

Resilient Business Models for Water and Wastewater Utilities

NACWA

2012 Summer Conference & 42nd Annual Meeting

July 15 – 18, 2012

**Hyatt Regency Philadelphia at Penn's Landing
Philadelphia, PA**

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Special Thanks

This work was supported in part by the United State Environmental Protection Agency and the Water Research Foundation.



Topics

- Water leadership center
- Project background
- Revenue and rates trends
 - Mining NACWA Data
- The art of financial policies
 - Stephen Winters, Orange Water and Sewer Authority
 - Barry Gullet, Charlotte Mecklenburg Utilities
- Coming attractions
- Questions

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February 24 - March 8, 2013

Kenan-Flagler Business School, University of North Carolina-
Chapel Hill

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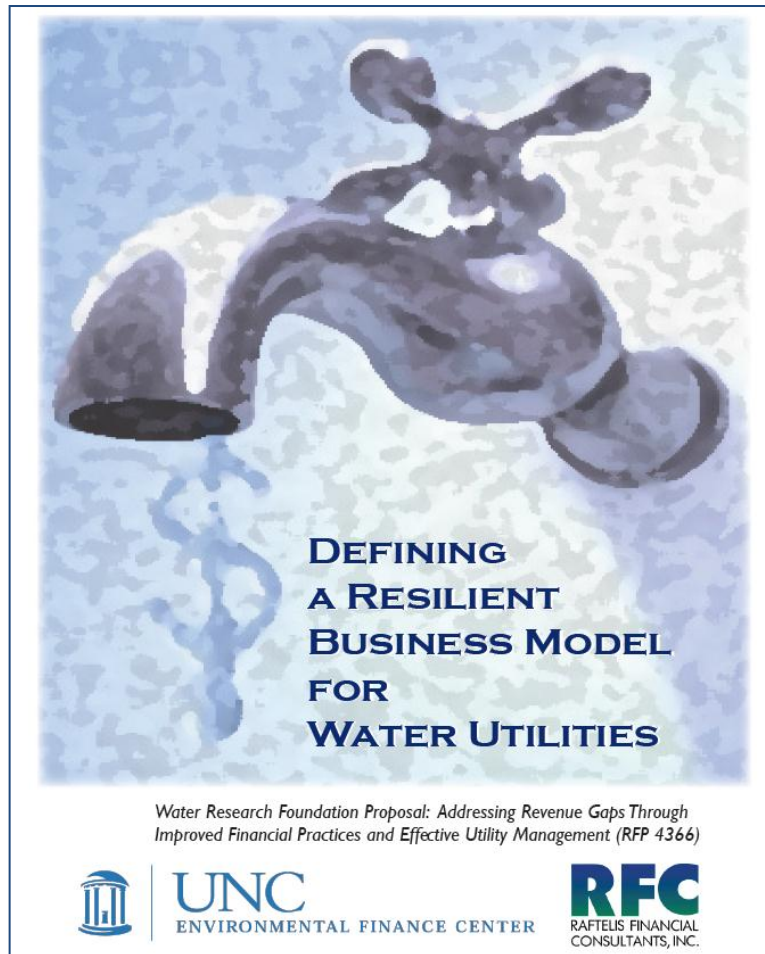
The Water and Wastewater Leadership Program at the University of North Carolina



Leadership Program Themes and Objectives

- Self-awareness and self-assessment
- Leading and managing skills
- Thinking strategically
- Leveraging technology
- Financial sustainability
- Taking it home and putting it to work
 - Personal development plan
 - Business improvement plan

Defining a Resilient Utility Business Model (Water Research Foundation Project #4366)



- Comprehensive trend analysis
- Identify and analyze best practices (pricing, policies, new revenue strategies....
- Examine the impact financial evaluation metrics and guidelines
- Assess impact and viability of new business models

Team Members: Raftelis Financial



Peiffer Brandt
Co-Principal
Investigator



Doug Bean
Project Advisor
and Liaison



Alexis Warmath
Utility Liaison



Catherine Noyes
Technical
Support



Rocky Craley
Technical
Support

Team Members: Environmental Finance Center at UNC



Jeff Hughes
Principal Investigator



Mary Wyatt Tiger
Project Manager



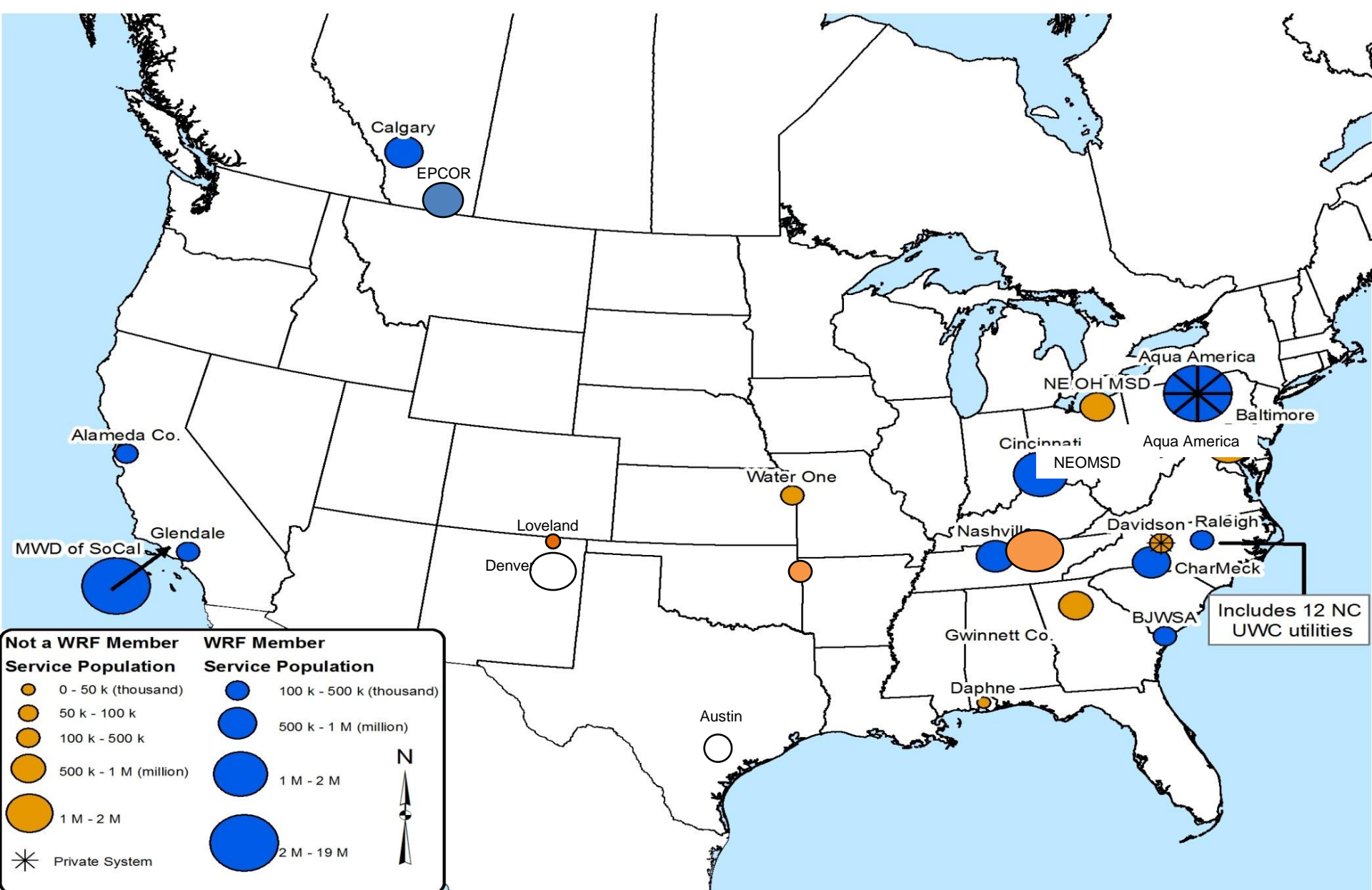
Stacey Isaac Berahzer
Outreach Coordinator



