Water and Sewer Rate Analysis

Supplement 1 to the Report Dated June 8, 2021

Richlands, Virginia

Prepared August 30, 2023

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What Led to This Report

In 2021, the town of Richlands, later called "the Town" or "you," hired GettingGreatRates.com, later called "me," "we" or "I," to perform rate analysis of its water and sewer utilities; to produce a report of my findings and recommendations; and to provide guidance on rate setting. I did that and you followed up with rate adjustments.

Following that your engineering firm has continued to develop system improvement plans, designs, cost estimates and more. You have applied for grants and loans. Agencies have offered funding packages. As cost estimates were further developed recently, the grant and loan agencies have adjusted their funding packages. All of this is a normal process. But cost-wise, it has probably been upset markedly by Covid-19 and the resulting inflationary and other effects that followed that. What engineer knew Covid was coming and what results it would bring?

Because many things are now different compared to when I did the first analyses and you first adjusted rates, you now see a need to have me update my analyses. You rehired me to do that updating. This supplemental report is the result of that work.

This report is a supplement to the original report. I used the original models as the starting place for assessing your new situation and the rates needed to fund the system improvements and ongoing costs of the utilities. The models included in this report are the original models, just revised to include the new and different data and information.

Said simply, in 2021, I modeled the utilities' then current and projected future costs to arrive at rates and fees to assess to pay those costs and do it fairly. Some of that data and some assumptions have since changed, so I stripped the outdated data and assumptions from the original models and replaced them with recently solidified funding packages, tighter cost estimates, and new conditions. Finally, because several years have passed, I inflated the rates the revised models have now calculated (because they were calculating 2021 rates) to arrive at what those rates need to be now, in Fiscal Year 2024.

As to the structure of this report, it is brief. The goal of these analyses is limited – to find the rates needed now to pay for the new situation. Thus, many of the original models' tables are not included in this report. And I only discuss those things in this supplement that are different from the original report. Some issues for water rates also apply to sewer rates, so in the sewer rates section of the report when that is the situation, I just refer readers back to the water section of the report.

Issues

Everyone needs to keep in mind that you and I can only analyze and set rates based on the data available at the time and the assumptions made about the future at that time. No one can "crystal ball" the future, but rate setting must move ahead anyway. You did the right thing, the responsible thing, by setting rates based on information you had four years ago. You are doing the right thing now by reexamining rates based on better known data. As the future rolls out, examine rates periodically to be sure they are performing as needed and when they are not, and that certainly will happen, adjust them accordingly. Rate setting is always a work in progress.

There have been many changes since the original report I gave you, dated June 8, 2021. Most have the effect of pushing rates higher. Some go the other way.

- CIP costs are higher than originally estimated. But they have also been delayed two years. One somewhat offsets the other.
- Additional loan and grant funds have been secured and loan lengths have been extended, and interest rates reduced, reducing annual debt payments that otherwise would be required. Those partly offset each other.
- Bill effects of new rates are shown in Table 18 of each model, and Table 18B, page 41, which combines water and sewer bills. In brief, compared to the originally recommended rates, water bills now can go down slightly for about 1,500 gallons of use per month or less. Above that, they need to rise. Compared to the originally recommended rates, sewer bills now need to be higher for all volumes of use and much higher overall. And when water and sewer bills are combined (Table 18B), which is what most customers experience, the bill for 1,000 gallons or less must rise only slightly and bill increases are more for higher volumes of use. But even that is not a complete picture of the effect of new rates, mainly because most customers use less sewer service than the water service they use.
- The Town adopted rates in different rate structures than those which I recommended, which is acceptable, but it is a factor in deciding how to model rates for the supplemental report. I chose to stick with the structures I originally recommended rather than try to incorporate the structures you adopted. This way, you will know what rates I recommend and you can choose to adopt those rates. Or you can adjust the structure of the newly recommended rates in the same way as you adjusted structures the first time. How you do that is up to you. There is not a right or wrong answer.

The report covers two models, one for water and one for sewer. Following are the model names and descriptions:

- "Richlands, VA, 2020 Water Rates Model 1, CIP Revised in FY 2024," later just called, "Revised Water CIP Model," depicts funding the new water plant, at a higher cost and with a different funding package than assumed in 2021.
- "Richlands, VA, 2020 Sewer Rates Model 1," later just called, "Revised Sewer CIP Model," is the same as the above water model, except it is for sewer.

In the report and printouts of the models that will follow, I will cover the water model and rates first and the sewer model and rates after that. I will be as brief as possible, so if you want to know more about principles, methods, structuring theory, previous recommendations, and other issues, please review the June 8, 2021, report.

Revised Water CIP Model Discussion

Tables 3 and 4, starting on page 16, come from the original model with only a bit of "wordsmithing." Some may wish to have that information for comparison to where the utilities are now, financially.

Capital Improvement Program (CIP) Costs, Loans and Grants

Table 5, page 19, which covers capital improvements, debt and grants, is where the big change drivers are. The Town's new Director of Finance, Ronnie Campbell, sent me critical data, so I could update CIP data in the models. That included new costs and amounts for system improvements, loans and loan terms, and grants; incomes and expenses expected for Fiscal Year 2024; and the current rates.

I updated CIP data in Table 5 accordingly. These changes revealed that the rates originally modeled are not appropriate now. Therefore, in Table 10, page 21, the main rate calculations table, I modeled new rates to generate enough revenue to pay the new costs, the system's ongoing operating costs, build appropriate reserves, and do it fairly.

Cost Sharing Among the Members of the Authority

The Town, plus Tazewell County and Cedar Bluff are members of the authority. They share authority costs on a set percentage basis. The County and Cedar Bluff cost shares for earlier costs are shown in Table 3, page 16. Their shares of debt for the system improvements are included in Table 5, in the "CIP Fund Sources" section. Thus, if the improvements are built soon and debt incurred during the "5th Year" of the Model, and debt repayment begins in the "6th Year" of the Model, those two members would begin contributing their shares of that debt payment. Whether the project happens on this schedule or not, whenever debt payments begin, that is when these two members' share payments should begin, unless the Authority has in place other arrangements.

Rate Adjustments Should Not Be Phased-in

In the models done in 2021, it was assumed the initial rate adjustments would be phased in over three years to ramp rates up to the revenue needed. Back then you had the "luxury" of easing into new rates. That time has passed. It is now time to collect the full share of revenue needed, so the modeled rates assume no phasing in. Rates need to go up in one "jump" and that needs to happen as soon as possible. To delay would put the utilities at financial risk.

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.

In the table, the AI calculation for the test year was at 1.17 percent. That means, such a customer paid 1.17 percent of their monthly household income to pay their monthly water bill. The national average is around 1.0 percent and that is considered affordable, so your current rates could reasonably be called slightly less affordable than average.

Under the modeled rates, by the sixth year when debt repayment will probably commence, this customer's AI will have risen to 2.27 percent. That means the bill for 5,000 gallons per month will rise markedly. After that, the AI is projected to rise slowly over the years.

Staff told me the VDH SRF Program considers affordability of the volume of use relevant to the individual borrowing utility. In your case, that is 3,528 gallons per month, not 5,000 gallons. Therefore, I calculated that Affordability Index, as well. That index was 0.91 percent in the test year and would by the sixth year would rise to 1.45 percent.

> 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. The current rates are far from satisfying such a criterion, but the future rates are well above it. Frankly, given these new circumstances, I would have expected you to qualify for more grant funding than 25 percent, but agencies have their eligibility criteria and there are many entities vying for limited funds. Eligibility is one thing. Having enough funds to cover all those that are eligible is another.

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 26, shows how customers' bills at different volumes of use and assumed to have a five-eighths inch meter will be affected by the modeled 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 for ratepayer attendees when you 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.

There is also a Table 18B which combines water and sewer bills. That is discussed in the sewer rates section.

Recommendations for Adopting the Revised Water CIP Model Rates

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

1. Tables A and B that follow this list state the modeled rates and fees.
2. The calculations assumed you will make these adjustments as soon as possible in Fiscal Year 2024, which is the current fiscal year. In the Model, that year is called, "4th Year Starting 7/1/23." Rate adjustment delay will slow down revenue generation and extreme delay could place the utility at risk. You would need to satisfy all Statutory requirements for making rate adjustments in advance of the adjustment date.
3. Approximately one full year after the initial rate adjustments in Fiscal Year 2024, increase the minimum and unit charges by 1.0 percent and do the same each following year. This 1.0 percent increase rate assumes inflation in the utility's operating budget (not including debt service, which has already been accounted for in the initial adjustments) will be 3.0 percent. Therefore, if budget inflation is greater than 3.0 percent, change the adjustment percentage accordingly. However, do not lower rates if the budget inflation factor drops to 2.0 percent or less. Instead, hold rates steady during such a year. Also note: This rate increase factor is different from future sewer rate adjustments that will be needed.
4. In addition to instructions for future adjustments in Bullet Point 3 above, examine the costs and incomes the utility experienced during the fifth year of the Model, and that you expect to experience in the sixth year (the projected budget), plus the balances that have accrued and are expected to accrue. Compare those items to the same items in Tables 3, 4, 5 and 17, of the Model.
    a) If all accrued close to and are expected to stay close to the values in the Model, raise all rates by 1.0 percent, as shown near the top of Table 3, page 16.
    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. From the fifth year on, once you have raised rates and fees by a cumulative 20 percent, have me or another rate analyst of your choice perform a new rate analysis, so rate structure and adequacy can be readjusted. (If all goes as modeled, that will be many years from now.) If your capital improvement costs and funding package turns out to be markedly different than modeled, you will need a new rate analysis or at least a model update at that time.

Table A: In-Town Water Rates From the Revised Water CIP Model

Table A: System Development Fees; Minimum and Unit Charges; With No Usage Allowance; Calculated by the Richlands, VA, 2020 Water Rates Model 1, CIP Revised in FY 2024

To fund revised and increased system improvements as well as current operating costs, adopt these rates as soon as possible in fiscal year 2024.

		In-Town			
Water Meter Size in Inches	Meter Type	Fee per New Tap for Peak Costs	Monthly Minimum Charge Each Meter Size	Usage Allowance in Gallons	Unit Charge per 1,000 Gallons
0.625	Displacement	$400	$10.19	0	$3.15
0.750	Displacement	$400	$10.19	0	$3.15
1.000	Displacement	$1,000	$13.03	0	$3.15
1.500	Displacement	$1,999	$17.77	0	$3.15
2.000	Displacement	$3,199	$23.45	0	$3.15
2.500	Displacement	$4,998	$31.98	0	$3.15
3.000	Singlet	$6,398	$38.61	0	$3.15
3.000	Compound, Class I	$6,398	$38.61	0	$3.15
3.000	Turbine, Class I	$6,997	$41.45	0	$3.15
4.000	Singlet	$9,996	$55.66	0	$3.15
4.000	Compound, Class I	$9,996	$55.66	0	$3.15
4.000	Turbine, Class I	$12,395	$67.03	0	$3.15
6.000	Singlet	$19,993	$103.03	0	$3.15
6.000	Compound, Class I	$19,993	$103.03	0	$3.15
6.000	Turbine, Class I	$25,990	$131.45	0	$3.15

Table B: Out-of-Town Water Rates From the Revised Water CIP Model

Table B: System Development Fees; Minimum and Unit Charges; With No Usage Allowance; Calculated by the Richlands, VA, 2020 Water Rates Model 1, CIP Revised in FY 2024					
To fund revised and increased system improvements as well as current operating costs, adopt these rates as soon as possible in fiscal year 2024.					
		Out-of-Town			
Water Meter Size in Inches	Meter Type	Fee per New Tap for Peak Costs	Monthly Minimum Charge Each Meter Size	Usage Allowance in Gallons	Unit Charge per 1,000 Gallons
0.625	Displacement	$533	$14.14	0	$4.37
0.750	Displacement	$533	$14.14	0	$4.37
1.000	Displacement	$1,333	$18.08	0	$4.37
1.500	Displacement	$2,666	$24.65	0	$4.37
2.000	Displacement	$4,265	$32.54	0	$4.37
2.500	Displacement	$6,664	$44.37	0	$4.37
3.000	Singlet	$8,530	$53.57	0	$4.37
3.000	Compound, Class I	$8,530	$53.57	0	$4.37
3.000	Turbine, Class I	$9,330	$57.51	0	$4.37
4.000	Singlet	$13,328	$77.23	0	$4.37
4.000	Compound, Class I	$13,328	$77.23	0	$4.37
4.000	Turbine, Class I	$16,527	$93.00	0	$4.37
6.000	Singlet	$26,657	$142.95	0	$4.37
6.000	Compound, Class I	$26,657	$142.95	0	$4.37
6.000	Turbine, Class I	$34,654	$182.39	0	$4.37

Water Section Closing

If you fund the new plant with the funding package presented, I recommend you adopt the rates calculated in the Revised Water CIP Model, which were discussed in several subsections above. Those rates are shown in Tables A and B immediately above. These rates are nearly in a cost-to-serve structure. 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 initial adjustments will result in a modest overall increase in water rate revenues and little change to the average residential customer's water bill. Future inflationary increases are projected to raise all bills by 1.0 percent per year.

Revised Sewer CIP Model Rates

Tables 3 and 4, starting on page 30, come from the original model and may be useful for comparison to where the utilities are now, financially.

