



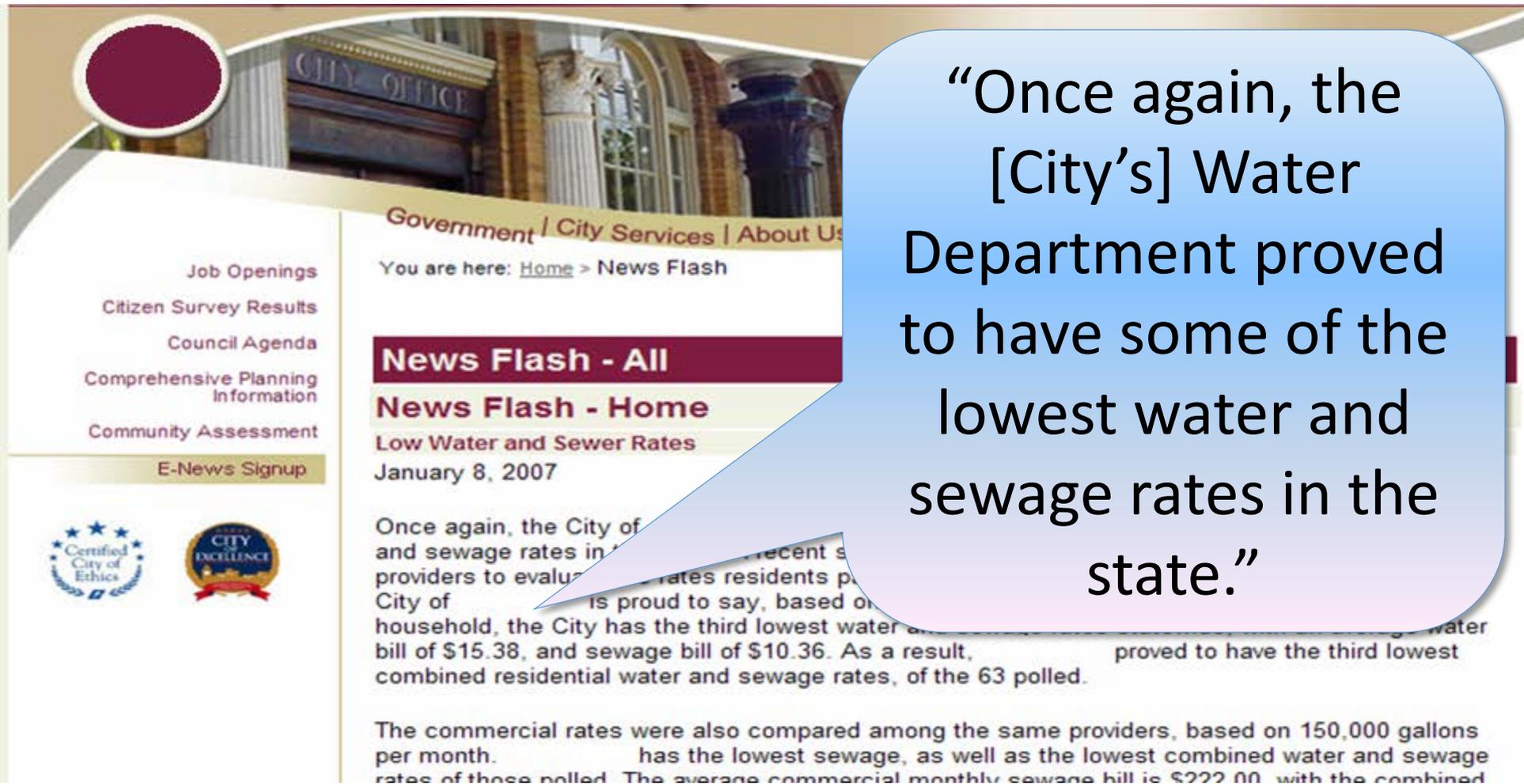
# Water System Revenues



# Session Objectives

- Understand how to pay for the costs of running your water system
- Look more closely at your rates

# Systems Love Low Rates, but...



The image shows a screenshot of a city website's news flash. The page has a header with navigation links: "Government | City Services | About Us". Below the header, it says "You are here: [Home](#) > News Flash". The main content area has a red banner that reads "News Flash - All" and "News Flash - Home". The title of the news flash is "Low Water and Sewer Rates" dated "January 8, 2007". The text of the news flash states: "Once again, the City of [redacted] and sewage rates in [redacted] recent s[redacted] providers to evaluate [redacted] rates residents p[redacted] City of [redacted] is proud to say, based on [redacted] household, the City has the third lowest water and sewage rates in the state. The average residential water bill of \$15.38, and sewage bill of \$10.36. As a result, [redacted] proved to have the third lowest combined residential water and sewage rates, of the 63 polled." The text continues: "The commercial rates were also compared among the same providers, based on 150,000 gallons per month. [redacted] has the lowest sewage, as well as the lowest combined water and sewage rates of those polled. The average commercial monthly sewage bill is \$222.00, with the combined [redacted]".

Government | City Services | About Us

You are here: [Home](#) > News Flash

**News Flash - All**

**News Flash - Home**

**Low Water and Sewer Rates**  
January 8, 2007

Once again, the City of [redacted] and sewage rates in [redacted] recent s[redacted] providers to evaluate [redacted] rates residents p[redacted] City of [redacted] is proud to say, based on [redacted] household, the City has the third lowest water and sewage rates in the state. The average residential water bill of \$15.38, and sewage bill of \$10.36. As a result, [redacted] proved to have the third lowest combined residential water and sewage rates, of the 63 polled.

The commercial rates were also compared among the same providers, based on 150,000 gallons per month. [redacted] has the lowest sewage, as well as the lowest combined water and sewage rates of those polled. The average commercial monthly sewage bill is \$222.00, with the combined [redacted]

Job Openings  
Citizen Survey Results  
Council Agenda  
Comprehensive Planning Information  
Community Assessment  
E-News Signup

Certified City of Ethics  
CITY EXCELLENCE

“Once again, the [City’s] Water Department proved to have some of the lowest water and sewage rates in the state.”

# What about customers?

 THE STORIES BUSINESS FAITH TECHNOLOGY REAL NEWS THE BLOG GUN

**HOT TOPICS:** Campaign 2012 Media Matters GBTV

 1.9k 

**RESIDENTS INCREDIBLY HAPPY ABOUT WATER SERVICE: *"I DON'T KNOW HOW THESE FOLKS DO IT – CLEAN WATER WHENEVER I NEED IT FOR ONLY A FEW DOLLARS A DAY!!"***

Posted on December 17, 2011 at 3:20pm by  **Becket Adams**

[Email »](#) [Print](#)

 Like   Send  10  Tweet 

[Comments \(3\)](#)

“These people are going to end up rioting about this,” says Sheila Tyson, a community activist in Jefferson County, Ala. “If they let this stuff happen they are going to get the biggest riot the South has ever seen . . . I can see it coming.”



Are we following the applicable laws?

Will our rates provide sufficient cost recovery?

What exactly does this include?





# Will our rates provide sufficient cost recovery?

Are we following the applicable laws?

