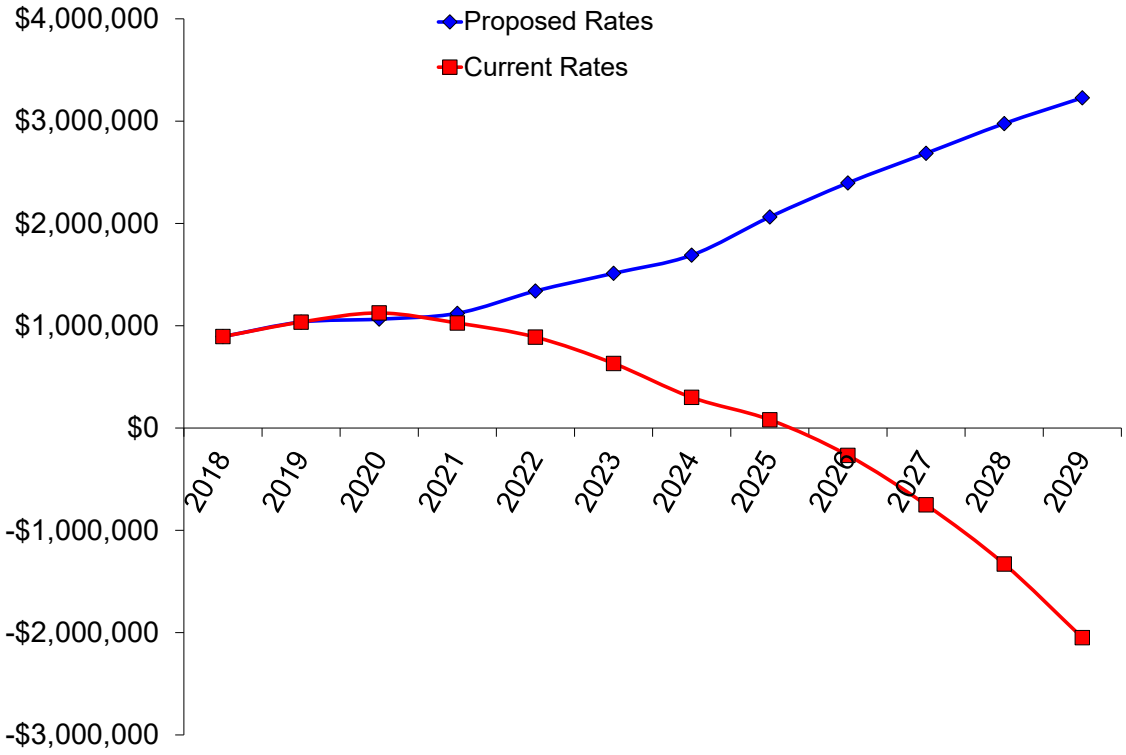


Chart 8 - Sum of All Reserves



Bonner Springs, KS, 2020 Stormwater Rates Model 3

This model calculated cost-to-serve rates.

March 2, 2020

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

Table 1 - Rates

Bonner Springs, KS, 2020 Stormwater Rates Model 3

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

Rates in Effect at End of Test Year

Customer Type, Rate Class or Meter Size	Volume Range Bottom (in ERUs)	Billing Cycle Minimum Charge	Usage Allowance in ERUs	Unit Charge per ERU
Residential, Low Density	1	$3.00	0.000	$0.00
	2	$3.00	0.000	$0.00
	170	$3.00	0.000	$0.00
Residential, Moderate Density	1	$3.00	0.000	$0.00
	2	$3.00	0.000	$0.00
	180	$3.00	0.000	$0.00
Residential, High Density	1	$3.00	0.000	$0.00
	170	$3.00	0.000	$0.00
Commercial	1	$5.50	0.000	$0.00
	170	$5.50	0.000	$0.00
Office	1	$5.50	0.000	$0.00
	170	$5.50	0.000	$0.00
Industrial	1	$5.50	0.000	$0.00
	170	$5.50	0.000	$0.00
Public, Semi-public	1	$5.50	0.000	$0.00
	2	$5.50	0.000	$0.00
	170	$5.50	0.000	$0.00
Parks, Common Areas	1	$5.50	0.000	$0.00
	2	$5.50	0.000	$0.00
	3	$5.50	0.000	$0.00
	170	$5.50	0.000	$0.00
Mixed Use	1	$5.50	0.000	$0.00
	170	$5.50	0.000	$0.00
Agriculture, Vacant	0	$5.50	0.000	$0.00
	1	$5.50	0.000	$0.00
	170	$5.50	0.000	$0.00
Other	1	$5.50	0.000	$0.00
	170	$5.50	0.000	$0.00

Table 2 - Test Year Usage
Bonner Springs, KS, 2020 Stormwater Rates Model 3

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

Residential meter readings per year: 12
Other customer readings per year: 12
Bills per year: 12

Test year = the one-year period being analyzed starts: 1/1/2018
Date this model created: 1/31/2020

Customer, Rate Class or Meter Size	Volume Range Bottom (in ERUs)	Volume Range Top (in ERUs)	Count of Bills With ANY Use in Each Range	Use in Each Range in ERUs	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
Residential, Low Density	1	1	23,580	23,580	0	0	0	0.0%	0.0%
	2	2	23,580	7,817	23,580	54,977	1,965	82.0%	44.6%
			70,740	54,977	23,580	54,977	1,965	82.0%	44.6%
Residential, Moderate Density	1	1	1,068	0	1,068	1,068	89	3.7%	0.9%
	2	2	0	0	0	0	0	0.0%	0.0%
			1,068	0	1,068	1,068	89	3.7%	0.9%
Residential, High Density	1	1	60	60	0	0	0	0.0%	0.0%
	2	2	60	60	0	0	0	0.0%	0.0%
	3	3	60	60	0	0	0	0.0%	0.0%
	4	4	60	60	0	0	0	0.0%	0.0%
	5	5	60	60	0	0	0	0.0%	0.0%
	6	6	60	60	0	0	0	0.0%	0.0%
	7	7	60	60	0	0	0	0.0%	0.0%
	8	8	60	60	0	0	0	0.0%	0.0%
	9	9	60	60	0	0	0	0.0%	0.0%
	10	19	60	600	0	0	0	0.0%	0.0%
	20	29	60	600	0	0	0	0.0%	0.0%
	30	39	60	600	0	0	0	0.0%	0.0%
	40	49	60	14	60	2,414	5	0.2%	2.0%
			840	2,414	60	2,414	5	0.2%	2.0%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in ERUs)	Volume Range Top (in ERUs)	Count of Bills With ANY Use in Each Range	Use in Each Range in ERUs	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
Commercial	1	1	1,272	1,272	0	0	0	0.0%	0.0%
	2	2	1,272	1,272	0	0	0	0.0%	0.0%
	3	3	1,272	1,272	0	0	0	0.0%	0.0%
	4	4	1,272	1,272	0	0	0	0.0%	0.0%
	5	5	1,272	1,272	0	0	0	0.0%	0.0%
	6	6	1,272	1,272	0	0	0	0.0%	0.0%
	7	7	1,272	1,272	0	0	0	0.0%	0.0%
	8	8	1,272	1,272	0	0	0	0.0%	0.0%
	9	9	1,272	1,272	0	0	0	0.0%	0.0%
	10	19	1,272	6,213	1,272	18,933	106	4.4%	15.3%
			13,992	18,933	1,272	18,933	106	4.4%	15.3%
Office	1	1	216	216	0	0	0	0.0%	0.0%
	2	2	216	216	0	0	0	0.0%	0.0%
	3	3	216	105	216	753	18	0.8%	0.6%
			864	753	216	753	18	0.8%	0.6%
Industrial	1	1	648	648	0	0	0	0.0%	0.0%
	2	2	648	648	0	0	0	0.0%	0.0%
	3	3	648	648	0	0	0	0.0%	0.0%
	4	4	648	648	0	0	0	0.0%	0.0%
	5	5	648	648	0	0	0	0.0%	0.0%
	6	6	648	648	0	0	0	0.0%	0.0%
	7	7	648	648	0	0	0	0.0%	0.0%
	8	8	648	648	0	0	0	0.0%	0.0%
	9	9	648	648	0	0	0	0.0%	0.0%
	10	19	648	6,480	0	0	0	0.0%	0.0%
	20	29	648	6,480	0	0	0	0.0%	0.0%
	30	39	648	6,480	0	0	0	0.0%	0.0%
	40	49	648	1,330	648	27,250	54	2.3%	22.1%
			9,072	27,250	648	27,250	54	2.3%	22.1%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in ERUs)	Volume Range Top (in ERUs)	Count of Bills With ANY Use in Each Range	Use in Each Range in ERUs	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
Public, Semi-public	1	1	252	252	0	0	0	0.0%	0.0%
	2	2	252	252	0	0	0	0.0%	0.0%
	3	3	252	252	0	0	0	0.0%	0.0%
	4	4	252	252	0	0	0	0.0%	0.0%
	5	5	252	252	0	0	0	0.0%	0.0%
	6	6	252	252	0	0	0	0.0%	0.0%
	7	7	252	252	0	0	0	0.0%	0.0%
	8	8	252	252	0	0	0	0.0%	0.0%
	9	9	252	252	0	0	0	0.0%	0.0%
	10	19	252	2,203	252	4,723	21	0.9%	3.8%
			2,772	4,723	252	4,723	21	0.9%	3.8%
Parks, Common Areas	1	1	60	60	0	0	0	0.0%	0.0%
	2	2	60	60	0	0	0	0.0%	0.0%
	3	3	60	60	0	0	0	0.0%	0.0%
	4	4	60	60	0	0	0	0.0%	0.0%
	5	5	60	60	0	0	0	0.0%	0.0%
	6	6	60	60	0	0	0	0.0%	0.0%
	7	7	60	60	0	0	0	0.0%	0.0%
	8	8	60	60	0	0	0	0.0%	0.0%
	9	9	60	60	0	0	0	0.0%	0.0%
	10	19	60	600	0	0	0	0.0%	0.0%
	20	29	60	600	0	0	0	0.0%	0.0%
	30	39	60	16	60	1,816	5	0.2%	1.5%
			780	1,816	60	1,816	5	0.2%	1.5%
Mixed Use	1	1	408	408	0	0	0	0.0%	0.0%
	2	2	408	408	0	0	0	0.0%	0.0%
	3	3	408	408	0	0	0	0.0%	0.0%
	4	4	408	408	0	0	0	0.0%	0.0%
	5	5	408	408	0	0	0	0.0%	0.0%
	6	6	408	408	0	0	0	0.0%	0.0%
	7	7	408	408	0	0	0	0.0%	0.0%
	8	8	408	408	0	0	0	0.0%	0.0%
	9	9	408	379	408	4,051	34	1.4%	3.3%
			4,080	4,051	408	4,051	34	1.4%	3.3%

