



Water System Revenues

Glenn Barnes

Environmental Finance Center

The University of North Carolina at Chapel Hill

919-962-2789

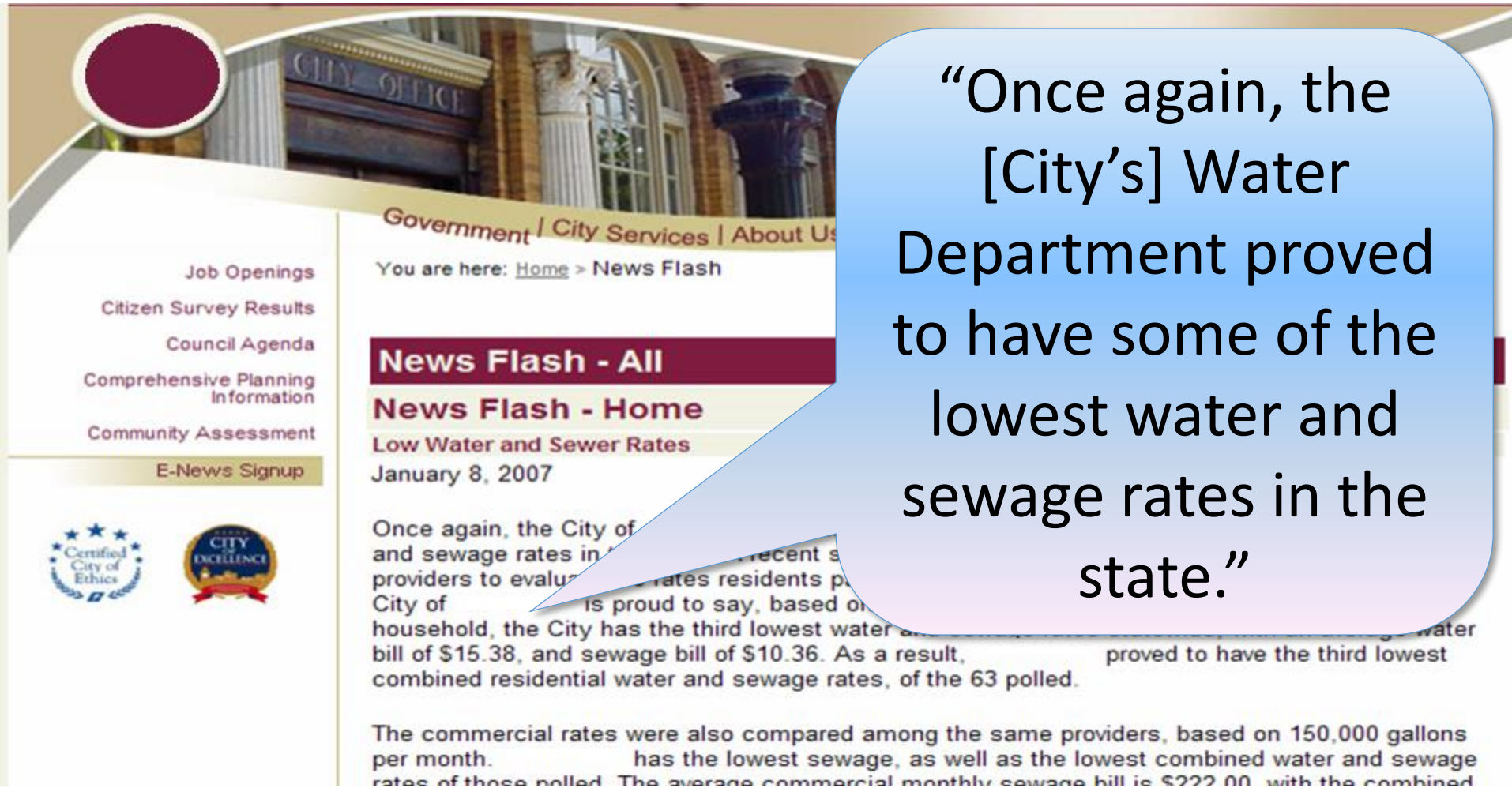
glennbarnes@sog.unc.edu



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. At the top, there is a navigation bar with links: "Government | City Services | About Us". Below this, a breadcrumb trail reads "You are here: [Home](#) > News Flash". The main content area features a "News Flash - All" section, followed by a "News Flash - Home" section titled "Low Water and Sewer Rates" dated "January 8, 2007". The article text begins with "Once again, the City of" and mentions "and sewage rates in" and "recent s". It continues with "providers to evalu" and "rates residents p". The City of is proud to say, based on household, the City has the third lowest water bill of \$15.38, and sewage bill of \$10.36. As a result, 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. 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



On the left side of the website, there is a sidebar with links: "Job Openings", "Citizen Survey Results", "Council Agenda", "Comprehensive Planning Information", "Community Assessment", and "E-News Signup". At the bottom left, there are two logos: "Certified City of Ethics" and "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 467  Send  10  Tweet 78

[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?





