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

David Tucker and Shadi Eskaf
Environmental Finance Center at the University of North Carolina, Chapel Hill
efc.sog.unc.edu

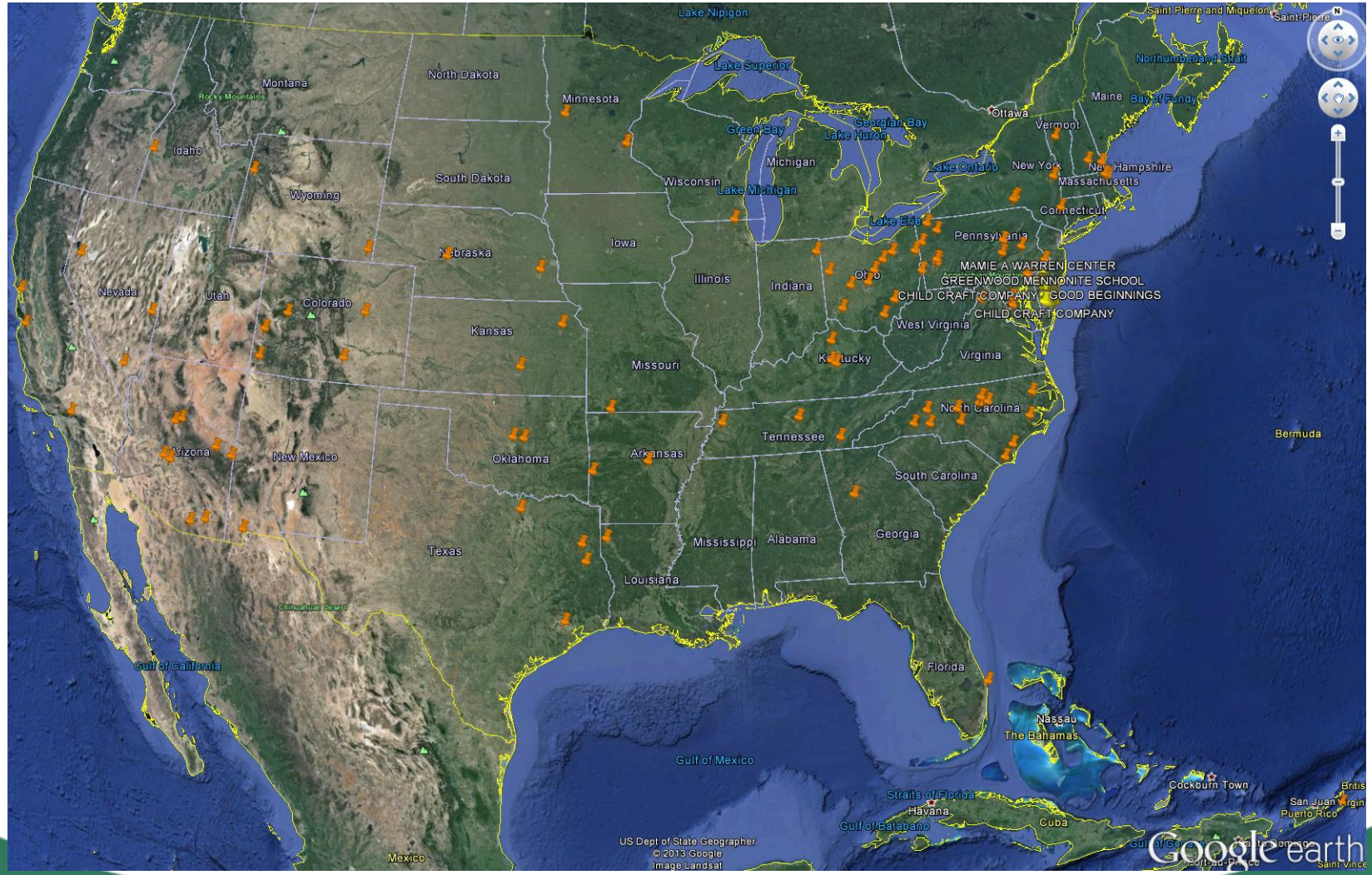
UNC ENVIRONMENTAL FINANCE CENTER

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

EFCN environmental finance center network

Geographic representation - all participants



UNC ENVIRONMENTAL FINANCE CENTER

efc.sog.unc.edu

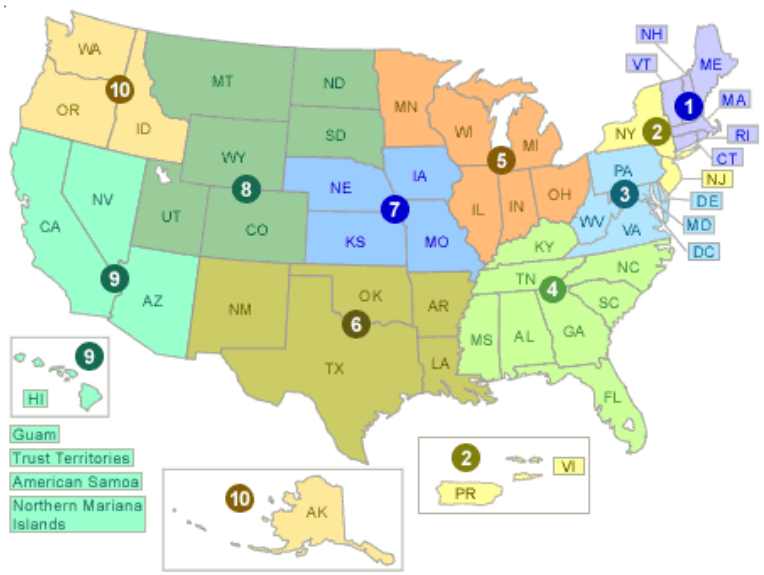
Dedicated to enhancing the ability of governments and other organizations to provide environmental programs and services in fair, effective and financially sustainable ways.

How you pay for it matters!

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 thoughout the United States.

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? — Operating Ratio
- Can your utility meet its short-term obligations? — Quick Ratio
- If your customers stop paying their bills, how long can you maintain operations? — Days Cash on Hand
- Are you able to cover your debt service after paying for your day-to-day operations? — 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

	Water and Sewer
Operating revenues:	
Charges for services	$ 11,329,883
Miscellaneous	—
Total operating revenues	11,329,883
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	6,907,756
Operating income (loss)	4,422,127
Nonoperating revenues (expenses):	
Interest and investment revenue	454,793
Miscellaneous revenue	—
Interest expense	(1,600,830)
Miscellaneous expense	—
Total nonoperating revenue (expenses)	(1,146,037)
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_ratesetting_guide.pdf

Operating Ratio

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

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

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

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

Natural Benchmark: >1

Accepted Benchmark: > 2

Days Cash on Hand

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

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

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

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

FitchRatings

Public Finance

Appendix F: 2013 Medians Relative to Rating Category

	Rating Category			
	AAA	AA	A	All Credits
Total Outstanding Long-Term Debt Per Customer ($)[a]	1,213	1,828	1,951	1,650
Total Outstanding Long-Term Debt Per Capita ($)[a]	352	492	521	460
Projected Debt Per Customer Year Five ($)[a]	1,583	2,117	2,354	2,024
Three-Year Historical Average All-In ADS Coverage (x)[a]	2.3	2.0	1.4	2.0
All-In ADS Coverage (x)[a]	2.7	1.9	1.5	2.0
Operating Margin (%)	37	39	45	39
Days Cash on Hand[a]	427	418	285	417
Days of Working Capital[a]	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?

