

# Benchmarking Rates and Financial Health for Small Water Systems in the United States

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[efc.sog.unc.edu](http://efc.sog.unc.edu)



August 15, 2013 webinar (with Astrid Case, EFC at  
Boise State University),

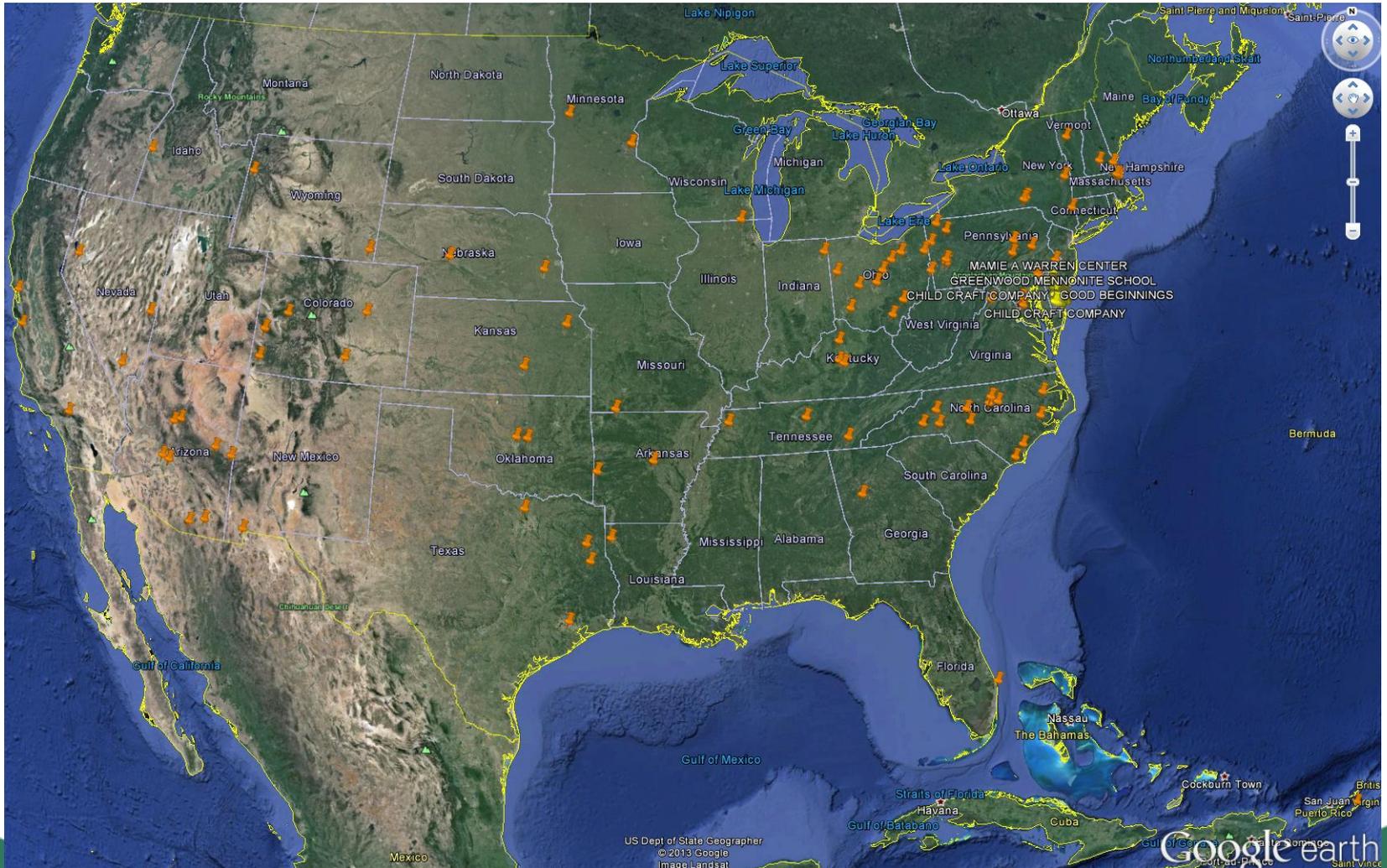
August 22, 2013 repeat webinar



Funded by the U.S. Environmental Protection Agency



# Geographic representation - all participants





UNC

ENVIRONMENTAL FINANCE CENTER

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Dedicated to enhancing the ability of governments and other organizations to provide environmental programs and services in fair, effective and financially sustainable ways.

