



Smart Management for
Small Water Systems

Structuring Water Rates for Small Water Systems in Connecticut

Tuesday, January 8, 2019
4:00-5:00pm EST

This program is made possible under a
cooperative agreement with EPA.



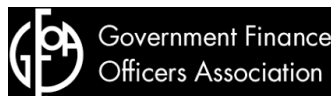
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Smart Management for
Small Water Systems

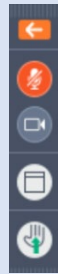


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Officers Association



Logistics

Opening the control panel




- ← Show your control panel
- ← All phones/microphones are muted for the duration of the webinar
- ← Toggle between full screen/window screen view

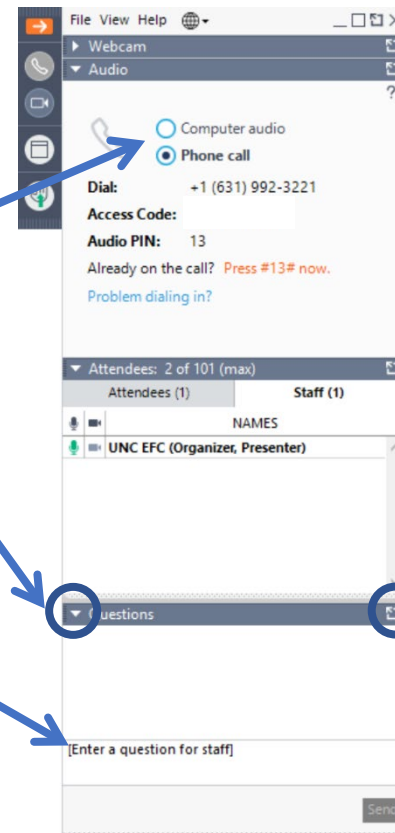
Using the control panel


Audio: please choose between computer audio or phone call

If you do not hear audio right now, please check your speaker volume or enter #[your Audio PIN]# if using phone

Click  to open in Control Panel

Submit **questions** in the Questions box at any time, and press [Send]



Click  to open in separate box and resize

<https://efcnetwork.org/events/webinar-asset-management-for-small-systems-improving-your-system-and-meeting-new-regulations/>

Webinar | Meeting Regulations in Connecticut to Improve Your System

Date/Time

Date(s) - 12/17/2018

4:00 pm - 5:00 pm

iCal (add to your calendar)

Register

Fill out form below to register for this event.


Categories

- Asset Management
- Webinars

Monday, December 17, 2018

4:00PM-5:00PM EST





Don't miss the next 2 webinars!

Consider Regionalization for Small System Sustainability

Tuesday, January 29, 2019

4:00PM-5:00PM EST

Managing Your Water System Under Pressure: New Requirements for Hydropneumatic Tanks and Water Loss

*Wednesday, **February** 13, 2019*

*3:00PM-4:00PM **EST***

Register at www.efcnetwork.org



Session Objectives

- Understand how to pay for the costs of running your water system
- Look more closely at how rates can be structured, with examples of small, non-governmental systems from across the country





Session Objectives

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- Look more closely at how rates can be structured, with examples of small, non-governmental systems from across the country



Customer Sales

- **Fixed Revenues**—not dependent on the volume of water used
 - “Base charge”
 - “Monthly minimum”
 - “Ready to use fee”
 - “Meter fee”



Customer Sales

- **Variable Revenues**—are linked to the volume of water used
 - “Commodity charges”



Customer Sales

All
Fixed
Revenues



All Fixed Revenues

Schedule of Rates

Availability – this rate is available to individual residential customers, whether occupying the premises on a permanent or a part-time basis, and to Cedar Green Condominium Owners Association, Inc. or its successors or assigns, with members as owners of living units based on the number of occupied units whether occupied permanently or part-time.

Bills shall be issued in advance.

Quarterly flat rate	\$80.37	Per Living Unit
---------------------	---------	-----------------

Cedar Green Land Acquisition, MO



All Fixed Revenues

GENERAL SERVICE - UNMETERED

RATE SCHEDULE - "GU"

AVAILABILITY:

This schedule is applicable to all unmetered water service in the franchise areas.

CHARACTER OF SERVICE:

Water will be furnished and maintained at a normal operating pressure of not less than 20 psig nor more than 125 psig at the service connection.

RATES:

Minimum Charge - \$522.00 per customer, per year (\$130.50 per quarter)

Wildwood Water Company, NH



Customer Sales

All
Fixed
Revenues

All
Variable
Revenues



All Variable Rates

Starting July 2006 water charges will begin for the delivery of water. Water meters will be read on the first of each month. If the first of the month falls on a weekend or holiday then the meter will be read on the first work day following the first. Currently the water rates are as follows:

\$1/1000 gallons	0 to 60,000 gallons
\$2/1000 gallons	60,001 – 90,000 gallons
\$4/1000 gallons	90,000+ gallons

Water bills will be mailed on the 15th of each month. Water charges will be due 30 days from the billing date. Amounts below \$30 will have a grace period of 90 days. A late fee of \$10 or 4% of the charge due, whichever is greater and a monthly interest rate of 10% per annum will be assessed to your account when payment is delinquent. A lien will be placed on a property when in default 120 days or \$2000. Foreclosure will be considered after an account is 180 days (6 months).