For Government Systems

- A city council, or other legislative body of a municipality, may establish just and equitable rates or charges to be paid to the municipality for the use of a water or wastewater utility

Fla. Stat. § 180.13



For FPSC Regulated Systems

- FPSC is responsible for fixing rates that are “just, reasonable, compensatory, and not unfairly discriminatory.”
- Systems can only apply rates approved by FPSC

Fla. Stat. § 367.081(2)(a)1



**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?





“Full 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)

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

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

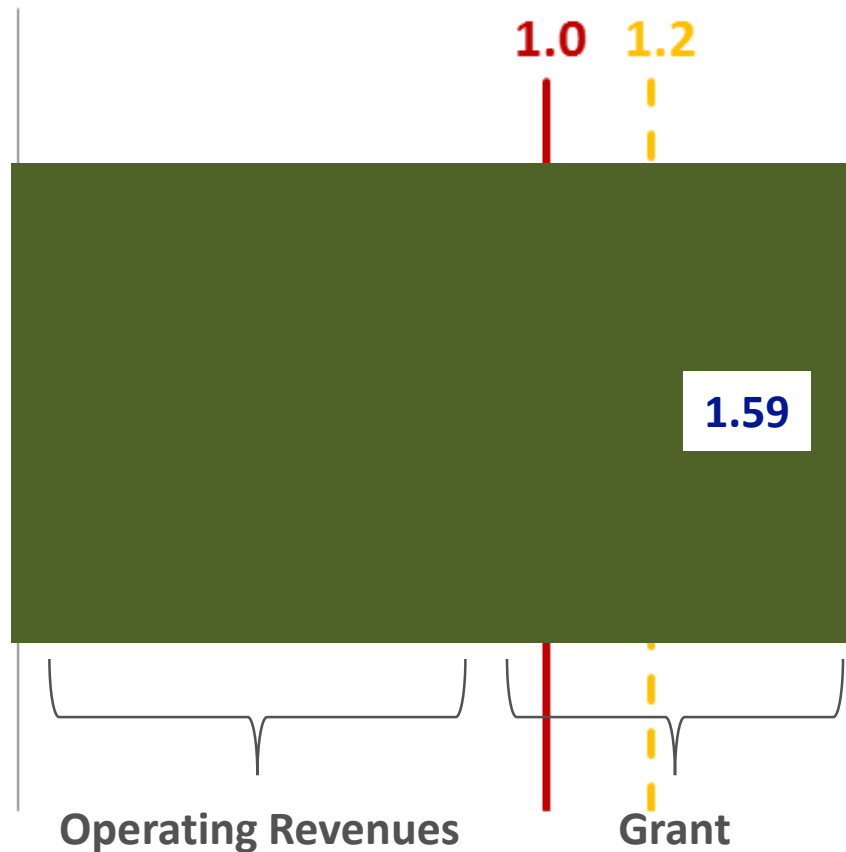
A blue-tinted photograph of industrial machinery, possibly a pump or engine, with various pipes, valves, and mechanical components visible.

Quick Thought on Grants

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

Grants Can Distort Operating Ratio

Sewer Program from Michigan





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



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

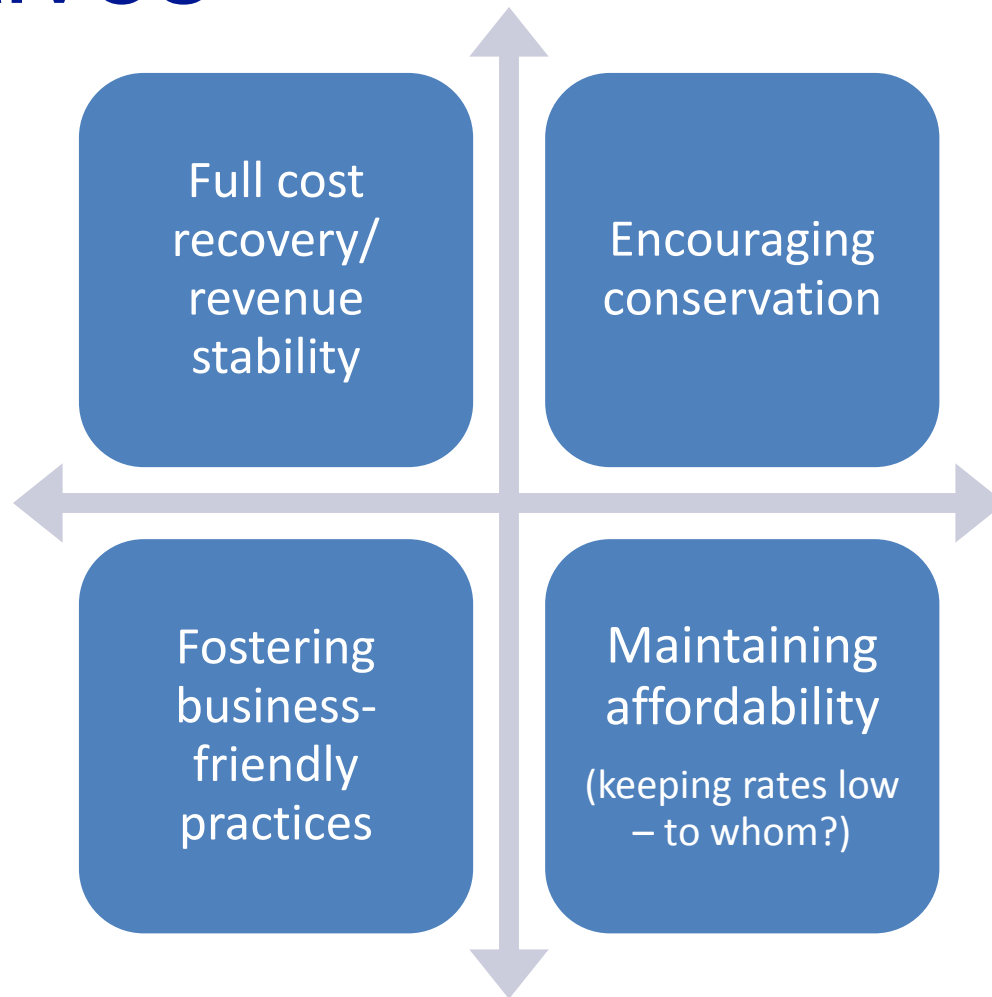
- Small town in New York state that charges \$120/year, billed twice
- Trailer park in Ohio that includes water in the monthly rent
- HUD-subsidized apartments that must include water in rent
- City of Chicago



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

Rank Your Rate Setting Objectives



A blue-tinted photograph of industrial machinery, possibly a water treatment plant, featuring large pipes and valves.