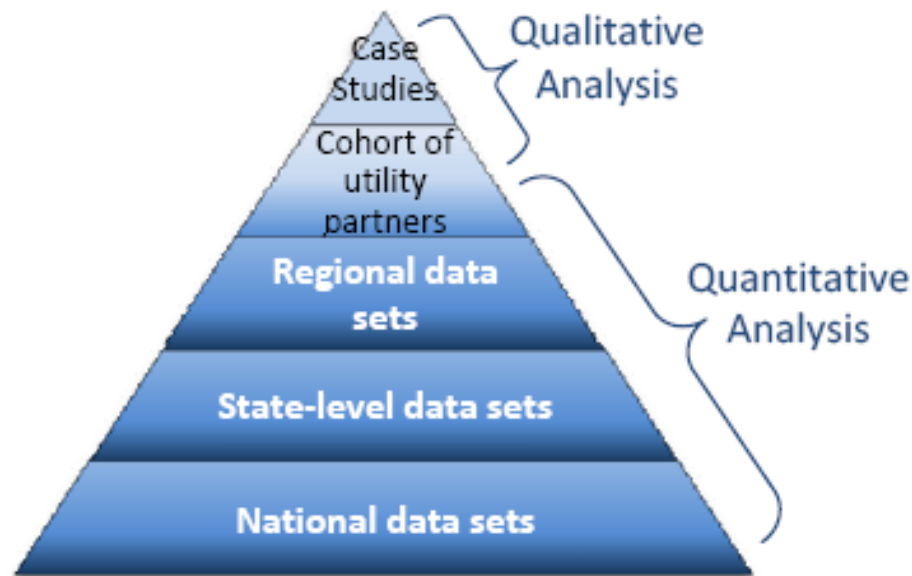
Shadi Eskaf
Technical Lead



Christine Boyle
Technical Support



Identifying Trends and Strategies

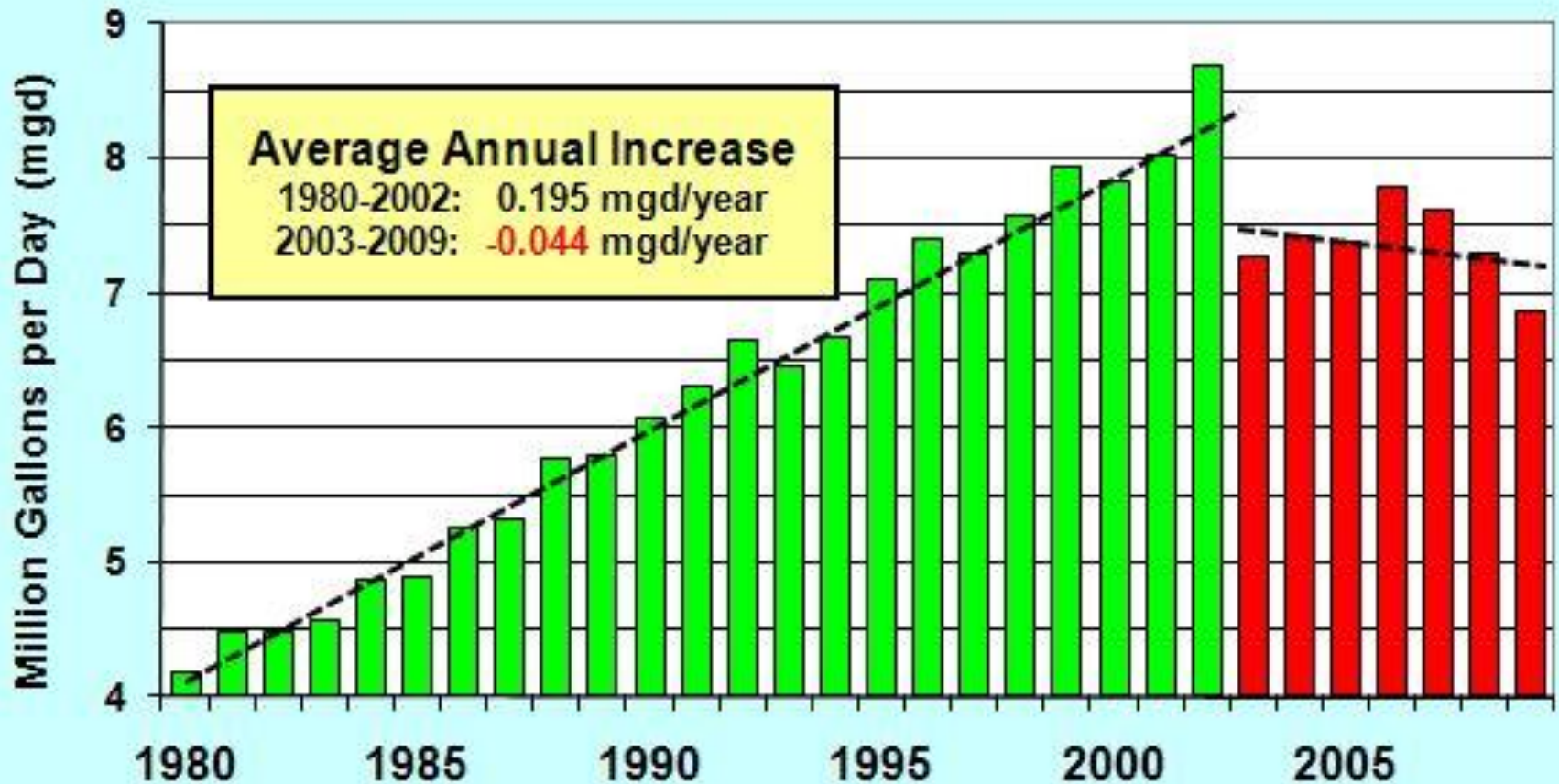


Sample data sources

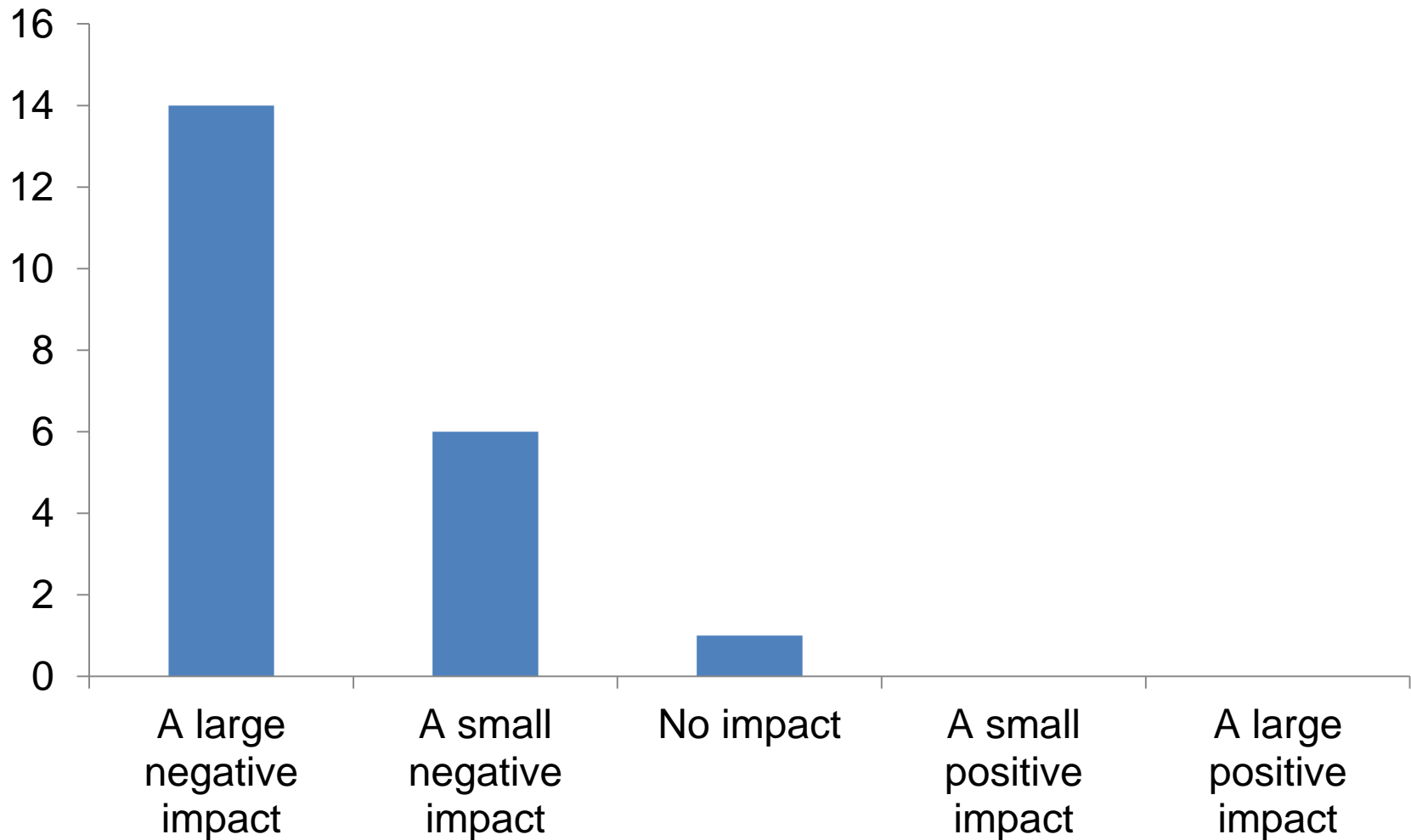
- National Pricing Data from EFC and RFC and other professional organizations
- National data on financial health metrics and revenue (rating agencies) for large systems
- State level data on financial health metrics and revenue for smaller systems (State Agencies)
- Utility level data from audit reports and billing systems