All Variable Rates

Water Rate:

The following rate will remain in effect until April 30, 2011:

For each 1000 gallons of usage per month	\$1.85	+
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The following rate will take effect on May 1, 2011:

For each 1000 gallons of usage per month	\$2.71	+
--	--------	---

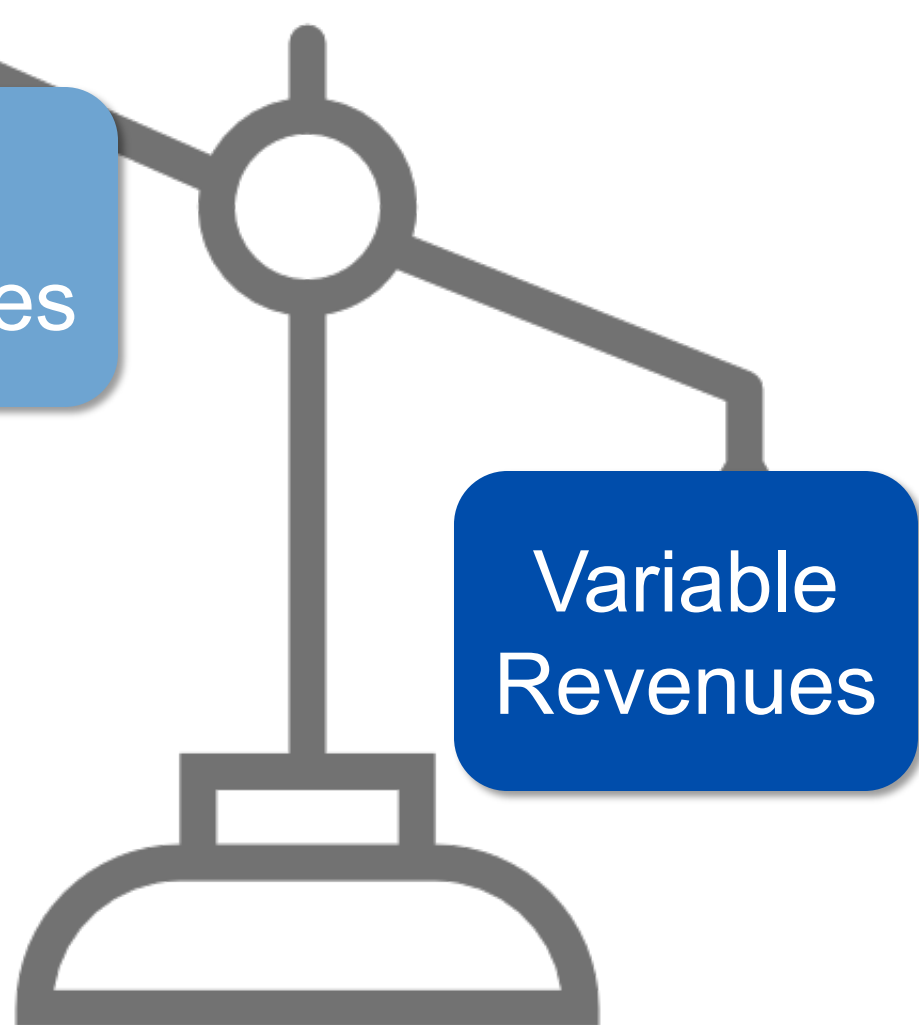
Customer Sales

All
Fixed
Revenues

All
Variable
Revenues

Fixed
Revenues

Variable
Revenues





Balance of Fixed and Variable

APPROVED ~~SCHEDULE~~ OF RATES FOR
OLD NEWGATE RIDGE WATER COMPANY

EFFECTIVE JULY 1, 1997

Meter Rates


Minimum Quarterly Charge	\$65.47
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Commodity Charge (per 1,000 gallons consumed)	\$ 5.84
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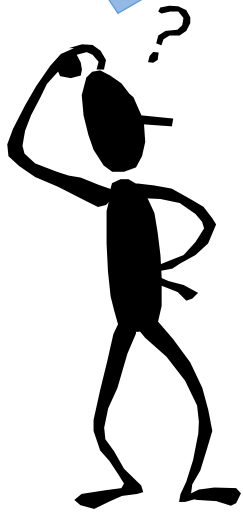
Old Newgate Ridge Water Company, CT



Your Rates—Polling Question



So which
rates are
right?

