

Formulate Great Rates

*The Guide to Conducting a
Rate Study for a Water System*



RCAP

RURAL COMMUNITY ASSISTANCE PARTNERSHIP
an equal opportunity provider and employer

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Table of Contents

INTRODUCTION	1
CHAPTER 1: Is it time to examine your system's rate structure?	3
CHAPTER 2: Is it time for a rate increase?	7
CHAPTER 3: How do we spread an increase fairly among all customers?	14
CHAPTER 4: Setting the final base and flow rates	26
CHAPTER 5: Adjusting rates: How you do it makes a difference	32

Introduction

As a board member or officer of your community's water system, you have a very important responsibility to your community. Your job is to ensure that the water system provides residents with an adequate supply of high-quality drinking water delivered at a price that not only covers all of the costs of providing the service but also allows the system to prepare and plan for providing that service for many years to come. You must ensure that the water meets all regulatory standards, is reliable, and that there is sufficient quantity for all current and future users. When you consider everything that goes into providing safe, clean and affordable drinking water, it can sometimes seem like a daunting responsibility.

If you think of your water system as a business, which you should, in the simplest terms, you are providing a product or a service—clean water—and you are very familiar with the end result. On the other side of the business, you have revenue, specifically the income that customers give for you to provide the service according to the rates you set. With a commitment to fully analyzing your system's current rate structures and making corrections in those structures where needed, you can make facing the daunting challenge of providing this service easier. When you go through this process, you will know that the system will receive the proper amount of income from customers and with this be able to cover all of the functions on the expenses side of the water production and delivery business.

This guide breaks down all of the steps that need to be taken in the process of setting rates into manageable parts that can be completed by board members, your clerk, bookkeeper, or accountant. Your community's residents trusted your ability to make the right—if often difficult—decisions when they elected you to oversee the water system. This publication will help you make better decisions by showing you what is involved in the process and raising the issues that need to be addressed. If you need additional help, technical assistance providers, such as those who work for RCAP (which produced this guide), are available (see inside back cover).

Here are a few of the parts of the process of rate development as well as some issues that should be kept in mind through the process:

- **Rates must be set at a level that covers all of the costs to produce, treat, store, and distribute water to all customers.** These functions include other parts of a “business” that are not so visible—servicing debt, funding financial reserves, and other operations, maintenance and administrative costs, including those associated with regulatory compliance.
- **Rates must be fair and equitable.** Fair means that they are high enough to cover all costs of operating the system. Equitable means that each class (or type) of customer is paying what is rightfully its share of the costs.
- **A water system’s revenues *must not* be used to pay for other municipal services.** Using water revenues for other purposes while not adequately maintaining financial reserves or fully funding maintenance needs will only increase the costs of operations in the long run.
- **Customers should know what the rates are.** This is a time when people demand transparency of their governments. Your governing board should post water rates in the water or city office, on your website (if you have one), and/or comply with any other notification or approval requirements dictated by your state. The rate schedule should be sent to all customers at least once a year and every time there is an adjustment to the rates.
- **The rate structure should be easy to understand.** In general, small systems (fewer than 5,000 users) should have between one and three user classifications and between one and five consumption blocks.
- **Water rates have a short life span.** The existing rate structure should be examined at least once a year as part of the budget-development process to

determine if an adjustment needs to be made. If a dramatic change in income or expenses is experienced during the year, an analysis should be done to determine if an adjustment is necessary before the regular budgeting process.

- **Good rate structures are based on actual, accurate financial information and good customer records.** It’s very difficult to develop a fair and equitable rate structure if you’re not sure what your income and expenses have been for the last two to three years and how much water you are selling to each customer.
- **The rate structure should be easy to administer.** If it is too complex, chances are it’s going to be hard for customers to understand and support.

About the worksheets in this guide and how to get electronic spreadsheets

Worksheets for performing a rate study are provided in this guidebook with instructions for filling them in and performing the necessary calculations. It is possible to complete a rate study by using the worksheets provided in this guidebook and filling them in by hand and on paper, but, of course, a computer makes collecting and manipulating the figures in a worksheet much easier.

All of the worksheets in this guide are available in electronic spreadsheet form (as Excel files) on the RCAP website at www.rcap.org/rateguide so you can enter the figures for your system on your computer and have the spreadsheet perform automatic calculations (the formulas are already entered to do the calculations for you). Using the spreadsheets on the computer will also allow you to easily transfer data about your system between spreadsheets, which is done several times in the steps of a rate study.

Chapter 1

Is it time to examine your system's rate structure?

What is a board's job?

"The board's job is to keep rates down!"

"They'd vote us out if we raised rates!"

"We haven't raised rates in 15 years, and we're proud of it!"

"We have a lot of folks on fixed incomes who can't afford to pay more!"

Chances are you have either heard comments like this or have said them yourself. If so, you're not alone. No board member truly wants to raise rates, and certainly no one enjoys raising them. If rates are reviewed annually as part of the budgeting process, they can be adjusted in small, annual increments instead of infrequent but large increases. Customers are much more likely to be unhappy with an increase every few years of 10 percent, 20 percent, or even as high as 50 percent than they would be if there were very small (1 to 4 percent) annual increases. After all, most people's incomes increase slowly year to year and not in big jumps every few years, so why should things they pay for, like utilities, jump in price suddenly and unpredictably?

Examining your current rate structure

Before you look at raising rates, you should examine the current rate structure. The following questions can help you decide if a rate adjustment is needed in the near future:

- Did your system's revenues exceed expenses in each of the last three years?
- Were you able to make all scheduled payments on your long-term debt?
- Are you fully funding reserve accounts?
- Were you able to cover the cost of emergency and preventative maintenance as needed?
- Is your system in compliance with your state drinking water standards and regulations?
- Have you had a rate increase in the last three years?

If you answered no to any of these questions, it may be time to examine your rate structure.

Gaining public support

There is no way to get overwhelming public support for a rate increase. In fact, widespread support for higher rates will probably never happen. Public support will increase and the anger and frustration of most customers can be avoided by ensuring the following:

- Customers have a clear understanding of the proposed rate structure.
- It is clearly explained that the rate structure is necessary in order to operate the system on a financially sound basis.
- Each class of customers is paying its fair share of the costs.

Fair fare

One of the most difficult yet most important aspects of rate setting is making sure that different customer types are paying their fair share. It obviously costs more to install and maintain a service connection to a commercial customer with a 2-inch meter than to a residential customer with a ¾-inch meter. Therefore, the commercial customer should pay a higher connection fee and a higher monthly base charge. But does it really cost more to provide the actual amount of water that flows to the commercial customer?

The answer could be yes or no. It might be a bit cheaper based on the fact that you are able to sell a much higher quantity of water to that customer. Or there could be a situation in which the commercial customer might be driving your peak demand, which then requires additional treatment or pumping capacities. Breaking down those costs based on your system's expenses is one of the tasks that will happen later in this guide.

You should be mindful to set rates for each customer type based on the accurate, actual costs to provide the service and to avoid the easy trap of overcharging one customer type while undercharging another. Not only does over- and undercharging not help you cover the full costs of providing the service, but it also can create animosity toward the board from overcharged customers.

Small systems have several options for setting connection fees. Connection fees are different from deposits. Deposits are set and collected to ensure that if customers do not pay their bills, the system has money in reserve to cover expenses. Deposits should be set aside in an account so that the money can be refunded to customers if they discontinue service. Connection fees, (also called tap fees, impact fees, capital-improvement fees, subdivision fees, development fees*) are fees that are charged to a customer or group of customers to help the system cover the costs of capital improvements that have already been paid for or are being paid for by current customers or to cover the cost that the system will incur due to the additional connections. These fees are not refundable.