Is There any Evidence of a Problem that Needs to be Addressed?

Figure 3. OWASA Water Sales, FY 1980-2009



Utility managers --*changes in water use have had:*



Source: Water Resource Foundation/Environmental Finance Center

[THE STORIES](#)[BUSINESS](#)[FAITH](#)[TECHNOLOGY](#)[REAL NEWS](#)[THE BLOG](#)[CONTRIBUTORS](#)

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1.9k



92k

BUSINESS

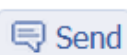
ALABAMA RESIDENTS FURIOUS OVER POSSIBLE RATE INCREASES: 'IF THEY LET THIS STUFF HAPPEN THEY ARE GOING TO GET THE BIGGEST RIOT THE SOUTH HAS EVER SEEN'

Posted on December 17, 2011 at 3:20pm by  [Becket Adams](#)

[Email »](#) [Print »](#)



467



10



78

[Comments \(326\)](#)

"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."



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Verizon Wireless to overhaul its phone and data pricing plans

By: Kelly Hodgkins | Jan 14th, 2010 at 12:02PM

0 Comments

Filed Under: [Breaking](#), [Exclusive](#), [Favorites](#), [Featured](#), [Rumor](#)

2010 Plan Changes Online Course



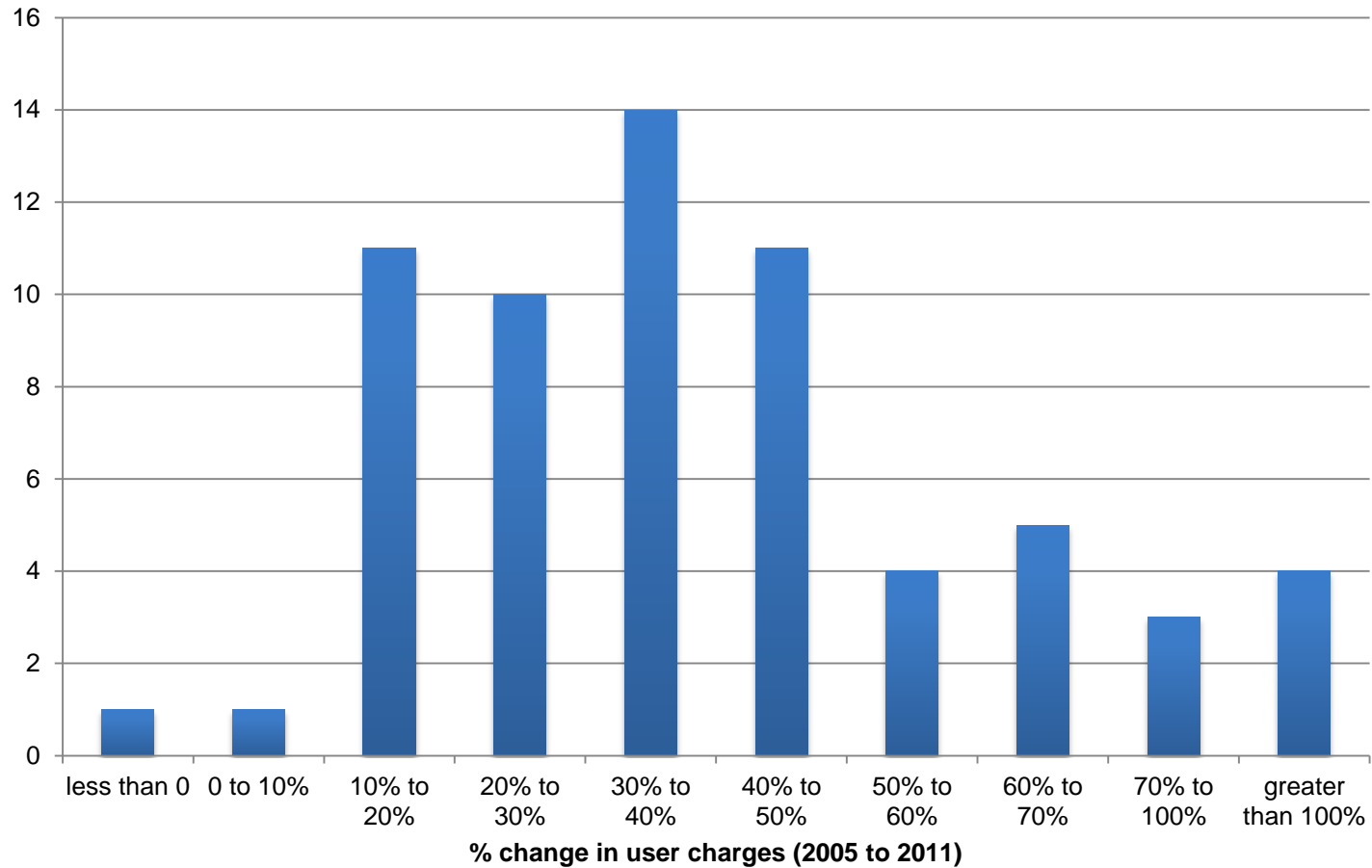
Summary

- Nationwide Consumer Plans have been simplified with fewer price points
 - New Names for Basic and Select Plans: Nationwide Talk and Nationwide Talk & Text
 - Easy upsell to Unlimited Anytime Minute options