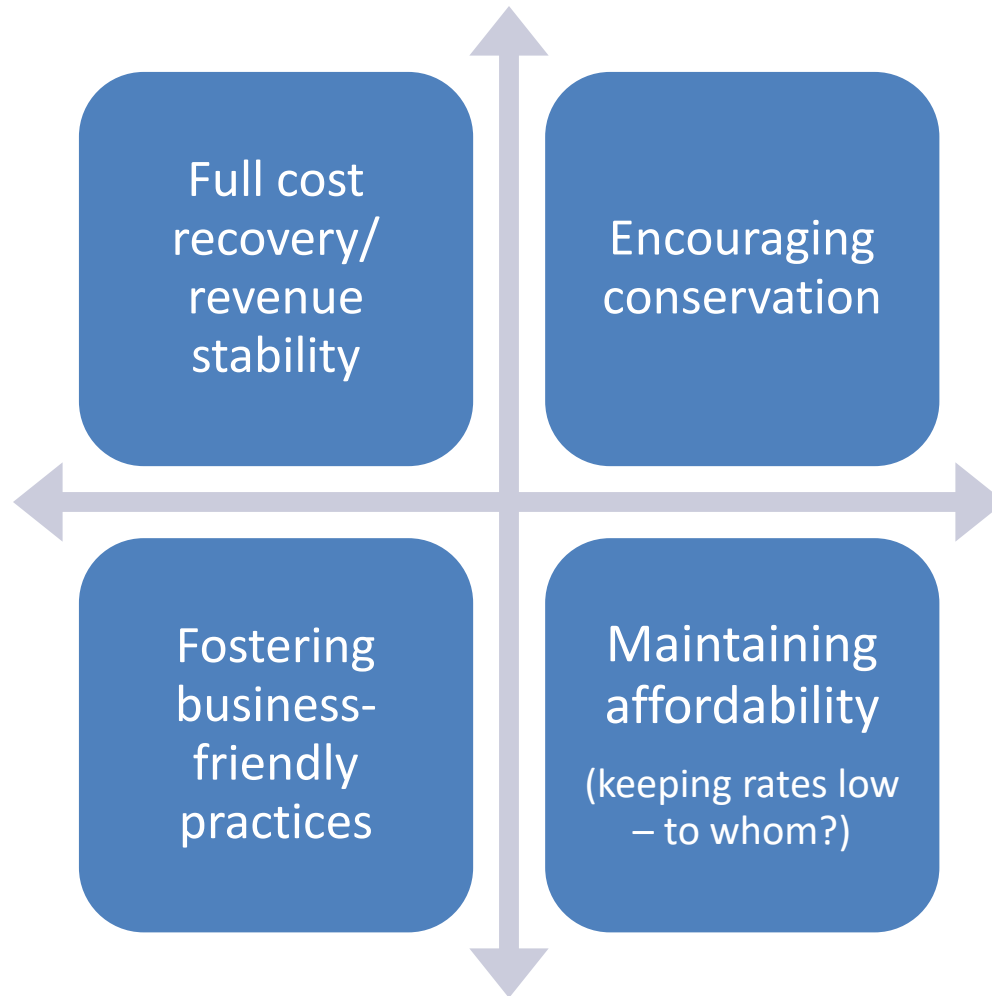


It depends...





Water System Objectives



A blue-tinted photograph of industrial machinery, possibly a large pipe or valve, serves as the background for the top portion of the slide.

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. Frequency of rate changes



Customer Classes/Distinctions

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

One Rate Structure for All

CURRENT RATES		
MINIMUM OR SERVICE CHARGES	\$	GALLONS
5/8" x 3/4" Meter	13.50	for 0 gallons
<u>First Tier</u>	<u>Up to 4,000 gallons</u>	<u>\$2.00 per 1,000 gallons</u>
<u>Second Tier</u>	<u>4,001 to 8,000 gallons</u>	<u>\$3.20 per 1,000 gallons</u>
<u>Third Tier</u>	<u>Over 8,000 gallons</u>	<u>\$4.60 per 1,000 gallons</u>



Customer Classes/Distinctions

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



Residential, Commercial, etc.

CONSUMER/ RESIDENTIAL RATES:

FIRST 2,000 GALLONS \$24.00
\$3.50 PER 1,000 GALLONS ABOVE 2,000 GALLONS
\$.35 PER GALLON PER 100 GALLONS

COMMERCIAL RATES:

FIRST 10,000 GALLONS \$60.00
NEXT 65,000 GALLONS \$3.00 PER 1,000 GALLONS
ALL OVER 75,000 GALLONS \$1.50 PER 1,000 GALLONS
\$.15 PER 100 GALLONS



Seasonal Customers

AVAILABILITY

These rates are available to all customers located on the mains of the Company, subject to the RULES AND REGULATIONS of the COMPANY and applied based on customer classifications.

"Year-round customers" are defined herein as customers receiving water service for more than six months per year. "Seasonal-Ridge Customers" are those seasonal customers that are served by one of three Ridge area water meters. "Seasonal (Non-Ridge) Customers" are all customers receiving water service for six months or less per year that are not Seasonal Ridge customers.

The Company reads meters semi-annually in April and October.