Base rates and flow rates— fixed costs and variable costs

The premise behind a base rate and a flow rate is that customers must pay a base rate even if they do not use any water at all in a given month; the flow rate covers the actual amount of water they use. The reason for having these two rates is that your system has costs (called fixed costs) that will have to be covered even if you never produce a single drop of water, such as long-term debt, reserve funding, billing and collecting expenses, operator salary, a portion of the clerk's salary, etc. You also have costs (called variable costs) that are directly related to producing water, such as labor costs, chemicals and equipment, utilities, contracted repairs, etc.

There are many opinions about what costs should be considered fixed and what costs should be considered variable, and determining them is not always going to be exact. A good rule of thumb is to consider costs that you would have to pay even if your system never produced a single drop of water as fixed costs and all costs directly associated with producing and delivering as variable costs. The fixed costs should be covered by the base rate and the variable costs covered by the flow rate.

Types of rate structures

The table on the next page describes the four most common types of rate structures. Study the chart to see what type of structure your system is currently using. As you will see, each structure type has advantages and disadvantages.

Your board needs to make careful and thoughtful decisions that balance the needs of both small- and large-volume users in your service area. If you are trying to develop or attract industry, you might want to select a rate structure that is more favorable to large-volume users. However, you need to be careful to not do this at the expense of the smaller commercial and residential users.

You should also consider the need to conserve. If your water supply is abundant and your treatment costs are relatively low and will remain so even with meeting new drinking water regulatory standards, you might not view conservation as paramount. Most financing agencies do consider conservation in evaluating financing for new projects, so that will need to be kept in mind. Conservation can also help in maintaining your level of storage as well as avoiding peak power rates that some electrical companies charge at various times of the year.

If your system is not metered and is using a uniform flat rate, it is strongly recommended that you install meters. If your system's meters are more than ten years old, you should formulate a plan to begin replacing the meters. Meters are the "cash register" of your system. If the meters are not reading accurately, you are losing revenue that your system needs in order to operate.

Overall, your board will want to select a rate structure that is fair and equitable to all users and produces the revenue necessary to operate your system.

Uniform flat rate

- Customers pay the same amount, regardless of the quantity of water used
- Used in unmetered systems

Example: Each customer is charged a flat rate of \$15 per month.

Advantages:

- No expense for installing and reading meters

Disadvantages:

- All users pay either too much or too little for what they use
- Promotes high consumption

Single block rate

- Customers are charged a constant price per gallon, regardless of the amount of water used
- Often is coupled with a minimum charge for having service available

Example: \$12 minimum service charge or base rate + \$2 per 1,000 gallons used.

Advantages:

- Easy to administer
- May encourage water conservation
- Cost to customer is in direct proportion to amount used

Disadvantages:

- May discourage industries that use high water

Decreasing block rate

- The price of water declines as the amount used increases
- Each succeeding consumption block rate is cheaper
- Structure is based on the assumption that costs decline as consumption goes up

Example:

- \$25 for first 2,000 gallons used
- \$3.50 per 1,000 from 2,001 to 6,000 gallons
- \$3.00 per 1,000 from 6,001 to 10,000 gallons
- \$2.50 per 1,000 for everything over 10,001 gallons

Advantages:

- Attractive to large-volume users

Disadvantages:

- Production costs may not decrease with the gallons of water produced
- For a limited number of customers, low-volume users may be subsidizing large-volume users

Increasing block rate

- The price of water increases as the amount used increases
- Each succeeding consumption block is more expensive
- Structure is based on the assumption that water rates should promote water conservation

Example:

- \$25 for first 2,000 gallons used
- \$2.50 per 1,000 for 2,001 to 6,000 gallons
- \$3.00 per 1,000 for 6,001 to 10,000 gallons
- \$3.50 per 1,000 for everything over 10,001 gallons

Advantages:

- Promotes water conservation, which is especially important in areas of limited water supplies or high treatment costs
- Less water use means less wastewater and smaller, less expensive wastewater treatment facilities
- Provides a reasonable amount of water at a reasonable price and charges a premium to those using more

Disadvantages:

- Higher costs for high usage may discourage industry from locating in service area

Chapter 2

Is it time for a rate increase?

As your water system's governing board, you are responsible for making sure that customers are charged enough to cover all of the expenses to operate the system. You are also responsible for spreading those charges fairly and equitably among all the customers served by your system.

Some customers may say, "But water is free!" The water might be free, but pumping, treating, storing, distributing, operating and maintaining the system in compliance with regulations is definitely *not* free. For most systems, the costs for these functions are going up every year.

Determining full and true costs of operations

Before your system can determine how much additional revenue might be needed for the next operating year, your board must review current expenses to see if all costs to operate the utility are being charged in the expenditures. Determining total revenues is much easier than determining total expenses.

The worksheet on page 9 will help you determine all revenues and expenditures for your system. The expenses are divided into fixed and variable costs, as discussed in the previous chapter. That distinction will be used later in determining base rates and flow rates.

Completing worksheets on the computer

While a computer is not absolutely necessary to complete a good rate study, all of the worksheets in this guide are available in electronic spreadsheet form (as Excel files) on the RCAP website at www.rcap.org/rateguide so you can enter the figures for your system on your computer and have the spreadsheet perform automatic calculations (the formulas to perform the calculations are already in the files, so all you have to enter is the data for your system). Using the spreadsheets on the computer will also allow you to easily transfer data about your system between spreadsheets, which is done several times in the steps of a rate study.

The instructions for filling in the worksheets in this guide apply also to the electronic spreadsheets, except that you do not need to perform any calculations. However, be aware that the worksheets in this guide look slightly different than the online Excel spreadsheets.

While entering expenditures into the worksheet/spreadsheet, make sure that any hidden costs or costs that might be paid by other community funds are noted. If your board operates only one utility, this may not be an issue, but it is quite a common issue in communities that also oversee other departments. A few examples of costs that may not be directly or only paid by the utility are:

- the salaries of a clerk or other administrative employees. At least a portion of those salaries should be allocated to the utility.
- office expenses, such as rent, utilities, supplies, etc. At least a portion should be allocated to the utility.
- insurance: The portion of the premium that covers any property of the utility, liability for the utility, or employees of the utility should be allocated to the utility.
- professional services, such as accounting, auditing, legal, or any others, should have a portion allocated to the utility.
- any other services, such as lawn mowing, snow removal, etc., that benefit the utility should have a portion allocated to the utility.



Name of town or system: _____

Income and Expense Worksheet

For year: 20____

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	Budget	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD	Mo. Avg.	Budget Diff.
3	Revenue															
4	Customer Payments															
5	Late Fees															
6	Other															
7	Revenue Received															
8																
9	Expenses															
10	Fixed Costs															
11	Debt Service															
12	Reserve Funds															
13	Billing & Collection/Office Rent															
14	Insurance															
15	Legal/Accounting															
16	Operator Salary															
17	Other															
18	Total Fixed Costs															
19	Variable Costs															
20	Labor															
21	O & M															
22	Repairs															
23	Office Expenses															
24	Other															
25	Total Variable Costs															
26	Total Expenses															
28	Profit/Loss															