Table 2 - Test Year Usage

Customer, Rate Class or Meter Size	Volume Range Bottom (in ERUs)	Volume Range Top (in ERUs)	Count of Bills With ANY Use in Each Range	Use in Each Range in ERUs	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
Agriculture, Vacant	0	0	12	0	12	0	1	0.0%	0.0%
	1	1	0	0	0	0	0	0.0%	0.0%
			12	0	12	0	1	0.0%	0.0%
Other	1	1	1,188	1,188	0	0	0	0.0%	0.0%
	2	2	1,188	1,188	0	0	0	0.0%	0.0%
	3	3	1,188	1,188	0	0	0	0.0%	0.0%
	4	4	1,188	1,188	0	0	0	0.0%	0.0%
	5	5	1,188	1,188	0	0	0	0.0%	0.0%
	6	6	1,188	234	1,188	7,362	99	4.1%	6.0%
			8,316	7,362	1,188	7,362	99	4.1%	6.0%
		Grand Totals:	112,536	122,279	28,764	123,347	2,397	100%	100%

Table 3 - Operating Incomes and Basic User Data
Bonner Springs, KS, 2020 Stormwater Rates Model 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)

$59,264	Census Bureau estimate of AMHI for the year	2017
$43,234	Census Bureau estimate of AMHI for the year	2000
$16,030	AMHI growth during this time period	
2.18%	Simple annual income growth rate during this time period (used to project incomes into the future)	

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

0	Number of new Stormwater connections made during the test year (Growth)
$0	Average 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 in the last column of that 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 1/1/18	Analysis Year 0 Year Starting 1/1/19	Years Following the Analysis Year (for Which Results Have Been Projected) 1st Year Starting 1/1/20	2nd Year Starting 1/1/21	3rd Year Starting 1/1/22	4th Year Starting 1/1/23	5th Year Starting 1/1/24	6th Year Starting 1/1/25	7th Year Starting 1/1/26	8th Year Starting 1/1/27	9th Year Starting 1/1/28	10th Year Starting 1/1/29
Rate Increases Projected for Future Years	N.A.	N.A.	N.A.	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
				The row above shows the rate at which user charge fees should be increased for each year beyond the initial rate adjustment year. Unless stated otherwise, these should be across-the-board increases to all rates and fees and that should continue until a new rate analysis is done.									
Average Number of Customers	N.A.	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397
Customers Added or Lost (-) Each Year	N.A.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Customer Growth or Loss (-) Rate	N.A.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Actual (Test Year) and Projected Service, in ERUs	N.A.	122,279	122,279	122,279	122,279	122,279	122,279	122,279	122,279	122,279	122,279	122,279	122,279
How User Charge Fees Were Calculated, Accounting for New Customers and Future Rate Increases													
Actual or Calculated Sales Revenues		$96,432	$97,875	$654,280	$686,994	$721,343	$757,410	$795,281	$835,045	$876,797	$920,637	$966,669	$1,015,002
Additional Sales Revenues From New Customers			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Calculated Revenues (User Charge Fees)		$96,432	$97,875	$654,280	$686,994	$721,343	$757,410	$795,281	$835,045	$876,797	$920,637	$966,669	$1,015,002
Operating Incomes													
User Charge Fees (Tables 10, 12, 12B, 15, 15B, 16, 16B)	N.A.	$109,421	$109,940	$734,932	$771,679	$810,263	$850,776	$893,315	$937,980	$984,880	$1,034,123	$1,085,830	$1,140,121
Interest Income	N.A.	$5,010	$5,972	$168	$614	$1,632	$1,719	$1,732	$1,784	$1,879	$1,892	$1,949	$2,053
Fees in lieu of detention	N.A.	$32,442	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Penalties	N.A.	$1,221	$1,233	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200
Cancel Prior Year Encumb	N.A.	$120	$12,750	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Revenue Loss Because Rate Adjustments Made This Number of Months Late	5.0	$0	$0	-$219,455	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Incomes		**$148,215**	**$129,895**	**$516,846**	**$773,493**	**$813,095**	**$853,695**	**$896,247**	**$940,964**	**$987,958**	**$1,037,216**	**$1,088,981**	**$1,143,379**

Table 4 - Operating Costs and Net Income

Bonner Springs, KS, 2020 Stormwater Rates Model 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.)	Inflation/ Deflation (–) Factor	Test Year Starting 1/1/18	Analysis Year 0 Year Starting 1/1/19	Years Following the Analysis Year (for Which Results Have Been Projected) 1st Year Starting 1/1/20	2nd Year Starting 1/1/21	3rd Year Starting 1/1/22	4th Year Starting 1/1/23	5th Year Starting 1/1/24	6th Year Starting 1/1/25	7th Year Starting 1/1/26	8th Year Starting 1/1/27	9th Year Starting 1/1/28	10th Year Starting 1/1/29
Engineering	3.0%	$4,776	$8,436	$10,000	$10,300	$10,609	$10,927	$11,255	$11,593	$11,941	$12,299	$12,668	$13,048
Engineering design	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Pemit Fees	3.0%	$0	$0	$2,000	$2,060	$2,122	$2,185	$2,251	$2,319	$2,388	$2,460	$2,534	$2,610
Printing/Publications Exp	3.0%	$54	$0	$100	$103	$106	$109	$113	$116	$119	$123	$127	$130
Stormwater Samples/Testing	3.0%	$882	$266	$3,000	$3,090	$3,183	$3,278	$3,377	$3,478	$3,582	$3,690	$3,800	$3,914
Stormwater master plan	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Canaan Detention Basin	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Storm Water Improvement Design	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Equipment maintenance/repairs	3.0%	$1,095	$0	$3,000	$3,090	$3,183	$3,278	$3,377	$3,478	$3,582	$3,690	$3,800	$3,914
Collection losses	3.0%	$391	$103	$500	$515	$530	$546	$563	$580	$597	$615	$633	$652
Stormwater System Maintenance	3.0%	$36,027	$16,152	$75,000	$77,250	$79,568	$81,955	$84,413	$86,946	$89,554	$92,241	$95,008	$97,858
Equip. Replacement Parts	3.0%	$39	$0	$3,000	$3,090	$3,183	$3,278	$3,377	$3,478	$3,582	$3,690	$3,800	$3,914
Vehicle fuel/supplies	3.0%	$2,866	$1,841	$3,000	$3,090	$3,183	$3,278	$3,377	$3,478	$3,582	$3,690	$3,800	$3,914
Stormwater repair supplies	3.0%	$0	$68	$3,000	$3,090	$3,183	$3,278	$3,377	$3,478	$3,582	$3,690	$3,800	$3,914
Inlet Box Replacements	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Culvert Pipe Replacements	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
Debt Service	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
RV Stormwater Project	3.0%	$6,775	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
General Fund	3.0%	$0	$0	$20,210	$20,816	$21,441	$22,084	$22,747	$23,429	$24,132	$24,856	$25,601	$26,369
Staffing and Benefits	3.0%	$0	$0	$0	$150,000	$154,500	$159,135	$163,909	$168,826	$173,891	$179,108	$184,481	$190,016
Public Outreach	3.0%	$0	$0	$0	$50,000	$51,500	$53,045	$54,636	$56,275	$57,964	$59,703	$61,494	$63,339
TRANSFER TO DEBT SERVICE	3.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
One-time Reduction of R&R Annuity	0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
One-time Transfer to R&R Reserve	0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Payment to R&R Reserve (Table 7)	0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
User Charge Analysis Services	5.0%	$0	$6,816	$0	$0	$7,514	$0	$0	$8,284	$0	$0	$9,134	$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		**$52,905**	**$33,682**	**$122,810**	**$326,494**	**$343,803**	**$346,378**	**$356,769**	**$375,757**	**$378,496**	**$389,851**	**$410,680**	**$413,593**
Net Income (or Loss)		$95,310	$96,213	$394,036	$446,999	$469,292	$507,317	$539,478	$565,208	$609,462	$647,365	$678,301	$729,785
Working Capital Goal: 50% In Dollars, That is:		$26,452	$16,841	$61,405	$163,247	$171,902	$173,189	$178,385	$187,878	$189,248	$194,926	$205,340	$206,797

Notes: The City currently has only a bare-bones stormwater program. It is being required to improve stormwater performance, so costs will go up dramatically.

