Proposal for Water and Sewer Rate Analyses
Dinwiddie County Water Authority
North Dinwiddie, Virginia

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 for the Dinwiddie County Water Authority, North Dinwiddie, Virginia (later referred to as the "District" or "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, and establish rates that are fairly structured for ratepayers, you need to analyze your rates and fees, set them appropriately and periodically reset them.

My services will support you as you seek to satisfy the utilities' and ratepayers' needs.

Note: I did rate analyses for you in 2014. With time, rates must be revisited, so the proposed analyses will do that.

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 board 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.

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 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, Vice-president, will likely 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 Virginia RATES Program https://gettinggreatrates.com/consulting/VaRATES.pdf. A benefit of the program is that Virginia Rural Water Association (VRWA) member systems get a 25 percent discount on all fees. VRWA verified that the District is a member system of VRWA. 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. This package includes up to five modeled and reported scenarios. A scenario is any set of circumstances, rate structures or other issues that are complicated enough that they require specific modeling as well as a report to give you the results and the actions I recommend to effectuate that scenario.
- Service package 2 is the same as service package 1, except it is for the sewer utility.

- Service package 3 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 board meeting. That is especially useful when I analyze more than one utility.
- Service package 4 is an hourly rate for all scenarios over five for each utility, or for anything else you have me do that does not fit into one of the other service packages. It is not likely you will need such service.

You may add or drop service packages at any time.

Approach and Timeline

I have scoped your current situation, which is much like it was in 2014. I have a clear idea of how the analyses need to be done to arrive at fair and adequate rates. However, as the project proceeds, I or you may discover that conditions are different than they first appeared. Or, you may decide you desire a different rate structure than I will initially propose. Such things happen. Regardless of how the project unfolds, I will carry you all the way through to a rate structure and level that works for you.

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. Completion time is only slightly affected by my workload. Generally, we can move analyses along almost as fast as data and guidance are sent to us. If we start soon and you gather data quickly, we can have your analyses and report done by February 1, 2020.

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. When your staff has difficulty understanding what data I need or how to get it, I will talk them through it. 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. I will share with you all that you want to see.
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 reports until you are satisfied.

7. If you choose the on-site visit service package, I will present my final analysis results and recommendations to your board in person. While there I would also like to meet with staff to discuss how to make needed changes to billing, equipment replacement scheduling, capital improvements planning 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 board 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 analysis. There are degrees of exceptions:

1. I keep my VRWA contact 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 after the project is complete, they have little call for discussing your situation anyway. Sharing with them is focused on enabling them to oversight my work in real time.
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 to board 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 board member "going rogue."

Early on you will probably designate your executive 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 person 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, usually receiving and sharing data and information by e-mail attachment. I prefer to receive numerical data (financial statements, customer usage data and the like) in a spreadsheet format and textual material (proposed ordinances) 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 report and the analyses, and any follow-up reports electronically as PDF documents.

Investment

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 $10,111, less the Virginia RATES Program discount of $2,528 yields a **net fee of $7,583**
- **Service package 2**, sewer rate analysis – full fee of $10,111, less our multi-study discount of $1,011, and less the Virginia RATES Program discount of $2,275 yields a **net fee of $6,825**
- **Service package 3**, on-site visits – $2,731, less the Virginia RATES Program discount of $683 yields a **net fee of $2,048 per visit**
- **Service package 4**, an hourly rate of $144.44 per hour, less the Virginia RATES Program discount of $36.11 per hour, yields a **net fee of $108.33 per hour**

If you choose service packages 1, 2 and one visit from package 3, the group of services you most likely need, the total investment will be $16,456, including total multi-study and Virginia RATES Program discounts of $6,497.

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 October 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.

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 elect to have me perform hourly work, I will invoice for that work 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 your next set of rate analyses, so you can bring your utility rates, finances and services to the next level of performance.

Best regards,
GettingGreatRates.com

Carl E. Brown
President

Water, Sewer and Fire Suppression Systems

Rate Analysis Report

Dinwiddie County Water Authority

North Dinwiddie, Virginia

Prepared March 17, 2020

Carl Brown, President
GettingGreatRates.com, LLC

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Executive Summary

These analyses calculate cost-to-serve water and sewer rates for the Authority. However, because some detailed data needed for complete cost-to-serve rate calculations is not available, estimates of that data were made.

The initial water rate adjustments will result in an overall revenue increase in the Main Water System Service Area of 20.9 percent. The water bill for a 5,000 gallon per month residential customer in that area will rise from $24.32 per month to $27.98. It is my understanding there are no residential customers in the Church Road Service Area, so water rates do not apply there. But the Church Road Water Service Area pays the same rates as the Main Water Service Area and will continue to do so.

The initial sewer rate adjustments will result in an overall revenue increase in the Main Sewer Service Area of 1.1 percent. The sewer bill for a 5,000 gallon per month residential customer in that area will rise from $32.82 per month to $46.67. The same will be the case in the Courthouse Sewer Service Area, as it is and will continue to be assessed the same rates as those in the Main Sewer Service Area.

The Meaning of This Report, in a Nutshell

The Dinwiddie, VA County Water Authority, later called "the Authority" or "you," hired GettingGreatRates.com, later called "me," "we" or "I," to perform rate analysis of its water services, including sprinkler and other fire suppression systems, as well as its sewer services; to produce a report of my findings and recommendations; and to provide guidance on rate setting. (As background, I performed similar rate analyses for the Authority in 2015.)

This report is detailed. The math behind the report is complex. Many assumptions had to be made about data. And, your rates situation if complex. 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.

The Authority serves water and sewer to a "main" service area. By agreement with the County, the Authority also serves two special areas – sewer to the "Courthouse" area and water to the "Church Road" area. Thus, there are four models, or sets of calculations – one for each service area. The four models track incomes, costs, etc. for each respective area. But there are only two sets of rates. Those are based upon the costs of the main water system and the main sewer system. Tracking of costs for the Courthouse and Church Road areas is done to determine if, and how much, the County should expect to subsidize rate revenues for those areas.

Overall, revenues for the Main Water Service Area need to go up moderately and stay about the same for the Main Sewer Service Area. With restructuring to bring rates closer to a cost-to-serve structure, bills for low-volume, small meter customers will go up and those for higher volume and larger meter customers will go down. Similar changes will happen to sewer bills.

When all adjustments are considered, the resulting rates will be simpler and better related to the nature of the costs to serve customers. This was done in 2015. Time has changed your costs, so it is time to do repeat the process.

Introduction

Overall, water and sewer rate revenues are about on track with financial needs, largely because you have kept up with incremental increases over the last five years. 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. Well done. Now the work continues.

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

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. Therefore, for water and sewer I recommend eliminating the 2,000 gallon per month water usage allowance and the declining rate structure for unit charges. Changes in the amounts of minimum charges, unit charges and system development fees were driven by cost classification. Thus, some customers' bills will go up while others 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 Robert Wilson (and later Brandon Luebbers and Ben Jones). They replied. We went through this step several times. As I received information and data, I modeled the Authority's finances and rates and submitted drafts for review and feedback. Mr. Luebbers and Mr. Jones 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, Mr. Luebbers and Mr. Jones 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. The Models are called:

- "Dinwiddie, VA, Main System, 2020 Water Rates Model 1," later called, "the Main Water Model;"
- "Dinwiddie, VA, Church Road, 2020 Water Rates Model 2," later called, "the Church Road Water Model;"
- "Dinwiddie, VA, Main System, 2020 Sewer Rates Model 3," later called, "the Main Sewer Model;" and

- "Dinwiddie, VA, Courthouse, 2019 Sewer Rates Model 4," later called, "the Courthouse Sewer Model."

The Models are sets of integrated calculations that mathematically depict the utilities' and service areas' situations – incomes, expenses, capital improvement needs, debt and more. In the case of the main systems, these criteria were used to calculate the rates and rate structures needed to fund them properly. Because of your agreement with the County about service and rates to the Church Road and Courthouse areas, those rates also need to be applied to those service areas, too. But separate models were needed for those areas because their incomes, costs, etc. need to be tracked so the Authority can see if, and by how much, revenues for each of those service areas should be subsidized by the County. Be aware, that part of the modeling only enables projection of rates and revenues. When it comes to the actual amount of subsidy from the County, you need to continue tracking revenues and costs and calculate the subsidy amount needed from the County each year.

As you read this report, please keep this in mind. The report does not *direct* the Authority 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 Assumptions, Details and Caveats

Depreciation and Repair and Replacement Scheduling

The Authority schedules and pays for equipment repair and replacement (R&R) differently than how I normally recommend it be done. However, the Authority has successfully managed R&R using its own methods for years, so I have accommodated that methodology in my analyses.

The Authority also includes depreciation as an expense for rate setting purposes. I seldom do so, but that is related to how I normally recommend R&R be paid for, too. In your case, using depreciation as the fund source to pay for R&R is a bit more conservative than my normal approach. By "conservative" I mean, the rates will generate more net revenue using your approach than mine. I favor that. So, I have modeled rates based upon how the Authority handles R&R and depreciation. Consequently, you will notice that Tables 6 and 7, which deal with R&R, have been left out of the models.

Fire Suppression Systems and Rates

Fire suppression and rates for that service apply to the Main Water System. I consider these rates to be a part of the regular water rates structure, but unlike service for regular water customers, fire suppression systems generally are not metered. However, they are designed and built to provide a peak flow rate. That peak flow capacity is related to the square footage of sprinkler coverage, for sprinklers. Peak flow is also related to hydrant orifice diameter. Thus, these criteria are analogous to meter size. When I later discuss meter size-based water rates, the same principles and similar math apply to fire suppression systems, too. That will be explained later.

Fire suppression systems come in a few forms, primarily sprinklers to suppress fires from within buildings; and fire hydrants, hose connections and other external equipment to suppress fires from outside. Sprinkler systems are the main equipment of rate setting concern, so I will refer to all fire suppression service as "sprinklers." But I have calculated rates for each of the types of service you provide.

Seldom if ever will a sprinkler system "go off." Thus, over the reach of time, little if any water volume will be used. However, a sprinkler system "ties up" capacity, which is the ability to provide flow, should it be needed. That means, when an engineer designs a water system, they consider the peak flow that might be needed to suppress fires. They design that capacity into the system, and it gets built. That capacity costs money. Therefore, a sprinkler system owner should reimburse the utility for the cost of the capacity that has been obligated to their sprinkler system. Or said another way, a property owner that has a sprinkler system derives benefit from the Authority making the investment in capacity to serve them. They receive something of value; they should pay for it.

Since there will be little, if any, flow through a sprinkler system, the sprinkler system should only be billed for capacity costs. Those costs should be based upon the flow capacity of each system. The bigger the system, the higher the bill should be to recover the cost of capacity. Therefore, I calculated sprinkler rates to recover the peak flow capacity costs they cause, with larger systems paying proportionately higher fees than smaller systems. These fees are analogous to the connection fees and minimum charge surcharges for regular water service except they are designed to only recover peak flow capacity costs.

Because these fees are so similar, I calculate them using the same basic "sheets" as for regular water service. In the Main Water Model, I use Tables 11 through 16 to calculate regular water customer connection and minimum charge rates. To calculate sprinkler connection fees and monthly rates, I use Tables 11B through 16B. When you view these tables, you will see that they are quite similar.

The Main Water Model includes sprinkler rates and fees. The other three do not. Two of those models are for sewer, so sprinklers do not apply there. The third is for Church road. If the Church Road customer (or any others elsewhere) also have sprinkler services, simply assess that customer the rates in the Main Water Model, which are shown in Table B on page 25.

Fire Hydrant Rental and Rates

Fire hydrants are intended primarily for fire suppression. But construction contractors and others need water to develop properties, build roads and the like. They often get such water from hydrants. The nature of this kind of use of fire hydrants is quite different from fire suppression. Fire suppression rarely uses water. It mainly needs capacity set aside so just in case water is needed, it will be available. Contractors and similar users actually use water when they get permission from the Authority to use a hydrant. They should be billed for flow capacity and for actual use. In that regard, they are similar to "regular" customers.

I made assumptions about the system's usage data and rates. When rental was for a "fire hose connection," I assumed the use was fire suppression. In those cases, I calculated rates based on the fire sprinkler system rate calculations methodology. When the use was called "hydrant rent," I assumed water was being used for construction, etc. but it was not being metered.

To calculate rates for hydrant rental, I assumed volume drawn from such hydrants averaged 25,000 gallons per month. I multiplied the calculated unit charge by 25 billable units, and then added the calculated minimum charge for the smallest sized meter. If you continue to bill for hydrant rental on a flat fee basis, you should adopt the rates calculated in the Model. However, I recommend a more accurate approach to bill for use drawn from fire hydrants.

First, the water supply should be protected by use of a backflow preventer when a contractor gets water from a fire hydrant.

Next, you should purchase a few water meters that can be connected to fire hydrants. (In fact, I recommend Authority staff meter line flushing flow, too. By metering flow when staff flush lines you can track water loss more accurately.) When a contractor or other user wants to draw water from a hydrant, you would install the backflow preventer and meter and bill them just like you would any other customer using that size meter. If a contractor needs lots of peak flow, you should attach a large meter to the larger hydrant outlet and bill the customer a minimum charge for that meter size and unit charges at the regular unit charge rate. If a customer can "get by" using the smaller outlet and meter, set them up and bill them on that basis.

The Current Rate Structures Appear to be Complicated

Your current water and sewer rate tables are complicated. The water rates table includes 16 water rate classes plus many sprinkler and fire hose rate classes. Except that there are no fire suppression rates, sewer rates are complicated, too. The actual rates you charge, however, are much less complicated. I recommend you simplify the water rate table to match the rates you actually charge. Do the same with sewer, too.

Those rates should show:

- A level unit charge (rather than the current declining rate,)
- No usage allowance, and
- Minimum charges based on meter size.

You already assess minimum charges that rise with water meter size, so in practice, your rates are fairly simple. But I recommend you simplify the language in your ordinances and the records in your billing program to match.

Because you serve and bill a few Prince George County and McKenny-located customers, and you bill them at the rates they otherwise would pay if they were being served by those entities, you would list those rates as exceptions to the general set of rates. To be revenue conservative, I assumed those rates will not change initially and that they will increase incrementally by the same inflationary factor as I assumed you will raise your rates in future years. In practice, you will just need to stay in touch with Prince George County and McKenny and adjust those rates as those entities adjust them.

Courthouse and Church Road Service Area Rates

By agreement with the County and when necessary, the County subsidizes the rate revenues generated by customers in the Courthouse and Church Road service areas. These customers pay the same rates as the main system customers but the costs to serve them are different and tracked separately. By my analysis, the Courthouse Service Area rate revenues are not now, and will not in the future be adequate to pay all the costs of that system. (Church Road service area revenues are projected to be just slightly inadequate.) To make up the revenue shortfall, your agreement with the County is that the County will make up the revenue shortfall to fully fund each system when rate revenues are inadequate.

To accomplish such a rate structure, I linked both water rate models, and both sewer rate models together where rates are concerned. Basically, I did the rate modeling for the Main Water System and the Main Sewer System first. The rates that came out of those models were then brought into the County and Church Road rate models, respectively, to be the rates that those customers would pay, too. Those rates will generate a certain level of revenues in each of those systems.

When those rates are not adequate to pay all costs of a service area, I solved for a subsidy level the County would pay to make up the shortfall. I calculated these subsidies to inflate at the same rate you would inflate user charge rates. Thus, these subsidies are calculated like you do it now except that I have averaged the subsidies over ten years where you calculate actual subsidies each year. This modeling shows the rates I recommend, and it shows the County what level of subsidies it needs to expect to pay, on average, over the next ten years.

Finally, since I used the main system water and sewer model rates for the County and Church Road customers, Tables 8, 9, 11 through 16, 19 and the charts were not needed, or they would be misleading, so I left those tables and charts out of the Courthouse and Church Road models.

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 their own equipment repair and replacement and capital improvement schedules, 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 Authority 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.

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.

An aside, but an important one in my mind, is this. The M1 Manual describes how to calculate cost-to-serve rates down to the customer class level. If a rate analyst classifies costs to that level and the utility sets rates that achieve that result, it can correctly be said that the utility has cost-to-serve rates. Those rates will be fairly structured, but only at the customer class level.

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

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.

Rate analysis, or a rate study, often considers the rates needed to fund one year, usually the coming fiscal year. Utilities need to plan farther into the future than that, so I calculate rates for ten years into the future.

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.

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

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 calculated bases for fixed costs and variable costs (Table 8) establish a ratio of the revenues that each rate component would generate in a cost-to-serve structure.
- To increase (or very rarely decrease) overall revenues to a target, each revenue stream is increased or decreased by the same percentage. Thus, the revenue streams remain in the same ratio to each other. That means they retain their cost-to-serve proportions.

- Once the overall revenue increase (or decrease) need is established, the base minimum charge to set initially is "back calculated" from the adjusted minimum charge revenue amount. The unit charge is "back calculated" from the adjusted unit charge revenue amount. 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, system development fees, minimum charge surcharges, investment earnings, penalties collected, and other income sources generate revenues. Those are calculated and added to rate revenues for each year. And, I assumed future inflationary rate increases, so those revenues are added over the years, as well. 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.

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. A few such issues are in play for you, so departures are explained later in this report.

Your utilities 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.**

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

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

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

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

The District currently assesses a declining unit charge to most water customers. I recommend you switch to a level unit charge for all volumes of use.

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

These models are dynamic. When the initial rate increase is set higher, future inflationary increases can be lower. When minimum charges are set lower, unit or other charges need to be set higher to make up the shortfall. When future expenses need to be higher, or lower, or of a different nature, the models adjust rates and fees accordingly. Such modeling enables me to do dynamic "what-if" scenario calculations. That enables me to arrive quickly at the "best fit" rates for each utility.

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

Two final thoughts on the rate modeling and adjustment topic:

- Almost always, rate adjustments include bill increases. Thus, time is money, often big money, to the utility. A rate increase delayed is a rate increase that must be even higher to reach the same reserve target. Get to know this report well but do not spend months mulling it over. Time will not make your rate setting task easier. Proceed deliberately but quickly and make the needed changes. If you cannot make all the needed changes at the same time, make those that you can as soon as you can.

- You will get complaints about customers' bills going up. In my experience, most of the time, when the math is laid out for all to see, most people are understanding. Cost-to-serve rate analysis does not arrive at unfair rates. It arrives at fair rates. The degree by which some customers' bills change highlights the fact that rates are unfairly structured right now. Cost-to-serve rate adjustments are aimed at correcting that unfairness.
    - These statements do not mean "do-it-yourself" rate adjustments are always unfair or insufficient, or that "rate analyst" calculated rate adjustments always are. I always try to calculate and advocate for rates that are fairly structured. But over time, costs and other conditions change, so even cost-to-serve rates I have calculated will become unfair after some years.

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. First, be effective. Second, be as efficient as is reasonably possible. Those two attributes fight against each other. In most utility services and situations, effectiveness trumps efficiency. It does not benefit water customers if you pump lots of water to them cheaply, if that water will make them sick. And, customers gain more benefit from water rates that are a bit higher than they like, but that fund the utility sustainably.
3. If a service costs the utility money, the utility should recover that cost from the most logical "person" if that makes good business and community administration sense. For example, generally "growth should pay for growth." Developers should fairly pay for their consumption of utility capacity 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.
4. It sometimes contradicts point number 3 above, but if adjusting a rate, fee or policy will turn currently "good" customers into "bad" customers, or discourage development that the community desires, you should consider the necessity of making the change carefully before doing it. For example, while it may be warranted, raising the minimum charge markedly to your residential customers may make it very difficult for fixed, low-income customers to pay their utility bill. That may cause more of them to pay late or not pay at all. That may trigger the utility's attorney to write collection letters to those customers and eventually require shutoff of service. Thus, in the attempt to generate

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

5. While cost-based rates are the most demonstrably fair rate structure, purely cost-to-serve rates can be impractical for some utilities. Consider this: a large city with thousands of customers served by a wide range of meter sizes and a wide range of use by its customers, needs rates that are cost-based and, necessarily, those rates will be complicated. Such rate complexity is worthwhile because the utility's situation is complicated. But a small town serving only a few meter sizes and few, if any, customers that use high volumes would not be well-served by complicated rates. Simpler rates are better for them.

General Issues

Concerning construction of the models, they were built to match the systems' financial statements and other data as much as possible. However, the intent of rate modeling is to see to it that the resulting rates are adequate to pay all system expenses for the next ten years, build and maintain responsible reserves and collect fees from customers on a fair basis. Because incomes and expenses in standard financial statements, and other data, are seldom grouped in such a way as to enable the required rate calculation methodology, the models do not always match 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 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 Main 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. 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.

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 Table 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 an hour to perform or 10 minutes. 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. Several issues affect both water and sewer rates. Thus, to keep the report shorter and simpler, I will cover such issues in the water subsection. In the sewer subsection, I will just refer readers back to the water subsection for those issues.

Main Service Area 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 level unit charge with no usage allowance.
- Subsidies by the County, if and as needed, to make the Authority "whole" for the costs to serve the Courthouse and Church Road service areas, as agreed to by the County.
- Rates for the Prince George County and McKenny-located customers in accordance with how those customers would be charged, were they served directly by the County and McKenny. This also is by agreement with those entities.

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 Water and Fire Suppression System Rates

I calculated meter size-based rates for two types of costs – system development (capacity) costs and operating costs. And, I calculated system development costs to be paid for 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 some over time in the form of surcharges.

Fire suppression systems also cause capacity costs. I modeled some of those costs to be paid up-front and the rest to be paid as a monthly service charge, analogous to the capacity surcharge on a regular water customer's monthly minimum charge. Fire suppression systems generally do not have meters, but they have other attributes that indicate their capacity to demand flow volume.

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. Both of 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 Main Water System Model (and in the other models)?

- Tables 12 through 16 cover regular water customer rates.
- Tables 12B through 16B do the same for fire suppression system rates. (These are not applicable in the other models.)
- The revenues that result from these rates and fees are brought back to Table 3, page 51.

In Tables 13 through 16, you will see that small meters and small sprinkler coverage areas 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 6.

Volume Usage

Table 2, page 43, shows the total volumes used by each rate class of customers. These volumes are used to calculate revenue projections from the rates I modeled.

Expected Incomes

Table 3, page 51, 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, 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.

Expected Operating Costs

Table 4, page 52, shows expected operating costs. A few costs deserve discussion.

As to repair and replacement (R&R) costs, you handle them in your regular budget each year as equipment needs to be replaced. While I got service truck replacement information from Mr. Wilson, plus a couple other R&R costs, I decided to model your current R&R processes as-is. Therefore, I did not need Tables 6 and 7 that handle such costs in a more detailed way. Those tables have been left out of the Model.

Unbilled-for and Lost Water

According to the difference between your master metered water purchase volumes and the volumes billed to customers, you appear to have a rather high unbilled-for water rate of 34 percent. Even on a marginal cost basis, that costs the Authority $367,000 per year, so you should look into water "loss" prevention. I put loss in parentheses because I am sure you use some of that volume for line and system maintenance, which is included in the unbilled-for total.

Capital Improvements

Capital improvements and debt are covered in Table 5, page 54. You have debt and a broad slate of improvement projects, so these costs impact rates significantly.

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.

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, 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 I estimated such R&R costs at 10 percent of operating costs, not including CIP, debt and administration costs and I targeted R&R reserves 20 years out at double the average annual R&R cost,* 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 77, 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 97, 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 95.

In the table, the AI calculation for the test year was at 0.48 percent. That means, such a customer paid 0.48 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 could be called, "cheap" with good reason.

Under the recommended rates, this customer's AI would rise to 0.52 percent. That is less affordable than the current bill, but still cheap compared to the average. And, the AI is projected to fall over the years. That means rates will become more affordable as customers' incomes rise faster than their water bills.

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.

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 are far from satisfying such a criterion and in the future, your rates will become even more affordable. 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 Authority's average residential customer's bill, but it will still be more affordable than bills for most such customers around the U.S.

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 78, 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 copy and bring to the board meeting where we will discuss rates. Because most customers are concerned about what will happen to their bills, you should give this table to everyone who wants a copy.

Recommendations for Adjusting Main Service Area Water Rates

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

1. Tables A and B that follow this list state most recommended rates and fees. Others must be set the same as those for customers of the Prince George County and McKenny systems.
2. The calculations assumed you would have made these adjustments early enough, approximately June 30, 2020, to enable you to collect at these rates for billings starting after July 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 51.
    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 A: Recommended Water Rates for Main and Courthouse Service Areas

Table A: System Development Fees; Minimum, Unit Charges; and Usage Allowance Calculated by the Dinwiddie, VA, Main System, 2019 Water Rates Model 1, and Also Applies to the Church Road Service Area

Water Meter Size in Inches	Meter Type	Fee per New Connection for Peak Flow Capacity (Field and Admin Costs Not Included)	Monthly Minimum Charge Each Meter Size	Usage Allowance in Gallons	Unit Charge per 1,000 Gallons
0.625	Displacement	$1,618	$13.78	0	$2.84
0.750	Displacement	$1,618	$13.78	0	$2.84
1.000	Displacement	$4,044	$27.13	0	$2.84
1.500	Displacement	$8,088	$49.36	0	$2.84
2.000	Displacement	$12,940	$76.04	0	$2.84
2.500	Displacement	$20,219	$116.06	0	$2.84
3.000	Singlet	$25,880	$147.19	0	$2.84
4.000	Singlet	$40,438	$227.24	0	$2.84
4.000	Turbine, Class I	$50,143	$280.60	0	$2.84
6.000	Singlet	$80,875	$449.59	0	$2.84
8.000	Compound, Class I	$129,400	$716.40	0	$2.84

Services provided in McKenny and Prince George County Water Authority jurisdictions will be provided at rates, as adjusted from time to time, by those authorities.

Table B: Recommended Fire Suppression System and Hydrant Rental Rates

Table B: Dinwiddie, VA, Main System Water Modeled System Development Fees and Monthly User Charges for Fire Sprinkler Systems, Private Fire Hydrants and Fire Hose Outlets Calculated by the Dinwiddie, VA, Main System, 2019 Water Rates Model 1, and Applies to the District's Main Service Area			
Service	Fee per New Connection	Units of Measure	Monthly Fee
Sprinklers	None	Less Than 1,000 Sq Ft	$5.11
Sprinklers	None	1,000 Sq Ft or Greater, per 1,000 Sq Ft	$5.11
Private Fire Hydrant	None	2.5 Inch Diameter	$147.04
Private Fire Hydrant	None	4.0 Inch Diameter	$298.24
Private Fire Hose Outlet	None	2.5 Inch Diameter	$147.04
Private Fire Hose Outlet	None	4.0 Inch Diameter	$298.24
Fire Hydrant Use (Rent)	None	2.5 Inch Diameter	$187.06
Fire Hydrant Use (Rent)	None	4.0 Inch Diameter	$298.24
Services provided in McKenny and Prince George County Water Authority jurisdictions will be provided at rates authorized by those authorities.			

Closing

I recommend you adopt the rates calculated in the Model and discussed in several subsections above. The recommended rates are shown in Tables A and B immediately above. These rates are in a cost-to-serve structure, based upon the Main Water Service Area costs. They will 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 board 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 and essentially no change to the average residential customer's water bill. Future inflationary increases will raise all bills by 3.0 percent per year.

Church Road Service Area Water Rates

This section is brief, for these reasons. By agreement with the County, the Authority serves water to the Church Road Service Area (Church Road). According to the agreement, the Authority assesses the same rates and charges to Church Road as it assesses to its Main Water Service Area. If these rates do not produce enough revenue to fully pay Church Road system costs, the County pays the difference to the Authority.

Because Church Road is not assessed rates that are based upon that system's costs and instead, it is assessed the Main Water System's rates, the Church Road model does not need Tables 11 through 16. Therefore, those tables have been left out of this report.

This section is also shorter than the previous section because most issues are the same for Church Road as for the main system. Only when an issue is different is it discussed here.

Expected Incomes

Table 3, page 102, shows past income and future incomes to expect, as well as several other things related to revenues. Revenues from Church Road are projected to be slightly inadequate to pay that system's cost, so the County will subsidize the Church Road revenues, the estimated amount of which appears at the bottom of that table. I assumed a couple of important things:

- The annual amount of this subsidy was figured based upon the shortfall for the entire modeling period. That results in a fairly flat subsidy over time. In practice, the Authority "bills" the County on an annual shortfall basis, which I recommend you continue doing, and
- I modeled the subsidy to increase by the same inflationary factor as other rates would increase in future years.

Capital Improvements

Church Road has debt payments of approximately $250,000 per year but that debt will end in fiscal year 2024, as shown in Table 5, page 104.

Target Reserve Levels

Current total reserves are strong, but I recommend even stronger reserves because the facilities built to serve the Church Road area are dependent upon one customer. I calculated the target reserves to be 100 percent of operating costs in the tenth year (bottom of Table 4) plus double total CIP and debt payouts in the fifth year (bottom of Table 5).

Rate Affordability

Rate affordability, as measured by the AI, does not apply in this case – there are no residential customers on the Church Road system. However, readers can see the effect of the recommended rates as compared to the current rates in Table 18, page 107.

Recommendations for Adjusting Church Road Service Area Water Rates

I recommend you continue assessing the same rates for the Church Road Service Area as for the Main Water System Service Area. Those rates are shown in Tables A and B, starting on page 24.

Closing

The rates I recommend you adopt for Church Road are the same as those for the Main Water System. Those rates are not in a cost-to-serve structure for Church Road, because the costs used to calculate the rates are those for the Main Water System. But the agreement between the County and the Authority calls for Church Road to pay the same rates as the Main Water System. Thus, the rates are in a cost-to-serve structure for the Main Water System and having the same rates apply to both service areas simplifies the rate structures.

Main Sewer Service Area Rates

Recommended Rate Structures

My recommendations here are the same as for the water rates except that the Courthouse Service Area is the outside area receiving sewer service rather than Church Road.

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.

Expected Incomes

Table 3, page 120, 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 121, shows expected operating costs. As with incomes, cost amounts are different but of the same nature as the water costs.

Unbilled-for and Lost Water

Water systems have water loss. Sewer systems have inflow and infiltration (I&I). The I&I rate, at 50 percent, appears to be unreasonably high. I suspect usage data was inaccurate. However, just as you do for water loss, you need to track I&I and reduce it wherever it would be cost-effective to do so.

Capital Improvements

Capital improvements and debt are covered in Table 5, page 123. You have debt and a broad slate of minor improvement projects. I added a "Place Keeper Project" in the fifth year to give the Authority the latitude to pursue its own treatment, or similar cost-level improvements. Mr. Wilson told me early in the project that the Authority may consider such actions. I modeled loan or note funding such a project over five years, so if you have higher cost improvements to make, you can stretch that term and do those improvements under the rates modeled here.

Target Reserve Levels

The reserves situation for sewer is the same as for water. Part of that is because your Main System balances are partially combined. We could not always tell which amounts belonged to water versus sewer, so we arbitrarily split your total Main System reserves balance evenly between the water and sewer systems. Thus, each had the same starting point for reserves.

The lines on the bottom of Table 17, page 140, 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.

Rate Affordability

In Table 17, near the top, I show the estimated AI. The AI is also shown graphically in Chart 4, page 160.

In the table, the AI for the test year was at 0.48 percent. That means, such a customer paid 0.48 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 could be called, "cheap" with good reason.

Under the recommended rates, this customer's AI would rise to 0.52 percent. That is a miniscule increase on an affordability basis.

Table 18, page 141, shows how customers' bills at different volumes of use and different meter sizes will be affected by the recommended rates.

Recommendations for Adjusting Main Sewer Service Area Rates

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

1. Table C that follows this list states most recommended rates and fees. Others must be set the same as those for customers of the Prince George County and McKenny systems.
2. The calculations assumed you would have made these adjustments early enough, approximately June 30, 2020, to enable you to collect at these rates for billings starting after July 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 120.

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 Sewer Rates for Main and Courthouse Service Areas

Table C: System Development Fees; Minimum, Unit Charges; and Usage Allowance Calculated by the Dinwiddie, VA, Main System, 2019 Sewer Rates Model 3, and Also Applies to the Courthouse Service Area

Water Meter Size in Inches	Meter Type	Fee per New Connection for Peak Flow Capacity (Field and Admin Costs Not Included)	Monthly Minimum Charge	Usage Allowance in Gallons	Unit Charge per 1,000 Gallons
0.625	Displacement	$3,910	$13.22	0	$6.70
0.750	Displacement	$3,910	$13.22	0	$6.70
1.000	Displacement	$9,775	$20.71	0	$6.70
1.500	Displacement	$19,550	$33.19	0	$6.70
2.000	Displacement	$31,280	$48.17	0	$6.70
2.500	Displacement	$48,875	$70.64	0	$6.70
3.000	Singlet	$62,559	$88.12	0	$6.70
4.000	Singlet	$97,749	$133.06	0	$6.70
4.000	Turbine, Class I	$121,209	$163.02	0	$6.70
6.000	Singlet	$195,498	$257.89	0	$6.70
8.000	Compound, Class I	$312,797	$407.69	0	$6.70

Services provided in McKenny and Prince George County Water Authority jurisdictions will be provided at rates, as adjusted from time to time, by those authorities.

Closing

I recommend you adopt the rates calculated in the Model and discussed in several subsections above. The recommended rates are shown in Table C immediately above. These rates are in a cost-to-serve structure, based upon the Main Sewer Service Area costs that will 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 board 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 and essentially no change to the average residential customer's water bill. Future inflationary increases will raise all bills by 3.0 percent per year.

Courthouse Service Area Sewer Rates

This section is also brief, for the same reasons as in the Church Road Water Service Area.

Expected Incomes

Table 3, page 169, shows past income and future incomes to expect, as well as several other things related to revenues. Revenues from the Courthouse area are projected to be inadequate to pay that system's cost, so the County will subsidize the Courthouse revenues. These subsidies are shown at the bottom of the table. These subsidies were calculated in the same way as were water subsidies for the Church Road Water Service Area subsidies.

Capital Improvements and Debt

The Courthouse Sewer Service Area has debt payments of approximately $250,000 per year, as shown in Table 5, page 171. It also has or shares in payments to the Series 2016B bond. That bond will be paid off this year. A new, small payment for SCWWA nutrient costs will start this year and "PAC" project debt will start in about three years. Thus, debt will rise and fall a bit over the next ten years, but mainly it will fall.

No capital improvements are anticipated for the Courthouse Sewer Service Area for the next ten years other than those that are shared with the main service area.

Target Reserve Levels

Current total reserves are an overall negative balance, so I calculated target reserves to rise to 100 percent of operating costs in the tenth year (bottom of Table 4) plus 100 percent of CIP and debt payouts in the tenth year (bottom of Table 5).

Rate Affordability

Rate affordability, as measured by the AI, could be applied in this case. But the customer base is largely commercial and schools, so that calculation would likely be misleading. I recommend readers refer to the AI in Table 17 of the Main System Sewer Rates Model, page 140, for that. However, readers can see the effect of the recommended rates as compared to the current rates in Table 18 of the Main System Sewer Rates Model, page 141.

Recommendations for Adjusting Courthouse Sewer Rates

I recommend you continue assessing the same rates for the Courthouse area as for the Main Sewer System Service Area. Those rates are shown in Table C on page 29.

Closing

The rates I recommend you adopt for the Courthouse area are the same as those for the Main Sewer System Service Area. Those rates are not in a cost-to-serve structure for the Courthouse area, but that is by agreement with the County. Thus, the rates are in a cost-to-serve structure for the Main Sewer System Service Area, making the rates simpler.

These rates are projected to require a subsidy be paid by the County to the Authority to fully pay the costs incurred to serve the Courthouse area.

Conclusion

"Conclusion" is a misnomer here. This report provides information upon which the Authority 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 Authority's water and sewer 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 Authority 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 Authority'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 board to discuss my findings and recommendations. I look forward to meeting with the board, answering everyone's questions and helping you get on your way to the next generation of great rates.

Dinwiddie, VA, Main System, 2019 Water Rates Model 1

This model calculated cost-to-serve rates with only minor variances to better suit the utility's needs.

March 17, 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

Dinwiddie, VA, Main System, 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
ARWA Res 3/4 Inch W1	0	$11.39	2.000	$4.31
	2,000	$11.39	2.000	$4.31
	20,000	$11.39	2.000	$3.71
	1,250,000	$11.39	2.000	$3.71
ARWA Res 1 Inch W3	0	$31.83	2.000	$4.31
	2,000	$31.83	2.000	$4.31
	20,000	$31.83	2.000	$3.71
	1,250,000	$31.83	2.000	$3.71
ARWA Res 1 1/2 Inch W5	0	$61.22	2.000	$4.31
	2,000	$61.22	2.000	$4.31
	20,000	$61.22	2.000	$3.71
	1,250,000	$61.22	2.000	$3.71
ARWA Res 3 Inch WO	0	$161.61	2.000	$4.31
	2,000	$161.61	2.000	$4.31
	20,000	$161.61	2.000	$3.71
	1,250,000	$161.61	2.000	$3.71
ARWA Comm 3/4 Inch W2	0	$11.39	2.000	$4.31
	2,000	$11.39	2.000	$4.31
	20,000	$11.39	2.000	$3.71
	1,250,000	$11.39	2.000	$3.71

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
ARWA Comm 1 Inch W4	0	$31.83	2.000	$4.31
	2,000	$31.83	2.000	$4.31
	20,000	$31.83	2.000	$3.71
	1,255,000	$31.83	2.000	$3.71
ARWA Comm 1 1/2 Inch W6	0	$61.22	2.000	$4.31
	2,000	$61.22	2.000	$4.31
	20,000	$61.22	2.000	$3.71
	1,255,000	$61.22	2.000	$3.71
ARWA Comm 2 Inch W7	0	$107.73	2.000	$4.31
	2,000	$107.73	2.000	$4.31
	20,000	$107.73	2.000	$3.71
	1,255,000	$107.73	2.000	$3.71
ARWA Comm 2 Inch WB	0	$107.73	2.000	$4.31
	2,000	$107.73	2.000	$4.31
	20,000	$107.73	2.000	$3.71
	1,255,000	$107.73	2.000	$3.71
ARWA Comm 2.2 Inch WA	0	$215.46	2.000	$4.31
	2,000	$215.46	2.000	$4.31
	20,000	$215.46	2.000	$3.71
	1,255,000	$215.46	2.000	$3.71
ARWA Comm 3 Inch WM	0	$161.61	2.000	$4.31
	2,000	$161.61	2.000	$4.31
	20,000	$161.61	2.000	$3.71
	1,250,000	$161.61	2.000	$3.71

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
ARWA Comm 6 Inch WU	0	$411.37	2.000	$4.31
	2,000	$411.37	2.000	$4.31
	20,000	$411.37	2.000	$3.71
	1,255,000	$411.37	2.000	$3.71
Lew Jones Residential W9	0	$22.72	3.000	$2.31
	3,000	$22.72	3.000	$2.31
	20,000	$22.72	3.000	$2.31
	1,250,000	$22.72	3.000	$2.31
McKenney Residential WV	0	$25.00	5.000	$5.00
	5,000	$25.00	5.000	$5.00
	300,000	$25.00	5.000	$7.50
	500,000	$25.00	5.000	$10.00
	1,250,000	$25.00	5.000	$10.00
McKenney Commercial WZ	0	$37.50	5.000	$7.50
	5,000	$37.50	5.000	$7.50
	500,000	$37.50	5.000	$10.00
	1,250,000	$37.50	5.000	$10.00
Prince George Residential WL	0	$9.10	6.000	$2.83
	6,000	$9.10	6.000	$3.54
	20,000	$9.10	6.000	$4.42
	1,250,000	$9.10	6.000	$4.42
ARWA Other Sprinkler M2	0	$9.33	0.000	$0.00
	1,255,000	$9.33	0.000	$0.00
ARWA Other Sprinkler 375 sq. ft. M3	0	$19.72	0.000	$0.00
	1,000	$19.72	0.000	$0.00
	1,255,000	$19.72	0.000	$0.00

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
ARWA Other Sprinkler 2900 sq. ft. M6	0	$9.53	0.000	$0.00
	1,000	$9.53	0.000	$0.00
	1,255,000	$9.53	0.000	$0.00
ARWA Other Sprinkler 25000 sq. ft. Z2	0	$82.16	0.000	$0.00
	1,000	$82.16	0.000	$0.00
	1,255,000	$82.16	0.000	$0.00
ARWA Other Fire Hose (4 Inch?) 4 Z3	0	$5.26	0.000	$0.00
	1,000	$5.26	0.000	$0.00
	1,255,000	$5.26	0.000	$0.00
ARWA Other Sprinkler 11,200 sq. ft. Z4	0	$36.81	0.000	$0.00
	1,000	$36.81	0.000	$0.00
	1,255,000	$36.81	0.000	$0.00
ARWA Other Sprinkler 125000 sq. ft. Z6	0	$410.81	0.000	$0.00
	1,005,000	$410.81	0.000	$0.00
	1,255,000	$410.81	0.000	$0.00
ARWA Other 27 Fire Hose Outlet (4 Inch?) Z8	0	$35.50	0.000	$0.00
	1,005,000	$35.50	0.000	$0.00
	1,255,000	$35.50	0.000	$0.00
ARWA Other Sprinkler 2400 sq. ft. Z9	0	$7.88	0.000	$0.00
	1,005,000	$7.88	0.000	$0.00
	1,255,000	$7.88	0.000	$0.00
Fire Hydrant Rent (4 Inch?) M1	0	$2.63	0.000	$0.00
	1,255,000	$2.63	0.000	$0.00

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
Fire Hydrant Rent 2 Hydrants (4 Inch?) M7	0	$5.26	0.000	$0.00
	1,000,000	$5.26	0.000	$0.00
	1,250,000	$5.26	0.000	$0.00
Fire Hydrant Rent 6 Hydrants (4 Inch?) Z1	0	$15.77	0.000	$0.00
	1,005,000	$15.77	0.000	$0.00
	1,255,000	$15.77	0.000	$0.00
Fire Hydrant Rent 4 Hose (4 Inch?) Z5	0	$10.51	0.000	$0.00
	1,000	$10.51	0.000	$0.00
	1,255,000	$10.51	0.000	$0.00
Fire Hydrant Rent 22 Hydrants (4 Inch?) Z7	0	$57.84	0.000	$0.00
	1,005,000	$57.84	0.000	$0.00
	1,255,000	$57.84	0.000	$0.00
McKenny Sprinkler M4	0	$52.59	0.000	$0.00
	1,255,000	$52.59	0.000	$0.00
McKenney Hydrant (4 Inch?) M5	0	$7.88	0.000	$0.00
	1,000	$7.88	0.000	$0.00
	1,250,000	$7.88	0.000	$0.00

Table 2 - Test Year Usage
Dinwiddie, VA, Main System, 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: 7/1/2018

Date this model created: 10/31/2019

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
ARWA Res 3/4 Inch W1	0	999	35,245	33,552,990	3,159	1,466,990	263	8.2%	0.7%
	1,000	1,999	32,086	29,189,390	6,086	9,275,390	507	15.8%	4.6%
	2,000	2,999	26,000	22,611,170	6,795	16,996,170	566	17.7%	8.5%
	3,000	3,999	19,205	16,013,760	6,086	21,152,760	507	15.8%	10.5%
	4,000	4,999	13,119	10,620,340	4,619	20,596,340	385	12.0%	10.3%
	5,000	5,999	8,500	6,741,570	3,166	17,237,570	264	8.2%	8.6%
	6,000	6,999	5,334	4,285,670	1,857	11,950,670	155	4.8%	6.0%
	7,000	7,999	3,477	2,886,190	1,088	8,113,190	91	2.8%	4.0%
	8,000	8,999	2,389	2,003,240	693	5,851,240	58	1.8%	2.9%
	9,000	9,999	1,696	1,451,110	440	4,155,110	37	1.1%	2.1%
	10,000	14,999	1,256	3,768,410	807	9,593,410	67	2.1%	4.8%
	15,000	19,999	449	1,615,210	226	3,890,210	19	0.6%	1.9%
	20,000	29,999	223	1,349,310	143	3,409,310	12	0.4%	1.7%
	30,000	39,999	80	579,300	36	1,219,300	3	0.1%	0.6%
	40,000	49,999	44	356,150	14	616,150	1	0.0%	0.3%
	50,000	74,999	30	554,960	12	704,960	1	0.0%	0.4%
	75,000	99,999	18	266,970	11	916,970	1	0.0%	0.5%
	100,000	124,999	7	157,690	4	482,690	0	0.0%	0.2%
	125,000	149,999	3	55,030	1	130,030	0	0.0%	0.1%
	150,000	204,999	2	71,790	1	166,790	0	0.0%	0.1%
	205,000	299,999	1	47,820	1	252,820	0	0.0%	0.1%
			149,164	138,178,070	35,245	138,178,070	2,937	91.6%	68.8%
ARWA Res 1 Inch W3	0	999	84	76,100	21	13,100	2	0.1%	0.0%
	1,000	1,999	63	55,040	13	18,040	1	0.0%	0.0%
	2,000	2,999	50	32,820	31	75,820	3	0.1%	0.0%
	3,000	3,999	19	10,290	13	43,290	1	0.0%	0.0%
	4,000	4,999	6	4,910	2	8,910	0	0.0%	0.0%
	5,000	5,999	4	2,600	3	16,600	0	0.0%	0.0%
	6,000	6,999	1	1,000	0	0	0	0.0%	0.0%
	7,000	7,999	1	1,000	0	0	0	0.0%	0.0%
	8,000	8,999	1	900	1	8,900	0	0.0%	0.0%
			229	184,660	84	184,660	7	0.2%	0.1%
ARWA Res 1 1/2 Inch W5	0	999	37	0	37	0	3	0.1%	0.0%
	1,000	1,999	0	0	0	0	0	0.0%	0.0%
			37	0	37	0	3	0.1%	0.0%
ARWA Res 3 Inch WO	0	999	0	0	0	0	0	0.0%	0.0%
	1,000	1,999	0	0	0	0	0	0.0%	0.0%
			0	0	0	0	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
ARWA Comm 3/4 Inch W2	-11,500	-1	14	-30,420	14	-30,420	1	0.0%	0.0%
	0	999	1,063	600,270	590	127,270	49	1.5%	0.1%
	1,000	1,999	473	398,530	123	171,530	10	0.3%	0.1%
	2,000	2,999	350	298,100	94	230,100	8	0.2%	0.1%
	3,000	3,999	256	237,730	34	117,730	3	0.1%	0.1%
	4,000	4,999	222	216,160	15	69,160	1	0.0%	0.0%
	5,000	5,999	207	194,660	22	119,660	2	0.1%	0.1%
	6,000	6,999	185	173,500	19	121,500	2	0.0%	0.1%
	7,000	7,999	166	157,340	14	103,340	1	0.0%	0.1%
	8,000	8,999	152	146,740	11	93,740	1	0.0%	0.0%
	9,000	9,999	141	134,400	13	123,400	1	0.0%	0.1%
	10,000	14,999	128	522,720	46	572,720	4	0.1%	0.3%
	15,000	19,999	82	302,380	36	612,380	3	0.1%	0.3%
	20,000	29,999	46	369,160	14	329,160	1	0.0%	0.2%
	30,000	39,999	32	246,360	12	406,360	1	0.0%	0.2%
	40,000	49,999	20	169,600	6	269,600	1	0.0%	0.1%
	50,000	74,999	14	284,180	5	309,180	0	0.0%	0.2%
	75,000	99,999	9	142,820	5	417,820	0	0.0%	0.2%
	100,000	124,999	4	96,000	1	121,000	0	0.0%	0.1%
	125,000	149,999	3	75,000	0	0	0	0.0%	0.0%
	150,000	204,999	3	134,500	1	174,500	0	0.0%	0.1%
	205,000	299,999	2	136,670	2	546,670	0	0.0%	0.3%
			3,572	5,006,400	1,077	5,006,400	90	2.8%	2.5%
ARWA Comm 1 Inch W4	0	999	544	445,380	136	37,380	11	0.4%	0.0%
	1,000	1,999	408	374,130	63	92,130	5	0.2%	0.0%
	2,000	2,999	345	327,400	30	72,400	3	0.1%	0.0%
	3,000	3,999	315	303,420	22	76,420	2	0.1%	0.0%
	4,000	4,999	293	287,120	11	49,120	1	0.0%	0.0%
	5,000	5,999	282	273,050	14	75,050	1	0.0%	0.0%
	6,000	6,999	268	261,680	10	63,680	1	0.0%	0.0%
	7,000	7,999	258	254,250	6	44,250	1	0.0%	0.0%
	8,000	8,999	252	246,360	10	84,360	1	0.0%	0.0%
	9,000	9,999	242	236,610	13	124,610	1	0.0%	0.1%
	10,000	14,999	229	976,960	56	671,960	5	0.1%	0.3%
	15,000	19,999	173	781,550	32	556,550	3	0.1%	0.3%
	20,000	24,999	141	630,340	26	575,340	2	0.1%	0.3%
	25,000	34,999	115	971,880	36	1,081,880	3	0.1%	0.5%
	35,000	44,999	79	604,630	35	1,389,630	3	0.1%	0.7%
	45,000	54,999	44	293,270	24	1,173,270	2	0.1%	0.6%
	55,000	79,999	20	318,260	12	778,260	1	0.0%	0.4%
	80,000	104,999	8	122,020	4	342,020	0	0.0%	0.2%
	105,000	129,999	4	67,190	2	227,190	0	0.0%	0.1%
	130,000	154,999	2	8,670	2	268,670	0	0.0%	0.1%
			4,022	7,784,170	544	7,784,170	45	1.4%	3.9%

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
ARWA Comm 1 1/2 Inch W6	0	999	240	211,800	35	6,800	3	0.1%	0.0%
	1,000	1,999	205	191,880	23	32,880	2	0.1%	0.0%
	2,000	2,999	182	169,640	23	56,640	2	0.1%	0.0%
	3,000	3,999	159	152,320	12	41,320	1	0.0%	0.0%
	4,000	4,999	147	139,070	12	52,070	1	0.0%	0.0%
	5,000	5,999	135	130,660	11	61,660	1	0.0%	0.0%
	6,000	6,999	124	115,240	14	89,240	1	0.0%	0.0%
	7,000	7,999	110	105,400	7	51,400	1	0.0%	0.0%
	8,000	8,999	103	101,090	4	34,090	0	0.0%	0.0%
	9,000	9,999	99	97,860	2	18,860	0	0.0%	0.0%
	10,000	14,999	97	456,940	10	121,940	1	0.0%	0.1%
	15,000	19,999	87	422,100	8	147,100	1	0.0%	0.1%
	20,000	24,999	79	372,410	8	177,410	1	0.0%	0.1%
	25,000	34,999	71	605,000	20	595,000	2	0.1%	0.3%
	35,000	44,999	51	416,370	18	716,370	2	0.0%	0.4%
	45,000	54,999	33	295,930	7	350,930	1	0.0%	0.2%
	55,000	79,999	26	354,560	22	1,464,560	2	0.1%	0.7%
	80,000	104,999	4	75,350	1	80,350	0	0.0%	0.0%
	105,000	129,999	3	75,000	0	0	0	0.0%	0.0%
	130,000	154,999	3	75,000	0	0	0	0.0%	0.0%
	155,000	209,999	3	160,030	1	205,030	0	0.0%	0.1%
	210,000	304,999	2	28,860	2	448,860	0	0.0%	0.2%
			1,963	4,752,510	240	4,752,510	20	0.6%	2.4%
ARWA Comm 2 Inch W7	0	999	210	176,800	35	1,800	3	0.1%	0.0%
	1,000	1,999	175	173,240	8	14,240	1	0.0%	0.0%
	2,000	2,999	167	162,660	7	16,660	1	0.0%	0.0%
	3,000	3,999	160	159,980	1	3,980	0	0.0%	0.0%
	4,000	4,999	159	153,660	10	44,660	1	0.0%	0.0%
	5,000	5,999	149	145,380	9	50,380	1	0.0%	0.0%
	6,000	6,999	140	137,000	5	32,000	0	0.0%	0.0%
	7,000	7,999	135	132,090	6	45,090	1	0.0%	0.0%
	8,000	8,999	129	123,810	9	75,810	1	0.0%	0.0%
	9,000	9,999	120	116,010	7	66,010	1	0.0%	0.0%
	10,000	14,999	113	535,230	11	135,230	1	0.0%	0.1%
	15,000	19,999	102	493,290	6	103,290	1	0.0%	0.1%
	20,000	24,999	96	455,290	11	250,290	1	0.0%	0.1%
	25,000	34,999	85	810,980	6	170,980	1	0.0%	0.1%
	35,000	44,999	79	782,510	3	127,510	0	0.0%	0.1%
	45,000	54,999	76	704,430	10	494,430	1	0.0%	0.2%
	55,000	79,999	66	1,344,760	20	1,294,760	2	0.1%	0.6%
	80,000	104,999	46	1,052,180	7	637,180	1	0.0%	0.3%
	105,000	129,999	39	763,040	16	1,868,040	1	0.0%	0.9%
	130,000	154,999	23	435,810	11	1,565,810	1	0.0%	0.8%
	155,000	209,999	12	504,090	5	894,090	0	0.0%	0.4%
	210,000	304,999	7	395,970	3	645,970	0	0.0%	0.3%
	305,000	504,999	4	305,410	3	1,020,410	0	0.0%	0.5%
	505,000	754,999	1	142,910	1	647,910	0	0.0%	0.3%
			2,293	10,206,530	210	10,206,530	18	0.5%	5.1%