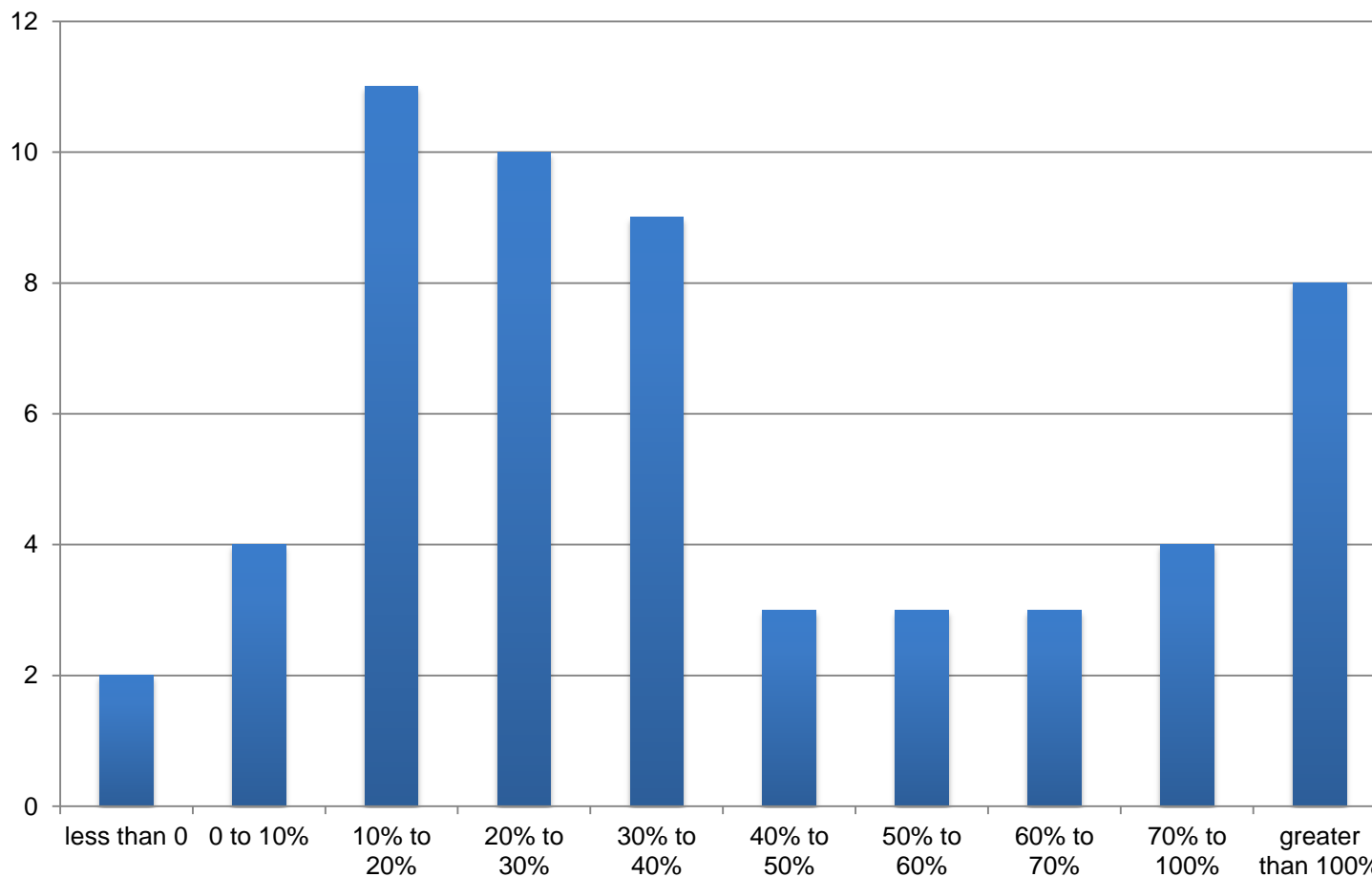
LOOKING FOR INSIGHT USING NACWA 2011 SURVEY DATA

User Charge Revenue Trends (2005 to 2011)



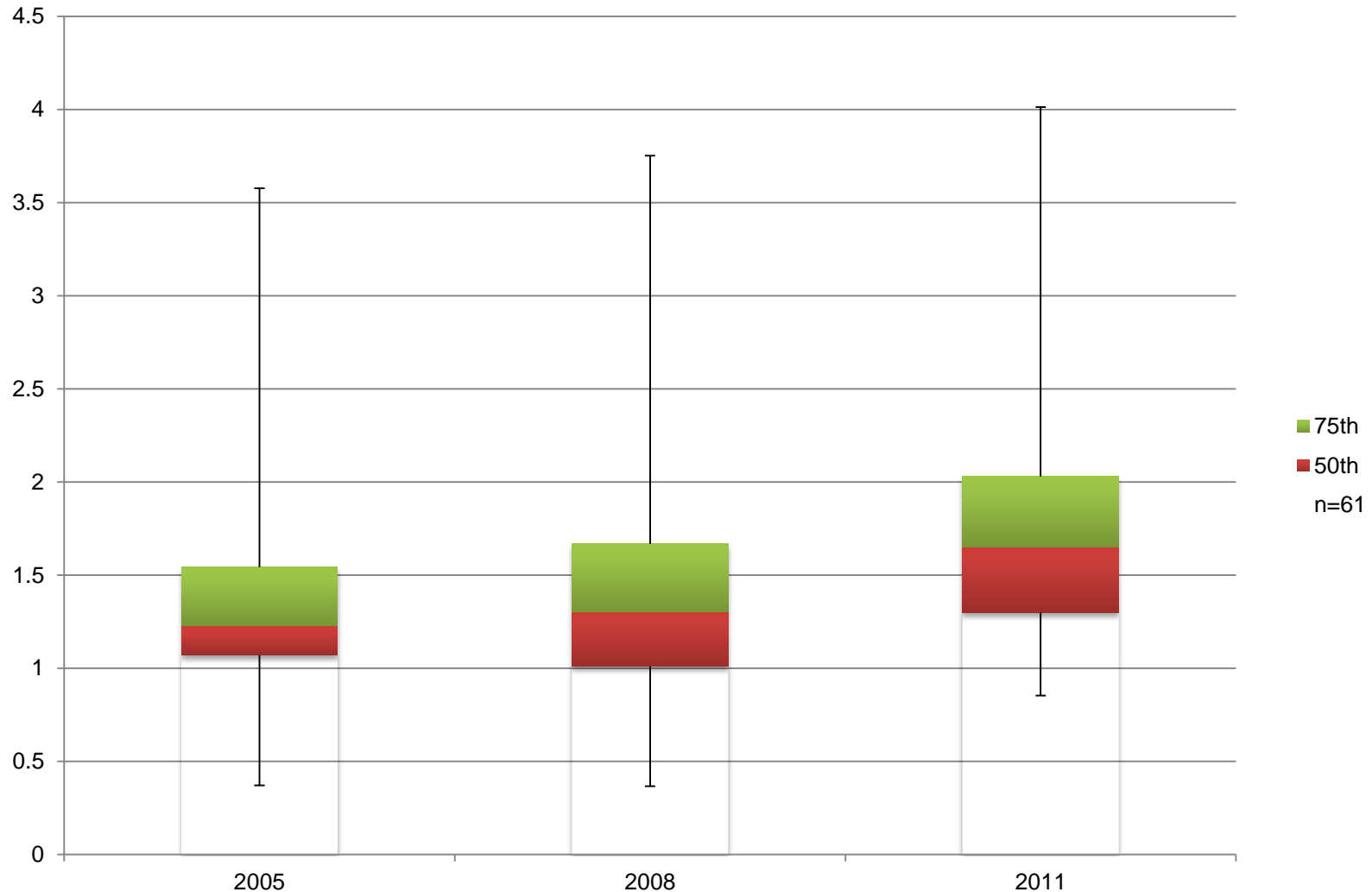
Source: Analysis by EFC using NACWA 2011 Survey Data

Pricing Level Modifications (2005 to 2011)