Capital Improvement Program (CIP) Costs, Loans and Grants

Like the Water Model, Table 5, page 33, of the Sewer Model covers capital improvements, debt and grants. Sewer system improvements will be a much bigger drivers of higher rates than the water system improvements. Otherwise, I revised this Table 5 in the same ways as I revised the Water Model Table 5. Following that, in Table 10, page 35, I modeled new rates to generate enough revenue to pay the new costs, the system's ongoing operating costs, build appropriate reserves, and do it fairly.

Cost Sharing Among the Members of the Authority

The Town, plus Tazewell County and Cedar Bluff are members of the authority for sewer services, too. Cost sharing for sewer services is done much like that as for water service, but the share percentages are a bit different.

Rate Adjustments Should Not Be Phased-in

As with the new water rates, new sewer rates should be adopted as soon as possible.

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. In the table, the AI calculation for the test year was at 1.17 percent. (This is the same as the water rates AI because in 2021, the Town assessed the same rates for water and for sewer. That, by the way, is a structure I do not recommend because the utilities have different total costs and different cost structures, so rates should be tailored to each utility's circumstances.)

Under the modeled rates, by the sixth year when debt repayment will probably commence, this customer's AI will have risen to 4.16 percent. That means the bill for 5,000 gallons per month will rise markedly. After that, the AI is projected to rise significantly over the years.

The VDH SRF Program considers affordability of the volume of use relevant to the individual borrowing utility. In your case, that is 3,528 gallons per month, not 5,000 gallons. Therefore, I calculated that Affordability Index, as well. That index was 0.91 percent in the test year and would by the sixth year would rise to 2.96 percent.

Table 18, page 40, shows how customers' bills at different volumes of use and assumed to have a five-eighths inch meter will be affected by the modeled rates. There is also a Table 18B which combines water and sewer bills. That is discussed in the sewer rates section.

Recommendations for Adopting the Revised Sewer CIP Model Rates

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

1. Tables C and D that follow this list state the modeled rates and fees.
2. The calculations assumed you will make these adjustments as soon as possible in Fiscal Year 2024, which is the current fiscal year. In the Model, that year is called, "4th Year Starting 7/1/23." Rate adjustment delay will slow down revenue generation and extreme delay could place the utility at risk. You would need to satisfy all Statutory requirements for making rate adjustments in advance of the adjustment date.
3. Approximately one full year after the initial rate adjustments in Fiscal Year 2024, increase the minimum and unit charges by 4.0 percent and do the same each following year. This 4.0 percent increase rate assumes inflation in the utility's operating budget (not including debt service, which has already been accounted for in the initial adjustments) will be 3.0 percent. Therefore, if budget inflation is greater than 3.0 percent, change the adjustment percentage accordingly. However, even if there is no budget inflation for a year, do not drop the rate inflation factor below 1.0 percent. Also note: This rate increase factor is quite different from future water rate adjustments that will be needed.
4. In addition to instructions for future adjustments in Bullet Point 3 above, examine the costs and incomes the utility experienced during the fifth year of the Model, and that you expect to experience in the sixth year (the projected budget), plus the balances that have accrued and are expected to accrue. Compare those items to the same items in Tables 3, 4, 5 and 17, of the Model.
    a) If all accrued close to and are expected to stay close to the values in the Model, raise all rates by 4.0 percent, as shown near the top of Table 3, page 30.
    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. From the fifth year on, once you have raised rates and fees by a cumulative 20 percent, have me or another rate analyst of your choice perform a new rate analysis, so rate structure and adequacy can be readjusted. (If all goes as modeled, that will happen about five years from now.) If your capital improvement costs and funding package turns out to be markedly different than modeled, you will need a new rate analysis or at least a model update at that time.

Table C: In-Town Sewer Rates From the Revised Sewer CIP Model

Table C: System Development Fees; Minimum and Unit Charges; With No Usage Allowance; Calculated by the Richlands, VA, 2020 Sewer Rates Model 1, CIP Revised in FY 2024

To fund revised and increased system improvements as well as current operating costs, adopt these rates as soon as possible in fiscal year 2024.

		In-Town			
Water Meter Size in Inches	Meter Type	Fee per New Tap for Peak Costs	Monthly Minimum Charge Each Meter Size	Usage Allowance in Gallons	Unit Charge per 1,000 Gallons
0.625	Displacement	$300	$23.25	0	$7.17
0.750	Displacement	$300	$23.25	0	$7.17
1.000	Displacement	$750	$25.92	0	$7.17
1.500	Displacement	$1,500	$30.39	0	$7.17
2.000	Displacement	$2,400	$35.75	0	$7.17
2.500	Displacement	$3,750	$43.78	0	$7.17
3.000	Singlet	$4,800	$50.03	0	$7.17
3.000	Compound, Class I	$4,800	$50.03	0	$7.17
3.000	Turbine, Class I	$5,250	$52.71	0	$7.17
4.000	Singlet	$7,500	$66.10	0	$7.17
4.000	Compound, Class I	$7,500	$66.10	0	$7.17
4.000	Turbine, Class I	$9,300	$76.82	0	$7.17
6.000	Singlet	$15,000	$110.75	0	$7.17
6.000	Compound, Class I	$15,000	$110.75	0	$7.17
6.000	Turbine, Class I	$19,500	$137.54	0	$7.17

Table D: Out-of-Town Sewer Rates From the Revised Sewer CIP Model

Table D: System Development Fees; Minimum and Unit Charges; With No Usage Allowance; Calculated by the Richlands, VA, 2020 Sewer Rates Model 1, CIP Revised in FY 2024

To fund revised and increased system improvements as well as current operating costs, adopt these rates as soon as possible in fiscal year 2024.

		Out-of-Town			
Water Meter Size in Inches	Meter Type	Fee per New Tap for Peak Costs	Monthly Minimum Charge Each Meter Size	Usage Allowance in Gallons	Unit Charge per 1,000 Gallons
0.625	Displacement	$400	$36.26	0	$11.19
0.750	Displacement	$400	$36.26	0	$11.19
1.000	Displacement	$1,000	$40.44	0	$11.19
1.500	Displacement	$2,000	$47.40	0	$11.19
2.000	Displacement	$3,200	$55.76	0	$11.19
2.500	Displacement	$5,000	$68.29	0	$11.19
3.000	Singlet	$6,400	$78.04	0	$11.19
3.000	Compound, Class I	$6,400	$78.04	0	$11.19
3.000	Turbine, Class I	$7,000	$82.22	0	$11.19
4.000	Singlet	$10,000	$103.11	0	$11.19
4.000	Compound, Class I	$10,000	$103.11	0	$11.19
4.000	Turbine, Class I	$12,400	$119.82	0	$11.19
6.000	Singlet	$20,000	$172.75	0	$11.19
6.000	Compound, Class I	$20,000	$172.75	0	$11.19
6.000	Turbine, Class I	$26,000	$214.53	0	$11.19

Sewer Section Closing

Rates for water and sewer both need to rise, but sewer rates need to go up much more. Otherwise, my recommendations are to handle sewer rates as I recommended for water rates.

Richlands, VA, 2020 Water Rates Model 1, CIP Revised in FY 2024

This model does several things. It uses recently revised system improvement costs and a revised package of DEQ grants and loans to arrive at the rates now needed to fund the system's operating costs, along with the recently refined improvement costs. And, reserves still need to be built up, so the modeled rates do that, too.

August 30, 2023

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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 3 - Operating Incomes and Basic User Data

Richlands, VA, 2020 Water Rates Model 1, CIP Revised in FY 2024

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)

$30,149 Income used by the VDH SRF Loan Program

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

2 Number new Water connections made during test year

$400 Average Water tap or installation fee assessed during the test year

This model is programmed for rates to be reset in the "Analysis Year," also called the "0 Year" column below (heading highlighted blue). Revenues will be collected at the now-current rates for the first part of the analysis year and the modeled rates for the last part of the analysis year. Thus, the revenues shown 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			Analysis Year	Years Following the Analysis Year (for Which Results Have Been Projected)									
(First year balances and incomes are actual, subsequent years are 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
Rate Increases Projected for Future Years	N.A.	N.A.	N.A.		1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
				The row above shows the rate at which user charge fees should be increased for each year beyond the initial rate adjustment year. Unless stated otherwise, these should be across-the-board increases to all rates and fees and that should continue until a new rate analysis is done.									
Average Number of Customers	N.A.	2,495	2,497	2,499	2,501	2,503	2,505	2,507	2,509	2,511	2,513	2,515	2,517
Customers Added or Lost (-) Each Year	N.A.	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Customer Growth or Loss (-) Rate	N.A.	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%
Actual (Test Year) and Projected Service, in Gallons	N.A.	155,733,869	155,858,701	155,983,534	156,108,366	156,233,199	156,358,032	156,482,864	156,607,697	156,732,529	156,857,362	156,982,195	157,107,027
How User Charge Fees Were Calculated, Accounting for New Customers and Future Rate Increases													
Actual or Calculated Sales Revenues		$864,354	$864,144	$787,351	$795,861	$804,463	$813,157	$821,944	$830,826	$839,803	$848,877	$858,048	$867,317
Additional Sales Revenues From New Customers			$2	$630	$637	$643	$649	$656	$662	$669	$676	$682	$689
Total Calculated Revenues (User Charge Fees)		$864,354	$864,146	$787,981	$796,498	$805,106	$813,806	$822,600	$831,488	$840,472	$849,552	$858,730	$868,007
Operating Incomes													
User Charge Fees (Tables 10, 12, 12B, 15, 15B, 16, 16B)	N.A.	$822,551	$822,352	$749,872	$757,977	$766,168	$774,448	$782,816	$791,275	$799,824	$808,465	$817,199	$826,027
Late Payment Charge	N.A.	$13,479	$13,490	$13,501	$13,512	$13,523	$13,533	$13,544	$13,555	$13,566	$13,576	$13,587	$13,598
New Water Taps or Connections (Current Rate Structure)	% Above	$800	$798	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Meter Size-based System Development Fees (Tables 13, 14)	% Above	$0	$2	$800	$808	$816	$824	$832	$840	$849	$857	$866	$875
Interest Income	N.A.	$3,172	$5,454	$5,663	$5,788	$7,064	$7,308	$7,459	$7,666	$7,674	$7,523	$7,098	$6,273
CEDAR BLUFF WATER COLL	N.A.	$67,524	$67,524	$69,014	$84,225	$87,134	$88,943	$91,409	$109,378	$111,350	$114,046	$117,535	$119,684
CEDAR BLUFF-Wat Debt	N.A.	$996	$996	$996	$996	$996	$996	$996	$996	$996	$996	$996	$996
CONTRACT WORK-SEW/WAT LIN	N.A.	$406	$406	$406	$406	$406	$406	$406	$406	$406	$406	$406	$406
CONTRACT WORK-WATER PLANT	N.A.	$57	$57	$57	$57	$57	$57	$57	$57	$57	$57	$57	$57
SALE OF SALVAGE & SURPLUS	N.A.	$711	$711	$711	$711	$711	$711	$711	$711	$711	$711	$711	$711
SERVICE CHARGES	N.A.	$4,964	$4,964	$4,964	$4,964	$4,964	$4,964	$4,964	$4,964	$4,964	$4,964	$4,964	$4,964
TAZ. PSA WATER COLL (26%), Additional Revenues in Table 5	N.A.	$478,710	$478,710	$489,273	$597,110	$617,737	$630,557	$648,040	$654,521	$661,066	$667,677	$674,353	$681,097
TZ CO PSA-KENTS RIDGE (Cedar Bluff 10%), Additional Revenues in Table 5	N.A.	$2,598	$2,598	$2,655	$3,241	$3,353	$3,422	$3,517	$3,552	$3,588	$3,624	$3,660	$3,696
Revenue Reduction Due to COVID-19 (10% of User Charge Fees from March, 2020 to June, 2021)	N.A.	$0	-$27,412	-$74,987	$0	$0	$0	$0	$0	$0	$0	$0	$0
Revenue Loss (-) or Gain Because Rate Adjustments Made This Number of Months Late	12.0	$0	$0	$77,003	$77,003	$0	$0	$0	$0	$0	$0	$0	$0
Revenue Loss (-) Due to Conservation	5.0%	$0	$0	$0	-$405	-$410	-$414	-$418	-$423	-$427	-$432	-$437	-$441
Total Operating Incomes		**$1,395,968**	**$1,370,650**	**$1,339,927**	**$1,546,391**	**$1,502,518**	**$1,525,754**	**$1,554,333**	**$1,587,498**	**$1,604,622**	**$1,622,469**	**$1,640,995**	**$1,657,942**

Note: The yellow highlighted revenues above are fees collected from Richland's cooperating utilities and service areas. By agreements, those areas participate in the utility's costs by set percentages. Therefore, in future years these revenues were increased or decreased by the same percentage rates that Richland's operating and capital costs (debt) will increase or decrease each year.