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
ARWA Comm 2 Inch WB	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	34,999	12	120,000	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	104,360	5	259,360	0	0.0%	0.1%
	55,000	79,999	7	42,810	7	427,810	1	0.0%	0.2%
			199	687,170	12	687,170	1	0.0%	0.3%
ARWA Comm 2.2 Inch WA	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	34,999	48	480,000	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	79,999	48	1,151,360	9	671,360	1	0.0%	0.3%
	80,000	104,999	39	921,330	6	576,330	1	0.0%	0.3%
	105,000	129,999	33	712,490	8	927,490	1	0.0%	0.5%
	130,000	154,999	25	624,650	1	154,650	0	0.0%	0.1%
	155,000	209,999	24	1,102,570	7	1,252,570	1	0.0%	0.6%
	210,000	304,999	17	1,399,870	5	1,309,870	0	0.0%	0.7%
	305,000	504,999	12	2,400,000	0	0	0	0.0%	0.0%
	505,000	754,999	12	2,492,840	10	7,042,840	1	0.0%	3.5%
	755,000	1,004,999	2	41,850	2	1,551,850	0	0.0%	0.8%
			980	13,486,960	48	13,486,960	4	0.1%	6.7%

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
ARWA Comm 3 Inch WM	0	999	96	92,300	5	1,300	0	0.0%	0.0%
	1,000	1,999	91	91,000	0	0	0	0.0%	0.0%
	2,000	2,999	91	91,000	0	0	0	0.0%	0.0%
	3,000	3,999	91	91,000	0	0	0	0.0%	0.0%
	4,000	4,999	91	88,490	5	22,490	0	0.0%	0.0%
	5,000	5,999	86	85,270	2	11,270	0	0.0%	0.0%
	6,000	6,999	84	82,550	3	19,550	0	0.0%	0.0%
	7,000	7,999	81	79,960	2	14,960	0	0.0%	0.0%
	8,000	8,999	79	79,000	0	0	0	0.0%	0.0%
	9,000	9,999	79	78,480	1	9,480	0	0.0%	0.0%
	10,000	14,999	78	376,310	6	76,310	1	0.0%	0.0%
	15,000	19,999	72	360,000	0	0	0	0.0%	0.0%
	20,000	29,999	72	698,440	4	98,440	0	0.0%	0.0%
	30,000	39,999	68	651,290	4	131,290	0	0.0%	0.1%
	40,000	49,999	64	612,710	5	222,710	0	0.0%	0.1%
	50,000	74,999	59	1,265,070	13	765,070	1	0.0%	0.4%
	75,000	99,999	46	1,138,030	2	188,030	0	0.0%	0.1%
	100,000	124,999	44	1,069,880	3	344,880	0	0.0%	0.2%
	125,000	149,999	41	916,420	8	1,091,420	1	0.0%	0.5%
	150,000	204,999	33	1,453,790	8	1,278,790	1	0.0%	0.6%
	205,000	299,999	25	2,131,790	6	1,556,790	1	0.0%	0.8%
	300,000	399,999	19	1,612,210	6	2,112,210	1	0.0%	1.1%
	400,000	499,999	13	663,390	10	4,363,390	1	0.0%	2.2%
	500,000	749,999	3	347,760	2	1,097,760	0	0.0%	0.5%
	750,000	999,999	1	250,000	0	0	0	0.0%	0.0%
	1,000,000	1,249,999	1	135,940	1	1,135,940	0	0.0%	0.6%
	1,250,000	1,500,000	0	0	0	0	0	0.0%	0.0%
			1,508	14,542,080	96	14,542,080	8	0.2%	7.2%
ARWA Comm 6 Inch WU	0	999	24	24,000	0	0	0	0.0%	0.0%
	1,000	1,999	24	24,000	0	0	0	0.0%	0.0%
	2,000	2,999	24	24,000	0	0	0	0.0%	0.0%
	3,000	3,999	24	24,000	0	0	0	0.0%	0.0%
	4,000	4,999	24	24,000	0	0	0	0.0%	0.0%
	5,000	5,999	24	24,000	0	0	0	0.0%	0.0%
	6,000	6,999	24	24,000	0	0	0	0.0%	0.0%
	7,000	7,999	24	24,000	0	0	0	0.0%	0.0%
	8,000	8,999	24	24,000	0	0	0	0.0%	0.0%
	9,000	9,999	24	24,000	0	0	0	0.0%	0.0%
	10,000	14,999	24	120,000	0	0	0	0.0%	0.0%
	15,000	19,999	24	120,000	0	0	0	0.0%	0.0%
	20,000	24,999	24	120,000	0	0	0	0.0%	0.0%
	25,000	34,999	24	240,000	0	0	0	0.0%	0.0%
	35,000	44,999	24	240,000	0	0	0	0.0%	0.0%
	45,000	54,999	24	240,000	0	0	0	0.0%	0.0%
	55,000	79,999	24	591,550	2	151,550	0	0.0%	0.1%
	80,000	104,999	22	485,390	4	355,390	0	0.0%	0.2%
	105,000	129,999	18	355,100	9	1,075,100	1	0.0%	0.5%
	130,000	154,999	9	86,880	8	1,101,880	1	0.0%	0.5%
	155,000	209,999	1	44,440	1	199,440	0	0.0%	0.1%
			458	2,883,360	24	2,883,360	2	0.1%	1.4%

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
Lew Jones Residential W9	0	999	294	281,610	23	10,610	2	0.1%	0.0%
	1,000	1,999	271	233,100	72	106,100	6	0.2%	0.1%
	2,000	2,999	199	179,370	37	91,370	3	0.1%	0.0%
	3,000	3,999	162	141,720	48	171,720	4	0.1%	0.1%
	4,000	4,999	114	95,030	40	181,030	3	0.1%	0.1%
	5,000	5,999	74	55,310	31	167,310	3	0.1%	0.1%
	6,000	6,999	43	30,740	21	134,740	2	0.1%	0.1%
	7,000	7,999	22	18,750	6	44,750	1	0.0%	0.0%
	8,000	8,999	16	13,290	5	42,290	0	0.0%	0.0%
	9,000	9,999	11	11,000	0	0	0	0.0%	0.0%
	10,000	14,999	11	35,490	5	55,490	0	0.0%	0.0%
	15,000	19,999	6	22,590	4	72,590	0	0.0%	0.0%
	20,000	29,999	2	20,000	0	0	0	0.0%	0.0%
	30,000	39,999	2	20,000	0	0	0	0.0%	0.0%
	40,000	49,999	2	11,520	1	41,520	0	0.0%	0.0%
	50,000	74,999	1	25,000	0	0	0	0.0%	0.0%
	75,000	99,999	1	25,000	0	0	0	0.0%	0.0%
	100,000	124,999	1	25,000	0	0	0	0.0%	0.0%
	125,000	149,999	1	25,000	0	0	0	0.0%	0.0%
	150,000	204,999	1	55,000	0	0	0	0.0%	0.0%
	205,000	299,999	1	5,470	1	210,470	0	0.0%	0.1%
			1,235	1,329,990	294	1,329,990	25	0.8%	0.7%
McKenney Residential WV	0	999	144	131,250	20	7,250	2	0.1%	0.0%
	1,000	1,999	124	106,820	37	56,820	3	0.1%	0.0%
	2,000	2,999	87	66,160	43	108,160	4	0.1%	0.1%
	3,000	3,999	44	28,340	26	88,340	2	0.1%	0.0%
	4,000	4,999	18	12,700	10	44,700	1	0.0%	0.0%
	5,000	5,999	8	6,580	4	22,580	0	0.0%	0.0%
	6,000	6,999	4	840	4	24,840	0	0.0%	0.0%
			429	352,690	144	352,690	12	0.4%	0.2%
McKenney Commercial WZ	0	999	25	12,000	13	0	1	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	59,980	1	19,980	0	0.0%	0.0%
	20,000	29,999	11	110,000	0	0	0	0.0%	0.0%
	30,000	39,999	11	110,000	0	0	0	0.0%	0.0%
	40,000	49,999	11	106,060	1	46,060	0	0.0%	0.0%
	50,000	74,999	10	230,670	2	130,670	0	0.0%	0.1%
	75,000	99,999	8	107,730	6	507,730	1	0.0%	0.3%
	100,000	124,999	2	29,270	2	229,270	0	0.0%	0.1%
			210	933,710	25	933,710	2	0.1%	0.5%

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
Prince George Residential WL	0	999	84	84,000	0	0	0	0.0%	0.0%
	1,000	1,999	84	81,730	10	17,730	1	0.0%	0.0%
	2,000	2,999	74	63,500	20	49,500	2	0.1%	0.0%
	3,000	3,999	54	46,680	12	40,680	1	0.0%	0.0%
	4,000	4,999	42	39,940	9	42,940	1	0.0%	0.0%
	5,000	5,999	33	28,460	8	43,460	1	0.0%	0.0%
	6,000	6,999	25	18,390	13	84,390	1	0.0%	0.0%
	7,000	7,999	12	10,740	2	14,740	0	0.0%	0.0%
	8,000	8,999	10	10,000	0	0	0	0.0%	0.0%
	9,000	9,999	10	9,260	1	9,260	0	0.0%	0.0%
	10,000	14,999	9	30,450	6	75,450	1	0.0%	0.0%
	15,000	19,999	3	9,640	2	34,640	0	0.0%	0.0%
	20,000	29,999	1	9,960	1	29,960	0	0.0%	0.0%
			441	442,750	84	442,750	7	0.2%	0.2%
ARWA Other Sprinkler M2	0	999	12	0	12	0	1	0.0%	0.0%
			12	0	12	0	1	0.0%	0.0%
ARWA Other Sprinkler 375 sq. ft. M3	0	999	12	0	12	0	1	0.0%	0.0%
			12	0	12	0	1	0.0%	0.0%
ARWA Other Sprinkler 2900 sq. ft. M6	0	999	12	0	12	0	1	0.0%	0.0%
			12	0	12	0	1	0.0%	0.0%
ARWA Other Sprinkler 25000 sq. ft. Z2	0	999	36	0	36	0	3	0.1%	0.0%
			36	0	36	0	3	0.1%	0.0%
ARWA Other Fire Hose (4 Inch?) 4 Z3	0	999	12	0	12	0	1	0.0%	0.0%
			12	0	12	0	1	0.0%	0.0%
ARWA Other Sprinkler 11,200 sq. ft. Z4	0	999	36	0	36	0	3	0.1%	0.0%
			36	0	36	0	3	0.1%	0.0%
ARWA Other Sprinkler 125000 sq. ft. Z6	0	999	12	0	12	0	1	0.0%	0.0%
			12	0	12	0	1	0.0%	0.0%
ARWA Other 27 Fire Hose Outlet (4 Inch?) Z8	0	999	12	0	12	0	1	0.0%	0.0%
			12	0	12	0	1	0.0%	0.0%
ARWA Other Sprinkler 2400 sq. ft. Z9	0	999	24	0	24	0	2	0.1%	0.0%
			24	0	24	0	2	0.1%	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
Fire Hydrant Rent (4 Inch?) M1	0	999	24	0	24	0	2	0.1%	0.0%
			24	0	24	0	2	0.1%	0.0%
Fire Hydrant Rent 2 Hydrants (4 Inch?) M7	0	999	24	0	24	0	2	0.1%	0.0%
			24	0	24	0	2	0.1%	0.0%
Fire Hydrant Rent 6 Hydrants (4 Inch?) Z1	0	999	12	0	12	0	1	0.0%	0.0%
			12	0	12	0	1	0.0%	0.0%
Fire Hydrant Rent 4 Hose (4 Inch?) Z5	0	999	12	0	12	0	1	0.0%	0.0%
			12	0	12	0	1	0.0%	0.0%
Fire Hydrant Rent 22 Hydrants (4 Inch?) Z7	0	999	12	0	12	0	1	0.0%	0.0%
			12	0	12	0	1	0.0%	0.0%
McKenny Sprinkler M4	0	999	26	1,000	25	0	2	0.1%	0.0%
			29	3,520	26	3,520	2	0.1%	0.0%
McKenney Hydrant (4 Inch?) M5	0	999	37	0	37	0	3	0.1%	0.0%
			37	0	37	0	3	0.1%	0.0%
		Grand Totals:	167,058	200,774,570	38,479	200,774,570	3,207	100%	100%

Table 3 - Operating Incomes and Basic User Data

Dinwiddie, VA, Main System, 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)

$54,640	Census Bureau estimate of AMHI for the year	2017
$51,579	Census Bureau estimate of AMHI for the year	2016
$3,061	AMHI growth during this time period	
5.93%	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

25	Number of new Water connections made during the test year
$5,290	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
		7/1/18	7/1/19	7/1/20	7/1/21	7/1/22	7/1/23	7/1/24	7/1/25	7/1/26	7/1/27	7/1/28	7/1/29
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.	3,207	3,232	3,257	3,282	3,307	3,332	3,357	3,382	3,407	3,432	3,457	3,482
Customers Added or Lost (-) Each Year	N.A.	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Customer Growth or Loss (-) Rate	N.A.	0.78%	0.77%	0.77%	0.77%	0.76%	0.75%	0.74%	0.74%	0.73%	0.73%	0.72%	0.72%
Actual (Test Year) and Projected Volumes, in Gallons	N.A.	200,774,570	202,339,901	203,905,232	205,470,563	207,035,894	208,601,225	210,166,556	211,731,887	213,297,218	214,862,549	216,427,880	217,993,211
Sprinkler Systems on the Water System	N.A.	13	13	13	13	13	13	13	13	13	13	13	13
Sprinkler Systems 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%
How User Charge Fees Were Calculated, Accounting for New Customers and Future Rate Increases													
Actual or Calculated Sales Revenues		$1,084,510	$1,085,128	$1,350,242	$1,401,426	$1,454,550	$1,509,513	$1,566,466	$1,625,477	$1,686,619	$1,749,967	$1,815,597	$1,883,590
Additional Sales Revenues From New Customers			$23	$10,365	$10,758	$10,997	$11,327	$11,667	$12,017	$12,378	$12,749	$13,131	$13,525
Total Calculated Revenues (User Charge Fees)		$1,084,510	$1,085,151	$1,360,607	$1,412,184	$1,465,547	$1,520,841	$1,578,133	$1,637,494	$1,698,997	$1,762,715	$1,828,728	$1,897,116
Operating Incomes													
User Charge Fees (Tables 10, 16, 16B)	N.A.	$1,134,356	$1,135,027	$1,423,144	$1,477,091	$1,532,906	$1,590,741	$1,650,667	$1,712,757	$1,777,086	$1,843,733	$1,912,780	$1,984,311
Late Payment Charge	N.A.	$24,518	$24,707	$24,897	$25,088	$25,278	$25,468	$25,657	$25,847	$26,037	$26,226	$26,416	$26,606
New Water Taps or Connections (Current Rate Structure)	% Above	$132,241	$131,879	$0	$0	$0	$0	$0	$0	$0	$0	$1	$2
Meter Size-based System Development Fees (Table 14)	% Above	$0	$129	$48,705	$50,166	$51,671	$53,221	$54,818	$56,462	$58,156	$59,901	$61,698	$63,549
Sprinkler Connection Fees (Current Rate Structure)	% Above	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1	$2
Sprinkler System Development Fees (Table 14B)	% Above	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest Income	N.A.	$71,709	$6,155	$6,332	$6,472	$6,639	$6,834	$6,988	$7,172	$7,387	$7,557	$7,759	$7,997
APPLICATION FEES	N.A.	$4,988	$4,988	$4,988	$4,988	$4,988	$4,988	$4,988	$4,988	$4,988	$4,988	$4,988	$4,988
COLLECT BAD DEBT	N.A.	$390	$390	$390	$390	$390	$390	$390	$390	$390	$390	$390	$390
LIEN FEES	N.A.	$315	$315	$315	$315	$315	$315	$315	$315	$315	$315	$315	$315
MISC. INCOME	N.A.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
REV. FROM BILLABLE	N.A.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SERVICE CHARGES	N.A.	$21,005	$21,005	$21,005	$21,005	$21,005	$21,005	$21,005	$21,005	$21,005	$21,005	$21,005	$21,005
Total Operating Incomes		**$1,389,521**	**$1,324,595**	**$1,529,775**	**$1,585,515**	**$1,643,191**	**$1,702,962**	**$1,764,828**	**$1,828,935**	**$1,895,363**	**$1,964,115**	**$2,035,353**	**$2,109,163**

Table 4 - Operating Costs and Net Income

Dinwiddie, VA, Main System, 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.)			Analysis Year	Years Following the Analysis Year (for Which Results Have Been Projected)									
	Inflation/ Deflation (–) Factor	Test Year Starting 7/1/18	0 Year Starting 7/1/19	1st Year Starting 7/1/20	2nd Year Starting 7/1/21	3rd Year Starting 7/1/22	4th Year Starting 7/1/23	5th Year Starting 7/1/24	6th Year Starting 7/1/25	7th Year Starting 7/1/26	8th Year Starting 7/1/27	9th Year Starting 7/1/28	10th Year Starting 7/1/29
ARWA	3.0%	$340,113	$353,027	$366,409	$380,299	$394,669	$409,560	$424,988	$440,974	$457,537	$474,696	$492,473	$510,890
AUTO ALLOWANCE	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BAD DEBT/ WRITE OFF	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Banking Service fees	3.0%	$1,477	$1,522	$1,567	$1,614	$1,663	$1,713	$1,764	$1,817	$1,871	$1,928	$1,985	$2,045
BUILD REPAIR/MAINT.	3.0%	$11,480	$11,824	$12,179	$12,544	$12,920	$13,308	$13,707	$14,119	$14,542	$14,978	$15,428	$15,891
CLEAN-OFFICE	3.0%	$1,048	$1,080	$1,112	$1,145	$1,180	$1,215	$1,252	$1,289	$1,328	$1,368	$1,409	$1,451
COLLECT/LIEN FEES	3.0%	$31	$32	$33	$34	$35	$36	$37	$38	$40	$41	$42	$43
COMPUTER MAINTENANCE	3.0%	$20,045	$20,646	$21,266	$21,903	$22,561	$23,237	$23,935	$24,653	$25,392	$26,154	$26,939	$27,747
COMPUTER TECH SUPPORT	3.0%	$149	$153	$158	$162	$167	$172	$177	$183	$188	$194	$200	$206
COPY MACHINE	3.0%	$228	$235	$242	$249	$257	$265	$273	$281	$289	$298	$307	$316
DEPRECIATION	0.0%	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283
DUES & SUBSCRIPTIONS	3.0%	$2,684	$2,765	$2,848	$2,933	$3,021	$3,112	$3,205	$3,301	$3,400	$3,502	$3,607	$3,715
ELECTRIC	3.0%	$16,164	$16,778	$17,414	$18,074	$18,757	$19,465	$20,198	$20,958	$21,745	$22,561	$23,406	$24,281
ELECTRIC - OFFICE	3.0%	$2,237	$2,305	$2,374	$2,445	$2,518	$2,594	$2,672	$2,752	$2,834	$2,919	$3,007	$3,097
Gain/Loss on Disposal of Fixed Assets	3.0%	$7,857	$8,092	$8,335	$8,585	$8,843	$9,108	$9,381	$9,663	$9,952	$10,251	$10,558	$10,875
GAS & OIL	3.0%	$3,603	$3,711	$3,822	$3,937	$4,055	$4,177	$4,302	$4,431	$4,564	$4,701	$4,842	$4,987
INSURANCE - GL	3.0%	$6,238	$6,425	$6,617	$6,816	$7,020	$7,231	$7,448	$7,671	$7,902	$8,139	$8,383	$8,634
INSURANCE-WORKERS COMP	3.0%	$1,028	$1,059	$1,091	$1,124	$1,157	$1,192	$1,228	$1,265	$1,303	$1,342	$1,382	$1,424
INTEREST EXPENSE	0.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
LAB TEST	3.0%	$1,697	$1,748	$1,801	$1,855	$1,910	$1,968	$2,027	$2,087	$2,150	$2,215	$2,281	$2,349
LEGAL & AUDITING	3.0%	$25,004	$25,754	$26,527	$27,323	$28,142	$28,987	$29,856	$30,752	$31,674	$32,625	$33,603	$34,612
MAINTENCE-OFF EQUIP	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MCKENNEY	3.0%	$9,160	$9,435	$9,718	$10,009	$10,310	$10,619	$10,938	$11,266	$11,604	$11,952	$12,310	$12,680
McKENNEY WATER MISC.	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MISCELLANEOUS	3.0%	$9,177	$9,453	$9,736	$10,028	$10,329	$10,639	$10,958	$11,287	$11,626	$11,974	$12,334	$12,704
NEW CONNECT SUPPLIES	3.0%	$5,030	$5,221	$5,419	$5,624	$5,837	$6,057	$6,285	$6,522	$6,767	$7,020	$7,283	$7,556
NO-CUT/MISS UTILITY	3.0%	$630	$649	$668	$688	$709	$730	$752	$775	$798	$822	$847	$872
PAGERS & CELL PHONE	3.0%	$3,897	$4,013	$4,134	$4,258	$4,386	$4,517	$4,653	$4,792	$4,936	$5,084	$5,237	$5,394
PAYROLL BENEFITS	3.0%	$2,072	$2,134	$2,198	$2,264	$2,332	$2,402	$2,474	$2,548	$2,624	$2,703	$2,784	$2,868
PAYROLL SERVICE	3.0%	$4,187	$4,312	$4,442	$4,575	$4,712	$4,854	$4,999	$5,149	$5,304	$5,463	$5,627	$5,795
PAYROLL TAXES	3.0%	$31,380	$32,321	$33,291	$34,289	$35,318	$36,378	$37,469	$38,593	$39,751	$40,943	$42,171	$43,437
PERMITS	3.0%	$9,608	$9,896	$10,193	$10,499	$10,814	$11,138	$11,473	$11,817	$12,171	$12,536	$12,913	$13,300
POSTAGE	3.0%	$14,200	$14,739	$15,298	$15,878	$16,478	$17,099	$17,744	$18,411	$19,102	$19,819	$20,561	$21,330
PRINCE GEORGE	3.0%	$2,317	$2,386	$2,458	$2,532	$2,608	$2,686	$2,767	$2,850	$2,935	$3,023	$3,114	$3,207
PROFESSIONAL SERVICES	3.0%	$46,905	$48,312	$49,761	$51,254	$52,792	$54,376	$56,007	$57,687	$59,418	$61,200	$63,036	$64,927
REPAIR - EQUIPMENT	3.0%	$1,605	$1,653	$1,703	$1,754	$1,806	$1,861	$1,916	$1,974	$2,033	$2,094	$2,157	$2,222

Table 4 - Operating Costs and Net Income

	Inflation/ Deflation (–) Factor	Test Year Starting 7/1/18	0 Year Starting 7/1/19	1st Year Starting 7/1/20	2nd Year Starting 7/1/21	3rd Year Starting 7/1/22	4th Year Starting 7/1/23	5th Year Starting 7/1/24	6th Year Starting 7/1/25	7th Year Starting 7/1/26	8th Year Starting 7/1/27	9th Year Starting 7/1/28	10th Year Starting 7/1/29
REPAIR - VEHICLE	3.0%	$4,451	$4,585	$4,722	$4,864	$5,010	$5,160	$5,315	$5,474	$5,638	$5,808	$5,982	$6,161
SALARIES	3.0%	$233,102	$240,095	$247,298	$254,717	$262,358	$270,229	$278,336	$286,686	$295,286	$304,145	$313,269	$322,667
SUPPLIES/MAINTENANCE	3.0%	$103,307	$106,406	$109,599	$112,886	$116,273	$119,761	$123,354	$127,055	$130,866	$134,792	$138,836	$143,001
SUPPLY-OFFICE	3.0%	$3,528	$3,633	$3,742	$3,855	$3,970	$4,090	$4,212	$4,339	$4,469	$4,603	$4,741	$4,883
SUPPLY-SHOP	3.0%	$5,811	$5,985	$6,165	$6,350	$6,540	$6,736	$6,938	$7,146	$7,361	$7,582	$7,809	$8,043
TELEPHONE	3.0%	$2,619	$2,697	$2,778	$2,862	$2,947	$3,036	$3,127	$3,221	$3,317	$3,417	$3,519	$3,625
TRAINING	3.0%	$1,706	$1,757	$1,810	$1,864	$1,920	$1,978	$2,037	$2,098	$2,161	$2,226	$2,293	$2,362
UNIFORMS & BOOTS	3.0%	$2,648	$2,728	$2,809	$2,894	$2,981	$3,070	$3,162	$3,257	$3,355	$3,455	$3,559	$3,666
UTILITY - HEATING GAS	3.0%	$2,256	$2,323	$2,393	$2,465	$2,539	$2,615	$2,693	$2,774	$2,857	$2,943	$3,031	$3,122
User Charge Analysis Services	5.0%	$0	$4,306	$0	$0	$4,747	$0	$0	$5,233	$0	$0	$5,770	$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		**$1,230,961**	**$1,266,479**	**$1,294,412**	**$1,327,734**	**$1,366,875**	**$1,397,651**	**$1,434,341**	**$1,477,469**	**$1,511,374**	**$1,551,798**	**$1,599,317**	**$1,636,667**
Net Income (or Loss)		$158,560	$58,117	$235,364	$257,780	$276,317	$305,311	$330,487	$351,466	$383,989	$412,317	$436,035	$472,496
Working Capital Goal: 50% In Dollars, That is:		$615,480	$633,239	$647,206	$663,867	$683,437	$698,825	$717,170	$738,735	$755,687	$775,899	$799,659	$818,333

Notes: The yellow highlighted cost items above will rise due to inflation and due to the additional cost of serving new customers. Additionally, the gold highlighted costs for depreciation would normally not be included in rate calculations. But the depreciation amounts were used as a funding source for CIP and debt in Table 5.

Table 5 - Capital Improvement Program (CIP)

Dinwiddie, VA, Main System, 2019 Water Rates Model 1

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

		Analysis Year	Years Following the Analysis Year (for Which Improvement Projects, Costs, Funding, etc. Have Been Projected)									
	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	7/1/18	7/1/19	7/1/20	7/1/21	7/1/22	7/1/23	7/1/24	7/1/25	7/1/26	7/1/27	7/1/28	7/1/29
Planned Spending, Cash-paid Portion of Projects (CIP costs to be funded from reserves are shown here.)												
Water Pump Station Rehabilitation	$0	$0	$25,750	$0	$27,318	$0	$28,982	$0	$30,747	$0	$32,619	$0
Radio Read Meter System	$0	$0	$51,500	$53,045	$54,636	$56,275	$57,964	$59,703	$61,494	$63,339	$65,239	$67,196
Tank Painting	$0	$0	$92,700	$95,481	$98,345	$101,296	$104,335	$107,465	$110,689	$114,009	$117,430	$120,952
Water Line Rehabilitation	$0	$0	$25,750	$79,568	$81,955	$84,413	$86,946	$89,554	$92,241	$95,008	$97,858	$100,794
Vehicle and Equipment Replacement (Shared W and S)	$0	$0	$25,750	$0	$27,318	$0	$28,982	$0	$30,747	$0	$32,619	$0
Business Server Replacement (Shared W and S)	$0	$0	$0	$0	$27,318	$0	$0	$0	$0	$47,504	$0	$0
Desktop computer replacement (Shared W and S)	$0	$0	$0	$0	$0	$0	$17,389	$0	$0	$0	$0	$26,878
AWIA of 2018 (regulatory requirement)	$0	$0	$154,500	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cash-paid Portion of Projects	$0	$0	$375,950	$228,094	$316,891	$241,984	$324,597	$256,721	$325,917	$319,859	$345,765	$315,820
Total CIP Costs	**$0**	**$0**	**$375,950**	**$228,094**	**$316,891**	**$241,984**	**$324,597**	**$256,721**	**$325,917**	**$319,859**	**$345,765**	**$315,820**
Debt Repayment												
Existing Debt Payments (Following is debt that was initiated during the test year or earlier.)												
Series 2016A, Annual Payment	$260,394	$260,047	$260,587	$260,024	$260,359	$259,603	$259,734	$259,762	$259,666	$260,457	$260,112	$259,663
"PAC" Project Debt	$0	$0	$0	$0	$0	$7,898	$7,898	$7,898	$7,898	$7,898	$7,898	$7,898
Total Debt Payments	$260,394	$260,047	$260,587	$260,024	$260,359	$267,501	$267,632	$267,660	$267,564	$268,355	$268,010	$267,561
Total CIP-related Payouts	**$260,394**	**$260,047**	**$636,537**	**$488,118**	**$577,250**	**$509,485**	**$592,228**	**$524,381**	**$593,480**	**$588,214**	**$613,775**	**$583,381**
(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	$1,771,228	$1,586,963	$1,493,845	$1,567,006	$1,568,125	$1,670,208	$1,713,808	$1,843,887	$1,944,604	$2,077,669	$2,208,006
Working Capital Transferred in	$2,031,622	$40,358	$221,397	$241,119	$256,747	$289,923	$312,142	$329,902	$367,036	$392,105	$412,276	$453,822
Debt and CIP Reserves Interest Earned (or Paid)	$0	$35,425	$31,739	$29,877	$31,340	$31,363	$33,404	$34,276	$36,878	$38,892	$41,553	$44,160
Total Available Internal Funds	$2,031,622	$1,847,010	$2,130,382	$2,055,123	$2,145,375	$2,179,693	$2,306,036	$2,368,268	$2,538,084	$2,665,884	$2,821,781	$2,996,270
Outcomes (This CIP spending and funding plan will result in the following cash needs and ending balances each year.)												
Total Available Funds	**$2,031,622**	**$1,847,010**	**$2,130,382**	**$2,055,123**	**$2,145,375**	**$2,179,693**	**$2,306,036**	**$2,368,268**	**$2,538,084**	**$2,665,884**	**$2,821,781**	**$2,996,270**
Total CIP-related Payouts	**$260,394**	**$260,047**	**$636,537**	**$488,118**	**$577,250**	**$509,485**	**$592,228**	**$524,381**	**$593,480**	**$588,214**	**$613,775**	**$583,381**
Debt and CIP Reserves Ending Balances	**$1,771,228**	**$1,586,963**	**$1,493,845**	**$1,567,006**	**$1,568,125**	**$1,670,208**	**$1,713,808**	**$1,843,887**	**$1,944,604**	**$2,077,669**	**$2,208,006**	**$2,412,889**

Notes: The Authority plans for CIP costs on an amortized cost basis, therefore, costs were handled in the same way here.

Table 8 - Average Cost Classification

Dinwiddie, VA, Main System, 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: 7/1/2023 through 6/30/2024

Cost Items	Cost During Rate Structure Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
ARWA	$409,560	0.0%	100.0%	$0	$409,560
AUTO ALLOWANCE	$0	24.8%	75.2%	$0	$0
BAD DEBT/ WRITE OFF	$0	24.8%	75.2%	$0	$0
Banking Service fees	$1,713	100.0%	0.0%	$1,713	$0
BUILD REPAIR/MAINT.	$13,308	100.0%	0.0%	$13,308	$0
CLEAN-OFFICE	$1,215	100.0%	0.0%	$1,215	$0
COLLECT/LIEN FEES	$36	100.0%	0.0%	$36	$0
COMPUTER MAINTENANCE	$23,237	100.0%	0.0%	$23,237	$0
COMPUTER TECH SUPPORT	$172	100.0%	0.0%	$172	$0
COPY MACHINE	$265	100.0%	0.0%	$265	$0
DEPRECIATION	$290,283	24.8%	75.2%	$71,990	$218,292
DUES & SUBSCRIPTIONS	$3,112	25.0%	75.0%	$778	$2,334
ELECTRIC	$19,465	0.0%	100.0%	$0	$19,465
ELECTRIC - OFFICE	$2,594	100.0%	0.0%	$2,594	$0
Gain/Loss on Disposal of Fixed Assets	$9,108	24.8%	75.2%	$2,259	$6,849
GAS & OIL	$4,177	24.8%	75.2%	$1,036	$3,141
INSURANCE - GL	$7,231	100.0%	0.0%	$7,231	$0
INSURANCE-WORKERS COMP	$1,192	25.0%	75.0%	$298	$894
INTEREST EXPENSE	$0	24.8%	75.2%	$0	$0
LAB TEST	$1,968	100.0%	0.0%	$1,968	$0
LEGAL & AUDITING	$28,987	100.0%	0.0%	$28,987	$0
MAINTENCE-OFF EQUIP	$0	100.0%	0.0%	$0	$0
MCKENNEY	$10,619	24.8%	75.2%	$2,633	$7,985
McKENNEY WATER MISC.	$0	24.8%	75.2%	$0	$0
MISCELLANEOUS	$10,639	100.0%	0.0%	$10,639	$0
NEW CONNECT SUPPLIES	$6,057	24.8%	75.2%	$1,502	$4,555
NO-CUT/MISS UTILITY	$730	24.8%	75.2%	$181	$549
PAGERS & CELL PHONE	$4,517	100.0%	0.0%	$4,517	$0
PAYROLL BENEFITS	$2,402	25.0%	75.0%	$600	$1,801
PAYROLL SERVICE	$4,854	25.0%	75.0%	$1,213	$3,640
PAYROLL TAXES	$36,378	25.0%	75.0%	$9,094	$27,283
PERMITS	$11,138	100.0%	0.0%	$11,138	$0
POSTAGE	$17,099	100.0%	0.0%	$17,099	$0
PRINCE GEORGE	$2,686	24.8%	75.2%	$666	$2,020
PROFESSIONAL SERVICES	$54,376	24.8%	75.2%	$13,485	$40,891
REPAIR - EQUIPMENT	$1,861	25.0%	75.0%	$465	$1,395
REPAIR - VEHICLE	$5,160	25.0%	75.0%	$1,290	$3,870
SALARIES	$270,229	25.0%	75.0%	$67,557	$202,672

Table 8 - Average Cost Classification

Cost Items	Cost During Rate Structure Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
SUPPLIES/MAINTENANCE	$119,761	25.0%	75.0%	$29,940	$89,821
SUPPLY-OFFICE	$4,090	100.0%	0.0%	$4,090	$0
SUPPLY-SHOP	$6,736	100.0%	0.0%	$6,736	$0
TELEPHONE	$3,036	100.0%	0.0%	$3,036	$0
TRAINING	$1,978	25.0%	75.0%	$494	$1,483
UNIFORMS & BOOTS	$3,070	25.0%	75.0%	$768	$2,303
UTILITY - HEATING GAS	$2,615	100.0%	0.0%	$2,615	$0
User Charge Analysis Services	$0	24.8%	75.2%	$0	$0
Total CIP-related Payouts, Less Capacity Charges From Tables 14 & 16 (This value can be negative)	$65,286	24.8%	75.2%	$16,191	$49,095
Grand Total Costs, Weighted Avg Percentages	$1,462,937	24.8%	75.2%	$363,039	$1,099,898

Bases for Cost to Serve Rate Structure		100%	$1,462,937
Number Customers During Year Defined Above	3,332	Unbilled-for Water is Estimated at	34%
Billed Volume, in Gallons, During Year Defined Above	208,601,225	Unbilled-for Water is Estimated at This Percentage of Average Cost	64%
Average Fixed Cost per User per Month During Year Defined Above	$9.08	Resulting Cost of Unbilled-for Water	$367,877
Average Variable Cost to Produce per 1,000 Gallons During Year Defined Above	$5.27	Test Year Customer Metered Volume, in Gallons	200,774,570
Gallons per Billing Cycle Used by Average Residential Customer	3,921	+ Test Year Unbilled-for Water, in Gallons	105,243,513
		Total Test Year Volume, in Gallons, From Master Meter Readings	306,018,083

Table 10 - Initial Rate Adjustments and Resulting Revenues

Dinwiddie, VA, Main System, 2019 Water Rates Model 1

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 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
ARWA Res 3/4 Inch W1	0	999	$35,883	$13.78	0.000	$2.84	$379	$36,262
	1,000	1,999	$69,130	$13.78	0.000	$2.84	$456	$69,586
	2,000	2,999	$174,371	$13.78	0.000	$2.84	$431	$174,803
	3,000	3,999	$137,961	$13.78	0.000	$2.84	$353	$138,314
	4,000	4,999	$98,115	$13.78	0.000	$2.84	$256	$98,372
	5,000	5,999	$64,939	$13.78	0.000	$2.84	$172	$65,111
	6,000	6,999	$39,514	$13.78	0.000	$2.84	$103	$39,617
	7,000	7,999	$24,764	$13.78	0.000	$2.84	$63	$24,827
	8,000	8,999	$16,482	$13.78	0.000	$2.84	$42	$16,524
	9,000	9,999	$11,235	$13.78	0.000	$2.84	$28	$11,263
	10,000	14,999	$25,364	$13.78	0.000	$2.84	$60	$25,424
	15,000	19,999	$9,510	$13.78	0.000	$2.84	$21	$9,531
	20,000	29,999	$6,617	$13.78	0.000	$2.84	$16	$6,632
	30,000	39,999	$2,552	$13.78	0.000	$2.84	$6	$2,558
	40,000	49,999	$1,477	$13.78	0.000	$2.84	$3	$1,480
	50,000	74,999	$2,190	$13.78	0.000	$2.84	$5	$2,194
	75,000	99,999	$1,113	$13.78	0.000	$2.84	$2	$1,115
	100,000	124,999	$629	$13.78	0.000	$2.84	$1	$630
	125,000	149,999	$215	$13.78	0.000	$2.84	$0	$215
	150,000	204,999	$277	$13.78	0.000	$2.84	$1	$278
	205,000	299,999	$188	$13.78	0.000	$2.84	$0	$189
ARWA Res 1 Inch W3	0	999	$667	$27.13	0.000	$2.84	$2	$669
	1,000	1,999	$413	$27.13	0.000	$2.84	$1	$414
	2,000	2,999	$1,125	$27.13	0.000	$2.84	$3	$1,128
	3,000	3,999	$457	$27.13	0.000	$2.84	$1	$458
	4,000	4,999	$85	$27.13	0.000	$2.84	$0	$85
	5,000	5,999	$106	$27.13	0.000	$2.84	$0	$107
	6,000	6,999	$4	$27.13	0.000	$2.84	$0	$4
	7,000	7,999	$4	$27.13	0.000	$2.84	$0	$4
	8,000	8,999	$36	$27.13	0.000	$2.84	$0	$36
ARWA Res 1 1/2 Inch W5	0	999	$2,259	$49.36	0.000	$2.84	$5	$2,264
	1,000	1,999	$0	$49.36	0.000	$2.84	$0	$0
ARWA Res 3 Inch WO	0	999	$0	$147.19	0.000	$2.84	$0	$0
	1,000	1,999	$0	$147.19	0.000	$2.84	$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
ARWA Comm 3/4 Inch W2	-11,500	-1	$28	$13.78	0.000	$2.84	$0	$29
	0	999	$6,702	$13.78	0.000	$2.84	$27	$6,729
	1,000	1,999	$1,397	$13.78	0.000	$2.84	$8	$1,405
	2,000	2,999	$2,349	$13.78	0.000	$2.84	$6	$2,355
	3,000	3,999	$1,408	$13.78	0.000	$2.84	$3	$1,411
	4,000	4,999	$1,099	$13.78	0.000	$2.84	$2	$1,102
	5,000	5,999	$1,087	$13.78	0.000	$2.84	$2	$1,089
	6,000	6,999	$962	$13.78	0.000	$2.84	$2	$964
	7,000	7,999	$835	$13.78	0.000	$2.84	$2	$837
	8,000	8,999	$756	$13.78	0.000	$2.84	$2	$757
	9,000	9,999	$725	$13.78	0.000	$2.84	$2	$727
	10,000	14,999	$2,769	$13.78	0.000	$2.84	$6	$2,775
	15,000	19,999	$1,709	$13.78	0.000	$2.84	$4	$1,712
	20,000	29,999	$1,525	$13.78	0.000	$2.84	$3	$1,528
	30,000	39,999	$1,048	$13.78	0.000	$2.84	$2	$1,050
	40,000	49,999	$696	$13.78	0.000	$2.84	$2	$697
	50,000	74,999	$1,108	$13.78	0.000	$2.84	$2	$1,111
	75,000	99,999	$585	$13.78	0.000	$2.84	$1	$587
	100,000	124,999	$367	$13.78	0.000	$2.84	$1	$367
	125,000	149,999	$277	$13.78	0.000	$2.84	$1	$278
	150,000	204,999	$509	$13.78	0.000	$2.84	$1	$510
	205,000	299,999	$528	$13.78	0.000	$2.84	$1	$530
ARWA Comm 1 Inch W4	0	999	$4,317	$27.13	0.000	$2.84	$14	$4,331
	1,000	1,999	$2,000	$27.13	0.000	$2.84	$8	$2,007
	2,000	2,999	$2,360	$27.13	0.000	$2.84	$5	$2,364
	3,000	3,999	$2,003	$27.13	0.000	$2.84	$4	$2,006
	4,000	4,999	$1,583	$27.13	0.000	$2.84	$3	$1,586
	5,000	5,999	$1,618	$27.13	0.000	$2.84	$3	$1,621
	6,000	6,999	$1,442	$27.13	0.000	$2.84	$3	$1,445
	7,000	7,999	$1,283	$27.13	0.000	$2.84	$2	$1,286
	8,000	8,999	$1,376	$27.13	0.000	$2.84	$3	$1,379
	9,000	9,999	$1,430	$27.13	0.000	$2.84	$3	$1,432
	10,000	14,999	$5,977	$27.13	0.000	$2.84	$12	$5,989
	15,000	19,999	$4,375	$27.13	0.000	$2.84	$8	$4,383
	20,000	24,999	$3,157	$27.13	0.000	$2.84	$7	$3,164
	25,000	34,999	$4,739	$27.13	0.000	$2.84	$10	$4,749
	35,000	44,999	$3,348	$27.13	0.000	$2.84	$7	$3,355
	45,000	54,999	$1,847	$27.13	0.000	$2.84	$4	$1,851
	55,000	79,999	$1,558	$27.13	0.000	$2.84	$3	$1,562
	80,000	104,999	$578	$27.13	0.000	$2.84	$1	$580
	105,000	129,999	$312	$27.13	0.000	$2.84	$1	$313
	130,000	154,999	$96	$27.13	0.000	$2.84	$0	$96

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
ARWA Comm 1 1/2 Inch W6	0	999	$2,137	$49.36	0.000	$2.84	$6	$2,143
	1,000	1,999	$1,404	$49.36	0.000	$2.84	$5	$1,409
	2,000	2,999	$2,133	$49.36	0.000	$2.84	$4	$2,138
	3,000	3,999	$1,387	$49.36	0.000	$2.84	$3	$1,390
	4,000	4,999	$1,330	$49.36	0.000	$2.84	$3	$1,333
	5,000	5,999	$1,233	$49.36	0.000	$2.84	$2	$1,236
	6,000	6,999	$1,350	$49.36	0.000	$2.84	$3	$1,353
	7,000	7,999	$880	$49.36	0.000	$2.84	$2	$882
	8,000	8,999	$679	$49.36	0.000	$2.84	$1	$680
	9,000	9,999	$543	$49.36	0.000	$2.84	$1	$544
	10,000	14,999	$2,575	$49.36	0.000	$2.84	$5	$2,579
	15,000	19,999	$2,303	$49.36	0.000	$2.84	$4	$2,307
	20,000	24,999	$1,866	$49.36	0.000	$2.84	$4	$1,870
	25,000	34,999	$3,459	$49.36	0.000	$2.84	$7	$3,467
	35,000	44,999	$2,639	$49.36	0.000	$2.84	$6	$2,645
	45,000	54,999	$1,522	$49.36	0.000	$2.84	$3	$1,526
	55,000	79,999	$2,655	$49.36	0.000	$2.84	$6	$2,661
	80,000	104,999	$340	$49.36	0.000	$2.84	$1	$341
	105,000	129,999	$277	$49.36	0.000	$2.84	$1	$278
	130,000	154,999	$277	$49.36	0.000	$2.84	$1	$278
	155,000	209,999	$653	$49.36	0.000	$2.84	$1	$655
	210,000	304,999	$229	$49.36	0.000	$2.84	$0	$229
ARWA Comm 2 Inch W7	0	999	$3,760	$76.04	0.000	$2.84	$9	$3,769
	1,000	1,999	$859	$76.04	0.000	$2.84	$3	$862
	2,000	2,999	$1,451	$76.04	0.000	$2.84	$3	$1,454
	3,000	3,999	$795	$76.04	0.000	$2.84	$1	$797
	4,000	4,999	$1,735	$76.04	0.000	$2.84	$3	$1,738
	5,000	5,999	$1,592	$76.04	0.000	$2.84	$3	$1,595
	6,000	6,999	$1,126	$76.04	0.000	$2.84	$2	$1,128
	7,000	7,999	$1,212	$76.04	0.000	$2.84	$2	$1,215
	8,000	8,999	$1,499	$76.04	0.000	$2.84	$3	$1,502
	9,000	9,999	$1,251	$76.04	0.000	$2.84	$2	$1,253
	10,000	14,999	$3,482	$76.04	0.000	$2.84	$6	$3,489
	15,000	19,999	$2,765	$76.04	0.000	$2.84	$5	$2,770
	20,000	24,999	$2,866	$76.04	0.000	$2.84	$6	$2,872
	25,000	34,999	$3,645	$76.04	0.000	$2.84	$8	$3,653
	35,000	44,999	$3,217	$76.04	0.000	$2.84	$7	$3,224
	45,000	54,999	$3,681	$76.04	0.000	$2.84	$8	$3,688
	55,000	79,999	$7,124	$76.04	0.000	$2.84	$15	$7,139
	80,000	104,999	$4,645	$76.04	0.000	$2.84	$10	$4,655
	105,000	129,999	$4,542	$76.04	0.000	$2.84	$9	$4,551
	130,000	154,999	$2,794	$76.04	0.000	$2.84	$6	$2,800
	155,000	209,999	$2,402	$76.04	0.000	$2.84	$5	$2,407
	210,000	304,999	$1,787	$76.04	0.000	$2.84	$4	$1,791
	305,000	504,999	$1,452	$76.04	0.000	$2.84	$3	$1,455
	505,000	754,999	$636	$76.04	0.000	$2.84	$1	$637

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
ARWA Comm 2 Inch WB	0	999	$0	$76.04	0.000	$2.84	$0	$0
	1,000	1,999	$0	$76.04	0.000	$2.84	$0	$0
	2,000	2,999	$52	$76.04	0.000	$2.84	$0	$52
	3,000	3,999	$52	$76.04	0.000	$2.84	$0	$52
	4,000	4,999	$52	$76.04	0.000	$2.84	$0	$52
	5,000	5,999	$52	$76.04	0.000	$2.84	$0	$52
	6,000	6,999	$52	$76.04	0.000	$2.84	$0	$52
	7,000	7,999	$52	$76.04	0.000	$2.84	$0	$52
	8,000	8,999	$52	$76.04	0.000	$2.84	$0	$52
	9,000	9,999	$52	$76.04	0.000	$2.84	$0	$52
	10,000	14,999	$258	$76.04	0.000	$2.84	$0	$258
	15,000	19,999	$258	$76.04	0.000	$2.84	$0	$258
	20,000	24,999	$222	$76.04	0.000	$2.84	$0	$222
	25,000	34,999	$444	$76.04	0.000	$2.84	$1	$445
	35,000	44,999	$444	$76.04	0.000	$2.84	$1	$445
	45,000	54,999	$923	$76.04	0.000	$2.84	$2	$925
	55,000	79,999	$910	$76.04	0.000	$2.84	$2	$912
ARWA Comm 2.2 Inch WA	0	999	$0	$76.04	0.000	$2.84	$0	$0
	1,000	1,999	$0	$76.04	0.000	$2.84	$0	$0
	2,000	2,999	$206	$76.04	0.000	$2.84	$0	$207
	3,000	3,999	$206	$76.04	0.000	$2.84	$0	$207
	4,000	4,999	$206	$76.04	0.000	$2.84	$0	$207
	5,000	5,999	$206	$76.04	0.000	$2.84	$0	$207
	6,000	6,999	$206	$76.04	0.000	$2.84	$0	$207
	7,000	7,999	$206	$76.04	0.000	$2.84	$0	$207
	8,000	8,999	$206	$76.04	0.000	$2.84	$0	$207
	9,000	9,999	$206	$76.04	0.000	$2.84	$0	$207
	10,000	14,999	$1,032	$76.04	0.000	$2.84	$2	$1,033
	15,000	19,999	$1,032	$76.04	0.000	$2.84	$2	$1,033
	20,000	24,999	$888	$76.04	0.000	$2.84	$2	$890
	25,000	34,999	$1,776	$76.04	0.000	$2.84	$4	$1,780
	35,000	44,999	$1,776	$76.04	0.000	$2.84	$4	$1,780
	45,000	54,999	$1,776	$76.04	0.000	$2.84	$4	$1,780
	55,000	79,999	$6,194	$76.04	0.000	$2.84	$11	$6,205
	80,000	104,999	$4,698	$76.04	0.000	$2.84	$8	$4,706
	105,000	129,999	$4,355	$76.04	0.000	$2.84	$7	$4,362
	130,000	154,999	$2,526	$76.04	0.000	$2.84	$5	$2,531
	155,000	209,999	$5,583	$76.04	0.000	$2.84	$10	$5,593
	210,000	304,999	$6,254	$76.04	0.000	$2.84	$12	$6,266
	305,000	504,999	$8,880	$76.04	0.000	$2.84	$19	$8,898
	505,000	754,999	$11,372	$76.04	0.000	$2.84	$21	$11,393
	755,000	1,004,999	$585	$76.04	0.000	$2.84	$1	$585

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
ARWA Comm 3 Inch WM	0	999	$806	$147.19	0.000	$2.84	$3	$809
	1,000	1,999	$0	$147.19	0.000	$2.84	$1	$1
	2,000	2,999	$391	$147.19	0.000	$2.84	$1	$392
	3,000	3,999	$391	$147.19	0.000	$2.84	$1	$392
	4,000	4,999	$1,186	$147.19	0.000	$2.84	$3	$1,189
	5,000	5,999	$689	$147.19	0.000	$2.84	$1	$690
	6,000	6,999	$838	$147.19	0.000	$2.84	$2	$840
	7,000	7,999	$666	$147.19	0.000	$2.84	$1	$667
	8,000	8,999	$340	$147.19	0.000	$2.84	$1	$340
	9,000	9,999	$498	$147.19	0.000	$2.84	$1	$500
	10,000	14,999	$2,584	$147.19	0.000	$2.84	$5	$2,590
	15,000	19,999	$1,547	$147.19	0.000	$2.84	$3	$1,550
	20,000	29,999	$3,229	$147.19	0.000	$2.84	$7	$3,236
	30,000	39,999	$3,054	$147.19	0.000	$2.84	$7	$3,061
	40,000	49,999	$3,073	$147.19	0.000	$2.84	$7	$3,080
	50,000	74,999	$6,776	$147.19	0.000	$2.84	$15	$6,791
	75,000	99,999	$4,533	$147.19	0.000	$2.84	$10	$4,543
	100,000	124,999	$4,442	$147.19	0.000	$2.84	$10	$4,451
	125,000	149,999	$4,680	$147.19	0.000	$2.84	$10	$4,690
	150,000	204,999	$6,668	$147.19	0.000	$2.84	$14	$6,683
	205,000	299,999	$8,854	$147.19	0.000	$2.84	$19	$8,873
	300,000	399,999	$6,932	$147.19	0.000	$2.84	$15	$6,947
	400,000	499,999	$4,066	$147.19	0.000	$2.84	$9	$4,075
	500,000	749,999	$1,609	$147.19	0.000	$2.84	$4	$1,613
	750,000	999,999	$925	$147.19	0.000	$2.84	$2	$927
	1,000,000	1,249,999	$664	$147.19	0.000	$2.84	$1	$666
	1,250,000	1,500,000	$0	$147.19	0.000	$2.84	$0	$0
ARWA Comm 6 Inch WU	0	999	$0	$449.59	0.000	$2.84	$0	$0
	1,000	1,999	$0	$449.59	0.000	$2.84	$0	$0
	2,000	2,999	$103	$449.59	0.000	$2.84	$0	$103
	3,000	3,999	$103	$449.59	0.000	$2.84	$0	$103
	4,000	4,999	$103	$449.59	0.000	$2.84	$0	$103
	5,000	5,999	$103	$449.59	0.000	$2.84	$0	$103
	6,000	6,999	$103	$449.59	0.000	$2.84	$0	$103
	7,000	7,999	$103	$449.59	0.000	$2.84	$0	$103
	8,000	8,999	$103	$449.59	0.000	$2.84	$0	$103
	9,000	9,999	$103	$449.59	0.000	$2.84	$0	$103
	10,000	14,999	$516	$449.59	0.000	$2.84	$1	$517
	15,000	19,999	$516	$449.59	0.000	$2.84	$1	$517
	20,000	24,999	$444	$449.59	0.000	$2.84	$1	$445
	25,000	34,999	$888	$449.59	0.000	$2.84	$2	$890
	35,000	44,999	$888	$449.59	0.000	$2.84	$2	$890
	45,000	54,999	$888	$449.59	0.000	$2.84	$2	$890
	55,000	79,999	$3,009	$449.59	0.000	$2.84	$7	$3,016
	80,000	104,999	$3,437	$449.59	0.000	$2.84	$9	$3,446
	105,000	129,999	$5,006	$449.59	0.000	$2.84	$14	$5,020
	130,000	154,999	$3,603	$449.59	0.000	$2.84	$11	$3,614
	155,000	209,999	$575	$449.59	0.000	$2.84	$2	$576

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
Lew Jones Residential W9	0	999	$521	$13.78	0.000	$2.84	$3	$524
	1,000	1,999	$1,631	$13.78	0.000	$2.84	$5	$1,636
	2,000	2,999	$838	$13.78	0.000	$2.84	$3	$841
	3,000	3,999	$1,414	$13.78	0.000	$2.84	$3	$1,417
	4,000	4,999	$1,125	$13.78	0.000	$2.84	$2	$1,127
	5,000	5,999	$830	$13.78	0.000	$2.84	$2	$831
	6,000	6,999	$547	$13.78	0.000	$2.84	$1	$548
	7,000	7,999	$179	$13.78	0.000	$2.84	$0	$180
	8,000	8,999	$144	$13.78	0.000	$2.84	$0	$144
	9,000	9,999	$25	$13.78	0.000	$2.84	$0	$25
	10,000	14,999	$195	$13.78	0.000	$2.84	$0	$196
	15,000	19,999	$143	$13.78	0.000	$2.84	$0	$143
	20,000	29,999	$46	$13.78	0.000	$2.84	$0	$46
	30,000	39,999	$46	$13.78	0.000	$2.84	$0	$46
	40,000	49,999	$49	$13.78	0.000	$2.84	$0	$49
	50,000	74,999	$58	$13.78	0.000	$2.84	$0	$58
	75,000	99,999	$58	$13.78	0.000	$2.84	$0	$58
	100,000	124,999	$58	$13.78	0.000	$2.84	$0	$58
	125,000	149,999	$58	$13.78	0.000	$2.84	$0	$58
	150,000	204,999	$127	$13.78	0.000	$2.84	$0	$127
	205,000	299,999	$35	$13.78	0.000	$2.84	$0	$35
McKenney Residential WV	0	999	$499	$25.00	5.000	$5.00	$1	$500
	1,000	1,999	$922	$25.00	5.000	$5.00	$3	$925
	2,000	2,999	$1,072	$25.00	5.000	$5.00	$3	$1,075
	3,000	3,999	$648	$25.00	5.000	$5.00	$2	$650
	4,000	4,999	$249	$25.00	5.000	$5.00	$1	$250
	5,000	5,999	$133	$25.00	5.000	$5.00	$0	$133
	6,000	6,999	$104	$25.00	5.000	$5.00	$0	$104
McKenney Commercial WZ	0	999	$486	$37.50	5.000	$7.50	$1	$488
	1,000	1,999	$0	$37.50	5.000	$7.50	$0	$0
	2,000	2,999	$0	$37.50	5.000	$7.50	$0	$0
	3,000	3,999	$0	$37.50	5.000	$7.50	$0	$0
	4,000	4,999	$0	$37.50	5.000	$7.50	$0	$0
	5,000	5,999	$90	$37.50	5.000	$7.50	$0	$90
	6,000	6,999	$90	$37.50	5.000	$7.50	$0	$90
	7,000	7,999	$90	$37.50	5.000	$7.50	$0	$90
	8,000	8,999	$90	$37.50	5.000	$7.50	$0	$90
	9,000	9,999	$90	$37.50	5.000	$7.50	$0	$90
	10,000	14,999	$449	$37.50	5.000	$7.50	$1	$450
	15,000	19,999	$486	$37.50	5.000	$7.50	$1	$487
	20,000	29,999	$823	$37.50	5.000	$7.50	$2	$825
	30,000	39,999	$823	$37.50	5.000	$7.50	$2	$825
	40,000	49,999	$831	$37.50	5.000	$7.50	$2	$833
	50,000	74,999	$1,800	$37.50	5.000	$7.50	$5	$1,805
	75,000	99,999	$1,030	$37.50	5.000	$7.50	$3	$1,033
	100,000	124,999	$294	$37.50	5.000	$7.50	$1	$295

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
Prince George Residential WL	0	999	$0	$9.10	6.000	$2.83	$0	$0
	1,000	1,999	$91	$9.10	6.000	$2.83	$0	$91
	2,000	2,999	$182	$9.10	6.000	$2.83	$0	$182
	3,000	3,999	$109	$9.10	6.000	$2.83	$0	$109
	4,000	4,999	$82	$9.10	6.000	$2.83	$0	$82
	5,000	5,999	$73	$9.10	6.000	$2.83	$0	$73
	6,000	6,999	$183	$9.10	6.000	$3.54	$1	$183
	7,000	7,999	$56	$9.10	6.000	$3.54	$0	$56
	8,000	8,999	$35	$9.10	6.000	$3.54	$0	$35
	9,000	9,999	$42	$9.10	6.000	$3.54	$0	$42
	10,000	14,999	$162	$9.10	6.000	$3.54	$0	$162
	15,000	19,999	$52	$9.10	6.000	$3.54	$0	$52
	20,000	29,999	$53	$9.10	6.000	$4.42	$0	$53
ARWA Other Sprinkler M2			$112	$2.04	0.000	$0.00	$0	$112
ARWA Other Sprinkler 375 sq. ft. M3			$236	$2.04	0.000	$0.00	$0	$236
ARWA Other Sprinkler 2900 sq. ft. M6			$114	$12.76	0.000	$0.00	$0	$114
ARWA Other Sprinkler 25000 sq. ft. Z2			$2,950	$127.63	0.000	$0.00	$13	$2,962
ARWA Other Fire Hose (4 Inch?) 4 Z3			$63	$908.96	0.000	$0.00	$30	$93
ARWA Other Sprinkler 11,200 sq. ft. Z4			$1,322	$57.18	0.000	$0.00	$6	$1,327
ARWA Other Sprinkler 125000 sq. ft. Z6			$4,916	$638.17	0.000	$0.00	$21	$4,937
ARWA Other 27 Fire Hose Outlet (4 Inch?) Z8			$425	$6,135.45	0.000	$0.00	$201	$626
ARWA Other Sprinkler 2400 sq. ft. Z9			$189	$12.76	0.000	$0.00	$1	$189

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
Fire Hydrant Rent (4 Inch?) M1			$63	$298.24	0.000	$0.00	$20	$83
Fire Hydrant Rent 2 Hydrants (4 Inch?) M7			$126	$369.24	0.000	$0.00	$24	$150
Fire Hydrant Rent 6 Hydrants (4 Inch?) Z1			$189	$653.24	0.000	$0.00	$21	$210
Fire Hydrant Rent 4 Hose (4 Inch?) Z5			$126	$511.24	0.000	$0.00	$17	$143
Fire Hydrant Rent 22 Hydrants (4 Inch?) Z7			$692	$1,789.24	0.000	$0.00	$59	$751
McKenny Sprinkler M4			$1,311	$52.59	0.000	$0.00	$4	$1,315
McKenney Hydrant (4 Inch?) M5			$291	$7.88	0.000	$0.00	$1	$292
Total Rate Revenue at Current Rates			$1,081,547	Total Rate Revenue at Modeled Rates			$3,582	
				Total Blended Rate Revenues for the Year				$1,085,128

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

Dinwiddie, VA, Main System, 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 11B - Fire Sprinkler Peak Flow Capacity Factor

Dinwiddie, VA, Main System, 2019 Water Rates Model 1

Fire suppression sprinkler systems rarely get activated and seldom do water suppliers charge for water volume used during a fire (unless that flow runs through the customer's water meter). Long-term, flow costs are negligible and there is value to the general public in preventing fire losses. However, water system peak flow capacity costs accrue even when a sprinkler system never goes off. Thus, water suppliers should recover peak flow capacity costs that sprinkler systems cause. This table covers such costs.

