Cultivating Resilient Business Models for Water and Wastewater Utilities

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Defining a Resilient Business Model for Water Utilities

- Water Research Foundation Project #4366
- Objectives:
  - To define new financial approaches and paradigms for water utilities in addressing current and future fiscal challenges
  - To explore new methods of identifying and reducing the risks associated with revenue variability
- On-going research discussion at www.efc.web.unc.edu
- Final research will be at www.waterrf.org

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Water Research Foundation℠

Outline

- Introduction
- Limitations of Current Model
- Overview of Alternate Models
  1. The Customer*select* Model
  2. The Peak-set Base Model
  3. The Dividend Model

INTRODUCTION

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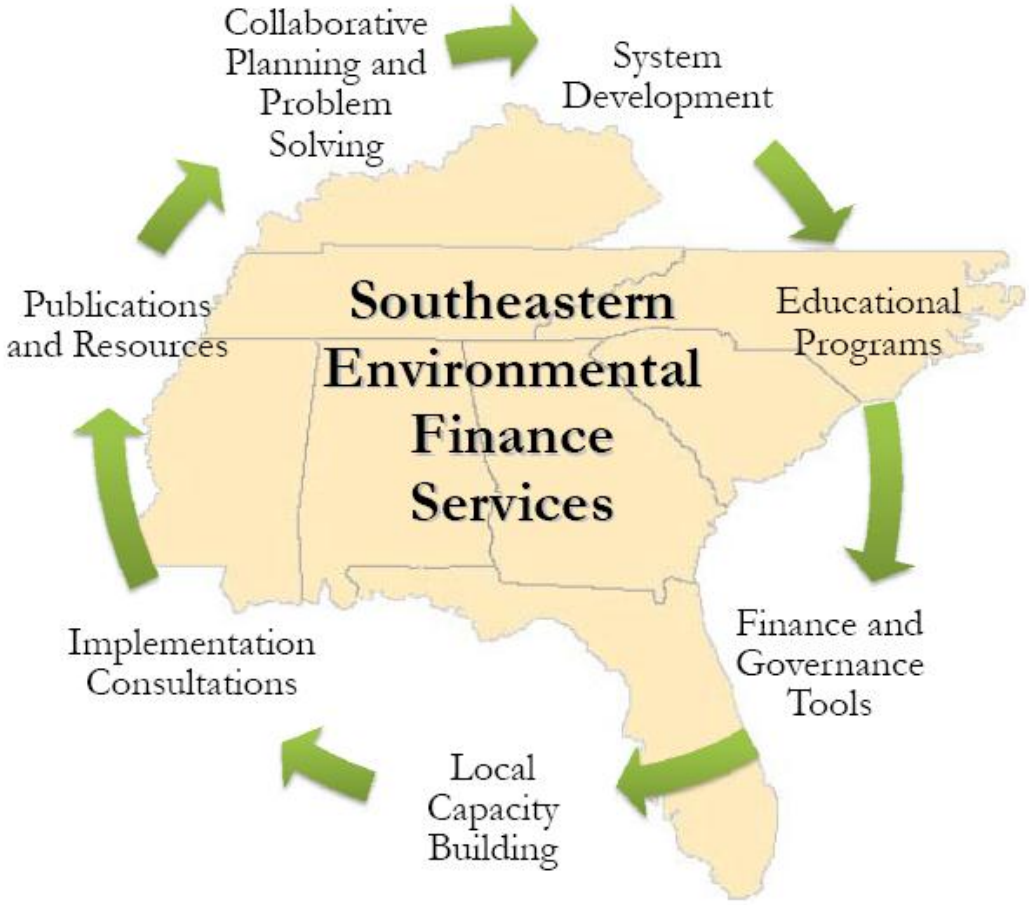


Dedicated to enhancing the ability of governments and organizations to provide environmental programs and services in fair, effective and financially sustainable ways