City of Anytown, USA Income and Expense Worksheet

2010

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	Budget	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD	Mo. Avg.	Budget Diff. per month
3	Revenue															
4	Customer Payments	\$5,000	\$4,900	\$5,200	\$5,300	\$4,800	\$4,400	\$4,400	\$4,900	\$5,300	\$5,200	\$5,500	\$5,000	\$59,600	\$4,967	(\$33)
5	Late Fees	\$100	\$100	\$120	\$80	\$40	\$120	\$80	\$120	\$100	\$80	\$120	\$40	\$1,080	\$90	(\$10)
6	Other	\$0	\$0	\$120	\$0	\$0	\$0	\$0	\$120	\$0	\$0	\$0	\$0	\$240	\$20	\$20
7	Revenue Received	\$5,100	\$4,780	\$5,440	\$5,380	\$4,840	\$4,520	\$4,480	\$5,140	\$5,400	\$5,280	\$5,620	\$5,040	\$60,920	\$5,077	(\$23)
8																
9	Expenses															
10	Fixed Costs															
11	Debt Service	\$822	\$822	\$822	\$822	\$822	\$822	\$822	\$822	\$822	\$822	\$822	\$822	\$9,864	\$822	\$0
12	Reserve Funds	\$130	\$130	\$130	\$130	\$130	\$130	\$130	\$130	\$130	\$130	\$130	\$130	\$1,560	\$130	\$0
13	Billing & Collection/Office Rent	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$2,400	\$200	\$0
14	Insurance	\$110	\$0	\$1,300	\$0	\$0	\$0	\$0	\$0	\$0	\$300	\$0	\$0	\$1,600	\$133	(\$23)
15	Legal/Accounting	\$50	\$0	\$0	\$0	\$0	\$0	\$200	\$0	\$0	\$200	\$0	\$0	\$400	\$33	\$17
16	Operator Salary	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$12,000	\$1,000	\$0
17	Other	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$1,200	\$100	\$0
18	Total Fixed Costs	\$2,412	\$2,252	\$3,552	\$2,252	\$2,252	\$2,252	\$2,452	\$2,252	\$2,252	\$2,752	\$2,252	\$2,252	\$29,024	\$2,419	(\$7)
19	Variable Costs															
20	Labor	\$200	\$150	\$200	\$350	\$125	\$100	\$400	\$0	\$100	\$200	\$175	\$250	\$2,050	\$171	\$29
21	O & M	\$1,400	\$500	\$600	\$11,000	\$400	\$600	\$500	\$400	\$300	\$500	\$250	\$600	\$16,050	\$1,338	\$63
22	Repairs	\$400	\$1,500	\$300	\$500	\$700	\$0	\$0	\$1,500	\$0	\$0	\$400	\$500	\$5,400	\$450	(\$50)
23	Office Expenses	\$10	\$0	\$0	\$50	\$0	\$0	\$20	\$0	\$0	\$20	\$0	\$25	\$115	\$10	\$0
24	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25	Total Variable Costs	\$2,010	\$2,150	\$600	\$11,900	\$1,225	\$700	\$920	\$1,900	\$400	\$720	\$825	\$1,375	\$23,615	\$1,968	\$42
26	Total Expenses	\$4,422	\$4,402	\$3,152	\$14,152	\$3,477	\$2,952	\$3,372	\$4,152	\$2,652	\$3,472	\$3,077	\$3,627	\$52,639	\$4,387	\$35
28	Profit/Loss	\$678	\$378	\$1,288	(\$8,772)	\$1,363	\$1,568	\$1,108	\$988	\$2,748	\$1,808	\$2,543	\$1,413	\$8,281	\$690	



Explanation of example – City of Anytown, USA

Income and Expense Worksheet

The income and expense worksheet can be used with any water system. In this example, the City of Anytown has entered information for the entire year of 2010. Here is a breakdown of the information entered for January: The city received \$4,700 in payments from customers and \$80 in late fees. The total income is \$4,780 for the month.

The expenses are divided into fixed and variable costs. To start, the system has a loan. The payment on the loan is \$822 per month, which includes interest. The city is building a reserve account to prepare for future expenses and repairs. \$130 is put into the reserve account each month. The cost for printing and mailing the bills each month is about \$75, and the water system's share of the rent is \$125. So \$200 goes on the "Billing & Collection/Office Rent" line. There were no insurance, legal or accounting bills this month. The operator gets paid \$1,000 each month for his regular salary. The clerk gets \$100 each month for her work with the water system. This amount was put on the "Other" line. These are all of Anytown's costs that fall under fixed costs.

The section for variable costs has fewer categories. The figure for labor, in this case, is for extra work performed by the operator, which does not fall under his regular duties. In January, he was paid an additional \$150 for emergency work done on a weekend. General operation and maintenance (O & M) costs, which include chemicals, electricity, etc., were \$500 in January. A pump was also repaired in January, which cost \$1,500. There were no additional costs in January.

The total fixed costs in January were \$2,252, and the total variable costs were \$2,150. The expenses to run the water system in January were \$4,402. The water system made a profit of \$378 in January.

In a similar way, the system's revenue and expenses for all other months of the year have been entered and calculated. As the next section discusses, the city can then look at its total revenues and expenses for the year and see which is greater to determine if a rate increase is necessary. At the bottom of the "YTD" column, the figure of \$8,281 is shown, indicating that the system generated a profit for the year—that is, its total annual revenue was greater than its total annual expenses (\$60,920 - \$52,639 = \$8,281).

The importance of an annual budget

After completing the income and expense spreadsheet, ask: Were revenues greater than all expenses? Or were expenses greater than revenues? If the expenses were greater, then it is obviously time for a rate increase. The amount of the shortfall is how much revenue you will need to raise through a rate increase.

$$\begin{array}{r} \text{Total expenses} \\ - \text{Total revenues} \\ \hline = \text{Additional revenue needed} \end{array}$$

Hopefully your system is already developing a budget every year, especially if your state's laws or your funding source requires one. If you are not doing this, you need to start doing it now. A budget is a plan for a very important part of your system's operations—the financial part—and a way of organizing and managing this aspect of your operations. The most important part of the budgeting process is not just setting an accurate budget but is tracking actual income and expenses and comparing that information with your budget on a regular basis. If you don't know that your income and/or expenses are off from what you budgeted (planned) until after the budget year is completed, you can't adjust spending as needed. Don't let the meeting at which you adopt the budget be the last time you look at it for a year. The

budget should be reviewed by the board or council on a monthly or at least a quarterly basis. Your budget is your plan, and the only way a plan will work is if you follow the plan.

Streamlining operations to help in the interim

Before a decision is made to raise rates, your board needs to be sure that it has done everything possible to streamline operations (minimize expenses). Your system should be well-managed; customers should not have to pay for inefficiency and waste. Your board should be able to point out to customers all of the cost-saving measures that you have put in place when you are explaining why a rate increase is needed—that you have done your work first before asking for more of your customers.

Below are some measures that will help you better manage your system and that will probably help with your cash flow until a full rate study is completed and implemented. They are divided into short-term actions, which should result in almost immediate results, and longer-term measures that will take longer to see results from.

Short-term measures

- **Customer billing:** Make sure that meters are read and bills are sent out in a timely manner.
- **Billing all users:** Do all customers that receive water from your system have a meter? If not, install them. Are all customers being billed? In some communities, hospitals, churches, and other governmental departments (police and fire departments, city parks, public buildings) receive water without charge. This is not a good practice and is not fair to other users of the system. Are there customers that are stealing water? Illegal taps into the system, tampering with meters, bypassing meters, or taking water from hydrants to avoid paying are all
- theft. Establish and enforce stiff penalties. When your meter reader is out, make sure he/she is observant for signs of theft.
- **Accounts receivable:** If your collection and shut-off policies are not being strictly enforced, your system is losing revenue. The customers who pay on time are subsidizing late payers. If you have a large amount of accounts receivable, you should consider reducing the amount of time that customers are given to pay their bills. Also, your penalty for late payments is perhaps not high enough to encourage customers to pay on time.
- **Paying bills:** Prioritize your expenses for payment. Pay higher-priority items first (debt-service payments, salaries). Avoid paying late-payment penalties, if possible. Postpone any large, non-essential purchases.
- **Put your money to work:** When money is collected, is it immediately deposited? Are your bank accounts earning the highest possible interest rate? Shop around for banking services, use more than one bank, and place reserves in higher-interest certificates of deposit or money market accounts. Cities, villages, and nonprofit water districts can and should be earning interest on their money.
- **Transfers from financial reserves:** This measure should be taken only in emergencies. Before you transfer funds from reserve accounts, know how and when you will replenish the reserves you are “borrowing” from.
- **Temporary surcharges:** This measure should be taken only in emergencies. You can place a small surcharge on each meter to get through tight times. Set a strict limit on the period the surcharge will be in effect with a definite cut-off date. This is a very short-term measure, preferably for no more than three to six months. Make sure the customers understand the need for the surcharge.