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

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

Customer Classes/Distinctions

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



Customer Classes/Distinctions

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



#3 City of Stockbridge

Gallons of Water Metered

Residential

0 through 4,000 gallons	\$ 4.56 Per Thousand	\$ 4.56 Per Thousand
4,001 through 9,000 gallons	\$ 6.99 Per Thousand	\$ 6.99 Per Thousand
9,001 gallons and up	\$ 9.42 Per Thousand	\$ 9.42 Per Thousand

Commercial, Apartments and Mobile Home Parks

0 through 10,000	\$ 5.78 Per Thousand	\$ 5.78 Per Thousand
10,000 and up	\$ 6.95 Per Thousand	\$ 6.95 Per Thousand

Irrigation

Per thousand gallons	\$ 9.26
----------------------	---------

Hydrant Meter

Per thousand gallons	\$ 9.26
----------------------	---------



Customer Classes/Distinctions

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



#2 Mount Pleasant

Water Meter Size	0 to 2,000 Gallons	Gallons Over 2,000
Inside Town		
5/8" or 3/4"	\$21.00	\$3.40/1000
1"	\$39.80	\$3.40/1000
1 1/2 "	\$112.40	\$3.40/1000
2" and up	\$218.00	\$3.40/1000
Outside Town		
5/8" or 3/4"	\$36.75	\$5.95/1000
1"	\$69.65	\$5.95/1000
1 1/2"	\$196.70	\$5.95/1000
2" and up	\$381.50	\$5.95/ 1000



#3 City of Stockbridge

Monthly Minimum Base Charge*

<u>Meter Size</u>		<u>Water</u>	<u>Sewer</u>
3/4	Most Residential	\$ 6.00	\$ 6.00
1		\$ 7.00	\$ 7.00
1.5		\$ 37.00	\$ 12.00
2		\$ 100.00	\$ 12.00
3		\$ 175.00	\$ 12.00
4		\$ 225.00	\$ 12.00
6		\$ 300.00	\$ 12.00
8		\$ 400.00	\$ 12.00
10		\$ 700.00	\$ 12.00



Customer Classes/Distinctions

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



#4 Union Point

INTOWN - 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



#2 Mount Pleasant

Water Meter Size	0 to 2,000 Gallons	Gallons Over 2,000
Inside Town		
5/8" or 3/4"	\$21.00	\$3.40/1000
1"	\$39.80	\$3.40/1000
1 1/2 "	\$112.40	\$3.40/1000
2" and up	\$218.00	\$3.40/1000
Outside Town		
5/8" or 3/4"	\$36.75	\$5.95/1000
1"	\$69.65	\$5.95/1000
1 1/2"	\$196.70	\$5.95/1000
2" and up	\$381.50	\$5.95/ 1000