*How you pay for it matters!*



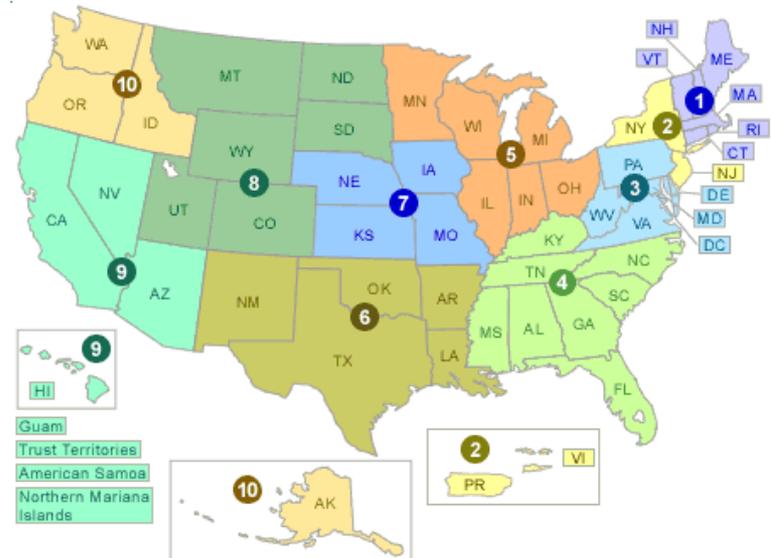
[www.efcnetwork.org](http://www.efcnetwork.org)



# The Environmental Finance Center Network

## ABOUT THE NETWORK

The Environmental Finance Center Network (EFCN) is a university-based organization creating innovative solutions to the difficult how-to-pay issues of environmental protection and improvement. The EFCN works with the public and private sectors to promote sustainable environmental solutions while bolstering efforts to manage costs.



Environmental Finance Centers are located throughout the United States.

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



# Smart Management for Small Water Systems

under a Cooperative Agreement with the US EPA

- The EFCN provides training and technical assistance to small public water systems in all fifty states and five territories to help local water systems achieve and maintain compliance with the Safe Drinking Water Act.
- Workshops, trainings and direct assistance are provided on:
  - Asset Management
  - Water Loss Reduction
  - Water System Collaboration
  - **Fiscal Planning and Rate Setting**
  - Energy Management
  - Funding Coordination, and
  - Managerial and Financial Leadership
- Sign up for direct assistance at <http://efcnetwork.org/one-on-one/>



# Objectives

- Become familiar with key financial ratios and benchmarks
- Learn how to compare rates across systems more wisely
- Become familiar with the features and benefits of Rates Dashboards



# Everyone needs safe drinking water!



# Financial Ratios and Benchmarking



# Can You Sleep at Night?

- Is your utility financially self-sufficient?
- Can your utility meet its short-term obligations?
- If your customers stop paying their bills, how long can you maintain operations?
- Are you able to cover your debt service after paying for your day-to-day operations?

Operating  
Ratio

Quick Ratio

Days Cash on  
Hand

Debt Service  
Coverage Ratio



# Where Do We Get the Data?

- Local governments: Audited Financial Statements
- Non-governments: balance sheets, shareholder reports, annual reports, etc.
- Small, private systems: estimate portion of revenues for the water system, monitor and track water system costs separately, keep a separate budget



# Sample Income Statement

	<u>Water and Sewer</u>
Operating revenues:	
Charges for services	\$ 11,329,883
Miscellaneous	—
Total operating revenues	<u>11,329,883</u>
Operating expenses:	
Personal services	3,400,559
Contractual services	344,422
Utilities	754,107
Repairs and maintenance	747,315
Other supplies and expenses	498,213
Insurance claims and expenses	—
Depreciation	1,163,140
Total operating expenses	<u>6,907,756</u>
Operating income (loss)	<u>4,422,127</u>
Nonoperating revenues (expenses):	
Interest and investment revenue	454,793
Miscellaneous revenue	—
Interest expense	(1,600,830)
Miscellaneous expense	—
Total nonoperating revenue (expenses)	<u>(1,146,037)</u>
Income (loss) before contributions and transfers	3,276,090
Capital contributions	1,645,919
Transfers out	(290,000)