Fire protection standards are promulgated by the National Fire Protection Association (NFPA). NFPA recommends water flow rates for such systems at not less than 20 gallons per minute per head, up to 40 gallons per minute. The following calculations are based on the lower flow rate.

Criteria	Value	Units
Fire Sprinkler Flow Rate	20	Gallons per minute per head
Coverage per Head	100	Square Feet

Flow Capacity Equivalencies

Flow Rate of a 5/8 Inch Water Meter	20	Gallons per minute, which is 1 Capacity Share from Table 12
1 Sprinkler Head, or 100 Square Feet gets	1	Capacity Share

Table 12 - Flow Capacity Costs

Dinwiddie, VA, Main System, 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)
$18,161,779	100.0%	75.0%	$13,621,335	$793,826	23.0%	$4,177,209	$243,440

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

5.094%	Target Percentage of Annualized Costs to Recover
$40,437.51	Target Portion of Annualized Costs to Recover
$1,617.50	Peak Capacity Cost per Capacity Share

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

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

50.000%	Target Percentage of Costs to Recover
$396,913.17	Target Portion of Costs to Recover in One Full Year
$33,076.10	Target Portion of Costs to Recover in Monthly Surcharges
$8.89	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 12B - Capacity Costs Attributable to Fire Sprinkler Systems

Dinwiddie, VA, Main System, 2019 Water Rates Model 1

System development fee and surcharge factors developed in this table are calculated in the same way as fees in Table 11, except for two things: These relate to fire sprinkler systems, and fire suppression cost calculations are for peak flow costs only. From these cost factors, system development fees and surcharges were developed in Tables 13B, 14B, 15B and 16B.

Peak and Base Flow Capacity Costs

	Costs Related to Fire Sprinkler Service		
Fixed Assets Original Value (Capacity Cost) From Table 11	% of That Value Attributable to Fire Sprinkler Service	Sprinkler Peak Capacity Cost	Annual Sprinkler Peak Capacity Cost (40-year Depreciation)
$18,161,779	2.0%	$363,236	$21,169

How Costs Will Be Recovered

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

Part of Peak Flow Capacity Costs to be Recovered From System Development Fees on New Customers

0%	Target Percentage of Annualized Costs to Recover
$0.00	Target Portion of Annualized Costs to Recover
$0.00	Peak Flow Capacity Cost per Capacity Share

In addition to peak flow-based system development fees caculated above, each new connection should reimburse the utility for all "out-of-pocket" connection costs it incurs, such as inspection of installation, backflow devices, etc. Those are not included in this calculation.

These costs are modeled to be recovered from Monthly charges calculated in Tables 15B and 16B

Part of Peak Flow Capacity Costs to be Recovered From Surcharges on Existing Customers

50%	Target Percentage of Annualized Costs to Recover
$10,584.35	Target Portion of Annualized Costs to Recover
$0.51	Monthly Charge per Peak Flow Capacity Share

Table 13 - System Development Fees
Dinwiddie, VA, Main System, 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.

Meter Size	Meter Type	Current Number Meters This Size	New Taps (Customer Growth) in a Typical Year	AWWA Capacity "Share" Factor, Compared to 5/8 Inch Meter	Foot Notes	Peak Capacity Cost per Capacity Share From Table 11	Peak Capacity Cost per Meter This Class	Base Capacity Cost per New Customer	Peak Plus Base Capacity Cost per New Connection	Average "Out-of-Pocket" Cost per New Connection	**Fee per New Connection for Peak, Base and Out-of-pocket Costs**
In-District											
Five Eighths	Displacement	0	0.0	1.0		$1,618	$1,618	$0.00	$1,618	$0	**$1,618**
Three Quarters	Displacement	3,072	24.2	1.0	1	$1,618	$1,618	$0.00	$1,618	$0	**$1,618**
One Inch	Displacement	55	0.4	2.5		$1,618	$4,044	$0.00	$4,044	$0	**$4,044**
One & a Half Inch	Displacement	20	0.2	5.0		$1,618	$8,088	$0.00	$8,088	$0	**$8,088**
Two Inch	Displacement	23	0.2	8.0		$1,618	$12,940	$0.00	$12,940	$0	**$12,940**
Two & a Half Inch	Displacement	0	0.0	12.5	2	$1,618	$20,219	$0.00	$20,219	$0	**$20,219**
Three Inch	Singlet	8	0.1	16.0		$1,618	$25,880	$0.00	$25,880	$0	**$25,880**
Three Inch	Compound, Class I	0	0.0	16.0		$1,618	$25,880	$0.00	$25,880	$0	**$25,880**
Three Inch	Turbine, Class I	0	0.0	17.5		$1,618	$28,306	$0.00	$28,306	$0	**$28,306**
Four Inch	Singlet	0	0.0	25.0		$1,618	$40,438	$0.00	$40,438	$0	**$40,438**
Four Inch	Compound, Class I	0	0.0	25.0		$1,618	$40,438	$0.00	$40,438	$0	**$40,438**
Four Inch	Turbine, Class I	0	0.0	31.0		$1,618	$50,143	$0.00	$50,143	$0	**$50,143**
Six Inch	Singlet	2	0.0	50.0		$1,618	$80,875	$0.00	$80,875	$0	**$80,875**
Six Inch	Compound, Class I	0	0.0	50.0		$1,618	$80,875	$0.00	$80,875	$0	**$80,875**
Six Inch	Turbine, Class I	0	0.0	65.0		$1,618	$105,138	$0.00	$105,138	$0	**$105,138**
Eight Inch	Compound, Class I	0	0.0	80.0		$1,618	$129,400	$0.00	$129,400	$0	**$129,400**
Eight Inch	Turbine, Class I	0	0.0	140.0		$1,618	$226,450	$0.00	$226,450	$0	**$226,450**
		3,180	25.0								

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 13B - System Development Fees for Fire Sprinkler Systems

Dinwiddie, VA, Main System, 2019 Water Rates Model 1

This table calculates system development fees to assess to fire sprinkler systems.

Areal Coverage (Square Feet) of Sprinkler System	Sprinkler Systems on Water System During Test Year	New Sprinkler Systems (Growth) in a Typical Year	Capacity "Share" Factor	Adjusted Capacity Shares of Sprinkler System Growth	Peak Capacity Cost per Capacity Share From Table 11B	**Fee for Peak Capacity Cost Each Sprinkler System**
In-District						
100	0	0.0	1.0	0.0	$0.00	**$0.00**
200	0	0.0	2.0	0.0	$0.00	**$0.00**
300	0	0.0	3.0	0.0	$0.00	**$0.00**
400	4	0.0	4.0	0.0	$0.00	**$0.00**
500	0	0.0	5.0	0.0	$0.00	**$0.00**
600	0	0.0	6.0	0.0	$0.00	**$0.00**
700	0	0.0	7.0	0.0	$0.00	**$0.00**
800	0	0.0	8.0	0.0	$0.00	**$0.00**
900	0	0.0	9.0	0.0	$0.00	**$0.00**
1,000	0	0.0	10.0	0.0	$0.00	**$0.00**
2,500	5	0.0	25.0	0.0	$0.00	**$0.00**
11,200	3	0.0	112.0	0.0	$0.00	**$0.00**
25,000	0	0.0	250.0	0.0	$0.00	**$0.00**
50,000	0	0.0	500.0	0.0	$0.00	**$0.00**
75,000	0	0.0	750.0	0.0	$0.00	**$0.00**
100,000	0	0.0	1,000.0	0.0	$0.00	**$0.00**
125,000	1	0.0	1,250.0	0.0	$0.00	**$0.00**
150,000	0	0.0	1,500.0	0.0	$0.00	**$0.00**
175,000	0	0.0	1,750.0	0.0	$0.00	**$0.00**
200,000	0	0.0	2,000.0	0.0	$0.00	**$0.00**
225,000	0	0.0	2,250.0	0.0	$0.00	**$0.00**
	13	0.0		0.0		

Table 14 - Revenues From System Development Fees
Dinwiddie, VA, Main System, 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-District				
Five Eighths	Displacement	0.0	$1,618	**$0**
Three Quarters	Displacement	24.2	$1,618	**$39,065**
One Inch	Displacement	0.4	$4,044	**$1,762**
One & a Half Inch	Displacement	0.2	$8,088	**$1,271**
Two Inch	Displacement	0.2	$12,940	**$2,289**
Two & a Half Inch	Displacement	0.0	$20,219	**$0**
Three Inch	Singlet	0.1	$25,880	**$1,628**
Three Inch	Compound, Class I	0.0	$25,880	**$0**
Three Inch	Turbine, Class I	0.0	$28,306	**$0**
Four Inch	Singlet	0.0	$40,438	**$0**
Four Inch	Compound, Class I	0.0	$40,438	**$0**
Four Inch	Turbine, Class I	0.0	$50,143	**$0**
Six Inch	Singlet	0.0	$80,875	**$1,271**
Six Inch	Compound, Class I	0.0	$80,875	**$0**
Six Inch	Turbine, Class I	0.0	$105,138	**$0**
Eight Inch	Compound, Class I	0.0	$129,400	**$0**
Eight Inch	Turbine, Class I	0.0	$226,450	**$0**
Ten Inch	Turbine, Class II	0.0	$339,675	**$0**
	Total:	25.0		**$47,286**

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

Table 14B - Revenues From System Development Fees for Fire Sprinkler Systems

Dinwiddie, VA, Main System, 2019 Water Rates Model 1

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

Areal Coverage (Square Feet) of Sprinkler System	New Sprinkler Systems (Growth) in a Typical Year	**Total Annual Sprinkler System Fees**
In-District		
100	0.0	**$0**
200	0.0	**$0**
300	0.0	**$0**
400	0.0	**$0**
500	0.0	**$0**
600	0.0	**$0**
700	0.0	**$0**
800	0.0	**$0**
900	0.0	**$0**
1,000	0.0	**$0**
2,500	0.0	**$0**
11,200	0.0	**$0**
25,000	0.0	**$0**
50,000	0.0	**$0**
75,000	0.0	**$0**
100,000	0.0	**$0**
125,000	0.0	**$0**
150,000	0.0	**$0**
175,000	0.0	**$0**
200,000	0.0	**$0**
225,000	0.0	**$0**
	0.0	**$0**

Table 15 - Minimum Charge Fees, Including Capacity Surcharges

Dinwiddie, VA, Main System, 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-District								
Five Eighths	Displacement	1.0	$8.89	$0	$0	$8.89	$4.89	**$13.78**
Three Quarters	Displacement	1.0	$8.89	$180,329	$508,238	$8.89	$4.89	**$13.78**
One Inch	Displacement	2.5	$8.89	$3,253	$18,039	$22.23	$4.89	**$27.13**
One & a Half Inch	Displacement	5.0	$8.89	$1,174	$11,847	$44.47	$4.89	**$49.36**
Two Inch	Displacement	8.0	$8.89	$1,321	$20,531	$71.15	$4.89	**$76.04**
Two & a Half Inch	Displacement	12.5	$8.89	$0	$0	$111.17	$4.89	**$116.06**
Three Inch	Singlet	16.0	$8.89	$470	$14,131	$142.30	$4.89	**$147.19**
Three Inch	Compound, Class I	16.0	$8.89	$0	$0	$142.30	$4.89	**$147.19**
Three Inch	Turbine, Class I	17.5	$8.89	$0	$0	$155.64	$4.89	**$160.53**
Four Inch	Singlet	25.0	$8.89	$0	$0	$222.35	$4.89	**$227.24**
Four Inch	Compound, Class I	25.0	$8.89	$0	$0	$222.35	$4.89	**$227.24**
Four Inch	Turbine, Class I	31.0	$8.89	$0	$0	$275.71	$4.89	**$280.60**
Six Inch	Singlet	50.0	$8.89	$117	$10,790	$444.70	$4.89	**$449.59**
Six Inch	Compound, Class I	50.0	$8.89	$0	$0	$444.70	$4.89	**$449.59**
Six Inch	Turbine, Class I	65.0	$8.89	$0	$0	$578.10	$4.89	**$583.00**
Eight Inch	Compound, Class I	80.0	$8.89	$0	$0	$711.51	$4.89	**$716.40**
Eight Inch	Turbine, Class I	140.0	$8.89	$0	$0	$1,245.15	$4.89	**$1,250.04**
	Total:	3,925.4		$186,663	$583,576			

Table 15B - Sprinkler System Capacity Charges
Dinwiddie, VA, Main System, 2019 Water Rates Model 1

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

Areal Coverage (Square Feet) of Sprinkler System	Sprinkler Systems on Water System During Test Year	Adjusted Capacity Shares per Sprinkler System	Capacity Shares in Each System Size Group	Monthly Peak Capacity Cost per Capacity Share	**Monthly Capacity Fee per Sprinkler System**
In-District					
100	0	1.0	0	$0.51	**$0.51**
200	0	2.0	0	$0.51	**$1.02**
300	0	3.0	0	$0.51	**$1.53**
400	4	4.0	17	$0.51	**$2.04**
500	0	5.0	0	$0.51	**$2.55**
600	0	6.0	0	$0.51	**$3.06**
700	0	7.0	0	$0.51	**$3.57**
800	0	8.0	0	$0.51	**$4.08**
900	0	9.0	0	$0.51	**$4.59**
1,000	0	10.0	0	$0.51	**$5.11**
2,500	5	25.0	125	$0.51	**$12.76**
11,200	3	112.0	336	$0.51	**$57.18**
25,000	0	250.0	0	$0.51	**$127.63**
50,000	0	500.0	0	$0.51	**$255.27**
75,000	0	750.0	0	$0.51	**$382.90**
100,000	0	1,000.0	0	$0.51	**$510.53**
125,000	1	1,250.0	1,250	$0.51	**$638.17**
150,000	0	1,500.0	0	$0.51	**$765.80**
175,000	0	1,750.0	0	$0.51	**$893.43**
200,000	0	2,000.0	0	$0.51	**$1,021.06**
225,000	0	2,250.0	0	$0.51	**$1,148.70**
Total:	13	22,884	1,728		

Table 16 - Revenues From Minimum Charge Surcharges
Dinwiddie, VA, Main System, 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-District				
Five Eighths	Displacement	0	1	**$0**
Three Quarters	Displacement	3,072	1	**$327,910**
One Inch	Displacement	55	3	**$14,786**
One & a Half Inch	Displacement	20	5	**$10,673**
Two Inch	Displacement	23	8	**$19,211**
Two & a Half Inch	Displacement	0	13	**$0**
Three Inch	Singlet	8	16	**$13,661**
Three Inch	Compound, Class I	0	16	**$0**
Three Inch	Turbine, Class I	0	18	**$0**
Four Inch	Singlet	0	25	**$0**
Four Inch	Compound, Class I	0	25	**$0**
Four Inch	Turbine, Class I	0	31	**$0**
Six Inch	Singlet	2	50	**$10,673**
Six Inch	Compound, Class I	0	50	**$0**
Six Inch	Turbine, Class I	0	65	**$0**
Eight Inch	Compound, Class I	0	80	**$0**
Eight Inch	Turbine, Class I	0	140	**$0**
		3,180	3,925	**$396,913**

Table 16B - Revenues From Sprinkler System Charges
Dinwiddie, VA, Main System, 2019 Water Rates Model 1

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

Areal Coverage (Square Feet) of Sprinkler System	Sprinkler Systems on Water System During Test Year	Adjusted Capacity Shares per Sprinkler System	Capacity Shares in Each System Size Group	**Annual Peak Capacity Surcharge Revenues**
In-District				
100	0	1.0	0	**$0**
200	0	2.0	0	**$0**
300	0	3.0	0	**$0**
400	4	4.0	17	**$102**
500	0	5.0	0	**$0**
600	0	6.0	0	**$0**
700	0	7.0	0	**$0**
800	0	8.0	0	**$0**
900	0	9.0	0	**$0**
1,000	0	10.0	0	**$0**
2,500	5	25.0	125	**$766**
11,200	3	112.0	336	**$2,058**
25,000	0	250.0	0	**$0**
50,000	0	500.0	0	**$0**
75,000	0	750.0	0	**$0**
100,000	0	1,000.0	0	**$0**
125,000	1	1,250.0	1,250	**$7,658**
150,000	0	1,500.0	0	**$0**
175,000	0	1,750.0	0	**$0**
200,000	0	2,000.0	0	**$0**
225,000	0	2,250.0	0	**$0**
Total:	13	22,884	1,728	**$10,584**

Table 17 - Financial Capacity Indicators and Reserves

Dinwiddie, VA, Main System, 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 7/1/18	0 Year Starting 7/1/19	1st Year Starting 7/1/20	2nd Year Starting 7/1/21	3rd Year Starting 7/1/22	4th Year Starting 7/1/23	5th Year Starting 7/1/24	6th Year Starting 7/1/25	7th Year Starting 7/1/26	8th Year Starting 7/1/27	9th Year Starting 7/1/28	10th Year Starting 7/1/29
Customary Affordability Index												
Monthly Bill for a 5,000 gal per Month, Small Meter Residential Customer	$24.32	$27.98	$28.82	$29.69	$30.58	$31.50	$32.44	$33.42	$34.42	$35.45	$36.51	$37.61
AMHI Within Service Area	$61,318	$64,957	$68,812	$72,895	$77,221	$81,804	$86,659	$91,802	$97,250	$103,021	$109,135	$115,612
Affordability Index: Current Rates First Column, Modeled Rates After That	0.48%	0.52%	0.50%	0.49%	0.48%	0.46%	0.45%	0.44%	0.42%	0.41%	0.40%	0.39%
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	$11.39	$19.46	$20.05	$20.65	$21.27	$21.91	$22.57	$23.24	$23.94	$24.66	$25.40	$26.16
Income at One-half the AMHI and Rising at One-half the Rate Above	$30,659	$31,569	$32,505	$33,470	$34,463	$35,486	$36,539	$37,623	$38,739	$39,889	$41,072	$42,291
Affordability for Low-income, Low-volume: Current Rates First Column, Modeled Rates After That	0.45%	0.74%	0.74%	0.74%	0.74%	0.74%	0.74%	0.74%	0.74%	0.74%	0.74%	0.74%
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	1.13	1.05	1.18	1.19	1.20	1.22	1.23	1.24	1.25	1.27	1.27	1.29
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	7.80	0.16	0.85	0.93	0.99	1.08	1.17	1.23	1.37	1.46	1.54	1.70
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 6/30/18	Balance Ending on 6/30/19	Balance Ending on 6/30/20	Balance Ending on 6/30/21	Balance Ending on 6/30/22	Balance Ending on 6/30/23	Balance Ending on 6/30/24	Balance Ending on 6/30/25	Balance Ending on 6/30/26	Balance Ending on 6/30/27	Balance Ending on 6/30/28	Balance Ending on 6/30/29	Balance Ending on 6/30/30
Cash and Cash Equivalents	$2,488,542	$615,480	$633,239	$647,206	$663,867	$683,437	$698,825	$717,170	$738,735	$755,687	$775,899	$799,659	$818,333
Other Liquid Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Undedicated Cash Assets	$2,488,542	$615,480	$633,239	$647,206	$663,867	$683,437	$698,825	$717,170	$738,735	$755,687	$775,899	$799,659	$818,333
Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	$2,488,542	$615,480	$633,239	$627,790	$624,633	$623,755	$618,665	$615,859	$615,345	$610,582	$608,106	$607,925	$622,122
Repair & Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt and CIP Reserves	$0	$1,771,228	$1,586,963	$1,493,845	$1,567,006	$1,568,125	$1,670,208	$1,713,808	$1,843,887	$1,944,604	$2,077,669	$2,208,006	$2,412,889
Sum of All Reserves	$2,488,542	$2,386,708	$2,220,202	$2,141,051	$2,230,873	$2,251,562	$2,369,033	$2,430,978	$2,582,622	$2,700,291	$2,853,568	$3,007,665	$3,231,223

Table 18 - Bills Before and After Rate Adjustments

Dinwiddie, VA, Main System, 2019 Water Rates Model 1

Revenue increase to be generated by the modeled rates 20.9%

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	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
ARWA Res 3/4 Inch W1	0	263	263	2,937	$11.39	$13.78	$2.39
	1,000	507	770	2,674	$11.39	$16.62	$5.23
	2,000	566	1,337	2,167	$11.39	$19.46	$8.07
	3,000	507	1,844	1,600	$15.70	$22.30	$6.60
	4,000	385	2,229	1,093	$20.01	$25.14	$5.13
	5,000	264	2,493	708	$24.32	$27.98	$3.66
	6,000	155	2,647	445	$28.63	$30.82	$2.19
	7,000	91	2,738	290	$32.94	$33.66	$0.72
	8,000	58	2,796	199	$37.25	$36.50	-$0.75
	9,000	37	2,832	141	$41.56	$39.34	-$2.22
	10,000	67	2,900	105	$45.87	$42.18	-$3.69
	15,000	19	2,919	37	$67.42	$56.38	-$11.04
	20,000	12	2,930	19	$85.97	$70.58	-$15.39
	30,000	3	2,933	7	$123.07	$98.98	-$24.09
	40,000	1	2,935	4	$160.17	$127.38	-$32.79
	50,000	1	2,936	3	$197.27	$155.78	-$41.49
	75,000	1	2,937	2	$290.02	$226.78	-$63.24
	100,000	0	2,937	1	$382.77	$297.78	-$84.99
ARWA Res 1 Inch W3	0	2	2	7	$31.83	$27.13	-$4.70
	1,000	1	3	5	$31.83	$29.97	-$1.86
	2,000	3	5	4	$31.83	$32.81	$0.98
	3,000	1	7	2	$36.14	$35.65	-$0.49
	4,000	0	7	1	$40.45	$38.49	-$1.96
ARWA Res 1 1/2 Inch W5	0	3	3	3	$61.22	$49.36	-$11.86
	1,000	0	3	0	$61.22	$52.20	-$9.02
	2,000	0	3	0	$61.22	$55.04	-$6.18
	3,000	0	3	0	$65.53	$57.88	-$7.65
	4,000	0	3	0	$69.84	$60.72	-$9.12
	5,000	0	3	0	$74.15	$63.56	-$10.59

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	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
ARWA Res 3 Inch WO	0	0	0	0	$161.61	$147.19	-$14.42
	1,000	0	0	0	$161.61	$150.03	-$11.58
	2,000	0	0	0	$161.61	$152.87	-$8.74
	3,000	0	0	0	$165.92	$155.71	-$10.21
	4,000	0	0	0	$170.23	$158.55	-$11.68
	5,000	0	0	0	$174.54	$161.39	-$13.15
ARWA Comm 3/4 Inch W2	0	49	50	89	$11.39	$13.78	$2.39
	1,000	10	61	39	$11.39	$16.62	$5.23
	2,000	8	68	29	$11.39	$19.46	$8.07
	3,000	3	71	21	$15.70	$22.30	$6.60
	4,000	1	73	19	$20.01	$25.14	$5.13
	5,000	2	74	17	$24.32	$27.98	$3.66
	6,000	2	76	15	$28.63	$30.82	$2.19
	7,000	1	77	14	$32.94	$33.66	$0.72
	8,000	1	78	13	$37.25	$36.50	-$0.75
	9,000	1	79	12	$41.56	$39.34	-$2.22
	10,000	4	83	11	$45.87	$42.18	-$3.69
	15,000	3	86	7	$67.42	$56.38	-$11.04
	20,000	1	87	4	$85.97	$70.58	-$15.39
	30,000	1	88	3	$123.07	$98.98	-$24.09
	40,000	1	89	2	$160.17	$127.38	-$32.79
	50,000	0	89	1	$197.27	$155.78	-$41.49
	75,000	0	89	1	$290.02	$226.78	-$63.24
	100,000	0	90	0	$382.77	$297.78	-$84.99
ARWA Comm 1 Inch W4	0	11	11	45	$31.83	$27.13	-$4.70
	1,000	5	17	34	$31.83	$29.97	-$1.86
	2,000	3	19	29	$31.83	$32.81	$0.98
	3,000	2	21	26	$36.14	$35.65	-$0.49
	4,000	1	22	24	$40.45	$38.49	-$1.96
	5,000	1	23	24	$44.76	$41.33	-$3.43
	6,000	1	24	22	$49.07	$44.17	-$4.90
	7,000	1	24	22	$53.38	$47.01	-$6.37
	8,000	1	25	21	$57.69	$49.85	-$7.84
	9,000	1	26	20	$62.00	$52.69	-$9.31
	10,000	5	31	19	$66.31	$55.53	-$10.78
	15,000	3	34	14	$87.86	$69.73	-$18.13
	20,000	2	36	12	$106.41	$83.93	-$22.48
	25,000	3	39	10	$124.96	$98.13	-$26.83
	35,000	3	42	7	$162.06	$126.53	-$35.53
	45,000	2	44	4	$199.16	$154.93	-$44.23
	55,000	1	45	2	$236.26	$183.33	-$52.93
	80,000	0	45	1	$329.01	$254.33	-$74.68

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	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
ARWA Comm 1 1/2 Inch W6	0	3	3	20	$61.22	$49.36	-$11.86
	1,000	2	5	17	$61.22	$52.20	-$9.02
	2,000	2	7	15	$61.22	$55.04	-$6.18
	3,000	1	8	13	$65.53	$57.88	-$7.65
	4,000	1	9	12	$69.84	$60.72	-$9.12
	5,000	1	10	11	$74.15	$63.56	-$10.59
	6,000	1	11	10	$78.46	$66.40	-$12.06
	7,000	1	11	9	$82.77	$69.24	-$13.53
	8,000	0	12	9	$87.08	$72.08	-$15.00
	9,000	0	12	8	$91.39	$74.92	-$16.47
	10,000	1	13	8	$95.70	$77.76	-$17.94
	15,000	1	13	7	$117.25	$91.96	-$25.29
	20,000	1	14	7	$135.80	$106.16	-$29.64
	25,000	2	16	6	$154.35	$120.36	-$33.99
	35,000	2	17	4	$191.45	$148.76	-$42.69
	45,000	1	18	3	$228.55	$177.16	-$51.39
	55,000	2	20	2	$265.65	$205.56	-$60.09
ARWA Comm 2 Inch W7	0	3	3	18	$107.73	$76.04	-$31.69
	1,000	1	4	15	$107.73	$78.88	-$28.85
	2,000	1	4	14	$107.73	$81.72	-$26.01
	3,000	0	4	13	$112.04	$84.56	-$27.48
	4,000	1	5	13	$116.35	$87.40	-$28.95
	5,000	1	6	12	$120.66	$90.24	-$30.42
	6,000	0	6	12	$124.97	$93.08	-$31.89
	7,000	1	7	11	$129.28	$95.92	-$33.36
	8,000	1	8	11	$133.59	$98.76	-$34.83
	9,000	1	8	10	$137.90	$101.60	-$36.30
	10,000	1	9	9	$142.21	$104.44	-$37.77
	15,000	1	10	9	$163.76	$118.64	-$45.12
	20,000	1	10	8	$182.31	$132.84	-$49.47
	25,000	1	11	7	$200.86	$147.04	-$53.82
	35,000	0	11	7	$237.96	$175.44	-$62.52
	45,000	1	12	6	$275.06	$203.84	-$71.22
	55,000	2	14	6	$312.16	$232.24	-$79.92
	80,000	1	14	4	$404.91	$303.24	-$101.67
	105,000	1	16	3	$497.66	$374.24	-$123.42
	130,000	1	17	2	$590.41	$445.24	-$145.17
	155,000	0	17	1	$683.16	$516.24	-$166.92
	210,000	0	17	1	$887.21	$672.44	-$214.77
	305,000	0	17	0	$1,239.66	$942.24	-$297.42
	505,000	0	18	0	$1,981.66	$1,510.24	-$471.42

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	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
ARWA Comm 2 Inch WB	0	0	0	1	$107.73	$76.04	-$31.69
	1,000	0	0	1	$107.73	$78.88	-$28.85
	2,000	0	0	1	$107.73	$81.72	-$26.01
	3,000	0	0	1	$112.04	$84.56	-$27.48
	4,000	0	0	1	$116.35	$87.40	-$28.95
	5,000	0	0	1	$120.66	$90.24	-$30.42
	6,000	0	0	1	$124.97	$93.08	-$31.89
	7,000	0	0	1	$129.28	$95.92	-$33.36
	8,000	0	0	1	$133.59	$98.76	-$34.83
	9,000	0	0	1	$137.90	$101.60	-$36.30
	10,000	0	0	1	$142.21	$104.44	-$37.77
	15,000	0	0	1	$163.76	$118.64	-$45.12
	20,000	0	0	1	$182.31	$132.84	-$49.47
	25,000	0	0	1	$200.86	$147.04	-$53.82
	35,000	0	0	1	$237.96	$175.44	-$62.52
	45,000	0	0	1	$275.06	$203.84	-$71.22
	55,000	1	1	1	$312.16	$232.24	-$79.92
ARWA Comm 2.2 Inch WA	0	0	0	4	$215.46	$76.04	-$139.42
	1,000	0	0	4	$215.46	$78.88	-$136.58
	2,000	0	0	4	$215.46	$81.72	-$133.74
	3,000	0	0	4	$219.77	$84.56	-$135.21
	4,000	0	0	4	$224.08	$87.40	-$136.68
	5,000	0	0	4	$228.39	$90.24	-$138.15
	6,000	0	0	4	$232.70	$93.08	-$139.62
	7,000	0	0	4	$237.01	$95.92	-$141.09
	8,000	0	0	4	$241.32	$98.76	-$142.56
	9,000	0	0	4	$245.63	$101.60	-$144.03
	10,000	0	0	4	$249.94	$104.44	-$145.50
	15,000	0	0	4	$271.49	$118.64	-$152.85
	20,000	0	0	4	$290.04	$132.84	-$157.20
	25,000	0	0	4	$308.59	$147.04	-$161.55
	35,000	0	0	4	$345.69	$175.44	-$170.25
	45,000	0	0	4	$382.79	$203.84	-$178.95
	55,000	1	1	4	$419.89	$232.24	-$187.65
	80,000	1	1	3	$512.64	$303.24	-$209.40
	105,000	1	2	3	$605.39	$374.24	-$231.15
	130,000	0	2	2	$698.14	$445.24	-$252.90
	155,000	1	3	2	$790.89	$516.24	-$274.65
	210,000	0	3	1	$994.94	$672.44	-$322.50
	305,000	0	3	1	$1,347.39	$942.24	-$405.15
	505,000	1	4	1	$2,089.39	$1,510.24	-$579.15

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	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
ARWA Comm 3 Inch WM	0	0	0	8	$161.61	$147.19	-$14.42
	1,000	0	0	8	$161.61	$150.03	-$11.58
	2,000	0	0	8	$161.61	$152.87	-$8.74
	3,000	0	0	8	$165.92	$155.71	-$10.21
	4,000	0	1	8	$170.23	$158.55	-$11.68
	5,000	0	1	7	$174.54	$161.39	-$13.15
	6,000	0	1	7	$178.85	$164.23	-$14.62
	7,000	0	1	7	$183.16	$167.07	-$16.09
	8,000	0	1	7	$187.47	$169.91	-$17.56
	9,000	0	2	7	$191.78	$172.75	-$19.03
	10,000	1	2	7	$196.09	$175.59	-$20.50
	15,000	0	2	6	$217.64	$189.79	-$27.85
	20,000	0	2	6	$236.19	$203.99	-$32.20
	30,000	0	3	6	$273.29	$232.39	-$40.90
	40,000	0	3	5	$310.39	$260.79	-$49.60
	50,000	1	4	5	$347.49	$289.19	-$58.30
	75,000	0	4	4	$440.24	$360.19	-$80.05
	100,000	0	5	4	$532.99	$431.19	-$101.80
	125,000	1	5	3	$625.74	$502.19	-$123.55
	150,000	1	6	3	$718.49	$573.19	-$145.30
	205,000	1	6	2	$922.54	$729.39	-$193.15
	300,000	1	7	2	$1,274.99	$999.19	-$275.80
	400,000	1	8	1	$1,645.99	$1,283.19	-$362.80
ARWA Comm 6 Inch WU	0	0	0	2	$411.37	$449.59	$38.22
	1,000	0	0	2	$411.37	$452.43	$41.06
	2,000	0	0	2	$411.37	$455.27	$43.90
	3,000	0	0	2	$415.68	$458.11	$42.43
	4,000	0	0	2	$419.99	$460.95	$40.96
	5,000	0	0	2	$424.30	$463.79	$39.49
	6,000	0	0	2	$428.61	$466.63	$38.02
	7,000	0	0	2	$432.92	$469.47	$36.55
	8,000	0	0	2	$437.23	$472.31	$35.08
	9,000	0	0	2	$441.54	$475.15	$33.61
	10,000	0	0	2	$445.85	$477.99	$32.14
	15,000	0	0	2	$467.40	$492.19	$24.79
	20,000	0	0	2	$485.95	$506.39	$20.44
	25,000	0	0	2	$504.50	$520.59	$16.09
	35,000	0	0	2	$541.60	$548.99	$7.39
	45,000	0	0	2	$578.70	$577.39	-$1.31
	55,000	0	0	2	$615.80	$605.79	-$10.01
	80,000	0	1	2	$708.55	$676.79	-$31.76
	105,000	1	1	2	$801.30	$747.79	-$53.51
	130,000	1	2	1	$894.05	$818.79	-$75.26

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	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
Lew Jones Residential W9	0	2	2	25	$22.72	$13.78	-$8.94
	1,000	6	8	23	$22.72	$16.62	-$6.10
	2,000	3	11	17	$22.72	$19.46	-$3.26
	3,000	4	15	14	$22.72	$22.30	-$0.42
	4,000	3	18	10	$25.03	$25.14	$0.11
	5,000	3	21	6	$27.34	$27.98	$0.64
	6,000	2	23	4	$29.65	$30.82	$1.17
	7,000	1	23	2	$31.96	$33.66	$1.70
	8,000	0	24	1	$34.27	$36.50	$2.23
	9,000	0	24	1	$36.58	$39.34	$2.76
	10,000	0	24	1	$38.89	$42.18	$3.29
	15,000	0	24	1	$50.44	$56.38	$5.94
	20,000	0	24	0	$61.99	$70.58	$8.59
	30,000	0	24	0	$85.09	$98.98	$13.89
	40,000	0	24	0	$108.19	$127.38	$19.19
	50,000	0	24	0	$131.29	$155.78	$24.49
	75,000	0	24	0	$189.04	$226.78	$37.74
	100,000	0	24	0	$246.79	$297.78	$50.99
	125,000	0	24	0	$304.54	$368.78	$64.24
	150,000	0	24	0	$362.29	$439.78	$77.49
	205,000	0	25	0	$489.34	$595.98	$106.64
McKenney Residential WV	0	2	2	12	$25.00	$25.00	$0.00
	1,000	3	5	10	$25.00	$25.00	$0.00
	2,000	4	8	7	$25.00	$25.00	$0.00
	3,000	2	11	4	$25.00	$25.00	$0.00
	4,000	1	11	2	$25.00	$25.00	$0.00
	5,000	0	12	1	$25.00	$25.00	$0.00
McKenney Commercial WZ	0	1	1	2	$37.50	$37.50	$0.00
	1,000	0	1	1	$37.50	$37.50	$0.00
	2,000	0	1	1	$37.50	$37.50	$0.00
	3,000	0	1	1	$37.50	$37.50	$0.00
	4,000	0	1	1	$37.50	$37.50	$0.00
	5,000	0	1	1	$37.50	$37.50	$0.00
	6,000	0	1	1	$45.00	$45.00	$0.00
	7,000	0	1	1	$52.50	$52.50	$0.00
	8,000	0	1	1	$60.00	$60.00	$0.00
	9,000	0	1	1	$67.50	$67.50	$0.00
	10,000	0	1	1	$75.00	$75.00	$0.00
	15,000	0	1	1	$112.50	$112.50	$0.00
	20,000	0	1	1	$150.00	$150.00	$0.00
	30,000	0	1	1	$225.00	$225.00	$0.00
	40,000	0	1	1	$300.00	$300.00	$0.00
	50,000	0	1	1	$375.00	$375.00	$0.00
	75,000	1	2	1	$562.50	$562.50	$0.00

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	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
Prince George Residential WL	0	0	0	7	$9.10	$9.10	$0.00
	1,000	1	1	7	$9.10	$9.10	$0.00
	2,000	2	3	6	$9.10	$9.10	$0.00
	3,000	1	4	5	$9.10	$9.10	$0.00
	4,000	1	4	4	$9.10	$9.10	$0.00
	5,000	1	5	3	$9.10	$9.10	$0.00
	6,000	1	6	2	$9.10	$9.10	$0.00
	7,000	0	6	1	$12.64	$12.64	$0.00
	8,000	0	6	1	$16.18	$16.18	$0.00
	9,000	0	6	1	$19.72	$19.72	$0.00
	10,000	1	7	1	$23.26	$23.26	$0.00
ARWA Other Sprinkler M2	0	1	1	1	$9.33	$2.04	-$7.29
ARWA Other Sprinkler 375 sq. ft. M3	0	1	1	1	$19.72	$2.04	-$17.68
ARWA Other Sprinkler 2900 sq. ft. M6	0	1	1	1	$9.53	$12.76	$3.23
ARWA Other Sprinkler 25000 sq. ft. Z2	0	3	3	3	$82.16	$127.63	$45.47
ARWA Other Fire Hose (4 Inch?) 4 Z3	0	1	1	1	$5.26	$908.96	$903.70
ARWA Other Sprinkler 11,200 sq. ft. Z4	0	3	3	3	$36.81	$57.18	$20.37
ARWA Other Sprinkler 125000 sq. ft. Z6	0	1	1	1	$410.81	$638.17	$227.36
ARWA Other 27 Fire Hose Outlet (4 Inch?) Z8	0	1	1	1	$35.50	$6,135.45	$6,099.95
ARWA Other Sprinkler 2400 sq. ft. Z9	0	2	2	2	$7.88	$12.76	$4.88

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	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
Fire Hydrant Rent (4 Inch?) M1	0	2	2	2	$2.63	$298.24	$295.61
Fire Hydrant Rent 2 Hydrants (4 Inch?) M7	0	2	2	2	$5.26	$369.24	$363.98
Fire Hydrant Rent 6 Hydrants (4 Inch?) Z1	0	1	1	1	$15.77	$653.24	$637.47
Fire Hydrant Rent 4 Hose (4 Inch?) Z5	0	1	1	1	$10.51	$511.24	$500.73
Fire Hydrant Rent 22 Hydrants (4 Inch?) Z7	0	1	1	1	$57.84	$1,789.24	$1,731.40
McKenny Sprinkler M4	0	2	2	2	$52.59	$52.59	$0.00
McKenney Hydrant (4 Inch?) M5	0	3	3	3	$7.88	$7.88	$0.00

Table 19 - User Statistics

Dinwiddie, VA, Main System, 2019 Water Rates Model 1

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

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

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

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

3,921	Gallons: This is the average residential customer's usage per Monthly billing cycle.

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

200,774,570	Gallons: The volume metered through customer meters that was available to be sold during the test year.
67,240,510	Gallons: The volume given away as a usage allowance during the test year.
$288,338	Revenue Loss: At the unit charge rate in effect during the test year, revenue lost due to the usage allowance.
$3,151	Revenue Loss: At the modeled unit charge rates and usage allowance (if any), revenue lost due to the usage allowance.