Customer Classes/Distinctions

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



Base Charge on Meter Size

QUARTERLY METERED SCHEDULE

Service Charge

Meter Size

5/8"	\$22.59
3/4"	\$22.90
1"	\$23.85
1 1/2"	\$25.12
2"	\$28.59
3"	\$54.18
4"	\$63.66
6"	\$85.78
8"	\$111.05
10"	\$153.39

Usage Rate

All Usage \$7.42 per 1,000 gallons

Preston Plains Water Company, CT



Base Charge on Meter Size

MONTHLY USAGE CHARGES

5/8 X 3/4 inch Meter	\$	13.50
3/4 inch Meter	\$	13.50
1 inch Meter	\$	33.75
1 1/2 inch Meter	\$	67.50
2 inch Meter	\$	108.00
3 inch Meter	\$	216.00
4 inch Meter	\$	337.00
6 inch Meter	\$	675.00

COMMODITY RATE CHARGES (PER 1,000 GALLONS)

ALL METER SIZES (Per 1,000 gallons)

0 TO 5,000 gallons	\$	1.00
5,001 to 15,000 gallons	\$	1.40
Over 15,000 gallons	\$	2.10



Customer Classes/Distinctions

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



Blocks Targeting Non-Residential

Monthly Standby Charges

<u>Meter Size (inches)</u>	<u>Monthly Charge Per Installed Meter</u>
1	\$21.00
2	\$65.00

Monthly Water Consumption Charge Rate

Per 1,000 gal (up to 25,000 gallons)	\$1.42
Per 1,000 gal (greater than 25,000 gallons)	\$1.14



Customer Classes/Distinctions

- Negotiated rate structure with individual high-use customers (typically an industrial customer)
- Target: Only one customer



Negotiated Rate

Monthly Usage Charge

5/8" x 3/4" Meter	\$20.00
3/4" Meter	30.00
1" Meter	50.00
1 1/2" Meter	100.00
2" Meter	136.00
3" Meter	255.00
4" Meter	370.00
6" Meter	900.00

Gallage Charge (per 1,000 gallons)