What exactly does this include?

Will revenues be resilient to changing water demands?

Will our customers be able to pay these rates?

Do these rates send the right signals to our customers, based on our objectives?



Will our customers understand these rates?

Are we allocating the costs to the right customers?



# “Fuller” Cost Pricing

- Operations & maintenance expenditures
- Taxes and accounting costs
- Contingencies for emergencies
- Principal and interest on long-term debt
- Reserves for capital improvement
- Source water protection



# Ways To Pay

- Pay as you go (current receipts)
- Save in advance and pay
- Pay later (someone loans you money)
- Grants (let someone else pay)



# Grants Aren't Completely Free Money

- Application for the grant can be expensive – staff time and money
- Applications can take months to process
- Often lots of strings attached
- Often require a percentage match
- Lots of competition
- Difficult to sustain



# Quick Thought on Grants

- This presentation is about ***sustainable*** program finance
- Grants are not sustainable finance



# The Main Source: Your Revenue

- Pay as you go (current receipts)
- Save in advance and pay
- Pay later (someone loans you money)
- ~~Grants (let someone else pay) - - -~~



# Non-Rate Revenues

- Penalties
- Cellphone and radio receivers on the tank
- Ads on the tank
- Tap fees
- System development charges



# Types of Rates

- Fixed rate
- Volumetric rates
- Rates based on meter sizes
- Rates based on customer class



# Town of Jacksonville

We charge a flat rate of \$15.00 monthly

P.O. - Box 133  
Jacksonville

We ARE a small town we do NOT have sewage



# Other Places with a Fixed Rate

- Small town in New York state that charges \$120/year, billed twice
- Trailer park in Ohio that includes water in the monthly rent
- HUD-subsidized apartments that must include water in rent

# Other Places with a Fixed Rate

- City of Chicago

Lots of meters  
to read



Drinking  
water  
supply

# Chicago is moving to meters now



Enroll Now

Frequently Asked Questions

Water Saving Tips

Check Status & Schedules

Manage Appointment

Add Your Testimonial

Neighborhood Testimonials

Take Survey

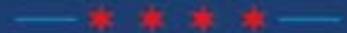
Water Testing



METER SAVE  
**SAVE WATER**  
**SAVE MONEY!**

CALL 311 For A **FREE** Water Meter

[www.metersave.org](http://www.metersave.org)



Homeowners participating in MeterSave will be eligible for a **7-year guarantee** that the home water bill will be no higher than it would have if the meter had not been installed.

# The Reef Condos – USVI





# The Reef Condos – USVI

- Has residential units and commercial (shops and restaurants)
- Flat rate structure for residents
- Decreasing block for commercial
- Bulk rate for the next condo complex over