Table 5 - Capital Improvement Program (CIP)

Bonner Springs, KS, 2020 Stormwater Rates Model 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
	1/1/18	1/1/19	1/1/20	1/1/21	1/1/22	1/1/23	1/1/24	1/1/25	1/1/26	1/1/27	1/1/28	1/1/29
Planned Spending, Debt-paid Portion of Projects (CIP costs to be funded with loans are shown in this section.)												
Engineering design	$4,776	$2,000	$10,300	$0	$0	$0	$0	$0	$0	$0	$0	$0
Stormwater master plan	$43,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Canaan Detention Basin	$0	$0	$103,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Storm Water Improvement Design	$0	$0	$51,500	$0	$0	$0	$0	$0	$0	$0	$0	$0
Inlet Box Replacements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Culvert Pipe Replacements	$9,208	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Engineering, Mgmt and Contingency at 50% of Following Project Costs	$0	$29,850	$28,737	$366,223	$410,920	$494,661	$529,035	$579,354	$593,968	$583,158	$538,741	$234,581
242 Coronado Rd, Priority Rank 1	$0	$1,200	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
213 Clark St & 212 Emerson, Priority Rank 2	$0	$7,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
326 Pratt Ave., Priority Rank 3	$0	$51,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BIP SW Issues, Priority Rank 4	$0	$0	$7,416	$0	$0	$0	$0	$0	$0	$0	$0	$0
226 Warner Ave, Priority Rank 5	$0	$0	$28,634	$0	$0	$0	$0	$0	$0	$0	$0	$0
322 W Insley Ave (314 & 315 Insley), Priority Rank 6	$0	$0	$21,424	$0	$0	$0	$0	$0	$0	$0	$0	$0
306 N 134th Street (134th St Drainage), Priority Rank 7	$0	$0	$0	$89,540	$0	$0	$0	$0	$0	$0	$0	$0
220 Sheidley Ave, Priority Rank 8	$0	$0	$0	$22,067	$0	$0	$0	$0	$0	$0	$0	$0
14126 Sandusky, Priority Rank 9	$0	$0	$0	$42,966	$0	$0	$0	$0	$0	$0	$0	$0
138th St & Kansas, Priority Rank 10	$0	$0	$0	$24,401	$0	$0	$0	$0	$0	$0	$0	$0
708 Linda Lane, Priority Rank 11	$0	$0	$0	$46,892	$0	$0	$0	$0	$0	$0	$0	$0
Archer Rd Culvert, Priority Rank 12	$0	$0	$0	$34,161	$0	$0	$0	$0	$0	$0	$0	$0
13122 Riverview Ave, Priority Rank 13	$0	$0	$0	$20,688	$0	$0	$0	$0	$0	$0	$0	$0
113 McDaniel St (McDanield-Arthur P2), Priority Rank 14	$0	$0	$0	$129,324	$0	$0	$0	$0	$0	$0	$0	$0
510 N 118th St, Priority Rank 15	$0	$0	$0	$33,418	$0	$0	$0	$0	$0	$0	$0	$0
13848 Harbor Dr, Priority Rank 16	$0	$0	$0	$16,762	$0	$0	$0	$0	$0	$0	$0	$0
Clark Drainage P6, Priority Rank 17	$0	$0	$0	$76,173	$0	$0	$0	$0	$0	$0	$0	$0
128 N Garfield Ave (MCDanield-Arthur P1), Priority Rank 18	$0	$0	$0	$196,054	$0	$0	$0	$0	$0	$0	$0	$0
236 Armour St (Pratt & Neconi), Priority Rank 19	$0	$0	$0	$0	$181,830	$0	$0	$0	$0	$0	$0	$0
801 Alcutt Ave, Priority Rank 20	$0	$0	$0	$0	$73,213	$0	$0	$0	$0	$0	$0	$0
305 N Garfield Ave, Priority Rank 21	$0	$0	$0	$0	$70,809	$0	$0	$0	$0	$0	$0	$0
137th St & Morse, Priority Rank 22	$0	$0	$0	$0	$109,710	$0	$0	$0	$0	$0	$0	$0
137th St & Morse, Priority Rank 22	$0	$0	$0	$0	$109,710	$0	$0	$0	$0	$0	$0	$0
431 N Blue Grass Dr (Tiblow Apts), Priority Rank 23	$0	$0	$0	$0	$26,990	$0	$0	$0	$0	$0	$0	$0
13341 Metropolitan Ave, Priority Rank 24	$0	$0	$0	$0	$32,563	$0	$0	$0	$0	$0	$0	$0
233 Tiblow Ln, Priority Rank 25	$0	$0	$0	$0	$61,958	$0	$0	$0	$0	$0	$0	$0
Lakewood Curb Inlets, Priority Rank 26	$0	$0	$0	$0	$127,849	$0	$0	$0	$0	$0	$0	$0
138th St Stormwater Channels, Priority Rank 27	$0	$0	$0	$0	$136,919	$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
	1/1/18	1/1/19	1/1/20	1/1/21	1/1/22	1/1/23	1/1/24	1/1/25	1/1/26	1/1/27	1/1/28	1/1/29
Garfield Ave Culvert, Priority Rank 28	$0	$0	$0	$0	$0	$218,574	$0	$0	$0	$0	$0	$0
830 S. 132nd, Priority Rank 29	$0	$0	$0	$0	$0	$54,024	$0	$0	$0	$0	$0	$0
132nd St & Kansas, Priority Rank 30	$0	$0	$0	$0	$0	$139,338	$0	$0	$0	$0	$0	$0
Clark Drainage P1, Priority Rank 31	$0	$0	$0	$0	$0	$577,386	$0	$0	$0	$0	$0	$0
Clark Drainage P2, Priority Rank 32	$0	$0	$0	$0	$0	$0	$1,058,069	$0	$0	$0	$0	$0
Clark Drainage P7, Priority Rank 33	$0	$0	$0	$0	$0	$0	$0	$0	$539,054	$0	$0	$0
Clark Drainage P3 - 300 Cornell, Priority Rank 34	$0	$0	$0	$0	$0	$0	$0	$1,158,708	$0	$0	$0	$0
Loring Bridge Scour Protection, Priority Rank 35	$0	$0	$0	$0	$0	$0	$0	$0	$130,121	$0	$0	$0
Spring Creek Erosion at Lion's Park, Priority Rank 36	$0	$0	$0	$0	$0	$0	$0	$0	$206,619	$0	$0	$0
121st St & K32, Priority Rank 37	$0	$0	$0	$0	$0	$0	$0	$0	$312,142	$0	$0	$0
Canaan Center Detention, Priority Rank 38	$0	$0	$0	$0	$0	$0	$0	$0	$0	$194,703	$0	$0
Clark Drainage P4 - 403 Murphy, Priority Rank 39	$0	$0	$0	$0	$0	$0	$0	$0	$0	$971,613	$0	$0
Clark Drainage P5 - 315 Clark, Priority Rank 40	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,077,482	$0
Spring Creek - Metropolitan to Morse, Priority Rank 41	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$291,361
South Deerfield Drive, Priority Rank 42	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$177,800
Loan Closing Costs, Estimated at: 2.5%	$1,425	$2,289	$6,464	$29,139	$36,674	$41,756	$45,997	$51,883	$54,788	$55,404	$52,720	$23,644
Total Debt-paid Portion of Projects	$58,409	$93,839	$257,475	$1,127,807	$1,379,144	$1,525,739	$1,633,101	$1,789,946	$1,836,691	$1,804,877	$1,668,943	$727,386
Debt Repayment												
Existing Debt Payments (Following is debt that was initiated during the test year or earlier.)												
Debt Service (GO Bonds)	$19,813	$80,179	$81,900	$79,686	$78,608	$78,044	$78,774	$77,661	$77,948	$78,768	$77,426	$77,788
New Debt Payments (Following are payments for projects to be paid with new debt. It is assumed these will be loan/lease-financed for a term of: 20 years at a 2.0% interest rate.)												
Loan Originated in Test Year		$3,572	$3,572	$3,572	$3,572	$3,572	$3,572	$3,572	$3,572	$3,572	$3,572	$3,572
Loan Originated in Analysis (This) Year			$5,739	$5,739	$5,739	$5,739	$5,739	$5,739	$5,739	$5,739	$5,739	$5,739
Loan Originated in 1st Year				$15,746	$15,746	$15,746	$15,746	$15,746	$15,746	$15,746	$15,746	$15,746
Loan Originated in 2nd Year					$68,973	$68,973	$68,973	$68,973	$68,973	$68,973	$68,973	$68,973
Loan Originated in 3rd Year						$84,344	$84,344	$84,344	$84,344	$84,344	$84,344	$84,344
Loan Originated in 4th Year							$93,309	$93,309	$93,309	$93,309	$93,309	$93,309
Loan Originated in 5th Year								$99,875	$99,875	$99,875	$99,875	$99,875
Loan Originated in 6th Year									$109,467	$109,467	$109,467	$109,467
Loan Originated in 7th Year										$112,326	$112,326	$112,326
Loan Originated in 8th Year											$110,380	$110,380
Loan Originated in 9th Year												$102,067
Total Debt Payments	$19,813	$83,751	$91,211	$104,744	$172,638	$256,418	$350,457	$449,220	$558,974	$672,120	$781,158	$883,587
Total CIP-related Payouts	**$78,222**	**$177,590**	**$348,686**	**$1,232,551**	**$1,551,782**	**$1,782,157**	**$1,983,558**	**$2,239,166**	**$2,395,665**	**$2,476,997**	**$2,450,101**	**$1,610,973**
(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
	1/1/18	1/1/19	1/1/20	1/1/21	1/1/22	1/1/23	1/1/24	1/1/25	1/1/26	1/1/27	1/1/28	1/1/29
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	$263,048	$290,382	$554,450	$805,952	$1,110,070	$1,381,883	$1,593,346	$1,731,707	$1,815,459	$1,821,336	$1,744,491
Working Capital Transferred in	$282,861	$105,824	$349,472	$345,156	$460,637	$506,030	$534,282	$555,714	$608,092	$641,687	$667,886	$728,329
Debt and CIP Reserves Interest Earned (or Paid)	$0	$5,261	$5,808	$11,089	$16,119	$22,201	$27,638	$31,867	$34,634	$36,309	$36,427	$34,890
Internal Income Source (Name it)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Available Internal Funds	$282,861	$374,133	$645,661	$910,695	$1,282,708	$1,638,301	$1,943,803	$2,180,927	$2,374,433	$2,493,456	$2,525,649	$2,507,709
Grant and Loan Proceeds (External Funds)												
Loan Originated in Test Year	$58,409	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in Analysis (This) Year		$93,839	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 1st Year			$257,475	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 2nd Year				$1,127,807	$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 3rd Year					$1,379,144	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 4th Year						$1,525,739	$0	$0	$0	$0	$0	$0
Loan Originated in 5th Year							$1,633,101	$0	$0	$0	$0	$0
Loan Originated in 6th Year								$1,789,946	$0	$0	$0	$0
Loan Originated in 7th Year									$1,836,691	$0	$0	$0
Loan Originated in 8th Year										$1,804,877	$0	$0
Loan Originated in 9th Year											$1,668,943	$0
Loan Originated in 10th Year												$727,386
Total Available External Funds	$58,409	$93,839	$257,475	$1,127,807	$1,379,144	$1,525,739	$1,633,101	$1,789,946	$1,836,691	$1,804,877	$1,668,943	$727,386
Total Available Funds	**$341,269**	**$467,972**	**$903,136**	**$2,038,503**	**$2,661,852**	**$3,164,041**	**$3,576,904**	**$3,970,873**	**$4,211,124**	**$4,298,333**	**$4,194,591**	**$3,235,095**
Outcomes	(This CIP spending and funding plan will result in the following cash needs and ending balances each year.)											
Total Available Funds	**$341,269**	**$467,972**	**$903,136**	**$2,038,503**	**$2,661,852**	**$3,164,041**	**$3,576,904**	**$3,970,873**	**$4,211,124**	**$4,298,333**	**$4,194,591**	**$3,235,095**
Total CIP-related Payouts	**$78,222**	**$177,590**	**$348,686**	**$1,232,551**	**$1,551,782**	**$1,782,157**	**$1,983,558**	**$2,239,166**	**$2,395,665**	**$2,476,997**	**$2,450,101**	**$1,610,973**
Debt and CIP Reserves Ending Balances	**$263,048**	**$290,382**	**$554,450**	**$805,952**	**$1,110,070**	**$1,381,883**	**$1,593,346**	**$1,731,707**	**$1,815,459**	**$1,821,336**	**$1,744,491**	**$1,624,122**

