

Water Rates Review for the Groveton Water System, NH

Conducted by the Environmental Finance Center at the UNC School of Government
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Introduction

The Groveton Water System, NH requested a review of its water rates and projections of the water enterprise fund’s revenues and expenses for the next few years. Under a cooperative agreement with the EPA – under the “Smart Management for Small Water Systems” project – the Environmental Finance Center (EFC) at the UNC School of Government conducted the following review at no charge to Groveton. The EFC worked with staff at the water system to collect and analyze expenses, revenues and rates using the “Water & Wastewater Rates Analysis Model”. The EFC assessed different scenarios in changing the town’s rates to generate enough revenues to cover expenses in the next few years. The EFC incorporated inputs and plans solicited from Groveton in these analyses.

While this rates review provides a broad assessment of the Groveton Water System’s revenues and expenses, it is not a complete “rates study” that a utility would expect to receive from a rates consultant. Additional analysis may be necessary to precisely calculate Groveton’s proposed rates based on additional inputs and considerations.

Review of current water rates

Based on data collected on expenses, current rates, number of accounts and water usage patterns of the town’s customers, we project that the town will not be generating sufficient revenue to meet expenses of the water system (see Figure 1). Assuming current water rates do not change, expenses will surpass revenues by around \$80,000 annually in the next five years, depending on how much Groveton decides to spend on capital projects and building up reserves.

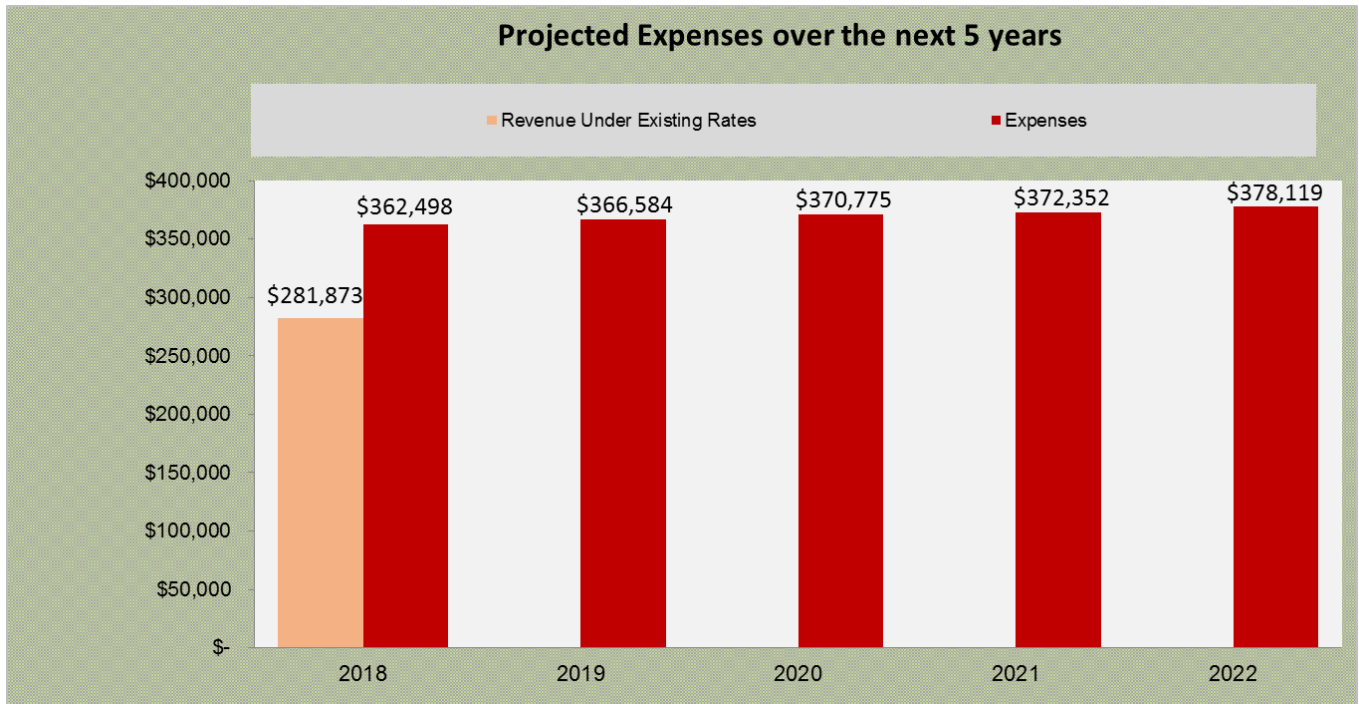


Figure 1: Total Expenses over the next 5 years and revenues at the current water rates