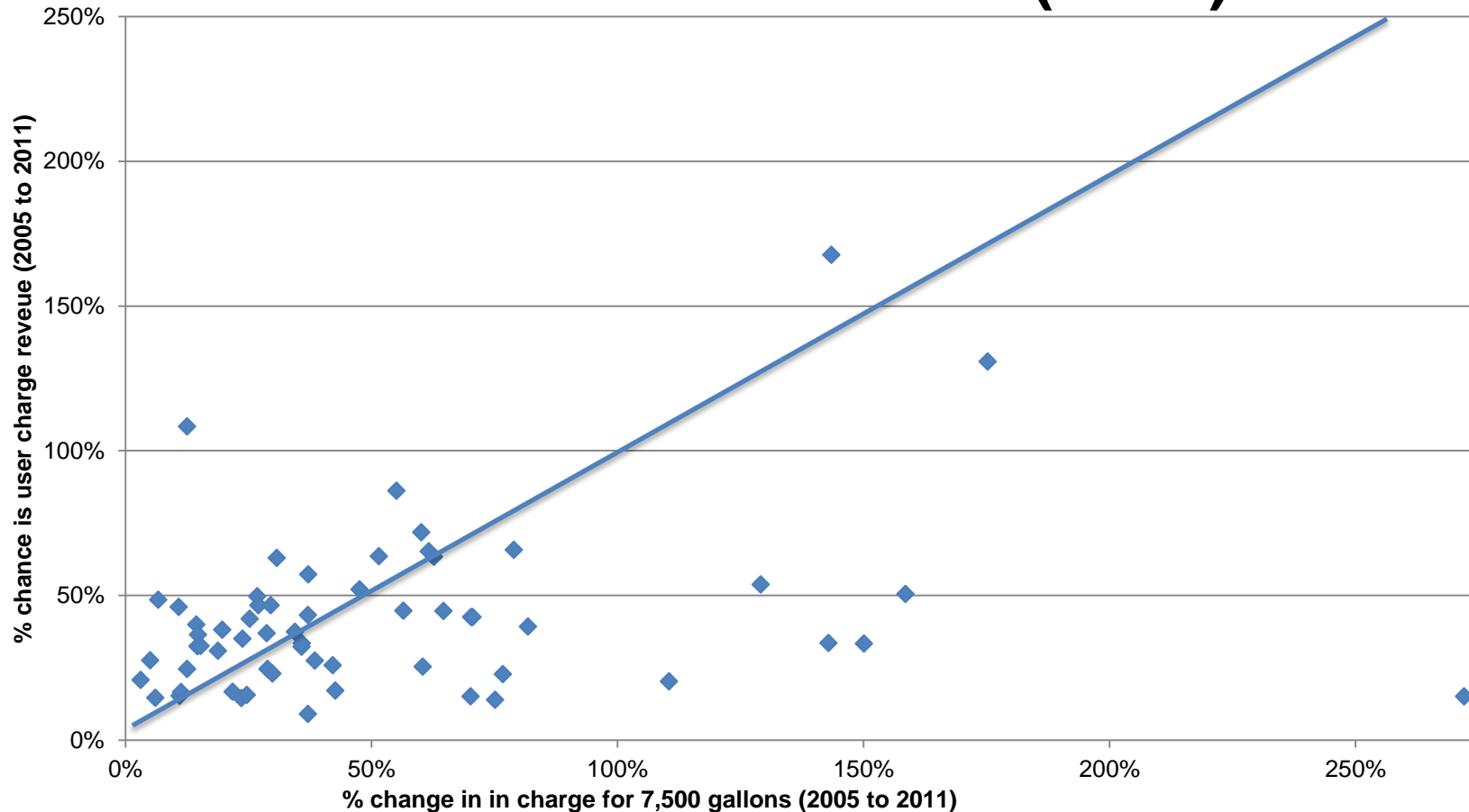
Source: Analysis by EFC using NACWA 2011 Survey Data

user charge revenue/total operating expenses



Source: Analysis by EFC using NACWA 2011 Survey Data

Change in user charge revenue user charges vs. change in user charge for 7,500 gallons from 2005 to 2011 (n=63)



Source: Analysis by EFC using NACWA 2011 Survey Data

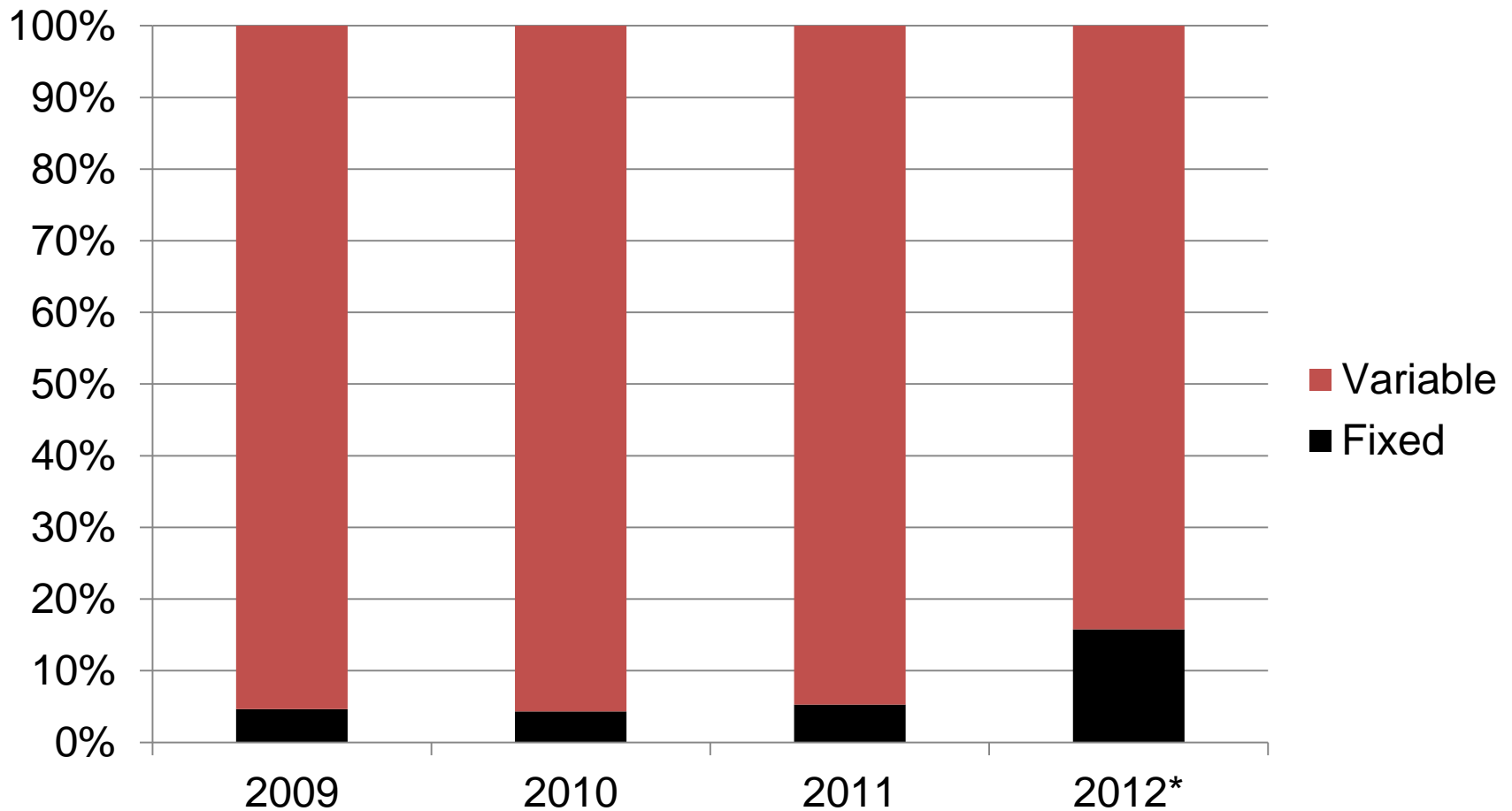
Fixed versus variable

	Cary	Durham	Raleigh
Fiscal Year	% of revenue collected from volumetric charges as a percent of all revenue collected from households (base & volumetric)		
'07	91.4%	82.0%	76.3%
'08	90.8%	82.2%	74.5%
'09	90.4%	71.0%	74.7%
'10	91.1%	73.5%	75.4%
'11*	92.3%	72.1%	78.0%
*FY11 does not include all 12 months in any of the data sets			

Data analyzed by the Environmental Finance Center at the University of North Carolina.
Data source: Each utility's customer billing records, project funded by NC Urban Water Consortium