Notes: Vast improvements must be made to the stormwater management facilities. It was assumed all will be paid with long-term, low-interest loans. After 2020, projects were distributed as evenly as practical across the remaining 10 years of the modeling period.

Table 6 - Equipment Replacement Schedule - Detailed

Bonner Springs, KS, 2020 Stormwater Rates Model 3

Year Beginning	R&R costs were included in the "Stormwater System Maintenance" cost item in Table 4			Total Annual Replacement Costs
1/1/18	$0	$0	$0	$0
1/1/19	$0	$0	$0	$0
1/1/20	$0	$0	$0	$0
1/1/21	$0	$0	$0	$0
1/1/22	$0	$0	$0	$0
1/1/23	$0	$0	$0	$0
1/1/24	$0	$0	$0	$0
1/1/25	$0	$0	$0	$0
1/1/26	$0	$0	$0	$0
1/1/27	$0	$0	$0	$0
1/1/28	$0	$0	$0	$0
1/1/29	$0	$0	$0	$0
1/1/30	$0	$0	$0	$0
1/1/31	$0	$0	$0	$0
1/1/32	$0	$0	$0	$0
1/1/33	$0	$0	$0	$0
1/1/34	$0	$0	$0	$0
1/1/35	$0	$0	$0	$0
1/1/36	$0	$0	$0	$0
1/1/37	$0	$0	$0	$0
1/1/38	$0	$0	$0	$0
1/1/39	$0	$0	$0	$0
1/1/40	$0	$0	$0	$0
1/1/41	$0	$0	$0	$0
1/1/42	$0	$0	$0	$0

Table 8 - Average Cost Classification

Bonner Springs, KS, 2020 Stormwater Rates Model 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: 1/1/2023 through 12/31/2023

Cost Items	Cost During Rate Structure Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
Engineering	$10,927	100.0%	0.0%	$10,927	$0
Engineering design	Table 5	0.0%	100.0%	$0	$0
Pemit Fees	$2,185	100.0%	0.0%	$2,185	$0
Printing/Publications Exp	$109	100.0%	0.0%	$109	$0
Stormwater Samples/Testing	$3,278	100.0%	0.0%	$3,278	$0
Stormwater master plan	Table 5	100.0%	0.0%	$0	$0
Canaan Detention Basin	Table 5	0.0%	100.0%	$0	$0
Storm Water Improvement Design	Table 5	0.0%	100.0%	$0	$0
Equipment maintenance/repairs	$3,278	100.0%	0.0%	$3,278	$0
Collection losses	$546	100.0%	0.0%	$546	$0
Stormwater System Maintenance	$81,955	100.0%	0.0%	$81,955	$0
Equip. Replacement Parts	$3,278	100.0%	0.0%	$3,278	$0
Vehicle fuel/supplies	$3,278	100.0%	0.0%	$3,278	$0
Stormwater repair supplies	$3,278	100.0%	0.0%	$3,278	$0
Inlet Box Replacements	Table 5	100.0%	0.0%	$0	$0
Culvert Pipe Replacements	Table 5	100.0%	0.0%	$0	$0
Debt Service	Table 5	0.0%	100.0%	$0	$0
RV Stormwater Project	$0	0.0%	100.0%	$0	$0
General Fund	$22,084	100.0%	0.0%	$22,084	$0
Annual Payment to R&R Reserve (Table 7)	$0	0.0%	100.0%	$0	$0
User Charge Analysis Services	$0	100.0%	0.0%	$0	$0
Total CIP-related Payouts	$1,782,157	10.0%	90.0%	$178,216	$1,603,941
Grand Total Costs, Weighted Avg Percentages	$2,128,535	24.6%	75.4%	$524,594	$1,603,941
		100%		$2,128,535	

Bases for Cost to Serve Rate Structure	
Number Customers During Year Defined Above	2,397
Billed Volume, in ERUs, During Year Defined Above	122,279
Average Fixed Cost per User per Month During Year Defined Above	$18.24
Average Variable Cost to Produce per ERU During Year Defined Above	$13.12
ERUs per Billing Cycle Used by Average Residential Customer	2

