

Ask the Experts



Jeff Hughes



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David Graff

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Please include your name and specify to whom you are addressing the question.



(Non Pricing) Practices for Addressing Revenue Resiliency



Jeff Hughes

**Director, Environmental Finance Center
University of North Carolina at Chapel Hill**



Rationale

- Revenue variability and volatility has become an increasingly common part of utility financial management. This presentation highlights recent research about trends and adaptive practices.



Learning Objectives

- Be able to communicate national revenue trends
- Identify practices that are being employed to address revenue challenges.



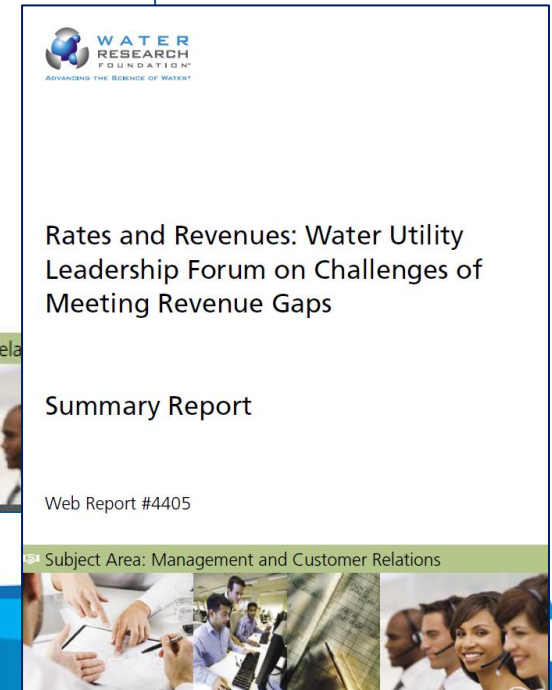
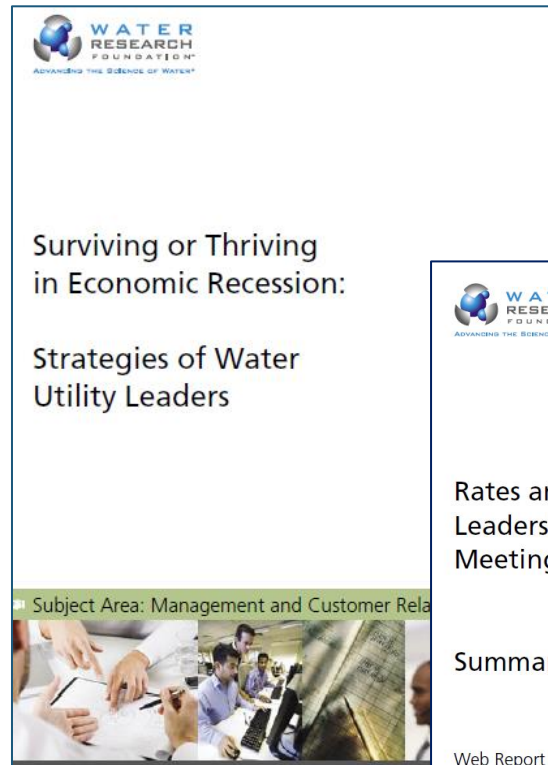
Agenda