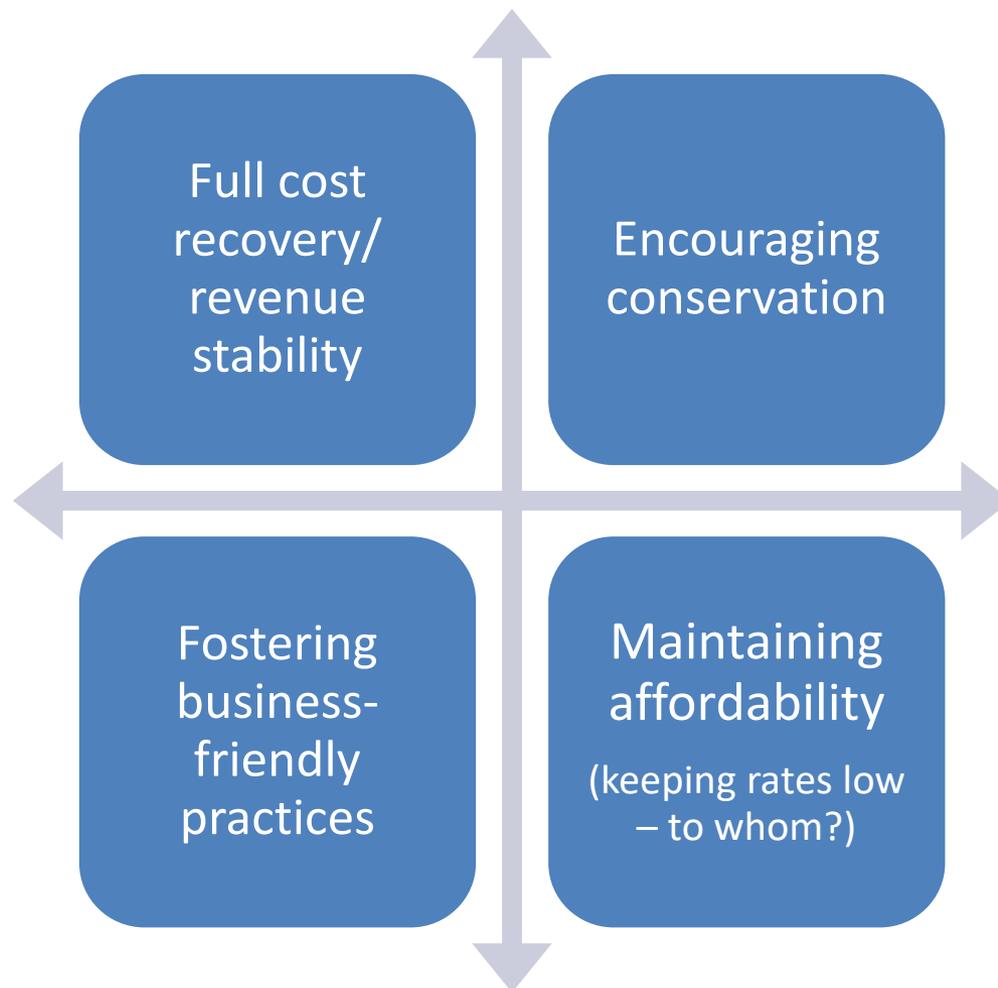


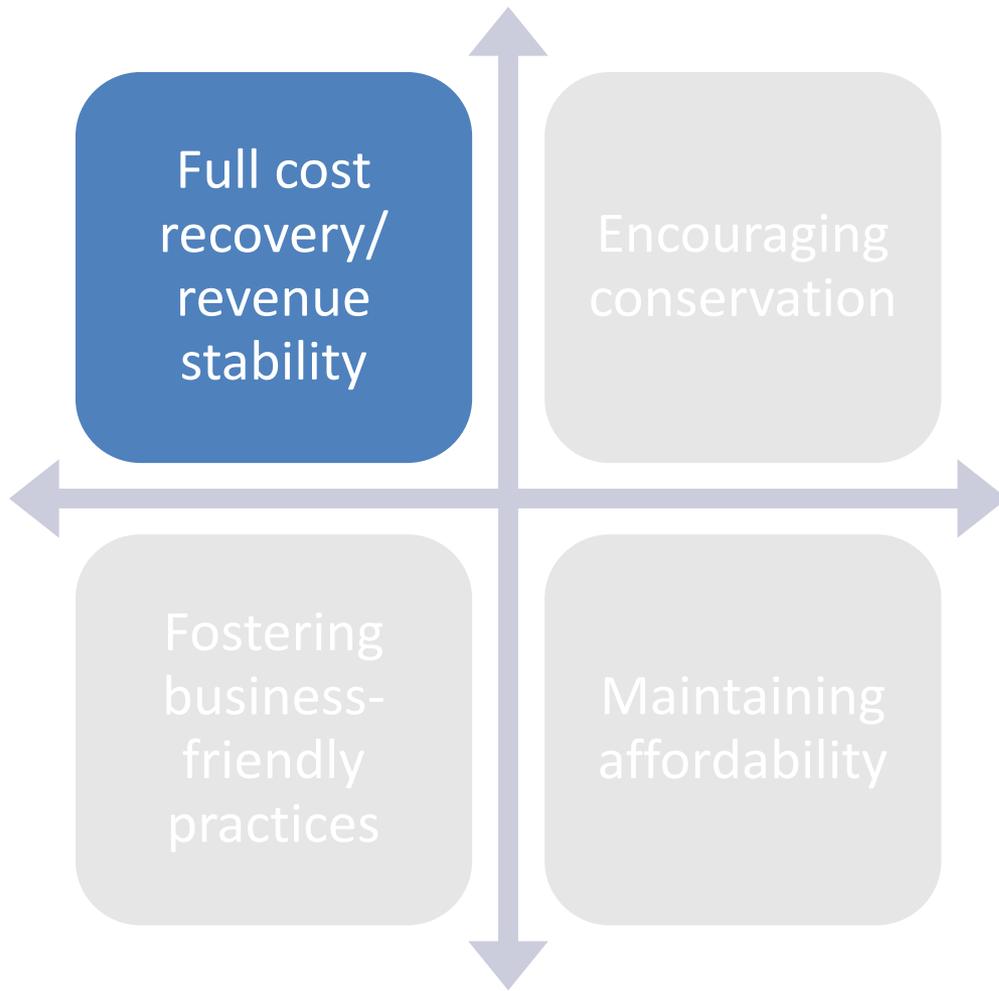
# And then there is this...

<b>Single outlet (Minimum charge)</b>	<b>\$193.00</b>
<b>One Bath</b>	<b>316.00</b>
<b>1 ½ or 2 Bath</b>	<b>349.00</b>
<b>2 ½ Bath</b>	<b>379.00</b>
<b>3 or more Baths</b>	<b>413.00</b>
<b>Additional apartment/same service</b>	<b>316.00</b>
<b>Swimming pool</b>	<b>126.00</b>
<b>Each Boat slip with water available</b>	<b>16.00</b>
<b>Each Rental or Commercial Mooring</b>	<b>6.15</b>
<b>Each restaurant/snack bar seat</b>	<b>16.00</b>

(Annual Rates)

# Example of Four Rate Setting Objectives

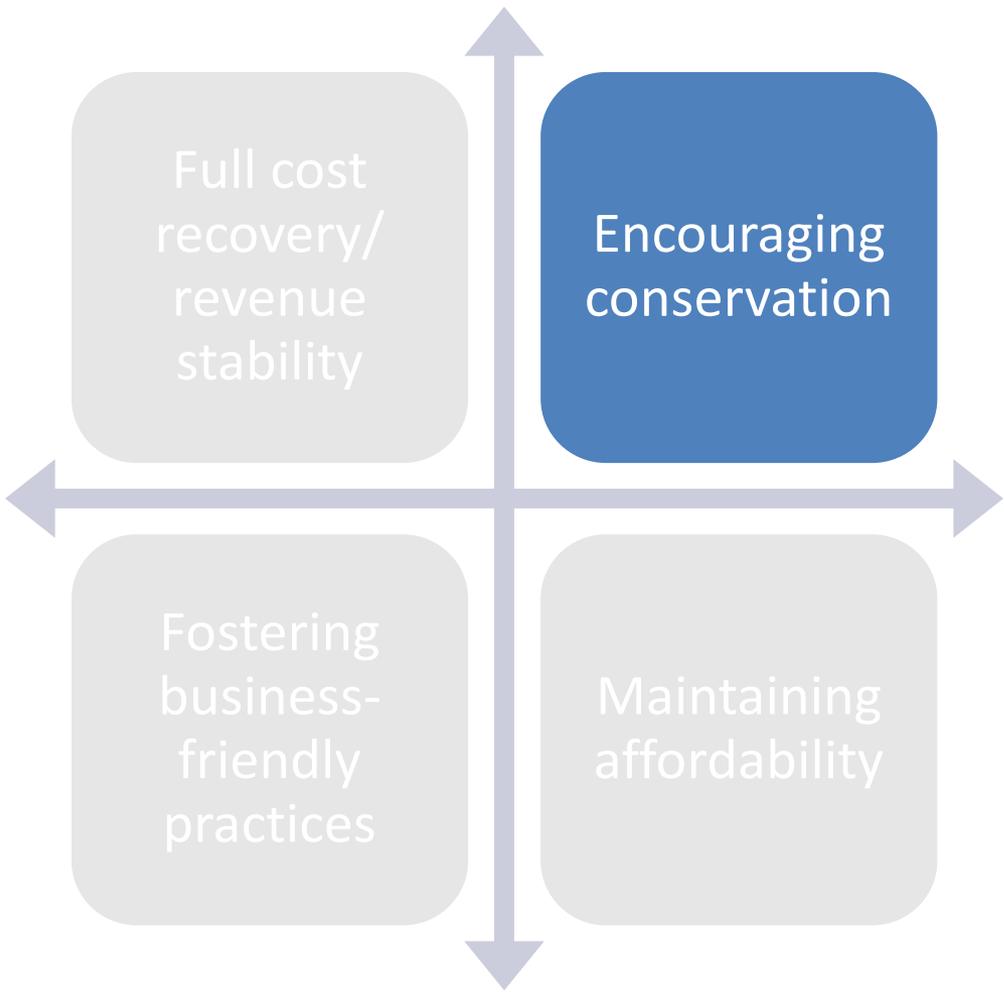




Bring in enough revenue to cover the full cost of running the water system:

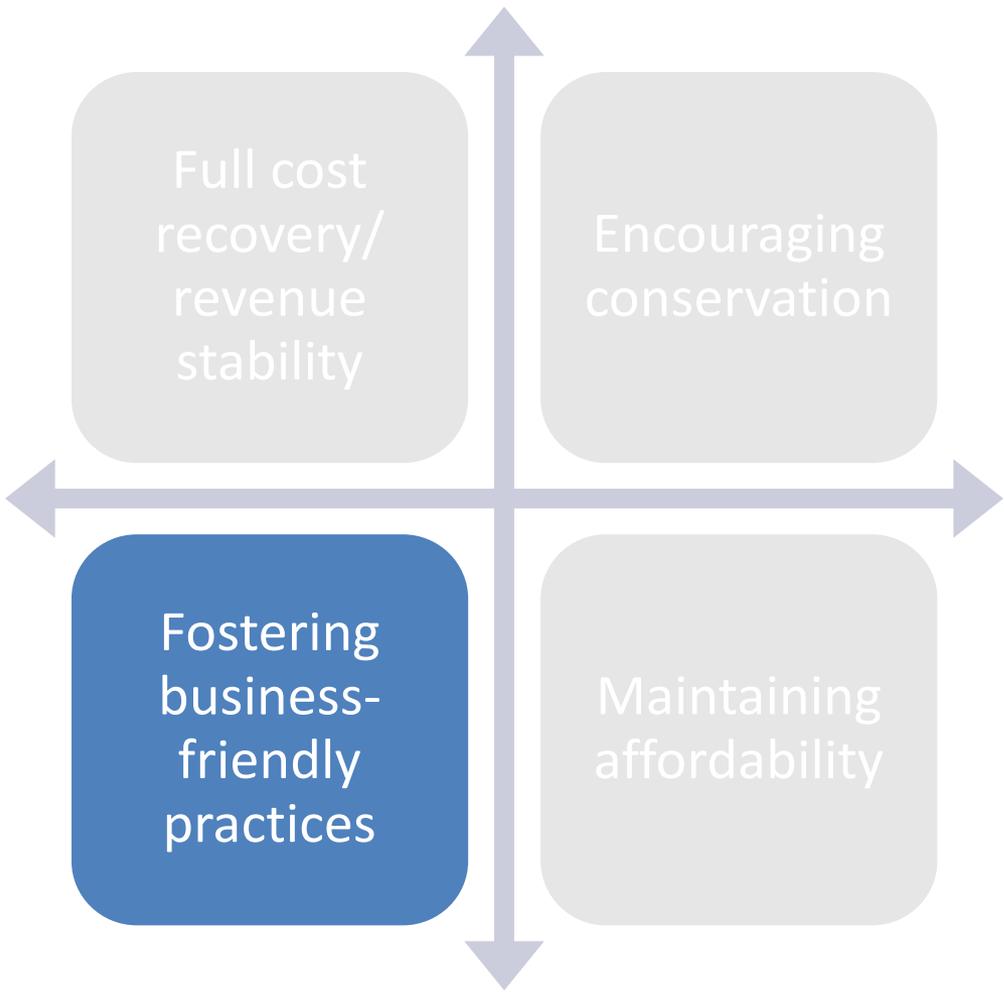
- O&M
- Capital needs
- Debt service

Why do this?



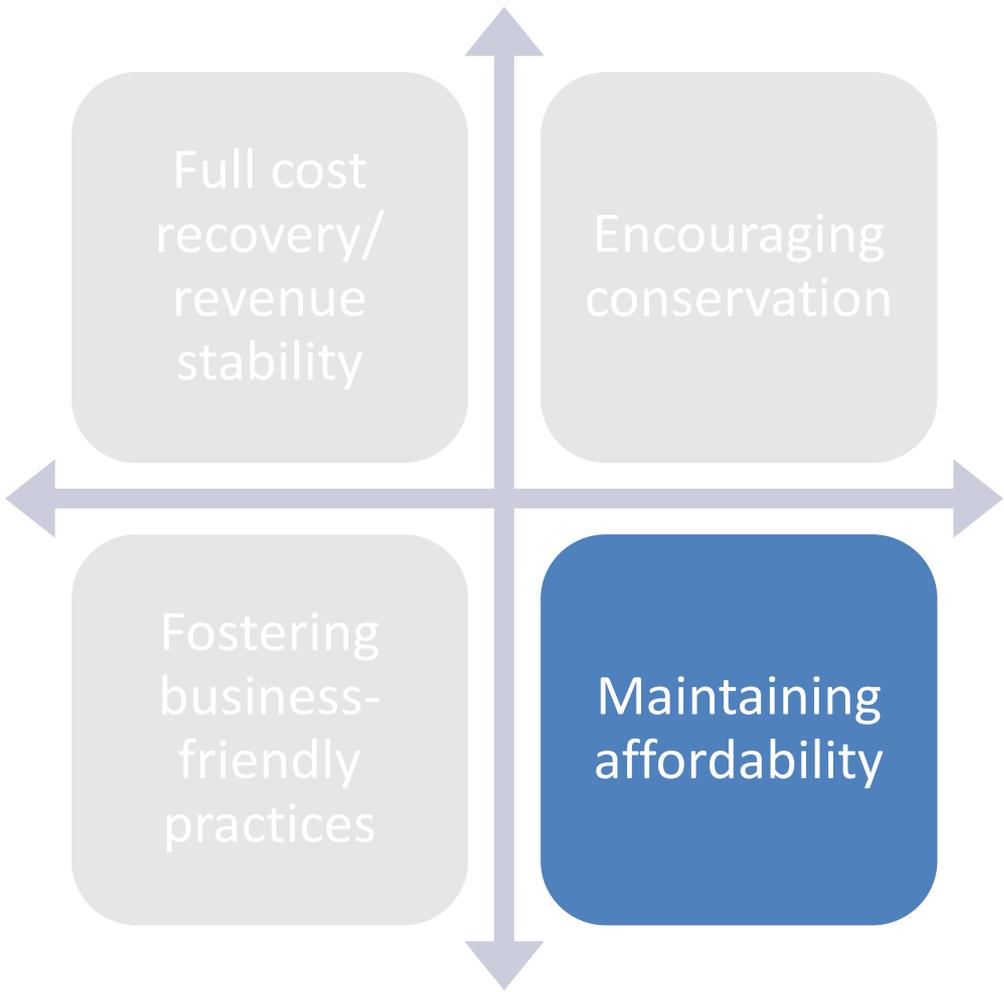
Use pricing to encourage customers to reduce their water consumption

Why do this?



Use pricing to encourage businesses and agriculture to locate to your community or stay in your community

Why do this?



Ensure that all customers in your water system are able to afford enough water to live on

Why do this?



# Elements of Rate Structure Designs

1. Customer classes/distinction
2. Billing period
3. Base charge
4. Consumption allowance included with base charge
5. Volumetric rate structure
6. (If applicable) Number of blocks, block sizes and rate differentials
7. (Optional) Automatic adjustments

Also: frequency of rate reviews and rate changes



# Customer Classes/Distinctions

- One rate structure for all
- Target: All are equal



# Brentwood Water Corp., NC

Monthly Minimum:	\$16.50
Water Included w/ Minimum Bill:	1,500/gallons
Additional Water	\$5.55 per thousand gallons



# Customer Classes/Distinctions

- One rate structure, but with different base charges based on meter size
- Target: Non-residential or multi-family housing



# Town of Mount Pleasant, NC

Water Meter Size	0 to 2,000 Gallons	Gallons Over 2,000
<b>Inside Town</b>		
5/8" or 3/4"	\$22.36	\$4.08 /1000
1"	\$41.16	\$4.08 /1000
1 1/2 "	\$113.76	\$4.08 /1000
2" and up	\$219.36	\$4.08 /1000



# Customer Classes/Distinctions

- Separate rate structure for residential, irrigation, commercial, industrial, governmental, or wholesale customers
- Target: Specific type of customer



# City of Stockbridge, GA

## **Residential**

0 through 4,000 gallons	\$ 5.27 Per Thousand
4,001 through 9,000 gallons	\$ 8.10 Per Thousand
9,001 gallons and up	\$ 10.90 Per Thousand