Table 10 - Initial Rate Adjustments and Resulting Revenues

Bonner Springs, KS, 2020 Stormwater Rates Model 3

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

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

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

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in ERUs)	Volume Range Top (in ERUs)	Sales This Year at Current Rates	Basic Minimum Charge	New Usage Allowance in ERUs	New Unit Charge per ERU	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
Residential, Low Density	0	0	$0	$5.34	0.000	$3.84	$248	$248
	1	1	$0	$5.34	0.000	$3.84	$248	$248
	2	2	$70,546	$5.34	0.000	$3.84	$427	$70,973
Residential, Moderate Density	1	1	$3,195	$5.34	0.000	$3.84	$16	$3,211
	2	2	$0	$5.34	0.000	$3.84	$0	$0
	3	3	$0	$5.34	0.000	$3.84	$0	$0
Residential, High Density	0	0	$0	$5.34	0.000	$3.84	$1	$1
	1	1	$0	$5.34	0.000	$3.84	$1	$1
	2	2	$0	$5.34	0.000	$3.84	$1	$1
	3	3	$0	$5.34	0.000	$3.84	$1	$1
	4	4	$0	$5.34	0.000	$3.84	$1	$1
	5	5	$0	$5.34	0.000	$3.84	$1	$1
	6	6	$0	$5.34	0.000	$3.84	$1	$1
	7	7	$0	$5.34	0.000	$3.84	$1	$1
	8	8	$0	$5.34	0.000	$3.84	$1	$1
	9	9	$0	$5.34	0.000	$3.84	$1	$1
	10	19	$0	$5.34	0.000	$3.84	$6	$6
	20	29	$0	$5.34	0.000	$3.84	$6	$6
	30	39	$0	$5.34	0.000	$3.84	$6	$6
	40	49	$180	$5.34	0.000	$3.84	$1	$181
Commercial	0	0	$0	$5.34	0.000	$3.84	$13	$13
	1	1	$0	$5.34	0.000	$3.84	$13	$13
	2	2	$0	$5.34	0.000	$3.84	$13	$13
	3	3	$0	$5.34	0.000	$3.84	$13	$13
	4	4	$0	$5.34	0.000	$3.84	$13	$13
	5	5	$0	$5.34	0.000	$3.84	$13	$13
	6	6	$0	$5.34	0.000	$3.84	$13	$13
	7	7	$0	$5.34	0.000	$3.84	$13	$13
	8	8	$0	$5.34	0.000	$3.84	$13	$13
	9	9	$0	$5.34	0.000	$3.84	$13	$13
	10	19	$6,977	$5.34	0.000	$3.84	$84	$7,061

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in ERUs)	Volume Range Top (in ERUs)	Sales This Year at Current Rates	Basic Minimum Charge	New Usage Allowance in ERUs	New Unit Charge per ERU	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
Office	0	0	$0	$5.34	0.000	$3.84	$2	$2
	1	1	$0	$5.34	0.000	$3.84	$2	$2
	2	2	$0	$5.34	0.000	$3.84	$2	$2
	3	3	$1,185	$5.34	0.000	$3.84	$4	$1,189
Industrial	0	0	$0	$5.34	0.000	$3.84	$7	$7
	1	1	$0	$5.34	0.000	$3.84	$7	$7
	2	2	$0	$5.34	0.000	$3.84	$7	$7
	3	3	$0	$5.34	0.000	$3.84	$7	$7
	4	4	$0	$5.34	0.000	$3.84	$7	$7
	5	5	$0	$5.34	0.000	$3.84	$7	$7
	6	6	$0	$5.34	0.000	$3.84	$7	$7
	7	7	$0	$5.34	0.000	$3.84	$7	$7
	8	8	$0	$5.34	0.000	$3.84	$7	$7
	9	9	$0	$5.34	0.000	$3.84	$7	$7
	10	19	$0	$5.34	0.000	$3.84	$68	$68
	20	29	$0	$5.34	0.000	$3.84	$68	$68
	30	39	$0	$5.34	0.000	$3.84	$68	$68
	40	49	$3,554	$5.34	0.000	$3.84	$23	$3,578
Public, Semi-public	0	0	$0	$5.34	0.000	$3.84	$3	$3
	1	1	$0	$5.34	0.000	$3.84	$3	$3
	2	2	$0	$5.34	0.000	$3.84	$3	$3
	3	3	$0	$5.34	0.000	$3.84	$3	$3
	4	4	$0	$5.34	0.000	$3.84	$3	$3
	5	5	$0	$5.34	0.000	$3.84	$3	$3
	6	6	$0	$5.34	0.000	$3.84	$3	$3
	7	7	$0	$5.34	0.000	$3.84	$3	$3
	8	8	$0	$5.34	0.000	$3.84	$3	$3
	9	9	$0	$5.34	0.000	$3.84	$3	$3
	10	19	$1,382	$5.34	0.000	$3.84	$27	$1,409

Table 10 - Initial Rate Adjustments and Resulting Revenues

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in ERUs)	Volume Range Top (in ERUs)	Sales This Year at Current Rates	Basic Minimum Charge	New Usage Allowance in ERUs	New Unit Charge per ERU	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
Parks, Common Areas	0	0	$0	$5.34	0.000	$3.84	$1	$1
	1	1	$0	$5.34	0.000	$3.84	$1	$1
	2	2	$0	$5.34	0.000	$3.84	$1	$1
	3	3	$0	$5.34	0.000	$3.84	$1	$1
	4	4	$0	$5.34	0.000	$3.84	$1	$1
	5	5	$0	$5.34	0.000	$3.84	$1	$1
	6	6	$0	$5.34	0.000	$3.84	$1	$1
	7	7	$0	$5.34	0.000	$3.84	$1	$1
	8	8	$0	$5.34	0.000	$3.84	$1	$1
	9	9	$0	$5.34	0.000	$3.84	$1	$1
	10	19	$0	$5.34	0.000	$3.84	$6	$6
	20	29	$0	$5.34	0.000	$3.84	$6	$6
	30	39	$329	$5.34	0.000	$3.84	$1	$330
Mixed Use	0	0	$0	$5.34	0.000	$3.84	$4	$4
	1	1	$0	$5.34	0.000	$3.84	$4	$4
	2	2	$0	$5.34	0.000	$3.84	$4	$4
	3	3	$0	$5.34	0.000	$3.84	$4	$4
	4	4	$0	$5.34	0.000	$3.84	$4	$4
	5	5	$0	$5.34	0.000	$3.84	$4	$4
	6	6	$0	$5.34	0.000	$3.84	$4	$4
	7	7	$0	$5.34	0.000	$3.84	$4	$4
	8	8	$0	$5.34	0.000	$3.84	$4	$4
	9	9	$2,238	$5.34	0.000	$3.84	$10	$2,248
Agriculture, Vacant	0	0	$66	$5.34	0.000	$3.84	$0	$66
	1	1	$0	$5.34	0.000	$3.84	$0	$0
Other	0	0	$0	$5.34	0.000	$3.84	$12	$12
	1	1	$0	$5.34	0.000	$3.84	$12	$12
	2	2	$0	$5.34	0.000	$3.84	$12	$12
	3	3	$0	$5.34	0.000	$3.84	$12	$12
	4	4	$0	$5.34	0.000	$3.84	$12	$12
	5	5	$0	$5.34	0.000	$3.84	$12	$12
	6	6	$6,516	$5.34	0.000	$3.84	$20	$6,536
Total Rate Revenue at Current Rates			$96,168	Total Rate Revenue at Modeled Rates			$1,707	
						Total Blended Rate Revenues for the Year		$97,875

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 17 - Financial Capacity Indicators and Reserves

Bonner Springs, KS, 2020 Stormwater Rates Model 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 1/1/18	0 Year Starting 1/1/19	1st Year Starting 1/1/20	2nd Year Starting 1/1/21	3rd Year Starting 1/1/22	4th Year Starting 1/1/23	5th Year Starting 1/1/24	6th Year Starting 1/1/25	7th Year Starting 1/1/26	8th Year Starting 1/1/27	9th Year Starting 1/1/28	10th Year Starting 1/1/29
Customary Affordability Index: Monthly Bill for a Two ERU Residential Customer in Low-density Housing	$3.00	$13.02	$13.67	$14.35	$15.07	$15.82	$16.62	$17.45	$18.32	$19.24	$20.20	$21.21
AMHI Within Service Area	$60,557	$61,877	$63,227	$64,606	$66,015	$67,455	$68,926	$70,429	$71,965	$73,535	$75,139	$76,777
Affordability Index: Current Rates First Column, Modeled Rates After That	0.06%	0.25%	0.26%	0.27%	0.27%	0.28%	0.29%	0.30%	0.31%	0.31%	0.32%	0.33%

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 not consider awarding grants if this indicator is less than 1.5 to 2.0%.

Low-income, Low-volume Affordability Index: Monthly Bill for a One ERU Residential Customer in Moderate-density Housing, Earning One-half the Median Income	$3.00	$9.18	$9.64	$10.12	$10.63	$11.16	$11.72	$12.30	$12.92	$13.56	$14.24	$14.95
Income at One-half the AMHI and Rising at One-half the Rate Above	$30,278	$30,608	$30,942	$31,280	$31,621	$31,966	$32,314	$32,667	$33,023	$33,383	$33,747	$34,115
Affordability for Low-income, Low-volume: Current Rates First Column, Modeled Rates After That	0.12%	0.36%	0.37%	0.39%	0.40%	0.42%	0.44%	0.45%	0.47%	0.49%	0.51%	0.53%

This additional indicator of affordability assumes a residential customer with income at one-half of 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.