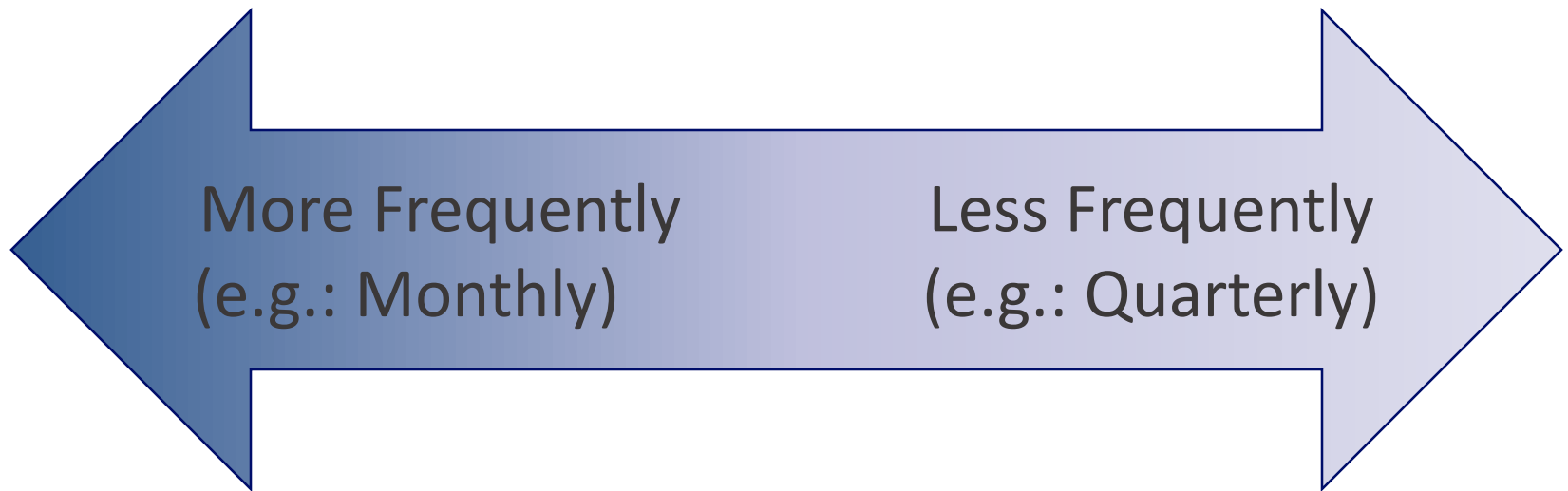


Customer Classes/Distinctions

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



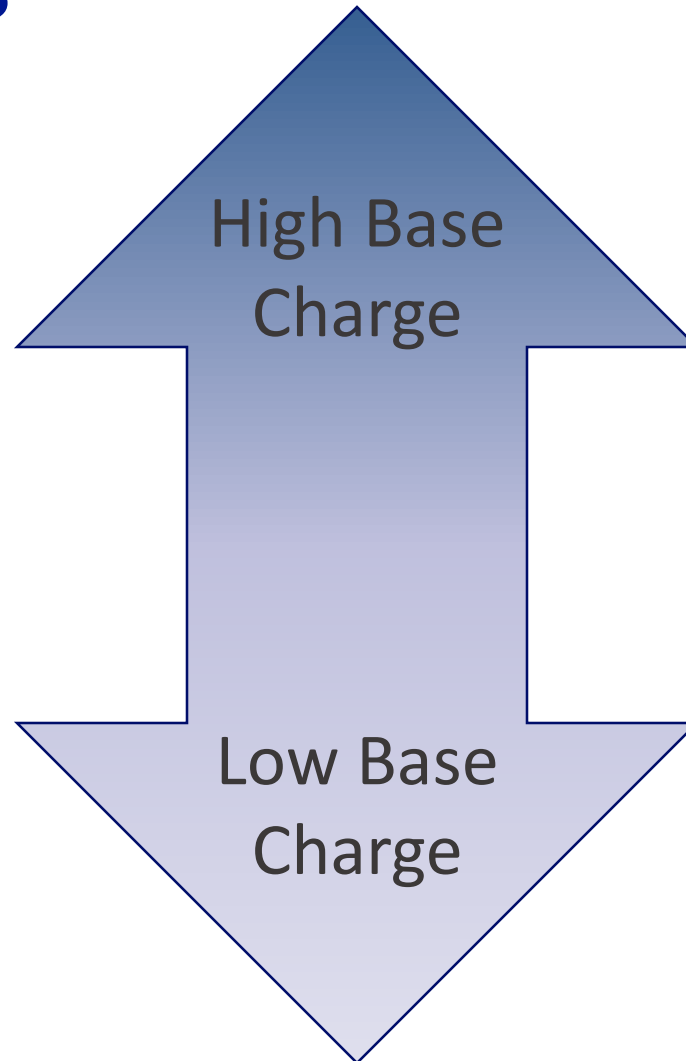
Billing Period



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

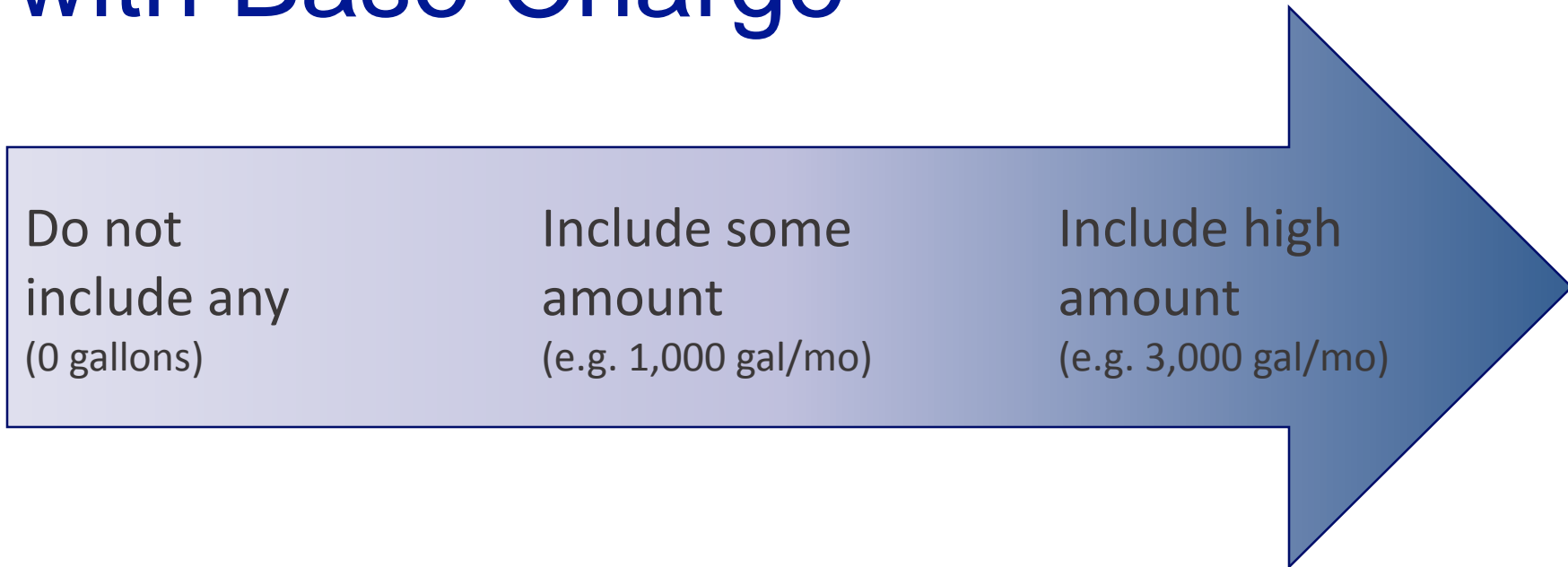
Base Charges

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





Consumption Allowance with Base Charge

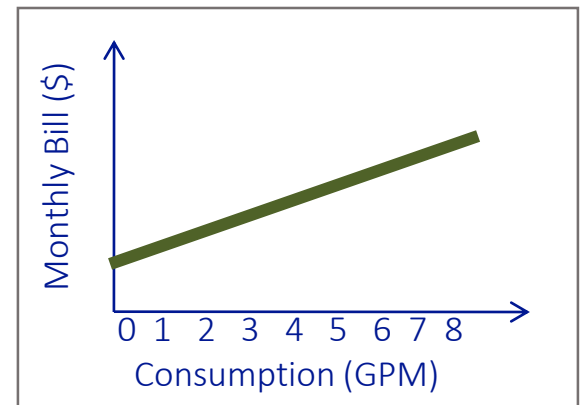
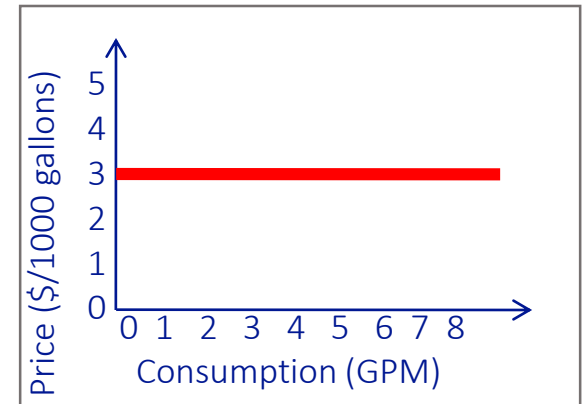


Suggestion: For systems with low base charges, do not include any consumption allowance. For systems with high base charges but wish to encourage conservation, keep consumption allowance low, if any.

Volumetric Rate Structure

Uniform (“Flat”) Rates

- Fair and simple





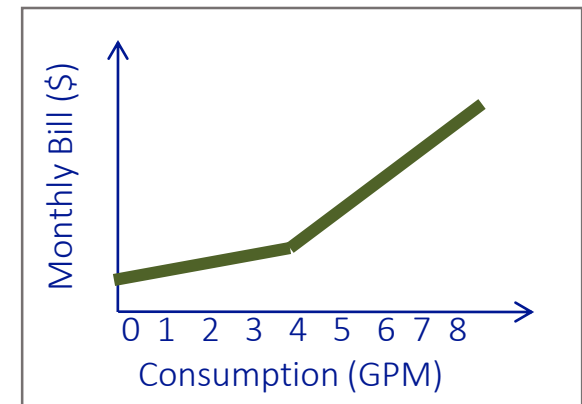
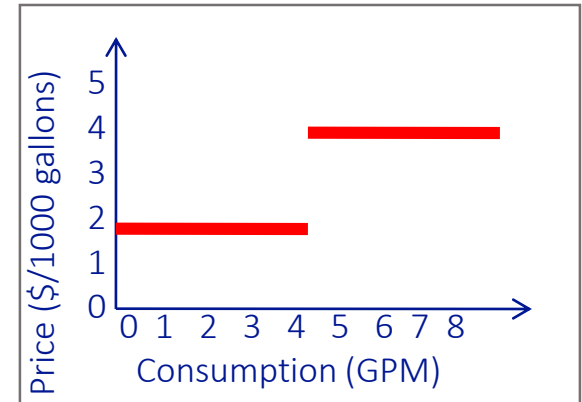
#2 Mount Pleasant

Water Meter Size	0 to 2,000 Gallons	Gallons Over 2,000
Inside Town		
5/8" or 3/4"	\$21.00	\$3.40/1000
1"	\$39.80	\$3.40/1000
1 1/2 "	\$112.40	\$3.40/1000
2" and up	\$218.00	\$3.40/1000
Outside Town		
5/8" or 3/4"	\$36.75	\$5.95/1000
1"	\$69.65	\$5.95/1000
1 1/2"	\$196.70	\$5.95/1000
2" and up	\$381.50	\$5.95/ 1000

Volumetric Rate Structure

Increasing Block Rates

- Conservation-oriented
- Consider large families





#3 City of Stockbridge

Gallons of Water Metered

Residential

0 through 4,000 gallons	\$ 4.56 Per Thousand	\$ 4.56 Per Thousand
4,001 through 9,000 gallons	\$ 6.99 Per Thousand	\$ 6.99 Per Thousand
9,001 gallons and up	\$ 9.42 Per Thousand	\$ 9.42 Per Thousand

Commercial, Apartments and Mobile Home Parks

0 through 10,000	\$ 5.78 Per Thousand	\$ 5.78 Per Thousand
10,000 and up	\$ 6.95 Per Thousand	\$ 6.95 Per Thousand