- Quick overview of revenue trends
- Brief description of practices



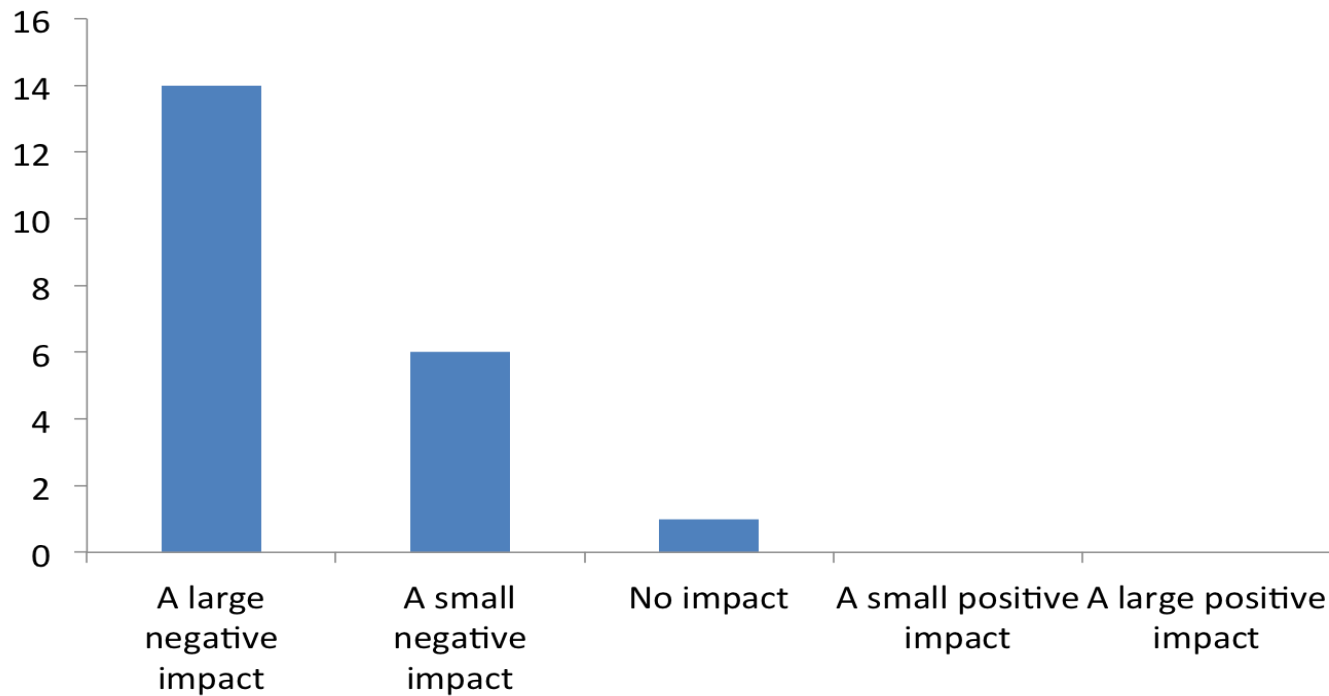
Water Research Foundation: Revenue Resiliency Applied Research and Convening

- 2009 Surviving or Thriving in Economic Recession (#4296)
- 2011 Forum on Challenges of Meeting Revenue Gap (#4405)
- 2013 Defining a Resilient Business Model for Water Utilities (#4366)

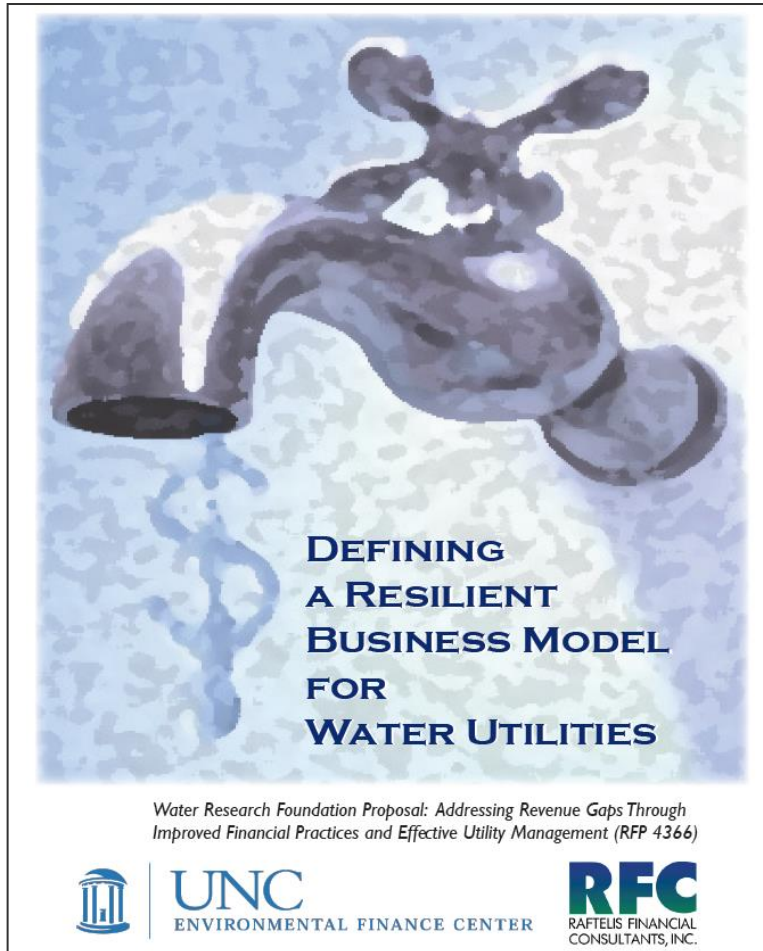


Challenge: Uncertain Revenue

Changes in water use have had:



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



- **Comprehensive revenue analysis**
 - National and state Trends
 - Factors driving changes
- **Identify and analyze best practices**
- **New business and pricing models**
- **Revenue variability assessment tool**



Project Resources www.waterrf.org



REPORT

Defining a Resilient Business Model for Water Utilities

Subject Area: Management and Customer Relations



Water Utility Revenue Risk Assessment Tool
How Much Revenue Might Be Lost When Residential Customers Reduce Consumption?
Version date: November 15, 2013

TOOLS

Developed by: The Environmental Finance Center at the University of North Carolina, Chapel Hill
Developed for: Water Research Foundation

[Click here to access a video tutorial on using the tool!](#)

This tool allows utilities and technical assistance providers to quickly determine the proportion of residential revenues from water sales that may be at risk of loss when residential customers change demand patterns. When residential customers reduce demand, whether due to price elasticity effects, or normal weather fluctuations that affect their water demands, or in reaction to shocks (such as new water conservation programs, water shortage periods, change in economic conditions, etc.), utilities collect less revenue from customer sales than anticipated. Utilities often ask how much of their revenues are really and realistically at risk of loss if their customers lower their consumption. This tool allows utilities and their technical assistance providers to quickly determine these estimates based on the utility's own rate structure, customer demand profile and weather conditions.

The tool requires only minimal data input and uses simplifying assumptions as well as detailed models developed after analyzing hundreds of thousands of real customer water records to understand how water customers change demand patterns.

This simplified tool is focused solely on revenue projections and assessment. Costs and revenue requirements based on customer classifications are not incorporated into this model. The tool allows the user to compare two different residential rate structures and determine which rate structure offers greater revenue resiliency.

Water demand scenarios included in this model
Residential customers' demand declines due to:

- price elasticity effect when rates are changed
- normal year-to-year fluctuations in weather (temperature and precipitation)

Revenue Trends, Pricing Signals, and Financially Resilient Utilities: Understanding and Adapting to New Challenges

SLIDES

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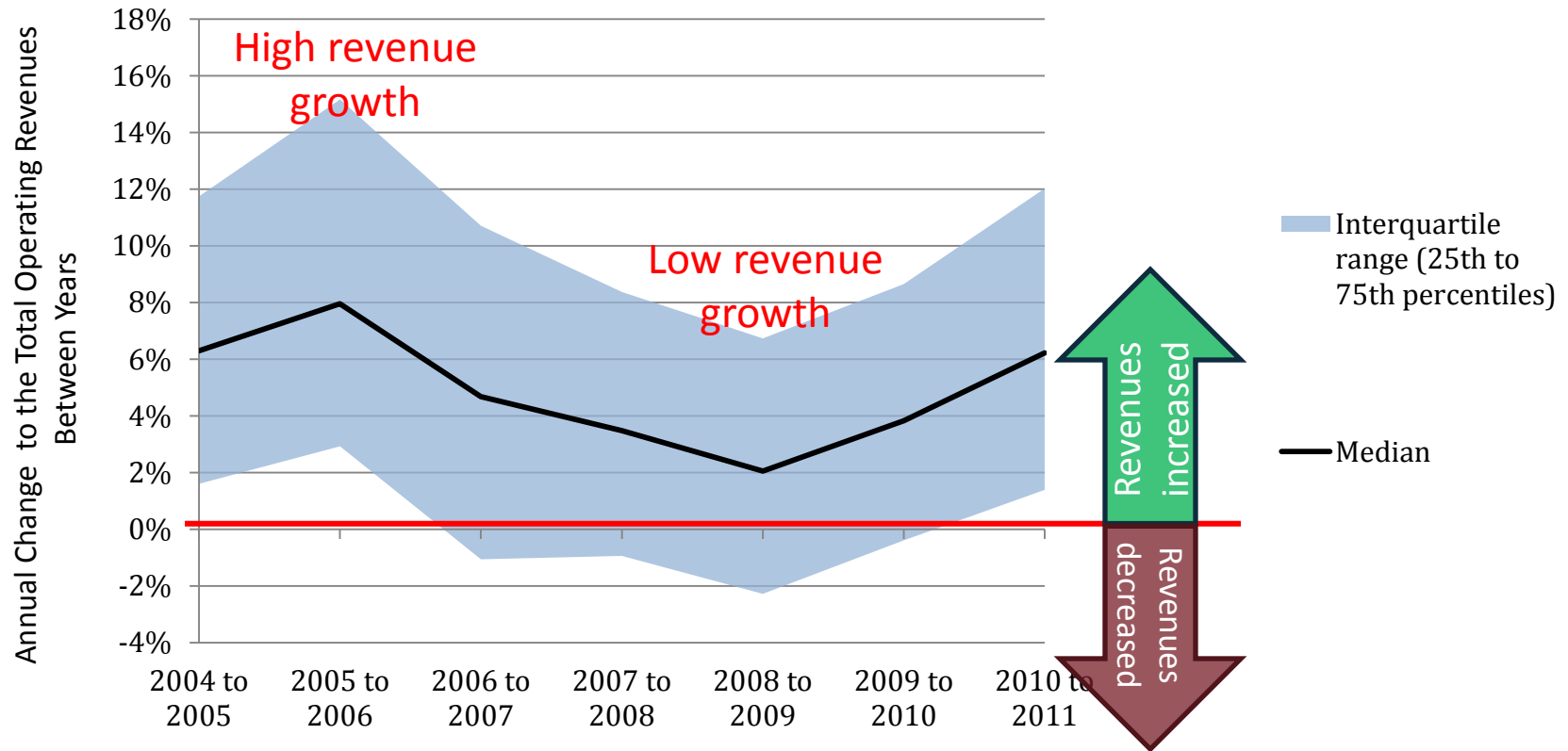
BLOG POSTS