Table 4 - Operating Costs and Net Income

Richlands, VA, 2020 Water Rates Model 1, CIP Revised in FY 2024

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
AUDITING & LEGAL	3.0%	$7,375	$7,596	$7,824	$8,059	$8,301	$8,550	$8,806	$9,070	$9,342	$9,623	$9,911	$10,209
BIRM WATER DEBT	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BIRMINGHAM LIFT STATION	3.0%	$135	$139	$144	$148	$152	$157	$162	$166	$171	$177	$182	$187
BUILDING REPAIRS/ADDITION	3.0%	$1,633	$1,682	$1,733	$1,784	$1,838	$1,893	$1,950	$2,008	$2,069	$2,131	$2,195	$2,261
CARD PROCESSING CHGS/FEES	3.0%	$2,143	$2,207	$2,274	$2,342	$2,412	$2,484	$2,559	$2,636	$2,715	$2,796	$2,880	$2,966
CASH OVER & SHORT	3.0%	$39	$40	$41	$43	$44	$45	$47	$48	$49	$51	$52	$54
CEDAR BLUFF BD-Wat Debt	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CHEMICALS / SUPPLIES-LAB	3.0%	$10,155	$10,460	$10,774	$11,097	$11,430	$11,773	$12,126	$12,490	$12,865	$13,250	$13,648	$14,057
CHEMICALS-TREATMENT	3.0%	$69,114	$71,245	$73,441	$75,704	$78,038	$80,443	$82,923	$85,478	$88,113	$90,828	$93,628	$96,513
CLEANING SUPPLIES	3.0%	$1,358	$1,399	$1,441	$1,484	$1,528	$1,574	$1,622	$1,670	$1,720	$1,772	$1,825	$1,880
CORR OF I/I SEWER LINE	3.0%	$220	$226	$233	$240	$247	$255	$262	$270	$278	$286	$295	$304
DEPRECIATION EXP-PROP	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DUES & MEMBERSHIP	3.0%	$780	$803	$828	$852	$878	$904	$931	$959	$988	$1,018	$1,048	$1,080
ELECTRICITY	3.0%	$127,491	$131,420	$135,471	$139,647	$143,952	$148,388	$152,962	$157,677	$162,536	$167,545	$172,709	$178,032
ENGINEERING	3.0%	$21,901	$22,558	$23,235	$23,932	$24,650	$25,390	$26,151	$26,936	$27,744	$28,576	$29,434	$30,317
EQUIPMENT	3.0%	$1,357	$1,398	$1,440	$1,483	$1,527	$1,573	$1,620	$1,669	$1,719	$1,770	$1,824	$1,878
EQUIPMENT MAINTENANCE	3.0%	$11,592	$11,939	$12,297	$12,666	$13,046	$13,438	$13,841	$14,256	$14,684	$15,124	$15,578	$16,045
FIRE HYD/LINES	3.0%	$3,775	$3,888	$4,005	$4,125	$4,249	$4,376	$4,508	$4,643	$4,782	$4,926	$5,073	$5,226
GARBAGE	3.0%	$335	$346	$356	$367	$378	$389	$401	$413	$425	$438	$451	$464
GRAVEL/STONE	3.0%	$1,316	$1,355	$1,396	$1,438	$1,481	$1,525	$1,571	$1,618	$1,666	$1,716	$1,768	$1,821
GROUNDS & FACILITIES	3.0%	$1,233	$1,270	$1,308	$1,347	$1,388	$1,429	$1,472	$1,516	$1,562	$1,609	$1,657	$1,707
HAND TOOLS & EQUIPMENT	3.0%	$618	$636	$655	$675	$695	$716	$738	$760	$783	$806	$830	$855
HEALTH DEPT ASSESSMENT	3.0%	$7,699	$7,930	$8,168	$8,413	$8,666	$8,926	$9,194	$9,469	$9,753	$10,046	$10,347	$10,658
INFRASTRUCTURE, DEPR.	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
INS AUTO	3.0%	$1,464	$1,508	$1,553	$1,600	$1,648	$1,697	$1,748	$1,801	$1,855	$1,910	$1,967	$2,027
INS GEN LIABILITY/BLDG	3.0%	$9,285	$9,563	$9,850	$10,145	$10,450	$10,763	$11,086	$11,419	$11,761	$12,114	$12,478	$12,852
INS HEALTH	3.0%	$127,986	$131,825	$135,780	$139,853	$144,049	$148,371	$152,822	$157,406	$162,129	$166,992	$172,002	$177,162
INS SOCIAL SECURITY	3.0%	$27,619	$28,448	$29,301	$30,180	$31,086	$32,018	$32,979	$33,968	$34,987	$36,037	$37,118	$38,231
INS WORKMENS COMPENSATION	3.0%	$11,098	$11,431	$11,774	$12,128	$12,491	$12,866	$13,252	$13,650	$14,059	$14,481	$14,915	$15,363
INS.-LIFE	3.0%	$2,142	$2,206	$2,272	$2,340	$2,410	$2,483	$2,557	$2,634	$2,713	$2,794	$2,878	$2,964
INS.-RETIREMENT PLAN	3.0%	$61,733	$63,585	$65,493	$67,458	$69,481	$71,566	$73,713	$75,924	$78,202	$80,548	$82,965	$85,453
INSTRUMENT CALIBRATION	3.0%	$850	$876	$902	$929	$957	$985	$1,015	$1,045	$1,077	$1,109	$1,142	$1,177
IT SERVICE/EQ	3.0%	$5,774	$5,947	$6,126	$6,309	$6,499	$6,694	$6,895	$7,101	$7,314	$7,534	$7,760	$7,993
LEASE PROP & RIGHT OF WAY	3.0%	$5,542	$5,708	$5,879	$6,056	$6,237	$6,425	$6,617	$6,816	$7,020	$7,231	$7,448	$7,671
MACHINERY AND EQUPMENT	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MAINS, LINES & VALVE MAINT	3.0%	$2,203	$2,270	$2,338	$2,408	$2,480	$2,554	$2,631	$2,710	$2,791	$2,875	$2,961	$3,050
METERS & RELATED EQ	3.0%	$44,372	$45,703	$47,074	$48,486	$49,941	$51,439	$52,982	$54,572	$56,209	$57,895	$59,632	$61,421
MISCELLANEOUS	3.0%	-$8,633	-$8,892	-$9,159	-$9,434	-$9,717	-$10,008	-$10,309	-$10,618	-$10,936	-$11,265	-$11,602	-$11,951

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
MISS UTILITY SERVICE FEES	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MOTOR FUEL & LUBRICATION	3.0%	$6,651	$6,850	$7,056	$7,267	$7,485	$7,710	$7,941	$8,180	$8,425	$8,678	$8,938	$9,206
NEW MAINS, LINES & VALVES	3.0%	$560	$577	$594	$612	$631	$650	$669	$689	$710	$731	$753	$776
NEW MANHOLES & SEWER LINE	3.0%	$130	$134	$138	$142	$147	$151	$156	$160	$165	$170	$175	$180
OFFICE FURN & COMPUTER EQ	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OFFICE FURN & FIXTURES	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OFFICE SUPPLIES	3.0%	$844	$869	$895	$922	$950	$978	$1,008	$1,038	$1,069	$1,101	$1,134	$1,168
PLANT PARTS	3.0%	$130	$134	$138	$142	$146	$151	$155	$160	$165	$169	$175	$180
POSTAGE	3.0%	$8,801	$9,072	$9,352	$9,640	$9,937	$10,243	$10,559	$10,885	$11,220	$11,566	$11,922	$12,290
PRINTING & BINDING	3.0%	$2,143	$2,207	$2,273	$2,342	$2,412	$2,484	$2,559	$2,636	$2,715	$2,796	$2,880	$2,966
SALARIES AND WAGES (Operations)	3.0%	$318,785	$328,348	$338,198	$348,344	$358,795	$369,559	$380,645	$392,065	$403,827	$415,941	$428,420	$441,272
SEWER	3.0%	$59,950	$61,749	$63,601	$65,509	$67,475	$69,499	$71,584	$73,731	$75,943	$78,221	$80,568	$82,985
SUPPLIES & MATERIALS	3.0%	$7,813	$8,047	$8,289	$8,537	$8,794	$9,057	$9,329	$9,609	$9,897	$10,194	$10,500	$10,815
TELEPHONE/INTERNET/COMM	3.0%	$6,484	$6,679	$6,879	$7,086	$7,298	$7,517	$7,743	$7,975	$8,214	$8,460	$8,714	$8,976
TOWN ATTORNEY	3.0%	$7,444	$7,668	$7,898	$8,135	$8,379	$8,630	$8,889	$9,156	$9,430	$9,713	$10,005	$10,305
TOWN BD-KENTS RIDGE	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOWN MANAGER SALARY	3.0%	$11,610	$11,958	$12,317	$12,687	$13,067	$13,459	$13,863	$14,279	$14,707	$15,148	$15,603	$16,071
TRAINING EXPENSE	3.0%	$543	$559	$576	$593	$611	$629	$648	$668	$688	$708	$730	$752
TZ CO PSA BD-KENTS RIDGE	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
UNIFORMS	3.0%	$1,156	$1,191	$1,227	$1,263	$1,301	$1,340	$1,380	$1,422	$1,465	$1,508	$1,554	$1,600
VEHICLE MAINT-INSIDE	3.0%	$4,838	$4,983	$5,133	$5,287	$5,446	$5,609	$5,777	$5,950	$6,129	$6,313	$6,502	$6,697
VEHICLE MAINT-OUTISDE	3.0%	$4,735	$4,877	$5,024	$5,175	$5,330	$5,490	$5,654	$5,824	$5,999	$6,179	$6,364	$6,555
VRS-VLDP	3.0%	$468	$482	$497	$512	$527	$543	$559	$576	$593	$611	$629	$648
WATER	3.0%	$2,216	$2,283	$2,351	$2,422	$2,494	$2,569	$2,646	$2,726	$2,808	$2,892	$2,978	$3,068
WATER DEBT BOND	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
WATER QUALITY TESTING	3.0%	$12,006	$12,366	$12,737	$13,119	$13,513	$13,918	$14,336	$14,766	$15,209	$15,665	$16,135	$16,619
Salaries and Wages (Billing, Office Staff)	3.0%	$51,496	$53,041	$54,632	$56,271	$57,959	$59,698	$61,489	$63,334	$65,234	$67,191	$69,206	$71,283
Salaries and Wages (Meter Reading)	3.0%	$20,289	$20,914	$21,559	$22,224	$22,909	$23,615	$24,343	$25,093	$25,866	$26,663	$27,485	$28,332
Payment in Lieu of Taxes (PILOT)	**3.0%**	**$0**	**$0**	**$0**	**$100,000**	**$103,000**	**$106,090**	**$109,273**	**$112,551**	**$115,927**	**$119,405**	**$122,987**	**$126,677**
One-time Reduction of R&R Annuity	0.0%	-$120,214	-$120,214	-$120,214	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Payment to R&R Reserve (Table 7)	0.0%	$120,214	$120,214	$120,214	$120,214	$120,214	$120,214	$120,214	$120,214	$120,214	$120,214	$120,214	$120,214
User Charge Analysis Services	5.0%	$0	$8,911	$0	$0	$9,824	$0	$0	$10,831	$0	$0	$11,942	$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		**$1,090,798**	**$1,132,619**	**$1,157,611**	**$1,412,751**	**$1,461,555**	**$1,491,886**	**$1,533,252**	**$1,586,697**	**$1,619,764**	**$1,664,986**	**$1,723,514**	**$1,759,563**
Net Income (or Loss)		$305,170	$238,031	$182,316	$133,640	$40,963	$33,868	$21,082	$802	-$15,141	-$42,517	-$82,519	-$101,621
Working Capital Goal: 50%	In Dollars, That is:	$545,399	$566,310	$578,805	$706,375	$730,778	$745,943	$766,626	$793,348	$809,882	$832,493	$861,757	$879,781

Notes: The Town will extend service to approximately 2 new customers per year. Therefore, the yellow highlighted cost items above will rise due to inflation and due to the additional cost of serving new customers.

Table 5 - Capital Improvement Program (CIP)

Richlands, VA, 2020 Water Rates Model 1, CIP Revised in FY 2024

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, Debt-paid Portion of Projects (CIP costs to be funded with loans are shown in this section.)												
Plant Upgrade Project, Revised Costs and Funding Package, 75% Loan, 25% Grant	$0	$0	$0	$0	$0	$0	$5,403,962	$0	$0	$0	$0	$0
Total Debt-paid Portion of Projects	$0	$0	$0	$0	$0	$0	$5,403,962	$0	$0	$0	$0	$0
Planned Spending, Grant-paid Portion of Projects (CIP costs to be grant-funded are shown here.)												
Plant Upgrade Project, Revised Costs and Funding Package, 75% Loan, 25% Grant	$0	$0	$0	$0	$0	$0	$415,000	$0	$0	$0	$0	$0
Total Grant-paid Portion of Projects	$0	$0	$0	$0	$0	$0	$415,000	$0	$0	$0	$0	$0
Planned Spending, Cash-paid Portion of Projects (CIP costs to be funded from reserves are shown here.)												
Plant Upgrade Project, Revised Costs and Funding Package, 75% Loan, 25% Grant	$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**	**$5,818,962**	**$0**	**$0**	**$0**	**$0**	**$0**
Debt Repayment												
Existing Debt Payments (Following is debt that was initiated during the test year or earlier.)												
None	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$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: 30 years at a 2.20% interest rate.)												
Loan Originated in 5th Year (Payment Estimated by SRF Program)								$247,972	$247,972	$247,972	$247,972	$247,972
Total Debt Payments	$0	$0	$0	$0	$0	$0	$0	$247,972	$247,972	$247,972	$247,972	$247,972
Total CIP-related Payouts	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$5,818,962**	**$247,972**	**$247,972**	**$247,972**	**$247,972**	**$247,972**

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

Table 5 - Capital Improvement Program (CIP)