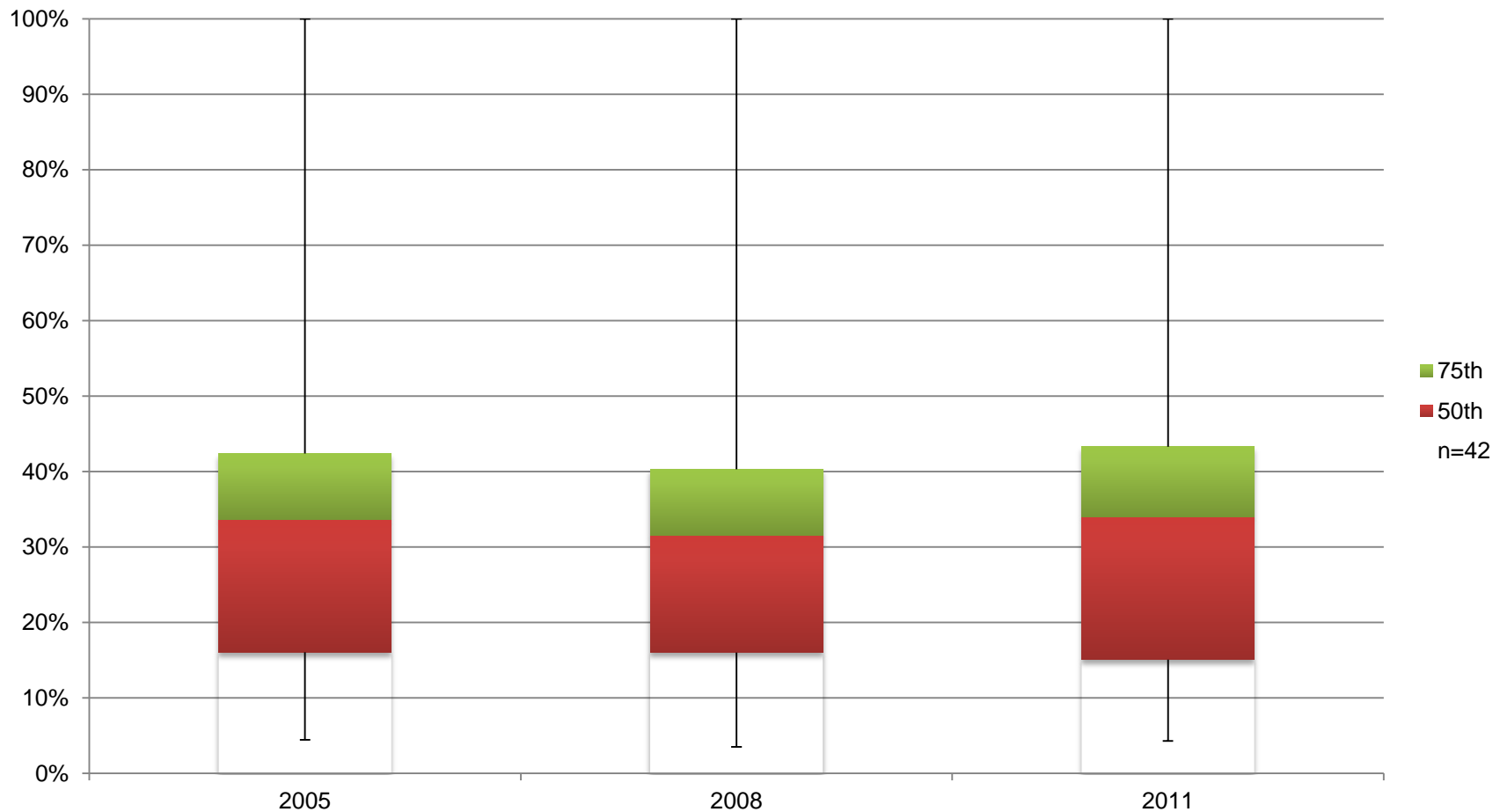
Charlotte-Mecklenburg Utilities

Water and Sewer Revenues Fixed versus variable



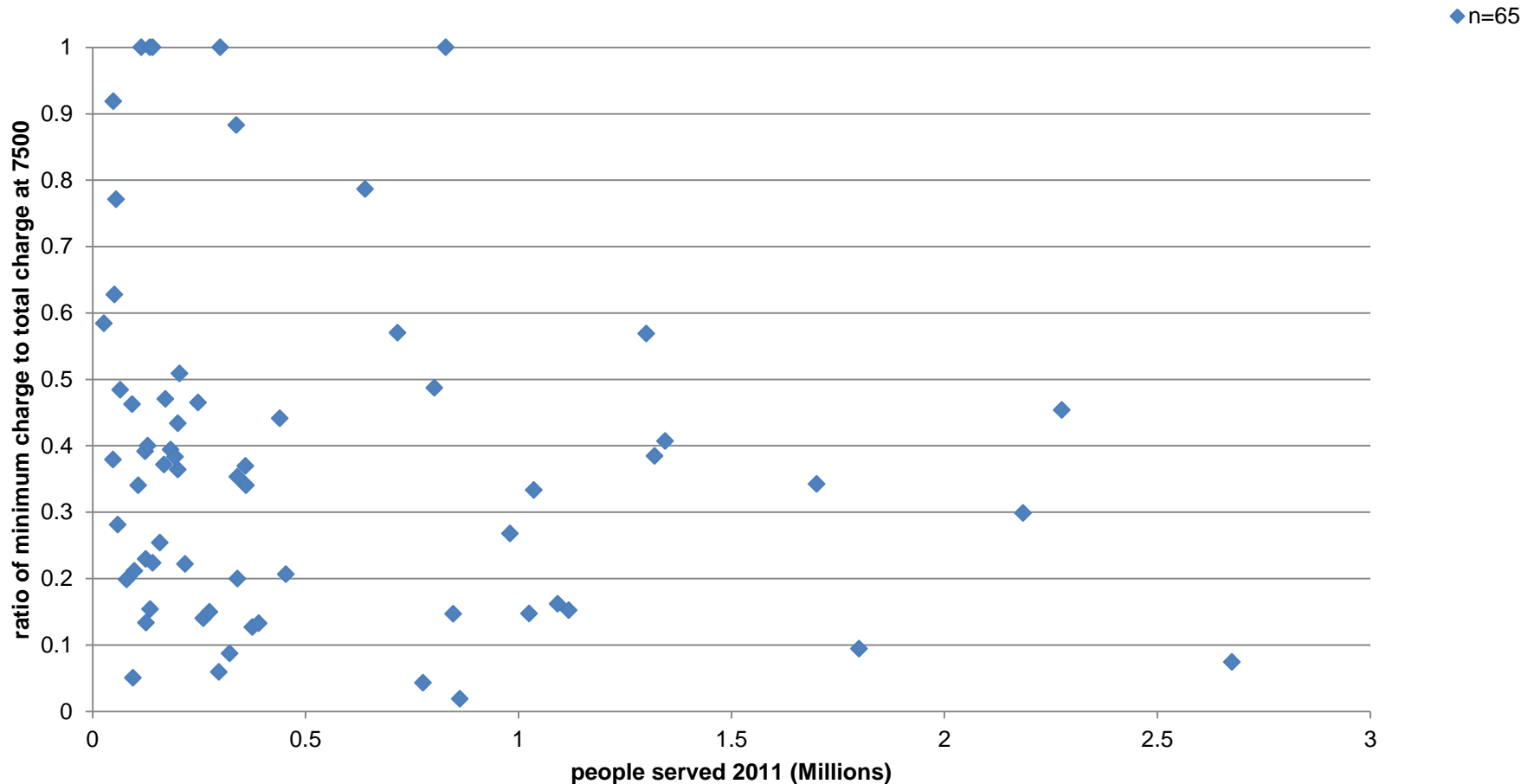
Data sources: Mickey Hicks, CFO, Charlotte-Mecklenburg Utilities

Minimum charge divided by total charge @ 7,500



Source: Analysis by EFC using NACWA 2011 Survey Data

ratio of minimum charge to total charge @ 7,500 vs. number of people served 2011



Meeting Revenue Challenges



Rates and Revenues: Water Utility
Leadership Forum on Challenges of
Meeting Revenue Gaps

Summary Report

Web Report #4405

Subject Area: Management and Customer Relations



- Costs
- Finance Policies
- New pricing and business models
- Supplemental services (behind the meter)
- Affordability programs
- Communication, communication...

A Utility Finance Policy is?

- a. A method for maintaining a better credit union
- b. A tool for influencing board decisions
- c. A bunch of words not worth the paper they are written on
- d. A vision of what a utility would like to become
- e. All of the above?