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
ARWA Res 3/4 Inch W1	0	999	1,466,990	263.3	1.1%	100.0%	8.2%	0.7%	3.3%	10.6%
	1,000	1,999	9,275,390	507.2	7.8%	98.9%	15.8%	4.6%	6.4%	12.7%
	2,000	2,999	16,996,170	566.3	20.1%	92.2%	17.7%	8.5%	16.1%	12.0%
	3,000	3,999	21,152,760	507.2	35.4%	79.9%	15.8%	10.5%	12.8%	9.9%
	4,000	4,999	20,596,340	384.9	50.3%	64.6%	12.0%	10.3%	9.1%	7.2%
	5,000	5,999	17,237,570	263.8	62.8%	49.7%	8.2%	8.6%	6.0%	4.8%
	6,000	6,999	11,950,670	154.8	71.4%	37.2%	4.8%	6.0%	3.7%	2.9%
	7,000	7,999	8,113,190	90.7	77.3%	28.6%	2.8%	4.0%	2.3%	1.8%
	8,000	8,999	5,851,240	57.8	81.5%	22.7%	1.8%	2.9%	1.5%	1.2%
	9,000	9,999	4,155,110	36.7	84.5%	18.5%	1.1%	2.1%	1.0%	0.8%
	10,000	14,999	9,593,410	67.3	91.5%	15.5%	2.1%	4.8%	2.3%	1.7%
	15,000	19,999	3,890,210	18.8	94.3%	8.5%	0.6%	1.9%	0.9%	0.6%
	20,000	29,999	3,409,310	11.9	96.8%	5.7%	0.4%	1.7%	0.6%	0.4%
	30,000	39,999	1,219,300	3.0	97.6%	3.2%	0.1%	0.6%	0.2%	0.2%
	40,000	49,999	616,150	1.2	98.1%	2.4%	0.0%	0.3%	0.1%	0.1%
	50,000	74,999	704,960	1.0	98.6%	1.9%	0.0%	0.4%	0.2%	0.1%
	75,000	99,999	916,970	0.9	99.3%	1.4%	0.0%	0.5%	0.1%	0.1%
	100,000	124,999	482,690	0.3	99.6%	0.7%	0.0%	0.2%	0.1%	0.0%
	125,000	149,999	130,030	0.1	99.7%	0.4%	0.0%	0.1%	0.0%	0.0%
	150,000	204,999	166,790	0.1	99.8%	0.3%	0.0%	0.1%	0.0%	0.0%
	205,000	299,999	252,820	0.1	100.0%	0.2%	0.0%	0.1%	0.0%	0.0%
	Totals for Class		138,178,070	2,937.1			91.6%	68.8%	66.8%	67.0%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
ARWA Res 1 Inch W3	0	999	13,100	1.8	7.1%	100.0%	0.1%	0.0%	0.1%	0.1%
	1,000	1,999	18,040	1.1	16.9%	92.9%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	75,820	2.6	57.9%	83.1%	0.1%	0.0%	0.1%	0.1%
	3,000	3,999	43,290	1.1	81.4%	42.1%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	8,910	0.2	86.2%	18.6%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	16,600	0.3	95.2%	13.8%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	0	0.0	95.2%	4.8%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	95.2%	4.8%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	8,900	0.1	100.0%	4.8%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		184,660	7.0			0.2%	0.1%	0.3%	0.2%
ARWA Res 1 1/2 Inch W5	0	999	0	3.1	0.0%	100.0%	0.1%	0.0%	0.2%	0.1%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		0	3.1			0.1%	0.0%	0.2%	0.1%
ARWA Res 3 Inch WO	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		0	0.0			0.0%	0.0%	0.0%	0.0%
ARWA Comm 3/4 Inch W2	-11,500	-1	(30,420)	1.2	-0.6%	100.0%	0.0%	0.0%	0.0%	0.0%
	0	999	127,270	49.2	1.9%	100.6%	1.5%	0.1%	0.6%	0.8%
	1,000	1,999	171,530	10.3	5.4%	98.1%	0.3%	0.1%	0.1%	0.2%
	2,000	2,999	230,100	7.8	10.0%	94.6%	0.2%	0.1%	0.2%	0.2%
	3,000	3,999	117,730	2.8	12.3%	90.0%	0.1%	0.1%	0.1%	0.1%
	4,000	4,999	69,160	1.3	13.7%	87.7%	0.0%	0.0%	0.1%	0.1%
	5,000	5,999	119,660	1.8	16.1%	86.3%	0.1%	0.1%	0.1%	0.1%
	6,000	6,999	121,500	1.6	18.5%	83.9%	0.0%	0.1%	0.1%	0.1%
	7,000	7,999	103,340	1.2	20.6%	81.5%	0.0%	0.1%	0.1%	0.0%
	8,000	8,999	93,740	0.9	22.4%	79.4%	0.0%	0.0%	0.1%	0.0%
	9,000	9,999	123,400	1.1	24.9%	77.6%	0.0%	0.1%	0.1%	0.0%
	10,000	14,999	572,720	3.8	36.3%	75.1%	0.1%	0.3%	0.3%	0.2%
	15,000	19,999	612,380	3.0	48.6%	63.7%	0.1%	0.3%	0.2%	0.1%
	20,000	29,999	329,160	1.2	55.2%	51.4%	0.0%	0.2%	0.1%	0.1%
	30,000	39,999	406,360	1.0	63.3%	44.8%	0.0%	0.2%	0.1%	0.1%
	40,000	49,999	269,600	0.5	68.7%	36.7%	0.0%	0.1%	0.1%	0.0%
	50,000	74,999	309,180	0.4	74.8%	31.3%	0.0%	0.2%	0.1%	0.1%
	75,000	99,999	417,820	0.4	83.2%	25.2%	0.0%	0.2%	0.1%	0.0%
	100,000	124,999	121,000	0.1	85.6%	16.8%	0.0%	0.1%	0.0%	0.0%
	125,000	149,999	0	0.0	85.6%	14.4%	0.0%	0.0%	0.0%	0.0%
	150,000	204,999	174,500	0.1	89.1%	14.4%	0.0%	0.1%	0.0%	0.0%
	205,000	299,999	546,670	0.2	100.0%	10.9%	0.0%	0.3%	0.0%	0.0%
	Totals for Class		5,006,400	89.8			2.8%	2.5%	2.6%	2.2%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
ARWA Comm 1 Inch W4	0	999	37,380	11.3	0.5%	100.0%	0.4%	0.0%	0.4%	0.4%
	1,000	1,999	92,130	5.3	1.7%	99.5%	0.2%	0.0%	0.2%	0.2%
	2,000	2,999	72,400	2.5	2.6%	98.3%	0.1%	0.0%	0.2%	0.1%
	3,000	3,999	76,420	1.8	3.6%	97.4%	0.1%	0.0%	0.2%	0.1%
	4,000	4,999	49,120	0.9	4.2%	96.4%	0.0%	0.0%	0.1%	0.1%
	5,000	5,999	75,050	1.2	5.2%	95.8%	0.0%	0.0%	0.1%	0.1%
	6,000	6,999	63,680	0.8	6.0%	94.8%	0.0%	0.0%	0.1%	0.1%
	7,000	7,999	44,250	0.5	6.6%	94.0%	0.0%	0.0%	0.1%	0.1%
	8,000	8,999	84,360	0.8	7.6%	93.4%	0.0%	0.0%	0.1%	0.1%
	9,000	9,999	124,610	1.1	9.2%	92.4%	0.0%	0.1%	0.1%	0.1%
	10,000	14,999	671,960	4.7	17.9%	90.8%	0.1%	0.3%	0.6%	0.3%
	15,000	19,999	556,550	2.7	25.0%	82.1%	0.1%	0.3%	0.4%	0.2%
	20,000	24,999	575,340	2.2	32.4%	75.0%	0.1%	0.3%	0.3%	0.2%
	25,000	34,999	1,081,880	3.0	46.3%	67.6%	0.1%	0.5%	0.4%	0.3%
	35,000	44,999	1,389,630	2.9	64.2%	53.7%	0.1%	0.7%	0.3%	0.2%
	45,000	54,999	1,173,270	2.0	79.2%	35.8%	0.1%	0.6%	0.2%	0.1%
	55,000	79,999	778,260	1.0	89.2%	20.8%	0.0%	0.4%	0.1%	0.1%
	80,000	104,999	342,020	0.3	93.6%	10.8%	0.0%	0.2%	0.1%	0.0%
	105,000	129,999	227,190	0.2	96.5%	6.4%	0.0%	0.1%	0.0%	0.0%
	130,000	154,999	268,670	0.2	100.0%	3.5%	0.0%	0.1%	0.0%	0.0%
	Totals for Class		7,784,170	45.3			1.4%	3.9%	4.2%	2.8%
ARWA Comm 1 1/2 Inch W6	0	999	6,800	2.9	0.1%	100.0%	0.1%	0.0%	0.2%	0.2%
	1,000	1,999	32,880	1.9	0.8%	99.9%	0.1%	0.0%	0.1%	0.1%
	2,000	2,999	56,640	1.9	2.0%	99.2%	0.1%	0.0%	0.2%	0.1%
	3,000	3,999	41,320	1.0	2.9%	98.0%	0.0%	0.0%	0.1%	0.1%
	4,000	4,999	52,070	1.0	4.0%	97.1%	0.0%	0.0%	0.1%	0.1%
	5,000	5,999	61,660	0.9	5.3%	96.0%	0.0%	0.0%	0.1%	0.1%
	6,000	6,999	89,240	1.2	7.2%	94.7%	0.0%	0.0%	0.1%	0.1%
	7,000	7,999	51,400	0.6	8.2%	92.8%	0.0%	0.0%	0.1%	0.0%
	8,000	8,999	34,090	0.3	9.0%	91.8%	0.0%	0.0%	0.1%	0.0%
	9,000	9,999	18,860	0.2	9.4%	91.0%	0.0%	0.0%	0.1%	0.0%
	10,000	14,999	121,940	0.8	11.9%	90.6%	0.0%	0.1%	0.2%	0.1%
	15,000	19,999	147,100	0.7	15.0%	88.1%	0.0%	0.1%	0.2%	0.1%
	20,000	24,999	177,410	0.7	18.8%	85.0%	0.0%	0.1%	0.2%	0.1%
	25,000	34,999	595,000	1.7	31.3%	81.2%	0.1%	0.3%	0.3%	0.2%
	35,000	44,999	716,370	1.5	46.3%	68.7%	0.0%	0.4%	0.2%	0.2%
	45,000	54,999	350,930	0.6	53.7%	53.7%	0.0%	0.2%	0.1%	0.1%
	55,000	79,999	1,464,560	1.8	84.6%	46.3%	0.1%	0.7%	0.2%	0.2%
	80,000	104,999	80,350	0.1	86.2%	15.4%	0.0%	0.0%	0.0%	0.0%
	105,000	129,999	0	0.0	86.2%	13.8%	0.0%	0.0%	0.0%	0.0%
	130,000	154,999	0	0.0	86.2%	13.8%	0.0%	0.0%	0.0%	0.0%
	155,000	209,999	205,030	0.1	90.6%	13.8%	0.0%	0.1%	0.1%	0.0%
	210,000	304,999	448,860	0.2	100.0%	9.4%	0.0%	0.2%	0.0%	0.0%
	Totals for Class		4,752,510	20.0			0.6%	2.4%	2.9%	1.9%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
ARWA Comm 2 Inch W7	0	999	1,800	2.9	0.0%	100.0%	0.1%	0.0%	0.3%	0.2%
	1,000	1,999	14,240	0.7	0.2%	100.0%	0.0%	0.0%	0.1%	0.1%
	2,000	2,999	16,660	0.6	0.3%	99.8%	0.0%	0.0%	0.1%	0.1%
	3,000	3,999	3,980	0.1	0.4%	99.7%	0.0%	0.0%	0.1%	0.0%
	4,000	4,999	44,660	0.8	0.8%	99.6%	0.0%	0.0%	0.2%	0.1%
	5,000	5,999	50,380	0.8	1.3%	99.2%	0.0%	0.0%	0.1%	0.1%
	6,000	6,999	32,000	0.4	1.6%	98.7%	0.0%	0.0%	0.1%	0.1%
	7,000	7,999	45,090	0.5	2.0%	98.4%	0.0%	0.0%	0.1%	0.1%
	8,000	8,999	75,810	0.8	2.8%	98.0%	0.0%	0.0%	0.1%	0.1%
	9,000	9,999	66,010	0.6	3.4%	97.2%	0.0%	0.0%	0.1%	0.1%
	10,000	14,999	135,230	0.9	4.8%	96.6%	0.0%	0.1%	0.3%	0.2%
	15,000	19,999	103,290	0.5	5.8%	95.2%	0.0%	0.1%	0.3%	0.1%
	20,000	24,999	250,290	0.9	8.2%	94.2%	0.0%	0.1%	0.3%	0.2%
	25,000	34,999	170,980	0.5	9.9%	91.8%	0.0%	0.1%	0.3%	0.2%
	35,000	44,999	127,510	0.3	11.1%	90.1%	0.0%	0.1%	0.3%	0.2%
	45,000	54,999	494,430	0.8	16.0%	88.9%	0.0%	0.2%	0.3%	0.2%
	55,000	79,999	1,294,760	1.7	28.7%	84.0%	0.1%	0.6%	0.7%	0.4%
	80,000	104,999	637,180	0.6	34.9%	71.3%	0.0%	0.3%	0.4%	0.3%
	105,000	129,999	1,868,040	1.3	53.2%	65.1%	0.0%	0.9%	0.4%	0.3%
	130,000	154,999	1,565,810	0.9	68.6%	46.8%	0.0%	0.8%	0.3%	0.2%
	155,000	209,999	894,090	0.4	77.3%	31.4%	0.0%	0.4%	0.2%	0.1%
	210,000	304,999	645,970	0.3	83.7%	22.7%	0.0%	0.3%	0.2%	0.1%
	305,000	504,999	1,020,410	0.3	93.7%	16.3%	0.0%	0.5%	0.1%	0.1%
	505,000	754,999	647,910	0.1	100.0%	6.3%	0.0%	0.3%	0.1%	0.0%
	Totals for Class		10,206,530	17.5			0.5%	5.1%	5.6%	3.4%
ARWA Comm 2 Inch WB	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	45,000	54,999	259,360	0.4	37.7%	100.0%	0.0%	0.1%	0.1%	0.1%
	55,000	79,999	427,810	0.6	100.0%	62.3%	0.0%	0.2%	0.1%	0.0%
	Totals for Class		687,170	1.0			0.0%	0.3%	0.4%	0.2%
ARWA Comm 2.2 Inch WA	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	15,000	19,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	20,000	24,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	25,000	34,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.2%	0.1%
	35,000	44,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.2%	0.1%
	45,000	54,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.2%	0.1%
	55,000	79,999	671,360	0.8	5.0%	100.0%	0.0%	0.3%	0.6%	0.3%
	80,000	104,999	576,330	0.5	9.3%	95.0%	0.0%	0.3%	0.4%	0.2%
	105,000	129,999	927,490	0.7	16.1%	90.7%	0.0%	0.5%	0.4%	0.2%
	130,000	154,999	154,650	0.1	17.3%	83.9%	0.0%	0.1%	0.2%	0.1%
	155,000	209,999	1,252,570	0.6	26.6%	82.7%	0.0%	0.6%	0.5%	0.3%
	210,000	304,999	1,309,870	0.4	36.3%	73.4%	0.0%	0.7%	0.6%	0.3%
	305,000	504,999	0	0.0	36.3%	63.7%	0.0%	0.0%	0.8%	0.5%
	505,000	754,999	7,042,840	0.8	88.5%	63.7%	0.0%	3.5%	1.1%	0.6%
	755,000	1,004,999	1,551,850	0.2	100.0%	11.5%	0.0%	0.8%	0.1%	0.0%
	1,005,000	1,254,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	1,255,000	1,500,000	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		13,486,960	4.0			0.1%	6.7%	5.6%	3.2%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
ARWA Comm 3 Inch WM	0	999	1,300	0.4	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	22,490	0.4	0.2%	100.0%	0.0%	0.0%	0.1%	0.1%
	5,000	5,999	11,270	0.2	0.2%	99.8%	0.0%	0.0%	0.1%	0.0%
	6,000	6,999	19,550	0.3	0.4%	99.8%	0.0%	0.0%	0.1%	0.1%
	7,000	7,999	14,960	0.2	0.5%	99.6%	0.0%	0.0%	0.1%	0.0%
	8,000	8,999	0	0.0	0.5%	99.5%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	9,480	0.1	0.5%	99.5%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	76,310	0.5	1.1%	99.5%	0.0%	0.0%	0.2%	0.1%
	15,000	19,999	0	0.0	1.1%	98.9%	0.0%	0.0%	0.1%	0.1%
	20,000	29,999	98,440	0.3	1.7%	98.9%	0.0%	0.0%	0.3%	0.2%
	30,000	39,999	131,290	0.3	2.6%	98.3%	0.0%	0.1%	0.3%	0.2%
	40,000	49,999	222,710	0.4	4.2%	97.4%	0.0%	0.1%	0.3%	0.2%
	50,000	74,999	765,070	1.1	9.4%	95.8%	0.0%	0.4%	0.6%	0.4%
	75,000	99,999	188,030	0.2	10.7%	90.6%	0.0%	0.1%	0.4%	0.3%
	100,000	124,999	344,880	0.3	13.1%	89.3%	0.0%	0.2%	0.4%	0.3%
	125,000	149,999	1,091,420	0.7	20.6%	86.9%	0.0%	0.5%	0.4%	0.3%
	150,000	204,999	1,278,790	0.7	29.4%	79.4%	0.0%	0.6%	0.6%	0.4%
	205,000	299,999	1,556,790	0.5	40.1%	70.6%	0.0%	0.8%	0.8%	0.5%
	300,000	399,999	2,112,210	0.5	54.6%	59.9%	0.0%	1.1%	0.6%	0.4%
	400,000	499,999	4,363,390	0.8	84.6%	45.4%	0.0%	2.2%	0.4%	0.3%
	500,000	749,999	1,097,760	0.2	92.2%	15.4%	0.0%	0.5%	0.1%	0.1%
	750,000	999,999	0	0.0	92.2%	7.8%	0.0%	0.0%	0.1%	0.1%
	1,000,000	1,249,999	1,135,940	0.1	100.0%	7.8%	0.0%	0.6%	0.1%	0.0%
	1,250,000	1,500,000	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		14,542,080	8.0			0.2%	7.2%	6.4%	4.2%
ARWA Comm 6 Inch WU	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	25,000	34,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	35,000	44,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	45,000	54,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	55,000	79,999	151,550	0.2	5.3%	100.0%	0.0%	0.1%	0.3%	0.2%
	80,000	104,999	355,390	0.3	17.6%	94.7%	0.0%	0.2%	0.3%	0.2%
	105,000	129,999	1,075,100	0.8	54.9%	82.4%	0.0%	0.5%	0.5%	0.4%
	130,000	154,999	1,101,880	0.7	93.1%	45.1%	0.0%	0.5%	0.3%	0.3%
	155,000	209,999	199,440	0.1	100.0%	6.9%	0.0%	0.1%	0.1%	0.0%
	Totals for Class		2,883,360	2.0			0.1%	1.4%	1.9%	1.4%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
Lew Jones Residential W9	0	999	10,610	1.9	0.8%	100.0%	0.1%	0.0%	0.0%	0.1%
	1,000	1,999	106,100	6.0	8.8%	99.2%	0.2%	0.1%	0.2%	0.1%
	2,000	2,999	91,370	3.1	15.6%	91.2%	0.1%	0.0%	0.1%	0.1%
	3,000	3,999	171,720	4.0	28.6%	84.4%	0.1%	0.1%	0.1%	0.1%
	4,000	4,999	181,030	3.3	42.2%	71.4%	0.1%	0.1%	0.1%	0.1%
	5,000	5,999	167,310	2.6	54.7%	57.8%	0.1%	0.1%	0.1%	0.0%
	6,000	6,999	134,740	1.8	64.9%	45.3%	0.1%	0.1%	0.1%	0.0%
	7,000	7,999	44,750	0.5	68.2%	35.1%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	42,290	0.4	71.4%	31.8%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	71.4%	28.6%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	55,490	0.4	75.6%	28.6%	0.0%	0.0%	0.0%	0.0%
	15,000	19,999	72,590	0.3	81.1%	24.4%	0.0%	0.0%	0.0%	0.0%
	20,000	29,999	0	0.0	81.1%	18.9%	0.0%	0.0%	0.0%	0.0%
	30,000	39,999	0	0.0	81.1%	18.9%	0.0%	0.0%	0.0%	0.0%
	40,000	49,999	41,520	0.1	84.2%	18.9%	0.0%	0.0%	0.0%	0.0%
	50,000	74,999	0	0.0	84.2%	15.8%	0.0%	0.0%	0.0%	0.0%
	75,000	99,999	0	0.0	84.2%	15.8%	0.0%	0.0%	0.0%	0.0%
	100,000	124,999	0	0.0	84.2%	15.8%	0.0%	0.0%	0.0%	0.0%
	125,000	149,999	0	0.0	84.2%	15.8%	0.0%	0.0%	0.0%	0.0%
	150,000	204,999	0	0.0	84.2%	15.8%	0.0%	0.0%	0.0%	0.0%
	205,000	299,999	210,470	0.1	100.0%	15.8%	0.0%	0.1%	0.0%	0.0%
	Totals for Class		1,329,990	24.5			0.8%	0.7%	0.8%	0.6%
McKenney Residential WV	0	999	7,250	1.7	2.1%	100.0%	0.1%	0.0%	0.0%	0.0%
	1,000	1,999	56,820	3.1	18.2%	97.9%	0.1%	0.0%	0.1%	0.1%
	2,000	2,999	108,160	3.6	48.8%	81.8%	0.1%	0.1%	0.1%	0.1%
	3,000	3,999	88,340	2.2	73.9%	51.2%	0.1%	0.0%	0.1%	0.0%
	4,000	4,999	44,700	0.8	86.6%	26.1%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	22,580	0.3	93.0%	13.4%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	24,840	0.3	100.0%	7.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		352,690	12.0			0.4%	0.2%	0.3%	0.3%
McKenney Commercial WZ	0	999	0	1.1	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	20,000	29,999	0	0.0	2.1%	97.9%	0.0%	0.0%	0.1%	0.1%
	30,000	39,999	0	0.0	2.1%	97.9%	0.0%	0.0%	0.1%	0.1%
	40,000	49,999	46,060	0.1	7.1%	97.9%	0.0%	0.0%	0.1%	0.1%
	50,000	74,999	130,670	0.2	21.1%	92.9%	0.0%	0.1%	0.2%	0.1%
	75,000	99,999	507,730	0.5	75.4%	78.9%	0.0%	0.3%	0.1%	0.1%
	100,000	124,999	229,270	0.2	100.0%	24.6%	0.0%	0.1%	0.0%	0.0%
	Totals for Class		933,710	2.1			0.1%	0.5%	0.7%	0.6%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
Prince George Residential WL	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	17,730	0.8	4.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	49,500	1.7	15.2%	96.0%	0.1%	0.0%	0.0%	0.0%
	3,000	3,999	40,680	1.0	24.4%	84.8%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	42,940	0.8	34.1%	75.6%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	43,460	0.7	43.9%	65.9%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	84,390	1.1	62.9%	56.1%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	14,740	0.2	66.3%	37.1%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	66.3%	33.7%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	9,260	0.1	68.4%	33.7%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	75,450	0.5	85.4%	31.6%	0.0%	0.0%	0.0%	0.0%
	15,000	19,999	34,640	0.2	93.2%	14.6%	0.0%	0.0%	0.0%	0.0%
	20,000	29,999	29,960	0.1	100.0%	6.8%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		442,750	7.0			0.2%	0.2%	0.1%	0.1%
ARWA Other Sprinkler M2	0	999	0	1.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		0	1.0			0.0%	0.0%	0.0%	0.0%
ARWA Other Sprinkler 375 sq. ft. M3	0	999	0	1.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		0	1.0			0.0%	0.0%	0.0%	0.0%
ARWA Other Sprinkler 2900 sq. ft. M6	0	999	0	1.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		0	1.0			0.0%	0.0%	0.0%	0.0%
ARWA Other Sprinkler 25000 sq. ft. Z2	0	999	0	3.0	0.0%	100.0%	0.1%	0.0%	0.3%	0.4%
	Totals for Class		0	3.0			0.1%	0.0%	0.3%	0.4%
ARWA Other Fire Hose (4 Inch?) 4 Z3	0	999	0	1.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.8%
	Totals for Class		0	1.0			0.0%	0.0%	0.0%	0.8%
ARWA Other Sprinkler 11,200 sq. ft. Z4	0	999	0	3.0	0.0%	100.0%	0.1%	0.0%	0.1%	0.2%
	Totals for Class		0	3.0			0.1%	0.0%	0.1%	0.2%
ARWA Other Sprinkler 125000 sq. ft. Z6	0	999	0	1.0	0.0%	100.0%	0.0%	0.0%	0.5%	0.6%
	Totals for Class		0	1.0			0.0%	0.0%	0.5%	0.6%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
ARWA Other 27 Fire Hose Outlet (4 Inch?) Z8	0	999	0	1.0	0.0%	100.0%	0.0%	0.0%	0.0%	5.6%
	Totals for Class		0	1.0			0.0%	0.0%	0.0%	5.6%
ARWA Other Sprinkler 2400 sq. ft. Z9	0	999	0	2.0	0.0%	100.0%	0.1%	0.0%	0.0%	0.0%
	Totals for Class		0	2.0			0.1%	0.0%	0.0%	0.0%
Fire Hydrant Rent (4 Inch?) M1	0	999	0	2.0	0.0%	100.0%	0.1%	0.0%	0.0%	0.5%
	Totals for Class		0	2.0			0.1%	0.0%	0.0%	0.5%
Fire Hydrant Rent 2 Hydrants (4 Inch?) M7	0	999	0	2.0	0.0%	100.0%	0.1%	0.0%	0.0%	0.7%
	Totals for Class		0	2.0			0.1%	0.0%	0.0%	0.7%
Fire Hydrant Rent 6 Hydrants (4 Inch?) Z1	0	999	0	1.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.6%
	Totals for Class		0	1.0			0.0%	0.0%	0.0%	0.6%
Fire Hydrant Rent 4 Hose (4 Inch?) Z5	0	999	0	1.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.5%
	Totals for Class		0	1.0			0.0%	0.0%	0.0%	0.5%
Fire Hydrant Rent 22 Hydrants (4 Inch?) Z7	0	999	0	1.0	0.0%	100.0%	0.0%	0.0%	0.1%	1.6%
	Totals for Class		0	1.0			0.0%	0.0%	0.1%	1.6%
McKenny Sprinkler M4	0	999	0	2.1	0.0%	100.0%	0.1%	0.0%	0.1%	0.1%
	Totals for Class		3,520	2.2			0.1%	0.0%	0.1%	0.1%
McKenney Hydrant (4 Inch?) M5	0	999	0	3.1	0.0%	100.0%	0.1%	0.0%	0.0%	0.0%
	Totals for Class		0	3.1			0.1%	0.0%	0.0%	0.0%
	Grand Totals		200,774,570				100.00%	100.00%	100.00%	100.00%

Chart 1 - Operating Ratio

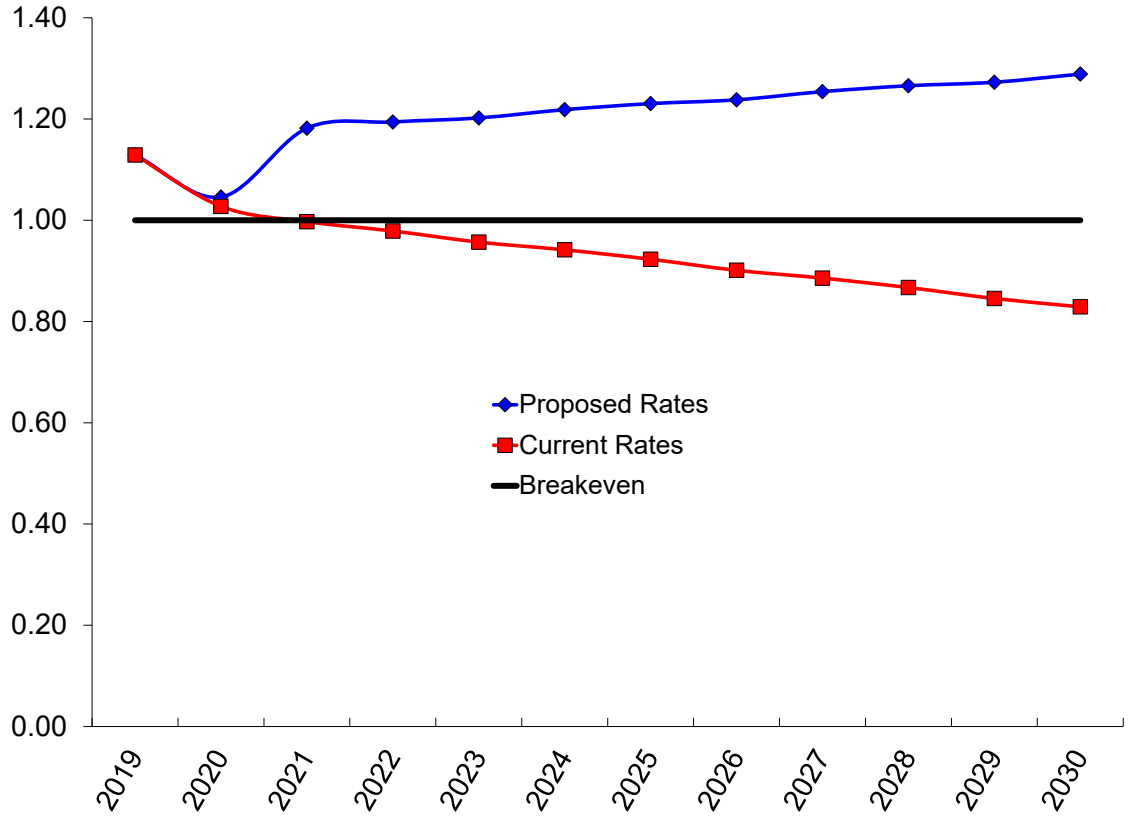


Chart 2 - Coverage Ratio

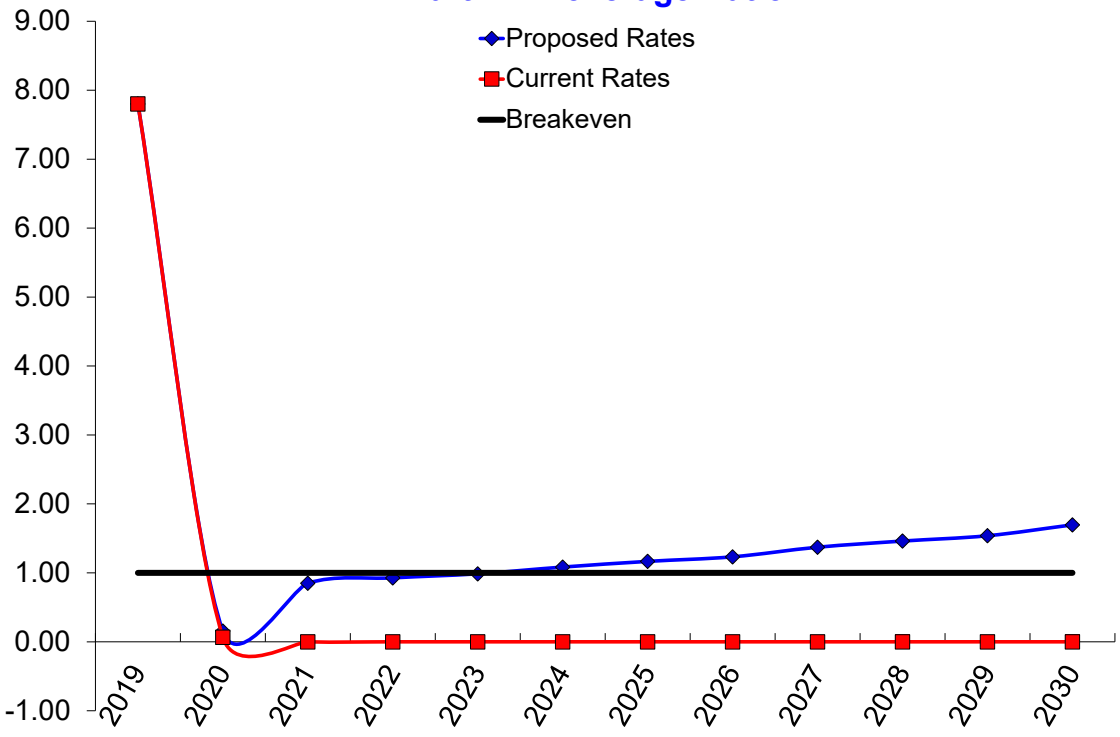


Chart 3 - Residential Users' Bills

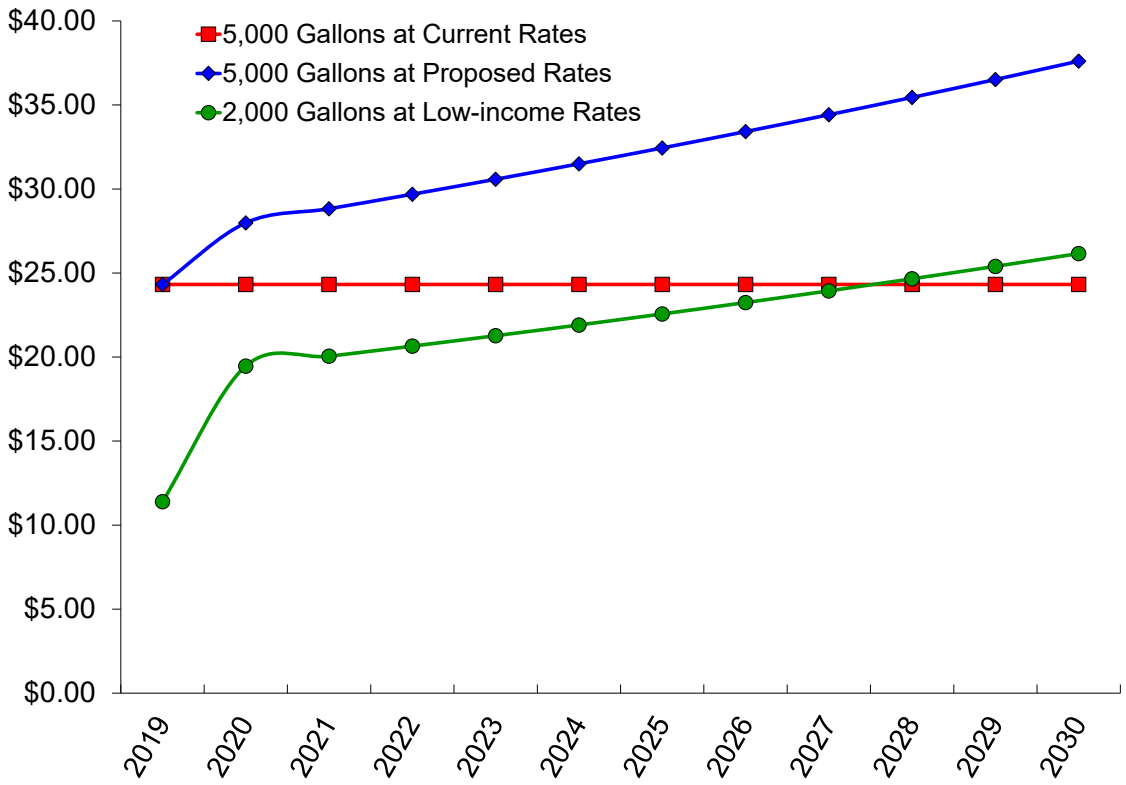


Chart 4 - Affordability

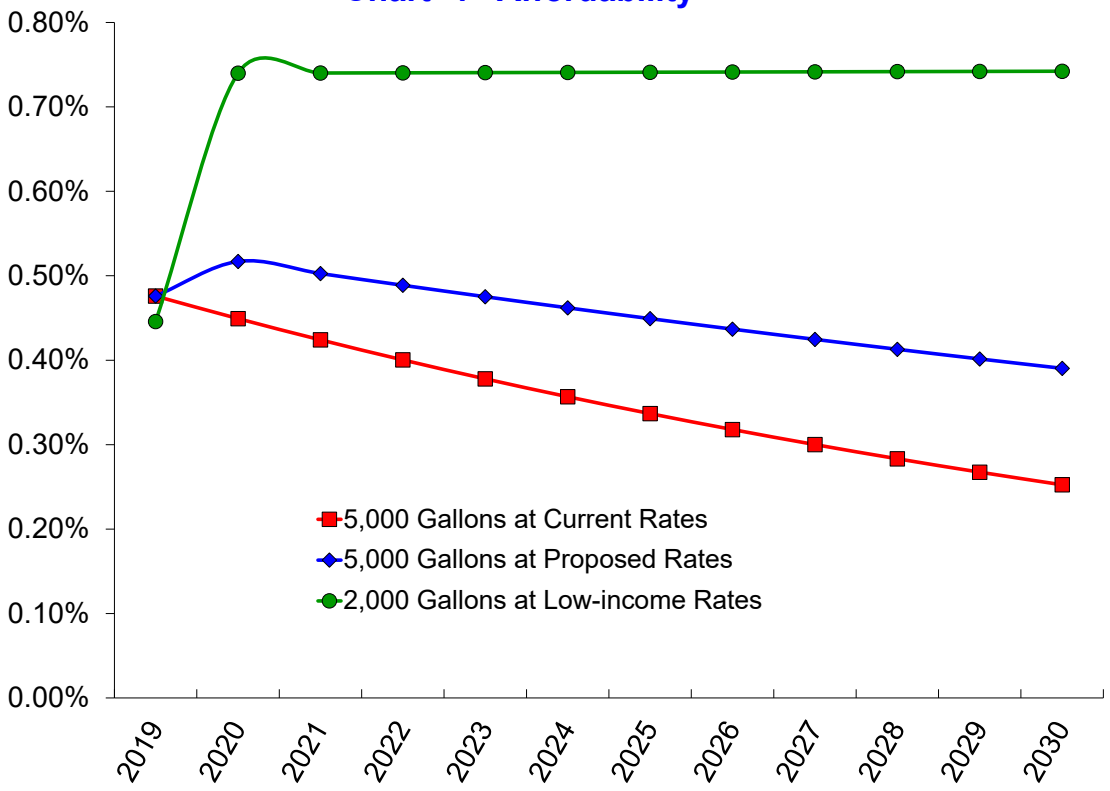


Chart 5 - Working Capital vs Goal

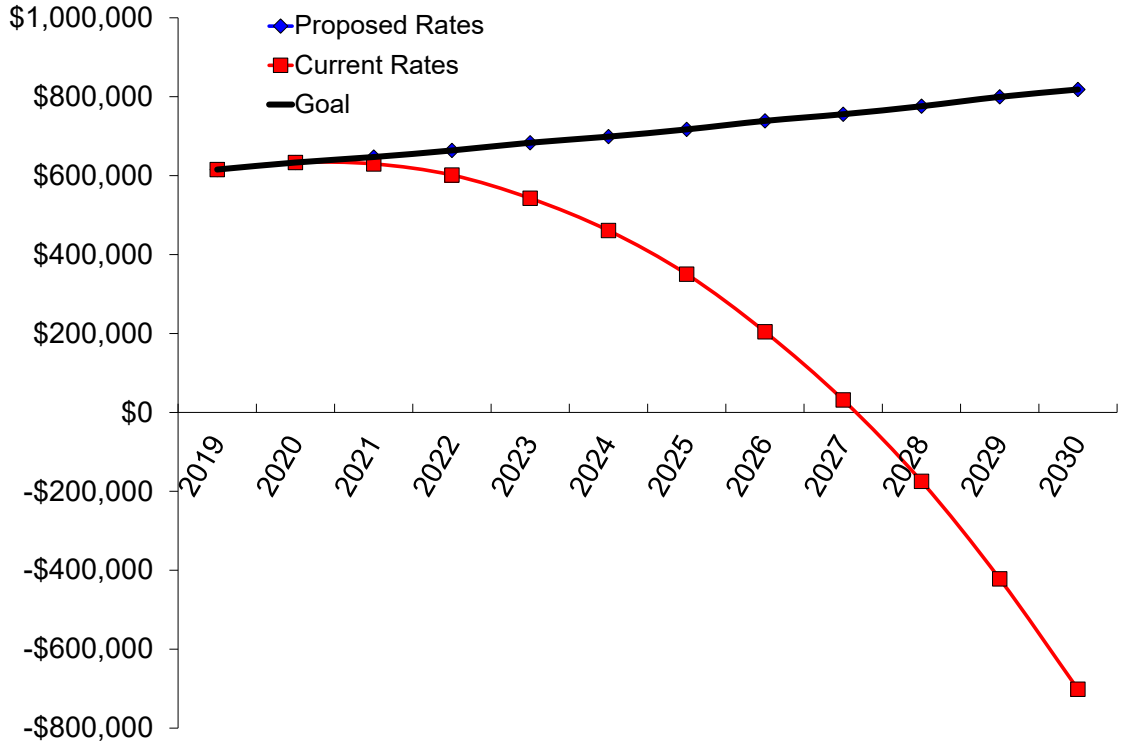


Chart 6 - Value of Cash Assets Before Inflation

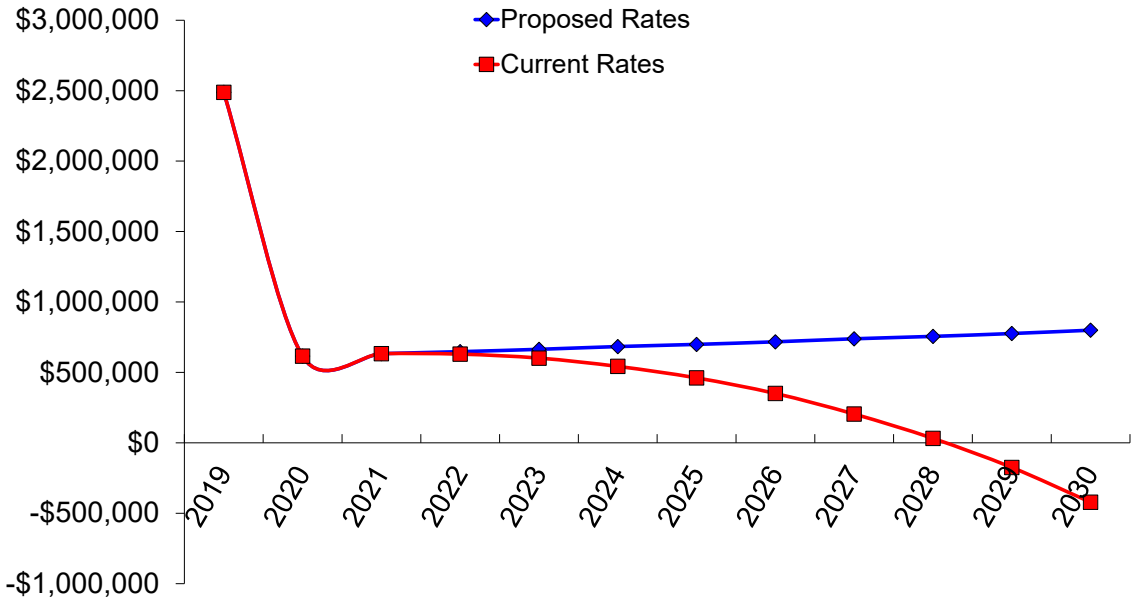


Chart 7 - Value of Cash Assets After Inflation

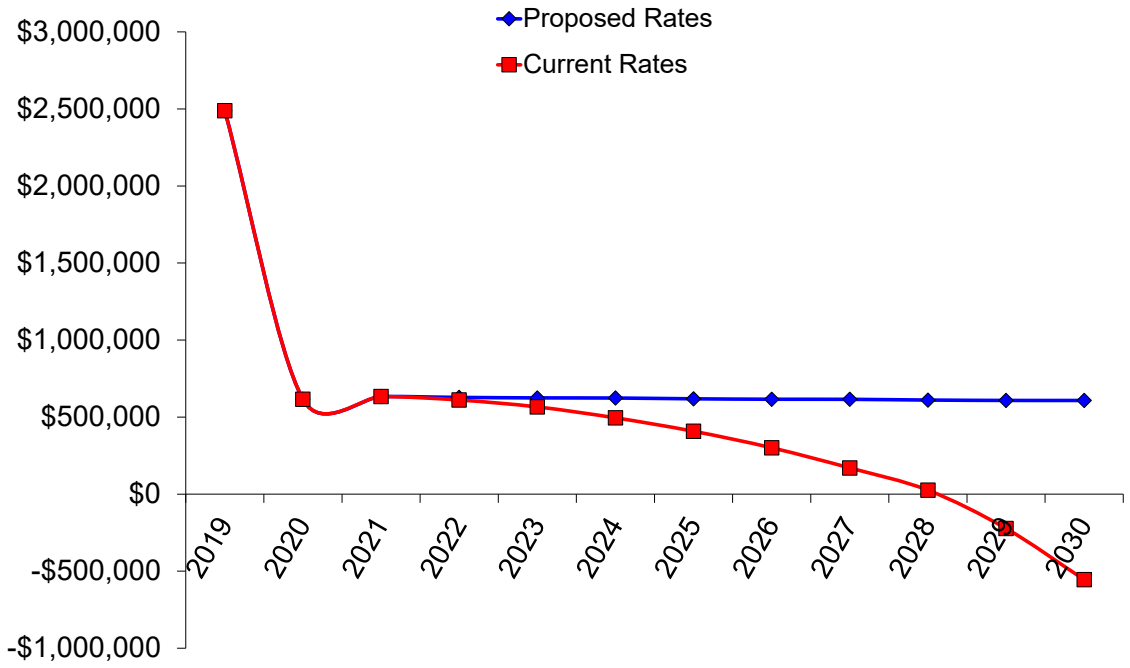
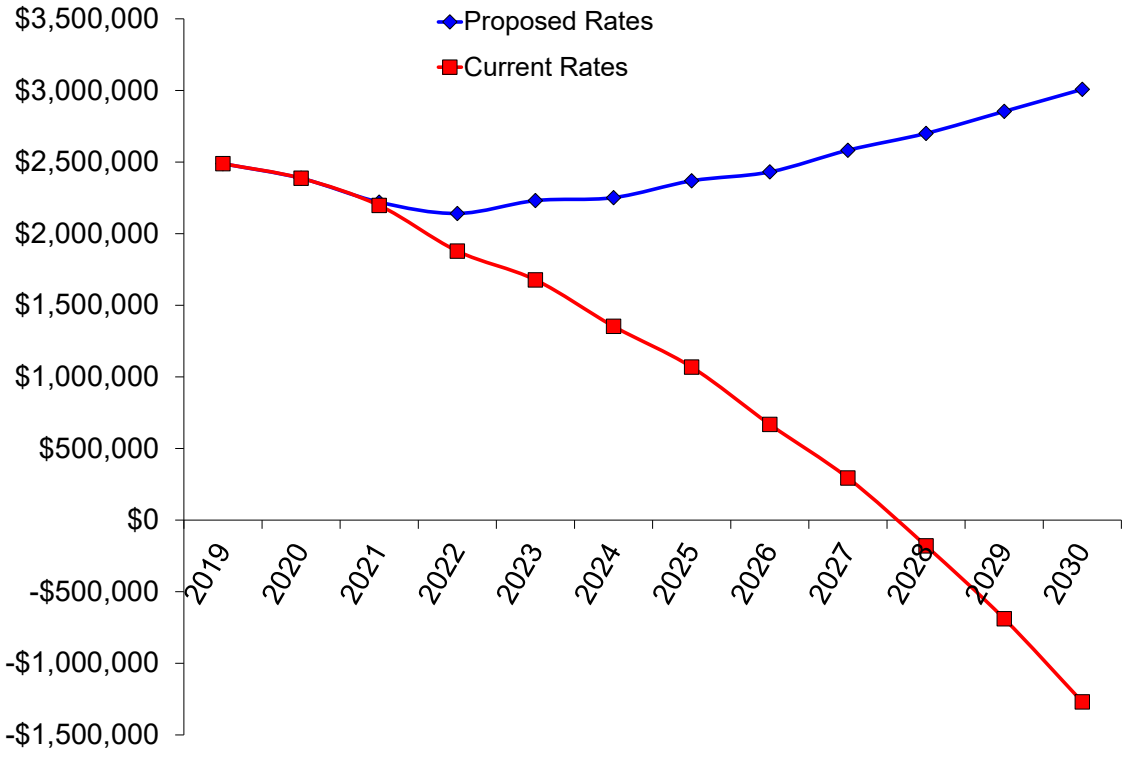


Chart 8 - Sum of All Reserves



Dinwiddie, VA, Church Road, 2019 Water Rates Model 2

(This model used the rates developed for the Main Water System Service Area.)

March 17, 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

Dinwiddie, VA, Church Road, 2019 Water 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
Church Road Commercial CR (8 Inch Meter?)	0	$855.79	2.000	$4.31
	2,000	$855.79	2.000	$4.31
	20,000	$855.79	2.000	$3.71
	1,250,000	$855.79	2.000	$3.71

Table 2 - Test Year Usage
Dinwiddie, VA, Church Road, 2019 Water Rates Model 2

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

Test year = the one-year period being analyzed starts: 7/1/2018

Date this model created: 10/31/2019

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
Church Road Commercial CR (8 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	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	29,999	12	120,000	0	0	0	0.0%	0.0%
	30,000	39,999	12	120,000	0	0	0	0.0%	0.0%
	40,000	49,999	12	120,000	0	0	0	0.0%	0.0%
	50,000	74,999	12	300,000	0	0	0	0.0%	0.0%
	75,000	99,999	12	300,000	0	0	0	0.0%	0.0%
	100,000	124,999	12	300,000	0	0	0	0.0%	0.0%
	125,000	149,999	12	300,000	0	0	0	0.0%	0.0%
	150,000	204,999	12	660,000	0	0	0	0.0%	0.0%
	205,000	299,999	12	1,140,000	0	0	0	0.0%	0.0%
	300,000	399,999	12	1,200,000	0	0	0	0.0%	0.0%
	400,000	499,999	12	1,200,000	0	0	0	0.0%	0.0%
	500,000	749,999	12	3,000,000	0	0	0	0.0%	0.0%
	750,000	999,999	12	3,000,000	0	0	0	0.0%	0.0%
	1,000,000	1,249,999	12	3,000,000	0	0	0	0.0%	0.0%
	1,250,000	15,741,320	12	125,838,350	12	140,838,350	1	100.0%	100.0%
		Grand Totals:	324	140,838,350	12	140,838,350	1	100%	100%

Table 3 - Operating Incomes and Basic User Data

Dinwiddie, VA, Church Road, 2019 Water 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)

$54,640	Census Bureau estimate of AMHI for the year	2017
$51,579	Census Bureau estimate of AMHI for the year	2016
$3,061	AMHI growth during this time period	
5.93%	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 connections made during the test year

$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	Analysis Year 0 Year	Years Following the Analysis Year (for Which Results Have Been Projected) 1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year
		Starting 7/1/18	Starting 7/1/19	Starting 7/1/20	Starting 7/1/21	Starting 7/1/22	Starting 7/1/23	Starting 7/1/24	Starting 7/1/25	Starting 7/1/26	Starting 7/1/27	Starting 7/1/28	Starting 7/1/29
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 for the Year	N.A.	1	1	1	1	1	1	1	1	1	1	1	1
Customers Added or Lost (-) During the 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 Volumes, in Gallons	N.A.	140,838,350	140,838,350	140,838,350	140,838,350	140,838,351	140,838,351	140,838,351	140,838,351	140,838,351	140,838,351	140,838,351	140,838,352
How User Charge Fees Were Calculated, Accounting for New Customers and Future Rate Increases													
Actual or Calculated Sales Revenues		$532,820	$532,477	$419,384	$431,966	$444,925	$458,273	$472,021	$486,181	$500,767	$515,790	$531,264	$547,201
Additional Sales Revenues From New Customers			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Calculated Revenues (User Charge Fees)		$532,820	$532,477	$419,384	$431,966	$444,925	$458,273	$472,021	$486,181	$500,767	$515,790	$531,264	$547,201
Operating Incomes													
User Charge Fees (Tables 10, 16)	N.A.	$568,858	$568,492	$447,750	$461,183	$475,018	$489,269	$503,947	$519,065	$534,637	$550,676	$567,196	$584,212
Late Payment Charge	N.A.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Taps or Connections (Current Rate Structure)	% Above	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1	$2
Meter Size-based System Development Fees (Table 14)	% Above	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest Income	N.A.	$14,800	$4,367	$4,147	$4,187	$4,272	$4,408	$4,451	$4,544	$4,692	$4,739	$4,841	$5,003
COUNTY BOND PAYBACK P&I	N.A.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
County Subsidy	N.A.	$0	$0	$43,500	$44,805	$46,149	$47,534	$48,960	$50,428	$51,941	$53,500	$55,104	$56,758
Total Operating Incomes		**$583,659**	**$572,859**	**$495,397**	**$510,174**	**$525,439**	**$541,210**	**$557,357**	**$574,037**	**$591,270**	**$608,914**	**$627,143**	**$645,975**

Table 4 - Operating Costs and Net Income

Dinwiddie, VA, Church Road, 2019 Water 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.)	Inflation/ Deflation (–) Factor	Test Year Starting 7/1/18	Analysis Year 0 Year Starting 7/1/19	Years Following the Analysis Year (for Which Results Have Been Projected) 1st Year Starting 7/1/20	2nd Year Starting 7/1/21	3rd Year Starting 7/1/22	4th Year Starting 7/1/23	5th Year Starting 7/1/24	6th Year Starting 7/1/25	7th Year Starting 7/1/26	8th Year Starting 7/1/27	9th Year Starting 7/1/28	10th Year Starting 7/1/29
AMORT BOND COST	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
CHURCH RD WATER	3.0%	$188,697	$194,358	$200,189	$206,195	$212,381	$218,752	$225,315	$232,074	$239,036	$246,207	$253,594	$261,201
DEPRECIATION	0.0%	$134,286	$134,286	$134,286	$134,286	$134,286	$134,286	$134,286	$134,286	$134,286	$134,286	$134,286	$134,286
ELECTRIC	3.0%	$14,139	$14,563	$15,000	$15,450	$15,913	$16,391	$16,882	$17,389	$17,911	$18,448	$19,001	$19,571
INSURANCE - GL	3.0%	$4,844	$4,989	$5,139	$5,293	$5,452	$5,616	$5,784	$5,958	$6,136	$6,320	$6,510	$6,705
INTEREST EXPENSE	0.0%	$34,317	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
LEGAL & AUDITING	3.0%	$6,760	$6,963	$7,172	$7,387	$7,608	$7,837	$8,072	$8,314	$8,563	$8,820	$9,085	$9,357
MISCELLANEOUS	3.0%	$7	$7	$7	$7	$7	$8	$8	$8	$8	$9	$9	$9
MISCELLANEOUS	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
PAYROLL TAXES	3.0%	$8,863	$9,129	$9,403	$9,685	$9,976	$10,275	$10,583	$10,901	$11,228	$11,565	$11,912	$12,269
Payroll Taxes Customer Accounts	3.0%	$1,816	$1,870	$1,927	$1,984	$2,044	$2,105	$2,168	$2,233	$2,300	$2,369	$2,441	$2,514
Payroll Taxes Water Pumping	3.0%	$1,908	$1,965	$2,024	$2,084	$2,147	$2,211	$2,278	$2,346	$2,416	$2,489	$2,564	$2,640
POSTAGE	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SALARIES	3.0%	$1,223	$1,259	$1,297	$1,336	$1,376	$1,417	$1,460	$1,504	$1,549	$1,595	$1,643	$1,692
SALARIES	3.0%	$1,164	$1,198	$1,234	$1,271	$1,310	$1,349	$1,389	$1,431	$1,474	$1,518	$1,564	$1,611
SALARIES	3.0%	$29,544	$30,431	$31,344	$32,284	$33,252	$34,250	$35,277	$36,336	$37,426	$38,549	$39,705	$40,896
SUPPLIES/MAINTENANCE	3.0%	$8,315	$8,565	$8,822	$9,086	$9,359	$9,640	$9,929	$10,227	$10,533	$10,849	$11,175	$11,510
SUPPLIES/MAINTENANCE	3.0%	$800	$824	$849	$874	$900	$927	$955	$984	$1,013	$1,044	$1,075	$1,107
SUPPLY-OFFICE	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
User Charge Analysis Services	5.0%	$0	$4,306	$0	$0	$4,747	$0	$0	$5,233	$0	$0	$5,770	$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		**$436,683**	**$414,713**	**$418,691**	**$427,224**	**$440,758**	**$445,063**	**$454,387**	**$469,223**	**$473,881**	**$484,069**	**$500,332**	**$505,370**
Net Income (or Loss)		$146,976	$158,145	$76,706	$82,951	$84,681	$96,146	$102,970	$104,814	$117,390	$124,846	$126,811	$140,605
Working Capital Goal: 100%	In Dollars, That is:	$436,683	$414,713	$418,691	$427,224	$440,758	$445,063	$454,387	$469,223	$473,881	$484,069	$500,332	$505,370

Notes: The yellow highlighted cost items above will rise due to inflation and due to the additional cost of serving new customers, if there are any. Additionally, the gold highlighted costs for depreciation would normally not be included in rate calculations. But the depreciation amounts were used as a funding source for CIP and debt in Table 5.

Table 5 - Capital Improvement Program (CIP)

Dinwiddie, VA, Church Road, 2019 Water Rates Model 2

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

	Test Year	Analysis Year	Years Following the Analysis Year (for Which Improvement Projects, Costs, Funding, etc. Have Been Projected)									
	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	7/1/18	7/1/19	7/1/20	7/1/21	7/1/22	7/1/23	7/1/24	7/1/25	7/1/26	7/1/27	7/1/28	7/1/29
Planned Spending, Cash-paid Portion of Projects (CIP costs to be funded from reserves are shown here.)												
None	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cash-paid Portion of Projects	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total CIP Costs	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Debt Repayment												
Existing Debt Payments (Following is debt that was initiated during the test year or earlier.)												
Series 2012 VRA (Refunding) Bonds	$250,459	$250,838	$246,122	$246,072	$250,522	$244,559	$243,238	$0	$0	$0	$0	$0
AMORT BOND COST	$6,278	$6,278	$6,278	$6,278	$6,278	$6,278	$6,278	$0	$0	$0	$0	$0
Total Debt Payments	$256,737	$257,116	$252,400	$252,350	$256,800	$250,837	$249,516	$0	$0	$0	$0	$0
Total CIP-related Payouts	**$256,737**	**$257,116**	**$252,400**	**$252,350**	**$256,800**	**$250,837**	**$249,516**	**$0**	**$0**	**$0**	**$0**	**$0**
(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	$28,255	-$48,180	-$94,530	-$140,066	-$194,236	-$222,830	-$248,870	-$29,583	$216,843	$470,123	$724,359
Working Capital Transferred in	$284,992	$180,115	$72,728	$74,419	$71,146	$91,841	$93,647	$89,978	$112,732	$114,658	$110,547	$135,566
Debt and CIP Reserves Interest Earned (or Paid)	$0	$565	-$964	-$1,891	-$2,801	-$3,885	-$4,457	-$4,977	-$592	$4,337	$9,402	$14,487
DEPRECIATION From Table 4	$0	$0	$134,286	$134,286	$134,286	$134,286	$134,286	$134,286	$134,286	$134,286	$134,286	$134,286
Total Available Internal Funds	$284,992	$208,936	$157,870	$112,284	$62,564	$28,007	$646	-$29,583	$216,843	$470,123	$724,359	$1,008,699
Total Available Funds	**$284,992**	**$208,936**	**$157,870**	**$112,284**	**$62,564**	**$28,007**	**$646**	**-$29,583**	**$216,843**	**$470,123**	**$724,359**	**$1,008,699**
Outcomes (This CIP spending and funding plan will result in the following cash needs and ending balances each year.)												
Total Available Funds	**$284,992**	**$208,936**	**$157,870**	**$112,284**	**$62,564**	**$28,007**	**$646**	**-$29,583**	**$216,843**	**$470,123**	**$724,359**	**$1,008,699**
Total CIP-related Payouts	**$256,737**	**$257,116**	**$252,400**	**$252,350**	**$256,800**	**$250,837**	**$249,516**	**$0**	**$0**	**$0**	**$0**	**$0**
Debt and CIP Reserves Ending Balances	**$28,255**	**-$48,180**	**-$94,530**	**-$140,066**	**-$194,236**	**-$222,830**	**-$248,870**	**-$29,583**	**$216,843**	**$470,123**	**$724,359**	**$1,008,699**

Notes: The Authority plans no CIP for the Church Road Service Area for the next 10 years.