For water systems without an income statement, create your own budget and statement using EPA's STEP guide:

[http://www.epa.gov/ogwdw/smallsystems/pdfs/guide\\_smallsystems\\_final\\_rat\\_essetting\\_guide.pdf](http://www.epa.gov/ogwdw/smallsystems/pdfs/guide_smallsystems_final_rat_essetting_guide.pdf)



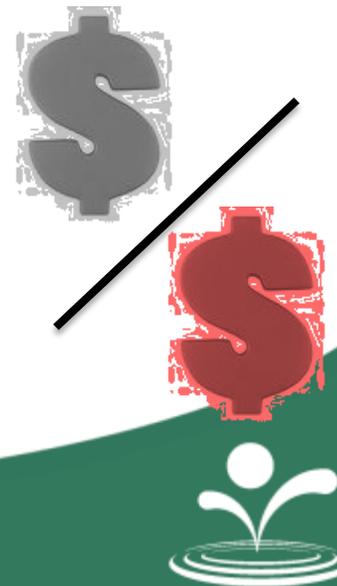
# Operating Ratio

$$= \frac{\textit{Operating Revenues}}{\textit{Operating Expenses}}$$

A measure of self-sufficiency.

The revenue you get from daily operations, divided by the expenditures or expenses you make to keep operations running

Natural Benchmark: > 1.0



# Operating Revenues and Expenses

- **Operating Revenues** = basically sales and charges to customers
- **Operating Expenses** = salaries, power, chemicals, board per diem, fringe benefits, office supplies, insurance, repairs (maintenance), contractual services, travel, depreciation, and any other **expenses necessary for the purchase, treatment, delivery and charging for water.**

STATE OF MISSISSIPPI  
OFFICE OF THE STATE AUDITOR  
Annual Financial Report for Non-Profit Public Water Systems

## C) Expenditures

Salaries . . . . .	.....
Board per diem . . . . .	.....
Fringe benefits . . . . .	.....
Office supplies . . . . .	.....
Utilities . . . . .	.....
Insurance . . . . .	.....
Repairs . . . . .	.....
Contractual services . . . . .	.....
Travel . . . . .	.....



# T'mayto, Tahmahto: Operating Ratio



- ▶ **You may wish to exclude depreciation in your operating ratio**
  - Total operating revenues divided by operating expenditures (total operating expenses minus depreciation).
  - This is solely a measure of whether you can pay for O&M *only* through operating revenues (no capital costs).
  
- ▶ **You may wish to include depreciation in your operating ratio**
  - Total operating revenues divided by total operating expenses (includes depreciation).
  - By including it, operating ratio assesses ability to pay for O&M and, theoretically, a portion of capital expenses in order to maintain assets using operating revenues.

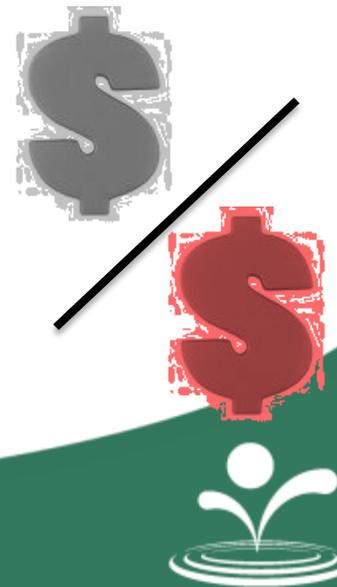


# Quick Ratio

$$\frac{\text{Quick Assets (unrestricted, excluding Inventories and Prepaid Items)}}{\text{Current Liabilities}}$$