## **Commercial, Apartments and Mobile Home Parks**

0 through 10,000	\$ 6.69 Per Thousand
10,000 and up	\$ 8.03 Per Thousand

## **Irrigation**

Per thousand gallons	\$ 10.72
----------------------	----------

## **Hydrant Meter**

Per thousand gallons	\$ 10.72
----------------------	----------



# Customer Classes/Distinctions

- One rate structure for all, but with blocks that implicitly only target non-residential use
- Target: Non-residential



# Union Point, NC

WATER

IN TOWN - 1/23/2006

STEP	RATE	CONSUMPTION
READY TO SERVE	\$21.00	
STEP 1	3.98	300,000
STEP 2	3.84	999,999,999



# Customer Classes/Distinctions

- Different rates for customers outside municipal limits/service area boundaries
- Target: “Outside” customers



# Town of Mount Pleasant, NC

<b>Water Meter Size</b>	<b>0 to 2,000 Gallons</b>	<b>Gallons Over 2,000</b>
<b>Inside Town</b>		
5/8" or 3/4"	\$22.36	\$4.08 /1000
1"	\$41.16	\$4.08 /1000
1 1/2 "	\$113.76	\$4.08 /1000
2" and up	\$219.36	\$4.08 /1000
<b>Outside Town</b>		
5/8" or 3/4"	\$39.13	\$7.14 /1000
1"	\$72.03	\$7.14 /1000
1 1/2"	\$199.08	\$7.14 /1000
2" and up	\$383.88	\$7.14 /1000



# Customer Classes/Distinctions

- Rate structure for which only a few individual customers would qualify (typically an industrial customer)
- Target: A narrow customer class



# City of Clio, AL

## **SIGNIFICANT USER: (High volume or High Strength Users)**

The City of Clio, Alabama via official action of its City Council reserves the right to enter into separate contracts with significant users on a case by case basis for the purpose of setting and determining a monthly charge or rate for the use of the public sewer system. Said monthly rate and associated fees may be computed upon a different basis than set forth in the paragraphs immediately proceeding. Such contract(s) shall be entered into by means of a resolution duly adopted by the City Council. For purposes of this Sewer Ordinance; unless amended by the City Council, a significant user shall be deemed any non-residential user who (1) has a water consumption of 50,000 gallons or more per month and/or (2) whose wastewater strength exceeds what is generally considered normal residential wastewater.

**Significant Users determined to date are: Easterling Correctional Facility**  
(Ord. 2008-01 \$1.75 per thousand; Ord. 2009-10 \$2.40 per thousand; Ord. 2012-04 \$2.90 per thousand)  
**Effective June 1, 2015 Easterling Correctional Facility: \$3.40 per thousand. This ordinance.**