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

	Analysis Year		Years Following the Analysis Year (for Which Improvement Projects, Costs, Funding, etc. Have Been Projected)									
	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	7/1/18	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
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	$289,405	$512,314	$692,380	$712,297	$743,104	$776,669	$792,601	$743,980	$694,387	$643,802	$592,205
Working Capital Transferred in	$289,405	$217,121	$169,820	$6,070	$16,561	$18,703	$399	$0	$0	$0	$0	$0
Debt and CIP Reserves Interest Earned (or Paid)	$0	$5,788	$10,246	$13,848	$14,246	$14,862	$15,533	$15,852	$14,880	$13,888	$12,876	$11,844
Annualized Share of Debt, Cedar Bluff (6%)	$0	$0	$0	$0	$0	$0	$0	$24,797	$24,797	$24,797	$24,797	$24,797
Annualized Share of Debt, TCPSA (20%)	$0	$0	$0	$0	$0	$0	$0	$158,702	$158,702	$158,702	$158,702	$158,702
Total Available Internal Funds	$289,405	$512,314	$692,380	$712,297	$743,104	$776,669	$792,601	$991,952	$942,359	$891,774	$840,177	$787,548
Grant and Loan Proceeds (External Funds)												
DEQ Grant	$0	$0	$0	$0	$0	$0	$415,000	$0	$0	$0	$0	$0
SWV W/WW Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CDBG Grant	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 3rd Year					$0	$0	$0	$0	$0	$0	$0	$0
Loan Originated in 4th Year						$0	$0	$0	$0	$0	$0	$0
Loan Originated in 5th Year (Payment Estimated by SRF Program)							$5,403,962	$0	$0	$0	$0	$0
Loan Originated in 6th Year								$0	$0	$0	$0	$0
Loan Originated in 7th Year									$0	$0	$0	$0
Loan Originated in 8th Year										$0	$0	$0
Loan Originated in 9th Year											$0	$0
Loan Originated in 10th Year												$0
Total Available External Funds	$0	$0	$0	$0	$0	$0	$5,818,962	$0	$0	$0	$0	$0
Total Available Funds	**$289,405**	**$512,314**	**$692,380**	**$712,297**	**$743,104**	**$776,669**	**$6,611,563**	**$991,952**	**$942,359**	**$891,774**	**$840,177**	**$787,548**
Outcomes (This CIP spending and funding plan will result in the following cash needs and ending balances each year.)												
Total Available Funds	**$289,405**	**$512,314**	**$692,380**	**$712,297**	**$743,104**	**$776,669**	**$6,611,563**	**$991,952**	**$942,359**	**$891,774**	**$840,177**	**$787,548**
Total CIP-related Payouts	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$5,818,962**	**$247,972**	**$247,972**	**$247,972**	**$247,972**	**$247,972**
Debt and CIP Reserves Ending Balances	**$289,405**	**$512,314**	**$692,380**	**$712,297**	**$743,104**	**$776,669**	**$792,601**	**$743,980**	**$694,387**	**$643,802**	**$592,205**	**$539,576**

Notes: In 2020, when the original rate analysis was done, it was known that Richlands needed major system improvements. The design engineer gave an estimate of those costs at that time, with many unknowns yet to be determined. Over the past three years, much has changed. The cost estimates are much firmer, and unfortunately higher, and DEQ has since offered revised grant and loan amounts. Those grants and loans for the revised costs are included in this table highlighted in gold.

Table 10 - Initial Rate Adjustments and Resulting Revenues

Richlands, VA, 2020 Water Rates Model 1, CIP Revised in FY 2024

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

Premium for Out-of-Town Service	133%	Conservation Rate Block Multiplier	100%	Other Multiplier	100%

6/30/20 Date when fees will first be collected at adjusted rates. Actual adjustment should occur one billing cycle earlier.

If there are no special costs to consider and before capacity costs are added, if appropriate, rates for a 5/8" meter would be in a "cost-to-serve" structure when: there is no usage allowance,
the base minimum charge is $7.97 Monthly, and the unit charge is set at $3.03 per 1,000 Gallons.

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

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

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Sales This Year at Current Rates	Basic Minimum Charge	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
In Town Residential	0	999	$63,506	$7.97	0.000	$3.03	$286	$63,792
	1,000	1,999	$92,116	$7.97	0.000	$3.03	$285	$92,401
	2,000	2,999	$147,385	$7.97	0.000	$3.03	$230	$147,615
	3,000	3,999	$106,097	$7.97	0.000	$3.03	$163	$106,260
	4,000	4,999	$65,717	$7.97	0.000	$3.03	$101	$65,818
	5,000	5,999	$39,240	$7.97	0.000	$3.03	$61	$39,301
	6,000	6,999	$23,201	$7.97	0.000	$3.03	$36	$23,237
	7,000	9,999	$30,220	$7.97	0.000	$3.03	$48	$30,268
	10,000	14,999	$14,662	$7.97	0.000	$3.03	$24	$14,686
	15,000	19,999	$5,380	$7.97	0.000	$3.03	$9	$5,389
	20,000	24,999	$2,523	$7.97	0.000	$3.03	$4	$2,527
	25,000	29,999	$1,704	$7.97	0.000	$3.03	$3	$1,707
	30,000	49,999	$3,371	$7.97	0.000	$3.03	$6	$3,377
	50,000	74,999	$1,249	$7.97	0.000	$3.03	$2	$1,251
	75,000	99,999	$675	$7.97	0.000	$3.03	$1	$677
	100,000	124,999	$320	$7.97	0.000	$3.03	$1	$321
	125,000	149,999	$189	$7.97	0.000	$3.03	$0	$190
	150,000	199,999	$224	$7.97	0.000	$3.03	$0	$225
	200,000	399,999	$37	$7.97	0.000	$3.03	$0	$37

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	Basic Minimum Charge	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
In Town Commercial	0	999	$17,823	$7.97	0.000	$3.03	$42	$17,865
	1,000	1,999	$7,787	$7.97	0.000	$3.03	$22	$7,809
	2,000	2,999	$8,737	$7.97	0.000	$3.03	$14	$8,751
	3,000	3,999	$5,184	$7.97	0.000	$3.03	$9	$5,193
	4,000	4,999	$4,397	$7.97	0.000	$3.03	$8	$4,405
	5,000	5,999	$4,026	$7.97	0.000	$3.03	$7	$4,033
	6,000	6,999	$3,558	$7.97	0.000	$3.03	$6	$3,565
	7,000	9,999	$9,848	$7.97	0.000	$3.03	$17	$9,865
	10,000	14,999	$13,151	$7.97	0.000	$3.03	$23	$13,174
	15,000	19,999	$9,251	$7.97	0.000	$3.03	$16	$9,268
	20,000	24,999	$7,298	$7.97	0.000	$3.03	$13	$7,310
	25,000	29,999	$5,333	$7.97	0.000	$3.03	$10	$5,342
	30,000	49,999	$15,044	$7.97	0.000	$3.03	$27	$15,071
	50,000	74,999	$11,609	$7.97	0.000	$3.03	$21	$11,630
	75,000	99,999	$6,840	$7.97	0.000	$3.03	$13	$6,852
	100,000	124,999	$5,583	$7.97	0.000	$3.03	$10	$5,593
	125,000	149,999	$4,504	$7.97	0.000	$3.03	$8	$4,512
	150,000	199,999	$7,890	$7.97	0.000	$3.03	$15	$7,904
	200,000	399,999	$20,254	$7.97	0.000	$3.03	$37	$20,291
	400,000	499,999	$5,730	$7.97	0.000	$3.03	$11	$5,741
	500,000	999,999	$12,875	$7.97	0.000	$3.03	$24	$12,898
Bulk Water	0	999	$0	$7.97	0.000	$3.03	$0	$0
	1,000	1,999	$0	$7.97	0.000	$3.03	$0	$0
	2,000	2,999	$0	$7.97	0.000	$3.03	$0	$0
	3,000	3,999	$0	$7.97	0.000	$3.03	$0	$0
	4,000	4,999	$0	$7.97	0.000	$3.03	$0	$0
	5,000	5,999	$0	$7.97	0.000	$3.03	$0	$0
	6,000	6,999	$0	$7.97	0.000	$3.03	$0	$0
	7,000	9,999	$0	$7.97	0.000	$3.03	$0	$0
	10,000	14,999	$0	$7.97	0.000	$3.03	$0	$0
	15,000	19,999	$0	$7.97	0.000	$3.03	$0	$0
	20,000	24,999	$0	$7.97	0.000	$3.03	$0	$0
	25,000	29,999	$0	$7.97	0.000	$3.03	$0	$0
	30,000	49,999	$0	$7.97	0.000	$3.03	$2	$2
	50,000	74,999	$0	$7.97	0.000	$3.03	$2	$2
	75,000	99,999	$0	$7.97	0.000	$3.03	$2	$2
	100,000	124,999	$0	$7.97	0.000	$3.03	$2	$2
	125,000	149,999	$0	$7.97	0.000	$3.03	$2	$2
	150,000	199,999	$0	$7.97	0.000	$3.03	$5	$5
	200,000	399,999	$0	$7.97	0.000	$3.03	$20	$20
	400,000	499,999	$0	$7.97	0.000	$3.03	$10	$10
	500,000	999,999	$0	$7.97	0.000	$3.03	$50	$50
	1,000,000	1,999,999	$798	$7.97	0.000	$3.03	$92	$890
	2,000,000	4,999,999	$399	$7.97	0.000	$3.03	$2	$401

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	Basic Minimum Charge	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
Water Plant Backwash	0	999	$0	$7.97	0.000	$3.03	$0	$0
	1,000	1,999	$0	$7.97	0.000	$3.03	$0	$0
	2,000	2,999	$36	$7.97	0.000	$3.03	$0	$36
	3,000	3,999	$36	$7.97	0.000	$3.03	$0	$36
	4,000	4,999	$36	$7.97	0.000	$3.03	$0	$36
	5,000	5,999	$36	$7.97	0.000	$3.03	$0	$36
	6,000	6,999	$36	$7.97	0.000	$3.03	$0	$36
	7,000	9,999	$108	$7.97	0.000	$3.03	$0	$108
	10,000	14,999	$180	$7.97	0.000	$3.03	$0	$180
	15,000	19,999	$180	$7.97	0.000	$3.03	$0	$180
	20,000	24,999	$180	$7.97	0.000	$3.03	$0	$180
	25,000	29,999	$180	$7.97	0.000	$3.03	$0	$180
	30,000	49,999	$718	$7.97	0.000	$3.03	$1	$719
	50,000	74,999	$898	$7.97	0.000	$3.03	$2	$899
	75,000	99,999	$898	$7.97	0.000	$3.03	$2	$899
	100,000	124,999	$854	$7.97	0.000	$3.03	$2	$855
	125,000	149,999	$785	$7.97	0.000	$3.03	$1	$787
	150,000	199,999	$1,571	$7.97	0.000	$3.03	$3	$1,574
	200,000	399,999	$6,283	$7.97	0.000	$3.03	$12	$6,294
	400,000	499,999	$3,141	$7.97	0.000	$3.03	$6	$3,147
	500,000	999,999	$15,175	$7.97	0.000	$3.03	$28	$15,203
	1,000,000	1,999,999	$5,435	$7.97	0.000	$3.03	$10	$5,444
Town Departments	0	999	$941	$7.97	0.000	$3.03	$2	$944
	1,000	1,999	$287	$7.97	0.000	$3.03	$1	$288
	2,000	2,999	$817	$7.97	0.000	$3.03	$1	$819
	3,000	3,999	$649	$7.97	0.000	$3.03	$1	$650
	4,000	4,999	$293	$7.97	0.000	$3.03	$0	$293
	5,000	5,999	$215	$7.97	0.000	$3.03	$0	$216
	6,000	6,999	$222	$7.97	0.000	$3.03	$0	$223
	7,000	7,999	$155	$7.97	0.000	$3.03	$0	$155
	8,000	8,999	$117	$7.97	0.000	$3.03	$0	$117
	9,000	9,999	$145	$7.97	0.000	$3.03	$0	$145
	10,000	14,999	$555	$7.97	0.000	$3.03	$1	$556
	15,000	19,999	$441	$7.97	0.000	$3.03	$1	$442
	20,000	24,999	$378	$7.97	0.000	$3.03	$1	$379
	25,000	29,999	$359	$7.97	0.000	$3.03	$1	$360
	30,000	34,999	$359	$7.97	0.000	$3.03	$1	$360
	35,000	44,999	$713	$7.97	0.000	$3.03	$1	$715
	45,000	54,999	$656	$7.97	0.000	$3.03	$1	$657
	55,000	64,999	$603	$7.97	0.000	$3.03	$1	$604
	65,000	74,999	$526	$7.97	0.000	$3.03	$1	$527
	75,000	84,999	$359	$7.97	0.000	$3.03	$1	$360
	85,000	94,999	$221	$7.97	0.000	$3.03	$0	$221
	95,000	104,999	$90	$7.97	0.000	$3.03	$0	$90
	105,000	114,999	$90	$7.97	0.000	$3.03	$0	$90
	115,000	124,999	$81	$7.97	0.000	$3.03	$0	$81
	125,000	134,999	$45	$7.97	0.000	$3.03	$0	$45
	135,000	144,999	$45	$7.97	0.000	$3.03	$0	$45
	145,000	1,000,000	$193	$7.97	0.000	$3.03	$0	$193