Variations

- Length: 1 to 40 pages
- Format: 1 policy, dozens of separate policies
- Board role: reviewed, approved, informed
- Customer/public role: extensive, as an after thought
- Contents: metrics, reserve policies, financial philosophies and objectives

Charlotte Mecklenburg Utilities

- Debt service coverage ratio minimum 1.80
- Fund balance to be maintained at level equal to 100% of the operating expenses for the current budget for the operating year
- The City's goal is a 40-60% mix of PAYGO to financing within next 2 years

Guest Presenters



Barry Gullet, Charlotte
Mecklenburg Utility



Stephen Winters,
Orange Water and
Sewer Authority



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Orange Water and Sewer Authority

FINANCIAL PERFORMANCE OBJECTIVES		
Measurement	Objective	Section
Working Capital Reserves	The greater of 4 months of O&M budget or 20% of the succeeding 3 years of CIP budget	A.1
Capital Improvements Reserve Fund	Minimum fund balance target of 2% of annual depreciated capital costs	B.1
Debt Service Coverage Ratio	≥ 20	D.1
Debt Burden to Asset Value	$\leq 5\%$	D.2
Sufficiency of Revenues Above Debt Requirements	Annual Debt service shall not exceed 35% of annual gross revenues	D.3
Credit Ratings	Aa2 – Moody's; AA+ – Standard & Poor's; AA+ – Fitch	D.4
Cash Financing of Capital	Annual revenues and cash reserves shall provide not less than 30% of CIP funding	E.1
Rate/Revenue Stabilization Fund	Minimum fund balance target of 5% of projected water and sewer revenue	E.2
Service Affordability	Average annual residential bill divided by real median household income shall be $\leq 15\%$.	F.2

**RESOLUTION ADOPTING ORANGE WATER AND SEWER AUTHORITY
FINANCIAL MANAGEMENT POLICY**

WHEREAS, Orange Water and Sewer Authority recognizes the importance of sound business practices and strong financial policy to support the utility's long-term fiscal sustainability; and

WHEREAS, Orange Water and Sewer Authority's *Strategic Financial Management and Planning Document* has guided financial policy since 1996; and

WHEREAS, staff and the Board of Directors' Finance Committee have developed a revised financial management policy; and

WHEREAS, the revised Orange Water and Sewer Authority *Financial Management Policy* reflects sound financial policy and provides guidance for financial practices and procedures;

NOW, THEREFORE, BE IT RESOLVED:

1. That the Orange Water and Sewer Authority *Financial Management Policy* is hereby adopted.
2. That Orange Water and Sewer Authority's *Strategic Financial Management and Planning Document* adopted September 14, 2006 is hereby rescinded.

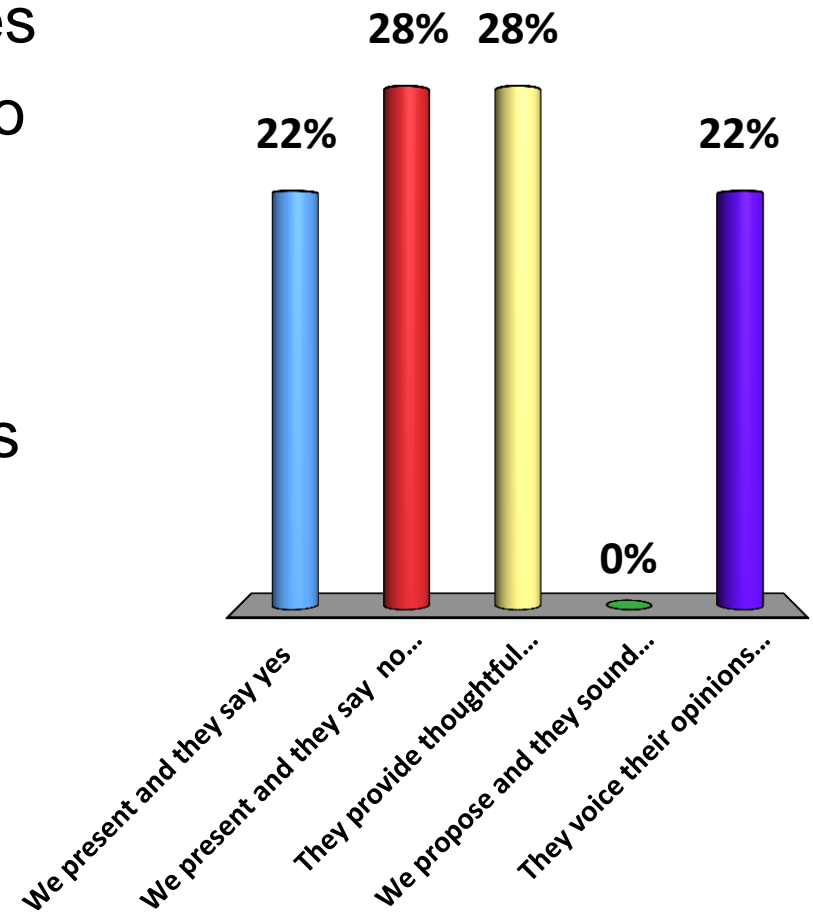
Adopted this 26th day of March, 2009



Gordon Merklein, Vice Chair

What best describes your governing board's role in financial decision making?

1. We present and they say yes
2. We present and they say no and tell us to cut
3. They provide thoughtful ideas that are incorporated into proposals and decisions
4. They voice their opinions loudly, but generally follow management's lead.



Governance Structure Matters

- Municipal
- County
- Authority/special district
- Elected board
- Appointed board
- Number of local governments
- Number of board members
- For-profit board



ORANGE WATER AND SEWER AUTHORITY

A public, non-profit agency providing water, sewer & reclaimed water services to the Carrboro-Chapel Hill community.

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Performance & Financial Information

As a single-purpose governmental entity, OWASA's financial activities are reported as a sole enterprise fund. We operate on a fiscal year that begins on July 1 and ends on June 30. The documents below provide information about our service objectives, business model and performance.

Budget for Fiscal Year 2013, 5-year Capital Program and Rates effective in October, 2012; related items

- [Summary of rates and fees](#). **Monthly rates for water, sewer and reclaimed water service will not increase in October, 2012.** Various other fees including those for connecting to the OWASA system will increase in October based on updated cost calculations.
- [Annual budget](#) (July, 2012 - June, 2013)
- [Summary of 5-Year Capital Program](#)
- [Financial Management Policy](#)
- [Comparison of water and sewer bills in the Triangle region as of January, 2012](#)
- [UNC Environmental Finance Center information on NC water and sewer rates](#)

Key Indicators and Performance Measurements

- [Key Performance Measurement Dashboard](#) - a snapshot in graphic form of information we use to measure organizational performance.



Strategic Plan

- [Strategic Plan](#) as adopted in March, 2010
- [Strategic Plan Update](#) in January, 2012



Capital Improvement Projects and Investments

This map represents some of the water and sewer projects completed since 2000 to serve the needs of our community.



Water and Sewer Improvements

Brier Creek Relief Sewer + Sugar Creek Treatment Plant Upgrades	\$90 million
Catawba Pump Station Expansion	\$20 million
Franklin Water Treatment Plant Expansion	\$18 million
Irvin Creek Relief Sewer	\$32.6 million
Lee S. Dukes Water Treatment Plant Improvements	\$13 million
Long Creek Lift Station and Relief Sewer	\$25 million
Maitland Creek Wastewater Treatment Plant Improvements	\$2.7 million
McAlpine Creek Relief Sewer, Phase I and II	\$31 million
McAlpine Creek Wastewater Treatment Plant Improvements	\$114 million
McDowell Creek Wastewater Treatment Plant Expansion	\$94 million
New Ready Creek Sewer Line	\$39 million
New Rocky River Wastewater Treatment Plant	\$18 million
New South Water Main	\$40 million
New Southwest Water Main	\$84 million
Vest Water Treatment Plant Improvements	\$5 million
New West Water Main	\$19 million

Rehabilitation

More than \$100 million invested in restoring and maintaining aging water and sewer lines.

Fire Protection

Utilities provides water for fire protection throughout Mecklenburg County and is responsible for repairing 16,000 hydrants and valves.

Cost of Improvements and Investments

Paying for capital and infrastructure projects accounts for 62 cents of every dollar spent by the utility, and is in many ways like a mortgage that has to be paid back over time. Utilities works hard to maintain a AAA-credit rating. This allows the utility to build new projects at the lowest possible borrowing rate and save millions in interest costs.



*PayGo (Pay-As-You-Go) cash used for capital projects

Operating Efficiently

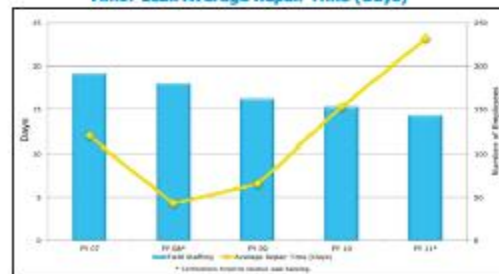
In an effort to maintain lower costs for customers, Utilities has increased its efficiencies in areas like energy management and reduced staffing levels. Utilities has fewer positions today than in 2001.