Table 10 - Initial Rate Adjustments and Resulting Revenues

Dinwiddie, VA, Church Road, 2019 Water Rates Model 2

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.

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. 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
Church Road Commercial CR (8 Inch Meter?)	0	999	$0	$716.39	0.000	$2.83	$0	$0
	1,000	1,999	$0	$716.39	0.000	$2.83	$0	$0
	2,000	2,999	$52	$716.39	0.000	$2.83	$0	$52
	3,000	3,999	$52	$716.39	0.000	$2.83	$0	$52
	4,000	4,999	$52	$716.39	0.000	$2.83	$0	$52
	5,000	5,999	$52	$716.39	0.000	$2.83	$0	$52
	6,000	6,999	$52	$716.39	0.000	$2.83	$0	$52
	7,000	7,999	$52	$716.39	0.000	$2.83	$0	$52
	8,000	8,999	$52	$716.39	0.000	$2.83	$0	$52
	9,000	9,999	$52	$716.39	0.000	$2.83	$0	$52
	10,000	14,999	$258	$716.39	0.000	$2.83	$0	$258
	15,000	19,999	$258	$716.39	0.000	$2.83	$0	$258
	20,000	29,999	$444	$716.39	0.000	$2.83	$1	$445
	30,000	39,999	$444	$716.39	0.000	$2.83	$1	$445
	40,000	49,999	$444	$716.39	0.000	$2.83	$1	$445
	50,000	74,999	$1,110	$716.39	0.000	$2.83	$2	$1,112
	75,000	99,999	$1,110	$716.39	0.000	$2.83	$2	$1,112
	100,000	124,999	$1,110	$716.39	0.000	$2.83	$2	$1,112
	125,000	149,999	$1,110	$716.39	0.000	$2.83	$2	$1,112
	150,000	204,999	$2,442	$716.39	0.000	$2.83	$5	$2,447
	205,000	299,999	$4,218	$716.39	0.000	$2.83	$9	$4,227
	300,000	399,999	$4,440	$716.39	0.000	$2.83	$9	$4,449
	400,000	499,999	$4,440	$716.39	0.000	$2.83	$9	$4,449
	500,000	749,999	$11,100	$716.39	0.000	$2.83	$23	$11,123
	750,000	999,999	$11,100	$716.39	0.000	$2.83	$23	$11,123
	1,000,000	1,249,999	$11,100	$716.39	0.000	$2.83	$23	$11,123
	1,250,000	15,741,320	$475,826	$716.39	0.000	$2.83	$997	$476,823
Total Rate Revenue at Current Rates			$531,365	Total Rate Revenue at Modeled Rates			$1,112	
							Total Blended Rate Revenues for the Year	$532,477

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

Dinwiddie, VA, Church Road, 2019 Water 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 7/1/18	0 Year Starting 7/1/19	1st Year Starting 7/1/20	2nd Year Starting 7/1/21	3rd Year Starting 7/1/22	4th Year Starting 7/1/23	5th Year Starting 7/1/24	6th Year Starting 7/1/25	7th Year Starting 7/1/26	8th Year Starting 7/1/27	9th Year Starting 7/1/28	10th Year Starting 7/1/29
Estimated Operating Ratio: Current Rates First Column, Modeled Rates After That	1.34	1.38	1.18	1.19	1.19	1.22	1.23	1.22	1.25	1.26	1.25	1.28

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	1.11	0.70	0.29	0.29	0.28	0.37	0.38	N.A.	N.A.	N.A.	N.A.	N.A.

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 6/30/19	Balance Ending on 6/30/20	Balance Ending on 6/30/21	Balance Ending on 6/30/22	Balance Ending on 6/30/23	Balance Ending on 6/30/24	Balance Ending on 6/30/25	Balance Ending on 6/30/26	Balance Ending on 6/30/27	Balance Ending on 6/30/28	Balance Ending on 6/30/29	Balance Ending on 6/30/30
Cash and Cash Equivalents	$436,683	$414,713	$418,691	$427,224	$440,758	$445,063	$454,387	$469,223	$473,881	$484,069	$500,332	$505,370
Other Liquid Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Undedicated Cash Assets	$436,683	$414,713	$418,691	$427,224	$440,758	$445,063	$454,387	$469,223	$473,881	$484,069	$500,332	$505,370
Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	$436,683	$414,713	$406,131	$401,975	$402,268	$394,011	$390,197	$390,850	$382,888	$379,386	$380,368	$384,198
Repair & Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt and CIP Reserves	$28,255	-$48,180	-$94,530	-$140,066	-$194,236	-$222,830	-$248,870	-$29,583	$216,843	$470,123	$724,359	$1,008,699
Sum of All Reserves	$464,938	$366,533	$324,161	$287,157	$246,523	$222,233	$205,517	$439,640	$690,724	$954,192	$1,224,691	$1,514,069

Table 18 - Bills Before and After Rate Adjustments

Dinwiddie, VA, Church Road, 2019 Water Rates Model 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 confusion, this table shows only example customer bills.

Customer, Rate Class or Meter Size	Gallons of Use	Customers at or Above This Volume and Below the Next	Customers up to and Including This Volume	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
Church Road Commercial CR (8 Inch Meter?)	0	0	0	$855.79	$716.39	-$139.40
	1,000	0	0	$855.79	$719.22	-$136.57
	2,000	0	0	$855.79	$722.05	-$133.74
	3,000	0	0	$860.10	$724.88	-$135.22
	4,000	0	0	$864.41	$727.71	-$136.70
	5,000	0	0	$868.72	$730.54	-$138.18
	6,000	0	0	$873.03	$733.37	-$139.66
	7,000	0	0	$877.34	$736.20	-$141.14
	8,000	0	0	$881.65	$739.03	-$142.62
	9,000	0	0	$885.96	$741.86	-$144.10
	10,000	0	0	$890.27	$744.69	-$145.58
	15,000	0	0	$911.82	$758.84	-$152.98
	20,000	0	0	$930.37	$772.99	-$157.38
	30,000	0	0	$967.47	$801.29	-$166.18
	40,000	0	0	$1,004.57	$829.59	-$174.98
	50,000	0	0	$1,041.67	$857.89	-$183.78
	75,000	0	0	$1,134.42	$928.64	-$205.78
	100,000	0	0	$1,227.17	$999.39	-$227.78
	125,000	0	0	$1,319.92	$1,070.14	-$249.78
	150,000	0	0	$1,412.67	$1,140.89	-$271.78
	205,000	0	0	$1,616.72	$1,296.54	-$320.18
	300,000	0	0	$1,969.17	$1,565.39	-$403.78
	400,000	0	0	$2,340.17	$1,848.39	-$491.78
	500,000	0	0	$2,711.17	$2,131.39	-$579.78
	750,000	0	0	$3,638.67	$2,838.89	-$799.78
	1,000,000	0	0	$4,566.17	$3,546.39	-$1,019.78
	1,250,000	1	1	$5,493.67	$4,253.89	-$1,239.78

Dinwiddie, VA, Main System, 2019 Sewer Rates
Model 3

This model calculated cost-to-serve rates with only minor variances to better suit the utility's needs.

March 17, 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
Dinwiddie, VA, Main System, 2019 Sewer 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 Gallons)	Billing Cycle Minimum Charge	Usage Allowance in 1,000 Gallons	Unit Charge per 1,000 Gallons
SCWWA Res 3/4 Inch SR S1	1,000	$14.82	2.000	$6.00
	2,000	$14.82	2.000	$6.00
	20,000	$14.82	2.000	$5.58
	1,250,000	$14.82	2.000	$5.58
SCWWA Res 1 Inch SR S3	0	$47.75	2.000	$6.00
	2,000	$47.75	2.000	$6.00
	20,000	$47.75	2.000	$5.58
	1,250,000	$47.75	2.000	$5.58
SCWWA Res 1 1/2 Inch SR S5	0	$115.08	2.000	$6.00
	2,000	$115.08	2.000	$6.00
	20,000	$115.08	2.000	$5.58
	1,255,000	$115.08	2.000	$5.58
SCWWA Comm .75 Inch SC S2	0	$14.82	2.000	$6.00
	2,000	$14.82	2.000	$6.00
	20,000	$14.82	2.000	$5.58
	1,255,000	$14.82	2.000	$5.58
SCWWA Comm 1 Inch SC S4	0	$47.75	2.000	$6.00
	2,000	$47.75	2.000	$6.00
	20,000	$47.75	2.000	$5.58
	1,255,000	$47.75	2.000	$5.58
SCWWA Comm 1.5 Inch SC S6	0	$115.08	2.000	$6.00
	2,000	$115.08	2.000	$6.00
	20,000	$115.08	2.000	$5.58
	1,255,000	$115.08	2.000	$5.58
SCWWA Comm 2 Inch SC S7	0	$155.49	2.000	$6.00
	2,000	$155.49	2.000	$6.00
	20,000	$155.49	2.000	$5.58
	1,255,000	$155.49	2.000	$5.58
SCWWA Comm 2 Inch SC SB	0	$155.49	2.000	$6.00
	2,000	$155.49	2.000	$6.00
	20,000	$155.49	2.000	$5.58
	1,255,000	$155.49	2.000	$5.58

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
SCWWA Comm 2.2 Inch SC SA	0	$309.75	2.000	$6.00
	2,000	$309.75	2.000	$6.00
	20,000	$309.75	2.000	$5.58
	1,255,000	$309.75	2.000	$5.58
SCWWA Comm 3 Inch SC SM	0	$188.54	2.000	$6.00
	2,000	$188.54	2.000	$6.00
	20,000	$188.54	2.000	$5.58
	1,255,000	$188.54	2.000	$5.58
SCWWA Comm 6 Inch SC SU	0	$572.97	2.000	$6.00
	2,000	$572.97	2.000	$6.00
	20,000	$572.97	2.000	$5.58
	1,255,000	$572.97	2.000	$5.58
SCWWA Comm Central State SC S8	0	$950.39	2.000	$6.00
	2,000	$950.39	2.000	$6.00
	20,000	$950.39	2.000	$5.58
	1,255,000	$950.39	2.000	$5.58
SCWWA Church Road Comm 2 Inch SW SWC	0	$155.49	2.000	$6.00
	2,000	$155.49	2.000	$6.00
	20,000	$155.49	2.000	$5.58
	1,255,000	$155.49	2.000	$5.58
MCK Residential SM SV	0	$25.00	5.000	$5.00
	5,000	$25.00	5.000	$5.00
	300,000	$25.00	5.000	$7.50
	500,000	$25.00	5.000	$10.00
	1,250,000	$25.00	5.000	$10.00
MCK Commercial SK SZ	0	$37.50	5.000	$7.50
	5,000	$37.50	5.000	$7.50
	500,000	$37.50	5.000	$10.00
	1,250,000	$37.50	5.000	$10.00
Prince George Residential SP SN	0	$11.54	0.000	$8.21
	1,000	$11.54	0.000	$8.21
	1,255,000	$11.54	0.000	$8.21

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
SCWWA Residential Non-Metered SR SK	0	$24.01	0.000	$0.00
	1,000	$24.01	0.000	$0.00
	2,000	$24.01	0.000	$0.00
	1,255,000	$24.01	0.000	$0.00
SCWWA Church Road 2 Inch SC SWC	0	$155.49	2.000	$6.00
	1,000	$155.49	2.000	$6.00
	2,000	$155.49	2.000	$6.00
	1,255,000	$155.49	2.000	$5.58
SCWWA Commercial 2 Inch SC SW	0	$155.49	2.000	$6.00
	2,000	$155.49	2.000	$6.00
	20,000	$155.49	2.000	$5.58
	1,255,000	$155.49	2.000	$5.58
Prince George Residential Unmetered SP SL	0	$41.66	0.000	$0.00
	1,000	$41.66	0.000	$0.00
	2,000	$41.66	0.000	$0.00
	1,255,000	$41.66	0.000	$0.00
SCWWA Residential Non-metered sewer SR SE	0	$24.01	0.000	$0.00
	1,000	$24.01	0.000	$0.00
	2,000	$24.01	0.000	$0.00
	1,255,000	$24.01	0.000	$0.00
SCWWA Residential 3 Inch SR SO	0	$188.54	2.000	$6.00
	2,000	$188.54	2.000	$6.00
	20,000	$188.54	2.000	$5.58
	1,255,000	$188.54	2.000	$5.58

Table 2 - Test Year Usage

Dinwiddie, VA, Main System, 2019 Sewer Rates Model 3

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

Test year = the one-year period being analyzed starts: 7/1/2018

Date this model created: 10/31/2019

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
SCWWA Res 3/4 Inch SR S1	-686,180	-1	73	-3,041,370	0	-3,041,370	0	0.0%	-1.4%
	0	999	34,207	32,619,300	2,548	1,392,300	212	7.1%	0.6%
	1,000	1,999	31,227	28,424,820	5,907	9,011,820	492	16.5%	4.1%
	2,000	2,999	25,320	22,007,060	6,649	16,634,060	554	18.5%	7.6%
	3,000	3,999	18,671	15,533,970	5,978	20,774,970	498	16.7%	9.5%
	4,000	4,999	12,693	10,252,860	4,518	20,149,860	377	12.6%	9.2%
	5,000	5,999	8,175	6,455,620	3,093	16,838,620	258	8.6%	7.7%
	6,000	6,999	5,082	4,059,270	1,800	11,577,270	150	5.0%	5.3%
	7,000	7,999	3,282	2,707,660	1,055	7,865,660	88	2.9%	3.6%
	8,000	8,999	2,227	1,852,710	680	5,745,710	57	1.9%	2.6%
	9,000	9,999	1,547	1,310,450	421	3,973,450	35	1.2%	1.8%
	10,000	14,999	1,126	3,271,780	752	8,921,780	63	2.1%	4.1%
	15,000	19,999	374	1,293,330	202	3,463,330	17	0.6%	1.6%
	20,000	29,999	172	1,015,880	114	2,715,880	10	0.3%	1.2%
	30,000	39,999	58	429,860	23	769,860	2	0.1%	0.4%
	40,000	49,999	35	276,750	12	526,750	1	0.0%	0.2%
	50,000	74,999	23	469,370	8	494,370	1	0.0%	0.2%
	75,000	99,999	15	194,420	10	819,420	1	0.0%	0.4%
	100,000	124,999	5	109,270	3	359,270	0	0.0%	0.2%
	125,000	149,999	2	36,720	1	136,720	0	0.0%	0.1%
	150,000	204,999	1	21,450	1	171,450	0	0.0%	0.1%
			144,315	129,301,180	33,775	129,301,180	2,815	94.2%	58.8%
SCWWA Res 1 Inch SR S3	0	999	60	60	20	12,170	2	0.1%	0.0%
	1,000	1,999	40	32,880	11	14,880	1	0.0%	0.0%
	2,000	2,999	29	23,950	12	30,950	1	0.0%	0.0%
	3,000	3,999	17	8,950	12	39,950	1	0.0%	0.0%
	4,000	4,999	5	3,910	2	8,910	0	0.0%	0.0%
	5,000	5,999	3	1,850	2	10,850	0	0.0%	0.0%
	6,000	6,999	1	1,000	0	0	0	0.0%	0.0%
	7,000	7,999	1	1,000	0	0	0	0.0%	0.0%
	8,000	8,999	1	900	1	8,900	0	0.0%	0.0%
			157	74,500	60	126,610	5	0.2%	0.1%
SCWWA Res 1 1/2 Inch SR S5	0	999	228	228,000	0	0	0	0.0%	0.0%
	1,000	1,999	228	228,000	0	0	0	0.0%	0.0%
	2,000	2,999	228	228,000	0	0	0	0.0%	0.0%
	3,000	3,999	228	228,000	0	0	0	0.0%	0.0%
	4,000	4,999	228	228,000	0	0	0	0.0%	0.0%
	5,000	5,999	228	228,000	0	0	0	0.0%	0.0%
	6,000	6,999	228	226,730	2	12,730	0	0.0%	0.0%
	7,000	7,999	226	225,370	1	7,370	0	0.0%	0.0%
	8,000	8,999	225	224,350	1	8,350	0	0.0%	0.0%
	9,000	9,999	224	223,020	2	19,020	0	0.0%	0.0%
	10,000	14,999	222	1,104,760	3	39,760	0	0.0%	0.0%
	15,000	19,999	219	1,053,090	15	258,090	1	0.0%	0.1%
	20,000	24,999	204	952,620	28	632,620	2	0.1%	0.3%
	25,000	34,999	176	1,506,310	59	1,811,310	5	0.2%	0.8%
	35,000	44,999	117	746,410	74	2,906,410	6	0.2%	1.3%
	45,000	54,999	43	201,610	34	1,641,610	3	0.1%	0.7%
	55,000	79,999	9	90,720	8	505,720	1	0.0%	0.2%
	80,000	104,999	1	2,310	1	82,310	0	0.0%	0.0%
			3,262	7,925,300	228	7,925,300	19	0.6%	3.6%

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
SCWWA Comm .75 Inch SC S2	0	999	577	443,850	209	75,850	17	0.6%	0.0%
	1,000	1,999	368	308,250	107	154,250	9	0.3%	0.1%
	2,000	2,999	261	226,400	67	166,400	6	0.2%	0.1%
	3,000	3,999	194	180,100	26	90,100	2	0.1%	0.0%
	4,000	4,999	168	161,110	16	73,110	1	0.0%	0.0%
	5,000	5,999	152	140,970	18	96,970	2	0.1%	0.0%
	6,000	6,999	134	126,010	11	69,010	1	0.0%	0.0%
	7,000	7,999	123	116,580	10	73,580	1	0.0%	0.0%
	8,000	8,999	113	107,490	11	93,490	1	0.0%	0.0%
	9,000	9,999	102	96,720	11	104,720	1	0.0%	0.0%
	10,000	14,999	91	337,970	41	497,970	3	0.1%	0.2%
	15,000	19,999	50	174,320	26	444,320	2	0.1%	0.2%
	20,000	24,999	24	104,750	5	109,750	0	0.0%	0.0%
	25,000	34,999	19	143,460	8	233,460	1	0.0%	0.1%
	35,000	44,999	11	96,410	3	121,410	0	0.0%	0.1%
	45,000	54,999	8	69,850	2	99,850	0	0.0%	0.0%
	55,000	79,999	6	135,330	2	145,330	0	0.0%	0.1%
	80,000	104,999	4	85,520	1	90,520	0	0.0%	0.0%
	105,000	129,999	3	66,000	1	121,000	0	0.0%	0.1%
	130,000	154,999	2	50,000	0	0	0	0.0%	0.0%
	155,000	209,999	2	110,000	0	0	0	0.0%	0.0%
	210,000	304,999	2	126,670	2	546,670	0	0.0%	0.2%
			2,414	3,407,760	577	3,407,760	48	1.6%	1.6%
SCWWA Comm 1 Inch SC S4	0	999	446	393,660	83	30,660	7	0.2%	0.0%
	1,000	1,999	363	333,480	60	90,480	5	0.2%	0.0%
	2,000	2,999	303	284,180	33	80,180	3	0.1%	0.0%
	3,000	3,999	270	260,610	19	66,610	2	0.1%	0.0%
	4,000	4,999	251	238,650	21	92,650	2	0.1%	0.0%
	5,000	5,999	230	221,560	13	69,560	1	0.0%	0.0%
	6,000	6,999	217	212,860	7	44,860	1	0.0%	0.0%
	7,000	7,999	210	206,250	6	44,250	1	0.0%	0.0%
	8,000	8,999	204	199,500	10	85,500	1	0.0%	0.0%
	9,000	9,999	194	188,220	12	114,220	1	0.0%	0.1%
	10,000	14,999	182	793,340	41	498,340	3	0.1%	0.2%
	15,000	19,999	141	653,500	19	328,500	2	0.1%	0.1%
	20,000	24,999	122	554,650	21	469,650	2	0.1%	0.2%
	25,000	34,999	101	851,080	31	926,080	3	0.1%	0.4%
	35,000	44,999	70	537,670	31	1,232,670	3	0.1%	0.6%
	45,000	54,999	39	276,700	19	931,700	2	0.1%	0.4%
	55,000	79,999	20	318,260	12	778,260	1	0.0%	0.4%
	80,000	104,999	8	122,020	4	342,020	0	0.0%	0.2%
	105,000	129,999	4	67,190	2	227,190	0	0.0%	0.1%
	130,000	154,999	2	8,670	2	268,670	0	0.0%	0.1%
			3,377	6,722,050	446	6,722,050	37	1.2%	3.1%
SCWWA Comm 1.5 Inch SC S6	0	999	216	202,160	19	5,160	2	0.1%	0.0%
	1,000	1,999	197	183,880	23	32,880	2	0.1%	0.0%
	2,000	2,999	174	161,640	23	56,640	2	0.1%	0.0%
	3,000	3,999	151	144,320	12	41,320	1	0.0%	0.0%
	4,000	4,999	139	132,060	11	48,060	1	0.0%	0.0%
	5,000	5,999	128	123,660	11	61,660	1	0.0%	0.0%
	6,000	6,999	117	108,240	14	89,240	1	0.0%	0.0%
	7,000	7,999	103	98,400	7	51,400	1	0.0%	0.0%
	8,000	8,999	96	94,090	4	34,090	0	0.0%	0.0%
	9,000	9,999	92	91,030	1	9,030	0	0.0%	0.0%
	10,000	14,999	91	426,940	10	121,940	1	0.0%	0.1%
	15,000	19,999	81	392,400	7	127,400	1	0.0%	0.1%
	20,000	24,999	74	347,410	8	177,410	1	0.0%	0.1%
	25,000	34,999	66	555,000	20	595,000	2	0.1%	0.3%
	35,000	44,999	46	366,370	18	716,370	2	0.1%	0.3%
	45,000	54,999	28	245,930	7	350,930	1	0.0%	0.2%
	55,000	79,999	21	271,020	20	1,346,020	2	0.1%	0.6%
	80,000	104,999	1	350	1	80,350	0	0.0%	0.0%
			1,821	3,944,900	216	3,944,900	18	0.6%	1.8%

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
SCWWA Comm 2 Inch SC S7	0	999	174	170,800	4	800	0	0.0%	0.0%
	1,000	1,999	170	168,240	8	14,240	1	0.0%	0.0%
	2,000	2,999	162	157,660	7	16,660	1	0.0%	0.0%
	3,000	3,999	155	154,980	1	3,980	0	0.0%	0.0%
	4,000	4,999	154	148,660	10	44,660	1	0.0%	0.0%
	5,000	5,999	144	140,410	8	44,410	1	0.0%	0.0%
	6,000	6,999	136	133,000	5	32,000	0	0.0%	0.0%
	7,000	7,999	131	128,090	6	45,090	1	0.0%	0.0%
	8,000	8,999	125	120,700	8	67,700	1	0.0%	0.0%
	9,000	9,999	117	113,010	7	66,010	1	0.0%	0.0%
	10,000	14,999	110	534,000	4	44,000	0	0.0%	0.0%
	15,000	19,999	106	513,290	6	103,290	1	0.0%	0.0%
	20,000	24,999	100	484,580	7	159,580	1	0.0%	0.1%
	25,000	34,999	93	915,300	2	55,300	0	0.0%	0.0%
	35,000	44,999	91	910,000	0	0	0	0.0%	0.0%
	45,000	54,999	91	880,990	7	355,990	1	0.0%	0.2%
	55,000	79,999	84	1,793,100	25	1,693,100	2	0.1%	0.8%
	80,000	104,999	59	1,280,360	15	1,380,360	1	0.0%	0.6%
	105,000	129,999	44	747,410	25	2,897,410	2	0.1%	1.3%
	130,000	154,999	19	335,810	11	1,565,810	1	0.0%	0.7%
	155,000	209,999	8	284,090	5	894,090	0	0.0%	0.4%
	210,000	304,999	3	15,970	3	645,970	0	0.0%	0.3%
			2,276	10,130,450	174	10,130,450	15	0.5%	4.6%
SCWWA Comm 2 Inch SC SB	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	34,999	12	120,000	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	104,360	5	259,360	0	0.0%	0.1%
	55,000	79,999	7	42,810	7	427,810	1	0.0%	0.2%
			199	687,170	12	687,170	1	0.0%	0.3%
SCWWA Comm 2.2 Inch SC SA	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	34,999	48	480,000	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	79,999	48	1,151,360	9	671,360	1	0.0%	0.3%
	80,000	104,999	39	921,330	6	576,330	1	0.0%	0.3%
	105,000	129,999	33	712,490	8	927,490	1	0.0%	0.4%
	130,000	154,999	25	624,650	1	154,650	0	0.0%	0.1%
	155,000	209,999	24	1,102,570	7	1,252,570	1	0.0%	0.6%
	210,000	304,999	17	1,399,870	5	1,309,870	0	0.0%	0.6%
	305,000	504,999	12	2,400,000	0	0	0	0.0%	0.0%
	505,000	754,999	12	2,492,840	10	7,042,840	1	0.0%	3.2%
	755,000	1,004,999	2	41,850	2	1,551,850	0	0.0%	0.7%
	1,005,000	1,254,999	0	0	0	0	0	0.0%	0.0%
	1,255,000	5,000,000	0	0	0	0	0	0.0%	0.0%
			980	13,486,960	48	13,486,960	4	0.1%	6.1%

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
SCWWA Comm 3 Inch SC SM	0	999	72	70,000	2	0	0	0.0%	0.0%
	1,000	1,999	70	70,000	0	0	0	0.0%	0.0%
	2,000	2,999	70	70,000	0	0	0	0.0%	0.0%
	3,000	3,999	70	70,000	0	0	0	0.0%	0.0%
	4,000	4,999	70	68,410	4	18,410	0	0.0%	0.0%
	5,000	5,999	66	65,270	2	11,270	0	0.0%	0.0%
	6,000	6,999	64	62,550	3	19,550	0	0.0%	0.0%
	7,000	7,999	61	59,960	2	14,960	0	0.0%	0.0%
	8,000	8,999	59	59,000	0	0	0	0.0%	0.0%
	9,000	9,999	59	58,480	1	9,480	0	0.0%	0.0%
	10,000	14,999	58	278,440	4	48,440	0	0.0%	0.0%
	15,000	19,999	54	270,000	0	0	0	0.0%	0.0%
	20,000	24,999	54	264,670	3	69,670	0	0.0%	0.0%
	25,000	34,999	51	494,680	4	124,680	0	0.0%	0.1%
	35,000	44,999	47	450,540	4	160,540	0	0.0%	0.1%
	45,000	54,999	43	410,390	7	365,390	1	0.0%	0.2%
	55,000	79,999	36	785,050	7	445,050	1	0.0%	0.2%
	80,000	104,999	29	703,030	2	188,030	0	0.0%	0.1%
	105,000	129,999	27	626,710	4	471,710	0	0.0%	0.2%
	130,000	154,999	23	461,610	7	971,610	1	0.0%	0.4%
	155,000	209,999	16	631,060	5	801,060	0	0.0%	0.4%
	210,000	304,999	11	769,250	6	1,554,250	1	0.0%	0.7%
	305,000	504,999	5	648,300	2	658,300	0	0.0%	0.3%
	505,000	754,999	3	337,760	2	1,097,760	0	0.0%	0.5%
	755,000	1,004,999	1	250,000	0	0	0	0.0%	0.0%
	1,005,000	1,254,999	1	130,940	1	1,135,940	0	0.0%	0.5%
	1,255,000	1,135,940	0	0	0	0	0	0.0%	0.0%
			1,120	8,166,100	72	8,166,100	6	0.2%	3.7%
SCWWA Comm 6 Inch SC SU	0	999	24	24,000	0	0	0	0.0%	0.0%
	1,000	1,999	24	24,000	0	0	0	0.0%	0.0%
	2,000	2,999	24	24,000	0	0	0	0.0%	0.0%
	3,000	3,999	24	24,000	0	0	0	0.0%	0.0%
	4,000	4,999	24	24,000	0	0	0	0.0%	0.0%
	5,000	5,999	24	24,000	0	0	0	0.0%	0.0%
	6,000	6,999	24	24,000	0	0	0	0.0%	0.0%
	7,000	7,999	24	24,000	0	0	0	0.0%	0.0%
	8,000	8,999	24	24,000	0	0	0	0.0%	0.0%
	9,000	9,999	24	24,000	0	0	0	0.0%	0.0%
	10,000	14,999	24	120,000	0	0	0	0.0%	0.0%
	15,000	19,999	24	120,000	0	0	0	0.0%	0.0%
	20,000	24,999	24	120,000	0	0	0	0.0%	0.0%
	25,000	34,999	24	240,000	0	0	0	0.0%	0.0%
	35,000	44,999	24	240,000	0	0	0	0.0%	0.0%
	45,000	54,999	24	240,000	0	0	0	0.0%	0.0%
	55,000	79,999	24	591,550	2	151,550	0	0.0%	0.1%
	80,000	104,999	22	485,390	4	355,390	0	0.0%	0.2%
	105,000	129,999	18	355,100	9	1,075,100	1	0.0%	0.5%
	130,000	154,999	9	86,880	8	1,101,880	1	0.0%	0.5%
	155,000	209,999	1	44,440	1	199,440	0	0.0%	0.1%
			458	2,883,360	24	2,883,360	2	0.1%	1.3%

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
SCWWA Comm Central State SC S8	0	999	12	11,000	1	0	0	0.0%	0.0%
	1,000	1,999	11	11,000	0	0	0	0.0%	0.0%
	2,000	2,999	11	11,000	0	0	0	0.0%	0.0%
	3,000	3,999	11	11,000	0	0	0	0.0%	0.0%
	4,000	4,999	11	11,000	0	0	0	0.0%	0.0%
	5,000	5,999	11	11,000	0	0	0	0.0%	0.0%
	6,000	6,999	11	11,000	0	0	0	0.0%	0.0%
	7,000	7,999	11	11,000	0	0	0	0.0%	0.0%
	8,000	8,999	11	11,000	0	0	0	0.0%	0.0%
	9,000	9,999	11	11,000	0	0	0	0.0%	0.0%
	10,000	14,999	11	55,000	0	0	0	0.0%	0.0%
	15,000	19,999	11	55,000	0	0	0	0.0%	0.0%
	20,000	24,999	11	55,000	0	0	0	0.0%	0.0%
	25,000	34,999	11	110,000	0	0	0	0.0%	0.0%
	35,000	44,999	11	110,000	0	0	0	0.0%	0.0%
	45,000	54,999	11	110,000	0	0	0	0.0%	0.0%
	55,000	79,999	11	275,000	0	0	0	0.0%	0.0%
	80,000	104,999	11	275,000	0	0	0	0.0%	0.0%
	105,000	129,999	11	275,000	0	0	0	0.0%	0.0%
	130,000	154,999	11	275,000	0	0	0	0.0%	0.0%
	155,000	209,999	11	605,000	0	0	0	0.0%	0.0%
	210,000	304,999	11	1,045,000	0	0	0	0.0%	0.0%
	305,000	504,999	11	2,200,000	0	0	0	0.0%	0.0%
	505,000	754,999	11	2,750,000	0	0	0	0.0%	0.0%
	755,000	1,004,999	11	2,750,000	0	0	0	0.0%	0.0%
	1,005,000	1,254,999	11	2,690,840	1	1,195,840	0	0.0%	0.5%
	1,255,000	5,000,000	10	9,072,950	10	21,622,950	1	0.0%	9.8%
			297	22,818,790	12	22,818,790	1	0.0%	10.4%
SCWWA Church Road Comm 2 Inch SW SWC	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	34,999	12	120,000	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	79,999	12	300,000	0	0	0	0.0%	0.0%
	80,000	104,999	12	300,000	0	0	0	0.0%	0.0%
	105,000	129,999	12	300,000	0	0	0	0.0%	0.0%
	130,000	154,999	12	300,000	0	0	0	0.0%	0.0%
	155,000	209,999	12	654,490	1	204,490	0	0.0%	0.1%
	210,000	304,999	11	663,360	6	1,448,360	1	0.0%	0.7%
	305,000	504,999	5	569,120	3	1,084,120	0	0.0%	0.5%
	505,000	754,999	2	500,000	0	0	0	0.0%	0.0%
	755,000	1,004,999	2	101,080	2	1,611,080	0	0.0%	0.7%
	1,005,000	1,254,999	0	0	0	0	0	0.0%	0.0%
	1,255,000	5,000,000	0	0	0	0	0	0.0%	0.0%
			272	4,348,050	12	4,348,050	1	0.0%	2.0%
MCK Residential SM SV	0	999	132	119,250	20	7,250	2	0.1%	0.0%
	1,000	1,999	112	94,820	37	56,820	3	0.1%	0.0%
	2,000	2,999	75	54,270	42	105,270	4	0.1%	0.0%
	3,000	3,999	33	22,600	16	53,600	1	0.0%	0.0%
	4,000	4,999	17	12,520	9	40,520	1	0.0%	0.0%
	5,000	5,999	8	6,580	4	22,580	0	0.0%	0.0%
	6,000	6,999	4	840	4	24,840	0	0.0%	0.0%
			381	310,880	132	310,880	11	0.4%	0.1%

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
MCK Commercial SK SZ	0	999	13	12,000	1	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	59,980	1	19,980	0	0.0%	0.0%
	20,000	24,999	11	55,000	0	0	0	0.0%	0.0%
	25,000	34,999	11	110,000	0	0	0	0.0%	0.0%
	35,000	44,999	11	110,000	0	0	0	0.0%	0.0%
	45,000	54,999	11	101,060	1	46,060	0	0.0%	0.0%
	55,000	79,999	10	216,620	3	206,620	0	0.0%	0.1%
	80,000	104,999	7	81,780	5	431,780	0	0.0%	0.2%
	105,000	129,999	2	19,270	2	229,270	0	0.0%	0.1%
	130,000	154,999	0	0	0	0	0	0.0%	0.0%
	155,000	209,999	0	0	0	0	0	0.0%	0.0%
	210,000	299,999	0	0	0	0	0	0.0%	0.0%
	300,000	499,999	0	0	0	0	0	0.0%	0.0%
	500,000	749,999	0	0	0	0	0	0.0%	0.0%
	750,000	999,999	0	0	0	0	0	0.0%	0.0%
	1,000,000	1,249,999	0	0	0	0	0	0.0%	0.0%
	1,250,000	5,000,000	0	0	0	0	0	0.0%	0.0%
			208	933,710	13	933,710	1	0.0%	0.4%
Prince George Residential SP SN	0	999	48	48,000	0	0	0	0.0%	0.0%
	1,000	1,999	48	45,780	9	15,780	1	0.0%	0.0%
	2,000	2,999	39	29,340	17	41,340	1	0.0%	0.0%
	3,000	3,999	22	18,360	5	16,360	0	0.0%	0.0%
	4,000	4,999	17	15,010	8	38,010	1	0.0%	0.0%
	5,000	5,999	9	6,050	5	27,050	0	0.0%	0.0%
	6,000	6,999	4	3,700	1	6,700	0	0.0%	0.0%
	7,000	7,999	3	3,000	0	0	0	0.0%	0.0%
	8,000	8,999	3	3,000	0	0	0	0.0%	0.0%
	9,000	9,999	3	3,000	0	0	0	0.0%	0.0%
	10,000	14,999	3	4,500	3	34,500	0	0.0%	0.0%
			199	179,740	48	179,740	4	0.1%	0.1%
SCWWA Residential Non-Metered SR SK	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	11,850	1	2,850	0	0.0%	0.0%
	3,000	3,999	11	9,470	2	6,470	0	0.0%	0.0%
	4,000	4,999	9	7,340	2	8,340	0	0.0%	0.0%
	5,000	5,999	7	4,860	3	15,860	0	0.0%	0.0%
	6,000	6,999	4	3,600	2	13,600	0	0.0%	0.0%
	7,000	7,999	2	2,000	0	0	0	0.0%	0.0%
	8,000	8,999	2	2,000	0	0	0	0.0%	0.0%
	9,000	9,999	2	2,000	0	0	0	0.0%	0.0%
	10,000	14,999	2	3,930	2	23,930	0	0.0%	0.0%
			75	71,050	12	71,050	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
SCWWA Church Road 2 Inch SC SWC	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	34,999	12	120,000	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	79,999	12	300,000	0	0	0	0.0%	0.0%
	80,000	104,999	12	300,000	0	0	0	0.0%	0.0%
	105,000	129,999	12	300,000	0	0	0	0.0%	0.0%
	130,000	154,999	12	300,000	0	0	0	0.0%	0.0%
	155,000	209,999	12	654,490	1	204,490	0	0.0%	0.1%
	210,000	304,999	11	663,360	6	1,448,360	1	0.0%	0.7%
	305,000	504,999	5	569,120	3	1,084,120	0	0.0%	0.5%
	505,000	754,999	2	500,000	0	0	0	0.0%	0.0%
	755,000	1,004,999	2	101,080	2	1,611,080	0	0.0%	0.7%
	1,005,000	1,254,999	0	0	0	0	0	0.0%	0.0%
	1,255,000	5,000,000	0	0	0	0	0	0.0%	0.0%
			272	4,348,050	12	4,348,050	1	0.0%	2.0%
SCWWA Commercial 2 Inch SC SW	0	999	0	0	0	0	0	0.0%	0.0%
	1,000	1,999	0	0	0	0	0	0.0%	0.0%
	1,255,000	5,000,000	0	0	0	0	0	0.0%	0.0%
			0	0	0	0	0	0.0%	0.0%
Prince George Residential Unmetered SP SL	0	999	0	0	0	0	0	0.0%	0.0%
	1,000	1,999	0	0	0	0	0	0.0%	0.0%
	1,255,000	5,000,000	0	0	0	0	0	0.0%	0.0%
			0	0	0	0	0	0.0%	0.0%
SCWWA Residential Non-metered sewer SR SE	0	999	0	0	0	0	0	0.0%	0.0%
	1,000	1,999	0	0	0	0	0	0.0%	0.0%
	1,255,000	5,000,000	0	0	0	0	0	0.0%	0.0%
			0	0	0	0	0	0.0%	0.0%
SCWWA Residential 3 Inch SR SO	0	999	0	0	0	0	0	0.0%	0.0%
	1,000	1,999	0	0	0	0	0	0.0%	0.0%
	1,255,000	5,000,000	0	0	0	0	0	0.0%	0.0%
			0	0	0	0	0	0.0%	0.0%
		Grand Totals:	162,083	219,740,000	35,873	219,792,110	2,989	100%	100%

Table 3 - Operating Incomes and Basic User Data

Dinwiddie, VA, Main System, 2019 Sewer 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)

$54,640	Census Bureau estimate of AMHI for the year	2017
$51,579	Census Bureau estimate of AMHI for the year	2016
$3,061	AMHI growth during this time period	
5.93%	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

25	Number of new connections made during the test year
$200	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	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	
		Starting 7/1/18	Starting 7/1/19	Starting 7/1/20	Starting 7/1/21	Starting 7/1/22	Starting 7/1/23	Starting 7/1/24	Starting 7/1/25	Starting 7/1/26	Starting 7/1/27	Starting 7/1/28	Starting 7/1/29
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 for the Year	N.A.	2,989	3,014	3,039	3,064	3,089	3,114	3,139	3,164	3,189	3,214	3,239	3,264
Customers Added or Lost (-) During the Year	N.A.	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Customer Growth or Loss (-) Rate	N.A.	0.84%	0.83%	0.82%	0.82%	0.81%	0.80%	0.80%	0.79%	0.78%	0.78%	0.77%	0.77%
Actual (Test Year) and Projected Volumes, in Gallons	N.A.	219,740,000	221,577,649	223,415,299	225,252,948	227,090,598	228,928,247	230,765,897	232,603,546	234,441,196	236,278,845	238,116,495	239,954,144
How User Charge Fees Were Calculated, Accounting for New Customers and Future Rate Increases													
Actual or Calculated Sales Revenues		$1,961,863	$1,961,928	$2,045,121	$2,123,801	$2,205,508	$2,290,056	$2,377,692	$2,468,525	$2,562,668	$2,660,238	$2,761,355	$2,866,146
Additional Sales Revenues From New Customers			$44	$16,822	$17,469	$17,847	$18,383	$18,934	$19,502	$20,087	$20,690	$21,311	$21,950
Total Calculated Revenues (User Charge Fees)		$1,961,863	$1,961,973	$2,061,943	$2,141,270	$2,223,355	$2,308,439	$2,396,626	$2,488,027	$2,582,755	$2,680,928	$2,782,666	$2,888,096
Operating Incomes													
User Charge Fees (Tables 10, 16)	N.A.	$1,797,980	$1,798,080	$1,889,699	$1,962,400	$2,037,628	$2,115,604	$2,196,425	$2,280,191	$2,367,006	$2,456,977	$2,550,217	$2,646,840
Late Payment Charge	N.A.	$24,518	$24,721	$24,924	$25,129	$25,333	$25,536	$25,740	$25,943	$26,146	$26,350	$26,553	$26,756
New Taps or Connections (Current Rate Structure)	% Above	$4,988	$4,974	$0	$0	$0	$0	$0	$0	$0	$0	$1	$2
Meter Size-based System Development Fees (Table 14)	% Above	$0	$473	$178,301	$183,650	$189,160	$194,835	$200,680	$206,700	$212,901	$219,288	$225,867	$232,643
Interest Income	N.A.	$0	$7,883	$8,075	$8,092	$8,124	$8,179	$8,187	$8,218	$8,276	$8,136	$8,167	$8,228
County Reimburse for WWPS & Force Main	N.A.	$632,031	$632,031	$632,031	$632,031	$632,031	$632,031	$632,031	$632,031	$632,031	$632,031	$632,031	$632,031
SPRINT NEXTEL LEASE WWTP	N.A.	$25,539	$25,539	$25,539	$25,539	$25,539	$25,539	$25,539	$25,539	$25,539	$25,539	$25,539	$25,539
COLLECT BAD DEBT	N.A.	$390	$390	$390	$390	$390	$390	$390	$390	$390	$390	$390	$390
LIEN FEES	N.A.	$315	$315	$315	$315	$315	$315	$315	$315	$315	$315	$315	$315
REV. FROM BILLABLE	N.A.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SERVICE CHARGES	N.A.	$21,005	$21,005	$21,005	$21,005	$21,005	$21,005	$21,005	$21,005	$21,005	$21,005	$21,005	$21,005
Total Operating Incomes		**$2,506,765**	**$2,515,411**	**$2,780,280**	**$2,858,552**	**$2,939,525**	**$3,023,434**	**$3,110,311**	**$3,200,332**	**$3,293,609**	**$3,390,031**	**$3,490,085**	**$3,593,749**

Table 4 - Operating Costs and Net Income

Dinwiddie, VA, Main System, 2019 Sewer 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.)			Analysis Year	Years Following the Analysis Year (for Which Results Have Been Projected)									
	Inflation/ Deflation (–) Factor	Test Year Starting 7/1/18	0 Year Starting 7/1/19	1st Year Starting 7/1/20	2nd Year Starting 7/1/21	3rd Year Starting 7/1/22	4th Year Starting 7/1/23	5th Year Starting 7/1/24	6th Year Starting 7/1/25	7th Year Starting 7/1/26	8th Year Starting 7/1/27	9th Year Starting 7/1/28	10th Year Starting 7/1/29
SCWWA Nutrient Costs, DCWA Share	0.0%	$0	$27,825	$29,150	$29,150	$29,150	$29,150	$29,150	$29,150	$0	$0	$0	$0
AUTO ALLOWANCE	0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BAD DEBT/ WRITE OFF	0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Banking Service fees	0.0%	$1,477	$1,477	$1,477	$1,477	$1,477	$1,477	$1,477	$1,477	$1,477	$1,477	$1,477	$1,477
BUILD REPAIR/MAINT.	0.0%	$11,480	$11,480	$11,480	$11,480	$11,480	$11,480	$11,480	$11,480	$11,480	$11,480	$11,480	$11,480
CLEAN-OFFICE	0.0%	$1,048	$1,048	$1,048	$1,048	$1,048	$1,048	$1,048	$1,048	$1,048	$1,048	$1,048	$1,048
COLLECT/LIEN FEES	0.0%	$31	$31	$31	$31	$31	$31	$31	$31	$31	$31	$31	$31
COMPUTER MAINTENANCE	0.0%	$20,045	$20,045	$20,045	$20,045	$20,045	$20,045	$20,045	$20,045	$20,045	$20,045	$20,045	$20,045
COMPUTER TECH SUPPORT	0.0%	$149	$149	$149	$149	$149	$149	$149	$149	$149	$149	$149	$149
COPY MACHINE	0.0%	$228	$228	$228	$228	$228	$228	$228	$228	$228	$228	$228	$228
DEPRECIATION	0.0%	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283
DUES & SUBSCRIPTIONS	0.0%	$2,684	$2,684	$2,684	$2,684	$2,684	$2,684	$2,684	$2,684	$2,684	$2,684	$2,684	$2,684
ELECTRIC	0.0%	$30,608	$30,862	$31,115	$31,371	$31,625	$31,879	$32,133	$32,387	$32,641	$32,894	$33,148	$33,402
ELECTRIC - OFFICE	0.0%	$2,237	$2,237	$2,237	$2,237	$2,237	$2,237	$2,237	$2,237	$2,237	$2,237	$2,237	$2,237
Gain/Loss on Disposal of Fixed Assets	0.0%	$7,857	$7,857	$7,857	$7,857	$7,857	$7,857	$7,857	$7,857	$7,857	$7,857	$7,857	$7,857
GAS & OIL	0.0%	$3,603	$3,603	$3,603	$3,603	$3,603	$3,603	$3,603	$3,603	$3,603	$3,603	$3,603	$3,603
INSURANCE - GL	0.0%	$6,238	$6,238	$6,238	$6,238	$6,238	$6,238	$6,238	$6,238	$6,238	$6,238	$6,238	$6,238
INSURANCE-WORKERS COMP	0.0%	$1,028	$1,028	$1,028	$1,028	$1,028	$1,028	$1,028	$1,028	$1,028	$1,028	$1,028	$1,028
INTEREST EXPENSE	0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
LEGAL & AUDITING	0.0%	$25,004	$25,004	$25,004	$25,004	$25,004	$25,004	$25,004	$25,004	$25,004	$25,004	$25,004	$25,004
MAINTENCE-OFF EQUIP	0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MCKENNEY	0.0%	$8,364	$8,364	$8,364	$8,364	$8,364	$8,364	$8,364	$8,364	$8,364	$8,364	$8,364	$8,364
MISCELLANEOUS	0.0%	$9,177	$9,177	$9,177	$9,177	$9,177	$9,177	$9,177	$9,177	$9,177	$9,177	$9,177	$9,177
NEW CONNECT SUPPLIES	0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NO-CUT/MISS UTILITY	0.0%	$630	$630	$630	$630	$630	$630	$630	$630	$630	$630	$630	$630
PAGERS & CELL PHONE	0.0%	$3,897	$3,897	$3,897	$3,897	$3,897	$3,897	$3,897	$3,897	$3,897	$3,897	$3,897	$3,897
PAYROLL BENEFITS	0.0%	$2,072	$2,072	$2,072	$2,072	$2,072	$2,072	$2,072	$2,072	$2,072	$2,072	$2,072	$2,072
PAYROLL SERVICE	0.0%	$4,187	$4,187	$4,187	$4,187	$4,187	$4,187	$4,187	$4,187	$4,187	$4,187	$4,187	$4,187
PAYROLL TAXES	0.0%	$33,883	$33,883	$33,883	$33,883	$33,883	$33,883	$33,883	$33,883	$33,883	$33,883	$33,883	$33,883
PERMITS	0.0%	$9,027	$9,027	$9,027	$9,027	$9,027	$9,027	$9,027	$9,027	$9,027	$9,027	$9,027	$9,027
POSTAGE	0.0%	$14,200	$14,318	$14,435	$14,554	$14,672	$14,790	$14,908	$15,025	$15,143	$15,261	$15,379	$15,496
PRINCE GEORGE	0.0%	$2,730	$2,730	$2,730	$2,730	$2,730	$2,730	$2,730	$2,730	$2,730	$2,730	$2,730	$2,730
PROFESSIONAL SERVICES	0.0%	$5,212	$5,212	$5,212	$5,212	$5,212	$5,212	$5,212	$5,212	$5,212	$5,212	$5,212	$5,212
REPAIR - EQUIPMENT	0.0%	$1,605	$1,605	$1,605	$1,605	$1,605	$1,605	$1,605	$1,605	$1,605	$1,605	$1,605	$1,605
REPAIR - VEHICLE	0.0%	$4,451	$4,451	$4,451	$4,451	$4,451	$4,451	$4,451	$4,451	$4,451	$4,451	$4,451	$4,451
SALARIES	0.0%	$249,446	$249,446	$249,446	$249,446	$249,446	$249,446	$249,446	$249,446	$249,446	$249,446	$249,446	$249,446
SCWWA Sewer Treatment	0.0%	$687,583	$693,285	$698,988	$704,737	$710,440	$716,143	$721,845	$727,548	$733,251	$738,954	$744,657	$750,360

Table 4 - Operating Costs and Net Income

	Inflation/ Deflation (–) Factor	Test Year Starting 7/1/18	0 Year Starting 7/1/19	1st Year Starting 7/1/20	2nd Year Starting 7/1/21	3rd Year Starting 7/1/22	4th Year Starting 7/1/23	5th Year Starting 7/1/24	6th Year Starting 7/1/25	7th Year Starting 7/1/26	8th Year Starting 7/1/27	9th Year Starting 7/1/28	10th Year Starting 7/1/29
SUPPLIES/MAINTENANCE	0.0%	$85,070	$85,070	$85,070	$85,070	$85,070	$85,070	$85,070	$85,070	$85,070	$85,070	$85,070	$85,070
SUPPLY-OFFICE	0.0%	$3,528	$3,528	$3,528	$3,528	$3,528	$3,528	$3,528	$3,528	$3,528	$3,528	$3,528	$3,528
SUPPLY-SHOP	0.0%	$5,811	$5,811	$5,811	$5,811	$5,811	$5,811	$5,811	$5,811	$5,811	$5,811	$5,811	$5,811
TELEPHONE	0.0%	$6,579	$6,579	$6,579	$6,579	$6,579	$6,579	$6,579	$6,579	$6,579	$6,579	$6,579	$6,579
TRAINING	0.0%	$1,706	$1,706	$1,706	$1,706	$1,706	$1,706	$1,706	$1,706	$1,706	$1,706	$1,706	$1,706
TRANSMISSION FEE	0.0%	$28,528	$28,765	$29,001	$29,240	$29,477	$29,713	$29,950	$30,186	$30,423	$30,660	$30,896	$31,133
UNIFORMS & BOOTS	0.0%	$2,648	$2,648	$2,648	$2,648	$2,648	$2,648	$2,648	$2,648	$2,648	$2,648	$2,648	$2,648
UTILITY - HEATING GAS	0.0%	$2,256	$2,256	$2,256	$2,256	$2,256	$2,256	$2,256	$2,256	$2,256	$2,256	$2,256	$2,256
User Charge Analysis Services	5.0%	$0	$4,306	$0	$0	$4,747	$0	$0	$5,233	$0	$0	$5,770	$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		**$1,576,588**	**$1,615,029**	**$1,618,359**	**$1,624,722**	**$1,635,779**	**$1,637,344**	**$1,643,655**	**$1,655,199**	**$1,627,127**	**$1,633,438**	**$1,645,519**	**$1,646,060**
Net Income (or Loss)		$930,178	$900,382	$1,161,921	$1,233,830	$1,303,745	$1,386,090	$1,466,656	$1,545,133	$1,666,482	$1,756,593	$1,844,566	$1,947,689
Working Capital Goal: 50% In Dollars, That is:		$788,294	$807,514	$809,180	$812,361	$817,890	$818,672	$821,827	$827,600	$813,564	$816,719	$822,759	$823,030

Notes: The District is adding new customers rapidly. Therefore, the yellow highlighted cost items above will rise due to inflation and due to the additional cost of serving new customers. Additionally, the gold highlighted costs for depreciation would normally not be included in rate calculations. But the depreciation amounts were used as a funding source for CIP and debt in Table 5.