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	Basic Minimum Charge	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
County Residential	0	999	$2,678	$10.63	0.000	$4.04	$11	$2,690
	1,000	1,999	$3,251	$10.63	0.000	$4.04	$11	$3,261
	2,000	2,999	$6,296	$10.63	0.000	$4.04	$10	$6,306
	3,000	3,999	$3,740	$10.63	0.000	$4.04	$6	$3,746
	4,000	4,999	$2,376	$10.63	0.000	$4.04	$4	$2,380
	5,000	5,999	$753	$10.63	0.000	$4.04	$1	$754
	6,000	6,999	$469	$10.63	0.000	$4.04	$1	$470
	7,000	9,999	$849	$10.63	0.000	$4.04	$1	$851
	10,000	14,999	$298	$10.63	0.000	$4.04	$0	$299
	15,000	19,999	$39	$10.63	0.000	$4.04	$0	$40
County Commercial	0	999	$491	$10.63	0.000	$4.04	$2	$493
	1,000	1,999	$368	$10.63	0.000	$4.04	$1	$369
	2,000	2,999	$709	$10.63	0.000	$4.04	$1	$711
	3,000	3,999	$483	$10.63	0.000	$4.04	$1	$484
	4,000	4,999	$468	$10.63	0.000	$4.04	$1	$469
	5,000	5,999	$374	$10.63	0.000	$4.04	$1	$375
	6,000	6,999	$353	$10.63	0.000	$4.04	$1	$354
	7,000	9,999	$818	$10.63	0.000	$4.04	$1	$819
	10,000	14,999	$1,130	$10.63	0.000	$4.04	$2	$1,132
	15,000	19,999	$1,128	$10.63	0.000	$4.04	$2	$1,130
	20,000	24,999	$1,152	$10.63	0.000	$4.04	$2	$1,154
	25,000	29,999	$653	$10.63	0.000	$4.04	$1	$654
	30,000	49,999	$782	$10.63	0.000	$4.04	$1	$783
	50,000	74,999	$222	$10.63	0.000	$4.04	$0	$222
	75,000	99,999	$62	$10.63	0.000	$4.04	$0	$62
Total Rate Revenue at Current Rates			$861,992	Total Rate Revenue at Modeled Rates			$1,957	
Prorated capacity surcharges from Table 16 (minimum charges above do not include them)								$194
Total Blended Rate Revenues for the Year								$864,144

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

Richlands, VA, 2020 Water Rates Model 1, CIP Revised in FY 2024

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	$29.50	$54.37	$54.37	$54.92	$55.47	$56.02	$56.58	$57.15	$57.72	$58.30	$58.88	$59.47
AMHI Within Service Area	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149
Affordability Index: Current Rates First Column, Modeled Rates After That	1.17%	2.16%	2.16%	2.19%	2.21%	2.23%	2.25%	2.27%	2.30%	2.32%	2.34%	2.37%

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%.

Affordability Index, VDH Methodology												
Monthly Bill for a 3,528 gal per Month Residential Customer	$22.88	$34.58	$34.58	$34.92	$35.27	$35.62	$35.98	$36.34	$36.70	$37.07	$37.44	$37.81
AMHI Within Service Area	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149
Affordability Index: Current Rates First Column, Modeled Rates After That	0.91%	1.38%	1.38%	1.39%	1.40%	1.42%	1.43%	1.45%	1.46%	1.48%	1.49%	1.51%

This additional indicator of affordability assumes a residential customer using the VDH benchmark volume each month.

Estimated Operating Ratio: Current Rates First Column, Modeled Rates After That	1.28	1.21	1.16	1.09	1.03	1.02	1.01	1.00	0.99	0.97	0.95	0.94

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: This utility has reserves (shown below). This gives the utility more ability to pay its operating costs than the OR would imply.

Estimated Coverage Ratio: Current Rates First Column, Modeled Rates After That	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.00	0.00	0.00	0.00	0.00

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: This utility has reserves (shown below). This give the utility more ability to pay debt than the CR would imply.

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	$529,634	$545,399	$566,310	$578,805	$706,375	$730,778	$745,943	$766,626	$767,428	$752,286	$709,770	$627,251	$525,630
Other Liquid Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Undedicated Cash Assets	$529,634	$545,399	$566,310	$578,805	$706,375	$730,778	$745,943	$766,626	$767,428	$752,286	$709,770	$627,251	$525,630
Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	$529,634	$545,399	$566,310	$578,805	$706,375	$730,778	$745,943	$766,626	$767,428	$752,286	$709,770	$627,251	$525,630
Repair & Replacement	$0	-$109,000	-$99,966	-$90,751	-$81,352	-$71,765	-$61,987	-$52,012	-$41,839	-$31,462	-$20,877	-$10,080	$932
Debt and CIP Reserves	$0	$289,405	$512,314	$692,380	$712,297	$743,104	$776,669	$792,601	$743,980	$694,387	$643,802	$592,205	$539,576
Sum of All Reserves	$529,634	$725,804	$978,657	$1,180,434	$1,337,320	$1,402,116	$1,460,625	$1,507,215	$1,469,569	$1,415,212	$1,332,695	$1,209,375	$1,066,138

Table 18 - Bills Before and After Rate Adjustments

Richlands, VA, 2020 Water Rates Model 1, CIP Revised in FY 2024

This table shows how bills needed going into Fiscal Year 2024, now that system improvement costs have been better determined, compare to what bills were four-plus years ago at the end of Fiscal Year 2019, when those costs were still largely unknown.

Rate Classes With 5/8 Inch Meter	Gallons of Use	Customers at or Above This Volume But Below the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill as of 6/30/2019	Modeled Bill for FY 2024	Modeled Bill Increase or Decrease (-)
In-Town	0	332	332	2,175	$16.00	$10.19	-$5.81
	1,000	481	813	1,844	$16.00	$13.34	-$2.66
	2,000	452	1,265	1,363	$16.00	$19.34	$3.34
	3,000	351	1,616	910	$20.50	$27.23	$6.73
	3,528				$22.88	$34.58	$11.70
	4,000	219	1,835	559	$25.00	$44.59	$19.59
	5,000	129	1,965	340	$29.50	$54.37	$24.87
	6,000	74	2,038	211	$34.00	$57.53	$23.53
	7,000	85	2,124	137	$38.50	$63.52	$25.02
	10,000	33	2,157	52	$52.00	$87.19	$35.19
	15,000	10	2,166	19	$74.50	$102.96	$28.46
	20,000	3	2,169	9	$97.00	$130.09	$33.09
	25,000	1	2,171	6	$119.50	$181.86	$62.36
	30,000	3	2,174	5	$142.00	$197.62	$55.62
	50,000	1	2,175	1	$232.00	$289.10	$57.10
	75,000	0	2,175	1	$344.50	$390.11	$45.61
Out-of-Town	0	93	93	230	$20.50	$14.14	-$6.36
	1,000	41	134	137	$20.50	$18.51	-$1.99
	2,000	22	156	96	$20.50	$26.83	$6.33
	3,000	7	163	74	$26.50	$37.78	$11.28
	4,000	5	168	67	$32.50	$50.04	$17.54
	5,000	4	172	62	$38.50	$66.24	$27.74
	6,000	3	175	58	$44.50	$79.82	$35.32
	7,000	8	183	55	$50.50	$84.19	$33.69
	10,000	13	197	47	$68.50	$101.26	$32.76
	15,000	8	204	33	$98.50	$142.85	$44.35
	20,000	7	211	26	$128.50	$164.72	$36.22
	25,000	3	214	19	$158.50	$202.37	$43.87
	30,000	6	220	17	$188.50	$274.19	$85.69
	50,000	5	225	10	$308.50	$361.69	$53.19
	75,000	1	226	6	$458.50	$510.49	$51.99

Table 18 - Bills Before and After Rate Adjustments

Rate Classes With 5/8 Inch Meter	Gallons of Use	Customers at or Above This Volume But Below the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill as of 6/30/2019	Modeled Bill for FY 2024	Modeled Bill Increase or Decrease (-)
Bulk Water	0	0	0	1	$100.00	$9.79	-$90.21
	500,000	0	0	1	$100.00	$1,524.79	$1,424.79
	1,000,000	1	1	1	$100.00	$3,039.79	$2,939.79
Water Plant Backwash	0	0	0	1	$16.00	$9.79	-$6.21
	500,000	0	0	1	$2,257.00	$1,524.79	-$732.21
	1,000,000	0	1	0	$4,507.00	$3,039.79	-$1,467.21
Town Departments	0	5	5	15	$16.00	$9.79	-$6.21
	1,000	2	6	10	$16.00	$12.82	-$3.18
	2,000	2	9	8	$16.00	$15.85	-$0.15
	3,000	2	11	6	$20.50	$18.88	-$1.62
	4,000	1	11	4	$25.00	$21.91	-$3.09
	5,000	0	12	3	$29.50	$24.94	-$4.56
	6,000	0	12	3	$34.00	$27.97	-$6.03
	7,000	0	12	2	$38.50	$31.00	-$7.50
	8,000	0	12	2	$43.00	$34.03	-$8.97
	9,000	0	13	2	$47.50	$37.06	-$10.44
	10,000	0	13	2	$52.00	$40.09	-$11.91
	15,000	0	13	2	$74.50	$55.24	-$19.26
	20,000	0	13	1	$97.00	$70.39	-$26.61
	25,000	0	13	1	$119.50	$85.54	-$33.96
	30,000	0	13	1	$142.00	$100.69	-$41.31
	35,000	0	13	1	$164.50	$115.84	-$48.66
	45,000	0	13	1	$209.50	$146.14	-$63.36
	55,000	0	14	1	$254.50	$176.44	-$78.06
	65,000	0	14	1	$299.50	$206.74	-$92.76
	75,000	0	14	1	$344.50	$237.04	-$107.46
	85,000	0	14	1	$389.50	$267.34	-$122.16
	95,000	0	14	0	$434.50	$297.64	-$136.86
	105,000	0	14	0	$479.50	$327.94	-$151.56
	115,000	0	14	0	$524.50	$358.24	-$166.26
	125,000	0	14	0	$569.50	$388.54	-$180.96
	135,000	0	14	0	$614.50	$418.84	-$195.66
	145,000	0	15	0	$659.50	$449.14	-$210.36

Table 18 - Bills Before and After Rate Adjustments

Rate Classes With 5/8 Inch Meter	Gallons of Use	Customers at or Above This Volume But Below the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill as of 6/30/2019	Modeled Bill for FY 2024	Modeled Bill Increase or Decrease (-)
County Residential	0	11	11	64	$20.50	$13.86	-$6.64
	1,000	13	24	53	$20.50	$17.90	-$2.60
	2,000	17	41	39	$20.50	$21.94	$1.44
	3,000	10	51	23	$26.50	$25.98	-$0.52
	4,000	7	58	13	$32.50	$30.02	-$2.48
	5,000	2	60	6	$38.50	$34.06	-$4.44
	6,000	1	61	4	$44.50	$38.10	-$6.40
	7,000	2	63	3	$50.50	$42.14	-$8.36
	10,000	1	64	1	$68.50	$54.26	-$14.24
County Commercial	0	2	2	10	$20.50	$13.86	-$6.64
	1,000	2	4	8	$20.50	$17.90	-$2.60
	2,000	1	5	7	$20.50	$21.94	$1.44
	3,000	1	5	5	$26.50	$25.98	-$0.52
	4,000	1	6	5	$32.50	$30.02	-$2.48
	5,000	0	6	4	$38.50	$34.06	-$4.44
	6,000	0	6	4	$44.50	$38.10	-$6.40
	7,000	0	7	4	$50.50	$42.14	-$8.36
	10,000	0	7	3	$68.50	$54.26	-$14.24
	15,000	0	7	3	$98.50	$74.46	-$24.04
	20,000	1	8	3	$128.50	$94.66	-$33.84
	25,000	1	9	2	$158.50	$114.86	-$43.64
	30,000	1	10	1	$188.50	$135.06	-$53.44

Richlands, VA, 2020 Sewer Rates Model 1, CIP Revised in FY 2024

This model does several things. It uses recently revised system improvement costs and a revised package of DEQ grants and loans to arrive at the rates now needed to fund the system's operating costs, along with the recently refined improvement costs. And, reserves still need to be built up, so the modeled rates do that, too.