Irrigation

Per thousand gallons	\$ 9.26
----------------------	---------

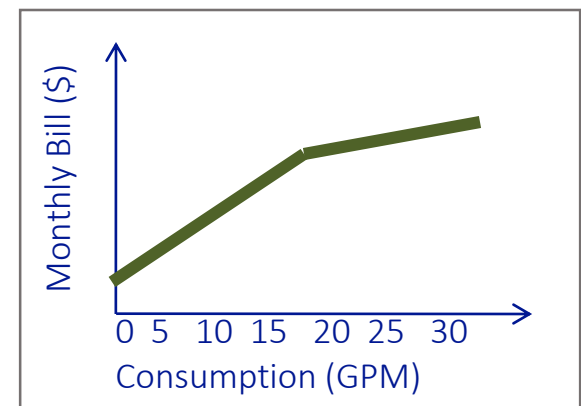
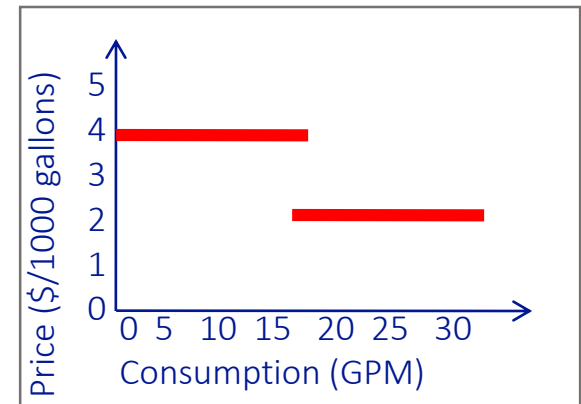
Hydrant Meter

Per thousand gallons	\$ 9.26
----------------------	---------

Volumetric Rate Structure

Decreasing Block Rates

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





#4 Union Point

INTOWN - 1/23/2006

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



(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

#5 – Too Many Blocks!

fixed 1000	Per 1000 gal.	water	Per 1000 gal.	sewer	combined
	rate	11.66	rate	13.10	24.76
2000	2.43	14.09	3.67	16.77	30.86
3000	4.85	18.94	7.41	24.18	43.12
4000	5.65	24.59	7.72	31.90	56.49
5000	5.78	30.37	8.06	39.96	70.33
6000	6.04	36.40	8.21	48.18	84.58
7000	6.23	42.63	8.40	56.58	99.20
8000	6.43	49.06	8.61	65.19	114.24
9000	6.63	55.68	8.79	73.97	129.65
10000	6.63	62.31	8.79	82.76	145.07
11000	6.63	68.93	8.79	91.55	160.48
12000	6.63	75.56	8.79	100.34	175.90
13000	6.63	82.18	8.79	109.13	191.31
14000	6.63	88.81	8.79	117.92	206.72
15000	6.63	95.43	8.79	126.71	222.14
15001-99999999	6.51	102.27	8.99	135.69	237.96



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



#8 Village of Richmond

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



Frequency of Rate Changes

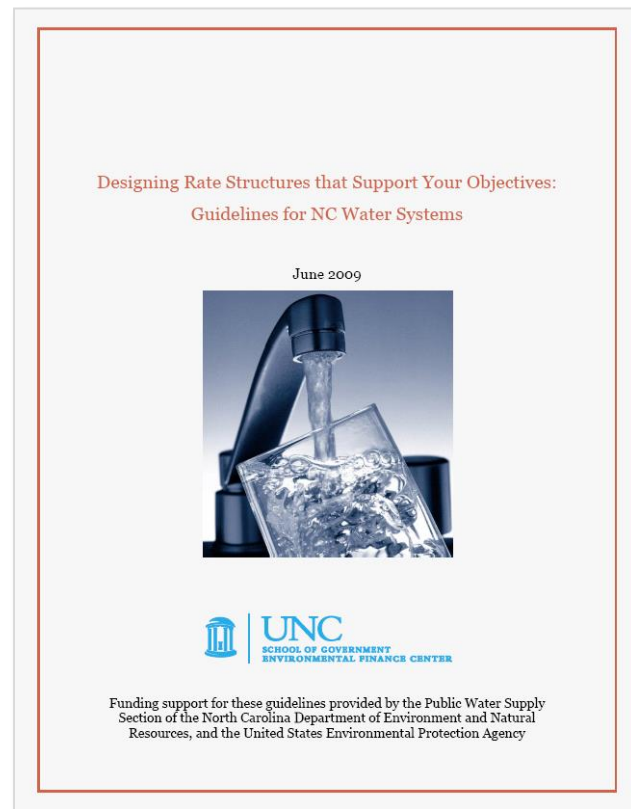
- *Important: Avoid maintaining low rates at the expense of your utility's financial health. It will either lead to a sudden, massive rate increase in the future or to failing systems and endangering public health.*

Designing Rate Structures That Support Your Objectives

Free guide
written for
system
managers

Available at:

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





Before we go...

http://efcnetwork.org/small_systems_blog/

Learn more about water finance and management through our Small Systems Blog! Blog posts feature lessons learned from our training and technical assistance, descriptions of available tools, and small systems “success stories.”

Sign Me Up



Innovative Finance Solutions for Environmental

HOMEABOUT ∨WORKSHOPS & WEBINARS ∨ASSISTANCE ∨RESOU

> BLOG

Blog



Magdalena, New Mexico: A Success Story from the Smart Management for Small Water Systems

Written by: Allison Perch Allison Perch is a Program Coordinator with the Environmental Finance Center. The financial health of its water system is at risk? This is the question that Stephanie Finch, the town clerk