Table 5 - Capital Improvement Program (CIP)

Dinwiddie, VA, Main System, 2019 Sewer Rates Model 3

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)									
	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	7/1/18	7/1/19	7/1/20	7/1/21	7/1/22	7/1/23	7/1/24	7/1/25	7/1/26	7/1/27	7/1/28	7/1/29
Planned Spending, Debt-paid Portion of Projects (CIP costs to be funded with loans are shown in this section.)												
Place Keeper Project	$0	$0	$0	$0	$0	$0	$13,500,000	$0	$0	$0	$0	$0
Loan Closing Costs, Estimated at: 2.5%	$0	$0	$0	$0	$0	$0	$391,255	$0	$0	$0	$0	$0
Total Debt-paid Portion of Projects	$0	$0	$0	$0	$0	$0	$13,891,255	$0	$0	$0	$0	$0
Planned Spending, Cash-paid Portion of Projects (CIP costs to be funded from reserves are shown here.)												
Sewer Pump Station Rehabilitation	$0	$0	$25,750	$26,523	$54,636	$56,275	$57,964	$59,703	$61,494	$63,339	$65,239	$67,196
Sewer Line Rehabilitation	$0	$0	$25,750	$79,568	$81,955	$84,413	$86,946	$89,554	$92,241	$95,008	$97,858	$100,794
Vehicle and Equipment Replacement (Shared W and S)	$0	$0	$25,750	$0	$27,318	$0	$28,982	$0	$30,747	$0	$32,619	$0
Standby Pumps	$0	$0	$51,500	$53,045	$0	$0	$57,964	$59,703	$0	$0	$65,239	$67,196
Business Server Replacement (Shared W and S)	$0	$0	$0	$0	$27,318	$0	$0	$0	$0	$47,504	$0	$0
Desktop computer replacement (Shared W and S)	$0	$0	$0	$0	$0	$0	$17,389	$0	$0	$0	$0	$26,878
New Generator and Fuel Tank for Ferndale WWPS	$0	$0	$0	$0	$163,909	$0	$0	$0	$0	$0	$0	$0
Inflow and Infiltration monitoring	$0	$0	$0	$212,180	$0	$112,551	$115,927	$119,405	$0	$0	$0	$0
Treatment Plant Place Keeper Project	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cash-paid Portion of Projects	$0	$0	$128,750	$371,315	$355,136	$253,239	$365,171	$328,364	$184,481	$205,850	$260,955	$262,064
Total CIP Costs	**$0**	**$0**	**$128,750**	**$371,315**	**$355,136**	**$253,239**	**$14,256,426**	**$328,364**	**$184,481**	**$205,850**	**$260,955**	**$262,064**
Debt Repayment												
Existing Debt Payments (Following is debt that was initiated during the test year or earlier.)												
AMORT SCWWA Nutrient Project Debt and Reserves	$186,869	$186,869	$186,869	$186,869	$220,966	$220,966	$220,966	$220,966	$220,966	$229,304	$229,304	$0
New Debt Payments (Following are payments for projects to be paid with new debt. It is assumed these will be loan/lease-financed for a term of: 5 years at a 2.0% interest rate.)												
Loan Originated in 5th Year								$2,947,146	$2,947,146	$2,947,146	$2,947,146	$2,947,146
Total Debt Payments	$186,869	$186,869	$186,869	$186,869	$220,966	$220,966	$220,966	$3,168,112	$3,168,112	$3,176,451	$3,176,451	$2,947,146
Total CIP-related Payouts	**$186,869**	**$186,869**	**$315,619**	**$558,184**	**$576,102**	**$474,206**	**$14,477,392**	**$3,496,477**	**$3,352,594**	**$3,382,301**	**$3,437,405**	**$3,209,210**
(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	$2,443,557	$3,186,721	$4,385,375	$5,435,829	$6,556,942	$7,889,466	$9,214,901	$7,732,365	$6,505,220	$5,296,743	$4,094,081
Working Capital Transferred in	$2,630,426	$881,162	$1,160,256	$1,230,649	$1,298,216	$1,385,308	$1,463,501	$1,539,361	$1,680,518	$1,753,437	$1,838,526	$1,947,418
Debt and CIP Reserves Interest Earned (or Paid)	$0	$48,871	$63,734	$87,707	$108,717	$131,139	$157,789	$184,298	$154,647	$130,104	$105,935	$81,882
DEPRECIATION From Table 4	$0	$0	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283	$290,283
Total Available Funds	**$2,630,426**	**$3,373,590**	**$4,700,994**	**$5,994,013**	**$7,133,045**	**$8,363,672**	**$23,692,294**	**$11,228,842**	**$9,857,813**	**$8,679,044**	**$7,531,486**	**$6,413,663**
Outcomes (This CIP spending and funding plan will result in the following cash needs and ending balances each year.)												
Total Available Funds	**$2,630,426**	**$3,373,590**	**$4,700,994**	**$5,994,013**	**$7,133,045**	**$8,363,672**	**$23,692,294**	**$11,228,842**	**$9,857,813**	**$8,679,044**	**$7,531,486**	**$6,413,663**
Total CIP-related Payouts	**$186,869**	**$186,869**	**$315,619**	**$558,184**	**$576,102**	**$474,206**	**$14,477,392**	**$3,496,477**	**$3,352,594**	**$3,382,301**	**$3,437,405**	**$3,209,210**
Debt and CIP Reserves Ending Balances	**$2,443,557**	**$3,186,721**	**$4,385,375**	**$5,435,829**	**$6,556,942**	**$7,889,466**	**$9,214,901**	**$7,732,365**	**$6,505,220**	**$5,296,743**	**$4,094,081**	**$3,204,453**

Notes: The Authority plans for CIP costs on an amortized cost basis, therefore, costs were handled in the same way here, with one exception. That is a place keeper project in the fifth year. It was assumed such a project would cost $13,500,000 plus loan original costs and it would be financed with a five-year note.

Table 8 - Average Cost Classification

Dinwiddie, VA, Main System, 2019 Sewer 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: 7/1/2023 through 6/30/2024

Cost Items	Cost During Rate Structure Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
SCWWA Nutrient Costs, DCWA Share	$29,150	0.0%	100.0%	$0	$29,150
AUTO ALLOWANCE	$0	16.7%	83.3%	$0	$0
BAD DEBT/ WRITE OFF	$0	16.7%	83.3%	$0	$0
Banking Service fees	$1,477	100.0%	0.0%	$1,477	$0
BUILD REPAIR/MAINT.	$11,480	100.0%	0.0%	$11,480	$0
CLEAN-OFFICE	$1,048	100.0%	0.0%	$1,048	$0
COLLECT/LIEN FEES	$31	16.7%	83.3%	$5	$26
COMPUTER MAINTENANCE	$20,045	100.0%	0.0%	$20,045	$0
COMPUTER TECH SUPPORT	$149	100.0%	0.0%	$149	$0
COPY MACHINE	$228	100.0%	0.0%	$228	$0
DEPRECIATION	$290,283	16.7%	83.3%	$48,477	$241,805
DUES & SUBSCRIPTIONS	$2,684	25.0%	75.0%	$671	$2,013
ELECTRIC	$31,879	0.0%	100.0%	$0	$31,879
ELECTRIC - OFFICE	$2,237	100.0%	0.0%	$2,237	$0
Gain/Loss on Disposal of Fixed Assets	$7,857	16.7%	83.3%	$1,312	$6,544
GAS & OIL	$3,603	16.7%	83.3%	$602	$3,001
INSURANCE - GL	$6,238	100.0%	0.0%	$6,238	$0
INSURANCE-WORKERS COMP	$1,028	25.0%	75.0%	$257	$771
INTEREST EXPENSE	$0	100.0%	0.0%	$0	$0
LEGAL & AUDITING	$25,004	100.0%	0.0%	$25,004	$0
MAINTENCE-OFF EQUIP	$0	100.0%	0.0%	$0	$0
MCKENNEY	$8,364	16.7%	83.3%	$1,397	$6,967
MISCELLANEOUS	$9,177	100.0%	0.0%	$9,177	$0
NEW CONNECT SUPPLIES	$0	16.7%	83.3%	$0	$0
NO-CUT/MISS UTILITY	$630	16.7%	83.3%	$105	$525
PAGERS & CELL PHONE	$3,897	100.0%	0.0%	$3,897	$0
PAYROLL BENEFITS	$2,072	25.0%	75.0%	$518	$1,554
PAYROLL SERVICE	$4,187	25.0%	75.0%	$1,047	$3,140
PAYROLL TAXES	$33,883	25.0%	75.0%	$8,471	$25,413
PERMITS	$9,027	100.0%	0.0%	$9,027	$0

Table 8 - Average Cost Classification

Cost Items	Cost During Rate Structure Basis Year	Fixed Cost %	Variable Cost %	Fixed Cost	Variable Cost
POSTAGE	$14,790	100.0%	0.0%	$14,790	$0
PRINCE GEORGE	$2,730	16.7%	83.3%	$456	$2,274
PROFESSIONAL SERVICES	$5,212	16.7%	83.3%	$870	$4,341
REPAIR - EQUIPMENT	$1,605	25.0%	75.0%	$401	$1,204
REPAIR - VEHICLE	$4,451	25.0%	75.0%	$1,113	$3,338
SALARIES	$249,446	25.0%	75.0%	$62,361	$187,084
SCWWA Sewer Treatment	$716,143	0.0%	100.0%	$0	$716,143
SUPPLIES/MAINTENANCE	$85,070	25.0%	75.0%	$21,268	$63,803
SUPPLY-OFFICE	$3,528	100.0%	0.0%	$3,528	$0
SUPPLY-SHOP	$5,811	100.0%	0.0%	$5,811	$0
TELEPHONE	$6,579	100.0%	0.0%	$6,579	$0
TRAINING	$1,706	25.0%	75.0%	$427	$1,280
TRANSMISSION FEE	$29,713	0.0%	100.0%	$0	$29,713
UNIFORMS & BOOTS	$2,648	25.0%	75.0%	$662	$1,986
UTILITY - HEATING GAS	$2,256	100.0%	0.0%	$2,256	$0
User Charge Analysis Services	$0	16.7%	83.3%	$0	$0
Total CIP-related Payouts, Less Capacity Charges From Tables 14 & 16 (This value can be negative)	$301,098	16.7%	83.3%	$50,283	$250,814
Grand Total Costs, Weighted Avg Percentages	$1,938,441	16.7%	83.3%	$323,672	$1,614,769

Bases for Cost to Serve Rate Structure		100%	$1,938,441
Number Customers During Year Defined Above	3,114	Inflow and Infiltration is Estimated at	50%
Billed Volume, in Gallons, During Year Defined Above	228,928,247	Inflow and Infiltration is Estimated at This Percentage of Average Cost	77%
Average Fixed Cost per User per Month During Year Defined Above	$8.66	Resulting Cost of Inflow and Infiltration	$1,258,503
Average Variable Cost to Produce per 1,000 Gallons During Year Defined Above	$7.05	Test Year Customer Metered Volume, in Gallons	219,740,000
Gallons per Billing Cycle Used by Average Residential Customer	3,828	+ Test Year Inflow and Infiltration, in Gallons	222,747,682
		Total Test Year Volume, in Gallons, From Master Meter Readings	442,487,682

Table 10 - Initial Rate Adjustments and Resulting Revenues

Dinwiddie, VA, Main System, 2019 Sewer 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.

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. 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
SCWWA Res 3/4 Inch SR S1	-686,180	-1	-$18,198	$13.22	0.000	$6.70	-$56	-$18,254
	0	999	$232,839	$13.22	0.000	$6.70	$689	$233,528
	1,000	1,999	$257,385	$13.22	0.000	$6.70	$734	$258,119
	2,000	2,999	$229,951	$13.22	0.000	$6.70	$643	$230,594
	3,000	3,999	$181,301	$13.22	0.000	$6.70	$500	$181,801
	4,000	4,999	$128,123	$13.22	0.000	$6.70	$351	$128,474
	5,000	5,999	$84,341	$13.22	0.000	$6.70	$230	$84,571
	6,000	6,999	$50,892	$13.22	0.000	$6.70	$139	$51,032
	7,000	7,999	$31,794	$13.22	0.000	$6.70	$88	$31,882
	8,000	8,999	$21,136	$13.22	0.000	$6.70	$58	$21,194
	9,000	9,999	$14,063	$13.22	0.000	$6.70	$39	$14,103
	10,000	14,999	$30,691	$13.22	0.000	$6.70	$87	$30,778
	15,000	19,999	$10,724	$13.22	0.000	$6.70	$31	$10,755
	20,000	29,999	$7,338	$13.22	0.000	$6.70	$23	$7,361
	30,000	39,999	$2,732	$13.22	0.000	$6.70	$9	$2,741
	40,000	49,999	$1,717	$13.22	0.000	$6.70	$5	$1,723
	50,000	74,999	$2,730	$13.22	0.000	$6.70	$9	$2,739
	75,000	99,999	$1,230	$13.22	0.000	$6.70	$4	$1,234
	100,000	124,999	$652	$13.22	0.000	$6.70	$2	$655
	125,000	149,999	$219	$13.22	0.000	$6.70	$1	$220
	150,000	204,999	$134	$13.22	0.000	$6.70	$0	$135
	1,250,000	171,450	$0	$13.22	0.000	$6.70	$0	$0
SCWWA Res 1 Inch SR S3	0	999	$641	$20.71	0.000	$6.70	$1	$642
	1,000	1,999	$524	$20.71	0.000	$6.70	$1	$525
	2,000	2,999	$715	$20.71	0.000	$6.70	$1	$716
	3,000	3,999	$625	$20.71	0.000	$6.70	$1	$626
	4,000	4,999	$119	$20.71	0.000	$6.70	$0	$119
	5,000	5,999	$106	$20.71	0.000	$6.70	$0	$106
	6,000	6,999	$6	$20.71	0.000	$6.70	$0	$6
	7,000	7,999	$6	$20.71	0.000	$6.70	$0	$6
	8,000	8,999	$53	$20.71	0.000	$6.70	$0	$53
	1,250,000	1,500,000	$0	$20.71	0.000	$6.70	$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
SCWWA Res 1 1/2 Inch SR S5	0	999	$1,364	$33.19	0.000	$6.70	$4	$1,368
	1,000	1,999	$1,364	$33.19	0.000	$6.70	$4	$1,368
	2,000	2,999	$1,364	$33.19	0.000	$6.70	$4	$1,368
	3,000	3,999	$1,364	$33.19	0.000	$6.70	$4	$1,368
	4,000	4,999	$1,364	$33.19	0.000	$6.70	$4	$1,368
	5,000	5,999	$1,364	$33.19	0.000	$6.70	$4	$1,368
	6,000	6,999	$1,586	$33.19	0.000	$6.70	$4	$1,591
	7,000	7,999	$1,463	$33.19	0.000	$6.70	$4	$1,468
	8,000	8,999	$1,457	$33.19	0.000	$6.70	$4	$1,461
	9,000	9,999	$1,564	$33.19	0.000	$6.70	$4	$1,568
	10,000	14,999	$6,955	$33.19	0.000	$6.70	$20	$6,975
	15,000	19,999	$8,023	$33.19	0.000	$6.70	$21	$8,043
	20,000	24,999	$8,515	$33.19	0.000	$6.70	$20	$8,535
	25,000	34,999	$15,153	$33.19	0.000	$6.70	$33	$15,186
	35,000	44,999	$12,646	$33.19	0.000	$6.70	$20	$12,667
	45,000	54,999	$5,024	$33.19	0.000	$6.70	$7	$5,031
	55,000	79,999	$1,423	$33.19	0.000	$6.70	$2	$1,425
	80,000	104,999	$128	$33.19	0.000	$6.70	$0	$128
	1,255,000	5,000,000	$0	$33.19	0.000	$6.70	$0	$0
SCWWA Comm .75 Inch SC S2	0	999	$5,745	$13.22	0.000	$6.70	$16	$5,760
	1,000	1,999	$3,426	$13.22	0.000	$6.70	$10	$3,435
	2,000	2,999	$2,345	$13.22	0.000	$6.70	$7	$2,351
	3,000	3,999	$1,462	$13.22	0.000	$6.70	$4	$1,466
	4,000	4,999	$1,200	$13.22	0.000	$6.70	$4	$1,204
	5,000	5,999	$1,110	$13.22	0.000	$6.70	$3	$1,113
	6,000	6,999	$917	$13.22	0.000	$6.70	$3	$919
	7,000	7,999	$845	$13.22	0.000	$6.70	$2	$848
	8,000	8,999	$806	$13.22	0.000	$6.70	$2	$808
	9,000	9,999	$741	$13.22	0.000	$6.70	$2	$743
	10,000	14,999	$2,628	$13.22	0.000	$6.70	$8	$2,636
	15,000	19,999	$1,427	$13.22	0.000	$6.70	$4	$1,431
	20,000	24,999	$657	$13.22	0.000	$6.70	$2	$659
	25,000	34,999	$917	$13.22	0.000	$6.70	$3	$919
	35,000	44,999	$581	$13.22	0.000	$6.70	$2	$583
	45,000	54,999	$418	$13.22	0.000	$6.70	$1	$420
	55,000	79,999	$783	$13.22	0.000	$6.70	$3	$785
	80,000	104,999	$491	$13.22	0.000	$6.70	$2	$492
	105,000	129,999	$382	$13.22	0.000	$6.70	$1	$383
	130,000	154,999	$278	$13.22	0.000	$6.70	$1	$279
	155,000	209,999	$612	$13.22	0.000	$6.70	$2	$614
	210,000	304,999	$734	$13.22	0.000	$6.70	$2	$737
	1,255,000	5,000,000	$0	$13.22	0.000	$6.70	$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
SCWWA Comm 1 Inch SC S4	0	999	$6,308	$20.71	0.000	$6.70	$12	$6,320
	1,000	1,999	$4,853	$20.71	0.000	$6.70	$9	$4,862
	2,000	2,999	$3,272	$20.71	0.000	$6.70	$7	$3,279
	3,000	3,999	$2,464	$20.71	0.000	$6.70	$6	$2,470
	4,000	4,999	$2,428	$20.71	0.000	$6.70	$6	$2,434
	5,000	5,999	$1,945	$20.71	0.000	$6.70	$5	$1,950
	6,000	6,999	$1,607	$20.71	0.000	$6.70	$4	$1,611
	7,000	7,999	$1,520	$20.71	0.000	$6.70	$4	$1,524
	8,000	8,999	$1,670	$20.71	0.000	$6.70	$4	$1,674
	9,000	9,999	$1,698	$20.71	0.000	$6.70	$4	$1,702
	10,000	14,999	$6,699	$20.71	0.000	$6.70	$17	$6,716
	15,000	19,999	$4,815	$20.71	0.000	$6.70	$13	$4,828
	20,000	24,999	$4,087	$20.71	0.000	$6.70	$11	$4,098
	25,000	34,999	$6,212	$20.71	0.000	$6.70	$17	$6,230
	35,000	44,999	$4,468	$20.71	0.000	$6.70	$12	$4,480
	45,000	54,999	$2,445	$20.71	0.000	$6.70	$6	$2,451
	55,000	79,999	$2,342	$20.71	0.000	$6.70	$7	$2,349
	80,000	104,999	$869	$20.71	0.000	$6.70	$2	$872
	105,000	129,999	$469	$20.71	0.000	$6.70	$1	$470
	130,000	154,999	$143	$20.71	0.000	$6.70	$0	$144
	1,255,000	137,060	$0	$20.71	0.000	$6.70	$0	$0
SCWWA Comm 1.5 Inch SC S6	0	999	$3,390	$33.19	0.000	$6.70	$5	$3,396
	1,000	1,999	$3,740	$33.19	0.000	$6.70	$5	$3,745
	2,000	2,999	$3,607	$33.19	0.000	$6.70	$5	$3,612
	3,000	3,999	$2,241	$33.19	0.000	$6.70	$4	$2,244
	4,000	4,999	$2,053	$33.19	0.000	$6.70	$3	$2,056
	5,000	5,999	$2,002	$33.19	0.000	$6.70	$3	$2,006
	6,000	6,999	$2,254	$33.19	0.000	$6.70	$3	$2,258
	7,000	7,999	$1,392	$33.19	0.000	$6.70	$2	$1,395
	8,000	8,999	$1,022	$33.19	0.000	$6.70	$2	$1,024
	9,000	9,999	$659	$33.19	0.000	$6.70	$2	$661
	10,000	14,999	$3,702	$33.19	0.000	$6.70	$9	$3,711
	15,000	19,999	$3,151	$33.19	0.000	$6.70	$8	$3,159
	20,000	24,999	$2,851	$33.19	0.000	$6.70	$7	$2,858
	25,000	34,999	$5,384	$33.19	0.000	$6.70	$12	$5,396
	35,000	44,999	$4,105	$33.19	0.000	$6.70	$8	$4,113
	45,000	54,999	$2,172	$33.19	0.000	$6.70	$5	$2,177
	55,000	79,999	$3,803	$33.19	0.000	$6.70	$7	$3,810
	80,000	104,999	$117	$33.19	0.000	$6.70	$0	$117
	1,255,000	5,000,000	$0	$33.19	0.000	$6.70	$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
SCWWA Comm 2 Inch SC S7	0	999	$1,642	$48.17	0.000	$6.70	$4	$1,646
	1,000	1,999	$2,247	$48.17	0.000	$6.70	$4	$2,251
	2,000	2,999	$2,029	$48.17	0.000	$6.70	$4	$2,033
	3,000	3,999	$1,082	$48.17	0.000	$6.70	$3	$1,085
	4,000	4,999	$2,440	$48.17	0.000	$6.70	$4	$2,444
	5,000	5,999	$2,081	$48.17	0.000	$6.70	$4	$2,084
	6,000	6,999	$1,571	$48.17	0.000	$6.70	$3	$1,574
	7,000	7,999	$1,697	$48.17	0.000	$6.70	$3	$1,700
	8,000	8,999	$1,963	$48.17	0.000	$6.70	$3	$1,966
	9,000	9,999	$1,762	$48.17	0.000	$6.70	$3	$1,765
	10,000	14,999	$3,816	$48.17	0.000	$6.70	$10	$3,826
	15,000	19,999	$4,002	$48.17	0.000	$6.70	$10	$4,012
	20,000	24,999	$3,782	$48.17	0.000	$6.70	$10	$3,792
	25,000	34,999	$5,404	$48.17	0.000	$6.70	$17	$5,421
	35,000	44,999	$5,064	$48.17	0.000	$6.70	$17	$5,081
	45,000	54,999	$5,988	$48.17	0.000	$6.70	$17	$6,005
	55,000	79,999	$13,855	$48.17	0.000	$6.70	$36	$13,891
	80,000	104,999	$9,451	$48.17	0.000	$6.70	$25	$9,476
	105,000	129,999	$8,036	$48.17	0.000	$6.70	$17	$8,053
	130,000	154,999	$3,574	$48.17	0.000	$6.70	$8	$3,582
	155,000	209,999	$2,356	$48.17	0.000	$6.70	$6	$2,362
	210,000	304,999	$554	$48.17	0.000	$6.70	$1	$555
	1,255,000	5,000,000	$0	$48.17	0.000	$6.70	$0	$0
SCWWA Comm 2 Inch SC SB	0	999	$72	$48.17	0.000	$6.70	$0	$72
	1,000	1,999	$72	$48.17	0.000	$6.70	$0	$72
	2,000	2,999	$72	$48.17	0.000	$6.70	$0	$72
	3,000	3,999	$72	$48.17	0.000	$6.70	$0	$72
	4,000	4,999	$72	$48.17	0.000	$6.70	$0	$72
	5,000	5,999	$72	$48.17	0.000	$6.70	$0	$72
	6,000	6,999	$72	$48.17	0.000	$6.70	$0	$72
	7,000	7,999	$72	$48.17	0.000	$6.70	$0	$72
	8,000	8,999	$72	$48.17	0.000	$6.70	$0	$72
	9,000	9,999	$72	$48.17	0.000	$6.70	$0	$72
	10,000	14,999	$359	$48.17	0.000	$6.70	$1	$360
	15,000	19,999	$359	$48.17	0.000	$6.70	$1	$360
	20,000	24,999	$334	$48.17	0.000	$6.70	$1	$335
	25,000	34,999	$668	$48.17	0.000	$6.70	$2	$670
	35,000	44,999	$668	$48.17	0.000	$6.70	$2	$670
	45,000	54,999	$1,356	$48.17	0.000	$6.70	$3	$1,359
	55,000	79,999	$1,324	$48.17	0.000	$6.70	$2	$1,325
	1,255,000	5,000,000	$0	$48.17	0.000	$6.70	$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
SCWWA Comm 2.2 Inch SC SA	0	999	$287	$70.64	0.000	$6.70	$1	$288
	1,000	1,999	$287	$70.64	0.000	$6.70	$1	$288
	2,000	2,999	$287	$70.64	0.000	$6.70	$1	$288
	3,000	3,999	$287	$70.64	0.000	$6.70	$1	$288
	4,000	4,999	$287	$70.64	0.000	$6.70	$1	$288
	5,000	5,999	$287	$70.64	0.000	$6.70	$1	$288
	6,000	6,999	$287	$70.64	0.000	$6.70	$1	$288
	7,000	7,999	$287	$70.64	0.000	$6.70	$1	$288
	8,000	8,999	$287	$70.64	0.000	$6.70	$1	$288
	9,000	9,999	$287	$70.64	0.000	$6.70	$1	$288
	10,000	14,999	$1,436	$70.64	0.000	$6.70	$4	$1,440
	15,000	19,999	$1,436	$70.64	0.000	$6.70	$4	$1,440
	20,000	24,999	$1,336	$70.64	0.000	$6.70	$4	$1,340
	25,000	34,999	$2,671	$70.64	0.000	$6.70	$9	$2,680
	35,000	44,999	$2,671	$70.64	0.000	$6.70	$9	$2,680
	45,000	54,999	$2,671	$70.64	0.000	$6.70	$9	$2,680
	55,000	79,999	$9,187	$70.64	0.000	$6.70	$23	$9,210
	80,000	104,999	$6,980	$70.64	0.000	$6.70	$18	$6,998
	105,000	129,999	$6,436	$70.64	0.000	$6.70	$15	$6,451
	130,000	154,999	$3,785	$70.64	0.000	$6.70	$12	$3,797
	155,000	209,999	$8,298	$70.64	0.000	$6.70	$22	$8,319
	210,000	304,999	$9,334	$70.64	0.000	$6.70	$27	$9,361
	305,000	504,999	$13,355	$70.64	0.000	$6.70	$44	$13,399
	505,000	754,999	$16,961	$70.64	0.000	$6.70	$48	$17,009
	755,000	1,004,999	$851	$70.64	0.000	$6.70	$1	$852
	1,005,000	1,254,999	$0	$70.64	0.000	$6.70	$0	$0
	1,255,000	5,000,000	$0	$70.64	0.000	$6.70	$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
SCWWA Comm 3 Inch SC SM	0	999	$795	$88.12	0.000	$6.70	$2	$797
	1,000	1,999	$419	$88.12	0.000	$6.70	$1	$420
	2,000	2,999	$419	$88.12	0.000	$6.70	$1	$420
	3,000	3,999	$419	$88.12	0.000	$6.70	$1	$420
	4,000	4,999	$1,161	$88.12	0.000	$6.70	$2	$1,164
	5,000	5,999	$767	$88.12	0.000	$6.70	$2	$768
	6,000	6,999	$938	$88.12	0.000	$6.70	$2	$940
	7,000	7,999	$735	$88.12	0.000	$6.70	$2	$736
	8,000	8,999	$353	$88.12	0.000	$6.70	$1	$354
	9,000	9,999	$538	$88.12	0.000	$6.70	$1	$539
	10,000	14,999	$2,418	$88.12	0.000	$6.70	$6	$2,424
	15,000	19,999	$1,616	$88.12	0.000	$6.70	$5	$1,621
	20,000	24,999	$2,037	$88.12	0.000	$6.70	$6	$2,042
	25,000	34,999	$3,505	$88.12	0.000	$6.70	$10	$3,515
	35,000	44,999	$3,259	$88.12	0.000	$6.70	$9	$3,268
	45,000	54,999	$3,600	$88.12	0.000	$6.70	$9	$3,609
	55,000	79,999	$5,685	$88.12	0.000	$6.70	$16	$5,701
	80,000	104,999	$4,288	$88.12	0.000	$6.70	$13	$4,302
	105,000	129,999	$4,240	$88.12	0.000	$6.70	$12	$4,252
	130,000	154,999	$3,885	$88.12	0.000	$6.70	$10	$3,895
	155,000	209,999	$4,452	$88.12	0.000	$6.70	$13	$4,465
	210,000	304,999	$5,409	$88.12	0.000	$6.70	$16	$5,424
	305,000	504,999	$3,984	$88.12	0.000	$6.70	$12	$3,996
	505,000	754,999	$2,256	$88.12	0.000	$6.70	$7	$2,262
	755,000	1,004,999	$1,391	$88.12	0.000	$6.70	$5	$1,396
	1,005,000	1,254,999	$917	$88.12	0.000	$6.70	$3	$919
	1,255,000	1,135,940	$0	$88.12	0.000	$6.70	$0	$0
SCWWA Comm 6 Inch SC SU	0	999	$144	$257.89	0.000	$6.70	$0	$144
	1,000	1,999	$144	$257.89	0.000	$6.70	$0	$144
	2,000	2,999	$144	$257.89	0.000	$6.70	$0	$144
	3,000	3,999	$144	$257.89	0.000	$6.70	$0	$144
	4,000	4,999	$144	$257.89	0.000	$6.70	$0	$144
	5,000	5,999	$144	$257.89	0.000	$6.70	$0	$144
	6,000	6,999	$144	$257.89	0.000	$6.70	$0	$144
	7,000	7,999	$144	$257.89	0.000	$6.70	$0	$144
	8,000	8,999	$144	$257.89	0.000	$6.70	$0	$144
	9,000	9,999	$144	$257.89	0.000	$6.70	$0	$144
	10,000	14,999	$718	$257.89	0.000	$6.70	$2	$720
	15,000	19,999	$718	$257.89	0.000	$6.70	$2	$720
	20,000	24,999	$668	$257.89	0.000	$6.70	$2	$670
	25,000	34,999	$1,336	$257.89	0.000	$6.70	$4	$1,340
	35,000	44,999	$1,336	$257.89	0.000	$6.70	$4	$1,340
	45,000	54,999	$1,336	$257.89	0.000	$6.70	$4	$1,340
	55,000	79,999	$4,435	$257.89	0.000	$6.70	$12	$4,447
	80,000	104,999	$4,987	$257.89	0.000	$6.70	$12	$4,998
	105,000	129,999	$7,119	$257.89	0.000	$6.70	$13	$7,132
	130,000	154,999	$5,055	$257.89	0.000	$6.70	$7	$5,062
	155,000	209,999	$819	$257.89	0.000	$6.70	$2	$820
	1,255,000	5,000,000	$0	$257.89	0.000	$6.70	$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
SCWWA Comm Central State SC S8	0	999	$1,014	$407.69	0.000	$6.70	$1	$1,015
	1,000	1,999	$66	$407.69	0.000	$6.70	$0	$66
	2,000	2,999	$66	$407.69	0.000	$6.70	$0	$66
	3,000	3,999	$66	$407.69	0.000	$6.70	$0	$66
	4,000	4,999	$66	$407.69	0.000	$6.70	$0	$66
	5,000	5,999	$66	$407.69	0.000	$6.70	$0	$66
	6,000	6,999	$66	$407.69	0.000	$6.70	$0	$66
	7,000	7,999	$66	$407.69	0.000	$6.70	$0	$66
	8,000	8,999	$66	$407.69	0.000	$6.70	$0	$66
	9,000	9,999	$66	$407.69	0.000	$6.70	$0	$66
	10,000	14,999	$329	$407.69	0.000	$6.70	$1	$330
	15,000	19,999	$329	$407.69	0.000	$6.70	$1	$330
	20,000	24,999	$306	$407.69	0.000	$6.70	$1	$307
	25,000	34,999	$612	$407.69	0.000	$6.70	$2	$614
	35,000	44,999	$612	$407.69	0.000	$6.70	$2	$614
	45,000	54,999	$612	$407.69	0.000	$6.70	$2	$614
	55,000	79,999	$1,530	$407.69	0.000	$6.70	$5	$1,535
	80,000	104,999	$1,530	$407.69	0.000	$6.70	$5	$1,535
	105,000	129,999	$1,530	$407.69	0.000	$6.70	$5	$1,535
	130,000	154,999	$1,530	$407.69	0.000	$6.70	$5	$1,535
	155,000	209,999	$3,367	$407.69	0.000	$6.70	$11	$3,378
	210,000	304,999	$5,815	$407.69	0.000	$6.70	$19	$5,834
	305,000	504,999	$12,242	$407.69	0.000	$6.70	$40	$12,283
	505,000	754,999	$15,303	$407.69	0.000	$6.70	$50	$15,353
	755,000	1,004,999	$15,303	$407.69	0.000	$6.70	$50	$15,353
	1,005,000	1,254,999	$15,922	$407.69	0.000	$6.70	$50	$15,972
	1,255,000	5,000,000	$59,967	$407.69	0.000	$6.70	$177	$60,144
SCWWA Church Road Comm 2 Inch SW SWC	0	999	$72	$48.17	0.000	$6.70	$0	$72
	1,000	1,999	$72	$48.17	0.000	$6.70	$0	$72
	2,000	2,999	$72	$48.17	0.000	$6.70	$0	$72
	3,000	3,999	$72	$48.17	0.000	$6.70	$0	$72
	4,000	4,999	$72	$48.17	0.000	$6.70	$0	$72
	5,000	5,999	$72	$48.17	0.000	$6.70	$0	$72
	6,000	6,999	$72	$48.17	0.000	$6.70	$0	$72
	7,000	7,999	$72	$48.17	0.000	$6.70	$0	$72
	8,000	8,999	$72	$48.17	0.000	$6.70	$0	$72
	9,000	9,999	$72	$48.17	0.000	$6.70	$0	$72
	10,000	14,999	$359	$48.17	0.000	$6.70	$1	$360
	15,000	19,999	$359	$48.17	0.000	$6.70	$1	$360
	20,000	24,999	$334	$48.17	0.000	$6.70	$1	$335
	25,000	34,999	$668	$48.17	0.000	$6.70	$2	$670
	35,000	44,999	$668	$48.17	0.000	$6.70	$2	$670
	45,000	54,999	$668	$48.17	0.000	$6.70	$2	$670
	55,000	79,999	$1,669	$48.17	0.000	$6.70	$5	$1,675
	80,000	104,999	$1,669	$48.17	0.000	$6.70	$5	$1,675
	105,000	129,999	$1,669	$48.17	0.000	$6.70	$5	$1,675
	130,000	154,999	$1,669	$48.17	0.000	$6.70	$5	$1,675
	155,000	209,999	$3,797	$48.17	0.000	$6.70	$12	$3,809
	210,000	304,999	$4,622	$48.17	0.000	$6.70	$13	$4,635
	305,000	504,999	$3,632	$48.17	0.000	$6.70	$11	$3,643
	505,000	754,999	$2,782	$48.17	0.000	$6.70	$9	$2,792
	755,000	1,004,999	$873	$48.17	0.000	$6.70	$2	$875
	1,005,000	1,254,999	$0	$48.17	0.000	$6.70	$0	$0
	1,255,000	5,000,000	$0	$48.17	0.000	$6.70	$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
MCK Residential SM SV	0	999	$499	$25.00	5.000	$5.00	$1	$500
	1,000	1,999	$922	$25.00	5.000	$5.00	$3	$925
	2,000	2,999	$1,047	$25.00	5.000	$5.00	$3	$1,050
	3,000	3,999	$399	$25.00	5.000	$5.00	$1	$400
	4,000	4,999	$224	$25.00	5.000	$5.00	$1	$225
	5,000	5,999	$133	$25.00	5.000	$5.00	$0	$133
	6,000	6,999	$104	$25.00	5.000	$5.00	$0	$104
MCK Commercial SK SZ	0	999	$37	$37.50	5.000	$7.50	$0	$38
	1,000	1,999	$0	$37.50	5.000	$7.50	$0	$0
	2,000	2,999	$0	$37.50	5.000	$7.50	$0	$0
	3,000	3,999	$0	$37.50	5.000	$7.50	$0	$0
	4,000	4,999	$0	$37.50	5.000	$7.50	$0	$0
	5,000	5,999	$90	$37.50	5.000	$7.50	$0	$90
	6,000	6,999	$90	$37.50	5.000	$7.50	$0	$90
	7,000	7,999	$90	$37.50	5.000	$7.50	$0	$90
	8,000	8,999	$90	$37.50	5.000	$7.50	$0	$90
	9,000	9,999	$90	$37.50	5.000	$7.50	$0	$90
	10,000	14,999	$449	$37.50	5.000	$7.50	$1	$450
	15,000	19,999	$486	$37.50	5.000	$7.50	$1	$487
	20,000	24,999	$411	$37.50	5.000	$7.50	$1	$413
	25,000	34,999	$823	$37.50	5.000	$7.50	$2	$825
	35,000	44,999	$823	$37.50	5.000	$7.50	$2	$825
	45,000	54,999	$793	$37.50	5.000	$7.50	$2	$795
	55,000	79,999	$1,732	$37.50	5.000	$7.50	$5	$1,737
	80,000	104,999	$799	$37.50	5.000	$7.50	$2	$801
	105,000	129,999	$219	$37.50	5.000	$7.50	$1	$220
Prince George Residential SP SN	0	999	$393	$11.54	0.000	$8.21	$1	$394
	1,000	1,999	$478	$11.54	0.000	$8.21	$1	$480
	2,000	2,999	$436	$11.54	0.000	$8.21	$1	$437
	3,000	3,999	$208	$11.54	0.000	$8.21	$1	$208
	4,000	4,999	$215	$11.54	0.000	$8.21	$1	$216
	5,000	5,999	$107	$11.54	0.000	$8.21	$0	$107
	6,000	6,999	$42	$11.54	0.000	$8.21	$0	$42
	7,000	7,999	$25	$11.54	0.000	$8.21	$0	$25
	8,000	8,999	$25	$11.54	0.000	$8.21	$0	$25
	9,000	9,999	$25	$11.54	0.000	$8.21	$0	$25
	10,000	14,999	$71	$11.54	0.000	$8.21	$0	$72
SCWWA Residential Non-Metered SR SK	0	999	$0	$13.22	0.000	$6.70	$0	$0
	1,000	1,999	$0	$13.22	0.000	$6.70	$0	$0
	2,000	2,999	$24	$13.22	0.000	$6.70	$0	$24
	3,000	3,999	$48	$13.22	0.000	$6.70	$0	$48
	4,000	4,999	$48	$13.22	0.000	$6.70	$0	$48
	5,000	5,999	$72	$13.22	0.000	$6.70	$0	$72
	6,000	6,999	$48	$13.22	0.000	$6.70	$0	$48
	7,000	7,999	$0	$13.22	0.000	$6.70	$0	$0
	8,000	8,999	$0	$13.22	0.000	$6.70	$0	$0
	9,000	9,999	$0	$13.22	0.000	$6.70	$0	$0
	10,000	14,999	$48	$13.22	0.000	$6.70	$0	$48

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
SCWWA Church Road 2 Inch SC SWC	0	999	$72	$48.17	0.000	$6.70	$0	$72
	1,000	1,999	$72	$48.17	0.000	$6.70	$0	$72
	2,000	2,999	$72	$48.17	0.000	$6.70	$0	$72
	3,000	3,999	$72	$48.17	0.000	$6.70	$0	$72
	4,000	4,999	$72	$48.17	0.000	$6.70	$0	$72
	5,000	5,999	$72	$48.17	0.000	$6.70	$0	$72
	6,000	6,999	$72	$48.17	0.000	$6.70	$0	$72
	7,000	7,999	$72	$48.17	0.000	$6.70	$0	$72
	8,000	8,999	$72	$48.17	0.000	$6.70	$0	$72
	9,000	9,999	$72	$48.17	0.000	$6.70	$0	$72
	10,000	14,999	$359	$48.17	0.000	$6.70	$1	$360
	15,000	19,999	$359	$48.17	0.000	$6.70	$1	$360
	20,000	24,999	$334	$48.17	0.000	$6.70	$1	$335
	25,000	34,999	$668	$48.17	0.000	$6.70	$2	$670
	35,000	44,999	$668	$48.17	0.000	$6.70	$2	$670
	45,000	54,999	$668	$48.17	0.000	$6.70	$2	$670
	55,000	79,999	$1,669	$48.17	0.000	$6.70	$5	$1,675
	80,000	104,999	$1,669	$48.17	0.000	$6.70	$5	$1,675
	105,000	129,999	$1,669	$48.17	0.000	$6.70	$5	$1,675
	130,000	154,999	$1,669	$48.17	0.000	$6.70	$5	$1,675
	155,000	209,999	$3,797	$48.17	0.000	$6.70	$12	$3,809
	210,000	304,999	$4,622	$48.17	0.000	$6.70	$13	$4,635
	305,000	504,999	$3,632	$48.17	0.000	$6.70	$11	$3,643
	505,000	754,999	$2,782	$48.17	0.000	$6.70	$9	$2,792
	755,000	1,004,999	$873	$48.17	0.000	$6.70	$2	$875
SCWWA Commercial 2 Inch SC SW	0	999	$0	$48.17	0.000	$6.70	$0	$0
	1,000	1,999	$0	$48.17	0.000	$6.70	$0	$0
	2,000	2,999	$0	$48.17	0.000	$6.70	$0	$0
	1,255,000	5,000,000	$0	$48.17	0.000	$6.70	$0	$0
Prince George Residential Unmetered SP SL	0	999	$0	$41.66	0.000	$0.00	$0	$0
	1,000	1,999	$0	$41.66	0.000	$0.00	$0	$0
	2,000	2,999	$0	$41.66	0.000	$0.00	$0	$0
	3,000	3,999	$0	$41.66	0.000	$0.00	$0	$0
	1,255,000	5,000,000	$0	$41.66	0.000	$0.00	$0	$0
SCWWA Residential Non-metered sewer SR SE	0	999	$0	$66.10	0.000	$0.00	$0	$0
	1,000	1,999	$0	$66.10	0.000	$0.00	$0	$0
	2,000	2,999	$0	$66.10	0.000	$0.00	$0	$0
	3,000	3,999	$0	$66.10	0.000	$0.00	$0	$0
	1,255,000	5,000,000	$0	$66.10	0.000	$0.00	$0	$0
SCWWA Residential 3 Inch SR SO	0	999	$0	$88.12	0.000	$6.70	$0	$0
	1,000	1,999	$0	$88.12	0.000	$6.70	$0	$0
	2,000	2,999	$0	$88.12	0.000	$6.70	$0	$0
	3,000	3,999	$0	$88.12	0.000	$6.70	$0	$0
	1,255,000	5,000,000	$0	$88.12	0.000	$6.70	$0	$0
Total Rate Revenue at Current Rates			$1,956,503	Total Rate Revenue at Modeled Rates			$5,425	
							Total Blended Rate Revenues for the Year	$1,961,928

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 - Capacity Costs

Dinwiddie, VA, Main System, 2019 Sewer Rates Model 3

System capacity and connection costs WILL be recovered in one way by default, or a combination of ways by design. That could be through regular user fees, in which case existing customers pay the costs to bring on new customers. It could be through system development or connection fees, in which case new customers pay "up front" for the capacity they are granted. It could be through on-going capacity surcharges added to minimum charges, preferably based on meter or connection size, in which case each customer pays for the capacity they are granted over time. Or, it could be by a combination of these. This table shows capacity costs to expect. From these costs, system development fees and surcharges were developed in Tables 13 through 16.

Peak and Base Flow Capacity Costs

	Fixed Assets Original Value (Capacity Cost)	% of Value Attributable to Peak Flow Capacity	Peak Flow Capacity Cost	Annual Peak Flow Capacity Cost (40-year Depreciation)	% of Value Attributable to Base Flow Capacity	Base Flow Capacity Cost	Annual Base Flow Capacity Cost (40-year Depreciation)
	$17,277,162	50.0%	$8,638,581	$503,441	50.0%	$8,638,581	$503,441
Totals	$17,277,162		$8,638,581	$503,441		$8,638,581	$503,441

How Capacity Costs Will Be Recovered

These costs are modeled to be recovered from system development fees in Table 14

Peak Flow Capacity Costs to be Recovered by System Development Fees

34.385%	Target Percentage of Costs to Recover
$173,108	Target Portion of Costs to Recover
$3,910	Cost per Peak Flow Capacity Share

Base Flow Capacity Costs to be Recovered by System Development Fees

0%	Target Percentage of Costs to Recover
$0	Target Portion of Costs to Recover
$0	Base Capacity Cost per New Customer Connected

In addition to calculation of the capacity cost for each new connection based on the unit cost above, the system development fee for each new connection should also include recovery of the following costs:

$0	Average Field Cost per New Connection
$0	Average Administration Cost per New Connection
$0	Field and Admin Cost per New Connection
$0	Base Cost to Recover per New Connection

These costs are modeled to be recovered from minimum charge surcharges in Table 16

Peak Flow Capacity Costs to be Recovered by Minimum Charge Surcharges

65.615%	Target Percentage of Costs to Recover
$330,333	Target Portion of Costs to Recover in One Full Year
$27,528	Target Portion of Costs to Recover in Monthly Surcharges
$4.99	Monthly Surcharge per Peak Flow Capacity Share

Base Flow Capacity Costs to be Recovered by Minimum Charge Surcharges

0%	Target Percentage of Costs to Recover
$0	Target Portion of Costs to Recover in One Full Year
$0	Target Portion of Costs to Recover in Monthly Surcharges
$0.00	Monthly Base Flow Surcharge per Bill

Note: Non-capital costs, such as field costs for inspection of connections and administration costs, should be recovered by fees charged for providing the services involved. These costs are in addition to peak flow capacity costs. If your system's basic costs to sign up and connect new customers is different than assumed above, adjust your final fees accordingly.

Table 13 - System Development Fees

Dinwiddie, VA, Main System, 2019 Sewer Rates Model 3

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

Note: Larger meter sizes are available in two or more types, each 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.

In-District

Meter Size	Meter Type	AWWA Capacity "Share" Factor, Compared to 5/8 Inch Meter	Foot Notes	Cost per Peak Flow Capacity Share From Table 11	Base Capacity Cost From Table 11	Peak Plus Base Capacity Cost	Field and Admin Cost per New Connection	System Development Fee
Five Eighths	Displacement	1.0		$3,910	$0	$3,910	$0	$3,910
Three Quarters	Displacement	1.0	1	$3,910	$0	$3,910	$0	$3,910
One Inch	Displacement	2.5		$3,910	$0	$9,775	$0	$9,775
One & a Half Inch	Displacement	5.0		$3,910	$0	$19,550	$0	$19,550
Two Inch	Displacement	8.0		$3,910	$0	$31,280	$0	$31,280
Two & a Half Inch	Displacement	12.5	2	$3,910	$0	$48,875	$0	$48,875
Three Inch	Singlet	16.0		$3,910	$0	$62,559	$0	$62,559
Three Inch	Compound, Class I	16.0		$3,910	$0	$62,559	$0	$62,559
Three Inch	Turbine, Class I	17.5		$3,910	$0	$68,424	$0	$68,424
Four Inch	Singlet	25.0		$3,910	$0	$97,749	$0	$97,749
Four Inch	Compound, Class I	25.0		$3,910	$0	$97,749	$0	$97,749
Four Inch	Turbine, Class I	31.0		$3,910	$0	$121,209	$0	$121,209
Six Inch	Singlet	50.0		$3,910	$0	$195,498	$0	$195,498
Six Inch	Compound, Class I	50.0		$3,910	$0	$195,498	$0	$195,498
Six Inch	Turbine, Class I	65.0		$3,910	$0	$254,148	$0	$254,148
Eight Inch	Compound, Class I	80.0		$3,910	$0	$312,797	$0	$312,797
Eight Inch	Turbine, Class I	140.0		$3,910	$0	$547,395	$0	$547,395

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.