August 30, 2023

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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 3 - Operating Incomes and Basic User Data

Richlands, VA, 2020 Sewer Rates Model 1, CIP Revised in FY 2024

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)

$30,149 Income used by the VDH SRF Loan Program

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

2 Number new Sewer connections made during test year

$375 Average Sewer tap or installation fee assessed during the test year

This model is programmed for rates to be reset in the "Analysis Year," also called the "0 Year" column below (heading highlighted blue). Revenues will be collected at the now-current rates for the first part of the analysis year and the modeled rates for the last part of the analysis year. Thus, the revenues shown 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			Analysis Year	Years Following the Analysis Year (for Which Results Have Been Projected)									
(First year balances and incomes are actual, subsequent years are 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
Rate Increases Projected for Future Years	N.A.	N.A.	N.A.		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
				The row above shows the rate at which user charge fees should be increased for each year beyond the initial rate adjustment year. Unless stated otherwise, these should be across-the-board increases to all rates and fees and that should continue until a new rate analysis is done.									
Average Number of Customers	N.A.	2,407	2,409	2,411	2,413	2,415	2,417	2,419	2,421	2,423	2,425	2,427	2,429
Customers Added or Lost (-) Each Year	N.A.	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Customer Growth or Loss (-) Rate	N.A.	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%
Actual (Test Year) and Projected Service, in Gallons	N.A.	121,479,544	121,580,480	121,681,415	121,782,350	121,883,285	121,984,220	122,085,155	122,186,090	122,287,025	122,387,960	122,488,895	122,589,830
How User Charge Fees Were Calculated, Accounting for New Customers and Future Rate Increases													
Actual or Calculated Sales Revenues		$802,723	$804,196	$1,341,763	$1,396,591	$1,453,660	$1,513,058	$1,574,883	$1,639,232	$1,706,210	$1,775,923	$1,848,483	$1,924,006
Additional Sales Revenues From New Customers			$2	$1,113	$1,158	$1,204	$1,252	$1,302	$1,354	$1,408	$1,465	$1,523	$1,584
Total Calculated Revenues (User Charge Fees)		$802,723	$804,198	$1,342,876	$1,397,750	$1,454,864	$1,514,310	$1,576,185	$1,640,586	$1,707,618	$1,777,387	$1,850,006	$1,925,590
Operating Incomes													
User Charge Fees (Tables 10, 12, 12B, 15, 15B, 16, 16B)	N.A.	$831,268	$832,795	$1,390,629	$1,447,454	$1,506,599	$1,568,159	$1,632,234	$1,698,926	$1,768,341	$1,840,591	$1,915,792	$1,994,064
Late Payment Charge	N.A.	$13,684	$13,696	$13,707	$13,718	$13,730	$13,741	$13,752	$13,764	$13,775	$13,786	$13,798	$13,809
New Sewer Taps or Connections (Current Rate Structure)	% Above	$750	$748	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Meter Size-based System Development Fees (Tables 13, 14)	% Above	$0	$2	$600	$624	$649	$675	$702	$730	$759	$790	$821	$854
Interest Income	N.A.	$1,869	-$6,478	-$7,183	-$12,054	-$2,874	$3,482	$7,432	$7,637	$7,902	$8,065	$8,289	$8,579
WWTP-LAB TEST/SEPTIC TRET	N.A.	$5,451	$5,451	$5,451	$5,451	$5,451	$5,451	$5,451	$5,451	$5,451	$5,451	$5,451	$5,451
SERVICE CHARGES	N.A.	$3,429	$3,429	$3,429	$3,429	$3,429	$3,429	$3,429	$3,429	$3,429	$3,429	$3,429	$3,429
SALE OF SALVAGE & SURPLUS	N.A.	$711	$711	$711	$711	$711	$711	$711	$711	$711	$711	$711	$711
CEDAR BLUFF (6%), Additional Revenues in Table 5	N.A.	$127,656	$127,656	$142,557	$146,122	$150,730	$153,578	$157,476	$163,775	$170,326	$177,139	$184,224	$191,593
TZ CO PSA (20%), Additional Revenues in Table 5	N.A.	$228,324	$228,324	$254,975	$261,352	$269,595	$274,688	$281,659	$292,926	$304,643	$316,828	$329,502	$342,682
CONTRACT WORK-SEW/WAT LIN	N.A.	$406	$406	$406	$406	$406	$406	$406	$406	$406	$406	$406	$406
Revenue Reduction Due to COVID-19 (10% of User Charge Fees from March, 2020 to June, 2021)	N.A.	$0	-$27,760	-$139,063	$0	$0	$0	$0	$0	$0	$0	$0	$0
Revenue Loss (-) or Gain Because Rate Adjustments Made This Number of Months Late	12.0	$0	$0	-$539,040	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Incomes		**$1,213,549**	**$1,178,980**	**$1,127,179**	**$1,867,213**	**$1,948,426**	**$2,024,320**	**$2,103,253**	**$2,187,754**	**$2,275,743**	**$2,367,197**	**$2,462,423**	**$2,561,578**

Note: The yellow highlighted revenues above are fees collected from Richland's cooperating utilities and service areas. By agreements, those areas participate in the utility's costs by set percentages. Therefore, in future years these revenues were increased or decreased by the same percentage rates that Richland's operating and capital costs (debt) will increase or decrease each year.

Table 4 - Operating Costs and Net Income

Richlands, VA, 2020 Sewer Rates Model 1, CIP Revised in FY 2024

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
AUDITING & LEGAL	3.0%	$7,375	$7,596	$7,824	$8,059	$8,301	$8,550	$8,806	$9,070	$9,342	$9,623	$9,911	$10,209
BIRMINGHAM LIFT STATION	3.0%	$135	$139	$144	$148	$152	$157	$162	$166	$171	$177	$182	$187
BIRMINGHAM WAT/SEW DEBT	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BUILDING & BLDG. IMPROVEMENTS	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BUILDING REPAIRS/ADDITION	3.0%	$3,382	$3,484	$3,588	$3,696	$3,807	$3,921	$4,039	$4,160	$4,285	$4,413	$4,546	$4,682
CARD PROCESSING CHGS/FEES	3.0%	$2,023	$2,084	$2,146	$2,211	$2,277	$2,345	$2,416	$2,488	$2,563	$2,640	$2,719	$2,800
CASH OVER & SHORT	3.0%	$40	$41	$42	$44	$45	$46	$48	$49	$51	$52	$54	$55
CHEMICALS / SUPPLIES-LAB	3.0%	$25,273	$26,031	$26,812	$27,617	$28,445	$29,299	$30,178	$31,083	$32,015	$32,976	$33,965	$34,984
CHEMICALS-TREATMENT	3.0%	$592	$610	$629	$649	$669	$689	$710	$732	$755	$778	$802	$827
CLEANING SUPPLIES	3.0%	$2,503	$2,578	$2,656	$2,735	$2,817	$2,902	$2,989	$3,079	$3,171	$3,266	$3,364	$3,465
CORR OF I/I SEWER LINE	3.0%	$220	$226	$233	$240	$247	$255	$262	$270	$278	$286	$295	$304
DEPRECIATION EXP-PROP	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DUES & MEMBERSHIP	3.0%	$600	$618	$637	$656	$675	$696	$716	$738	$760	$783	$806	$831
ELECTRICITY	3.0%	$177,179	$182,646	$188,281	$194,090	$200,079	$206,252	$212,615	$219,174	$225,936	$232,906	$240,090	$247,497
ELECTRICITY-LIFT STATION	3.0%	$13,907	$14,324	$14,754	$15,197	$15,652	$16,122	$16,606	$17,104	$17,617	$18,145	$18,690	$19,251
ENGINEERING	3.0%	$44,282	$45,610	$46,979	$48,388	$49,840	$51,335	$52,875	$54,461	$56,095	$57,778	$59,511	$61,296
EQUIPMENT	3.0%	$1,656	$1,706	$1,757	$1,809	$1,864	$1,920	$1,977	$2,037	$2,098	$2,161	$2,225	$2,292
EQUIPMENT MAINTENANCE	3.0%	$14,843	$15,288	$15,747	$16,220	$16,706	$17,207	$17,724	$18,255	$18,803	$19,367	$19,948	$20,546
FIRE HYD/LINES	3.0%	$3,775	$3,888	$4,005	$4,125	$4,249	$4,376	$4,508	$4,643	$4,782	$4,926	$5,073	$5,226
GARBAGE	3.0%	$828	$853	$878	$905	$932	$960	$989	$1,018	$1,049	$1,080	$1,113	$1,146
GRAVEL/STONE	3.0%	$1,316	$1,355	$1,396	$1,438	$1,481	$1,525	$1,571	$1,618	$1,666	$1,716	$1,768	$1,821
GROUNDS & FACILITIES	3.0%	$1,657	$1,707	$1,758	$1,811	$1,865	$1,921	$1,978	$2,038	$2,099	$2,162	$2,227	$2,294
HAND TOOLS & EQUIPMENT	3.0%	$618	$636	$655	$675	$695	$716	$738	$760	$783	$806	$830	$855
HEATING OIL/FUEL	3.0%	$30,161	$31,066	$31,997	$32,957	$33,946	$34,964	$36,013	$37,094	$38,207	$39,353	$40,533	$41,749
INS AUTO	3.0%	$2,396	$2,468	$2,542	$2,618	$2,697	$2,778	$2,861	$2,947	$3,035	$3,126	$3,220	$3,317
INS GEN LIABILITY/BLDG	3.0%	$15,208	$15,664	$16,134	$16,618	$17,116	$17,630	$18,159	$18,703	$19,264	$19,842	$20,438	$21,051
INS HEALTH	3.0%	$127,547	$131,374	$135,315	$139,374	$143,556	$147,862	$152,298	$156,867	$161,573	$166,420	$171,413	$176,555
INS SOCIAL SECURITY	3.0%	$31,789	$32,743	$33,725	$34,737	$35,779	$36,853	$37,958	$39,097	$40,270	$41,478	$42,722	$44,004
INS WORKMENS COMPENSATION	3.0%	$7,162	$7,377	$7,598	$7,826	$8,061	$8,302	$8,551	$8,808	$9,072	$9,344	$9,625	$9,913
INS.-LIFE	3.0%	$2,189	$2,254	$2,322	$2,392	$2,463	$2,537	$2,613	$2,692	$2,773	$2,856	$2,941	$3,030
INS.-RETIREMENT PLAN	3.0%	$70,112	$72,215	$74,382	$76,613	$78,911	$81,279	$83,717	$86,229	$88,815	$91,480	$94,224	$97,051
IT SERVICE/EQ	3.0%	$5,904	$6,081	$6,264	$6,452	$6,645	$6,845	$7,050	$7,261	$7,479	$7,704	$7,935	$8,173
LEASE PROP & RIGHT OF WAY	3.0%	$5,542	$5,708	$5,879	$6,056	$6,237	$6,425	$6,617	$6,816	$7,020	$7,231	$7,448	$7,671
MACHINERY AND EQUPMENT	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MAINS, LINES & VALVE MAINT	3.0%	$2,203	$2,270	$2,338	$2,408	$2,480	$2,554	$2,631	$2,710	$2,791	$2,875	$2,961	$3,050
METERS & RELATED EQ	3.0%	$44,372	$45,703	$47,074	$48,486	$49,941	$51,439	$52,982	$54,572	$56,209	$57,895	$59,632	$61,421
MISCELLANEOUS	3.0%	-$9,663	-$9,952	-$10,251	-$10,559	-$10,875	-$11,202	-$11,538	-$11,884	-$12,240	-$12,607	-$12,986	-$13,375
MISS UTILITY SERVICE FEES	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

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
MOTOR FUEL & LUBRICATION	3.0%	$8,677	$8,938	$9,206	$9,482	$9,767	$10,060	$10,361	$10,672	$10,992	$11,322	$11,662	$12,012
NEW MAINS, LINES & VALVES	3.0%	$560	$577	$594	$612	$631	$650	$669	$689	$710	$731	$753	$776
NEW MANHOLES & SEWER LINE	3.0%	$130	$134	$138	$142	$147	$151	$156	$160	$165	$170	$175	$180
OFFICE FURN & COMPUTER EQ	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OFFICE FURN & FIXTURES	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OFFICE SUPPLIES	3.0%	$795	$819	$843	$869	$895	$922	$949	$978	$1,007	$1,037	$1,068	$1,100
OUTSIDE LAB TESTING	3.0%	$3,717	$3,828	$3,943	$4,062	$4,183	$4,309	$4,438	$4,571	$4,708	$4,850	$4,995	$5,145
PERMIT FEES	3.0%	$9,027	$9,298	$9,577	$9,864	$10,160	$10,465	$10,779	$11,102	$11,435	$11,778	$12,132	$12,495
PLANT METERING & INSTRU.	3.0%	$4,018	$4,138	$4,262	$4,390	$4,522	$4,658	$4,797	$4,941	$5,089	$5,242	$5,399	$5,561
PLANT PARTS	3.0%	$11,583	$11,931	$12,289	$12,657	$13,037	$13,428	$13,831	$14,246	$14,673	$15,113	$15,567	$16,034
POSTAGE	3.0%	$7,614	$7,849	$8,091	$8,341	$8,598	$8,864	$9,137	$9,419	$9,709	$10,009	$10,318	$10,636
PRINTING & BINDING	3.0%	$1,820	$1,875	$1,931	$1,989	$2,049	$2,110	$2,173	$2,239	$2,306	$2,375	$2,446	$2,520
SALARIES AND WAGES (Operations)	3.0%	$356,937	$367,645	$378,675	$390,035	$401,736	$413,788	$426,202	$438,988	$452,157	$465,722	$479,694	$494,085
SEWER	3.0%	$3,770	$3,883	$3,999	$4,119	$4,243	$4,370	$4,501	$4,636	$4,775	$4,919	$5,066	$5,218
SUPPLIES & MATERIALS	3.0%	$10,738	$11,060	$11,392	$11,734	$12,086	$12,448	$12,822	$13,206	$13,603	$14,011	$14,431	$14,864
TELEPHONE/INTERNET/COMM	3.0%	$3,434	$3,537	$3,643	$3,752	$3,865	$3,981	$4,100	$4,223	$4,350	$4,481	$4,615	$4,754
TOWN ATTORNEY	3.0%	$7,444	$7,668	$7,898	$8,135	$8,379	$8,630	$8,889	$9,156	$9,430	$9,713	$10,005	$10,305
TOWN MANAGER SALARY	3.0%	$10,719	$11,041	$11,372	$11,713	$12,064	$12,426	$12,799	$13,183	$13,579	$13,986	$14,405	$14,838
TRAINING EXPENSE	3.0%	$841	$866	$892	$919	$947	$975	$1,004	$1,034	$1,065	$1,097	$1,130	$1,164
UNIFORMS	3.0%	$1,516	$1,562	$1,609	$1,657	$1,707	$1,758	$1,811	$1,865	$1,921	$1,979	$2,038	$2,099
VEHICLE MAINT-INSIDE	3.0%	$7,765	$7,998	$8,238	$8,485	$8,739	$9,002	$9,272	$9,550	$9,836	$10,131	$10,435	$10,748
VEHICLE MAINT-OUTISDE	3.0%	$8,030	$8,270	$8,519	$8,774	$9,037	$9,308	$9,588	$9,875	$10,172	$10,477	$10,791	$11,115
VEHICLES, BOATS, ETC.	3.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VRS-VLDP	3.0%	$641	$660	$680	$701	$722	$743	$766	$789	$812	$837	$862	$888
WATER	3.0%	$3,768	$3,881	$3,997	$4,117	$4,241	$4,368	$4,499	$4,634	$4,773	$4,916	$5,063	$5,215
WATER-LIFT STATION	3.0%	$463	$477	$492	$506	$522	$537	$553	$570	$587	$605	$623	$642
Salaries and Wages (Billing, Office Staff)	3.0%	$48,656	$50,116	$51,619	$53,168	$54,763	$56,406	$58,098	$59,841	$61,636	$63,485	$65,390	$67,351
Salaries and Wages (Meter Reading)	3.0%	$20,289	$20,915	$21,560	$22,226	$22,911	$23,618	$24,347	$25,098	$25,872	$26,670	$27,493	$28,341
One-time Reduction of R&R Annuity	0.0%	-$129,037	-$129,037	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Payment to R&R Reserve (Table 7)	0.0%	$129,037	$129,037	$129,037	$129,037	$129,037	$129,037	$129,037	$129,037	$129,037	$129,037	$129,037	$129,037
User Charge Analysis Services	5.0%	$0	$8,911	$0	$0	$9,824	$0	$0	$10,831	$0	$0	$11,942	$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		**$1,170,079**	**$1,214,269**	**$1,370,737**	**$1,408,174**	**$1,456,565**	**$1,486,470**	**$1,527,396**	**$1,580,389**	**$1,612,989**	**$1,657,731**	**$1,715,763**	**$1,751,301**
Net Income (or Loss)		$43,469	-$35,289	-$243,558	$459,039	$491,861	$537,851	$575,856	$607,365	$662,754	$709,466	$746,660	$810,278
Working Capital Goal: 50%	In Dollars, That is:	$585,040	$607,134	$685,368	$704,087	$728,283	$743,235	$763,698	$790,194	$806,495	$828,865	$857,881	$875,650