Does Governing Structure Determine the Financial Health of a Water Utility?
By Stacy Isaac Beranber, on June 3rd, 2013

Stacy Isaac Beranber is a Senior Project Director for the Environmental Finance Center at the University of North Carolina, and works from a satellite office in Georgia.

Water utilities in the United States operate under a variety of organizational structures and governance models. The possibility of a utility adopting a given financial management option depends largely on the governance model of that utility. Ownership and governance of water utilities fall to state and federal government agencies, tribes, municipalities, counties, districts, authorities, not-for-profit water associations, investor-owned water companies, international and national corporations, individuals, homeowner associations, and more. While there are nuances even within each of these classes, according to the Environmental Protection Agency (EPA), water systems in the United States are almost evenly split between those owned by local governments (48%) and those owned by private organizations (47%).

Industry Revenue Growth Roller Coaster



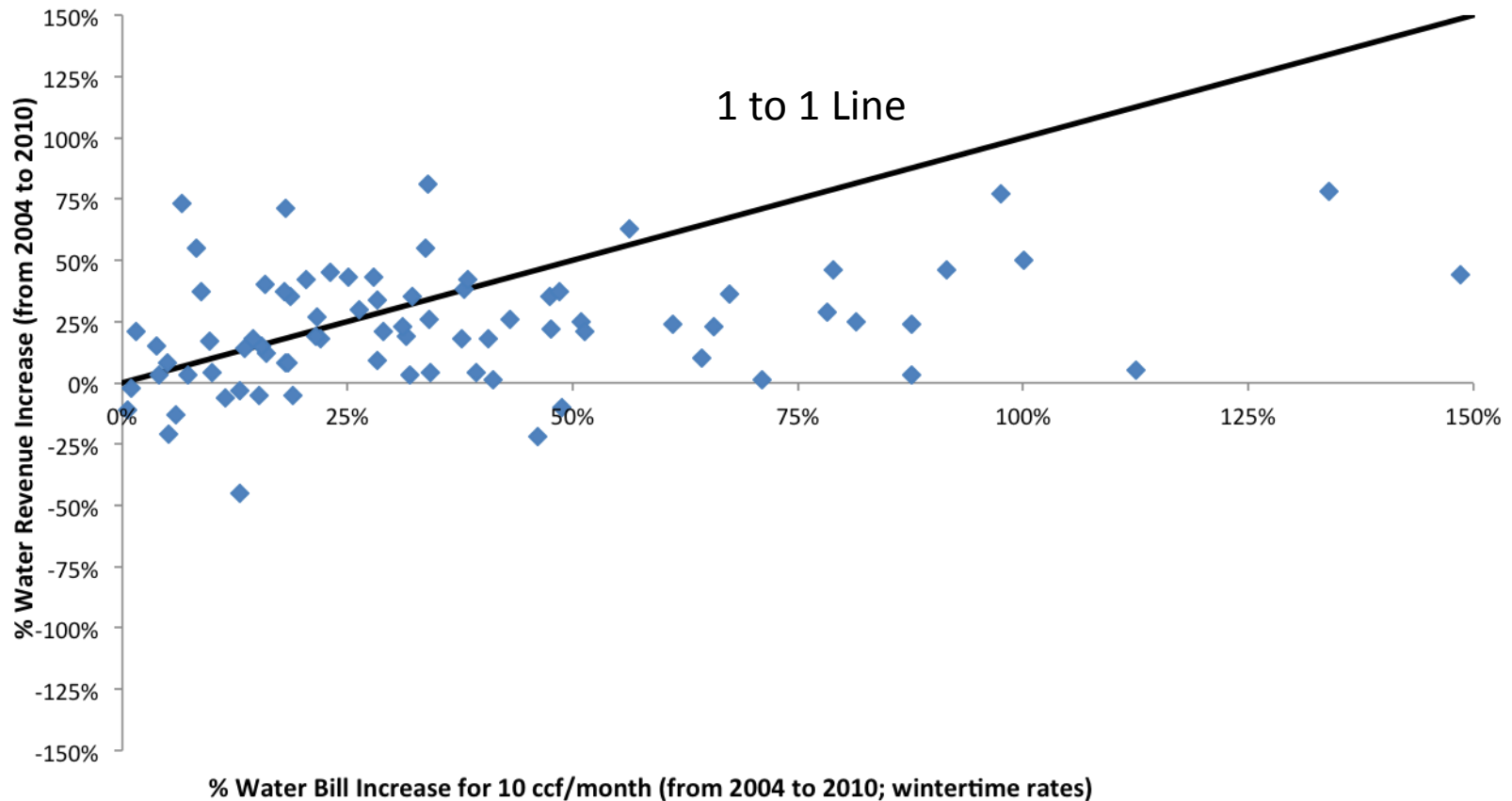
Data analyzed by the Environmental Finance Center at the University of North Carolina, Chapel Hill and Raftelis Financial Consultants, Inc. Data Source: Moody's Water and Sewer Municipal Financial Ratio Analysis. The cohort of 485 utilities is consistent across all years.



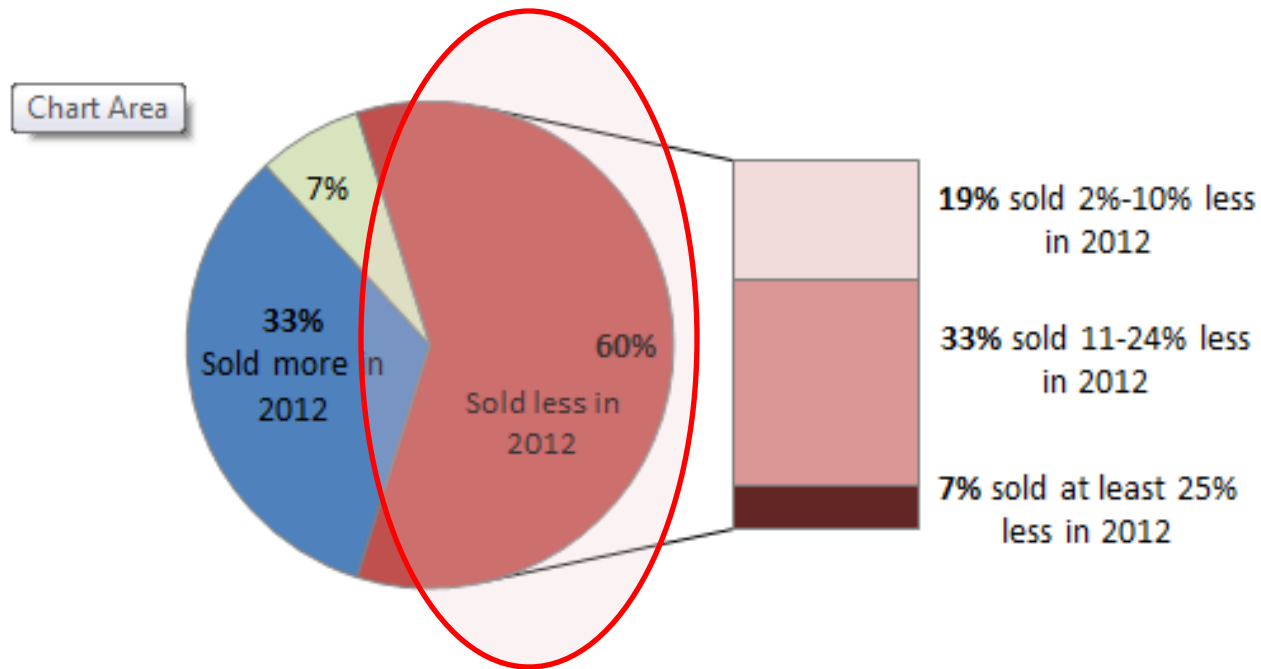
Annual change in total operating revenues among the same 485 utilities nationwide