A measure of short-term liquidity: ability to pay your current bills

Natural Benchmark: >1  
Accepted Benchmark: > 2



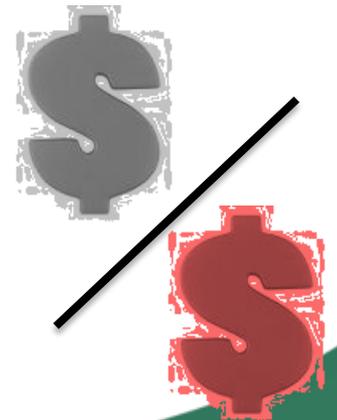
# Days Cash on Hand

$$= \frac{\text{Unrestricted cash and cash equivalents} \times 365}{\text{Operating Expenses} - \text{Depreciation}}$$

A measure of the ability of the utility to weather a significant temporary reduction in revenue to continue paying for daily operations

Benchmark? At the very least, enough to last a billing cycle or when you expect a substantial inflow of cash.

Most utilities aim for >180 days.

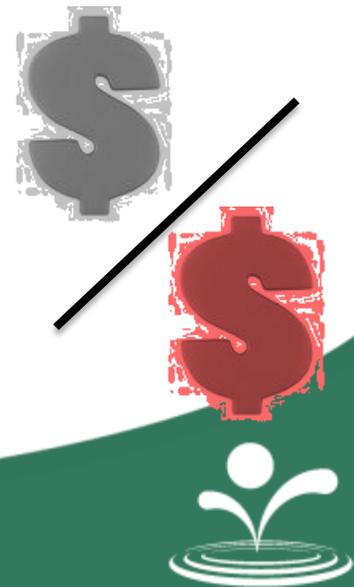


# Debt Service Coverage Ratio

$$= \frac{\text{Operating Revenues} - \text{Operating Expenditures (excludes depreciation)}}{\text{Principal} + \text{Interest Payments on Long Term Debt}}$$

A measure of the ability to pay debt service with operating revenue: Operating revenue left over after daily operation expenditures, divided by debt service (principal and interest)

Natural Benchmark: > 1  
Funders typically require >1.2



# Why Care About This?

- Setting rates and financial planning: as you think about the future needs of your system, you have to know where you are starting from
- Monitor system's financial performance to detect any negative trends (long-term)
- Funders care about these ratios → lower interest rates
- Accountable to your customers



# Debt Ratios

## Appendix F: 2013 Medians Relative to Rating Category

	Rating Category			All Credits
	AAA	AA	A	
Total Outstanding Long-Term Debt Per Customer (\$) <sup>a</sup>	1,213	1,828	1,951	1,650
Total Outstanding Long-Term Debt Per Capita (\$) <sup>a</sup>	352	492	521	460
Projected Debt Per Customer Year Five (\$) <sup>a</sup>	1,583	2,117	2,354	2,024
Three-Year Historical Average All-In ADS Coverage (x) <sup>a</sup>	2.3	2.0	1.4	2.0
All-In ADS Coverage (x) <sup>a</sup>	2.7	1.9	1.5	2.0
Operating Margin (%)	37	39	45	39
Days Cash on Hand <sup>a</sup>	427	418	285	417
Days of Working Capital <sup>a</sup>	430	390	250	373
Quick Ratio	3.4	3.0	2.6	3.1

Source: Fitch, 2013 ratings



# Benchmarking Rates



# An annual rates review in the U.S.

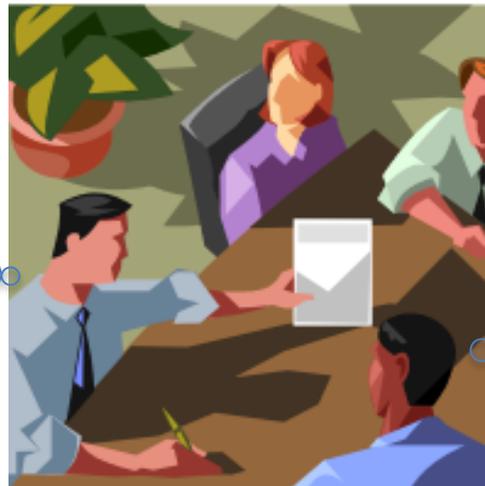
Will our rates provide sufficient cost recovery?