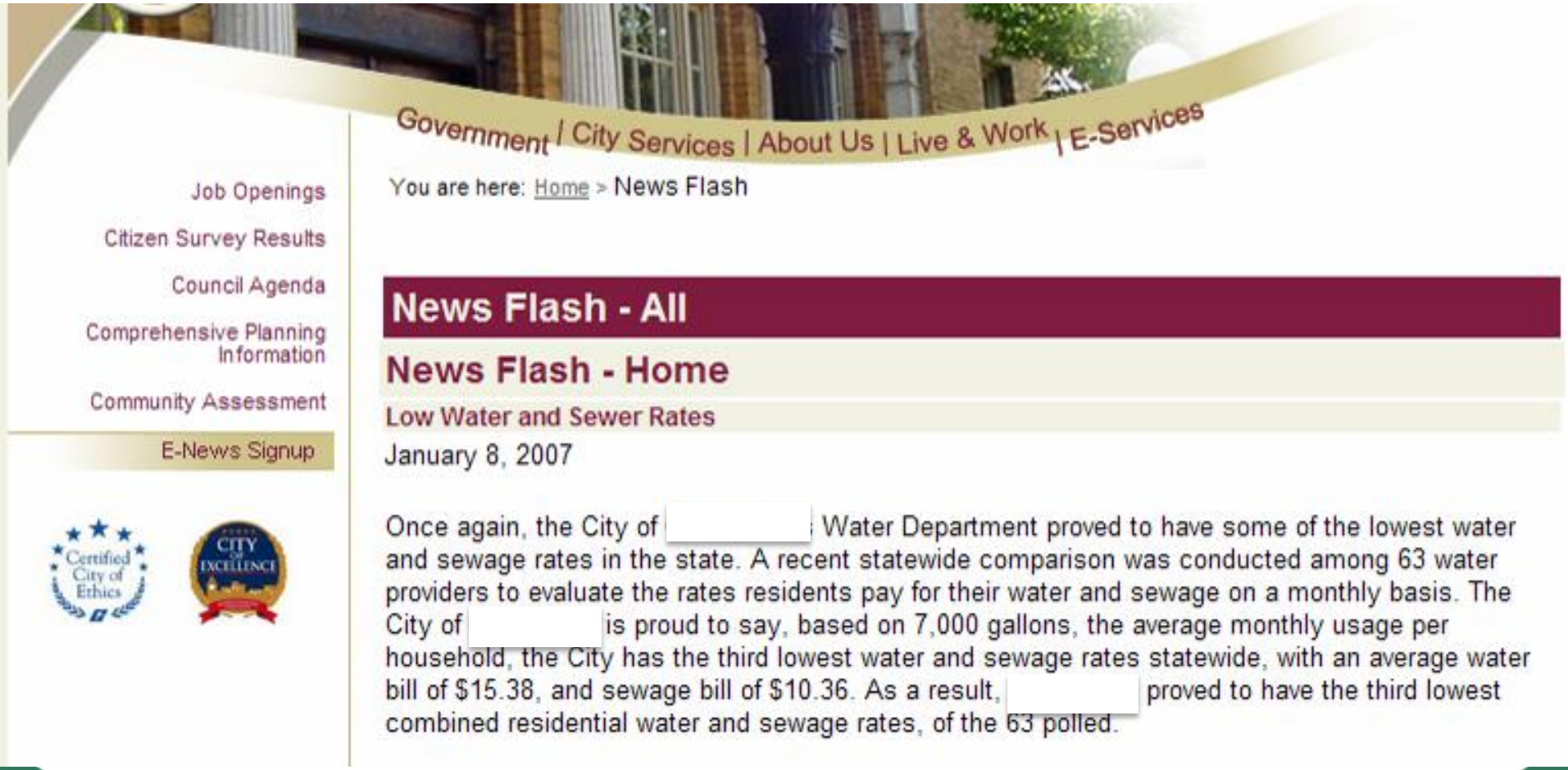
Are we allocating the costs to the right customers and encouraging development?