0 to 2,000 gallons	\$3.50
2,001 to 10,000 gallons	3.75
Over 10,000 gallons	4.00

Special Rates for Salvation Army Youth Camp

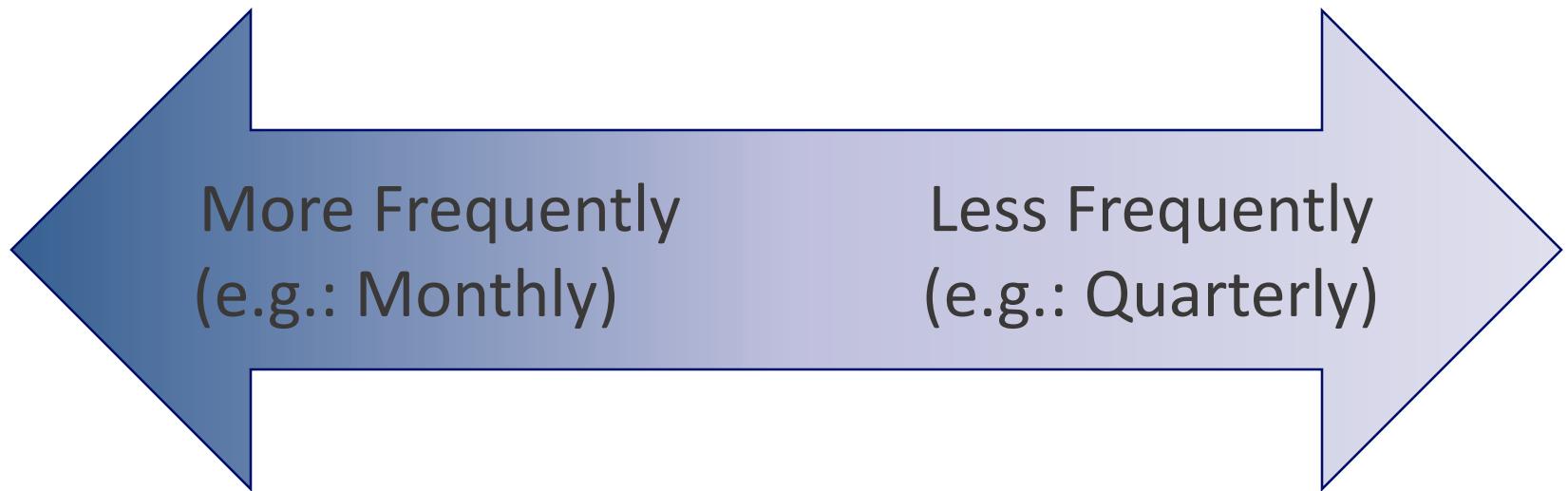
4" Meter – Monthly \$275.00

Gallage Charge (per 1,000 gallons) \$2.875

High Country Pines Water Company, AZ



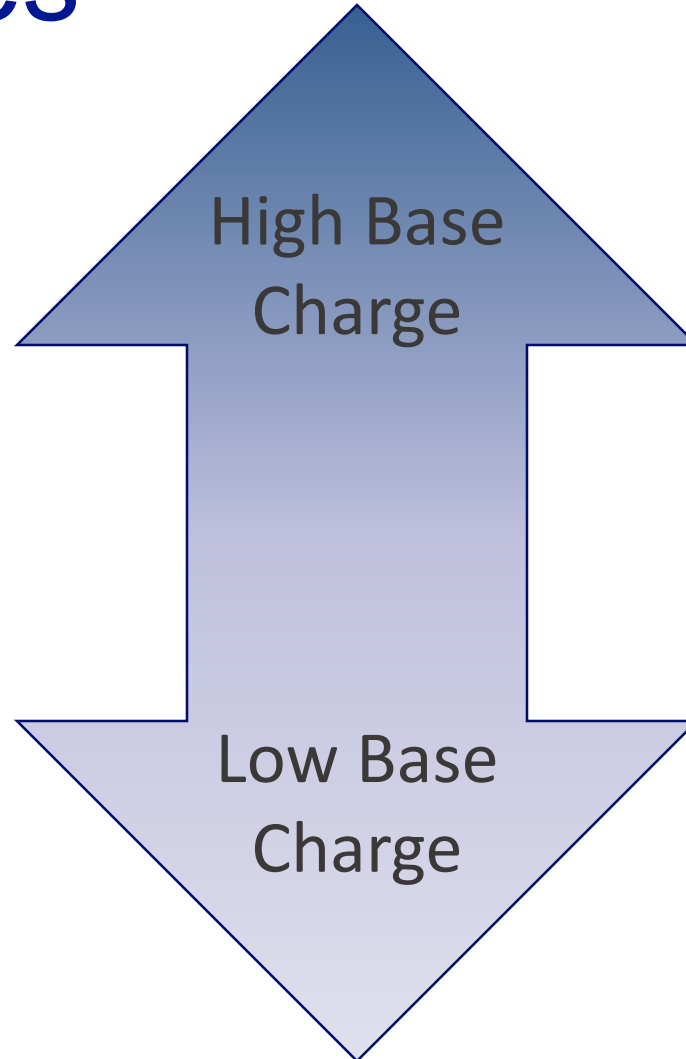
Billing Period



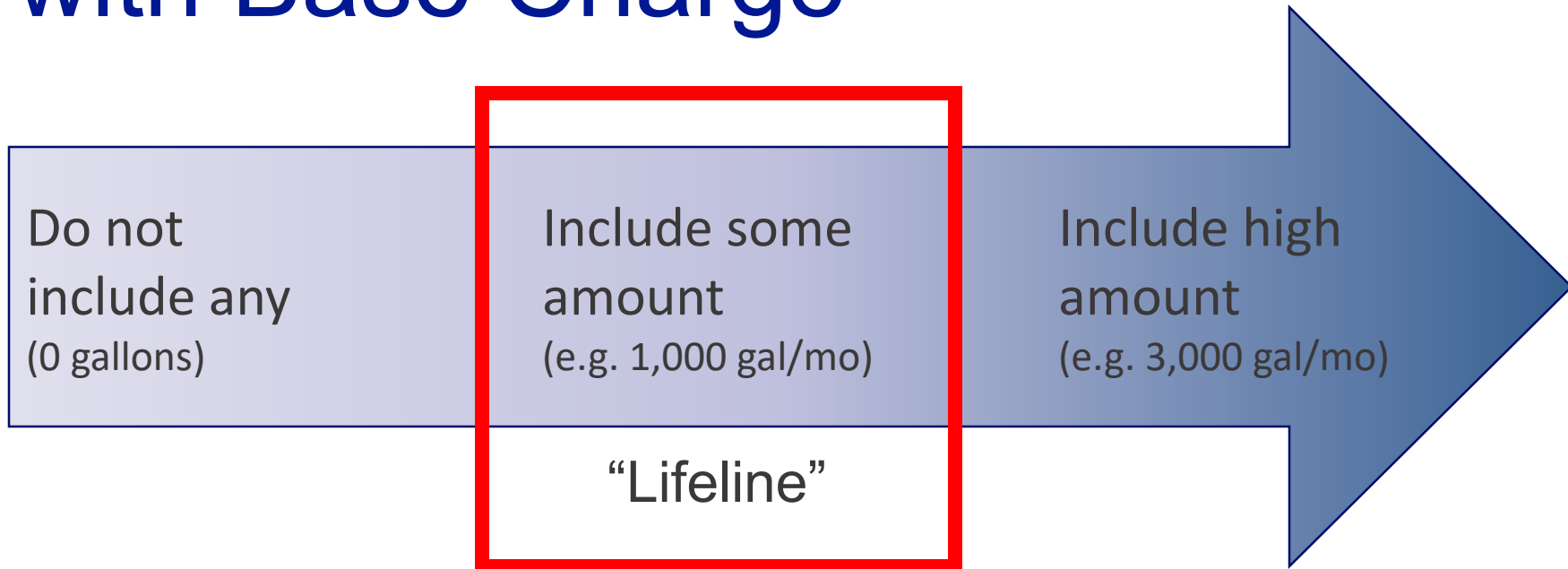
Suggestion: Use a monthly billing period if you can afford it

Base Charges

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



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.