What exactly does this include?

Are we following State law?

Are our rates comparable?

Are we allocating the costs to the right customers and encouraging development?



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

Will our customers understand these rates?

Will our customers be able to pay these rates?



# Source of pride

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Citizen Survey Results

Council Agenda

Comprehensive Planning  
Information

Community Assessment

E-News Signup

## News Flash - All

### News Flash - Home

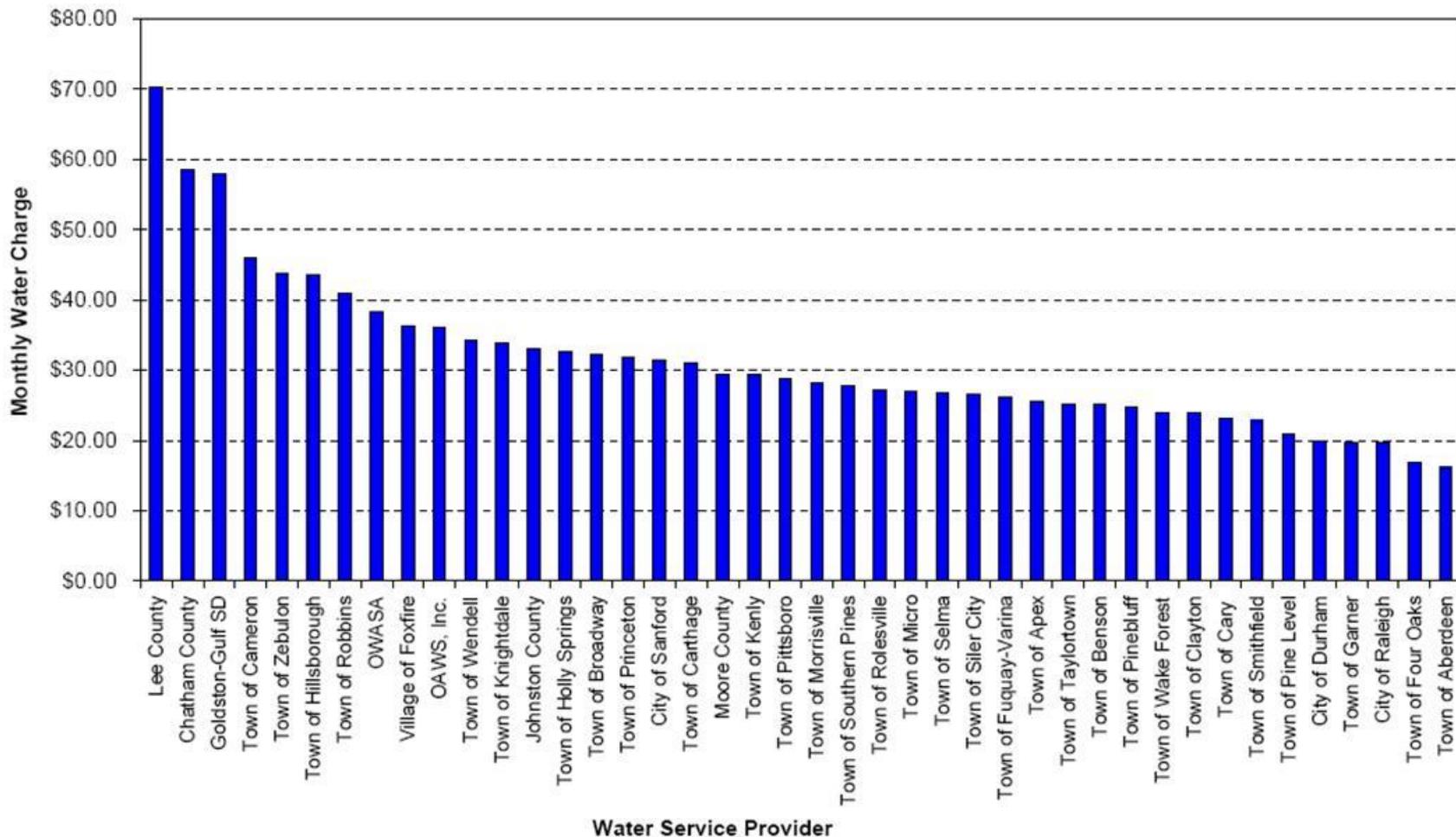
#### Low Water and Sewer Rates

January 8, 2007

Once again, the City of \_\_\_\_\_ Water Department proved to have some of the lowest water and sewage rates in the state. A recent statewide comparison was conducted among 63 water providers to evaluate the rates residents pay for their water and sewage on a monthly basis. The City of \_\_\_\_\_ is proud to say, based on 7,000 gallons, the average monthly usage per household, the City has the third lowest water and sewage rates statewide, with an average 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.



# Comparing rates – the old way



Source: NC Triangle J Council of Government



# What's wrong with it?

- Poor sample selection (number, types of systems)
- Comparing only one bill amount
- Comparing nothing besides rates
  - pressure to keep rates low ...
  - ... regardless of financial condition of utility