Estimated Operating Ratio: Current Rates First Column, Modeled Rates After That	2.80	3.86	4.21	2.37	2.37	2.46	2.51	2.50	2.61	2.66	2.65	2.76

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 the OR implies.

Estimated Coverage Ratio: Current Rates First Column, Modeled Rates After That	14.28	1.26	3.83	3.30	2.67	1.97	1.52	1.24	1.09	0.95	0.85	0.82

Coverage Ratio (CR) goes to the ability of the utility to pay its debt payments out of current incomes. OR applies only to years with debt service. 1.0 is break even. Generally, the CR should be at least 1.25. Note: If the utility has or will have reserves (shown below,) it has more ability to make debt payments than the CR implies.

Reserves	Balance Ending on 12/31/17	Balance Ending on 12/31/18	Balance Ending on 12/31/19	Balance Ending on 12/31/20	Balance Ending on 12/31/21	Balance Ending on 12/31/22	Balance Ending on 12/31/23	Balance Ending on 12/31/24	Balance Ending on 12/31/25	Balance Ending on 12/31/26	Balance Ending on 12/31/27	Balance Ending on 12/31/28	Balance Ending on 12/31/29
Cash and Cash Equivalents	$214,003	$26,452	$16,841	$61,405	$163,247	$171,902	$173,189	$178,385	$187,878	$189,248	$194,926	$205,340	$206,797
Other Liquid Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Undedicated Cash Assets	$214,003	$26,452	$16,841	$61,405	$163,247	$171,902	$173,189	$178,385	$187,878	$189,248	$194,926	$205,340	$206,797
Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	$214,003	$26,452	$16,841	$59,563	$153,599	$156,890	$153,323	$153,185	$156,497	$152,909	$152,772	$156,106	$157,213
Repair & Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt and CIP Reserves	$0	$263,048	$290,382	$554,450	$805,952	$1,110,070	$1,381,883	$1,593,346	$1,731,707	$1,815,459	$1,821,336	$1,744,491	$1,624,122
Sum of All Reserves	$214,003	$289,500	$307,223	$615,855	$969,199	$1,281,972	$1,555,072	$1,771,731	$1,919,586	$2,004,707	$2,016,261	$1,949,831	$1,830,919

Table 18 - Bills Before and After Rate Adjustments

Bonner Springs, KS, 2020 Stormwater Rates Model 3

Revenue increase to be generated by the modeled rates 546.2%

If applicable, the revenue increase above includes meter size-based minimum charges calculated in Table 15. If rate classes shown below do not include meter size, the modeled bills below do not include those 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	ERUs of Use	Customers at or Above This Volume But Below the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
Residential, Low Density	2	1,965	1,965	1,965	$3.00	$13.02	$10.02
Residential, Moderate Density	1	89	89	89	$3.00	$9.18	$6.18
Residential, High Density	1	0	0	5	$3.00	$9.18	$6.18
	2	0	0	5	$3.00	$13.02	$10.02
	3	0	0	5	$3.00	$16.86	$13.86
	4	0	0	5	$3.00	$20.70	$17.70
	5	0	0	5	$3.00	$24.54	$21.54
	6	0	0	5	$3.00	$28.38	$25.38
	7	0	0	5	$3.00	$32.22	$29.22
	8	0	0	5	$3.00	$36.06	$33.06
	9	0	0	5	$3.00	$39.90	$36.90
	10	0	0	5	$3.00	$43.74	$40.74
	20	0	0	5	$3.00	$82.14	$79.14
	30	0	0	5	$3.00	$120.54	$117.54
	40	5	5	5	$3.00	$158.94	$155.94
Commercial	1	0	0	106	$5.50	$9.18	$3.68
	2	0	0	106	$5.50	$13.02	$7.52
	3	0	0	106	$5.50	$16.86	$11.36
	4	0	0	106	$5.50	$20.70	$15.20
	5	0	0	106	$5.50	$24.54	$19.04
	6	0	0	106	$5.50	$28.38	$22.88
	7	0	0	106	$5.50	$32.22	$26.72
	8	0	0	106	$5.50	$36.06	$30.56
	9	0	0	106	$5.50	$39.90	$34.40
	10	106	106	106	$5.50	$43.74	$38.24
Office	1	0	0	18	$5.50	$9.18	$3.68
	2	0	0	18	$5.50	$13.02	$7.52
	3	18	18	18	$5.50	$16.86	$11.36

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	ERUs of Use	Customers at or Above This Volume But Below the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
Industrial	1	0	0	54	$5.50	$9.18	$3.68
	2	0	0	54	$5.50	$13.02	$7.52
	3	0	0	54	$5.50	$16.86	$11.36
	4	0	0	54	$5.50	$20.70	$15.20
	5	0	0	54	$5.50	$24.54	$19.04
	6	0	0	54	$5.50	$28.38	$22.88
	7	0	0	54	$5.50	$32.22	$26.72
	8	0	0	54	$5.50	$36.06	$30.56
	9	0	0	54	$5.50	$39.90	$34.40
	10	0	0	54	$5.50	$43.74	$38.24
	20	0	0	54	$5.50	$82.14	$76.64
	30	0	0	54	$5.50	$120.54	$115.04
	40	54	54	54	$5.50	$158.94	$153.44
Public, Semi-public	1	0	0	21	$5.50	$9.18	$3.68
	2	0	0	21	$5.50	$13.02	$7.52
	3	0	0	21	$5.50	$16.86	$11.36
	4	0	0	21	$5.50	$20.70	$15.20
	5	0	0	21	$5.50	$24.54	$19.04
	6	0	0	21	$5.50	$28.38	$22.88
	7	0	0	21	$5.50	$32.22	$26.72
	8	0	0	21	$5.50	$36.06	$30.56
	9	0	0	21	$5.50	$39.90	$34.40
	10	21	21	21	$5.50	$43.74	$38.24
Parks, Common Areas	1	0	0	5	$5.50	$9.18	$3.68
	2	0	0	5	$5.50	$13.02	$7.52
	3	0	0	5	$5.50	$16.86	$11.36
	4	0	0	5	$5.50	$20.70	$15.20
	5	0	0	5	$5.50	$24.54	$19.04
	6	0	0	5	$5.50	$28.38	$22.88
	7	0	0	5	$5.50	$32.22	$26.72
	8	0	0	5	$5.50	$36.06	$30.56
	9	0	0	5	$5.50	$39.90	$34.40
	10	0	0	5	$5.50	$43.74	$38.24
	20	0	0	5	$5.50	$82.14	$76.64
	30	5	5	5	$5.50	$120.54	$115.04

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	ERUs of Use	Customers at or Above This Volume But Below the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
Mixed Use	1	0	0	34	$5.50	$9.18	$3.68
	2	0	0	34	$5.50	$13.02	$7.52
	3	0	0	34	$5.50	$16.86	$11.36
	4	0	0	34	$5.50	$20.70	$15.20
	5	0	0	34	$5.50	$24.54	$19.04
	6	0	0	34	$5.50	$28.38	$22.88
	7	0	0	34	$5.50	$32.22	$26.72
	8	0	0	34	$5.50	$36.06	$30.56
	9	34	34	34	$5.50	$39.90	$34.40
Agriculture, Vacant	1	0	1	0	$5.50	$9.18	$3.68
Other	1	0	0	99	$5.50	$9.18	$3.68
	2	0	0	99	$5.50	$13.02	$7.52
	3	0	0	99	$5.50	$16.86	$11.36
	4	0	0	99	$5.50	$20.70	$15.20
	5	0	0	99	$5.50	$24.54	$19.04
	6	99	99	99	$5.50	$28.38	$22.88