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
Dinwiddie, VA, Main System, 2019 Sewer Rates Model 3

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

In-District

Meter Size	Meter Type	Mix of New Taps in a Typical Year	Capacity Shares After Economy of Scale Adj	Adjusted Annual Growth in Capacity Shares	Adjusted Peak Capacity Fees, One Full Year	Base Capacity Fees, One Full Year	Combined Capacity Fees, One Full Year	Adjusted Admin and Field Fees, One Full Year	**System Development Fee Revenues, One Full Year**
Five Eighths	Displacement	0.0	1.0	0.0	$0	$0	$0	$0	**$0**
Three Quarters	Displacement	24.1	1.0	24.1	$94,326	$0	$94,326	$0	**$94,326**
One Inch	Displacement	0.3	2.5	0.9	$3,376	$0	$3,376	$0	**$3,376**
One & a Half Inch	Displacement	0.3	5.0	1.5	$5,809	$0	$5,809	$0	**$5,809**
Two Inch	Displacement	0.1	8.0	1.1	$4,270	$0	$4,270	$0	**$4,270**
Two & a Half Inch	Displacement	0.0	12.5	0.0	$0	$0	$0	$0	**$0**
Three Inch	Singlet	0.0	16.0	0.8	$3,014	$0	$3,014	$0	**$3,014**
Three Inch	Compound, Class I	0.0	16.0	0.0	$0	$0	$0	$0	**$0**
Three Inch	Turbine, Class I	0.0	17.5	0.0	$0	$0	$0	$0	**$0**
Four Inch	Singlet	0.0	25.0	0.0	$0	$0	$0	$0	**$0**
Four Inch	Compound, Class I	0.0	25.0	0.0	$0	$0	$0	$0	**$0**
Four Inch	Turbine, Class I	0.0	31.0	0.0	$0	$0	$0	$0	**$0**
Six Inch	Singlet	0.0	50.0	0.8	$3,140	$0	$3,140	$0	**$3,140**
Six Inch	Compound, Class I	0.0	50.0	0.0	$0	$0	$0	$0	**$0**
Six Inch	Turbine, Class I	0.0	65.0	0.0	$0	$0	$0	$0	**$0**
Eight Inch	Compound, Class I	0.0	80.0	0.0	$0	$0	$0	$0	**$0**
Eight Inch	Turbine, Class I	0.0	140.0	0.0	$0	$0	$0	$0	**$0**
	Total:	25.0		44.3	$173,108	$0	$173,108	$0	**$173,108**

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
Dinwiddie, VA, Main System, 2019 Sewer Rates Model 3

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

In-District

Meter Size	Meter Type	Monthly Peak Capacity-only Cost per Capacity Share	Uniform Adj to Peak Capacity Cost	Peak Plus Base Capacity Cost	Adjusted Peak Capacity-only Surcharge Revenues	Monthly Base Capacity-only Cost per Customer	Uniform Adj to Base Capacity Cost	Adjusted Monthly Base Capacity Cost	Base Capacity-only Surcharge Revenues	Cost to Serve Minimum From Table 10	Monthly Minimum Charge	Monthly Snowbird Fee
Five Eighths	Displacement	$4.99	$0.00	$4.99	$0	$0.00	$0.00	$0.00	$0	$8.23	$13.22	$11.18
Three Quarters	Displacement	$4.99	$0.00	$4.99	$179,998	$0.00	$0.00	$0.00	$0	$8.23	$13.22	$11.18
One Inch	Displacement	$12.48	$0.00	$12.48	$6,441	$0.00	$0.00	$0.00	$0	$8.23	$20.71	$17.51
One & a Half Inch	Displacement	$24.97	$0.00	$24.97	$11,085	$0.00	$0.00	$0.00	$0	$8.23	$33.19	$28.07
Two Inch	Displacement	$39.95	$0.00	$39.95	$8,149	$0.00	$0.00	$0.00	$0	$8.23	$48.17	$40.74
Two & a Half Inch	Displacement	$62.42	$0.00	$62.42	$0	$0.00	$0.00	$0.00	$0	$8.23	$70.64	$59.74
Three Inch	Singlet	$79.89	$0.00	$79.89	$5,752	$0.00	$0.00	$0.00	$0	$8.23	$88.12	$74.52
Three Inch	Compound, Class I	$79.89	$0.00	$79.89	$0	$0.00	$0.00	$0.00	$0	$8.23	$88.12	$74.52
Three Inch	Turbine, Class I	$87.38	$0.00	$87.38	$0	$0.00	$0.00	$0.00	$0	$8.23	$95.61	$80.86
Four Inch	Singlet	$124.83	$0.00	$124.83	$0	$0.00	$0.00	$0.00	$0	$8.23	$133.06	$112.53
Four Inch	Compound, Class I	$124.83	$0.00	$124.83	$0	$0.00	$0.00	$0.00	$0	$8.23	$133.06	$112.53
Four Inch	Turbine, Class I	$154.79	$0.00	$154.79	$0	$0.00	$0.00	$0.00	$0	$8.23	$163.02	$137.87
Six Inch	Singlet	$249.66	$0.00	$249.66	$5,992	$0.00	$0.00	$0.00	$0	$8.23	$257.89	$218.11
Six Inch	Compound, Class I	$249.66	$0.00	$249.66	$0	$0.00	$0.00	$0.00	$0	$8.23	$257.89	$218.11
Six Inch	Turbine, Class I	$324.56	$0.00	$324.56	$0	$0.00	$0.00	$0.00	$0	$8.23	$332.79	$281.45
Eight Inch	Compound, Class I	$399.46	$0.00	$399.46	$0	$0.00	$0.00	$0.00	$0	$8.23	$407.69	$344.79
Eight Inch	Turbine, Class I	$699.06	$0.00	$699.06	$0	$0.00	$0.00	$0.00	$0	$8.23	$707.29	$598.17

Table 16 - Revenues From Minimum Charges
Dinwiddie, VA, Main System, 2019 Sewer Rates Model 3

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

Meter Size	Meter Type	Capacity Shares After Economy of Scale Adj	Current Number Meters This Size	Total Adjusted Capacity Shares	Adjusted Peak Capacity-only Surcharge Revenues	Base Capacity-only Surcharge Revenues	Capacity Surcharges for One Full Year
In-District							
Five Eighths	Displacement	1.0	0	0	$0	$0	$0
Three Quarters	Displacement	1.0	3,004	3,004	$179,998	$0	$179,998
One Inch	Displacement	2.5	43	108	$6,441	$0	$6,441
One & a Half Inch	Displacement	5.0	37	185	$11,085	$0	$11,085
Two Inch	Displacement	8.0	17	136	$8,149	$0	$8,149
Two & a Half Inch	Displacement	12.5	0	0	$0	$0	$0
Three Inch	Singlet	16.0	6	96	$5,752	$0	$5,752
Three Inch	Compound, Class I	16.0	0	0	$0	$0	$0
Three Inch	Turbine, Class I	17.5	0	0	$0	$0	$0
Four Inch	Singlet	25.0	0	0	$0	$0	$0
Four Inch	Compound, Class I	25.0	0	0	$0	$0	$0
Four Inch	Turbine, Class I	31.0	0	0	$0	$0	$0
Six Inch	Singlet	50.0	2	100	$5,992	$0	$5,992
Six Inch	Compound, Class I	50.0	0	0	$0	$0	$0
Six Inch	Turbine, Class I	65.0	0	0	$0	$0	$0
Eight Inch	Compound, Class I	80.0	0	0	$0	$0	$0
Eight Inch	Turbine, Class I	140.0	0	0	$0	$0	$0
		Total:	3,113	5,513	$330,333	$0	$330,333

Table 17 - Financial Capacity Indicators and Reserves

Dinwiddie, VA, Main System, 2019 Sewer 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 7/1/18	0 Year Starting 7/1/19	1st Year Starting 7/1/20	2nd Year Starting 7/1/21	3rd Year Starting 7/1/22	4th Year Starting 7/1/23	5th Year Starting 7/1/24	6th Year Starting 7/1/25	7th Year Starting 7/1/26	8th Year Starting 7/1/27	9th Year Starting 7/1/28	10th Year Starting 7/1/29
Customary Affordability Index: Monthly Bill for a 5,000 gal per Month, Small Meter Residential Customer	$26.82	$40.02	$41.22	$42.46	$43.73	$45.04	$46.39	$47.79	$49.22	$50.70	$52.22	$53.78
AMHI Within Service Area	$61,318	$64,957	$68,812	$72,895	$77,221	$81,804	$86,659	$91,802	$97,250	$103,021	$109,135	$115,612
Affordability Index: Current Rates First Column, Modeled Rates After That	0.52%	0.74%	0.72%	0.70%	0.68%	0.66%	0.64%	0.62%	0.61%	0.59%	0.57%	0.56%

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	$14.82	$19.92	$20.52	$21.13	$21.77	$22.42	$23.09	$23.79	$24.50	$25.23	$25.99	$26.77
Income at One-half the AMHI and Rising at One-half the Rate Above	$30,659	$31,569	$32,505	$33,470	$34,463	$35,486	$36,539	$37,623	$38,739	$39,889	$41,072	$42,291
Affordability for Low-income, Low-volume: Current Rates First Column, Modeled Rates After That	0.58%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%

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	1.59	1.56	1.72	1.76	1.80	1.85	1.89	1.93	2.02	2.08	2.12	2.18

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	14.08	4.72	6.21	6.59	5.88	6.27	6.62	0.49	0.53	0.55	0.58	0.66

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 6/30/19	Balance Ending on 6/30/20	Balance Ending on 6/30/21	Balance Ending on 6/30/22	Balance Ending on 6/30/23	Balance Ending on 6/30/24	Balance Ending on 6/30/25	Balance Ending on 6/30/26	Balance Ending on 6/30/27	Balance Ending on 6/30/28	Balance Ending on 6/30/29	Balance Ending on 6/30/30
Cash and Cash Equivalents	$788,294	$807,514	$809,180	$812,361	$817,890	$818,672	$821,827	$827,600	$813,564	$816,719	$822,759	$823,030
Other Liquid Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Undedicated Cash Assets	$788,294	$807,514	$809,180	$812,361	$817,890	$818,672	$821,827	$827,600	$813,564	$816,719	$822,759	$823,030
Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	$788,294	$807,514	$784,904	$764,350	$746,466	$724,764	$705,731	$689,367	$657,345	$640,098	$625,487	$625,693
Repair & Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt and CIP Reserves	$2,443,557	$3,186,721	$4,385,375	$5,435,829	$6,556,942	$7,889,466	$9,214,901	$7,732,365	$6,505,220	$5,296,743	$4,094,081	$3,204,453
Sum of All Reserves	$3,231,851	$3,994,235	$5,194,554	$6,248,190	$7,374,832	$8,708,138	$10,036,729	$8,559,965	$7,318,783	$6,113,462	$4,916,840	$4,027,483

Table 18 - Bills Before and After Rate Adjustments

Dinwiddie, VA, Main System, 2019 Sewer Rates Model 3

Revenue increase to be generated by the modeled rates 1.2%

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 confusion, this table shows only example customer bills.

Customer, Rate Class or Meter Size	Gallons of Use	Customers at or Above This Volume and Below the Next	Customers up to and Including This Volume	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
SCWWA Res 3/4 Inch SR S1	0	212	212	$14.82	$13.22	-$1.60
	1,000	492	705	$14.82	$19.92	$5.10
	2,000	554	1,259	$14.82	$26.62	$11.80
	3,000	498	1,757	$20.82	$33.32	$12.50
	4,000	377	2,133	$26.82	$40.02	$13.20
	5,000	258	2,391	$32.82	$46.72	$13.90
	6,000	150	2,541	$38.82	$53.42	$14.60
	7,000	88	2,629	$44.82	$60.12	$15.30
	8,000	57	2,686	$50.82	$66.82	$16.00
	9,000	35	2,721	$56.82	$73.52	$16.70
	10,000	63	2,783	$62.82	$80.22	$17.40
	15,000	17	2,800	$92.82	$113.72	$20.90
	20,000	10	2,810	$120.72	$147.22	$26.50
	30,000	2	2,812	$176.52	$214.22	$37.70
	40,000	1	2,813	$232.32	$281.22	$48.90
	50,000	1	2,813	$288.12	$348.22	$60.10
	75,000	1	2,814	$427.62	$515.72	$88.10
SCWWA Res 1 Inch SR S3	0	2	2	$47.75	$20.71	-$27.04
	1,000	1	3	$47.75	$27.41	-$20.34
	2,000	1	4	$47.75	$34.11	-$13.64
	3,000	1	5	$53.75	$40.81	-$12.94

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers at or Above This Volume and Below the Next	Customers up to and Including This Volume	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
SCWWA Res 1 1/2 Inch SR S5	0	0	0	$115.08	$33.19	-$81.89
	1,000	0	0	$115.08	$39.89	-$75.19
	2,000	0	0	$115.08	$46.59	-$68.49
	3,000	0	0	$121.08	$53.29	-$67.79
	4,000	0	0	$127.08	$59.99	-$67.09
	5,000	0	0	$133.08	$66.69	-$66.39
	6,000	0	0	$139.08	$73.39	-$65.69
	7,000	0	0	$145.08	$80.09	-$64.99
	8,000	0	0	$151.08	$86.79	-$64.29
	9,000	0	1	$157.08	$93.49	-$63.59
	10,000	0	1	$163.08	$100.19	-$62.89
	15,000	1	2	$193.08	$133.69	-$59.39
	20,000	2	4	$220.98	$167.19	-$53.79
	25,000	5	9	$248.88	$200.69	-$48.19
	35,000	6	15	$304.68	$267.69	-$36.99
	45,000	3	18	$360.48	$334.69	-$25.79
	55,000	1	19	$416.28	$401.69	-$14.59
SCWWA Comm .75 Inch SC S2	0	17	17	$14.82	$13.22	-$1.60
	1,000	9	26	$14.82	$19.92	$5.10
	2,000	6	32	$14.82	$26.62	$11.80
	3,000	2	34	$20.82	$33.32	$12.50
	4,000	1	35	$26.82	$40.02	$13.20
	5,000	2	37	$32.82	$46.72	$13.90
	6,000	1	38	$38.82	$53.42	$14.60
	7,000	1	39	$44.82	$60.12	$15.30
	8,000	1	40	$50.82	$66.82	$16.00
	9,000	1	41	$56.82	$73.52	$16.70
	10,000	3	44	$62.82	$80.22	$17.40
	15,000	2	46	$92.82	$113.72	$20.90
	20,000	0	47	$120.72	$147.22	$26.50
	25,000	1	47	$148.62	$180.72	$32.10

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers at or Above This Volume and Below the Next	Customers up to and Including This Volume	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
SCWWA Comm 1 Inch SC S4	0	7	7	$47.75	$20.71	-$27.04
	1,000	5	12	$47.75	$27.41	-$20.34
	2,000	3	15	$47.75	$34.11	-$13.64
	3,000	2	16	$53.75	$40.81	-$12.94
	4,000	2	18	$59.75	$47.51	-$12.24
	5,000	1	19	$65.75	$54.21	-$11.54
	6,000	1	20	$71.75	$60.91	-$10.84
	7,000	1	20	$77.75	$67.61	-$10.14
	8,000	1	21	$83.75	$74.31	-$9.44
	9,000	1	22	$89.75	$81.01	-$8.74
	10,000	3	25	$95.75	$87.71	-$8.04
	15,000	2	27	$125.75	$121.21	-$4.54
	20,000	2	29	$153.65	$154.71	$1.06
	25,000	3	31	$181.55	$188.21	$6.66
	35,000	3	34	$237.35	$255.21	$17.86
	45,000	2	36	$293.15	$322.21	$29.06
	55,000	1	37	$348.95	$389.21	$40.26
SCWWA Comm 1.5 Inch SC S6	0	2	2	$115.08	$33.19	-$81.89
	1,000	2	4	$115.08	$39.89	-$75.19
	2,000	2	5	$115.08	$46.59	-$68.49
	3,000	1	6	$121.08	$53.29	-$67.79
	4,000	1	7	$127.08	$59.99	-$67.09
	5,000	1	8	$133.08	$66.69	-$66.39
	6,000	1	9	$139.08	$73.39	-$65.69
	7,000	1	10	$145.08	$80.09	-$64.99
	8,000	0	10	$151.08	$86.79	-$64.29
	9,000	0	10	$157.08	$93.49	-$63.59
	10,000	1	11	$163.08	$100.19	-$62.89
	15,000	1	12	$193.08	$133.69	-$59.39
	20,000	1	13	$220.98	$167.19	-$53.79
	25,000	2	14	$248.88	$200.69	-$48.19
	35,000	2	16	$304.68	$267.69	-$36.99
	45,000	1	16	$360.48	$334.69	-$25.79
	55,000	2	18	$416.28	$401.69	-$14.59

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers at or Above This Volume and Below the Next	Customers up to and Including This Volume	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
SCWWA Comm 2 Inch SC S7	0	0	0	$155.49	$48.17	-$107.32
	1,000	1	1	$155.49	$54.87	-$100.62
	2,000	1	2	$155.49	$61.57	-$93.92
	3,000	0	2	$161.49	$68.27	-$93.22
	4,000	1	3	$167.49	$74.97	-$92.52
	5,000	1	3	$173.49	$81.67	-$91.82
	6,000	0	4	$179.49	$88.37	-$91.12
	7,000	1	4	$185.49	$95.07	-$90.42
	8,000	1	5	$191.49	$101.77	-$89.72
	9,000	1	5	$197.49	$108.47	-$89.02
	10,000	0	6	$203.49	$115.17	-$88.32
	15,000	1	6	$233.49	$148.67	-$84.82
	20,000	1	7	$261.39	$182.17	-$79.22
	25,000	0	7	$289.29	$215.67	-$73.62
	35,000	0	7	$345.09	$282.67	-$62.42
	45,000	1	8	$400.89	$349.67	-$51.22
	55,000	2	10	$456.69	$416.67	-$40.02
	80,000	1	11	$596.19	$584.17	-$12.02
	105,000	2	13	$735.69	$751.67	$15.98
	130,000	1	14	$875.19	$919.17	$43.98
	155,000	0	14	$1,014.69	$1,086.67	$71.98
	210,000	0	15	$1,321.59	$1,455.17	$133.58

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers at or Above This Volume and Below the Next	Customers up to and Including This Volume	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
SCWWA Comm 2 Inch SC SB	0	0	0	$155.49	$48.17	-$107.32
	1,000	0	0	$155.49	$54.87	-$100.62
	2,000	0	0	$155.49	$61.57	-$93.92
	3,000	0	0	$161.49	$68.27	-$93.22
	4,000	0	0	$167.49	$74.97	-$92.52
	5,000	0	0	$173.49	$81.67	-$91.82
	6,000	0	0	$179.49	$88.37	-$91.12
	7,000	0	0	$185.49	$95.07	-$90.42
	8,000	0	0	$191.49	$101.77	-$89.72
	9,000	0	0	$197.49	$108.47	-$89.02
	10,000	0	0	$203.49	$115.17	-$88.32
	15,000	0	0	$233.49	$148.67	-$84.82
	20,000	0	0	$261.39	$182.17	-$79.22
	25,000	0	0	$289.29	$215.67	-$73.62
	35,000	0	0	$345.09	$282.67	-$62.42
	45,000	0	0	$400.89	$349.67	-$51.22
	55,000	1	1	$456.69	$416.67	-$40.02

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers at or Above This Volume and Below the Next	Customers up to and Including This Volume	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
SCWWA Comm 2.2 Inch SC SA	0	0	0	$309.75	$70.64	-$239.11
	1,000	0	0	$309.75	$77.34	-$232.41
	2,000	0	0	$309.75	$84.04	-$225.71
	3,000	0	0	$315.75	$90.74	-$225.01
	4,000	0	0	$321.75	$97.44	-$224.31
	5,000	0	0	$327.75	$104.14	-$223.61
	6,000	0	0	$333.75	$110.84	-$222.91
	7,000	0	0	$339.75	$117.54	-$222.21
	8,000	0	0	$345.75	$124.24	-$221.51
	9,000	0	0	$351.75	$130.94	-$220.81
	10,000	0	0	$357.75	$137.64	-$220.11
	15,000	0	0	$387.75	$171.14	-$216.61
	20,000	0	0	$415.65	$204.64	-$211.01
	25,000	0	0	$443.55	$238.14	-$205.41
	35,000	0	0	$499.35	$305.14	-$194.21
	45,000	0	0	$555.15	$372.14	-$183.01
	55,000	1	1	$610.95	$439.14	-$171.81
	80,000	1	1	$750.45	$606.64	-$143.81
	105,000	1	2	$889.95	$774.14	-$115.81
	130,000	0	2	$1,029.45	$941.64	-$87.81
	155,000	1	3	$1,168.95	$1,109.14	-$59.81
	210,000	0	3	$1,475.85	$1,477.64	$1.79
	305,000	0	3	$2,005.95	$2,114.14	$108.19
	505,000	1	4	$3,121.95	$3,454.14	$332.19

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers at or Above This Volume and Below the Next	Customers up to and Including This Volume	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
SCWWA Comm 3 Inch SC SM	0	0	0	$188.54	$88.12	-$100.42
	1,000	0	0	$188.54	$94.82	-$93.72
	2,000	0	0	$188.54	$101.52	-$87.02
	3,000	0	0	$194.54	$108.22	-$86.32
	4,000	0	1	$200.54	$114.92	-$85.62
	5,000	0	1	$206.54	$121.62	-$84.92
	6,000	0	1	$212.54	$128.32	-$84.22
	7,000	0	1	$218.54	$135.02	-$83.52
	8,000	0	1	$224.54	$141.72	-$82.82
	9,000	0	1	$230.54	$148.42	-$82.12
	10,000	0	2	$236.54	$155.12	-$81.42
	15,000	0	2	$266.54	$188.62	-$77.92
	20,000	0	2	$294.44	$222.12	-$72.32
	25,000	0	2	$322.34	$255.62	-$66.72
	35,000	0	2	$378.14	$322.62	-$55.52
	45,000	1	3	$433.94	$389.62	-$44.32
	55,000	1	4	$489.74	$456.62	-$33.12
	80,000	0	4	$629.24	$624.12	-$5.12
	105,000	0	4	$768.74	$791.62	$22.88
	130,000	1	5	$908.24	$959.12	$50.88
	155,000	0	5	$1,047.74	$1,126.62	$78.88
	210,000	1	6	$1,354.64	$1,495.12	$140.48

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers at or Above This Volume and Below the Next	Customers up to and Including This Volume	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
SCWWA Comm 6 Inch SC SU	0	0	0	$572.97	$257.89	-$315.08
	1,000	0	0	$572.97	$264.59	-$308.38
	2,000	0	0	$572.97	$271.29	-$301.68
	3,000	0	0	$578.97	$277.99	-$300.98
	4,000	0	0	$584.97	$284.69	-$300.28
	5,000	0	0	$590.97	$291.39	-$299.58
	6,000	0	0	$596.97	$298.09	-$298.88
	7,000	0	0	$602.97	$304.79	-$298.18
	8,000	0	0	$608.97	$311.49	-$297.48
	9,000	0	0	$614.97	$318.19	-$296.78
	10,000	0	0	$620.97	$324.89	-$296.08
	15,000	0	0	$650.97	$358.39	-$292.58
	20,000	0	0	$678.87	$391.89	-$286.98
	25,000	0	0	$706.77	$425.39	-$281.38
	35,000	0	0	$762.57	$492.39	-$270.18
	45,000	0	0	$818.37	$559.39	-$258.98
	55,000	0	0	$874.17	$626.39	-$247.78
	80,000	0	1	$1,013.67	$793.89	-$219.78
	105,000	1	1	$1,153.17	$961.39	-$191.78
	130,000	1	2	$1,292.67	$1,128.89	-$163.78
SCWWA Comm Central State SC S8	0	0	0	$950.39	$407.69	-$542.70
	1,000	0	0	$950.39	$414.39	-$536.00
	1,255,000	1	1	$7,947.59	$8,816.19	$868.60
SCWWA Church Road Comm 2 Inch SW SWC	0	0	0	$155.49	$48.17	-$107.32
	1,000	0	0	$155.49	$54.87	-$100.62
	210,000	1	1	$1,321.59	$1,455.17	$133.58
	305,000	0	1	$1,851.69	$2,091.67	$239.98
	505,000	0	1	$2,967.69	$3,431.67	$463.98
	755,000	0	1	$4,362.69	$5,106.67	$743.98
	1,005,000	0	1	$5,757.69	$6,781.67	$1,023.98
	1,255,000	0	1	$7,152.69	$8,456.67	$1,303.98

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers at or Above This Volume and Below the Next	Customers up to and Including This Volume	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
MCK Residential SM SV	0	2	2	$25.00	$25.00	$0.00
	1,000	3	5	$25.00	$25.00	$0.00
	2,000	4	8	$25.00	$25.00	$0.00
	3,000	1	10	$25.00	$25.00	$0.00
	4,000	1	10	$25.00	$25.00	$0.00
	5,000	0	11	$25.00	$25.00	$0.00
MCK Commercial SK SZ	0	0	0	$37.50	$37.50	$0.00
	1,000	0	0	$37.50	$37.50	$0.00
	2,000	0	0	$37.50	$37.50	$0.00
	3,000	0	0	$37.50	$37.50	$0.00
	4,000	0	0	$37.50	$37.50	$0.00
	5,000	0	0	$37.50	$37.50	$0.00
	6,000	0	0	$45.00	$45.00	$0.00
	7,000	0	0	$52.50	$52.50	$0.00
	8,000	0	0	$60.00	$60.00	$0.00
	9,000	0	0	$67.50	$67.50	$0.00
	10,000	0	0	$75.00	$75.00	$0.00
	15,000	0	0	$112.50	$112.50	$0.00
	20,000	0	0	$150.00	$150.00	$0.00
	25,000	0	0	$187.50	$187.50	$0.00
	35,000	0	0	$262.50	$262.50	$0.00
	45,000	0	0	$337.50	$337.50	$0.00
	55,000	0	1	$412.50	$412.50	$0.00
Prince George Residential SP SN	0	0	0	$11.54	$11.54	$0.00
	1,000	1	1	$19.75	$19.75	$0.00
	2,000	1	2	$27.96	$27.96	$0.00
	3,000	0	3	$36.17	$36.17	$0.00
	4,000	1	3	$44.38	$44.38	$0.00
	5,000	0	4	$52.59	$52.59	$0.00

Table 18 - Bills Before and After Rate Adjustments

Customer, Rate Class or Meter Size	Gallons of Use	Customers at or Above This Volume and Below the Next	Customers up to and Including This Volume	Current Bill	Modeled Bill	Modeled Bill Increase or Decrease (-)
SCWWA Residential Non-Metered SR SK	0	0	0	$24.01	$13.22	-$10.79
	1,000	0	0	$24.01	$19.92	-$4.09
	2,000	0	0	$24.01	$26.62	$2.61
	3,000	0	0	$24.01	$33.32	$9.31
	4,000	0	0	$24.01	$40.02	$16.01
	5,000	0	1	$24.01	$46.72	$22.71
SCWWA Church Road 2 Inch SC SWC	0	0	0	$155.49	$48.17	-$107.32
	155,000	0	0	$1,014.69	$1,086.67	$71.98
	210,000	1	1	$1,321.59	$1,455.17	$133.58
	1,255,000	0	1	$7,152.69	$8,456.67	$1,303.98
SCWWA Commercial 2 Inch SC SW	0	0	0	$155.49	$48.17	-$107.32
	1,000	0	0	$155.49	$54.87	-$100.62
	1,255,000	0	0	$7,152.69	$8,456.67	$1,303.98
Prince George Residential Unmetered SP SL	0	0	0	$41.66	$41.66	$0.00
	1,000	0	0	$41.66	$41.66	$0.00
	2,000	0	0	$41.66	$41.66	$0.00
SCWWA Residential Non-metered sewer SR SE	0	0	0	$24.01	$66.10	$42.09
	1,000	0	0	$24.01	$66.10	$42.09
	2,000	0	0	$24.01	$66.10	$42.09
SCWWA Residential 3 Inch SR SO	0	0	0	$188.54	$88.12	-$100.42
	1,000	0	0	$188.54	$94.82	-$93.72
	2,000	0	0	$188.54	$101.52	-$87.02

Table 19 - User Statistics
Dinwiddie, VA, Main System, 2019 Sewer Rates Model 3

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

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

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

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

3,828	Gallons: This is the average residential customer's usage per Monthly billing cycle.

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

219,792,110	Gallons: The volume metered through customer meters that was available to be sold during the test year.
448,510	Gallons: The volume given away as a usage allowance during the test year.
$2,478	Revenue Loss: At the unit charge rate in effect during the test year, revenue lost due to the usage allowance.
$1,967	Revenue Loss: At the modeled unit charge rates and usage allowance (if any), revenue lost due to the usage allowance.

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
SCWWA Res 3/4 Inch SR S1	-686,180	-1	(3,041,370)	0.0	-2.4%	100.0%	0.0%	-1.4%	-0.9%	-1.0%
	0	999	1,392,300	212.3	-1.3%	102.4%	7.1%	0.6%	11.9%	12.7%
	1,000	1,999	9,011,820	492.3	5.7%	101.3%	16.5%	4.1%	13.2%	13.5%
	2,000	2,999	16,634,060	554.1	18.6%	94.3%	18.5%	7.6%	11.8%	11.9%
	3,000	3,999	20,774,970	498.2	34.6%	81.4%	16.7%	9.5%	9.3%	9.2%
	4,000	4,999	20,149,860	376.5	50.2%	65.4%	12.6%	9.2%	6.5%	6.5%
	5,000	5,999	16,838,620	257.8	63.2%	49.8%	8.6%	7.7%	4.3%	4.2%
	6,000	6,999	11,577,270	150.0	72.2%	36.8%	5.0%	5.3%	2.6%	2.6%
	7,000	7,999	7,865,660	87.9	78.3%	27.8%	2.9%	3.6%	1.6%	1.6%
	8,000	8,999	5,745,710	56.7	82.7%	21.7%	1.9%	2.6%	1.1%	1.1%
	9,000	9,999	3,973,450	35.1	85.8%	17.3%	1.2%	1.8%	0.7%	0.7%
	10,000	14,999	8,921,780	62.7	92.7%	14.2%	2.1%	4.1%	1.6%	1.6%
	15,000	19,999	3,463,330	16.8	95.4%	7.3%	0.6%	1.6%	0.5%	0.6%
	20,000	29,999	2,715,880	9.5	97.5%	4.6%	0.3%	1.2%	0.4%	0.4%
	30,000	39,999	769,860	1.9	98.1%	2.5%	0.1%	0.4%	0.1%	0.2%
	40,000	49,999	526,750	1.0	98.5%	1.9%	0.0%	0.2%	0.1%	0.1%
	50,000	74,999	494,370	0.7	98.9%	1.5%	0.0%	0.2%	0.1%	0.2%
	75,000	99,999	819,420	0.8	99.5%	1.1%	0.0%	0.4%	0.1%	0.1%
	100,000	124,999	359,270	0.3	99.8%	0.5%	0.0%	0.2%	0.0%	0.0%
	125,000	149,999	136,720	0.1	99.9%	0.2%	0.0%	0.1%	0.0%	0.0%
	150,000	204,999	171,450	0.1	100.0%	0.1%	0.0%	0.1%	0.0%	0.0%
	Totals for Class		129,301,180	2,814.6			94.2%	58.8%	65.0%	66.1%
SCWWA Res 1 Inch SR S3	0	999	12,170	1.7	16.3%	100.0%	0.1%	0.0%	0.0%	0.0%
	1,000	1,999	14,880	0.9	36.3%	83.7%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	30,950	1.0	77.9%	63.7%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	39,950	1.0	131.5%	22.1%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		74,500	5.0			0.2%	0.1%	0.1%	0.1%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
SCWWA Res 1 1/2 Inch SR S5	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	2,000	2,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	3,000	3,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	4,000	4,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	5,000	5,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	6,000	6,999	12,730	0.2	0.2%	100.0%	0.0%	0.0%	0.1%	0.1%
	7,000	7,999	7,370	0.1	0.3%	99.8%	0.0%	0.0%	0.1%	0.1%
	8,000	8,999	8,350	0.1	0.4%	99.7%	0.0%	0.0%	0.1%	0.1%
	9,000	9,999	19,020	0.2	0.6%	99.6%	0.0%	0.0%	0.1%	0.1%
	10,000	14,999	39,760	0.3	1.1%	99.4%	0.0%	0.0%	0.4%	0.4%
	15,000	19,999	258,090	1.3	4.4%	98.9%	0.0%	0.1%	0.4%	0.4%
	20,000	24,999	632,620	2.3	12.3%	95.6%	0.1%	0.3%	0.4%	0.4%
	25,000	34,999	1,811,310	4.9	35.2%	87.7%	0.2%	0.8%	0.8%	0.6%
	35,000	44,999	2,906,410	6.2	71.9%	64.8%	0.2%	1.3%	0.6%	0.4%
	45,000	54,999	1,641,610	2.8	92.6%	28.1%	0.1%	0.7%	0.3%	0.1%
	55,000	79,999	505,720	0.7	99.0%	7.4%	0.0%	0.2%	0.1%	0.0%
	80,000	104,999	82,310	0.1	100.0%	1.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		7,925,300	19.0			0.6%	3.6%	3.7%	3.1%
SCWWA Comm .75 Inch SC S2	0	999	75,850	17.4	2.2%	100.0%	0.6%	0.0%	0.3%	0.3%
	1,000	1,999	154,250	8.9	6.8%	97.8%	0.3%	0.1%	0.2%	0.2%
	2,000	2,999	166,400	5.6	11.6%	93.2%	0.2%	0.1%	0.1%	0.1%
	3,000	3,999	90,100	2.2	14.3%	88.4%	0.1%	0.0%	0.1%	0.1%
	4,000	4,999	73,110	1.3	16.4%	85.7%	0.0%	0.0%	0.1%	0.1%
	5,000	5,999	96,970	1.5	19.3%	83.6%	0.1%	0.0%	0.1%	0.1%
	6,000	6,999	69,010	0.9	21.3%	80.7%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	73,580	0.8	23.5%	78.7%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	93,490	0.9	26.2%	76.5%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	104,720	0.9	29.3%	73.8%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	497,970	3.4	43.9%	70.7%	0.1%	0.2%	0.1%	0.1%
	15,000	19,999	444,320	2.2	56.9%	56.1%	0.1%	0.2%	0.1%	0.1%
	20,000	24,999	109,750	0.4	60.1%	43.1%	0.0%	0.0%	0.0%	0.0%
	25,000	34,999	233,460	0.7	67.0%	39.9%	0.0%	0.1%	0.0%	0.1%
	35,000	44,999	121,410	0.3	70.6%	33.0%	0.0%	0.1%	0.0%	0.0%
	45,000	54,999	99,850	0.2	73.5%	29.4%	0.0%	0.0%	0.0%	0.0%
	55,000	79,999	145,330	0.2	77.8%	26.5%	0.0%	0.1%	0.0%	0.0%
	80,000	104,999	90,520	0.1	80.4%	22.2%	0.0%	0.0%	0.0%	0.0%
	105,000	129,999	121,000	0.1	84.0%	19.6%	0.0%	0.1%	0.0%	0.0%
	130,000	154,999	0	0.0	84.0%	16.0%	0.0%	0.0%	0.0%	0.0%
	155,000	209,999	0	0.0	84.0%	16.0%	0.0%	0.0%	0.0%	0.0%
	210,000	304,999	546,670	0.2	100.0%	16.0%	0.0%	0.2%	0.0%	0.0%
	Totals for Class		3,407,760	48.1			1.6%	1.6%	1.5%	1.5%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
SCWWA Comm 1 Inch SC S4	0	999	30,660	6.9	0.5%	100.0%	0.2%	0.0%	0.3%	0.2%
	1,000	1,999	90,480	5.0	1.8%	99.5%	0.2%	0.0%	0.2%	0.2%
	2,000	2,999	80,180	2.8	3.0%	98.2%	0.1%	0.0%	0.2%	0.1%
	3,000	3,999	66,610	1.6	4.0%	97.0%	0.1%	0.0%	0.1%	0.1%
	4,000	4,999	92,650	1.8	5.4%	96.0%	0.1%	0.0%	0.1%	0.1%
	5,000	5,999	69,560	1.1	6.4%	94.6%	0.0%	0.0%	0.1%	0.1%
	6,000	6,999	44,860	0.6	7.1%	93.6%	0.0%	0.0%	0.1%	0.1%
	7,000	7,999	44,250	0.5	7.7%	92.9%	0.0%	0.0%	0.1%	0.1%
	8,000	8,999	85,500	0.8	9.0%	92.3%	0.0%	0.0%	0.1%	0.1%
	9,000	9,999	114,220	1.0	10.7%	91.0%	0.0%	0.1%	0.1%	0.1%
	10,000	14,999	498,340	3.4	18.1%	89.3%	0.1%	0.2%	0.3%	0.3%
	15,000	19,999	328,500	1.6	23.0%	81.9%	0.1%	0.1%	0.2%	0.2%
	20,000	24,999	469,650	1.8	30.0%	77.0%	0.1%	0.2%	0.2%	0.2%
	25,000	34,999	926,080	2.6	43.8%	70.0%	0.1%	0.4%	0.3%	0.3%
	35,000	44,999	1,232,670	2.6	62.1%	56.2%	0.1%	0.6%	0.2%	0.2%
	45,000	54,999	931,700	1.6	76.0%	37.9%	0.1%	0.4%	0.1%	0.1%
	55,000	79,999	778,260	1.0	87.5%	24.0%	0.0%	0.4%	0.1%	0.1%
	80,000	104,999	342,020	0.3	92.6%	12.5%	0.0%	0.2%	0.0%	0.0%
	105,000	129,999	227,190	0.2	96.0%	7.4%	0.0%	0.1%	0.0%	0.0%
	130,000	154,999	268,670	0.2	100.0%	4.0%	0.0%	0.1%	0.0%	0.0%
	Totals for Class		6,722,050	37.2			1.2%	3.1%	3.1%	2.7%
SCWWA Comm 1.5 Inch SC S6	0	999	5,160	1.6	0.1%	100.0%	0.1%	0.0%	0.2%	0.1%
	1,000	1,999	32,880	1.9	1.0%	99.9%	0.1%	0.0%	0.2%	0.1%
	2,000	2,999	56,640	1.9	2.4%	99.0%	0.1%	0.0%	0.2%	0.1%
	3,000	3,999	41,320	1.0	3.4%	97.6%	0.0%	0.0%	0.1%	0.1%
	4,000	4,999	48,060	0.9	4.7%	96.6%	0.0%	0.0%	0.1%	0.1%
	5,000	5,999	61,660	0.9	6.2%	95.3%	0.0%	0.0%	0.1%	0.1%
	6,000	6,999	89,240	1.2	8.5%	93.8%	0.0%	0.0%	0.1%	0.1%
	7,000	7,999	51,400	0.6	9.8%	91.5%	0.0%	0.0%	0.1%	0.0%
	8,000	8,999	34,090	0.3	10.7%	90.2%	0.0%	0.0%	0.1%	0.0%
	9,000	9,999	9,030	0.1	10.9%	89.3%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	121,940	0.8	14.0%	89.1%	0.0%	0.1%	0.2%	0.2%
	15,000	19,999	127,400	0.6	17.2%	86.0%	0.0%	0.1%	0.2%	0.1%
	20,000	24,999	177,410	0.7	21.7%	82.8%	0.0%	0.1%	0.1%	0.1%
	25,000	34,999	595,000	1.7	36.8%	78.3%	0.1%	0.3%	0.3%	0.2%
	35,000	44,999	716,370	1.5	54.9%	63.2%	0.1%	0.3%	0.2%	0.2%
	45,000	54,999	350,930	0.6	63.8%	45.1%	0.0%	0.2%	0.1%	0.1%
	55,000	79,999	1,346,020	1.7	98.0%	36.2%	0.1%	0.6%	0.2%	0.1%
	80,000	104,999	80,350	0.1	100.0%	2.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		3,944,900	18.0			0.6%	1.8%	2.4%	1.7%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
SCWWA Comm 2 Inch SC S7	0	999	800	0.3	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	1,000	1,999	14,240	0.7	0.1%	100.0%	0.0%	0.0%	0.1%	0.1%
	2,000	2,999	16,660	0.6	0.3%	99.9%	0.0%	0.0%	0.1%	0.1%
	3,000	3,999	3,980	0.1	0.4%	99.7%	0.0%	0.0%	0.1%	0.1%
	4,000	4,999	44,660	0.8	0.8%	99.6%	0.0%	0.0%	0.1%	0.1%
	5,000	5,999	44,410	0.7	1.2%	99.2%	0.0%	0.0%	0.1%	0.1%
	6,000	6,999	32,000	0.4	1.5%	98.8%	0.0%	0.0%	0.1%	0.1%
	7,000	7,999	45,090	0.5	2.0%	98.5%	0.0%	0.0%	0.1%	0.1%
	8,000	8,999	67,700	0.7	2.7%	98.0%	0.0%	0.0%	0.1%	0.1%
	9,000	9,999	66,010	0.6	3.3%	97.3%	0.0%	0.0%	0.1%	0.1%
	10,000	14,999	44,000	0.3	3.7%	96.7%	0.0%	0.0%	0.2%	0.2%
	15,000	19,999	103,290	0.5	4.8%	96.3%	0.0%	0.0%	0.2%	0.2%
	20,000	24,999	159,580	0.6	6.3%	95.2%	0.0%	0.1%	0.2%	0.2%
	25,000	34,999	55,300	0.2	6.9%	93.7%	0.0%	0.0%	0.3%	0.3%
	35,000	44,999	0	0.0	6.9%	93.1%	0.0%	0.0%	0.3%	0.3%
	45,000	54,999	355,990	0.6	10.4%	93.1%	0.0%	0.2%	0.3%	0.3%
	55,000	79,999	1,693,100	2.1	27.1%	89.6%	0.1%	0.8%	0.7%	0.7%
	80,000	104,999	1,380,360	1.3	40.7%	72.9%	0.0%	0.6%	0.5%	0.5%
	105,000	129,999	2,897,410	2.1	69.3%	59.3%	0.1%	1.3%	0.4%	0.3%
	130,000	154,999	1,565,810	0.9	84.8%	30.7%	0.0%	0.7%	0.2%	0.1%
	155,000	209,999	894,090	0.4	93.6%	15.2%	0.0%	0.4%	0.1%	0.1%
	210,000	304,999	645,970	0.3	100.0%	6.4%	0.0%	0.3%	0.0%	0.0%
	Totals for Class		10,130,450	14.5			0.5%	4.6%	4.3%	3.8%
SCWWA Comm 2 Inch SC SB	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	45,000	54,999	259,360	0.4	37.7%	100.0%	0.0%	0.1%	0.1%	0.0%
	55,000	79,999	427,810	0.6	100.0%	62.3%	0.0%	0.2%	0.1%	0.0%
	Totals for Class		687,170	1.0			0.0%	0.3%	0.3%	0.3%
SCWWA Comm 2.2 Inch SC SA	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	15,000	19,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	20,000	24,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	25,000	34,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.2%
	35,000	44,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.2%
	45,000	54,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.2%
	55,000	79,999	671,360	0.8	5.0%	100.0%	0.0%	0.3%	0.5%	0.4%
	80,000	104,999	576,330	0.5	9.3%	95.0%	0.0%	0.3%	0.4%	0.3%
	105,000	129,999	927,490	0.7	16.1%	90.7%	0.0%	0.4%	0.3%	0.3%
	130,000	154,999	154,650	0.1	17.3%	83.9%	0.0%	0.1%	0.2%	0.2%
	155,000	209,999	1,252,570	0.6	26.6%	82.7%	0.0%	0.6%	0.4%	0.4%
	210,000	304,999	1,309,870	0.4	36.3%	73.4%	0.0%	0.6%	0.5%	0.5%
	305,000	504,999	0	0.0	36.3%	63.7%	0.0%	0.0%	0.7%	0.8%
	505,000	754,999	7,042,840	0.8	88.5%	63.7%	0.0%	3.2%	0.9%	0.9%
	755,000	1,004,999	1,551,850	0.2	100.0%	11.5%	0.0%	0.7%	0.0%	0.0%
	1,005,000	1,254,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	1,255,000	5,000,000	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		13,486,960	4.0			0.1%	6.1%	4.6%	4.7%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
SCWWA Comm 3 Inch SC SM	0	999	0	0.2	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	18,410	0.3	0.2%	100.0%	0.0%	0.0%	0.1%	0.0%
	5,000	5,999	11,270	0.2	0.4%	99.8%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	19,550	0.3	0.6%	99.6%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	14,960	0.2	0.8%	99.4%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	0.8%	99.2%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	9,480	0.1	0.9%	99.2%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	48,440	0.3	1.5%	99.1%	0.0%	0.0%	0.1%	0.1%
	15,000	19,999	0	0.0	1.5%	98.5%	0.0%	0.0%	0.1%	0.1%
	20,000	24,999	69,670	0.3	2.3%	98.5%	0.0%	0.0%	0.1%	0.1%
	25,000	34,999	124,680	0.3	3.9%	97.7%	0.0%	0.1%	0.2%	0.2%
	35,000	44,999	160,540	0.3	5.8%	96.1%	0.0%	0.1%	0.2%	0.2%
	45,000	54,999	365,390	0.6	10.3%	94.2%	0.0%	0.2%	0.2%	0.2%
	55,000	79,999	445,050	0.6	15.8%	89.7%	0.0%	0.2%	0.3%	0.3%
	80,000	104,999	188,030	0.2	18.1%	84.2%	0.0%	0.1%	0.2%	0.2%
	105,000	129,999	471,710	0.3	23.8%	81.9%	0.0%	0.2%	0.2%	0.2%
	130,000	154,999	971,610	0.6	35.7%	76.2%	0.0%	0.4%	0.2%	0.2%
	155,000	209,999	801,060	0.4	45.6%	64.3%	0.0%	0.4%	0.2%	0.2%
	210,000	304,999	1,554,250	0.5	64.6%	54.4%	0.0%	0.7%	0.3%	0.3%
	305,000	504,999	658,300	0.2	72.6%	35.4%	0.0%	0.3%	0.2%	0.2%
	505,000	754,999	1,097,760	0.2	86.1%	27.4%	0.0%	0.5%	0.1%	0.1%
	755,000	1,004,999	0	0.0	86.1%	13.9%	0.0%	0.0%	0.1%	0.1%
	1,005,000	1,254,999	1,135,940	0.1	100.0%	13.9%	0.0%	0.5%	0.0%	0.0%
	1,255,000	1,135,940	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		8,166,100	6.0			0.2%	3.7%	3.0%	3.1%
SCWWA Comm 6 Inch SC SU	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	25,000	34,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	35,000	44,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	45,000	54,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	55,000	79,999	151,550	0.2	5.3%	100.0%	0.0%	0.1%	0.2%	0.2%
	80,000	104,999	355,390	0.3	17.6%	94.7%	0.0%	0.2%	0.3%	0.2%
	105,000	129,999	1,075,100	0.8	54.9%	82.4%	0.0%	0.5%	0.4%	0.2%
	130,000	154,999	1,101,880	0.7	93.1%	45.1%	0.0%	0.5%	0.3%	0.1%
	155,000	209,999	199,440	0.1	100.0%	6.9%	0.0%	0.1%	0.0%	0.0%
	Totals for Class		2,883,360	2.0			0.1%	1.3%	1.5%	1.3%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
SCWWA Comm Central State SC S8	0	999	0	0.1	0.0%	100.0%	0.0%	0.0%	0.1%	0.0%
	55,000	79,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	80,000	104,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	105,000	129,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	130,000	154,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	155,000	209,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.2%	0.2%
	210,000	304,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.3%	0.4%
	305,000	504,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.6%	0.7%
	505,000	754,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.8%	0.9%
	755,000	1,004,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.8%	0.9%
	1,005,000	1,254,999	1,195,840	0.1	5.2%	100.0%	0.0%	0.5%	0.8%	0.9%
	1,255,000	5,000,000	21,622,950	0.8	100.0%	94.8%	0.0%	9.8%	3.1%	3.3%
	Totals for Class		22,818,790	1.0			0.0%	10.4%	7.1%	7.9%
SCWWA Church Road Comm 2 Inch SW SWC	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	55,000	79,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	80,000	104,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	105,000	129,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	130,000	154,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	155,000	209,999	204,490	0.1	4.7%	100.0%	0.0%	0.1%	0.2%	0.2%
	210,000	304,999	1,448,360	0.5	38.0%	95.3%	0.0%	0.7%	0.2%	0.2%
	305,000	504,999	1,084,120	0.3	62.9%	62.0%	0.0%	0.5%	0.2%	0.2%
	505,000	754,999	0	0.0	62.9%	37.1%	0.0%	0.0%	0.1%	0.2%
	755,000	1,004,999	1,611,080	0.2	100.0%	37.1%	0.0%	0.7%	0.0%	0.0%
	1,005,000	1,254,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	1,255,000	5,000,000	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		4,348,050	1.0			0.0%	2.0%	1.3%	1.5%
MCK Residential SM SV	0	999	7,250	1.7	2.3%	100.0%	0.1%	0.0%	0.0%	0.0%
	1,000	1,999	56,820	3.1	20.6%	97.7%	0.1%	0.0%	0.0%	0.0%
	2,000	2,999	105,270	3.5	54.5%	79.4%	0.1%	0.0%	0.1%	0.1%
	3,000	3,999	53,600	1.3	71.7%	45.5%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	40,520	0.8	84.7%	28.3%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	22,580	0.3	92.0%	15.3%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	24,840	0.3	100.0%	8.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		310,880	11.0			0.4%	0.1%	0.2%	0.2%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
MCK Commercial SK SZ	0	999	0	0.1	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	15,000	19,999	19,980	0.1	2.1%	100.0%	0.0%	0.0%	0.0%	0.0%
	20,000	24,999	0	0.0	2.1%	97.9%	0.0%	0.0%	0.0%	0.0%
	25,000	34,999	0	0.0	2.1%	97.9%	0.0%	0.0%	0.0%	0.0%
	35,000	44,999	0	0.0	2.1%	97.9%	0.0%	0.0%	0.0%	0.0%
	45,000	54,999	46,060	0.1	7.1%	97.9%	0.0%	0.0%	0.0%	0.0%
	55,000	79,999	206,620	0.3	29.2%	92.9%	0.0%	0.1%	0.1%	0.1%
	80,000	104,999	431,780	0.4	75.4%	70.8%	0.0%	0.2%	0.0%	0.0%
	105,000	129,999	229,270	0.2	100.0%	24.6%	0.0%	0.1%	0.0%	0.0%
	Totals for Class		933,710	1.1			0.0%	0.4%	0.4%	0.4%
Prince George Residential SP SN	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	15,780	0.8	8.8%	100.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	41,340	1.4	31.8%	91.2%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	16,360	0.4	40.9%	68.2%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	38,010	0.7	62.0%	59.1%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	27,050	0.4	77.1%	38.0%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	6,700	0.1	80.8%	22.9%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	80.8%	19.2%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	80.8%	19.2%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	80.8%	19.2%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	34,500	0.3	100.0%	19.2%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		179,740	4.0			0.1%	0.1%	0.1%	0.1%
SCWWA Residential Non-Metered SR SK	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	2,850	0.1	4.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	3,000	3,999	6,470	0.2	13.1%	96.0%	0.0%	0.0%	0.0%	0.0%
	4,000	4,999	8,340	0.2	24.9%	86.9%	0.0%	0.0%	0.0%	0.0%
	5,000	5,999	15,860	0.3	47.2%	75.1%	0.0%	0.0%	0.0%	0.0%
	6,000	6,999	13,600	0.2	66.3%	52.8%	0.0%	0.0%	0.0%	0.0%
	7,000	7,999	0	0.0	66.3%	33.7%	0.0%	0.0%	0.0%	0.0%
	8,000	8,999	0	0.0	66.3%	33.7%	0.0%	0.0%	0.0%	0.0%
	9,000	9,999	0	0.0	66.3%	33.7%	0.0%	0.0%	0.0%	0.0%
	10,000	14,999	23,930	0.2	100.0%	33.7%	0.0%	0.0%	0.0%	0.0%
	1,255,000	5,000,000	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		71,050	1.0			0.0%	0.0%	0.0%	0.0%

Table 19 - User Statistics

Customer, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Use in Each Range in Gallons	Customers Within This Range	Cumulative Use % in This Class From Low to High	Cumulative Use % in This Class From High to Low	% Users	% Use	% Revenue at Current Rates	% Revenue at Modeled Rates
SCWWA Church Road 2 Inch SC SWC	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	55,000	79,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	80,000	104,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	105,000	129,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	130,000	154,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.1%	0.1%
	155,000	209,999	204,490	0.1	4.7%	100.0%	0.0%	0.1%	0.2%	0.2%
	210,000	304,999	1,448,360	0.5	38.0%	95.3%	0.0%	0.7%	0.2%	0.2%
	305,000	504,999	1,084,120	0.3	62.9%	62.0%	0.0%	0.5%	0.2%	0.2%
	505,000	754,999	0	0.0	62.9%	37.1%	0.0%	0.0%	0.1%	0.2%
	755,000	1,004,999	1,611,080	0.2	100.0%	37.1%	0.0%	0.7%	0.0%	0.0%
	1,005,000	1,254,999	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	1,255,000	5,000,000	0	0.0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		4,348,050	1.0			0.0%	2.0%	1.3%	1.5%
SCWWA Commercial 2 Inch SC SW	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,255,000	5,000,000	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		0	0.0			0.0%	0.0%	0.0%	0.0%
Prince George Residential Unmetered SP SL	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	2,000	2,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,255,000	5,000,000	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		0	0.0			0.0%	0.0%	0.0%	0.0%
SCWWA Residential Non-metered sewer SR SE	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,255,000	5,000,000	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		0	0.0			0.0%	0.0%	0.0%	0.0%
SCWWA Residential 3 Inch SR SO	0	999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,000	1,999	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	1,255,000	5,000,000	0	0.0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Totals for Class		0	0.0			0.0%	0.0%	0.0%	0.0%
	Grand Totals		219,740,000				100.00%	100.00%	100.00%	100.00%