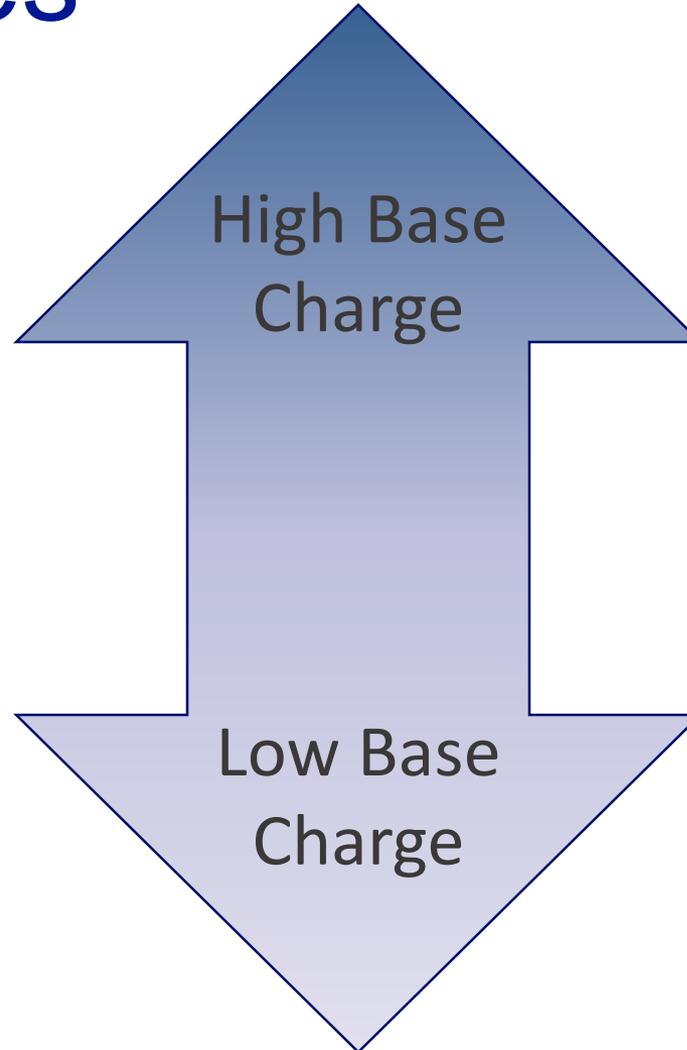
# Billing Period



*Suggestion: Use a monthly billing period if you can afford it*

# Base Charges

*Suggestion:  
Smaller utilities  
should lean  
towards higher  
base charges*





# Elements of Rate Structure Designs:

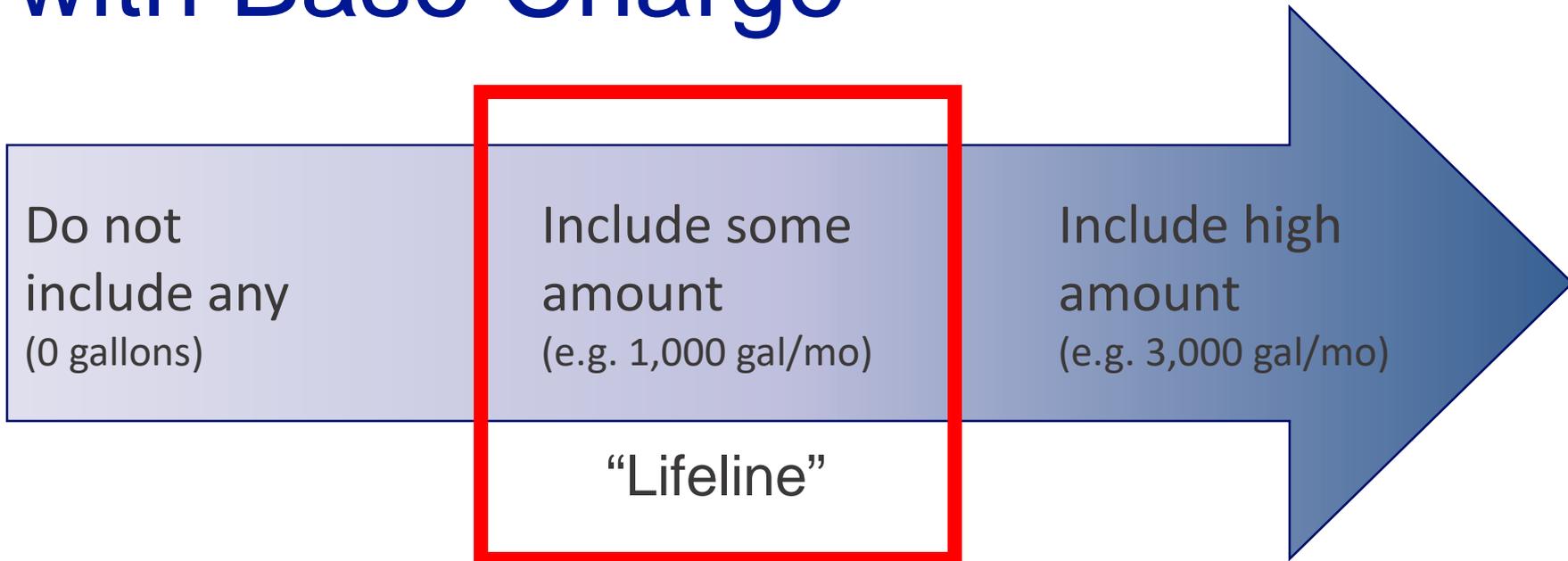
## 3. Base Charges

Two common ways to charge:

- Constant (by customer class):
  - \$35 for residential
  - \$55 for commercial
  - \$105 for industrial
- By meter size:
  - \$35.00/month for 5/8" or 3/4" meter
  - \$55.00/month for 1" meter
  - \$105.00/month for 2" meter, etc.



# Consumption Allowance with Base Charge



*Suggestion: For systems with low base charges, do not include any consumption allowance. For systems with high base charges but wish to encourage conservation, keep consumption allowance low, if any.*



# Red Bay Water, AL

INSIDE CITY LIMITS

CLASS CODE 01, 02

RESIDENTIAL AND COMMERCIAL

FIRST 2000 GALLONS → 15.50 (Minimum Charge)

5.75 PER THOUSAND GALLONS

A photograph of a water treatment facility with large blue pipes and machinery.

# Town of Montrose, GA

<b>ACCOUNT TYPE</b>	<b>RATE</b>	<b>GALLONS</b>
<b>RESIDENTIAL</b>	<b>\$20.00</b>	<b>10,000</b>
<b>COMMERCIAL</b>	<b>\$30.00</b>	<b>15,000</b>
<b>INDUSTRIAL</b>	<b>\$40.00</b>	<b>20,000</b>
<b>AGENT/SELLER</b>	<b>\$50.00</b>	<b>2,500</b>



# Northampton County, NC

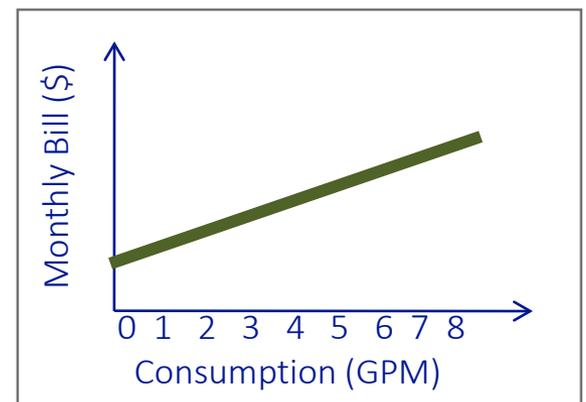
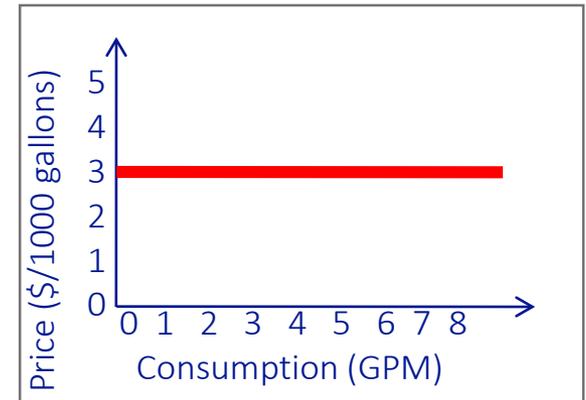
<b>USER FEE / Residential</b>	<b>\$19.50</b>
RATE PER THOUSAND/GALLONS 0,001-10,000	\$5.00
RATE PER THOUSAND/GALLONS 10,001-25,000	\$5.50
RATE PER THOUSAND/GALLONS 25,001-50,000	\$6.00
RATE PER THOUSAND/GALLONS 50,001-100,000	\$6.50
RATE PER THOUSAND/GALLONS 100,000>	\$7.00

<b>USER FEE / Commercial</b>	<b>\$25.50</b>
RATE PER THOUSAND/GALLONS 0,001-10,000	\$6.00
RATE PER THOUSAND/GALLONS 10,001-25,000	\$7.00
RATE PER THOUSAND/GALLONS 25,001-50,000	\$7.50
RATE PER THOUSAND/GALLONS 50,001-100,000	\$8.50

# Volumetric Rate Structure

## Uniform (“Flat”) Rates

- Fair and simple





# Garden City, AL

## WATER RATES

Section 1. Water rates inside the corporate limits of the town:

The following rates to be charged for water service inside the corporate limits of the Town of Garden City are hereby fixed and established by the Town Council of the Town of Garden City, effective June 1, 2018.

**¾" Meter - Minimum Bill**  
Each additional 1,000 gallons

**\$21.00 for first 2,000 gallons**  
**\$ 9.00 each additional 1,000 gallons**

**1" Meter - Minimum Bill**  
Each additional 1,000 gallons

**\$25.00 for first 2,000 gallons**  
**\$ 9.00 each additional 1,000 gallons**

**1.5" Meter - Minimum Bill**  
Each additional 1,000 gallons

**\$32.00 for first 2,000 gallons**  
**\$ 9.00 each additional 1,000 gallons**

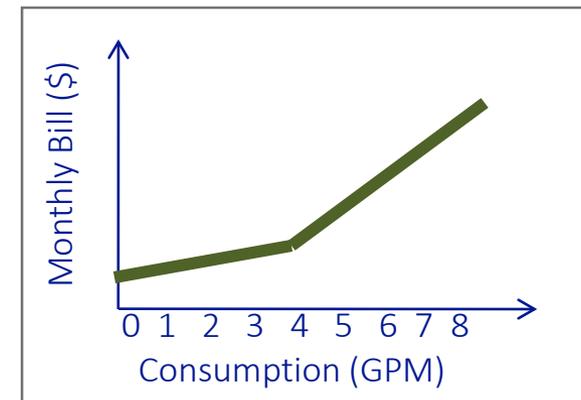
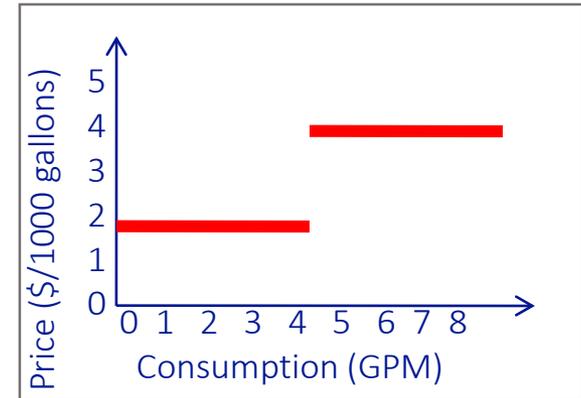
**2" Meter - Minimum Bill**  
Each additional 1,000 gallons