We projected that in 2018 Groveton's revenues from customer charges will be about \$282,000 (net of uncollected bills) from water sales. According to the financial statements for Groveton for 2010-2015, the water system brings in about \$300,000 in operating revenue every year. This means that the model is fairly accurate in capturing the revenue situation—but is missing about 6% of yearly revenue. We project that expenses will be about \$362,000. These expenses include \$284,000 for operating expenditures, \$55,148 for debt service, and \$25,000 to build up reserves. The operating expenditures are projected to rise by 1.92% each year. This number was derived from the average change in operating expenditures in 2010-2015, and from conversations with the town. The total operating expenditures was based on Northumberland's 2016 budget. The debt service payments are equivalent to one third of the yearly payments on the rural development bond debt. Finally, the yearly transfer of \$25,000 was based on conversations with the town.

Scenarios to increase water rates

To address this revenue shortfall, we outline three different ways for Groveton to reach net positive revenue using different increases in water rates. Each scenario, which is compared to the status quo of maintaining your current rates, is outlined below. The rates discussed below refer to your residential customers, unless otherwise specified. To view the rates for all customers, please view the referenced scenarios. For Brookview, Dean Brook, and Guildhall we increased their fixed charges at the same rate that we increased the fixed demand charges of residents and commercial customers. We kept the rate for the commercial fire line constant.

Status Quo rates:

Under the current rates, your residential customers pay a quarterly fixed demand charge of \$20.00 for water, commercial customers pay a quarterly fixed demand of charge of \$50.00, and industrial customers pay a quarterly fixed demand of \$75.00. There is no consumption allowance included with the base charge. All customers then pay \$5.00 for every 1000 gallons used.

Scenario 1 rates (only fixed demand increase, break even in year 3):

Under this scenario, fixed demand charges are steadily increased for the next 3 years to achieve positive net revenues by 2020, with slight increases in subsequent years to keep pace with inflation. In other words, Groveton would continue to face revenue shortfalls for the years of 2018 and 2019, and will eventually start to break even in 2020 onwards. This breaks out to a 40.00% increase in 2018, 28.50% increase in 2019, and a 22.00% increase in 2020. For residential customers this will be equivalent to about an **\$8.00 increase in their quarterly bill each year**. By 2020 the fixed demand charge will be just under \$44.00, a total increase of \$24.00.

Scenario 2 rates (Primarily Fixed Demand Charges, break even in year 3):

In this scenario, the volumetric charges are increased by \$0.50 a year—in line with the current schedule of increases—and the rest of the revenue is made up by increasing the fixed demand charge. This will require increases of 25.00%, 20.00%, and 17.00. For residential customers this is equivalent for a **\$5.00 increase in their quarterly fixed demand charge each year**. In 2020 the fixed demand charge will be around \$35.00, and the volumetric charge will be \$6.50 per 1000 gallons.

Scenario 3 rates (Same Increase across the board, break even in year 3):

In this scenario, fixed demand charges and the volumetric charges are increased by the same percentage: 17.00% in year 1, 14.50% in year 2, and 12.50% in year 3. For residential customers this will mean a **\$3.40 in their quarterly fixed demand charge each year, and a \$0.85 increase in the volumetric**

charge each year. In 2020 the fixed demand charge will be about \$30.20, and the volumetric charge will be \$7.55 per 1000 gallons.

Projected net revenues and water bills in each scenario

The table below outlines revenues net of expenses under each scenario for the next three years. Note that all 3 scenarios have negative net revenues in the first two years, and subsequently positive revenue.

Table 1: Projected net revenues in the first three years under each rates scenario

	Current Rates	Scenario 1	Scenario 2	Scenario 3
Net Revenue or (Deficit) in Year 1	(\$80,625)	(\$47,217)	(\$47,899)	(\$46,902)
Net Revenue or (Deficit) in Year 2	(\$83,871)	(\$16,543)	(\$18,462)	(\$17,020)
Net Revenue or (Deficit) in Year 3	(\$87,340)	\$14,227	\$11,592	\$11,816
Net Revenue or (Deficit) in Year 4	(\$88,212)	\$14,231	\$11,268	\$11,307
Net Revenue or (Deficit) in Year 5	(\$93,291)	\$10,026	\$6,732	\$6,585
Total Net Revenue or (Deficit)	(\$433,339)	(\$25,275)	(\$36,769)	(\$34,213)

While each scenario achieves positive revenue by year 3 (2020), they each represent different paths to get there. The mechanism by which these scenarios increase revenue is exemplified by the following table. These table below shows the water bill for a household or business at three different monthly consumption points: 0 gallons for a residential customer, a resident at average consumption, and a commercial customer at average consumption.