The challenge of driving revenue increases through rate increases:

HH rate versus revenues increases (2004 to 2010)



Water Use is Declining for Many Utilities



Data analyzed by the Environmental Finance Center at the University of North Carolina, Chapel Hill and Raftelis Financial Consultants, Inc. Data Source: Biennial, national AWWA-RFC Water and Wastewater Rate Surveys in 2006 and 2012. Water utilities that reported their total daily gallons sold (MGD) in 2006 and 2012 are included in this analysis. 81% of the sampled utilities increased total number of accounts from 2006 to 2012.

MGD sales in 2012 compared to 2006 among 129 utilities nationwide





There are things you can do....

Answer	Very effective	Somewhat effective	Not effective at all	Not Applicable/ Not Tested
Communication techniques	9	7	4	1
Innovative rate structure/design	10	6	2	2
Demand projection techniques	3	12	1	4
Board-approved finance policy	6	5	4	4
Rate stabilization fund/Reserves	6	7	4	3



Rethinking Rate Models, Projections, and Cash flow Plans

- More conservative  recalibration periods
 - Rate models with less (or no) dependence on revenues from high volume or high block sales
- 
- Excess” revenues transferred to reserve funds or used for increased pay as you go cash capital funding

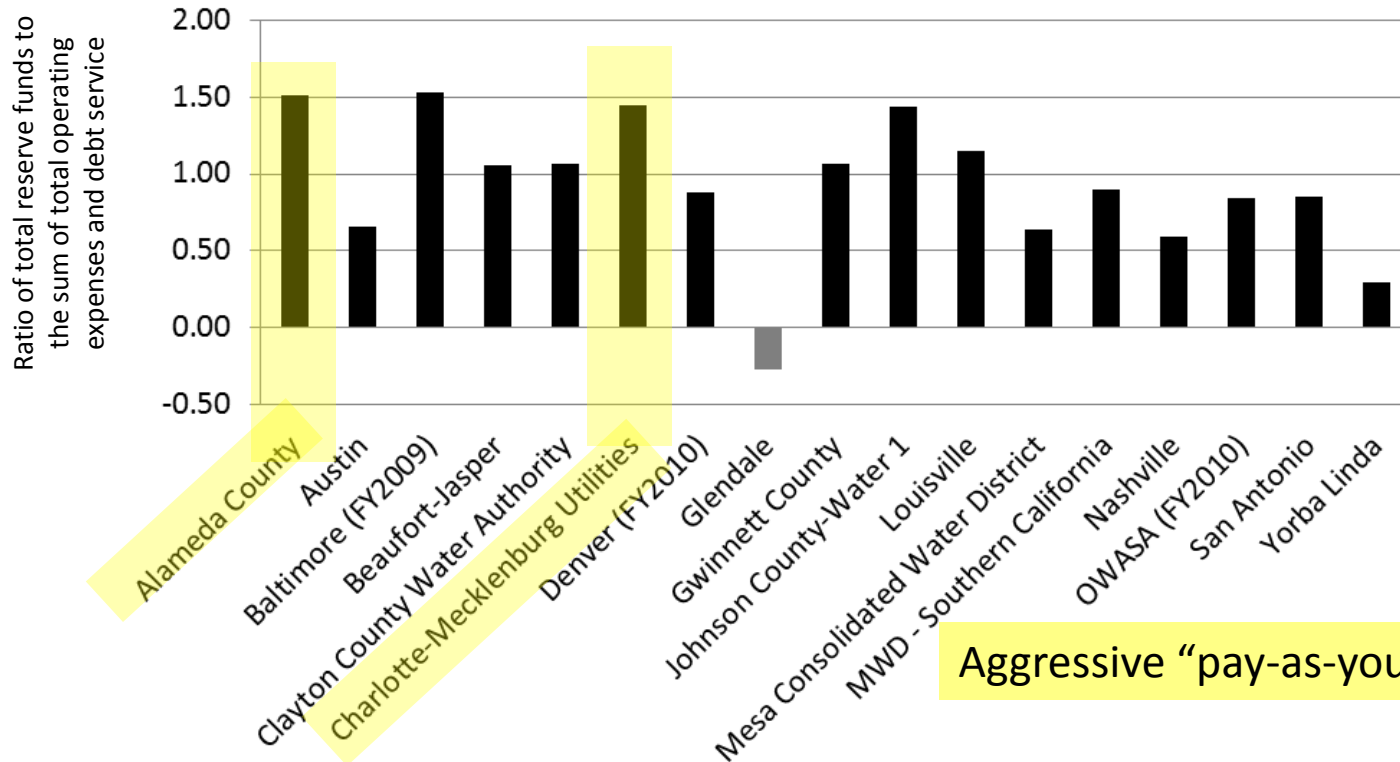


Internal Financial Performance Targets (E.g. EBMUD)

EBMUD Financial Indicator	Target
Working capital reserve	≥ 3x monthly net O&M expenses
Self-insurance reserve	1.25x expected annual costs
Contingency/rate stabilization reserve	20% of annual water volume revenues
Debt service coverage ratio	≥1.6x coverage
Debt-funded capital	≤65% of total CIP spending over 5 year planning period



Increased Use of Reserves



Data obtained from partner utility CAFRs. Unless otherwise indicated, the data used in these calculations is from the 2011 fiscal year. These ratios were obtained by taking the total reserve fund level and dividing it by total operating expenses including depreciation for the most recent fiscal year with available data.

Ratio of total reserve funds to the sum of total operating expenses and debt service



Affordability Programs as Revenue Resiliency Strategy

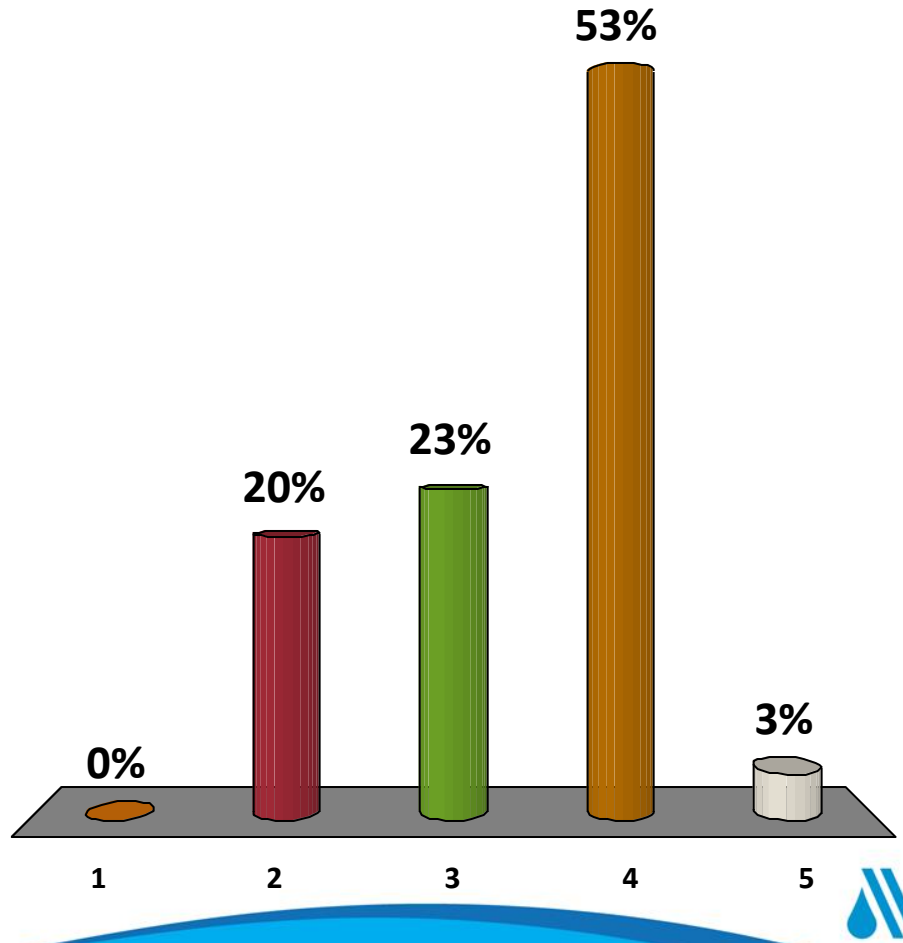
Options facing payment-troubled customers