Chart 1 - Operating Ratio

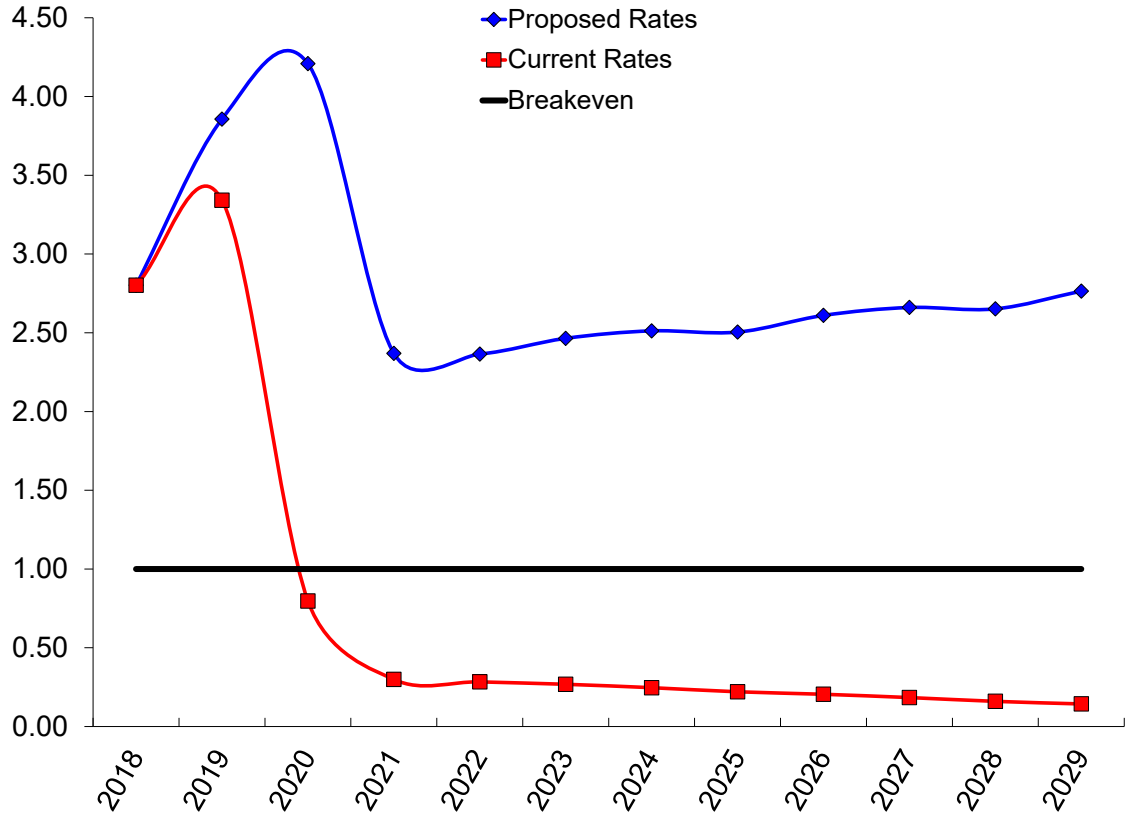

Chart 2 - Coverage Ratio

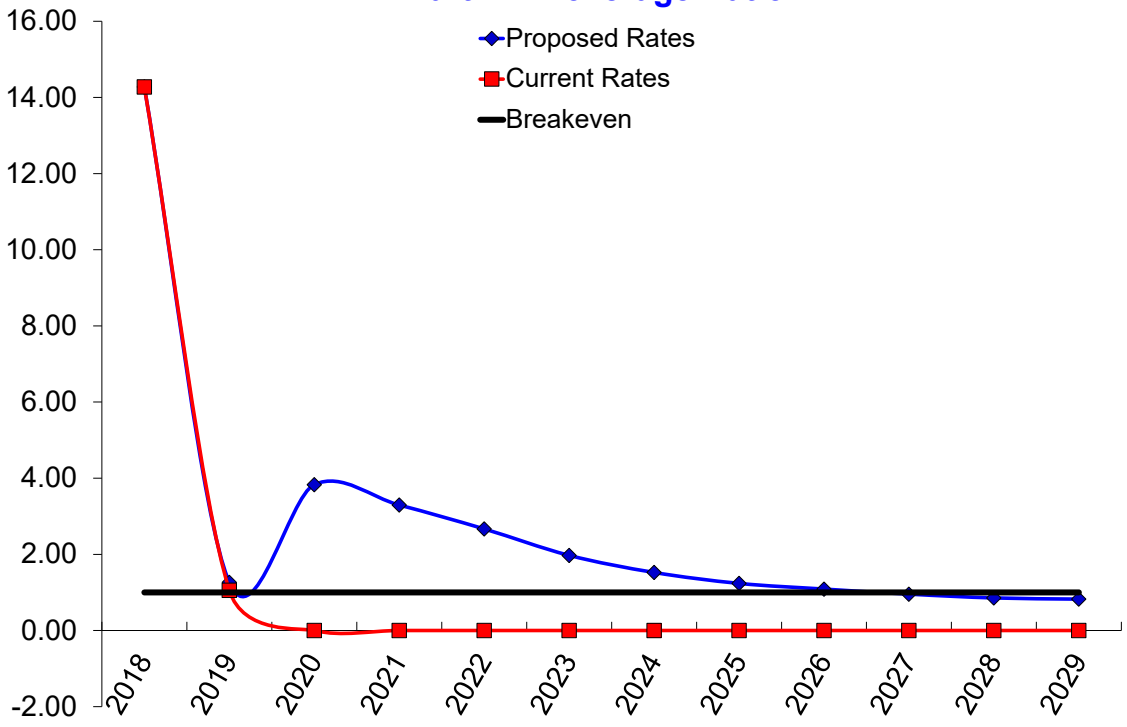

Chart 3 - Residential Users' Bills

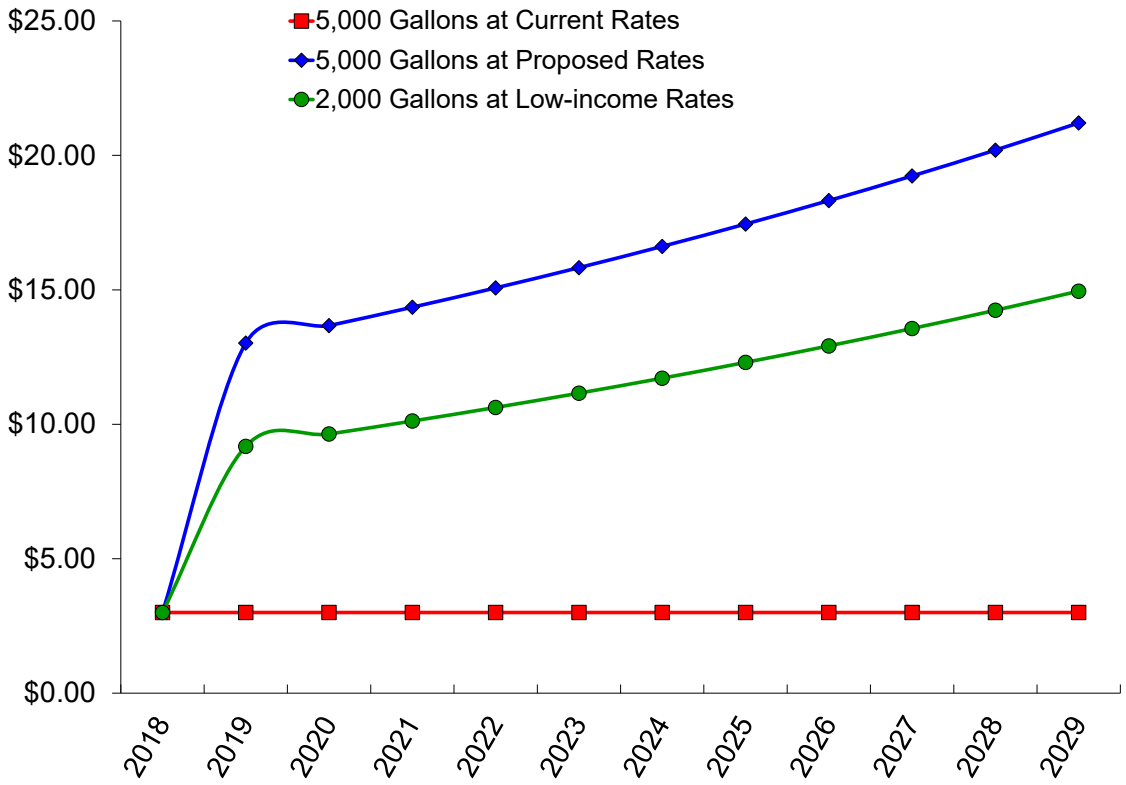

Chart 4 - Affordability

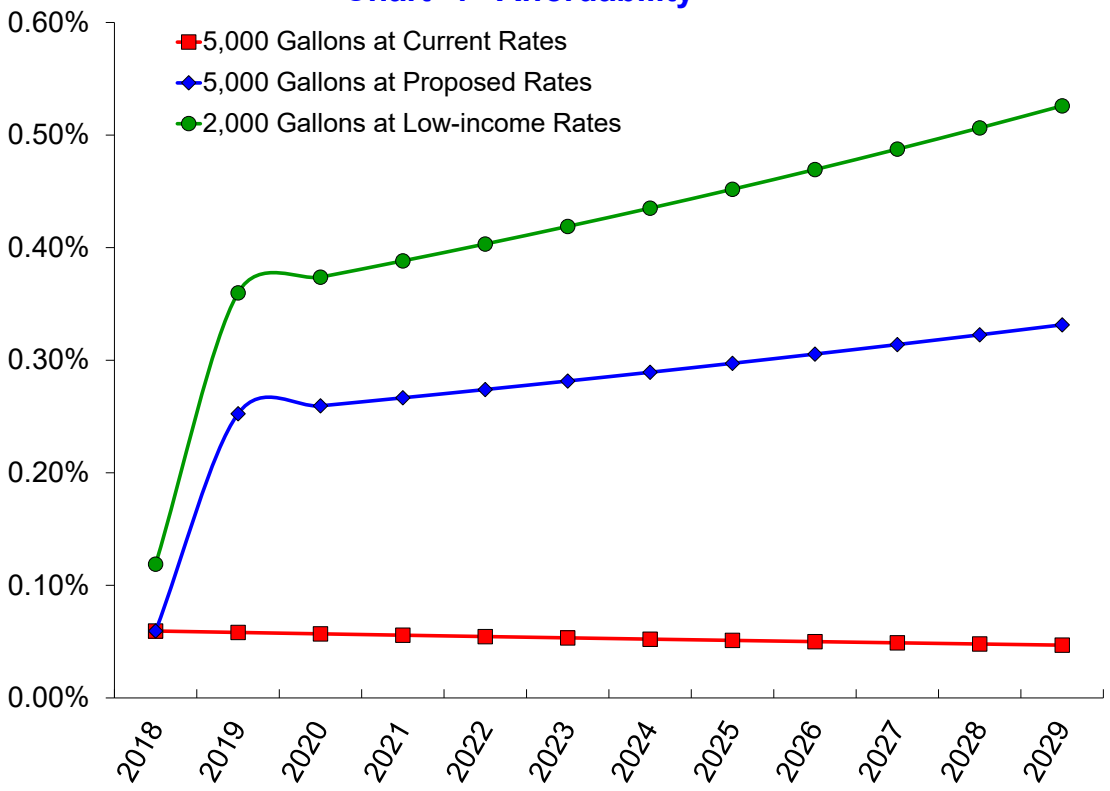