  - ignores customers' ability to pay
  - ignores price signals and utility's policies



# How Board members sometimes respond to request to raise rates

- “Our rates are high enough”
- “The customers cannot pay any more”
- “Our rates are higher here than towns X, Y and Z [already ‘too high’]” or “our rates are lower here than towns A, B and C [good, let’s not raise them]”



# Solution: provide more information?

Rate Table 1: FY09-10 Water Rate Structures for Residential Customers

Utility / Rate Structure	Service Population	Billing Period	Base Charge Pricing	Monthly Gallons Provided with Base Charge (Allowance)	Water Rate Structure	Number of Blocks	First Block Maximum (Monthly Gallons)	Implied Rate Structure for Residential Usage (< 15,000 GPM)	Outside/Inside Bill Differential at 5,000 Gallons
Aberdeen	5,455 <sup>1</sup>	Bi-monthly	Constant	0	Increasing Block	5	2,500	Increasing Block	188%
Ahoskie	4,479 <sup>1</sup>	Monthly	Constant	0	Uniform Rate			Uniform Rate	200%
Alamance	800 <sup>1</sup>	Bi-monthly	Constant	0	Uniform Rate			Uniform Rate	
Albemarle	16,042 <sup>1</sup>	Monthly	Constant	2,244	Decreasing Block	3	224,400	Implied Uniform Rate	200%
Alexander County - Bethlehem	10,917 <sup>1</sup>	Monthly	By Meter Size	0	Uniform Rate			Uniform Rate	

Compare with caution. High rates may be justified and necessary to protect public health.

Rate Table 2: FY09-10 Monthly-Equivalent RESIDENTIAL WATER Bills at Various Consumption Levels (Includes Base Charges)