No Gallons Included

MONTHLY USAGE CHARGE:

5/8" x 3/4" Meter	\$25.25
3/4" Meter	37.88
1" Meter	63.13
1 1/2" Meter	126.25
2" Meter	202.00
3" Meter	378.75
4" Meter	631.25
6" Meter	1,262.50

Commodity Charge:
Per 1,000 Gallons

\$2.42



Some Gallons Included

Schedule of Rates

Residential Minimum Monthly Charge (<u>Includes first 1,000 gallons</u>)	\$16.86
Residential Minimum Quarterly Charge (Includes first 1,000 gallons)	\$48.06
Water Usage Charge (over the first 1,000 gallons)	\$5.34 per 1,000 gallons

Stockton Hills Water Company, MO



Higher Gallons Included

Water and Sewer Rates Schedule:

Water- flat rate for <u>first 3000 gallons-</u>	\$28.00
Water rate remains at \$1.75 for each additional 1000 gallons of water used.	
Sewer- flat rate for first 3000 gallons of water used-	42.00
Sewer rate remains at \$3.00 for each additional 1000 gallons of water used.	
Total Monthly Flat Rate – (3000 gallons of water or less)	<u>\$70.00</u>

Higher Gallons Included

Monthly Service Rate:

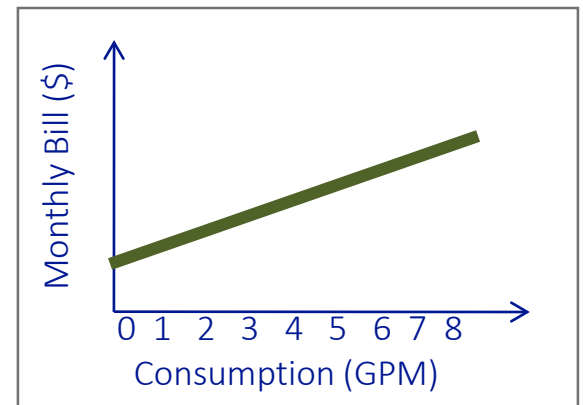
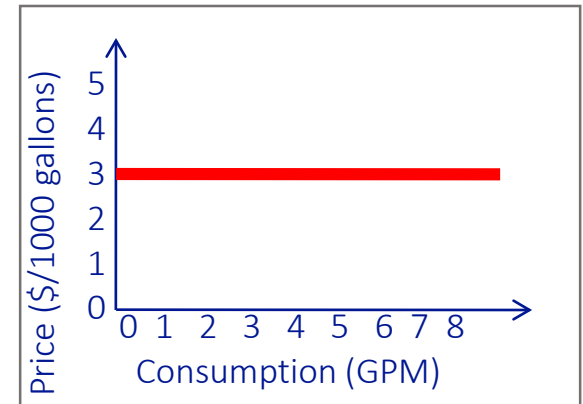
<u>Minimum</u>			<u>Gallons</u>
5/8 x 3/4"	\$	For	
3/4"	\$ 28.00	For	4,000
1"	\$ 45.00	For	7,000
1 - 1 1/2"	\$ 60.00	For	10,000
2"	\$ 200.00	For	75,000
3"	\$	For	
4"	\$	For	
5"	\$	For	
6"	\$	For	
\$ 2.00	Per	1,000	Gallons in Excess of Minimum

Thim Water Corporation, AZ

Volumetric Rate Structure

Uniform (“Flat”) Rates

- Fair and simple





Uniform Rates

WATER SERVICE RATES

MONTHLY USAGE

5/8" x 3/4"

\$12.00

Commodity charge

Per 1,000 gallons

\$1.20

Escapees at North Ranch Utilities, AZ



Uniform Rates

A. VOLUMETRIC RATES

Volumetric rates apply to all metered consumption and are in addition to the Customer Charge.

CUSTOMER CLASSIFICATION

RATES PER 100 CUBIC FEET

1. All Year-round Customers	\$5.64
3. Seasonal Ridge Customers	\$6.48
4. Seasonal (Non-Ridge) Customers	\$14.90

B. CUSTOMER CHARGES

Semi-Annual Customer Charges apply to all year-round customers based on meter size. Annual Customer Charges apply to all seasonal customers based on meter size (except as provided hereinafter for Ridge Area Customers).