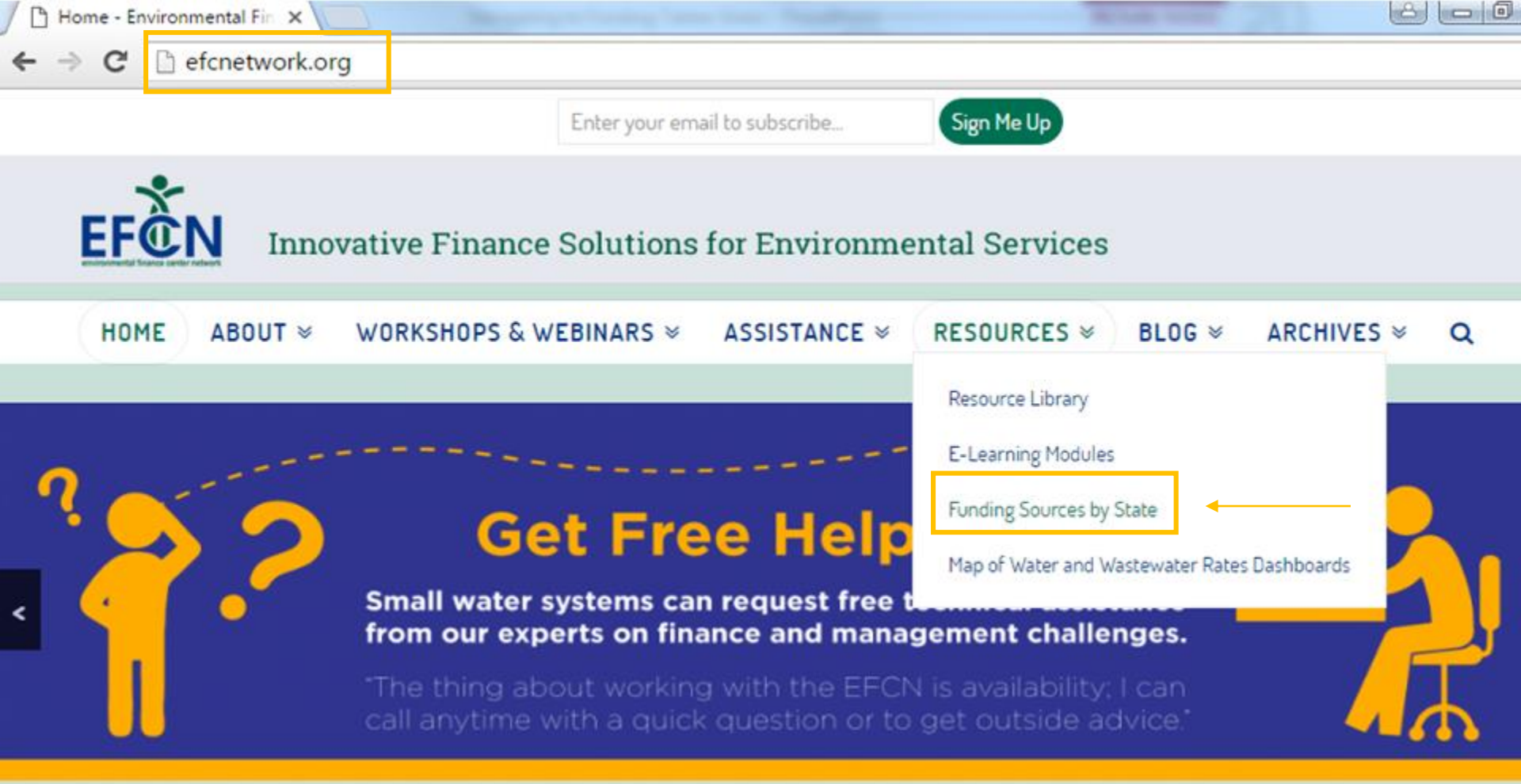
The Virtuous Cycle: Internal Energy Revolving Funds for Small Water Systems

Written by: David Tucker David Tucker is a Project Director with the Environmental Finance Center at pay for energy efficiency and renewable energy, helping cut utility costs? As energy is often the large



Smart Management for Small Water Systems Program Newsletter | Fall 2015

View Full Issue The Environmental Finance Center Network has published the third issue in a series