**\$40.00 for first 2,000 gallons**  
**\$ 9.00 each additional 1,000 gallons**

# Volumetric Rate Structure

## Increasing Block Rates

- Conservation-oriented
- Consider large families





# City of Stockbridge, GA

## **Residential**

0 through 4,000 gallons	\$ 5.27 Per Thousand
4,001 through 9,000 gallons	\$ 8.10 Per Thousand
9,001 gallons and up	\$ 10.90 Per Thousand

## **Commercial, Apartments and Mobile Home Parks**

0 through 10,000	\$ 6.69 Per Thousand
10,000 and up	\$ 8.03 Per Thousand

## **Irrigation**

Per thousand gallons	\$ 10.72
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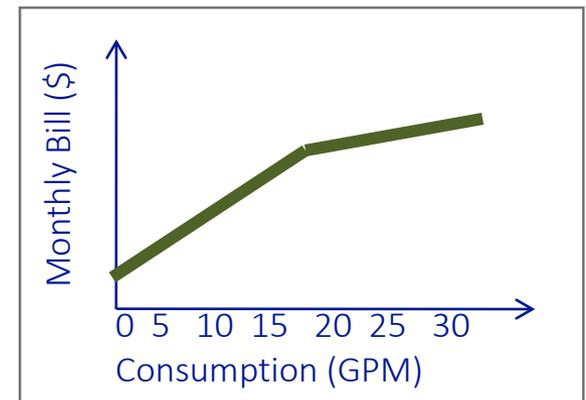
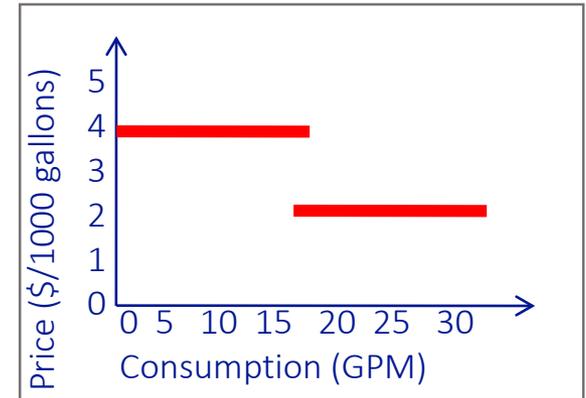
## **Hydrant Meter**

Per thousand gallons	\$ 10.72
----------------------	----------

# Volumetric Rate Structure

## Decreasing Block Rates

- Provide price break for large users (e.g.: commercial)
- Do not use for residential





# Town of Ardmore, AL

## **COMMERCIAL WATER:**

0 to 2000 gallons:	-----	\$21.25 Minimum Bill
Additional:	-----	\$7.00 2001 – 12,000 gal
		\$6.75 12,001 – 27,000 gal
		\$6.50 27,001 gallon & up



# Town of Double Springs, AL

## Commercial Water Rate Table

Minimum	10,000 gals.	\$143.25
Next	10,000 gals.	\$ 7.10 per 1,000 gals.
Next	10,000 gals.	\$ 6.00 per 1,000 gals.
Next	20,000 gals.	\$ 5.50 per 1,000 gals.
Next	99,999,999 gals.	\$ 5.00 per 1,000 gals.

A photograph of industrial water treatment equipment, including large pipes and valves, with a blue color cast.

# Town of Lancaster, NH

## **WATER RATES –**

### **CONSUMPTION RATES –**

**1000 – 1,000,000 = 3.75 per 1,000**

**1,000,000 + = \$0.30 per 1,000**

### **BASE RATE –**

**80.00 per residential unit**

**150.00 per commercial unit**



# (If Applicable) Block Designs

For block rate structures to be effective:

- Decide on the correct number of blocks
- Decide on where the blocks should end/start
- Set significant rate differentials between blocks



# (If Applicable) Block Designs

For block rate structures to be effective:

- Keep in mind your base charge and consumption allowance
- Meter reading must be punctual, and meters must be replaced frequently
- Think about large families

# Too Many Blocks!

fixed 1000	Per 1000 gal.	water	Per 1000 gal.	sewer	combined
	increase	11.66	increase	13.10	24.76
2000	2.43	14.09	3.67	16.77	30.86
3000	4.62	18.71	7.06	23.83	42.54
4000	5.38	24.09	7.35	31.18	55.27
5000	5.50	29.59	7.68	38.86	68.45
6000	5.75	35.34	7.82	46.68	82.02
7000	5.93	41.27	8.00	54.68	95.95
8000	6.12	47.39	8.20	62.88	110.27
9000	6.31	53.70	8.37	71.25	124.95
10000	6.31	60.01	8.37	79.62	139.63
11000	6.31	66.32	8.37	87.99	154.31
12000	6.31	72.63	8.37	96.36	168.99
13000	6.31	78.94	8.37	104.73	183.67
14000	6.31	85.25	8.37	113.10	198.35
15000	6.31	91.56	8.37	121.47	213.03
15001-99999999	6.51	98.07	8.56	130.03	228.10



# Frequency of Rate Changes

- Always review your rates annually (recommended)
- Review your financial health indicators annually, and then review your rates if any of the indicators reflect poor financing
- Raise rates each year automatically based on inflation



# Village of Richmond, IL

## SECTION 3.27 ANNUAL INCREASE OF RATES AND FEES

The following fees: Water and Sewer Service, Building Permit Fees, School Impact Fees, Fire Prevention and Life Safety Donations and Municipal Impact Fees as set forth by Village ordinance are subject to an annual increase to be applied by the Village Treasurer by May 1 of each year using the following prescribed formula:

The above rates and Fees will be increased by the amount of the percentage increase of the Consumer Price Index (hereinafter defined) for the previous calendar year. Consumer Price Index ("CPI") means the U.S. City Averages for all Urban Consumers, All Items, (1982-1984=100) of the United States Bureau of Labor Statistics. The CPI for any calendar year shall be determined by averaging the monthly indices for that year. If the Bureau of Labor Statistics substantially revises the manner in which the CPI is determined, an adjustment shall be made in the revised index which would produce results equivalent, as nearly as possible, to those which would be obtained if the CPI had not been so revised. If the 1982-1984 average shall no longer be used as an index of 100, such change shall constitute a substantial revision. If the CPI becomes unavailable to the public because publication is discontinued or otherwise, the Village shall substitute therefore a comparable index based upon changes in the cost of living or purchasing power of the consumer dollar published by any other governmental agency or, if no such index is available, then a comparable index published by a major bank, other financial