Longer-term measures

- **Leak detection:** Subtract the number of gallons you billed your customers in a given month from the amount of water you produced or purchased. After allowing for known losses, such as what is used for flushing, figure out how much water your system is losing. It should be less than 15 percent of your water production. If it is higher than that, you are losing revenue and need to begin to identify loss points and start fixing them.
- **Meters:** As stated before, meters are the cash register of your system. If you don't have meters or your meters are not reading accurately, your system is losing money. If your meters are more than 10 years old, they probably need to be replaced. You should start a meter-replacement program that replaces approximately 10 percent of all meters every year, which means that over a decade all meters will be replaced.
- **Fees, deposits, surcharges:** Review your current fee and deposit policies to make sure they reflect the cost of providing services. Does your hook-up fee really cover the full cost of hooking up a new customer? Does your service-fee structure cover the extra cost of night and weekend work? Make sure all of your policies are in writing, and *always* treat customers equally. Many systems are now charging "impact fees." These require new customers to make up-front contributions to capital costs (such as additional wells, treatment, and other system components) the system incurs because new customers are hooking up. By doing this, existing customers are not subsidizing the direct cost of growth.
- **Bulk purchasing:** Consider purchasing chemicals and supplies in bulk to save money. Try to coordinate with a nearby system/systems to buy larger quantities or to purchase equipment that can be shared. Always get bids on high-cost items. Call around periodically to check prices to ensure that you are getting the best price on your supplies.

Chapter 3

How do we spread an increase fairly among all customers?

While no one likes a rate increase, customers are less likely to complain if they know that the increased cost is being shared fairly among all customers.

To make sure the cost of operating your system is being shared fairly, you need to know something about the history of your customers' water use. Gathering this history is part of a rate study. Doing a good rate study takes some time and work. Your board may want to appoint a committee to carry out the study. Be sure to include your city's accountant and your billing and collection clerk. Asking one or two customers to participate on the committee can increase public involvement, bring in the views of an important set of stakeholders, and help build support for the rate adjustment.

Many utility billing systems have built-in reporting functions that are able to produce usage information as described below. Otherwise, you can use the worksheet and the instructions starting on the following page to gather this information.

Collecting information

To determine how much water is used, this question needs to be answered: How many customers use how much water in an average month?

This information can be found in your customer billing records. The best method is to calculate each customer's usage for the last 12 months and then calculate an average. As mentioned, if you have a computer and billing software, this is very easy to do.

If you have to do it by hand, however, it could take several weeks for you to collect and format this information. If this is the case, a faster method is to use a sample of four months. The general rule for selecting months is to use the months with the highest and lowest usage and two medium-usage months (for example, July, December, October, and March).

If you use the four-month sample method, it is very important that you gather data for all 12

months for large users, particularly those that have wide variations in usage from month to month, such as seasonal industries, schools, etc. Analyzing only four months of data from large users could cause wide distortions in your figures. Use the Worksheet for Large Users (page 18) to get the monthly averages.

If your system charges different rates for residential and commercial customers, you need to calculate the average monthly usage for each current rate schedule.

Use Worksheet 1 to calculate the number of customers at each usage level for each month. Make a copy for each month calculated (four or 12) and for each rate schedule. Use the tick and cross method (tally or hash marks) to count customers at each usage level, and then add the total number in each level. Usage levels above 15,000 gallons need to have actual usage numbers recorded. Again, use the Worksheet for Large Users to calculate the monthly averages.



Explanation of example – City of Anytown, USA



Worksheet for Large Users

In Anytown, there is an elementary school that uses much more water when school is in session. Its usage is entered for each month of the year. In January, it used 23,900 gallons. In July, it used 1,800 gallons. Similarly, the usage for another larger user is entered—a car wash. The total gallons used by the large users is found at the bottom of the worksheet. In this case, the large users used 617,400 gallons for the year, for an average of 51,450 gallons per month. This information is used in subsequent worksheets.

Analyzing customer usage

When the usage information for all customers has been recorded for each month and each rate class in Worksheet 1, this information needs to be summarized to establish the general customer profile, which is Worksheet 2.

There are three ways to use worksheet 2:

1. Enter the number of customers for each month in each usage category.
2. Select 4 months and enter the number of customers for those months in each usage category.
3. Enter in column N the average number of users for per month in each usage category.

The method you select will depend on the information available to you. If you have to

figure usage manually and use worksheet 1, you should use the 4-month method (option 2 above). If your computer system can give you the average number of customers for each usage category, then use method 3 and enter the numbers in column N. Otherwise, the most accurate method would be the first. Enter the actual number of customers for each usage category.

If your system has separate rate schedules for residential and commercial users, you will need to complete a separate Worksheet 2 for each rate class.



Worksheet 2 - General Customer Profile

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
Water use per month in gallons	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	If Average Number of users is known - Enter here	Average Number of Customers per month	Customer Percentage of Total	Average Use	Average Total Water Use	Percent of Average Total Water Used	Target Revenue	
4 Under 1000																500				
5 1001 - 2000																1500				
6 2001 - 3000																2500				
7 3001 - 4000																3500				
8 4001 - 5000																4500				
9 5001 - 6000																5500				
10 6001 - 7000																6500				
11 7001 - 8000																7500				
12 8001 - 9000																8500				
13 9001 - 10,000																9500				
14 10,001 - 11,000																10,500				
15 11,001 - 12,000																11,500				
16 12,001 - 13,000																12,500				
17 13,001 - 14,000																13,500				
18 14,001 - 15,000																14,500				
19 Over 15,000																				
20 Totals																				

Explanation of example – City of Anytown, USA



Worksheet 2

For Anytown, all of the information was entered for the whole year. There are a total of 109 customers in January. Twenty-three of them used less than 1,000 gallons of water. On the right side of the worksheet, information is provided. “Customer percentage of total” indicates the percentage of Anytown’s customers at each usage level. In this example, 17.92% of customers use less than 1,000 gallons per month. The far right column shows how much of the water system’s costs should be supported by each usage class. In this example, the customers who use less than 1,000 gallons of water should pay about 10.03% of the total cost to operate the system.

Instructions for Worksheet 2

- Columns B-M:** Enter the number of customers counted on the respective monthly sheet from Worksheet 1.
- Column O:** For each usage level (row), add the numbers entered in columns B-M. Divide this total by 12 if you have figures for all 12 months or 4 if you have figures for only 4 months. Enter the result in column O. Add the numbers in column O, and enter the total at the bottom of column O.
- Column P:** For each usage level (row), divide the number in column O by the total found at the bottom of column O and multiply this by 100 to get a percentage. Enter each result in column P.
- Column Q:** The values shown in this column represent the midpoint of each usage level. The midpoint is an accurate estimate for median usage of all customers in that category. For the last row (the over 15,000 gallons line), enter the monthly average usage of all customers using more than 15,000 gallons per month. To calculate the average usage for these customers, use the Worksheet for Large Users. Enter the Total Monthly Average from the Worksheet for Large Users in cell 19Q.
- Column R:** Multiply the number in each row of column O by the amount in column Q, and enter the answer in column R. ($O \times Q = R$). After entering the results for each row in column R, add the numbers in column R, and enter the total at the bottom of column R.
- Column S:** For each usage level (row), divide the number in column R by the total found at the bottom of column R and multiply this by 100 to get a percentage. Enter each result in column S.
- Column T:** For each usage level (row), add the entry in column P to the entry on the same line in column S, and divide by 2. Enter each result on the corresponding row of column T. $[(P+S)/2=T]$