Navigating to Funding Tables

Step 1: efcnnetwork.org

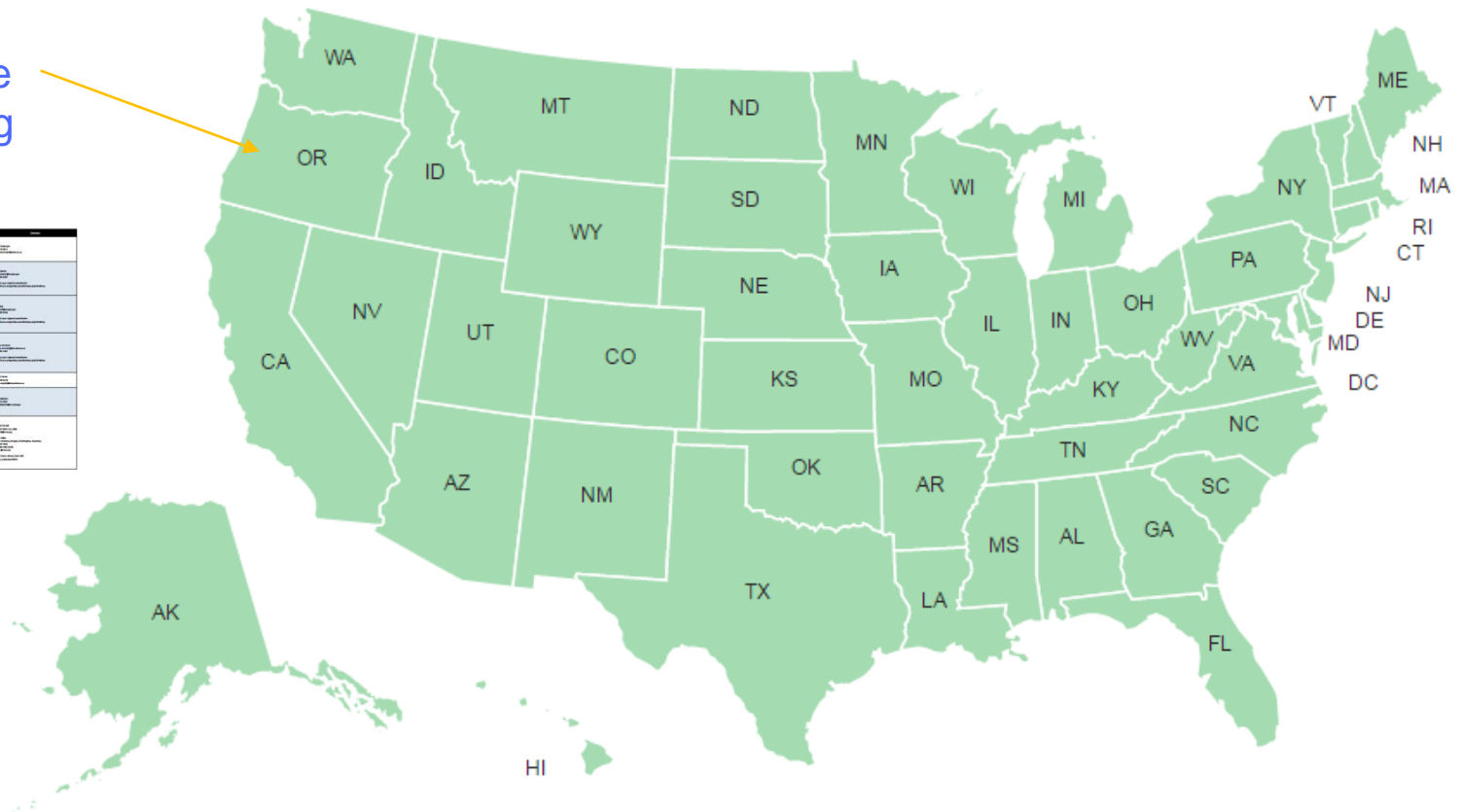
Step 2: Select "Funding Sources by State" under the Resources Tab

Funding Sources by State

Note: Some states may have additional resources listed below the map.

Click on the map below to view funding sources for each state:

Click on an individual state to view funding table.



Requirement	Product	Feature or Use Case	Software Req.	Design	Code
2000-2001 2002-2003	2000-2001 2002-2003	2000-2001 2002-2003	2000-2001 2002-2003	2000-2001 2002-2003	2000-2001 2002-2003
	2000-2001 2002-2003	2000-2001 2002-2003	2000-2001 2002-2003	2000-2001 2002-2003	2000-2001 2002-2003
	2000-2001 2002-2003	2000-2001 2002-2003	2000-2001 2002-2003	2000-2001 2002-2003	2000-2001 2002-2003
2004-2005 2006-2007	2004-2005 2006-2007	2004-2005 2006-2007	2004-2005 2006-2007	2004-2005 2006-2007	2004-2005 2006-2007
	2004-2005 2006-2007	2004-2005 2006-2007	2004-2005 2006-2007	2004-2005 2006-2007	2004-2005 2006-2007
	2004-2005 2006-2007	2004-2005 2006-2007	2004-2005 2006-2007	2004-2005 2006-2007	2004-2005 2006-2007
2008-2009 2010-2011	2008-2009 2010-2011	2008-2009 2010-2011	2008-2009 2010-2011	2008-2009 2010-2011	2008-2009 2010-2011
	2008-2009 2010-2011	2008-2009 2010-2011	2008-2009 2010-2011	2008-2009 2010-2011	2008-2009 2010-2011
	2008-2009 2010-2011	2008-2009 2010-2011	2008-2009 2010-2011	2008-2009 2010-2011	2008-2009 2010-2011
2012-2013 2014-2015	2012-2013 2014-2015	2012-2013 2014-2015	2012-2013 2014-2015	2012-2013 2014-2015	2012-2013 2014-2015
	2012-2013 2014-2015	2012-2013 2014-2015	2012-2013 2014-2015	2012-2013 2014-2015	2012-2013 2014-2015
	2012-2013 2014-2015	2012-2013 2014-2015	2012-2013 2014-2015	2012-2013 2014-2015	2012-2013 2014-2015
2016-2017 2018-2019	2016-2017 2018-2019	2016-2017 2018-2019	2016-2017 2018-2019	2016-2017 2018-2019	2016-2017 2018-2019
	2016-2017 2018-2019	2016-2017 2018-2019	2016-2017 2018-2019	2016-2017 2018-2019	2016-2017 2018-2019
	2016-2017 2018-2019	2016-2017 2018-2019	2016-2017 2018-2019	2016-2017 2018-2019	2016-2017 2018-2019
2020-2021 2022-2023	2020-2021 2022-2023	2020-2021 2022-2023	2020-2021 2022-2023	2020-2021 2022-2023	2020-2021 2022-2023
	2020-2021 2022-2023	2020-2021 2022-2023	2020-2021 2022-2023	2020-2021 2022-2023	2020-2021 2022-2023
	2020-2021 2022-2023	2020-2021 2022-2023	2020-2021 2022-2023	2020-2021 2022-2023	2020-2021 2022-2023



A Favor & A Reminder

- Please fill out an eval form for us before you leave
- Contact us anytime for direct technical assistance on any finance and management topic of our project

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

Thank you!

Glenn Barnes

Environmental Finance Center

University of North Carolina at Chapel Hill

919-962-2789

glennbarnes@sog.unc.edu