Chart 5 - Working Capital vs Goal

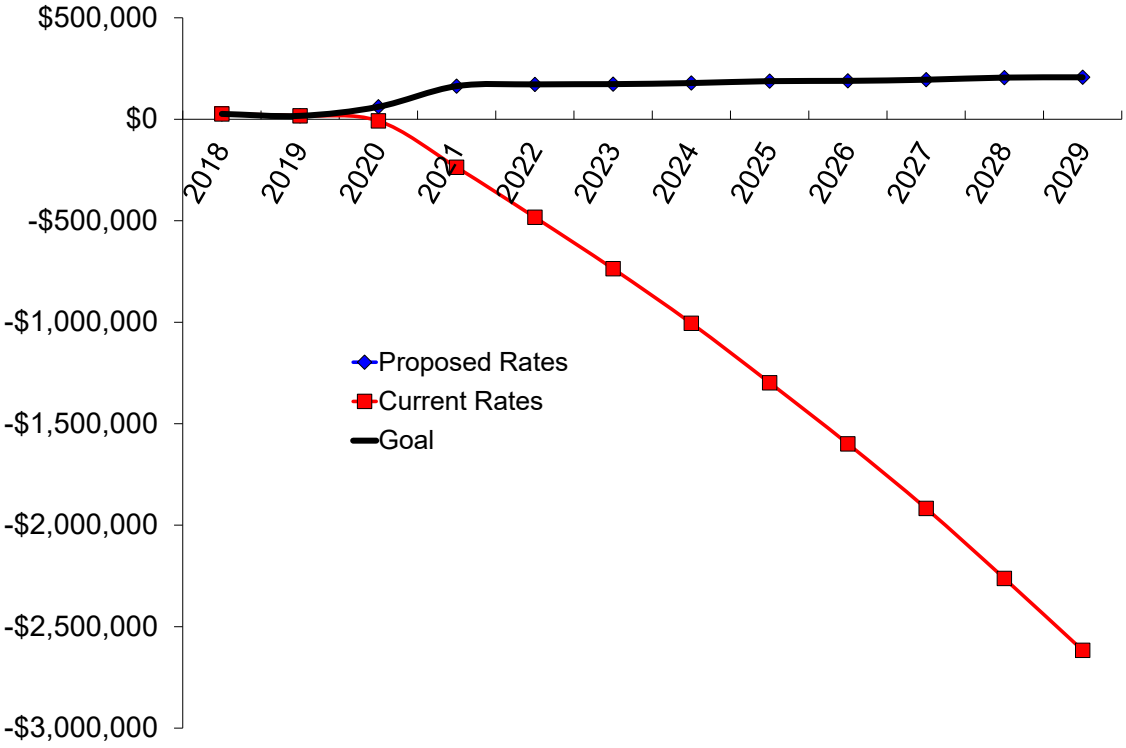

Chart 6 - Value of Cash Assets Before Inflation

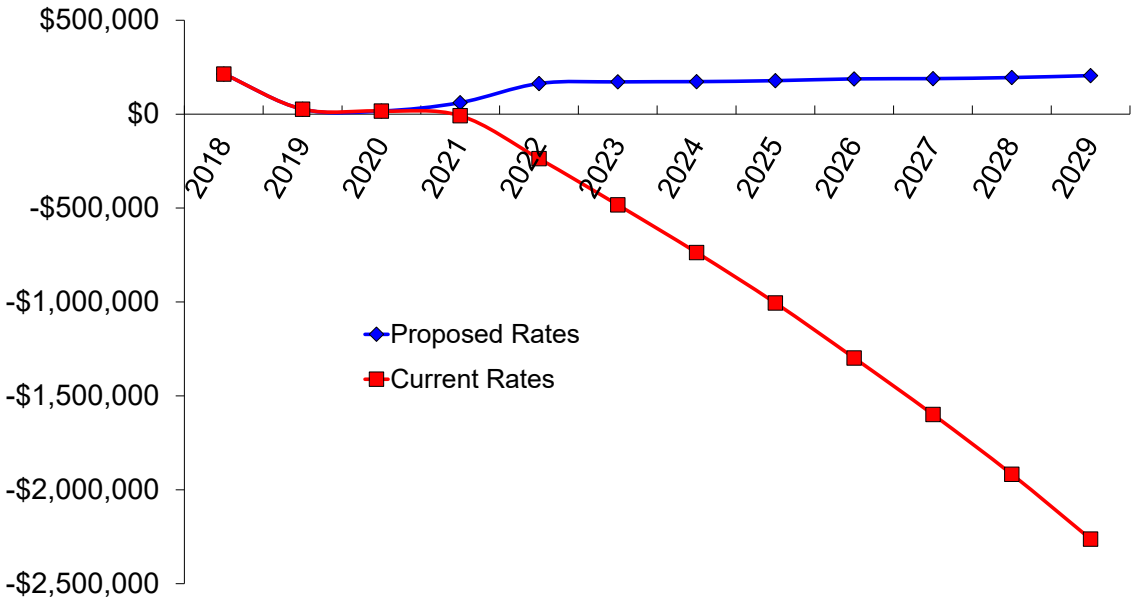

Chart 7 - Value of Cash Assets After Inflation

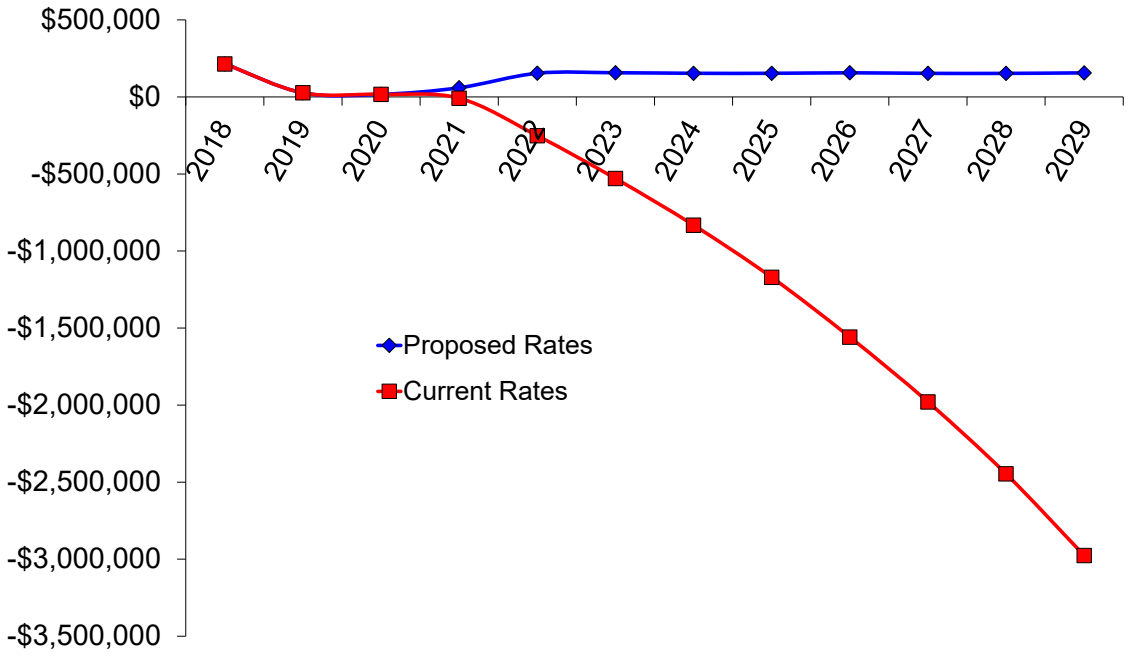

Chart 8 - Sum of All Reserves