Worksheet 2 - General Customer Profile - 12 months

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Water use per month in gallons	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	If Average Number of users is known - Enter here	Average Number of Customers per month	Customer Percentage of Total	Average Use	Average Total Water Use	Percent of Average Total Water Used	Target Revenue
Under 1000	23	26	22	19	18	14	16	18	20	22	23	22	20	20.25	17.92%	500	10,125	2.13%	10.03%
1001 - 2000	10	11	14	21	22	27	23	22	19	15	16	13	18	17.75	15.71%	1500	26,625	5.61%	10.66%
2001 - 3000	16	15	17	18	17	15	14	17	18	18	19	17	17	16.75	14.82%	2500	41,875	8.82%	11.82%
3001 - 4000	19	19	18	21	22	20	18	19	20	23	18	18	20	19.58	17.33%	3500	68,542	14.43%	15.88%
4001 - 5000	13	14	16	14	15	17	13	15	18	13	9	12	8	14.08	12.46%	4500	63,375	13.34%	12.90%
5001 - 6000	7	6	8	6	7	5	12	9	10	9	13	11	5	8.58	7.60%	5500	47,208	9.94%	8.77%
6001 - 7000	5	5	3	4	6	7	3	5	3	4	6	6	3	4.75	4.20%	6500	30,875	6.50%	5.35%
7001 - 8000	2	4	3	3	2	4	6	2	2	3	4	3	2	3.17	2.80%	7500	23,750	5.00%	3.90%
8001 - 9000	2	1	2	3	1	1	3	2	0	2	0	3	2	1.67	1.47%	8500	14,167	2.98%	2.23%
9001 - 10,000	5	3	6	2	0	1	1	1	0	1	2	2	1	2.00	1.77%	9500	19,000	4.00%	2.89%
10,001 - 11,000	2	2	1	1	2	0	1	2	2	0	1	1	1	1.25	1.11%	10,500	13,125	2.76%	1.93%
11,001 - 12,000	3	2	1	1	0	1	2	0	0	2	0	2	2	1.17	1.03%	11,500	13,417	2.82%	1.93%
12,001 - 13,000														0.00	0.00%	12,500	0	0.00%	0.00%
13,001 - 14,000														0.00	0.00%	13,500	0	0.00%	0.00%
14,001 - 15,000														0.00	0.00%	14,500	0	0.00%	0.00%
Over 15,000	2	2	2	2	2	2	2	2	2	2	2	2	2	2.00	1.77%	51,450	102,900	21.66%	11.72%
Totals	109	110	113	115	114	114	114	114	114	114	113	112		113.00	100%		474,983	100.00%	100.00%

Interpreting the information

The information in Worksheet 2 will provide you with important information about your customers' water usage. For example, if you look at Column P, you will probably find that most of your customers, perhaps more than 50 percent, have an average usage of less than 4,000 of water per month.

What percentage of your customers uses an average of less than 4,000 gallons per month?

Answer: _____

(Use column P for your answer.)

Next, look at column S. You will probably find that these same customers use a small portion of the average total water used for the entire system, perhaps less than 10 percent of the total.

What percentage of the average total water used in your system goes to customers using less than 4,000 gallons per month?

Answer: _____

(Use column S for your answer.)

Now look at your high-usage customers, referring to the bottom of column P. What percentage of your customers is in the highest usage level? Beginning at the bottom of column P, work your way up column P until you reach 10 percent. These will be your highest-use customers. Now move across to column S to determine what percentage of the average of all water is used by this small group. Commonly this group will use 25 percent or more of the water.

Worksheet 2 helps to explain why coming up with a satisfactory rate structure is so difficult. A large proportion of your customers uses a small percentage of the water, and a small proportion of your customers uses a large percentage of the water. Who benefits and who pays? Continue to study Worksheet 2 to see what else can you learn about your customers' water usage.

Fairness check

When you have to adjust water rates, "equity" is the art of spreading the burden fairly among your customers. The governing board may not be able to entirely control the distribution of the costs of producing, treating, storing, and distributing safe water to your customers, but you can and *should* make sure that all customers are paying their fair share—not too much and not too little.

Look at Worksheet 2, column T (Target revenue). Target revenue is the percentage of all revenue that will be charged to each user level in a system that spreads costs fairly among all users.

Example

Say your target revenue for all customers using between 4,001 and 5,000 gallons per month is 10 percent. If your rate structure is fair, then the customers at this usage level will pay 10 percent of the total revenue needed to operate the system. If users are paying more or less than the percentage listed, they are paying too much or too little.

Target revenue is an average of the percentage of customers at each usage level and the percentage of the average amount of total water used by customers in each usage level.

Worksheet 3 will allow you to calculate the equity (or "fairness") of your current rate structure. Some of the information you gathered in Worksheet 2 will be used to see how fair your current rate structure is.

Worksheet 3 - Current Rate Structure Equity (Fairness) Check

	A	B	C	D	E	F	G
	Average Monthly Water Use	Current Cost per Customer	Average Number of Customers	Total Average Revenue by use Class	% of Total Average Revenue	Target Revenue	Equity*
4	500						
5	1,500						
6	2,500						
7	3,500						
8	4,500						
9	5,500						
10	6,500						
11	7,500						
12	8,500						
13	9,500						
14	10,500						
15	11,500						
16	12,500						
17	13,500						
18	14,500						
19							
20	Total						
*Goal is -2 to +2 percent							

Instructions for Worksheet 3

Column A: The numbers in this column represent the average monthly water use for each usage level. Substitute the average use in your highest-use category for the 0 in cell A19 (found in Worksheet 2, cell Q19).

Column B (Current cost per customer): Use your current rate structure to calculate how much you have charged a customer using each of the usage levels found in column A.

Column C: The average number of customers in each usage level is taken from Worksheet 2 column O.

Column D (Total average revenue by use class): For each usage level (row), multiply the dollar amount found in column B by the average number of customers in column C and enter the result in column D. ($B \times C = D$) After entering the results for each row in column D, add the numbers in column D and enter the total at the bottom of column D.

Column E (% of total average revenue): Divide each row in column D by the total found at the bottom of column D and multiply by 100 to get a percentage. Enter each result in column E.

Column F: The target revenue is taken from Worksheet 2, column T.

Column G: Subtract each row in column E from the same row in column F, and place your answer in column G ($F - E = G$).

If your current rate structure spreads the cost of providing water equitably, the numbers on each row of column G will be between -2 percent and +2 percent. If some of the numbers are larger or smaller than -2 percent to +2 percent, the customers in that class are paying too much or too little for their water.



Explanation of example – City of Anytown, USA



Worksheet 3

All of the information for this worksheet is collected from information in other worksheets. Its purpose is to help determine if the water rates are fair for all customers. The goal is to be plus or minus two percent in column G.

Column A is always the same, with the exception of the last row. For Anytown, the average monthly water use is 51,450 gallons for large users, information that was retrieved from the Large User Worksheet. Column B (Current Cost per Customer) is collected from worksheet 4 (Calculating Basic Flow Charge). For Anytown, the current cost for a customer whose average use is about 11,500 is \$102.00 per month. Column C (Average number of Customers) shows how many customers on average for each group for the last year. For those who use, on average, 3,500 gallons (would be the same customers who use between 3,001 and 4,000 gallons from worksheet 2), the average number of customers per month is 19.58 for Anytown. Column D is average revenue per month by user class. The average revenue for water sold to the large users is \$843.20 per month. Column E breaks down the percentage of revenue collected from each user class. This example shows the minimum water users pay 7.27% of total revenues. The Target Revenue in column F is the “equitable” goal for each user class. This number comes from worksheet 2. The target revenue for the minimum water users is 10.03%. The final column—G—shows if the user group is paying its fair share. If a number is positive, the group is under paying. If the number is negative, the group is overpaying. In the example, the minimum user class has a target revenue of 10.03% and pays 7.27% of total revenue. This user class underpays by 2.75%. This is considered inequitable.