	Percent	N
Payment plan to allow customer to pay amount over time	76%	231
Customer referral to private, nonutility agency	54%	163
Customer referral to a local gov. agency for assistance	49%	149
Education	35%	105
In-home conservation assistance	25%	76
Special billing arrangements	21%	64
Change in the rate customer is charged	8%	24
Other	8%	24
One-time bill credit from utility funds	3%	8



On a scale of 1 -5, how well would affordability programs work with your utility or the utilities you work with?

1. Very well
2. Pretty well
3. Maybe so, maybe not
4. Not well
5. Dreadfully



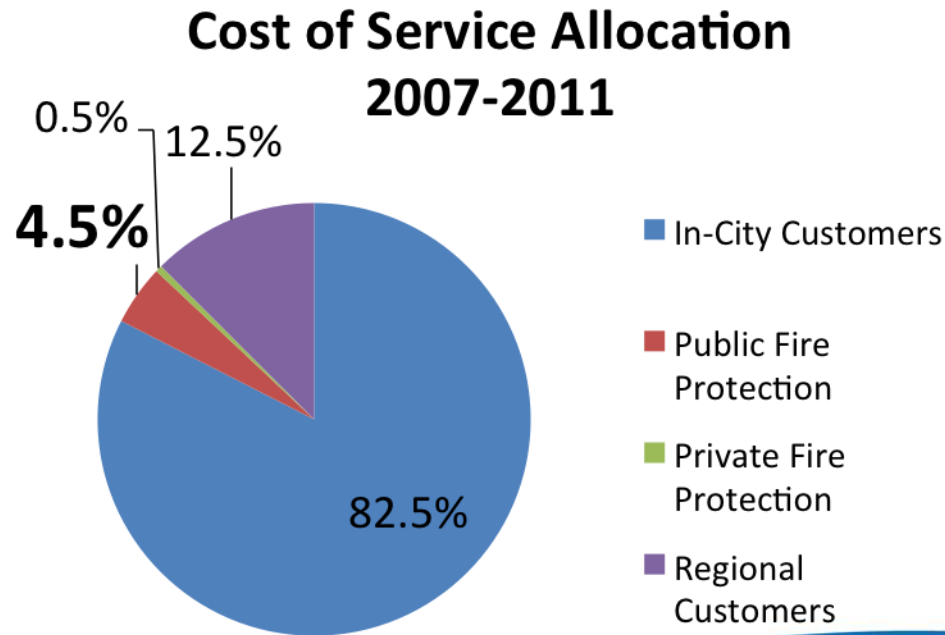
Commercializing new, expanded, or existing services

- Pricing and selling fire protection
- Customer line repair programs
 - Self administered
 - Third party
- Selling services to other enterprises
 - Meter reading and billing
 - Project management



Fire Protection Pricing (e.g. EPCOR – Edmonton)

- Fire Hydrant Service fee charged to the City of Edmonton;
the City of Edmonton's Fire Rescue Service Budget



A Joke, but.....

Texas town adds sugar to water supply to encourage residents to drink more water

Wednesday, November 7, 2012 | Categories: [Clips](#), [Headlines](#), [News](#) 14

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According Hestor Griggs, citizens of Talon, TX can't drink enough of the town's water. (Bill Hughes/CP Images)

Talon is small town located in Pecos County, Texas. When town officials realized that drinking-water consumption by residents was well below the national average, they decided take action and three months ago began adding **sugar to their water supply** to make drinking it more desirable. According to Hester Griggs, the Commissioner of Utilities for Talon, they are adding roughly "4 tablespoons of sugar for every 8 oz. cup of water." Earlier today, Pat Kelly spoke with Mr. Griggs to find out how residents are responding to this initiative.



Summary

- The business model is not obsolete, but it is problematic for many utilities.
- Practices do make a difference
- Resources www.efc.unc.edu



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