Table 2: Water Bill in Year 3

	Current Rates	Scenario 1	Scenario 2	Scenario 3
Residential Bill at 0 gallons	\$ 20.00	\$ 44.00	\$ 35.00	\$ 30.20
Residential Bill at 10,800 gallons	\$ 74.00	\$ 98.00	\$ 105.20	\$ 111.74
Commercial bill at 19,200 gallons	\$ 146.00	\$ 206.00	\$ 212.30	\$ 220.46

Key Highlights:

- Scenario 1 is most expensive at 0 gallons, but cheapest at 10,800 residential gallons and 19,200 commercial gallons.
- Scenario 2 is neither the cheapest nor most expensive at any consumption point.
- Scenario 3 is cheapest at 0 gallons, but the most expensive at the other two price points.

Affordability

Finally, we know that the affordability of water rates can be a major concern for many communities. The following table shows the combined water bill at 3,600 gallons/month (10,800 gallons/quarter) as a percentage of Groveton's current Median Household Income (MHI) for year 3 for all three groups of residential customers. Please keep in mind that we are using the latest Census data for Groveton's MHI and we have not made any projections for how it will change in the coming years. By year 3, the MHI may have increased or decreased.

Table 4: Water Bill at Average Consumption Levels as Percentage of Median Household Income

	Current Rates	Scenario 1	Scenario 2	Scenario 3
Annual Bill	\$ 296.00	\$ 392.00	\$ 420.80	\$ 446.96
Bill as a % of Groveton MHI	0.82%	1.08%	1.16%	1.23%

Scenario 1 has increase of about 0.25 percentage points, while scenarios 2 and 3 have increases of 0.35 and 0.4 percentage points, respectively. While Scenario 1 is the lowest, none of these scenarios have a percent MHI value that we would consider unacceptable. Based on our work across the country—1.50% is about the average value. However, it is up to every community to determine what is “affordable”, and what percentage of income spent on water is acceptable. The other consideration is that this bill represents the average use customer. For customers that use less water than average, Scenario 1 might result in higher bills than the other scenarios—while for customers that use more water than average, Scenario 3 will have the highest bill.

Considerations when choosing which rate scenario or approach to adopt

Which rate increase scenario you choose to implement depends on what the Town and Board decide is appropriate for your customer base. Is the Town worried about placing too much of a burden on its low use customers? If so, scenario 2 or 3 might be better options. If the Town is worried about the burden on large families and high-use commercial customers, scenario 1 might be the better option. Another factor to keep in mind is revenue stability. Fixed demand charges represent guaranteed income, while the income from volumetric charges is more volatile and subject to changes in customer behavior. Thus, if the town wants a steadier cash flow, it should consider scenarios 1 and 2. Finally, you might decide that for financial or environmental reasons, you want to set rates that encourage conservation. In that case scenario 3 will be a better option, as a higher price of water will reduce discretionary use among high-use households.

Please also consider the following as you continue to review your rates and make decisions on rate increases:

- All of the scenarios raised rates at an equal percentage across the board. Of course, you are not required to do so—and you may decide to raise rates differently for different customer classes.
- All three scenarios also had the aim of raising rates over three years. You may decide that you want to make up the revenue shortfall in one year, or over a longer period of time. Either option is appropriate—but keep in mind that a shorter timeframe will require steeper rate increases, while a longer timeframe will require discipline to stick to scheduled rate increases.
- Along with the 3 different scenarios, we are sending you a version of the tool called “Master Rates Analysis”. This allows you to set different percentage increases for base charges, volumetric charges, and water rates. The tool then shows projections for Groveton’s revenues and expenses. Along increasing rates using percentages, you can also manually change the rates in specific years. This tool is similar to what we used to analyze Groveton’s rates and in preparing this document.
- This rates review is not a full rates study, which would normally include a Cost of Service analysis and more in-depth analysis of your costs by customer type to ensure rates equity.

For more information

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