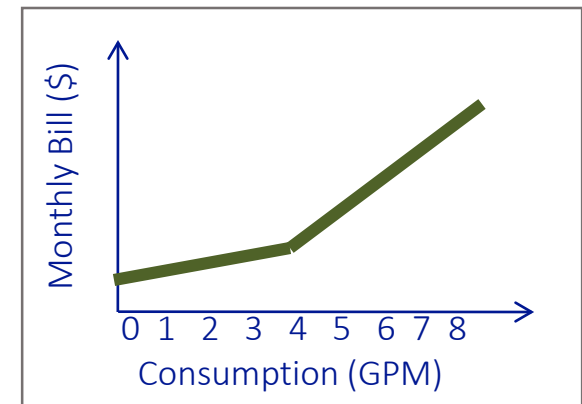
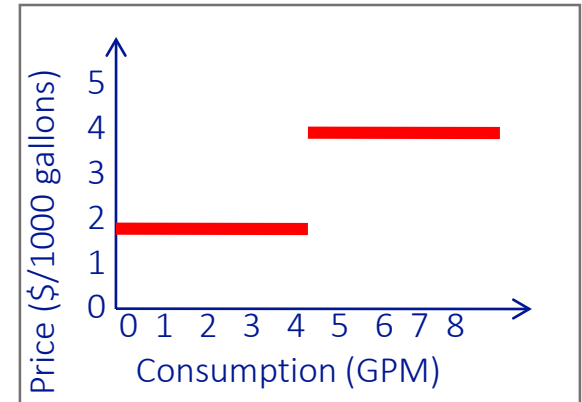
<u>Size of Meter (Inches)</u>	<u>Semi-Annual Customer Charge</u>	<u>Annual Customer Charge</u>
5/8	\$ 87.50	\$ 175.00
1	215.00	430.00
1-1/2	415.00	830.00
2	69	
3	1,25	

East Northfield Water Company, MA

Volumetric Rate Structure

Increasing Block Rates

- Conservation-oriented
- Consider large families





Increasing Block Rates

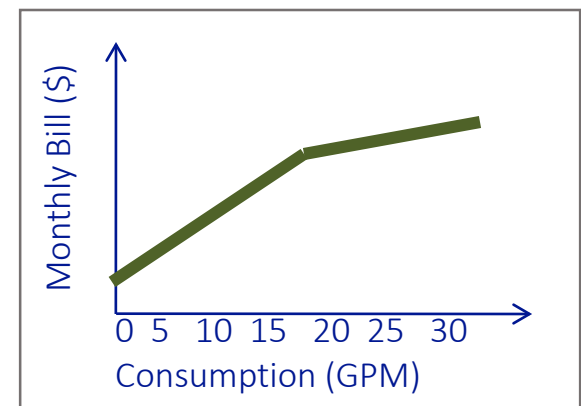
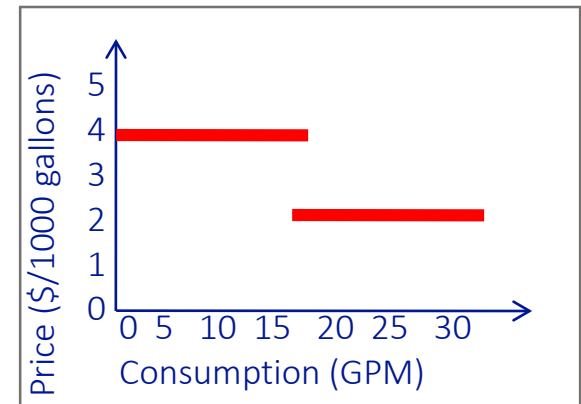
Rate per 1,000 gallons - Tiered

Tier	Water Usage	Rate per 1,000 gallons (\$)
1	First 5,000 gallons or less	\$13.00
2	Next 5,001 – 15,000	\$17.75
3	Next 15,001 – 25,000 (Over 15,000 cattle lessees)	\$18.75
4	25,001 or more for all except cattle lessees	\$19.75

Volumetric Rate Structure

Decreasing Block Rates

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



Decreasing Block

MONTHLY SERVICE RATE:

<u>MINIMUM</u>	<u>GALLONS</u>	<u>MINIMUM</u>	<u>GALLONS</u>
5/8 x 3/4"	\$ 4.00 FOR NO WATER	3"	\$ FOR
3/4" . . .	\$ FOR	4"	\$ FOR
1"	\$ FOR	5"	\$ FOR
1-1 1/2" . .	\$ FOR	6"	\$ FOR
2"	\$ FOR		

\$ 2.00 PER 1,000 GALLONS IN EXCESS OF MINIMUM UP TO 2,000 GALLONS
\$ 1.10 PER 1,000 GALLONS FOR THE NEXT 8,000 GALLONS
\$.90 PER 1,000 GALLONS FOR THE NEXT 40,000 GALLONS
\$.80 PER 1,000 GALLONS FOR ALL IN EXCESS OF 50,000 GALLONS.