Worksheet 3 - Current Rate Structure Equity (Fairness) Check

	A	B	C	D	E	F	G
	Average Monthly Water Use	Current Cost per Customer	Average Number of Customers	Total Average Revenue by use Class	% of Total Average Revenue	Target Revenue	Equity*
4	500	\$18.00	20.25	\$364.50	7.27%	10.03%	2.75
5	1,500	\$22.00	17.75	\$390.50	7.79%	10.66%	2.86
6	2,500	\$30.00	16.75	\$502.50	10.03%	11.82%	1.79
7	3,500	\$38.00	19.58	\$744.17	14.85%	15.88%	1.03
8	4,500	\$46.00	14.08	\$647.83	12.93%	12.90%	-0.03
9	5,500	\$54.00	8.58	\$463.50	9.25%	8.77%	-0.48
10	6,500	\$62.00	4.75	\$294.50	5.88%	5.35%	-0.53
11	7,500	\$70.00	3.17	\$221.67	4.42%	3.90%	-0.52
12	8,500	\$78.00	1.67	\$130.00	2.59%	2.23%	-0.37
13	9,500	\$86.00	2.00	\$172.00	3.43%	2.89%	-0.55
14	10,500	\$94.00	1.25	\$117.50	2.34%	1.93%	-0.41
15	11,500	\$102.00	1.17	\$119.00	2.37%	1.93%	-0.45
16	12,500	\$0.00	0.00	\$0.00	0.00%	0.00%	0.00
17	13,500	\$0.00	0.00	\$0.00	0.00%	0.00%	0.00
18	14,500	\$0.00	0.00	\$0.00	0.00%	0.00%	0.00
19							
20	Totals	\$421.60	2.00	\$843.20	16.83%	11.72%	-5.11
*Goal is -2 to +2 percent			Total	\$5,010.87			

If your system includes 1,000 or 2,000 gallons of water in the base rate, your base rate needs to include the cost of this water. The reason for including this cost is that there are operation and maintenance costs associated with producing the first 1,000 gallons just as there are costs to produce the second, third, or fourth thousand gallons.

Now you will use the monthly fixed costs per customer and the variable cost per 1,000 gallons to develop a basic rate structure.

Base rate

Basic rule: Try to cover all of your system's fixed costs in the base rate portion of your rate schedule.

The fixed costs per customer that you calculated above represent each customer's fair (equal) share of having water available whenever they want it. If your base rate includes a minimum amount of water (1,000 or 2,000 gallons, for example), you need to include the cost of producing that water in the base rate. You do this by multiplying the variable cost per 1,000 gallons (calculated in the previous section) by the number of units of water included in the minimum. Then add this number to the fixed cost per customer to determine the base rate. The formula below will help you find your base rate. *Remember to make the calculation in parentheses first.*

1,000 gallons = 1 unit

\$ _____ + (\$ _____ x _____) = \$ _____

Fixed cost per customer	Variable cost per 1,000 X # of units included in minimum	Base rate
-------------------------	--	-----------

Flow rate

Basic rule: Try to recover all of your system's variable expenses in the flow rate portion of your rate schedule.

Small systems should begin with a flow rate that is based on the calculated variable costs per 1,000 gallons. This allows you to build a rate structure that divides costs fairly among all customers regardless of the amount of water used. Once the flow rate is calculated and you have had a chance to study the overall rate structure, you may wish to modify it in response to local conditions and considerations.

Ensuring your rate structure covers all expenses

The following worksheet will help you make sure that your rate structure covers all expenses.



Worksheet 4 - Calculating Basic Flow Charge

	A	B	C	D	E	
3		Base rate	\$18.00		Flow rate	\$8.00
4		How many 1000's of gallons are included in base rate?		1		
5						
6						
	Water usage for the month in gallons	Average number of customers	Average usage (in 1,000-gallon units)	Revenue from base rate	Revenue from flow rate	
8	Under 1000	20.25	0.5	\$364.50	0.00	
9	1001 - 2000	17.75	1.5	\$319.50	71.00	
10	2001 - 3000	16.75	2.5	\$301.50	201.00	
11	3001 - 4000	19.58	3.5	\$352.50	391.67	
12	4001 - 5000	14.08	4.5	\$253.50	394.33	
13	5001 - 6000	8.58	5.5	\$154.50	309.00	
14	6001 - 7000	4.75	6.5	\$85.50	209.00	
15	7001 - 8000	3.17	7.5	\$57.00	164.67	
16	8001 - 9000	1.67	8.5	\$30.00	100.00	
17	9001 - 10,000	2.00	9.5	\$36.00	136.00	
18	10,001 - 11,000	1.25	10.5	\$22.50	95.00	
19	11,001 - 12,000	1.17	11.5	\$21.00	98.00	
20	12,001 - 13,000	0.00	12.5	\$0.00	0.00	
21	13,001 - 14,000	0.00	13.5	\$0.00	0.00	
22	14,001 - 15,000	0.00	14.5	\$0.00	0.00	
23	Over 15,000 gallons	2.00	51	\$36.00	807.20	
24	Totals	113.00		\$2,034.00	2,976.87	
25	Total Monthly Revenue \$5010.87					

Explanation of example – City of Anytown, USA

Worksheet 4

This worksheet calculates revenue based on number of users from worksheet 2, the base rate for water (C3), the flow rate (F3), and the number of thousand gallons included in the base rate. In the example, the base rate is \$18.00, the flow rate is \$8.00 and 1,000 gallons are included in the base rate.

Column B's information is from worksheet 2. The last row in column C reflects large users and is information collected from worksheet 2. Column D calculates revenue from the base rate, and column E calculates revenue from the flow rate. The base rate should cover your expenses from the income and expense worksheet. In the example, the base rate revenue is expected to be about \$2,034 per month. The budget on the income and expense worksheet shows fixed costs to be about \$2,419 per month. So the base rate should be higher to cover the fixed costs to run the water system.

This rate structure should provide enough revenue to cover your budgeted expenses. If you are unsure that your budgeted expenses are correct, you may want to increase your estimated expenses by 5 to 7 percent then refigure your fixed and variable costs to provide a cushion. If your system has a capital-improvements plan, be sure to add the expenditure projections into the fixed-costs section in the previous spreadsheets.

The rate structure you just completed is considered a single-block rate. In this type of rate structure, the fixed costs are divided evenly among users, and the variable costs are charged to the customer in direct proportion to the amount of water used.

Modifying the single-block rate structure

The primary purposes of a rate study are to ensure that rates are set high enough to cover all costs of operating the system and to ensure that costs are spread fairly among the system's customers. However, there are local conditions and circumstances that may require other factors be considered in the process of determining rates. Below are some factors that may need to be considered that might require a single block rate structure to be modified:

- Base rates for commercial and industrial customers may need to be higher due to possible higher costs of providing service, such as more expensive metering systems, or if these users require additional peak-production capacities (well production, treatment plant, storage, pumping, etc.) to meet their requirements.
- Some systems may want to minimize costs to commercial and industrial users

Worksheet 4 - Calculating Basic Flow Charge

	A	B	C	D	E	F
3		Base rate			Flow rate	
4		How many 1000's of gallons are included in base rate?				
5						
6						
	Water usage for the month in gallons	Average number of customers	Average usage (in 1,000-gallon units)	Revenue from base rate	Revenue from flow rate	
8	Under 1000					
9	1001 - 2000					
10	2001 - 3000					
11	3001 - 4000					
12	4001 - 5000					
13	5001 - 6000					
14	6001 - 7000					
15	7001 - 8000					
16	8001 - 9000					
17	9001 - 10,000					
18	10,001 - 11,000					
19	11,001 - 12,000					
20	12,001 - 13,000					
21	13,001 - 14,000					
22	14,001 - 15,000					
23	Over 15,000 gallons					
24	Totals					
25	Total Monthly Revenue* (D24 + E24)					

Instructions for completing Worksheet 4:

Column A: Usage levels are taken from Worksheet 2 (column A).