Chart 1 - Operating Ratio

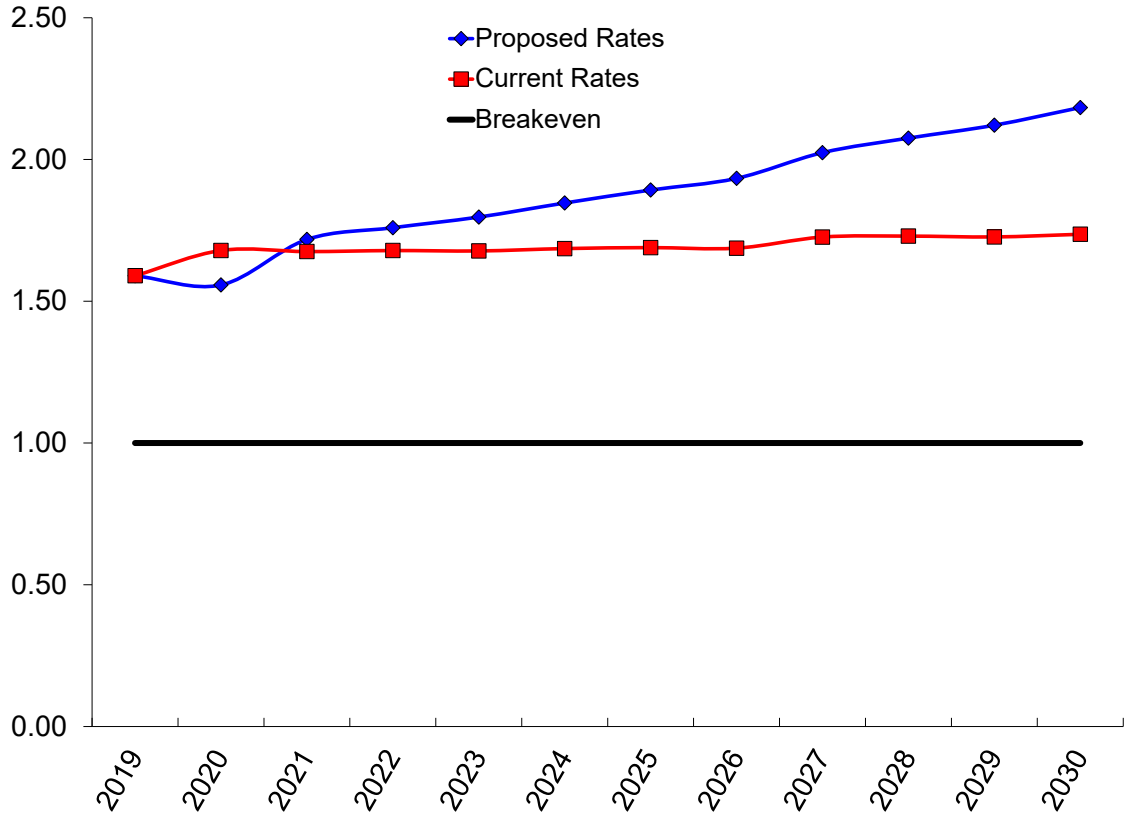


Chart 2 - Coverage Ratio

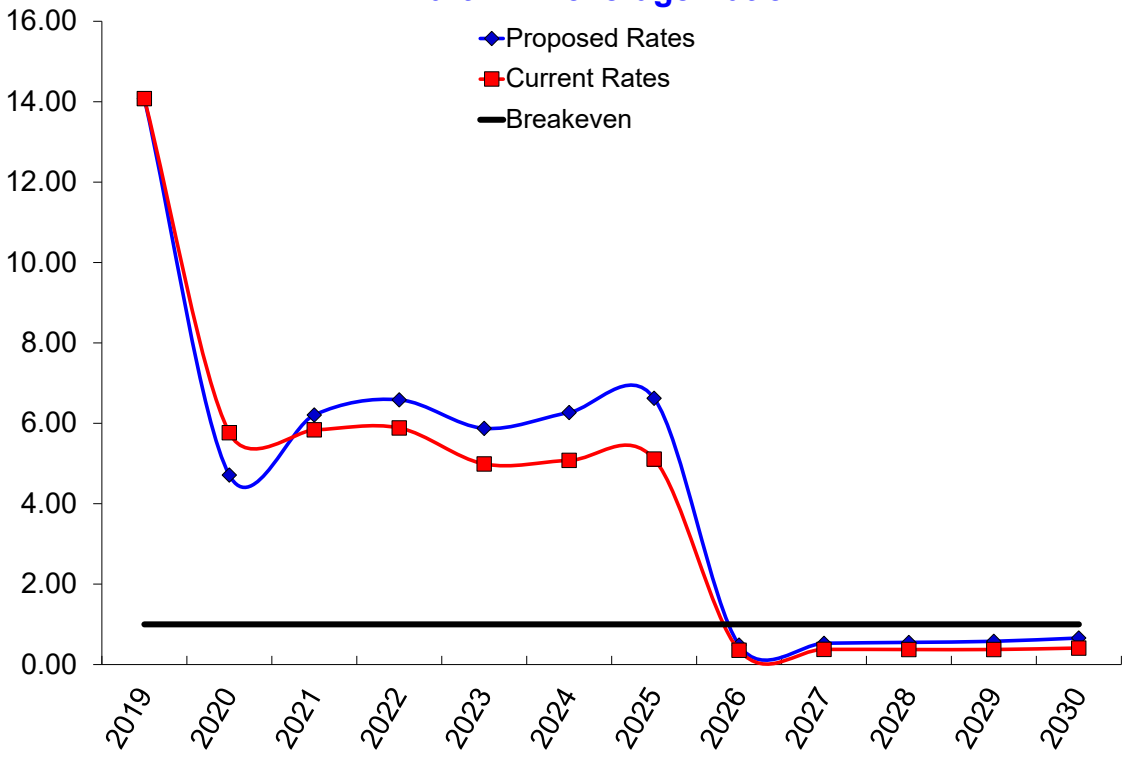


Chart 3 - Residential Users' Bills

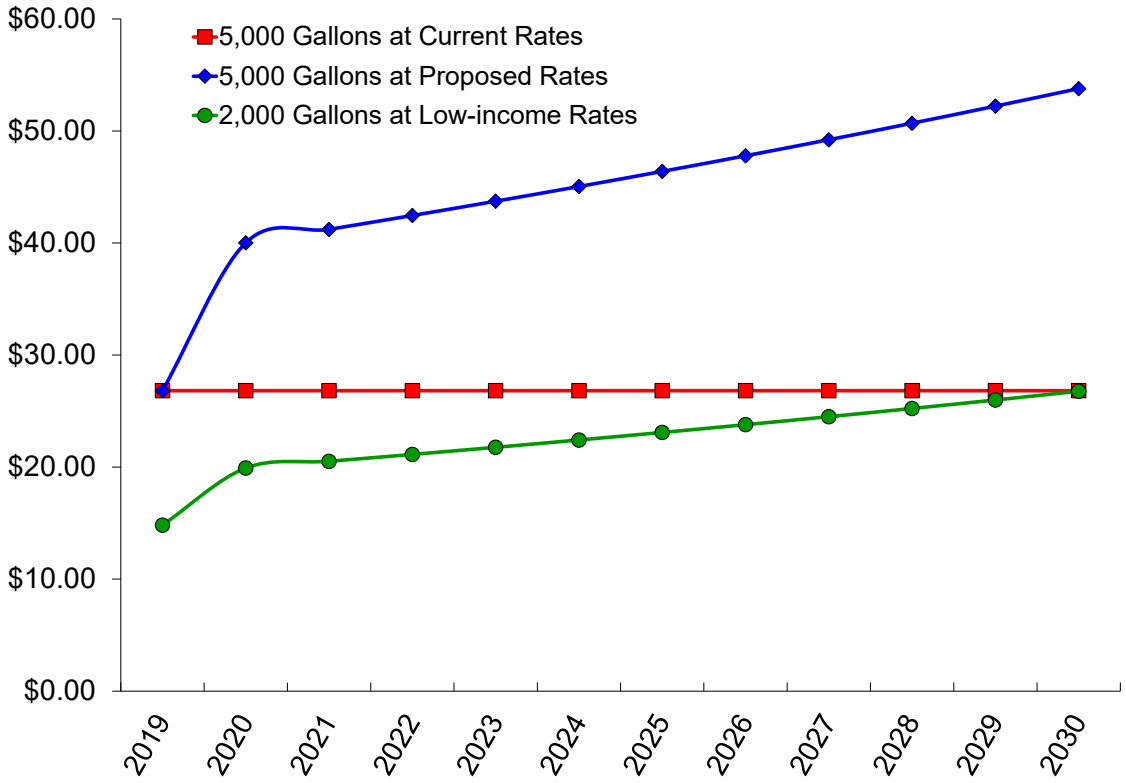


Chart 4 - Affordability

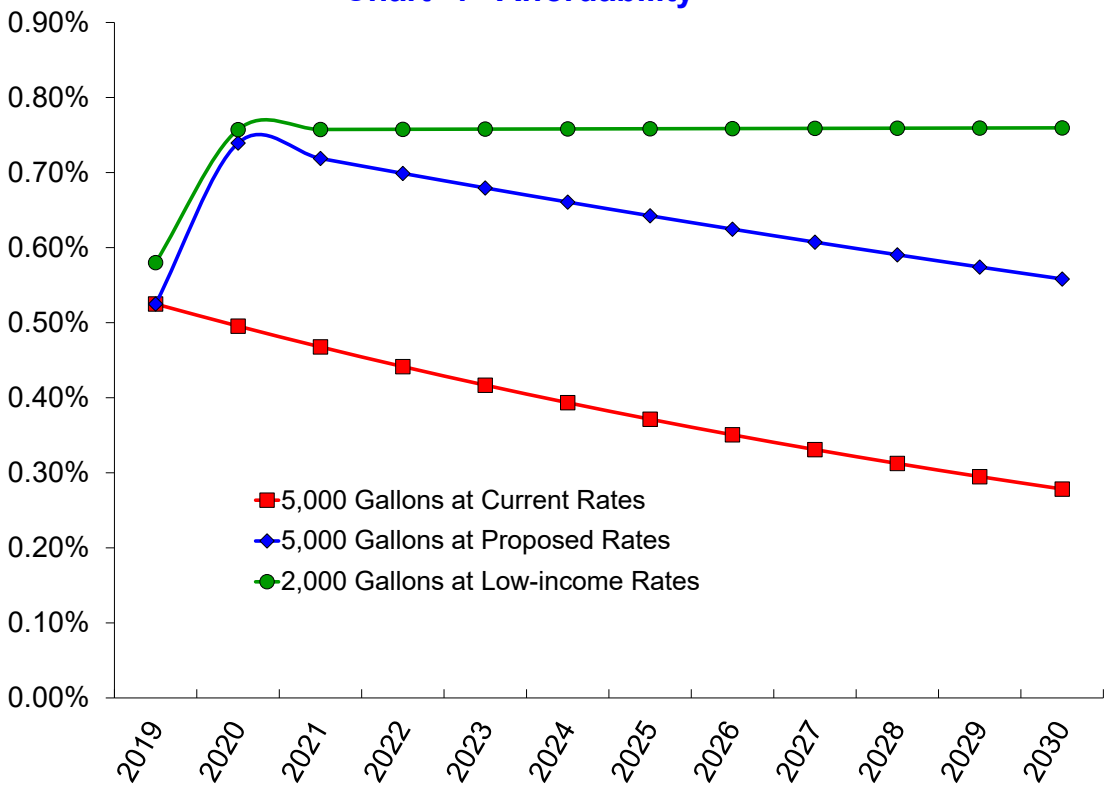


Chart 5 - Working Capital vs Goal

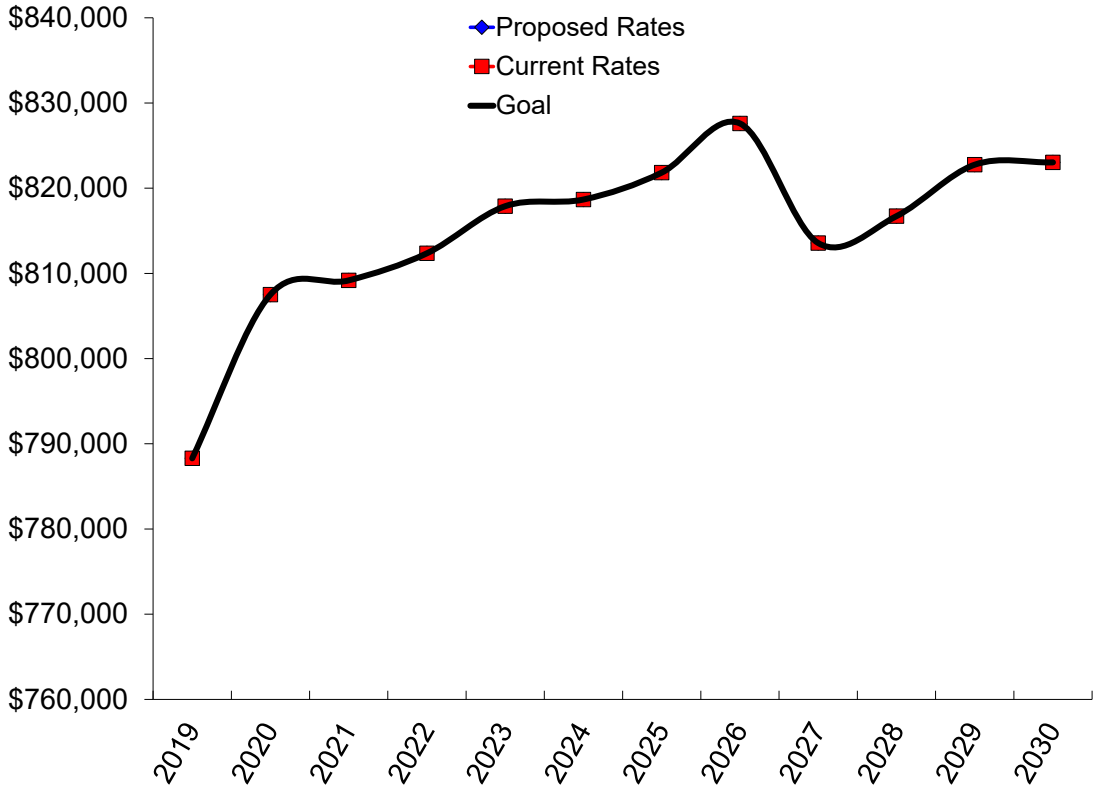


Chart 6 - Value of Cash Assets Before Inflation

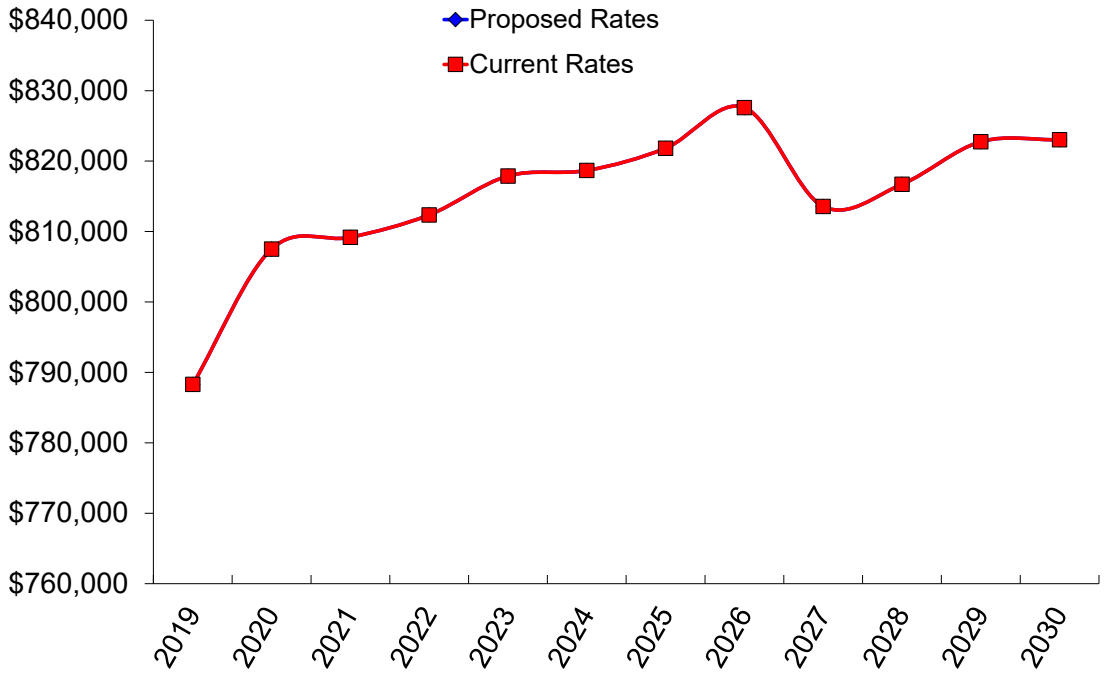


Chart 7 - Value of Cash Assets After Inflation

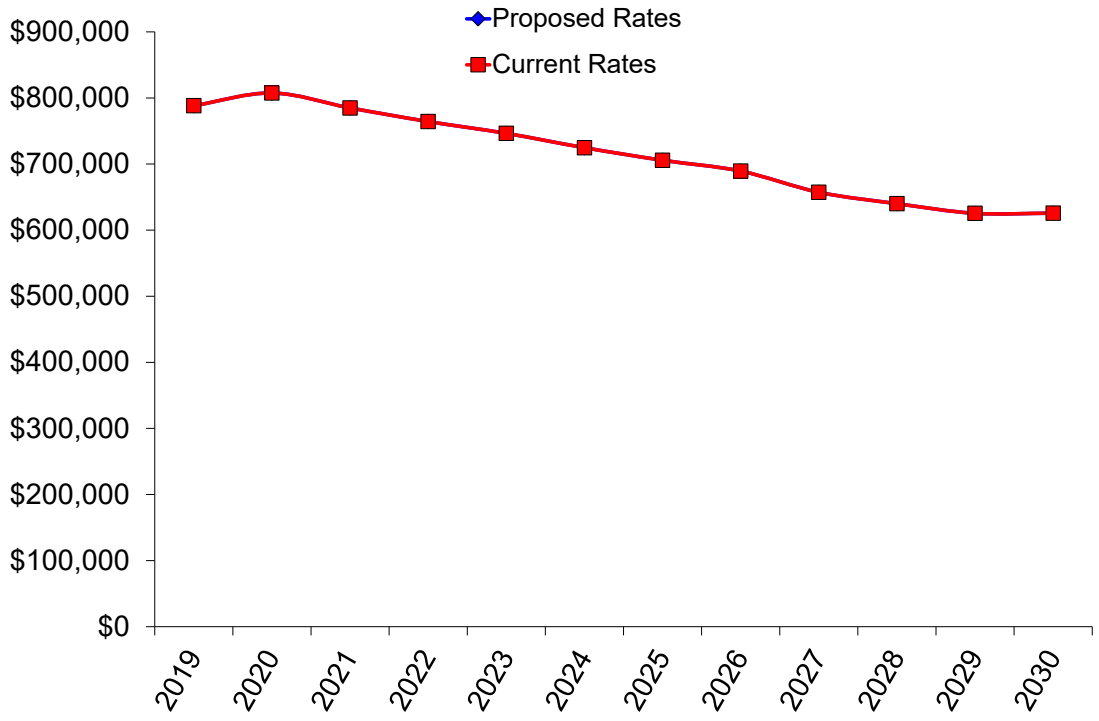
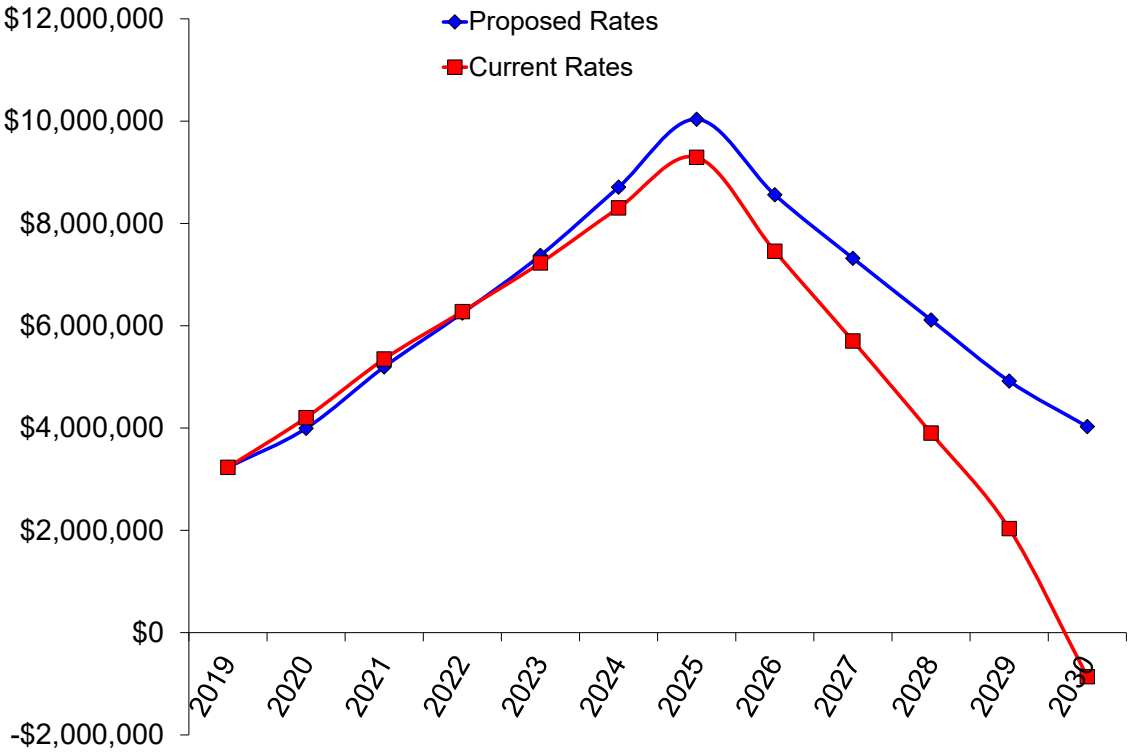


Chart 8 - Sum of All Reserves



Dinwiddie, VA, Courthouse, 2019 Sewer Rates
Model 4

(This model used the rates developed for the Main Sewer System Service Area.)

March 17, 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

Dinwiddie, VA, Courthouse, 2019 Sewer Rates Model 4

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
Courthouse Commercial C2 (3/4 Inch)	0	$14.82	2.000	$6.00
	2,000	$14.82	2.000	$6.00
	20,000	$14.82	2.000	$5.58
	1,255,000	$14.82	2.000	$5.58
Courthouse Commercial C4 (1 Inch)	0	$47.75	2.000	$6.00
	2,000	$47.75	2.000	$6.00
	20,000	$47.75	2.000	$5.58
	1,255,000	$47.75	2.000	$5.58
Courthouse Commercial C6 (1.5 Inch)	0	$115.08	2.000	$6.00
	2,000	$115.08	2.000	$6.00
	20,000	$115.08	2.000	$5.58
	1,255,000	$115.08	2.000	$5.58
Courthouse Commercial CC (Non-metered)	0	$24.01	0.000	$0.00
	1,000	$24.01	0.000	$0.00
	1,005,000	$24.01	0.000	$0.00
	1,255,000	$24.01	0.000	$0.00
Courthouse Commercial CM (Non-metered)	0	$24.01	0.000	$0.00
	1,000	$24.01	0.000	$0.00
	1,005,000	$24.01	0.000	$0.00
	1,255,000	$24.01	0.000	$0.00

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
Courthouse Residential CR (Non-metered)	0	$24.01	0.000	$0.00
	1,000	$24.01	0.000	$0.00
	2,000	$24.01	0.000	$0.00
	1,005,000	$24.01	0.000	$0.00
	1,255,000	$24.01	0.000	$0.00
Courthouse Residential CN (Non-metered)	0	$24.01	0.000	$0.00
	1,000	$24.01	0.000	$0.00
	1,005,000	$24.01	0.000	$0.00
	1,255,000	$24.01	0.000	$0.00
County School SD CE (1.5 Inch)	0	$115.06	2.000	$6.00
	2,000	$115.06	2.000	$6.00
	20,000	$115.06	2.000	$5.58
	1,255,000	$115.06	2.000	$5.58
County School SD CS (1.5 Inch)	0	$115.08	2.000	$6.00
	2,000	$115.08	2.000	$6.00
	20,000	$115.08	2.000	$5.58
	1,255,000	$115.08	2.000	$5.58
County School SD CW (1.5 Inch)	0	$115.08	2.000	$6.00
	2,000	$115.08	2.000	$6.00
	20,000	$115.08	2.000	$5.58
	1,255,000	$115.08	2.000	$5.58

Table 2 - Test Year Usage
Dinwiddie, VA, Courthouse, 2019 Sewer Rates Model 4

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

Test year = the one-year period being analyzed starts: 7/1/2018

Date this model created: 12/11/2019

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
Courthouse Commercial C2 (3/4 Inch)	0	999	24	11,000	13	0	1	2.9%	0.0%
	1,000	1,999	11	11,000	0	0	0	0.0%	0.0%
	2,000	2,999	11	11,000	0	0	0	0.0%	0.0%
	3,000	3,999	11	11,000	0	0	0	0.0%	0.0%
	4,000	4,999	11	11,000	0	0	0	0.0%	0.0%
	5,000	5,999	11	10,750	1	5,750	0	0.2%	0.1%
	6,000	6,999	10	10,000	0	0	0	0.0%	0.0%
	7,000	7,999	10	10,000	0	0	0	0.0%	0.0%
	8,000	8,999	10	9,820	1	8,820	0	0.2%	0.2%
	9,000	9,999	9	7,370	4	38,370	0	0.9%	0.7%
	10,000	14,999	5	23,970	2	28,970	0	0.4%	0.5%
	15,000	19,999	3	10,640	1	15,640	0	0.2%	0.3%
	20,000	24,999	2	7,820	2	47,820	0	0.4%	0.9%
			128	145,370	24	145,370	2	5.3%	2.7%
Courthouse Commercial C4 (1 Inch)	0	999	24	24	2	0	0	0.4%	0.0%
	1,000	1,999	22	22,000	0	0	0	0.0%	0.0%
	2,000	2,999	22	22,000	0	0	0	0.0%	0.0%
	3,000	3,999	22	22,000	0	0	0	0.0%	0.0%
	4,000	4,999	22	22,000	0	0	0	0.0%	0.0%
	5,000	5,999	22	22,000	0	0	0	0.0%	0.0%
	6,000	6,999	22	22,000	0	0	0	0.0%	0.0%
	7,000	7,999	22	22,000	0	0	0	0.0%	0.0%
	8,000	8,999	22	22,000	0	0	0	0.0%	0.0%
	9,000	9,999	22	22,000	0	0	0	0.0%	0.0%
	10,000	14,999	22	110,000	0	0	0	0.0%	0.0%
	15,000	19,999	22	110,000	0	0	0	0.0%	0.0%
	20,000	24,999	22	110,000	0	0	0	0.0%	0.0%
	25,000	34,999	22	188,000	7	213,000	1	1.5%	3.9%
	35,000	44,999	15	127,760	3	112,760	0	0.7%	2.1%
	45,000	54,999	12	120,000	0	0	0	0.0%	0.0%
	55,000	79,999	12	279,750	1	59,750	0	0.2%	1.1%
	80,000	104,999	11	273,330	1	103,330	0	0.2%	1.9%
	105,000	129,999	10	224,530	2	234,530	0	0.4%	4.3%
	130,000	154,999	8	177,950	1	132,950	0	0.2%	2.4%
	155,000	209,999	7	249,380	5	914,380	0	1.1%	16.8%
	210,000	304,999	2	131,150	1	246,150	0	0.2%	4.5%
	305,000	504,999	1	47,210	1	352,210	0	0.2%	6.5%
			388	2,347,084	24	2,369,060	2	5.3%	43.6%
Courthouse Commercial C6 (1.5 Inch)	0	999	12	170	12	170	1	2.6%	0.0%
	1,000	1,999	0	0	0	0	0	0.0%	0.0%
	2,000	2,999	0	0	0	0	0	0.0%	0.0%
			12	170	12	170	1	2.6%	0.0%
Courthouse Commercial CC (Non-metered)	0	999	60	0	60	0	5	13.2%	0.0%
	1,000	1,999	0	0	0	0	0	0.0%	0.0%
	2,000	2,999	0	0	0	0	0	0.0%	0.0%
			60	0	60	0	5	13.2%	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
Courthouse Commercial CM (Non-metered)	0	999	24	0	24	0	2	5.3%	0.0%
	1,000	1,999	0	0	0	0	0	0.0%	0.0%
	2,000	2,999	0	0	0	0	0	0.0%	0.0%
			24	0	24	0	2	5.3%	0.0%
Courthouse Residential CR (Non-metered)	0	999	241	0	241	0	20	52.9%	0.0%
	1,000	1,999	0	0	0	0	0	0.0%	0.0%
	2,000	2,999	0	0	0	0	0	0.0%	0.0%
			241	0	241	0	20	52.9%	0.0%
Courthouse Residential CN (Non-metered)	0	999	24	0	24	0	2	5.3%	0.0%
	1,000	1,999	0	0	0	0	0	0.0%	0.0%
	2,000	2,999	0	0	0	0	0	0.0%	0.0%
			24	0	24	0	2	5.3%	0.0%
County School SD CE (1.5 Inch)	0	999	12	11,000	1	0	0	0.2%	0.0%
	1,000	1,999	11	11,000	0	0	0	0.0%	0.0%
	2,000	2,999	11	11,000	0	0	0	0.0%	0.0%
	3,000	3,999	11	11,000	0	0	0	0.0%	0.0%
	4,000	4,999	11	11,000	0	0	0	0.0%	0.0%
	5,000	5,999	11	11,000	0	0	0	0.0%	0.0%
	6,000	6,999	11	11,000	0	0	0	0.0%	0.0%
	7,000	7,999	11	11,000	0	0	0	0.0%	0.0%
	8,000	8,999	11	11,000	0	0	0	0.0%	0.0%
	9,000	9,999	11	11,000	0	0	0	0.0%	0.0%
	10,000	14,999	11	52,130	1	12,130	0	0.2%	0.2%
	15,000	19,999	10	50,000	0	0	0	0.0%	0.0%
	20,000	24,999	10	49,530	1	24,530	0	0.2%	0.5%
	25,000	34,999	9	85,660	1	30,660	0	0.2%	0.6%
	35,000	44,999	8	75,910	1	40,910	0	0.2%	0.8%
	45,000	54,999	7	36,600	6	296,600	1	1.3%	5.5%
	55,000	79,999	1	6,680	1	61,680	0	0.2%	1.1%
			167	466,510	12	466,510	1	2.6%	8.6%
County School SD CS (1.5 Inch)	0	999	23	21,000	2	0	0	0.4%	0.0%
	1,000	1,999	21	21,000	0	0	0	0.0%	0.0%
	2,000	2,999	21	21,000	0	0	0	0.0%	0.0%
	3,000	3,999	21	21,000	0	0	0	0.0%	0.0%
	4,000	4,999	21	21,000	0	0	0	0.0%	0.0%
	5,000	5,999	21	21,000	0	0	0	0.0%	0.0%
	6,000	6,999	21	21,000	0	0	0	0.0%	0.0%
	7,000	7,999	21	21,000	0	0	0	0.0%	0.0%
	8,000	8,999	21	21,000	0	0	0	0.0%	0.0%
	9,000	9,999	21	21,000	0	0	0	0.0%	0.0%
	10,000	14,999	21	105,000	0	0	0	0.0%	0.0%
	15,000	19,999	21	102,960	1	17,960	0	0.2%	0.3%
	20,000	24,999	20	100,000	0	0	0	0.0%	0.0%
	25,000	34,999	20	200,000	0	0	0	0.0%	0.0%
	35,000	44,999	20	199,120	1	44,120	0	0.2%	0.8%
	45,000	54,999	19	190,000	0	0	0	0.0%	0.0%
	55,000	79,999	19	422,790	5	347,790	0	1.1%	6.4%
	80,000	104,999	14	248,980	8	738,980	1	1.8%	13.6%
	105,000	129,999	6	83,490	3	323,490	0	0.7%	5.9%
	130,000	154,999	3	58,620	1	138,620	0	0.2%	2.5%
	155,000	209,999	2	108,500	1	208,500	0	0.2%	3.8%
	210,000	304,999	1	35,040	1	245,040	0	0.2%	4.5%
			378	2,064,500	23	2,064,500	2	5.0%	38.0%

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
County School SD CW (1.5 Inch)	0	999	12	11,000	1	0	0	0.2%	0.0%
	1,000	1,999	11	11,000	0	0	0	0.0%	0.0%
	2,000	2,999	11	11,000	0	0	0	0.0%	0.0%
	3,000	3,999	11	11,000	0	0	0	0.0%	0.0%
	4,000	4,999	11	11,000	0	0	0	0.0%	0.0%
	5,000	5,999	11	11,000	0	0	0	0.0%	0.0%
	6,000	6,999	11	11,000	0	0	0	0.0%	0.0%
	7,000	7,999	11	11,000	0	0	0	0.0%	0.0%
	8,000	8,999	11	11,000	0	0	0	0.0%	0.0%
	9,000	9,999	11	11,000	0	0	0	0.0%	0.0%
	10,000	14,999	11	55,000	0	0	0	0.0%	0.0%
	15,000	19,999	11	53,920	2	38,920	0	0.4%	0.7%
	20,000	24,999	9	43,510	1	23,510	0	0.2%	0.4%
	25,000	34,999	8	58,790	5	153,790	0	1.1%	2.8%
	35,000	44,999	3	29,160	1	44,160	0	0.2%	0.8%
	45,000	54,999	2	20,000	0	0	0	0.0%	0.0%
	55,000	79,999	2	22,510	2	132,510	0	0.4%	2.4%
			157	392,890	12	392,890	1	2.6%	7.2%
		Grand Totals:	1,579	5,416,524	456	5,438,500	38	100%	100%

Table 3 - Operating Incomes and Basic User Data

Dinwiddie, VA, Courthouse, 2019 Sewer Rates Model 4

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)

$54,640	Census Bureau estimate of AMHI for the year	2017
$51,579	Census Bureau estimate of AMHI for the year	2016
$3,061	AMHI growth during this time period	
5.93%	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 connections made during the test year
$250,000,000	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)									
		Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
		7/1/18	7/1/19	7/1/20	7/1/21	7/1/22	7/1/23	7/1/24	7/1/25	7/1/26	7/1/27	7/1/28	7/1/29
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 for the Year	N.A.	38	38	38	38	38	38	38	38	38	38	38	38
Customers Added or Lost (-) During the 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 Volumes, in Gallons	N.A.	5,416,524	5,416,524	5,416,524	5,416,524	5,416,524	5,416,524	5,416,524	5,416,524	5,416,524	5,416,524	5,416,524	5,416,524
How User Charge Fees Were Calculated, Accounting for New Customers and Future Rate Increases													
Actual or Calculated Sales Revenues		$47,485	$47,388	$12,355	$12,726	$13,107	$13,501	$13,906	$14,323	$14,752	$15,195	$15,651	$16,120
Additional Sales Revenues From New Customers			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Calculated Revenues (User Charge Fees)		$47,485	$47,388	$12,355	$12,726	$13,107	$13,501	$13,906	$14,323	$14,752	$15,195	$15,651	$16,120
Operating Incomes													
User Charge Fees (Tables 10, 16)	N.A.	$46,777	$46,682	$12,171	$12,536	$12,912	$13,299	$13,698	$14,109	$14,533	$14,969	$15,418	$15,880
Late Payment Charge	N.A.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Taps or Connections (Current Rate Structure)	% Above	$25	$25	$0	$0	$0	$0	$0	$0	$0	$0	$1	$2
Meter Size-based System Development Fees (Table 14)	% Above	$0	$1	$421	$433	$446	$460	$474	$488	$502	$518	$533	$549
Interest Income	N.A.	$8,546	$1,869	$2,021	$2,893	$2,937	$3,006	$3,029	$3,077	$3,153	$3,177	$3,230	$3,312
COUNTY BOND PAYBACK P&I	N.A.	$476,904	$452,481	$479,629	$280,746	$279,728	$312,246	$312,575	$310,503	$310,503	$284,653	$284,667	$284,667
MISC. INCOME	N.A.	$88,606	$88,606	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
County Subsidy	N.A.	$0	$0	$403,150	$415,245	$427,702	$440,533	$453,749	$467,361	$481,382	$495,824	$510,698	$526,019
Total Operating Incomes		**$620,858**	**$589,664**	**$897,391**	**$711,854**	**$723,725**	**$769,545**	**$783,525**	**$795,538**	**$810,072**	**$799,140**	**$814,546**	**$830,430**

Table 4 - Operating Costs and Net Income

Dinwiddie, VA, Courthouse, 2019 Sewer Rates Model 4

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 7/1/18	Analysis Year 0 Year Starting 7/1/19	Years Following the Analysis Year (for Which Results Have Been Projected) 1st Year Starting 7/1/20	2nd Year Starting 7/1/21	3rd Year Starting 7/1/22	4th Year Starting 7/1/23	5th Year Starting 7/1/24	6th Year Starting 7/1/25	7th Year Starting 7/1/26	8th Year Starting 7/1/27	9th Year Starting 7/1/28	10th Year Starting 7/1/29
BUILDING REP/MAINTENANCE	3.0%	$8,932	$9,200	$9,476	$9,760	$10,053	$10,354	$10,665	$10,985	$11,314	$11,654	$12,003	$12,364
DEPRECIATION	0.0%	$286,146	$286,146	$286,146	$286,146	$286,146	$286,146	$286,146	$286,146	$286,146	$286,146	$286,146	$286,146
ELECTRIC	3.0%	$6,026	$6,207	$6,393	$6,585	$6,782	$6,986	$7,195	$7,411	$7,633	$7,862	$8,098	$8,341
ELECTRIC - PLANT	3.0%	$24,745	$25,487	$26,252	$27,039	$27,850	$28,686	$29,546	$30,433	$31,346	$32,286	$33,255	$34,252
GAS & OIL	3.0%	$7,000	$7,210	$7,426	$7,649	$7,879	$8,115	$8,358	$8,609	$8,867	$9,133	$9,407	$9,690
INSURANCE - GL	3.0%	$4,065	$4,187	$4,313	$4,442	$4,576	$4,713	$4,854	$5,000	$5,150	$5,304	$5,464	$5,627
INSURANCE - WC	3.0%	$779	$802	$826	$851	$876	$903	$930	$958	$986	$1,016	$1,046	$1,078
INTEREST EXPENSE	3.0%	$6,360	$6,551	$6,747	$6,949	$7,158	$7,373	$7,594	$7,822	$8,056	$8,298	$8,547	$8,803
LAB TEST	3.0%	$15,832	$16,307	$16,796	$17,300	$17,819	$18,354	$18,904	$19,471	$20,056	$20,657	$21,277	$21,915
LEGAL & AUDITING	3.0%	$28,933	$29,801	$30,695	$31,615	$32,564	$33,541	$34,547	$35,583	$36,651	$37,750	$38,883	$40,049
MISCELLANEOUS	3.0%	$603	$621	$640	$659	$679	$699	$720	$741	$764	$787	$810	$835
NEW CONNECT SUPPLIES	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OFFICE SUPPLIES	3.0%	$548	$564	$581	$598	$616	$635	$654	$674	$694	$715	$736	$758
PAGERS & CELL PHONE	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
PAYROLL TAXES	3.0%	$37,852	$38,988	$40,157	$41,362	$42,603	$43,881	$45,197	$46,553	$47,950	$49,388	$50,870	$52,396
PERMITS	3.0%	$2,214	$2,280	$2,349	$2,419	$2,492	$2,567	$2,644	$2,723	$2,805	$2,889	$2,975	$3,065
PLANT EQUIP REP & MAINT	3.0%	$13,005	$13,395	$13,797	$14,211	$14,637	$15,076	$15,529	$15,994	$16,474	$16,968	$17,478	$18,002
PLANT SUPPLIES	3.0%	$4,634	$4,773	$4,916	$5,063	$5,215	$5,372	$5,533	$5,699	$5,870	$6,046	$6,227	$6,414
POSTAGE	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SALARIES	3.0%	$84,182	$86,707	$89,308	$91,988	$94,747	$97,590	$100,517	$103,533	$106,639	$109,838	$113,133	$116,527
SHOP SUPPLIES	3.0%	$8	$8	$8	$9	$9	$9	$9	$10	$10	$10	$11	$11
SLUDGE REMOVAL	3.0%	$17,018	$17,529	$18,055	$18,597	$19,154	$19,729	$20,321	$20,931	$21,558	$22,205	$22,871	$23,558
SUPPLIES/MAINTENANCE	3.0%	$5,639	$5,808	$5,982	$6,162	$6,347	$6,537	$6,733	$6,935	$7,143	$7,357	$7,578	$7,806
TELEPHONE	3.0%	$1,800	$1,854	$1,910	$1,967	$2,026	$2,087	$2,149	$2,214	$2,280	$2,349	$2,419	$2,492
TELEPHONE- PLANT	3.0%	$4,552	$4,689	$4,829	$4,974	$5,123	$5,277	$5,435	$5,598	$5,766	$5,939	$6,117	$6,301
UNIFORMS & BOOTS	3.0%	$1,014	$1,045	$1,076	$1,108	$1,142	$1,176	$1,211	$1,248	$1,285	$1,324	$1,363	$1,404
SCWWA Nutrient Costs, DCWA Share	0.0%	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5	Table 5
User Charge Analysis Services	5.0%	$0	$4,306	$0	$0	$4,747	$0	$0	$5,233	$0	$0	$5,770	$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		**$561,885**	**$574,463**	**$578,678**	**$587,454**	**$601,240**	**$605,803**	**$615,393**	**$630,504**	**$635,444**	**$645,923**	**$662,486**	**$667,833**
Net Income (or Loss)		$58,973	$15,201	$318,714	$124,400	$122,486	$163,742	$168,132	$165,034	$174,628	$153,217	$152,060	$162,596
Working Capital Goal: 50% In Dollars, That is:		$280,943	$287,231	$289,339	$293,727	$300,620	$302,902	$307,696	$315,252	$317,722	$322,961	$331,243	$333,917

Notes: The yellow highlighted cost items above will rise due to inflation and due to the additional cost of serving new customers, if there are any. Additionally, the gold highlighted costs for depreciation would normally not be included in rate calculations. But the depreciation amounts were used as a funding source for CIP and debt in Table 5.

Table 5 - Capital Improvement Program (CIP)

Dinwiddie, VA, Courthouse, 2019 Sewer Rates Model 4

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

	Test Year	Analysis Year	Years Following the Analysis Year (for Which Improvement Projects, Costs, Funding, etc. Have Been Projected)									
	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	7/1/18	7/1/19	7/1/20	7/1/21	7/1/22	7/1/23	7/1/24	7/1/25	7/1/26	7/1/27	7/1/28	7/1/29
Planned Spending, Cash-paid Portion of Projects (CIP costs to be funded from reserves are shown here.)												
None	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cash-paid Portion of Projects	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total CIP Costs	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Debt Repayment												
Existing Debt Payments (Following is debt that was initiated during the test year or earlier.)												
SCWWA Nutrient Costs, Dinwiddie's Share	$0	$0	$24,675	$25,850	$25,850	$25,850	$25,850	$25,850	$25,850	$0	$0	$0
"PAC" Project Debt	$0	$0	$0	$0	$0	$32,192	$32,192	$32,192	$32,192	$32,192	$32,192	$32,192
Dinwiddie's portion of debt service (ARWA)	$256,000	$256,000	$255,657	$254,896	$253,878	$254,204	$254,532	$252,460	$252,460	$252,460	$252,474	$252,474
Series 2016B Bond	$198,989	$196,481	$199,297	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Debt Payments	$454,989	$452,481	$479,629	$280,746	$279,728	$312,246	$312,575	$310,503	$310,503	$284,653	$284,667	$284,667
Total CIP-related Payouts	**$454,989**	**$452,481**	**$479,629**	**$280,746**	**$279,728**	**$312,246**	**$312,575**	**$310,503**	**$310,503**	**$284,653**	**$284,667**	**$284,667**
(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	-$454,989	-$916,570	-$896,920	-$789,446	-$683,224	-$561,529	-$435,852	-$311,446	-$169,874	-$23,801	$120,982
Working Capital Transferred in	$0	$0	$231,464	$120,012	$115,593	$161,460	$163,337	$157,479	$172,158	$147,977	$143,779	$159,923
Debt and CIP Reserves Interest Earned (or Paid)	$0	-$9,100	-$18,331	-$17,938	-$15,789	-$13,664	-$11,231	-$8,717	-$6,229	-$3,397	-$476	$2,420
DEPRECIATION From Table 4	$0	$0	$286,146	$286,146	$286,146	$286,146	$286,146	$286,146	$286,146	$286,146	$286,146	$286,146
Total Available Funds	**$0**	**-$464,089**	**-$417,291**	**-$508,700**	**-$403,497**	**-$249,283**	**-$123,277**	**-$944**	**$140,629**	**$260,852**	**$405,648**	**$569,470**
Outcomes (This CIP spending and funding plan will result in the following cash needs and ending balances each year.)												
Total Available Funds	**$0**	**-$464,089**	**-$417,291**	**-$508,700**	**-$403,497**	**-$249,283**	**-$123,277**	**-$944**	**$140,629**	**$260,852**	**$405,648**	**$569,470**
Total CIP-related Payouts	**$454,989**	**$452,481**	**$479,629**	**$280,746**	**$279,728**	**$312,246**	**$312,575**	**$310,503**	**$310,503**	**$284,653**	**$284,667**	**$284,667**
Debt and CIP Reserves Ending Balances	**-$454,989**	**-$916,570**	**-$896,920**	**-$789,446**	**-$683,224**	**-$561,529**	**-$435,852**	**-$311,446**	**-$169,874**	**-$23,801**	**$120,982**	**$284,803**

Notes: The Authority plans no new CIP for the Courthouse Sewer Service Area. This service area has existing debt but those payments will drop by about 40 percent next year.

Table 10 - Initial Rate Adjustments and Resulting Revenues

Dinwiddie, VA, Courthouse, 2019 Sewer Rates Model 4

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.

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. 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
Courthouse Commercial C2 (3/4 Inch)	0	999	$258	$6.70	0.000	$2.23	$0	$258
	1,000	1,999	$66	$6.70	0.000	$2.23	$0	$66
	2,000	2,999	$66	$6.70	0.000	$2.23	$0	$66
	3,000	3,999	$66	$6.70	0.000	$2.23	$0	$66
	4,000	4,999	$66	$6.70	0.000	$2.23	$0	$66
	5,000	5,999	$79	$6.70	0.000	$2.23	$0	$79
	6,000	6,999	$60	$6.70	0.000	$2.23	$0	$60
	7,000	7,999	$60	$6.70	0.000	$2.23	$0	$60
	8,000	8,999	$74	$6.70	0.000	$2.23	$0	$74
	9,000	9,999	$103	$6.70	0.000	$2.23	$0	$103
	10,000	14,999	$173	$6.70	0.000	$2.23	$0	$173
	15,000	19,999	$78	$6.70	0.000	$2.23	$0	$79
	20,000	24,999	$73	$6.70	0.000	$2.23	$0	$73

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
Courthouse Commercial C4 (1 Inch)	0	999	$95	$6.70	0.000	$2.23	$0	$95
	1,000	1,999	$132	$6.70	0.000	$2.23	$0	$132
	2,000	2,999	$132	$6.70	0.000	$2.23	$0	$132
	3,000	3,999	$132	$6.70	0.000	$2.23	$0	$132
	4,000	4,999	$132	$6.70	0.000	$2.23	$0	$132
	5,000	5,999	$132	$6.70	0.000	$2.23	$0	$132
	6,000	6,999	$132	$6.70	0.000	$2.23	$0	$132
	7,000	7,999	$132	$6.70	0.000	$2.23	$0	$132
	8,000	8,999	$132	$6.70	0.000	$2.23	$0	$132
	9,000	9,999	$132	$6.70	0.000	$2.23	$0	$132
	10,000	14,999	$658	$6.70	0.000	$2.23	$1	$659
	15,000	19,999	$658	$6.70	0.000	$2.23	$1	$659
	20,000	24,999	$612	$6.70	0.000	$2.23	$1	$613
	25,000	34,999	$1,380	$6.70	0.000	$2.23	$1	$1,381
	35,000	44,999	$854	$6.70	0.000	$2.23	$1	$855
	45,000	54,999	$668	$6.70	0.000	$2.23	$1	$669
	55,000	79,999	$1,604	$6.70	0.000	$2.23	$2	$1,606
	80,000	104,999	$1,569	$6.70	0.000	$2.23	$2	$1,570
	105,000	129,999	$1,345	$6.70	0.000	$2.23	$1	$1,346
	130,000	154,999	$1,038	$6.70	0.000	$2.23	$1	$1,039
	155,000	209,999	$1,626	$6.70	0.000	$2.23	$2	$1,627
	210,000	304,999	$777	$6.70	0.000	$2.23	$1	$778
	305,000	504,999	$310	$6.70	0.000	$2.23	$0	$311
Courthouse Commercial C6 (1.5 Inch)	0	999	$1,378	$6.70	0.000	$2.23	$0	$1,378
	1,000	1,999	$0	$6.70	0.000	$2.23	$0	$0
	2,000	2,999	$0	$6.70	0.000	$2.23	$0	$0
	3,000	3,999	$0	$6.70	0.000	$2.23	$0	$0
Courthouse Commercial CC (Non-metered)	0	999	$1,437	$15.24	0.000	$0.00	$2	$1,439
	1,000	1,999	$0	$15.24	0.000	$0.00	$0	$0
	2,000	2,999	$0	$15.24	0.000	$0.00	$0	$0
	3,000	3,999	$0	$15.24	0.000	$0.00	$0	$0
Courthouse Commercial CM (Non-metered)	0	999	$575	$15.24	0.000	$0.00	$1	$576
	1,000	1,999	$0	$15.24	0.000	$0.00	$0	$0
	2,000	2,999	$0	$15.24	0.000	$0.00	$0	$0
	3,000	3,999	$0	$15.24	0.000	$0.00	$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
Courthouse Residential CR (Non-metered)	0	999	$5,771	$15.24	0.000	$0.00	$10	$5,781
	1,000	1,999	$0	$15.24	0.000	$0.00	$0	$0
	2,000	2,999	$0	$15.24	0.000	$0.00	$0	$0
	3,000	3,999	$0	$15.24	0.000	$0.00	$0	$0
Courthouse Residential CN (Non-metered)	0	999	$575	$15.24	0.000	$0.00	$1	$576
	1,000	1,999	$0	$15.24	0.000	$0.00	$0	$0
	2,000	2,999	$0	$15.24	0.000	$0.00	$0	$0
	3,000	3,999	$0	$15.24	0.000	$0.00	$0	$0
County School SD CE (1.5 Inch)	0	999	$181	$15.24	0.000	$0.00	$0	$181
	1,000	1,999	$66	$15.24	0.000	$0.00	$0	$66
	2,000	2,999	$66	$15.24	0.000	$0.00	$0	$66
	3,000	3,999	$66	$15.24	0.000	$0.00	$0	$66
	4,000	4,999	$66	$15.24	0.000	$0.00	$0	$66
	5,000	5,999	$66	$15.24	0.000	$0.00	$0	$66
	6,000	6,999	$66	$15.24	0.000	$0.00	$0	$66
	7,000	7,999	$66	$15.24	0.000	$0.00	$0	$66
	8,000	8,999	$66	$15.24	0.000	$0.00	$0	$66
	9,000	9,999	$66	$15.24	0.000	$0.00	$0	$66
	10,000	14,999	$427	$15.24	0.000	$0.00	$0	$427
	15,000	19,999	$299	$15.24	0.000	$0.00	$0	$299
	20,000	24,999	$390	$15.24	0.000	$0.00	$0	$390
	25,000	34,999	$591	$15.24	0.000	$0.00	$0	$591
	35,000	44,999	$537	$15.24	0.000	$0.00	$0	$537
	45,000	54,999	$892	$15.24	0.000	$0.00	$0	$892
	55,000	79,999	$152	$15.24	0.000	$0.00	$0	$152

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
County School SD CS (1.5 Inch)	0	999	$355	$15.24	0.000	$0.00	$0	$355
	1,000	1,999	$126	$15.24	0.000	$0.00	$0	$126
	2,000	2,999	$126	$15.24	0.000	$0.00	$0	$126
	3,000	3,999	$126	$15.24	0.000	$0.00	$0	$126
	4,000	4,999	$126	$15.24	0.000	$0.00	$0	$126
	5,000	5,999	$126	$15.24	0.000	$0.00	$0	$126
	6,000	6,999	$126	$15.24	0.000	$0.00	$0	$126
	7,000	7,999	$126	$15.24	0.000	$0.00	$0	$126
	8,000	8,999	$126	$15.24	0.000	$0.00	$0	$126
	9,000	9,999	$126	$15.24	0.000	$0.00	$0	$126
	10,000	14,999	$628	$15.24	0.000	$0.00	$0	$628
	15,000	19,999	$731	$15.24	0.000	$0.00	$0	$731
	20,000	24,999	$556	$15.24	0.000	$0.00	$0	$556
	25,000	34,999	$1,113	$15.24	0.000	$0.00	$0	$1,113
	35,000	44,999	$1,223	$15.24	0.000	$0.00	$0	$1,223
	45,000	54,999	$1,057	$15.24	0.000	$0.00	$0	$1,057
	55,000	79,999	$2,927	$15.24	0.000	$0.00	$0	$2,927
	80,000	104,999	$2,304	$15.24	0.000	$0.00	$0	$2,304
	105,000	129,999	$809	$15.24	0.000	$0.00	$0	$809
	130,000	154,999	$441	$15.24	0.000	$0.00	$0	$441
	155,000	209,999	$719	$15.24	0.000	$0.00	$0	$719
	210,000	304,999	$310	$15.24	0.000	$0.00	$0	$310

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
County School SD CW (1.5 Inch)	0	999	$181	$15.24	0.000	$0.00	$0	$181
	1,000	1,999	$66	$15.24	0.000	$0.00	$0	$66
	2,000	2,999	$66	$15.24	0.000	$0.00	$0	$66
	3,000	3,999	$66	$15.24	0.000	$0.00	$0	$66
	4,000	4,999	$66	$15.24	0.000	$0.00	$0	$66
	5,000	5,999	$66	$15.24	0.000	$0.00	$0	$66
	6,000	6,999	$66	$15.24	0.000	$0.00	$0	$66
	7,000	7,999	$66	$15.24	0.000	$0.00	$0	$66
	8,000	8,999	$66	$15.24	0.000	$0.00	$0	$66
	9,000	9,999	$66	$15.24	0.000	$0.00	$0	$66
	10,000	14,999	$329	$15.24	0.000	$0.00	$0	$329
	15,000	19,999	$552	$15.24	0.000	$0.00	$0	$552
	20,000	24,999	$357	$15.24	0.000	$0.00	$0	$357
	25,000	34,999	$901	$15.24	0.000	$0.00	$0	$901
	35,000	44,999	$277	$15.24	0.000	$0.00	$0	$277
	45,000	54,999	$111	$15.24	0.000	$0.00	$0	$111
	55,000	79,999	$355	$15.24	0.000	$0.00	$0	$355
Total Rate Revenue at Current Rates			$47,355	Total Rate Revenue at Modeled Rates			$33	
				Total Blended Rate Revenues for the Year				$47,388

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

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

Capacity Indicators	Test Year Starting 7/1/18	0 Year Starting 7/1/19	1st Year Starting 7/1/20	2nd Year Starting 7/1/21	3rd Year Starting 7/1/22	4th Year Starting 7/1/23	5th Year Starting 7/1/24	6th Year Starting 7/1/25	7th Year Starting 7/1/26	8th Year Starting 7/1/27	9th Year Starting 7/1/28	10th Year Starting 7/1/29
Estimated Operating Ratio: Current Rates First Column, Modeled Rates After That	1.10	1.03	1.55	1.21	1.20	1.27	1.27	1.26	1.27	1.24	1.23	1.24

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	0.00	0.00	0.48	0.43	0.41	0.52	0.52	0.51	0.55	0.52	0.51	0.56

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 6/30/19	Balance Ending on 6/30/20	Balance Ending on 6/30/21	Balance Ending on 6/30/22	Balance Ending on 6/30/23	Balance Ending on 6/30/24	Balance Ending on 6/30/25	Balance Ending on 6/30/26	Balance Ending on 6/30/27	Balance Ending on 6/30/28	Balance Ending on 6/30/29	Balance Ending on 6/30/30
Cash and Cash Equivalents	$186,888	$202,089	$289,339	$293,727	$300,620	$302,902	$307,696	$315,252	$317,722	$322,961	$331,243	$333,917
Other Liquid Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Undedicated Cash Assets	$186,888	$202,089	$289,339	$293,727	$300,620	$302,902	$307,696	$315,252	$317,722	$322,961	$331,243	$333,917
Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	$186,888	$202,089	$280,659	$276,368	$274,368	$268,157	$264,229	$262,596	$256,714	$253,119	$251,821	$253,854
Repair & Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt and CIP Reserves	-$454,989	-$916,570	-$896,920	-$789,446	-$683,224	-$561,529	-$435,852	-$311,446	-$169,874	-$23,801	$120,982	$284,803
Sum of All Reserves	-$268,101	-$714,480	-$607,581	-$495,720	-$382,604	-$258,628	-$128,155	$3,805	$147,848	$299,161	$452,225	$618,720