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

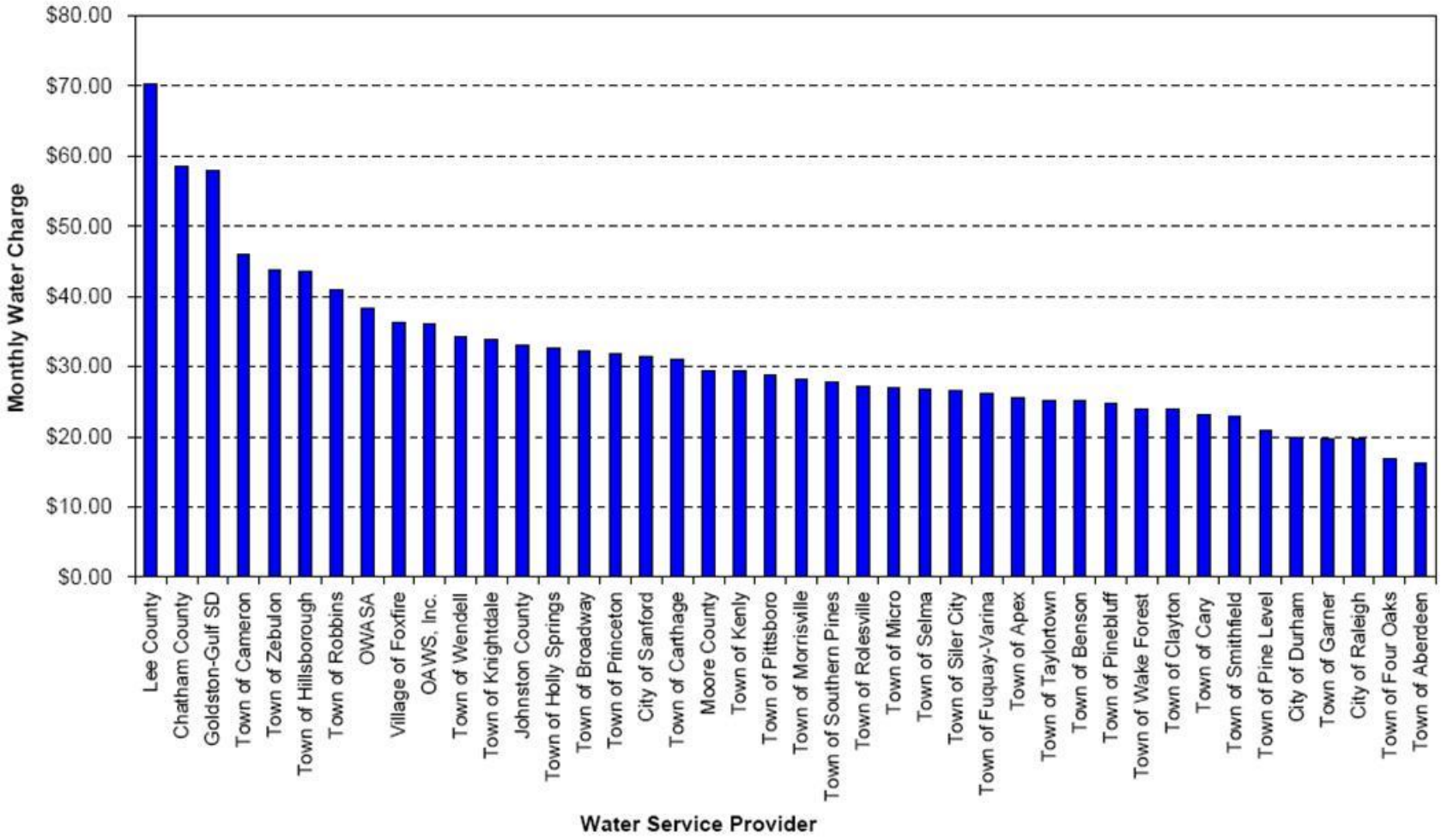
Will our customers understand these rates?

Will our customers be able to pay these rates?

Source of pride



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 [1]	Bi-monthly	Constant	0	Increasing Block	5	2,500	Increasing Block	188%
Ahoskie	4,479 [1]	Monthly	Constant	0	Uniform Rate			Uniform Rate	200%
Alamance	800 [1]	Bi-monthly	Constant	0	Uniform Rate			Uniform Rate	
Albemarle	16,042 [1]	Monthly	Constant	2,244	Decreasing Block	3	224,400	Implied Uniform Rate	200%
Alexander County - Bethlehem	10,917 [1]	Monthly	By Meter Size	0	Uniform Rate			Uniform Rate	
Alexander County - Suga									
Andrews									
Angier									
Anson County									
Ansonville									
Apex									
Archdale									
Asheboro									
Asheville									
Atlantic Beach									
Aulander									
Aurora									
Autryville									
Ayden									
Bailey									
Bakersville									
Bald Head Island									
Banner Elk									
Bath									
Baton Water Corporation									
Bay River Metropolitan S									
Beaufort									
Beaufort County - District									
Beaufort County - District									
Beaufort County - District									
Beaufort County - District									
Beaufort County - District									
Beaufort County - District									