Serving EPA Region 4

THE PROBLEM

The Conservation Conundrum

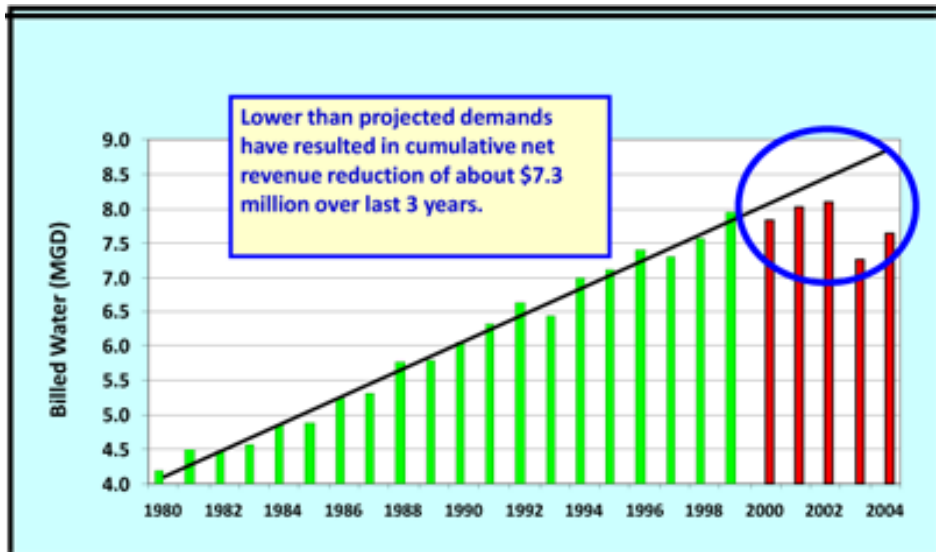
- Water utilities face a dilemma in encouraging water conservation
  - By selling less water, utilities have to increase rates to cover their costs
  - Customers are essentially being asked to pay more for less water

Lower Revenues…

Public Perception:

Source: Fayetteville Observer 2/6/04

Utility Reality:



Source: OWASA

With data from an actual utility

OVERVIEW OF ALTERNATE MODELS

1. The Customer*select* Model

- *Inspiration = cell phone plans*
- Customer buys into a “plan” that allows them a certain “bundle of consumption”

Example residential structure

Plan name	Monthly water allotment	Cost for w&s under current rate structure	Customerselect cost (w&s)	Overage
Lifeline	2,000 gallons	$12.00-$31.02	$25.99	$12.00/kgal
Basic service/Small family	6,000 gallons	$40.53-$69.06	$59.99	$12.00/kgal
Light irrigation/Large family	10,000 gallons	$78.57-$88.95	$79.99	$12.00/kgal
Heavy irrigation	15,000 gallons	$92.41-$106.25	$99.99	$12.00/kgal
Water waster	Unlimited	>$106.25	$139.99*	NA

Potential Benefits

- Increased revenue stability: Customers “lock into” plans
- Gives customer a choice: This means less administrative burden than budget-based rates of utility determining block rate for customers
- Moves more to a model of water and sewer **service**, rather than a commodity
- Promotes conservation, especially around the “break points”
- Relatively easy to add ancillary services (like service line protection) a la carte

Potential Challenges

- Complicates budgeting process:
  - -How do you predict what plan customers will choose?
  - -When will they “lock in”?
  - -Can they change plans? How often? What is the optimal length of the contract?
- Does not fit with seasonal use of water: Water use is not as consistent month-to-month as cell phone use. Allowing roll-overs could help this, but would dissuade conservation.
- Customers will request real-time water use information: In order to provide this service, metering upgrades will be required.