(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. increase	water	Per 1000 gal. increase	sewer	combined
		11.66		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



Frequency of Rate Changes

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

<https://www.ct.gov/pura/site/default.asp>



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Katie Dykes
Chair



Welcome to the Public Utilities Regulatory Authority website. Here you will find information about the regulation of rates and services of Connecticut's electricity, natural gas, water and telecommunication public service companies as well as franchise information about the state's cable television companies. We also offer helpful information to you as a consumer of these services.

PURA is hiring for several key positions on our management team, legal and technical staff. View [position details and apply on-line](#).

[Connecticut State Water Plan](#)

Effective January 1, 2017, out of state attorneys must follow *pro hac vice* procedures in order to appear before Connecticut administrative proceedings, including those at PURA.

More information is available at www.ct.gov/pura/ProHacVice

The Class I or Class II Renewable Energy Source Certification Application has been revised as of October 25, 2017. Files

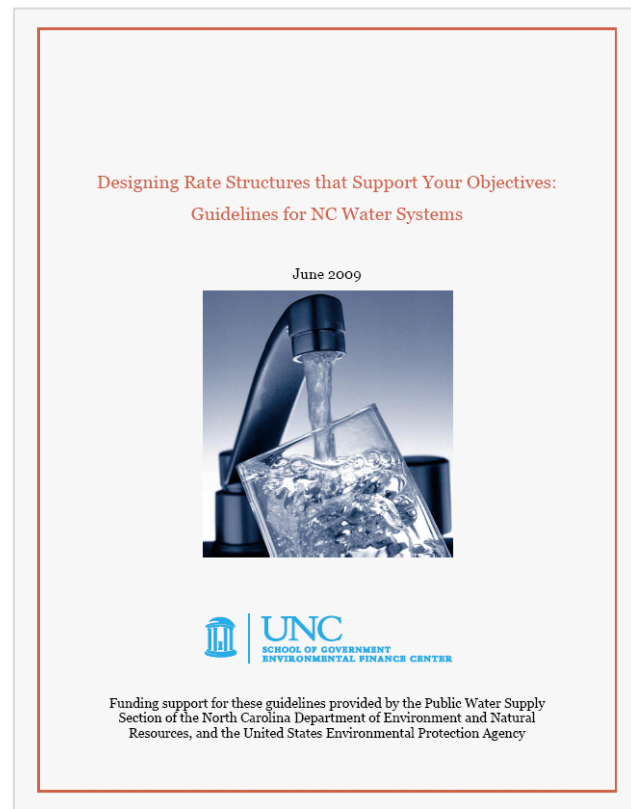


Designing Rate Structures That Support Your Objectives

Free guide
written for
system
managers

Available at:

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




Water and Wastewater Rates Analysis Model

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

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



Water & Wastewater Rates Analysis Model

Version 2.8.2 (last updated August 4, 2015)



UNC
ENVIRONMENTAL FINANCE CENTER

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

Get Started

Download a copy of the model populated with data from an example utility

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
- Up to 12 rate structures
- Uniform or block rates (up to 10 blocks)
- Model changes to accounts and water use
- Customizable list of operating and capital expenses
- Building up reserves through rates
- Compare monthly bills under new rates vs. existing rates
- Assess revenue sufficiency and fund balance
- Error notifications

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)

Year	2015	2016	2017	2018	2019	2020
Debt Service	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000
Other Known Annual Expenses	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000
Total	\$ 3,500,000	\$ 3,500,000	\$ 3,500,000	\$ 3,500,000	\$ 3,500,000	\$ 3,500,000

Category	2015
Administrative	\$ 200,000
Capital Expenses	\$ 200,000
Construction	\$ 100,000
Regional Sewer Authority operations & maintenance	\$ 100,000
Interest	\$ 100,000
Operational	\$ 100,000
Reserve	\$ 100,000
Other charges	\$ 100,000
Total	\$ 1,000,000

Year	2015	2016	2017	2018	2019	2020
Existing	\$11.50	\$13.00	\$14.50	\$16.00	\$17.50	\$19.00
New	\$11.50	\$13.00	\$14.50	\$16.00	\$17.50	\$19.00
Block End	4,000	4,000	4,000	4,000	4,000	4,000
Block Rate	\$2.78	\$2.78	\$2.78	\$2.78	\$2.78	\$2.78
Block Size	4,000	4,000	4,000	4,000	4,000	4,000
Block Rate	\$4.00	\$4.00	\$4.00	\$4.00	\$4.00	\$4.00
Block Size	4,000	4,000	4,000	4,000	4,000	4,000
Block Rate	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00
Block Size	4,000	4,000	4,000	4,000	4,000	4,000

Back to top

Error: missing block size

Error: missing block size

Watch out for red "Error" messages describing what data entry errors

Created by the Environmental Finance Center at the University of North Carolina, Chapel Hill
Funded by the U.S. E.P.A. and the N.C. Department of Environment and Natural Resources



How to Structure Water Rates

Glenn Barnes

Environmental Finance Center

The University of North Carolina at Chapel Hill

919-962-2789

glennbarnes@sog.unc.edu