Column B: Average number of customers in each usage level is taken from Worksheet 2, column O.

Column C: Average usage (expressed by 1,000 gallon units) is the same as the average use in Worksheet 2, column Q, divided by 1,000. Thus, 500 gallons of average use becomes 0.5, and 1,500 becomes 1.5. Replace the 0 in cell C23 with the amount from Worksheet 2, cell Q19, divided by 1,000.

Column D (Revenue from base rate): Write in the base rate you calculated above: \$_____ (or in cell C3). Multiply each number in column B by your base rate, then enter the result in column D. When all rows are completed, add all of the numbers in column D, and enter your total at the bottom of the column.

Column E: Enter the calculated flow rate into cell F3, and enter the number of units included in the base rate into cell D4. Multiply each number in column B by the number in column C minus the number of units included in your base rate. Then multiply the answer by the flow rate. Enter the result in column E. The formula below will help you with this calculation (*remember to complete the calculation in parentheses first*). If you get a negative number with this calculation, enter 0 in column E. (This is because the usage for this category is less than the minimum.)

$$\text{_____} \times (\text{_____} - \text{_____}) \times \$\text{_____} = \$\text{_____}$$

Column B Average use minus Flow rate Revenue from
 # of units included in flow rate flow rate
 base rate

When finished, add the numbers in column E, and enter your total at the bottom of the column.

Add the total from the bottom of columns D and E and enter your answer here: \$_____. This is the estimated total revenue your new rate structure will produce. Check it against your expense budget for next year.

in order to attract new business to the community by shifting a larger portion of the costs to residential users.

- Limits on the amount of water available to the system may require a rate structure that encourages conservation and that charges a premium for wasting water or for high usage.
- A community whose wastewater treatment facility is at or very near capacity may choose a rate structure that discourages high usage in order to avoid the expense of expanding and/or upgrading wastewater facilities.

If your system has more than two classes of customers, or if you have larger commercial or industrial users that are to be given special consideration with rates, it is highly recommended that you consider seeking qualified outside guidance to modify the single block-rate structure. Technical assistance providers from the Rural Community Assistance Partnership (RCAP) can provide assistance at no cost to your community.

Special attention should be devoted to non-standard requests for water service, that is, any request for service beyond a typical residential meter placement. These could take the form of service requests for new developments or subdivisions, or for single, large commercial or industrial users. Many systems also adopt impact or capital-improvement fees to cover increased demand on capital assets (source water, treatment, storage, pumping, distribution, etc.) as a result of increased demand from new customers.

See the inside back cover of this guide for contact information for assistance from RCAP in your state.



Chapter 5

Adjusting rates: How you do it makes a difference

Do you know the feeling when you go to the gas station to fill up your vehicle and see that the price of gas has increased each time? Are you shocked and mad? Do you feel like you are being ripped off or taken advantage of? Do the explanations for this that you hear on the news sound more like excuses than good reasons?

The lesson for small-system governing boards is: **Don't make a rate increase a surprise to your customers!** They *will* get mad. Some may even complain loudly when they see you in the grocery store. Explanations after you've raised rates will likely sound like excuses to customers. And you will have lost support you could have had if you had made customers aware beforehand.

The decision to raise rates is never an easy one. In earlier chapters, you have gone through the steps of developing an equitable (fair) rate structure that will fully cover all costs of operating your system. Following are some ideas to help with gaining customer support for the needed increases.

Educate yourself

Getting ready for a rate increase starts with the board doing its homework. The board needs to honestly assess the physical and financial condition of the system.

When was the last time you toured your system's facilities? If it has been more than six months, schedule a date as soon as possible for the entire board to view your facilities with the operator. Look at each part of the system—how it works, what preventative maintenance is being done to keep it in good shape, and when it will need to be replaced. Make a list of both the good and bad parts of the system's operation. Carefully identify any improvements the board plans to make and pay for with a rate increase, and be ready to explain why the improvements are necessary. Look at the last inspection from your state's regulatory agency to see that all recommended improvements have been made or are included on your list.

Technical help for non-technical people

For board members who need to understand some of the technical aspects of a drinking water or wastewater plant and treatment process in order to make decisions about their physical maintenance and development, RCAP has produced two guides. *A Drop of Knowledge: The Non-operator's Guide to Drinking Water Systems* and *A Drop of Knowledge: The Non-operator's Guide to Wastewater Systems* explain in simple, everyday language the water-treatment processes to people without a technical background or who have no prior experience with water-plant operations. See page 35 for how to obtain these guides.

Review next year's budget, and identify what costs will be going up. If you know that your costs for electric services and chemicals will be higher, let your customers know. They will understand that you have no choice but to pass those increased costs along to those who receive your final product.

You know you have done your homework when you can knowledgeably answer customers when they ask, "Why do we need a rate increase?" It is easier for your customers to support a rate increase if they know specifically what the money will be spent on. The bottom line is to provide information so customers know what you are doing and why, which, in essence, is what transparency is all about.

Streamline your operation

Before you increase rates, be sure you have done everything possible to cut back on expenses. Go back to the section in Chapter 2 about short- and long-term measures for cutting expenses and increasing revenue. Your system should be well-managed; your customers should not have to pay for inefficiency and waste.

Educate your customers before the increase

Your program to educate customers should include the following three points:

1. The proposed increase will ensure that the utility can comply with current regulations to protect the health and welfare of the community.

Safe drinking water has both a personal and community impact. Modern water-treatment processes have almost eliminated diseases such as cholera and typhoid and will protect consumers from new and equally deadly contaminants we face due to increased industrialization and use of chemicals. Effects on the community are related to growth and economic development. Businesses and industries will not locate where they cannot be assured of clean water for their employees

and manufacturing or processing needs. Do you think a business would locate to a place where the electricity supply is not stable? It is the same with the water supply. New businesses and residents expect both a reliable and safe supply of water.

The Environmental Protection Agency (EPA) continuously updates the list of harmful contaminants, and state regulatory agencies (called "primacy agencies" because they are the primary enforcers of regulations) set regulations to keep our drinking water safe and to protect our environment. As the list of contaminants deemed harmful to humans and the regulations to protect our water supplies expand, so will the cost of treating water. Additional money will be needed to pay for the new technologies to keep our water supply in compliance with these regulations.

2. The rate structure you have developed is as equitable and fair as possible; each class of customers is paying its fair share.

Stress how the proposed rate structure you have developed is as fair as possible to all customers. For whatever principle or strategy you have used to develop the rate structure, make sure you can explain it to the public. Post the rates, and make sure that customers understand them.

3. The rate increase is needed to cover the full costs of producing, treating, storing, and distributing water to the customers.

Explain that the system must be self-supporting and that revenue from the sale of water must cover all costs of operating the system. Utilities must be self-sufficient, which is an important part of an industry-wide movement toward sustainability. In order to pay for itself, your system must rely solely on its own income, which comes mainly from user fees (the amount you charge customers). As a board, you are responsible for keeping the public informed of the financial condition of the system and what it costs to provide safe

and dependable water. Invite the public to take part in the budget process and once the budget is complete, don't keep it a secret.

After all, unlike some businesses residents patronize, your community's residents have not only their funds invested month in and month out in your water system through the rates they pay, but the system is something they use and depend on daily—more than they ever think about for the way it fulfills their basic needs. A water utility owes it to its customers to explain what this service is and how vital it is to their survival and lifestyle and what it takes to bring them that service.

Remember—there should be no surprises!