Notes: The Town will extend service to approximately 2 new customers per year. Therefore, the yellow highlighted cost items above will rise due to inflation and due to the additional cost of serving new customers.

Table 5 - Capital Improvement Program (CIP)

Richlands, VA, 2020 Sewer Rates Model 1, CIP Revised in FY 2024

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, Debt-paid Portion of Projects (CIP costs to be funded with loans are shown in this section.)												
Plant Upgrade Project, Revised Costs and Funding Package, 75% Loan, 25% Grant	$0	$0	$0	$0	$0	$0	**$11,962,340**	$0	$0	$0	$0	$0
Total Debt-paid Portion of Projects	$0	$0	$0	$0	$0	$0	$11,962,340	$0	$0	$0	$0	$0
Planned Spending, Grant-paid Portion of Projects (CIP costs to be grant-funded are shown here.)												
Plant Upgrade Project, Principal Forgiveness by VRLF Program	$0	$0	$0	$0	$0	$0	**$4,003,503**	$0	$0	$0	$0	$0
Total Grant-paid Portion of Projects	$0	$0	$0	$0	$0	$0	$4,003,503	$0	$0	$0	$0	$0
Planned Spending, Cash-paid Portion of Projects (CIP costs to be funded from reserves are shown here.)												
Plant Upgrade Project, Revised Costs and Funding Package, 75% Loan, 25% Grant	$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**	**$15,965,843**	**$0**	**$0**	**$0**	**$0**	**$0**
Debt Repayment												
Existing Debt Payments (Following is debt that was initiated during the test year or earlier.)												
Project C-515436-02 (Birmingham Sewer Extension)	$44,844	$44,844	$44,844	$44,844	$44,844	$44,844	$44,844	$44,844	$44,844	$44,844	$44,844	$44,844
WSL-20-03	$66,760	$66,760	$66,760	$66,760	$66,760	$66,760	$66,760	$66,760	$66,760	$66,760	$66,760	$66,760
WSL-20-03	$14,601	$14,601	$14,601	$14,601	$14,601	$14,601	$14,601	$14,601	$14,601	$14,601	$14,601	$14,601
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: **25** years at a **0.50%** interest rate.)												
Loan Originated in 5th Year (Payment Estimated by SRF Program)								**$510,216**	$510,216	$510,216	$510,216	$510,216
Total Debt Payments	$126,205	$126,205	$126,205	$126,205	$126,205	$126,205	$126,205	$636,421	$636,421	$636,421	$636,421	$636,421
Total CIP-related Payouts	**$126,205**	**$126,205**	**$126,205**	**$126,205**	**$126,205**	**$126,205**	**$16,092,048**	**$636,421**	**$636,421**	**$636,421**	**$636,421**	**$636,421**

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

Table 5 - Capital Improvement Program (CIP)

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

	Analysis Year		Years Following the Analysis Year (for Which Improvement Projects, Costs, Funding, etc. Have Been Projected)									
	Test Year Starting	0 Year Starting	1st Year Starting	2nd Year Starting	3rd Year Starting	4th Year Starting	5th Year Starting	6th Year Starting	7th Year Starting	8th Year Starting	9th Year Starting	10th Year Starting
	7/1/18	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
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	-$126,205	-$254,934	-$386,237	-$520,167	-$656,775	-$653,322	-$237,201	-$164,840	-$25,449	$157,373	$374,400
Working Capital Transferred in	$0	$0	$0	$0	$0	$142,793	$555,393	$580,869	$646,453	$687,095	$717,644	$792,509
Debt and CIP Reserves Interest Earned (or Paid)	$0	-$2,524	-$5,099	-$7,725	-$10,403	-$13,136	-$13,066	-$4,744	-$3,297	-$509	$3,147	$7,488
Annualized Share of Debt, Cedar Bluff (6%)	$0	$0	$0	$0	$0	$0	$0	$30,613	$30,613	$30,613	$30,613	$30,613
Annualized Share of Debt, TCPSA (20%)	$0	$0	$0	$0	$0	$0	$0	$102,043	$102,043	$102,043	$102,043	$102,043
Internal Income Source (Name it)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Internal Income Source (Name it)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Internal Income Source (Name it)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Available Internal Funds	$0	-$128,729	-$260,032	-$393,962	-$530,570	-$527,117	-$110,996	$471,580	$610,972	$793,794	$1,010,821	$1,307,052
Grant and Loan Proceeds (External Funds)												
DEQ Grant	$0	$0	$0	$0	$0	$0	$4,003,503	$0	$0	$0	$0	$0
Loan Originated in 5th Year (Payment Estimated by SRF Program)							$11,962,340	$0	$0	$0	$0	$0
Total Available External Funds	$0	$0	$0	$0	$0	$0	$15,965,843	$0	$0	$0	$0	$0
Total Available Funds	**$0**	**-$128,729**	**-$260,032**	**-$393,962**	**-$530,570**	**-$527,117**	**$15,854,847**	**$471,580**	**$610,972**	**$793,794**	**$1,010,821**	**$1,307,052**
Outcomes	(This CIP spending and funding plan will result in the following cash needs and ending balances each year.)											
Total Available Funds	**$0**	**-$128,729**	**-$260,032**	**-$393,962**	**-$530,570**	**-$527,117**	**$15,854,847**	**$471,580**	**$610,972**	**$793,794**	**$1,010,821**	**$1,307,052**
Total CIP-related Payouts	**$126,205**	**$126,205**	**$126,205**	**$126,205**	**$126,205**	**$126,205**	**$16,092,048**	**$636,421**	**$636,421**	**$636,421**	**$636,421**	**$636,421**
Debt and CIP Reserves Ending Balances	**-$126,205**	**-$254,934**	**-$386,237**	**-$520,167**	**-$656,775**	**-$653,322**	**-$237,201**	**-$164,840**	**-$25,449**	**$157,373**	**$374,400**	**$670,632**

Notes: In 2020, when the original rate analysis was done, it was known that Richlands needed major system improvements. The design engineer gave an estimate of those costs at that time, with many unknowns yet to be determined. Over the past three years, much has changed. The cost estimates are much firmer, and unfortunately higher, and DEQ has since offered revised grant and loan amounts. Those grants and loans for the revised costs are included in this table highlighted in gold.

Table 10 - Initial Rate Adjustments and Resulting Revenues
Richlands, VA, 2020 Sewer Rates Model 1, CIP Revised in FY 2024

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

Premium for Out-of-Town Service	133%	Conservation Rate Block Multiplier	100%	Other Multiplier	100%

6/30/20 Date when fees will first be collected at adjusted rates. Actual adjustment should occur one billing cycle earlier.

If there are no special costs to consider and before capacity costs are added, if appropriate, rates for a 5/8" meter would be in a "cost-to-serve" structure when: there is no usage allowance,
the base minimum charge is $18.34 Monthly, and the unit charge is set at $6.13 per 1,000 Gallons.

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

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

Customer Class, Rate Class or Meter Size	Volume Range Bottom (in Gallons)	Volume Range Top (in Gallons)	Sales This Year at Current Rates	Basic Minimum Charge	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
In Town Residential	0	999	$59,485	$18.34	0.000	$6.13	$580	$60,065
	1,000	1,999	$90,201	$18.34	0.000	$6.13	$599	$90,800
	2,000	2,999	$143,886	$18.34	0.000	$6.13	$487	$144,373
	3,000	3,999	$103,248	$18.34	0.000	$6.13	$347	$103,595
	4,000	4,999	$64,010	$18.34	0.000	$6.13	$215	$64,224
	5,000	5,999	$38,544	$18.34	0.000	$6.13	$129	$38,674
	6,000	6,999	$22,718	$18.34	0.000	$6.13	$77	$22,794
	7,000	9,999	$29,256	$18.34	0.000	$6.13	$100	$29,355
	10,000	14,999	$13,986	$18.34	0.000	$6.13	$49	$14,035
	15,000	19,999	$5,035	$18.34	0.000	$6.13	$18	$5,053
	20,000	24,999	$2,365	$18.34	0.000	$6.13	$8	$2,373
	25,000	29,999	$1,577	$18.34	0.000	$6.13	$6	$1,583
	30,000	49,999	$3,260	$18.34	0.000	$6.13	$12	$3,272
	50,000	74,999	$1,249	$18.34	0.000	$6.13	$5	$1,254
	75,000	99,999	$675	$18.34	0.000	$6.13	$2	$678
	100,000	124,999	$320	$18.34	0.000	$6.13	$1	$322
	125,000	149,999	$189	$18.34	0.000	$6.13	$1	$190
	150,000	199,999	$224	$18.34	0.000	$6.13	$1	$225
	200,000	399,999	$37	$18.34	0.000	$6.13	$0	$37

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	Basic Minimum Charge	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
In Town Commercial	0	999	$16,977	$18.34	0.000	$6.13	$87	$17,065
	1,000	1,999	$7,627	$18.34	0.000	$6.13	$46	$7,673
	2,000	2,999	$8,486	$18.34	0.000	$6.13	$29	$8,516
	3,000	3,999	$5,006	$18.34	0.000	$6.13	$18	$5,024
	4,000	4,999	$4,258	$18.34	0.000	$6.13	$15	$4,273
	5,000	5,999	$3,875	$18.34	0.000	$6.13	$14	$3,889
	6,000	6,999	$3,424	$18.34	0.000	$6.13	$12	$3,436
	7,000	9,999	$9,423	$18.34	0.000	$6.13	$34	$9,457
	10,000	14,999	$12,501	$18.34	0.000	$6.13	$45	$12,547
	15,000	19,999	$8,690	$18.34	0.000	$6.13	$32	$8,722
	20,000	24,999	$6,737	$18.34	0.000	$6.13	$24	$6,761
	25,000	29,999	$4,770	$18.34	0.000	$6.13	$17	$4,788
	30,000	49,999	$13,056	$18.34	0.000	$6.13	$48	$13,104
	50,000	74,999	$9,328	$18.34	0.000	$6.13	$34	$9,363
	75,000	99,999	$5,187	$18.34	0.000	$6.13	$19	$5,207
	100,000	124,999	$4,340	$18.34	0.000	$6.13	$16	$4,356
	125,000	149,999	$3,572	$18.34	0.000	$6.13	$13	$3,586
	150,000	199,999	$6,249	$18.34	0.000	$6.13	$23	$6,272
	200,000	399,999	$15,649	$18.34	0.000	$6.13	$58	$15,707
	400,000	499,999	$4,670	$18.34	0.000	$6.13	$17	$4,688
	500,000	999,999	$12,522	$18.34	0.000	$6.13	$47	$12,569
Meter by PSA	0	999	$191	$18.34	0.000	$6.13	$1	$192
	1,000	1,999	$176	$18.34	0.000	$6.13	$1	$176
No Meter	0	999	$162	$18.34	0.000	$6.13	$1	$162
	1,000	1,999	$190	$18.34	0.000	$6.13	$1	$191
	2,000	2,999	$280	$18.34	0.000	$6.13	$1	$281
	3,000	3,999	$207	$18.34	0.000	$6.13	$1	$207
	4,000	4,999	$151	$18.34	0.000	$6.13	$1	$151
	5,000	5,999	$98	$18.34	0.000	$6.13	$0	$98
	6,000	6,999	$45	$18.34	0.000	$6.13	$0	$45
	7,000	9,999	$144	$18.34	0.000	$6.13	$1	$144
	10,000	14,999	$202	$18.34	0.000	$6.13	$1	$202
	15,000	19,999	$21	$18.34	0.000	$6.13	$0	$21