Water and Sewer Customer Accounts and Staff Positions



The proposed rate increase will put crews back into the field to address water leak backlogs and other maintenance items. Currently, there are 15 pipe repair crews, down from 31. The rate increase will restore 8 additional crews. This would help reduce the service backlog by adding capacity to fix about 16 additional leaks each day on average.

Minor Leak Average Repair Time (Days)



New Rates

Effective July 1, the proposed rate increase will impact each customer differently based on their water usage. For most residential customers, the impact of the new rate structure and tier rates will lead to an increase from between \$.37 to \$.89 per month, with most seeing increases between \$.4 and \$.4.59 per month.

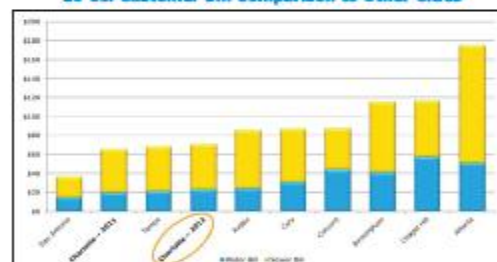
For the typical customer who uses 8 Ccf of water each month, the total monthly bill increase will be \$4.59. Of this \$4.59, \$2.85 will pay back construction loans. The remaining \$1.74 pays for increases for personnel, chemicals, maintenance and 311/customer service.

A very small percentage of customers will see their total bill decrease because of the reduction in the sewer cap.

Water and Sewer Rates 2011-2012

	2011 (current)	2012 (proposed)
Tier 1 (1-4 Ccf)	\$1.45	\$1.98
Tier 2 (5-8 Ccf)	\$1.64	\$1.96
Tier 3 (9-16 Ccf)	\$2.59	\$3.41
Tier 4 (over 16 Ccf)	\$5.32	\$5.32
Sewer Charges	\$4.31	\$4.14

10 Ccf Customer Bill Comparison to Other Cities



Utilities' water and sewer rates are among the lowest in the region.

Did you know?

\$1 purchases 400 gallons of water from Utilities.



By comparison, \$1 purchases a single 16.9oz bottle of water from the store.

For the same \$1, Utilities delivers 400 gallons of water to customers any time, day or night.



Utilities is a 24/7 operation. Maintenance and construction crews repair an average of 2 leaks per crew per day.

Henry County WSA, GA

- *“Beginning October 1, 2008 and on the first day of October of each year thereafter, the water and sewer rates in effect as of September 30th, 2008 and each year thereafter shall be increased by 5 percent. **The 5 percent rate increase shall be computed each year by increasing the previous year's rates by 5 percent.** Said rates shall remain in effect until modified, amended or terminated by the Authority.”*

NE OH Regional Sewer District

Rate Stabilization Account

- This account will be established to enable the District to pre-fund expected future expenses in a way that can reduce or smooth rate increases that would otherwise be needed. The Rate Stabilization Account is established and funded to meet a specific risk such as a revenue loss related to a certain level of demand curtailment. The restrictions in place will be structured so that the use of this account also helps to meet bond covenants.
- Funds deposited into this account are treated as operating costs in the year of deposit and will be treated as revenues in the years of use for the purposes of computing the District's debt service coverage ratio. Impacts to the account are determined by the annual performance of actual rate revenue versus the budgeted rate revenue. The account will be established to accumulate funds annually up to 5% of rate revenues, however, only after all payments are made for operating expenses and debt service, and all required deposits to the debt service reserve and the working capital reserve are made. Funds will be drawn down to reduce or smooth

Columbus WW

Rates Comparison

Characteristics

About and Links

Select residential bill and monthly consumption amount

☐ Water Bill ☒ Sewer Bill ☐ Water + Sewer

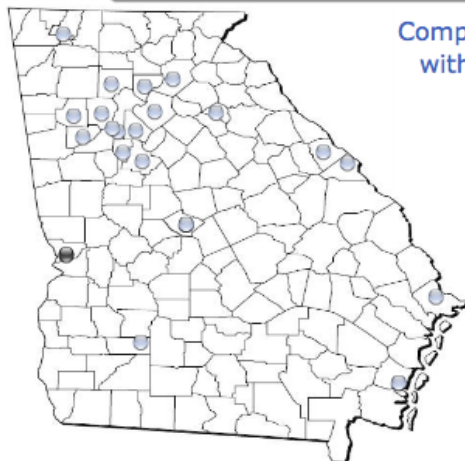
5,000 gallons
668 cubic feet

Monthly Sewer Bill: \$20.52

Local Basic Cable Bill in 2008: \$50.95

Select your comparison group

Similar Number of Accounts



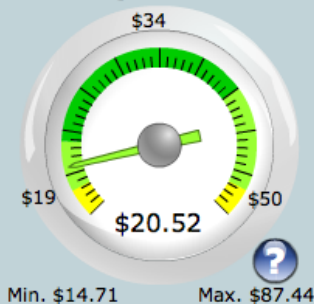
Comparing to utilities also
with More than 25,000
connections

24 rate structures

Observe the effects of
raising rates by: 0%

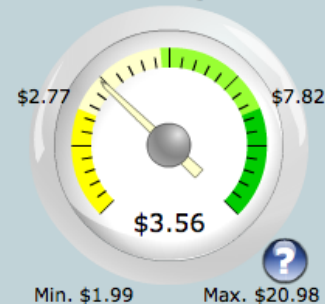
Bill Comparison

Sewer Bill at 5,000
gallons



Conservation Signal

Sewer Price/1,000 Gallons
after 10,000 gallons

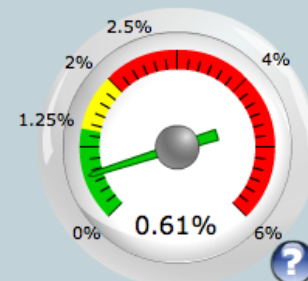


Cost Recovery

Financial data are
unavailable. Please
refer to your audited
financial statement to
compare operating
revenues to operating
expenses.

Affordability

Sewer Bills as % MHI
in 2009





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All A-board! Strategies to Get Your Board on Track with Financial Policies

By Mary Tiger, on July 17th, 2012

Mary Tiger is the Chief Operating Officer for the Environmental Finance Center and Project Manager for the Water Research Foundation Project.

Making the way to financial sustainability can feel like an uphill battle for utilities when stressed by unexpected weather, economic and demographic obstacles. However, getting a governing board in understanding of and agreement with financial goals can keep a utility on-track to achieve financial resiliency and avoid drastic adjustments in rates.

Continue reading All A-board! Strategies to Get Your Board on Track with Financial Policies

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Christine Boyle on Finding the Right Grant for State and Tribal Wetland Programs

Mary Tiger on American Idol for Water Utility Finance: The Results Show

Drew Beckwith on American Idol for Water Utility Finance: The Results Show

Marc Goncher on The Increasing Need to Address Customer Affordability

Kara Millonzi on The Increasing Need to Address Customer Affordability



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Peakset Base Model

- Inspiration = energy sector
- A customer's base charge would be individually set based on their three-year rolling average peak
- Builds more of utility cost recovery into the base charge while still promoting customer conservation and efficiency

	Current Residential Rate Structure	High Fixed (AR1)	Medium Fixed (AR2)	Low Fixed (AR3)
% Fixed Revenue	18%	57%	47%	37%
Base Rate	\$6.00/meter – water + \$6.00/meter - irrigation	\$1.85/kgal of historic peak demand	\$1.49/kgal of historic peak demand	\$1.12/kgal of historic peak demand
Variable Rate	\$3.46/kgal of previous month's use	\$0.52/kgal of previous month's use	\$1.25/kgal of previous month's use	\$2.01/kgal of previous month's use

Think water. Think AWWA.



American
Water Works
Association

- Ensuring the right customers are parti
- Accuracy in targeting at-risk users of th
- Legal authority to implement an affor
- program

Think wat





For on-going research discussion visit:

www.efc.web.unc.edu

For final research results visit:

www.waterrf.org

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