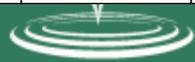
Utility / Rate Structure	Service Population	Oper. Revenue/ Oper. Expense (FY09 LGC Data)	Zero Gallons (0 cf)		3,000 Gallons (401 cf)		5,000 Gallons (668 cf)		6,000 Gallons (802 cf)		10,000 Gallons (1,337 cf)		15,000 Gallons (2,005 cf)	
			Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside	Inside	Outside
			Aberdeen	5,455 <sup>1</sup>	0.81	\$5.00	\$8.00	\$11.82	\$21.65	\$16.62	\$31.25	\$19.17	\$36.35	\$29.75
Ahoskie	4,479 <sup>1</sup>	1.50	\$10.00	\$20.00	\$20.95	\$41.90	\$28.25	\$56.50	\$31.90	\$63.80	\$46.50	\$93.00	\$64.75	\$129.50
Alamance	800 <sup>1</sup>	0.73	\$8.50		\$19.27		\$26.45		\$30.04		\$44.40		\$62.35	
Albemarle	16,042 <sup>1</sup>	0.87	\$9.49	\$18.97	\$11.31	\$22.60	\$16.12	\$32.23	\$18.53	\$37.04	\$28.15	\$56.29	\$40.18	\$80.36
Alexander County - Bethlehem	10,917 <sup>1</sup>	1.16	\$27.92		\$32.09		\$34.87						3.78	
Alexander County - Sugarloaf and Hwy 16	10,917 <sup>1</sup>	1.16	\$19.44		\$29.66		\$36.47						1.52	
Aurora	2,285 <sup>1</sup>	0.87	\$14.30	\$40.70	\$14.30	\$40.70	\$19.03	\$46.33					7.43	\$83.83
Autryville								\$39.30					5.80	\$92.30
Andrews													4.89	
Angier													3.67	
Anson County													7.34	\$114.68
Ansonville													1.25	\$122.50
Apex								\$44.28					4.24	\$135.70
Archdale													3.63	
Asheboro								\$47.50					1.35	
Asheville													7.28	\$25.06
Atlantic Beach													3.65	\$107.40
Aulander													3.50	\$124.38
Aurora								\$22.71					3.74	\$115.74
Autryville	375 <sup>1</sup>	1.02	\$19.00	\$23.75	\$30.50	\$38.13	\$42.00	\$52.50					7.95	\$75.90
Ayden	5,629 <sup>1</sup>	1.11	\$11.00	\$22.00	\$23.75	\$37.75	\$32.25	\$48.25					7.00	\$48.00
Bailey	850 <sup>1</sup>	0.88	\$16.50	\$33.00	\$20.79	\$41.58	\$23.65	\$47.30					3.47	
Bakersville	737 <sup>1</sup>	0.63	\$16.00	\$26.00	\$16.00	\$26.00	\$17.00	\$28.00					3.89	\$121.78
Bald Head Island	2,806 <sup>1</sup>	1.28	\$17.67		\$32.64		\$48.27							
Banner Elk	1,407 <sup>1</sup>	0.76	\$12.60	\$25.20	\$16.20	\$32.39	\$23.89	\$47.78						
Bath	290 <sup>1</sup>	1.17	\$27.50		\$37.50		\$57.50		\$67.50		\$107.50		\$157.50	
Baton Water Corporation	6,720 <sup>1</sup>		\$13.65		\$13.65		\$21.29		\$25.11		\$40.39		\$58.43	
Bay River Metropolitan S	2,285 <sup>1</sup>	1.31												

185 pages

of wonderful tables,  
full of data you can use!



Service Pop.: 1=EPA SDWIS, 2=sewer accounts, 6=Water



# Building a tool (Business Intelligence)

Attractive

Comprehensive

Intuitive

Simple

At-a-glance

Accurate

Guides decision making

Interactive

Accessible

Parsimonious



# Demonstrate the Dashboards

[efc.sog.unc.edu](http://efc.sog.unc.edu) or [efcnetwork.org](http://efcnetwork.org)

Find them on Resources / Tools



# Rates Dashboards

- Created for NC, GA, TX, CO, VA.
- NJ and AZ coming soon!
- Free, online, open to the public
  - <http://efc.sog.unc.edu/> or <http://efcnetwork.org/tools/>
- Compares rates against multiple characteristics:  
Utility finances; System characteristics; Customer base socioeconomic conditions; Geography; History
- Compare to similar utilities (large samples):
  - All utilities; same size (accounts or revenue); same water source; same river basin; same customer income levels; same economic tier; within 50 miles; same regional districts



# Poll Questions 1 and 2



# HydroDASH™

- Create your own dashboard!
- Input current financial data for your utility in a simple Excel worksheet and upload into the dashboard
- Dashboard displays key financial indicators for your utility
- Free, online, open to the public: <http://www.hydrodash.com>
- Created by the EFC at Boise State University. Can provide direct assistance in using the dashboard.

HydroDASH™

Home How It Works Support About Us

Visualizing financial sustainability

Log in to your account

Email

Password

Remember me?

Log In Forgot your password?

Sign up to start creating your dashboard.