# Frequency of Rate Changes

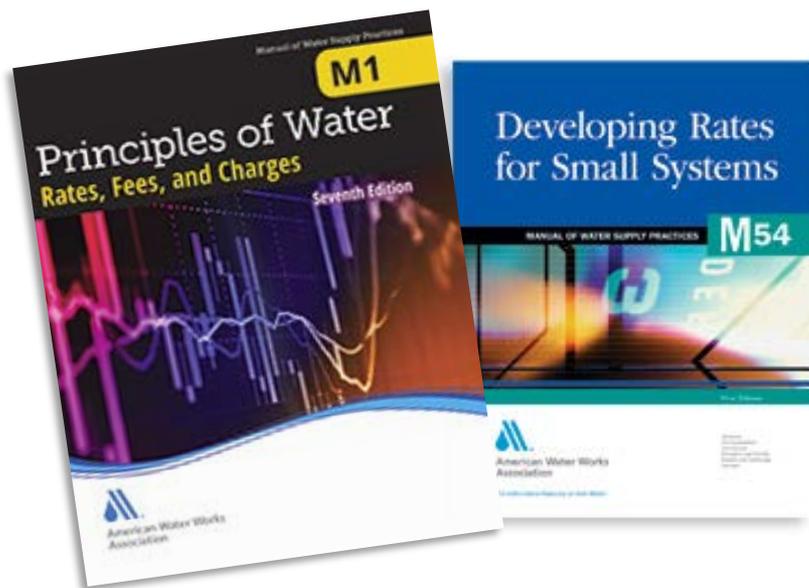
- *Important: Avoid maintaining low rates at the expense of your utility's financial health. It will either lead to a sudden, massive rate increase in the future or to failing systems and endangering public health.*

# Rate Setting Resources



## Setting Small Drinking Water System Rates for a Sustainable Future

One of the Simple Tools for Effective Performance (STEP) Guide Series



<http://www.awwa.org>

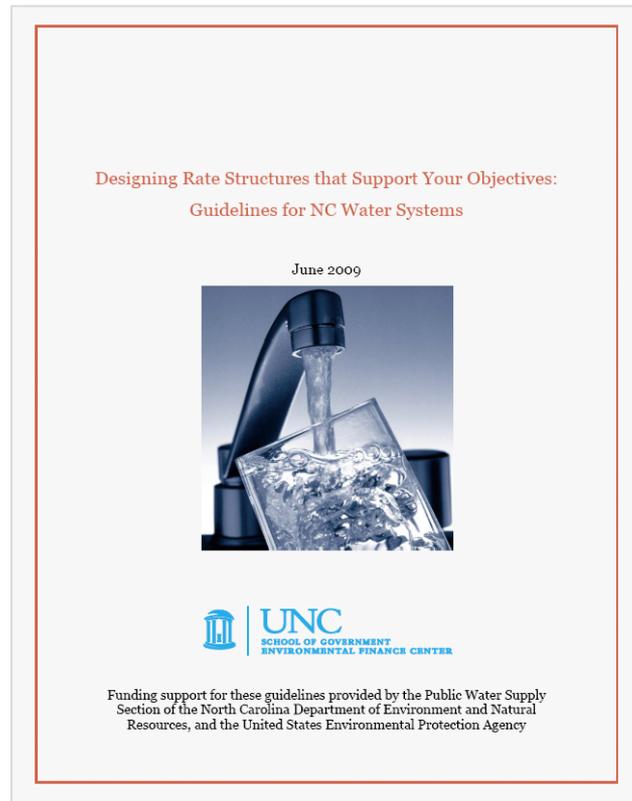
<https://www.epa.gov/dwcapacity/resources-setting-small-system-water-rates-0>

# Designing Rate Structures That Support Your Objectives

Free guide  
written for  
system  
managers

Available at:

<http://efc.sog.unc.edu/>



# Various Decision-Making Tools

<http://www.efc.sog.unc.edu/project/utility-financial-tools>

or <http://efcnetwork.org/resources/tools/>



The EFC has created several free tools to assist water utilities in addressing the challenges and questions we commonly see in our teaching and advising. These tools cover a broad range of finance and management topics, including rates and revenue, financial benchmarking, affordability, capital finance, communicating with the board, and evaluating loans and grants.

## Rates and Revenue



### Water and Wastewater Rates Analysis Model

Use this tool to review your rates to ensure projected revenues cover projected expenses. This tool will help you determine whether proposed rates will keep the utility financially self-sufficient for the next few years.



### Water Utility Revenue Risk Assessment Tool

Use this tool to assess how much revenues might be affected by changing demand patterns. The tool will help you compare effects on existing rates and on alternative rate structures.

## Benchmarking



### Financial Sustainability and Rates Dashboards

Our flagship tools for water utilities, these interactive dashboards allow you to benchmark your utility's rates against other utilities with similar characteristics. The dashboards also help you evaluate rates, cost recovery, affordability, pricing signal, and other financial benchmarks. Use the dashboards to communicate important information about your rates with your board, the media, and the public.

# Water & Wastewater Rates Analysis Model

<http://efc.sog.unc.edu> or <http://efcnetwork.org>

Find the most up-to-date version in Resources / Tools

Free, simplified Excel tool allowing you to model and compare two rate structures on your projected fund balance

**Water & Wastewater Rates Analysis Model**  
Version 2.8.2 (last updated August 4, 2015)

Developed by the Environmental Finance Center at the University of North Carolina, Chapel Hill  
<http://efc.sog.unc.edu>

Funded by the U.S. Environmental Protection Agency and the Public Water Supply Section of the North Carolina Department of Environment and Natural Resources

**DESCRIPTION**  
A do-it-yourself, simplified financial model to assist utility managers and private system owners in setting water and wastewater rates.

**FEATURES**  
Comparisons of annual fund balance projections (for up to 20 years) under proposed new rates vs. staying with existing rates  
Adjust rates for the next 1-5 years  
Model changes to accounts and water use  
Compare monthly bills under new rates vs. existing rates  
Up to 12 rate structures  
Customizable list of operating and capital expenses  
Error notifications  
Uniform or block rates (up to 10 blocks)  
Building up reserves through rates  
Assess revenue sufficiency and fund balance

**INSTRUCTIONS**  
1) Navigate using worksheet tabs at bottom of screen or following arrows and clicking on buttons  
2) In the green "Data Input" worksheets, input data in the dark green cells

**View Results**  
Financial forecast of the next few years under 'Existing' rates versus 'New' rates (graphs of cost recovery and end-of-year fund balance)  
How new rates compare to existing rates (graphs of monthly bills)

**Instructions**  
Watch out for red "Error" messages describing where data entry errors

Year	2015	2016	2017	2018	2019	2020
Existing	\$15.00	\$13.00	\$11.00	\$17.00	\$20.00	\$21.00
New	7.00	7.00	7.00	7.00	7.00	7.00

Block End	4,000 gpm/mo	7,000 gpm/mo	10,000 gpm/mo	15,000 gpm/mo	20,000 gpm/mo	25,000 gpm/mo
Existing	\$2.78	\$2.78	\$2.78	\$3.00	\$3.50	\$4.00
New	\$4.00	\$4.00	\$4.00	\$4.00	\$4.00	\$4.00