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	Basic Minimum Charge	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
Richlands Town Departments	0	999	$878	$18.34	0.000	$6.13	$5	$882
	1,000	1,999	$191	$18.34	0.000	$6.13	$2	$194
	2,000	2,999	$804	$18.34	0.000	$6.13	$3	$806
	3,000	3,999	$640	$18.34	0.000	$6.13	$2	$642
	4,000	4,999	$302	$18.34	0.000	$6.13	$1	$303
	5,000	5,999	$224	$18.34	0.000	$6.13	$1	$225
	6,000	6,999	$231	$18.34	0.000	$6.13	$1	$232
	7,000	9,999	$437	$18.34	0.000	$6.13	$2	$438
	10,000	14,999	$625	$18.34	0.000	$6.13	$2	$627
	15,000	19,999	$530	$18.34	0.000	$6.13	$2	$532
	20,000	24,999	$468	$18.34	0.000	$6.13	$2	$469
	25,000	29,999	$449	$18.34	0.000	$6.13	$2	$450
	30,000	49,999	$1,773	$18.34	0.000	$6.13	$7	$1,780
	50,000	74,999	$1,892	$18.34	0.000	$6.13	$7	$1,899
	75,000	99,999	$1,074	$18.34	0.000	$6.13	$4	$1,078
	100,000	124,999	$665	$18.34	0.000	$6.13	$2	$667
	125,000	149,999	$561	$18.34	0.000	$6.13	$2	$563
	150,000	199,999	$1,068	$18.34	0.000	$6.13	$4	$1,072
	200,000	399,999	$3,590	$18.34	0.000	$6.13	$13	$3,604
	400,000	499,999	$1,795	$18.34	0.000	$6.13	$7	$1,802
	500,000	999,999	$8,898	$18.34	0.000	$6.13	$33	$8,931
	1,000,000	1,999,999	$1,434	$18.34	0.000	$6.13	$5	$1,440
County Residential	0	999	$2,535	$24.46	0.000	$8.17	$19	$2,554
	1,000	1,999	$2,351	$24.46	0.000	$8.17	$16	$2,367
	2,000	2,999	$4,252	$24.46	0.000	$8.17	$15	$4,267
	3,000	3,999	$2,606	$24.46	0.000	$8.17	$9	$2,615
	4,000	4,999	$1,481	$24.46	0.000	$8.17	$5	$1,486
	5,000	5,999	$450	$24.46	0.000	$8.17	$2	$452
	6,000	6,999	$235	$24.46	0.000	$8.17	$1	$236
	7,000	9,999	$478	$24.46	0.000	$8.17	$2	$480
	10,000	14,999	$212	$24.46	0.000	$8.17	$1	$213
	15,000	19,999	$39	$24.46	0.000	$8.17	$0	$40

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	Basic Minimum Charge	New Usage Allowance in 1,000s	New Unit Charge per 1,000 Gallons	Sales This Year at Modeled Rates	Total "Blended" Sales This Year
County Commercial	0	999	$491	$24.46	0.000	$8.17	$4	$495
	1,000	1,999	$368	$24.46	0.000	$8.17	$3	$371
	2,000	2,999	$709	$24.46	0.000	$8.17	$3	$712
	3,000	3,999	$483	$24.46	0.000	$8.17	$2	$485
	4,000	4,999	$468	$24.46	0.000	$8.17	$2	$470
	5,000	5,999	$374	$24.46	0.000	$8.17	$1	$376
	6,000	6,999	$353	$24.46	0.000	$8.17	$1	$355
	7,000	9,999	$818	$24.46	0.000	$8.17	$3	$821
	10,000	14,999	$1,130	$24.46	0.000	$8.17	$4	$1,134
	15,000	19,999	$1,128	$24.46	0.000	$8.17	$4	$1,133
	20,000	24,999	$1,152	$24.46	0.000	$8.17	$4	$1,156
	25,000	29,999	$653	$24.46	0.000	$8.17	$2	$655
	30,000	49,999	$561	$24.46	0.000	$8.17	$3	$564
	50,000	74,999	$145	$24.46	0.000	$8.17	$1	$146
	75,000	99,999	$46	$24.46	0.000	$8.17	$0	$46
Total Rate Revenue at Current Rates			$800,530	Total Rate Revenue at Modeled Rates			$3,509	
Prorated capacity surcharges from Table 16 (minimum charges above do not include them)								$157
Total Blended Rate Revenues for the Year								$804,196

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

Richlands, VA, 2020 Sewer Rates Model 1, CIP Revised in FY 2024

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	$29.50	$85.89	$85.89	$89.32	$92.90	$96.61	$100.48	$104.50	$108.68	$113.02	$117.55	$122.25
AMHI Within Service Area	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149
Affordability Index: Current Rates First Column, Modeled Rates After That	1.17%	3.42%	3.42%	3.56%	3.70%	3.85%	4.00%	4.16%	4.33%	4.50%	4.68%	4.87%

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%.

Affordability Index, VDH Methodology												
Monthly Bill for a 3,528 gal per Month Residential Customer	$16.00	$61.05	$61.05	$63.49	$66.03	$68.67	$71.42	$74.27	$77.24	$80.33	$83.55	$86.89
AMHI Within Service Area	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149	$30,149
Affordability Index: Current Rates First Column, Modeled Rates After That	0.64%	2.43%	2.43%	2.53%	2.63%	2.73%	2.84%	2.96%	3.07%	3.20%	3.33%	3.46%
Affordability Index for Combined Water and Sewer Bill: Current Rates First Column, Modeled Rates After That	1.55%	3.29%	3.26%	3.33%	3.40%	3.52%	3.63%	3.76%	3.88%	4.01%	4.15%	4.29%

This additional indicator of affordability assumes a residential customer using the VDH benchmark volume each month. The index shown in bright yellow highlight is for combined water and sewer bills for the same volume of use. The VDH SRF loan is likely to go into repayment in the third year (2022), and rate adjustments are modeled to "ramp up" through that year, so that year's AI is the index to focus on.

Estimated Operating Ratio: Current Rates First Column, Modeled Rates After That	1.04	0.97	0.82	1.33	1.34	1.36	1.38	1.38	1.41	1.43	1.44	1.46

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: This utility will soon have reserves (shown below). This will give the utility more ability to pay its operating costs than the OR would imply.

Estimated Coverage Ratio: Current Rates First Column, Modeled Rates After That	0.00	0.00	0.00	0.00	0.00	1.13	4.40	0.91	1.02	1.08	1.13	1.25

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: This utility will soon have reserves (shown below). This will give the utility more ability to pay debt than the CR would imply.

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	-$367,345	-$323,876	-$359,164	-$602,722	-$143,683	$348,177	$743,235	$763,698	$790,194	$806,495	$828,865	$857,881	$875,650
Other Liquid Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Undedicated Cash Assets	-$367,345	-$323,876	-$359,164	-$602,722	-$143,683	$348,177	$743,235	$763,698	$790,194	$806,495	$828,865	$857,881	$875,650
Total Cash Assets Discounted for Inflation (Future Unrestricted Purchasing Power)	-$367,345	-$323,876	-$359,164	-$602,722	-$143,683	$348,177	$743,235	$763,698	$790,194	$806,495	$828,865	$857,881	$875,650
Repair & Replacement	$0	-$117,000	-$107,303	-$97,412	-$87,323	-$77,033	-$66,536	-$55,830	-$44,909	-$33,771	-$22,409	-$10,820	$1,000
Debt and CIP Reserves	$0	-$126,205	-$254,934	-$386,237	-$520,167	-$656,775	-$653,322	-$237,201	-$164,840	-$25,449	$157,373	$374,400	$670,632
Sum of All Reserves	-$367,345	-$567,080	-$721,401	-$1,086,371	-$751,173	-$385,630	$23,377	$470,668	$580,444	$747,275	$963,829	$1,221,461	$1,547,282

Table 18 - Bills Before and After Rate Adjustments

Richlands, VA, 2020 Sewer Rates Model 1, CIP Revised in FY 2024

This table shows how bills needed going into Fiscal Year 2024, now that system improvement costs have been better determined, compare to what bills were four-plus years ago at the end of Fiscal Year 2019, when those costs were still largely unknown.

Rate Classes With 5/8 Inch Meter	Gallons of Use	Customers at or Above This Volume But Below the Next	Customers Using This Volume or Less	Customers Using This Volume or More	Bill as of 6/30/2019	Modeled Bill for FY 2024	Modeled Bill Increase or Decrease (-)
In-Town	0	311	311	2,111	$16.00	$23.25	$7.25
	1,000	471	782	1,800	$16.00	$30.42	$14.42
	2,000	442	1,224	1,329	$16.00	$40.27	$24.27
	3,000	341	1,565	887	$20.50	$51.90	$31.40
	3,528				$22.88	$61.05	$38.17
	4,000	213	1,778	546	$25.00	$72.47	$47.47
	5,000	127	1,906	332	$29.50	$85.89	$56.39
	6,000	73	1,978	205	$34.00	$93.06	$59.06
	7,000	83	2,061	132	$38.50	$102.91	$64.41
	10,000	32	2,093	49	$52.00	$137.82	$85.82
	15,000	9	2,102	18	$74.50	$173.67	$99.17
	20,000	3	2,105	9	$97.00	$220.24	$123.24
	25,000	1	2,106	6	$119.50	$290.03	$170.53
	30,000	3	2,109	4	$142.00	$325.89	$183.89
	50,000	1	2,110	1	$232.00	$496.10	$264.10
	75,000	0	2,110	1	$344.50	$678.31	$333.81
Out-of-Town	0	89	89	222	$20.50	$36.26	$15.76
	1,000	40	129	133	$20.50	$47.45	$26.95
	2,000	22	150	93	$20.50	$62.81	$42.31
	3,000	7	157	72	$26.50	$80.96	$54.46
	4,000	5	162	64	$32.50	$100.50	$68.00
	5,000	4	166	60	$38.50	$124.22	$85.72
	6,000	3	169	55	$44.50	$145.16	$100.66
	7,000	8	177	53	$50.50	$156.34	$105.84
	10,000	13	190	44	$68.50	$194.08	$125.58
	15,000	8	198	31	$98.50	$270.90	$172.40
	20,000	7	204	24	$128.50	$326.83	$198.33
	25,000	3	207	17	$158.50	$399.47	$240.97
	30,000	6	213	15	$188.50	$508.32	$319.82
	50,000	5	217	9	$308.50	$732.04	$423.54
	75,000	1	218	4	$458.50	$1,053.46	$594.96

Table 18B - Combined Water and Sewer Bills Before and After Rate Adjustments

Richlands, VA

This table combines water and sewer bills for the same volumes of use. This is a better indicator of the effect of bill adjstments on most customers. But note, most residential customers use less sewer service some months (summer) than the water they use, so their actual combined bills will likely be less than what this table shows.

Rate Classes With 5/8 Inch Meter	Gallons of Use	Average Customers at or Above This Volume But Below the Next	Average Customers Using This Volume or Less	Average Customers Using This Volume or More	Combined Bill as of 6/30/2019	Modeled Combined Bill for FY 2024	Modeled Co,bomed Bill Increase or Decrease (-)
In-Town	0	321	321	2,143	$32.00	$33.43	$1.43
	1,000	476	797	1,822	$32.00	$43.76	$11.76
	2,000	447	1,244	1,346	$32.00	$59.60	$27.60
	3,000	346	1,590	899	$41.00	$79.13	$38.13
	3,528				$45.75	$95.62	$49.87
	4,000	216	1,807	552	$50.00	$117.06	$67.06
	5,000	128	1,935	336	$59.00	$140.26	$81.26
	6,000	73	2,008	208	$68.00	$150.59	$82.59
	7,000	84	2,092	135	$77.00	$166.43	$89.43
	10,000	32	2,125	51	$104.00	$225.01	$121.01
	15,000	9	2,134	18	$149.00	$276.63	$127.63
	20,000	3	2,137	9	$194.00	$350.34	$156.34
	25,000	1	2,139	6	$239.00	$471.89	$232.89
	30,000	3	2,142	4	$284.00	$523.51	$239.51
	50,000	1	2,142	1	$464.00	$785.20	$321.20
	75,000	0	2,143	1	$689.00	$1,068.42	$379.42
Out-of-Town	0	91	91	226	$41.00	$50.40	$9.40
	1,000	40	131	135	$41.00	$65.96	$24.96
	2,000	22	153	95	$41.00	$89.64	$48.64
	3,000	7	160	73	$53.00	$118.73	$65.73
	4,000	5	165	66	$65.00	$150.54	$85.54
	5,000	4	169	61	$77.00	$190.46	$113.46
	6,000	3	172	57	$89.00	$224.97	$135.97
	7,000	8	180	54	$101.00	$240.53	$139.53
	10,000	13	193	46	$137.00	$295.34	$158.34
	15,000	8	201	32	$197.00	$413.75	$216.75
	20,000	7	208	25	$257.00	$491.55	$234.55
	25,000	3	210	18	$317.00	$601.84	$284.84
	30,000	6	216	16	$377.00	$782.51	$405.51
	50,000	5	221	10	$617.00	$1,093.72	$476.72
	75,000	1	222	5	$917.00	$1,563.95	$646.95