ervice Pop.: 1=EPA SDWIS, 2=2xsewer accounts, 6=Wate

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 [1]	0.81	$5.00	$8.00	$11.82	$21.65	$16.62	$31.25	$19.17	$36.35	$29.75	$57.49	$45.49	$88.99
Ahoskie	4,479 [1]	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 [1]	0.73	$8.50		$19.27		$26.45		$30.04		$44.40		$62.35	
Albemarle	16,042 [1]	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 [1]	1.16	$27.92		$32.09		$34.87						3.78	
Alexander County - Sugarloaf and Hwy 16	10,917 [1]	1.16	$19.44		$29.66		$36.47						0.52	
Andrews	3,285 [1]	0.87	$14.30	$40.70	$14.30	$40.70	$19.93	$46.33					7.43	$83.83
Angier								$39.30					6.80	$92.30
Anson County													4.89	
Ansonville													9.67	
Apex								$44.28					7.34	$114.68
Archdale								$47.50					1.25	$122.50
Asheboro								$51.74					4.24	$135.70
Asheville													8.63	
Atlantic Beach													0.35	
Aulander								$22.71					7.28	$25.06
Aurora								$55.40					8.65	$107.40
Autryville	375 [1]	1.02	$19.00	$23.75	$30.50	$38.13	$42.00	$52.50					9.50	$124.38
Ayden	5,629 [1]	1.11	$11.00	$22.00	$23.75	$37.75	$32.25	$48.25					9.74	$115.74
Bailey	850 [1]	0.88	$16.50	$33.00	$20.79	$41.58	$23.65	$47.30					7.95	$75.90
Bakersville	737 [1]	0.63	$16.00	$26.00	$16.00	$26.00	$17.00	$28.00					7.00	$48.00
Bald Head Island	2,806 [1]	1.28	$17.67		$32.64		$48.27						6.47	
Banner Elk	1,407 [1]	0.76	$12.60	$25.20	$16.20	$32.39	$23.89	$47.78					8.89	$121.78
Bath	290 [1]	1.17	$27.50		$37.50		$57.50		$67.50		$107.50		$157.50	
Baton Water Corporation	6,720 [1]		$13.65		$13.65		$21.29		$25.11		$40.39		$58.43	
	2,285 [6]	1.21												

185 pages

of wonderful tables,

full of data you can use!

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 or efcnetwork.org

Find them on Resources / Tools

Rates Dashboards

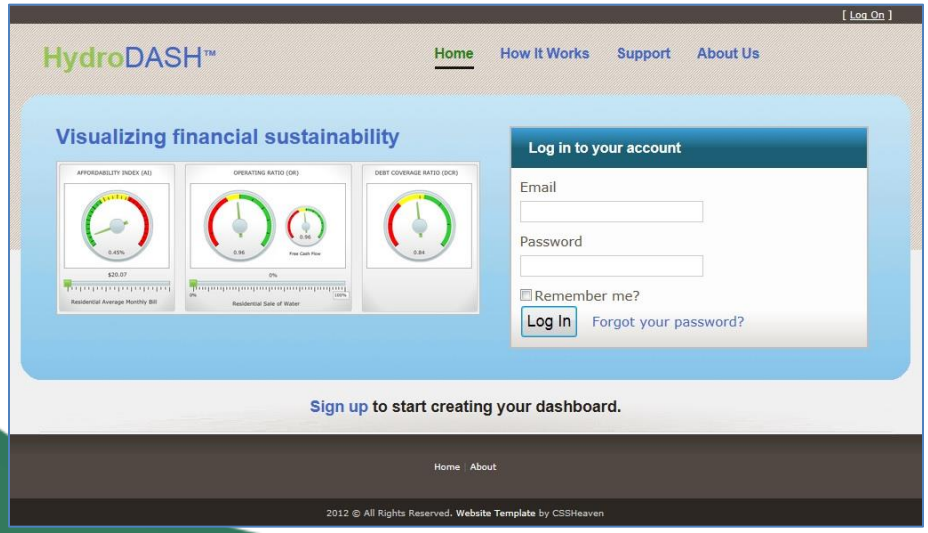
- Created for NC, GA, TX, CO, VA.
- NJ and AZ coming soon!
- Free, online, open to the public
  - http://efc.sog.unc.edu/ or http://efcnetwork.org/tools/
- Compares rates against multiple characteristics:

  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™

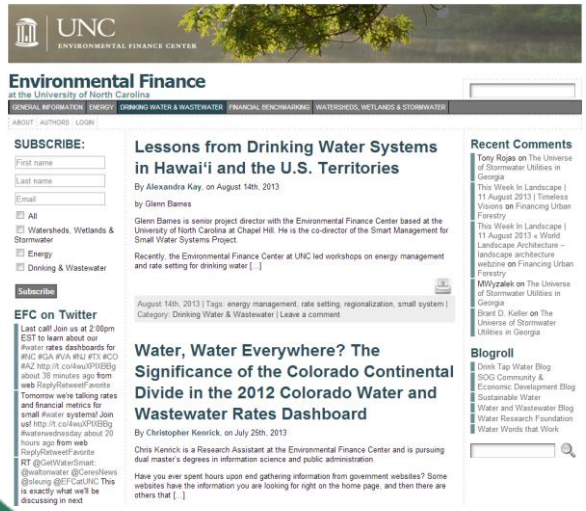
- Create your own dashboard!
- Input current financial data for your utility in a simple Excel worksheet and upload into the dashboard
- Dashboard displays key financial indicators for your utility
- Free, online, open to the public: http://www.hydrodash.com
- Created by the EFC at Boise State University.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

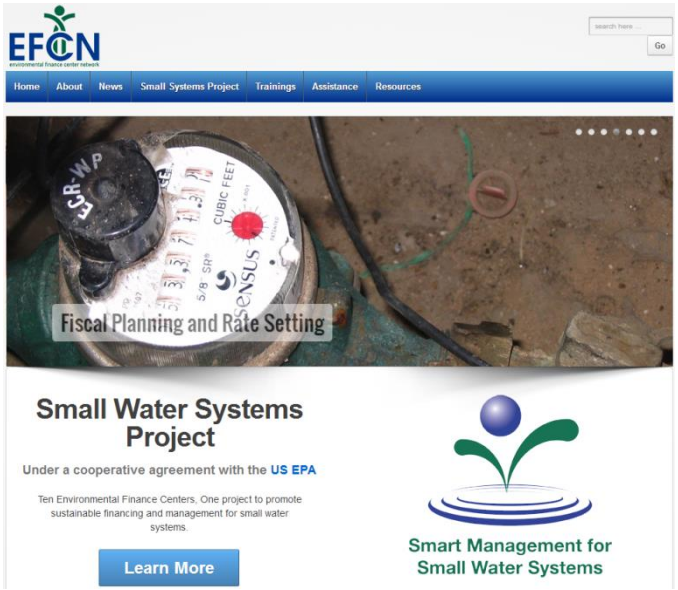


Some EFCN Resources

Tools, trainings, assistance and resources for small water systems: www.efcnetwork.org

Environmental Finance blog (EFC UNC)
efc.web.unc.edu/





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

Poll Questions 3 and 4

Thank you!

David Tucker

EFC at University of North Carolina, Chapel Hill

919-966-4199

drtucker@sog.unc.edu

Astrid Case

EFC at Boise State University

208-426-3790

astridcase@boisestate.edu

Shadi Eskaf

EFC at University of North Carolina, Chapel Hill

919-962-2785

eskaf@sog.unc.edu

Chris Blanchard

EFC at Boise State University

208-426-4110

cblanch@boisestate.edu

www.efcnetwork.org/