2. The Peak-set Base Model

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

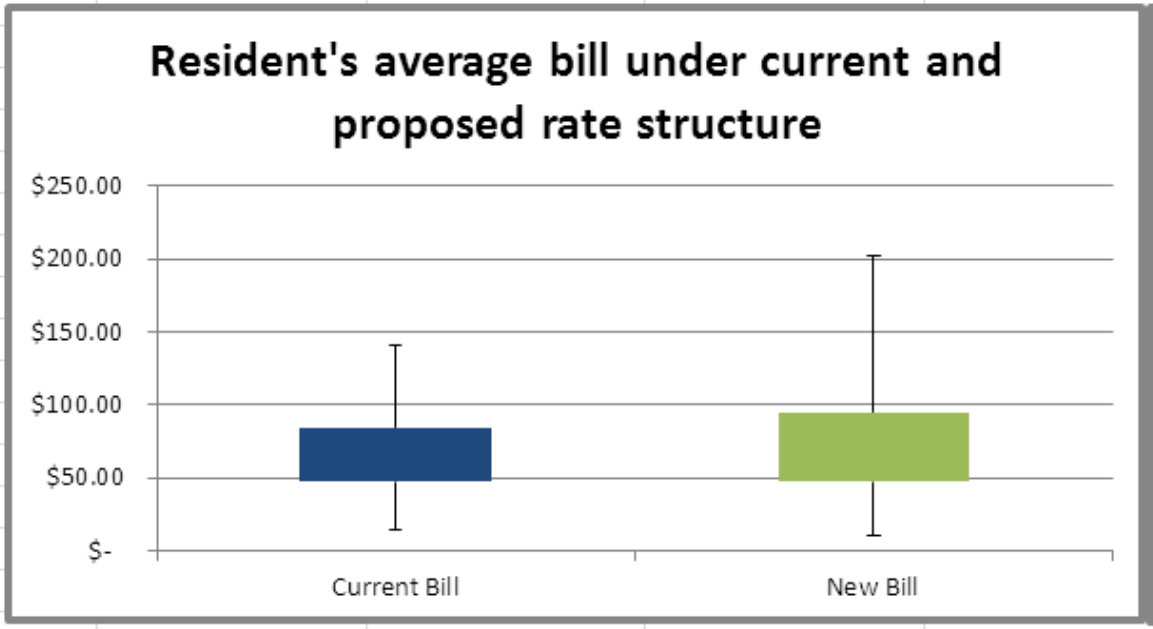
Example residential structure

Residential Peak-set base rate structure		Base Charge	Variable rate
	Water	$1.50/ peak kgal	$2.00/kgal
	Sewer	$6.00	$6.05/kgal (sewer cap at 7,000 gallons)

Example application								
Household	Peak monthly use			Average monthly water use (gallons)	3-year average peak	Base charge for 2012	Total bill on average bill under current rate structure	Total bill on average month under new rate structure
	2009	2010	2011					
1	15,000	13,200	16,800	5,821	15,000	$28.50	$67.36	$75.36
2	4,450	4,600	4,300	2,921	4,450	$12.68	$39.78	$36.19
3	20,450	18,100	22,800	7,942	20,450	$36.68	$81.48	$94.56

Impact of Peak-Set Base on Utility and Residential Customers for Utility *X*

Estimated Impact on Utility Revenue and Revenue Stability	Current Bill	New Bill
Total Annual Revenue from 100 Residential Customers	$81,128.02	$88,817.33
Revenue Collected from Base Charges (based on average)	$14,400.00	$34,389.00
Revenue Collected from Rates (based on average)	$66,728.02	$54,428.33
Percent Fixed Revenue	18%	39%



Potential Benefits

- Increased revenue stability: There would be a larger percentage of revenue coming from base charge
- Promotes steady customer water use: A high peaking ratio would be costly to a customer all year long
- Customers can expect more steady bills: This might also mean reduced customer cutoffs
- Would not require metering upgrades

Potential Challenges

- Requires methodology for determining base charges for new customers
- Potentially requires billing software upgrade
- Utility may expect more meter re-reads and high bill disputes because of the long-term impact of a high meter read
- A customer that is planning to move will not have a large incentive to conserve

3. Cooperative/Dividend Model

- *Inspiration = energy sector/ REI outdoor*
- Customers are “members” of utility
- Utility clearly defines its revenue needs (including O&M, debt service, capital reserves, etc.)
- Utility develops a share of this total cost that a “member” should pay for a fiscal year
- Customer pays a fixed monthly fee
- “Extra” funds paid out to customers at end of fiscal year

Example Structure

	3-year rolling average (2008-2010)	2011 average water use	Reduction (1 – 2011 average water use/3-year rolling average)	Portion of Reduction (Customer reduction x total reduction)	Portion of Profit (% of total reduction x utility profit)
Household A	3,000	2,500	17% reduction	14% of total reduction	$70
Household B	8,000	4,000	50% reduction	41% of total reduction	$205
Household C	5,500	5,350	3% reduction	2%	$10
Household D	4,000	4,200	No reduction	0%	$0
Business A	2,500	2,450	2% reduction	2%	$10
Business B	10,000	8,000	20% reduction	16%	$80
Business C	500,000	350,000	30% reduction	25%	$125
			122%	100%	$500

Potential Benefits

- This model drives the message that the utility is not a for-profit entity: “Profits” are returned to customers
- Provides a positive way for the utility to interact with customers: A certain Electric Coop issues checks on December 1
- Ensures that utility first-and-foremost meets financial goals
- Depending on how this model was set up, it most likely would not require metering or billing upgrades

Potential Challenges

- Added administrative costs of calculating and cutting checks
- Disincentive to conserve during first years as a customer establishes a baseline
- The more people that act as water stewards, the less money there is to go around to more customers. This could be discouraging.

CONCLUSION

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Questions/Comments

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