Home About

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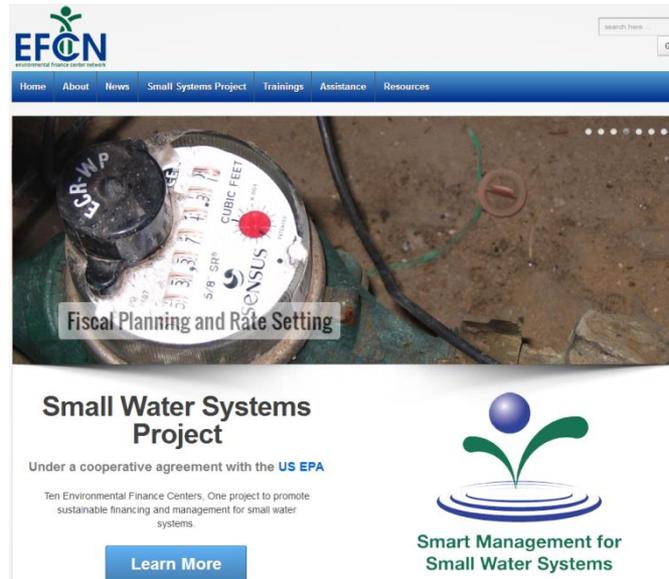
# Some EFCN Resources

Tools, trainings, assistance and resources for small water systems: [www.efcnetwork.org](http://www.efcnetwork.org)

Environmental Finance blog (EFC UNC)  
[efc.web.unc.edu/](http://efc.web.unc.edu/)

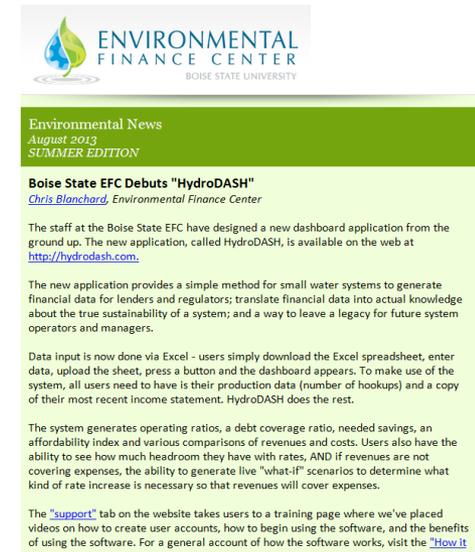


The screenshot shows the homepage of the Environmental Finance Center at UNC. It features a navigation menu with categories like 'GENERAL INFORMATION', 'ENERGY', 'DRINKING WATER & WASTEWATER', 'FINANCIAL BENCHMARKING', 'WATERSHEDS, WETLANDS & STORMWATER', 'ABOUT', 'AUTHORS', and 'LOGIN'. A 'SUBSCRIBE' form is visible on the left, and a featured article titled 'Lessons from Drinking Water Systems in Hawai'i and the U.S. Territories' is highlighted. The article is by Alexandra Kay and dated August 14th, 2013. Other articles listed include 'Water, Water Everywhere? The Significance of the Colorado Continental Divide in the 2012 Colorado Water and Wastewater Rates Dashboard' and 'Smart Management for Small Water Systems Project'.



The screenshot displays the EFCN website's 'Small Water Systems Project' page. The header includes the EFCN logo and navigation links: Home, About, News, Small Systems Project, Trainings, Assistance, Resources. A search bar is located in the top right. The main content area features a large image of a water meter with the text 'Fiscal Planning and Rate Setting' overlaid. Below the image, the title 'Small Water Systems Project' is prominently displayed, followed by the sub-header 'Under a cooperative agreement with the US EPA'. A 'Learn More' button is positioned at the bottom of the main content area. To the right, there is a logo for 'Smart Management for Small Water Systems' featuring a stylized water drop and plant.

EFC Boise State University newsletter  
<http://efc.boisestate.edu/Publications/tabid/59/Default.aspx>



The screenshot shows the cover of the 'Environmental News' newsletter, August 2013, Summer Edition. The logo for the Environmental Finance Center at Boise State University is at the top. The main content area is green and white, featuring the title 'Boise State EFC Debuts "HydroDASH"' by Chris Blanchard. The text describes the new application, HydroDASH, which is available on the web at <http://hydrodash.com>. It explains that the application provides a simple method for small water systems to generate financial data for lenders and regulators, translating financial data into actual knowledge about the true sustainability of a system. The newsletter also mentions that the application is available in Excel and provides a link to a training page under the 'support' tab.



# Poll Questions 3 and 4



# Thank you!

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