Educating customers should be an ongoing part of your system's operation. Your community's system belongs to its customers, and as a board, you work for them and on behalf of them. One of the best times to educate customers is while you are developing the annual budget. Let the public know when you are working on the budget, and post more than the required notices inviting them to attend budget meetings. You can publish the notices in the local newspaper or have them announced on the local radio station. Let residents know that you have nothing to hide, and you should act like you have nothing to hide (transparency again, which citizens are expecting of their governments). The more your customers know about what it takes to provide the safe drinking water they take for granted, the more likely they will be to support a rate increase.

Getting the word out

As soon as you know a rate increase is coming, start getting the word out. Primary responsibility for obtaining customer support for an increase belongs to the governing board. To be effective, each member of the board needs to understand the operation and needs of the system in order to communicate effectively.

Make sure your operator, clerk, and all other employees understand the need for the rate increase. Let them know the board expects their support. But remember—you as the governing board are responsible for educating customers. That is not a job that should be left only to employees.

Think about your community and how to best get the word out. Divide the responsibility for some of the following tasks among board members:

- How can we use the local newspaper or radio coverage to help? Don't consider only placing an ad, but contact a reporter to pitch a news story as well that could include interesting information about the process the community has for supplying water. This would help with educating customers, which would help them support a rate increase.
- If your utility has a website, can an announcement and an explanation about the rate increase be posted? Does the community as a whole have a website where this could be done?
- What civic, business, or church groups need to be informed?
- Would the support of key community leaders help?
- Can you send information home with school-aged children?
- Does your monthly billing process allow for providing additional information (such as a bill insert), or should the board prepare a separate mailing to all customers?
- What other ways can you use to provide customers with information to illustrate the need for the rate increase?

Final thoughts

Small increases are better than large increases:

This almost goes without saying: Smaller is always better. Don't wait until your system is in deep financial trouble or a large and expensive piece of your system breaks to start thinking about a rate increase.

Scheduled, small increases are even better:

Decide now to review your water rates every year as part of your annual budgeting process. Small, annual increases are much less painful for customers than large increases every three or four years.

Scheduled increases that don't happen are best of all:

Once you get into the habit of reviewing rates every year, you will find that some years it won't be necessary to raise them at all. Certainly let your customers know when you *don't* have to raise rates.

As your board begins to think about a rate increase, it's important to remember that you were elected to take responsibility for providing your community with an uninterrupted supply of safe drinking water. No one is going to thank you for keeping rates low if the water becomes unsafe to drink or the system keeps breaking down and there is no money to pay for repairs. Keep in mind that the public trusted you (by electing you) to make the tough decisions, so don't let them down!

Other RCAP publications to help in the operations and oversight of water systems

If you are a board or council member or staff member with responsibilities for overseeing your community's water system, the Rural Community Assistance Partnership (RCAP) has produced many other publications to assist you in these responsibilities. These publications are titled/on the topics of:

- *A Drop of Knowledge: The Non-operator's Guide to Drinking Water Systems*
- *A Drop of Knowledge: The Non-operator's Guide to Wastewater Systems*
- *responsibilities (managerial, financial, legal, etc.) of board members of small water systems*
- *USDA Rural Utilities Service Borrower's Guide: A How-to for Water and Wastewater Loans from USDA Rural Development*
- *ARRA Registering and Reporting Guide for Water/Wastewater Systems with Loans/Grants from the U.S. Department of Agriculture-Rural Utilities Service*
- *planning and resources for sustainable infrastructure for small water systems*
- *financial management of small water systems*
- *developing and managing a water- or sewer-construction project*
- *water-distribution system maintenance*
- *asset management and conducting vulnerability assessments and emergency-response planning*

All of the above publications can be accessed and downloaded for free (in PDF) on the RCAP website at www.rcap.org (click on "Publications & Resources" on the main menu).

Free resources that can be sent to you regularly:

RCAP has a magazine—*Rural Matters*—that is produced several times each year. Subscriptions are free. Included in each issue are articles that are useful to small community leaders and system operators. RCAP also produces an electronic newsletter, the eBulletin. Subscribing by email is also free. Each issue provides helpful tips, guides and resources on practical subjects. Find subscription information for both of these resources at www.rcap.org (click on Publications & Resources).

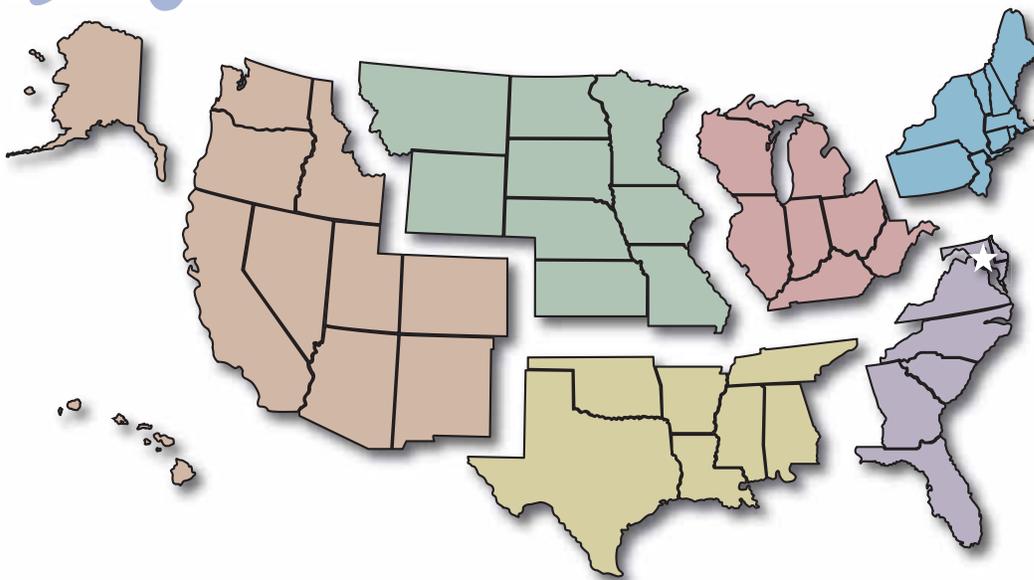
Need help with your community's water or wastewater system?

The Rural Community Assistance Partnership (RCAP) is a national network of nonprofit organizations working to ensure that rural and small communities throughout the United States have access to safe drinking water and sanitary wastewater disposal. The six regional RCAPs provide a variety of programs to accomplish this goal, such as direct training and technical assistance, leveraging millions of dollars to assist communities develop and improve their water and wastewater systems.

If you are seeking assistance in your community, contact the office for the RCAP region that your state is in, according to the map below. Work in individual communities is coordinated by these regional offices.



Rural Community Assistance Partnership



Western RCAP

Rural Community Assistance Corporation
3120 Freeboard Drive, Suite 201
West Sacramento, CA 95691
(916) 447-2854
www.rcac.org

Midwest RCAP

Midwest Assistance Program
P.O. Box 81
212 Lady Slipper Avenue NE
New Prague, MN 56071
(952) 758-4334
www.map-inc.org

Southern RCAP

Community Resource Group
3 East Colt Square Drive
Fayetteville, AR 72703
(479) 443-2700
www.crg.org

Northeast RCAP

RCAP Solutions
P.O. Box 159
205 School Street
Gardner, MA 01440
(800) 488-1969
www.rcapsolutions.org

Puerto Rico
(Northeast RCAP)
and U.S. Virgin
Islands (RCAC)

Great Lakes RCAP

WSOS Community Action Commission
P.O. Box 590
219 S. Front St., 2nd Floor
Fremont, OH 43420
(800) 775-9767
www.glracap.org

Southeast RCAP

Southeast Rural Community Assistance Project
P.O. Box 2868
347 Campbell Ave. SW
Roanoke, VA 24016
(866) 928-3731
www.southeastrcap.org

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Visit our website for other publications, electronic and print periodicals, and ways your community can get assistance with its water and wastewater system.